SUBSTATION ENGINEERING COMPANY

AC Transmission New York Public Policy Transmission Need

Technical Review Report

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The independent consultant project team (alternately, "review team," "consultant," "reviewer," or "reviewers") includes:

Project Lead: Joseph W. Allen, SECo Vice President

Lead Contributors:

Barry Hart, SECo Principal Transmission Engineer
Prakash Pradhan, SECo Sr. Transmission Engineer
Tracy Hollands, SECo Manager of New York Operations
Todd Smith, SECo Lead Substation Designer
Jack Holodak, SECo VP Senior Project Manager
Joe Simone, GEI Consultants Senior Consulting Engineer
Curtis Compton, Kenny Construction Vice President
Thomas Bell, Kenny Construction Estimator
Jason Petersen, Kenny Construction Field Construction Manager

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1. Introduction

This report documents the technical evaluation of the thirteen proposals submitted to the New York State Independent System Operator, Inc. ("NYISO") to satisfy the AC Transmission Public Policy Transmission Needs (AC Transmission PPTN) that the New York Public Service Commission ("NYPSC") identified in December 2015. In its October 27, 2016 Viability and Sufficiency Assessment Report, the NYISO reported that the thirteen proposals were viable and sufficient and would be able to satisfy the public policy transmission need criteria. Four Developers submitted proposals including National Grid/Transco ("NGRID"), NextEra Energy Transmission New York ("NextEra"), North American Transmission ("NAT") and New York Power Authority ("NYPA") collectively ("NAT/NYPA"), and ITC. The thirteen proposals evaluated are:

SEGMENT A

Proposal Number	Developer	Description
T018	National Grid/Transco (NGRID)	Base proposal
T021	NextEra Energy Transmission New York	Base Proposal
T025	North America Transmission/New York Power Authority (NAT/NYPA)	765 kV Proposal
T026	North America Transmission/New York Power Authority (NAT/NYPA)	Base Proposal
T027	North America Transmission/New York Power Authority (NAT/NYPA)	Double Circuit
T028	North America Transmission/New York Power Authority (NAT/NYPA)	Enhanced
T031	ITC	Base Proposal

SEGMENT B

Proposal Number	Developer	Description
T019	National Grid/Transco (NGRID)	Base Proposal
T022	NextEra Energy Transmission New York	Base Proposal
T023	NextEra Energy Transmission New York	Alternative
T029	North America Transmission/New York Power Authority (NAT/NYPA)	Base Proposal
T030	North America Transmission/New York Power Authority (NAT/NYPA)	Enhanced
T032	ITC	Base Proposal

The primary scope and requirements of the AC Transmission PPTN, as identified and described in the NYPSC Order issued on December 17, 2015, is development and construction of the following facilities:

SEGMENT A: Edic/Marcy to New Scotland; Princetown to Rotterdam

Construction of new 345 kV line from Edic or Marcy to New Scotland on existing right-of-way (primarily using Edic to Rotterdam right-of-way west of Princetown); construction of two new 345 kV lines or two new 230 kV lines from Princetown to Rotterdam on existing Edic to Rotterdam right-of-way; decommissioning of two 230 kV lines from Edic to Rotterdam; related switching or substation work at Edic or Marcy, Princetown, Rotterdam and New Scotland.

SEGMENT B: Knickerbocker to Pleasant Valley

Construction of a new double circuit 345 kV/115 kV line from Knickerbocker to Churchtown on existing Greenbush to Pleasant Valley right-of-way; construction of a new double circuit 345 kV/115 kV line or triple circuit 345 kV/115 kV line from Churchtown to Pleasant Valley on existing Greenbush to Pleasant Valley right-of-way; decommissioning of a double-circuit 115 kV line from Knickerbocker to Churchtown; decommissioning of one or two double-circuit 115 kV lines from Knickerbocker to Pleasant Valley; construction of a new tap of the New-Scotland-Alps 345 kV line and new Knickerbocker switching station; related switching or substation work at Greenbush, Knickerbocker, Churchtown and Pleasant Valley substations.

In addition to the Segment A and Segment B, the NYPSC also identified in the AC Transmission PPTN, upgrades to the Rock Tavern 345 kV Substation and the rebuild of the Shoemaker to Sugarloaf 138 kV line with a new double circuit 138 kV line and related substation work at Shoemaker, Hartley, South Goshen, Chester, and Sugarloaf.

The evaluation conducted by the review team included review of the thirteen proposals received from the NYISO, as well as responses to the Requests For Information (RFIs) issued to the Developers in June, September, and November 2017.

The review team's evaluation focused on the following areas:

- Site review and "walk down" of proposed sites and routes to evaluate their constructability and identify potential issues with the proposed design, siting and routing;

- Review of the environmental and permitting requirements for the project as proposed by Developers and identify gaps and issues, which were completed predominately using "desktop" analysis supplemented with occasional field review;
- Evaluate completeness and reasonableness of the proposed project schedules and sequencing plans, including identification of potential issues associated with delay in obtaining permits for and construction of the proposed project;
- Evaluate the Developers' cost estimates by preparing independent cost estimates for each project;
- Review, identify and estimate real estate requirements;
- Identify risks associated with the projects;
- Determine expandability of proposed project;
- Assess the Developers' plans for site control; and
- Evaluate the Developers' operating plans

The review team's evaluation did not include further evaluation of Developers' qualifications or credentials beyond the screening performed earlier in the process.

2. Executive Summary

This technical review focused primarily on schedule, cost, identifiable risks, the ability to expand on the project in the future, site control plan and availability of Rights of Way ("ROW"), and the operating plan provided by each Developer. Below is a brief summary of our findings. Please see the remainder of the report for further detail.

2.1. Schedule

Each Developer's schedule for permitting and construction of its project was evaluated based on the review team's collective experience with transmission projects sited by the New York State Public Service Commission ("NYPSC") under Article VII of the New York State Public Service Law and constructed in New York State. A review of recent Article VII electric transmission projects timelines was completed to identify comparable schedules for obtaining permits and approvals needed to begin construction. The review team also estimated the amount of time required to procure equipment, construct the facilities, and test and commission the facilities in order to be placed into service. A summary of the expected durations for each Developer's proposed scope is detailed in the table below:

Summary of Expected Durations

Segment A Proposals	**Developer Proposed Total Duration**	**Estimated Minimum Duration (Note #1 and #2)**
T018 NGRID/Transco Segment A	48 Months	48 Months
T021 NextEra Segment A	29 Months	48 Months
T025 NAT/NYPA Segment A + 765 kV	44 Months	50 Months
T026 NAT/NYPA Segment A Base	44 Months	48 Months
T027 NAT/NYPA Segment A Double Circuit	48 Months	51 Months
T028 NAT/NYPA Segment A Enhanced	44 Months	48 Months
T031 ITC Segment A	39 Months	48 Months
Segment B Proposals	**Developer Proposed Total Duration**	**Estimated Minimum Duration (Note #1)**
T019 NGRID/Transco Segment B	48 Months	45 Months
T022 NextEra Segment B	28 Months	43 Months
T023 NextEra Segment B – Alt	29 Months	45 Months
T029 NAT/NYPA Segment B Base	40 Months	45 Months
T030 NAT/NYPA Segment B Enhanced	41 Months	45 Months
T032 ITC Segment B	53 Months	47 Months

Note #1: "Estimated Minimum Duration" is calculated using the anticipated time for Article VII application preparation, the anticipated time for the Article VII approval process, ROW procurement where significant and the anticipated time for construction of the project. The review team also assumed that the Environmental Management and Construction Plan (EM&CP) preparation is completed and ready for submission when the Article VII certificate is received. All of these components will depend on the experience and the level of resources of the developer and the complexity of the project which is further discussed in the risk register. In order to establish a reasonable normal schedule for the purpose of establishing an in-service date an additional four months should be added to the estimated minimum duration.

Note #2: For the Edic to Princetown portion of Segment A, all Developers are proposing to use existing NYPA-owned transmission line structures for about 12.5 miles of their proposed projects. If detailed engineering indicates that the existing structures are inadequate and need to be replaced, the construction schedule may increase by about 4 months, however; this would be consistent across all proposed projects.

2.2. **Cost**

In evaluating the construction cost of each proposal, Kenny Construction (Kenny) prepared independent cost estimates for each proposal. Kenny reviewed the Developers' proposals with the Developers' cost estimates redacted. GEI Consultants, Inc. estimated the environmental licensing and permitting costs. The results are shown below:

SEGMENT A (SUMMARY OF ESTIMATES COMPARISON WITH 30% CONTINGENCY)

Developer	Independent Estimate (2018 $)
T018 National Grid/ NY Transco	$520,156,065
T021 NextEra Energy	$497,652,781
T025 NYPA / NAT (Base+765 kV)	$862,968,398
T026 NYPA / NAT (Base)	$490,654,542
T027 NYPA / NAT (Double Ckt)	$749,941,620
T028 NYPA / NAT (Enhanced)	$513,977,889
T031 ITC	$570,008,025

SEGMENT B (SUMMARY OF ESTIMATES COMPARISON WITH 30% CONTINGENCY)

Developer	Independent Estimate (2018 $)
T019 National Grid/ NY Transco	$479,306,858
T022 NextEra Energy	$372,564,299
T023 NextEra Energy (Alternate)	$423,900,414
T029 NYPA / NAT (Base)	$421,732,556
T030 NYPA / NAT (Enhanced)	$440,576,906
T032 ITC	$536,111,604

SEGMENT B (SUMMARY OF ESTIMATES COMPARISON WITH 30% CONTINGENCY and Global Addition of $113M)

Developer	Independent Estimate (2018 $)
T019 National Grid/ NY Transco	$592,306,858
T022 NextEra Energy	$485,564,299
T023 NextEra Energy (Alternate)	$536,900,414
T029 NYPA / NAT (Base)	$534,732,556
T030 NYPA / NAT (Enhanced)	$553,576,906
T032 ITC	$649,111,604

Notes:

- Independent Estimates are adjusted to 2018 U.S. Dollars.
- The estimates includes the contingency rate of 30% referenced in the PSC "Order Finding Transmission Needs Driven by Public Policy Requirements" (December 17, 2015) and the Department of Public Service Staff report. The review team agrees that level of contingency is sufficient to allow for unanticipated costs and estimating accuracy to forecast a reasonable worst case cost.
- The Global Additions includes upgrades to the Rock Tavern 345 kV Substation and the rebuild of the Shoemaker to Sugarloaf 138 kV line with a new double circuit 138 kV line and related substation work at Shoemaker, Hartley, South Goshen, Chester, and Sugarloaf at the cost identified by the NYPSC in the AC Transmission Proceedings.
- Includes preliminary costs for Network Upgrade Facilities identified through the respective System Impact Studies.

2.3. **Risk**

2.3.1. The review team completed a review of the potential risks associated with the proposals' schedules and costs, focusing on the most significant drivers, which include:

- Article VII review approval process and potential environmental issues
- Procurement of major equipment
- Construction
- Site Control and procurement of real estate
- Operational Plan

2.3.2. The proposals share many risks in common such as potential delays in preparation and approval of regulatory licenses and permits.

2.3.3. The most significant risks associated with the proposals are identified as follows:

SEGMENT A

- Need to obtain additional easements for exceedance of EMF levels. The existing corridor between Princetown Junction and New Scotland Substation (that has 345 kV line #14 and line #18, and 115 kV line #13) is currently estimated to exceed NYS PSC guidelines for EMF levels. The proposed designs improve the condition, but EMF levels are still estimated to exceed the guidelines for all proposals. EMF levels will have to be confirmed during detailed engineering and may result in purchasing EMF easements from property owners along the ROW between Princetown and New Scotland Substations. See Section 4.11.2.4 for more detail.
- For proposal T025 (NAT/NYPA proposal to convert the existing 345 kV line to 765 kV operation) there is a significant risk to the project's cost and schedule due to (i) potential public opposition, (ii) the potential need to replace the transmission line hardware due to potential corona issues and (iii) additional EMF concerns due to the higher operating voltage of the facility. An allowance was added to the independent cost estimate to account for the potential cost of mitigating corona and EMF issues.

SEGMENT B

- The NYPSC encouraged that new structures have minimal increase in height and concluded that height increases of less than 25 feet over exisiting structures will not create a significant adverse visual impact of a regional nature (December 12, 2015 Order at p. 35). All else being equal, the construction of new structures even with minimal increase in height may increase the risk of public opposition due to their potential local visual impact. The PSC determined that the local visual impacts will be addressed in the Article VII siting proceedings.

2.4. **Expandability**

2.4.1. The review team evaluated the potential for future expansion of the proposed transmission solutions to increase their capacity. Many of the more common design approaches that could be employed on a transmission project to afford future expandability are not applicable since the objective of this project is to utilize existing transmission rights-of-way (ROW) and property. Much of the existing transmission ROW will be fully utilized in construction of this project but there is some opportunity for expansion as described below.

2.4.1.1. All proposals for Segment A involve replacement of the existing Porter-Rotterdam 230 kV circuits #30 and #31 with a new Edic to New Scotland 345 kV line. This will provide the space for future use of the existing ROW and may

allow the addition of another circuit from Edic/Porter to Princetown Junction. During detailed engineering the placement of structures could be optimized to maximize the remaining ROW.

2.4.1.2. The proposed new substations provide the potential for future line terminal and transformer additions.

2.5. **Site Control and Real Estate**

2.5.1. In all of the proposals, the following is common for the property rights acquisition process:

- All Developers propose to use existing ROW for their transmission facilities.
- Some additional real estate is required for new substation construction at Princetown Junction
  - NextEra's project (T021) proposes a new greenfield site located between Princetown Junction and Rotterdam, and has an option to purchase the real estate for the substation
  - ITC's project (T031) proposes a larger substation at Princetown Junction than the substations proposed by other projects, and will require additional property acquisition
- All Developers have completed preliminary routing of their proposed lines.
- All Developers have documented plans to obtain site control

2.5.2. The non-incumbent Developers all claim common rights in obtaining real property:

- The Developers cite the NYPSC's December 17, 2015 Order in the AC Transmission proceedings (Case Nos. 12-T-0502, *et al.*) as requiring incumbent utilities to engage in non-discriminatory, good faith negotiation of terms in obtaining the right to use an incumbent utility's ROW. The Order further stated that "incumbent utilities should offer competitors the same terms they offer Transco; there should be no bias shown to Transco."

2.6. **Operational Plan**

2.6.1. The review team conducted a review of the Developers' operations and maintenance plans associated with the proposals. The review team did not identify any major flaws with the Developers' plans and the plans are essentially the same.

2.6.2. For the non-incumbent Developer proposals, the following aspects are common:

- The Developers stated that all O&M activities will comply with required NERC regulations.
- Proposed facilities will have real-time reporting of operating data.

2.6.3. The non-incumbent Developers proposed the following arrangements for Control Center services:

- ITC proposes to use their Control Center in Novi MI. to provide control center services.
- NextEra proposes to construct a physical control center in New York to provide control center services.
- NAT/NYPA proposed to utilize the NYPA Control Center for control center services.

3. Discussion of Proposals

Brief descriptions of the proposed projects are provided below.

SEGMENT A

3.1. T018 - NGRID/Transco – New Energy Solution Segment A

National Grid/Transco's NYES Segment A Proposal includes the following components:

- A new 345 kV line of approximately 87 miles from the existing Edic 345 kV substation to the existing New Scotland 345 kV substation. The New Scotland 345 kV Substation will be upgraded and expanded
- Two new 345 kV lines of approximately 5 miles single-circuit looping the existing 345 kV Edic to New Scotland #14 line into and out of a new Rotterdam 345 kV Substation. The Rotterdam 230 kV substation will be retired
- Two new 345/115 kV autotransformers connecting the existing Rotterdam 115 kV switchyard to the new 345 kV switchyard
- One new 345/230 kV autotransformer connecting the existing 230 kV Rotterdam to Eastover Road #38 line to the new Rotterdam 345 kV switchyard
- One new 135 MVAR capacitor bank connected to the new Rotterdam 345 kV switchyard
- Decommissioning of the Porter to Rotterdam 230 kV lines #30 and #31

3.2. T021 – NextEra – Enterprise Line - Segment A

NextEra's Enterprise Segment A Proposal includes the following components:

- A new 345 kV line of approximately 86 miles (83.4 miles 345 kV line and 2.6 miles double circuit 345/115 kV line) from the existing Edic 345 kV substation to the existing New Scotland 345 kV substation
- Rebuild 2.6 miles of existing Rotterdam-New Scotland 115 kV line circuit #13
- A new breaker-and-a-half 345/230 kV Princetown Substation, located near the existing Rotterdam 230 kV substation. The substation will include two 345/230 kV auto-transformers

- Two new 345 kV circuits each approximately 4 miles in length to loop the existing Marcy – New Scotland 345 kV circuit #18 into Princetown 345/230 kV substation
- Two new 1 mile 230 kV lines from Princetown-Rotterdam
- Decommissioning of the Porter to Rotterdam 230 kV lines #30 and #31

3.3. T025 – NAT/NYPA - Segment A – A + 765 KV

The NAT/NYPA Segment A +765 kV Proposal consists of the following components:

- A new 345 kV line of approximately 86 miles from the existing Edic 345 kV substation to the existing New Scotland 345 kV substation
- Two new 345 kV lines of approximately 5 miles single-circuit looping the existing 345 kV Edic to New Scotland #14 line into and out of a new Rotterdam 345 kV Substation. The Rotterdam 230 kV substation will be retired
- Two new 345/115 kV lower impedance transformers connecting the existing Rotterdam 115 kV switchyard to the new 345 kV switchyard. One new 345/230 kV transformer connecting the existing 230 kV Rotterdam to Eastover Road #38 line to the new Rotterdam 345 kV switchyard
- A new Princetown 345 kV switchyard by tapping the newly proposed Edic-New Scotland lines and Rotterdam-New Scotland transmission lines
- Convert the Marcy – New Scotland and New Scotland – Knickerbocker 345 kV transmission lines to 765 kV operation as Marcy – Knickerbocker 765 kV (with no connection at New Scotland)
- Switching station or substation work at Knickerbocker with two new 2000 MVA 765/345 kV transformers at Knickerbocker
- Terminal upgrades at Edic and Marcy 345 kV substations
- Decommissioning of the Porter to Rotterdam 230 kV lines #30 and #31

3.4. T026 – NAT/NYPA - Segment A - Base

NAT/NYPA Segment A Base Proposal consists of the following components:

- A new 345 kV line of approximately 86 miles from the existing Edic 345 kV substation to the existing New Scotland 345 kV substation
- Two new 345 kV lines of approximately 5 miles single-circuit looping the existing 345 kV Edic to New Scotland #14 line into and out of a new Rotterdam 345 kV Substation. The Rotterdam 230 kV substation will be retired
- Two new 345/115 kV transformers connecting the existing Rotterdam 115 kV switchyard to the new 345 kV switchyard. One new 345/230 kV transformer connecting the existing 230 kV Rotterdam to Eastover Road #38 line to the new Rotterdam 345 kV switchyard
- Terminal upgrades at Edic and Marcy 345 kV substations

- Decommissioning of the Porter to Rotterdam 230 kV lines #30 and #31

3.5. T027 – NAT/NYPA Segment A - Double Circuit

NAT/NYPA Segment A Double Circuit Proposal consists of the following components:

- A new 345 kV double circuit line of approximately 86 miles from the existing Edic 345 kV substation to the existing New Scotland 345 kV substation
- Two new 345 kV lines of approximately 5 miles single-circuit looping the existing 345 kV Edic to New Scotland #14 line into and out of a new Rotterdam 345 kV Substation. The Rotterdam 230 kV substation will be retired
- Two new 345/115 kV lower impedance transformers connecting the existing Rotterdam 115 kV switchyard to the new 345 kV switchyard. One new 345/230 kV transformer connecting the existing 230 kV Rotterdam to Eastover Road #38 line to the new Rotterdam 345 kV switchyard
- Rebuild approximately 6 miles of the Rotterdam to New Scotland 345 kV transmission line to accommodate the new double-circuit line beginning from Princetown junction
- Remove the Rotterdam to New Scotland 115 kV transmission line
- A new Princetown 345 kV switchyard by tapping the newly proposed Edic-New Scotland lines and Rotterdam-New Scotland transmission lines
- Terminal upgrades at Edic and Marcy 345 kV substations
- Decommissioning of the Porter to Rotterdam 230 kV lines #30 and #31

3.6. T028 – NAT/NYPA Segment A - Enhanced

The NAT/NYPA - Segment A Enhanced Proposal consists of the following components:

- A new 345 kV line of approximately 86 miles from the existing Edic 345 kV substation to the existing New Scotland 345 kV substation
- Two new 345 kV lines of approximately 5 miles single-circuit looping the existing 345 kV Edic to New Scotland #14 line into and out of a new Rotterdam 345 kV Substation. The Rotterdam 230 kV substation will be retired
- Two new 345/115 kV lower impedance transformers connecting the existing Rotterdam 115 kV switchyard to the new 345 kV switchyard. One new 345/230 kV transformer connecting the existing 230 kV Rotterdam to Eastover Road #38 line to the new Rotterdam 345 kV switchyard
- A new Princetown 345 kV switchyard by tapping the newly proposed Edic-New Scotland lines and Rotterdam-New Scotland transmission lines
- Terminal upgrades at Edic and Marcy 345 kV substations
- Decommissioning of the Porter to Rotterdam 230 kV lines #30 and #31

3.7. T031 – ITC Segment A - 16NYPP1-1A

The ITC Segment A Proposal consists of the following components:

- A new Princetown 345 kV switching station tapping the existing Marcy to New Scotland 345 kV #18 line and Edic to New Scotland 345 kV #14 line
- A new Edic – Princetown – New Scotland 345 kV line, rebuilding line #14 between Princetown and New Scotland and sharing the common tower structures with the new line
- A new Rotterdam 345 kV substation with two new 345/230 kV transformers
- Two new Princetown to Rotterdam 345 kV lines of approximately 5.2 miles single circuit
- Decommissioning of the Porter to Rotterdam 230 kV lines #30 and #31

SEGMENT B

All Segment B projects include terminal upgrades for Coopers Corners – Rock Tavern 345 kV lines to be performed by Central Hudson, and upgrades on Shoemaker – Sugarloaf 138 kV line to be performed by Orange & Rockland.

3.8. T019 – NGRID/Transco – New Energy Solution Segment B

National Grid/Transco-NYES Segment B proposal consists of the following components:

- A new double-circuit 345/115 kV line from a new Knickerbocker 345 kV Switching Station to the existing Pleasant Valley Substation, including a rebuild of the Churchtown 115 kV Switching Station and an upgrade of the existing Pleasant Valley 345/115 kV Substation, and 50% series compensation on Knickerbocker to Pleasant Valley 345 kV line
- Two new 135 MVAR 345 kV capacitor banks connected to the Pleasant Valley 345 kV Substation
- Terminal upgrades to the existing Roseton 345 kV Substation and Transition Station to upgrade the thermal ratings on the 345 kV Roseton to East Fishkill #305 line
- Terminal upgrades to the existing New Scotland 345 kV Substation to upgrade the thermal ratings on the 345 kV New Scotland to Knickerbocker #2A line
- Retirement of aging infrastructure including multiple existing 115 kV lines between Greenbush 115 kV Substation and Pleasant Valley 115 kV Substation345 kV

3.9. T022 – NextEra – Enterprise Line - Segment B

NextEra Enterprise Line Segment B proposal consists of the following components:

- Multiple retirements and reconfigurations on 115 kV lines between Greenbush – Pleasant Valley
- New Knickerbocker 345 kV Switchyard, approximately 13 miles southeast of New Scotland along the New Scotland - Alps 345 kV line

- Loop New Scotland - Alps 345 kV line circuit #2 into Knickerbocker Switchyard
- New North Churchtown 115 kV Switchyard, just north of NYSEG's existing Churchtown 115 kV switchyard
- A new 345 kV line from a new Knickerbocker 345 kV switching station to the existing Pleasant Valley 345 kV substation (double-circuit 345/115 kV line between Knickerbocker and Churchtown, and single–circuit 345 kV line between Churchtown and Pleasant Valley)

3.10. T023 – NextEra– Enterprise Line Segment B

NextEra Enterprise Line Segment B-Alt proposal consists of the following components:

- Multiple retirements and reconfigurations on 115 kV lines between Greenbush – Pleasant Valley
- New Knickerbocker 345 kV Switchyard, approximately 13 miles southeast of New Scotland along the New Scotland - Alps 345 kV line
- Loop New Scotland - Alps 345 kV line circuit #2 into Knickerbocker Switchyard
- New North Churchtown 115 kV Switchyard, just north of NYSEG's existing Churchtown 115 kV switchyard
- A new double-circuit 345/115 kV line from a new Knickerbocker 345 kV switching station to the existing Pleasant Valley 345 kV substation

3.11. T029 – NAT/NYPA Segment B - Base

NAT/NYPA Segment B Base Proposal consists of the following components:

- Multiple retirements and reconfigurations on 115 kV lines between Greenbush – Pleasant Valley
- A new 345 kV Knickerbocker switchyard along the New Scotland - Alps 345 kV line
- Loop the existing 345 kV New Scotland to Alps transmission line into Knickerbocker Switchyard
- A new double-circuit 345/115 kV line from a new Knickerbocker 345 kV switching station to Pleasant Valley 345 kV Substation (double-bundled 345 kV line)
- A new Churchtown 115 kV substation
- Shoemaker – Shoemaker Tap – Middletown 345/138 kV transformer and 138 kV facilities upgrades

3.12. T030 – NAT/NYPA Segment B - Enhanced

NAT/NYPA Segment B Enhanced Proposal consists of the components included with the Segment B Base Proposal with use of a triple bundle (instead of double bundle) conductor for the Knickerbocker – Pleasant Valley 345 kV transmission line.

3.13. T032 – ITC Segment B - 16NYPP1-1B

ITC Segment B Proposal consists of the following components:

- Multiple retirements and reconfigurations on 115 kV lines between Greenbush and Pleasant Valley
- A new Knickerbocker 345 kV Substation and a new Knickerbocker 115 kV Substation by tapping the existing 345 kV New Scotland to Alps circuit and Greenbush to Pleasant Valley 115 kV line respectively
- A new 345/115 kV double-circuit line from the Knickerbocker station to Churchtown station on existing Greenbush to Pleasant Valley right-of-way
- A new 345/115/115 kV triple-circuit line from Churchtown to Pleasant Valley on existing Greenbush to Pleasant Valley right-of-way

4. Evaluation

4.1. Schedule

In evaluating the schedule for the proposed projects, the NYISO OATT section 31.4.8.1.7 provides the following evaluation criteria: "The potential issues associated with delay in constructing the proposed regulated Public Policy Transmission Project consistent with the major milestone schedule and the schedule for obtaining any permits and other certifications as required to timely meet the need."

The review team has completed an evaluation of the schedules submitted with each proposal. In its evaluation of the proposals, the review team leveraged its collective experience with the development, construction and maintenance of transmission line and substation projects in New York State, and compared the proposed schedules to actual Article VII electric transmission projects completed in the State of New York.

Several Developers appear to assume that the selected project or projects could be subject to an expedited Article VII process. In Case Nos. 12-T-0502, *et al.*, *Proceeding on Motion to Examine Alternating Current Transmission Upgrades*, Order Authorizing Modification of the Process to Allow for Consideration of Alternative Proposals (February 21, 2014), the NYPSC determined that the expedited process proposed in the 2014 State of the State address was not directly applicable to its proceedings and would not be employed.[1]

[1] *Id.* at pp 3-4 (finding that the proposed expedited process "would apply only to projects that do not require permanent expansion of the right-of-way 'envelope' with wider corridors or taller towers" and, thus, "is not directly applicable to this proceeding and will not be employed").

Accordingly, the review team's analysis is based on standard historical durations for siting review. Our conclusion for the Article VII process minimum durations based upon "best case" assumptions is as follows:

Article VII Process Minimum Durations

Task	Duration based on construction primarily on Existing ROW
Prepare and submit complete Article VII application (estimate)	6 mo.
PSC issue Certificate (minimum based on past comparable Article VII projects)	12 mo.
Prepare and submit EM&CP (best case: assumes no major changes to design required in Certificate, and prepared during Article VII proceedings)	0 mo.
DPS review and approve EM&CP (based on past comparable Article VII projects)	6 mo.
Total: Best Case Submit Article VII application until Start Construction	18 mo.
Total: Best Case Prepare Article VII application until Start Construction	24 mo.

The main drivers to the project schedule durations considered were:

- Article VII licensing process
- Procurement of major equipment
- Real Estate requirements
- Construction requirements.

The project minimum durations discussed in this evaluation assume that preparation of the Article VII application and real estate procurement negotiations will begin at the time the project is awarded to the Developer and that any preliminary work required has already been completed by the Developer prior to that date. Likewise, the review team assumes that work to file the first EM&CP segment is complete prior to receipt of Article VII Certificate and there are no major changes to the projects' designs required in the Article VII Certificate.

The review team developed Gantt chart schedules for each project to show a reasonable time line for each proposal, and appended them to this report as Attachment A.

An evaluation of the construction component of the proposals was completed by Kenny Construction.

Considering that the evaluation focused on establishing reasonable minimum schedule durations, the review team also recommended that some float be added to the schedule to establish a reasonable schedule recognizing the potential for minor delays for the purpose of determining the in-service date once a project is selected. The review team recommends adding 4 months total to each minimum schedule to account for the following float:

- Two months to the construction schedule for each proposal to account for typical slippage of construction activities (*i.e.*, potential weather events, delays if construction crews are needed to respond and provide storm support, unanticipated material and equipment issues, and inability to obtain outages on a timely basis); and
- Two months to the schedule for licensing and permitting activities between the NYPSC issuing the Article VII Certificate and the submittal of the EM&CP to account for possible delays in submitting the EMCP should the PSC require changes to the plan submitted in the application.

Summarized below are the review team's findings for Segment A:

4.1.1. National Grid/Transco Proposal T018 – Segment A

- The Developer included 5 months for Article VII application preparation. Based on experience the review team allocated six months.
- Overall Article VII process schedule is adequate.
- Time for procurement of major equipment is adequate.
- The project is to utilize ROW owned by National Grid and some additional easement to satisfy EMF requirements. The review team believes the Developer has adequate time in its schedule to acquire ROW.
- Overall Construction schedule is adequate.
- The proposed project duration is 48 months. The review team believes that is adequate for this project.

4.1.2. NextEra Proposal T021 – Segment A

- The Developer included six months for Article VII application preparation. Based on experience the review team believes that to be adequate.

- The Developer included nine months for the overall Article VII process (from submission of Article VII application to EM&CP approval). Based on comparable Article VII projects the review team believes that process will take at least 18 months.
- NextEra's schedule is showing that it expects substation EM&CP approval in about 3 months to allow for an earlier start on substation construction. Approval is unlikely to be granted that quickly and the review team believes that approval will take a minimum of six months.
- Time for procurement of major equipment is adequate.
- The project is to utilize existing ROW owned by National Grid and some additional easement to satisfy EMF requirements. The review team believes the Developer has adequate time in its schedule to acquire ROW.
- Overall Construction schedule includes 14 months. Based on experience with similar work the review team believes the work will take at least 24 months.
- Their proposed project duration is 29 months. The review team believes that at least 48 months will be required to complete this project.

4.1.3. NAT/NYPA Segment A

4.1.3.1. Proposal T025 – Segment A + 765 kV Proposal

- The Developer included six months for Article VII application preparation. Based on experience the review team believes that to be adequate.
- The Developer included 13 months for the overall Article VII process (from submission of Article VII application to EM&CP approval). Based on comparable Article VII projects the review team believes that process will take at least 20 months. (Two additional months were added to the estimated minimum time period to account for anticipated additional issues associated with the 765 kV line.) The Developer's schedule is showing start construction at receipt of Article VII Certificate. At least six months will be required for EM&CP approval.
- Time for procurement of major equipment is adequate.
- The project is to utilize existing ROW owned by National Grid and some owned by NYPA as well as some additional easement to satisfy EMF requirements. The review team believes the Developer has adequate time in its schedule to acquire ROW.
- Overall Construction schedule is adequate.
- Their proposed project duration is 44 months. The review team believes that at least 50 months will be required to complete this project.

4.1.3.2. Proposal T026 – Segment A Base Proposal

- The Developer has included six months for Article VII application preparation. Based on experience the review team believes that to be adequate.
- The Developer has included 13 months for the overall Article VII process (from submission of Article VII application to EM&CP approval). Based on comparable Article VII projects the review team believes that process will take at least 18 months. The Developer's schedule is showing start construction at receipt of Article VII Certificate. At least six months will be required for EM&CP approval.
- Time for procurement of major equipment is adequate.
- The project is to utilize existing ROW owned by National Grid and some additional easement to satisfy EMF requirements. The review team believes the Developer has adequate time in its schedule to acquire ROW.
- Overall Construction schedule is adequate.
- The Developer's proposed project duration is 44 months. The review team believes that at least 48 months will be required to complete this project.

4.1.3.3. Proposal T027 – Segment A Double Circuit

- The Developer has included six months for Article VII application preparation. Based on experience the review team believes that to be adequate.
- The Developer has included 13 months for the overall Article VII process (from submission of Article VII application to EM&CP approval). Based on comparable Article VII projects the review team believes that process will take at least 18 months. The Developer's schedule is showing start construction at receipt of Article VII Certificate. At least six months will be required for EM&CP approval.
- Time for procurement of major equipment is adequate.
- The project is to utilize existing ROW owned by National Grid and some additional easement to satisfy EMF requirements. The review team believes the Developer has adequate time in its schedule to acquire ROW.
- The Developer's overall Construction schedule of 29 months is adequate. The review team believes that a minimum of 27 months will be required.
- The Developer's proposed project duration is 48 months. The review team believes that at least 51 months will be required to complete this project.

4.1.3.4. Proposal T028 – Segment A Enhanced Proposal

- The Developer has included six months for Article VII application preparation. Based on experience the review team believes that to be adequate.
- The Developer has have included 13 months for the overall Article VII process (from submission of Article VII application to EM&CP approval). Based on comparable Article VII projects the review team believes that process will take at least 18 months. The Developer's schedule is showing start construction at receipt of Article VII Certificate. At least six months will be required for EM&CP approval.
- Time for procurement of major equipment is adequate.
- The project is to utilize existing ROW owned by National Grid and some additional easement to satisfy EMF requirements. The review team believes the Developer has adequate time in its schedule to acquire ROW.
- Overall Construction schedule is adequate.
- The Developer's proposed project duration is 44 months. The review team believes that at least 48 months will be required to complete this project.

4.1.4. ITC Proposal T031 Segment A

- Inconsistencies exist between ITC's Milestone Schedule Table, Text in Attachment B, and their Gantt Chart which show different dates and durations for their schedule. Attachment C Milestone Schedule Table was used to document the developer proposed durations.
- The Developer has included seven months for Article VII application preparation. Based on experience the review team believes that to be adequate
- The Developer has included 10 months for the overall Article VII process (from submission of Article VII application to EM&CP approval). Based on comparable Article VII projects the review team believes that process will take at least 18 months.
- Time for procurement of major equipment is adequate.
- The project is to utilize existing ROW owned by National Grid and some additional easement to satisfy EMF requirements. The review team believes the Developer has adequate time in its schedule to acquire ROW.
- Overall Construction schedule includes 22 months. Based on experience with similar work the review team believes the work will take at least 24 months.
- The Developer's proposed project duration is 39 months. The review team believes that at least 48 months will be required for this project.

Summarized below are the review team's findings for Segment B:

4.1.5. National Grid/Transco Proposal T019 – Segment B

- The Developer has included five months for Article VII application preparation. Based on experience the review team would allocate six months.
- Overall Article VII process schedule is adequate.
- Time for procurement of major equipment is adequate.
- The project is to utilize ROW owned by National Grid.
- Overall Construction schedule of 24 months is adequate. The review team estimates that a minimum of 21 months will be required.
- The Developer's proposed project duration is 48 months. The review team believes that is adequate for this project.

4.1.6. NextEra Segment B Proposals

4.1.6.1. NextEra Proposal T022 – Segment B

- The Developer has included six months for Article VII application preparation. Based on experience the review team believes that to be adequate.
- They have included 9 months for the overall Article VII process (from submission of Article VII application to EM&CP approval). Based on comparable Article VII projects the review team believes that process will take at least 18 months.
- NextEra's schedule is showing that it expects substation EM&CP approval in about three months to allow for an earlier start on substation construction. The review team believes that it is unlikely for approval to be granted that quickly and believe that approval will take a minimum of six months.
- Time for procurement of major equipment is adequate.
- The project is to utilize existing ROW owned by National Grid. The review team believes the Developer has adequate time in its schedule to obtain a lease.
- Overall Construction schedule includes 13 months. Based on experience with similar work the review team believes the work will take at least 19 months.
- The Developer's proposed project duration is 28 months. The review team believes that at least 43 months will be required to complete this project.

4.1.6.2. NextEra Proposal T023 – Segment B Alt

- The Developer has included six months for Article VII application preparation. Based on experience the review team believes that to be adequate.

- The Developer has included nine months for the overall Article VII process (from submission of Article VII application to EM&CP approval). Based on comparable Article VII projects the review team believes that process will take at least 18 months.
- NextEra's schedule is showing that it expects substation EM&CP approval in about three months to allow for an earlier start on substation construction. The review team believes that it is unlikely for approval to be granted that quickly and believe that approval will take a minimum of six months.
- Time for procurement of major equipment is adequate.
- The project is to utilize existing ROW owned by National Grid. The review team believes the Developer has adequate time in its schedule to transfer ownership.
- Overall Construction schedule includes 14 months. Based on experience with similar work the review team believes the work will take at least 21 months.
- The Developer's proposed project duration is 29 months. The review team believes that at least 45 months will be required to complete this project.

4.1.7. NAT/NYPA Segment B Proposals

4.1.7.1. NAT/NYPA Proposal T029 - Segment B Base

- The Developer has included six months for Article VII application preparation. Based on experience the review team believes that to be adequate.
- The Developer has included 13 months for the overall Article VII process (from submission of Article VII application to EM&CP approval). Based on comparable Article VII projects the review team believes that process will take at least 18 months. The Developer's schedule is showing start construction at receipt of Article VII certificate. At least six months will be required for EM&CP approval.
- Time for procurement of major equipment is adequate.
- The project is to utilize existing ROW owned by National Grid. The review team believes the Developer has adequate time in its schedule to obtain a lease.
- Overall Construction schedule is adequate.
- The Developer's proposed project duration is 40 months. The review team believes that at least 45 months will be required for this project.

4.1.7.2. NAT/NYPA Proposal T030 – Segment B Enhanced

- The Developer has included six months for Article VII application preparation. Based on experience the review team believes that to be adequate.
- The Developer has included 13 months for the overall Article VII process (from submission of Article VII application to EM&CP approval). Based on comparable Article VII projects the review team believes that process will take at least 18 months. The Developer's schedule is showing start construction at receipt of Article VII certificate. At least six months will be required for EM&CP approval.
- Time for procurement of major equipment is adequate.
- The project is to utilize existing ROW owned by National Grid. The review team believe the Developer has adequate time in its schedule to obtain a lease.
- Overall Construction schedule is adequate.
- The Developer's proposed project duration is 41 months. The review team believes that at least 45 months will be required for this project.

4.1.8. ITC Proposal T032 – Segment B

- Inconsistencies exist between ITC's Milestone Schedule Table, Text in Attachment B, and their Gantt Chart which show different dates and durations for their schedule. Attachment C Milestone Schedule Table was used to document the developer proposed durations.
- ITC's schedule assumes that Segment A is to be constructed first followed by Segment B and that both segments cannot be constructed at the same time due to outage constraints. The Developer states that if that is not the case, its construction schedule for Segment B could be moved back by one year.
- The Developer has included seven months for Article VII application preparation. Based on experience the review team believes that to be adequate
- Overall Article VII process schedule is adequate.
- Time for procurement of major equipment is adequate.
- The project is to utilize existing ROW owned by National Grid. The review team believes the Developer has adequate time in their schedule to obtain a lease.
- Overall Construction schedule includes 19 months. Based on experience with similar work the review team believes the work will take at least 23 months.
- The Developer's proposed project duration is 53 months. The review team believes that 47 months is adequate for this project.

Conclusion

Based on its review, the review team estimates the following total project durations:

Summary of Expected Durations

Segment A Proposals	Developer Proposed Total Duration	Estimated Minimum Duration (Note #1 and #2)
T018 NGRID/Transco Segment A	48 Months	48 Months
T021 NextEra Segment A	29 Months	48 Months
T025 NAT/NYPA Segment A + 765 kV	44 Months	50 Months
T026 NAT/NYPA Segment A Base	44 Months	48 Months
T027 NAT/NYPA Segment A Double Circuit	48 Months	51 Months
T028 NAT/NYPA Segment A Enhanced	44 Months	48 Months
T031 ITC Segment A	39 Months	48 Months

Segment B Proposals	Developer Proposed Total Duration	Estimated Minimum Duration (Note #1)
T019 NGRID/Transco Segment B	48 Months	45 Months
T022 NextEra Segment B	28 Months	43 Months
T023 NextEra Segment B - Alt	29 Months	45 Months
T029 NAT/NYPA Segment B Base	40 Months	45 Months
T030 NAT/NYPA Segment B Enhanced	41 Months	45 Months
T032 ITC Segment B	53 Months	47 Months

Note #1: "Estimated Minimum Duration" is calculated using the anticipated time for Article VII application preparation, the anticipated time for the Article VII approval process, ROW procurement where significant and the anticipated time for construction of the project. The review team also assumed that the EM&CP preparation is completed and ready for submission when the Article VII Certificate is received. All of these components will depend on the experience and the level of resources of the developer and the complexity of the project which is further discussed in the risk register. In order to establish a reasonable normal schedule for the purpose of establishing an in-service date, an additional four months should be added to the estimated minimum duration.

Note #2: For the Edic to Princetown portion of segment A, all developers are proposing to reuse existing NYPA owned transmission line structures for about 12.5 miles. If detailed engineering indicates that the structures are not adequate and need to be replaced the construction schedule may increase by about 4 months however, this would be consistent across all proposed projects.

4.2. Cost

In evaluating the cost of a proposed Public Policy Transmission Project, the NYISO OATT section 31.4.8.1.1 specifies the following criteria: "The capital cost estimates for the proposed

regulated Public Policy Transmission Project, including the accuracy of the proposed estimates. For this evaluation, the Developer shall provide the ISO with credible capital cost estimates for its proposed project, with itemized supporting work sheets that identify all material and labor cost assumptions, and related drawings to the extent applicable and available. The work sheets should include an estimated quantification of cost variance, providing an assumed plus/minus range around the capital cost estimate. The estimate shall include all components that are needed to meet the Public Policy Transmission Need. To the extent information is available, the Developer should itemize: material and labor cost by equipment, engineering and design work, permitting, site acquisition, procurement and construction work, and commissioning needed for the proposed project, all in accordance with Good Utility Practice. For each of these cost categories, the Developer should specify the nature and estimated cost of all major project components and estimate the cost of the work to be done at each substation and/or on each feeder to physically and electrically connect each facility to the existing system. The work sheets should itemize to the extent applicable and available all equipment for: (i) the proposed project, (ii) interconnection facilities (including Attachment Facilities and Direct Assignment Facilities), and (iii) Network Upgrade Facilities, System Upgrade Facilities, System Deliverability Upgrades, Network Upgrades, and Distribution Upgrades."

4.2.1. **Estimate Methodology**

Development of the independent cost estimates for the AC Transmission Project was an iterative process utilizing the collective expertise and experience of the review team, and augmented by vendor budgetary quotations. Kenny Construction (Kenny) prepared the independent cost estimates.

A copy of each Developer's proposals was provided to Kenny with all pricing information redacted. Kenny familiarized itself with the proposals and, in conjunction with SECo, completed field reviews of the impacted facilities.

SECo solicited budgetary quotations from vendors for major equipment including transformers, circuit breakers, GIS equipment, and Series Compensation System. Kenny Construction solicited budgetary quotations for concrete and steel poles, insulators and conductor. Kenny Construction also used historical data from projects it had completed to develop unit pricing for the material supply rates and labor and equipment rates for equipment such as switches, instrument transformers, station service transformers, transmission structures, conductors, grounding and hardware. Kenny purchases large volumes of transmission and substation materials annually.

The Preliminary designs provided by each Developer were used as the basis for the cost estimates. SECo provided engineering input as required to assist Kenny in determining specific

technical requirements and verifying the Developers' preliminary designs. Developers' designs were checked for general compliance with standard industry requirements but they were not optimized.

Indirect cost percentages were derived by Kenny Construction from historical project data.

Licensing and environmental cost estimates were developed for each project by SECo's subcontractor GEI Consultants, Inc..

The draft cost estimates from Kenny were reviewed by SECo for completeness and accuracy. SECo also compared the independent draft cost estimates for the proposals against each other for consistency across the proposals. Lastly, SECo compared each proposal's draft cost estimates against the Developer's cost estimates as a check for their reasonableness. If large differences were observed between the independent cost estimate and the Developer's cost estimate, SECo investigated and determined whether the differences were justified or they were erroneous. If the differences in the cost estimates resulted from errors, they were corrected by Kenny.

The cost estimates were prepared in accordance with the Association for the Advancement of Cost Engineering International Recommended Practice for Class 4 Accuracy. The expected accuracy range typically varies from a low of (-15% to -30%) and high of (+20% to +50%).

Association for the Advancement of Cost Engineering Criteria for Class 4 Accuracy

ESTIMATE CLASS	**MATURITY LEVEL OF PROJECT DEFINITION DELIVERABLES** Expressed as % of complete definition	**END USAGE** Typical purpose of estimate	**METHODOLOGY** Typical estimating method	**EXPECTED ACCURACY RANGE** Typical variation in low and high ranges
Class 4	1% to 15%	Study or feasibility	Equipment factored or parametric models	L: -15% to -30% H: +20% to +50%

The final cost estimates include the contingency rate of 30% referenced in the NYPSC "Order Finding Transmission Needs Driven by Public Policy Requirements" (Case No. 12-T-0502, et al.)

December 17, 2015, and the Staff report.[2] The review team agrees that level of contingency is sufficient to allow for unanticipated costs and estimating accuracy to forecast a reasonable worst case cost.

Segment B projects include Global Upgrades to the Rock Tavern 345 kV Substation and the rebuild of the Shoemaker to Sugarloaf 138 kV line with a new double circuit 138 kV line and related substation work at Shoemaker, Hartley, South Goshen, Chester, and Sugarloaf at the cost identified by the NYPSC in the AC Transmission Proceedings [3].

4.2.2.**Potential Synergy Cost Savings**

The review team calculated potential cost savings should one Developer be awarded both Segment A and Segment B projects. The savings were derived by evaluating the average cost of individual cost components of the projects to estimate potential cost savings assuming one Developer was awarded both Segment A and Segment B projects. These individual cost components included project shared cost items such as Labor & Equipment, Matting, Materials, Contractor Mobilization/Demobilization, Project Management, Field Construction Management and Inspection Staffing, Incumbent Utility Project Management and Project Oversite, Site Facilities, Material Handling & Storage, Design Engineering, Light Detection and Ranging survey (LiDAR), Geotechechnical investigations, Licensing and Permiting,Testing & Commissioning of Transmission Line and Equipment, Contractor Warranties, Legal Fees, and Contractor Markup (Overhead & Profit). Each of these items were assessed for economy of scale; utilization of resources, equipment and materials; duplication of services; and replication of engineering designs to estimate the potential savings. Based on experience with prior transmission construction projects Kenny and SECo estimated a potential synergy savings of five percent (5%).

[2] Item # 14 in Appendix B of the "NYPSC Order Finding Transmission Needs Driven by Public Policy Requirements" dated 12-17-2015 states: The percentage rates applied to account for contingencies and revenue requirement should all be treated uniformly across all estimates so that those factors are not manipulated by the bidders to confuse or artificially skew the results. The selection process shall not use the percentage rates applied to account for contingencies and revenue requirement as a distinguishing factor between bids. For the purposes of bids, all developers should account for contingencies and revenue requirement at the percentage rates provided in the Trial Staff report as a placeholder for the actual rates.

[3] Item # 6 in Appendix B of the December 17, 2015 NYPSC Order Finding Transmission Needs Driven by Public Policy Requirements states: "The selection process for transmission solutions for Segment B shall not use the costs of upgrades to the Rock Tavern Substation and upgrades to the Shoemaker to Sugarloaf transmission lines as a distinguishing factor between bids. The developers shall include the upgrade costs in their bids at the same level using the cost estimates for the upgrades provided in the Trial Staff report as a placeholder for the actual costs.

4.2.3.**Summary of Costs**

A summary of the results are shown below:

SEGMENT A (SUMMARY OF ESTIMATE COMPARISON)

Developer	Independent Estimate (2018 $)
T018 National Grid/ NY Transco	$400,120,050
T021 NextEra Energy	$382,809,831
T025 NYPA / NAT (Base+765 kV)	$663,821,844
T026 NYPA / NAT (Base)	$377,426,571
T027 NYPA / NAT (Double Ckt)	$576,878,169
T028 NYPA / NAT (Enhanced)	$395,367,607
T031 ITC	$438,467,712

SEGMENT A (SUMMARY OF ESTIMATES COMPARISON WITH 30% CONTINGENCY)

Developer	Independent Estimate (2018 $)
T018 National Grid/ NY Transco	$520,156,065
T021 NextEra Energy	$497,652,781
T025 NYPA / NAT (Base+765 kV)	$862,968,398
T026 NYPA / NAT (Base)	$490,654,542
T027 NYPA / NAT (Double Ckt)	$749,941,620
T028 NYPA / NAT (Enhanced)	$513,977,889
T031 ITC	$570,008,025

SEGMENT B (SUMMARY OF ESTIMATE COMPARISON)

Developer	Independent Estimate (2018 $)
T019 National Grid/ NY Transco	$368,697,583
T022 NextEra Energy	$286,587,923
T023 NextEra Energy (Alternate)	$326,077,242
T029 NYPA / NAT (Base)	$324,409,659
T030 NYPA / NAT (Enhanced)	$338,905,312
T032 ITC	$412,393,542

SEGMENT B (SUMMARY OF ESTIMATES COMPARISON WITH 30% CONTINGENCY)

Developer	Independent Estimate (2018 $)
T019 National Grid/ NY Transco	$479,306,858
T022 NextEra Energy	$372,564,299
T023 NextEra Energy (Alternate)	$423,900,414
T029 NYPA / NAT (Base)	$421,732,556
T030 NYPA / NAT (Enhanced)	$440,576,906
T032 ITC	$536,111,604

SEGMENT B (SUMMARY OF ESTIMATES COMPARISON WITH 30% CONTINGENCY and Global Addition of $113M)

Developer	Independent Estimate (2018 $)
T019 National Grid/ NY Transco	$592,306,858
T022 NextEra Energy	$485,564,299
T023 NextEra Energy (Alternate)	$536,900,414
T029 NYPA / NAT (Base)	$534,732,556
T030 NYPA / NAT (Enhanced)	$553,576,906
T032 ITC	$649,111,604

Notes:

- Independent Estimates are adjusted to 2018 U.S. Dollars.

- The estimates include the contingency rate of 30% referenced in the PSC "Order Finding Transmission Needs Driven by Public Policy Requirements" (December 17, 2015) and the Department of Public Service Staff report.. The review team agrees that level of the contingency is sufficient to allow for unanticipated costs and estimating accuracy to forecast a reasonable worst case cost.
- The Global Addition includes upgrades to the Rock Tavern 345 kV Substation and the rebuild of the Shoemaker to Sugarloaf 138 kV Substation with a new double circuit 138 kV line and related substation work at Shoemaker, Hartley, South Goshen, Chester, and Sugarloaf at the cost identified by the NYPSC in the AC Transmission Proceedings.
- Includes preliminary costs for Network Upgrade Facilities identified in the respective System Impact Studies.

The following tables highlight the significant technical differences between the proposals that drive the differences in estimated costs. Items shown in red would tend to increase costs while those shown in green tend to lower costs.

Comparison of Significant Technical Differences Between Proposals for Segment A					
Developer	Project	Major Technical Differences in Proposals			
		Princetown Substation	Rotterdam Substation	Transmission Lines	Other
NGRID/ Transco	T018	No	Rebuilds with GIS and includes 345 kV Capacitor	Proposed heavier structures than NAT/NYPA, which has a similar design. Concrete foundations on all structures other than H-pole tangent structures.	
NextEra	T021	Includes Princetown at new site. Includes (2) 345-230 kV transformers and 230 kV yard	No, retains existing Rotterdam	Monopole Design - less ROW required. Concrete Poles	
NAT/NYPA	T025 A+765 kV	Yes	Rebuilds, no capacitor	Direct embedded tangent structures	765 kV line (converted from 345 kV) and new Knickerbocker 765 kV Substation
	T026 Base	No	Rebuilds, no capacitor		
	T027 Double circuit	Yes, is GIS	Rebuilds, no capacitor	Double Circuit Edic to NS	
	T028 Enhanced	Yes	Rebuilds, no capacitor	Same as T026, but adds Princetown Sub	
ITC	T031	Yes -with all 8 lines terminated.	Adds new 345/230 kV Transformers and retains existing station	Rebuilds #14 line from Princetown to New Scotland. Has approx. 15% more transmission structures	

Comparison of Significant Technical Differences Between Proposals for Segment B					
Developer	Project	Major Technical Differences in Proposals			
		Churchtown Substation	Other Substations	Transmission Lines	Other
NGRID/ Transco	T019	Complete Rebuild	Includes 345 kV Series Comp. at Knickerbocker, Capacitors at P.V., Breakers at Schodak 115 kV	Proposed heavier structures than NAT/NYPA. Concrete foundations on all structures	
NextEra	T022	New "North" Churchtown and retains existing Churchtown SS.		Monopole Design - less ROW required. Concrete Poles. Does not include replacement of 32 miles of Circuits 12 and 13.	
	T023 ALT	Similar to T022 but has one less line terminal		Includes replacement of 32 miles of 115 kV Churchtown to P.V.	
NAT/NYPA	T029 Base	Complete Rebuild	Breakers at Schodak		
	T030 Enhanced	Complete Rebuild	Breakers at Schodak	Same as T029 but triple bundled 345 kV conductor	
ITC	T032	Adds breaker at existing station, and builds new Knickerbocker 115 kV		Has approx. 15% more transmission structures	

A summary of the independent cost estimates (raw costs - not including contingency or Global Additions - in $1,000's) for each Developer's proposal follows:

Segment A Proposals:

4.2.4. **T018 National Grid/Transco Segment A**

National Grid and NY Transco (T018)			
		Description	**Total Amount** (In thousand $)
Direct Cost	1	**Transmission Lines**	
	1.1	Clearing & Access	$52,139
	1.2	Foundations	$38,037
	1.3	Structures	$67,033
	1.4	Conductor, Shiedwire and Optical Ground Wire	$35,990
	1.5	Insulators, Fitting and Hardwares	$10,840
		Subtotal (1)	**$204,039**
	2	**Substations**	
	2.1	Rotterdam Substation	$48,141
	2.2	Edic Substation	$2,117
	2.3	Princetown Substation	$0
	2.4	New Scotland Substation	$7,037
	2.5	Porter Substation	$546
	2.6	Knickerbocker Substation	$0
	2.7	Marcy Substation	$0
	2.8	Substation Interconnections	$8,459
		Subtotal (2)	**$66,301**
		Total (1+2)	$270,340
		Contractors Mark-up (15% of Total 1+2)	$40,551
		Total Direct Cost (A)	**$310,891**
Indirect Cost	3	**Technical Services Costs**	
	3.1	Contractor Mobilization / Demobilization	$2,711
	3.2	Project Management, Material Handling & Amenities	$18,402
	3.3	Engineering	$18,121
	3.4	Testing & Commissioning	$1,559
	3.5	Permitting, Real Estate, Sales Tax and Additional Costs	$20,144
	3.6	Compensation for use of NYPA Structures (1 Circuit)	$8,919
	3.7	Legal, Environmental Licensing & Permitting and Environmental Mitigation	$7,719
		Total Indirect Cost (3)	**$77,575**
		Subtotal Project Cost (B=A+3) 2017 $	**$388,466**
	4	**Network Upgrade Facilities (NUF)**	
	4.1	NUF proposed as element of the Project	$0
	4.2	NUF identified during Evaluation	$0
		Subtotal NUF Cost (C)	**$0**
		Total Project Cost (B+C) 2017 $	**$388,466**
		Total Project Cost 2018 $	**$400,120**

4.2.5 **T021 NextEra Segment A**

NextEra Energy (T021)			
		Description	**Total Amount** (In thousand $)
Direct Cost	1	**Transmission Lines**	
	1.1	Clearing & Access	$55,279
	1.2	Foundations	$18,318
	1.3	Structures	$74,701
	1.4	Conductor, Shiedwire and Optical Ground Wire	$38,661
	1.5	Insulators, Fitting and Hardwares	$18,280
		Subtotal (1)	**$205,239**
	2	**Substations**	
	2.1	Rotterdam Substation	$850
	2.2	Edic Substation	$2,153
	2.3	Princetown Substation	$40,296
	2.4	New Scotland Substation	$6,883
	2.5	Porter Substation	$546
	2.6	Knickerbocker Substation	$0
	2.7	Marcy Substation	$0
	2.8	Substation Interconnections	$4,378
		Subtotal (2)	**$55,107**
		Total (1+2)	$260,346
		Contractors Mark-up (15% of Total 1+2)	$39,052
		Total Direct Cost (A)	**$299,398**
Indirect Cost	3	**Technical Services Costs**	
	3.1	Contractor Mobilization / Demobilization	$2,603
	3.2	Project Management, Material Handling & Amenities	$18,440
	3.3	Engineering	$17,327
	3.4	Testing & Commissioning	$1,435
	3.5	Permitting, Real Estate, Sales Tax and Additional Costs	$15,672
	3.6	Compensation for use of NYPA Structures (1 Circuit)	$8,919
	3.7	Legal, Environmental Licensing & Permitting and Environmental Mitigation	$7,865
		Total Indirect Cost (3)	**$72,262**
		Subtotal Project Cost (B=A+3) 2017 $	**$371,660**
	4	**Network Upgrade Facilities (NUF)**	
	4.1	NUF proposed as element of the Project	$0
	4.2	NUF identified during Evaluation	$0
		Subtotal NUF Cost (C)	**$0**
		Total Project Cost (B+C) 2017 $	**$371,660**
		Total Project Cost 2018 $	**$382,810**

4.2.6 **T025 NAT/NYPA Segment A + 765 kV**

NY Power Authority and North American Transmission (T025)			
		Description	**Total Amount** (In thousand $)
Direct Cost	1	**Transmission Lines**	
	1.1	Clearing & Access	$54,770
	1.2	Foundations	$35,794
	1.3	Structures	$67,800
	1.4	Conductor, Shiedwire and Optical Ground Wire	$37,454
	1.5	Insulators, Fitting and Hardwares	$13,068
		Subtotal (1)	**$208,887**
	2	**Substations**	
	2.1	Rotterdam Substation	$47,629
	2.2	Edic Substation	$2,153
	2.3	Princetown Substation	$12,713
	2.4	New Scotland Substation	$0
	2.5	Porter Substation	$546
	2.6	Knickerbocker Substation	$67,167
	2.7	Marcy Substation	$17,553
	2.8	Substation Interconnections	$8,301
		Subtotal (2)	**$156,062**
		Total (1+2)	$364,949
		Contractors Mark-up (15% of Total 1+2)	$54,742
		Total Direct Cost (A)	**$419,691**
Indirect Cost	3	**Technical Services Costs**	
	3.1	Contractor Mobilization / Demobilization	$3,649
	3.2	Project Management, Material Handling & Amenities	$20,483
	3.3	Engineering	$26,265
	3.4	Testing & Commissioning	$3,851
	3.5	Permitting, Real Estate, Sales Tax and Additional Costs	$28,307
	3.6	Compensation for use of NYPA Structures (1 Circuit)	$8,919
	3.7	Legal, Environmental Licensing & Permitting and Environmental Mitigation	$9,589
		Total Indirect Cost (3)	**$101,064**
		Subtotal Project Cost (B=A+3) 2017 $	**$520,756**
	4	**Network Upgrade Facilities (NUF)**	
	4.1	NUF proposed as element of the Project (Marcy and Edic Terminals)	$7,727
	4.2	NUF identified during Evaluation (765kV Corona Mitigation)	$116,005
		Subtotal NUF Cost (C)	**$123,731**
		Total Project Cost (B+C) 2017 $	**$644,487**
		Total Project Cost 2018 $	**$663,822**

4.2.7 **T026 NAT/NYPA Segment A Base**

		NY Power Authority and North American Transmission (T026)	
		Description	**Total Amount** (In thousand $)
Direct Cost	1	**Transmission Lines**	
	1.1	Clearing & Access	$50,021
	1.2	Foundations	$23,713
	1.3	Structures	$60,645
	1.4	Conductor, Shiedwire and Optical Ground Wire	$35,492
	1.5	Insulators, Fitting and Hardwares	$11,907
		Subtotal (1)	**$181,777**
	2	**Substations**	
	2.1	Rotterdam Substation	$48,340
	2.2	Edic Substation	$2,153
	2.3	Princetown Substation	$0
	2.4	New Scotland Substation	$5,264
	2.5	Porter Substation	$546
	2.6	Knickerbocker Substation	$0
	2.7	Marcy Substation	$0
	2.8	Substation Interconnections	$8,301
		Subtotal (2)	**$64,603**
		Total (1+2)	$246,381
		Contractors Mark-up (15% of Total 1+2)	$36,957
		Total Direct Cost (A)	**$283,338**
Indirect Cost	3	**Technical Services Costs**	
	3.1	Contractor Mobilization / Demobilization	$2,464
	3.2	Project Management, Material Handling & Amenities	$18,148
	3.3	Engineering	$16,643
	3.4	Testing & Commissioning	$1,523
	3.5	Permitting, Real Estate, Sales Tax and Additional Costs	$19,753
	3.6	Compensation for use of NYPA Structures (1 Circuit)	$8,919
	3.7	Legal, Environmental Licensing & Permitting and Environmental Mitigation	$7,920
		Total Indirect Cost (3)	**$75,369**
		Subtotal Project Cost (B=A+3) 2017 $	**$358,707**
	4	**Network Upgrade Facilities (NUF)**	
	4.1	NUF proposed as element of the Project (Marcy and Edic Terminals)	$7,727
	4.2	NUF identified during Evaluation	$0
		Subtotal NUF Cost (C)	**$7,727**
		Total Project Cost (B+C) 2017 $	**$366,434**
		Total Project Cost 2018 $	**$377,427**

4.2.8 **T027 NAT/NYPA Segment A Double Circuit**

		NY Power Authority and North American Transmission (T027)	
		Description	**Total Amount** (In thousand $)
Direct Cost	1	**Transmission Lines**	
	1.1	Clearing & Access	$56,801
	1.2	Foundations	$31,116
	1.3	Structures	$106,166
	1.4	Conductor, Shiedwire and Optical Ground Wire	$62,279
	1.5	Insulators, Fitting and Hardwares	$26,553
		Subtotal (1)	**$282,915**
	2	**Substations**	
	2.1	Rotterdam Substation	$48,340
	2.2	Edic Substation	$5,333
	2.3	Princetown Substation	$29,872
	2.4	New Scotland Substation	$7,717
	2.5	Porter Substation	$546
	2.6	Knickerbocker Substation	$0
	2.7	Marcy Substation	$0
	2.8	Substation Interconnections	$8,301
		Subtotal (2)	**$100,109**
		Total (1+2)	$383,023
		Contractors Mark-up (15% of Total 1+2)	$57,453
		Total Direct Cost (A)	**$440,477**
Indirect Cost	3	**Technical Services Costs**	
	3.1	Contractor Mobilization / Demobilization	$3,830
	3.2	Project Management, Material Handling & Amenities	$22,218
	3.3	Engineering	$25,799
	3.4	Testing & Commissioning	$2,557
	3.5	Permitting, Real Estate, Sales Tax and Additional Costs	$26,204
	3.6	Compensation for use of NYPA Structures (2 Circuit)	$17,838
	3.7	Legal, Environmental Licensing & Permitting and Environmental Mitigation	$8,278
		Total Indirect Cost (3)	**$106,725**
		Subtotal Project Cost (B=A+3) 2017 $	**$547,201**
	4	**Network Upgrade Facilities (NUF)**	
	4.1	NUF proposed as element of the Project (Marcy and Edic Terminals)	$7,727
	4.2	NUF identified during Evaluation (Everett - Wolf Road 115kV Upgrade)	$5,000
		Subtotal NUF Cost (C)	**$12,727**
		Total Project Cost (B+C) 2017 $	**$559,928**
		Total Project Cost 2018 $	**$576,726**

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		NY Power Authority and North American Transmission (T027)	
		Description	**Total Amount** (In thousand $)
Direct Cost	1	**Transmission Lines**	
	1.1	Clearing & Access	$56,801
	1.2	Foundations	$31,116
	1.3	Structures	$106,166
	1.4	Conductor, Shiedwire and Optical Ground Wire	$62,279
	1.5	Insulators, Fitting and Hardwares	$26,553
		Subtotal (1)	**$282,915**
	2	**Substations**	
	2.1	Rotterdam Substation	$48,340
	2.2	Edic Substation	$5,333
	2.3	Princetown Substation	$29,872
	2.4	New Scotland Substation	$7,717
	2.5	Porter Substation	$546
	2.6	Knickerbocker Substation	$0
	2.7	Marcy Substation	$0
	2.8	Substation Interconnections	$8,301
		Subtotal (2)	**$100,109**
		Total (1+2)	$383,023
		Contractors Mark-up (15% of Total 1+2)	$57,453
		Total Direct Cost (A)	**$440,477**
Indirect Cost	3	**Technical Services Costs**	
	3.1	Contractor Mobilization / Demobilization	$3,830
	3.2	Project Management, Material Handling & Amenities	$22,218
	3.3	Engineering	$25,799
	3.4	Testing & Commissioning	$2,557
	3.5	Permitting, Real Estate, Sales Tax and Additional Costs	$26,351
	3.6	Compensation for use of NYPA Structures (2 Circuit)	$17,838
	3.7	Legal, Environmental Licensing & Permitting and Environmental Mitigation	$8,278
		Total Indirect Cost (3)	**$106,872**
		Subtotal Project Cost (B=A+3) 2017 $	**$547,348**
	4	**Network Upgrade Facilities (NUF)**	
	4.1	NUF proposed as element of the Project (Marcy and Edic Terminals)	$7,727
	4.2	NUF identified during Evaluation (Everett - Wolf Road 115kV Upgrade)	$5,000
		Subtotal NUF Cost (C)	**$12,727**
		Total Project Cost (B+C) 2017 $	**$560,075**
		Total Project Cost 2018 $	**$576,878**

4.2.9 **T028 NAT/NYPA Segment A Enhanced**

		NY Power Authority and North American Transmission (T028)	
		Description	**Total Amount** (In thousand $)
Direct Cost	1	**Transmission Lines**	
	1.1	Clearing & Access	$50,021
	1.2	Foundations	$23,713
	1.3	Structures	$60,645
	1.4	Conductor, Shiedwire and Optical Ground Wire	$35,494
	1.5	Insulators, Fitting and Hardwares	$11,907
		Subtotal (1)	**$181,780**
	2	**Substations**	
	2.1	Rotterdam Substation	$48,340
	2.2	Edic Substation	$2,153
	2.3	Princetown Substation	$12,718
	2.4	New Scotland Substation	$5,264
	2.5	Porter Substation	$546
	2.6	Knickerbocker Substation	$0
	2.7	Marcy Substation	$0
	2.8	Substation Interconnections	$8,301
		Subtotal (2)	**$77,322**
		Total (1+2)	$259,101
		Contractors Mark-up (15% of Total 1+2)	$38,865
		Total Direct Cost (A)	**$297,967**
Indirect Cost	3	**Technical Services Costs**	
	3.1	Contractor Mobilization / Demobilization	$2,591
	3.2	Project Management, Material Handling & Amenities	$18,417
	3.3	Engineering	$17,763
	3.4	Testing & Commissioning	$1,840
	3.5	Permitting, Real Estate, Sales Tax and Additional Costs	$20,533
	3.6	Compensation for use of NYPA Structures (1 Circuit)	$8,919
	3.7	Legal, Environmental Licensing & Permitting and Environmental Mitigation	$8,096
		Total Indirect Cost (3)	**$78,159**
		Subtotal Project Cost (B=A+3) 2017 $	**$376,125**
	4	**Network Upgrade Facilities (NUF)**	
	4.1	Network upgrade facility proposed as element of the Project (Marcy and Edic Terminals)	$7,727
	4.2	Network upgrade facility identified during Evaluation	$0
		Subtotal NUF Cost (C)	**$7,727**
		Total Project Cost (B+C) 2017 $	**$383,852**
		Total Project Cost 2018 $	**$395,368**

4.2.10. **T031 ITC Segment A**

ITC (T031)			
		Description	**Total Amount** (In thousand $)
Direct Cost	1	**Transmission Lines**	
	1.1	Clearing & Access	$53,084
	1.2	Foundations	$43,503
	1.3	Structures	$80,620
	1.4	Conductor, Shiedwire and Optical Ground Wire	$41,525
	1.5	Insulators, Fitting and Hardwares	$18,615
		Subtotal (1)	**$237,347**
	2	**Substations**	
	2.1	Rotterdam Substation	$19,805
	2.2	Edic Substation	$2,185
	2.3	Princetown Substation	$27,974
	2.4	New Scotland Substation	$3,615
	2.5	Porter Substation	$546
	2.6	Knickerbocker Substation	$0
	2.7	Marcy Substation	$0
	2.8	Substation Interconnections	$8,383
		Subtotal (2)	**$62,507**
		Total (1+2)	$299,855
		Contractors Mark-up (15% of Total 1+2)	$44,978
		Total Direct Cost (A)	**$344,833**
Indirect Cost	3	**Technical Services Costs**	
	3.1	Contractor Mobilization / Demobilization	$2,999
	3.2	Project Management, Material Handling & Amenities	$18,925
	3.3	Engineering	$19,832
	3.4	Testing & Commissioning	$1,560
	3.5	Permitting, Real Estate, Sales Tax and Additional Costs	$20,688
	3.6	Compensation for use of NYPA Structures (1 Circuit)	$8,919
	3.7	Legal, Environmental Licensing & Permitting and Environmental Mitigation	$7,941
		Total Indirect Cost (3)	**$80,864**
		Subtotal Project Cost (B=A+3) 2017 $	**$425,697**
	4	**Network Upgrade Facilities (NUF)**	
	4.1	NUF proposed as element of the Project	$0
	4.2	NUF identified during Evaluation	$0
		Subtotal NUF Cost (C)	**$0**
		Total Project Cost (B+C) 2017 $	**$425,697**
		Total Project Cost 2018 $	**$438,468**

Segment B Proposals:

4.2.11. **T019 NGRID/Transco Segment B**

National Grid and NY Transco (T019)			
Description			**Total Amount** (In thousand $)
Direct Cost	1	**Transmission Lines**	
	1.1	Clearing & Access	$34,641
	1.2	Foundations	$44,405
	1.3	Structures	$56,279
	1.4	Conductor, Shiedwire and Optical Ground Wire	$30,070
	1.5	Insulators, Fitting and Hardwares	$11,200
		Subtotal (1)	**$176,595**
	2	**Substations**	
	2.1	Knickerbocker Substation	$26,306
	2.2	East Greenbush Substation	$61
	2.3	Schodack Substation	$2,226
	2.4	Churchtown Substation	$14,616
	2.5	Pleasant Valley Substation	$6,939
	2.6	Substation Interconnections	$5,534
		Subtotal (2)	**$55,682**
		Total (1+2)	$232,277
		Contractors Mark-up (15% of Total 1+2)	$34,842
		Total Direct Cost (A)	**$267,118**
Indirect Cost	3	**Technical Services Costs**	
	3.1	Contractor Mobilization / Demobilization	$2,323
	3.2	Project Management, Material Handling & Amenities	$16,172
	3.3	Engineering	$15,527
	3.4	Testing & Commissioning	$1,324
	3.5	Permitting, Real Estate, Sales Tax and Additional Costs	$16,982
	3.6	Legal, Environmental Licensing & Permitting and Environmental Mitigation	$7,428
		Total Indirect Cost (3)	**$59,755**
		Subtotal Project Cost (B=A+3) 2017 $	**$326,874**
	4	**Network Upgrade Facilities (NUF)**	
	4.1	NUF proposed as element of the Project (Fishkill and New Scotland Terminals)	$1,085
	4.2	NUF to mitigate NY to NE interface transfer limit degradation	$30,000
		Subtotal NUF Cost (C)	**$31,085**
		Total Project Cost (B+C) 2017 $	**$357,959**
		Total Project Cost 2018 $	**$368,698**

4.2.12. **T022 NextEra Segment B**

NextEra Energy (T022)			
Description			**Total Amount** (In thousand $)
Direct Cost	1	**Transmission Lines**	
	1.1	Clearing & Access	$33,783
	1.2	Foundations	$17,271
	1.3	Structures	$49,013
	1.4	Conductor, Shiedwire and Optical Ground Wire	$25,925
	1.5	Insulators, Fitting and Hardwares	$9,609
		Subtotal (1)	**$135,602**
	2	**Substations**	
	2.1	Knickerbocker Substation	$15,110
	2.2	East Greenbush Substation	$61
	2.3	Schodack Substation	$0
	2.4	Churchtown Substation	$14,897
	2.5	Pleasant Valley Substation	$2,798
	2.6	Substation Interconnections	$6,769
		Subtotal (2)	**$39,635**
		Total (1+2)	$175,237
		Contractors Mark-up (15% of Total 1+2)	$26,286
		Total Direct Cost (A)	**$201,523**
Indirect Cost	3	**Technical Services Costs**	
	3.1	Contractor Mobilization / Demobilization	$1,752
	3.2	Project Management, Material Handling & Amenities	$14,399
	3.3	Engineering	$11,654
	3.4	Testing & Commissioning	$920
	3.5	Permitting, Real Estate, Sales Tax and Additional Costs	$10,365
	3.6	Legal, Environmental Licensing & Permitting and Environmental Mitigation	$7,628
		Total Indirect Cost (3)	**$46,718**
		Subtotal Project Cost (B=A+3) 2017 $	**$248,241**
	4	**Network Upgrade Facilities (NUF)**	
	4.1	NUF proposed as element of the Project	$0
	4.2	NUF to mitigate NY to NE interface transfer limit degradation	$30,000
		Subtotal NUF Cost (C)	**$30,000**
		Total Project Cost (B+C) 2017 $	**$278,241**
		Total Project Cost 2018 $	**$286,588**

4.2.13. **T023 NextEra Segment B – Alt**

NextEra Energy (T023)			
		Description	**Total Amount** (In thousand $)
Direct Cost	1	**Transmission Lines**	
	1.1	Clearing & Access	$34,215
	1.2	Foundations	$21,257
	1.3	Structures	$67,904
	1.4	Conductor, Shiedwire and Optical Ground Wire	$30,529
	1.5	Insulators, Fitting and Hardwares	$11,349
		Subtotal (1)	**$165,255**
	2	**Substations**	
	2.1	Knickerbocker Substation	$15,110
	2.2	East Greenbush Substation	$61
	2.3	Schodack Substation	$0
	2.4	Churchtown Substation	$13,040
	2.5	Pleasant Valley Substation	$2,798
	2.6	Substation Interconnections	$6,473
		Subtotal (2)	**$37,482**
		Total (1+2)	$202,736
		Contractors Mark-up (15% of Total 1+2)	$30,410
		Total Direct Cost (A)	**$233,147**
Indirect Cost	3	**Technical Services Costs**	
	3.1	Contractor Mobilization / Demobilization	$2,027
	3.2	Project Management, Material Handling & Amenities	$16,697
	3.3	Engineering	$13,253
	3.4	Testing & Commissioning	$874
	3.5	Permitting, Real Estate, Sales Tax and Additional Costs	$12,954
	3.6	Legal, Environmental Licensing & Permitting and Environmental Mitigation	$7,628
		Total Indirect Cost (3)	**$53,433**
		Subtotal Project Cost (B=A+3) 2017 $	**$286,580**
	4	**Network Upgrade Facilities (NUF)**	
	4.1	NUF proposed as element of the Project	$0
	4.2	NUF to mitigate NY to NE interface transfer limit degradation	$30,000
		Subtotal NUF Cost (C)	**$30,000**
		Total Project Cost (B+C) 2017 $	**$316,580**
		Total Project Cost 2018 $	**$326,077**

4.2.14. **T029 NAT/NYPA Segment B Base**

NY Power Authority and North American Transmission (T029)			
		Description	**Total Amount** (In thousand $)
Direct Cost	1	**Transmission Lines**	
	1.1	Clearing & Access	$34,313
	1.2	Foundations	$17,769
	1.3	Structures	$52,916
	1.4	Conductor, Shiedwire and Optical Ground Wire	$30,069
	1.5	Insulators, Fitting and Hardwares	$11,442
		Subtotal (1)	**$146,509**
	2	**Substations**	
	2.1	Knickerbocker Substation	$14,982
	2.2	East Greenbush Substation	$61
	2.3	Schodack Substation	$2,226
	2.4	Churchtown Substation	$15,925
	2.5	Pleasant Valley Substation	$2,798
	2.6	Substation Interconnections	$5,495
		Subtotal (2)	**$41,487**
		Total (1+2)	$187,996
		Contractors Mark-up (15% of Total 1+2)	$28,199
		Total Direct Cost (A)	**$216,196**
Indirect Cost	3	**Technical Services Costs**	
	3.1	Contractor Mobilization / Demobilization	$1,880
	3.2	Project Management, Material Handling & Amenities	$15,363
	3.3	Engineering	$12,524
	3.4	Testing & Commissioning	$973
	3.5	Permitting, Real Estate, Sales Tax and Additional Costs	$14,136
	3.6	Legal, Environmental Licensing & Permitting and Environmental Mitigation	$7,628
		Total Indirect Cost (3)	**$52,504**
		Subtotal Project Cost (B=A+3) 2017 $	**$268,700**
	4	**Network Upgrade Facilities (NUF)**	
	4.1	NUF proposed as element of the Project (Middletown Line and Terminal)	$16,261
	4.2	NUF to mitigate NY to NE interface transfer limit degradation	$30,000
		Subtotal NUF Cost (C)	**$46,261**
		Total Project Cost (B+C) 2017 $	**$314,961**
		Total Project Cost 2018 $	**$324,410**

4.2.15. **T030 NAT/NYPA Segment B Enhanced**

		NY Power Authority and North American Transmission (T030)	
		Description	**Total Amount** (In thousand $)
Direct Cost	1	**Transmission Lines**	
	1.1	Clearing & Access	$34,378
	1.2	Foundations	$18,131
	1.3	Structures	$56,775
	1.4	Conductor, Shiedwire and Optical Ground Wire	$35,969
	1.5	Insulators, Fitting and Hardwares	$11,553
		Subtotal (1)	**$156,807**
	2	**Substations**	
	2.1	Knickerbocker Substation	$14,982
	2.2	East Greenbush Substation	$61
	2.3	Schodack Substation	$2,226
	2.4	Churchtown Substation	$16,010
	2.5	Pleasant Valley Substation	$2,778
	2.6	Substation Interconnections	$6,312
		Subtotal (2)	**$42,369**
		Total (1+2)	$199,176
		Contractors Mark-up (15% of Total 1+2)	$29,876
		Total Direct Cost (A)	**$229,052**
Indirect Cost	3	**Technical Services Costs**	
	3.1	Contractor Mobilization / Demobilization	$1,992
	3.2	Project Management, Material Handling & Amenities	$15,576
	3.3	Engineering	$13,164
	3.4	Testing & Commissioning	$972
	3.5	Permitting, Real Estate, Sales Tax and Additional Costs	$14,389
	3.6	Legal, Environmental Licensing & Permitting and Environmental Mitigation	$7,628
		Total Indirect Cost (3)	**$53,721**
		Subtotal Project Cost (B=A+3) 2017 $	**$282,773**
	4	**Network Upgrade Facilities (NUF)**	
	4.1	NUF proposed as element of the Project (Middletown Line and Terminal)	$16,261
	4.2	NUF to mitigate NY to NE interface transfer limit degradation	$30,000
		Subtotal NUF Cost (C)	**$46,261**
		Total Project Cost (B+C) 2017 $	**$329,034**
		Total Project Cost 2018 $	**$338,905**

4.2.16. **T032 ITC Segment B**

ITC (T032)			
		Description	**Total Amount** (In thousand $)
Direct Cost	1	**Transmission Lines**	
	1.1	Clearing & Access	$35,253
	1.2	Foundations	$82,888
	1.3	Structures	$67,205
	1.4	Conductor, Shiedwire and Optical Ground Wire	$33,769
	1.5	Insulators, Fitting and Hardwares	$16,154
		Subtotal (1)	**$235,269**
	2	**Substations**	
	2.1	Knickerbocker Substation	$21,112
	2.2	East Greenbush Substation	$0
	2.3	Schodack Substation	$0
	2.4	Churchtown Substation	$1,977
	2.5	Pleasant Valley Substation	$3,101
	2.6	Substation Interconnections	$5,764
		Subtotal (2)	**$31,954**
		Total (1+2)	$267,224
		Contractors Mark-up (15% of Total 1+2)	$40,084
		Total Direct Cost (A)	**$307,307**
Indirect Cost	3	**Technical Services Costs**	
	3.1	Contractor Mobilization / Demobilization	$2,672
	3.2	Project Management, Material Handling & Amenities	$18,202
	3.3	Engineering	$16,986
	3.4	Testing & Commissioning	$755
	3.5	Permitting, Real Estate, Sales Tax and Additional Costs	$16,833
	3.6	Legal, Environmental Licensing & Permitting and Environmental Mitigation	$7,628
		Total Indirect Cost (3)	**$63,075**
		Subtotal Project Cost (B=A+3) 2017 $	**$370,382**
	4	**Network Upgrade Facilities (NUF)**	
	4.1	NUF proposed as element of the Project	$0
	4.2	NUF to mitigate NY to NE interface transfer limit degradation	$30,000
		Subtotal NUF Cost (C)	**$30,000**
		Total Project Cost (B+C) 2017 $	**$400,382**
		Total Project Cost 2018 $	**$412,394**

4.3. **Risk**

The review team completed an evaluation of the potential risks associated with the proposals and summarized the significant risks, including those that were previously identified by each Developer. The review team's evaluation was based on the team's collective experience with transmission line and substation projects in New York State.

The significant drivers to the project risks considered were:

- Article VII review approval process and potential environmental issues
- Procurement of major equipment
- Real Estate acquisition
- Construction

The most significant risks are summarized below. The review team also recommends that a Risk Management Program be implemented in the execution of the project or projects selected by the NYISO. A Risk Management Program will highlight items such as safety management, materials management, construction operations, outage planning, QA/QC program, field inspection, and environmental controls that are critical in identifying both risk areas and specific mitigation strategies. It is also important that Risk Management become a living project component that is constantly monitored and updated as the project progresses.

4.3.1. **Common Risks**

The risks common to all proposals are summarized below. The costs for these risks are adequately covered by the project contingency.

Common Risks to all Proposals

#	Risk Title	Description	Comment
1	Article VII Certificate	Article VII review approval process could take longer than estimated in schedule for a variety of reasons (*i.e.,* additional special studies requested by involved agencies, lack of stakeholder consensus).	Developer needs early outreach with all stakeholders and to prepare a comprehensive application. Developer's experience with Article VII process will be essential.
2	Other environmental approvals	Federal agency and other approvals could take longer than the state Article VII process. This could become	Developer needs early outreach with Federal agencies and others to prepare comprehensive

		more likely if cutbacks of funding to regulatory agencies affect employee staffing.	applications and obtain approvals in parallel with Article VII process.
3	Public Opposition	If local groups or citizens oppose the project, it could cause significant delays especially if opposition results in litigation.	Developer needs early outreach to solicit public involvement, incorporate public concerns during planning stage before project execution, build mitigation into design, and foster community buy-in.
4	EM&CP Approval	EM&CP approval process could take longer than estimated by the Developer in schedule.	Developer needs to prepare a comprehensive EM&CP that will meet regulatory agency requirements. Developer's experience with DPS, DEC, Ag. & Markets, and other agency requirements will be essential.
5	Environmental Study Findings	Environmental studies could find critical habitat, wetlands, agricultural lands, rare, threatened or endangered species, cultural or archeological sites, etc. that could require re-routing of lines or special conditions such as seasonal restriction on construction. The time of year when studies can be conducted could also affect project schedule. Access to structures in Black Creek Marsh may require design or construction modifications.	Studies need to be scheduled and conducted early in the process to ensure design and the EM&CP adequately minimizes, mitigates or avoids environmental impacts.
6	Unknown environmental conditions discovered	During construction, the Developer could encounter previously unidentified issues, such as contaminated soil, archeological	Environmental monitor will be on-site during construction. Such findings could require relocating

	during construction	remains, rare, threatened or endangered species, unidentified utilities, etc.	and redesigning structures resulting in construction delays.
7	Violation of environmental requirements during construction	Construction activities could result in violations of environmental permits/approvals due to inadequate control measures or not following plans (i.e., storm water discharges) resulting in stop work notice.	The risk can be mitigated by following Best Management Practices and ensure crews are adequately trained to implement EM&CP and other environmental permit/approval requirements.
8	Gas pipeline mitigation	Transmission line crossings and paralleling of natural gas pipelines may require grounding or other mitigation, and natural gas pipeline entities are increasingly aware of this issue and demanding mitigation to be installed by transmission utilities.	The cost of gas pipeline mitigation studies and mitigation requirements are relatively small compared to the overall project cost. The risk can be mitigated by a study to determine the exact location of gas pipeline(s) and recommend mitigation requirements.
9	Transmission line crossings	Crossing of other transmission and distribution lines: creates additional schedule risk, to the extent an outage needs to be scheduled; creates additional operating risk, to the extent a single event could remove both elements from services; and creates cost risk to the extent unexpected costs such as raising, lowering, or relocating an existing line is required.	This risk is mitigated by early identification of all necessary crossings. For example, this risk is best minimized during construction through frequent coordination with the existing transmission line owner and installation of protective netting and other protection prior to pulling sock line and conductor. This risk can be mitigated through the development of High Risk Evolution Plans for transmission crossings, which include, at a minimum, coordination with all involved utility owners, contractors, construction and

			project management planning sessions and a detailed schedule of events for crossing.
10	Highway, Rail Road & Navigable Waterway crossings	Crossing of Highways, Rail Roads, and Navigable Waterways creates additional risk to the project schedule and cost, depending on the requirements imposed during construction.	The risks can be mitigated by early identification of all necessary crossings. Prior to and during construction this risk is best minimized through frequent coordination with those responsible for the operation of the facilities being crossed. Develop High Risk Evolution Plans for all major highway, RR or waterway crossings which include at a minimum coordination with RR, flaggers, contractors, Local and state police / highway patrol, construction and project management planning sessions and a detailed schedule of events for crossing.
11	Material Shortages	Material and equipment shortages and delayed shipments.	The risks can be mitigated by proper quality assurance during engineering to insure adequate quantities ordered. Procurement with sufficient period of float between scheduled deliveries from suppliers and when material is needed for construction and proactive monitoring and expediting.
12	Operational Issues	Need to maintain resources for emergency response for the life of the facility.	This risk can be mitigated by maintaining a local staff, contracting with emergency restoration provider in the project

			area, and entering into mutual assistance agreements with neighboring utilities.
13	Need for additional System Upgrade Facilities	Completion of the detailed studies, such as fault studies and protection coordination for the project, will normally be completed during the SIS, the Facilities Study and detailed engineering.	The system modifications proposed by the Developers may require replacement of breakers and protection equipment on the existing system. Additional thermal overloads may be identified.
14	Catastrophic HSE / Safety Event	High voltage transmission and substation work is inherently dangerous. Accidents that occur on projects of this nature frequently result in serious injury or fatality. Catastrophic safety events such as loss of life can result in extended work stoppages across all stages of the project.	This risk can be mitigated through a robust Project and Site Safety Program implementation. Project Orientations which verify training of ALL project personnel. Extensive Health, Safety and Environmental (HSE)management presence during construction to ensure compliance.
15	Construction Quality Control	Compliance with project specifications and quality can be compromised if installations are not properly monitored. Structure misalignments, improper structure framing, use of incorrect materials, etc. can result in re-work, unnecessary delays and project overruns. Larger and complex projects that require greater resources are more susceptible to Quality Control Issues. If the NYPSC cited a contractor as being in non-compliance, the result can be extended work stoppages.	This risk can be mitigated by detailed Quality Control/Quality Assurance Plans during early planning stages and in a detailed Project Execution Plan; ensuring inspection processes are in place for all components of construction; and considering the utilization of third-party inspectors to ensure compliance.

16	Change Order Management - Construction Impacts	Unresolved Change Orders may result in delays to construction and impact the schedule.	This risk can be mitigated by including detailed Change Order Management Plan and process in the Project Execution Plan in order to mitigate potential delays.

4.3.2. **Project-Specific Risks**

Summarized below are the review team's most significant risk findings specific to each proposal. This is not all inclusive but is intended to highlight those items that pose the most critical risks to the completion of the projects.

4.3.2.1. **SEGMENT A**:

T018 – New York Energy Solution Segment A - National Grid/Transco			
#	**Risk Title**	**Description**	**Comment**
1	Design Concern - New Scotland Substation (National Grid Owned)	A significant issue is the lack of space in Control House #3 i.e., the most up-to-date building of the three existing control houses.	To keep the new 345 kV panels with the existing panel line up will likely require expanding the building to the east where the cable trench entrances and a communication tower is located. *(While the Developer did not include expanding the control house in its estimate, the review team's independent cost estimate includes this scope of work.)*
2	Obtaining Site Control and Property Acquisition	National Grid owns all property required for new facilities. *De minimis* property may need to be acquired for access and construction marshalling yards.	National Grid's control of the property obviates any significant issue. Property will ultimately be transferred to the NY Transco.

3	Design Concern - EMF	The existing corridor between Princetown Junction and New Scotland Substation (345 kV lines #14 and #18, and 115 kV Line #13 are located in that corridor) is currently estimated to exceed NPSC guidelines for EMF levels. The proposed design improves the condition, but EMF levels are still estimated to exceed the guidelines.	EMF levels will have to be addressed during detailed engineering and may result in purchasing EMF easements from property owners along the ROW between Princetown and New Scotland. *(The review team's independent cost estimate includes the cost for additional EMF easements.)* This is considered a critical risk for all Segment A proposals.
4	Re-use of existing structures	During construction the Developer could discover that structures originally planned for re-use are in worse condition than expected or inadequate and require repair or replacement.	The Developer proposes re-using 92 structures on the double circuit Edic/Fraser and 230 kV line # 30 beginning at Edic/Porter and continuing east for 12.6 miles. A cursory visual inspection indicate the structures are in good physical condition. Thorough inspection and analysis of existing structures is advisable prior to completing final design.

T021 – Enterprise Line: Segment A – NextEra			
#	**Risk Title**	**Description**	**Comment**
1	Design Concern - New Scotland Substation (National Grid Owned)	A significant issue is the lack of space in Control House #3-i.e., the most up-to-date building of the three existing control houses.	To keep the new 345 kV panels with the existing panel line up will likely require expanding the building to the east where the cable trench entrances and a communication tower is located. *(While the Developer did not include expanding the control house in its estimate, the review*

			team's independent cost estimate includes this scope of work.)
2	Obtaining Site Control and Property Acquisition	Proposal utilizes existing ROW owned by National Grid. *De minimis* property may need to be acquired for access and construction marshalling yards. Additionally, Developer must procure property for Princetown substation.	Negotiations with the incumbent utility could result in potential cost and schedule implications. The review team's schedule provides two years for negotiation and procurement of ROW beginning with the notice to proceed. This should be sufficient time making this a potential but low risk. The estimate contingency should be sufficient to cover potential increased costs which is considered a low probability. For Princetown Substation, Developer has already obtained a purchase option on property for its proposed location.
3	Construction Concern – Use of Concrete Poles	Developer proposes using concrete poles for the majority of transmission line structures and has considered some of the concerns associated with transportation, public protection and community impact.	Developer needs to evaluate each proposed structure location during detailed engineering to verify delivery and installation feasibility, and develop a robust risk mitigation plan taking account of the project risks, planning and clear mitigation for problem areas. Issues encountered with delivery or installation of these poles may result in schedule delays and increased costs.

4	Design Concern - EMF	The existing corridor between Princetown Junction and New Scotland Substation (345 kV lines #14 and #18, and 115 kV Line #13 are located in that corridor) is currently estimated to exceed NPSC guidelines for EMF levels. The proposed design improves the condition, but EMF levels are still estimated to exceed the guidelines.	EMF levels will have to be addressed during detailed engineering and may result in purchasing EMF easements from property owners along the right-of-way between Princetown and New Scotland. *(The review team's independent cost estimate includes the cost for additional EMF easements.)* This is considered a critical risk for all Segment A proposals.
5	Re-use of existing structures	During construction, the Developer could discover that structures originally planned for re-use are in worse condition than expected or inadequate and require repair or replacement.	The Developer proposes re-using 92 structures on the double circuit Edic/Fraser and 230 kV line #30 beginning at Edic/Porter and continuing east for 12.6 miles. A cursory visual inspection indicates the structures are in good physical condition. Thorough inspection and analysis of existing structures is advisable prior to completing final design.

T025 – Segment A + 765 kV Proposal - North American Transmission/NYPA			
#	**Risk Title**	**Description**	**Comment**

1	Design Concern - Rotterdam Substation (National Grid Owned)	Proposed substation layout is directly over two existing gas transmission lines and is likely to be resisted by the owner of that facility.	Relocation of the existing gas transmission lines is likely necessary and the review team's analysis indicates that the lines could be relocated within the National Grid property. There is a risk that the new substation may need to be moved to an alternate location within the existing National Grid property or *de minimis* additional easement be acquired. See section 4.11.1.4 for more detail. *(The review team's independent cost estimate includes the cost for relocating these gas transmission lines.)*
2	Property Acquisition Concern - Princetown Substation	NAT/NYPA's proposed design for Princetown Substation appears to just fit within the existing National Grid ROW.	If the final design requires purchasing additional property it will likely be difficult and increase cost. *(The review team's independent cost estimate does not include the cost for additional property/easements.)* This is considered one of the highest risks for this proposal
3	Design Concern – Princetown Substation location (on National Grid Owned ROW)	Proposed substation is located close to existing homes and buildings. These property owners may oppose the siting of a substation near their property due to concerns with visual impact, noise, security lights, etc.	Public opposition to this site may result in delays associated with obtaining regulatory approvals and increased costs. The risks include: 1. the potential need for an alternative design such as GIS

		Construction on ROW with existing lines will require coordination with incumbent utility to maintain clearances.	or alternative site may need to be identified, such as a location midway between the Junction and Rotterdam which has adequate space and would not be as close to existing buildings or roads; and 2.short term outages and/or temporary bypasses of existing lines may be required during construction.
4	Design Concern - Marcy 765 kV Substation (NYPA Owned)	As proposed, the Developer's layout has a single span of conductors crossing the bus between the new 765 kV breaker and the south main bus, and between the new breaker and breaker 7202.	A dropped conductor could trip out the south main bus as well as the bus between the new breaker and breaker 7202.
5	Design Concern - New Scotland Substation (National Grid Owned)	A significant issue is the lack of space in Control House #3—i.e., the most up-to-date building of the three existing control houses.	To keep the new 345 kV panels with the existing panel line up will likely require expanding the building to the east where the cable trench entrances and a communication tower are located. *(While the Developer did not include expanding the control house in its estimate, the review team's independent cost estimate includes this scope of work.)*
6	Obtaining Site Control and Property Acquisition	Proposal utilizes existing ROW owned by National Grid.	Negotiations with the incumbent utility could result in potential cost and schedule implications.

		De minimis property may need to be acquired for access and construction marshalling yards.	The review team's schedule provides two years for negotiation and procurement of ROW beginning with the notice to proceed. This should be sufficient time making this a potential but low risk. The estimate contingency should be sufficient to cover potential increased costs which is considered a low probability.
7	Design Concern - EMF	The existing corridor between Princetown Junction and New Scotland Substation(345 kV lines #14 and #18, and 115 kV Line #13 are located in that corridor) is currently estimated to exceed NYS PSC guidelines for EMF levels. Additionally, conversion of the 345 kV line between Marcy substation and proposed Knickerbocker substation to 765 kV is estimated to likely increase EMF levels beyond NYPSC guidelines.	EMF levels will have to be addressed during detailed engineering and may result in purchasing EMF easements totaling approximately 76 acres from property owners along the ROW between Marcy and New Scotland. *(The review team's independent cost estimate includes the cost for additional EMF easements.)* This is considered a critical risk for all Segment A proposals.
8	Public Opposition - 765 kV Transmission Line	New York State's only 765 kV transmission line between Massena and Marcy was completed in 1975 amidst heavy public opposition. As such, it is highly likely that converting the 345 kV line between Marcy substation and the proposed Knickerbocker substation will be controversial due to increased	This risk could be mitigated with a targeted and well-planned public outreach effort. However, negative public opposition may result in delays associated with the project's schedule and affect the project's cost and the ability to obtain required EMF easements.

		EMF, noise from corona and increased structure heights, and result in delays associated with obtaining regulatory approvals and EMF easements likely based on public opposition. New structures in the 2.5 mile section of 765 kV line range in height from 130 to 165 feet. In the section of the line where there is the existing 115 kV transmission line, the four new structures will be approximately 80 feet taller than the existing structures.	
9	Design Concern - 765 kV Transmission Line	The 345 kV line between Marcy substation and the proposed Knickerbocker substation was designed and constructed to 765 kV standards over 40 years ago.	Design clearances will have to be verified against current standards during detailed design. Also, the condition of insulators and hardware will have to be evaluated due to age. Changing out hardware due to age or modifications to reduce corona could have significant cost and schedule implications. *(The review team's independent cost estimate includes an allowance for potential remedial work that may be identified.)*
10	Re-use of existing structures	During construction the Developer could discover that structures originally planned for re-use are in worse condition than expected or inadequate and require repair or replacement.	The Developer proposes re-using 92 structures on the double circuit Edic/Fraser and 230 kV line #30 beginning at Edic/Porter and continuing east for 12.6 miles. A cursory visual

			inspection indicate the structures are in good physical condition. Thorough inspection and analysis of existing structures is advisable prior to completing final design.

T026 – Segment A Base Proposal - North American Transmission/NYPA			
#	**Risk Title**	**Description**	**Comment**
1	Design Concern - Rotterdam Substation (National Grid Owned)	Proposed substation layout is directly over two existing gas transmission lines and is likely to be resisted by the owner of that facility.	Relocation of the existing gas transmission lines is likely necessary, and the review team's analysis indicates that the lines could be relocated within the National Grid property. There is a risk that the new substation may need to be moved to an alternate location within the existing National Grid property or *de minimis* additional easement be acquired. See section 4.11.1.4 for more detail. *(The review team's independent cost estimate includes the cost for relocating these gas transmission lines.)*
2	Design Concern - New Scotland Substation (National Grid Owned)	A significant issue is the lack of space in Control House #3 i.e., the most up-to-date building of the three existing control houses.	To keep the new 345 kV panels with the existing panel line up will likely require expanding the building to the east where the cable trench entrances and a communication tower are located. *(While the Developer*

			did not include expanding the control house in its estimate, the review team's independent cost estimate includes this scope of work.)
3	Obtaining Site Control and Property Acquisition	Proposal utilizes existing ROW owned by National Grid. *De minimis* property may need to be acquired for access and construction marshalling yards.	Negotiations with the incumbent utility could result in potential cost and schedule implications. The review team's schedule provides two years for negotiation and procurement of ROW beginning with the notice to proceed. This should be sufficient time making this a potential but low risk. The estimated contingency should be sufficient to cover potential increased costs which is considered a low probability.
4	Design Concern - EMF	The existing corridor (345 kV Lines #14 and #18, and 115 kV line #13) between Princetown Junction and New Scotland Substation is currently estimated to exceed NYS PSC guidelines for EMF levels. The proposed design improves the condition, but EMF levels are still estimated to exceed the guidelines.	EMF levels will have to be addressed during detailed engineering and may result in purchasing EMF easements from property owners along the right-of-way between Princetown and New Scotland. *(The review team's independent cost estimate includes the cost for additional EMF easements.)* This is considered a critical risk for all Segment A proposals.

5	Re-use of existing structures	During construction the Developer could discover that structures originally planned for re-use are in worse condition than expected or inadequate and require repair or replacement.	The Developer proposes re-using 92 structures on the double circuit Edic/Fraser and 230 kV Line 30 beginning at Edic/Porter and continuing east for 12.6 miles. A cursory visual inspection indicate the structures are in good physical condition. Thorough inspection and analysis of existing structures is advisable prior to completing final design.

T027 – Segment A Double Circuit Proposal - North American Transmission/NYPA			
#	**Risk Title**	**Description**	**Comment**
1	Design Concern - Rotterdam Substation (National Grid Owned)	Proposed substation layout is directly over two existing gas transmission lines and is likely to be resisted by the owner of that facility.	Relocation of the existing gas transmission lines is likely necessary, and the review team's analysis indicates that the lines could be relocated within the National Grid property. There is a risk that the substation may need to be moved to an alternate location within the existing National Grid property or *de minimis* additional easement be acquired. See section 4.11.1.4 for more detail. *(The review team's independent cost estimate includes the cost for relocating these gas transmission lines.)*

2	Property Acquisition Concern - Princetown Substation	NAT/NYPA's proposed design for Princetown Substation appears to just fit within the existing National Grid ROW.	If required by the final design purchasing additional property will likely be difficult and increase cost. *(The review team's independent cost estimate does not include the cost for additional property/easements.)*
3	Design Concern – Princetown Substation location (on National Grid Owned ROW)	Proposed GIS substation is located close to existing homes and buildings. These property owners may oppose the siting of a substation near their property due to concerns with visual impact, noise, security lights, etc. Construction on ROW with existing lines will require coordination with incumbent utility to maintain clearances.	Public opposition to this site may result in delays associated with obtaining regulatory approvals and increased costs. An alternative site may need to be identified such as a location midway between the Junction and Rotterdam which has adequate space and would not be as close to existing buildings or roads, minimizing the visual impact and possible opposition. The risk for this proposal is somewhat minimized by the proposed GIS design which has a smaller footprint and less visual impact. Short term outages and/or temporary bypasses of existing lines may be required during construction.
4	Design Concern - New Scotland Substation (National Grid Owned)	A significant issue is the lack of space in Control House #3—i.e., the most up-to-date building of the three existing control houses.	To keep the new 345 kV panels with the existing panel line up will likely require expanding the building to the east where the cable trench entrances and a communication tower are

			located. *(While the Developer did not include expanding the control house in its estimate, the review team's independent cost estimate includes this scope of work.)*
5	Obtaining Site Control and Property Acquisition	Proposal utilizes existing ROW owned by National Grid. *De minimis* property may need to be acquired for access and construction marshalling yards.	Negotiations with the incumbent utility could result in potential cost and schedule implications. The review team's schedule provides two years for negotiation and procurement of ROW beginning with the notice to proceed. This should be sufficient time making this a potential but low risk. The estimate contingency should be sufficient to cover potential increased costs which is considered a low probability.
6	Design Concern - EMF	The existing corridor (345 kV Lines #14 and #18, and 115 kV line #13) between Princetown Junction and New Scotland Substation is currently estimated to exceed NYS PSC guidelines for EMF levels. The proposed design improves the condition, but EMF levels are still estimated to exceed the guidelines.	EMF levels will have to be confirmed during detailed engineering. There is a risk that the EMF levels will exceed NYS PSC levels after final studies and may result in purchasing EMF easements from property owners along the right-of-way between Princetown and New Scotland. (The review team's independent cost estimate includes the cost for additional EMF easements.)

			This is considered a critical risk for all Segment A proposals.
7	Re-use of existing structures	During construction the Developer could discover that structures originally planned for re-use are in worse condition than expected or inadequate and require repair or replacement.	The Developer proposes re-using 92 structures on the double circuit Edic/Fraser and 230 kV line #30 beginning at Edic/Porter and continuing east for 12.6 miles. A cursory visual inspection indicate the structures are in good physical condition. Thorough inspection and analysis of existing structures is advisable prior to completing final design.

T028 – Segment A Enhanced Proposal - North American Transmission/NYPA			
#	**Risk Title**	**Description**	**Comment**
1	Design Concern - Rotterdam Substation (National Grid Owned)	Proposed substation layout is directly over two existing gas transmission lines and is likely to be resisted by the owner of that facility.	Relocation of the existing gas transmission lines is likely, and the review team's analysis indicates that the lines could be relocated within the National Grid property. There is a risk that the substation may need to be moved to an alternate location within the existing National Grid propertyor *de minimis* additional easement be acquired. See section 4.11.1.4 for more detail. *(The review team's independent cost estimate includes the cost for*

			relocating these gas transmission lines.)
2	Property Acquisition Concern - Princetown Substation	NAT/NYPA's proposed design for Princetown Substation appears to just fit within the existing National Grid rights-of-way.	If required by the final design purchasing additional property will likely be difficult and increase cost. *(The review team's independent cost estimate does not include the cost for additional property/easements.)*
3	Design Concern – Princetown Substation location (on National Grid Owned ROW)	Proposed substation is located close to existing homes and buildings. These property owners may oppose the siting of a substation near their property due to concerns with visual impact, noise, security lights, etc. Construction on ROW with existing lines will require coordination with incumbent utility to maintain clearances.	Public opposition to this site may result in delays associated with obtaining regulatory approvals and increased costs. An alternative design such as GIS or an alternative site may need to be identified such as a location midway between the Junction and Rotterdam, which has adequate space and would not be as close to existing buildings or roads minimizing the visual impact and possible opposition. Short term outages and/or temporary bypasses of existing lines may be required during construction.
4	Design Concern - New Scotland Substation (National Grid Owned)	A significant issue is the lack of space in Control House #3, the most up-to-date building of the three existing control houses.	To keep the new 345 kV panels with the existing panel line up will likely require expanding the building to the east where the cable trench entrances and a communication tower are located. *(While the Developer*

			did not include expanding the control house in its estimate, the review team's independent cost estimate will include this scope of work.)
5	Obtaining Site Control and Property Acquisition	Proposal utilizes existing ROW owned by National Grid. *De minimis* property may need to be acquired for access and construction marshalling yards.	Negotiations with the incumbent utility could result in potential cost and schedule implications. The review team's schedule provides two years for negotiation and procurement of ROW beginning with the notice to proceed. This should be sufficient time making this a potential but low risk. The estimate contingency should be sufficient to cover potential increased costs which is considered a low probability.
6	Design Concern - EMF	The existing corridor (which has 345 kV lines #14 and #18, and 115 kV line #13) between Princetown Junction and New Scotland Substation is currently estimated to exceed NYS PSC guidelines for EMF levels. The proposed design improves the condition, but EMF levels are still estimated to exceed the guidelines.	EMF levels will have to be addressed during detailed engineering and may result in purchasing EMF easements from property owners along the right-of-way between Princetown and New Scotland. *(The review team's independent cost estimate includes the cost for additional EMF easements.)* This is considered a critical risk for all Segment A proposals.

7	Re-use of existing structures	During construction the Developer could discover that structures originally planned for re-use are in worse condition than expected or inadequate and require repair or replacement.	The Developer proposes re-using 92 structures on the double circuit Edic/Fraser and 230 kV line #30 beginning at Edic/Porter and continuing east for 12.6 miles. A cursory visual inspection indicate the structures are in good physical condition. Thorough inspection and analysis of existing structures is advisable prior to completing final design.

T031 – 16NYPP1-1A AC Transmission – ITC			
#	**Risk Title**	**Description**	**Comment**
1	Reliability Concern - New Scotland Substation (National Grid Owned)	ITC proposes connecting a new 345 kV transmission line into New Scotland by adding a 345 kV terminal structure, circuit breaker with disconnect switches connected to the main bus.	While this may be the simplest arrangement, it also provides the least amount of reliability. With this configuration, a failed breaker or a bus fault will cause a loss of the following: New 345 kV line to Princetown 345 kV Line to Princetown (formally line14 to Edic), 345 kV Line 93 to Leeds, 345 kV Line 2 to Alps, Bank #2, Capacitor Banks #1 and #3. The review team recognizes that a failed breaker on any of the existing lines, capacitor banks or Bank #2 will also cause a similar loss to those stated. However, the

			proposed arrangement does not improve the reliability and will exacerbate the situation.
2	Design Concern - New Scotland Substation (National Grid Owned)	A significant issue is the lack of space in Control House #3, the most up-to-date building of the three existing control houses.	To keep the new 345 kV panels with the existing panel line up will likely require expanding the building to the east where the cable trench entrances and a communication tower are located. *(While the Developer did not include expanding the control house in its estimate, the review team's independent cost estimate includes this scope of work.)*
3	Design Concern - Rotterdam Substation (National Grid Owned)	Proposed substation layout is directly over an existing gas transmission line and is likely to be resisted by the owner of that facility.	Relocation of the existing gas transmission line is likely, and the review team's analysis indicates that the lines could be relocated within the National Grid property. There is a risk that the substation location may need to be moved within the existing National Grid property or *de minimis* additional easement be acquired. See section 4.11.1.4 for more detail. *(The review team's independent cost estimate includes the cost for relocating this gas transmission line.)*
4	Reliability Concern - Rotterdam	ITC proposes a straight bus arrangement by installing two new 345 kV T-line terminals with	With this configuration, and because the 230 kV lines #30 and #31 are eliminated, a

	Substation (National Grid Owned)	circuit breakers, disconnect switches, a 345 kV tie breaker, and two 345 kV – 230 kV transformers. Each transformer will have a 230 kV circuit breaker connected to the 230 kV main bus.	failed 230 kV breaker or a 230 kV bus fault will cause a loss of the entire 230 kV yard.
5	Property Acquisition Concern - Princetown Substation	ITC's proposed design for Princetown Substation will not fit within the existing National Grid ROW.	Purchasing additional property will likely be difficult and increase the cost of the project. *(The review team's independent cost estimate includes the cost for additional property/easements.)*
6	Design Concern – Princetown Substation location (on National Grid Owned ROW)	Proposed substation is located close to existing homes and buildings. These property owners may oppose the siting of a substation near their property due to concerns with visual impact, noise, security lights, etc. Construction on ROW with existing lines will require coordination with incumbent utility to maintain clearances.	Public opposition to this site may result in delays associated with obtaining regulatory approvals and increased costs. An alternative design such as GIS or alternative site may need to be identified, such as a location midway between the Junction and Rotterdam which has adequate space and would not be as close to existing buildings or roads Short term outages and/or temporary bypasses of existing lines will be required during construction.
7	Obtaining Site Control and Property Acquisition	Proposal utilizes existing ROW owned by National Grid.	Negotiations with the incumbent utility could result in potential cost and schedule implications.

		De minimis property may need to be acquired for access and construction marshalling yards.	The review team's schedule provides two years for negotiation and procurement of ROW beginning with the notice to proceed. This should be sufficient time making this a potential but low risk. The estimate contingency should be sufficient to cover potential increased costs which is considered a low probability.
8	Design Concern - EMF	The Developer's calculations for EMF are currently estimated to exceed NYPSC guidelines for entire section.	EMF calculations will need to be confirmed during detail engineering. It is possible that EMF easements will need to be purchased for the entire ROW between Edic and New Scotland. At a minimum, easements will likely be required between Princetown and New Scotland. *(The review team's independent cost estimate includes the cost for additional EMF easements.)* This is considered a critical risk for all Segment A proposals.
9	Re-use of existing structures	During construction the Developer could discover that structures originally planned for re-use are in worse condition than expected or inadequate and require repair or replacement.	The Developer proposes re-using 92 structures on the double circuit Edic/Fraser and 230 kV line #30 beginning at Edic/Porter and continuing east for 12.6 miles. A cursory visual inspection indicate the structures are in good physical condition. Thorough inspection

			and analysis of existing structures is advisable prior to completing final design.

SEGMENT B

T019 – New York Energy Solution Segment B - National Grid/Transco			
#	**Risk Title**	**Description**	**Comment**
1	FAA requirements	Additional requirements may be required to accommodate air traffic.	Green Acres Airport is located about 700 feet east of the proposed ROW. The risks are mitigated by early and frequent coordination with the FAA and the local airport.
2	Design Concern - Pleasant Valley Substation (Con Ed Owned)	The Developer proposes terminating the new 345 kV line from Knickerbocker Substation in Bay #2 of Pleasant Valley Substation, which could require Network Upgrade Facilities to expand the Pleasant Valley Substation depending on the outcome of the NYISO's 2017 Class Year Study.	This will likely require adding two 345 kV breakers with disconnect switches to Bay #1. The Cricket Valley line will be moved from Bay #2 to Bay #1. Bay #2 will then be available for the new line from Knickerbocker. Depending on the outcome of the 2017 Class Year Study, the substation yard may have to be expanded to the southwest to accommodate one of the proposed 345 kV capacitor banks. *(This additional work is not included in the independent estimates.)*
3	Design Concern - Pleasant Valley Substation (Con Ed Owned)	Lack of space for additional panels in the control house.	The control house will need to be expanded to accommodate the additional panels. This is more apparent with the additional line for the Cricket Valley Project. *(Expansion of the control house is included in the independent estimates.)*

4	Construction Concern - Churchtown Substation (NYSEG Owned)	Developer proposes constructing a new 115 kV, three-bay, breaker-and-a-half substation on the same property currently occupied by NYSEG's Churchtown Substation, eventually demolishing the entire existing substation.	The existing Churchtown substation feeds a radial 115 kV line to NYSEG's Craryville and Klinekill Substations. Construction sequencing will have to be developed to maintain service to this line during construction of the new Churchtown substation.
5	Visual Concern – Proposed Transmission Lines	Potential of public opposition due to visual impact. NYPSC has encouraged that new structures have minimal increase in height.	Need to address during detail engineering. The Developer's proposal has the same number of structures as the existing line but 48% of them have an increase in height between 5 ft. and 20 ft. and 5% have a height increase of more than 20 ft. This increases the siting risk of this proposal.
6	Obtaining Site Control and Property Acquisition	National Grid owns all property required for new facilities. *De minimis* property may need to be acquired for access and construction marshalling yards.	National Grid's control of the property obviates any significant issue. Property will ultimately be transferred to the NY Transco.

T022 – Enterprise Line: Segment B – NextEra			
#	**Risk Title**	**Description**	**Comment**
1	FAA requirements	Additional requirements may be required to accommodate air traffic.	Green Acres Airport is located about 700 feet east of the proposed ROW. The risks are mitigated by early and frequent coordination with the FAA and the local airport.
2	Construction Concern – Use of Concrete Poles	Developer proposes using concrete poles for the majority of transmission line structures and has considered some of the concerns associated with transportation, public protection and community impact.	Developer needs to evaluate each proposed structure location during detailed engineering to verify delivery and installation feasibility, and develop a robust risk mitigation plan taking account of the project risks, planning and clear mitigation for problem areas.
3	Design Concern - Pleasant Valley Substation (Con Ed Owned)	The Developer proposes terminating the new 345 kV line from Knickerbocker Substation in Bay #2 of Pleasant Valley Substation, which could require Network Upgrade Facilities to expand the Pleasant Valley Substation depending on the outcome of the NYISO's 2017 Class Year Study.	This will likely require adding two 345 kV breakers with disconnect switches to Bay #1. The Cricket Valley line will be moved from Bay #2 to Bay #1. Bay #2 will then be available for the new line from Knickerbocker. *(This additional work is not included in the independent estimates.)*
4	Design Concern - Pleasant Valley Substation (Con Ed Owned)	Lack of space for additional panels in the control house.	The control house will need to be expanded to accommodate the additional panels. This is more apparent with the additional line for the Cricket

			Valley Project. *(Expansion of the control house is included in the independent estimates.)*
5	Construction Concern - Churchtown Substation (NYSEG Owned)	Developer proposes constructing a new 115 kV, two-bay, breaker-and-a-half substation north of NYSEG's Churchtown Substation. NYSEG's substation will remain in service upon completion of the AC Transmission Project.	Additional property may be required to accommodate storm water management system.
6	Visual Concern – Proposed Transmission Lines	Potential of public opposition due to visual impact. NYPSC has encouraged that new structures have minimal increase in height.	Need to address during detail engineering. The Developer's proposal has the same number of structures as the existing line but 73% of them have an increase in height between 5 ft. and 20 ft. This increases the siting risk of this proposal.
7	Obtaining Site Control and Property Acquisition	Proposal utilizes existing ROW owned by National Grid. *De minimis* property may need to be acquired for access and construction marshalling yards.	Negotiations with the incumbent utility could result in potential cost and schedule implications. The review team's schedule provides two years for negotiation and procurement of ROW beginning with the notice to proceed. This should be sufficient time making this a potential but low risk. The estimate contingency should be sufficient to cover potential increased costs which is considered a low probability.

T023 – Enterprise Line: Segment B Alt. – NextEra			
#	**Risk Title**	**Description**	**Comment**
1	FAA requirements	Additional requirements may be required to accommodate air traffic	Green Acres Airport is located about 700 feet east of the proposed ROW. The risks are mitigated by early and frequent coordination with the FAA and the local airport.
2	Construction Concern – Use of Concrete Poles	Developer proposes using concrete poles for the majority of transmission line structures and has considered some of the concerns associated with transportation, public protection and community impact.	Developer needs to evaluate each proposed structure location during detailed engineering to verify delivery and installation feasibility, and develop a robust risk mitigation plan taking account of the project risks, planning and clear mitigation for problem areas.
3	Design Concern - Pleasant Valley Substation (Con Ed Owned)	The Developer proposes terminating the new 345 kV line from Knickerbocker Substation in Bay #2 of Pleasant Valley Substation, which could require Network Upgrade Facilities to expand the Pleasant Valley Substation depending on the outcome of the NYISO's 2017 Class Year Study.	This will likely require adding two 345 kV breakers with disconnect switches to Bay #1. The Cricket Valley line will be moved from Bay #2 to Bay #1. Bay #2 will then be available for the new line from Knickerbocker. *(This additional work is not included in the independent estimates.)*
4	Design Concern - Pleasant Valley Substation (Con Ed Owned)	Lack of space for additional panels in the control house.	The control house will need to be expanded to accommodate the additional panels. This is more apparent with the additional line for the Cricket Valley Project.

			(Expansion of the control house is included in the independent estimates.)
5	Construction Concern - Churchtown Substation (NYSEG Owned)	Developer proposes constructing a new 115 kV, two-bay, breaker-and-a-half substation north of NYSEG's Churchtown Substation. NYSEG's substation will remain in service upon completion of the AC Transmission Project.	Additional property may be required to accommodate storm water management system.
6	Visual Concern – Proposed Transmission Lines	Potential of public opposition due to visual impact. NYS PSC has encouraged that new structures have minimal increase in height.	Need to address during detail engineering. The Developer's proposal has the same number of structures as the existing line but 83% of them have an increase in height between 5-ft. and 20-ft. This increases the siting risk of this proposal.
7	Obtaining Site Control and Property Acquisition	Proposal utilizes existing ROW owned by National Grid. *De minimis* property may need to be acquired for access and construction marshalling yards.	Negotiations with the incumbent utility could result in potential cost and schedule implications. The review team's schedule provides two years for negotiation and procurement of ROW beginning with the notice to proceed. This should be sufficient time making this a potential but low risk. The estimate contingency should be sufficient to cover potential increased costs which is considered a low probability.

T029 – Segment B Base Proposal - North American Transmission/NYPA			
#	**Risk Title**	**Description**	**Comment**
1	FAA requirements	Additional requirements may be required to accommodate air traffic	Green Acres Airport is located about 700 feet east of the proposed ROW. The risks are mitigated by early and frequent coordination with the FAA and the local airport.
2	Design Concern - Pleasant Valley Substation (Con Ed Owned)	The Developer proposes terminating the new 345 kV line from Knickerbocker Substation in Bay #2 of Pleasant Valley Substation, which could require Network Upgrade Facilities to expand the Pleasant Valley Substation depending on the outcome of the NYISO's 2017 Class Year Study.	This will likely require adding two 345 kV breakers with disconnect switches to Bay #1. The Cricket Valley line will be moved from Bay #2 to Bay #1. Bay #2 will then be available for the new line from Knickerbocker. *(This additional work is not included in the independent estimates.)*
3	Design Concern - Pleasant Valley Substation (Con Ed Owned)	Lack of space for additional panels in the control house.	The control house will need to be expanded to accommodate the additional panels. This is more apparent with the additional line for the Cricket Valley Project. *(Expansion of the control house is included in the independent estimates.)*
4	Visual Concern – Proposed Transmission Lines	Potential of public opposition due to visual impact. NYS PSC has encouraged that new structures have minimal increase in height.	Need to address during detail engineering. The Developer's proposal has the same number of structures as the existing line but 14% of them have an increase in height between 5-ft. and 20-ft. This increases the siting risk of this proposal.

5	Obtaining Site Control and Property Acquisition	Proposal utilizes existing ROW owned by National Grid. *De minimis* property may need to be acquired for access and construction marshalling yards.	Negotiations with the incumbent utility could result in potential cost and schedule implications. The review team's schedule provides two years for negotiation and procurement of ROW beginning with the notice to proceed. This should be sufficient time making this a potential but low risk. The estimate contingency should be sufficient to cover potential increased costs which is considered a low probability.

T030 – Segment B Enhanced Base Proposal - North American Transmission/NYPA			
#	**Risk Title**	**Description**	**Comment**
1	FAA requirements	Additional requirements may be required to accommodate air traffic	Green Acres Airport is located about 700 feet east of the proposed ROW. The risks are mitigated by early and frequent coordination with the FAA and the local airport.
2	Design Concern - Pleasant Valley Substation (Con Ed Owned)	The Developer proposes terminating the new 345 kV line from Knickerbocker Substation in Bay #2 of Pleasant Valley Substation, which could require Network Upgrade Facilities to expand the Pleasant Valley Substation depending on the outcome of the NYISO's 2017 Class Year Study.	This will likely require adding two 345 kV breakers with disconnect switches to Bay #1. The Cricket Valley line will be moved from Bay #2 to Bay #1. Bay #2 will then be available for the new line from Knickerbocker. *(This additional work is not included in the independent estimates.)*
3	Design Concern - Pleasant Valley Substation (Con Ed Owned)	Lack of space for additional panels in the control house.	The control house will need to be expanded to accommodate the additional panels. This is more apparent with the additional line for the Cricket Valley Project. *(Expansion of the control house is included in the independent estimates.)*
4	Visual Concern – Proposed Transmission Lines	Potential of public opposition due to visual impact. NYS PSC has encouraged that new structures have minimal increase in height.	Need to address during detail engineering. The Developer's proposal has the same number of structures as the existing line but 14% of them have an increase in height between 5-ft. and 20-ft. This

			increases the siting risk of this proposal.
5	Obtaining Site Control and Property Acquisition	Proposal utilizes existing ROW owned by National Grid. *De minimis* property may need to be acquired for access and construction marshalling yards.	Negotiations with the incumbent utility could result in potential cost and schedule implications. The review team's schedule provides two years for negotiation and procurement of ROW beginning with the notice to proceed. This should be sufficient time making this a potential but low risk. The estimate contingency should be sufficient to cover potential increased costs which is considered a low probability.

T032 – 16NYPP1-1B AC Transmission - ITC			
#	**Risk Title**	**Description**	**Comment**
1	FAA requirements	Additional requirements may be required to accommodate air traffic	Green Acres Airport is located about 700 feet east of the proposed ROW. The risks are mitigated by early and frequent coordination with the FAA and the local airport.
2	Design Concern - Pleasant Valley Substation (Con Ed Owned)	The Developer proposes terminating the new 345 kV line from Knickerbocker Substation in Bay #2 of Pleasant Valley Substation, which could require Network Upgrade Facilities to	This will likely require adding two 345 kV breakers with disconnect switches to Bay #1. The Cricket Valley line will be moved from Bay #2 to Bay #1. Bay #2 will then be available

		expand the Pleasant Valley Substation depending on the outcome of the NYISO's 2017 Class Year Study.	for the new line from Knickerbocker. *(This additional work is not included in the independent estimates.)*
3	Design Concern - Pleasant Valley Substation (Con Ed Owned)	Lack of space for additional panels in the control house.	The control house will need to be expanded to accommodate the additional panels. This is more apparent with the additional line for the Cricket Valley Project. *(Expansion of the control house is included in the independent estimates.)*
4	Visual Concern – Proposed Transmission Lines	Potential of public opposition due to visual impact. NYS PSC has encouraged that new structures have minimal increase in height.	ITC's proposal has a less significant structure height increase than other developer proposals (46% with 5-ft. or less increase and only 1% with 5-ft. to 10-ft. increase) but increases the total number of structures by 15%. The increase in the total number of structures could increase the risk of adverse impact on visual and agricultural resources. Impact of structure placement will have to be determined during detailed engineering. This is considered one of the highest risks for this proposal.
5	Obtaining Site Control and Property Acquisition	Proposal utilizes existing ROW owned by National Grid.	Negotiations with the incumbent utility could result in potential cost and schedule implications.

		De minimis property may need to be acquired for access and construction marshalling yards.	The review team's schedule provides two years for negotiation and procurement of ROW beginning with the notice to proceed. This should be sufficient time making this a potential but low risk. The estimate contingency should be sufficient to cover potential increased costs which is considered a low probability.
6	Operation Concern – Triple Circuit Transmission Design	Developer proposes using triple circuit structures between Churchtown Substation and Pleasant Valley Substation. The proposed structures are in a two-pole configuration with one 345 kV circuit attached horizontally to an upper crossarm and two 115 kV circuits attached side by side horizontally to a lower crossarm.	The proposed compact design conserves space within the transmission corridor but creates an operations concern. Future maintenance of the transmission circuits and associated structures may depend on the outage availability of all the circuits attached. A maintenance plan must be developed prior to putting this configuration into service.

4.4. **Expandability**

In evaluating the expandability of a proposed regulated Public Policy Transmission Project, the NYISO OATT section 31.4.8.1.3 prescribed the following: "The ISO will consider the impact of the proposed project on future construction. The ISO will also consider the extent to which any subsequent expansion will continue to use this proposed project within the context of system expansion."

The review team conducted an initial review of the expansion capability of the Developers' proposals. The review centered predominately on the Developers' claimed expandability as presented in their proposals:

4.4.1.**Items that may be considered common to all proposals:**

Many of the more common design approaches that could be employed on a transmission project to afford future expandability are not applicable since the objective of this project is to utilize existing rights-of-way (ROW). Much of the existing transmission ROW will be fully utilized in construction of this project but there is some opportunity for expansion.

Potential transmission expansion includes the following:

- All proposals for Segment A involve replacement of the existing Porter-Rotterdam 230 kV circuits, line #30 and line #31, with an Edic to New Scotland 345 kV line. This will provide space for future use of the existing ROW and may allow for the addition of another circuit from Edic or Porter to Princetown Junction within the existing ROW, based on current electrical clearance requirements. Any proposal to construct an additional circuit is subject to the applicable permitting and regulatory requirements, such as public acceptance of visual impact, EMF compliance, compatibility with existing gas facilities and regulatory approvals.
  - For the base proposals, NextEra affords the most efficient use of the ROW by utilizing 100 ft. single-pole delta structures. National Grid/Transco, NAT/NYPA and ITC propose using 65-85 ft. H-pole structures, which requires the use of more space within the ROW. In all base proposals, there may be adequate space in the ROW remaining for an additional 345 kV line. However, a compact transmission line configuration may be required to fit a future 345 kV line in the remaining ROW.
  - All alternative proposals may also provide adequate space within the ROW for a future line with the exception of NAT/NYPA T027. The NAT/NYPA T027 double circuit line proposal utilizes all 4 existing circuit positions for the first 12 miles out of Edic.
  - During detailed engineering the placement of structures could be optimized to maximize the remaining ROW.
  - Refer to the table below for summary of the ROW requirements for each Developer's projects in the Edic to Princetown Junction corridor.

Summary of ROW Requirements for Segment-A Projects From Edic to Princetown Junction							
Sector	Corridor Width (ft.)	Developer	Proposal	Proposed Structure Configuration	ROW Reqd. (ft.)	ROW Corridor Remaining (ft.)	Remarks
Edic SS to Prince -town Jct	200	NGRID/ Transco	T018	1 Ckt – 345 kV H-pole Horizontal	120	80	Sufficient reserved ROW for expansion utilizing Compact Vertical Configuration
		NextEra	T021	1 Ckt – 345 kV Single Pole Delta	80	120	Sufficient reserved ROW for expansion utilizing H-pole Horizontal Configuration
		NAT/NYPA	T026 & T028	1 Ckt – 345 kV H-pole Horizontal	140	60	Sufficient reserved ROW for expansion utilizing Compact Vertical Configuration
		NAT/NYPA	T027	2 Ckt – 345 kV Single Pole Vertical	105	95	Sufficient reserved ROW for expansion utilizing Single Pole Delta Configuration with exception of the first 12.6 miles out of Edic
		ITC	T031	1 Ckt – 345 kV H-pole Horizontal	100	100	Sufficient reserved ROW for expansion utilizing Single Pole Delta Configuration

- The new Edic to New Scotland line for Segment A could be designed for double circuit capability similar to the NAT/NYPA T027 double circuit line proposal.
- Transmission lines could be constructed with higher ampacity conductor or re-conductored in the future.
- Most proposals provide for future expansion of substations or could be expanded to provide for additional line terminals and transformers in the new substations.

4.4.2. **Items specific to each proposal:**

Potential transmission expansion for each Developer's specific proposal is discussed in the summary table below.

Significant items specific to each developer: Potential Transmission Expansion for Segment A				
Proposal	**Segment**	**Developer**	**Transmission Line Expandability**	**Substation Expandability**
T018 - New York Energy Solution Segment A	A	National Grid/Transco	No significant expandability to NGRID's proposal beyond the common items mentioned above.	At Rotterdam Substation, the 345 kV gas-insulated substation design provides one open 345 kV bay position and room for additional 345 kV bays. Design also provides ability to connect one additional 345 kV/115 kV transformer to support the local transmission system. Lastly, the design allows for the rebuilding of the 115 kV straight bus configuration into a breaker-and-a-half configuration.
T021 - Enterprise Line: Segment A	A	NextEra	No significant expandability to NextEra's proposal beyond the common items mentioned above.	NextEra is proposing a "Princetown" substation approximately 3 miles east of the junction and 2 miles west of Rotterdam Substation on a new greenfield site. The design provides two open 345 kV bay positions and room on the property for adding bays. NextEra's proposal maintains the existing and aging Rotterdam 230 kV yard intact.

T025 - Segment A + 765 kV Proposal	A	NYPA/North American Transmission	Including the common items above, the Developer states that converting the Marcy-New Scotland-Knickerbocker 345 kV transmission lines to 765 kV could significantly increase Central East transfer capability. (Note that T025 includes this conversion.)	At Rotterdam, rebuilding and relocating the 345 kV substation allows for the rebuilding of the 115 kV straight bus configuration into a breaker-and-a-half configuration. A new Princetown Substation is proposed at the junction of the 345 kV Edic-New Scotland line and the 230 kV Porter to Rotterdam lines. Due to the proximity to the neighboring properties, constructing or expanding the substation will be difficult. At New Scotland, proposal T025 eliminates the 345 kV line to Alps thus creating an open line terminal position.
T026 - Segment A Base Proposal	A	NYPA/North American Transmission	No significant expandability to NAT/NYPA's proposal beyond the common items mentioned above.	At Rotterdam, rebuilding and relocating the 345 kV substation allows for the rebuilding of the 115 kV straight bus configuration into a breaker-and-a-half configuration.

T027 - Segment A Double Circuit Proposal	A	NYPA/North American Transmission	No significant expandability to NAT/NYPA's proposal beyond the common items mentioned above.	At Rotterdam, rebuilding and relocating the 345 kV substation allows for the rebuilding of the 115 kV straight bus configuration into a breaker-and-a-half configuration. A new Princetown Substation is proposed at the junction of the 345 kV Edic-New Scotland line and the 230 kV Porter to Rotterdam lines. Due to the proximity to the neighboring properties, constructing or expanding the substation will be difficult. *At Edic, it should be noted that a potential spare terminal position (shown on the Developer's drawings) in the proposed bay north of Bay #1 is already occupied by a 345 kV capacitor bank.*

T028 - Segment A Enhanced Proposal	A	NYPA/North American Transmission	No significant expandability to NAT/NYPA's proposal beyond the common items mentioned above.	At Rotterdam, rebuilding and relocating the 345 kV substation allows for the rebuilding of the 115 kV straight bus configuration into a breaker-and-a-half configuration. A new Princetown Substation is proposed at the junction of the 345 kV Edic-New Scotland line and the 230 kV Porter to Rotterdam lines. Due to the proximity to the neighboring properties, constructing or, if constructed, expanding the substation will be difficult.
T031 - 16NYPP1-1A AC Transmission	A	ITC	No significant expandability to ITC's proposal beyond the common items mentioned above.	ITC's proposal does not provide any additional bays at Princetown or Rotterdam Substations. ITC's proposal maintains the existing and aging Rotterdam 230 kV yard intact. Additionally, physical limitations at these properties may preclude future expansions without purchasing additional property.
Potential Transmission Expansion for Segment B				
Proposal	**Segment**	**Developer**	**Transmission Line Expandability**	**Substation Expandability**

T019 - New York Energy Solution Segment B	B	National Grid/Transco	No significant expandability to NGRID's proposal beyond the common items mentioned above.	At Knickerbocker Substation, the proposed design provides one open 345 kV bay position. The Knickerbocker design also allows the 345 kV ring bus configuration to be converted to a breaker-and-a-half configuration with room on the property for adding bays. At Churchtown Substation, design provides one open 115 kV bay position. Additional breaker-and-a-half bays can be added in the future.
T022 - Enterprise Line: Segment B	B	NextEra	No significant expandability to NextEra's proposal beyond the common items mentioned above.	At North Churchtown Substation, the proposed design provides one open 115 kV bay position and with room on the property for adding bays. The southern-most bay could also be built out to a breaker-and-a-half configuration. At Knickerbocker Substation, the proposed design provides one open 345 kV bay position. The Knickerbocker design also allows the 345 kV ring bus configuration to be converted to a breaker-and-a-half configuration with room on the property for adding bays.

T023 - Enterprise Line: Segment B-Alt	B	NextEra	No significant expandability to NextEra's proposal beyond the common items mentioned above.	Same comments as stated for T022 also apply to T023.
T029 - Segment B Base Proposal	B	NYPA/North American Transmission	No significant expandability to NAT/NYPA's proposal beyond the common items mentioned above.	The Developer proposes a new 115 kV breaker-and-a-half substation and eliminates the existing NYSEG Churchtown substation. The three-bay substation is proposed for south of the existing substation and north of Orchard Road. This location will permit future expansion of the proposed substation to the north. At Knickerbocker, the Developer's design allows the 345 kV ring bus configuration to be converted to a breaker-and-a-half configuration with room on the property for adding bays.

T030 - Segment B Enhanced Proposal	B	NYPA/North American Transmission	No significant expandability to NAT/NYPA's proposal beyond the common items mentioned above.	The Developer proposes a new 115 kV breaker-and-a-half substation and eliminates the existing NYSEG Churchtown substation. The three-bay substation is proposed for south of the existing substation and north of Orchard Road. This location will permit future expansion of the substation to the north. At Knickerbocker, the Developer's design allows the 345 kV ring bus configuration to be converted to a breaker-and-a-half configuration with room on the property for adding bays.

T032 - 16NYPP1-1B AC Transmission	B	ITC	No significant expandability to ITC's proposal beyond the common items mentioned above.	At Knickerbocker Substation, the design provides one open 345 kV bay position and one open 115 kV bay position. The Knickerbocker design also allows the 345 kV and 115 kV ring bus configurations to be converted to a breaker-and-a-half configuration. The detailed design could also optimize the physical layout on the property possibly providing room for additional bays. Additionally, during detailed design, the ability to connect up to two 345 kV – 115 kV transformers to support the local transmission system could be provided.

4.5. Site Control and Real Estate

4.5.1. **Site Control**

In evaluating site control of a proposed regulated Public Policy Transmission Project, The NYISO OATT section 31.4.8.1.6 specifies that the evaluation will assess the following: "The extent to which the Developer of a proposed regulated Public Policy Transmission Project has the property rights, or ability to obtain the property rights, required to implement the project. The ISO will consider whether the Developer: (i) already possesses the rights of way necessary to implement the project; (ii) has completed a transmission routing study, which (a) identifies a specific routing plan with alternatives, (b) includes a schedule indicating the timing for obtaining siting and permitting, and (c) provides specific attention to sensitive areas (*e.g.,* wetlands, river crossings, protected areas, and schools); or (iii) has specified a plan or approach for determining routing and acquiring property rights."

The review team conducted a review of the Developers' property rights acquisition plans contained in their proposals. The review centered on the Developers' information and plans presented in their proposals and additional information provided in response to NYISO RFIs.

In all proposals, the following is common for the property rights acquisition process:

- The NYPSC prescribed specific requirements in Appendix B of its Order Finding Transmission Needs Driven by Public Policy Requirements, dated December 17, 2015.
  - No transmission solution shall be selected that requires the acquisition of new permanent transmission ROW, except for *De-minimis* acquisitions that cannot be avoided due to unique circumstances. The NYPSC specified that for the purposes of meeting this criterion, the transfer or lease of existing transmission ROW property or access rights from a current utility company owner to a Developer shall not be considered such an acquisition.
  - The selection process for transmission solutions shall favor transmission solutions that minimize the acquisition of property rights for new substations and substation expansions. The NYPSC specified that for the purposes of this criterion, the transfer or lease of existing property rights from a current utility company owner to a Developer shall not be considered such an acquisition.
  - No transmission solution shall be selected that includes a crossing of the Hudson River, either overhead, underwater, in riverbed, or underground, or in any other way, by any component of the transmission facility.

The non-incumbent Developers all claim two common rights in obtaining property:

- The Developers cite the NYPSC's "Order Finding Transmission Needs Driven by Public Policy Requirements" as requiring incumbent utilities to engage in non-discriminatory, good faith negotiation of terms in obtaining rights to use an incumbent utility's ROW. The NYPSC's order specifically stated that the *"Commission expects the utility company owner to bargain in good faith to reach an agreement with the developer of the transmission solution as to property access and compensation as it would for other linear project developers that seek to co-locate on utility property."* Further, the NYPSC stated that *"incumbent utilities should offer competitors the same terms they offer Transco; there should be no bias shown to Transco."*

- If negotiations with private land owners are unsuccessful, the Developers believe that under New York State Law, they will have eminent domain authority after certification of a route by the NYPSC.

Below is a summary of the team's review:

Summary of Property Rights Acquisition

#	Developer	Property Rights Acquisition
T018 T019	National Grid/Transco	NGRID completed a routing study and states that "the ROW targeted for this project is either fee-owned by, or under the control (via easement or permit)," of NGRID. NGRID will transfer ownership of all assets to the Transco.
T025 T026 T027 T028 T029 T030	NYPA/North American Transmission	The proposed project's route would use existing ROW owned by the incumbent utility (National Grid). NAT/NYPA lays out a plan in their proposal (Attachment C.2AProperty Right Acquisition Plan) for obtaining site control. They would rely on NYPA, which has extensive experience in negotiating and obtaining easements, including from other incumbent utilities, to lead negotiations with the other New York Transmission Owners. NAT/NYPA does not yet possess the required ROWs. However, they have a documented plan to obtain the real property.
T021 T022 T023	NextEra	The proposed project's route would use existing ROW owned by the incumbent utility (National Grid) with the exception of property to be acquired for the Princetown Junction substation. NextEra has already obtained an option to purchase the real estate for the proposed substation site. NextEra lays out a plan for obtaining site control in their proposal (Attachment B Requirement #7). NextEra does not yet possess the required ROWs. However, it has a documented plan to obtain the necessary real property.

T031 T032	ITC	Their route would use existing ROW owned by the incumbent utility (National Grid). It is likely that some additional property will be required to construct their proposed Princetown Junction Substation. ITC lays out a plan for obtaining site control in their proposal (Attachment C.2A) ITC does not yet possess the required ROWs. However, they have a documented plan to obtain the real property.

4.5.2. **Real Estate Analysis**

A review of the proposed routing for the transmission lines and substations was completed to identify property that each Developer would need to obtain for their proposed project. Cost estimates for the property were derived by obtaining recent comparable sales and tax assessments from municipal tax records in the town and county where the property is located and commercially available software. The estimated cost of the required property was included in the independent cost estimates.

All Developers propose to utilize existing incumbent-owned property and ROW with the following exceptions:

- All proposals for Segment A will likely require the acquisition of easements to meet EMF guidelines in the Princetown Junction to New Scotland corridor. NAT/NYPA's T025 765 kV line conversion also requires additional easements to meet EMF guidelines.
- *De minimis* property rights may be required for construction laydown area and access, tree trimming or danger tree clearing.
- Development of a new substation at the Princetown Junction may require additional property or easements.
  - Proposals T018 and T026 do not include a substation at Princetown Junction.
  - NextEra proposal T021 proposes to build the substation at Princetown Junction on a new greenfield site for which they have obtained an option to acquire.
  - Proposal T031 proposes to tie all seven lines into a substation at Princetown Junction, which will require additional property.
  - Proposals T025, T027, and T028 propose smaller substations at Princetown Junction with four breaker ring bus arrangements or GIS equipment that may fit

in the existing property. Although it appears that placing these stations on the site is possible, the review team has identified this as a potential risk that will need to be carefully considered and, if necessary, potentially mitigated during detailed engineering and licensing development.

- A summary of substation property requirements for Segment A is shown below. The amount of property required for each proposal is listed by the acreage within exiting utility owned property and the amount that needs to be acquired from a non-utility owner.

Substation Property Requirements for Segment A

PROPOSAL	DEVELOPER	SUBSTATION	COUNTY	OWNER NAME	
				NATIONAL GRID/ NIAGARA MOHAWK (ACRES)	NON-UTILITY (ACRES)
T018	National Grid / NY Transco	Rotterdam Substation (Extension)	Schenectady	2.60	
T021	NextEra Energy	Princetown Substation (New)	Schenectady		24.0
T025	NYPA / NAT	Knickerbocker Substation (New)	Rensselaer	30.00	
		Princetown Substation (New)	Schenectady	3.00	
		Rotterdam Substation (New)	Schenectady	7.50	
T026	NYPA / NAT	Rotterdam Substation (New)	Schenectady	7.50	
T027	NYPA / NAT	Edic Substation (Extension)	Oneida	1.25	
		Princetown Substation (New)	Schenectady	3.00	
		Rotterdam Substation (New)	Schenectady	7.50	
T028	NYPA / NAT	Princetown Substation (New)	Schenectady	3.00	
		Rotterdam Substation (New)	Schenectady	7.50	
T031	ITC	Princetown Substation (New)	Schenectady	5.50	2.6
		Rotterdam Substation (Extension)	Schenectady	2.50	

4.6. Operational Plan

The review team conducted an evaluation of the Developers' operations and maintenance (O&M) plans detailed in their proposals. The review centered on the Developers' proposals and additional information provided in response to a NYISO RFI submitted to Developers in November 2017. The following are common elements of the Developers O&M plans. :

- All O&M activities will comply with NERC regulations.
- Real time system operations will be conducted by the NYISO.
- Control center schedules will be 24-7-365.

Below is a summary of the review team's review of the proposed O&M plans . The review team did not identify any major flaw with any Developers' O&M plans. With the exception of ITC, all Developers propose to operate their facilities from an in-state control center.

Summary Proposed of O&M Plans			
#	**Developer**	**Operations**	**Maintenance**
T018 T019	National Grid / TRANSCO	NGRID/TRANSCO did not provide an O&M plan with its proposal. However, the review team recognizes that as a New York Transmission Owner, NGRID has a demonstrated history of operating and maintaining its transmission and distribution systems.	See comment under Operations.
T021 T022 TO23	NextEra	NextEra will build and operate a primary and backup control center within New York State. Multi-site EMS with redundant servers and telecommunication will interface real-time situational awareness with the NYISO and neighboring control areas. Power Delivery and Support Center in Florida provides added backup. Policies and training program for operators to meet NERC, Transmission Owner's and System Operator standards.	Transmission line and substation maintenance activities will be managed and performed by NextEra staff supplemented with third-party contractors. NextEra has experience maintaining transmission systems in other areas of the country and provided a detailed maintenance plan.
T025 T026 T027 T028 T029 T030	North American Transmission/ New York Power Authority	Developer states real-time system monitoring and control center services will be provided by NYPA from their Blenheim Gilboa Facility.	Transmission line and substation maintenance will be managed by local NYPA staff. Maintenance activities will be performed by third-party contractors. NYPA has

			experience maintaining 1,400 miles of transmission with an in-house staff of engineers, operators, planners, electricians and line engineers.
T031 T032	ITC	ITC Holdings currently operates and maintains 15,000 miles of transmission and 557 substations from a control center in Novi, Michigan and proposes to operate the proposed facilities from that center.	ITC uses dedicated O&M contractors under exclusive contract for storm restoration. ITC Holdings in-house staff of engineers, designers, P&C, SCADA and construction supervisors are available to assist after the project is put in-service. ITC has Line Outage Guidelines and an Emergency Operations Plan that incorporates use of a local utility's workforce with whom they would partner to provide O&M services.

4.7. Field Reviews

Field review of proposed transmission line routes and substations was completed by the review team. The results of those field reviews are documented in a report supplemented with checklists and maps marked with comments and observations. The review team used the results to develop the project scheduling and cost estimates and identify potential issues and risks with the proposed design, siting and routing.

4.8. Work Plans

The Developers' work plans should provide a detailed description of the overall work plan from start to finish; should list items to be done by in-house staff; and list services that will be performed by consultants or contractors. No significant deficiencies were found in the work plans and processes proposed by any of the Developers. A high-level summary of the work plans follows:

- All qualified Developers have a history of managing successful transmission and substation design and construction projects. There was variation in the degree of self-performance of work versus using third-party contractors. All Developers propose to manage internal and external resources.

- All Developers include work plan activities in their estimates and schedules. More detailed analysis of the construction work plans is discussed in the Schedule analysis section of this report.
- All Developers propose Permitting and Regulatory activities to be performed by a mix of in-house staff and outside consultants.
- All Developers propose to contract for a portion of the engineering and self-perform the remainder of the engineering work.
- All Developers propose to contract transmission line and substation surveying.
- All Developers propose to contract for site work and construction. National Grid plans to contract out or self-perform above grade/structures and electrical construction.
- NextEra and ITC indicate that they would share public outreach efforts with public relations firms. All Developers signal the importance of early and careful attention to public outreach.
- It was not possible to evaluate external team members at this stage, as they are expected to be selected competitively after award from among leading engineering, geo-technical, environmental and construction firms.

4.9. Environmental

All of the Developers' proposals recognize the need for environmental studies, permits and approvals from various federal and state government agencies. Standard permit requirements include: transmission approval from the NYPSC under Article VII; wetland delineation and protection; archeological studies; storm water pollution prevention requirements; stream protection; invasive species management; agricultural land protection; and rare, threatened and endangered species surveys and protection. The Developers acknowledge the possibility that their proposals could require modification to address additional permit conditions. At this point in the project planning process, it is difficult to ascertain what those permit conditions would be. Based on available information, there do not appear to be any environmental issues that would prevent the projects from being constructed. The following is a general discussion of the most significant environmental issues and factors that could affect each of the proposals.

4.9.1. **Transmission Lines**

All the projects propose utilizing the same existing ROW for the transmission lines, except for the additional 765 kV line proposed in T025 proposal. Any additional clearing of the ROW to accommodate the proposed transmission lines is expected to proportionally increase the environmental impacts and risks. These impacts and risks are further described below.

4.9.1.1. **Clearing of ROW**

The tables below present the estimated acreage that would need to be cleared of trees to accommodate the transmission lines for each proposed project. The ROW being cleared will require environmental and archeological studies. These studies could discover sensitive areas that may require re-routing of the transmission line or relocating structures to avoid area impacts. The projects will also require vegetative mowing within existing ROWs, which is typically considered a slight environmental impact, and has not been included in the tables below.

AC TRANSMISSION PROJECT SEGMENT A: Estimate of Heavy Clearing (Acres)						
T018	T021	T025	T026	T027	T028	T031
19	0	132	34	0	34	38

AC TRANSMISSION PROJECT SEGMENT B: Estimate of Heavy Clearing (Acres)					
T019	T022	T023	T029	T030	T032
40	10	19	28	34	19

4.9.1.2. **ROW Access, Clearing, and New Structures in Wetlands**

The projects, including the substation footprint and/or the new transmission structures, could have a permanent impact on regulated wetlands. The table below presents the estimated acreage of wetland impacts including permanent wetland loss from the new structures footprints, and the estimated acreage of forested wetlands that will likely be cleared by each project due to the proposed transmission lines. Forested wetlands are a very valuable ecological resource in New York, and proposed tree clearing will require mitigation of impacts, including possible replacement offsite. While an estimate of these mitigation costs has been provided, there is the potential that project regulatory approval could take additional time, and an alternate structure location or construction access may be required to avoid the wetland entirely.

Access through wetlands and locating structures in wetlands will need to be avoided to the greatest extent practical. Black Creek Marsh State Wildlife Management Area, located on

the Princetown-New Scotland section of Segment A, will present some difficult access issues that will have to be approved by the New York State Department of Environmental Conservation (NYSDEC). This could require the use of specialized equipment or possible relocation of the transmission line.

Additionally, temporary wetland impacts are anticipated to allow construction access and the placement of temporary matting will be required to minimize surface damages to wetlands. Post-construction restoration efforts may also be required depending on the severity of these construction impacts (*e.g.,* soil disturbance, vegetation dieback).

Regarding permanent impacts to wetlands, loss of wooded wetlands due to ROW clearing, and loss of any wetlands due to proposed structure installations (assuming 60 square feet for each pole footprint) are estimated in the tables below. If on-site mitigation is not possible due to required ROW maintenance, then offsite mitigation may be necessary.

AC TRANSMISSION PROJECT A: Estimate of Impacted Wetlands (Acres)						
T018	T021	T025	T026	T027	T028	T031
0.456	0.198	1.257	0.46	0.493	0.463	0.561

AC TRANSMISSION PROJECT SEGMENT B: Estimate of Impacted Wetlands (Acres)					
T019	T022	T023	T029	T030	T032
0.055	0.064	0.064	0.064	0.064	0.072

For the project to be approved under the United States Army Corps of Engineers (USACE) Nationwide Permit Program (NWP 12 Utility Line Activities), the actions required for the construction, maintenance, repair, and removal of utility lines and associated facilities (including the construction of access roads) in waters of the United States (*i.e.* wetlands) cannot result in the loss of greater than ½ acre of non-tidal waters for a single and complete project. If the project does not qualify for the Nationwide Permit, an Individual Permit will be required, which may involve a longer review timeframe.

4.9.1.3. **Clearing of Protected Species Habitat**

The project area may include critical habitats for rare, threatened or endangered plant or animal species, such as the Northern Long Eared Bat, Bog Turtle, Karner Blue Butterfly

and/or Dwarf Wedgemussel. If such habitat is identified, agency review and response times are likely to increase along with timeframe for obtaining project approvals, and an alternate route may be required to protect the critical habitat. Seasonal restrictions may also be imposed to control ROW mowing or clearing, which could further delay the project construction timeline.

4.9.1.4. **Visual Impacts**

Typically, visual impacts are categorized as minor, moderate or significant/major with regards to how project structures may be seen from sensitive receptors (i.e., parks, trails, scenic roads, historic sites) and overall community/neighborhood character. Visual assessments of the proposed transmission lines may also be required, which would include visual simulations and viewshed maps. Many factors affect the visibility and visual impact of the proposed lines, including surrounding vegetation, presence of existing lines, topography, land use, structure design and the number of structures. If the line is determined to impact scenic resources or is not compatible with the character of the community, the line configuration could require modifications during final design to reduce the visual impact. The type of structure will affect its visibility with lattice type towers having the highest potential visual impact. No lattice towers are proposed for this project and most of the structures being removed are lattice towers. All Developers have proposed the use of steel or concrete monopole and H frame structures. Since all of the proposed projects are essentially using the same existing ROW, with the exception of the 765 kV portion of T025 proposal, the remaining variable for evaluating potential visual impact is the structure height and the number of structures.

In its December 17, 2015 Order, the NYPSC noted that it "will not mandate criteria to be applied by the NYISO, but all proposers of transmission solutions should be aware as they prepare their submissions that minimizing structure heights will be an important issue in the siting review process so applicants should be careful to not lock themselves into designs that could not later be approved. All applicants are encouraged to minimize the heights of the proposed structures while keeping them within the context of their 2015 proposals. In making this statement, the Commission is not in any way suggesting that it would be suitable for applicants to appropriate the structure designs of other applicants." The NYPSC concluded that height increases of less than 25 feet over exisiting structures will not create a significant adverse visual impact of a regional nature (December 12, 2015 Order at p. 35). The construction of new structures even with minimal increase in height may result in public opposition due to their potential local visual impact. The PSC determined that the local visual impacts will be addressed in the Article VII siting proceedings.

Segment A

The height of the structure may increase its visibility and, therefore, potentially increase the visual impact. The following tables summarize the estimated difference in height of the existing structures being removed and proposed structures for the Segment A projects. The comparison demonstrates the relative height differences for the proposed projects. It should be noted that the proposed lines parallel the existing line #18, between Princetown Junction and New Scotland, which is constructed for 765 kV operation and has structures ranging in height from 135 feet to 195 feet where the proposed structures range in height from 60 to 145 ft. This may reduce the visual impact of the proposed line. Green highlights in the table below indicates that no visual impacts are expected due to the height of the proposed structures. When structures are replaced, height increases over 10 feet are typically classified as “severe” visual impacts, absent a viewshed analysis.

Proposed Height Increase for Segment A	Number of Structures					
	T018	**T021**	**T025**	**T026/T028**	**T027**	**T031**
1. Less than 0 ft.	62	0	269	269	19	28
2. Same Ht.	9	0	7	7	11	581
3. From 0.1ft to 5 ft.	30	3	51	51	76	69
4. From 5.1 ft to 10 ft.	56	5	33	33	5	10
5. From 10.1 ft to 15 ft.	72	45	35	34	47	0
6. From 15.1 ft to 20 ft.	97	72	65	66	40	2
7. From 20.1 ft to 25 ft.	74	490	38	38	69	1
8. From 25.1 ft to 30 ft.	68	67	9	9	204	0
9. From 30.1 ft to 40 ft.	52	67	18	18	95	0
10. From 40.1 ft to 50 ft.	21	21	10	9	34	0
11. From 50.1 ft to 60 ft.	23	4	6	1	22	0
12. From 60.1 to 70 ft.	8	1	1	0	1	0
13. From 70.1 to 80 ft.	2	1	1	1	4	0
14. From 80.1 to 90 ft.	0	0	5	0	4	0
15. From 90.1 to 100 ft.	1	0	3	1	0	0
16. From 100.1 to 110 ft.	0	0	0	0	0	0
17. From 110.1 to 120 ft.	0	0	2	0	0	0
Total	575	776	553	537	631	691

	Percent of Structures					
	T018	**T021**	**T025**	**T026/T028**	**T027**	**T031**
1. Less than 0 ft.	10.8%	0.0%	48.6%	50.1%	3.0%	4.1%
2. Same Ht.	1.6%	0.0%	1.3%	1.3%	1.7%	84.1%
3. From 0.1ft to 5 ft.	5.2%	0.4%	9.2%	9.5%	12.0%	10.0%
4. From 5.1 ft to 10 ft.	9.7%	0.6%	6.0%	6.1%	0.8%	1.4%
5. From 10.1 ft to 15 ft.	12.5%	5.8%	6.3%	6.3%	7.4%	0.0%
6. From 15.1 ft to 20 ft.	16.9%	9.3%	11.8%	12.3%	6.3%	0.3%
7. From 20.1 ft to 25 ft.	12.9%	63.1%	6.9%	7.1%	10.9%	0.1%
8. From 25.1 ft to 30 ft.	11.8%	8.6%	1.6%	1.7%	32.3%	0.0%
9. From 30.1 ft to 40 ft.	9.0%	8.6%	3.3%	3.4%	15.1%	0.0%
10. From 40.1 ft to 50 ft.	3.7%	2.7%	1.8%	1.7%	5.4%	0.0%
11. From 50.1 ft to 60 ft.	4.0%	0.5%	1.1%	0.2%	3.5%	0.0%
12. From 60.1 to 70 ft.	1.4%	0.1%	0.2%	0.0%	0.2%	0.0%
13. From 70.1 to 80 ft.	0.3%	0.1%	0.2%	0.2%	0.6%	0.0%
14. From 80.1 to 90 ft.	0.0%	0.0%	0.9%	0.0%	0.6%	0.0%
15. From 90.1 to 100 ft.	0.2%	0.0%	0.5%	0.2%	0.0%	0.0%
16. From 100.1 to 110 ft.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
17. From 110.1 to 120 ft.	0.0%	0.0%	0.4%	0.0%	0.0%	0.0%

Based upon the height increase comparison estimates above, proposal T031 would have the least potential visual impacts by a considerable margin, although it does use more structures than all other proposals, except proposal T021. Proposal T031 is also removing 20 additional miles of lattice structures along Princetown Junction to New Scotland (circuit 14), which none of the other proposed projects are removing except for 6.3 mile being removed by T027. Using the 10-foot height increase as the basis for ranking the potential visual impacts, proposals T026 andT028 would have the second lowest visual impact, with about a third of the structures having a height increase of 10 feet or more. Proposal T018 would be fourth followed by proposal T027. Proposal T021 would have the most potential visual impact with 99% of the structures having a height increase of more than 10 feet. In addition, proposal T021 is proposing the greatest number of structures.

Proposal T025 would have the third lowest overall potential visual impact based upon the table and method discussed above. However, the most significant potential visual impacts for proposal T025 are due to the proposed height increase for the 2.5 miles of new 765 kV transmission line structures. This will involve 16 new two and three pole structures that range in height from 130 to 165 feet. In the section of the line where there is the existing 115 kV transmission line, the four new structures will be approximately 80 feet taller than the existing structures. On the other sections, the height increase will be approximately 40 feet or more.

Segment B

The following tables summarize the estimated difference in height of existing structures being removed and proposed structures for Segment B projects. The comparision demonstrates the relative height differences for the proposed projects. Green highlights in the table below indicates no visual impact due to height of the proposed structures. When structures are replaced, height increases over 10 feet are typically classified as “severe” visual impacts, absent a viewshed analysis.

Proposed Height Increase for Segment B	Number of Structures				
	T019	**T022**	**T023**	**T029/T030**	**T032**
1. Less than 0 ft.	87	49	6	222	240
2. Same Ht.	3	1	2	77	6
3. From 0.1ft to 5 ft.	97	58	60	44	218
4. From 5.1 ft to 10 ft.	108	181	114	44	6
5. From 10.1 ft to 15 ft.	66	116	227	12	0
6. From 15.1 ft to 20 ft.	20	0	0	3	0
7. From 20.1 ft to 25 ft.	12	0	0	1	0
8. From 25.1 ft to 30 ft.	4	0	0	0	0
9. From 30.1 ft to 40 ft.	4	0	0	0	0
10. From 60.1 ft to 70 ft.	0	0	0	2	0
Total	401	405	409	405	470

	Percent of Structures				
	T019	**T022**	**T023**	**T029/T030**	**T032**
1. Less than 0 ft.	21.7%	12.1%	1.5%	54.8%	51.1%
2. Same Ht.	0.7%	0.2%	0.5%	19.0%	1.3%
3. From 0.1ft to 5 ft.	24.2%	14.3%	14.7%	10.9%	46.4%
4. From 5.1 ft to 10 ft.	26.9%	44.7%	27.9%	10.9%	1.3%
5. From 10.1 ft to 15 ft.	16.5%	28.6%	55.5%	3.0%	0.0%
6. From 15.1 ft to 20 ft.	5.0%	0.0%	0.0%	0.7%	0.0%
7. From 20.1 ft to 25 ft.	3.0%	0.0%	0.0%	0.2%	0.0%
8. From 25.1 ft to 30 ft.	1.0%	0.0%	0.0%	0.0%	0.0%
9. From 30.1 ft to 40 ft.	1.0%	0.0%	0.0%	0.0%	0.0%
10. From 60.1 ft to 70 ft.	0.0%	0.0%	0.0%	0.5%	0.0%

Based upon the estimates and criteria described above, proposal T032 would have the least significant potential visual impact due to height increase; however, it adds 61 (15%) more structures than any other proposed project which could have additional potential visual impacts. Proposal T029 and T030 would have the second least potential visual impact with only 5% of the structures increasing in height by more than 10 feet. Proposals T019 and T022 would have comparable potential visual impacts, with 26% and 29% of the structures increasing in height by more than 10 feet, respectively. However, proposal T022 is proposing to remove 32.3 less miles of lattice structures along Churchtown to Pleasant Valley (circuits 12 and 13) than all the other proposed projects. Proposal T023 would have the most significant potential visual impact, if only the height increase is considered, with 56% of the structures increasing in height by 10 to 15 feet.

4.9.1.5. **Agricultural Impacts**

Early coordination with agricultural landowners, and consideration of potential impacts to farmland will be needed for the proposed project. Siting and construction coordination will be needed to minimize impacts on prime agricultural lands and to limit loss of crop production. Site restoration of disturbed and compacted soils will be required. Herbicide use may be restricted during construction and long-term ROW maintenance operations. Transmission line siting near Certified Organic Farms may require additional planning and consideration for compliance with organic certification. If the proposed transmission line would cross properties within an Agricultural Conservation Easement Program or Land Trust, then additional agency coordination will be needed.

The estimated acreage of agricultural land that will be temporarily impacted by each proposed project within their respective segments is nearly equivalent. Assuming 20-foot-wide matting is used where the ROW is adjacent to Agricultural Districts or crop land, the estimated temporary impact to Segment A would be 94.5 acres, and the estimated temporary impact to Segment B would be 24.75 acres.

4.9.2. **Substations and Switching Stations**

Proposed projects do vary in the number, size and location of new or expanded substations or switching stations. Both temporary and permanent environmental impacts could result from the construction and installation of the proposed stations, including: visual, noise, tree clearing, and increased stormwater run-off (which will likely require construction of stormwater retention). Fewer or smaller stations would have less environmental impact. The table below provides the total estimated area required for the new or expanded stations, including the estimated area for stormwater retention basins, and the total number of stations.

AC TRANSMISSION PROJECT SEGMENT A: Estimated Station Area (Acres/(number))						
T018	T021	T025	T026	T027	T028	T031
2.6 (1)	24.0 (1)	40.5 (3)	7.5 (1)	11.8 (3)	10.5 (2)	10.6 (2)

AC TRANSMISSION PROJECT SEGMENT B: Estimated Station Area (Acres/(number))					
T019	T022	T023	T029	T030	T032
26.8 (3)	19.5 (2)	19.5 (2)	25.4 (2)	25.4 (2)	20.3 (2)

4.10. Replacement of Aging Infrastructure

In Appendix B of the December 17, 2015 Order Finding Transmission Needs Driven by Public Policy Requirements, the NYPSC stated: "The selection process for transmission solutions shall favor transmission solutions that result in upgrades to aging infrastructure." ~~All of the proposed projects include upgrades to aging transmission lines infrastructure~~The December 17, 2015 PSC Order also states on page 66 "*The Commission hereby finds that having considered the extensive record in these proceedings, it is the public policy of the State of New York and the Public Service Commission: to reduce transmission congestion so that large amounts of power can be transmitted to regions of New York where it is most needed; ….. to avoid refurbishment costs of aging transmission*". All of the proposed projects include upgrades to aging transmission lines infrastructure. The below sections analyze the transmission lines being decommissioned and replaced by the proposed projects.

4.10.1. Replacement of Aging Infrastructure – Transmission Lines (Segment A)

The following table is a summary of the transmission line mileages to be replaced for each Segment A proposal. All proposals intend to utilize existing double circuit structures for the first 12.6 miles heading east out of Edic/Porter. These structures are approximately 30 years old. They appear well maintained and in very good physical condition. It would not be prudent to replace those structures at this time. The table below shows that ITC's proposal T031 and NAT/NYPA's proposal T027 would replace more miles of existing infrastructure than the other proposals. ITC intends to rebuild the Princetown to New Scotland section of existing circuit #14. NAT/NYPA (T027) proposes to rebuild 6.3 miles of line# 14 from Princetown Junction where the ROW is only 370 feet wide. The replacement of 6.3 miles of lattice structures with single steel pole vertical structure is to accommodate the proposed double circuit 345 kV line.

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Client:	NYISO		
Project:	AC Transmission Project Evaluation		
Subject:	Report Draft		
Document No.:	AC Transmission Report 06 ~~11~~18 18	**Revision:**	~~7~~8

Replacement of Aging Transmission Lines Infrastructure –Segment A

SEGMENT A	CIRCUIT NUMBER	T018 (NGRID/ NY TRANSCO)	T021 (NEXTERA)	T025 (NAT/ NYPA)	T026 (NAT/ NYPA)	T027 (NAT/ NYPA)	T028 (NAT/ NYPA)	T031 (ITC)
Marcy - New Scotland	18	0	0	2.66	0	0	0	0
Princetown Junction - New Scotland	14[1]	0	0	0	0	6.3	0	20
Miles of 345 kV Removed		**0**	**0**	**2.66**	**0**	**6.3**	**0**	**20**
Edic - Princetown Junction	30[2]	66.8	66.8	66.8	66.8	66.8	66.8	66.8
Edic - Princetown Junction	31[3]	54.2	54.2	54.2	54.2	66.8	54.2	54.2
Princetown Junction - Rotterdam	30	5	5	5	5	5	5	5
Princetown Junction - Rotterdam	31	5	5	5	5	5	5	5
Miles of 230 kV Removed		**131**	**131**	**131**	**131**	**143.6**	**131**	**131**
Princetown Junction - New Scotland	13[4]	2.5	2.5	2.5	2.5	13.4	2.5	0
Miles of 115 kV Removed		**2.5**	**2.5**	**2.5**	**2.5**	**13.4**	**2.5**	**0**
Total Miles of Line Removed		**133.5**	**133.5**	**136.16**	**133.5**	**163.3**	**133.5**	**151**

1 T027 (NAT/NYPA) proposing to replace 6.3 miles of lattice structure with single pole structure and T031 (ITC) proposing to replace entire 20 miles of lattice structure with single pole double circuit lines.

2 All developers are proposing to reuse existing double circuit poles of line #30 to replace existing 230 kV for the first 12.6 miles east out of Edic/Porter. Therefore 12.6 miles of removal shown includes wire, insulators and hardwares only. Removal total 66.8 miles is sum of 12.6miles from NYPA Structures and 54.2 miles of NG Line.

3 T027 (NAT/NYPA), double circuit proposal, proposing to reuse existing double circuit poles of line #31 to replace 230 kV for the first 12.6 miles east out of Edic/Porter. Therefore 12.6 miles of removal shown includes wire, insulators and hardwares only. Removal total 66.8 miles is sum from 12.6miles on NYPA Structures and 54.2 miles of NG Line. For rest of the proposals, line#31 from Porter to 12.6 miles is being de-energized, retired in place.

4 T027 (NYPA/ NAT), double circuit proposal, 115 kV line#13 from a point 6.3miles South of Princetown Jct. to Rotterdam Substation, approximately 4.5 miles is being de-energized, retired in place.

4.10.2. **Replacement of Aging Infrastructure – Substations (Segment A)**

- The Segment A proposals predominately affect four existing substations: National Grid's Edic, New Scotland, Porter and Rotterdam substations. Additionally, NAT/NYPA proposal T025 also affects the NYPA's Marcy 765 kV station.
- At Edic, NAT/NYPA T025, T026, T027, and T028 are replacing two 345 kV circuit breakers due to loading. At Marcy they are replacing three 345 kV circuit breakers.
- At New Scotland, NGrid proposal T018 proposes to replace the existing R81 and R82 (oil) tie breakers with new SF6 circuit breakers. In addition, the review team identified the need to replace these circuit breakers for NextEra proposal T021 due to physical limitations with proposal T021. None of the remaining proposals replace any existing equipment.
- At Porter, all proposals retire the 230 kV circuit breakers R300, R320 for line #30 and breaker R310 for line #31.
- At Rotterdam, NGrid proposal T018 and the NAT/NYPA proposals T025, T026, T027, and T028 remove the 230 kV yard from service. ITC proposal T031 does not replace any existing equipment. NextEra proposal T021 does not affect or replace any existing equipment at Rotterdam substation.

4.10.3. **Replacement of Aging Infrastructure – Transmission Lines (Segment B)**

The following table summarizes the transmission line mileage to be replaced by each project for each Segment B proposal. The table below shows that NextEra proposal T022 would replace about 65 less miles of existing infrastructure than the other proposals.

Transmission Line Replaced For Segment B

SEGMENT B	CIRCUIT NUMBER	T019 (NGRID/NY TRANSCO)	T022 (NEXTERA)	T023 (NEXTERA)	T029 (NYPA/NAT)	T030 (NYPA/NAT)	T032 (ITC)
Knickerbocker - Churchtown	14	21.9	21.9	21.9	21.9	21.9	21.9
Knickerbocker - Churchtown	15	21.9	21.9	21.9	21.9	21.9	21.9
Churchtown - Pleasant Valley	8	32.6	32.6	32.6	32.6	32.6	32.6
Churchtown - Pleasant Valley	10	32.6	32.6	32.6	32.6	32.6	32.6
Churchtown - Pleasant Valley	12	32.6	0	32.6	32.6	32.6	32.6
Churchtown - Pleasant Valley	13	32.6	0	32.6	32.6	32.6	32.6
Blue Stores Tap - Blue Stores	8	2.1	2.1	2.1	2.1	2.1	2.1
Total Miles of 115kV Removed		**176.3**	**111.1**	**176.3**	**176.3**	**176.3**	**176.3**

4.10.4. Replacement of Aging Infrastructure – Substations (Segment A)

The Segment B proposals predominantly affect NYSEG's Churchtown substation and Con Ed's Pleasant Valley substation with minor work at multiple National Grid substations.

- Churchtown Substation
  - National Grid proposal T019 and NAT/NYPA proposals T029 and T030 will replace the existing NYSEG Churchtown 115 kV Substation.
  - NextEra proposals T022 and T023 and ITC proposal T032 retain the existing Churchtown 115 kV Substation.
- No significant aging infrastructure is replaced by any proposal at Pleasant Valley.
- No significant aging infrastructure is replaced by any proposal in the National Grid's substations.

4.11. General Design Verifications

4.11.1. Substation Design and Arrangements

The review team compared the proposed bus arrangement for the substations proposed by the projects. Below are summary tables of the bus arrangement, number of lines, number of transformers and breakers for each substation.

Segment A

4.11.1.1. Edic 345 kV Substation

Base Proposals

Developer	# of new Lines	# of new Transformers	Total new elements	Proposed Breaker Arrangement	# of Breakers
T018 NGrid/Transco	1	0	1	Breaker & Half	16 (1 new)
T021 NextEra	1	0	1	Breaker & Half	16 (1 new)
T026 NAT/NYPA	1	0	1	Breaker & Half	16 (1 new)
T031 ITC	1	0	1	Breaker & Half	16 (1 new)

Discussion

The bus arrangements are comparable for all base proposals. A 345 kV breaker is added to Bay #3 to create a new line terminal. All proposals, except proposal T031, shift the 345 kV line to Fraser from Bay #4 to Bay #3 making Bay #4 available for a new 345 kV line. For proposals T018, T021, and T026, the new 345 kV line is to New Scotland. For proposal T031, the new 345 kV line is to the proposed Princetown substation and will terminate in Bay #3.

Expandability
None of the base proposals provide any built-in expandability.

For proposal T027, it should be noted that a potential spare terminal position at Edic (shown on the Developer's drawings) in the proposed bay north of Bay #1 is already occupied by a 345 kV capacitor bank. Therefore, there is no built-in expandability.

Replacement of Aging Infrastructure
NAT/NYPA T026 replaces two 345 kV circuit breakers at Edic due to loading. At Marcy they are replacing three 345 kV circuit breakers. It should be noted that National Grid has an extensive ongoing project to replace the existing control house, protection and control equipment, cabling, conduit and trench system, 345 kV breakers, and 345 kV-115 kV transformers.

Alternate Proposals

Developer	# of new Lines	# of new Transformers	Total new elements	Proposed Breaker Arrangement	# of Breakers
T025 NAT/NYPA	1	0	1	Breaker & Half	16 (1 new)
T027 NAT/NYPA	2	0	2	Breaker & Half	18 (3 new)
T028 NAT/NYPA	1	0	1	Breaker & Half	16(1 new)

Discussion
Like the base proposals, except for ITC proposal T031, the alternate proposals shift the 345 kV line to Fraser from Bay #4 to Bay #3 making Bay #4 available for a new 345 kV line. For proposal T027, the Developer adds a bay north of Bay #1 for a new 345 kV line to Princetown.

Expandability
Like the base proposals, none of the alternate proposals provide any built-in expandability.

Replacement of Aging Infrastructure
At Edic, NAT/NYPA T025, T027, and T028 are replacing two 345 kV circuit breakers due to loading. At Marcy they are replacing three 345 kV circuit breakers.

4.11.1.2. **New Scotland 345 kV Substation**

Base Proposals

Developer	# of new Lines	# of new Transformers	Total new elements	Proposed Breaker Arrangement	# of Breakers
T018 NGrid/Transco	1	0	1	Sectionalized Bus (3 sections)	16 (5 new)
T021 NextEra	1	0	1	Sectionalized Bus (3 sections)	16 (3 new)
T026 NAT/NYPA	1	0	1	Sectionalized Bus (3 sections)	16 (3 new)
T031 ITC	1	0	1	Sectionalized Bus (2 sections)	14 (1 new)

Discussion

The 345 kV yard at New Scotland has a sectionalized bus. The north main bus is the 99 bus and the south main bus is the 77 bus. The main bus is split by a redundant (back-to-back) tie breaker arrangement, which are breakers R81 and R82.

For all base proposals, one new 345 kV line terminal is added. The Developers place the new line terminal at various locations on the main bus. Proposals T018 and T021 place the new line terminal between tie breakers R81 and R82. Proposals T026 and T031 place the new line terminal on the south main bus (77 bus).

Proposals T018, T021, and T026 increase reliability and operability by adding a second arrangement of redundant tie breakers to further sectionalize the bus creating a third main bus section (88 bus). Proposals T018 and T021 create an 88 bus by adding redundant tie breakers between R81 and R82. Proposal T026 creates an 88 bus by adding redundant tie breakers south of the existing Leeds 93 line terminal.

For proposal T031, a new line terminal is added with no changes to the main bus.

Expandability

None of the base proposals provide any built-in expandability.

Replacement of Aging Infrastructure

Proposal T018 replaces the existing R81 and R82 (oil) tie circuit breakers with new SF6 breakers. Proposal T021 has the same electrical arrangement as T018, but the Developer does not propose replacing R81 and R82. Based on the review team's field review, these breakers will have to be relocated because there is insufficient room for the proposed arrangement. Thus, from a practical standpoint, R81 and R82 need to be replaced for proposal T021.

Proposals T026 and T031 do not replace any existing equipment.

Alternate Proposals

Developer	# of new Lines	# of new Transformers	Total new elements	Proposed Breaker Arrangement	# of Breakers
T025 NAT/NYPA	0	0	0	Sectionalized Bus	13 (0 new)
T027 NAT/NYPA	2	0	2	Sectionalized Bus	17 (4 new)
T028 NAT/NYPA	1	0	1	Sectionalized Bus	16 (3 new)

Discussion

Proposal T025 does not add any new line terminals or circuit breakers. Proposals T027 and T028 create an 88 bus by adding redundant tie breakers south of the existing Leeds 93 line terminal. For proposal T027, two new 345 kV line terminals are added to the 77 bus. Proposal T028 adds one new line terminal to the 77 bus.

Expandability

Proposal T025 provides some future expandability by creating one open 345 kV line terminal through the retirement of the 345 kV line to Alps. Proposals T027 and T028 do not provide any built-in expandability.

Replacement of Aging Infrastructure

None of the alternate proposals replace any existing equipment.

4.11.1.3. **Princetown Substation**

Base Proposals

Developer	# of new Lines	# of new Transformers	Total new elements	Proposed Breaker Arrangement	# of Breakers
T018 NGrid/Transco	No Princetown Substation proposed.				
T021 NextEra	2 – 345 kV 2 – 230 kV	2	6	Breaker & Half	7 – 345 kV 6 – 230 kV
T026 NAT/NYPA	No Princetown Substation proposed.				
T031 ITC	8	0	8	Breaker & Half	12

Discussion

For proposals T021 and T031, a breaker-and-a-half configuration is proposed. Proposal T021 has three bays and proposal T031 has four bays. Refer to Risk Analysis section of the report for discussions on the potential issues with siting and constructing the Princetown substation .

Expandability

Proposal T021 provides two vacant line terminal positions by adding breakers to complete the breaker-and-a-half configuration. There is also sufficient land available at the proposed site for future expansion.

Proposal T031 does not provide any built-in expandability.

Replacement of Aging Infrastructure

There is no replacement of aging infrastructure, as Princetown would be a new substation on a greenfield site.

Alternate Proposals

Developer	# of new Lines	# of new Transformers	Total new elements	Proposed Breaker Arrangement	# of Breakers
T025 NAT/NYPA	4	0	4	Ring Bus	4
T027 NAT/NYPA	6	0	6	Breaker & Half	9
T028 NAT/NYPA	4	0	4	Ring Bus	4

Discussion

For alternate proposals T025 and T028, a four-breaker ring-bus configuration is proposed. For alternate proposal T027, NAT/NYPA propose a gas-insulated three-bay breaker-and-a-half configuration. Refer to Risk Analysis section of the report for discussions on the potential issues with siting and constructing the Princetown substation.

Expandability

None of the proposals provide any built-in expandability.

Replacement of Aging Infrastructure

There is no replacement of aging infrastructure, as Princetown would be a new substation on a greenfield site.

4.11.1.4. **Rotterdam Substation**

Base Proposals

Developer	# of new Lines	# of new Transformers	Total new elements	Proposed Breaker Arrangement	# of Breakers
T018 NGrid/Transco	2 – 345 kV 1 – 230 kV 2 – 115 kV*	1 – 345 kV-230 kV 2 – 345 kV-115 kV	8	Breaker & Half (Gas-Insulated)	9 – 345 kV 1 – 230 kV
T021 NextEra	No changes to Rotterdam proposed.				
T026 NAT/NYPA	2 – 345 kV 1 – 230 kV 2 – 115 kV*	1 – 345 kV-230 kV 2 – 345 kV-115 kV	8	Breaker & Half	8 – 345 kV 1 – 230 kV
T031 ITC	2 – 345 kV	2 – 345 kV-230 kV	4	Sectionalized Bus	3 – 345 kV 1 – 230 kV

*These are tie lines to the existing 115 kV yard at Rotterdam.

Discussion

Proposals T018 and T026 propose new 345 kV breaker-and-a-half substations at Rotterdam. These proposals also add two 345 kV-115 kV transformers and one 345 kV-230 kV transformer.

Proposal T031 proposes adding a 345 kV sectionalized bus yard to the north side of the existing Rotterdam 230 kV yard.

Proposal T021 makes no changes to the existing Rotterdam bus arrangement.

It should be noted that NAT/NYPA proposals T025, T026, T027, and T028 impacts the two existing natural gas transmission pipelines that share the National Grid electric transmission line ROW. During the field review of Rotterdam substation it was identified that the proposed substation layout included in the NAT/NYPA proposals would interfere with existing gas pipelines and the NYISO issued a Request For Information requesting information on how the Developer was proposing to address the issue. The Developer response indicated options to relocate the gas pipelines or move the substation location to the northeast to avoid the pipelines.

NAT/NYPA's proposal had indicated that the designs were preliminary in nature and expressed willingness to work with the incumbent utility to complete an acceptable design. They stated in their original proposal: "*Rotterdam - the proposal assumes the new 345 kV substation yard will be built in an area to the southwest of the existing 230 kV yard in an area that requires minimal relocation of existing lower voltage transmission lines. The cost of relocation has been included in the estimate. Another alternative considered is building a 345 kV yard on a portion of the existing 230 kV yard. Bidders propose a new location for the Rotterdam 345 yard due to the lower estimated cost, and with the expectation that expanding the 230 kV yard to 345 kV would be much more difficult and require a longer schedule. However, Bidders will be willing to have the incumbent transmission owners build and own the Rotterdam 345 kV substation if necessary to implement the proposal in the most effective and cost efficient manner. Similarly, Gas Insulated Substation (GIS) equipment could be used to greatly reduce the footprint of the Rotterdam 345 kV substation and allow for construction on a smaller footprint on the Rotterdam site, but at a higher cost.*" Since there were viable options to mitigate the concern with the gas pipeline interference and NAT/NYPA had indicated in their proposal a willingness to adapt the design to the incumbent utilities needs the NYISO decided to proceed with the evaluation and include the mitigation costs in the independent cost estimates. Only a small section (length of approximately 1500 feet) of the gas pipelines is affected and can be relocated within existing National Grid property. Thus the risk associated with the relocation was considered to be low. The lines can be relocated to the western edge of National Grid's property or to the east side of the proposed substation location internal to National Grid's property. SECo used Kenny Construction, a Division of Granite Construction, for constructability reviews and Kenny had another Granite subsidiary that performs gas pipeline construction review the proposed relocation and pricing. The pipeline was constructed under an Article VII certificate and would be subject to an Article VII modification. Considering the line can be relocated within the National Grid substation site, it was not considered to be a major obstacle. Alternatively, the substation can be moved to the north-east of the proposed location to avoid the gas lines or a GIS station can be constructed in the northern 230kV

yard that will be abandoned in this project. This should be analyzed in more detail during detailed engineering and licensing in conjunction with the NYSPSC and the incumbent utility. Ultimately, we would expect the PSC to take a holistic approach and decide in the AC Transmission Article VII process the best solution for the gas pipeline and new station location.

ITCs' proposal T031 also impacts one of the gas pipelines and would require a relocation of approximately 900 feet of the pipeline to the western edge within National Grid property and would be located in parallel with the other existing pipeline.

Expandability

Both proposals T018 and T026 provide one vacant line terminal position by adding a breaker to complete the breaker-and-a-half configuration. Proposal T031 does not provide any built-in expandability.

Replacement of Aging Infrastructure

For proposal T018, the new station replaces the existing north 230 kV yard and allows for the retirement of the south 230 kV yard. This provides an area to potentially reconstruct the 115 kV yard as a full breaker-and-a-half station in the future.

For proposal T026, the new station removes the existing north and south 230 kV yards from service, providing an area to potentially reconstruct the 115 kV yard as a full breaker-and-a-half station in the future.

For proposal T031, all existing 230 kV equipment remains in service. New equipment is added to the existing arrangement.

Alternate Proposals

Developer	# of new Lines	# of new Transformers	Total new elements	Proposed Breaker Arrangement	# of Breakers
T025 NAT/NYPA	Same as T026.				
T027 NAT/NYPA	Same as T026.				
T028 NAT/NYPA	Same as T026.				

Discussion

No further discussion beyond proposal T026 above.

Expandability

No further discussion beyond proposal T026 above.

Replacement of Aging Infrastructure

No further discussion beyond proposal T026 above.

4.11.1.5. **Remote Terminal Substation**s

Protection settings and minor equipment changes will be required at remote stations due to system re-configuration. Alps, Marcy, Porter, and Leeds substations are among the substations likely to be affected.

4.11.1.6. **Terminal Upgrades**

Various terminal upgrades are likely at project related substations and may result in the replacement of some equipment. The scope of work will be determined during the Facilities Study and detailed engineering.

Segment B

4.11.1.7. **Knickerbocker Substation**

Base Proposals

Developer	# of new Lines	# of new Transformers	Total new elements	Proposed Breaker Arrangement	# of Breakers
T019 NGrid/Transco	3	0	3 (also includes Series Compensation)	Ring Bus (built for future Breaker & Half)	3
T022 NextEra	3	0	3	Ring Bus (built for future Breaker & Half)	3
T029 NAT/NYPA	3	0	3	Ring Bus (built for future Breaker & Half)	3
T032 ITC	3 – 345 kV 3 – 115 kV	0	6	345 kV - Ring Bus 115 kV – Ring Bus	3 – 345 kV 3 – 115 kV

Discussion

All Developers propose a new Knickerbocker Substation with similar 345 kV ring bus arrangements. Proposal T019 includes Series Compensation on the line terminal to Pleasant Valley. Proposal T032 adds an independent 115 kV ring bus yard.

Expandability

Proposals T019, T022, and T029 all provide one vacant line terminal position by adding one breaker to the ring bus, or by adding breakers to complete the breaker-and-a-half configuration.

Although proposal T032 does not provide any built-in expandability, ITC's layouts for both the 345 kV and 115 kV yards could easily be modified to provide a vacant line terminal position(s).

Replacement of Aging Infrastructure

There is no replacement of aging infrastructure, as Knickerbocker would be a new substation on a greenfield site.

Alternate Proposals

Developer	# of new Lines	# of new Transformers	Total new elements	Proposed Breaker Arrangement	# of Breakers
T023 NextEra	Same as T022.				
T025 NAT/NYPA	1 – 765 kV 2 – 345 kV	2	5	765 kV – Ring Bus 345 kV – Ring Bus	3 – 765 kV 4 – 345 kV
T030 NAT/NYPA	Same as T029.				

Discussion

Proposal T025 proposes a 765 kV ring bus yard and a 345 kV ring bus yard with two 765 kV – 345 kV transformers. Proposal T025 is a Segment A alternative proposal discussed in this section to keep it's Knickerbocker 765 kV Substation together with other projects' Knickerbocker substation arrangements discussions. Proposal T025 will also require the installation of a new 765 kV breaker and associated equipment at the Marcy Substation.

Expandability

Proposal T025 does not provide any built-in expandability.

Replacement of Aging Infrastructure

There is no replacement of aging infrastructure, as Knickerbocker would be a new substation on a greenfield site.

4.11.1.8. **Churchtown Substation**

Base Proposals.

Developer	# of new Lines	# of new Transformers	Total new elements	Proposed Breaker Arrangement	# of Breakers
T019 NGrid/Transco	5	0	5	Breaker & Half	8
T022 NextEra	5	0	5	Ring Bus (built for future Breaker & Half)	5
T029 NAT/NYPA	5	0	5	Breaker & Half	8
T032 ITC	1	0	1	Straight Bus	4 (1 new)

Discussion

Except for proposal T032, all Developers propose constructing a new 115 kV substation at Churchtown. Proposals T019 and T029 will replace the existing NYSEG 115 kV Churchtown Substation. Proposal T022 retains and connects to the existing NYSEG Churchtown Substation.

Proposal T032 adds a line terminal to the existing NYSEG substation.

Expandability

Proposals T019 and T029 provide one vacant line terminal position by adding a breaker to complete the breaker-and-a-half configuration.

Proposal T022 provides one vacant line terminal position by adding a breaker to the ring bus.

Proposal T032 does not provide any built-in expandability.

Replacement of Aging Infrastructure

National Grid proposal T019 and NAT/NYPA proposal T029 will replace the existing NYSEG Churchtown 115 kV Substation. NextEra proposal T022 and ITC proposal T032 retains the existing Churchtown Substation.

Alternate Proposals.

Developer	# of new Lines	# of new Transformers	Total new elements	Proposed Breaker Arrangement	# of Breakers
T023 NextEra	4	0	4	Ring Bus (built for future Breaker & Half)	4
T030 NAT/NYPA	Same as T029.				

Discussion

Similar to proposal T022, proposal T023 retains and connects to the existing NYSEG Churchtown 115 kV substation. It differs from proposal T022 in that itremoves one line terminal for the connection to Pleasant Valley substation.

Expandability

Proposal T023 does not provide any built-in expandability. However, there are provisions for future disconnect switches and breakers to convert the ring bus to a breaker-and-a-half configuration. This will allow a third bay to be added to the north side of the substation.

Replacement of Aging Infrastructure

NAT/NYPA proposal T030 will replace the existing NYSEG Churchtown substation. NextEra proposal T023 retains the existing Churchtown Substation.

4.11.1.9. **Pleasant Valley Substation**

Base Proposals

Developer	# of new Lines	# of new Transformers	Total new elements	Proposed Breaker Arrangement	# of Breakers
T019 NGrid/Transco	1	0	1 (Also includes (2) capacitor banks)	Breaker & Half	11 (1 new)
T022 NextEra	1	0	1	Breaker & Half	11 (1 new)
T029 NAT/NYPA	1	0	1	Breaker & Half	11 (1 new)
T032 ITC	1	0	1	Breaker & Half	11 (1 new)

Discussion

Proposals T019, T022 and T029 add a 345 kV breaker to Bay #2 to complete the breaker-and-a-half configuration. This provides a new terminal for relocation of the 345 kV Long Mountain line to Bay #2. The vacant terminal in Bay #3 is then available for the proposed 345 kV line from Knickerbocker. This solution eliminates the new Knickerbocker line crossing the Long Mountain line.

Similarly, proposal T032 adds a 345 kV breaker to Bay #2 to complete the breaker-and-a-half configuration. The Bay #2 terminal is then available for the proposed 345 kV line from Knickerbocker. This solution makes it necessary for the new Knickerbocker line to cross the Long Mountain line.

Expandability
The proposals do not provide any built-in expandability.

Replacement of Aging Infrastructure
The proposal does not replace any existing equipment.

Potential Additional Upgrades Required for Segment B Proposals to Connect to Pleasant Valley 345 kV Substation
As stated above, all of the proposals for Segment B propose to occupy Bay #2 at the Pleasant Valley Substation. However, based upon the current NYISO interconnection queue, the Cricket Valley Energy Center (CVEC) project—an over 1,000 MW natural gas fired generator located in Dover, New York-- also proposes to interconnect at the Pleasant Valley substation by adding a breaker to Bay #2 completing the breaker-and-a-half configuration.

Currently, the CVEC project is being studied in the NYISO's 2017 Class Year. In the event that the CVEC project accepts its cost allocation from the 2017 Class Year, the proposed project selected by the NYISO will be required to expand the Pleasant Valley Substation to interconnect. Given that such potential upgrades will be similar across all of the proposals, the cost of these potential upgrades has not been included in the independent cost estimates.

Alternate Proposals.

Developer	# of new Lines	# of new Transformers	Total new elements	Proposed Breaker Arrangement	# of Breakers
T023 NextEra	Same as T022.				
T030 NAT/NYPA	Same as T029.				

Discussion, Expandability and Replacement of Aging Equipment: Refer to paragraphs under Base Proposal.

4.11.1.10. **Schodak Substation**

Proposals T019, T029 and T030 add 115 kV line breakers. The other proposals do not propose changes at the Schodak substation.

4.11.1.11. **Remote Terminal Substation**s

Protection settings and minor equipment changes will be required at remote substations due to system re-configuration. Greenbush, Milan, Lafarge, North Catskill, Hudson, and Pleasant Valley 115 kV substations are among the substations likely affected.

4.11.1.12. **Terminal Upgrades**

Various terminal upgrades are likely at project-related substations and may result in the replacement of some equipment. The scope of work will be determined during the Facilities Study and detailed engineering.

4.11.2. **Transmission Line Design Comparisons**

4.11.2.1. Proposed Line Design

The following tables show the Transmission Line Designs proposed by each Developer:

Transmission Line Design Information for Segment A Projects

PROPOSAL	DEVELOPER	SECTOR	LINE LENGTH (Miles)	VOLTAGE (KV)	NUMBER OF CIRCUIT	CONDUCTOR		TOTAL STRUCTURE TYPE			COMMENTS
						TYPE	NO/PH	STEEL MONO POLE	STEEL H-POLE	CONCRETE MONO POLE	
T018	National Grid and NYTransco	Edic SS to Princetown Jct.	66.8	345	1	954kcmil CARDINAL ACSS	2	45	316		Edic SS to 12.6 miles - 1 Ckt Reconductoring only
		Princetown Jct. to New Scotland SS	19.7	345	1	954kcmil CARDINAL ACSS	2	59	70		2.5 Miles-2 Ckts, 345kV & 115kV Line#13
		Princetown Jct. to Rotterdam SS	5.0	345/345	2	954 kcmil CARDINAL ACSS	2	85			
T021	NextEra	Edic SS to Princetown Jct.	66.8	345	1	1033.5kcmil CURLEW ACSS	2	10		515	Edic SS to 12.6 miles - 1 Ckt Reconductoring only
		Princetown Jct. to New Scotland SS	19.9	345	1	1033.5kcmil CURLEW ACSS	2	7		130	2.5 Miles-2 Ckts, 345kV & 115kV Line#13
		Princetown Jct. to Rotterdam SS	4.2	345/345	2	1033.5kcmil CURLEW ACSS	2	8		72	
		Princetown Jct. to Rotterdam SS	0.8	230/230	2	1033.5kcmil CURLEW ACSS	1	34			
T025	NYPA and NAT	Marcy to Church Rd and New Scotland Bypass	2.7	765	1	1351.5kcmil DIPPER ACSR	4	6	10		Edic SS to 12.6 miles - 1 Ckt Reconductoring only
		Edic SS to Princetown Jct.	66.8	345	1	954kcmil CARDINAL ACSS	2	62	274		2.5 Miles-2 Ckts, 345kV & 115kV Line#13
		Princetown Jct. to New Scotland SS	19.7	345	1	954kcmil CARDINAL ACSS	2	66	61		
		Princetown Jct. to Rotterdam SS	5.0	345/345	2	954kcmil CARDINAL ACSS	2	74			
T026	NYPA and NAT	Edic SS to Princetown Jct.	66.8	345	1	954kcmil CARDINAL ACSS	2	62	274		Edic SS to 12.6 miles - 1 Ckt Reconductoring only
		Princetown Jct. to New Scotland SS	19.7	345	1	954kcmil CARDINAL ACSS	2	66	61		
		Princetown Jct. to Rotterdam SS	5.0	345/345	2	954kcmil CARDINAL ACSS	2	74			
T027	NYPA and NAT	Edic SS to Princetown Jct.	78.6	345/345	2	954kcmil CARDINAL ACSS	2	391			Edic SS to 12.6 miles - 1 Ckt Reconductoring only
		Princetown Jct. to New Scotland SS	19.7	345/345	2	954kcmil CARDINAL ACSS	2	128			2.5 Miles-2 Ckts, 345kV & 115kV Line#13
		Princetown Jct. to New Scotland SS	6.3	345	1	954kcmil CARDINAL ACSS	2	38			
		Princetown Jct. to Rotterdam SS	5.0	345/345	2	954kcmil CARDINAL ACSS	2	74			
T028	NYPA and NAT	Edic SS to Princetown Jct.	66.8	345	1	954kcmil CARDINAL ACSS	2	62	274		Edic SS to 12.6 miles - 1 Ckt Reconductoring only
		Princetown Jct. to New Scotland SS	19.7	345	1	954kcmil CARDINAL ACSS	2	66	61		2.5 Miles-2 Ckts, 345kV & 115kV Line#13
		Princetown Jct. to Rotterdam SS	5.0	345/345	2	954kcmil CARDINAL ACSS	2	74			
T031	ITC	Edic SS to Princetown Jct.	67.2	345	1	954kcmil CARDINAL ACSR	2	42	403		Edic SS to 12.6 miles - 1 Ckt Reconductoring only
		Princetown Jct. to New Scotland SS	19.7	345/345	2	954kcmil CARDINAL ACSR	2	145			
		Princetown Jct. to Rotterdam SS	5.0	345/345	2	954kcmil CARDINAL ACSR	2	8	93		

Transmission Line Design Information for Segment B

PROPOSAL	DEVELOPER	SECTOR	LINE LENGTH (Miles)	VOLTAGE (KV)	NUMBER OF CIRCUIT	CONDUCTOR		TOTAL STRUCTURE TYPE			COMMENTS
						TYPE	NO/ PH	STEEL MONO POLE	STEEL H-POLE	CONCRETE MONO POLE	
T019	National Grid and NYTransco	Knickerbocker to Churchtown SS	21.9	115/345	2	954kcmil CARDINAL ACSS	2	163	7		
		Churchtown SS to Pleasant Valley SS	32.3	115/345	2	954kcmil CARDINAL ACSS	2	231			
		Blue Stores Jct to Blue Stores SS	2.1	115	1	795kcmil DRAKE ACSR	1		24		
T022	NextEra	Knickerbocker to Churchtown SS	21.9	115/345	2	1033.5kcmil CURLEW ACSS	2	14		145	
		Churchtown SS to Pleasant Valley SS	32.3	345	1	1033.5kcmil CURLEW ACSS	2	17		229	
		Blue Stores Jct to Blue Stores SS	2.1	115	1	795kcmil DRAKE ACSR	1		24		
T023	NextEra	Knickerbocker to Churchtown SS	21.9	115/345	2	1033.5kcmil CURLEW ACSS	2	14		145	
		Churchtown SS to Pleasant Valley SS	32.3	115/345	2	1033.5kcmil CURLEW ACSS	2	21		229	
		Blue Stores Jct to Blue Stores SS	2.1	115	1	795kcmil DRAKE ACSR	1		24		
T029	NYPA and NAT	Knickerbocker to Churchtown SS	21.9	115/345	2	954kcmil CARDINAL ACSS	2	161			
		Churchtown SS to Pleasant Valley SS	32.3	115/345	2	954kcmil CARDINAL ACSS	2	244			
		Blue Stores Jct to Blue Stores SS	2.1	115	1	795kcmil DRAKE ACSR	1		24		
T030	NYPA and NAT	Knickerbocker to Churchtown SS	21.9	115/345	2	477kcmil HAWK ACSS	3	161			
		Churchtown SS to Pleasant Valley SS	32.3	115/345	2	477kcmil HAWK ACSS	3	244			
		Blue Stores Jct to Blue Stores SS	2.1	115	1	795kcmil DRAKE ACSR	1		24		
T032	ITC	Knickerbocker to Churchtown SS	21.9	115/345	2	954kcmil CARDINAL ACSR	2	158	14		
		Churchtown SS to Pleasant Valley SS	32.1	115/345	3	954kcmil CARDINAL ACSR	2	19	279		2x115 kV and 1X345kV Circuits
		Blue Stores Jct to Blue Stores SS	2.1	115	1	795kcmil DRAKE ACSR	1		24		

4.11.2.2. **Proposed ROW**

All of the transmission line proposals were evaluated to verify that they adequately fit within existing ROW corridors. The evaluation was based on conductor swingout using maximum blow out at 6 psf wind, maximum deflection and electrical clearance requirements. All proposals were found to be adequate.

4.11.2.3. **Clearances**

Electrical clearance to ground was checked to ensure compliance with NESC requirements. All proposed designs exceed NESC minimum clearances with a two to three foot margin. Including at least a two foot additional buffer in the design is good utility practice for construction tolerances and survey adjustments/errors.

4.11.2.4. **EMF**

NY State Public Service Commission policy limits the electrical and magnetic fields produced by a transmission line. The maximum limits at the edge of the right of way for the electrical field is 1.6

kilovolts per meter (kV/m)[4] and for the magnetic field is 200 milligauss (mG)[5]. The existing transmission line corridor (345 kV Lines #14 and #18, and 115 kV Line #13 are located in that corridor) between Princetown Junction and New Scotland Substation is currently estimated to exceed NYPSC standards for EMF levels. The designs for proposals T018, T021, T026, T027 and T028 improve the EMF exceedance condition, but EMF levels are still estimated to exceed the standards. Although the proposed designs may actually improve existing levels on this transmission corridor, current NYPSC Article VII regulations require that any project proposing upgrades on the corridor will need to correct the exceedance to comply with current standards. Calculations provided by the Developers are preliminary in nature and will have to be confirmed during detailed engineering design. The findings might result in purchasing of new EMF easements from property owners along the ROW between Princetown and New Scotland.

Additionally, proposal T025 proposed conversion of the 345 kV line between Marcy substation and the proposed Knickerbocker Substation to 765 kV, will likely increase EMF levels beyond NYPSC standards and would also require acquisition of additional easements.

The study originally provided by the Developer for the double circuit 345 kV line construction for Proposal T027 indicated the design would mitigate the EMF exceedance. After further review by the Developer and an independent study by SECo it was concluded that the design would exceed NYS PSC guidelines.

It should be noted that SECo did not perform independent EMF calculations with the exception of T027. Developers provided calculations that were checked for their reasonableness within the context of the PSC EMF standards. The calculations provided by all Developers have a reasonable correlation to one another for similar arrangements and appear to be a good preliminary indication of the potential EMF levels. The additional ROW requirements shown in this report are estimates based on information provided by the Developers and subject to round off and preliminary nature of the design. The exact ROW requirements will need to be determined once the final design is complete. An allowance was included in the independent cost estimate to allow for the purchase of additional easements associated with EMF mitigation.

[4] The applicable electric field strength standards established by the PSC are set forth in Opinion No. 78-13 (issued June 19, 1978).

[5] The magnetic field standards established by the PSC are set forth in the PSC's Interim Policy Statement on Magnetic Fields, issued September 11, 1990. This statement also reaffirmed the electric field strength standards set in Opinion No. 78-13.

The following table summarizes the EMF results provided by the developers and the estimated additional ROW that is likely to be required to mitigate the EMF levels. The values included for T027 are based on revised corrected results submitted by the Developer in June 2018 and verified by an independent study.

EMF Results Provided by the Developers and Estimated Additional ROW

PROPOSAL	Developer	LINE				EMF			
						Estimated @ Edge of ROW		Estimated Additional ROW Requirement	
		Sector	Voltage (kV)	Length (miles)	Corridor Width (ft.)	Max. Electric Field (kV/m)	Max. Magnetic Field (mG)	Width (ft.)	Area (Acres)
T018	National Grid and NYTransco	Princetown Jct. to New Scotland SS	345	6.3	370	1.9	94.6	10	7.6
			345	4.3	590	1.9	59.2	10	5.2
			345/115	2.5	450	1.9	83.4	10	3.0
			345	6.6	590	1.9	59.2	10	8.0
				19.7					23.9
T021	NextEra Energy	Princetown Jct. to New Scotland SS	345	6.5	370	1.7	140.0	10	7.9
			345	4.3	590	1.8	150.0	10	5.2
			345/115	2.5	450	1.8	150.0	10	3.0
			345	6.6	590	1.8	170.0	10	8.0
				19.9					24.1
T025	NYPA / NAT	Marcy SS to Knickerbocker	765	0.4	470	0.3	50.0		0.0
			765	1.3	675	2.7	125.0	25	4.0
			765	33.7	360-380	-	-	23	93.8
			765	2.0	570	2.6	161.0	23	5.5
			765	27.7	345-380	-	-	23	77.2
			765	6.3	370	2.7	212.0	25	19.1
			765	4.3	590	2.6	148.0	23	11.9
			765	2.5	450	2.7	188.0	25	7.6
			765	6.1	590	2.6	148.0	23	17.1
			765	1.0	615	1.4	119.0		0.0
			765	1.9	615	0.2	27.0		0.0
			765	1.1	400	0.5	232.0		0.0
			765	1.5	400	1.9	100.0	9	1.6
			765	5.1	250	1.7	92.0	8	5.0
			765	3.0	750	0.4	187.0		0.0
				97.9					242.9
T026 & T028	NYPA / NAT	Princetown Jct. to New Scotland SS	345	6.3	370	1.8	208.0	10	7.6
			345	4.3	590	1.9	150.0	10	5.2
			345/115	2.5	450	1.9	188.0	10	3.0
			345	6.6	590	1.8	185.0	10	8.0
				19.7					23.9
T027	NYPA / NAT	Princetown Jct. to New Scotland SS	345	6.3	370	1.2	113.0		0.0
			345	4.3	590	1.8	162.0	10	5.2
			345	2.5	450	1.8	155.0	10	3.0
			345	6.6	590	1.8	162.0	10	8.0
				19.7					16.2
T031	ITC	Princetown Jct. to New Scotland SS	345	6.3	370	>1.0	<100	10	7.6
			345	4.3	590	-	-	10	5.2
			345/115	2.5	450	-	-	10	3.0
			345	6.6	590	-	-	10	8.0
				19.7					23.9

PROPOSAL	Developer	LINE				EMF			
						Estimated @ Edge of ROW		Estimated Additional ROW Requirement	
		Sector	Voltage (kV)	Length (miles)	Corridor Width (ft.)	Max. Electric Field (kV/m)	Max. Magnetic Field (mG)	Width (ft.)	Area (Acres)
T018	National Grid and NYTransco	Princetown Jct. to New Scotland SS	345	6.3	370	1.9	94.6	10	7.6
			345	4.3	590	1.9	59.2	10	5.2
			345/115	2.5	450	1.9	83.4	10	3.0
			345	6.6	590	1.9	59.2	10	8.0
				19.7					23.9
T021	NextEra Energy	Princetown Jct. to New Scotland SS	345	6.5	370	1.7	140.0	10	7.9
			345	4.3	590	1.8	150.0	10	5.2
			345/115	2.5	450	1.8	150.0	10	3.0
			345	6.6	590	1.8	170.0	10	8.0
				19.9					24.1
T025	NYPA / NAT	Marcy SS to Knickerbocker	765	0.4	470	0.3	50.0		0.0
			765	1.3	675	2.7	125.0	25	4.0
			765	33.7	360-380	Not Provided		23	93.8
			765	2.0	570	2.6	161.0	23	5.5
			765	27.7	345-380	Not Provided		23	77.2
			765	6.3	370	2.7	212.0	25	19.1
			765	4.3	590	2.6	148.0	23	11.9
			765	2.5	450	2.7	188.0	25	7.6
			765	6.1	590	2.6	148.0	23	17.1
			765	1.0	615	1.4	119.0		0.0
			765	1.9	615	0.2	27.0		0.0
			765	1.1	400	0.5	232.0		0.0
			765	1.5	400	1.9	100.0	9	1.6
			765	5.1	250	1.7	92.0	8	5.0
			765	3.0	750	0.4	187.0		0.0
				97.9					242.9
T026 & T028	NYPA / NAT	Princetown Jct. to New Scotland SS	345	6.3	370	1.8	208.0	10	7.6
			345	4.3	590	1.9	150.0	10	5.2
			345/115	2.5	450	1.9	188.0	10	3.0
			345	6.6	590	1.8	185.0	10	8.0
				19.7					23.9
T027	NYPA / NAT	Princetown Jct. to New Scotland SS	345	6.3	370	1.2	113.0		0.0
			345	4.3	590	1.8	162.0	10	5.2
			345	2.5	450	1.8	155.0	10	3.0
			345	6.6	590	1.8	162.0	10	8.0
				19.7					16.2
T031	ITC	Princetown Jct. to New Scotland SS	345	6.3	370	>1.6	<200	10	7.6
			345	4.3	590	Not Provided		10	5.2
			345/115	2.5	450	Not Provided		10	3.0
			345	6.6	590	Not Provided		10	8.0
				19.7					23.9

4.11.2.5. **Transmission Line Conductor Ampacity Ratings**

The following tables show a summary of the proposed line lengths, conductor types and conductor ratings for each proposal. No concerns were identified with the proposed conductor types and sizes.

Segment A Transmission Line Conductor Ampacity Ratings

Segment A								SECO CALCULATED	
PROPOSAL	DEVELOPER	SECTOR	Line Length (Miles)	VOLTAGE (KV)	NUMBER OF LINE	CONDUCTOR TYPE	CONDUCTOR NO/ PH	STEADY STATE THERMAL RATING (AMPS)	CONDUCTOR RATING (MVA)
T018	National Grid and NYTransco	Edic SS to Rotterdam SS	71.8	345	1	954kcmil CARDINAL ACSS	2	4072.8	2433.7
		Edic SS to New Scotland SS	86.5	345	1	954kcmil CARDINAL ACSS	2	4072.8	2433.7
		Rotterdam SS to New Scotland SS	24.7	345	1	954kcmil CARDINAL ACSS	2	4072.8	2433.7
T021	NextEra	Edic SS to Princetown SS	71.0	345	1	1033.5kcmil CURLEW ACSS	2	4293.2	2565.4
		Edic SS to New Scotland SS	86.7	345	1	1033.5kcmil CURLEW ACSS	2	4293.2	2565.4
		Princetown SS to Rotterdam SS	0.8	230	1	1033.5kcmil CURLEW ACSS	1	2147.0	855.3
		Princetown SS to Rotterdam SS #2	0.8	230	1	1033.5kcmil CURLEW ACSS	1	2147.0	855.3
T025	NYPA and NAT	Edic SS to Rotterdam SS	71.8	345	1	954kcmil CARDINAL ACSS	2	3678.2	2197.9
		Edic SS to New Scotland SS	86.5	345	1	954kcmil CARDINAL ACSS	2	3678.2	2197.9
		Rotterdam SS to New Scotland SS	24.7	345	1	954kcmil CARDINAL ACSS	2	3678.2	2197.9
		Marcy to New Scotland SS	85.7	765	1	1351.5kcmil DIPPER ACSR	4	3210.0	4253.3
T026 & T028	NYPA and NAT	Edic SS to Rotterdam SS	71.8	345	1	954kcmil CARDINAL ACSS	2	3678.2	2197.9
		Edic SS to New Scotland SS	86.5	345	1	954kcmil CARDINAL ACSS	2	3678.2	2197.9
		Rotterdam SS to New Scotland SS	24.7	345	1	954kcmil CARDINAL ACSS	2	3678.2	2197.9
T027	NYPA and NAT	Edic SS to Rotterdam SS	71.8	345	1	954kcmil CARDINAL ACSS	2	3678.2	2197.9
		Edic SS to New Scotland SS	86.5	345	1	954kcmil CARDINAL ACSS	2	3678.2	2197.9
		Edic SS to New Scotland SS #2	86.5	345	1	954kcmil CARDINAL ACSS	2	3678.2	2197.9
		Rotterdam SS to New Scotland SS	24.7	345	1	954kcmil CARDINAL ACSS	2	3678.2	2197.9
T031	ITC	Edic SS to Rotterdam SS	72.2	345	1	954kcmil CARDINAL ACSR	2	3162.0	1889.5
		Edic SS to New Scotland SS	86.9	345	1	954kcmil CARDINAL ACSR	2	3162.0	1889.5
		Rotterdam SS to New Scotland SS	24.7	345	1	954kcmil CARDINAL ACSR	2	3162.0	1889.5

Results based on Conductor Maximum temperature and Ambient temperature as shown in table above, Absorptivity and Emissivity 0.6 and Wind 3 ft/sec.

Segment B Transmission Line Conductor Ampacity Ratings

Segment B								SECO CALCULATED	
PROPOSAL	DEVELOPER	SECTOR	Line Length (Miles)	VOLTAGE (KV)	NUMBER OF LINE	CONDUCTOR TYPE	CONDUCTOR NO/ PH	STEADY STATE THERMAL RATING (AMPS)	CONDUCTOR RATING (MVA)
T019	National Grid and NYTransco	Knickerbocker to Pleasant Valley	54.2	345	1	954kcmil CARDINAL ACSS	2	3910.0	2336.4
		Knickerbocker to Pleasant Valley	54.2	115	1	954kcmil CARDINAL ACSS	1	1955.0	389.4
		Blue Stores Jct to Blue Stores SS	2.1	115	1	795kcmil DRAKE ACSR	1	1364.5	271.8
T022	NextEra	Knickerbocker to Pleasant Valley	54.2	345	1	1033.5 CURLEW ACSS	2	3440.0	2055.6
		Knickerbocker to Churchtown	21.9	115	1	795kcmil DRAKE ACSS	1	1495.0	297.8
T023	NextEra	Knickerbocker to Pleasant Valley	54.2	345	1	1033.5 CURLEW ACSS	2	3440.0	2055.6
		Knickerbocker to Pleasant Valley	54.2	115	1	795kcmil DRAKE ACSS	1	1495.0	297.8
T029	NYPA and NAT	Knickerbocker to Pleasant Valley	54.2	345	1	954kcmil CARDINAL ACSS	2	3882.8	2320.2
		Knickerbocker to Pleasant Valley	54.2	115	1	954kcmil CARDINAL ACSS	1	1941.4	386.7
T030	NYPA and NAT	Knickerbocker to Pleasant Valley	54.2	345	1	477kcmil HAWK ACSS	3	4195.8	2507.2
		Knickerbocker to Pleasant Valley	54.2	115	1	954kcmil CARDINAL ACSS	1	2126.1	423.5
T032	ITC	Knickerbocker to Pleasant Valley	54.0	345	1	954kcmil CARDINAL ACSR	2	3162.0	1889.5
		Knickerbocker to Pleasant Valley	54.0	115	1	954kcmil CARDINAL ACSR	1	1581.0	314.9
		Churchtown to Pleasant Valley	32.1	115	1	954kcmil CARDINAL ACSR	1	1581.0	314.9

Results based on Conductor Maximum temperature and Ambient temperature as shown in table above, Absorptivity and Emissivity 0.6 and Wind 3 ft/s

4.11.2.6. **Structure Heights**

Tables summarizing the structure height increase for each proposal is shown in the Environmental Section 4.9. The heights were derived from each Devlopers proposed designs and PLSCadd models provided.

4.11.2.7. **Structural Design Criteria**

The transmission line structural design criteria were evaluated for all of the proposals. The following table summarizes the criteria used. All proposals meet minimum standards as defined by the 2017 version of the National Electric Safety Code Section 25 for this region of the country and are within the guidelines of the Third Edition of ASCE's Manual 74 "Guidelines for Electrical Transmission Line Structural Loading".

DESIGN CRITERIA REQUIREMENT COMPARISON FOR THE TRANSMISSION LINE DESIGNS

		STANDARD REQIREMENTS				COMPARISON WITH DEVELOPER'S DESIGN CRITERIA			
Case No.	Case Description	Wind Load (mph)	Radial Thickness of ice (inches)	Temp (°F)	Standard	National Grid/ NY Transco	NextEra	NYPA/NAT	ITC
1	NESC Heavy	39.5	0.5	0	NESC – 250B	Ok	Ok	Ok	Ok
2	Extreme Wind 1	90	0	60	NESC – 250C	Ok 1	Ok 1	Exceeds (100MPH)	Exceeds (100MPH)
3	Extreme Ice and Wind	40	0.75	15	NESC – 250D	Ok	Ok	Ok	Ok
4	Extreme Ice				Not Required by NESC or ASCE Loading Guideline 74	1.5" Ice & 2psf Wind (structure overload factor of 1.1)	1.5" Ice & 0psf Wind (structure overload factor of 1.0)	1" Ice & 0psf Wind (structure overload factor of 1.0)	1" Ice & 0psf Wind (structure overload factor of 1.0)

1 Columbia County & Dutchess County are in the "Special Wind Region" as defined by the NESC. NYPA/NAT & ITC address this by exceeding the requirements of 250C. It is likely that the NESC 250D load case and/or the Extreme Ice case will control the design for National Grid & Nextera which will adequately address any special wind concerns.

The National Grid/Transco proposals T018 and T019 include noticeably heavier duty structures and foundations than other similar proposals. As stated in their proposal, their design "uses significantly heavier ice loadings than required by code and implements several techniques to mitigate cascading structure failures." Use of these more stringent design criteria does result in higher transmission line structure and foundation costs.

It was also observed that National Grid's proposal uses more concrete foundations as compared to NAT/NYPA proposals. To ensure that NAT/NYPA were not under designing their foundations, SECo completed a spot check of the NAT/NYPA foundation designs using the geotechnical data that they provided. SECo found that NAT/NYPA's proposed foundations were adequate.

4.11.2.8. **Potential Issues with Conversion of Line to 765 kV**

A preliminary assessment of the feasibility of the NAT/NYPA 765 KV option, T025 proposal, was completed . The assessment is based on data provided in NAT/NYPA's proposal and as obtained from Developer and National Grid responses to RFIs. SECo concludes that the conversion of the line is technically feasible. However, as suggested in the NAT/NYPA's "765 kV Conversion Feasibility Study" document, additional detailed engineering study, survey and field testing must be performed prior to implementation of the project. The review team also believe that the final cost of this conversion may vary widely depending on the potential remedial work recommended as the result of more detailed study. NAT/NYPA have provided rough estimates to indicate possible range of costs.

The assessment focused on the following technical criteria:

- Condition of Existing Transmission Line – The existing transmission line is approximately 40 years old and has been operated at 345 kV since its construction. Based on visual observation of portions of the line it appears that the line has been well maintained and is in very good physical condition.
- Clearances - NAT/NYPA has obtained Light Detection and Ranging survey (Lidar) data for roughly 1/3 of the existing line length to be converted to 765 kV operation. They state that they have evaluated that data and determined that their proposal will meet current day clearance standards. SECo also reviewed the Lidar data and concurs with NAT/NYPA's conclusion. SECo has obtained PLSCadd files for the proposed line from NAT/NYPA and found the design line to ground clearance on the line is 44ft. The minimum calculated ground clearance requirement for 765 kV line based on NESC 2012- Rule 232C1a and Table 232-1 is 33.2 feet. The maximum operating temperature of the line as proposed by the Developer will be less than the original design operating temperature of the line. Based on the information put forth by NAT/NYPA and our own evaluation of the partial data received from National Grid, we agree that ground clearance should not be an issue, with the exception of one span between Smith Hill Road and Newport Road. Our independent cost estimate does not include any costs to correct clearance issues.
- Insulation – NAT/NYPA has evaluated the insulation of the existing line and documented their findings in their 765 kV conversion feasibility study report. They show that the insulation level and air gaps are adequate for 765 kV operation and plan to confirm their findings by performing a system transient analysis study. Our independent cost estimate doesn't include any dollars to correct insulation issues.
- EMF – NAT/NYPA has provided an assessment regarding EMF requirements and has calculated the amount of additional easement required to address EMF needs. Our independent cost estimate includes the cost of the additional easements required to mitigate EMF exceedance.
- Corona – There is concern that corona may likely be an issue with the existing line construction. SECo has contacted a major conductor hardware supplier and learned that some improvements have been made to the corona performance of transmission line hardware since the existing line was constructed. SECo does not have drawings that show the hardware used in the existing construction. Based on photos, taken at several locations throughout the line, it does not appear that the line was constructed with corona rings. Remedial work may be required to correct corona issues on the existing line. A rough cost estimate needed to potentially mitigate corona issues if detailed engineering study confirms the need, was included

in the cost estimates. The additional cost estimate is to replace hardware (not including insulators) on 83 miles of the existing line and completely rebuild approximately 13-mile of the existing line north of Knickerbocker. The rebuild of the 13 mile section might be required since that section was originally constructed with a bundle of three conductors per phase while the remaining line was constructed with a 4 bundle per phase. These costs have been included as a existing system Network Upgrade Facilities costs in the independent cost estimate.

4.11.2.9. **Use of Concrete Poles**

NextEra proposes to use concrete poles. Due to the length and weight of concrete poles, careful planning during detailed engineering will be required to develop delivery and construction plans for each pole site. NextEra has provided documentation demonstrating that they and the proposed supplier have investigated the logistics of the pole delivery and installations. This investigation includes field reviews, production schedules; as well as delivery methods and routes. In general, the review team determined that the preliminary field review process and planning has considered many of the issues and obstacles that may be confronted during delivery and construction. The Developer's plan has considered some of the concerns associated with transport, public protection and community impacts. And the option to utilize multi-piece steel poles provides a clear mitigation for problem areas. But as with all project risks, early detection, planning and mitigation are key to avoiding unexpected and untimely schedule and financial impacts. The review team recommends that a more detailed and robust plan and risk mitigation be developed during detailed engineering.

Additionally, the installation of full length concrete poles as opposed to multi-piece steel poles requires significantly more equipment and labor to install. The concrete poles range in length up to 135 feet and weigh up to 62,000 pounds vs. steel pole sections (steel poles typically include three sections) up to 50 feet long and 16,000 pounds. Larger capacity cranes for offloading and setting the poles, heavy duty trucks to move poles on the right of way, larger work pad areas with additional and thicker matting, heavier duty construction access roads with wider turning radius, and additional labor to rig and maneuver the poles is required.
These incremental installation costs were considered in the cost estimates.

4.11.2.10. **Operations Concerns**

4.11.2.10.1. **Transmission Line Crossings**

Overhead Transmission line wire crossings could be an area of risk due to the possibility of an upper circuit failing and falling into a lower circuit (or circuits) below.

- At Edic all Developers, except for ITC, have proposed to relocate the existing Fraser line into a new bay and terminate the new line in the vacated Fraser terminal. ITC (T031) instead terminates the new line into the new terminal and crosses the Fraser line.
- A similar situation applies to the Pleasant Valley substation, where all Developers except ITC propose to relocate the existing Long Mountain line to a new bay allowing the new line to terminate without a crossing.
- At the New Scotland substation, National Grid/Transco and NextEra propose to cross the existing Blenheim Gilboa to New Scotland (Line #672) and New Scotland to Leeds (Line# 686) 345 kV lines to terminate at the New Scotland substation.
  - NextEra proposed design for the 345kV line (T022 and T023) does not have adequate clearance for the crossing of the 115 kV lines from LaFarge to Pleasant Valley and North Catskill to Milan near the Churchtown substation. This should be corrected in final design.

4.11.2.10.2. **Triple Circuit Concerns**

ITC's Segment B proposal T032 proposes using triple circuit structures between Churchtown Substation and Pleasant Valley Substation. The proposed structures are in a two-pole configuration with one 345 kV circuit attached horizontally to an upper crossarm and two 115 kV circuits attached side by side horizontally to a lower crossarm. The proposed compact design conserves space within the transmission corridor but creates an operational concern. Future maintenance of the transmission circuits and associated structures may depend on the outage availability of all the circuits attached. A maintenance plan must be developed prior to putting this configuration into service.

5. Attachments

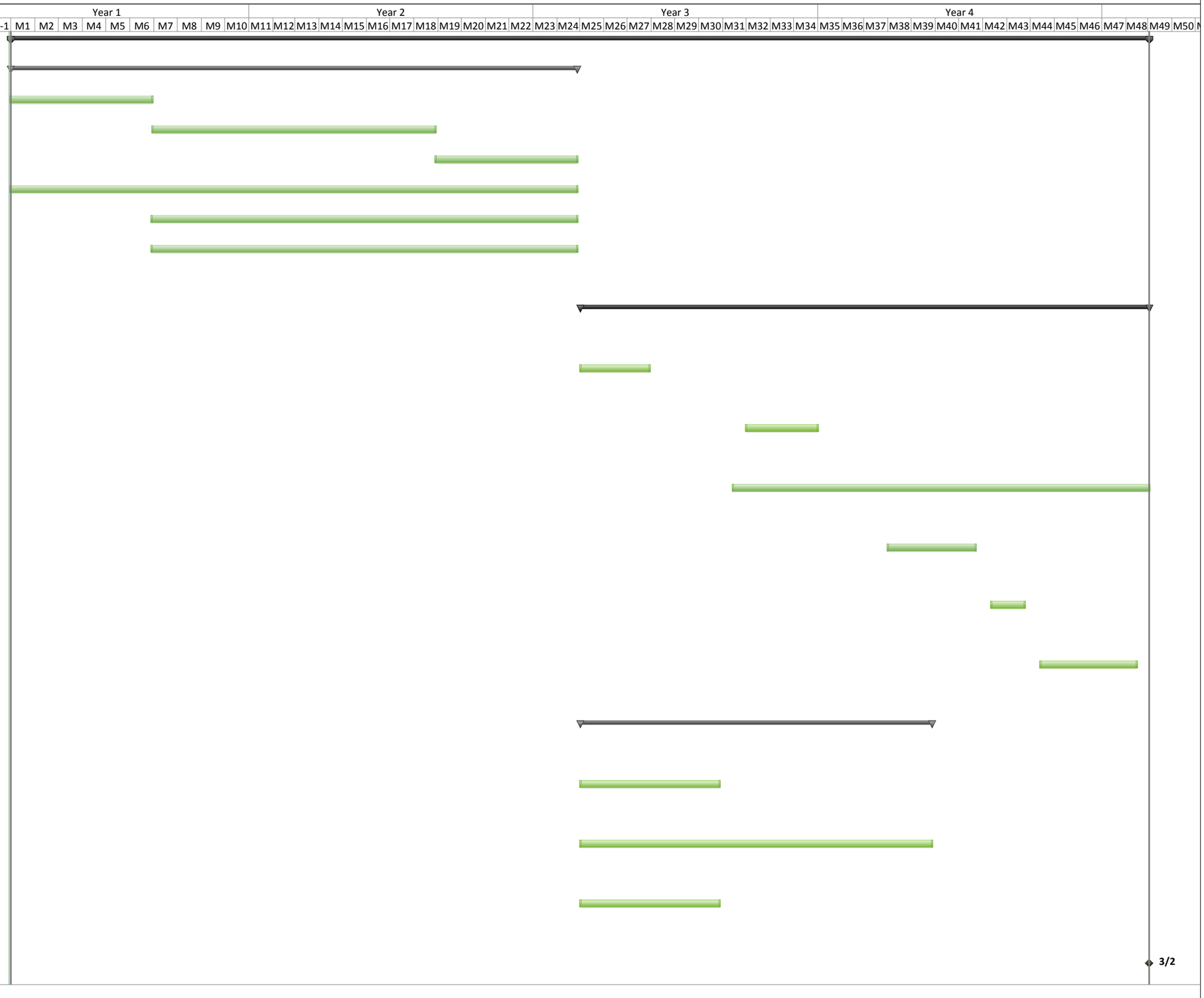
5.1. Attachment A –Schedule Gantt Charts

5.2. Attachment B –Independent Estimates

5.2.1. National Grid (NGRID) – (T018)
5.2.2. NextEra Energy Transmission New York – (T021)
5.2.3. North America Transmission/New York Power Authority (NAT/NYPA) – 765 kV Proposal #1 (T025)
5.2.4. North America Transmission/New York Power Authority (NAT/NYPA) – Base Proposal (T026)
5.2.5. North America Transmission/New York Power Authority (NAT/NYPA) – Double Circuit (T027)
5.2.6. North America Transmission/New York Power Authority (NAT/NYPA) – Enhanced (T028)
5.2.7. ITC – (T031)
5.2.8. National Grid (NGRID) – (T019)
5.2.9. NextEra Energy Transmission New York – (T022)
5.2.10. NextEra Energy Transmission New York Alternative – (T023)
5.2.11. North America Transmission/New York Power Authority (NAT/NYPA) – Base (T029)
5.2.12. North America Transmission/New York Power Authority (NAT/NYPA) – Enhanced (T030)
5.2.13. ITC – (T032)

NG NY TRANSCO T018

Task Name	Duration
NG NY TRANSCO T018	**1046 days**
PRE-CONSTRUCTION	**520 days**
ARTICLE 7 PREPARATION & SUBMISSION	130 days
ARTICLE 7 REVIEW & APPROVAL	260 days
EM&CP REVIEW & APPROVAL	130 days
REAL ESTATE ACQUISITION	520 days
FINAL ENGINEERING	391 days
PROCURE MAJOR EQUIPMENT & MATERIALS	391 days
TRANSMISSION LINE - EDIC TO NEW SCOTLAND	**523 days**
PRINCETOWN TO ROTTERDAM LINE 31 REBUILD	65 days
PRINCETOWN TO ROTTERDAM LINE 30 REBUILD	66 days
EDIC TO PRINCETOWN	383 days
PRINCETOWN TO NEW SCOTLAND - XS 11, 13	81 days
PRINCETOWN TO NEW SCOTLAND - XS 10	31 days
PRINCETOWN TO NEW SCOTLAND - XS 1,4	88 days
SUBSTATIONS - EDIC TO NEW SCOTLAND	**324 days**
EDIC SUBSTATION	129 days
ROTTERDAM SUBSTATION	324 days
NEW SCOTLAND SUBSTATION	129 days
T018 COMPLETE	**1 day**



NEXTERA T021

Task Name	Duration
NEXTERA T021	**1046 days**
PRE-CONSTRUCTION	**520 days**
ARTICLE 7 PREPARATION & SUBMISSION	130 days
ARTICLE 7 REVIEW & APPROVAL	260 days
EM&CP REVIEW & APPROVAL	130 days
REAL ESTATE ACQUISITION	520 days
FINAL ENGINEERING	391 days
PROCURE MAJOR EQUIPMENT & MATERIALS	391 days
TRANSMISSION LINE - EDIC TO NEW SCOTLAND	**523 days**
PRINCETOWN TO ROTTERDAM (Line 31)	65 days
PRINCETOWN TO ROTTERDAM (Line 30)	66 days
EDIC TO PRINCETOWN	383 days
PRINCETOWN TO NEW SCOTLAND	228 days
SUBSTATIONS - EDIC TO NEW SCOTLAND	**324 days**
EDIC SUBSTATION	129 days
PRINCETOWN SUBSTATION	324 days
NEW SCOTLAND SUBSTATION	129 days
T021 COMPLETE	**1 day**

NYPA NAT T025

Task Name	Duration
NYPA NAT T025	**1089 days**
PRE-CONSTRUCTION	**563 days**
ARTICLE 7 PREPARATION & SUBMISSION	130 days
ARTICLE 7 REVIEW & APPROVAL	281 days
EM&CP REVIEW & APPROVAL	152 days
REAL ESTATE ACQUISITION	563 days
FINAL ENGINEERING	433 days
PROCURE MAJOR EQUIPMENT & MATERIALS	433 days
TRANSMISSION LINE - EDIC TO NEW SCOTLAND	**522 days**
PRINCETOWN TO ROTTERDAM Line 31 Rebuild	65 days
PRINCETOWN TO ROTTERDAM Line 30 Rebuild	66 days
EDIC TO PRINCETOWN	383 days
MARCY TO EDIC 765kV REBUILD	68 days
NEW SCOTLAND 765kV REBUILD	68 days
PRINCETOWN TO NEW SCOTLAND	219 days
SUBSTATIONS - EDIC TO NEW SCOTLAND	**455 days**
EDIC SUBSTATION	129 days
KNICKERBOCKER SUBSTATION	324 days
PRINCETOWN SUBSTATION	324 days
NEW SCOTLAND SUBSTATION	129 days
MARCY SUBSTATION	90 days
T025 COMPLETE	**1 day**

NYPA NAT T026

Task Name	Duration
NYPA NAT T026	**1046 days**
PRE-CONSTRUCTION	**520 days**
ARTICLE 7 PREPARATION & SUBMISSION	130 days
ARTICLE 7 REVIEW & APPROVAL	260 days
EM&CP REVIEW & APPROVAL	130 days
REAL ESTATE ACQUISITION	520 days
FINAL ENGINEERING	391 days
PROCURE MAJOR EQUIPMENT & MATERIALS	391 days
TRANSMISSION LINE - EDIC TO NEW SCOTLAND	**523 days**
PRINCETOWN TO ROTTERDAM (Line 31 Rebuild)	65 days
PRINCETOWN TO ROTTERDAM (Line 30 Rebuild)	66 days
EDIC TO PRINCETOWN	383 days
PRINCETOWN TO NEW SCOTLAND	228 days
SUBSTATIONS - EDIC TO NEW SCOTLAND	**324 days**
EDIC SUBSTATION	129 days
ROTTERDAM SUBSTATION	324 days
NEW SCOTLAND SUBSTATION	129 days
T026 COMPLETE	**1 day**

NYPA NAT T027

Task Name	Duration
NYPA NAT T027	**1113 days**
PRE-CONSTRUCTION	**520 days**
ARTICLE 7 PREPARATION & SUBMISSION	130 days
ARTICLE 7 REVIEW & APPROVAL	260 days
EM&CP REVIEW & APPROVAL	130 days
REAL ESTATE ACQUISITION	520 days
FINAL ENGINEERING	391 days
PROCURE MAJOR EQUIPMENT & MATERIALS	391 days
TRANSMISSION LINE - EDIC TO NEW SCOTLAND	**590 days**
PRINCETOWN TO ROTTERDAM (Line 31)	65 days
PRINCETOWN TO ROTTERDAM (Line 30)	66 days
EDIC TO PRINCETOWN	383 days
PRINCETOWN TO NEW SCOTLAND	285 days
SUBSTATIONS - EDIC TO NEW SCOTLAND	**324 days**
EDIC SUBSTATION	129 days
ROTTERDAM SUBSTATION	324 days
PRINCETOWN SUBSTATION	324 days
NEW SCOTLAND SUBSTATION	129 days
T027 COMPLETE	**1 day**

NYPA NAT T028

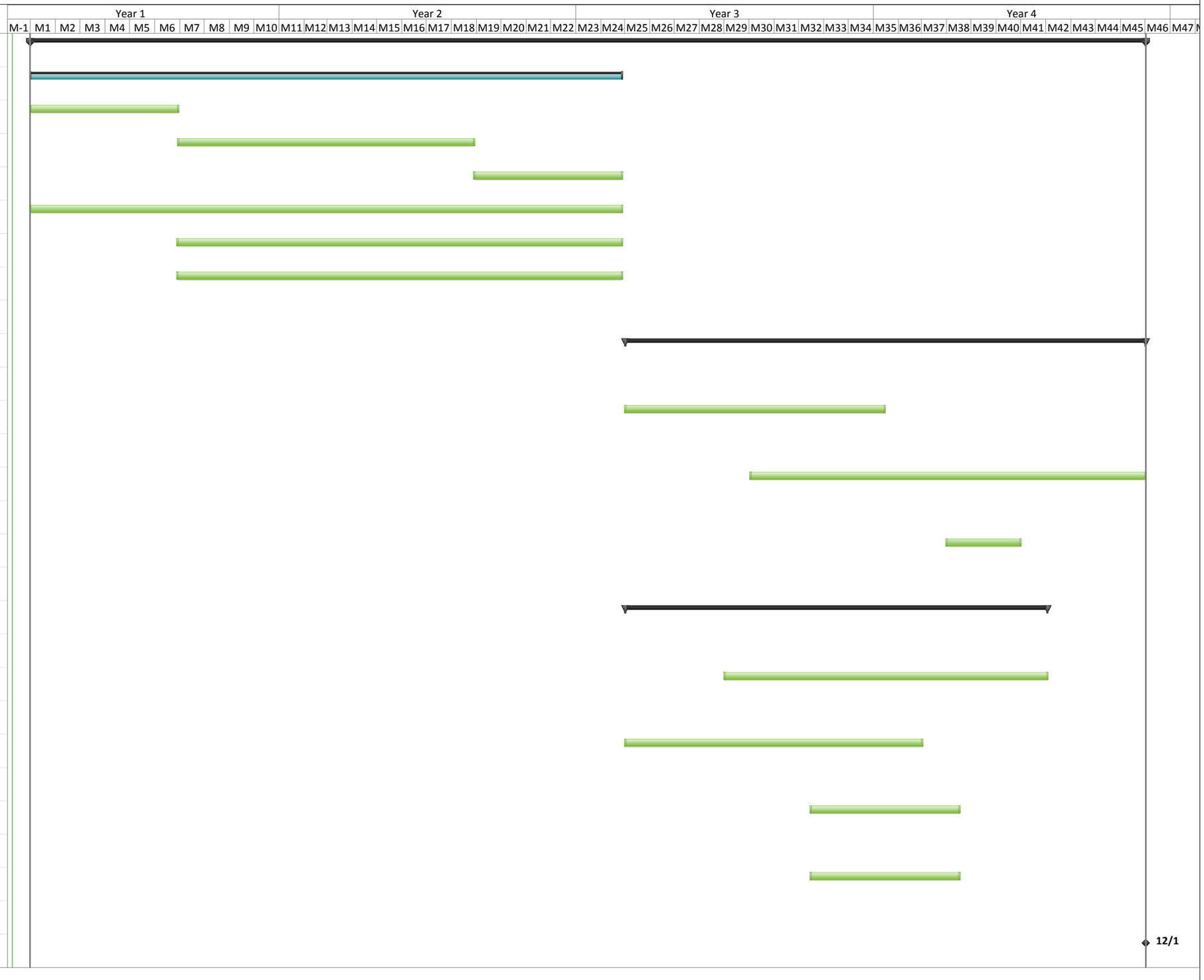
Task Name	Duration
NYPA NAT T028	**1046 days**
PRE-CONSTRUCTION	**520 days**
ARTICLE 7 PREPARATION & SUBMISSION	130 days
ARTICLE 7 REVIEW & APPROVAL	260 days
EM&CP REVIEW & APPROVAL	130 days
REAL ESTATE ACQUISITION	520 days
FINAL ENGINEERING	391 days
PROCURE MAJOR EQUIPMENT & MATERIALS	391 days
TRANSMISSION LINE - EDIC TO NEW SCOTLAND	**523 days**
PRINCETOWN TO ROTTERDAM (Line 31)	65 days
PRINCETOWN TO ROTTERDAM (Line 30)	66 days
EDIC TO PRINCETOWN	383 days
PRINCETOWN TO NEW SCOTLAND	228 days
SUBSTATIONS - EDIC TO NEW SCOTLAND	**324 days**
EDIC SUBSTATION	129 days
ROTTERDAM SUBSTATION	324 days
PRINCETOWN SUBSTATION	324 days
NEW SCOTLAND SUBSTATION	129 days
T028 COMPLETE	**1 day**

ITC T031

Task Name	Duration
ITC T031	**1046 days**
PRE-CONSTRUCTION	**520 days**
ARTICLE 7 PREPARATION & SUBMISSION	130 days
ARTICLE 7 REVIEW & APPROVAL	260 days
EM&CP REVIEW & APPROVAL	130 days
REAL ESTATE ACQUISITION	520 days
FINAL ENGINEERING	391 days
PROCURE MAJOR EQUIPMENT & MATERIALS	391 days
TRANSMISSION LINE - EDIC TO NEW SCOTLAND	**523 days**
PRINCETOWN TO ROTTERDAM (Line 31)	65 days
PRINCETOWN TO ROTTERDAM (Line 30)	66 days
EDIC TO PRINCETOWN	383 days
PRINCETOWN TO NEW SCOTLAND	228 days
SUBSTATIONS - EDIC TO NEW SCOTLAND	**324 days**
EDIC SUBSTATION	129 days
ROTTERDAM SUBSTATION	324 days
PRINCETOWN SUBSTATION	324 days
NEW SCOTLAND SUBSTATION	129 days
T031 COMPLETE	**1 day**

NG NY TRANSCO T019

Task Name	Duration
NG NY TRANSCO T019	**980 days**
PRE-CONSTRUCTION	**520 days**
ARTICLE 7 PREPARATION & SUBMISSION	130 days
ARTICLE 7 REVIEW & APPROVAL	260 days
EM&CP REVIEW & APPROVAL	130 days
REAL ESTATE ACQUISITION	520 days
FINAL ENGINEERING	391 days
PROCURE MAJOR EQUIPMENT & MATERIALS	391 days
TRANSMISSION LINE - KNICKERBOCKER TO PLEASANT VALLEY	**458 days**
KNICKERBOCKER TO CHURCHTOWN	229 days
CHURCHTOWN TO PLEASANT VALLEY	348 days
BLUE STORES JUNCTION TO BLUE STORES SS	65 days
SUBSTATIONS - KNICKERBOCKER TO PLEASANT VALLEY	**371 days**
KNICKERBOCKER SUBSTATION	283 days
CHURCHTOWN SUBSTATION	261 days
PLEASANT VALLEY SUBSTATION	131 days
SCHODACK SUBSTATION	131 days
T019 COMPLETE	**1 day**



NEXTERA T022

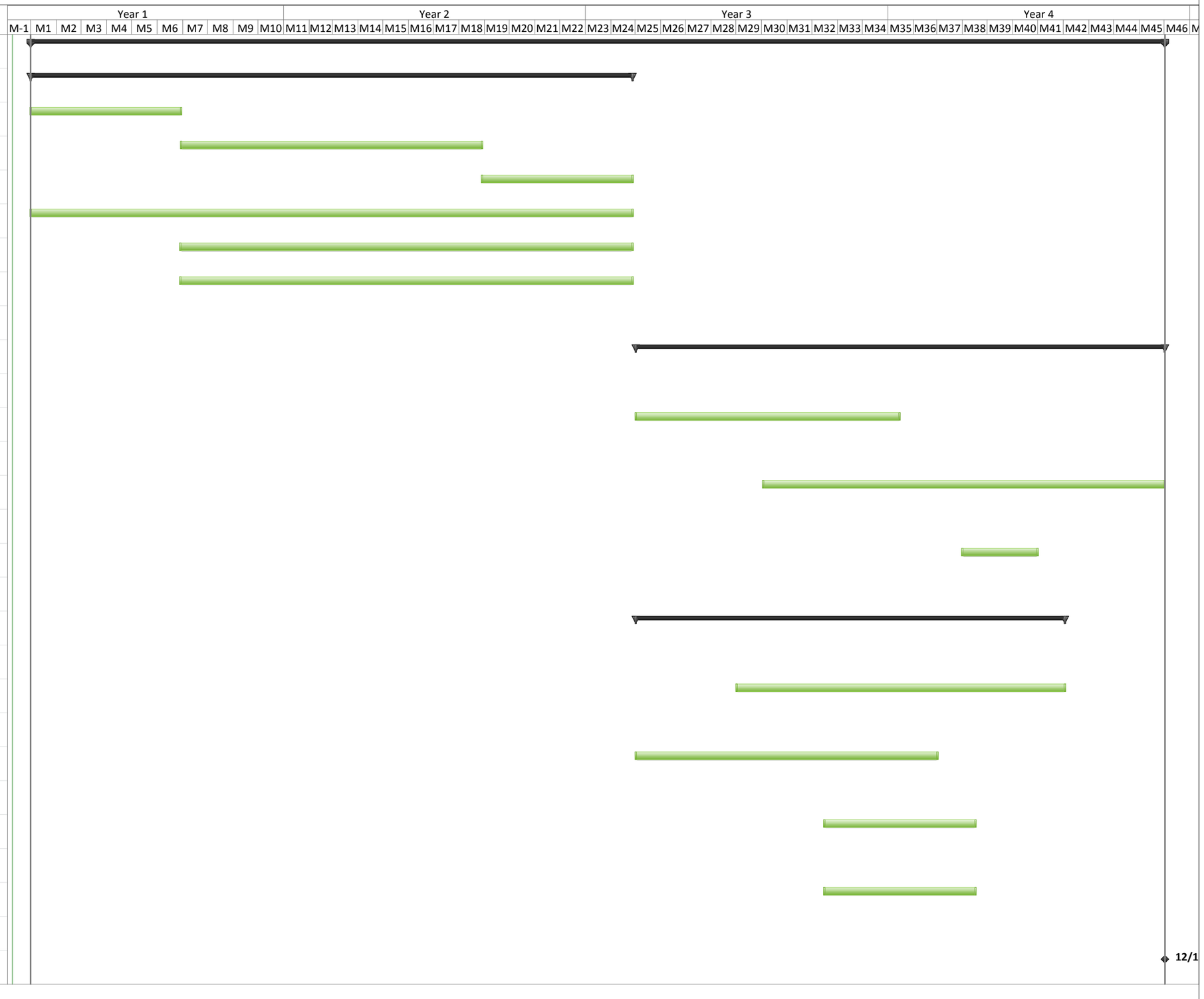
Task Name	Duration
NEXTERA T022	**937 days**
PRE-CONSTRUCTION	**520 days**
ARTICLE 7 PREPARATION & SUBMISSION	130 days
ARTICLE 7 REVIEW & APPROVAL	260 days
EM&CP REVIEW & APPROVAL	130 days
REAL ESTATE ACQUISITION	520 days
FINAL ENGINEERING	391 days
PROCURE MAJOR EQUIPMENT & MATERIALS	391 days
TRANSMISSION LINE - KNICKERBOCKER TO PLEASANT VALLEY	**415 days**
KNICKERBOCKER TO CHURCHTOWN	229 days
CHURCHTOWN TO PLEASANT VALLEY	305 days
BLUE STORES JUNCTION TO BLUE STORES SS	65 days
SUBSTATIONS - KNICKERBOCKER TO PLEASANT VALLEY	**371 days**
KNICKERBOCKER	283 days
NORTH CHURCHTOWN	261 days
PLEASANT VALLEY	131 days
T022 COMPLETE	**1 day**

NEXTERA T023

Task Name	Duration
NEXTERA T023	**979 days**
PRE-CONSTRUCTION	**520 days**
ARTICLE 7 PREPARATION & SUBMISSION	130 days
ARTICLE 7 REVIEW & APPROVAL	260 days
EM&CP REVIEW & APPROVAL	130 days
REAL ESTATE ACQUISITION	520 days
FINAL ENGINEERING	391 days
PROCURE MAJOR EQUIPMENT & MATERIALS	391 days
TRANSMISSION LINE - KNICKERBOCKER TO PLEASANT VALLEY	**457 days**
KNICKERBOCKER TO CHURCHTOWN	229 days
CHURCHTOWN TO PLEASANT VALLEY	347 days
BLUE STORES JUNCTION TO BLUE STORES SS	65 days
SUBSTATIONS - KNICKERBOCKER TO PLEASANT VALLEY	**371 days**
KNICKERBOCKER	283 days
NORTHCHURCHTOWN	261 days
PLEASANT VALLEY	131 days
T023 COMPLETE	**1 day**

NYPA NAT T029

Task Name	Duration
NYPA NAT T029	**980 days**
PRE-CONSTRUCTION	**520 days**
ARTICLE 7 PREPARATION & SUBMISSION	130 days
ARTICLE 7 REVIEW & APPROVAL	260 days
EM&CP REVIEW & APPROVAL	130 days
REAL ESTATE ACQUISITION	520 days
FINAL ENGINEERING	391 days
PROCURE MAJOR EQUIPMENT & MATERIALS	391 days
TRANSMISSION LINE - KNICKERBOCKER TO PLEASANT VALLEY	**458 days**
KNICKERBOCKER TO CHURCHTOWN	229 days
CHURCHTOWN TO PLEASANT VALLEY	348 days
BLUE STORES JUNCTION TO BLUE STORES SS	65 days
SUBSTATIONS - KNICKERBOCKER TO PLEASANT VALLEY	**371 days**
KNICKERBOCKER	283 days
CHURCHTOWN	261 days
PLEASANT VALLEY	131 days
SCHODACK	131 days
T029 COMPLETE	**1 day**



NYPA NAT T030

Task Name	Duration
NYPA NAT T030	**980 days**
PRE-CONSTRUCTION	**520 days**
ARTICLE 7 PREPARATION & SUBMISSION	130 days
ARTICLE 7 REVIEW & APPROVAL	260 days
EM&CP REVIEW & APPROVAL	130 days
REAL ESTATE ACQUISITION	520 days
FINAL ENGINEERING	391 days
PROCURE MAJOR EQUIPMENT & MATERIALS	391 days
TRANSMISSION LINE - KNICKERBOCKER TO PLEASANT VALLEY	**458 days**
KNICKERBOCKER TO CHURCHTOWN	229 days
CHURCHTOWN TO PLEASANT VALLEY	348 days
BLUE STORES JUNCTION TO BLUE STORES SS	65 days
SUBSTATIONS - KNICKERBOCKER TO PLEASANT VALLEY	**371 days**
KNICKERBOCKER	283 days
CHURCHTOWN	261 days
PLEASANT VALLEY	131 days
SCHODACK	131 days
T030 COMPLETE	**1 day**

ITC T032

Task Name	Duration
ITC T032	**1025 days**
PRE-CONSTRUCTION	**520 days**
ARTICLE 7 PREPARATION & SUBMISSION	130 days
ARTICLE 7 REVIEW & APPROVAL	260 days
EM&CP REVIEW & APPROVAL	130 days
REAL ESTATE ACQUISITION	520 days
FINAL ENGINEERING	391 days
PROCURE MAJOR EQUIPMENT & MATERIALS	391 days
TRANSMISSION LINE - KNICKERBOCKER TO PLEASANT VALLEY	**503 days**
KNICKERBOCKER TO CHURCHTOWN	229 days
CHURCHTOWN TO PLEASANT VALLEY	393 days
BLUE STORES JUNCTION TO BLUE STORES SS	65 days
SUBSTATIONS - KNICKERBOCKER TO PLEASANT VALLEY	**295 days**
KNICKERBOCKER	261 days
CHURCHTOWN	261 days
PLEASANT VALLEY	131 days
T032 COMPLETE	**1 day**

National Grid and NY Transco (T018)			
		Description	**Total Amount** (In thousand $)
Direct Cost	1	**Transmission Lines**	
	1.1	Clearing & Access	$52,139
	1.2	Foundations	$38,037
	1.3	Structures	$67,033
	1.4	Conductor, Shiedwire and Optical Ground Wire	$35,990
	1.5	Insulators, Fitting and Hardwares	$10,840
		Subtotal (1)	**$204,039**
	2	**Substations**	
	2.1	Rotterdam Substation	$48,141
	2.2	Edic Substation	$2,117
	2.3	Princetown Substation	$0
	2.4	New Scotland Substation	$7,037
	2.5	Porter Substation	$546
	2.6	Knickerbocker Substation	$0
	2.7	Marcy Substation	$0
	2.8	Substation Interconnections	$8,459
		Subtotal (2)	**$66,301**
		Total (1+2)	$270,340
		Contractors Mark-up (15% of Total 1+2)	$40,551
		Total Direct Cost (A)	**$310,891**
Indirect Cost	3	**Technical Services Costs**	
	3.1	Contractor Mobilization / Demobilization	$2,711
	3.2	Project Management, Material Handling & Amenities	$18,402
	3.3	Engineering	$18,121
	3.4	Testing & Commissioning	$1,559
	3.5	Permitting, Real Estate, Sales Tax and Additional Costs	$20,144
	3.6	Compensation for use of NYPA Structures (1 Circuit)	$8,919
	3.7	Legal, Environmental Licensing & Permitting and Environmental Mitigation	$7,719
		Total Indirect Cost (3)	**$77,575**
		Subtotal Project Cost (B=A+3) 2017 $	**$388,466**
	4	**Network Upgrade Facilities (NUF)**	
	4.1	NUF proposed as element of the Project	$0
	4.2	NUF identified during Evaluation	$0
		Subtotal NUF Cost (C)	**$0**

Total Project Cost (B+C) 2017 $	**$388,466**
Total Project Cost 2018 $	**$400,120**

NG & NY Transco - T018 - (Segment A)

Estimate Revision: 5

NG & NY Transco - T018 - (Segment A) - Direct Costs		*Total Each Segment*
Direct Labor, Material & Equipment Costs	A. Transmission Line Edic to Princetown	$ 135,362,305
Direct Labor, Material & Equipment Costs	B. Transmission Line Princetown to Rotterdam	$ 25,485,641
Direct Labor, Material & Equipment Costs	C. Transmission Line Princetown to New Scotland	$ 43,191,073
Direct Labor, Material & Equipment Costs	D. Rotterdam Substation - Install	$ 44,530,412
Direct Labor, Material & Equipment Costs	E. Rotterdam Substation - Removal	$ 3,611,030
Direct Labor, Material & Equipment Costs	F. Edic Substation - Install	$ 2,081,185
Direct Labor, Material & Equipment Costs	G. Edic Substation - Removal	$ 35,950
Direct Labor, Material & Equipment Costs	H. New Scotland Substation - Install	$ 6,878,173
Direct Labor, Material & Equipment Costs	I. New Scotland Substation - Removal	$ 159,075
Direct Labor, Material & Equipment Costs	J. Porter Substation - Install	$ 71,912
Direct Labor, Material & Equipment Costs	K. Porter Substation - Removal	$ 474,313
Direct Labor, Material & Equipment Costs	L. Interconnection Edic Station	$ 1,784,075
Direct Labor, Material & Equipment Costs	M. Interconnection New Scotland Station	$ 2,594,271
Direct Labor, Material & Equipment Costs	N. Interconnection Rotterdam Station	$ 4,080,624
Direct Labor, Material & Equipment Costs	O. System Upgrade Facilities (Various Lines for Edic to New Scotland)	$ -
Direct Labor, Material & Equipment Costs	P. System Upgrade Facilities (Various Stations for Edic to New Scotland)	$ -
	SUBTOTAL:	$ 270,340,040
	CONTRACTOR MARK-UP (OH&P)	$ 40,551,006
	CONTINGENCY ON ENTIRE PROJECT	$ -
	TOTAL DIRECT:	$ 310,891,046

NG & NY Transco - T018 - (Segment A) - Indirect Costs		*Total Each Segment*
Indirect Costs	A. Transmission Line Edic to Princetown	$ 38,838,802
Indirect Costs	B. Transmission Line Princetown to Rotterdam	$ 5,423,881
Indirect Costs	C. Transmission Line Princetown to New Scotland	$ 9,939,957
Indirect Costs	D. Rotterdam Substation - Install	$ 11,232,064
Indirect Costs	E. Rotterdam Substation - Removal	$ 585,240
Indirect Costs	F. Edic Substation - Install	$ 506,194
Indirect Costs	G. Edic Substation - Removal	$ 5,790
Indirect Costs	H. New Scotland Substation - Install	$ 1,654,143
Indirect Costs	I. New Scotland Substation - Removal	$ 25,622
Indirect Costs	J. Porter Substation - Install	$ 15,157
Indirect Costs	K. Porter Substation - Removal	$ 83,512
Indirect Costs	L. Interconnection Edic Station	$ 337,998
Indirect Costs	M. Interconnection New Scotland Station	$ 506,933
Indirect Costs	N. Interconnection Rotterdam Station	$ 700,876
Indirect Costs	O. System Upgrade Facilities (Various Lines for Edic to New Scotland)	$ -
Indirect Costs	P. System Upgrade Facilities (Various Stations for Edic to New Scotland)	$ -
Indirect Costs	Legal and Permitting (Includes Legal, Envir. Lisc. & Permit., and Envir. Mitagation)	$ 7,718,854
	TOTAL INDIRECT:	$ 77,575,022

TOTAL ESTIMATED COST:	$ 388,466,068

NG & NY Transco - T018 - (Segment A)

A. Transmission Line Edic to Princetown

Estimate Revision: 4

Total: $ 174,201,107

NG & NY Transco - T018 - (Segment A)	*Supply*	*Installation*	*Total*
A. Transmission Line Edic to Princetown			
1. CLEARING & ACCESS	$ 41,500	$ 36,310,876	$ 36,352,376
2. FOUNDATIONS	$ 7,516,941	$ 13,107,490	$ 20,624,431
3. STRUCTURES	$ 18,292,102	$ 27,319,288	$ 45,611,390
4. CONDUCTOR, SHIELDWIRE, OPGW	$ 4,946,158	$ 21,045,480	$ 25,991,638
5. INSULATORS, FITTINGS, HARDWARE	$ 4,581,500	$ 2,200,970	$ 6,782,470
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 2,830,256	$ 36,008,546	$ 38,838,802
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 38,208,458	$ 135,992,649	$ 174,201,107
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 38,208,458	$ 135,992,649	$ 174,201,107

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Sum	Labor & Equipment Supply Rate	Labor & Equipment Sum	Total Unit Rate	TOTAL
A. Transmission Line Edic to Princetown									
1. CLEARING & ACCESS									
1.1	Clearing the ROW - Heavy (mowing & clearing)	19	Acre	$ -	$ -	$ 15,000	$ 285,000	$ 15,000	**$ 285,000**
1.2	Clearing the ROW - Light (mowing)	172	Acre		$ -	$ 5,000	$ 860,000	$ 5,000	**$ 860,000**
1.3	Permanent Access Road	70,540.8	LF	$ -	$ -	$ 45	$ 3,174,336	$ 45	**$ 3,174,336**
1.4	Silt Fence	352,704	LF	$ -	$ -	$ 4	$ 1,410,816	$ 4	**$ 1,410,816**
1.5	Matting - Access and ROW	282,163.2	LF	$ -	$ -	$ 70	$ 19,751,424	$ 70	**$ 19,751,424**
1.6	Matting - To Work Area	27,075	LF	$ -	$ -	$ 70	$ 1,895,250	$ 70	**$ 1,895,250**
1.7	Snow Removal	66.8	Mile	$ -	$ -	$ 16,000	$ 1,068,800	$ 16,000	**$ 1,068,800**
1.8	ROW Restoration	66.8	Mile	$ -	$ -	$ 10,000	$ 668,000	$ 10,000	**$ 668,000**
1.9	Work Pads	1,805,000	SF	$ -	$ -	$ 4	$ 6,353,600	$ 4	**$ 6,353,600**
1.10	Restoration for Work Pad areas	361,000	SF	$ -	$ -	$ 0.15	$ 54,150	$ 0	**$ 54,150**
1.11	Temporary Access Bridge	-	EA	$ -	$ -	$ 20,035	$ -	$ 20,035	**$ -**
1.12	Air Bridge	-	EA	$ -	$ -	$ 14,445	$ -	$ 14,445	**$ -**
1.13	Stabilized Construction Entrance	50	EA	$ -	$ -	$ 4,580	$ 229,000	$ 4,580	**$ 229,000**
1.14	Maintenance and Protection of Traffic on Public Roads	100	EA	$ -	$ -	$ 4,130	$ 413,000	$ 4,130	**$ 413,000**
1.15	Culverts / Misc. Access	10	EA	$ 750	$ 7,500	$ 1,250	$ 12,500	$ 2,000	**$ 20,000**
1.16	Gates	17	EA	$ 2,000	$ 34,000	$ 2,500	$ 42,500	$ 4,500	**$ 76,500**
1.17	Concrete Washout Station	50	EA	$ -	$ -	$ 1,850	$ 92,500	$ 1,850	**$ 92,500**
TOTAL - CLEARING & ACCESS:					$ 41,500		$ 36,310,876		**$ 36,352,376**
2. FOUNDATIONS									
2.1	***Direct Embed -*** 345kV Single Circuit H-Pole Tangent (0-2 degree) 65'-115'	268	Structure	$ 3,094	$ 829,125	$ 21,038	$ 5,638,050	$ 24,131	**$ 6,467,175**
2.2	***Drilled Pier -*** 345kV Single Circuit H-Pole Angle (15-30 degree)	9	Structure	$ 94,824	$ 853,418	$ 95,840	$ 862,557	$ 190,664	**$ 1,715,975**
2.3	***Drilled Pier -*** 345kV Single Circuit H-Pole Angle (2-15 degree)	33	Structure	$ 94,824	$ 3,129,198	$ 95,840	$ 3,162,710	$ 190,664	**$ 6,291,908**
2.4	***Drilled Pier -*** 345kV Single Circuit H-Pole Angle (30-60 degree)	6	Structure	$ 94,824	$ 568,945	$ 95,840	$ 575,038	$ 190,664	**$ 1,143,983**
2.5	***Drilled Pier -*** 345kV Single Circuit Single Pole Angle (2-15 degree)	3	Structure	$ 79,376	$ 238,129	$ 80,226	$ 240,679	$ 159,603	**$ 478,808**
2.6	***Drilled Pier -*** 345kV Single Circuit Single Pole Deadend (15-30 degree)	8	Structure	$ 100,412	$ 803,294	$ 101,487	$ 811,897	$ 201,899	**$ 1,615,191**
2.7	***Drilled Pier -*** 345kV Single Circuit Single Pole Deadend (30-60 degree)	2	Structure	$ 100,412	$ 200,823	$ 101,487	$ 202,974	$ 201,899	**$ 403,798**
2.8	***Drilled Pier -*** 345kV Single Circuit Single Pole Tangent (0-2 degree)	32	Structure	$ 27,938	$ 894,010	$ 28,237	$ 903,584	$ 56,175	**$ 1,797,594**
2.9									
2.10	Rock Excavation Adder	355	CY	$ -	$ -	$ 2,000	$ 710,000	$ 2,000	**$ 710,000**
TOTAL - FOUNDATIONS:					$ 7,516,941		$ 13,107,490		**$ 20,624,431**
3. STRUCTURES									
3.1	345kV Single Circuit H-Pole Angle (15-30 degree) 60'-90'	9	Structure	$ 97,613	$ 878,521	$ 58,568	$ 527,112	$ 156,181	**$ 1,405,633**
3.2	345kV Single Circuit H-Pole Angle (2-15 degree) 60'-90'	33	Structure	$ 97,613	$ 3,221,242	$ 58,568	$ 1,932,745	$ 156,181	**$ 5,153,988**
3.3	345kV Single Circuit H-Pole Angle (30-60 degree) 70'-100'	6	Structure	$ 98,839	$ 593,036	$ 59,304	$ 355,822	$ 158,143	**$ 948,858**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Sum	Labor & Equipment Supply Rate	Labor & Equipment Sum	Total Unit Rate	TOTAL
3.4	345kV Single Circuit H-Pole Tangent (0-2 degree) 65'-115'	268	Structure	$ 39,502	$ 10,586,586	$ 23,701	$ 6,351,952	$ 63,203	**$ 16,938,538**
3.5	345kV Single Circuit Single Pole Angle (2-15 degree) 95'-110'	3	Structure	$ 82,952	$ 248,856	$ 49,771	$ 149,314	$ 132,723	**$ 398,170**
3.6	345kV Single Circuit Single Pole Deadend (15-30 degree) 115'-155'	8	Structure	$ 101,691	$ 813,526	$ 61,014	$ 488,116	$ 162,705	**$ 1,301,642**
3.7	345kV Single Circuit Single Pole Deadend (30-60 degree) 140'-145'	2	Structure	$ 106,098	$ 212,195	$ 63,659	$ 127,317	$ 169,756	**$ 339,512**
3.8	345kV Single Circuit Single Pole Tangent (0-2 degree) 100'-130'	32	Structure	$ 43,612	$ 1,395,577	$ 26,167	$ 837,346	$ 69,779	**$ 2,232,923**
3.9									
3.10	Remove Existing Foundation	50	EA	$ -	$ -	$ 7,500	$ 375,000	$ 7,500	**$ 375,000**
3.11	Remove Existing Structure and Accessories	994	EA	$ -	$ -	$ 12,500	$ 12,425,000	$ 12,500	**$ 12,425,000**
3.12									
3.13									
3.14	Install Grounding and Grounding Accessories	677	Pole	$ 506	$ 342,562	$ 5,539	$ 3,749,565	$ 6,045	**$ 4,092,127**
3.15									
TOTAL - STRUCTURES:					$ 18,292,102		$ 27,319,288		**$ 45,611,390**
4. CONDUCTOR, SHIELDWIRE, OPGW									
4.1	345kV - (1) 954kcmil 54/7 ACSS "Cardinal"	2,228,688	LF	$ 1.90	$ 4,234,507	$ 5.00	$ 11,143,440	$ 6.90	**$ 15,377,947**
4.2	(1) OPGW 36 Fiber AC-33/38/571	301,594	LF	$ 1.35	$ 407,152	$ 5.00	$ 1,507,970	$ 6.35	**$ 1,915,122**
4.3	(1) 3/8" EHS7 Steel	301,594	LF	$ 0.47	$ 141,749	$ 5.00	$ 1,507,970	$ 5.47	**$ 1,649,719**
4.4	Remove Existing Conductor and Accessories	121.0	Mile	$ -	$ -	$ 30,000	$ 3,630,000	$ 30,000.00	**$ 3,630,000**
4.5	Remove Existing OPGW and Accessories	108.4	Mile	$ -	$ -	$ 12,000	$ 1,300,800	$ 12,000.00	**$ 1,300,800**
4.6	Remove Existing OHSW and Accessories	108.4	Mile	$ -	$ -	$ 12,000	$ 1,300,800	$ 12,000.00	**$ 1,300,800**
4.7	Rider Poles (187 Locations)	93	Set	$ 1,750	$ 162,750	$ 3,500	$ 325,500	$ 5,250.00	**$ 488,250**
4.8	Rider Poles - Relocated	94	Set	$ -	$ -	$ 3,500	$ 329,000	$ 3,500.00	**$ 329,000**
TOTAL: CONDUCTOR, SHIELDWIRE, OPGW:					$ 4,946,158		$ 21,045,480		**$ 25,991,638**
5. INSULATOR, FITTINGS, HARDWARE									
5.1	345kV Tangent (1-Group of 18-Bells Each Assembly)	1,113	Assembly	$ 1,800	$ 2,003,400	$ 720	$ 801,360	$ 2,520	**$ 2,804,760**
5.2	115kV Tangent (1-Group of 9-Bells Each Assembly)	-	Assembly	$ 900	$ -	$ 560	$ -	$ 1,460	**$ -**
5.3	345kV Dead-end & Angle Insulators (1-Group of 18-Bells Each Assembly)	375	Assembly	$ 1,800	$ 675,000	$ 720	$ 270,000	$ 2,520	**$ 945,000**
5.4	115kV Dead-end & Angle Insulators (1-Group of 9-Bells Each Assembly)	-	Assembly	$ 900	$ -	$ 560	$ -	$ 1,460	**$ -**
5.5	OPGW Assembly - Tangent	336	Assembly	$ 200	$ 67,200	$ 150	$ 50,400	$ 350	**$ 117,600**
5.6	OPGW Assembly - Angle / DE	50	Assembly	$ 250	$ 12,500	$ 150	$ 7,500	$ 400	**$ 20,000**
5.7	OHSW Assembly - Tangent	301	Assembly	$ 200	$ 60,200	$ 150	$ 45,150	$ 350	**$ 105,350**
5.8	OHSW Assembly - Angle / DE	20	Assembly	$ 250	$ 5,000	$ 150	$ 3,000	$ 400	**$ 8,000**
5.9	OPGW Splice Boxes	41	Set	$ 1,746	$ 71,592	$ 2,274	$ 93,234	$ 4,020	**$ 164,826**
5.10	OPGW Splice & Test	41	EA	$ 2,520	$ 103,320	$ 2,520	$ 103,320	$ 5,040	**$ 206,640**
5.11	Spacer - Conductor	3,593	EA	$ 50	$ 179,650	$ 35	$ 125,755	$ 85	**$ 305,405**
5.12	Vibration Dampers - Conductor	2,874	EA	$ 35	$ 100,590	$ 35	$ 100,590	$ 70	**$ 201,180**
5.13	Shield wire / OPGW Dampers, Misc. Fittings	1,356	EA	$ 27	$ 36,612	$ 35	$ 47,460	$ 62	**$ 84,072**
5.14									
5.15	*Replace - Mono Pole Vertical Tangent - V-String*	480	Set	$ 1,800	$ 864,000	$ 720	$ 345,600	$ 2,520	**$ 1,209,600**
5.16	*Replace - Dead-end & Angle Insulators*	195	Set	$ 1,800	$ 351,000	$ 720	$ 140,400	$ 2,520	**$ 491,400**
5.17									
5.18	Guys, Anchors, and Accessories	-	EA	$ 720	$ -	$ 885	$ -	$ 1,605	**$ -**
5.19	Misc. materials (Signs and Markers)	66.8	Mile	$ 770	$ 51,436	$ 1,006	$ 67,201	$ 1,776	**$ 118,637**
TOTAL - INSULATORS, FITTINGS, HARDWARE:					$ 4,581,500		$ 2,200,970		**$ 6,782,470**
A. Transmission Line Edic to Princetown					$ 35,378,202		$ 99,984,104		**$ 135,362,305**
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
6.1	Mob / Demob	1	LS	$ -	$ -	$ 1,353,623	$ 1,353,623	$ 1,353,623	**$ 1,353,623**
	Project Management, Material Handling & Amenities								
6.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 6,506,866	$ 6,506,866	$ 6,506,866	**$ 6,506,866**
6.3	Utility PM and Project Oversite	1	LS		$ -	$ 1,353,623	$ 1,353,623	$ 1,353,623	**$ 1,353,623**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Sum	Labor & Equipment Supply Rate	Labor & Equipment Sum	Total Unit Rate	TOTAL
6.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 1,353,623	$ 1,353,623	$ 1,353,623	**$ 1,353,623**
	Engineering								
6.5	Design Engineering	1	LS	$ -	$ -	$ 6,768,115	$ 6,768,115	$ 6,768,115	**$ 6,768,115**
6.6	LiDAR	1	LS	$ -	$ -	$ 406,087	$ 406,087	$ 406,087	**$ 406,087**
6.7	Geotech	67	Location	$ -	$ -	$ 3,500	$ 234,500	$ 3,500	**$ 234,500**
6.8	Surveying/Staking	1	LS	$ -	$ -	$ 947,536	$ 947,536	$ 947,536	**$ 947,536**
	Testing & Commissioning								
6.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 40,000	$ 40,000	$ 40,000	**$ 40,000**
	Permitting and Additional Costs								
6.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.12	Warranties / LOC's	1	LS	$ -	$ -	$ 406,087	$ 406,087	$ 406,087	**$ 406,087**
6.13	Real Estate Costs (New ROW)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.14	Real Estate Costs (Incumbent Utility ROW)	1	LS	$ -	$ -	$ 7,584,000	$ 7,584,000	$ 7,584,000	**$ 7,584,000**
6.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.17	Compensation for use of 1 Ckt - NYPA Structures (92 Structures)	1	LS	$ -	$ -	$ 8,919,123	$ 8,919,123	$ 8,919,123	**$ 8,919,123**
6.18	Sales Tax on Materials	1	LS	$ 2,830,256	$ 2,830,256	$ -	$ -	$ 2,830,256	**$ 2,830,256**
6.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 135,362	$ 135,362	$ 135,362	**$ 135,362**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 2,830,256		$ 36,008,546		**$ 38,838,802**

NG & NY Transco - T018 - (Segment A)

B. Transmission Line Princetown to Rotterdam

Estimate Revision: 4

Total: $ 30,909,522

NG & NY Transco - T018 - (Segment A)	*Supply*	*Installation*	*Total*
B. Transmission Line Princetown to Rotterdam			
1. CLEARING & ACCESS	$ 6,000	$ 4,142,200	$ 4,148,200
2. FOUNDATIONS	$ 3,178,993	$ 4,231,038	$ 7,410,031
3. STRUCTURES	$ 4,080,173	$ 4,419,070	$ 8,499,243
4. CONDUCTOR, SHIELDWIRE, OPGW	$ 773,826	$ 2,903,455	$ 3,677,281
5. INSULATORS, FITTINGS, HARDWARE	$ 1,143,953	$ 606,933	$ 1,750,886
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 734,636	$ 4,689,245	$ 5,423,881
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 9,917,580	$ 20,991,942	$ 30,909,522
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 9,917,580	$ 20,991,942	$ 30,909,522

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
B. Transmission Line Princetown to Rotterdam									
1. CLEARING & ACCESS									
1.1	Clearing the ROW - Heavy (mowing & clearing)	-	Acre	$ -	$ -	$ 15,000	$ -	$ 15,000	$ -
1.2	Clearing the ROW - Light (mowing)	24.0	Acre	$ -	$ -	$ 5,000	$ 120,000	$ 5,000	**$ 120,000**
1.3	Permanent Access Road	5,280	LF	$ -	$ -	$ 45	$ 237,600	$ 45	**$ 237,600**
1.4	Silt Fence	26,400	LF	$ -	$ -	$ 4	$ 105,600	$ 4	**$ 105,600**
1.5	Matting - Access and ROW	21,120	LF	$ -	$ -	$ 70	$ 1,478,400	$ 70	**$ 1,478,400**
1.6	Matting - To Work Area	6,375	LF	$ -	$ -	$ 70	$ 446,250	$ 70	**$ 446,250**
1.7	Snow Removal	5.0	Mile	$ -	$ -	$ 16,000	$ 80,000	$ 16,000	**$ 80,000**
1.8	ROW Restoration	5.0	Mile	$ -	$ -	$ 10,000	$ 50,000	$ 10,000	**$ 50,000**
1.9	Work Pads	425,000	SF	$ -	$ -	$ 4	$ 1,496,000	$ 4	**$ 1,496,000**
1.10	Restoration for Work Pad areas	85,000	SF	$ -	$ -	$ 0.2	$ 12,750	$ 0	**$ 12,750**
1.11	Temporary Access Bridge	-	EA	$ -	$ -	$ 20,035	$ -	$ 20,035	$ -
1.12	Air Bridge	-	EA	$ -	$ -	$ 14,445	$ -	$ 14,445	$ -
1.13	Stabilized Construction Entrance	10	EA	$ -	$ -	$ 4,580	$ 45,800	$ 4,580	**$ 45,800**
1.14	Maintenance and Protection of Traffic on Public Roads	10	LS	$ -	$ -	$ 4,130	$ 41,300	$ 4,130	**$ 41,300**
1.15	Gates	-	EA	$ 2,000	$ -	$ 2,500	$ -	$ 4,500	$ -
1.16	Culverts / Misc. Access	8	EA	$ 750	$ 6,000	$ 1,250	$ 10,000	$ 2,000	**$ 16,000**
1.17	Concrete Washout Station	10	EA	$ -	$ -	$ 1,850	$ 18,500	$ 1,850	**$ 18,500**
TOTAL - CLEARING & ACCESS:					$ 6,000		$ 4,142,200		**$ 4,148,200**
2. FOUNDATIONS									
2.1	***Drilled Pier*** - 345kV Single Circuit Single Pole Angle	4	Structure	$ 28,102	$ 112,409	$ 28,403	$ 113,612	$ 56,505	**$ 226,021**
2.2	***Drilled Pier*** - 345kV Single Circuit Single Pole Deadend	2	Structure	$ 79,376	$ 158,752	$ 80,226	$ 160,453	$ 159,603	**$ 319,205**
2.3	***Drilled Pier*** - 345kV Single Circuit Single Pole Hvy Angle/DE	22	Structure	$ 79,376	$ 1,746,277	$ 80,226	$ 1,764,979	$ 159,603	**$ 3,511,255**
2.4	***Drilled Pier*** - 345kV Single Circuit Single Pole Tangent Delta	57	Structure	$ 20,378	$ 1,161,555	$ 20,596	$ 1,173,995	$ 40,975	**$ 2,335,550**
2.5									
2.6									
2.7									
2.8	Rock Excavation Adder	509.0	CY	$ -	$ -	$ 2,000	$ 1,018,000	$ 2,000	**$ 1,018,000**
TOTAL - FOUNDATIONS:					$ 3,178,993		$ 4,231,038		**$ 7,410,031**
3. STRUCTURES									
3.1	345kV Single Circuit Single Pole Angle 95'	4	Structure	$ 40,408	$ 161,631	$ 24,245	$ 96,978	$ 64,652	**$ 258,609**
3.2	345kV Single Circuit Single Pole Deadend 95'	2	Structure	$ 110,393	$ 220,786	$ 66,236	$ 132,472	$ 176,629	**$ 353,258**
3.3	345kV Single Circuit Single Pole Hvy Angle/DE 90'-95'	22	Structure	$ 83,034	$ 1,826,747	$ 49,820	$ 1,096,048	$ 132,854	**$ 2,922,796**
3.4	345kV Single Circuit Single Pole Tangent Delta 90'-95'	57	Structure	$ 32,070	$ 1,827,998	$ 19,242	$ 1,096,799	$ 51,312	**$ 2,924,797**
3.5	Remove Existing Foundation	22	EA	$ -	$ -	$ 7,500	$ 163,500	$ 7,500	**$ 163,500**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.6	Remove Existing Structure and Accessories	109	EA	$ -	$ -	$ 12,500	$ 1,362,500	$ 12,500	**$ 1,362,500**
3.7									
3.8	Install Grounding and Grounding Accessories	85	Pole	$ 506	$ 43,010	$ 5,539	$ 470,773	$ 6,045	**$ 513,783**
3.9									
3.10									
TOTAL - STRUCTURES PRINCTOWN TO NEW SCOTLAND:					$ 4,080,173		$ 4,419,070		**$ 8,499,243**
4. CONDUCTOR, SHIELDWIRE, OPGW									
4.1	345kV - (1) 954kcmil 54/7 ACSS "Cardinal"	339,293	LF	$ 1.90	$ 644,657	$ 5.00	$ 1,696,465	$ 6.90	**$ 2,341,122**
4.2	(1) OPGW 36 Fiber AC-33/38/571	56,549	LF	$ 1.35	$ 76,341	$ 5.00	$ 282,745	$ 6.35	**$ 359,086**
4.3	(1) 3/8" EHS7 Steel	56,549	LF	$ 0.47	$ 26,578	$ 5.00	$ 282,745	$ 5.47	**$ 309,323**
4.5	Remove Existing Conductor and Accessories	10.0	Mile	$ -	$ -	$ 30,000	$ 300,000	$ 30,000.00	**$ 300,000**
4.6	Remove Existing OPGW and Accessories	10.0	Mile	$ -	$ -	$ 12,000	$ 120,000	$ 12,000.00	**$ 120,000**
4.7	Remove Existing OHSW and Accessories	10.0	Mile	$ -	$ -	$ 12,000	$ 120,000	$ 12,000.00	**$ 120,000**
4.8	Rider Poles	15	Set	$ 1,750	$ 26,250	$ 3,500	$ 52,500	$ 5,250.00	**$ 78,750**
4.9	Rider Poles - Relocated	14	Set	$ -	$ -	$ 3,500	$ 49,000	$ 3,500.00	**$ 49,000**
4.10									
4.11									
TOTAL: CONDUCTOR, SHIELDWIRE, OPGW:					$ 773,826		$ 2,903,455		**$ 3,677,281**
5. INSULATOR, FITTINGS, HARDWARE									
5.1	345kV Tangent (1-Group of 18-Bells Each Assembly)	366	Assembly	$ 1,800	$ 658,800	$ 720	$ 263,520	$ 2,520	**$ 922,320**
5.2	115kV Tangent (1-Group of 9-Bells Each Assembly)	-	Assembly	$ 900	$ -	$ 560	$ -	$ 1,460	**$ -**
5.3	345kV Dead-end & Angle Insulators (1-Group of 18-Bells Each Assembly)	-	Assembly	$ 1,800	$ -	$ 720	$ -	$ 2,520	**$ -**
5.4	115kV Dead-end & Angle Insulators (1-Group of 9-Bells Each Assembly)	360	Assembly	$ 900	$ 324,000	$ 560	$ 201,600	$ 1,460	**$ 525,600**
5.5	OPGW Assembly - Tangent	61	Assembly	$ 200	$ 12,200	$ 150	$ 9,150	$ 350	**$ 21,350**
5.6	OPGW Assembly - Angle / DE	24	Assembly	$ 250	$ 6,000	$ 150	$ 3,600	$ 400	**$ 9,600**
5.7	OHSW Assembly - Tangent	61	Assembly	$ 200	$ 12,200	$ 150	$ 9,150	$ 350	**$ 21,350**
5.8	OHSW Assembly - Angle / DE	24	Assembly	$ 250	$ 6,000	$ 150	$ 3,600	$ 400	**$ 9,600**
5.9	OPGW Splice Boxes	8	Set	$ 1,746	$ 13,969	$ 2,274	$ 18,192	$ 4,020	**$ 32,161**
5.10	OPGW Splice & Test	8	EA	$ 2,520	$ 20,160	$ 2,520	$ 20,160	$ 5,040	**$ 40,320**
5.11	Spacer - Conductor	1,038	EA	$ 50	$ 51,900	$ 35	$ 36,330	$ 85	**$ 88,230**
5.12	Vibration Dampers - Conductor	830	EA	$ 35	$ 29,050	$ 35	$ 29,050	$ 70	**$ 58,100**
5.13	Shieldwire / OPGW Dampers, Misc. Fittings	210	EA	$ 27	$ 5,670	$ 35	$ 7,350	$ 62	**$ 13,020**
5.14	Guys, Anchors, and Accessories	-	EA	$ 720	$ -	$ 885	$ -	$ 1,605	**$ -**
5.15	Misc. materials (Signs and Markers)	5.2	Mile	$ 770	$ 4,004	$ 1,006	$ 5,231	$ 1,776	**$ 9,235**
TOTAL - INSULATORS, FITTINGS, HARDWARE:					$ 1,143,953		$ 606,933		**$ 1,750,886**
B. Transmission Line Princetown to Rotterdam					$ 9,182,945		$ 16,302,697		**$ 25,485,641**
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS									
	Contractor Mobilization / Demobilization								
6.1	Mob / Demob	1	LS	$ -	$ -	$ 254,856	$ 254,856	$ 254,856	**$ 254,856**
	Project Management, Material Handling & Amenities								
6.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 1,225,095	$ 1,225,095	$ 1,225,095	**$ 1,225,095**
6.3	Utility PM and Project Oversite	1	LS		$ -	$ 254,856	$ 254,856	$ 254,856	**$ 254,856**
6.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 254,856	$ 254,856	$ 254,856	**$ 254,856**
	Engineering								
6.5	Design Engineering	1	LS	$ -	$ -	$ 1,274,282	$ 1,274,282	$ 1,274,282	**$ 1,274,282**
6.6	LiDAR	1	LS	$ -	$ -	$ 76,457	$ 76,457	$ 76,457	**$ 76,457**
6.7	Geotech	5	Location	$ -	$ -	$ 3,500	$ 17,500	$ 3,500	**$ 17,500**
6.8	Surveying/Staking	1	LS	$ -	$ -	$ 178,399	$ 178,399	$ 178,399	**$ 178,399**
	Testing & Commissioning								
6.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 40,000	$ 40,000	$ 40,000	**$ 40,000**
	Permitting and Additional Costs								
6.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.12	Warranties / LOC's	1	LS	$ -	$ -	$ 76,457	$ 76,457	$ 76,457	**$ 76,457**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6.13	Real Estate Costs (New ROW)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.14	Real Estate Costs (Incumbent Utility ROW)	1	LS	$ -	$ -	$ 1,011,000	$ 1,011,000	$ 1,011,000	**$ 1,011,000**
6.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.18	Sales Tax on Materials	1	LS	$ 734,636	$ 734,636	$ -	$ -	$ 734,636	**$ 734,636**
6.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 25,486	$ 25,486	$ 25,486	**$ 25,486**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 734,636		$ 4,689,245		**$ 5,423,881**

NG & NY Transco - T018 - (Segment A)

C. Transmission Line Princetown to New Scotland

Estimate Revision: 5

Total: $ 53,131,031

NG & NY Transco - T018 - (Segment A)	*Supply*	*Installation*	*Total*
C. Transmission Line Princetown to New Scotland			
1. CLEARING & ACCESS	**$ 31,000**	**$ 11,607,774**	**$ 11,638,774**
2. FOUNDATIONS	**$ 4,202,127**	**$ 5,800,125**	**$ 10,002,252**
3. STRUCTURES	**$ 7,218,941**	**$ 5,703,110**	**$ 12,922,050**
4. CONDUCTOR, SHIELDWIRE, OPGW	**$ 1,564,842**	**$ 4,756,290**	**$ 6,321,132**
5. INSULATORS, FITTINGS, HARDWARE	**$ 1,555,610**	**$ 751,255**	**$ 2,306,865**
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	**$ 1,165,802**	**$ 8,774,156**	**$ 9,939,957**
CONTRACTOR MARK-UP (OH&P)	**$ -**	**$ -**	**$ -**
SUBTOTAL:	**$ 15,738,322**	**$ 37,392,709**	**$ 53,131,031**
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	**$ 15,738,322**	**$ 37,392,709**	**$ 53,131,031**

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
C. Transmission Line Princetown to New Scotland									
1. CLEARING & ACCESS									
1.1	Clearing the ROW - Heavy (mowing & clearing)	-	Acre	$ -	$ -	$ 15,000	$ -	$ 15,000	**$ -**
1.2	Clearing the ROW - Light (mowing)	54.0	Acre	$ -	$ -	$ 5,000	$ 270,000	$ 5,000	**$ 270,000**
1.3	Permanent Access Road	20,803	LF	$ -	$ -	$ 45	$ 936,144	$ 45	**$ 936,144**
1.4	Silt Fence	104,016.0	LF	$ -	$ -	$ 4	$ 416,064	$ 4	**$ 416,064**
1.5	Matting - Access and ROW	83,213	LF	$ -	$ -	$ 70	$ 5,824,896	$ 70	**$ 5,824,896**
1.6	Matting - To Work Area	9,675.0	LF	$ -	$ -	$ 70	$ 677,250	$ 70	**$ 677,250**
1.7	Snow Removal	20	Mile	$ -	$ -	$ 16,000	$ 315,200	$ 16,000	**$ 315,200**
1.8	ROW Restoration	19.7	Mile	$ -	$ -	$ 10,000	$ 197,000	$ 10,000	**$ 197,000**
1.9	Work Pads	645,000.0	SF	$ -	$ -	$ 4	$ 2,270,400	$ 4	**$ 2,270,400**
1.10	Restoration for Work Pad areas	129,000.0	SF	$ -	$ -	$ 0.2	$ 19,350	$ 0	**$ 19,350**
1.11	Temporary Access Bridge	-	EA	$ -	$ -	$ 20,035	$ -	$ 20,035	$ -
1.12	Air Bridge	2.0	EA	$ -	$ -	$ 14,445	$ 28,890	$ 14,445	**$ 28,890**
1.13	Stabilized Construction Entrance	76.0	EA	$ -	$ -	$ 4,580	$ 348,080	$ 4,580	**$ 348,080**
1.14	Maintenance and Protection of Traffic on Public Roads	50	EA	$ -	$ -	$ 4,130	$ 206,500	$ 4,130	**$ 206,500**
1.15	Gates	11	EA	$ 2,000	$ 22,000	$ 2,500	$ 27,500	$ 4,500	**$ 49,500**
1.16	Culverts / Misc. Access	12	EA	$ 750	$ 9,000	$ 1,250	$ 15,000	$ 2,000	**$ 24,000**
1.17	Concrete Washout Station	30	EA	$ -	$ -	$ 1,850	$ 55,500	$ 1,850	**$ 55,500**
TOTAL - CLEARING & ACCESS:					$ 31,000		$ 11,607,774		**$ 11,638,774**
2. FOUNDATIONS									
2.1	***Direct Embed*** - 345kV Single Circuit H-Pole Tangent (0-2 degree) 65'-115'	56	Structure	$ 3,094	$ 173,250	$ 21,038	$ 1,178,100	$ 24,131	**$ 1,351,350**
2.2	***Drilled Pier*** - 345kV Double Circuit Single Pole Deadend (0-30 degree)	2	Structure	$ 124,323	$ 248,646	$ 125,655	$ 251,309	$ 249,978	**$ 499,956**
2.3	***Drilled Pier*** - 345kV Double Circuit Single Pole Tangent (0-2 degree)	15	Structure	$ 27,856	$ 417,834	$ 28,154	$ 422,309	$ 56,010	**$ 840,144**
2.4	***Drilled Pier*** - 345kV Single Circuit H-Pole Angle (15-30 degree)	3	Structure	$ 94,824	$ 284,473	$ 95,840	$ 287,519	$ 190,664	**$ 571,992**
2.5	***Drilled Pier*** - 345kV Single Circuit H-Pole Angle (2-15 degree)	6	Structure	$ 94,824	$ 568,945	$ 95,840	$ 575,038	$ 190,664	**$ 1,143,983**
2.6	***Drilled Pier*** - 345kV Single Circuit H-Pole Angle (30-60 degree)	5	Structure	$ 94,824	$ 474,121	$ 95,840	$ 479,199	$ 190,664	**$ 953,319**
2.7	***Drilled Pier*** - 345kV Single Circuit Single Pole Angle (2-15 degree)	2	Structure	$ 79,376	$ 158,752	$ 80,226	$ 160,453	$ 159,603	**$ 319,205**
2.8	***Drilled Pier*** - 345kV Single Circuit Single Pole Deadend (15-30 degree)	6	Structure	$ 100,412	$ 602,470	$ 101,487	$ 608,923	$ 201,899	**$ 1,211,393**
2.9	***Drilled Pier*** - 345kV Single Circuit Single Pole Deadend (30-60 degree)	2	Structure	$ 100,412	$ 200,823	$ 101,487	$ 202,974	$ 201,899	**$ 403,798**
2.10	***Drilled Pier*** - 345kV Single Circuit Single Pole Tangent 0 (0-2 degree)	32	Structure	$ 33,525	$ 1,072,812	$ 33,884	$ 1,084,301	$ 67,410	**$ 2,157,112**
2.11									$ -
2.12	Rock Excavation Adder	275.0	CY	$ -	$ -	$ 2,000	$ 550,000	$ 2,000	**$ 550,000**
2.13									
2.14									
2.15									
TOTAL - FOUNDATIONS:					$ 4,202,127		$ 5,800,125		**$ 10,002,252**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3. STRUCTURES									
3.1	345kV Double Circuit Single Pole Deadend (0-30 degree) 125'-140'	2	Structure	$ 134,867	$ 269,734	$ 80,920	$ 161,840	$ 215,787	**$ 431,574**
3.2	345kV Double Circuit Single Pole Tangent (0-2 degree) 110'-140'	15	Structure	$ 48,606	$ 729,089	$ 29,164	$ 437,453	$ 77,769	**$ 1,166,542**
3.3	345kV Single Circuit H-Pole Angle (15-30 degree) 70'-90'	3	Structure	$ 97,613	$ 292,840	$ 58,568	$ 175,704	$ 156,181	**$ 468,544**
3.4	345kV Single Circuit H-Pole Angle (2-15 degree) 60'-75'	6	Structure	$ 97,613	$ 585,680	$ 58,568	$ 351,408	$ 156,181	**$ 937,089**
3.5	345kV Single Circuit H-Pole Angle (30-60 degree) 60'-75'	5	Structure	$ 99,085	$ 495,423	$ 59,451	$ 297,254	$ 158,535	**$ 792,676**
3.6	345kV Single Circuit H-Pole Tangent (0-2 degree) 70'-115'	56	Structure	$ 39,385	$ 2,205,587	$ 23,631	$ 1,323,352	$ 63,017	**$ 3,528,939**
3.7	345kV Single Circuit Single Pole Angle (2-15 degree) 95'	2	Structure	$ 82,952	$ 165,904	$ 49,771	$ 99,543	$ 132,723	**$ 265,447**
3.8	345kV Single Circuit Single Pole Deadend (15-30 degree) 115'-150'	6	Structure	$ 101,691	$ 610,145	$ 61,014	$ 366,087	$ 162,705	**$ 976,232**
3.9	345kV Single Circuit Single Pole Deadend (30-60 degree) 135'-155'	2	Structure	$ 106,098	$ 212,195	$ 63,659	$ 127,317	$ 169,756	**$ 339,512**
3.10	345kV Single Circuit Single Pole Tangent 0 (0-2 degree) 110'-145'	32	Structure	$ 48,489	$ 1,551,651	$ 29,093	$ 930,990	$ 77,583	**$ 2,482,641**
3.11	Remove Existing Foundation	4	EA	$ -	$ -	$ 7,500	$ 30,000	$ 7,500	**$ 30,000**
3.12	Remove Existing Structure and Accessories	24	EA	$ -	$ -	$ 12,500	$ 300,000	$ 12,500	**$ 300,000**
3.13									
3.14	Install Grounding and Grounding Accessories	199	Pole	$ 506	$ 100,694	$ 5,539	$ 1,102,162	$ 6,045	**$ 1,202,856**
3.15									
TOTAL - STRUCTURES:					$ 7,218,941		$ 5,703,110		**$ 12,922,050**
4. CONDUCTOR, SHIELDWIRE, OPGW									
4.1	**345kV** - (1) 954kcmil 54/7 ACSS "Cardinal"	661,954	LF	$ 1.90	$ 1,257,713	$ 5.00	$ 3,309,770	$ 6.90	**$ 4,567,483**
4.2	(1) OPGW 36 Fiber AC-33/38/571	110,326	LF	$ 1.35	$ 148,940	$ 5.00	$ 551,630	$ 6.35	**$ 700,570**
4.3	(1) 3/8" EHS7 Steel	75,398	LF	$ 0.47	$ 35,437	$ 5.00	$ 376,990	$ 5.47	**$ 412,427**
4.4	**115kV** - (1) 954kcmil 54/7 ACSS "Cardinal"	41,580	LF	$ 1.90	$ 79,002	$ 5.00	$ 207,900	$ 6.90	**$ 286,902**
4.5	(1) OPGW 36 Fiber AC-33/38/571	-	LF	$ 1.35	$ -	$ 5.00	$ -	$ 6.35	**$ -**
4.6	(1) 3/8" EHS7 Steel	-	LF	$ 0.47	$ -	$ 5.00	$ -	$ 5.47	**$ -**
4.7	Remove Existing Conductor and Accessories	2.5	Mile	$ -	$ -	$ 30,000	$ 75,000	$ 30,000.00	**$ 75,000**
4.8	Remove Existing OPGW and Accessories	2.5	Mile	$ -	$ -	$ 12,000	$ 30,000	$ 12,000.00	**$ 30,000**
4.9	Remove Existing OHSW and Accessories	2.5	Mile	$ -	$ -	$ 12,000	$ 30,000	$ 12,000.00	**$ 30,000**
4.10	Rider Poles	25	EA	$ 1,750	$ 43,750	$ 3,500	$ 87,500	$ 5,250.00	**$ 131,250**
4.11	Rider Poles - Relocated	25	Set	$ -	$ -	$ 3,500	$ 87,500	$ 3,500.00	**$ 87,500**
4.12									
4.13									
TOTAL - CONDUCTOR, SHIELDWIRE, OPGW:					$ 1,564,842		$ 4,756,290		**$ 6,321,132**
5. INSULATOR, FITTINGS, HARDWARE									
5.1	345kV Tangent (1-Group of 18-Bells Each Assembly)	435	Assembly	$ 1,800	$ 783,000	$ 720	$ 313,200	$ 2,520	**$ 1,096,200**
5.2	115kV Tangent (1-Group of 9-Bells Each Assembly)	45	Assembly	$ 900	$ 40,500	$ 560	$ 25,200	$ 1,460	**$ 65,700**
5.3	345kV Dead-end & Angle Insulators (1-Group of 18-Bells Each Assembly)	270	Assembly	$ 1,800	$ 486,000	$ 720	$ 194,400	$ 2,520	**$ 680,400**
5.4	115kV Dead-end & Angle Insulators (1-Group of 9-Bells Each Assembly)	14	Assembly	$ 900	$ 12,600	$ 560	$ 7,840	$ 1,460	**$ 20,440**
5.5			Assembly		$ -		$ -	$ -	**$ -**
5.6			Assembly		$ -		$ -	$ -	**$ -**
5.7			Assembly		$ -		$ -	$ -	**$ -**
5.8			Assembly		$ -		$ -	$ -	**$ -**
5.9			Assembly		$ -		$ -	$ -	**$ -**
5.10	OPGW Assembly - Tangent	111	Assembly	$ 200	$ 22,200	$ 150	$ 16,650	$ 350	**$ 38,850**
5.11	OPGW Assembly - Angle / DE	36	Assembly	$ 250	$ 9,000	$ 150	$ 5,400	$ 400	**$ 14,400**
5.12	OHSW Assembly - Tangent	77	Assembly	$ 200	$ 15,400	$ 150	$ 11,550	$ 350	**$ 26,950**
5.13	OHSW Assembly - Angle / DE	16	Assembly	$ 250	$ 4,000	$ 150	$ 2,400	$ 400	**$ 6,400**
5.14	OPGW Splice Boxes	8	Set	$ 1,746	$ 13,969	$ 2,274	$ 18,192	$ 4,020	**$ 32,161**
5.15	OPGW Splice & Test	8	EA	$ 2,520	$ 20,160	$ 2,520	$ 20,160	$ 5,040	**$ 40,320**
5.16	Spacer - Conductor	1,489	EA	$ 50	$ 74,450	$ 35	$ 52,115	$ 85	**$ 126,565**
5.17	Vibration Dampers - Conductor	1,192	EA	$ 35	$ 41,720	$ 35	$ 41,720	$ 70	**$ 83,440**
5.18	Shieldwire / OPGW Dampers, Misc. Fittings	646	EA	$ 27	$ 17,442	$ 35	$ 22,610	$ 62	**$ 40,052**
5.19	Guys, Anchors, and Accessories	-	EA	$ 720	$ -	$ 885	$ -	$ 1,605	**$ -**
5.20	Misc. materials (Signs and Markers)	19.7	Mile	$ 770	$ 15,169	$ 1,006	$ 19,818	$ 1,776	**$ 34,987**
TOTAL - INSULATORS, FITTINGS, HARDWARE:					$ 1,555,610		$ 751,255		**$ 2,306,865**
C. Transmission Line Princetown to New Scotland					$ 14,572,520		$ 28,618,553		**$ 43,191,073**
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6.1	Mob / Demob	1	LS	$ -	$ -	$ 431,911	$ 431,911	$ 431,911	**$ 431,911**
	Project Management, Material Handling & Amenities								
6.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 2,076,195	$ 2,076,195	$ 2,076,195	**$ 2,076,195**
6.3	Utility PM and Project Oversite	1	LS		$ -	$ 431,911	$ 431,911	$ 431,911	**$ 431,911**
6.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 431,911	$ 431,911	$ 431,911	**$ 431,911**
	Engineering								
6.5	Design Engineering	1	LS	$ -	$ -	$ 2,159,554	$ 2,159,554	$ 2,159,554	**$ 2,159,554**
6.6	LiDAR	1	LS	$ -	$ -	$ 129,573	$ 129,573	$ 129,573	**$ 129,573**
6.7	Geotech	20	Location	$ -	$ -	$ 3,500	$ 70,000	$ 3,500	**$ 70,000**
6.8	Surveying/Staking	1	LS	$ -	$ -	$ 302,338	$ 302,338	$ 302,338	**$ 302,338**
	Testing & Commissioning								
6.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 40,000	$ 40,000	$ 40,000	**$ 40,000**
	Permitting and Additional Costs								
6.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.12	Warranties / LOC's	1	LS	$ -	$ -	$ 129,573	$ 129,573	$ 129,573	**$ 129,573**
6.13	Real Estate Costs (New ROW)	1	LS	$ -	$ -	$ 215,000	$ 215,000	$ 215,000	**$ 215,000**
6.14	Real Estate Costs (Incumbent Utility ROW)	1	LS	$ -	$ -	$ 2,313,000	$ 2,313,000	$ 2,313,000	**$ 2,313,000**
6.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.18	Sales Tax on Materials	1	LS	$ 1,165,802	$ 1,165,802	$ -	$ -	$ 1,165,802	**$ 1,165,802**
6.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 43,191	$ 43,191	$ 43,191	**$ 43,191**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 1,165,802		$ 8,774,156		**$ 9,939,957**

NG & NY Transco - T018 - (Segment A)

D. Rotterdam Substation - Install

Estimate Revision: 5

Total: $ 55,762,476

NG & NY Transco - T018 - (Segment A)	*Supply*	*Installation*	*Total*
D. Rotterdam Substation - Install			
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ 189,745	$ 1,156,225	$ 1,345,970
2. SUBSTATION FOUNDATIONS	$ 2,197,240	$ 2,353,000	$ 4,550,240
3. SUBSTATION STRUCTURES	$ 372,220	$ 372,220	$ 744,440
4. MAJOR EQUIPTMENT	$ 23,285,000	$ 6,676,670	$ 29,961,670
5. SMALL EQUIPTMENT / MATERIALS	$ 1,164,540	$ 675,000	$ 1,839,540
6. CONTROL HOUSE / PANELS	$ 3,396,670	$ 1,285,545	$ 4,682,215
7. MISC ITEMS	$ 532,667	$ 873,670	$ 1,406,337
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 2,491,047	$ 8,741,017	$ 11,232,064
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 33,629,129	$ 22,133,347	$ 55,762,476
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 33,629,129	$ 22,133,347	$ 55,762,476

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
D. Rotterdam Substation - Install									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	3.25	ACRES	$ -	$ -	$ 230,000	$ 747,500	$ 230,000	**$ 747,500**
1.2	Station stone within substation fence.	1,385	CY	$ 27	$ 37,395	$ 75	$ 103,875	$ 102	**$ 141,270**
1.3	Substation Fence	1,310	LF	$ 100	$ 131,000	$ 100	$ 131,000	$ 200	**$ 262,000**
1.4	Retaining Wall (1065' x 13')	0		$ -	$ -	$ -	$ -	$ -	**$ -**
1.5	Compacted Fill (124,583cy Sand)	0		$ -	$ -	$ -	$ -	$ -	**$ -**
1.6	Permanent Access Road - 20'-Wide	610	LF	$ 35	$ 21,350	$ 285	$ 173,850	$ 320	**$ 195,200**
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ 189,745		$ 1,156,225		$ 1,345,970
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	0	EA	$ 14,940	$ -	$ 16,000	$ -	$ 30,940	**$ -**
2.1b	Capacitor Bank Foundations	1	EA	$ 56,025	$ 56,025	$ 60,000	$ 60,000	$ 116,025	**$ 116,025**
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	8	EA	$ 26,145	$ 209,160	$ 28,000	$ 224,000	$ 54,145	**$ 433,160**
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 26,145	$ -	$ 28,000	$ -	$ 54,145	**$ -**
2.1e	Switch Stand Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	**$ -**
2.1f	Station Service Transformer Stand Foundation	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	**$ -**
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1h	Bus Support 1 Ph Foundations	15	EA	$ 4,482	$ 67,230	$ 4,800	$ 72,000	$ 9,282	**$ 139,230**
2.1j	Instrument Transformer Stand Foundations	18	EA	$ 4,482	$ 80,676	$ 4,800	$ 86,400	$ 9,282	**$ 167,076**
2.1k	Arrester Stand Foundations	6	EA	$ 4,482	$ 26,892	$ 4,800	$ 28,800	$ 9,282	**$ 55,692**
2.1m	Wave Trap Stand Foundations	2	EA	$ 4,482	$ 8,964	$ 4,800	$ 9,600	$ 9,282	**$ 18,564**
2.1n	Reactor Foundations	3	EA	$ 7,470	$ 22,410	$ 8,000	$ 24,000	$ 15,470	**$ 46,410**
2.1p	Transformer Firewalls	3	EA	$ 65,736	$ 197,208	$ 70,400	$ 211,200	$ 136,136	**$ 408,408**
2.1q									
2.2	**230kV**								
2.2a	Circuit Breaker Foundations	1	EA	$ 11,952	$ 11,952	$ 12,800	$ 12,800	$ 24,752	**$ 24,752**
2.2b	Capacitor Bank Foundations	0	EA	$ 44,820	$ -	$ 48,000	$ -	$ 92,820	**$ -**
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	4	EA	$ 22,410	$ 89,640	$ 24,000	$ 96,000	$ 46,410	**$ 185,640**
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	**$ -**
2.2e	Switch Stand Foundations	4	EA	$ 3,735	$ 14,940	$ 4,000	$ 16,000	$ 7,735	**$ 30,940**
2.2f	Station Service Transformer Stand Foundation	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	**$ -**
2.2g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.2h	Bus Support 1 Ph Foundations	3	EA	$ 3,735	$ 11,205	$ 4,000	$ 12,000	$ 7,735	**$ 23,205**
2.2j	Instrument Transformer Stand Foundations	9	EA	$ 3,735	$ 33,615	$ 4,000	$ 36,000	$ 7,735	**$ 69,615**
2.2k	Arrester Stand Foundations	3	EA	$ 3,735	$ 11,205	$ 4,000	$ 12,000	$ 7,735	**$ 23,205**
2.2m	Wave Trap Stand Foundations	1	EA	$ 3,735	$ 3,735	$ 4,000	$ 4,000	$ 7,735	**$ 7,735**
2.2n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.2p									
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	0	EA	$ 5,229	$ -	$ 5,600	$ -	$ 10,829	**$ -**
2.3b	Capacitor Bank Foundations	0	EA	$ 33,615	$ -	$ 36,000	$ -	$ 69,615	**$ -**
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	8	EA	$ 16,434	$ 131,472	$ 17,600	$ 140,800	$ 34,034	**$ 272,272**
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	**$ -**
2.3e	Switch Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	**$ -**
2.3f	Fuse Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	**$ -**
2.3g	Bus Support 3ph Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	**$ -**
2.3h	Bus Support 1 Ph Foundations	6	EA	$ 2,988	$ 17,928	$ 3,200	$ 19,200	$ 6,188	**$ 37,128**
2.3j	Instrument Transformer Stand Foundations	6	EA	$ 2,988	$ 17,928	$ 3,200	$ 19,200	$ 6,188	**$ 37,128**
2.3k	Arrester Stand Foundations	6	EA	$ 2,988	$ 17,928	$ 3,200	$ 19,200	$ 6,188	**$ 37,128**
2.3m	Wave Trap Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	**$ -**
2.3n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment	1	EA	$ 97,110	$ 97,110	$ 104,000	$ 104,000	$ 201,110	**$ 201,110**
2.4b	345-115kV Transformer Foundation w/ Oil Containment	2	EA	$ 74,700	$ 149,400	$ 80,000	$ 160,000	$ 154,700	**$ 309,400**
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad	1	EA	$ 862,785	$ 862,785	$ 924,000	$ 924,000	$ 1,786,785	**$ 1,786,785**
2.5b	Generator Foundation	1	EA	$ 16,000	$ 16,000	$ 17,000	$ 17,000	$ 33,000	**$ 33,000**
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	8	EA	$ 5,229	$ 41,832	$ 5,600	$ 44,800	$ 10,829	**$ 86,632**
2.6b				$ -	$ -	$ -	$ -	$ -	**$ -**
2.6c				$ -	$ -	$ -	$ -	$ -	**$ -**
TOTAL - SUBSTATION FOUNDATIONS					$ 2,197,240		$ 2,353,000		$ 4,550,240
3. SUBSTATION STRUCTURES									
3.1	**345kV**								
3.1a	Substation A-Frame Structures - Stand alone	2	EA	$ 37,000	$ 74,000	$ 37,000	$ 74,000	$ 74,000	**$ 148,000**
3.1b	Substation A-Frame Structures - Shared Column	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	**$ -**
3.1c	Switch Stands	0	EA	$ 14,800	$ -	$ 14,800	$ -	$ 29,600	**$ -**
3.1d	Station Service Transformer Stand	0	EA	$ 14,800	$ -	$ 14,800	$ -	$ 29,600	**$ -**
3.1e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.1f	Bus Support 1 Ph	15	EA	$ 3,700	$ 55,500	$ 3,700	$ 55,500	$ 7,400	**$ 111,000**
3.1g	Instrument Transformer Stand	18	EA	$ 1,850	$ 33,300	$ 1,850	$ 33,300	$ 3,700	**$ 66,600**
3.1h	Arrester Stand	6	EA	$ 1,850	$ 11,100	$ 1,850	$ 11,100	$ 3,700	**$ 22,200**
3.1j	Wave Trap Stand	2	EA	$ 7,400	$ 14,800	$ 7,400	$ 14,800	$ 14,800	**$ 29,600**
3.1k	Misc. Structures	8	EA	$ 6,475	$ 51,800	$ 6,475	$ 51,800	$ 12,950	**$ 103,600**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone	1	EA	$ 33,300	$ 33,300	$ 33,300	$ 33,300	$ 66,600	**$ 66,600**
3.2b	Substation A-Frame Structures - Shared Column	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	**$ -**
3.2c	Switch Stands	1	EA	$ 12,025	$ 12,025	$ 12,025	$ 12,025	$ 24,050	**$ 24,050**
3.2d	Station Service Transformer Stand	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	**$ -**
3.2e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.2f	Bus Support 1 Ph	3	EA	$ 2,775	$ 8,325	$ 2,775	$ 8,325	$ 5,550	**$ 16,650**
3.2g	Instrument Transformer Stand	9	EA	$ 1,295	$ 11,655	$ 1,295	$ 11,655	$ 2,590	**$ 23,310**
3.2h	Arrester Stand	3	EA	$ 1,295	$ 3,885	$ 1,295	$ 3,885	$ 2,590	**$ 7,770**
3.2j	Wave Trap Stand	1	EA	$ 5,550	$ 5,550	$ 5,550	$ 5,550	$ 11,100	**$ 11,100**
3.2k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	**$ -**
3.3	**115kV**								
3.3a	Substation A-Frame Structures - Stand alone	2	EA	$ 18,500	$ 37,000	$ 18,500	$ 37,000	$ 37,000	**$ 74,000**
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	**$ -**
3.3c	Switch Stands	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	**$ -**
3.3d	Fuse Stand	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	**$ -**
3.3e	Bus Support 3ph	0	EA	$ 3,330	$ -	$ 3,330	$ -	$ 6,660	**$ -**
3.3f	Bus Support 1 Ph	6	EA	$ 1,850	$ 11,100	$ 1,850	$ 11,100	$ 3,700	**$ 22,200**
3.3g	Instrument Transformer Stand	6	EA	$ 740	$ 4,440	$ 740	$ 4,440	$ 1,480	**$ 8,880**
3.3h	Arrester Stand	6	EA	$ 740	$ 4,440	$ 740	$ 4,440	$ 1,480	**$ 8,880**
3.3j	Wave Trap Stand	0	EA	$ 3,700	$ -	$ 3,700	$ -	$ 7,400	**$ -**
3.3k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	**$ -**
TOTAL - SUBSTATION STRUCTURES					$ 372,220		$ 372,220		$ 744,440
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	0	EA	$ 200,000	$ -	$ 80,000	$ -	$ 280,000	**$ -**
4.1b	Capacitor Banks with Reactors	1	EA	$ 370,000	$ 370,000	$ 80,000	$ 80,000	$ 450,000	**$ 450,000**
4.1c	345 kV - 230 kV Auto Transformer	1	EA	$ 3,700,000	$ 3,700,000	$ 750,000	$ 750,000	$ 4,450,000	**$ 4,450,000**
4.1d	345 kV - 115 kV Auto Transformer	2	EA	$ 3,200,000	$ 6,400,000	$ 750,000	$ 1,500,000	$ 3,950,000	**$ 7,900,000**
4.1e	345 kV (3) Bay Breaker-and-a-half GIS system with building	1	EA	$ 12,700,000	$ 12,700,000	$ 4,266,670	$ 4,266,670	$ 16,966,670	**$ 16,966,670**
4.2	**230kV**								
4.2a	Circuit Breakers	1	EA	$ 115,000	$ 115,000	$ 80,000	$ 80,000	$ 195,000	**$ 195,000**
4.2b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	**$ -**
4.3	**115kV**								
4.3a	Circuit Breakers	0	EA	$ 52,000	$ -	$ 60,000	$ -	$ 112,000	**$ -**
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ 60,000	$ -	$ 60,000	**$ -**
TOTAL - MAJOR EQUIPTMENT					$ 23,285,000		$ 6,676,670		$ 29,961,670
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator	2	EA	$ 40,000	$ 80,000	$ 15,000	$ 30,000	$ 55,000	**$ 110,000**
5.1b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 35,000	$ -	$ 17,500	$ -	$ 52,500	**$ -**
5.1c	VT'S	6	EA	$ 13,000	$ 78,000	$ 12,000	$ 72,000	$ 25,000	**$ 150,000**
5.1d	CT'S	6	EA	$ 13,000	$ 78,000	$ 8,000	$ 48,000	$ 21,000	**$ 126,000**
5.1e	CCVT'S	6	EA	$ 13,000	$ 78,000	$ 8,000	$ 48,000	$ 21,000	**$ 126,000**
5.1f	Arresters	15	EA	$ 6,500	$ 97,500	$ 1,500	$ 22,500	$ 8,000	**$ 120,000**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
5.1g	Wave Traps	2	EA	$ 13,000	$ 26,000	$ 8,000	$ 16,000	$ 21,000	**$ 42,000**
5.1h	Station Service Transformers	1	EA	$ 200,000	$ 200,000	$ 50,000	$ 50,000	$ 250,000	**$ 250,000**
5.1j									
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator	1	EA	$ 35,000	$ 35,000	$ 15,000	$ 15,000	$ 50,000	**$ 50,000**
5.2b	Disconnect Switches - 3ph w/ manual operator	1	EA	$ 30,000	$ 30,000	$ 17,500	$ 17,500	$ 47,500	**$ 47,500**
5.2c	VT'S	3	EA	$ 13,000	$ 39,000	$ 8,000	$ 24,000	$ 21,000	**$ 63,000**
5.2d	CT'S	3	EA	$ 13,000	$ 39,000	$ 8,000	$ 24,000	$ 21,000	**$ 63,000**
5.2e	CCVT'S	3	EA	$ 10,000	$ 30,000	$ 6,000	$ 18,000	$ 16,000	**$ 48,000**
5.2f	Arresters	6	EA	$ 5,000	$ 30,000	$ 6,000	$ 36,000	$ 11,000	**$ 66,000**
5.2g	Wave Traps	1	EA	$ 13,000	$ 13,000	$ 8,000	$ 8,000	$ 21,000	**$ 21,000**
5.2h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.2j									
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	2	EA	$ 33,000	$ 66,000	$ 15,000	$ 30,000	$ 48,000	**$ 96,000**
5.3b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 28,000	$ -	$ 17,500	$ -	$ 45,500	**$ -**
5.3c	VT'S	6	EA	$ 13,000	$ 78,000	$ 8,000	$ 48,000	$ 21,000	**$ 126,000**
5.3d	CT'S	6	EA	$ 13,000	$ 78,000	$ 8,000	$ 48,000	$ 21,000	**$ 126,000**
5.3e	CCVT'S	6	EA	$ 8,000	$ 48,000	$ 8,000	$ 48,000	$ 16,000	**$ 96,000**
5.3f	Arresters	12	EA	$ 3,420	$ 41,040	$ 6,000	$ 72,000	$ 9,420	**$ 113,040**
5.3g	Wave Traps	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.3h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.3j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ 1,164,540		$ 675,000		$ 1,839,540
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE (70'x135'x22')	1	EA	$ 1,653,750	$ 1,653,750	$ 212,625	$ 212,625	$ 1,866,375	**$ 1,866,375**
6.2	Protection and Telecom Equipment Panels	30	EA	$ 35,000	$ 1,050,000	$ 10,000	$ 300,000	$ 45,000	**$ 1,350,000**
6.3	125VDC Batteries	2	EA	$ 75,000	$ 150,000	$ 25,000	$ 50,000	$ 100,000	**$ 200,000**
6.4	Control Cables	1	LS	$ 227,920	$ 227,920	$ 227,920	$ 227,920	$ 455,840	**$ 455,840**
6.5	SCADA and Communications	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.6	Low Voltage AC Distribution	2	EA	$ 50,000	$ 100,000	$ 100,000	$ 200,000	$ 150,000	**$ 300,000**
6.7	DC Distribution System	2	EA	$ 50,000	$ 100,000	$ 100,000	$ 200,000	$ 150,000	**$ 300,000**
6.8	Security	1	EA	$ 7,500	$ 7,500	$ 7,500	$ 7,500	$ 15,000	**$ 15,000**
6.9	Fire Alarm	1	EA	$ 7,500	$ 7,500	$ 7,500	$ 7,500	$ 15,000	**$ 15,000**
6.10	Generator	1	EA	$ 100,000	$ 100,000	$ 80,000	$ 80,000	$ 180,000	**$ 180,000**
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ 3,396,670		$ 1,285,545		**$ 4,682,215**
7. MISC ITEMS									
7.1	Conduit & Cable Trench System	200	LF	$ 185.00	$ 37,000	$ 170.00	$ 34,000	$ 355	**$ 71,000**
7.2	Rigid Bus, Fittings & Insulators	100	LF	$ 125.07	$ 12,507	$ 237.10	$ 23,710	$ 362	**$ 36,217**
7.3	Strain Bus, Connectors & Insulators	0	LF	$ 39.30	$ -	$ 53.35	$ -	$ 93	**$ -**
7.4	Grounding System	12,000	LF	$ 6.93	$ 83,160	$ 32.58	$ 390,960	$ 40	**$ 474,120**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
7.5	Strain Bus Insulators - 345kV	0	EA	$ 2,000	$ -	$ 1,050	$ -	$ 3,050	**$ -**
7.6	Strain Bus Insulators - 230kV	0	EA	$ 1,400	$ -	$ 750	$ -	$ 2,150	**$ -**
7.7	Strain Bus Insulators - 115kV	0	EA	$ 1,000	$ -	$ 550	$ -	$ 1,550	**$ -**
7.8	Low Voltage AC Station Service	1	LS	$ 50,000	$ 50,000	$ 75,000	$ 75,000	$ 125,000	**$ 125,000**
7.9	SSVT Service	1	LS	$ 45,000	$ 45,000	$ 45,000	$ 45,000	$ 90,000	**$ 90,000**
7.10	Control Conduits from Trench to Equipment	1	LS	$ 125,000	$ 125,000	$ 125,000	$ 125,000	$ 250,000	**$ 250,000**
7.11	Misc. Materials (Above and Below Ground)	1	LS	$ 180,000	$ 180,000	$ 180,000	$ 180,000	$ 360,000	**$ 360,000**
TOTAL - MISC ITEMS					$ 532,667		$ 873,670		$ 1,406,337
D. Rotterdam Substation - Install					$ 31,138,082		$ 13,392,330		**$ 44,530,412**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1.0	LS	$ -	$ -	$ 445,304	$ 445,304	$ 445,304	**$ 445,304**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 2,140,577	$ 2,140,577	$ 2,140,577	**$ 2,140,577**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 445,304	$ 445,304	$ 445,304	**$ 445,304**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 445,304	$ 445,304	$ 445,304	**$ 445,304**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 3,562,433	$ 3,562,433	$ 3,562,433	**$ 3,562,433**
8.6	LiDAR	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.7	Geotech	4	EA	$ -	$ -	$ 3,500	$ 14,000	$ 3,500	**$ 14,000**
8.8	Surveying/Staking	1	Site	$ -	$ -	$ 311,713	$ 311,713	$ 311,713	**$ 311,713**
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 1,113,260	$ 1,113,260	$ 1,113,260	**$ 1,113,260**
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 133,591	$ 133,591	$ 133,591	**$ 133,591**
8.13	Real Estate Costs (New)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.14	Real Estate Costs (Incumbent Utility)	1	LS	$ -	$ -	$ 85,000	$ 85,000	$ 85,000	**$ 85,000**
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.18	Sales Tax on Materials	1	LS	$ 2,491,047	$ 2,491,047	$ -	$ -	$ 2,491,047	**$ 2,491,047**
8.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 44,530	$ 44,530	$ 44,530	**$ 44,530**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 2,491,047		$ 8,741,017		**$ 11,232,064**

NG & NY Transco - T018 - (Segment A)

E. Rotterdam Substation - Removal

Estimate Revision: 5

Total: $ 4,196,270

NG & NY Transco - T018 - (Segment A)	*Supply*	*Installation*	*Total*
E. Rotterdam Substation - Removal			
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ -	$ 1,472,750	$ 1,472,750
2. SUBSTATION FOUNDATIONS	$ -	$ 617,400	$ 617,400
3. SUBSTATION STRUCTURES	$ -	$ 534,900	$ 534,900
4. MAJOR EQUIPTMENT	$ -	$ 147,000	$ 147,000
5. SMALL EQUIPTMENT / MATERIALS	$ -	$ 169,500	$ 169,500
6. CONTROL HOUSE / PANELS	$ -	$ 150,000	$ 150,000
7. MISC ITEMS	$ -	$ 519,480	$ 519,480
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ -	$ 585,240	$ 585,240
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ -	$ 4,196,270	$ 4,196,270
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ -	$ 4,196,270	$ 4,196,270

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
E. Rotterdam Substation - Removal									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	6.25	ACRES	$ -	$ -	$ 203,000	$ 1,268,750	$ 203,000	**$ 1,268,750**
1.2	Station stone within substation fence.	2,000	CY	$ -	$ -	$ 102	$ 204,000	$ 102	**$ 204,000**
1.3	Substation Fence	0	LF	$ -	$ -	$ 150	$ -	$ 150	**$ -**
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ -		$ 1,472,750		$ 1,472,750
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1e	Switch Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1f	Station Service Transformer Stand Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1k	Arrester Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.2	**230kV**								
2.2a	Circuit Breaker Foundations	9	EA	$ -	$ -	$ 7,200	$ 64,800	$ 7,200	**$ 64,800**
2.2b	Capacitor Bank Foundations	2	EA	$ -	$ -	$ 32,000	$ 64,000	$ 32,000	**$ 64,000**
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	1	EA	$ -	$ -	$ 22,000	$ 22,000	$ 22,000	**$ 22,000**
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	5	EA	$ -	$ -	$ 11,000	$ 55,000	$ 11,000	**$ 55,000**
2.2e	Switch Stand Foundations	15	EA	$ -	$ -	$ 5,200	$ 78,000	$ 5,200	**$ 78,000**
2.2f	Station Service Transformer Stand Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.2g	Bus Support 3ph Foundations	4	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.2h	Bus Support 1 Ph Foundations	59	EA	$ -	$ -	$ 2,400	$ 141,600	$ 2,400	**$ 141,600**
2.2j	Instrument Transformer Stand Foundations	15	EA	$ -	$ -	$ 2,400	$ 36,000	$ 2,400	**$ 36,000**
2.2k	Arrester Stand Foundations	6	EA	$ -	$ -	$ 2,400	$ 14,400	$ 2,400	**$ 14,400**
2.2m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.2n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3e	Switch Stand Foundations	3	EA	$ -	$ -	$ 5,200	$ 15,600	$ 5,200	**$ 15,600**
2.3f	Fuse Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3k	Arrester Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.4b	345-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment	3	EA	$ -	$ -	$ 42,000	$ 126,000	$ 42,000	**$ 126,000**
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.5b	Generator Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.6b		0		$ -	$ -	$ -	$ -	$ -	**$ -**
2.6c		0		$ -	$ -	$ -	$ -	$ -	**$ -**
TOTAL - SUBSTATION FOUNDATIONS					$ -		$ 617,400		$ 617,400
3. SUBSTATION STRUCTURES									
3.1	**345kV**								
3.1a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.1b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.1c	Switch Stands	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.1d	Station Service Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.1e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.1f	Bus Support 1 Ph	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.1g	Instrument Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.1h	Arrester Stand	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.1j	Wave Trap Stand	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.1k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone	1	EA	$ -	$ -	$ 27,000	$ 27,000	$ 27,000	**$ 27,000**
3.2b	Substation A-Frame Structures - Shared Column	5	EA	$ -	$ -	$ 27,000	$ 135,000	$ 27,000	**$ 135,000**
3.2c	Switch Stands	15	EA	$ -	$ -	$ 9,750	$ 146,250	$ 9,750	**$ 146,250**
3.2d	Station Service Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.2e	Bus Support 3ph	4	EA	$ -	$ -	$ 2,250	$ 9,000	$ 2,250	**$ 9,000**
3.2f	Bus Support 1 Ph	59	EA	$ -	$ -	$ 2,250	$ 132,750	$ 2,250	**$ 132,750**
3.2g	Instrument Transformer Stand	15	EA	$ -	$ -	$ 1,050	$ 15,750	$ 1,050	**$ 15,750**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.2h	Arrester Stand	6	EA	$ -	$ -	$ 1,050	$ 6,300	$ 1,050	**$ 6,300**
3.2j	Wave Trap Stand	3	EA	$ -	$ -	$ 4,500	$ 13,500	$ 4,500	**$ 13,500**
3.2k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.3	**115kV**								
3.3a	Substation A-Frame Structures - Stand alone	2	EA	$ -	$ -	$ 15,000	$ 30,000	$ 15,000	**$ 30,000**
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.3c	Switch Stands	3	EA	$ -	$ -	$ 6,450	$ 19,350	$ 6,450	**$ 19,350**
3.3d	Fuse Stand	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.3e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.3f	Bus Support 1 Ph	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.3g	Instrument Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.3h	Arrester Stand	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.3j	Wave Trap Stand	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.3k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
TOTAL - SUBSTATION STRUCTURES					$ -		$ 534,900		$ 534,900
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
4.1b	Capacitor Banks	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
4.1c		0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
4.1d									
4.2	**230kV**								
4.2a	Circuit Breakers	9	EA	$ -	$ -	$ 7,000	$ 63,000	$ 7,000	**$ 63,000**
4.2b	Capacitor Banks	2	EA	$ -	$ -	$ 42,000	$ 84,000	$ 42,000	**$ 84,000**
4.3	**115kV**								
4.3a	Circuit Breakers	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
TOTAL - MAJOR EQUIPTMENT					$ -		$ 147,000		$ 147,000
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	**$ -**
5.1b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	**$ -**
5.1c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.1d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.1e	CCVT'S	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	**$ -**
5.1f	Arresters	0	EA	$ -	$ -	$ 1,500	$ -	$ 1,500	**$ -**
5.1g	Wave Traps	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	**$ -**
5.1h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator	3	EA	$ -	$ -	$ 5,500	$ 16,500	$ 5,500	**$ 16,500**
5.2b	Disconnect Switches - 3ph w/ manual operator	12	EA	$ -	$ -	$ 5,500	$ 66,000	$ 5,500	**$ 66,000**
5.2c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.2d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.2e	CCVT'S	8	EA	$ -	$ -	$ 1,500	$ 12,000	$ 1,500	**$ 12,000**
5.2f	Arresters	15	EA	$ -	$ -	$ 2,500	$ 37,500	$ 2,500	**$ 37,500**
5.2g	Wave Traps	3	EA	$ -	$ -	$ 2,500	$ 7,500	$ 2,500	**$ 7,500**
5.2h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.3	**115kV**								

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
5.3a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3b	Disconnect Switches - 3ph w/ manual operator	3	EA	$ -	$ -	$ 5,500	$ 16,500	$ 5,500	**$ 16,500**
5.3c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3e	CCVT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3f	Arresters	9	EA	$ -	$ -	$ 1,500	$ 13,500	$ 1,500	**$ 13,500**
5.3g	Wave Traps	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ -		$ 169,500		$ 169,500
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE	1	EA	$ -	$ -	$ 150,000	$ 150,000	$ 150,000	**$ 150,000**
6.2	Protection and Telecom Equipment Panels	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.3	125VDC Batteries	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.4	Control Cables	0	LS	$ -	$ -	$ -	$ -	$ -	$ -
6.5	SCADA and Communications	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.6	Low Voltage AC Distribution	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.7	DC Distribution System	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.8	Security	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.9	Fire Alarm	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.10	Generator	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ -		$ 150,000		**$ 150,000**
7. MISC ITEMS									
7.1	Conduit & Cable Trench System	1	LS	$ -	$ -	$ 42,000.00	$ 42,000	$ 42,000	**$ 42,000**
7.2	Rigid Bus, Fittings & Insulators	3,200	LF	$ -	$ -	$ 126.25	$ 404,000	$ 126	**$ 404,000**
7.3	Strain Bus, Connectors & Insulators	800	LF	$ -	$ -	$ 39.35	$ 31,480	$ 39	**$ 31,480**
7.4	Grounding System	1	LS	$ -	$ -	$ 42,000.00	$ 42,000	$ 42,000	**$ 42,000**
TOTAL - MISC ITEMS					$ -		$ 519,480		$ 519,480
E. Rotterdam Substation - Removal					$ -		$ 3,611,030		**$ 3,611,030**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1	LS	$ -	$ -	$ 36,110	$ 36,110	$ 36,110	**$ 36,110**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 173,582	$ 173,582	$ 173,582	**$ 173,582**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 36,110	$ 36,110	$ 36,110	**$ 36,110**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 36,110	$ 36,110	$ 36,110	**$ 36,110**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 288,882	$ 288,882	$ 288,882	**$ 288,882**
8.6	LiDAR	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.7	Geotech	-	EA	$ -	$ -	$ 3,500	$ -	$ 3,500	$ -
8.8	Surveying/Staking	-	Site	$ -	$ -	$ 25,277	$ -	$ 25,277	$ -
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	-	LS	$ -	$ -	$ 90,276	$ -	$ 90,276	$ -
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 10,833	$ 10,833	$ 10,833	**$ 10,833**
8.13	Real Estate Costs (New)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.14	Real Estate Costs (Incumbent Utility)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.18	Sales Tax on Materials	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 3,611	$ 3,611	$ 3,611	**$ 3,611**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ -		$ 585,240		**$ 585,240**

NG & NY Transco - T018 - (Segment A)

F. Edic Substation - Install

Estimate Revision: 5

Total: $ 2,587,379

NG & NY Transco - T018 - (Segment A)	*Supply*	*Installation*	*Total*
F. Edic Substation - Install			
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ 2,025	$ 5,625	$ 7,650
2. SUBSTATION FOUNDATIONS	$ 100,098	$ 107,200	$ 207,298
3. SUBSTATION STRUCTURES	$ 44,400	$ 44,400	$ 88,800
4. MAJOR EQUIPTMENT	$ 200,000	$ 80,000	$ 280,000
5. SMALL EQUIPTMENT / MATERIALS	$ 244,000	$ 133,500	$ 377,500
6. CONTROL HOUSE / PANELS	$ 173,850	$ 98,850	$ 272,700
7. MISC ITEMS	$ 339,357	$ 507,880	$ 847,237
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 88,298	$ 417,896	$ 506,194
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 1,192,028	$ 1,395,351	$ 2,587,379
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 1,192,028	$ 1,395,351	$ 2,587,379

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
F. Edic Substation - Install									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	0	ACRES	$ -	$ -	$ 203,000	$ -	$ 203,000	$ -
1.2	Station stone within substation fence.	75	CY	$ 27	$ 2,025	$ 75	$ 5,625	$ 102	**$ 7,650**
1.3	Substation Fence	0	LF	$ 100	$ -	$ 100	$ -	$ 200	$ -
1.4	Permanent Access Road - 20'-Wide	0	LF	$ 35	$ -	$ 285	$ -	$ 320	$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ 2,025		$ 5,625		$ 7,650
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	1	EA	$ 14,940	$ 14,940	$ 16,000	$ 16,000	$ 30,940	**$ 30,940**
2.1b	Capacitor Bank Foundations	0	EA	$ 56,025	$ -	$ 60,000	$ -	$ 116,025	$ -
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 26,145	$ -	$ 28,000	$ -	$ 54,145	$ -
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 26,145	$ -	$ 28,000	$ -	$ 54,145	$ -
2.1e	Switch Stand Foundations	6	EA	$ 4,482	$ 26,892	$ 4,800	$ 28,800	$ 9,282	**$ 55,692**
2.1f	Station Service Transformer Stand Foundation	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1h	Bus Support 1 Ph Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1j	Instrument Transformer Stand Foundations	9	EA	$ 4,482	$ 40,338	$ 4,800	$ 43,200	$ 9,282	**$ 83,538**
2.1k	Arrester Stand Foundations	3	EA	$ 4,482	$ 13,446	$ 4,800	$ 14,400	$ 9,282	**$ 27,846**
2.1m	Wave Trap Stand Foundations	1	EA	$ 4,482	$ 4,482	$ 4,800	$ 4,800	$ 9,282	**$ 9,282**
2.1n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2	**230kV**								
2.2a	Circuit Breaker Foundations	0	EA	$ 11,952	$ -	$ 12,800	$ -	$ 24,752	$ -
2.2b	Capacitor Bank Foundations	0	EA	$ 44,820	$ -	$ 48,000	$ -	$ 92,820	$ -
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	$ -
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	$ -
2.2e	Switch Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2f	Station Service Transformer Stand Foundation	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2h	Bus Support 1 Ph Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2j	Instrument Transformer Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2k	Arrester Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2m	Wave Trap Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	0	EA	$ 5,229	$ -	$ 5,600	$ -	$ 10,829	$ -
2.3b	Capacitor Bank Foundations	0	EA	$ 33,615	$ -	$ 36,000	$ -	$ 69,615	$ -
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	$ -
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	$ -
2.3e	Switch Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3f	Fuse Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3g	Bus Support 3ph Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3h	Bus Support 1 Ph Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3j	Instrument Transformer Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.3k	Arrester Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3m	Wave Trap Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment	0	EA	$ 97,110	$ -	$ 104,000	$ -	$ 201,110	$ -
2.4b	345-115kV Transformer Foundation w/ Oil Containment	0	EA	$ 74,700	$ -	$ 80,000	$ -	$ 154,700	$ -
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad	0	EA	$ 76,194	$ -	$ 81,600	$ -	$ 157,794	$ -
2.5b	Generator Foundation	0	EA	$ 16,000	$ -	$ 17,000	$ -	$ 33,000	$ -
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	0	EA	$ 5,229	$ -	$ 5,600	$ -	$ 10,829	$ -
2.6b	60' Lightning Mast Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6c	50' Lightning Mast Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION FOUNDATIONS					$ 100,098		$ 107,200		$ 207,298
3. SUBSTATION STRUCTURES									
3.1	**345kV**								
3.1a	Substation A-Frame Structures - Stand alone	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	$ -
3.1b	Substation A-Frame Structures - Shared Column	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	$ -
3.1c	Switch Stands	1	EA	$ 14,800	$ 14,800	$ 14,800	$ 14,800	$ 29,600	**$ 29,600**
3.1d	Station Service Transformer Stand	0	EA	$ 14,800	$ -	$ 14,800	$ -	$ 29,600	$ -
3.1e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1f	Bus Support 1 Ph	0	EA	$ 3,700	$ -	$ 3,700	$ -	$ 7,400	$ -
3.1g	Instrument Transformer Stand	9	EA	$ 1,850	$ 16,650	$ 1,850	$ 16,650	$ 3,700	**$ 33,300**
3.1h	Arrester Stand	3	EA	$ 1,850	$ 5,550	$ 1,850	$ 5,550	$ 3,700	**$ 11,100**
3.1j	Wave Trap Stand	1	EA	$ 7,400	$ 7,400	$ 7,400	$ 7,400	$ 14,800	**$ 14,800**
3.1k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	$ -
3.2b	Substation A-Frame Structures - Shared Column	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	$ -
3.2c	Switch Stands	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	$ -
3.2d	Station Service Transformer Stand	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	$ -
3.2e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2f	Bus Support 1 Ph	0	EA	$ 2,775	$ -	$ 2,775	$ -	$ 5,550	$ -
3.2g	Instrument Transformer Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	$ -
3.2h	Arrester Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	$ -
3.2j	Wave Trap Stand	0	EA	$ 5,550	$ -	$ 5,550	$ -	$ 11,100	$ -
3.2k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
3.3	**115kV**								
3.3a	Substation A-Frame Structures - Stand alone	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	$ -
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	$ -
3.3c	Switch Stands	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	$ -
3.3d	Fuse Stand	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	$ -
3.3e	Bus Support 3ph	0	EA	$ 3,330	$ -	$ 3,330	$ -	$ 6,660	$ -
3.3f	Bus Support 1 Ph	0	EA	$ 1,850	$ -	$ 1,850	$ -	$ 3,700	$ -
3.3g	Instrument Transformer Stand	0	EA	$ 740	$ -	$ 740	$ -	$ 1,480	$ -
3.3h	Arrester Stand	0	EA	$ 740	$ -	$ 740	$ -	$ 1,480	$ -
3.3j	Wave Trap Stand	0	EA	$ 3,700	$ -	$ 3,700	$ -	$ 7,400	$ -
3.3k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
TOTAL - SUBSTATION STRUCTURES					$ 44,400		$ 44,400		$ 88,800
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	1	EA	$ 200,000	$ 200,000	$ 80,000	$ 80,000	$ 280,000	**$ 280,000**
4.1b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	$ -
4.1c	345 kV - 230 kV Auto Transformer	0	EA	$ -	$ -	$ 750,000	$ -	$ 750,000	$ -
4.1d	345 kV - 115 kV Auto Transformer	0	EA	$ -	$ -	$ 750,000	$ -	$ 750,000	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
4.2	**230kV**								
4.2a	Circuit Breakers	0	EA	$ 115,000	$ -	$ 80,000	$ -	$ 195,000	$ -
4.2b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	$ -
4.3	**115kV**								
4.3a	Circuit Breakers	0	EA	$ 52,000	$ -	$ 60,000	$ -	$ 112,000	$ -
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ 60,000	$ -	$ 60,000	$ -
TOTAL - MAJOR EQUIPTMENT					$ 200,000		$ 80,000		$ 280,000
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator	1	EA	$ 40,000	$ 40,000	$ 15,000	$ 15,000	$ 55,000	**$ 55,000**
5.1b	Disconnect Switches - 3ph w/ manual operator	1	EA	$ 35,000	$ 35,000	$ 17,500	$ 17,500	$ 52,500	**$ 52,500**
5.1c	VT'S	3	EA	$ 13,000	$ 39,000	$ 12,000	$ 36,000	$ 25,000	**$ 75,000**
5.1d	CT'S	3	EA	$ 13,000	$ 39,000	$ 8,000	$ 24,000	$ 21,000	**$ 63,000**
5.1e	CCVT'S	3	EA	$ 13,000	$ 39,000	$ 8,000	$ 24,000	$ 21,000	**$ 63,000**
5.1f	Arresters	6	EA	$ 6,500	$ 39,000	$ 1,500	$ 9,000	$ 8,000	**$ 48,000**
5.1g	Wave Traps	1	EA	$ 13,000	$ 13,000	$ 8,000	$ 8,000	$ 21,000	**$ 21,000**
5.1h	Station Service Transformers	0	EA	$ 200,000	$ -	$ 50,000	$ -	$ 250,000	$ -
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator	0	EA	$ 35,000	$ -	$ 15,000	$ -	$ 50,000	$ -
5.2b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 30,000	$ -	$ 17,500	$ -	$ 47,500	$ -
5.2c	VT'S	0	EA	$ 30,000	$ -	$ 8,000	$ -	$ 38,000	$ -
5.2d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2e	CCVT'S	0	EA	$ 10,000	$ -	$ 6,000	$ -	$ 16,000	$ -
5.2f	Arresters	0	EA	$ 5,000	$ -	$ 6,000	$ -	$ 11,000	$ -
5.2g	Wave Traps	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	0	EA	$ 33,000	$ -	$ 15,000	$ -	$ 48,000	$ -
5.3b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 28,000	$ -	$ 17,500	$ -	$ 45,500	$ -
5.3c	VT'S	0	EA	$ 28,000	$ -	$ 8,000	$ -	$ 36,000	$ -
5.3d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.3e	CCVT'S	0	EA	$ 8,000	$ -	$ 8,000	$ -	$ 16,000	$ -
5.3f	Arresters	0	EA	$ 3,420	$ -	$ 6,000	$ -	$ 9,420	$ -
5.3g	Wave Traps	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ 244,000		$ 133,500		$ 377,500
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE	0	EA	$ 551,250	$ -	$ 85,000	$ -	$ 636,250	$ -
6.2	Protection and Telecom Equipment Panels	3	EA	$ 35,000	$ 105,000	$ 10,000	$ 30,000	$ 45,000	**$ 135,000**
6.3	125VDC Batteries	0	EA	$ 75,000	$ -	$ 25,000	$ -	$ 100,000	$ -
6.4	Control Cables	1	LS	$ 68,850	$ 68,850	$ 68,850	$ 68,850	$ 137,700	**$ 137,700**
6.5	SCADA and Communications	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.6	Low Voltage AC Distribution	0	EA	$ 50,000	$ -	$ 100,000	$ -	$ 150,000	$ -
6.7	DC Distribution System	0	EA	$ 50,000	$ -	$ 100,000	$ -	$ 150,000	$ -
6.8	Security	0	EA	$ 7,500	$ -	$ 7,500	$ -	$ 15,000	$ -
6.9	Fire Alarm	0	EA	$ 7,500	$ -	$ 7,500	$ -	$ 15,000	$ -
6.10	Generator	0	EA	$ 100,000	$ -	$ 80,000	$ -	$ 180,000	$ -
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ 173,850		$ 98,850		**$ 272,700**
7. MISC ITEMS									
7.1	Conduit & Cable Trench System	800	LF	$ 185.00	$ 148,000	$ 170.00	$ 136,000	$ 355	**$ 284,000**
7.2	Rigid Bus, Fittings & Insulators	0	L.S.	$ 75,042.00	$ -	$ 142,260.00	$ -	$ 217,302	$ -
7.3	Strain Bus, Connectors & Insulators	2,500	LF	$ 39.30	$ 98,250	$ 53.35	$ 133,375	$ 93	**$ 231,625**
7.4	Grounding System	1	L.S.	$ 10,395.00	$ 10,395	$ 73,305.00	$ 73,305	$ 83,700	**$ 83,700**
7.5	Strain Bus Insulators - 345kV	24	EA	$ 2,000	$ 48,000	$ 1,050	$ 25,200	$ 3,050	**$ 73,200**
7.6	Strain Bus Insulators - 230kV	0	EA	$ 1,400	$ -	$ 750	$ -	$ 2,150	$ -
7.7	Strain Bus Insulators - 115kV	0	EA	$ 1,000	$ -	$ 550	$ -	$ 1,550	$ -
7.8	Low Voltage AC Station Service	0	LS	$ 50,000	$ -	$ 75,000	$ -	$ 125,000	$ -
7.9	SSVT Service	0	LS	$ 45,000	$ -	$ 45,000	$ -	$ 90,000	$ -
7.10	Control Conduits from Trench to Equipment	1	LS	$ 14,000	$ 14,000	$ 70,000	$ 70,000	$ 84,000	**$ 84,000**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
7.11	Misc. Materials (Above and Below Ground)	1	LS	$ 20,712	$ 20,712	$ 70,000	$ 70,000	$ 90,712	**$ 90,712**
TOTAL - MISC ITEMS					$ 339,357		$ 507,880		$ 847,237
F. Edic Substation - Install					$ 1,103,730		$ 977,455		**$ 2,081,185**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1.0	LS	$ -	$ -	$ 20,812	$ 20,812	$ 20,812	**$ 20,812**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 100,043	$ 100,043	$ 100,043	**$ 100,043**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 20,812	$ 20,812	$ 20,812	**$ 20,812**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 20,812	$ 20,812	$ 20,812	**$ 20,812**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 166,495	$ 166,495	$ 166,495	**$ 166,495**
8.6	LiDAR	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.7	Geotech	4	EA	$ -	$ -	$ 3,500	$ 14,000	$ 3,500	**$ 14,000**
8.8	Surveying/Staking	1	Site	$ -	$ -	$ 14,568	$ 14,568	$ 14,568	**$ 14,568**
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 52,030	$ 52,030	$ 52,030	**$ 52,030**
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 6,244	$ 6,244	$ 6,244	**$ 6,244**
8.13	Real Estate Costs (New)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.14	Real Estate Costs (Incumbent Utility)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.18	Sales Tax on Materials	1	LS	$ 88,298	$ 88,298	$ -	$ -	$ 88,298	**$ 88,298**
8.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 2,081	$ 2,081	$ 2,081	**$ 2,081**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 88,298		$ 417,896		**$ 506,194**

NG & NY Transco - T018 - (Segment A)

G. Edic Substation - Removal

Estimate Revision: 5

Total: $ 41,740

NG & NY Transco - T018 - (Segment A)	*Supply*	*Installation*	*Total*
G. Edic Substation - Removal			
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ -	$ -	$ -
2. SUBSTATION FOUNDATIONS	$ -	$ 14,200	$ 14,200
3. SUBSTATION STRUCTURES	$ -	$ 6,750	$ 6,750
4. MAJOR EQUIPTMENT	$ -	$ -	$ -
5. SMALL EQUIPTMENT / MATERIALS	$ -	$ 4,500	$ 4,500
6. CONTROL HOUSE / PANELS	$ -	$ -	$ -
7. MISC ITEMS	$ -	$ 10,500	$ 10,500
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ -	$ 5,790	$ 5,790
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ -	$ 41,740	$ 41,740
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ -	$ 41,740	$ 41,740

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
G. Edic Substation - Removal									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1									
1.2									
1.3									
1.4									
1.5									
1.6									
1.7									
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ -		$ -		$ -
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	1	EA	$ -	$ -	$ 14,200	$ 14,200	$ 14,200	**$ 14,200**
2.1b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
2.1e	Switch Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
2.1f	Station Service Transformer Stand Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
2.1h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	**$** -
2.1j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
2.1k	Arrester Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
2.1m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
2.1n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
2.1p									
2.2	**230kV**								
2.2a	Circuit Breaker Foundations	0	EA	$ -	$ -	$ 7,200	$ -	$ 7,200	**$** -
2.2b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ 32,000	$ -	$ 32,000	**$** -
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ 22,000	$ -	$ 22,000	**$** -
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ 11,000	$ -	$ 11,000	**$** -
2.2e	Switch Stand Foundations	0	EA	$ -	$ -	$ 5,200	$ -	$ 5,200	**$** -
2.2f	Station Service Transformer Stand Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
2.2g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
2.2h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	**$** -
2.2j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	**$** -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.2k	Arrester Stand Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.2m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2p									
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3e	Switch Stand Foundations	0	EA	$ -	$ -	$ 5,200	$ -	$ 5,200	$ -
2.3f	Fuse Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3k	Arrester Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4b	345-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ 42,000	$ -	$ 42,000	$ -
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5b	Generator Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6b		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6c		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION FOUNDATIONS					$ -		$ 14,200		$ 14,200
3. SUBSTATION STRUCTURES									
3.1	**345kV**								
3.1a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1c	Switch Stands	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1d	Station Service Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1f	Bus Support 1 Ph	3	EA	$ -	$ -	$ 2,250	$ 6,750	$ 2,250	**$ 6,750**
3.1g	Instrument Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1h	Arrester Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1j	Wave Trap Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ 27,000	$ -	$ 27,000	$ -
3.2b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ 27,000	$ -	$ 27,000	$ -
3.2c	Switch Stands	0	EA	$ -	$ -	$ 9,750	$ -	$ 9,750	$ -
3.2d	Station Service Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2f	Bus Support 1 Ph	0	EA	$ -	$ -	$ 2,250	$ -	$ 2,250	$ -
3.2g	Instrument Transformer Stand	0	EA	$ -	$ -	$ 1,050	$ -	$ 1,050	$ -
3.2h	Arrester Stand	0	EA	$ -	$ -	$ 1,050	$ -	$ 1,050	$ -
3.2j	Wave Trap Stand	0	EA	$ -	$ -	$ 4,500	$ -	$ 4,500	$ -
3.2k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3	**115kV**								
3.3a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ 15,000	$ -	$ 15,000	$ -
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ -	$ -	$ -	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.3c	Switch Stands	0	EA	$ -	$ -	$ 6,450	$ -	$ 6,450	$ -
3.3d	Fuse Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3f	Bus Support 1 Ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3g	Instrument Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3h	Arrester Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3j	Wave Trap Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION STRUCTURES					$ -		$ 6,750		$ 6,750
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.1b	Capacitor Banks	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.1c		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.1d									
4.2	**230kV**								
4.2a	Circuit Breakers	0	EA	$ -	$ -	$ 7,000	$ -	$ 7,000	$ -
4.2b	Capacitor Banks	0	EA	$ -	$ -	$ 42,000	$ -	$ 42,000	$ -
4.3	**115kV**								
4.3a	Circuit Breakers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - MAJOR EQUIPTMENT					$ -		$ -		$ -
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.1b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.1c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.1d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.1e	CCVT'S	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.1f	Arresters	3	EA	$ -	$ -	$ 1,500	$ 4,500	$ 1,500	**$ 4,500**
5.1g	Wave Traps	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.1h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.1j									
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.2b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.2c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2e	CCVT'S	0	EA	$ -	$ -	$ 1,500	$ -	$ 1,500	$ -
5.2f	Arresters	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.2g	Wave Traps	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.2h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2j									
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.3c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3e	CCVT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3f	Arresters	0	EA	$ -	$ -	$ 1,500	$ -	$ 1,500	$ -
5.3g	Wave Traps	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ -		$ 4,500		$ 4,500
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE	0	EA	$ -	$ -	$ 150,000	$ -	$ 150,000	$ -
6.2	Protection and Telecom Equipment Panels	0	EA	$ -	$ -	$ -	$ -	$ -	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6.3	125VDC Batteries	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.4	Control Cables	0	LS	$ -	$ -	$ -	$ -	$ -	$ -
6.5	SCADA and Communications	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.6	Low Voltage AC Distribution	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.7	DC Distribution System	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.8	Security	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.9	Fire Alarm	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.10	Generator	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ -		$ -		$ -
7. MISC ITEMS									
7.1	Conduit & Cable Trench System	0	EA	$ -	$ -	$ 42,000.00	$ -	$ 42,000	$ -
7.2	Rigid Bus, Fittings & Insulators	1	LS	$ -	$ -	$ 10,500.00	$ 10,500	$ 10,500	**$ 10,500**
7.3	Strain Bus, Connectors & Insulators	0	EA	$ -	$ -	$ 39.35	$ -	$ 39	$ -
7.4	Grounding System	0	EA	$ -	$ -	$ 42,000.00	$ -	$ 42,000	$ -
TOTAL - MISC ITEMS					$ -		$ 10,500		$ 10,500
G. Edic Substation - Removal					$ -		$ 35,950		**$ 35,950**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1	LS	$ -	$ -	$ 360	$ 360	$ 360	**$ 360**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 1,728	$ 1,728	$ 1,728	**$ 1,728**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 360	$ 360	$ 360	**$ 360**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 360	$ 360	$ 360	**$ 360**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 2,876	$ 2,876	$ 2,876	**$ 2,876**
8.6	LiDAR	-	Mile	$ -	$ -	$ -	$ -	$ -	$ -
8.7	Geotech	-	Site	$ -	$ -	$ -	$ -	$ -	$ -
8.8	Surveying/Staking	-	Site	$ -	$ -	$ 252	$ -	$ 252	$ -
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	-	LS	$ -	$ -	$ 899	$ -	$ 899	$ -
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 108	$ 108	$ 108	**$ 108**
8.13	Real Estate Costs (New)	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.14	Real Estate Costs (Incumbent Utility)	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.18	Sales Tax on Materials	1	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.19	Fees for permits, including roadway, railroad, building or other local permits	-	LS		$ -	$ 36	$ -	$ 36	$ -
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ -		$ 5,790		**$ 5,790**

NG & NY Transco - T018 - (Segment A)

H. New Scotland Substation - Install

Estimate Revision: 5

Total: $ 8,532,315

NG & NY Transco - T018 - (Segment A)	*Supply*	*Installation*	*Total*
H. New Scotland Substation - Install			
1. SITE PREP/ GRADING/ FENCING / CIVIL	**$ 30,750**	**$ 233,063**	**$ 263,813**
2. SUBSTATION FOUNDATIONS	**$ 498,996**	**$ 534,400**	**$ 1,033,396**
3. SUBSTATION STRUCTURES	**$ 240,500**	**$ 240,500**	**$ 481,000**
4. MAJOR EQUIPTMENT	**$ 1,000,000**	**$ 400,000**	**$ 1,400,000**
5. SMALL EQUIPTMENT / MATERIALS	**$ 399,500**	**$ 188,000**	**$ 587,500**
6. CONTROL HOUSE / PANELS	**$ 749,150**	**$ 372,900**	**$ 1,122,050**
7. MISC ITEMS	**$ 897,304**	**$ 1,093,110**	**$ 1,990,414**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	**$ 305,296**	**$ 1,348,847**	**$ 1,654,143**
CONTRACTOR MARK-UP (OH&P)	**$ -**	**$ -**	**$ -**
SUBTOTAL:	**$ 4,121,496**	**$ 4,410,819**	**$ 8,532,315**
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	**$ 4,121,496**	**$ 4,410,819**	**$ 8,532,315**

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
H. New Scotland Substation - Install									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	0.94	ACRES	$ -	$ -	$ 203,000	$ 190,313	$ 203,000	**$ 190,313**
1.2	Station stone within substation fence.	250	CY	$ 27	$ 6,750	$ 75	$ 18,750	$ 102	**$ 25,500**
1.3	Substation Fence	240	LF	$ 100	$ 24,000	$ 100	$ 24,000	$ 200	**$ 48,000**
1.4	Permanent Access Road - 20'-Wide	0	LF	$ 35	$ -	$ 285	$ -	$ 320	**$ -**
1.5									
1.6									
1.7									
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ 30,750		$ 233,063		$ 263,813
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	5	EA	$ 14,940	$ 74,700	$ 16,000	$ 80,000	$ 30,940	**$ 154,700**
2.1b	Capacitor Bank Foundations	0	EA	$ 56,025	$ -	$ 60,000	$ -	$ 116,025	**$ -**
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	4	EA	$ 26,145	$ 104,580	$ 28,000	$ 112,000	$ 54,145	**$ 216,580**
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 26,145	$ -	$ 28,000	$ -	$ 54,145	**$ -**
2.1e	Switch Stand Foundations	18	EA	$ 4,482	$ 80,676	$ 4,800	$ 86,400	$ 9,282	**$ 167,076**
2.1f	Station Service Transformer Stand Foundation	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	**$ -**
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1h	Bus Support 1 Ph Foundations	32	EA	$ 4,482	$ 143,424	$ 4,800	$ 153,600	$ 9,282	**$ 297,024**
2.1j	Instrument Transformer Stand Foundations	15	EA	$ 4,482	$ 67,230	$ 4,800	$ 72,000	$ 9,282	**$ 139,230**
2.1k	Arrester Stand Foundations	3	EA	$ 4,482	$ 13,446	$ 4,800	$ 14,400	$ 9,282	**$ 27,846**
2.1m	Wave Trap Stand Foundations	1	EA	$ 4,482	$ 4,482	$ 4,800	$ 4,800	$ 9,282	**$ 9,282**
2.1n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1p									
2.2	**230kV**								
2.2a	Circuit Breaker Foundations	0	EA	$ 11,952	$ -	$ 12,800	$ -	$ 24,752	**$ -**
2.2b	Capacitor Bank Foundations	0	EA	$ 44,820	$ -	$ 48,000	$ -	$ 92,820	**$ -**
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	**$ -**
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	**$ -**
2.2e	Switch Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	**$ -**
2.2f	Station Service Transformer Stand Foundation	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	**$ -**
2.2g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.2h	Bus Support 1 Ph Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2j	Instrument Transformer Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2k	Arrester Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2m	Wave Trap Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2p									
				$ -	$ -	$ -	$ -	$ -	$ -
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	0	EA	$ 5,229	$ -	$ 5,600	$ -	$ 10,829	$ -
2.3b	Capacitor Bank Foundations	0	EA	$ 33,615	$ -	$ 36,000	$ -	$ 69,615	$ -
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	$ -
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	$ -
2.3e	Switch Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3f	Fuse Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3g	Bus Support 3ph Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3h	Bus Support 1 Ph Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3j	Instrument Transformer Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3k	Arrester Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3m	Wave Trap Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment	0	EA	$ 97,110	$ -	$ 104,000	$ -	$ 201,110	$ -
2.4b	345-115kV Transformer Foundation w/ Oil Containment	0	EA	$ 74,700	$ -	$ 80,000	$ -	$ 154,700	$ -
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad	0	EA	$ 76,194	$ -	$ 81,600	$ -	$ 157,794	$ -
2.5b	Generator Foundation	0	EA	$ 16,000	$ -	$ 17,000	$ -	$ 33,000	$ -
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	2	EA	$ 5,229	$ 10,458	$ 5,600	$ 11,200	$ 10,829	**$ 21,658**
2.6b		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6c		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION FOUNDATIONS					$ 498,996		$ 534,400		$ 1,033,396
3. SUBSTATION STRUCTURES									
3.1	**345kV**								
3.1a	Substation A-Frame Structures - Stand alone	1	EA	$ 37,000	$ 37,000	$ 37,000	$ 37,000	$ 74,000	**$ 74,000**
3.1b	Substation A-Frame Structures - Shared Column	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	$ -
3.1c	Switch Stands	3	EA	$ 14,800	$ 44,400	$ 14,800	$ 44,400	$ 29,600	**$ 88,800**
3.1d	Station Service Transformer Stand	0	EA	$ 14,800	$ -	$ 14,800	$ -	$ 29,600	$ -
3.1e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1f	Bus Support 1 Ph	32	EA	$ 3,700	$ 118,400	$ 3,700	$ 118,400	$ 7,400	**$ 236,800**
3.1g	Instrument Transformer Stand	15	EA	$ 1,850	$ 27,750	$ 1,850	$ 27,750	$ 3,700	**$ 55,500**
3.1h	Arrester Stand	3	EA	$ 1,850	$ 5,550	$ 1,850	$ 5,550	$ 3,700	**$ 11,100**
3.1j	Wave Trap Stand	1	EA	$ 7,400	$ 7,400	$ 7,400	$ 7,400	$ 14,800	**$ 14,800**
3.1k	Lightning Masts - 70'	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	$ -
3.2b	Substation A-Frame Structures - Shared Column	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	$ -
3.2c	Switch Stands	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	$ -
3.2d	Station Service Transformer Stand	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	$ -
3.2e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2f	Bus Support 1 Ph	0	EA	$ 2,775	$ -	$ 2,775	$ -	$ 5,550	$ -
3.2g	Instrument Transformer Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	$ -
3.2h	Arrester Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	$ -
3.2j	Wave Trap Stand	0	EA	$ 5,550	$ -	$ 5,550	$ -	$ 11,100	$ -
3.2k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
3.3	**115kV**								

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.3a	Substation A-Frame Structures - Stand alone	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	$ -
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	$ -
3.3c	Switch Stands	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	$ -
3.3d	Fuse Stand	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	$ -
3.3e	Bus Support 3ph	0	EA	$ 3,330	$ -	$ 3,330	$ -	$ 6,660	$ -
3.3f	Bus Support 1 Ph	0	EA	$ 1,850	$ -	$ 1,850	$ -	$ 3,700	$ -
3.3g	Instrument Transformer Stand	0	EA	$ 740	$ -	$ 740	$ -	$ 1,480	$ -
3.3h	Arrester Stand	0	EA	$ 740	$ -	$ 740	$ -	$ 1,480	$ -
3.3j	Wave Trap Stand	0	EA	$ 3,700	$ -	$ 3,700	$ -	$ 7,400	$ -
3.3k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
TOTAL - SUBSTATION STRUCTURES					$ 240,500		$ 240,500		$ 481,000
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	5	EA	$ 200,000	$ 1,000,000	$ 80,000	$ 400,000	$ 280,000	**$ 1,400,000**
4.1b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	$ -
4.1c	345 kV - 230 kV Auto Transformer	0	EA	$ -	$ -	$ 750,000	$ -	$ 750,000	$ -
4.1d	345 kV - 115 kV Auto Transformer	0	EA	$ -	$ -	$ 750,000	$ -	$ 750,000	$ -
4.2	**230kV**								
4.2a	Circuit Breakers	0	EA	$ 115,000	$ -	$ 80,000	$ -	$ 195,000	$ -
4.2b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	$ -
4.3	**115kV**								
4.3a	Circuit Breakers	0	EA	$ 52,000	$ -	$ 60,000	$ -	$ 112,000	$ -
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ 60,000	$ -	$ 60,000	$ -
TOTAL - MAJOR EQUIPTMENT					$ 1,000,000		$ 400,000		$ 1,400,000
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator	1	EA	$ 40,000	$ 40,000	$ 15,000	$ 15,000	$ 55,000	**$ 55,000**
5.1b	Disconnect Switches - 3ph w/ manual operator	3	EA	$ 35,000	$ 105,000	$ 17,500	$ 52,500	$ 52,500	**$ 157,500**
5.1c	VT'S	3	EA	$ 35,000	$ 105,000	$ 12,000	$ 36,000	$ 47,000	**$ 141,000**
5.1d	CT'S	3	EA	$ 13,000	$ 39,000	$ 8,000	$ 24,000	$ 21,000	**$ 63,000**
5.1e	CCVT'S	6	EA	$ 13,000	$ 78,000	$ 8,000	$ 48,000	$ 21,000	**$ 126,000**
5.1f	Arresters	3	EA	$ 6,500	$ 19,500	$ 1,500	$ 4,500	$ 8,000	**$ 24,000**
5.1g	Wave Traps	1	EA	$ 13,000	$ 13,000	$ 8,000	$ 8,000	$ 21,000	**$ 21,000**
5.1h	Station Service Transformers	0	EA	$ 200,000	$ -	$ 50,000	$ -	$ 250,000	$ -
5.1j									
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator	0	EA	$ 35,000	$ -	$ 15,000	$ -	$ 50,000	$ -
5.2b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 30,000	$ -	$ 17,500	$ -	$ 47,500	$ -
5.2c	VT'S	0	EA	$ 30,000	$ -	$ 8,000	$ -	$ 38,000	$ -
5.2d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2e	CCVT'S	0	EA	$ 10,000	$ -	$ 6,000	$ -	$ 16,000	$ -
5.2f	Arresters	0	EA	$ 5,000	$ -	$ 6,000	$ -	$ 11,000	$ -
5.2g	Wave Traps	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2j									
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	0	EA	$ 33,000	$ -	$ 15,000	$ -	$ 48,000	$ -
5.3b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 28,000	$ -	$ 17,500	$ -	$ 45,500	$ -
5.3c	VT'S	0	EA	$ 28,000	$ -	$ 8,000	$ -	$ 36,000	$ -
5.3d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.3e	CCVT'S	0	EA	$ 8,000	$ -	$ 8,000	$ -	$ 16,000	$ -
5.3f	Arresters	0	EA	$ 3,420	$ -	$ 6,000	$ -	$ 9,420	$ -
5.3g	Wave Traps	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ 399,500		$ 188,000		$ 587,500
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE	1	EA	$ 243,750	$ 243,750	$ 42,500	$ 42,500	$ 286,250	**$ 286,250**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6.2	Protection and Telecom Equipment Panels	7	EA	$ 35,000	$ 245,000	$ 10,000	$ 70,000	$ 45,000	**$ 315,000**
6.3	125VDC Batteries	0	EA	$ 75,000	$ -	$ 25,000	$ -	$ 100,000	**$ -**
6.4	Control Cables	1	LS	$ 260,400	$ 260,400	$ 260,400	$ 260,400	$ 520,800	**$ 520,800**
6.5	SCADA and Communications	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.6	Low Voltage AC Distribution	0	EA	$ 50,000	$ -	$ 100,000	$ -	$ 150,000	**$ -**
6.7	DC Distribution System	0	EA	$ 50,000	$ -	$ 100,000	$ -	$ 150,000	**$ -**
6.8	Security	0	EA	$ 7,500	$ -	$ 7,500	$ -	$ 15,000	**$ -**
6.9	Fire Alarm	0	EA	$ 7,500	$ -	$ 7,500	$ -	$ 15,000	**$ -**
6.10	Generator	0	EA	$ 100,000	$ -	$ 80,000	$ -	$ 180,000	**$ -**
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ 749,150		$ 372,900		**$ 1,122,050**
7. MISC ITEMS									
7.1	Conduit & Cable Trench System	2,500.0	LF	$ 185.00	$ 462,500	$ 170.00	$ 425,000	$ 355	**$ 887,500**
7.2	Rigid Bus, Fittings & Insulators	700.0	LF	$ 125.07	$ 87,549	$ 237.10	$ 165,970	$ 362	**$ 253,519**
7.3	Strain Bus, Connectors & Insulators	200.0	LF	$ 39.30	$ 7,860	$ 53.35	$ 10,670	$ 93	**$ 18,530**
7.4	Grounding System	1,500.0	LF	$ 6.93	$ 10,395	$ 32.58	$ 48,870	$ 40	**$ 59,265**
7.5	Strain Bus Insulators - 345kV	12	EA	$ 2,000	$ 24,000	$ 1,050	$ 12,600	$ 3,050	**$ 36,600**
7.6	Strain Bus Insulators - 230kV	0	EA	$ 1,400	$ -	$ 750	$ -	$ 2,150	**$ -**
7.7	Strain Bus Insulators - 115kV	0	EA	$ 1,000	$ -	$ 550	$ -	$ 1,550	**$ -**
7.8	Low Voltage AC Station Service	0	LS	$ 50,000	$ -	$ 75,000	$ -	$ 125,000	**$ -**
7.9	SSVT Service	0	LS	$ 45,000	$ -	$ 45,000	$ -	$ 90,000	**$ -**
7.10	Control Conduits from Trench to Equipment	1	LS	$ 125,000	$ 125,000	$ 125,000	$ 125,000	$ 250,000	**$ 250,000**
7.11	Misc. Materials (Above and Below Ground)	1	LS	$ 180,000	$ 180,000	$ 180,000	$ 180,000	$ 360,000	**$ 360,000**
7.12	Install new communication tower foundation	1	LS	$ -	$ -	$ 75,000	$ 75,000	$ 75,000	**$ 75,000**
7.13	Relocate existing communication tower	1	LS	$ -	$ -	$ 50,000	$ 50,000	$ 50,000	**$ 50,000**
7.14									
7.15									
7.16									
7.17									
7.18									
7.19									
7.20									
7.21									
7.22									
7.23									
7.24									
7.25									
TOTAL - MISC ITEMS					$ 897,304		$ 1,093,110		$ 1,990,414
H. New Scotland Substation - Install					$ 3,816,200		$ 3,061,973		**$ 6,878,173**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1.0	LS	$ -	$ -	$ 68,782	$ 68,782	$ 68,782	**$ 68,782**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 330,634	$ 330,634	$ 330,634	**$ 330,634**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 68,782	$ 68,782	$ 68,782	**$ 68,782**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 68,782	$ 68,782	$ 68,782	**$ 68,782**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 550,254	$ 550,254	$ 550,254	**$ 550,254**
8.6	LiDAR	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.7	Geotech	4	EA	$ -	$ -	$ 3,500	$ 14,000	$ 3,500	**$ 14,000**
8.8	Surveying/Staking	1	Site	$ -	$ -	$ 48,147	$ 48,147	$ 48,147	**$ 48,147**
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 171,954	$ 171,954	$ 171,954	**$ 171,954**
	Permitting and Additional Costs								

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 20,635	$ 20,635	$ 20,635	**$ 20,635**
8.13	Real Estate Costs (New)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.14	Real Estate Costs (Incumbent Utility)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.18	Sales Tax on Materials	1	LS	$ 305,296	$ 305,296	$ -	$ -	$ 305,296	**$ 305,296**
8.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 6,878	$ 6,878	$ 6,878	**$ 6,878**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 305,296		$ 1,348,847		**$ 1,654,143**

NG & NY Transco - T018 - (Segment A)

I. New Scotland Substation - Removal

Estimate Revision: 5

Total: $ 184,697

NG & NY Transco - T018 - (Segment A)	*Supply*	*Installation*	*Total*
I. New Scotland Substation - Removal			
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ -	$ 30,000	$ 30,000
2. SUBSTATION FOUNDATIONS	$ -	$ 57,200	$ 57,200
3. SUBSTATION STRUCTURES	$ -	$ 27,000	$ 27,000
4. MAJOR EQUIPTMENT	$ -	$ -	$ -
5. SMALL EQUIPTMENT / MATERIALS	$ -	$ 7,000	$ 7,000
6. CONTROL HOUSE / PANELS	$ -	$ -	$ -
7. MISC ITEMS	$ -	$ 37,875	$ 37,875
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ -	$ 25,622	$ 25,622
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ -	$ 184,697	$ 184,697
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ -	$ 184,697	$ 184,697

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
I. New Scotland Substation - Removal									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Substation Fence	200	LF	$ -	$ -	$ 150	$ 30,000	$ 150	**$ 30,000**
1.2									
1.3									
1.4									
1.5									
1.6									
1.7									
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ -		$ 30,000		$ 30,000
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	2	EA	$ -	$ -	$ 14,200	$ 28,400	$ 14,200	**$ 28,400**
2.1b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1e	Switch Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1f	Station Service Transformer Stand Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1h	Bus Support 1 Ph Foundations	12	EA	$ -	$ -	$ 2,400	$ 28,800	$ 2,400	**$ 28,800**
2.1j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1k	Arrester Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1p									
2.2	**230kV**								
2.2a	Circuit Breaker Foundations	0	EA	$ -	$ -	$ 7,200	$ -	$ 7,200	$ -
2.2b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ 32,000	$ -	$ 32,000	$ -
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ 22,000	$ -	$ 22,000	$ -
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ 11,000	$ -	$ 11,000	$ -
2.2e	Switch Stand Foundations	0	EA	$ -	$ -	$ 5,200	$ -	$ 5,200	$ -
2.2f	Station Service Transformer Stand Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.2j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.2k	Arrester Stand Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.2m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2p									
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3e	Switch Stand Foundations	0	EA	$ -	$ -	$ 5,200	$ -	$ 5,200	$ -
2.3f	Fuse Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3k	Arrester Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4b	345-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ 42,000	$ -	$ 42,000	$ -
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5b	Generator Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6b		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6c		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION FOUNDATIONS					$ -		$ 57,200		$ 57,200
3. SUBSTATION STRUCTURES									
3.1	**345kV**								
3.1a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1c	Switch Stands	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1d	Fuse Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1f	Bus Support 1 Ph	12	EA	$ -	$ -	$ 2,250	$ 27,000	$ 2,250	**$ 27,000**
3.1g	Instrument Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1h	Arrester Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1j	Wave Trap Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ 27,000	$ -	$ 27,000	$ -
3.2b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ 27,000	$ -	$ 27,000	$ -
3.2c	Switch Stands	0	EA	$ -	$ -	$ 9,750	$ -	$ 9,750	$ -
3.2d	Fuse Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2f	Bus Support 1 Ph	0	EA	$ -	$ -	$ 2,250	$ -	$ 2,250	$ -
3.2g	Instrument Transformer Stand	0	EA	$ -	$ -	$ 1,050	$ -	$ 1,050	$ -
3.2h	Arrester Stand	0	EA	$ -	$ -	$ 1,050	$ -	$ 1,050	$ -
3.2j	Wave Trap Stand	0	EA	$ -	$ -	$ 4,500	$ -	$ 4,500	$ -
3.2k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3	**115kV**								
3.3a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ 15,000	$ -	$ 15,000	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3c	Switch Stands	0	EA	$ -	$ -	$ 6,450	$ -	$ 6,450	$ -
3.3d	Fuse Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3f	Bus Support 1 Ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3g	Instrument Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3h	Arrester Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3j	Wave Trap Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION STRUCTURES					$ -		$ 27,000		$ 27,000
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.1b	Capacitor Banks	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.1c		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.1d									
4.2	**230kV**								
4.2a	Circuit Breakers	0	EA	$ -	$ -	$ 7,000	$ -	$ 7,000	$ -
4.2b	Capacitor Banks	0	EA	$ -	$ -	$ 42,000	$ -	$ 42,000	$ -
4.3	**115kV**								
4.3a	Circuit Breakers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - MAJOR EQUIPTMENT					$ -		$ -		$ -
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.1b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.1c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.1d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.1e	CCVT'S	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.1f	Arresters	3	EA	$ -	$ -	$ 1,500	$ 4,500	$ 1,500	**$ 4,500**
5.1g	Wave Traps	1	EA	$ -	$ -	$ 2,500	$ 2,500	$ 2,500	**$ 2,500**
5.1h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.1j									
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.2b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.2c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2e	CCVT'S	0	EA	$ -	$ -	$ 1,500	$ -	$ 1,500	$ -
5.2f	Arresters	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.2g	Wave Traps	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.2h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2j									
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.3c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3e	CCVT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3f	Arresters	0	EA	$ -	$ -	$ 1,500	$ -	$ 1,500	$ -
5.3g	Wave Traps	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ -		$ 7,000		$ 7,000
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE	0	EA	$ -	$ -	$ 150,000	$ -	$ 150,000	$ -
6.2	Protection and Telecom Equipment Panels	0	EA	$ -	$ -	$ -	$ -	$ -	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6.3	125VDC Batteries	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.4	Control Cables	0	LS	$ -	$ -	$ -	$ -	$ -	$ -
6.5	SCADA and Communications	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.6	Low Voltage AC Distribution	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.7	DC Distribution System	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.8	Security	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.9	Fire Alarm	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.10	Generator	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ -		$ -		$ -
7. MISC ITEMS									
7.1	Conduit & Cable Trench System	0	EA	$ -	$ -	$ 42,000.00	$ -	$ 42,000	$ -
7.2	Rigid Bus, Fittings & Insulators	300	EA	$ -	$ -	$ 126.25	$ 37,875	$ 126	**$ 37,875**
7.3	Strain Bus, Connectors & Insulators	0	LS	$ -	$ -	$ 21,000.00	$ -	$ 21,000	$ -
7.4	Grounding System	0	EA	$ -	$ -	$ 42,000.00	$ -	$ 42,000	$ -
7.5									
7.6									
7.7									
7.8									
7.9									
7.10									
7.11									
7.12									
7.13									
7.14									
7.15									
TOTAL - MISC ITEMS					$ -		$ 37,875		$ 37,875
I. New Scotland Substation - Removal					$ -		$ 159,075		**$ 159,075**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1.0	LS	$ -	$ -	$ 1,591	$ 1,591	$ 1,591	**$ 1,591**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 7,647	$ 7,647	$ 7,647	**$ 7,647**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 1,591	$ 1,591	$ 1,591	**$ 1,591**
8.4	Site Accommodation, Facilities, Storage	1.0	LS	$ -	$ -	$ 1,591	$ 1,591	$ 1,591	**$ 1,591**
	Engineering								
8.5	Design Engineering	1.0	LS	$ -	$ -	$ 12,726	$ 12,726	$ 12,726	**$ 12,726**
8.6	LiDAR	-	Mile	$ -	$ -	$ -	$ -	$ -	$ -
8.7	Geotech	-	Site	$ -	$ -	$ -	$ -	$ -	$ -
8.8	Surveying/Staking	-	Site	$ -	$ -	$ 1,114	$ -	$ 1,114	$ -
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	-	LS	$ -	$ -	$ 3,977	$ -	$ 3,977	$ -
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 477	$ 477	$ 477	**$ 477**
8.13	Real Estate Costs (New)	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.14	Real Estate Costs (Incumbent Utility)	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.18	Sales Tax on Materials	1.0	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.19	Fees for permits, including roadway, railroad, building or other local permits	-	LS		$ -	$ 159	$ -	$ 159	$ -
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ -		$ 25,622		**$ 25,622**

NG & NY Transco - T018 - (Segment A)

J. Porter Substation - Install

Estimate Revision: 5

Total: $ 87,069

NG & NY Transco - T018 - (Segment A)	*Supply*	*Installation*	*Total*
J. Porter Substation - Install			
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ -	$ -	$ -
2. SUBSTATION FOUNDATIONS	$ -	$ -	$ -
3. SUBSTATION STRUCTURES	$ -	$ -	$ -
4. MAJOR EQUIPTMENT	$ -	$ -	$ -
5. SMALL EQUIPTMENT / MATERIALS	$ -	$ -	$ -
6. CONTROL HOUSE / PANELS	$ -	$ -	$ -
7. MISC ITEMS	$ 15,008	$ 56,904	$ 71,912
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 1,201	$ 13,956	$ 15,157
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 16,209	$ 70,860	$ 87,069
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 16,209	$ 70,860	$ 87,069

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
J. Porter Substation - Install									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	0	ACRES	$ -	$ -	$ 203,000	$ -	$ 203,000	$ -
1.2	Station stone within substation fence.	0	CY	$ 27	$ -	$ 75	$ -	$ 102	$ -
1.3	Substation Fence	0	LF	$ 100	$ -	$ 100	$ -	$ 200	$ -
1.4									
1.5									
1.6									
1.7									
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ -		$ -		$ -
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	0	EA	$ 14,940	$ -	$ 16,000	$ -	$ 30,940	$ -
2.1b	Capacitor Bank Foundations	0	EA	$ 56,025	$ -	$ 60,000	$ -	$ 116,025	$ -
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 26,145	$ -	$ 28,000	$ -	$ 54,145	$ -
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 26,145	$ -	$ 28,000	$ -	$ 54,145	$ -
2.1e	Switch Stand Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1f	Station Service Transformer Stand Foundation	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1h	Bus Support 1 Ph Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1j	Instrument Transformer Stand Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1k	Arrester Stand Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1m	Wave Trap Stand Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1p									
2.2	**230kV**								
2.2a	Circuit Breaker Foundations	0	EA	$ 11,952	$ -	$ 12,800	$ -	$ 24,752	$ -
2.2b	Capacitor Bank Foundations	0	EA	$ 44,820	$ -	$ 48,000	$ -	$ 92,820	$ -
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	$ -
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	$ -
2.2e	Switch Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2f	Station Service Transformer Stand Foundation	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.2h	Bus Support 1 Ph Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2j	Instrument Transformer Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2k	Arrester Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2m	Wave Trap Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2p									
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	0	EA	$ 5,229	$ -	$ 5,600	$ -	$ 10,829	$ -
2.3b	Capacitor Bank Foundations	0	EA	$ 33,615	$ -	$ 36,000	$ -	$ 69,615	$ -
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	$ -
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	$ -
2.3e	Switch Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3f	Fuse Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3g	Bus Support 3ph Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3h	Bus Support 1 Ph Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3j	Instrument Transformer Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3k	Arrester Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3m	Wave Trap Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment	0	EA	$ 97,110	$ -	$ 104,000	$ -	$ 201,110	$ -
2.4b	345-115kV Transformer Foundation w/ Oil Containment	0	EA	$ 74,700	$ -	$ 80,000	$ -	$ 154,700	$ -
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad	0	EA	$ 76,194	$ -	$ 81,600	$ -	$ 157,794	$ -
2.5b	Generator Foundation	0	EA	$ 16,000	$ -	$ 17,000	$ -	$ 33,000	$ -
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	0	EA	$ 5,229	$ -	$ 5,600	$ -	$ 10,829	$ -
2.6b		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6c		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION FOUNDATIONS					$ -		$ -		$ -
3. SUBSTATION STRUCTURES									
3.1	**345kV**								
3.1a	Substation A-Frame Structures - Stand alone	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	$ -
3.1b	Substation A-Frame Structures - Shared Column	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	$ -
3.1c	Switch Stands	0	EA	$ 14,800	$ -	$ 14,800	$ -	$ 29,600	$ -
3.1d	Station Service Transformer Stand	0	EA	$ 14,800	$ -	$ 14,800	$ -	$ 29,600	$ -
3.1e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1f	Bus Support 1 Ph	0	EA	$ 3,700	$ -	$ 3,700	$ -	$ 7,400	$ -
3.1g	Instrument Transformer Stand	0	EA	$ 1,850	$ -	$ 1,850	$ -	$ 3,700	$ -
3.1h	Arrester Stand	0	EA	$ 1,850	$ -	$ 1,850	$ -	$ 3,700	$ -
3.1j	Wave Trap Stand	0	EA	$ 7,400	$ -	$ 7,400	$ -	$ 14,800	$ -
3.1k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	$ -
3.2b	Substation A-Frame Structures - Shared Column	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	$ -
3.2c	Switch Stands	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	$ -
3.2d	Station Service Transformer Stand	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	$ -
3.2e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2f	Bus Support 1 Ph	0	EA	$ 2,775	$ -	$ 2,775	$ -	$ 5,550	$ -
3.2g	Instrument Transformer Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	$ -
3.2h	Arrester Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	$ -
3.2j	Wave Trap Stand	0	EA	$ 5,550	$ -	$ 5,550	$ -	$ 11,100	$ -
3.2k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
3.3	**115kV**								

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.3a	Substation A-Frame Structures - Stand alone	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	$ -
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	$ -
3.3c	Switch Stands	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	$ -
3.3d	Fuse Stand	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	$ -
3.3e	Bus Support 3ph	0	EA	$ 3,330	$ -	$ 3,330	$ -	$ 6,660	$ -
3.3f	Bus Support 1 Ph	0	EA	$ 1,850	$ -	$ 1,850	$ -	$ 3,700	$ -
3.3g	Instrument Transformer Stand	0	EA	$ 740	$ -	$ 740	$ -	$ 1,480	$ -
3.3h	Arrester Stand	0	EA	$ 740	$ -	$ 740	$ -	$ 1,480	$ -
3.3j	Wave Trap Stand	0	EA	$ 3,700	$ -	$ 3,700	$ -	$ 7,400	$ -
3.3k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
TOTAL - SUBSTATION STRUCTURES					$ -		$ -		$ -
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	0	EA	$ 300,000	$ -	$ 80,000	$ -	$ 380,000	$ -
4.1b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	$ -
4.1c	345 kV - 230 kV Auto Transformer	0	EA	$ -	$ -	$ 750,000	$ -	$ 750,000	$ -
4.1d	345 kV - 115 kV Auto Transformer	0	EA	$ -	$ -	$ 750,000	$ -	$ 750,000	$ -
4.2	**230kV**								
4.2a	Circuit Breakers	0	EA	$ 250,000	$ -	$ 80,000	$ -	$ 330,000	$ -
4.2b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	$ -
4.3	**115kV**								
4.3a	Circuit Breakers	0	EA	$ 225,000	$ -	$ 60,000	$ -	$ 285,000	$ -
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ 60,000	$ -	$ 60,000	$ -
TOTAL - MAJOR EQUIPTMENT					$ -		$ -		$ -
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator	0	EA	$ 35,000	$ -	$ 15,000	$ -	$ 50,000	$ -
5.1b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 40,000	$ -	$ 17,500	$ -		$ -
5.1c	VT'S	0	EA	$ 35,000	$ -	$ 12,000	$ -	$ 47,000	$ -
5.1d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.1e	CCVT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.1f	Arresters	0	EA	$ 6,500	$ -	$ 1,500	$ -	$ 8,000	$ -
5.1g	Wave Traps	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.1h	Station Service Transformers	0	EA	$ 200,000	$ -	$ 50,000	$ -	$ 250,000	$ -
5.1j									
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator	0	EA	$ 30,000	$ -	$ 15,000	$ -	$ 45,000	$ -
5.2b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 35,000	$ -	$ 17,500	$ -	$ 52,500	$ -
5.2c	VT'S	0	EA	$ 30,000	$ -	$ 8,000	$ -	$ 38,000	$ -
5.2d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2e	CCVT'S	0	EA	$ 10,000	$ -	$ 6,000	$ -	$ 16,000	$ -
5.2f	Arresters	0	EA	$ 5,000	$ -	$ 6,000	$ -	$ 11,000	$ -
5.2g	Wave Traps	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2j									
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	0	EA	$ 28,000	$ -	$ 15,000	$ -	$ 43,000	$ -
5.3b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 33,000	$ -	$ 17,500	$ -	$ 50,500	$ -
5.3c	VT'S	0	EA	$ 28,000	$ -	$ 8,000	$ -	$ 36,000	$ -
5.3d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.3e	CCVT'S	0	EA	$ 8,000	$ -	$ 8,000	$ -	$ 16,000	$ -
5.3f	Arresters	0	EA	$ 3,420	$ -	$ 6,000	$ -	$ 9,420	$ -
5.3g	Wave Traps	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ -		$ -		$ -
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE	0	EA	$ 551,250	$ -	$ 85,000	$ -	$ 636,250	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6.2	Protection and Telecom Equipment Panels	0	EA	$ 35,000	$ -	$ 10,000	$ -	$ 45,000	$ -
6.3	125VDC Batteries	0	EA	$ 75,000	$ -	$ 25,000	$ -	$ 100,000	$ -
6.4	Control Cables	0	LS	$ -	$ -	$ -	$ -	$ -	$ -
6.5	SCADA and Communications	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.6	Low Voltage AC Distribution	0	EA	$ 50,000	$ -	$ 100,000	$ -	$ 150,000	$ -
6.7	DC Distribution System	0	EA	$ 50,000	$ -	$ 100,000	$ -	$ 150,000	$ -
6.8	Security	0	EA	$ 7,500	$ -	$ 7,500	$ -	$ 15,000	$ -
6.9	Fire Alarm	0	EA	$ 7,500	$ -	$ 7,500	$ -	$ 15,000	$ -
6.10	Generator	0	EA	$ 100,000	$ -	$ 80,000	$ -	$ 180,000	$ -
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ -		$ -		$ -
7. MISC ITEMS									
7.1	Conduit & Cable Trench System	0	LF	$ 185.00	$ -	$ 170.00	$ -	$ 355	$ -
7.2	Rigid Bus, Fittings & Insulators	1	LS	$ 15,008.40	$ 15,008	$ 56,904.00	$ 56,904	$ 71,912	**$ 71,912**
7.3	Strain Bus, Connectors & Insulators	0	LF	$ 13.38	$ -	$ 39.35	$ -	$ 53	$ -
7.4	Grounding System	0	LF	$ 6.93	$ -	$ 32.58	$ -	$ 40	$ -
7.5	Strain Bus Insulators - 345kV	0	EA	$ 2,000	$ -	$ 1,050	$ -	$ 3,050	$ -
7.6	Strain Bus Insulators - 230kV	0	EA	$ 1,400	$ -	$ 750	$ -	$ 2,150	$ -
7.7	Strain Bus Insulators - 115kV	0	EA	$ 1,000	$ -	$ 550	$ -	$ 1,550	$ -
7.8	Low Voltage AC Station Service	0	LS	$ 50,000	$ -	$ 75,000	$ -	$ 125,000	$ -
7.9	SSVT Service	0	LS	$ 45,000	$ -	$ 45,000	$ -	$ 90,000	$ -
7.10	Control Conduits from Trench to Equipment	0	LS	$ 125,000	$ -	$ 125,000	$ -	$ 250,000	$ -
7.11	Misc. Materials (Above and Below Ground)	0	LS	$ 180,000	$ -	$ 180,000	$ -	$ 360,000	$ -
7.12									
7.13									
7.14									
7.15									
7.16									
7.17									
7.18									
7.19									
7.20									
7.21									
7.22									
7.23									
7.24									
7.25									
TOTAL - MISC ITEMS					$ 15,008		$ 56,904		$ 71,912
J. Porter Substation - Install					$ 15,008		$ 56,904		**$ 71,912**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1.0	LS	$ -	$ -	$ 719	$ 719	$ 719	**$ 719**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 3,457	$ 3,457	$ 3,457	**$ 3,457**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 719	$ 719	$ 719	**$ 719**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 719	$ 719	$ 719	**$ 719**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 5,753	$ 5,753	$ 5,753	**$ 5,753**
8.6	LiDAR	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.7	Geotech	-	EA	$ -	$ -	$ 3,500	$ -	$ 3,500	$ -
8.8	Surveying/Staking	1	Site	$ -	$ -	$ 503	$ 503	$ 503	**$ 503**
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 1,798	$ 1,798	$ 1,798	**$ 1,798**
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 216	$ 216	$ 216	**$ 216**
8.13	Real Estate Costs (New)	-	LS	$ -	$ -	$ -	$ -	$ -	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
8.14	Real Estate Costs (Incumbent Utility)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.18	Sales Tax on Materials	1	LS	$ 1,201	$ 1,201	$ -	$ -	$ 1,201	**$ 1,201**
8.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 72	$ 72	$ 72	**$ 72**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 1,201		$ 13,956		**$ 15,157**

NG & NY Transco - T018 - (Segment A)

K. Porter Substation - Removal

Estimate Revision: 5

Total: $ 557,825

NG & NY Transco - T018 - (Segment A)	*Supply*	*Installation*	*Total*
K. Porter Substation - Removal			
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ -	$ -	$ -
2. SUBSTATION FOUNDATIONS	$ -	$ 126,600	$ 126,600
3. SUBSTATION STRUCTURES	$ -	$ 206,100	$ 206,100
4. MAJOR EQUIPTMENT	$ -	$ 43,500	$ 43,500
5. SMALL EQUIPTMENT / MATERIALS	$ -	$ 59,500	$ 59,500
6. CONTROL HOUSE / PANELS	$ -	$ -	$ -
7. MISC ITEMS	$ -	$ 38,613	$ 38,613
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ -	$ 83,512	$ 83,512
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ -	$ 557,825	$ 557,825
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ -	$ 557,825	$ 557,825

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
K. Porter Substation - Removal									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ -		$ -		$ -
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1e	Switch Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1f	Station Service Transformer Stand Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1k	Arrester Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1p									
2.2	**230kV**								
2.2a	Circuit Breaker Foundations	3	EA	$ -	$ -	$ 7,200	$ 21,600	$ 7,200	**$ 21,600**
2.2b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ 32,000	$ -	$ 32,000	**$ -**
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ 22,000	$ -	$ 22,000	**$ -**
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	5	EA	$ -	$ -	$ 11,000	$ 55,000	$ 11,000	**$ 55,000**
2.2e	Switch Stand Foundations	5	EA	$ -	$ -	$ 5,200	$ 26,000	$ 5,200	**$ 26,000**
2.2f	Station Service Transformer Stand Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.2g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.2h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	**$ -**
2.2j	Instrument Transformer Stand Foundations	4	EA	$ -	$ -	$ 2,400	$ 9,600	$ 2,400	**$ 9,600**
2.2k	Arrester Stand Foundations	6	EA	$ -	$ -	$ 2,400	$ 14,400	$ 2,400	**$ 14,400**
2.2m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.2n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.2p									
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.3e	Switch Stand Foundations	0	EA	$ -	$ -	$ 5,200	$ -	$ 5,200	$ -
2.3f	Fuse Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3k	Arrester Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4b	345-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ 42,000	$ -	$ 42,000	$ -
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5b	Generator Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6b		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6c		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION FOUNDATIONS					$ -		$ 126,600		$ 126,600
3. SUBSTATION STRUCTURES									
3.1	**345kV**								
3.1a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1c	Switch Stands	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1d	Station Service Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1f	Bus Support 1 Ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1g	Instrument Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1h	Arrester Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1j	Wave Trap Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ 27,000	$ -	$ 27,000	$ -
3.2b	Substation A-Frame Structures - Shared Column	5	EA	$ -	$ -	$ 27,000	$ 135,000	$ 27,000	**$ 135,000**
3.2c	Switch Stands	6	EA	$ -	$ -	$ 9,750	$ 58,500	$ 9,750	**$ 58,500**
3.2d	Station Service Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2f	Bus Support 1 Ph	0	EA	$ -	$ -	$ 2,250	$ -	$ 2,250	$ -
3.2g	Instrument Transformer Stand	6	EA	$ -	$ -	$ 1,050	$ 6,300	$ 1,050	**$ 6,300**
3.2h	Arrester Stand	6	EA	$ -	$ -	$ 1,050	$ 6,300	$ 1,050	**$ 6,300**
3.2j	Wave Trap Stand	0	EA	$ -	$ -	$ 4,500	$ -	$ 4,500	$ -
3.2k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3	**115kV**								
3.3a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ 15,000	$ -	$ 15,000	$ -
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3c	Switch Stands	0	EA	$ -	$ -	$ 6,450	$ -	$ 6,450	$ -
3.3d	Fuse Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3f	Bus Support 1 Ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3g	Instrument Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3h	Arrester Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3j	Wave Trap Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION STRUCTURES					$ -		$ 206,100		$ 206,100

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
4.1b	Capacitor Banks	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
4.1c		0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
4.1d									
4.2	**230kV**								
4.2a	Circuit Breakers	3	EA	$ -	$ -	$ 14,500	$ 43,500	$ 14,500	**$ 43,500**
4.2b	Capacitor Banks	0	EA	$ -	$ -	$ 42,000	$ -	$ 42,000	**$ -**
4.3	**115kV**								
4.3a	Circuit Breakers	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
TOTAL - MAJOR EQUIPTMENT					$ -		$ 43,500		$ 43,500
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	**$ -**
5.1b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	**$ -**
5.1c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.1d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.1e	CCVT'S	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	**$ -**
5.1f	Arresters	0	EA	$ -	$ -	$ 1,500	$ -	$ 1,500	**$ -**
5.1g	Wave Traps	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	**$ -**
5.1h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.1j									
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator	2	EA	$ -	$ -	$ 5,500	$ 11,000	$ 5,500	**$ 11,000**
5.2b	Disconnect Switches - 3ph w/ manual operator	3	EA	$ -	$ -	$ 5,500	$ 16,500	$ 5,500	**$ 16,500**
5.2c	VT'S	2	EA	$ -	$ -	$ 1,500	$ 3,000	$ 1,500	**$ 3,000**
5.2d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.2e	CCVT'S	6	EA	$ -	$ -	$ 1,500	$ 9,000	$ 1,500	**$ 9,000**
5.2f	Arresters	6	EA	$ -	$ -	$ 2,500	$ 15,000	$ 2,500	**$ 15,000**
5.2g	Wave Traps	2	EA	$ -	$ -	$ 2,500	$ 5,000	$ 2,500	**$ 5,000**
5.2h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.2j									
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.3b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	**$ -**
5.3c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.3d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.3e	CCVT'S	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.3f	Arresters	0	EA	$ -	$ -	$ 1,500	$ -	$ 1,500	**$ -**
5.3g	Wave Traps	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.3h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.3j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ -		$ 59,500		$ 59,500
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE	0	EA	$ -	$ -	$ 150,000	$ -	$ 150,000	**$ -**
6.2	Protection and Telecom Equipment Panels	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.3	125VDC Batteries	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.4	Control Cables	0	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.5	SCADA and Communications	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.6	Low Voltage AC Distribution	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.7	DC Distribution System	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.8	Security	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.9	Fire Alarm	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.10	Generator	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ -		$ -		**$ -**
7. MISC ITEMS									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
7.1	Conduit & Cable Trench System	0	EA	$ -	$ -	$ 42,000.00	$ -	$ 42,000	**$ -**
7.2	Rigid Bus, Fittings & Insulators	1	L.S.	$ -	$ -	$ 18,937.50	$ 18,938	$ 18,938	**$ 18,938**
7.3	Strain Bus, Connectors & Insulators	1	L.S.	$ -	$ -	$ 19,675.00	$ 19,675	$ 19,675	**$ 19,675**
7.4	Grounding System	0	EA	$ -	$ -	$ 42,000.00	$ -	$ 42,000	**$ -**
7.5									
7.6									
7.7									
7.8									
7.9									
7.10									
7.11									
7.12									
7.13									
7.14									
7.15									
TOTAL - MISC ITEMS					$ -		$ 38,613		$ 38,613
K. Porter Substation - Removal					$ -		$ 474,313		**$ 474,313**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1.0	LS	$ -	$ -	$ 11,858	$ 11,858	$ 11,858	**$ 11,858**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 22,800	$ 22,800	$ 22,800	**$ 22,800**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 4,743	$ 4,743	$ 4,743	**$ 4,743**
8.4	Site Accommodation, Facilities, Storage	1.0	LS	$ -	$ -	$ 4,743	$ 4,743	$ 4,743	**$ 4,743**
	Engineering								
8.5	Design Engineering	1.0	LS	$ -	$ -	$ 37,945	$ 37,945	$ 37,945	**$ 37,945**
8.6	LiDAR	-	Mile	$ -	$ -	$ -	$ -	$ -	**$ -**
8.7	Geotech	-	Site	$ -	$ -	$ -	$ -	$ -	**$ -**
8.8	Surveying/Staking	-	Site	$ -	$ -	$ 3,320	$ -	$ 3,320	**$ -**
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	-	LS	$ -	$ -	$ 11,858	$ -	$ 11,858	**$ -**
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 1,423	$ 1,423	$ 1,423	**$ 1,423**
8.13	Real Estate Costs (New)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.14	Real Estate Costs (Incumbent Utility)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.18	Sales Tax on Materials	1.0	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.19	Fees for permits, including roadway, railroad, building or other local permits	-	LS		$ -	$ 474	$ -	$ 474	**$ -**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ -		$ 83,512		**$ 83,512**

NG & NY Transco - T018 - (Segment A)

L. Interconnection Edic Station

Estimate Revision: 5

Total: $ 2,122,073

NG & NY Transco - T018 - (Segment A)	*Supply*	*Installation*	*Total*
L. Interconnection Edic Station			
1. CLEARING & ACCESS	$ -	$ 367,850	$ 367,850
2. FOUNDATIONS	$ 168,366	$ 170,169	$ 338,536
3. STRUCTURES	$ 501,469	$ 321,821	$ 823,289
4. CONDUCTOR, SHIELDWIRE, OPGW	$ -	$ -	$ -
5. INSULATORS, FITTINGS, HARDWARE	$ 160,000	$ 94,400	$ 254,400
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 66,387	$ 271,611	$ 337,998
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 896,222	$ 1,225,851	$ 2,122,073
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 896,222	$ 1,225,851	$ 2,122,073

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
L. Interconnection Edic Station									
1. CLEARING & ACCESS									
1.1	Clearing the ROW - Heavy (mowing & clearing)	-	Acre	$ -	$ -	$ 15,000	$ -	$ 15,000	$ -
1.2	Clearing the ROW - Light (mowing)	2.0	Acre	$ -	$ -	$ 5,000	$ 10,000	$ 5,000	**$ 10,000**
1.3	Access Road	-	LF	$ -	$ -	$ 45	$ -	$ 45	$ -
1.4	Silt Fence	3,500.0	LF	$ -	$ -	$ 4	$ 14,000	$ 4	**$ 14,000**
1.5	Matting - Access and ROW	3,500.0	LF	$ -	$ -	$ 70	$ 245,000	$ 70	**$ 245,000**
1.6	Matting - To Work Area	300.0	LF	$ -	$ -	$ 70	$ 21,000	$ 70	**$ 21,000**
1.7	Snow Removal	-	LS	$ -	$ -	$ 516,800	$ -	$ 516,800	$ -
1.8	ROW Restoration	0.5	Mile	$ -	$ -	$ 10,000	$ 5,000	$ 10,000	**$ 5,000**
1.9	Work Pads	20,000.0	SF	$ -	$ -	$ 4	$ 70,400	$ 4	**$ 70,400**
1.10	Restoration for Work Pad areas	4,000.0	SF	$ -	$ -	$ 0.2	$ 600	$ 0	**$ 600**
1.11	Temporary Access Bridge	-	EA	$ -	$ -	$ 20,035	$ -	$ 20,035	$ -
1.12	Air Bridge	-	EA	$ -	$ -	$ 14,445	$ -	$ 14,445	$ -
1.13	Stabilized Construction Entrance	-	EA	$ -	$ -	$ 4,580	$ -	$ 4,580	$ -
1.14	Maintenance and Protection of Traffic on Public Roads	-	EA	$ -	$ -	$ 4,130	$ -	$ 4,130	$ -
1.15	Gates	-	EA	$ 2,000	$ -	$ 2,500	$ -	$ 4,500	$ -
1.16	Culverts / Misc. Access	-	EA	$ 750	$ -	$ 1,250	$ -	$ 2,000	$ -
1.17	Concrete Washout Station	1	EA	$ -	$ -	$ 1,850	$ 1,850	$ 1,850	**$ 1,850**
1.18					$ -		$ -		$ -
1.19					$ -		$ -		$ -
1.20	Crushed Rock	0	CY	$ 27	$ -	$ 75	$ -	$ 102	$ -
TOTAL - CLEARING & ACCESS					$ -		$ 367,850		$ 367,850
2. FOUNDATIONS									
2.1	Foundation – Drilled Pier – 8'X 27'	3	EA	$ 41,332	$ 123,995	$ 41,774	$ 125,322	$ 83,106	**$ 249,317**
2.2	Foundation – Drilled Pier – 8'X 29'	1	EA	$ 44,372	$ 44,372	$ 44,847	$ 44,847	$ 89,219	**$ 89,219**
2.3	Rock Excavation Adder	-	CY	$ -	$ -	$ 2,000	$ -	$ 2,000	$ -
2.4									
2.5									
2.6									
2.7									
2.8									
2.9									
2.10									
2.11									
2.12									
2.13									
2.14									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.15									
TOTAL - FOUNDATIONS					$ 168,366		$ 170,169		$ 338,536
3. STRUCTURES									
3.1	1-CKT 345KV VERTICAL MEDIUM ANGLE DEADEND (15°-60°) – 105'	3	Structure	$ 98,883	$ 296,648	$ 59,330	$ 177,989	$ 158,212	**$ 474,636**
3.2	2-CKT 345KV VERTICAL MEDIUM ANGLE DEADEND (15°-60°) - 115'	1	Structure	$ 202,797	$ 202,797	$ 121,678	$ 121,678	$ 324,475	**$ 324,475**
3.3	Install Grounding and Grounding Accessories	4	Pole	$ 506	$ 2,024	$ 5,539	$ 22,154	$ 6,045	**$ 24,178**
3.4					$ -		$ -		$ -
3.5									
3.6					$ -		$ -		$ -
3.7					$ -		$ -		$ -
3.8					$ -		$ -		$ -
3.9					$ -		$ -		$ -
3.10					$ -		$ -		$ -
3.11					$ -		$ -		$ -
3.12					$ -		$ -		$ -
3.13					$ -		$ -		$ -
3.14					$ -		$ -		$ -
3.15					$ -		$ -		$ -
TOTAL - STRUCTURES					$ 501,469		$ 321,821		$ 823,289
4. CONDUCTOR, SHIELDWIRE, OPGW									
4.1	345kV - (1) 954kcmil 54/7 ACSS "Cardinal"	-	LF	$ 1.90	$ -	$ 5.00	$ -	$ 6.90	$ -
4.2	(1) OPGW 36 Fiber AC-33/38/571	-	LF	$ 1.35	$ -	$ 5.00	$ -	$ 6.35	$ -
4.3	(1) 3/8" EHS7 Steel	-	LF	$ 0.47	$ -	$ 5.00	$ -	$ 5.47	$ -
4.5	Remove Existing Cable From Existing Structures	-	Mile	$ -	$ -	$ 30,000	$ -	$ 30,000.00	$ -
4.6	Remove Existing OPGW Cable	-	Mile	$ -	$ -	$ 12,000	$ -	$ 12,000.00	$ -
4.7	Remove Existing EH7	-	Mile	$ -	$ -	$ 12,000	$ -	$ 12,000.00	$ -
4.8									
4.9		-							
4.10	Rider Poles - Relocated	-	Set	$ -	$ -	$ 3,500	$ -	$ 3,500.00	$ -
4.11	Rider Poles	-	EA	$ 1,750	$ -	$ 3,500	$ -	$ 5,250.00	$ -
TOTAL: CONDUCTOR, SHIELDWIRE, OPGW:					$ -		$ -		$ -
5. INSULATOR, FITTINGS, HARDWARE									
5.1	345kV Tangent (1-Group of 18-Bells Each Assembly)		Assembly	$ 1,800	$ -	$ 720	$ -	$ 2,520	$ -
5.2	115kV Tangent (1-Group of 9-Bells Each Assembly)		Assembly	$ 900	$ -	$ 560	$ -	$ 1,460	$ -
5.3	345kV Dead-end & Angle Insulators (1-Group of 18-Bells Each Assembly)	60	Assembly	$ 1,800	$ 108,000	$ 720	$ 43,200	$ 2,520	**$ 151,200**
5.4	115kV Dead-end & Angle Insulators (1-Group of 9-Bells Each Assembly)		Assembly	$ 900	$ -	$ 560	$ -	$ 1,460	$ -
5.5	OPGW Assembly - Tangent	-	Assembly	$ 200	$ -	$ 150	$ -	$ 350	$ -
5.6	OPGW Assembly - Angle / DE	4	Assembly	$ 250	$ 1,000	$ 150	$ 600	$ 400	**$ 1,600**
5.7	OHSW Assembly - Angle / DE	4	Assembly	$ 250	$ 1,000	$ 150	$ 600	$ 400	**$ 1,600**
5.8	OPGW Splice Boxes	-	Set	$ 1,746	$ -	$ 2,274	$ -	$ 4,020	$ -
5.9	OPGW Splice & Test	-	EA	$ 2,520	$ -	$ 2,520	$ -	$ 5,040	$ -
5.10	Spacer - Conductor	-	EA	$ 50	$ -	$ 35	$ -	$ 85	$ -
5.11	Vibration Dampers - Conductor	-	EA	$ 35	$ -	$ 35	$ -	$ 70	$ -
5.12	Shieldwire / OPGW Dampers, Misc. Fittings	-	EA	$ 27	$ -	$ 35	$ -	$ 62	$ -
5.13	Guys, Anchors, and Accessories	-	EA	$ 720	$ -	$ 885	$ -	$ 1,605	$ -
5.14	Misc. materials (Signs and Markers)	-	Mile	$ 770	$ -	$ 1,006	$ -	$ 1,776	$ -
5.15					$ -		$ -		$ -
5.16									
5.17					$ -		$ -		$ -
5.18					$ -		$ -		$ -
5.19	Interconnection Arrangements	1	EA	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 100,000	**$ 100,000**
5.20					$ -		$ -		$ -
TOTAL - INSULATOR, FITTINGS, HARDWARE					$ 160,000		$ 94,400		$ 254,400
L. Interconnection Edic Station					$ 829,835		$ 954,240		$ 1,784,075
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
6.1	Mob / Demob	1	LS	$ -	$ -	$ 17,841	$ 17,841	$ 17,841	**$ 17,841**
	Project Management, Material Handling & Amenities								
6.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 85,760	$ 85,760	$ 85,760	**$ 85,760**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6.3	Utility PM and Project Oversite	1	LS		$ -	$ 17,841	$ 17,841	$ 17,841	**$ 17,841**
6.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 17,841	$ 17,841	$ 17,841	**$ 17,841**
	Engineering								
6.5	Design Engineering	1	LS	$ -	$ -	$ 89,204	$ 89,204	$ 89,204	**$ 89,204**
6.6	LiDAR	-	LS	$ -	$ -	$ 5,352	$ -	$ 5,352	**$ -**
6.7	Geotech	1	Location	$ -	$ -	$ 3,500	$ 3,500	$ 3,500	**$ 3,500**
6.8	Surveying/Staking	1	LS	$ -	$ -	$ 12,489	$ 12,489	$ 12,489	**$ 12,489**
	Testing & Commissioning								
6.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 20,000	$ 20,000	$ 20,000	**$ 20,000**
	Permitting and Additional Costs								
6.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.12	Warranties / LOC's	1	LS	$ -	$ -	$ 5,352	$ 5,352	$ 5,352	**$ 5,352**
6.13	Real Estate Costs (New ROW)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.14	Real Estate Costs (Incumbent Utility ROW)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.18	Sales Tax on Materials	1	LS	$ 66,387	$ 66,387	$ -	$ -	$ 66,387	**$ 66,387**
6.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 1,784	$ 1,784	$ 1,784	**$ 1,784**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 66,387		$ 271,611		**$ 337,998**

NG & NY Transco - T018 - (Segment A)

M. Interconnection New Scotland Station

Estimate Revision: 5

Total: $ 3,101,204

NG & NY Transco - T018 - (Segment A)	*Supply*	*Installation*	*Total*
M. Interconnection New Scotland Station			
1. CLEARING & ACCESS	$ -	$ 367,850	$ 367,850
2. FOUNDATIONS	$ 365,657	$ 473,093	$ 838,749
3. STRUCTURES	$ 655,465	$ 445,628	$ 1,101,092
4. CONDUCTOR, SHIELDWIRE, OPGW	$ 3,555	$ 26,100	$ 29,655
5. INSULATORS, FITTINGS, HARDWARE	$ 161,130	$ 95,795	$ 256,925
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 94,864	$ 412,068	$ 506,933
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 1,280,670	$ 1,820,533	$ 3,101,204
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 1,280,670	$ 1,820,533	$ 3,101,204

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
M. Interconnection New Scotland Station									
1. CLEARING & ACCESS									
1.1	Clearing the ROW - Heavy (mowing & clearing)	-	Acre	$ -	$ -	$ 15,000	$ -	$ 15,000	$ -
1.2	Clearing the ROW - Light (mowing)	2.0	Acre	$ -	$ -	$ 5,000	$ 10,000	$ 5,000	**$ 10,000**
1.3	Access Road	-	LF	$ -	$ -	$ 45	$ -	$ 45	$ -
1.4	Silt Fence	3,500.0	LF	$ -	$ -	$ 4	$ 14,000	$ 4	**$ 14,000**
1.5	Matting - Access and ROW	3,500.0	LF	$ -	$ -	$ 70	$ 245,000	$ 70	**$ 245,000**
1.6	Matting - To Work Area	300.0	LF	$ -	$ -	$ 70	$ 21,000	$ 70	**$ 21,000**
1.7	Snow Removal	-	LS	$ -	$ -	$ 516,800	$ -	$ 516,800	$ -
1.8	ROW Restoration	0.5	Mile	$ -	$ -	$ 10,000	$ 5,000	$ 10,000	**$ 5,000**
1.9	Work Pads	20,000.0	SF	$ -	$ -	$ 4	$ 70,400	$ 4	**$ 70,400**
1.10	Restoration for Work Pad areas	4,000.0	SF	$ -	$ -	$ 0.2	$ 600	$ 0	**$ 600**
1.11	Temporary Access Bridge	-	EA	$ -	$ -	$ 20,035	$ -	$ 20,035	$ -
1.12	Air Bridge	-	EA	$ -	$ -	$ 14,445	$ -	$ 14,445	$ -
1.13	Stabilized Construction Entrance	-	EA	$ -	$ -	$ 4,580	$ -	$ 4,580	$ -
1.14	Maintenance and Protection of Traffic on Public Roads	-	EA	$ -	$ -	$ 4,130	$ -	$ 4,130	$ -
1.15	Gates	-	EA	$ 2,000	$ -	$ 2,500	$ -	$ 4,500	$ -
1.16	Culverts / Misc. Access	-	EA	$ 750	$ -	$ 1,250	$ -	$ 2,000	$ -
1.17	Concrete Washout Station	1	EA	$ -	$ -	$ 1,850	$ 1,850	$ 1,850	**$ 1,850**
1.18					$ -		$ -		$ -
1.19					$ -		$ -		$ -
1.20	Crushed Rock	0	CY	$ 27	$ -	$ 75	$ -	$ 102	$ -
TOTAL - CLEARING & ACCESS					$ -		$ 367,850		$ 367,850
2. FOUNDATIONS									
2.1	Foundation – Drilled Pier – 8'X 50'	3	EA	$ 76,500	$ 229,501	$ 77,320	$ 231,959	$ 153,820	**$ 461,459**
2.2	Foundation – Drilled Pier – 8'X 89'	1	EA	$ 136,156	$ 136,156	$ 137,614	$ 137,614	$ 273,770	**$ 273,770**
2.3	Rock Excavation Adder	51.8	CY	$ -	$ -	$ 2,000	$ 103,520	$ 2,000	**$ 103,520**
2.4									
2.5									
2.6									
2.7									
2.8									
2.9									
2.10									
2.11									
2.12									
2.13									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.14									
2.15									
TOTAL - FOUNDATIONS					$ 365,657		$ 473,093		$ 838,749
3. STRUCTURES									
3.1	1-CKT 345KV 3-POLE MEDIUM ANGLE DEADEND (15°-60°) - 115'	3	Structure	$ 178,026	$ 534,077	$ 106,815	$ 320,446	$ 284,841	**$ 854,522**
3.2	1-CKT 345KV VERTICAL MEDIUM ANGLE DEADEND (15°-60°) - 115'	1	Structure	$ 116,328	$ 116,328	$ 69,797	$ 69,797	$ 186,125	**$ 186,125**
3.3	Install Grounding and Grounding Accessories	10	Structure	$ 506	$ 5,060	$ 5,539	$ 55,385	$ 6,045	**$ 60,445**
3.4					$ -		$ -		
3.5									
3.6					$ -		$ -		
3.7					$ -		$ -		
3.8					$ -		$ -		
3.9					$ -		$ -		
3.10					$ -		$ -		
3.11					$ -		$ -		
3.12					$ -		$ -		
3.13					$ -		$ -		
3.14					$ -		$ -		
3.15					$ -		$ -		
TOTAL - STRUCTURES					$ 655,465		$ 445,628		$ 1,101,092
4. CONDUCTOR, SHIELDWIRE, OPGW									
4.1	345kV - (1) 954kcmil 54/7 ACSS "Cardinal"	1,500	LF	$ 1.90	$ 2,850	$ 5.00	$ 7,500	$ 6.90	**$ 10,350**
4.2	(1) OPGW 36 Fiber AC-33/38/571	-	LF	$ 1.35	$ -	$ 5.00	$ -	$ 6.35	**$ -**
4.3	(1) 3/8" EHS7 Steel	1,500	LF	$ 0.47	$ 705	$ 5.00	$ 7,500	$ 5.47	**$ 8,205**
4.5	Remove Existing 345kV Cable From Existing Structures	0.3	Mile	$ -	$ -	$ 30,000	$ 7,500	$ 30,000.00	**$ 7,500**
4.6	Remove Existing OPGW Cable	-	Mile	$ -	$ -	$ 12,000	$ -	$ 12,000.00	**$ -**
4.7	Remove Existing EH7	0.3	Mile	$ -	$ -	$ 12,000	$ 3,600	$ 12,000.00	**$ 3,600**
4.8									
4.9									
4.10	Rider Poles - Relocated	-	Set	$ -	$ -	$ 3,500	$ -	$ 3,500.00	**$ -**
4.11	Rider Poles	-	EA	$ 1,750	$ -	$ 3,500	$ -	$ 5,250.00	**$ -**
TOTAL: CONDUCTOR, SHIELDWIRE, OPGW:					$ 3,555		$ 26,100		**$ 29,655**
5. INSULATOR, FITTINGS, HARDWARE									
5.1	345kV Tangent (1-Group of 18-Bells Each Assembly)	-	Assembly	$ 1,800	$ -	$ 720	$ -	$ 2,520	**$ -**
5.2	115kV Tangent (1-Group of 9-Bells Each Assembly)	-	Assembly	$ 900	$ -	$ 560	$ -	$ 1,460	**$ -**
5.3	345kV Dead-end & Angle Insulators (1-Group of 18-Bells Each Assembly)	60	Assembly	$ 1,800	$ 108,000	$ 720	$ 43,200	$ 2,520	**$ 151,200**
5.4	115kV Dead-end & Angle Insulators (1-Group of 9-Bells Each Assembly)	-	Assembly	$ 900	$ -	$ 560	$ -	$ 1,460	**$ -**
5.5	OPGW Assembly - Tangent	-	Assembly	$ 200	$ -	$ 150	$ -	$ 350	**$ -**
5.6	OPGW Assembly - Angle / DE	-	Assembly	$ 250	$ -	$ 150	$ -	$ 400	**$ -**
5.7	OHSW Assembly - Angle / DE	4	Assembly	$ 250	$ 1,000	$ 150	$ 600	$ 400	**$ 1,600**
5.8	OPGW Splice Boxes	-	Set	$ 1,746	$ -	$ 2,274	$ -	$ 4,020	**$ -**
5.9	OPGW Splice & Test	-	EA	$ 2,520	$ -	$ 2,520	$ -	$ 5,040	**$ -**
5.10	Spacer - Conductor	9	EA	$ 50	$ 450	$ 35	$ 315	$ 85	**$ 765**
5.11	Vibration Dampers - Conductor	48	EA	$ 35	$ 1,680	$ 35	$ 1,680	$ 70	**$ 3,360**
5.12	Shieldwire / OPGW Dampers, Misc. Fittings	-	EA	$ 27	$ -	$ 35	$ -	$ 62	**$ -**
5.13	Guys, Anchors, and Accessories	-	EA	$ 720	$ -	$ 885	$ -	$ 1,605	**$ -**
5.14	Misc. materials (Signs and Markers)	-	Mile	$ 770	$ -	$ 1,006	$ -	$ 1,776	**$ -**
5.15					$ -		$ -		**$ -**
5.16	Interconnection Arrangements	1	EA	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 100,000	**$ 100,000**
5.17					$ -		$ -		**$ -**
5.18					$ -		$ -		**$ -**
5.19					$ -		$ -		**$ -**
5.20					$ -		$ -		**$ -**
TOTAL - INSULATOR, FITTINGS, HARDWARE					$ 161,130		$ 95,795		$ 256,925
M. Interconnection New Scotland Station					$ 1,185,806		$ 1,408,465		$ 2,594,271
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
6.1	Mob / Demob	1	LS	$ -	$ -	$ 25,943	$ 25,943	$ 25,943	**$ 25,943**
	Project Management, Material Handling & Amenities								

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 124,707	$ 124,707	$ 124,707	**$ 124,707**
6.3	Utility PM and Project Oversite	1	LS		$ -	$ 25,943	$ 25,943	$ 25,943	**$ 25,943**
6.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 25,943	$ 25,943	$ 25,943	**$ 25,943**
	Engineering								
6.5	Design Engineering	1	LS	$ -	$ -	$ 129,714	$ 129,714	$ 129,714	**$ 129,714**
6.6	LiDAR	1	LS	$ -	$ -	$ 7,783	$ 7,783	$ 7,783	**$ 7,783**
6.7	Geotech	1	Location	$ -	$ -	$ 3,500	$ 3,500	$ 3,500	**$ 3,500**
6.8	Surveying/Staking	1	LS	$ -	$ -	$ 18,160	$ 18,160	$ 18,160	**$ 18,160**
	Testing & Commissioning								
6.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 40,000	$ 40,000	$ 40,000	**$ 40,000**
	Permitting and Additional Costs								
6.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.12	Warranties / LOC's	1	LS	$ -	$ -	$ 7,783	$ 7,783	$ 7,783	**$ 7,783**
6.13	Real Estate Costs (New ROW)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.14	Real Estate Costs (Incumbent Utility ROW)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.18	Sales Tax on Materials	1	LS	$ 94,864	$ 94,864	$ -	$ -	$ 94,864	**$ 94,864**
6.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 2,594	$ 2,594	$ 2,594	**$ 2,594**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 94,864		$ 412,068		**$ 506,933**

NG & NY Transco - T018 - (Segment A)

N. Interconnection Rotterdam Station

Estimate Revision: 5

Total: $ 4,781,500

NG & NY Transco - T018 - (Segment A)	*Supply*	*Installation*	*Total*
N. Interconnection Rotterdam Station			
1. CLEARING & ACCESS	$ -	$ 1,233,050	$ 1,233,050
2. FOUNDATIONS	$ 192,145	$ 325,963	$ 518,108
3. STRUCTURES	$ 546,722	$ 995,362	$ 1,542,084
4. CONDUCTOR, SHIELDWIRE, OPGW	$ 65,923	$ 437,250	$ 503,173
5. INSULATORS, FITTINGS, HARDWARE	$ 165,730	$ 118,480	$ 284,210
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 77,642	$ 623,234	$ 700,876
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 1,048,161	$ 3,733,339	$ 4,781,500
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 1,048,161	$ 3,733,339	$ 4,781,500

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
N. Interconnection Rotterdam Station									
1. CLEARING & ACCESS									
1.1	Clearing the ROW - Heavy (mowing & clearing)	7.0	Acre	$ -	$ -	$ 15,000	$ 105,000	$ 15,000	**$ 105,000**
1.2	Clearing the ROW - Light (mowing)	5.0	Acre	$ -	$ -	$ 5,000	$ 25,000	$ 5,000	**$ 25,000**
1.3	Access Road	-	LF	$ -	$ -	$ 45	$ -	$ 45	$ -
1.4	Silt Fence	4,800.0	LF	$ -	$ -	$ 4	$ 19,200	$ 4	**$ 19,200**
1.5	Matting - Access and ROW	4,800.0	LF	$ -	$ -	$ 70	$ 336,000	$ 70	**$ 336,000**
1.6	Matting - To Work Area	2,400.0	LF	$ -	$ -	$ 70	$ 168,000	$ 70	**$ 168,000**
1.7	Snow Removal	-	LS	$ -	$ -	$ 516,800	$ -	$ 516,800	$ -
1.8	ROW Restoration	1.0	Mile	$ -	$ -	$ 10,000	$ 10,000	$ 10,000	**$ 10,000**
1.9	Work Pads	160,000.0	SF	$ -	$ -	$ 4	$ 563,200	$ 4	**$ 563,200**
1.10	Restoration for Work Pad areas	32,000.0	SF	$ -	$ -	$ 0.2	$ 4,800	$ 0	**$ 4,800**
1.11	Temporary Access Bridge	-	EA	$ -	$ -	$ 20,035	$ -	$ 20,035	$ -
1.12	Air Bridge	-	EA	$ -	$ -	$ 14,445	$ -	$ 14,445	$ -
1.13	Stabilized Construction Entrance	-	EA	$ -	$ -	$ 4,580	$ -	$ 4,580	$ -
1.14	Maintenance and Protection of Traffic on Public Roads	-	EA	$ -	$ -	$ 4,130	$ -	$ 4,130	$ -
1.15	Gates	-	EA	$ 2,000	$ -	$ 2,500	$ -	$ 4,500	$ -
1.16	Culverts / Misc. Access	-	EA	$ 750	$ -	$ 1,250	$ -	$ 2,000	$ -
1.17	Concrete Washout Station	1	EA	$ -	$ -	$ 1,850	$ 1,850	$ 1,850	**$ 1,850**
1.18					$ -		$ -		$ -
1.19					$ -		$ -		$ -
1.20	Crushed Rock	0	CY	$ 27	$ -	$ 75	$ -	$ 102	$ -
TOTAL - CLEARING & ACCESS					$ -		$ 1,233,050		$ 1,233,050
2. FOUNDATIONS									
2.1	10' ED Rock BF	6	EA	$ 358	$ 2,145	$ 3,575	$ 21,450	$ 3,933	**$ 23,595**
2.2	15' ED Rock BF	18	EA	$ 536	$ 9,653	$ 5,363	$ 96,525	$ 5,899	**$ 106,178**
2.3	20' ED Rock BF	4	EA	$ 715	$ 2,860	$ 7,150	$ 28,600	$ 7,865	**$ 31,460**
2.4	Foundation – Drilled Pier – 8'X 29'	4	EA	$ 44,372	$ 177,487	$ 44,847	$ 179,388	$ 89,219	**$ 356,875**
2.5	Rock Excavation Adder	-	CY	$ -	$ -	$ 2,000	$ -	$ 2,000	$ -
2.6					$ -		$ -		$ -
2.7					$ -		$ -		$ -
2.8					$ -		$ -		$ -
2.9					$ -		$ -		$ -
2.10					$ -		$ -		$ -
2.11					$ -		$ -		$ -
2.12					$ -		$ -		$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.13					$ -		$ -		$ -
2.14					$ -		$ -		$ -
2.15					$ -		$ -		$ -
TOTAL - FOUNDATIONS					$ 192,145		$ 325,963		$ 518,108
3. STRUCTURES									
3.1	15kV 3-CKT TANGENT DIST. - WOOD POLE	3	Pole	$ 3,500	$ 10,500	$ 3,600	$ 10,800	$ 7,100	**$ 21,300**
3.2	15Kv 3-CKT MA DIST. - WOOD POLE	1	Pole	$ 3,500	$ 3,500	$ 3,600	$ 3,600	$ 7,100	**$ 7,100**
3.3	15kV 3-CKT DE - WOOD POLE	2	Pole	$ 3,500	$ 7,000	$ 3,600	$ 7,200	$ 7,100	**$ 14,200**
3.4	115kV 1-CKT TANGENT - WOOD POLE	5	Pole	$ 4,500	$ 22,500	$ 4,400	$ 22,000	$ 8,900	**$ 44,500**
3.5	115kV 1-CKT MA - WOOD POLE	2	Pole	$ 4,500	$ 9,000	$ 4,400	$ 8,800	$ 8,900	**$ 17,800**
3.6	115kV 1-CKT DE - WOOD POLE	11	Pole	$ 5,500	$ 60,500	$ 5,000	$ 55,000	$ 10,500	**$ 115,500**
3.7	115kV 2-CKT TANGENT - WOOD POLE	4	Pole	$ 5,500	$ 22,000	$ 5,000	$ 20,000	$ 10,500	**$ 42,000**
3.8	115kV 2-CKT DE - STEEL POLE	4	Pole	$ 98,883	$ 395,530	$ 98,883	$ 395,530	$ 197,765	**$ 791,060**
3.9	Remove Existing Structure	24	EA		$ -	$ 12,300	$ 295,200	$ 12,300	**$ 295,200**
3.10					$ -		$ -		$ -
3.11					$ -		$ -		$ -
3.12	Install Grounding and Grounding Accessories	32	Structure	$ 506	$ 16,192	$ 5,539	$ 177,232	$ 6,045	**$ 193,424**
3.13					$ -		$ -		$ -
3.14					$ -		$ -		$ -
3.15					$ -		$ -		$ -
TOTAL - STRUCTURES					$ 546,722		$ 995,362		$ 1,542,084
4. CONDUCTOR, SHIELDWIRE, OPGW									
4.1	345kV - (1) 954kcmil 54/7 ACSS "Cardinal"	23,400	LF	$ 1.90	$ 44,460	$ 5.00	$ 117,000	$ 6.90	**$ 161,460**
4.2	(1) OPGW 36 Fiber AC-33/38/571	-	LF	$ 1.35	$ -	$ 5.00	$ -	$ 6.35	$ -
4.3	(1) 3/8" EHS7 Steel	7,800	LF	$ 0.47	$ 3,666	$ 5.00	$ 39,000	$ 5.47	**$ 42,666**
4.5	Remove Existing Cable	6.6	Mile	$ -	$ -	$ 30,000	$ 197,700	$ 30,000.00	**$ 197,700**
4.6	Remove Existing EH7	2.2	Mile	$ -	$ -	$ 12,000	$ 26,400	$ 12,000.00	**$ 26,400**
4.7	15kV - (1) 477kcmil 26/7 ACSR "Hawk"	9,630	LF	$ 1.62	$ 15,601	$ 5.00	$ 48,150	$ 6.62	**$ 63,751**
4.8	15kV - (1) 336kcmil 26/7 ACSR "Linnet"	1,800	LF	$ 1.22	$ 2,196	$ 5.00	$ 9,000	$ 6.22	**$ 11,196**
4.9		-							
4.10	Rider Poles - Relocated	-	Set	$ -	$ -	$ 3,500	$ -	$ 3,500.00	$ -
4.11	Rider Poles	-	EA	$ 1,750	$ -	$ 3,500	$ -	$ 5,250.00	$ -
TOTAL: CONDUCTOR, SHIELDWIRE, OPGW:					$ 65,923		$ 437,250		**$ 503,173**
5. INSULATOR, FITTINGS, HARDWARE									
5.1	115kV Tangent (1-Group of 9-Bells Each Assembly)	33	Assembly	$ 1,000	$ 33,000	$ 560	$ 18,480	$ 1,560	**$ 51,480**
5.2	115kV Dead-end & Angle Insulators (1-Group of 9-Bells Each Assembly)	66	Assembly	$ 1,000	$ 66,000	$ 560	$ 36,960	$ 1,560	**$ 102,960**
5.3	15kV Tangent	12	Assembly	$ 100	$ 1,200	$ 75	$ 900	$ 175	**$ 2,100**
5.4	15kV Dead-end & Angle Insulators	18	Assembly	$ 100	$ 1,800	$ 75	$ 1,350	$ 175	**$ 3,150**
5.5	Neutral, Distribution, Tangent	4	Assembly	$ 100	$ 400	$ 75	$ 300	$ 175	**$ 700**
5.6	Neutral, Distribution, DE/Side	2	Assembly	$ 100	$ 200	$ 75	$ 150	$ 175	**$ 350**
5.7	Jumper, DE/Angle, 3PH	4	Assembly	$ 100	$ 400	$ 75	$ 300	$ 175	**$ 700**
5.8	OPGW Assembly - Tangent	2	Assembly	$ 200	$ 400	$ 150	$ 300	$ 350	**$ 700**
5.9	OSHW Assembly - Tangent	11	Assembly	$ 250	$ 2,750	$ 150	$ 1,650	$ 400	**$ 4,400**
5.10	OHSW Assembly - Angle / DE	38	Assembly	$ 250	$ 9,500	$ 150	$ 5,700	$ 400	**$ 15,200**
5.11	OPGW Splice Boxes	-	Set	$ 1,746	$ -	$ 2,274	$ -	$ 4,020	$ -
5.12	OPGW Splice & Test	-	EA	$ 2,520	$ -	$ 2,520	$ -	$ 5,040	$ -
5.13	Spacer - Conductor	-	EA	$ 50	$ -	$ 35	$ -	$ 85	$ -
5.14	Vibration Dampers - Conductor	-	EA	$ 35	$ -	$ 35	$ -	$ 70	$ -
5.15	Shieldwire / OPGW Dampers, Misc. Fittings	-	EA	$ 27	$ -	$ 35	$ -	$ 62	$ -
5.16	Guys, Anchors, and Accessories	14.0	EA	$ 720	$ 10,080	$ 885	$ 12,390	$ 1,605	**$ 22,470**
5.17	Misc. materials (Signs and Markers)	-	Mile	$ 770	$ -	$ 1,006	$ -	$ 1,776	$ -
5.18					$ -		$ -		$ -
5.19	Interconnection Arrangements	8	EA	$ 5,000	$ 40,000	$ 5,000	$ 40,000	$ 10,000	**$ 80,000**
5.20					$ -		$ -		$ -
5.21					$ -		$ -		$ -
5.22					$ -		$ -		$ -
5.23					$ -		$ -		$ -
TOTAL - INSULATOR, FITTINGS, HARDWARE					$ 165,730		$ 118,480		$ 284,210
N. Interconnection Rotterdam Station					$ 970,519		$ 3,110,105		$ 4,080,624
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6.1	Mob / Demob	1	LS	$ -	$ -	$ 40,806	$ 40,806	$ 40,806	**$ 40,806**
	Project Management, Material Handling & Amenities								
6.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 196,156	$ 196,156	$ 196,156	**$ 196,156**
6.3	Utility PM and Project Oversite	1	LS		$ -	$ 40,806	$ 40,806	$ 40,806	**$ 40,806**
6.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 40,806	$ 40,806	$ 40,806	**$ 40,806**
	Engineering								
6.5	Design Engineering	1	LS	$ -	$ -	$ 204,031	$ 204,031	$ 204,031	**$ 204,031**
6.6	LiDAR	1	LS	$ -	$ -	$ 12,242	$ 12,242	$ 12,242	**$ 12,242**
6.7	Geotech	1	Location	$ -	$ -	$ 3,500	$ 3,500	$ 3,500	**$ 3,500**
6.8	Surveying/Staking	1	LS	$ -	$ -	$ 28,564	$ 28,564	$ 28,564	**$ 28,564**
	Testing & Commissioning								
6.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 40,000	$ 40,000	$ 40,000	**$ 40,000**
	Permitting and Additional Costs								
6.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.12	Warranties / LOC's	1	LS	$ -	$ -	$ 12,242	$ 12,242	$ 12,242	**$ 12,242**
6.13	Real Estate Costs (New ROW)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.14	Real Estate Costs (Incumbent Utility ROW)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.18	Sales Tax on Materials	1	LS	$ 77,642	$ 77,642	$ -	$ -	$ 77,642	**$ 77,642**
6.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 4,081	$ 4,081	$ 4,081	**$ 4,081**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 77,642		$ 623,234		**$ 700,876**

NG & NY Transco - T018 - (Segment A)	
ESTIMATE ASSUMPTIONS & CLARIFICATIONS	
1	Cost Estimate is based on 2017 rates.
2	Construction schedule is in accordance with proposed schedule - we have assumed continuous working with no breaks in the schedule. Six months have been added to the construction schedule for start up and close out works and assisting in pre-construction activities (i.e. permitting activities, material procurement etc.).
3	We have assumed a typical work week of five-(5) days per week at ten-(10) hours per day (5 x 10 hour days).
4	All labor rates and benefits used for estimating purposes are taken from IBEW Local 1249 working agreement as updated 5-8-2017.
5	We have assumed that the Access Road included in Developer Estimate will be Type 1 Gravel Type.
6	Costs will vary for handling and disposal of contaminated spoils, depending on type of contaminants and availability / location of the appropriate tipping facility. Since there is not enough information to provide a quantified estimate for this item, allowance is included in the contingency monies.
7	Costs have been developed based on historical data from Projects of a similar nature (AACE Class 5 and 4 Estimating Practices). We have not engaged any subcontractors for formal quotes.
8	Foundation rates include supply and installation of materials. Drilled Pier rates include supply and testing of concrete, rebar cage and the use of temp or permanent casing.
9	A Contractor Mark-Up (OH&P) of 15% has been included in the Total section.
10	We have assumed that all project details provided are accurate unless noted otherwise.
11	Any SUF pricing includes 35% to cover Contractor markup (15%) and contingency (20%)
12	A contractor allowance of 1% for mobilization and demobilization has been included in the total section.
13	A contractor allowance of 4.121% for project management and staffing has been included in the total section. This also includes agricultural inspector, engineering inspector, safety inspector, compliance inspector, environmental inspector, and SWPP inspector.
14	An allowance of 1% for Utility PM and Project Oversite staffing has been included in the total section.
15	A contractor allowance of 1% for site accommodation, facilities, and storage has been included in the total section.
16	An allowance of 5% for transmission design and engineering has been included in the total section.
17	An allowance of 8% for substation design and engineering has been included in the total section.
18	An allowance of 0.7% for survey and staking of the transmission line and substation layout has been included in the total section.
19	An allowance of 0.3% for LIDAR of the transmission line has been included in the total section.
20	An allowance of 3.75% for substation testing and commissioning has been included in the total section.
21	An allowance of $20,000.00 per circuit for transmission line testing and commissioning has been included in the total section.
22	New York state sales tax of 8% is included in all material pricing.
23	An allowance of 1.5% for insurance is included in the DPS sheet.

NextEra Energy (T021)			
		Description	**Total Amount** (In thousand $)
Direct Cost	1	**Transmission Lines**	
	1.1	Clearing & Access	$55,279
	1.2	Foundations	$18,318
	1.3	Structures	$74,701
	1.4	Conductor, Shiedwire and Optical Ground Wire	$38,661
	1.5	Insulators, Fitting and Hardwares	$18,280
		Subtotal (1)	**$205,239**
	2	**Substations**	
	2.1	Rotterdam Substation	$850
	2.2	Edic Substation	$2,153
	2.3	Princetown Substation	$40,296
	2.4	New Scotland Substation	$6,883
	2.5	Porter Substation	$546
	2.6	Knickerbocker Substation	$0
	2.7	Marcy Substation	$0
	2.8	Substation Interconnections	$4,378
		Subtotal (2)	**$55,107**
		Total (1+2)	$260,346
		Contractors Mark-up (15% of Total 1+2)	$39,052
		Total Direct Cost (A)	**$299,398**
Indirect Cost	3	**Technical Services Costs**	
	3.1	Contractor Mobilization / Demobilization	$2,603
	3.2	Project Management, Material Handling & Amenities	$18,440
	3.3	Engineering	$17,327
	3.4	Testing & Commissioning	$1,435
	3.5	Permitting, Real Estate, Sales Tax and Additional Costs	$15,672
	3.6	Compensation for use of NYPA Structures (1 Circuit)	$8,919
	3.7	Legal, Environmental Licensing & Permitting and Environmental Mitigation	$7,865
		Total Indirect Cost (3)	**$72,262**
		Subtotal Project Cost (B=A+3) 2017 $	**$371,660**
	4	**Network Upgrade Facilities (NUF)**	
	4.1	NUF proposed as element of the Project	$0
	4.2	NUF identified during Evaluation	$0
		Subtotal NUF Cost (C)	**$0**

Total Project Cost (B+C) 2017 $	**$371,660**
Total Project Cost 2018 $	**$382,810**

NextEra - T021 Enterprise Line - (Segment A)

Estimate Revision: 5

NextEra - T021 Enterprise Line - (Segment A) - Direct Costs		*Total Each Segment*
Direct Labor, Material & Equipment Costs	A. Transmission Line Edic to Princetown	$ 142,045,942
Direct Labor, Material & Equipment Costs	B. Transmission Line Princetown to Rotterdam	$ 22,954,338
Direct Labor, Material & Equipment Costs	C. Transmission Line Princetown to New Scotland	$ 40,238,473
Direct Labor, Material & Equipment Costs	D. Princetown Substation - Install	$ 40,296,444
Direct Labor, Material & Equipment Costs	F. Edic Substation - Install	$ 2,117,185
Direct Labor, Material & Equipment Costs	G. Edic Substation - Removal	$ 35,950
Direct Labor, Material & Equipment Costs	H. New Scotland Substation - Install	$ 6,740,673
Direct Labor, Material & Equipment Costs	I. New Scotland Substation - Removal	$ 142,200
Direct Labor, Material & Equipment Costs	J. Porter Substation - Install	$ 71,912
Direct Labor, Material & Equipment Costs	K. Porter Substation - Removal	$ 474,313
Direct Labor, Material & Equipment Costs	L. Interconnection Edic Station	$ 1,784,075
Direct Labor, Material & Equipment Costs	M. Interconnection New Scotland Station	$ 2,594,271
Direct Labor, Material & Equipment Costs	N. Rotterdam Subtation - Install	$ 850,000
Direct Labor, Material & Equipment Costs	O. System Upgrade Facilities (Various Lines for Edic to New Scotland)	$ -
Direct Labor, Material & Equipment Costs	P. System Upgrade Facilities (Various Stations for Edic to New Scotland)	$ -
	SUBTOTAL:	$ 260,345,776
	CONTRACTOR MARK-UP (OH&P)	$ 39,051,866
	CONTINGENCY ON ENTIRE PROJECT	$ -
	TOTAL DIRECT:	$ 299,397,642

NextEra - T021 Enterprise Line - (Segment A) - Indirect Costs		*Total Each Segment*
Indirect Costs	A. Transmission Line Edic to Princetown	$ 37,373,534
Indirect Costs	B. Transmission Line Princetown to Rotterdam	$ 4,659,697
Indirect Costs	C. Transmission Line Princetown to New Scotland	$ 8,472,452
Indirect Costs	D. Princetown Substation - Install	$ 10,527,866
Indirect Costs	F. Edic Substation - Install	$ 521,904
Indirect Costs	G. Edic Substation - Removal	$ 5,890
Indirect Costs	H. New Scotland Substation - Install	$ 1,643,663
Indirect Costs	I. New Scotland Substation - Removal	$ 26,852
Indirect Costs	J. Porter Substation - Install	$ 29,355
Indirect Costs	K. Porter Substation - Removal	$ 78,181
Indirect Costs	L. Interconnection Edic Station	$ 342,922
Indirect Costs	M. Interconnection New Scotland Station	$ 514,093
Indirect Costs	N. Interconnection Rotterdam Station	$ 201,306
Indirect Costs	O. System Upgrade Facilities (Various Lines for Edic to New Scotland)	$ -
Indirect Costs	P. System Upgrade Facilities (Various Stations for Edic to New Scotland)	$ -
Indirect Costs	Legal and Permitting (Includes Legal, Envir. Lisc. & Permit., and Envir. Mitagation)	$ 7,864,674
	TOTA INDIRECT:	$ 72,262,388

TOTAL ESTIMATED COST:	$ 371,660,030

NextEra - T021 Enterprise Line - (Segment A)

A. Transmission Line Edic to Princetown

Estimate Revision: 5

Total: $ 179,419,477

NextEra - T021 Enterprise Line - (Segment A)	*Supply*	*Installation*	*Total*
A. Transmission Line Edic to Princetown			
1. CLEARING & ACCESS	**$ 41,500**	**$ 38,580,626**	**$ 38,622,126**
2. FOUNDATIONS	**$ 1,198,049**	**$ 9,147,920**	**$ 10,345,968**
3. STRUCTURES	**$ 8,531,149**	**$ 41,220,539**	**$ 49,751,688**
4. CONDUCTOR, SHIELDWIRE, OPGW	**$ 7,848,486**	**$ 22,863,905**	**$ 30,712,391**
5. INSULATORS, FITTINGS, HARDWARE	**$ 8,560,788**	**$ 4,052,981**	**$ 12,613,769**
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	**$ 2,094,398**	**$ 35,279,137**	**$ 37,373,534**
CONTRACTOR MARK-UP (OH&P)	**$ -**	**$ -**	**$ -**
SUBTOTAL:	**$ 28,274,369**	**$ 151,145,108**	**$ 179,419,477**
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	**$ 28,274,369**	**$ 151,145,108**	**$ 179,419,477**

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Sum	Labor & Equipment Supply Rate	Labor & Equipment Sum	Total Unit Rate	TOTAL
A. Transmission Line Edic to Princetown									
1. CLEARING & ACCESS									
1.1	Clearing the ROW - Heavy (mowing & clearing)	-	Acre	$ -	$ -	$ 15,000	$ -	$ 15,000	**$ -**
1.2	Clearing the ROW - Light (mowing)	127.0	Acre		$ -	$ 5,000	$ 635,000	$ 5,000	**$ 635,000**
1.3	Access Road	70,540.8	LF	$ -	$ -	$ 45	$ 3,174,336	$ 45	**$ 3,174,336**
1.4	Silt Fence	352,704.0	LF	$ -	$ -	$ 4	$ 1,410,816	$ 4	**$ 1,410,816**
1.5	Matting - Access and ROW	282,163.2	LF	$ -	$ -	$ 70	$ 19,751,424	$ 70	**$ 19,751,424**
1.6	Matting - To Work Area	25,200.0	LF	$ -	$ -	$ 70	$ 1,764,000	$ 70	**$ 1,764,000**
1.7	Snow Removal	66.8	Mile	$ -	$ -	$ 16,000	$ 1,068,800	$ 16,000	**$ 1,068,800**
1.8	ROW Restoration	66.8	Mile	$ -	$ -	$ 10,000	$ 668,000	$ 10,000	**$ 668,000**
1.9	Work Pads	2,625,000.0	SF	$ -	$ -	$ 4	$ 9,240,000	$ 4	**$ 9,240,000**
1.10	Restoration for Work Pad areas	525,000.0	SF	$ -	$ -	$ 0.15	$ 78,750	$ 0	**$ 78,750**
1.11	Temporary Access Bridge	-	EA	$ -	$ -	$ 20,035	$ -	$ 20,035	**$ -**
1.12	Air Bridge	-	EA	$ -	$ -	$ 14,445	$ -	$ 14,445	**$ -**
1.13	Stabilized Construction Entrance	50	EA	$ -	$ -	$ 4,580	$ 229,000	$ 4,580	**$ 229,000**
1.14	Maintenance and Protection of Traffic on Public Roads	100	EA	$ -	$ -	$ 4,130	$ 413,000	$ 4,130	**$ 413,000**
1.15	Culverts / Misc. Access	10	EA	$ 750	$ 7,500	$ 1,250	$ 12,500	$ 2,000	**$ 20,000**
1.16	Gates	17	EA	$ 2,000	$ 34,000	$ 2,500	$ 42,500	$ 4,500	**$ 76,500**
1.17	Concrete Washout Station	50	EA	$ -	$ -	$ 1,850	$ 92,500	$ 1,850	**$ 92,500**
TOTAL - CLEARING & ACCESS:					$ 41,500		$ 38,580,626		**$ 38,622,126**
2. FOUNDATIONS									
2.1	***Direct Embed*** - 345KV S/C CONC DELTA TANGENT	472	EA	$ 1,739	$ 820,985	$ 11,828	$ 5,582,698	$ 13,567	**$ 6,403,683**
2.2	***Direct Embed*** - 345KV S/C CONC GUYED DEADEND	21	EA	$ 1,943	$ 40,800	$ 13,212	$ 277,443	$ 15,154	**$ 318,243**
2.3	***Direct Embed*** - 345KV S/C CONC RUNNING ANGLE	22	EA	$ 2,072	$ 45,587	$ 14,090	$ 309,990	$ 16,163	**$ 355,577**
2.4	***Drilled Pier*** - 345KV S/C STEEL DELTA TANGENT	5	EA	$ 24,478	$ 122,392	$ 24,741	$ 123,703	$ 49,219	**$ 246,095**
2.5	***Drilled Pier*** - 345KV RUNNING ANGLE, STEEL	2	EA	$ 32,128	$ 64,257	$ 32,473	$ 64,945	$ 64,601	**$ 129,202**
2.6	***Drilled Pier*** - 345KV SELF SUPPORT DEADEND, STEEL	3	EA	$ 34,676	$ 104,027	$ 35,047	$ 105,141	$ 69,723	**$ 209,169**
2.7	Rock Excavation Adder	1,342.0	CY	$ -	$ -	$ 2,000	$ 2,684,000	$ 2,000	**$ 2,684,000**
2.8									
2.9									
2.10									
2.11									
2.12									
2.13									
2.14									
2.15									
TOTAL - FOUNDATIONS:					$ 1,198,049		$ 9,147,920		**$ 10,345,968**
3. STRUCTURES									
3.1	345KV S/C CONCRETE DELTA TANGENT	472	Structure	$ 14,930	$ 7,046,960	$ 47,964	$ 22,639,079	$ 62,894	**$ 29,686,039**
3.2	345KV S/C CONCRETE GUYED DEADEND	21	Structure	$ 17,582	$ 369,222	$ 60,144	$ 1,263,021	$ 77,726	**$ 1,632,243**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Sum	Labor & Equipment Supply Rate	Labor & Equipment Sum	Total Unit Rate	TOTAL
3.3	345KV S/C CONCRETE GUYED RUNNING ANGLE	22	Structure	$ 17,880	$ 393,360	$ 60,780	$ 1,337,153	$ 78,660	**$ 1,730,513**
3.4	345KV S/C STEEL DELTA TANGENT	5	Structure	$ 15,860	$ 79,300	$ 9,516	$ 47,580	$ 25,376	**$ 126,880**
3.5	345KV RUNNING ANGLE, STEEL	2	Structure	$ 62,900	$ 125,800	$ 37,740	$ 75,480	$ 100,640	**$ 201,280**
3.6	345KV SELF SUPPORT DEADEND, STEEL	3	Structure	$ 83,619	$ 250,856	$ 50,171	$ 150,514	$ 133,790	**$ 401,370**
3.7	Remove Existing Foundation	50	EA	$ -	$ -	$ 7,500	$ 375,000	$ 7,500	**$ 375,000**
3.8	Remove Existing Structure and Accessories	994	EA	$ -	$ -	$ 12,500	$ 12,425,000	$ 12,500	**$ 12,425,000**
3.9	Install Grounding and Grounding Accessories	525	Pole	$ 506	$ 265,650	$ 5,539	$ 2,907,713	$ 6,045	**$ 3,173,363**
3.10									
3.11									
3.12									
3.13									
3.14									
3.15									
TOTAL - STRUCTURES:					$ 8,531,149		$ 41,220,539		**$ 49,751,688**
4. CONDUCTOR, SHIELDWIRE, OPGW									
4.1	345kV - (1) 1033kcmil 54/7 ACSS "Curlew"	2,501,453	LF	$ 2.82	$ 7,054,097	$ 5.00	$ 12,507,265	$ 7.82	**$ 19,561,362**
4.2	(1) OPGW 36 Fiber AC-33/38/571	347,054	LF	$ 1.35	$ 468,523	$ 5.00	$ 1,735,270	$ 6.35	**$ 2,203,793**
4.3	(1) 7/16" EHS7 Steel	347,054	LF	$ 0.47	$ 163,115	$ 5.00	$ 1,735,270	$ 5.47	**$ 1,898,385**
4.4	Remove Existing Conductor and Accessories	121.0	Mile	$ -	$ -	$ 30,000	$ 3,630,000	$ 30,000.00	**$ 3,630,000**
4.5	Remove Existing OPGW and Accessories	108.4	Mile	$ -	$ -	$ 12,000	$ 1,300,800	$ 12,000.00	**$ 1,300,800**
4.6	Remove Existing OHSW and Accessories	108.4	Mile	$ -	$ -	$ 12,000	$ 1,300,800	$ 12,000.00	**$ 1,300,800**
4.7	Rider Poles (187 Locations)	93	Set	$ 1,750	$ 162,750	$ 3,500	$ 325,500	$ 5,250.00	**$ 488,250**
4.8	Rider Poles - Relocated	94	Set	$ -	$ -	$ 3,500	$ 329,000	$ 3,500.00	**$ 329,000**
4.9									
4.10									
4.11									
4.12									
4.13									
4.14									
4.15									
4.16									
4.17									
TOTAL: CONDUCTOR, SHIELDWIRE, OPGW:					$ 7,848,486		$ 22,863,905		**$ 30,712,391**
5. INSULATOR, FITTINGS, HARDWARE									
5.1	345kV Tangent (1-Group of 18-Bells Each Assembly)	3,006	Assembly	$ 1,800	$ 5,410,800	$ 720	$ 2,164,320	$ 2,520	**$ 7,575,120**
5.2	345kV Dead-end & Angle Insulators (1-Group of 18-Bells Each Assembly)	360	Assembly	$ 1,800	$ 648,000	$ 720	$ 259,200	$ 2,520	**$ 907,200**
5.3			Assembly		$ -		$ -	$ -	**$ -**
5.4	OPGW Assembly - Tangent	501	Assembly	$ 200	$ 100,200	$ 150	$ 75,150	$ 350	**$ 175,350**
5.5	OPGW Assembly - Angle / DE	48	Assembly	$ 250	$ 12,000	$ 150	$ 7,200	$ 400	**$ 19,200**
5.6	OHSW Assembly - Tangent	501	Assembly	$ 200	$ 100,200	$ 150	$ 75,150	$ 350	**$ 175,350**
5.7	OHSW Assembly - Angle / DE	48	Assembly	$ 250	$ 12,000	$ 150	$ 7,200	$ 400	**$ 19,200**
5.8	OPGW Splice Boxes	42	Assembly	$ 1,746	$ 73,338	$ 2,274	$ 95,508	$ 4,020	**$ 168,846**
5.9	OPGW Splice & Test	42	EA	$ 2,520	$ 105,840	$ 2,520	$ 105,840	$ 5,040	**$ 211,680**
5.10	Spacer - Conductor	11,077	EA	$ 50	$ 553,850	$ 35	$ 387,695	$ 85	**$ 941,545**
5.11	Vibration Dampers - Conductor	2,658	EA	$ 35	$ 93,030	$ 35	$ 93,030	$ 70	**$ 186,060**
5.12	Shield wire / OPGW Dampers, Misc. Fittings	1,090	EA	$ 27	$ 29,430	$ 35	$ 38,150	$ 62	**$ 67,580**
5.13									
5.14	*Replace - Mono Pole Vertical Tangent - V-String*	480	Assembly	$ 1,800	$ 864,000	$ 720	$ 345,600	$ 2,520	**$ 1,209,600**
5.15	*Replace - Dead-end & Angle Insulators*	195	Assembly	$ 1,800	$ 351,000	$ 720	$ 140,400	$ 2,520	**$ 491,400**
5.16									
5.17	Guys, Anchors, and Accessories	188	EA	$ 828	$ 155,664	$ 1,018	$ 191,337	$ 1,846	**$ 347,001**
5.18	Misc. materials (Signs and Markers)	66.8	Mile	$ 770	$ 51,436	$ 1,006	$ 67,201	$ 1,776	**$ 118,637**
5.19		-		$ -	$ -	$ -	$ -	$ -	**$ -**
TOTAL - INSULATORS, FITTINGS, HARDWARE:					$ 8,560,788		$ 4,052,981		**$ 12,613,769**
A. Transmission Line Edic to Princetown					$ 26,179,971		$ 115,865,971		**$ 142,045,942**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Sum	Labor & Equipment Supply Rate	Labor & Equipment Sum	Total Unit Rate	TOTAL
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
6.1	Mob / Demob	1	LS	$ -	$ -	$ 1,420,459	$ 1,420,459	$ 1,420,459	**$ 1,420,459**
	Project Management, Material Handling & Amenities								
6.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 7,220,195	$ 7,220,195	$ 7,220,195	**$ 7,220,195**
6.3	Utility PM and Project Oversite	1	LS		$ -	$ 1,420,459	$ 1,420,459	$ 1,420,459	**$ 1,420,459**
6.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 1,420,459	$ 1,420,459	$ 1,420,459	**$ 1,420,459**
	Engineering								
6.5	Design Engineering	1	LS	$ -	$ -	$ 7,102,297	$ 7,102,297	$ 7,102,297	**$ 7,102,297**
6.6	LiDAR	1	LS	$ -	$ -	$ 426,138	$ 426,138	$ 426,138	**$ 426,138**
6.7	Geotech	55.0	Location	$ -	$ -	$ 3,500	$ 192,500	$ 3,500	**$ 192,500**
6.8	Surveying/Staking	1	LS	$ -	$ -	$ 994,322	$ 994,322	$ 994,322	**$ 994,322**
	Testing & Commissioning								
6.9	Testing & Commissioning of T-Line and Equipment	1	EA	$ -	$ -	$ 40,000	$ 40,000	$ 40,000	**$ 40,000**
	Permitting and Additional Costs								
6.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.12	Warranties / LOC's	1	LS	$ -	$ -	$ 426,138	$ 426,138	$ 426,138	**$ 426,138**
6.13	Real Estate Costs (New ROW)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.14	Real Estate Costs (Incumbent Utility ROW)	1	LS	$ -	$ -	$ 5,555,000	$ 5,555,000	$ 5,555,000	**$ 5,555,000**
6.15	Legal Fees		LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.17	Compensation for use of 1 Ckt - NYPA Structures (92 Structures)	1	LS	$ -	$ -	$ 8,919,123	$ 8,919,123	$ 8,919,123	**$ 8,919,123**
6.18	Sales Tax on Materials	1	LS	$ 2,094,398	$ 2,094,398	$ -	$ -	$ 2,094,398	**$ 2,094,398**
6.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 142,046	$ 142,046	$ 142,046	**$ 142,046**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 2,094,398		$ 35,279,137		**$ 37,373,534**

NextEra - T021 Enterprise Line - (Segment A)

B. Transmission Line Princetown to Rotterdam

Estimate Revision: 5

Total: $ 27,614,035

NextEra - T021 Enterprise Line - (Segment A)	*Supply*	*Installation*	*Total*
B. Transmission Line Princetown to Rotterdam			
1. CLEARING & ACCESS	$ 6,000	$ 4,789,200	$ 4,795,200
2. FOUNDATIONS	$ 891,972	$ 4,104,882	$ 4,996,854
3. STRUCTURES	$ 2,675,074	$ 7,029,527	$ 9,704,602
4. CONDUCTOR, SHIELDWIRE, OPGW	$ 128,126	$ 852,170	$ 980,296
5. INSULATORS, FITTINGS, HARDWARE	$ 1,682,833	$ 794,553	$ 2,477,386
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 430,720	$ 4,228,977	$ 4,659,697
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 5,814,726	$ 21,799,309	$ 27,614,035
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 5,814,726	$ 21,799,309	$ 27,614,035

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
B. Transmission Line Princetown to Rotterdam									
1. CLEARING & ACCESS									
1.1	Clearing the ROW - Heavy (mowing & clearing)	-	Acre	$ -	$ -	$ 15,000	$ -	$ 15,000	$ -
1.2	Clearing the ROW - Light (mowing)	20.0	Acre	$ -	$ -	$ 5,000	$ 100,000	$ 5,000	**$ 100,000**
1.3	Access Road	5,280.0	LF	$ -	$ -	$ 45	$ 237,600	$ 45	**$ 237,600**
1.4	Silt Fence	26,400.0	LF	$ -	$ -	$ 4	$ 105,600	$ 4	**$ 105,600**
1.5	Matting - Access and ROW	21,120.0	LF	$ -	$ -	$ 70	$ 1,478,400	$ 70	**$ 1,478,400**
1.6	Matting - To Work Area	8,550.0	LF	$ -	$ -	$ 70	$ 598,500	$ 70	**$ 598,500**
1.7	Snow Removal	5.0	Mile	$ -	$ -	$ 16,000	$ 80,000	$ 16,000	**$ 80,000**
1.8	ROW Restoration	5.0	Mile	$ -	$ -	$ 10,000	$ 50,000	$ 10,000	**$ 50,000**
1.9	Work Pads	570,000.0	SF	$ -	$ -	$ 4	$ 2,006,400	$ 4	**$ 2,006,400**
1.10	Restoration for Work Pad areas	114,000.0	SF	$ -	$ -	$ 0.2	$ 17,100	$ 0	**$ 17,100**
1.11	Temporary Access Bridge	-	EA	$ -	$ -	$ 20,035	$ -	$ 20,035	$ -
1.12	Air Bridge	-	EA	$ -	$ -	$ 14,445	$ -	$ 14,445	$ -
1.13	Stabilized Construction Entrance	10	EA	$ -	$ -	$ 4,580	$ 45,800	$ 4,580	**$ 45,800**
1.14	Maintenance and Protection of Traffic on Public Roads	10	EA	$ -	$ -	$ 4,130	$ 41,300	$ 4,130	**$ 41,300**
1.15	Gates	-	EA	$ 2,000	$ -	$ 2,500	$ -	$ 4,500	$ -
1.16	Culverts / Misc. Access	8	EA	$ 750	$ 6,000	$ 1,250	$ 10,000	$ 2,000	**$ 16,000**
1.17	Concrete Washout Station	10	EA	$ -	$ -	$ 1,850	$ 18,500	$ 1,850	**$ 18,500**
TOTAL - CLEARING & ACCESS:					$ 6,000		$ 4,789,200		**$ 4,795,200**
2. FOUNDATIONS									
2.1	***Direct Embed*** - 230KV S/C STEEL GUYED DEADEND	4	EA	$ 1,200	$ 4,802	$ 8,163	$ 32,650	$ 9,363	**$ 37,452**
2.2	***Direct Embed*** - 230KV S/C STEEL GUYED RUNNING ANGLE	24	EA	$ 1,416	$ 33,990	$ 9,631	$ 231,132	$ 11,047	**$ 265,122**
2.3	***Direct Embed*** - 230 KV GUYED ANGLE, STEEL	6	EA	$ 1,471	$ 8,828	$ 10,005	$ 60,027	$ 11,476	**$ 68,855**
2.4	***Direct Embed*** - 345KV S/C CONC DELTA TANGENT	70	EA	$ 2,229	$ 156,021	$ 15,156	$ 1,060,945	$ 17,385	**$ 1,216,966**
2.5	***Direct Embed*** - 345KV GUYED DEADEND, CONCRETE	2	EA	$ 1,920	$ 3,839	$ 13,053	$ 26,105	$ 14,972	**$ 29,944**
2.6	***Drilled Pier*** - 345KV S/C STEEL SELF SUPPORTING DEADEND	1	EA	$ 32,128	$ 32,128	$ 32,473	$ 32,473	$ 64,601	**$ 64,601**
2.7	***Drilled Pier*** - 345KV THREE POLE TAP, STEEL	6	EA	$ 96,377	$ 578,263	$ 97,409	$ 584,456	$ 193,787	**$ 1,162,719**
2.8	***Drilled Pier*** - 345KV STEEL D/C DEADEND , STEEL	1	EA	$ 74,101	$ 74,101	$ 74,894	$ 74,894	$ 148,995	**$ 148,995**
2.9	Rock Excavation Adder	1,001.1	CY	$ -	$ -	$ 2,000	$ 2,002,200	$ 2,000	**$ 2,002,200**
TOTAL - FOUNDATIONS:					$ 891,972		$ 4,104,882		**$ 4,996,854**
3. STRUCTURES									
3.1	345KV RUNNING ANGLE, STEEL	24	Structure	$ 17,074	$ 409,775	$ 10,244	$ 245,865	$ 27,318	**$ 655,640**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.2	345KV SELF SUPPORT DEADEND, STEEL	6	Structure	$ 10,268	$ 61,605	$ 6,161	$ 36,963	$ 16,428	**$ 98,568**
3.3	230 KV GUYED DEADEND, STEEL	4	Structure	$ 12,025	$ 48,100	$ 7,215	$ 28,860	$ 19,240	**$ 76,960**
3.4	345KV S/C DEADEND, STEEL	1	Structure	$ 74,000	$ 74,000	$ 44,400	$ 44,400	$ 118,400	**$ 118,400**
3.5	345KV THREE POLE TAP, STEEL	6	Structure	$ 166,500	$ 999,000	$ 99,900	$ 599,400	$ 266,400	**$ 1,598,400**
3.6	345KV STEEL D/C DEADEND , STEEL	1	Structure	$ 101,750	$ 101,750	$ 61,050	$ 61,050	$ 162,800	**$ 162,800**
3.7	345KV S/C CONCRETE DELTA TANGENT	70	Structure	$ 12,990	$ 909,300	$ 53,923	$ 3,774,600	$ 66,913	**$ 4,683,900**
3.8	345KV S/C CONCRETE GUYED RUNNING ANGLE	1	Structure	$ 13,860	$ 13,860	$ 81,000	$ 81,000	$ 94,860	**$ 94,860**
3.9	Remove Existing Foundation	22	EA	$ -	$ -	$ 7,500	$ 163,500	$ 7,500	**$ 163,500**
3.10	Remove Existing Structure and Accessories	109	EA	$ -	$ -	$ 12,500	$ 1,362,500	$ 12,500	**$ 1,362,500**
3.11	Install Grounding and Grounding Accessories	114	Pole	$ 506	$ 57,684	$ 5,539	$ 631,389	$ 6,045	**$ 689,073**
3.12									
3.13									
TOTAL - STRUCTURES PRINCTOWN TO NEW SCOTLAND:					$ 2,675,074		$ 7,029,527		**$ 9,704,602**
4. CONDUCTOR, SHIELDWIRE, OPGW									
4.1	345kV - (1) 1033kcmil 54/7 ACSS "Curlew"	-	LF	$ 2.82	$ -	$ 5.00	$ -	$ 7.82	**$ -**
4.2	(1) OPGW 36 Fiber AC-33/38/571	-	LF	$ 1.35	$ -	$ 5.00	$ -	$ 6.35	**$ -**
4.3	(1) 3/8" EHS7 Steel	-	LF	$ 0.47	$ -	$ 5.00	$ -	$ 5.47	**$ -**
4.5	230V - (1) 1033kcmil 54/7 ACSS "Curlew"	33,264	LF	$ 2.82	$ 93,804	$ 5.00	$ 166,320	$ 7.82	**$ 260,124**
4.6	(1) OPGW 36 Fiber AC-33/38/571	4,435	LF	$ 1.35	$ 5,987	$ 5.00	$ 22,175	$ 6.35	**$ 28,162**
4.7	(1) 3/8" EHS7 Steel	4,435	LF	$ 0.47	$ 2,084	$ 5.00	$ 22,175	$ 5.47	**$ 24,259**
4.8	Remove Existing Conductor and Accessories	10.0	Mile	$ -	$ -	$ 30,000	$ 300,000	$ 30,000.00	**$ 300,000**
4.9	Remove Existing OPGW and Accessories	10.0	Mile	$ -	$ -	$ 12,000	$ 120,000	$ 12,000.00	**$ 120,000**
4.10	Remove Existing OHSW and Accessories	10.0	Mile	$ -	$ -	$ 12,000	$ 120,000	$ 12,000.00	**$ 120,000**
4.11									
4.12	Rider Poles	15	EA	$ 1,750	$ 26,250	$ 3,500	$ 52,500	$ 5,250.00	**$ 78,750**
4.13	Rider Poles - Relocated	14	Set	$ -	$ -	$ 3,500	$ 49,000	$ 3,500.00	**$ 49,000**
4.14									
TOTAL: CONDUCTOR, SHIELDWIRE, OPGW:					$ 128,126		$ 852,170		**$ 980,296**
5. INSULATOR, FITTINGS, HARDWARE									
5.1	230kV/345kV Tangent (1-Group of 18-Bells Each Assembly)	600	Assembly	$ 1,800	$ 1,080,000	$ 720	$ 432,000	$ 2,520	**$ 1,512,000**
5.2	230kV/345kV Dead-end & Angle Insulators (1-Group of 18-Bells Each Assembly)	210	Assembly	$ 1,800	$ 378,000	$ 720	$ 151,200	$ 2,520	**$ 529,200**
5.3			Assembly		$ -		$ -	$ -	**$ -**
5.4	OPGW Assembly - Tangent	100	Assembly	$ 200	$ 20,000	$ 150	$ 15,000	$ 350	**$ 35,000**
5.5	OPGW Assembly - Angle / DE	28	Assembly	$ 250	$ 7,000	$ 150	$ 4,200	$ 400	**$ 11,200**
5.6	OHSW Assembly - Tangent	100	Assembly	$ 200	$ 20,000	$ 150	$ 15,000	$ 350	**$ 35,000**
5.7	OHSW Assembly - Angle / DE	28	Assembly	$ 250	$ 7,000	$ 150	$ 4,200	$ 400	**$ 11,200**
5.8	OPGW Splice Boxes	8	Assembly	$ 1,746	$ 13,969	$ 2,274	$ 18,192	$ 4,020	**$ 32,161**
5.9	OPGW Splice & Test	8	EA	$ 2,520	$ 20,160	$ 2,520	$ 20,160	$ 5,040	**$ 40,320**
5.10	Spacer - Conductor	1,038	EA	$ 50	$ 51,900	$ 35	$ 36,330	$ 85	**$ 88,230**
5.11	Vibration Dampers - Conductor	830	EA	$ 35	$ 29,050	$ 35	$ 29,050	$ 70	**$ 58,100**
5.12	Shieldwire / OPGW Dampers, Misc. Fittings	210	EA	$ 27	$ 5,670	$ 35	$ 7,350	$ 62	**$ 13,020**
5.13	Guys, Anchors, and Accessories	64.0	EA	$ 720	$ 46,080	$ 885	$ 56,640	$ 1,605	**$ 102,720**
5.14	Misc. materials (Signs and Markers)	5.2	Mile	$ 770	$ 4,004	$ 1,006	$ 5,231	$ 1,776	**$ 9,235**
TOTAL - INSULATORS, FITTINGS, HARDWARE:					$ 1,682,833		$ 794,553		**$ 2,477,386**
B. Transmission Line Princetown to Rotterdam					$ 5,384,005		$ 17,570,333		**$ 22,954,338**
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS									
	Contractor Mobilization / Demobilization								
6.1	Mob / Demob	1	LS	$ -	$ -	$ 229,543	$ 229,543	$ 229,543	**$ 229,543**
	Project Management, Material Handling & Amenities								
6.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 1,166,769	$ 1,166,769	$ 1,166,769	**$ 1,166,769**
6.3	Utility PM and Project Oversite	1	LS		$ -	$ 229,543	$ 229,543	$ 229,543	**$ 229,543**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 229,543	$ 229,543	$ 229,543	**$ 229,543**
	Engineering								
6.5	Design Engineering	1	LS	$ -	$ -	$ 1,147,717	$ 1,147,717	$ 1,147,717	**$ 1,147,717**
6.6	LiDAR	1	LS	$ -	$ -	$ 68,863	$ 68,863	$ 68,863	**$ 68,863**
6.7	Geotech	5	Location	$ -	$ -	$ 3,500	$ 17,500	$ 3,500	**$ 17,500**
6.8	Surveying/Staking	1	LS	$ -	$ -	$ 160,680	$ 160,680	$ 160,680	**$ 160,680**
	Testing & Commissioning								
6.9	Testing & Commissioning of T-Line and Equipment	1	EA	$ -	$ -	$ 40,000	$ 40,000	$ 40,000	**$ 40,000**
	Permitting and Additional Costs								
6.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.12	Warranties / LOC's	1	LS	$ -	$ -	$ 68,863	$ 68,863	$ 68,863	**$ 68,863**
6.13	Real Estate Costs (New ROW)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.14	Real Estate Costs (Incumbent Utility ROW)	1	LS	$ -	$ -	$ 847,000	$ 847,000	$ 847,000	**$ 847,000**
6.15	Legal Fees	-	LS	$ -	$ -		$ -	$ -	**$ -**
6.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.18	Sales Tax on Materials	1	LS	$ 430,720	$ 430,720	$ -	$ -	$ 430,720	**$ 430,720**
6.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 22,954	$ 22,954	$ 22,954	**$ 22,954**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 430,720		$ 4,228,977		**$ 4,659,697**

NextEra - T021 Enterprise Line - (Segment A)

C. Transmission Line Princetown to New Scotland

Estimate Revision: 5

Total: $ 48,710,925

NextEra - T021 Enterprise Line - (Segment A)	*Supply*	*Installation*	*Total*
C. Transmission Line Princetown to New Scotland			
1. CLEARING & ACCESS	$ 88,000	$ 11,773,438	$ 11,861,438
2. FOUNDATIONS	$ 257,730	$ 2,717,364	$ 2,975,094
3. STRUCTURES	$ 3,192,349	$ 12,052,512	$ 15,244,861
4. CONDUCTOR, SHIELDWIRE, OPGW	$ 2,212,093	$ 4,756,290	$ 6,968,383
5. INSULATORS, FITTINGS, HARDWARE	$ 2,164,996	$ 1,023,701	$ 3,188,698
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 633,213	$ 7,839,238	$ 8,472,452
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 8,548,381	$ 40,162,544	$ 48,710,925
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 8,548,381	$ 40,162,544	$ 48,710,925

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
C. Transmission Line Princetown to New Scotland									
1. CLEARING & ACCESS									
1.1	Clearing the ROW - Heavy (mowing & clearing)	-	Acre	$ -	$ -	$ 15,000	$ -	$ 15,000	**$ -**
1.2	Clearing the ROW - Light (mowing)	40.0	Acre	$ -	$ -	$ 5,000	$ 200,000	$ 5,000	**$ 200,000**
1.3	Access Road	21,014.4	LF	$ -	$ -	$ 45	$ 945,648	$ 45	**$ 945,648**
1.4	Silt Fence	105,072.0	LF	$ -	$ -	$ 4	$ 420,288	$ 4	**$ 420,288**
1.5	Matting - Access and ROW	84,057.6	LF	$ -	$ -	$ 70	$ 5,884,032	$ 70	**$ 5,884,032**
1.6	Matting - To Work Area	10,275.0	LF	$ -	$ -	$ 70	$ 719,250	$ 70	**$ 719,250**
1.7	Snow Removal	19.9	LS	$ -	$ -	$ 16,000	$ 318,400	$ 16,000	**$ 318,400**
1.8	ROW Restoration	19.9	Mile	$ -	$ -	$ 10,000	$ 199,000	$ 10,000	**$ 199,000**
1.9	Work Pads	685,000.0	SF	$ -	$ -	$ 4	$ 2,411,200	$ 4	**$ 2,411,200**
1.10	Restoration for Work Pad areas	137,000.0	SF	$ -	$ -	$ 0.2	$ 20,550	$ 0	**$ 20,550**
1.11	Temporary Access Bridge	-	EA	$ -	$ -	$ 20,035	$ -	$ 20,035	**$ -**
1.12	Air Bridge	2.0	EA	$ -	$ -	$ 14,445	$ 28,890	$ 14,445	**$ 28,890**
1.13	Stabilized Construction Entrance	76.0	EA	$ -	$ -	$ 4,580	$ 348,080	$ 4,580	**$ 348,080**
1.14	Maintenance and Protection of Traffic on Public Roads	30.0	EA	$ 750	$ 22,500	$ 1,250	$ 37,500	$ 2,000	**$ 60,000**
1.15	Gates	11.0	EA	$ 2,000	$ 22,000	$ 2,500	$ 27,500	$ 4,500	**$ 49,500**
1.16	Culverts / Misc. Access	58.0	EA	$ 750	$ 43,500	$ 1,250	$ 72,500	$ 2,000	**$ 116,000**
1.17	Concrete Washout Station	76.0	EA	$ -	$ -	$ 1,850	$ 140,600	$ 1,850	**$ 140,600**
TOTAL - CLEARING & ACCESS:					$ 88,000		$ 11,773,438		**$ 11,861,438**
2. FOUNDATIONS									
2.1	***Drilled Pier*** - 345KV SELF SUPPORT DEADEND, STEEL	3	EA	$ 72,918	$ 218,753	$ 73,699	$ 221,096	$ 146,616	**$ 439,849**
2.2	***Drilled Pier*** - 345KV VERTICAL D/C TANGENT, STEEL	2	EA	$ 12,547	$ 25,095	$ 12,682	$ 25,363	$ 25,229	**$ 50,458**
2.3	***Drilled Pier*** - 345KV VERTICAL TANGENT, STEEL	2	EA	$ 32,128	$ 64,257	$ 32,473	$ 64,945	$ 64,601	**$ 129,202**
2.4	***Direct Embed*** - 345KV DELTA S/C TANGENT, CONCRETE	66	EA	$ 2,043	$ 134,855	$ 13,894	$ 917,011	$ 15,937	**$ 1,051,865**
2.5	Direct Embed - 345KV VERTICAL TANGENT, CONCRETE	37	EA	$ 1,881	$ 69,597	$ 12,791	$ 473,260	$ 14,672	**$ 542,857**
2.6	Direct Embed - 345KV RUNNING ANGLE, CONCRETE	5	EA	$ 1,920	$ 9,598	$ 13,053	$ 65,263	$ 14,972	**$ 74,861**
2.7	Direct Embed - 345KV GUYED DEADEND, CONCRETE	4	EA	$ 1,800	$ 7,200	$ 12,239	$ 48,957	$ 14,039	**$ 56,156**
2.8	Direct Embed - 345KV VERTICAL D/C TANGENT, CONCRETE	18	EA	$ 2,027	$ 36,482	$ 13,782	$ 248,074	$ 15,809	**$ 284,556**
2.9	Rock Excavation Adder	482.4	CY	$ -	$ -	$ 2,000	$ 964,800	$ 2,000	**$ 964,800**
2.10									
2.11									
2.12									
2.13									
2.14									
2.15									
TOTAL - FOUNDATIONS:					$ 257,730		$ 2,717,364		**$ 2,975,094**
3. STRUCTURES									
3.1	345KV D/C CONCRETE VERTICAL TANGENT	18	Structure	$ 21,737	$ 391,266	$ 84,708	$ 1,524,752	$ 106,445	**$ 1,916,018**
3.2	345KV S/C CONCRETE DELTA TANGENT	66	Structure	$ 21,214	$ 1,400,124	$ 84,051	$ 5,547,366	$ 105,265	**$ 6,947,490**
3.3	345KV S/C CONCRETE GUYED DEADEND	4	Structure	$ 17,563	$ 70,252	$ 59,114	$ 236,455	$ 76,677	**$ 306,707**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.4	345KV S/C CONCRETE GUYED RUNNING ANGLE	5	Structure	$ 17,563	$ 87,815	$ 62,417	$ 312,086	$ 79,980	**$ 399,901**
3.5	345KV S/C CONCRETE VERTICAL TANGENT	37	Structure	$ 21,214	$ 784,918	$ 84,051	$ 3,109,887	$ 105,265	**$ 3,894,805**
3.6	345KV S/C STEEL SELF SUPPORTING DEADEND	3	Structure	$ 80,217	$ 240,652	$ 48,130	$ 144,391	$ 128,348	**$ 385,043**
3.7	345KV S/C STEEL VERTICAL TANGENT	2	Structure	$ 37,000	$ 74,000	$ 22,200	$ 44,400	$ 59,200	**$ 118,400**
3.8	345KV VERTICAL D/C TANGENT, STEEL	2	Structure	$ 37,000	$ 74,000	$ 22,200	$ 44,400	$ 59,200	**$ 118,400**
3.9	Remove Existing Foundation	4	EA	$ -	$ -	$ 7,500	$ 30,000	$ 7,500	**$ 30,000**
3.10	Remove Existing Structure and Accessories	24	EA	$ -	$ -	$ 12,500	$ 300,000	$ 12,500	**$ 300,000**
3.11	Install Grounding and Grounding Accessories	137	Pole	$ 506	$ 69,322	$ 5,539	$ 758,775	$ 6,045	**$ 828,097**
3.12									
3.13									
3.14									
3.15									
3.16									
3.17									
3.18									
3.19									
3.20									
TOTAL - STRUCTURES:					$ 3,192,349		$ 12,052,512		**$ 15,244,861**
4. CONDUCTOR, SHIELDWIRE, OPGW									
4.1	**345kV** - (1) 1033kcmil 54/7 ACSS "Curlew"	661,954	LF	$ 2.82	$ 1,866,710	$ 5.00	$ 3,309,770	$ 7.82	**$ 5,176,480**
4.2	(1) OPGW 36 Fiber AC-33/38/571	110,326	LF	$ 1.35	$ 148,940	$ 5.00	$ 551,630	$ 6.35	**$ 700,570**
4.3	(1) 3/8" EHS7 Steel	75,398	LF	$ 0.47	$ 35,437	$ 5.00	$ 376,990	$ 5.47	**$ 412,427**
4.4	**115kV** - (1) 1033kcmil 54/7 ACSS "Curlew"	41,580	LF	$ 2.82	$ 117,256	$ 5.00	$ 207,900	$ 7.82	**$ 325,156**
4.5	(1) OPGW 36 Fiber AC-33/38/571	-	LF	$ 1.35	$ -	$ 5.00	$ -	$ 6.35	**$ -**
4.6	(1) 3/8" EHS7 Steel	-	LF	$ 0.47	$ -	$ 5.00	$ -	$ 5.47	**$ -**
4.7	Remove Existing Conductor and Accessories	2.5	Mile	$ -	$ -	$ 30,000	$ 75,000	$ 30,000.00	**$ 75,000**
4.8	Remove Existing OPGW and Accessories	2.5	Mile	$ -	$ -	$ 12,000	$ 30,000	$ 12,000.00	**$ 30,000**
4.9	Remove Existing OHSW and Accessories	2.5	Mile	$ -	$ -	$ 12,000	$ 30,000	$ 12,000.00	**$ 30,000**
4.10									
4.11									
4.12	Rider Poles (50 Locations)	25	EA	$ 1,750	$ 43,750	$ 3,500	$ 87,500	$ 5,250.00	**$ 131,250**
4.13	Rider Poles - Relocated	25	Set	$ -	$ -	$ 3,500	$ 87,500	$ 3,500.00	**$ 87,500**
TOTAL - CONDUCTOR, SHIELDWIRE, OPGW:					$ 2,212,093		$ 4,756,290		**$ 6,968,383**
5. INSULATOR, FITTINGS, HARDWARE									
5.1	345kV Tangent (1-Group of 18-Bells Each Assembly)	900	Assembly	$ 1,800	$ 1,620,000	$ 720	$ 648,000	$ 2,520	**$ 2,268,000**
5.2	345kV Dead-end & Angle Insulators (1-Group of 18-Bells Each Assembly)	105	Assembly	$ 1,800	$ 189,000	$ 720	$ 75,600	$ 2,520	**$ 264,600**
5.3			Assembly		$ -		$ -	$ -	**$ -**
5.4	OPGW Assembly - Tangent	130	Assembly	$ 200	$ 26,000	$ 150	$ 19,500	$ 350	**$ 45,500**
5.5	OPGW Assembly - Angle / DE	14	Assembly	$ 250	$ 3,500	$ 150	$ 2,100	$ 400	**$ 5,600**
5.6	OHSW Assembly - Tangent	130	Assembly	$ 200	$ 26,000	$ 150	$ 19,500	$ 350	**$ 45,500**
5.7	OHSW Assembly - Angle / DE	14	Assembly	$ 250	$ 3,500	$ 150	$ 2,100	$ 400	**$ 5,600**
5.8	OPGW Splice Boxes	8	Assembly	$ 1,746	$ 13,969	$ 2,274	$ 18,192	$ 4,020	**$ 32,161**
5.9	OPGW Splice & Test	8	EA	$ 2,520	$ 20,160	$ 2,520	$ 20,160	$ 5,040	**$ 40,320**
5.10	Spacer - Conductor	3,734	EA	$ 50	$ 186,700	$ 35	$ 130,690	$ 85	**$ 317,390**
5.11	Vibration Dampers - Conductor	896	EA	$ 35	$ 31,360	$ 35	$ 31,360	$ 70	**$ 62,720**
5.12	Shieldwire / OPGW Dampers, Misc. Fittings	132	EA	$ 27	$ 3,564	$ 35	$ 4,620	$ 62	**$ 8,184**
5.13	Guys, Anchors, and Accessories	36	EA	$ 720	$ 25,920	$ 885	$ 31,860	$ 1,605	**$ 57,780**
5.14	Misc. materials (Signs and Markers)	19.9	Mile	$ 770	$ 15,323	$ 1,006	$ 20,019	$ 1,776	**$ 35,342**
5.15									
5.16									
5.17									
5.18									
5.19									
5.20		-		$ -	$ -	$ -	$ -	$ -	**$ -**
TOTAL - INSULATORS, FITTINGS, HARDWARE:					$ 2,164,996		$ 1,023,701		**$ 3,188,698**
C. Transmission Line Princetown to New Scotland					$ 7,915,168		$ 32,323,305		**$ 40,238,473**
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
	Contractor Mobilization / Demobilization								
6.1	Mob / Demob	1	LS	$ -	$ -	$ 402,385	$ 402,385	$ 402,385	**$ 402,385**
	Project Management, Material Handling & Amenities								
6.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 2,045,322	$ 2,045,322	$ 2,045,322	**$ 2,045,322**
6.3	Utility PM and Project Oversite	1	LS		$ -	$ 402,385	$ 402,385	$ 402,385	**$ 402,385**
6.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 402,385	$ 402,385	$ 402,385	**$ 402,385**
	Engineering								
6.5	Design Engineering	1	LS	$ -	$ -	$ 2,011,924	$ 2,011,924	$ 2,011,924	**$ 2,011,924**
6.6	LiDAR	1	LS	$ -	$ -	$ 120,715	$ 120,715	$ 120,715	**$ 120,715**
6.7	Geotech	21	Location	$ -	$ -	$ 3,500	$ 73,500	$ 3,500	**$ 73,500**
6.8	Surveying/Staking	1	Mile	$ -	$ -	$ 281,669	$ 281,669	$ 281,669	**$ 281,669**
	Testing & Commissioning								
6.9	Testing & Commissioning of T-Line and Equipment	1	EA	$ -	$ -	$ 40,000	$ 40,000	$ 40,000	**$ 40,000**
	Permitting and Additional Costs								
6.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.12	Warranties / LOC's	1	LS	$ -	$ -	$ 120,715	$ 120,715	$ 120,715	**$ 120,715**
6.13	Real Estate Costs (New ROW)	1	LS	$ -	$ -	$ 218,000	$ 218,000	$ 218,000	**$ 218,000**
6.14	Real Estate Costs (Incumbent Utility ROW)	1	LS	$ -	$ -	$ 1,680,000	$ 1,680,000	$ 1,680,000	**$ 1,680,000**
6.15	Legal Fees	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.18	Sales Tax on Materials	1	LS	$ 633,213	$ 633,213	$ -	$ -	$ 633,213	**$ 633,213**
6.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 40,238	$ 40,238	$ 40,238	**$ 40,238**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 633,213		$ 7,839,238		**$ 8,472,452**

NextEra - T021 Enterprise Line - (Segment A)

D. Princetown Substation - Install

Estimate Revision: 5

Total: $ 50,824,310

NextEra - T021 Enterprise Line - (Segment A)	*Supply*	*Installation*	*Total*	
D. Princetown Substation - Install				
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ 440,750	$ 3,451,500	$ 3,892,250	
2. SUBSTATION FOUNDATIONS	$ 3,436,513	$ 3,680,200	$ 7,116,713	
3. SUBSTATION STRUCTURES	$ 1,426,720	$ 1,426,720	$ 2,853,440	
4. MAJOR EQUIPTMENT	$ 8,890,000	$ 2,540,000	$ 11,430,000	
5. SMALL EQUIPTMENT / MATERIALS	$ 2,338,000	$ 1,215,000	$ 3,553,000	
6. CONTROL HOUSE / PANELS	$ 4,021,205	$ 2,135,205	$ 6,156,410	
7. MISC ITEMS	$ 1,825,778	$ 3,468,853	$ 5,294,631	
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 1,790,317	$ 8,737,549	$ 10,527,866	
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -	0.0%
SUBTOTAL:	$ 24,169,283	$ 26,655,027	$ 50,824,310	
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -	0.0%
TOTAL:	$ 24,169,283	$ 26,655,027	$ 50,824,310	

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
D. Princetown Substation - Install									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	9.4	ACRES	$ -	$ -	$ 230,000	$ 2,156,250	$ 230,000	**$ 2,156,250**
1.2	Station stone within substation fence.	4,000	CY	$ 27	$ 108,000	$ 75	$ 300,000	$ 102	**$ 408,000**
1.3	Substation Fence	2,400	LF	$ 100	$ 240,000	$ 100	$ 240,000	$ 200	**$ 480,000**
1.4	Retaining Wall (1065' x 13')			$ -	$ -	$ -	$ -	$ -	**$ -**
1.5	Compacted Fill (124,583cy Sand)			$ -	$ -	$ -	$ -	$ -	**$ -**
1.6	Permanent Access Road - 20'-Wide (**From Coplon Road**)	2,650	LF	$ 35	$ 92,750	$ 285	$ 755,250	$ 320	**$ 848,000**
1.7									
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ 440,750		$ 3,451,500		$ 3,892,250
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	7	EA	$ 14,940	$ 104,580	$ 16,000	$ 112,000	$ 30,940	**$ 216,580**
2.1b	Capacitor Bank Foundations	0	EA	$ 56,025	$ -	$ 60,000	$ -	$ 116,025	**$ -**
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	16	EA	$ 26,145	$ 418,320	$ 28,000	$ 448,000	$ 54,145	**$ 866,320**
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 26,145	$ -	$ 28,000	$ -	$ 54,145	**$ -**
2.1e	Switch Stand Foundations	108	EA	$ 4,482	$ 484,056	$ 4,800	$ 518,400	$ 9,282	**$ 1,002,456**
2.1f	Station Service Transformer Stand Foundation	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	**$ -**
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1h	Bus Support 1 Ph Foundations	122	EA	$ 4,482	$ 546,804	$ 4,800	$ 585,600	$ 9,282	**$ 1,132,404**
2.1j	Instrument Transformer Stand Foundations	30	EA	$ 4,482	$ 134,460	$ 4,800	$ 144,000	$ 9,282	**$ 278,460**
2.1k	Arrester Stand Foundations	6	EA	$ 4,482	$ 26,892	$ 4,800	$ 28,800	$ 9,282	**$ 55,692**
2.1m	Wave Trap Stand Foundations	2	EA	$ 4,482	$ 8,964	$ 4,800	$ 9,600	$ 9,282	**$ 18,564**
2.1n	Misc. Structure Foundations	1	EA	$ 7,470	$ 7,470	$ 8,000	$ 8,000	$ 15,470	**$ 15,470**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.1p	Transformer Firewalls	0	EA	$ 65,736	$ -	$ 70,400	$ -	$ 136,136	**$ -**
2.1q									
2.2	**230kV**								
2.2a	Circuit Breaker Foundations	6	EA	$ 11,952	$ 71,712	$ 12,800	$ 76,800	$ 24,752	**$ 148,512**
2.2b	Capacitor Bank Foundations	0	EA	$ 44,820	$ -	$ 48,000	$ -	$ 92,820	**$ -**
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	20	EA	$ 22,410	$ 448,200	$ 24,000	$ 480,000	$ 46,410	**$ 928,200**
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	12	EA	$ 22,410	$ 268,920	$ 24,000	$ 288,000	$ 46,410	**$ 556,920**
2.2e	Switch Stand Foundations	56	EA	$ 3,735	$ 209,160	$ 4,000	$ 224,000	$ 7,735	**$ 433,160**
2.2f	Station Service Transformer Stand Foundation	4	EA	$ 3,735	$ 14,940	$ 4,000	$ 16,000	$ 7,735	**$ 30,940**
2.2g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.2h	Bus Support 1 Ph Foundations	57	EA	$ 3,735	$ 212,895	$ 4,000	$ 228,000	$ 7,735	**$ 440,895**
2.2j	Instrument Transformer Stand Foundations	30	EA	$ 3,735	$ 112,050	$ 4,000	$ 120,000	$ 7,735	**$ 232,050**
2.2k	Arrester Stand Foundations	6	EA	$ 3,735	$ 22,410	$ 4,000	$ 24,000	$ 7,735	**$ 46,410**
2.2m	Wave Trap Stand Foundations	2	EA	$ 3,735	$ 7,470	$ 4,000	$ 8,000	$ 7,735	**$ 15,470**
2.2n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.2p									
2.3	**115kV**								
2.3a	Circuit Breaker Foundations		EA	$ 5,229	$ -	$ 5,600	$ -	$ 10,829	**$ -**
2.3b	Capacitor Bank Foundations	0	EA	$ 33,615	$ -	$ 36,000	$ -	$ 69,615	**$ -**
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)		EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	**$ -**
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)		EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	**$ -**
2.3e	Switch Stand Foundations		EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	**$ -**
2.3f	Fuse Stand Foundations		EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	**$ -**
2.3g	Bus Support 3ph Foundations		EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	**$ -**
2.3h	Bus Support 1 Ph Foundations		EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	**$ -**
2.3j	Instrument Transformer Stand Foundations		EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	**$ -**
2.3k	Arrester Stand Foundations		EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	**$ -**
2.3m	Wave Trap Stand Foundations		EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	**$ -**
2.3n	Station Service Foundations		EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3p	Misc. Structure Foundations		EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment	2	EA	$ 97,110	$ 194,220	$ 104,000	$ 208,000	$ 201,110	**$ 402,220**
2.4b	345-115kV Transformer Foundation w/ Oil Containment	0	EA	$ 74,700	$ -	$ 80,000	$ -	$ 154,700	**$ -**
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad (45' x120')	1	EA	$ 74,700	$ 74,700	$ 80,000	$ 80,000	$ 154,700	**$ 154,700**
2.5b	Generator Foundation	1	EA	$ 16,000	$ 16,000	$ 17,000	$ 17,000	$ 33,000	**$ 33,000**
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	10	EA	$ 5,229	$ 52,290	$ 5,600	$ 56,000	$ 10,829	**$ 108,290**
2.6b				$ -	$ -	$ -	$ -	$ -	**$ -**
2.6c				$ -	$ -	$ -	$ -	$ -	**$ -**
TOTAL - SUBSTATION FOUNDATIONS					$ 3,436,513		$ 3,680,200		$ 7,116,713
3. SUBSTATION STRUCTURES									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.1	**345kV**								
3.1a	Substation A-Frame Structures - Stand alone	4	EA	$ 37,000	$ 148,000	$ 37,000	$ 148,000	$ 74,000	**$ 296,000**
3.1b	Substation A-Frame Structures - Shared Column	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	**$ -**
3.1c	Switch Stands	18	EA	$ 14,800	$ 266,400	$ 14,800	$ 266,400	$ 29,600	**$ 532,800**
3.1d	Station Service Transformer Stand	1	EA	$ 14,800	$ 14,800	$ 14,800	$ 14,800	$ 29,600	**$ 29,600**
3.1e	Bus Support 3ph	59	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.1f	Bus Support 1 Ph	63	EA	$ 3,700	$ 233,100	$ 3,700	$ 233,100	$ 7,400	**$ 466,200**
3.1g	Instrument Transformer Stand	30	EA	$ 1,850	$ 55,500	$ 1,850	$ 55,500	$ 3,700	**$ 111,000**
3.1h	Arrester Stand	6	EA	$ 1,850	$ 11,100	$ 1,850	$ 11,100	$ 3,700	**$ 22,200**
3.1j	Wave Trap Stand	2	EA	$ 7,400	$ 14,800	$ 7,400	$ 14,800	$ 14,800	**$ 29,600**
3.1k	Misc. Structures	7	EA	$ 6,475	$ 45,325	$ 6,475	$ 45,325	$ 12,950	**$ 90,650**
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone	5	EA	$ 33,300	$ 166,500	$ 33,300	$ 166,500	$ 66,600	**$ 333,000**
3.2b	Substation A-Frame Structures - Shared Column	4	EA	$ 33,300	$ 133,200	$ 33,300	$ 133,200	$ 66,600	**$ 266,400**
3.2c	Switch Stands	14	EA	$ 12,025	$ 168,350	$ 12,025	$ 168,350	$ 24,050	**$ 336,700**
3.2d	Station Service Transformer Stand	1	EA	$ 12,025	$ 12,025	$ 12,025	$ 12,025	$ 24,050	**$ 24,050**
3.2e	Bus Support 3ph	28	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.2f	Bus Support 1 Ph	29	EA	$ 2,775	$ 80,475	$ 2,775	$ 80,475	$ 5,550	**$ 160,950**
3.2g	Instrument Transformer Stand	30	EA	$ 1,295	$ 38,850	$ 1,295	$ 38,850	$ 2,590	**$ 77,700**
3.2h	Arrester Stand	6	EA	$ 1,295	$ 7,770	$ 1,295	$ 7,770	$ 2,590	**$ 15,540**
3.2j	Wave Trap Stand	2	EA	$ 5,550	$ 11,100	$ 5,550	$ 11,100	$ 11,100	**$ 22,200**
3.2k	Misc. Structures	3	EA	$ 6,475	$ 19,425	$ 6,475	$ 19,425	$ 12,950	**$ 38,850**
3.3	**115kV**								
TOTAL - SUBSTATION STRUCTURES					$ 1,426,720		$ 1,426,720		$ 2,853,440
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	7	EA	$ 200,000	$ 1,400,000	$ 80,000	$ 560,000	$ 280,000	**$ 1,960,000**
4.1b	Capacitor Banks with Reactors	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	**$ -**
4.1c	345 kV - 230 kV Auto Transformer	2	EA	$ 3,400,000	$ 6,800,000	$ 750,000	$ 1,500,000	$ 4,150,000	**$ 8,300,000**
4.1d	345 kV - 115 kV Auto Transformer	0	EA			$ 750,000	$ -	$ 750,000	**$ -**
4.1e									
4.2	**230kV**								
4.2a	Circuit Breakers	6	EA	$ 115,000	$ 690,000	$ 80,000	$ 480,000	$ 195,000	**$ 1,170,000**
4.2b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	**$ -**
4.3	**115kV**								
4.3a	Circuit Breakers		EA	$ 52,000	$ -	$ 60,000	$ -	$ 112,000	**$ -**
4.3b	Capacitor Banks		EA	$ -	$ -	$ 60,000	$ -	$ 60,000	**$ -**
TOTAL - MAJOR EQUIPTMENT					$ 8,890,000		$ 2,540,000		$ 11,430,000
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator	4	EA	$ 40,000	$ 160,000	$ 15,000	$ 60,000	$ 55,000	**$ 220,000**
5.1b	Disconnect Switches - 3ph w/ manual operator	14	EA	$ 35,000	$ 490,000	$ 17,500	$ 245,000	$ 52,500	**$ 735,000**
5.1c	VT'S	6	EA	$ 25,000	$ 150,000	$ 12,000	$ 72,000	$ 37,000	**$ 222,000**
5.1d	CT'S	6	EA	$ 13,000	$ 78,000	$ 8,000	$ 48,000	$ 21,000	**$ 126,000**
5.1e	CCVT'S	18	EA	$ 13,000	$ 234,000	$ 8,000	$ 144,000	$ 21,000	**$ 378,000**
5.1f	Arresters	12	EA	$ 6,500	$ 78,000	$ 1,500	$ 18,000	$ 8,000	**$ 96,000**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
5.1g	Wave Traps	2	EA	$ 13,000	$ 26,000	$ 8,000	$ 16,000	$ 21,000	**$ 42,000**
5.1h	Station Service Transformers	1	EA	$ 200,000	$ 200,000	$ 50,000	$ 50,000	$ 250,000	**$ 250,000**
5.1j									
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator	4	EA	$ 35,000	$ 140,000	$ 15,000	$ 60,000	$ 50,000	**$ 200,000**
5.2b	Disconnect Switches - 3ph w/ manual operator	12	EA	$ 30,000	$ 360,000	$ 17,500	$ 210,000	$ 47,500	**$ 570,000**
5.2c	VT'S	6	EA	$ 13,000	$ 78,000	$ 8,000	$ 48,000	$ 21,000	**$ 126,000**
5.2d	CT'S	6	EA	$ 13,000	$ 78,000	$ 8,000	$ 48,000	$ 21,000	**$ 126,000**
5.2e	CCVT'S	18	EA	$ 10,000	$ 180,000	$ 6,000	$ 108,000	$ 16,000	**$ 288,000**
5.2f	Arresters	12	EA	$ 5,000	$ 60,000	$ 6,000	$ 72,000	$ 11,000	**$ 132,000**
5.2g	Wave Traps	2	EA	$ 13,000	$ 26,000	$ 8,000	$ 16,000	$ 21,000	**$ 42,000**
5.2h	Station Service Transformers	1	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.2j									
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator		EA	$ 33,000	$ -	$ 15,000	$ -	$ 48,000	**$ -**
5.3b	Disconnect Switches - 3ph w/ manual operator		EA	$ 28,000	$ -	$ 17,500	$ -	$ 45,500	**$ -**
5.3c	VT'S		EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	**$ -**
5.3d	CT'S		EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	**$ -**
5.3e	CCVT'S		EA	$ 8,000	$ -	$ 8,000	$ -	$ 16,000	**$ -**
5.3f	Arresters		EA	$ 3,420	$ -	$ 6,000	$ -	$ 9,420	**$ -**
5.3g	Wave Traps		EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.3h	Station Service Transformers		EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.3j	Fuses		EA	$ -	$ -	$ -	$ -	$ -	**$ -**
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ 2,338,000		$ 1,215,000		$ 3,553,000
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE	1	EA	$ 1,026,000	$ 1,026,000	$ 85,000	$ 85,000	$ 1,111,000	**$ 1,111,000**
6.2	Protection and Telecom Equipment Panels	43	EA	$ 35,000	$ 1,505,000	$ 10,000	$ 430,000	$ 45,000	**$ 1,935,000**
6.3	125VDC Batteries	2	EA	$ 75,000	$ 150,000	$ 25,000	$ 50,000	$ 100,000	**$ 200,000**
6.4	Control Cables	1	LS	$ 975,205	$ 975,205	$ 975,205	$ 975,205	$ 1,950,410	**$ 1,950,410**
6.5	SCADA and Communications	1	EA	$ 50,000	$ 50,000	$ 100,000	$ 100,000	$ 150,000	**$ 150,000**
6.6	Low Voltage AC Distribution	2	EA	$ 50,000	$ 100,000	$ 100,000	$ 200,000	$ 150,000	**$ 300,000**
6.7	DC Distribution System	2	EA	$ 50,000	$ 100,000	$ 100,000	$ 200,000	$ 150,000	**$ 300,000**
6.8	Security	1	EA	$ 7,500	$ 7,500	$ 7,500	$ 7,500	$ 15,000	**$ 15,000**
6.9	Fire Alarm	1	EA	$ 7,500	$ 7,500	$ 7,500	$ 7,500	$ 15,000	**$ 15,000**
6.10	Generator	1	EA	$ 100,000	$ 100,000	$ 80,000	$ 80,000	$ 180,000	**$ 180,000**
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ 4,021,205		$ 2,135,205		**$ 6,156,410**
7. MISC ITEMS									
7.1	Conduit & Cable Trench System	2,000	LF	$ 185.00	$ 370,000	$ 170.00	$ 340,000	$ 355	**$ 710,000**
7.2	Rigid Bus, Fittings & Insulators	5,000	LF	$ 125.07	$ 625,350	$ 237.10	$ 1,185,500	$ 362	**$ 1,810,850**
7.3	Strain Bus, Connectors & Insulators	2,700	LF	$ 39.30	$ 106,110	$ 53.35	$ 144,045	$ 93	**$ 250,155**
7.4	Grounding System	32,600	LF	$ 6.93	$ 225,918	$ 32.58	$ 1,062,108	$ 40	**$ 1,288,026**
7.5	Strain Bus Insulators - 345kV	24	EA	$ 2,000	$ 48,000	$ 1,050	$ 25,200	$ 3,050	**$ 73,200**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
7.6	Strain Bus Insulators - 230kV	36	EA	$ 1,400	$ 50,400	$ 750	$ 27,000	$ 2,150	**$ 77,400**
7.7	Strain Bus Insulators - 115kV		EA	$ 1,000	$ -	$ 550	$ -	$ 1,550	**$ -**
7.8	Low Voltage AC Station Service	1	LS	$ 50,000	$ 50,000	$ 75,000	$ 75,000	$ 125,000	**$ 125,000**
7.9	SSVT Service	1	LS	$ 45,000	$ 45,000	$ 45,000	$ 45,000	$ 90,000	**$ 90,000**
7.10	Control Conduits from Trench to Equipment	1	LS	$ 125,000	$ 125,000	$ 125,000	$ 125,000	$ 250,000	**$ 250,000**
7.11	Misc. Materials (Above and Below Ground)	1	LS	$ 180,000	$ 180,000	$ 180,000	$ 180,000	$ 360,000	**$ 360,000**
7.12	Utility Station Power	1	LS		$ -	$ 135,000	$ 135,000	$ 135,000	**$ 135,000**
7.13	Install new communication tower foundation	1	LS		$ -	$ 75,000	$ 75,000	$ 75,000	**$ 75,000**
7.14	Relocate existing communication tower	1	LS		$ -	$ 50,000	$ 50,000	$ 50,000	**$ 50,000**
7.15									
7.16									
7.17									
7.18									
7.19									
7.20									
7.21									
7.22									
7.23									
7.24									
7.25									
TOTAL - MISC ITEMS					$ 1,825,778		$ 3,468,853		$ 5,294,631
D. Princetown Substation - Install					$ 22,378,966		$ 17,917,478		**$ 40,296,444**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1.0	LS	$ -	$ -	$ 402,964	$ 402,964	$ 402,964	**$ 402,964**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 2,048,268	$ 2,048,268	$ 2,048,268	**$ 2,048,268**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 402,964	$ 402,964	$ 402,964	**$ 402,964**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 402,964	$ 402,964	$ 402,964	**$ 402,964**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 3,223,716	$ 3,223,716	$ 3,223,716	**$ 3,223,716**
8.6	LiDAR	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.7	Geotech	4	EA	$ -	$ -	$ 3,500	$ 14,000	$ 3,500	**$ 14,000**
8.8	Surveying/Staking	1	Site	$ -	$ -	$ 282,075	$ 282,075	$ 282,075	**$ 282,075**
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 1,007,411	$ 1,007,411	$ 1,007,411	**$ 1,007,411**
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 120,889	$ 120,889	$ 120,889	**$ 120,889**
8.13	Real Estate Costs (New)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.14	Real Estate Costs (Incumbent Utility)	1	LS	$ -	$ -	$ 792,000	$ 792,000	$ 792,000	**$ 792,000**
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.18	Sales Tax on Materials	1	LS	$ 1,790,317	$ 1,790,317	$ -	$ -	$ 1,790,317	**$ 1,790,317**
8.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 40,296	$ 40,296	$ 40,296	**$ 40,296**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 1,790,317		$ 8,737,549		**$ 10,527,866**

NextEra - T021 Enterprise Line - (Segment A)

F. Edic Substation - Install

Estimate Revision: 5

Total: $ 2,639,089

NextEra - T021 Enterprise Line - (Segment A)			
	Supply	*Installation*	*Total*
F. Edic Substation - Install			
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ 2,025	$ 5,625	$ 7,650
2. SUBSTATION FOUNDATIONS	$ 100,098	$ 107,200	$ 207,298
3. SUBSTATION STRUCTURES	$ 44,400	$ 44,400	$ 88,800
4. MAJOR EQUIPTMENT	$ 200,000	$ 80,000	$ 280,000
5. SMALL EQUIPTMENT / MATERIALS	$ 280,000	$ 133,500	$ 413,500
6. CONTROL HOUSE / PANELS	$ 173,850	$ 98,850	$ 272,700
7. MISC ITEMS	$ 339,357	$ 507,880	$ 847,237
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 91,178	$ 430,726	$ 521,904
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 1,230,908	$ 1,408,181	$ 2,639,089
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 1,230,908	$ 1,408,181	$ 2,639,089

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
F. Edic Substation - Install									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	0	ACRES	$ -	$ -	$ 203,000	$ -	$ 203,000	$ -
1.2	Station stone within substation fence.	75	CY	$ 27	$ 2,025	$ 75	$ 5,625	$ 102	**$ 7,650**
1.3	Substation Fence	0	LF	$ 100	$ -	$ 100	$ -	$ 200	$ -
1.4	Permanent Access Road - 20'-Wide	0	LF	$ 35	$ -	$ 285	$ -	$ 320	$ -
1.5									
1.6									
1.7									
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ 2,025		$ 5,625		$ 7,650
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	1	EA	$ 14,940	$ 14,940	$ 16,000	$ 16,000	$ 30,940	**$ 30,940**
2.1b	Capacitor Bank Foundations	0	EA	$ 56,025	$ -	$ 60,000	$ -	$ 116,025	$ -
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 26,145	$ -	$ 28,000	$ -	$ 54,145	$ -
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 26,145	$ -	$ 28,000	$ -	$ 54,145	$ -
2.1e	Switch Stand Foundations	6	EA	$ 4,482	$ 26,892	$ 4,800	$ 28,800	$ 9,282	**$ 55,692**
2.1f	Station Service Transformer Stand Foundation	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1h	Bus Support 1 Ph Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1j	Instrument Transformer Stand Foundation	9	EA	$ 4,482	$ 40,338	$ 4,800	$ 43,200	$ 9,282	**$ 83,538**
2.1k	Arrester Stand Foundations	3	EA	$ 4,482	$ 13,446	$ 4,800	$ 14,400	$ 9,282	**$ 27,846**
2.1m	Wave Trap Stand Foundations	1	EA	$ 4,482	$ 4,482	$ 4,800	$ 4,800	$ 9,282	**$ 9,282**
2.1n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1p									
2.2	**230kV**								
2.2a	Circuit Breaker Foundations		EA	$ 11,952	$ -	$ 12,800	$ -	$ 24,752	$ -
2.2b	Capacitor Bank Foundations		EA	$ 44,820	$ -	$ 48,000	$ -	$ 92,820	$ -
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)		EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	$ -
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)		EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.2e	Switch Stand Foundations		EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2f	Station Service Transformer Stand Foundation		EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2g	Bus Support 3ph Foundations		EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2h	Bus Support 1 Ph Foundations		EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2j	Instrument Transformer Stand Foundation		EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2k	Arrester Stand Foundations		EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2m	Wave Trap Stand Foundations		EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2n	Misc. Structure Foundations		EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2p									
2.3	**115kV**								
2.3a	Circuit Breaker Foundations		EA	$ 5,229	$ -	$ 5,600	$ -	$ 10,829	$ -
2.3b	Capacitor Bank Foundations		EA	$ 33,615	$ -	$ 36,000	$ -	$ 69,615	$ -
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)		EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	$ -
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)		EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	$ -
2.3e	Switch Stand Foundations		EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3f	Fuse Stand Foundations		EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3g	Bus Support 3ph Foundations		EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3h	Bus Support 1 Ph Foundations		EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3j	Instrument Transformer Stand Foundations		EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3k	Arrester Stand Foundations		EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3m	Wave Trap Stand Foundations		EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3n	Station Service Foundations		EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3p	Misc. Structure Foundations		EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment		EA	$ 97,110	$ -	$ 104,000	$ -	$ 201,110	$ -
2.4b	345-115kV Transformer Foundation w/ Oil Containment		EA	$ 74,700	$ -	$ 80,000	$ -	$ 154,700	$ -
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment		EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment		EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad		EA	$ 76,194	$ -	$ 81,600	$ -	$ 157,794	$ -
2.5b	Generator Foundation		EA	$ 16,000	$ -	$ 17,000	$ -	$ 33,000	$ -
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation		EA	$ 5,229	$ -	$ 5,600	$ -	$ 10,829	$ -
2.6b	60' Lightning Mast Foundation		EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6c	50' Lightning Mast Foundation		EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION FOUNDATIONS					$ 100,098		$ 107,200		$ 207,298
3. SUBSTATION STRUCTURES									
3.1	**345kV**								
3.1a	Substation A-Frame Structures - Stand alone	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	$ -
3.1b	Substation A-Frame Structures - Shared Column	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	$ -
3.1c	Switch Stands	1	EA	$ 14,800	$ 14,800	$ 14,800	$ 14,800	$ 29,600	**$ 29,600**
3.1d	Station Service Transformer Stand	0	EA	$ 14,800	$ -	$ 14,800	$ -	$ 29,600	$ -
3.1e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1f	Bus Support 1 Ph	0	EA	$ 3,700	$ -	$ 3,700	$ -	$ 7,400	$ -
3.1g	Instrument Transformer Stand	9	EA	$ 1,850	$ 16,650	$ 1,850	$ 16,650	$ 3,700	**$ 33,300**
3.1h	Arrester Stand	3	EA	$ 1,850	$ 5,550	$ 1,850	$ 5,550	$ 3,700	**$ 11,100**
3.1j	Wave Trap Stand	1	EA	$ 7,400	$ 7,400	$ 7,400	$ 7,400	$ 14,800	**$ 14,800**
3.1k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone		EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	$ -
3.2b	Substation A-Frame Structures - Shared Column		EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	$ -
3.2c	Switch Stands		EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	$ -
3.2d	Station Service Transformer Stand		EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	$ -
3.2e	Bus Support 3ph		EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2f	Bus Support 1 Ph		EA	$ 2,775	$ -	$ 2,775	$ -	$ 5,550	$ -
3.2g	Instrument Transformer Stand		EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	$ -
3.2h	Arrester Stand		EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	$ -
3.2j	Wave Trap Stand		EA	$ 5,550	$ -	$ 5,550	$ -	$ 11,100	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.2k	Misc. Structures		EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
3.3	**115kV**								
3.3a	Substation A-Frame Structures - Stand alone		EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	$ -
3.3b	Substation A-Frame Structures - Shared Column		EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	$ -
3.3c	Switch Stands		EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	$ -
3.3d	Fuse Stand		EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	$ -
3.3e	Bus Support 3ph		EA	$ 3,330	$ -	$ 3,330	$ -	$ 6,660	$ -
3.3f	Bus Support 1 Ph		EA	$ 1,850	$ -	$ 1,850	$ -	$ 3,700	$ -
3.3g	Instrument Transformer Stand		EA	$ 740	$ -	$ 740	$ -	$ 1,480	$ -
3.3h	Arrester Stand		EA	$ 740	$ -	$ 740	$ -	$ 1,480	$ -
3.3j	Wave Trap Stand		EA	$ 3,700	$ -	$ 3,700	$ -	$ 7,400	$ -
3.3k	Misc. Structures		EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
TOTAL - SUBSTATION STRUCTURES					$ 44,400		$ 44,400		$ 88,800
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	1	EA	$ 200,000	$ 200,000	$ 80,000	$ 80,000	$ 280,000	**$ 280,000**
4.1b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	$ -
4.1c	345 kV - 230 kV Auto Transformer	0	EA	$ -	$ -	$ 750,000	$ -	$ 750,000	$ -
4.1d	345 kV - 115 kV Auto Transformer	0	EA	$ -	$ -	$ 750,000	$ -	$ 750,000	$ -
4.2	**230kV**								
4.2a	Circuit Breakers		EA	$ 115,000	$ -	$ 80,000	$ -	$ 195,000	$ -
4.2b	Capacitor Banks		EA	$ -	$ -	$ 80,000	$ -	$ 80,000	$ -
4.3	**115kV**								
4.3a	Circuit Breakers		EA	$ 52,000	$ -	$ 60,000	$ -	$ 112,000	$ -
4.3b	Capacitor Banks		EA	$ -	$ -	$ 60,000	$ -	$ 60,000	$ -
TOTAL - MAJOR EQUIPTMENT					$ 200,000		$ 80,000		$ 280,000
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator	1	EA	$ 40,000	$ 40,000	$ 15,000	$ 15,000	$ 55,000	**$ 55,000**
5.1b	Disconnect Switches - 3ph w/ manual operator	1	EA	$ 35,000	$ 35,000	$ 17,500	$ 17,500	$ 52,500	**$ 52,500**
5.1c	VT'S	3	EA	$ 25,000	$ 75,000	$ 12,000	$ 36,000	$ 37,000	**$ 111,000**
5.1d	CT'S	3	EA	$ 13,000	$ 39,000	$ 8,000	$ 24,000	$ 21,000	**$ 63,000**
5.1e	CCVT'S	3	EA	$ 13,000	$ 39,000	$ 8,000	$ 24,000	$ 21,000	**$ 63,000**
5.1f	Arresters	6	EA	$ 6,500	$ 39,000	$ 1,500	$ 9,000	$ 8,000	**$ 48,000**
5.1g	Wave Traps	1	EA	$ 13,000	$ 13,000	$ 8,000	$ 8,000	$ 21,000	**$ 21,000**
5.1h	Station Service Transformers	0	EA	$ 200,000	$ -	$ 50,000	$ -	$ 250,000	$ -
5.1j									
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator		EA	$ 35,000	$ -	$ 15,000	$ -	$ 50,000	$ -
5.2b	Disconnect Switches - 3ph w/ manual operator		EA	$ 30,000	$ -	$ 17,500	$ -	$ 47,500	$ -
5.2c	VT'S		EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2d	CT'S		EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2e	CCVT'S		EA	$ 10,000	$ -	$ 6,000	$ -	$ 16,000	$ -
5.2f	Arresters		EA	$ 5,000	$ -	$ 6,000	$ -	$ 11,000	$ -
5.2g	Wave Traps		EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2h	Station Service Transformers		EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2j									
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator		EA	$ 33,000	$ -	$ 15,000	$ -	$ 48,000	$ -
5.3b	Disconnect Switches - 3ph w/ manual operator		EA	$ 28,000	$ -	$ 17,500	$ -	$ 45,500	$ -
5.3c	VT'S		EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.3d	CT'S		EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.3e	CCVT'S		EA	$ 8,000	$ -	$ 8,000	$ -	$ 16,000	$ -
5.3f	Arresters		EA	$ 3,420	$ -	$ 6,000	$ -	$ 9,420	$ -
5.3g	Wave Traps		EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3h	Station Service Transformers		EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3j	Fuses		EA	$ -	$ -	$ -	$ -	$ -	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ 280,000		$ 133,500		$ 413,500
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE	0	EA	$ 551,250	$ -	$ 85,000	$ -	$ 636,250	**$ -**
6.2	Protection and Telecom Equipment Panels	3	EA	$ 35,000	$ 105,000	$ 10,000	$ 30,000	$ 45,000	**$ 135,000**
6.3	125VDC Batteries	0	EA	$ 75,000	$ -	$ 25,000	$ -	$ 100,000	**$ -**
6.4	Control Cables	1	LS	$ 68,850	$ 68,850	$ 68,850	$ 68,850	$ 137,700	**$ 137,700**
6.5	SCADA and Communications	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.6	Low Voltage AC Distribution	0	EA	$ 50,000	$ -	$ 100,000	$ -	$ 150,000	**$ -**
6.7	DC Distribution System	0	EA	$ 50,000	$ -	$ 100,000	$ -	$ 150,000	**$ -**
6.8	Security	0	EA	$ 7,500	$ -	$ 7,500	$ -	$ 15,000	**$ -**
6.9	Fire Alarm	0	EA	$ 7,500	$ -	$ 7,500	$ -	$ 15,000	**$ -**
6.10	Generator	0	EA	$ 100,000	$ -	$ 80,000	$ -	$ 180,000	**$ -**
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ 173,850		$ 98,850		**$ 272,700**
7. MISC ITEMS									
7.1	Conduit & Cable Trench System	800	LF	$ 185.00	$ 148,000	$ 170.00	$ 136,000	$ 355	**$ 284,000**
7.2	Rigid Bus, Fittings & Insulators	0	L.S.	$ 75,042.00	$ -	$ 142,260.00	$ -	$ 217,302	**$ -**
7.3	Strain Bus, Connectors & Insulators	2,500	LF	$ 39.30	$ 98,250	$ 53.35	$ 133,375	$ 93	**$ 231,625**
7.4	Grounding System	1	L.S.	$ 10,395.00	$ 10,395	$ 73,305.00	$ 73,305	$ 83,700	**$ 83,700**
7.5	Strain Bus Insulators - 345kV	24	EA	$ 2,000	$ 48,000	$ 1,050	$ 25,200	$ 3,050	**$ 73,200**
7.6	Strain Bus Insulators - 230kV	0	EA	$ 1,400	$ -	$ 750	$ -	$ 2,150	**$ -**
7.7	Strain Bus Insulators - 115kV	0	EA	$ 1,000	$ -	$ 550	$ -	$ 1,550	**$ -**
7.8	Low Voltage AC Station Service	0	LS	$ 50,000	$ -	$ 75,000	$ -	$ 125,000	**$ -**
7.9	SSVT Service	0	LS	$ 45,000	$ -	$ 45,000	$ -	$ 90,000	**$ -**
7.10	Control Conduits from Trench to Equipment	1	LS	$ 14,000	$ 14,000	$ 70,000	$ 70,000	$ 84,000	**$ 84,000**
7.11	Misc. Materials (Above and Below Ground)	1	LS	$ 20,712	$ 20,712	$ 70,000	$ 70,000	$ 90,712	**$ 90,712**
7.12									
7.13									
7.14									
7.15									
7.16									
7.17									
7.18									
7.19									
7.20									
7.21									
7.22									
7.23									
7.24									
7.25									
TOTAL - MISC ITEMS					$ 339,357		$ 507,880		$ 847,237
F. Edic Substation - Install					$ 1,139,730		$ 977,455		**$ 2,117,185**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1	LS	$ -	$ -	$ 21,172	$ 21,172	$ 21,172	**$ 21,172**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 107,617	$ 107,617	$ 107,617	**$ 107,617**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 21,172	$ 21,172	$ 21,172	**$ 21,172**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 21,172	$ 21,172	$ 21,172	**$ 21,172**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 169,375	$ 169,375	$ 169,375	**$ 169,375**
8.6	LiDAR	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.7	Geotech	4	EA	$ -	$ -	$ 3,500	$ 14,000	$ 3,500	**$ 14,000**
8.8	Surveying/Staking	1	Site	$ -	$ -	$ 14,820	$ 14,820	$ 14,820	**$ 14,820**
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 52,930	$ 52,930	$ 52,930	**$ 52,930**
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 6,352	$ 6,352	$ 6,352	**$ 6,352**
8.13	Real Estate Costs (New)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.14	Real Estate Costs (Incumbent Utility)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.18	Sales Tax on Materials	1	LS	$ 91,178	$ 91,178	$ -	$ -	$ 91,178	**$ 91,178**
8.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 2,117	$ 2,117	$ 2,117	**$ 2,117**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 91,178		$ 430,726		**$ 521,904**

NextEra - T021 Enterprise Line - (Segment A)

G. Edic Substation - Removal

Estimate Revision: 5

Total: $ 41,840

NextEra - T021 Enterprise Line - (Segment A)	*Supply*	*Installation*	*Total*
G. Edic Substation - Removal			
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ -	$ -	$ -
2. SUBSTATION FOUNDATIONS	$ -	$ 14,200	$ 14,200
3. SUBSTATION STRUCTURES	$ -	$ 6,750	$ 6,750
4. MAJOR EQUIPTMENT	$ -	$ -	$ -
5. SMALL EQUIPTMENT / MATERIALS	$ -	$ 4,500	$ 4,500
6. CONTROL HOUSE / PANELS	$ -	$ -	$ -
7. MISC ITEMS	$ -	$ 10,500	$ 10,500
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ -	$ 5,890	$ 5,890
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ -	$ 41,840	$ 41,840
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ -	$ 41,840	$ 41,840

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
G. Edic Substation - Removal									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	0	ACRES	$ -	$ -	$ 203,000	$ -	$ 203,000	$ -
1.2	Station stone within substation fence.	0	CY	$ -	$ -	$ 75	$ -	$ 75	$ -
1.3	Substation Fence	0	LF	$ -	$ -	$ 150	$ -	$ 150	$ -
1.4									
1.5									
1.6									
1.7									
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ -		$ -		$ -
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	1	EA	$ -	$ -	$ 14,200	$ 14,200	$ 14,200	**$ 14,200**
2.1b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1e	Switch Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1f	Station Service Transformer Stand Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.1j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1k	Arrester Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1p									
2.2	**230kV**								
2.2a	Circuit Breaker Foundations	0	EA	$ -	$ -	$ 7,200	$ -	$ 7,200	$ -
2.2b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ 32,000	$ -	$ 32,000	$ -
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ 22,000	$ -	$ 22,000	$ -
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ 11,000	$ -	$ 11,000	$ -
2.2e	Switch Stand Foundations	0	EA	$ -	$ -	$ 5,200	$ -	$ 5,200	$ -
2.2f	Station Service Transformer Stand Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.2h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.2j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.2k	Arrester Stand Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.2m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2p									
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3e	Switch Stand Foundations	0	EA	$ -	$ -	$ 5,200	$ -	$ 5,200	$ -
2.3f	Fuse Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3k	Arrester Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4b	345-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ 42,000	$ -	$ 42,000	$ -
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5b	Generator Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6b		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6c		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION FOUNDATIONS					$ -		$ 14,200		$ 14,200
3. SUBSTATION STRUCTURES									
3.1	**345kV**								
3.1a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1c	Switch Stands	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1d	Station Service Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1e									
3.1f	Bus Support 1 Ph	3	EA	$ -	$ -	$ 2,250	$ 6,750	$ 2,250	**$ 6,750**
3.1g	Instrument Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1h	Arrester Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1j	Wave Trap Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ 27,000	$ -	$ 27,000	$ -
3.2b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ 27,000	$ -	$ 27,000	$ -
3.2c	Switch Stands	0	EA	$ -	$ -	$ 9,750	$ -	$ 9,750	$ -
3.2d	Station Service Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2f	Bus Support 1 Ph	0	EA	$ -	$ -	$ 2,250	$ -	$ 2,250	$ -
3.2g	Instrument Transformer Stand	0	EA	$ -	$ -	$ 1,050	$ -	$ 1,050	$ -
3.2h	Arrester Stand	0	EA	$ -	$ -	$ 1,050	$ -	$ 1,050	$ -
3.2j	Wave Trap Stand	0	EA	$ -	$ -	$ 4,500	$ -	$ 4,500	$ -
3.2k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3	**115kV**								

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.3a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ 15,000	$ -	$ 15,000	$ -
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3c	Switch Stands	0	EA	$ -	$ -	$ 6,450	$ -	$ 6,450	$ -
3.3d	Fuse Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3f	Bus Support 1 Ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3g	Instrument Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3h	Arrester Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3j	Wave Trap Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION STRUCTURES					$ -		$ 6,750		$ 6,750
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.1b	Capacitor Banks	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.1c		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.1d									
4.2	**230kV**								
4.2a	Circuit Breakers	0	EA	$ -	$ -	$ 7,000	$ -	$ 7,000	$ -
4.2b	Capacitor Banks	0	EA	$ -	$ -	$ 42,000	$ -	$ 42,000	$ -
4.3	**115kV**								
4.3a	Circuit Breakers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - MAJOR EQUIPTMENT					$ -		$ -		$ -
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.1b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.1c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.1d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.1e	CCVT'S	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.1f	Arresters	3	EA	$ -	$ -	$ 1,500	$ 4,500	$ 1,500	**$ 4,500**
5.1g	Wave Traps	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.1h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.1j									
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.2b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.2c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2e	CCVT'S	0	EA	$ -	$ -	$ 1,500	$ -	$ 1,500	$ -
5.2f	Arresters	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.2g	Wave Traps	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.2h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2j									
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.3c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3e	CCVT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3f	Arresters	0	EA	$ -	$ -	$ 1,500	$ -	$ 1,500	$ -
5.3g	Wave Traps	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ -		$ 4,500		$ 4,500
6. CONTROL HOUSE / PANELS / GENERATOR									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6.1	CONTROL HOUSE	0	EA	$ -	$ -	$ 150,000	$ -	$ 150,000	$ -
6.2	Protection and Telecom Equipment Panels	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.3	125VDC Batteries	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.4	Control Cables	0	LS	$ -	$ -	$ -	$ -	$ -	$ -
6.5	SCADA and Communications	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.6	Low Voltage AC Distribution	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.7	DC Distribution System	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.8	Security	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.9	Fire Alarm	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.10	Generator	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ -		$ -		$ -
7. MISC ITEMS									
7.1	Conduit & Cable Trench System	0	EA	$ -	$ -	$ 42,000.00	$ -	$ 42,000	$ -
7.2	Rigid Bus, Fittings & Insulators	1	LS	$ -	$ -	$ 10,500.00	$ 10,500	$ 10,500	**$ 10,500**
7.3	Strain Bus, Connectors & Insulators	0	EA	$ -	$ -	$ 39.35	$ -	$ 39	$ -
7.4	Grounding System	0	EA	$ -	$ -	$ 42,000.00	$ -	$ 42,000	$ -
7.5									
7.6									
7.7									
7.8									
7.9									
7.10									
7.11									
7.12									
7.13									
7.14									
7.15									
TOTAL - MISC ITEMS					$ -		$ 10,500		$ 10,500
G. Edic Substation - Removal					$ -		$ 35,950		**$ 35,950**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1	LS	$ -	$ -	$ 360	$ 360	$ 360	**$ 360**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 1,827	$ 1,827	$ 1,827	**$ 1,827**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 360	$ 360	$ 360	**$ 360**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 360	$ 360	$ 360	**$ 360**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 2,876	$ 2,876	$ 2,876	**$ 2,876**
8.6	LiDAR	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.7	Geotech	-	EA	$ -	$ -	$ 3,500	$ -	$ 3,500	$ -
8.8	Surveying/Staking	-	Site	$ -	$ -	$ 252	$ -	$ 252	$ -
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	-	LS	$ -	$ -	$ 899	$ -	$ 899	$ -
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 108	$ 108	$ 108	**$ 108**
8.13	Real Estate Costs (New)	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.14	Real Estate Costs (Incumbent Utility)	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.18	Sales Tax on Materials	1	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.19	Fees for permits, including roadway, railroad, building or other local permits	-	LS		$ -	$ 36	$ -	$ 36	$ -
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ -		$ 5,890		**$ 5,890**

NextEra - T021 Enterprise Line - (Segment A)

H. New Scotland Substation - Install

Estimate Revision: 5

Total: $ 8,384,335

NextEra - T021 Enterprise Line - (Segment A)	*Supply*	*Installation*	*Total*
H. New Scotland Substation - Install			
1. SITE PREP/ GRADING/ FENCING / CIVIL	**$ 30,750**	**$ 233,063**	**$ 263,813**
2. SUBSTATION FOUNDATIONS	**$ 498,996**	**$ 534,400**	**$ 1,033,396**
3. SUBSTATION STRUCTURES	**$ 240,500**	**$ 240,500**	**$ 481,000**
4. MAJOR EQUIPTMENT	**$ 1,000,000**	**$ 400,000**	**$ 1,400,000**
5. SMALL EQUIPTMENT / MATERIALS	**$ 369,500**	**$ 188,000**	**$ 557,500**
6. CONTROL HOUSE / PANELS	**$ 749,150**	**$ 390,400**	**$ 1,139,550**
7. MISC ITEMS	**$ 897,304**	**$ 968,110**	**$ 1,865,414**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	**$ 302,896**	**$ 1,340,767**	**$ 1,643,663**
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	**$ 4,089,096**	**$ 4,295,239**	**$ 8,384,335**
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 4,089,096	$ 4,295,239	$ 8,384,335

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
H. New Scotland Substation - Install									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	0.9	ACRES	$ -	$ -	$ 203,000	$ 190,313	$ 203,000	**$ 190,313**
1.2	Station stone within substation fence.	250	CY	$ 27	$ 6,750	$ 75	$ 18,750	$ 102	**$ 25,500**
1.3	Substation Fence	240	LF	$ 100	$ 24,000	$ 100	$ 24,000	$ 200	**$ 48,000**
1.4	Permanent Access Road - 20'-Wide	0	LF	$ 35	$ -	$ 285	$ -	$ 320	**$ -**
1.5									
1.6									
1.7									
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ 30,750		$ 233,063		$ 263,813
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	5	EA	$ 14,940	$ 74,700	$ 16,000	$ 80,000	$ 30,940	**$ 154,700**
2.1b	Capacitor Bank Foundations	0	EA	$ 56,025	$ -	$ 60,000	$ -	$ 116,025	**$ -**
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	4	EA	$ 26,145	$ 104,580	$ 28,000	$ 112,000	$ 54,145	**$ 216,580**
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 26,145	$ -	$ 28,000	$ -	$ 54,145	**$ -**
2.1e	Switch Stand Foundations	18	EA	$ 4,482	$ 80,676	$ 4,800	$ 86,400	$ 9,282	**$ 167,076**
2.1f	Station Service Transformer Stand Foundation	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	**$ -**
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1h	Bus Support 1 Ph Foundations	32	EA	$ 4,482	$ 143,424	$ 4,800	$ 153,600	$ 9,282	**$ 297,024**
2.1j	Instrument Transformer Stand Foundations	15	EA	$ 4,482	$ 67,230	$ 4,800	$ 72,000	$ 9,282	**$ 139,230**
2.1k	Arrester Stand Foundations	3	EA	$ 4,482	$ 13,446	$ 4,800	$ 14,400	$ 9,282	**$ 27,846**
2.1m	Wave Trap Stand Foundations	1	EA	$ 4,482	$ 4,482	$ 4,800	$ 4,800	$ 9,282	**$ 9,282**
2.1n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1p									
2.2	**230kV**								
2.2a	Circuit Breaker Foundations	0	EA	$ 11,952	$ -	$ 12,800	$ -	$ 24,752	**$ -**
2.2b	Capacitor Bank Foundations	0	EA	$ 44,820	$ -	$ 48,000	$ -	$ 92,820	**$ -**
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	**$ -**
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	**$ -**
2.2e	Switch Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	**$ -**
2.2f	Station Service Transformer Stand Foundation	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	**$ -**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.2g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2h	Bus Support 1 Ph Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2j	Instrument Transformer Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2k	Arrester Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2m	Wave Trap Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2p									
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	0	EA	$ 5,229	$ -	$ 5,600	$ -	$ 10,829	$ -
2.3b	Capacitor Bank Foundations	0	EA	$ 33,615	$ -	$ 36,000	$ -	$ 69,615	$ -
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	$ -
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	$ -
2.3e	Switch Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3f	Fuse Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3g	Bus Support 3ph Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3h	Bus Support 1 Ph Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3j	Instrument Transformer Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3k	Arrester Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3m	Wave Trap Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment	0	EA	$ 97,110	$ -	$ 104,000	$ -	$ 201,110	$ -
2.4b	345-115kV Transformer Foundation w/ Oil Containment	0	EA	$ 74,700	$ -	$ 80,000	$ -	$ 154,700	$ -
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad	0	EA	$ 76,194	$ -	$ 81,600	$ -	$ 157,794	$ -
2.5b	Generator Foundation	0	EA	$ 16,000	$ -	$ 17,000	$ -	$ 33,000	$ -
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	2	EA	$ 5,229	$ 10,458	$ 5,600	$ 11,200	$ 10,829	**$ 21,658**
2.6b		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6c		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION FOUNDATIONS					$ 498,996		$ 534,400		$ 1,033,396
3. SUBSTATION STRUCTURES									
3.1	**345kV**								
3.1a	Substation A-Frame Structures - Stand alone	1	EA	$ 37,000	$ 37,000	$ 37,000	$ 37,000	$ 74,000	**$ 74,000**
3.1b	Substation A-Frame Structures - Shared Column	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	$ -
3.1c	Switch Stands	3	EA	$ 14,800	$ 44,400	$ 14,800	$ 44,400	$ 29,600	**$ 88,800**
3.1d	Station Service Transformer Stand	0	EA	$ 14,800	$ -	$ 14,800	$ -	$ 29,600	$ -
3.1e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1f	Bus Support 1 Ph	32	EA	$ 3,700	$ 118,400	$ 3,700	$ 118,400	$ 7,400	**$ 236,800**
3.1g	Instrument Transformer Stand	15	EA	$ 1,850	$ 27,750	$ 1,850	$ 27,750	$ 3,700	**$ 55,500**
3.1h	Arrester Stand	3	EA	$ 1,850	$ 5,550	$ 1,850	$ 5,550	$ 3,700	**$ 11,100**
3.1j	Wave Trap Stand	1	EA	$ 7,400	$ 7,400	$ 7,400	$ 7,400	$ 14,800	**$ 14,800**
3.1k	Lightning Masts - 70'	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	$ -
3.2b	Substation A-Frame Structures - Shared Column	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	$ -
3.2c	Switch Stands	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	$ -
3.2d	Station Service Transformer Stand	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	$ -
3.2e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2f	Bus Support 1 Ph	0	EA	$ 2,775	$ -	$ 2,775	$ -	$ 5,550	$ -
3.2g	Instrument Transformer Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	$ -
3.2h	Arrester Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	$ -
3.2j	Wave Trap Stand	0	EA	$ 5,550	$ -	$ 5,550	$ -	$ 11,100	$ -
3.2k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.3	**115kV**								
3.3a	Substation A-Frame Structures - Stand alone	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	$ -
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	$ -
3.3c	Switch Stands	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	$ -
3.3d	Fuse Stand	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	$ -
3.3e	Bus Support 3ph	0	EA	$ 3,330	$ -	$ 3,330	$ -	$ 6,660	$ -
3.3f	Bus Support 1 Ph	0	EA	$ 1,850	$ -	$ 1,850	$ -	$ 3,700	$ -
3.3g	Instrument Transformer Stand	0	EA	$ 740	$ -	$ 740	$ -	$ 1,480	$ -
3.3h	Arrester Stand	0	EA	$ 740	$ -	$ 740	$ -	$ 1,480	$ -
3.3j	Wave Trap Stand	0	EA	$ 3,700	$ -	$ 3,700	$ -	$ 7,400	$ -
3.3k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
TOTAL - SUBSTATION STRUCTURES					$ 240,500		$ 240,500		$ 481,000
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	5	EA	$ 200,000	$ 1,000,000	$ 80,000	$ 400,000	$ 280,000	**$ 1,400,000**
4.1b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	$ -
4.1c	345 kV - 230 kV Auto Transformer	0	EA	$ -	$ -	$ 750,000	$ -	$ 750,000	$ -
4.1d	345 kV - 115 kV Auto Transformer	0	EA	$ -	$ -	$ 750,000	$ -	$ 750,000	$ -
4.2	**230kV**								
4.2a	Circuit Breakers	0	EA	$ 115,000	$ -	$ 80,000	$ -	$ 195,000	$ -
4.2b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	$ -
4.3	**115kV**								
4.3a	Circuit Breakers	0	EA	$ 52,000	$ -	$ 60,000	$ -	$ 112,000	$ -
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ 60,000	$ -	$ 60,000	$ -
TOTAL - MAJOR EQUIPTMENT					$ 1,000,000		$ 400,000		$ 1,400,000
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator	1	EA	$ 40,000	$ 40,000	$ 15,000	$ 15,000	$ 55,000	**$ 55,000**
5.1b	Disconnect Switches - 3ph w/ manual operator	3	EA	$ 35,000	$ 105,000	$ 17,500	$ 52,500	$ 52,500	**$ 157,500**
5.1c	VT'S	3	EA	$ 25,000	$ 75,000	$ 12,000	$ 36,000	$ 37,000	**$ 111,000**
5.1d	CT'S	3	EA	$ 13,000	$ 39,000	$ 8,000	$ 24,000	$ 21,000	**$ 63,000**
5.1e	CCVT'S	6	EA	$ 13,000	$ 78,000	$ 8,000	$ 48,000	$ 21,000	**$ 126,000**
5.1f	Arresters	3	EA	$ 6,500	$ 19,500	$ 1,500	$ 4,500	$ 8,000	**$ 24,000**
5.1g	Wave Traps	1	EA	$ 13,000	$ 13,000	$ 8,000	$ 8,000	$ 21,000	**$ 21,000**
5.1h	Station Service Transformers	0	EA	$ 200,000	$ -	$ 50,000	$ -	$ 250,000	$ -
5.1j									
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator	0	EA	$ 35,000	$ -	$ 15,000	$ -	$ 50,000	$ -
5.2b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 30,000	$ -	$ 17,500	$ -	$ 47,500	$ -
5.2c	VT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2e	CCVT'S	0	EA	$ 10,000	$ -	$ 6,000	$ -	$ 16,000	$ -
5.2f	Arresters	0	EA	$ 5,000	$ -	$ 6,000	$ -	$ 11,000	$ -
5.2g	Wave Traps	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2j									
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	0	EA	$ 33,000	$ -	$ 15,000	$ -	$ 48,000	$ -
5.3b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 28,000	$ -	$ 17,500	$ -	$ 45,500	$ -
5.3c	VT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.3d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.3e	CCVT'S	0	EA	$ 8,000	$ -	$ 8,000	$ -	$ 16,000	$ -
5.3f	Arresters	0	EA	$ 3,420	$ -	$ 6,000	$ -	$ 9,420	$ -
5.3g	Wave Traps	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ 369,500		$ 188,000		$ 557,500
6. CONTROL HOUSE / PANELS / GENERATOR									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6.1	CONTROL HOUSE	1	EA	$ 243,750	$ 243,750	$ 42,500	$ 42,500	$ 286,250	**$ 286,250**
6.2	Protection and Telecom Equipment Panels	7	EA	$ 35,000	$ 245,000	$ 12,500	$ 87,500	$ 47,500	**$ 332,500**
6.3	125VDC Batteries	0	EA	$ 75,000	$ -	$ 25,000	$ -	$ 100,000	**$ -**
6.4	Control Cables	1	LS	$ 260,400	$ 260,400	$ 260,400	$ 260,400	$ 520,800	**$ 520,800**
6.5	SCADA and Communications	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.6	Low Voltage AC Distribution	0	EA	$ 50,000	$ -	$ 100,000	$ -	$ 150,000	**$ -**
6.7	DC Distribution System	0	EA	$ 50,000	$ -	$ 100,000	$ -	$ 150,000	**$ -**
6.8	Security	0	EA	$ 7,500	$ -	$ 7,500	$ -	$ 15,000	**$ -**
6.9	Fire Alarm	0	EA	$ 7,500	$ -	$ 7,500	$ -	$ 15,000	**$ -**
6.10	Generator	0	EA	$ 100,000	$ -	$ 80,000	$ -	$ 180,000	**$ -**
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ 749,150		$ 390,400		**$ 1,139,550**
7. MISC ITEMS									
7.1	Conduit & Cable Trench System	2,500.0	LF	$ 185.00	$ 462,500	$ 170.00	$ 425,000	$ 355	**$ 887,500**
7.2	Rigid Bus, Fittings & Insulators	700.0	LF	$ 125.07	$ 87,549	$ 237.10	$ 165,970	$ 362	**$ 253,519**
7.3	Strain Bus, Connectors & Insulators	200.0	LF	$ 39.30	$ 7,860	$ 53.35	$ 10,670	$ 93	**$ 18,530**
7.4	Grounding System	1,500.0	LF	$ 6.93	$ 10,395	$ 32.58	$ 48,870	$ 40	**$ 59,265**
7.5	Strain Bus Insulators - 345kV	12	EA	$ 2,000	$ 24,000	$ 1,050	$ 12,600	$ 3,050	**$ 36,600**
7.6	Strain Bus Insulators - 230kV	0	EA	$ 1,400	$ -	$ 750	$ -	$ 2,150	**$ -**
7.7	Strain Bus Insulators - 115kV	0	EA	$ 1,000	$ -	$ 550	$ -	$ 1,550	**$ -**
7.8	Low Voltage AC Station Service	0	LS	$ 50,000	$ -	$ 75,000	$ -	$ 125,000	**$ -**
7.9	SSVT Service	0	LS	$ 45,000	$ -	$ 45,000	$ -	$ 90,000	**$ -**
7.10	Control Conduits from Trench to Equipment	1	LS	$ 125,000	$ 125,000	$ 125,000	$ 125,000	$ 250,000	**$ 250,000**
7.11	Misc. Materials (Above and Below Ground)	1	LS	$ 180,000	$ 180,000	$ 180,000	$ 180,000	$ 360,000	**$ 360,000**
7.12									
7.13									
7.14									
7.15									
7.16									
7.17									
7.18									
7.19									
7.20									
7.21									
7.22									
7.23									
7.24									
7.25									
TOTAL - MISC ITEMS					$ 897,304		$ 968,110		$ 1,865,414
H. New Scotland Substation - Install					$ 3,786,200		$ 2,954,473		**$ 6,740,673**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1.0	LS	$ -	$ -	$ 67,407	$ 67,407	$ 67,407	**$ 67,407**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 342,628	$ 342,628	$ 342,628	**$ 342,628**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 67,407	$ 67,407	$ 67,407	**$ 67,407**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 67,407	$ 67,407	$ 67,407	**$ 67,407**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 539,254	$ 539,254	$ 539,254	**$ 539,254**
8.6	LiDAR	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.7	Geotech	4	EA	$ -	$ -	$ 3,500	$ 14,000	$ 3,500	**$ 14,000**
8.8	Surveying/Staking	1	Site	$ -	$ -	$ 47,185	$ 47,185	$ 47,185	**$ 47,185**
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 168,517	$ 168,517	$ 168,517	**$ 168,517**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 20,222	$ 20,222	$ 20,222	**$ 20,222**
8.13	Real Estate Costs (New)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.14	Real Estate Costs (Incumbent Utility)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.18	Sales Tax on Materials	1	LS	$ 302,896	$ 302,896	$ -	$ -	$ 302,896	**$ 302,896**
8.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 6,741	$ 6,741	$ 6,741	**$ 6,741**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 302,896		$ 1,340,767		**$ 1,643,663**

NextEra - T021 Enterprise Line - (Segment A)

I. New Scotland Substation - Removal

Estimate Revision: 5

Total: $ 169,052

NextEra - T021 Enterprise Line - (Segment A)	*Supply*	*Installation*	*Total*
I. New Scotland Substation - Removal			
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ -	$ 30,000	$ 30,000
2. SUBSTATION FOUNDATIONS	$ -	$ 57,200	$ 57,200
3. SUBSTATION STRUCTURES	$ -	$ 27,000	$ 27,000
4. MAJOR EQUIPTMENT	$ -	$ -	$ -
5. SMALL EQUIPTMENT / MATERIALS	$ -	$ 7,000	$ 7,000
6. CONTROL HOUSE / PANELS	$ -	$ -	$ -
7. MISC ITEMS	$ -	$ 21,000	$ 21,000
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ -	$ 26,852	$ 26,852
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ -	$ 169,052	$ 169,052
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ -	$ 169,052	$ 169,052

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
I. New Scotland Substation - Removal									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	0	ACRES	$ -	$ -	$ 203,000	$ -	$ 203,000	$ -
1.2	Station stone within substation fence.	0	CY	$ -	$ -	$ 75	$ -	$ 75	$ -
1.3	Substation Fence	200	LF	$ -	$ -	$ 150	$ 30,000	$ 150	**$ 30,000**
1.4									
1.5									
1.6									
1.7									
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ -		$ 30,000		$ 30,000
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	2	EA	$ -	$ -	$ 14,200	$ 28,400	$ 14,200	**$ 28,400**
2.1b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1e	Switch Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1f	Fuse Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1h	Bus Support 1 Ph Foundations	12	EA	$ -	$ -	$ 2,400	$ 28,800	$ 2,400	**$ 28,800**
2.1j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1k	Arrester Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2	**230kV**								
2.2a	Circuit Breaker Foundations	0	EA	$ -	$ -	$ 7,200	$ -	$ 7,200	$ -
2.2b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ 32,000	$ -	$ 32,000	$ -
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ 22,000	$ -	$ 22,000	$ -
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ 11,000	$ -	$ 11,000	$ -
2.2e	Switch Stand Foundations	0	EA	$ -	$ -	$ 5,200	$ -	$ 5,200	$ -
2.2f	Fuse Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.2h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.2j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.2k	Arrester Stand Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.2m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3e	Switch Stand Foundations	0	EA	$ -	$ -	$ 5,200	$ -	$ 5,200	$ -
2.3f	Fuse Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3k	Arrester Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4b	345-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ 42,000	$ -	$ 42,000	$ -
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5b	Generator Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6b		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6c		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION FOUNDATIONS					$ -		$ 57,200		$ 57,200
3. SUBSTATION STRUCTURES									
3.1	**345kV**								
3.1a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1c	Switch Stands	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1d	Fuse Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1f	Bus Support 1 Ph	12	EA	$ -	$ -	$ 2,250	$ 27,000	$ 2,250	**$ 27,000**
3.1g	Instrument Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1h	Arrester Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1j	Wave Trap Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ 27,000	$ -	$ 27,000	$ -
3.2b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ 27,000	$ -	$ 27,000	$ -
3.2c	Switch Stands	0	EA	$ -	$ -	$ 9,750	$ -	$ 9,750	$ -
3.2d	Fuse Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2f	Bus Support 1 Ph	0	EA	$ -	$ -	$ 2,250	$ -	$ 2,250	$ -
3.2g	Instrument Transformer Stand	0	EA	$ -	$ -	$ 1,050	$ -	$ 1,050	$ -
3.2h	Arrester Stand	0	EA	$ -	$ -	$ 1,050	$ -	$ 1,050	$ -
3.2j	Wave Trap Stand	0	EA	$ -	$ -	$ 4,500	$ -	$ 4,500	$ -
3.2k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3	**115kV**								

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.3a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ 15,000	$ -	$ 15,000	$ -
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3c	Switch Stands	0	EA	$ -	$ -	$ 6,450	$ -	$ 6,450	$ -
3.3d	Fuse Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3f	Bus Support 1 Ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3g	Instrument Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3h	Arrester Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3j	Wave Trap Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION STRUCTURES					$ -		$ 27,000		$ 27,000
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.1b	Capacitor Banks	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.1c		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.1d									
4.2	**230kV**								
4.2a	Circuit Breakers	0	EA	$ -	$ -	$ 7,000	$ -	$ 7,000	$ -
4.2b	Capacitor Banks	0	EA	$ -	$ -	$ 42,000	$ -	$ 42,000	$ -
4.3	**115kV**								
4.3a	Circuit Breakers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - MAJOR EQUIPTMENT					$ -		$ -		$ -
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.1b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.1c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.1d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.1e	CCVT'S	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.1f	Arresters	3	EA	$ -	$ -	$ 1,500	$ 4,500	$ 1,500	**$ 4,500**
5.1g	Wave Traps	1	EA	$ -	$ -	$ 2,500	$ 2,500	$ 2,500	**$ 2,500**
5.1h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.1j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.2b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.2c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2e	CCVT'S	0	EA	$ -	$ -	$ 1,500	$ -	$ 1,500	$ -
5.2f	Arresters	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.2g	Wave Traps	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.2h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.3c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3e	CCVT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3f	Arresters	0	EA	$ -	$ -	$ 1,500	$ -	$ 1,500	$ -
5.3g	Wave Traps	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ -		$ 7,000		$ 7,000
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE	0	EA	$ -	$ -	$ 150,000	$ -	$ 150,000	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6.2	PANELS	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.3	125VDC Batteries	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.4	Protection and Telecom Equipment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.5	SCADA and Communications	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.6	Low Voltage AC Distribution	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.7	DC Distribution System	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.8	Security	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.9	Fire Alarm	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.10	Generator	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ -		$ -		$ -
7. MISC ITEMS									
7.1	Conduit & Cable Trench System	0	EA	$ -	$ -	$ 42,000.00	$ -	$ 42,000	$ -
7.2	Rigid Bus, Fittings & Insulators	1	LS	$ -	$ -	$ 21,000.00	$ 21,000	$ 21,000	**$ 21,000**
7.3	Strain Bus, Connectors & Insulators	0	LS	$ -	$ -	$ 21,000.00	$ -	$ 21,000	$ -
7.4	Grounding System	0	EA	$ -	$ -	$ 42,000.00	$ -	$ 42,000	$ -
7.5									
7.6									
7.7									
7.8									
7.9									
7.10									
7.11									
7.12									
7.13									
7.14									
7.15									
TOTAL - MISC ITEMS					$ -		$ 21,000		$ 21,000
I. New Scotland Substation - Removal					$ -		$ 142,200		**$ 142,200**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1.0	LS	$ -	$ -	$ 1,422	$ 1,422	$ 1,422	**$ 1,422**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 7,228	$ 7,228	$ 7,228	**$ 7,228**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 1,422	$ 1,422	$ 1,422	**$ 1,422**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 1,422	$ 1,422	$ 1,422	**$ 1,422**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 11,376	$ 11,376	$ 11,376	**$ 11,376**
8.6	LiDAR	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.7	Geotech	-	EA	$ -	$ -	$ 3,500	$ -	$ 3,500	$ -
8.8	Surveying/Staking	-	Site	$ -	$ -	$ 995	$ -	$ 995	$ -
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 3,555	$ 3,555	$ 3,555	**$ 3,555**
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 427	$ 427	$ 427	**$ 427**
8.13	Real Estate Costs (New)	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.14	Real Estate Costs (Incumbent Utility)	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.18	Sales Tax on Materials	1	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.19	Fees for permits, including roadway, railroad, building or other local permits	-	LS		$ -	$ 142	$ -	$ 142	$ -
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ -		$ 26,852		**$ 26,852**

NextEra - T021 Enterprise Line - (Segment A) — **J. Porter Substation - Install**

Estimate Revision: 5 — **Total: $ 101,268**

NextEra - T021 Enterprise Line - (Segment A)			
	Supply	*Installation*	*Total*
J. Porter Substation - Install			
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ -	$ -	$ -
2. SUBSTATION FOUNDATIONS	$ -	$ -	$ -
3. SUBSTATION STRUCTURES	$ -	$ -	$ -
4. MAJOR EQUIPTMENT	$ -	$ -	$ -
5. SMALL EQUIPTMENT / MATERIALS	$ -	$ -	$ -
6. CONTROL HOUSE / PANELS	$ -	$ -	$ -
7. MISC ITEMS	**$ 15,008**	**$ 56,904**	**$ 71,912**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	**$ 1,201**	**$ 28,155**	**$ 29,355**
CONTRACTOR MARK-UP (OH&P)	**$ -**	**$ -**	**$ -**
SUBTOTAL:	**$ 16,209**	**$ 85,059**	**$ 101,268**
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	**$ 16,209**	**$ 85,059**	**$ 101,268**

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
J. Porter Substation - Install									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	0	ACRES	$ -	$ -	$ 203,000	$ -	$ 203,000	$ -
1.2	Station stone within substation fence.	0	CY	$ 27	$ -	$ 75	$ -	$ 102	$ -
1.3	Substation Fence	0	LF	$ 100	$ -	$ 100	$ -	$ 200	$ -
1.4	Permanent Access Road - 20'-Wide	0	LF	$ 35	$ -	$ 285	$ -	$ 320	$ -
1.5									
1.6									
1.7									
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ -		$ -		$ -
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	0	EA	$ 14,940	$ -	$ 16,000	$ -	$ 30,940	$ -
2.1b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 26,145	$ -	$ 28,000	$ -	$ 54,145	$ -
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 26,145	$ -	$ 28,000	$ -	$ 54,145	$ -
2.1e	Switch Stand Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1f	Fuse Stand Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1h	Bus Support 1 Ph Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1j	Instrument Transformer Stand Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1k	Arrester Stand Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1m	Wave Trap Stand Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
				$ -	$ -	$ -	$ -	$ -	$ -
2.2	**230kV**								
2.2a	Circuit Breaker Foundations	0	EA	$ 11,952	$ -	$ 12,800	$ -	$ 24,752	$ -
2.2b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	$ -
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	$ -
2.2e	Switch Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2f	Fuse Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.2h	Bus Support 1 Ph Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2j	Instrument Transformer Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2k	Arrester Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2m	Wave Trap Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
				$ -	$ -	$ -	$ -	$ -	$ -
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	0	EA	$ 5,229	$ -	$ 5,600	$ -	$ 10,829	$ -
2.3b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	$ -
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	$ -
2.3e	Switch Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3f	Fuse Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3g	Bus Support 3ph Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3h	Bus Support 1 Ph Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3j	Instrument Transformer Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3k	Arrester Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3m	Wave Trap Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment	0	EA	$ 97,110	$ -	$ 104,000	$ -	$ 201,110	$ -
2.4b	345-115kV Transformer Foundation w/ Oil Containment	0	EA	$ 74,700	$ -	$ 80,000	$ -	$ 154,700	$ -
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad	0	EA	$ 76,194	$ -	$ 81,600	$ -	$ 157,794	$ -
2.5b	Generator Foundation	0	EA	$ 16,000	$ -	$ 17,000	$ -	$ 33,000	$ -
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	0	EA	$ 5,229	$ -	$ 5,600	$ -	$ 10,829	$ -
2.6b		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6c		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION FOUNDATIONS					$ -		$ -		$ -
3. SUBSTATION STRUCTURES									
3.1	**345kV**								
3.1a	Substation A-Frame Structures - Stand alone	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	$ -
3.1b	Substation A-Frame Structures - Shared Column	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	$ -
3.1c	Switch Stands	0	EA	$ 14,800	$ -	$ 14,800	$ -	$ 29,600	$ -
3.1d	Fuse Stand	0	EA	$ 14,800	$ -	$ 14,800	$ -	$ 29,600	$ -
3.1e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1f	Bus Support 1 Ph	0	EA	$ 3,700	$ -	$ 3,700	$ -	$ 7,400	$ -
3.1g	Instrument Transformer Stand	0	EA	$ 1,850	$ -	$ 1,850	$ -	$ 3,700	$ -
3.1h	Arrester Stand	0	EA	$ 1,850	$ -	$ 1,850	$ -	$ 3,700	$ -
3.1j	Wave Trap Stand	0	EA	$ 7,400	$ -	$ 7,400	$ -	$ 14,800	$ -
3.1k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	$ -
3.2b	Substation A-Frame Structures - Shared Column	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	$ -
3.2c	Switch Stands	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	$ -
3.2d	Fuse Stand	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	$ -
3.2e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2f	Bus Support 1 Ph	0	EA	$ 2,775	$ -	$ 2,775	$ -	$ 5,550	$ -
3.2g	Instrument Transformer Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	$ -
3.2h	Arrester Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	$ -
3.2j	Wave Trap Stand	0	EA	$ 5,550	$ -	$ 5,550	$ -	$ 11,100	$ -
3.2k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
3.3	**115kV**								

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.3a	Substation A-Frame Structures - Stand alone	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	$ -
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	$ -
3.3c	Switch Stands	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	$ -
3.3d	Fuse Stand	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	$ -
3.3e	Bus Support 3ph	0	EA	$ 3,330	$ -	$ 3,330	$ -	$ 6,660	$ -
3.3f	Bus Support 1 Ph	0	EA	$ 1,850	$ -	$ 1,850	$ -	$ 3,700	$ -
3.3g	Instrument Transformer Stand	0	EA	$ 740	$ -	$ 740	$ -	$ 1,480	$ -
3.3h	Arrester Stand	0	EA	$ 740	$ -	$ 740	$ -	$ 1,480	$ -
3.3j	Wave Trap Stand	0	EA	$ 3,700	$ -	$ 3,700	$ -	$ 7,400	$ -
3.3k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
TOTAL - SUBSTATION STRUCTURES					$ -		$ -		$ -
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	0	EA	$ 200	$ -	$ 80,000	$ -	$ 80,200	$ -
4.1b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	$ -
4.1c	345 kV - 230 kV Auto Transformer	0	EA	$ -	$ -	$ 750,000	$ -	$ 750,000	$ -
4.1d	345 kV - 115 kV Auto Transformer	0	EA	$ -	$ -	$ 750,000	$ -	$ 750,000	$ -
4.2	**230kV**								
4.2a	Circuit Breakers	0	EA	$ 115,000	$ -	$ 80,000	$ -	$ 195,000	$ -
4.2b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	$ -
4.3	**115kV**								
4.3a	Circuit Breakers	0	EA	$ 52,000	$ -	$ 60,000	$ -	$ 112,000	$ -
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ 60,000	$ -	$ 60,000	$ -
TOTAL - MAJOR EQUIPTMENT					$ -		$ -		$ -
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator	0	EA	$ 40,000	$ -	$ 15,000	$ -	$ 55,000	$ -
5.1b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 35,000	$ -	$ 17,500	$ -		$ -
5.1c	VT'S	0	EA	$ -	$ -	$ 12,000	$ -	$ 12,000	$ -
5.1d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.1e	CCVT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.1f	Arresters	0	EA	$ 6,500	$ -	$ 1,500	$ -	$ 8,000	$ -
5.1g	Wave Traps	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.1h	Station Service Transformers	0	EA	$ 200,000	$ -	$ 50,000	$ -	$ 250,000	$ -
5.1j	Fuses	0	EA	$ 15,000	$ -	$ 7,500	$ -	$ 22,500	$ -
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator	0	EA	$ 35,000	$ -	$ 15,000	$ -	$ 50,000	$ -
5.2b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 30,000	$ -	$ 17,500	$ -	$ 47,500	$ -
5.2c	VT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2e	CCVT'S	0	EA	$ 10,000	$ -	$ 6,000	$ -	$ 16,000	$ -
5.2f	Arresters	0	EA	$ 5,000	$ -	$ 6,000	$ -	$ 11,000	$ -
5.2g	Wave Traps	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	0	EA	$ 33,000	$ -	$ 15,000	$ -	$ 48,000	$ -
5.3b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 28,000	$ -	$ 17,500	$ -	$ 45,500	$ -
5.3c	VT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.3d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.3e	CCVT'S	0	EA	$ 8,000	$ -	$ 8,000	$ -	$ 16,000	$ -
5.3f	Arresters	0	EA	$ 3,420	$ -	$ 6,000	$ -	$ 9,420	$ -
5.3g	Wave Traps	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ -		$ -		$ -
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE	0	EA	$ 551,250	$ -	$ 85,000	$ -	$ 636,250	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6.2	Protection and Telecom Equipment	0	EA	$ 35,000	$ -	$ 12,500	$ -	$ 47,500	$ -
6.3	125VDC Batteries	0	EA	$ 75,000	$ -	$ 25,000	$ -	$ 100,000	$ -
6.4	Control Cables	0	LS	$ -	$ -	$ -	$ -	$ -	$ -
6.5	SCADA and Communications	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.6	Low Voltage AC Distribution	0	EA	$ 50,000	$ -	$ 100,000	$ -	$ 150,000	$ -
6.7	DC Distribution System	0	EA	$ 50,000	$ -	$ 100,000	$ -	$ 150,000	$ -
6.8	Security	0	EA	$ 7,500	$ -	$ 7,500	$ -	$ 15,000	$ -
6.9	Fire Alarm	0	EA	$ 7,500	$ -	$ 7,500	$ -	$ 15,000	$ -
6.10	Generator	0	EA	$ 100,000	$ -	$ 80,000	$ -	$ 180,000	$ -
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ -		$ -		$ -
7. MISC ITEMS									
7.1	Conduit & Cable Trench System	0	LF	$ 185.00	$ -	$ 170.00	$ -	$ 355	$ -
7.2	Rigid Bus, Fittings & Insulators	1	LS	$ 15,008.40	$ 15,008	$ 56,904.00	$ 56,904	$ 71,912	**$ 71,912**
7.3	Strain Bus, Connectors & Insulators	0	LF	$ 13.38	$ -	$ 39.35	$ -	$ 53	$ -
7.4	Grounding System	0	LF	$ 6.93	$ -	$ 32.58	$ -	$ 40	$ -
7.5	Strain Bus Insulators - 345kV	0	EA	$ 2,000	$ -	$ 1,050	$ -	$ 3,050	$ -
7.6	Strain Bus Insulators - 230kV	0	EA	$ 1,400	$ -	$ 750	$ -	$ 2,150	$ -
7.7	Strain Bus Insulators - 115kV	0	EA	$ 1,000	$ -	$ 550	$ -	$ 1,550	$ -
7.8	Low Voltage AC Station Service	0	LS	$ 50,000	$ -	$ 75,000	$ -	$ 125,000	$ -
7.9	SSVT Service	0	LS	$ 45,000	$ -	$ 45,000	$ -	$ 90,000	$ -
7.10	Control Conduits from Trench to Equipment	0	LS	$ 125,000	$ -	$ 125,000	$ -	$ 250,000	$ -
7.11	Misc. Materials (Above and Below Ground)	0	LS	$ 180,000	$ -	$ 180,000	$ -	$ 360,000	$ -
7.12									
7.13									
7.14									
7.15									
7.16									
7.17									
7.18									
7.19									
7.20									
7.21									
7.22									
7.23									
7.24									
7.25									
TOTAL - MISC ITEMS					$ 15,008		$ 56,904		$ 71,912
J. Porter Substation - Install					$ 15,008		$ 56,904		**$ 71,912**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1.0	LS	$ -	$ -	$ 719	$ 719	$ 719	**$ 719**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 3,655	$ 3,655	$ 3,655	**$ 3,655**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 719	$ 719	$ 719	**$ 719**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 719	$ 719	$ 719	**$ 719**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 5,753	$ 5,753	$ 5,753	**$ 5,753**
8.6	LiDAR	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.7	Geotech	4	EA	$ -	$ -	$ 3,500	$ 14,000	$ 3,500	**$ 14,000**
8.8	Surveying/Staking	1	Site	$ -	$ -	$ 503	$ 503	$ 503	**$ 503**
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 1,798	$ 1,798	$ 1,798	**$ 1,798**
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 216	$ 216	$ 216	**$ 216**
8.13	Real Estate Costs (New)	-	LS	$ -	$ -	$ -	$ -	$ -	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
8.14	Real Estate Costs (Incumbent Utility)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.18	Sales Tax on Materials	1	LS	$ 1,201	$ 1,201	$ -	$ -	$ 1,201	**$ 1,201**
8.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 72	$ 72	$ 72	**$ 72**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 1,201		$ 28,155		**$ 29,355**

NextEra - T021 Enterprise Line - (Segment A)

K. Porter Substation - Removal

Estimate Revision: 5

Total: $ 552,493

NextEra - T021 Enterprise Line - (Segment A)	*Supply*	*Installation*	*Total*
K. Porter Substation - Removal			
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ -	$ -	$ -
2. SUBSTATION FOUNDATIONS	$ -	$ 126,600	$ 126,600
3. SUBSTATION STRUCTURES	$ -	$ 206,100	$ 206,100
4. MAJOR EQUIPTMENT	$ -	$ 43,500	$ 43,500
5. SMALL EQUIPTMENT / MATERIALS	$ -	$ 59,500	$ 59,500
6. CONTROL HOUSE / PANELS	$ -	$ -	$ -
7. MISC ITEMS	$ -	$ 38,613	$ 38,613
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ -	$ 78,181	$ 78,181
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ -	$ 552,493	$ 552,493
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ -	$ 552,493	$ 552,493

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
K. Porter Substation - Removal									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	0	ACRES	$ -	$ -	$ 203,000	$ -	$ 203,000	$ -
1.2	Station stone within substation fence.	0	CY	$ -	$ -	$ 75	$ -	$ 75	$ -
1.3	Substation Fence	0	LF	$ -	$ -	$ 150	$ -	$ 150	$ -
1.4									
1.5									
1.6									
1.7									
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ -		$ -		$ -
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1e	Switch Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1f	Fuse Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1k	Arrester Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2	**230kV**								
2.2a	Circuit Breaker Foundations	3	EA	$ -	$ -	$ 7,200	$ 21,600	$ 7,200	**$ 21,600**
2.2b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ 32,000	$ -	$ 32,000	$ -
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ 22,000	$ -	$ 22,000	$ -
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	5	EA	$ -	$ -	$ 11,000	$ 55,000	$ 11,000	**$ 55,000**
2.2e	Switch Stand Foundations	5	EA	$ -	$ -	$ 5,200	$ 26,000	$ 5,200	**$ 26,000**
2.2f	Fuse Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.2g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.2j	Instrument Transformer Stand Foundations	4	EA	$ -	$ -	$ 2,400	$ 9,600	$ 2,400	**$ 9,600**
2.2k	Arrester Stand Foundations	6	EA	$ -	$ -	$ 2,400	$ 14,400	$ 2,400	**$ 14,400**
2.2m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3e	Switch Stand Foundations	0	EA	$ -	$ -	$ 5,200	$ -	$ 5,200	$ -
2.3f	Fuse Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3k	Arrester Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4b	345-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ 42,000	$ -	$ 42,000	$ -
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad (40'x125')	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5b	Generator Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6b		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6c		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION FOUNDATIONS					$ -		$ 126,600		$ 126,600
3. SUBSTATION STRUCTURES									
3.1	**345kV**								
3.1a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1c	Switch Stands	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1d	Fuse Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1f	Bus Support 1 Ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1g	Instrument Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1h	Arrester Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1j	Wave Trap Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ 27,000	$ -	$ 27,000	$ -
3.2b	Substation A-Frame Structures - Shared Column	5	EA	$ -	$ -	$ 27,000	$ 135,000	$ 27,000	**$ 135,000**
3.2c	Switch Stands	6	EA	$ -	$ -	$ 9,750	$ 58,500	$ 9,750	**$ 58,500**
3.2d	Fuse Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2f	Bus Support 1 Ph	0	EA	$ -	$ -	$ 2,250	$ -	$ 2,250	$ -
3.2g	Instrument Transformer Stand	6	EA	$ -	$ -	$ 1,050	$ 6,300	$ 1,050	**$ 6,300**
3.2h	Arrester Stand	6	EA	$ -	$ -	$ 1,050	$ 6,300	$ 1,050	**$ 6,300**
3.2j	Wave Trap Stand	0	EA	$ -	$ -	$ 4,500	$ -	$ 4,500	$ -
3.2k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.3	**115kV**								
3.3a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ 15,000	$ -	$ 15,000	**$** -
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
3.3c	Switch Stands	0	EA	$ -	$ -	$ 6,450	$ -	$ 6,450	**$** -
3.3d	Fuse Stand	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
3.3e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
3.3f	Bus Support 1 Ph	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
3.3g	Instrument Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
3.3h	Arrester Stand	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
3.3j	Wave Trap Stand	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
3.3k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
TOTAL - SUBSTATION STRUCTURES					$ -		$ 206,100		$ 206,100
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
4.1b	Capacitor Banks	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
4.1c		0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
4.1d									
4.2	**230kV**								
4.2a	Circuit Breakers	3	EA	$ -	$ -	$ 14,500	$ 43,500	$ 14,500	**$ 43,500**
4.2b	Capacitor Banks	0	EA	$ -	$ -	$ 42,000	$ -	$ 42,000	**$** -
4.3	**115kV**								
4.3a	Circuit Breakers	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
TOTAL - MAJOR EQUIPTMENT					$ -		$ 43,500		$ 43,500
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	**$** -
5.1b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	**$** -
5.1c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
5.1d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
5.1e	CCVT'S	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	**$** -
5.1f	Arresters	0	EA	$ -	$ -	$ 1,500	$ -	$ 1,500	**$** -
5.1g	Wave Traps	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	**$** -
5.1h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
5.1j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator	2	EA	$ -	$ -	$ 5,500	$ 11,000	$ 5,500	**$ 11,000**
5.2b	Disconnect Switches - 3ph w/ manual operator	3	EA	$ -	$ -	$ 5,500	$ 16,500	$ 5,500	**$ 16,500**
5.2c	VT'S	2	EA	$ -	$ -	$ 1,500	$ 3,000	$ 1,500	**$ 3,000**
5.2d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
5.2e	CCVT'S	6	EA	$ -	$ -	$ 1,500	$ 9,000	$ 1,500	**$ 9,000**
5.2f	Arresters	6	EA	$ -	$ -	$ 2,500	$ 15,000	$ 2,500	**$ 15,000**
5.2g	Wave Traps	2	EA	$ -	$ -	$ 2,500	$ 5,000	$ 2,500	**$ 5,000**
5.2h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
5.2j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
5.3b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	**$** -
5.3c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
5.3d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
5.3e	CCVT'S	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
5.3f	Arresters	0	EA	$ -	$ -	$ 1,500	$ -	$ 1,500	**$** -
5.3g	Wave Traps	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
5.3h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
5.3j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ -		$ 59,500		$ 59,500
6. CONTROL HOUSE / PANELS / GENERATOR									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6.1	CONTROL HOUSE	0	EA	$ -	$ -	$ 150,000	$ -	$ 150,000	$ -
6.2	PANELS	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.3	125VDC Batteries	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.4	Protection and Telecom Equipment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.5	SCADA and Communications	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.6	Low Voltage AC Distribution	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.7	DC Distribution System	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.8	Security	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.9	Fire Alarm	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.10	Generator	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ -		$ -		$ -
7. MISC ITEMS									
7.1	Conduit & Cable Trench System	0	EA	$ -	$ -	$ 42,000.00	$ -	$ 42,000	$ -
7.2	Rigid Bus, Fittings & Insulators	1	L.S.	$ -	$ -	$ 18,937.50	$ 18,938	$ 18,938	**$ 18,938**
7.3	Strain Bus, Connectors & Insulators	1	L.S.	$ -	$ -	$ 19,675.00	$ 19,675	$ 19,675	**$ 19,675**
7.4	Grounding System	0	EA	$ -	$ -	$ 42,000.00	$ -	$ 42,000	$ -
7.5									
7.6									
7.7									
7.8									
7.9									
7.10									
7.11									
7.12									
7.13									
7.14									
7.15									
TOTAL - MISC ITEMS					$ -		$ 38,613		$ 38,613
K. Porter Substation - Removal					$ -		$ 474,313		**$ 474,313**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1	LS	$ -	$ -	$ 4,743	$ 4,743	$ 4,743	**$ 4,743**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 24,109	$ 24,109	$ 24,109	**$ 24,109**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 4,743	$ 4,743	$ 4,743	**$ 4,743**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 4,743	$ 4,743	$ 4,743	**$ 4,743**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 37,945	$ 37,945	$ 37,945	**$ 37,945**
8.6	LiDAR	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.7	Geotech	-	EA	$ -	$ -	$ 3,500	$ -	$ 3,500	$ -
8.8	Surveying/Staking	-	Site	$ -	$ -	$ 3,320	$ -	$ 3,320	$ -
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	-	LS	$ -	$ -	$ 11,858	$ -	$ 11,858	$ -
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 1,423	$ 1,423	$ 1,423	**$ 1,423**
8.13	Real Estate Costs (New)	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.14	Real Estate Costs (Incumbent Utility)	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.18	Sales Tax on Materials	1	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 474	$ 474	$ 474	**$ 474**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ -		$ 78,181		**$ 78,181**

NextEra - T021 Enterprise Line - (Segment A)

L. Interconnection Edic Station

Estimate Revision: 5

Total: $ 2,126,997

NextEra - T021 Enterprise Line - (Segment A)	*Supply*	*Installation*	*Total*
L. Interconnection Edic Station			
1. CLEARING & ACCESS	$ -	$ 367,850	$ 367,850
2. FOUNDATIONS	$ 168,366	$ 170,169	$ 338,536
3. STRUCTURES	$ 501,469	$ 321,821	$ 823,289
4. CONDUCTOR, SHIELDWIRE, OPGW	$ -	$ -	$ -
5. INSULATORS, FITTINGS, HARDWARE	$ 160,000	$ 94,400	$ 254,400
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 66,387	$ 276,535	$ 342,922
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 896,222	$ 1,230,776	$ 2,126,997
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 896,222	$ 1,230,776	$ 2,126,997

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
L. Interconnection Edic Station									
1. CLEARING & ACCESS									
1.1	Clearing the ROW - Heavy (mowing & clearing)	-	Acre	$ -	$ -	$ 15,000	$ -	$ 15,000	$ -
1.2	Clearing the ROW - Light (mowing)	2.0	Acre	$ -	$ -	$ 5,000	$ 10,000	$ 5,000	**$ 10,000**
1.3	Access Road	-	LF	$ -	$ -	$ 45	$ -	$ 45	$ -
1.4	Silt Fence	3,500.0	LF	$ -	$ -	$ 4	$ 14,000	$ 4	**$ 14,000**
1.5	Matting - Access and ROW	3,500.0	LF	$ -	$ -	$ 70	$ 245,000	$ 70	**$ 245,000**
1.6	Matting - To Work Area	300.0	LF	$ -	$ -	$ 70	$ 21,000	$ 70	**$ 21,000**
1.7	Snow Removal	-	LS	$ -	$ -	$ 516,800	$ -	$ 516,800	$ -
1.8	ROW Restoration	0.5	Mile	$ -	$ -	$ 10,000	$ 5,000	$ 10,000	**$ 5,000**
1.9	Work Pads	20,000.0	SF	$ -	$ -	$ 4	$ 70,400	$ 4	**$ 70,400**
1.10	Restoration for Work Pad areas	4,000.0	SF	$ -	$ -	$ 0.2	$ 600	$ 0	**$ 600**
1.11	Temporary Access Bridge	-	EA	$ -	$ -	$ 20,035	$ -	$ 20,035	$ -
1.12	Air Bridge	-	EA	$ -	$ -	$ 14,445	$ -	$ 14,445	$ -
1.13	Stabilized Construction Entrance	-	EA	$ -	$ -	$ 4,580	$ -	$ 4,580	$ -
1.14	Maintenance and Protection of Traffic on Public Roads	-	EA	$ -	$ -	$ 4,130	$ -	$ 4,130	$ -
1.15	Gates	-	EA	$ 2,000	$ -	$ 2,500	$ -	$ 4,500	$ -
1.16	Culverts / Misc. Access	-	EA	$ 750	$ -	$ 1,250	$ -	$ 2,000	$ -
1.17	Concrete Washout Station	1	EA	$ -	$ -	$ 1,850	$ 1,850	$ 1,850	**$ 1,850**
1.18					$ -		$ -		$ -
1.19					$ -		$ -		$ -
1.20	Crushed Rock	0	CY	$ 27	$ -	$ 75	$ -	$ 102	$ -
TOTAL - CLEARING & ACCESS					$ -		$ 367,850		$ 367,850
2. FOUNDATIONS									
2.1	Foundation – Drilled Pier – 8'X 27'	3	EA	$ 41,332	$ 123,995	$ 41,774	$ 125,322	$ 83,106	**$ 249,317**
2.2	Foundation – Drilled Pier – 8'X 29'	1	EA	$ 44,372	$ 44,372	$ 44,847	$ 44,847	$ 89,219	**$ 89,219**
2.3	Rock Excavation Adder	-	CY	$ -	$ -	$ 2,000	$ -	$ 2,000	$ -
2.4									
2.5									
2.6									
2.7									
2.8									
2.9									
2.10									
2.11									
2.12									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.13									
2.14									
2.15									
TOTAL - FOUNDATIONS					$ 168,366		$ 170,169		$ 338,536
3. STRUCTURES									
3.1	1-CKT 345KV VERTICAL MEDIUM ANGLE DEADEND (15°-60°) – 105'	3	Structure	$ 98,883	$ 296,648	$ 59,330	$ 177,989	$ 158,212	**$ 474,636**
3.2	2-CKT 345KV VERTICAL MEDIUM ANGLE DEADEND (15°-60°) - 115'	1	Structure	$ 202,797	$ 202,797	$ 121,678	$ 121,678	$ 324,475	**$ 324,475**
3.3	Install Grounding and Grounding Accessories	4	Pole	$ 506	$ 2,024	$ 5,539	$ 22,154	$ 6,045	**$ 24,178**
3.4									
3.5									
3.6									
3.7									
3.8									
3.9									
3.10									
3.11									
3.12									
3.13									
3.14									
3.15									
TOTAL - STRUCTURES					$ 501,469		$ 321,821		$ 823,289
4. CONDUCTOR, SHIELDWIRE, OPGW									
4.1	345kV - (2) 954kcmil 54/7 ACSS "Cardinal"	-	LF	$ 3.53	$ -	$ 5.00	$ -	$ 8.53	**$ -**
4.2	(1) OPGW 36 Fiber AC-33/38/571	-	LF	$ 1.55	$ -	$ 5.00	$ -	$ 6.55	**$ -**
4.3	(1) 3/8" EHS7 Steel	-	LF	$ 0.72	$ -	$ 5.00	$ -	$ 5.72	**$ -**
4.5	Remove Existing Cable From Existing Structures	-	Mile	$ -	$ -	$ 30,000	$ -	$ 30,000.00	**$ -**
4.6	Remove Existing OPGW Cable	-	Mile	$ -	$ -	$ 12,000	$ -	$ 12,000.00	**$ -**
4.7	Remove Existing EH7	-	Mile	$ -	$ -	$ 12,000	$ -	$ 12,000.00	**$ -**
4.8									
4.9		-							
4.10	Rider Poles - Relocated	-	Set	$ -	$ -	$ 3,500	$ -	$ 3,500.00	**$ -**
4.11	Rider Poles	-	EA	$ 1,750	$ -	$ 3,500	$ -	$ 5,250.00	**$ -**
TOTAL: CONDUCTOR, SHIELDWIRE, OPGW:					$ -		$ -		**$ -**
5. INSULATOR, FITTINGS, HARDWARE									
5.1	345kV Tangent (1-Group of 18-Bells Each Assembly)								
5.2	115kV Tangent (1-Group of 9-Bells Each Assembly)								
5.3	345kV Dead-end & Angle Insulators (1-Group of 18-Bells Each Assembly)	60	Assembly	$ 1,800	$ 108,000	$ 720	$ 43,200	$ 2,520	**$ 151,200**
5.4	115kV Dead-end & Angle Insulators (1-Group of 9-Bells Each Assembly)								
5.5	OPGW Assembly - Tangent	-	Assembly	$ 200	$ -	$ 150	$ -	$ 350	**$ -**
5.6	OPGW Assembly - Angle / DE	4	Assembly	$ 250	$ 1,000	$ 150	$ 600	$ 400	**$ 1,600**
5.7	OHSW Assembly - Angle / DE	4	Assembly	$ 250	$ 1,000	$ 150	$ 600	$ 400	**$ 1,600**
5.8	OPGW Splice Boxes	-	Set	$ 1,746	$ -	$ 2,274	$ -	$ 4,020	**$ -**
5.9	OPGW Splice & Test	-	EA	$ 2,520	$ -	$ 2,520	$ -	$ 5,040	**$ -**
5.10	Spacer - Conductor	-	EA	$ 50	$ -	$ 35	$ -	$ 85	**$ -**
5.11	Vibration Dampers - Conductor	-	EA	$ 35	$ -	$ 35	$ -	$ 70	**$ -**
5.12	Shieldwire / OPGW Dampers, Misc. Fittings	-	EA	$ 27	$ -	$ 35	$ -	$ 62	**$ -**
5.13	Guys, Anchors, and Accessories	-	EA	$ 720	$ -	$ 885	$ -	$ 1,605	**$ -**
5.14	Misc. materials (Signs and Markers)	-	Mile	$ 770	$ -	$ 1,006	$ -	$ 1,776	**$ -**
5.15									
5.16									
5.17									
5.18									
5.19	Interconnection Arrangements	1	EA	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 100,000	**$ 100,000**
5.20									
TOTAL - INSULATOR, FITTINGS, HARDWARE					$ 160,000		$ 94,400		$ 254,400
L. Interconnection Edic Station					$ 829,835		$ 954,240		$ 1,784,075
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
6.1	Mob / Demob	1	LS	$ -	$ -	$ 17,841	$ 17,841	$ 17,841	**$ 17,841**
	Project Management, Material Handling & Amenities								

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 90,685	$ 90,685	$ 90,685	**$ 90,685**
6.3	Utility PM and Project Oversite	1	LS		$ -	$ 17,841	$ 17,841	$ 17,841	**$ 17,841**
6.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 17,841	$ 17,841	$ 17,841	**$ 17,841**
	Engineering								
6.5	Design Engineering	1	LS	$ -	$ -	$ 89,204	$ 89,204	$ 89,204	**$ 89,204**
6.6	LiDAR	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.7	Geotech	1	LS	$ -	$ -	$ 3,500	$ 3,500	$ 3,500	**$ 3,500**
6.8	Surveying/Staking	1	LS	$ -	$ -	$ 12,489	$ 12,489	$ 12,489	**$ 12,489**
	Testing & Commissioning								
6.9	Testing & Commissioning of T-Line and Equipment	1	EA	$ -	$ -	$ 20,000	$ 20,000	$ 20,000	**$ 20,000**
	Permitting and Additional Costs								
6.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.12	Warranties / LOC's	1	LS	$ -	$ -	$ 5,352	$ 5,352	$ 5,352	**$ 5,352**
6.13	Real Estate Costs (New ROW)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.14	Real Estate Costs (Incumbent Utility ROW)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.15	Legal Fees	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.18	Sales Tax on Materials	1	LS	$ 66,387	$ 66,387	$ -	$ -	$ 66,387	**$ 66,387**
6.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 1,784	$ 1,784	$ 1,784	**$ 1,784**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 66,387		$ 276,535		**$ 342,922**

NextEra - T021 Enterprise Line - (Segment A)

M. Interconnection New Scotland Station

Estimate Revision: 5

Total: $ 3,108,364

NextEra - T021 Enterprise Line - (Segment A)	*Supply*	*Installation*	*Total*
M. Interconnection New Scotland Station			
1. CLEARING & ACCESS	$ -	$ 367,850	$ 367,850
2. FOUNDATIONS	$ 365,657	$ 473,093	$ 838,749
3. STRUCTURES	$ 655,465	$ 445,628	$ 1,101,092
4. CONDUCTOR, SHIELDWIRE, OPGW	$ 3,555	$ 26,100	$ 29,655
5. INSULATORS, FITTINGS, HARDWARE	$ 161,130	$ 95,795	$ 256,925
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 94,864	$ 419,228	$ 514,093
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 1,280,670	$ 1,827,693	$ 3,108,364
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 1,280,670	$ 1,827,693	$ 3,108,364

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
M. Interconnection New Scotland Station									
1. CLEARING & ACCESS									
1.1	Clearing the ROW - Heavy (mowing & clearing)	-	Acre	$ -	$ -	$ 15,000	$ -	$ 15,000	$ -
1.2	Clearing the ROW - Light (mowing)	2.0	Acre	$ -	$ -	$ 5,000	$ 10,000	$ 5,000	**$ 10,000**
1.3	Access Road	-	LF	$ -	$ -	$ 45	$ -	$ 45	$ -
1.4	Silt Fence	3,500.0	LF	$ -	$ -	$ 4	$ 14,000	$ 4	**$ 14,000**
1.5	Matting - Access and ROW	3,500.0	LF	$ -	$ -	$ 70	$ 245,000	$ 70	**$ 245,000**
1.6	Matting - To Work Area	300.0	LF	$ -	$ -	$ 70	$ 21,000	$ 70	**$ 21,000**
1.7	Snow Removal	-	LS	$ -	$ -	$ 516,800	$ -	$ 516,800	$ -
1.8	ROW Restoration	0.5	Mile	$ -	$ -	$ 10,000	$ 5,000	$ 10,000	**$ 5,000**
1.9	Work Pads	20,000.0	SF	$ -	$ -	$ 4	$ 70,400	$ 4	**$ 70,400**
1.10	Restoration for Work Pad areas	4,000.0	SF	$ -	$ -	$ 0.2	$ 600	$ 0	**$ 600**
1.11	Temporary Access Bridge	-	EA	$ -	$ -	$ 20,035	$ -	$ 20,035	$ -
1.12	Air Bridge	-	EA	$ -	$ -	$ 14,445	$ -	$ 14,445	$ -
1.13	Stabilized Construction Entrance	-	EA	$ -	$ -	$ 4,580	$ -	$ 4,580	$ -
1.14	Maintenance and Protection of Traffic on Public Roads	-	EA	$ -	$ -	$ 4,130	$ -	$ 4,130	$ -
1.15	Gates	-	EA	$ 2,000	$ -	$ 2,500	$ -	$ 4,500	$ -
1.16	Culverts / Misc. Access	-	EA	$ 750	$ -	$ 1,250	$ -	$ 2,000	$ -
1.17	Concrete Washout Station	1	EA	$ -	$ -	$ 1,850	$ 1,850	$ 1,850	**$ 1,850**
1.18					$ -		$ -		$ -
1.19					$ -		$ -		$ -
1.20	Crushed Rock	0	CY	$ 27	$ -	$ 75	$ -	$ 102	$ -
TOTAL - CLEARING & ACCESS					$ -		$ 367,850		$ 367,850
2. FOUNDATIONS									
2.1	Foundation – Drilled Pier – 8'X 50'	3	EA	$ 76,500	$ 229,501	$ 77,320	$ 231,959	$ 153,820	**$ 461,459**
2.2	Foundation – Drilled Pier – 8'X 89'	1	EA	$ 136,156	$ 136,156	$ 137,614	$ 137,614	$ 273,770	**$ 273,770**
2.3	Rock Excavation Adder	51.8	CY	$ -	$ -	$ 2,000	$ 103,520	$ 2,000	**$ 103,520**
2.4									
2.5									
2.6									
2.7									
2.8									
2.9									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.10									
2.11									
2.12									
2.13									
2.14									
2.15									
TOTAL - FOUNDATIONS					$ 365,657		$ 473,093		$ 838,749
3. STRUCTURES									
3.1	1-CKT 345KV 3-POLE MEDIUM ANGLE DEADEND (15°-60°) - 115'	3	Structure	$ 178,026	$ 534,077	$ 106,815	$ 320,446	$ 284,841	**$ 854,522**
3.2	1-CKT 345KV VERTICAL MEDIUM ANGLE DEADEND (15°-60°) - 115'	1	Structure	$ 116,328	$ 116,328	$ 69,797	$ 69,797	$ 186,125	**$ 186,125**
3.3	Install Grounding and Grounding Accessories	10	Structure	$ 506	$ 5,060	$ 5,539	$ 55,385	$ 6,045	**$ 60,445**
3.4					$ -		$ -		
3.5									
3.6					$ -		$ -		
3.7					$ -		$ -		
3.8					$ -		$ -		
3.9					$ -		$ -		
3.10					$ -		$ -		
3.11					$ -		$ -		
3.12					$ -		$ -		
3.13					$ -		$ -		
3.14					$ -		$ -		
3.15					$ -		$ -		
TOTAL - STRUCTURES					$ 655,465		$ 445,628		$ 1,101,092
4. CONDUCTOR, SHIELDWIRE, OPGW									
4.1	345kV - (2) 954kcmil 54/7 ACSS "Cardinal"	1,500	LF	$ 1.90	$ 2,850	$ 5.00	$ 7,500	$ 6.90	**$ 10,350**
4.2	(1) OPGW 36 Fiber AC-33/38/571	-	LF	$ 1.35	$ -	$ 5.00	$ -	$ 6.35	**$ -**
4.3	(1) 3/8" EHS7 Steel	1,500	LF	$ 0.47	$ 705	$ 5.00	$ 7,500	$ 5.47	**$ 8,205**
4.5	Remove Existing 345kV Cable From Existing Structures	0.3	Mile	$ -	$ -	$ 30,000	$ 7,500	$ 30,000.00	**$ 7,500**
4.6	Remove Existing OPGW Cable	-	Mile	$ -	$ -	$ 12,000	$ -	$ 12,000.00	**$ -**
4.7	Remove Existing EH7	0.3	Mile	$ -	$ -	$ 12,000	$ 3,600	$ 12,000.00	**$ 3,600**
4.8									
4.9									
4.10	Rider Poles - Relocated	-	Set	$ -	$ -	$ 3,500	$ -	$ 3,500.00	**$ -**
4.11	Rider Poles	-	EA	$ 1,750	$ -	$ 3,500	$ -	$ 5,250.00	**$ -**
TOTAL: CONDUCTOR, SHIELDWIRE, OPGW:					$ 3,555		$ 26,100		**$ 29,655**
5. INSULATOR, FITTINGS, HARDWARE									
5.1	345kV Tangent (1-Group of 18-Bells Each Assembly)	-	Assembly	$ 1,800	$ -	$ 720	$ -	$ 2,520	**$ -**
5.2	115kV Tangent (1-Group of 9-Bells Each Assembly)	-	Assembly	$ 900	$ -	$ 560	$ -	$ 1,460	**$ -**
5.3	345kV Dead-end & Angle Insulators (1-Group of 18-Bells Each Assembly)	60	Assembly	$ 1,800	$ 108,000	$ 720	$ 43,200	$ 2,520	**$ 151,200**
5.4	115kV Dead-end & Angle Insulators (1-Group of 9-Bells Each Assembly)	-	Assembly	$ 900	$ -	$ 560	$ -	$ 1,460	**$ -**
5.5	OPGW Assembly - Tangent	-	Assembly	$ 200	$ -	$ 150	$ -	$ 350	**$ -**
5.6	OPGW Assembly - Angle / DE	-	Assembly	$ 250	$ -	$ 150	$ -	$ 400	**$ -**
5.7	OHSW Assembly - Angle / DE	4	Assembly	$ 250	$ 1,000	$ 150	$ 600	$ 400	**$ 1,600**
5.8	OPGW Splice Boxes	-	Set	$ 1,746	$ -	$ 2,274	$ -	$ 4,020	**$ -**
5.9	OPGW Splice & Test	-	EA	$ 2,520	$ -	$ 2,520	$ -	$ 5,040	**$ -**
5.10	Spacer - Conductor	9	EA	$ 50	$ 450	$ 35	$ 315	$ 85	**$ 765**
5.11	Vibration Dampers - Conductor	48	EA	$ 35	$ 1,680	$ 35	$ 1,680	$ 70	**$ 3,360**
5.12	Shieldwire / OPGW Dampers, Misc. Fittings	-	EA	$ 27	$ -	$ 35	$ -	$ 62	**$ -**
5.13	Guys, Anchors, and Accessories	-	EA	$ 720	$ -	$ 885	$ -	$ 1,605	**$ -**
5.14	Misc. materials (Signs and Markers)	-	Mile	$ 770	$ -	$ 1,006	$ -	$ 1,776	**$ -**
5.15					$ -		$ -		**$ -**
5.16	Interconnection Arrangements	1	EA	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 100,000	**$ 100,000**
5.17					$ -		$ -		**$ -**
5.18					$ -		$ -		**$ -**
5.19					$ -		$ -		**$ -**
5.20					$ -		$ -		**$ -**
TOTAL - INSULATOR, FITTINGS, HARDWARE					$ 161,130		$ 95,795		$ 256,925
M. Interconnection New Scotland Station					$ 1,185,806		$ 1,408,465		$ 2,594,271
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6.1	Mob / Demob	1	LS	$ -	$ -	$ 25,943	$ 25,943	$ 25,943	**$ 25,943**
	Project Management, Material Handling & Amenities								
6.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 131,867	$ 131,867	$ 131,867	**$ 131,867**
6.3	Utility PM and Project Oversite	1	LS		$ -	$ 25,943	$ 25,943	$ 25,943	**$ 25,943**
6.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 25,943	$ 25,943	$ 25,943	**$ 25,943**
	Engineering								
6.5	Design Engineering	1	LS	$ -	$ -	$ 129,714	$ 129,714	$ 129,714	**$ 129,714**
6.6	LiDAR	1	LS	$ -	$ -	$ 7,783	$ 7,783	$ 7,783	**$ 7,783**
6.7	Geotech	1	Location	$ -	$ -	$ 3,500	$ 3,500	$ 3,500	**$ 3,500**
6.8	Surveying/Staking	1	LS	$ -	$ -	$ 18,160	$ 18,160	$ 18,160	**$ 18,160**
	Testing & Commissioning								
6.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 40,000	$ 40,000	$ 40,000	**$ 40,000**
	Permitting and Additional Costs								
6.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.12	Warranties / LOC's	1	LS	$ -	$ -	$ 7,783	$ 7,783	$ 7,783	**$ 7,783**
6.13	Real Estate Costs (New ROW)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.14	Real Estate Costs (Incumbent Utility ROW)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.18	Sales Tax on Materials	1	LS	$ 94,864	$ 94,864	$ -	$ -	$ 94,864	**$ 94,864**
6.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 2,594	$ 2,594	$ 2,594	**$ 2,594**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 94,864		$ 419,228		**$ 514,093**

NextEra - T021 Enterprise Line - (Segment A)

J. Porter Substation - Install

Estimate Revision: 5

Total: $ 1,051,306

NextEra - T021 Enterprise Line - (Segment A)	*Supply*	*Installation*	*Total*
J. Porter Substation - Install			
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ -	$ -	$ -
2. SUBSTATION FOUNDATIONS	$ -	$ -	$ -
3. SUBSTATION STRUCTURES	$ -	$ -	$ -
4. MAJOR EQUIPTMENT	$ -	$ -	$ -
5. SMALL EQUIPTMENT / MATERIALS	$ -	$ -	$ -
6. CONTROL HOUSE / PANELS	$ 425,000	$ 425,000	$ 850,000
7. MISC ITEMS	$ -	$ -	$ -
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 34,000	$ 167,306	$ 201,306
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 459,000	$ 592,306	$ 1,051,306
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 459,000	$ 592,306	$ 1,051,306

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
J. Porter Substation - Install									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	0	ACRES	$ -	$ -	$ 203,000	$ -	$ 203,000	$ -
1.2	Station stone within substation fence.	0	CY	$ 27	$ -	$ 75	$ -	$ 102	$ -
1.3	Substation Fence	0	LF	$ 100	$ -	$ 100	$ -	$ 200	$ -
1.4	Permanent Access Road - 20'-Wide	0	LF	$ 35	$ -	$ 285	$ -	$ 320	$ -
1.5									
1.6									
1.7									
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ -		$ -		$ -
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	0	EA	$ 14,940	$ -	$ 16,000	$ -	$ 30,940	$ -
2.1b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 26,145	$ -	$ 28,000	$ -	$ 54,145	$ -
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 26,145	$ -	$ 28,000	$ -	$ 54,145	$ -
2.1e	Switch Stand Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1f	Fuse Stand Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1h	Bus Support 1 Ph Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1j	Instrument Transformer Stand Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1k	Arrester Stand Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1m	Wave Trap Stand Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
				$ -	$ -	$ -	$ -	$ -	$ -
2.2	**230kV**								
2.2a	Circuit Breaker Foundations	0	EA	$ 11,952	$ -	$ 12,800	$ -	$ 24,752	$ -
2.2b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	$ -
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	$ -
2.2e	Switch Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.2f	Fuse Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2h	Bus Support 1 Ph Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2j	Instrument Transformer Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2k	Arrester Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2m	Wave Trap Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
				$ -	$ -	$ -	$ -	$ -	$ -
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	0	EA	$ 5,229	$ -	$ 5,600	$ -	$ 10,829	$ -
2.3b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	$ -
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	$ -
2.3e	Switch Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3f	Fuse Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3g	Bus Support 3ph Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3h	Bus Support 1 Ph Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3j	Instrument Transformer Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3k	Arrester Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3m	Wave Trap Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment	0	EA	$ 97,110	$ -	$ 104,000	$ -	$ 201,110	$ -
2.4b	345-115kV Transformer Foundation w/ Oil Containment	0	EA	$ 74,700	$ -	$ 80,000	$ -	$ 154,700	$ -
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad	0	EA	$ 76,194	$ -	$ 81,600	$ -	$ 157,794	$ -
2.5b	Generator Foundation	0	EA	$ 16,000	$ -	$ 17,000	$ -	$ 33,000	$ -
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	0	EA	$ 5,229	$ -	$ 5,600	$ -	$ 10,829	$ -
2.6b		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6c		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION FOUNDATIONS					$ -		$ -		$ -
3. SUBSTATION STRUCTURES									
3.1	**345kV**								
3.1a	Substation A-Frame Structures - Stand alone	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	$ -
3.1b	Substation A-Frame Structures - Shared Column	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	$ -
3.1c	Switch Stands	0	EA	$ 14,800	$ -	$ 14,800	$ -	$ 29,600	$ -
3.1d	Fuse Stand	0	EA	$ 14,800	$ -	$ 14,800	$ -	$ 29,600	$ -
3.1e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1f	Bus Support 1 Ph	0	EA	$ 3,700	$ -	$ 3,700	$ -	$ 7,400	$ -
3.1g	Instrument Transformer Stand	0	EA	$ 1,850	$ -	$ 1,850	$ -	$ 3,700	$ -
3.1h	Arrester Stand	0	EA	$ 1,850	$ -	$ 1,850	$ -	$ 3,700	$ -
3.1j	Wave Trap Stand	0	EA	$ 7,400	$ -	$ 7,400	$ -	$ 14,800	$ -
3.1k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	$ -
3.2b	Substation A-Frame Structures - Shared Column	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	$ -
3.2c	Switch Stands	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	$ -
3.2d	Fuse Stand	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	$ -
3.2e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2f	Bus Support 1 Ph	0	EA	$ 2,775	$ -	$ 2,775	$ -	$ 5,550	$ -
3.2g	Instrument Transformer Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	$ -
3.2h	Arrester Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.2j	Wave Trap Stand	0	EA	$ 5,550	$ -	$ 5,550	$ -	$ 11,100	$ -
3.2k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
3.3	**115kV**								
3.3a	Substation A-Frame Structures - Stand alone	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	$ -
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	$ -
3.3c	Switch Stands	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	$ -
3.3d	Fuse Stand	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	$ -
3.3e	Bus Support 3ph	0	EA	$ 3,330	$ -	$ 3,330	$ -	$ 6,660	$ -
3.3f	Bus Support 1 Ph	0	EA	$ 1,850	$ -	$ 1,850	$ -	$ 3,700	$ -
3.3g	Instrument Transformer Stand	0	EA	$ 740	$ -	$ 740	$ -	$ 1,480	$ -
3.3h	Arrester Stand	0	EA	$ 740	$ -	$ 740	$ -	$ 1,480	$ -
3.3j	Wave Trap Stand	0	EA	$ 3,700	$ -	$ 3,700	$ -	$ 7,400	$ -
3.3k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
TOTAL - SUBSTATION STRUCTURES					$ -		$ -		$ -
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	0	EA	$ 200	$ -	$ 80,000	$ -	$ 80,200	$ -
4.1b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	$ -
4.1c	345 kV - 230 kV Auto Transformer	0	EA	$ -	$ -	$ 750,000	$ -	$ 750,000	$ -
4.1d	345 kV - 115 kV Auto Transformer	0	EA	$ -	$ -	$ 750,000	$ -	$ 750,000	$ -
4.2	**230kV**								
4.2a	Circuit Breakers	0	EA	$ 115,000	$ -	$ 80,000	$ -	$ 195,000	$ -
4.2b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	$ -
4.3	**115kV**								
4.3a	Circuit Breakers	0	EA	$ 52,000	$ -	$ 60,000	$ -	$ 112,000	$ -
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ 60,000	$ -	$ 60,000	$ -
TOTAL - MAJOR EQUIPTMENT					$ -		$ -		$ -
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator	0	EA	$ 40,000	$ -	$ 15,000	$ -	$ 55,000	$ -
5.1b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 35,000	$ -	$ 17,500	$ -		$ -
5.1c	VT'S	0	EA	$ -	$ -	$ 12,000	$ -	$ 12,000	$ -
5.1d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.1e	CCVT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.1f	Arresters	0	EA	$ 6,500	$ -	$ 1,500	$ -	$ 8,000	$ -
5.1g	Wave Traps	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.1h	Station Service Transformers	0	EA	$ 200,000	$ -	$ 50,000	$ -	$ 250,000	$ -
5.1j	Fuses	0	EA	$ 15,000	$ -	$ 7,500	$ -	$ 22,500	$ -
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator	0	EA	$ 35,000	$ -	$ 15,000	$ -	$ 50,000	$ -
5.2b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 30,000	$ -	$ 17,500	$ -	$ 47,500	$ -
5.2c	VT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2e	CCVT'S	0	EA	$ 10,000	$ -	$ 6,000	$ -	$ 16,000	$ -
5.2f	Arresters	0	EA	$ 5,000	$ -	$ 6,000	$ -	$ 11,000	$ -
5.2g	Wave Traps	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	0	EA	$ 33,000	$ -	$ 15,000	$ -	$ 48,000	$ -
5.3b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 28,000	$ -	$ 17,500	$ -	$ 45,500	$ -
5.3c	VT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.3d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.3e	CCVT'S	0	EA	$ 8,000	$ -	$ 8,000	$ -	$ 16,000	$ -
5.3f	Arresters	0	EA	$ 3,420	$ -	$ 6,000	$ -	$ 9,420	$ -
5.3g	Wave Traps	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
5.3j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ -		$ -		$ -
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE	0	EA	$ 551,250	$ -	$ 85,000	$ -	$ 636,250	$ -
6.2	Protection and Telecom Equipment	1	L.S.	$ 425,000	$ 425,000	$ 425,000	$ 425,000	$ 850,000	**$ 850,000**
6.3	125VDC Batteries	0	EA	$ 75,000	$ -	$ 25,000	$ -	$ 100,000	$ -
6.4	Control Cables	0	LS	$ -	$ -	$ -	$ -	$ -	$ -
6.5	SCADA and Communications	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.6	Low Voltage AC Distribution	0	EA	$ 50,000	$ -	$ 100,000	$ -	$ 150,000	$ -
6.7	DC Distribution System	0	EA	$ 50,000	$ -	$ 100,000	$ -	$ 150,000	$ -
6.8	Security	0	EA	$ 7,500	$ -	$ 7,500	$ -	$ 15,000	$ -
6.9	Fire Alarm	0	EA	$ 7,500	$ -	$ 7,500	$ -	$ 15,000	$ -
6.10	Generator	0	EA	$ 100,000	$ -	$ 80,000	$ -	$ 180,000	$ -
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ 425,000		$ 425,000		**$ 850,000**
7. MISC ITEMS									
7.1	Conduit & Cable Trench System	0	LF	$ 185.00	$ -	$ 170.00	$ -	$ 355	$ -
7.2	Rigid Bus, Fittings & Insulators	0	LS	$ 15,008.40	$ -	$ 56,904.00	$ -	$ 71,912	$ -
7.3	Strain Bus, Connectors & Insulators	0	LF	$ 13.38	$ -	$ 39.35	$ -	$ 53	$ -
7.4	Grounding System	0	LF	$ 6.93	$ -	$ 32.58	$ -	$ 40	$ -
7.5	Strain Bus Insulators - 345kV	0	EA	$ 2,000	$ -	$ 1,050	$ -	$ 3,050	$ -
7.6	Strain Bus Insulators - 230kV	0	EA	$ 1,400	$ -	$ 750	$ -	$ 2,150	$ -
7.7	Strain Bus Insulators - 115kV	0	EA	$ 1,000	$ -	$ 550	$ -	$ 1,550	$ -
7.8	Low Voltage AC Station Service	0	LS	$ 50,000	$ -	$ 75,000	$ -	$ 125,000	$ -
7.9	SSVT Service	0	LS	$ 45,000	$ -	$ 45,000	$ -	$ 90,000	$ -
7.10	Control Conduits from Trench to Equipment	0	LS	$ 125,000	$ -	$ 125,000	$ -	$ 250,000	$ -
7.11	Misc. Materials (Above and Below Ground)	0	LS	$ 180,000	$ -	$ 180,000	$ -	$ 360,000	$ -
7.12									
7.13									
7.14									
7.15									
7.16									
7.17									
7.18									
7.19									
7.20									
7.21									
7.22									
7.23									
7.24									
7.25									
TOTAL - MISC ITEMS					$ -		$ -		$ -
J. Porter Substation - Install					$ 425,000		$ 425,000		**$ 850,000**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1.0	LS	$ -	$ -	$ 8,500	$ 8,500	$ 8,500	**$ 8,500**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 43,206	$ 43,206	$ 43,206	**$ 43,206**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 8,500	$ 8,500	$ 8,500	**$ 8,500**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 8,500	$ 8,500	$ 8,500	**$ 8,500**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 68,000	$ 68,000	$ 68,000	**$ 68,000**
8.6	LiDAR	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.7	Geotech	-	EA	$ -	$ -	$ 3,500	$ -	$ 3,500	$ -
8.8	Surveying/Staking	1	Site	$ -	$ -	$ 5,950	$ 5,950	$ 5,950	**$ 5,950**
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 21,250	$ 21,250	$ 21,250	**$ 21,250**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 2,550	$ 2,550	$ 2,550	**$ 2,550**
8.13	Real Estate Costs (New)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.14	Real Estate Costs (Incumbent Utility)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.18	Sales Tax on Materials	1	LS	$ 34,000	$ 34,000	$ -	$ -	$ 34,000	**$ 34,000**
8.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 850	$ 850	$ 850	**$ 850**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 34,000		$ 167,306		**$ 201,306**

NextEra - T021 Enterprise Line - (Segment A)	
ESTIMATE ASSUMPTIONS & CLARIFICATIONS	
1	Cost Estimate is based on 2017 rates.
2	Construction schedule is in accordance with proposed schedule - we have assumed continuous working with no breaks in the schedule. Six months have been added to the construction schedule for start up and close out works and assisting in pre-construction activities (i.e. permitting activities, material procurement etc.).
3	We have assumed a typical work week of five-(5) days per week at ten-(10) hours per day (5 x 10 hour days).
4	All labor rates and benefits used for estimating purposes are taken from IBEW Local 1249 working agreement as updated 5-8-2017.
5	We have assumed that the Access Road included in Developer Estimate will be Type 1 Gravel Type.
6	Costs will vary for handling and disposal of contaminated spoils, depending on type of contaminants and availability / location of the appropriate tipping facility. Since there is not enough information to provide a quantified estimate for this item, allowance is included in the contingency monies.
7	Costs have been developed based on historical data from Projects of a similar nature (AACE Class 5 and 4 Estimating Practices). We have not engaged any subcontractors for formal quotes.
8	Foundation rates include supply and installation of materials. Drilled Pier rates include supply and testing of concrete, rebar cage and the use of temp or permanent casing.
9	A Contractor Mark-Up (OH&P) of 15% has been included in the Total section.
10	We have assumed that all project details provided are accurate unless noted otherwise.
11	Any SUF pricing includes 35% to cover Contractor markup (15%) and contingency (20%)
12	A contractor allowance of 1% for mobilization and demobilization has been included in the total section.
13	A contractor allowance of 4.347% for project management and staffing has been included in the total section. This also includes agricultural inspector, engineering inspector, safety inspector, compliance inspector, environmental inspector, and SWPP inspector.
14	An allowance of 1% for Utility PM and Project Oversite staffing has been included in the total section.
15	A contractor allowance of 1% for site accommodation, facilities, and storage has been included in the total section.
16	An allowance of 5% for transmission design and engineering has been included in the total section.
17	An allowance of 8% for substation design and engineering has been included in the total section.
18	An allowance of 0.7% for survey and staking of the transmission line and substation layout has been included in the total section.
19	An allowance of 0.3% for LIDAR of the transmission line has been included in the total section.
20	An allowance of 3.75% for substation testing and commissioning has been included in the total section.
21	An allowance of $20,000.00 per circuit for transmission line testing and commissioning has been included in the total section.
22	New York state sales tax of 8% is included in all material pricing.
23	An allowance of 1.5% for insurance is included in the DPS sheet.

NY Power Authority and North American Transmission (T025)			
		Description	**Total Amount** (In thousand $)
Direct Cost	1	**Transmission Lines**	
	1.1	Clearing & Access	$54,770
	1.2	Foundations	$35,794
	1.3	Structures	$67,800
	1.4	Conductor, Shiedwire and Optical Ground Wire	$37,454
	1.5	Insulators, Fitting and Hardwares	$13,068
		Subtotal (1)	**$208,887**
	2	**Substations**	
	2.1	Rotterdam Substation	$47,629
	2.2	Edic Substation	$2,153
	2.3	Princetown Substation	$12,713
	2.4	New Scotland Substation	$0
	2.5	Porter Substation	$546
	2.6	Knickerbocker Substation	$67,167
	2.7	Marcy Substation	$17,553
	2.8	Substation Interconnections	$8,301
		Subtotal (2)	**$156,062**
		Total (1+2)	$364,949
		Contractors Mark-up (15% of Total 1+2)	$54,742
		Total Direct Cost (A)	**$419,691**
Indirect Cost	3	**Technical Services Costs**	
	3.1	Contractor Mobilization / Demobilization	$3,649
	3.2	Project Management, Material Handling & Amenities	$20,483
	3.3	Engineering	$26,265
	3.4	Testing & Commissioning	$3,851
	3.5	Permitting, Real Estate, Sales Tax and Additional Costs	$28,307
	3.6	Compensation for use of NYPA Structures (1 Circuit)	$8,919
	3.7	Legal, Environmental Licensing & Permitting and Environmental Mitigation	$9,589
		Total Indirect Cost (3)	**$101,064**
		Subtotal Project Cost (B=A+3) 2017 $	**$520,756**
	4	**Network Upgrade Facilities (NUF)**	
	4.1	NUF proposed as element of the Project (Marcy and Edic Terminals)	$7,727
	4.2	NUF identified during Evaluation (765kV Corona Mitigation)	$116,005
		Subtotal NUF Cost (C)	**$123,731**

Total Project Cost (B+C) 2017 $	**$644,487**

Total Project Cost 2018 $	**$663,822**

NAT & NYPA - T025 - (Segment A, + 765kV)

Estimate Revision: 7

NAT & NYPA - T025 - (Segment A, + 765kV) - Direct Costs		*Total Each Segment*
Direct Labor, Material & Equipment Costs	A. Transmission Line Edic to Princetown	$ 122,946,653
Direct Labor, Material & Equipment Costs	A1. Marcy Interconnect & New Scotland SS Loop	$ 27,109,751
Direct Labor, Material & Equipment Costs	B. Transmission Line Princetown to Rotterdam	$ 20,488,282
Direct Labor, Material & Equipment Costs	C. Transmission Line Princetown to New Scotland	$ 38,342,499
Direct Labor, Material & Equipment Costs	D. Rotterdam Substation - Install	$ 44,017,974
Direct Labor, Material & Equipment Costs	E. Rotterdam Substation - Removal	$ 3,611,030
Direct Labor, Material & Equipment Costs	F. Edic Substation - Install	$ 2,117,185
Direct Labor, Material & Equipment Costs	G. Edic Substation - Removal	$ 35,950
Direct Labor, Material & Equipment Costs	H. Princetown Substation - Install	$ 12,713,164
Direct Labor, Material & Equipment Costs	I.	$ -
Direct Labor, Material & Equipment Costs	J. Porter Substation - Install	$ 71,912
Direct Labor, Material & Equipment Costs	K. Porter Substation - Removal	$ 474,313
Direct Labor, Material & Equipment Costs	L. Interconnection Edic Station	$ 1,784,075
Direct Labor, Material & Equipment Costs	M. Interconnection New Scotland Station	$ 2,594,271
Direct Labor, Material & Equipment Costs	N. Interconnection Rotterdam Station	$ 3,922,412
Direct Labor, Material & Equipment Costs	O. System Upgrade Facilities (765kV Corona Mitigation)	$ 82,860,450
Direct Labor, Material & Equipment Costs	P. System Upgrade Facilities (Various Stations for Edic to New Scotland)	$ 5,519,000
Direct Labor, Material & Equipment Costs	Q. Knickerbocker Substation - Install	$ 67,167,025
Direct Labor, Material & Equipment Costs	R. Marcy Substation - Install	$ 17,552,506
	SUBTOTAL:	$ 453,328,452
	CONTRACTOR MARK-UP (OH&P)	$ 67,999,268
	CONTINGENCY ON ENTIRE PROJECT	$ -
	TOTAL DIRECT:	$ 521,327,720

NAT & NYPA - T025 - (Segment A, + 765kV) - Indirect Costs		*Total Each Segment*
Indirect Costs	A. Transmission Line Edic to Princetown	$ 36,074,996
	A1. Marcy Interconnect & New Scotland SS Loop	$ 7,071,214
Indirect Costs	B. Transmission Line Princetown to Rotterdam	$ 4,232,179
Indirect Costs	C. Transmission Line Princetown to New Scotland	$ 8,706,295
Indirect Costs	D. Rotterdam Substation - Install	$ 10,243,358
Indirect Costs	E. Rotterdam Substation - Removal	$ 542,106
Indirect Costs	F. Edic Substation - Install	$ 490,771
Indirect Costs	G. Edic Substation - Removal	$ 5,361
Indirect Costs	H. Princetown Substation - Install	$ 3,058,558
Indirect Costs	I.	$ -
Indirect Costs	J. Porter Substation - Install	$ 14,298
Indirect Costs	K. Porter Substation - Removal	$ 70,732
Indirect Costs	L. Interconnection Edic Station	$ 316,687
Indirect Costs	M. Interconnection New Scotland Station	$ 475,944
Indirect Costs	N. Interconnection Rotterdam Station	$ 631,545
Indirect Costs	O. System Upgrade Facilities (765kV Corona Mitigation)	$ 20,715,113
Indirect Costs	P. System Upgrade Facilities (Various Stations for Edic to New Scotland)	$ 1,380,000
Indirect Costs	Q. Knickerbocker Substation - Install	$ 15,567,255
Indirect Costs	R. Marcy Substation - Install	$ 3,973,633
Indirect Costs	Legal and Permitting (Includes Legal, Envir. Lisc. & Permit., and Envir. Mitagation)	$ 9,589,464
	TOTAL INDIRECT:	$ 123,159,508

TOTAL ESTIMATED COST:	$ 644,487,228

NAT & NYPA - T025 - (Segment A, + 765kV)

A. Transmission Line Edic to Princetown

Estimate Revision: 7

Total: $ 159,021,649

NAT & NYPA - T025 - (Segment A, + 765kV)	*Supply*	*Installation*	*Total*
A. Transmission Line Edic to Princetown			
1. CLEARING & ACCESS	$ 41,500	$ 35,680,876	$ 35,722,376
2. FOUNDATIONS	$ 3,098,282	$ 10,723,946	$ 13,822,229
3. STRUCTURES	$ 14,839,646	$ 25,190,231	$ 40,029,876
4. CONDUCTOR, SHIELDWIRE, OPGW	$ 4,932,087	$ 20,895,790	$ 25,827,877
5. INSULATORS, FITTINGS, HARDWARE	$ 5,125,311	$ 2,418,984	$ 7,544,295
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 2,242,946	$ 33,832,050	$ 36,074,996
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 30,279,773	$ 128,741,877	$ 159,021,649
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 30,279,773	$ 128,741,877	$ 159,021,649

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Sum	Labor & Equipment Supply Rate	Labor & Equipment Sum	Total Unit Rate	TOTAL
A. Transmission Line Edic to Princetown									
1. CLEARING & ACCESS									
1.1	Clearing the ROW - Heavy (mowing & clearing)	8.0	Acre	$ -	$ -	$ 15,000	$ 120,000	$ 15,000	**$ 120,000**
1.2	Clearing the ROW - Light (mowing)	194.0	Acre		$ -	$ 5,000	$ 970,000	$ 5,000	**$ 970,000**
1.3	Permanent Access Road	70,540.8	LF	$ -	$ -	$ 45	$ 3,174,336	$ 45	**$ 3,174,336**
1.4	Silt Fence	352,704.0	LF	$ -	$ -	$ 4	$ 1,410,816	$ 4	**$ 1,410,816**
1.5	Matting - Access and ROW	282,163.2	LF	$ -	$ -	$ 70	$ 19,751,424	$ 70	**$ 19,751,424**
1.6	Matting - To Work Area	25,200.0	LF	$ -	$ -	$ 70	$ 1,764,000	$ 70	**$ 1,764,000**
1.7	Snow Removal	66.8	Mile	$ -	$ -	$ 16,000	$ 1,068,800	$ 16,000	**$ 1,068,800**
1.8	ROW Restoration	66.8	Mile	$ -	$ -	$ 10,000	$ 668,000	$ 10,000	**$ 668,000**
1.9	Work Pads	1,680,000.0	SF	$ -	$ -	$ 4	$ 5,913,600	$ 4	**$ 5,913,600**
1.10	Restoration for Work Pad areas	336,000.0	SF	$ -	$ -	$ 0.15	$ 50,400	$ 0	**$ 50,400**
1.11	Temporary Access Bridge	-	EA	$ -	$ -	$ 20,035	$ -	$ 20,035	**$ -**
1.12	Air Bridge	-	EA	$ -	$ -	$ 14,445	$ -	$ 14,445	**$ -**
1.13	Stabilized Construction Entrance	50	EA	$ -	$ -	$ 4,580	$ 229,000	$ 4,580	**$ 229,000**
1.14	Maintenance and Protection of Traffic on Public Roads	100	EA	$ -	$ -	$ 4,130	$ 413,000	$ 4,130	**$ 413,000**
1.15	Culverts / Misc. Access	10	EA	$ 750	$ 7,500	$ 1,250	$ 12,500	$ 2,000	**$ 20,000**
1.16	Gates	17	EA	$ 2,000	$ 34,000	$ 2,500	$ 42,500	$ 4,500	**$ 76,500**
1.17	Concrete Washout Station	50	EA	$ -	$ -	$ 1,850	$ 92,500	$ 1,850	**$ 92,500**
TOTAL - CLEARING & ACCESS:					$ 41,500		$ 35,680,876		**$ 35,722,376**
2. FOUNDATIONS									
2.1	Direct Embed Foundations - 4' x 16'	416	EA	$ 941	$ 391,345	$ 7,398	$ 3,077,513	$ 8,339	**$ 3,468,858**
2.2	Direct Embed Foundations - 4' x 17'	2	EA	$ 995	$ 1,990	$ 7,833	$ 15,666	$ 8,828	**$ 17,656**
2.3	Direct Embed Foundations - 4' x 19'	52	EA	$ 1,104	$ 57,404	$ 8,703	$ 452,576	$ 9,807	**$ 509,979**
2.4	Direct Embed Foundations - 4' x 21'	4	EA	$ 1,213	$ 4,851	$ 9,574	$ 38,295	$ 10,786	**$ 43,146**
2.5	Direct Embed Foundations - 4' x 23'	16	EA	$ 1,322	$ 21,144	$ 10,444	$ 167,105	$ 11,766	**$ 188,249**
2.6	Direct Embed Foundations - 4' x 25'	4	EA	$ 1,430	$ 5,721	$ 11,314	$ 45,258	$ 12,745	**$ 50,979**
2.7	Direct Embed Foundations - 6' x 18'	6	EA	$ 1,857	$ 11,145	$ 18,603	$ 111,621	$ 20,461	**$ 122,766**
2.8	Direct Embed Foundations - 6' x 19'	6	EA	$ 1,952	$ 11,711	$ 19,583	$ 117,496	$ 21,534	**$ 129,207**
2.9	Direct Embed Foundations - 6' x 20'	14	EA	$ 2,046	$ 28,648	$ 20,562	$ 287,864	$ 22,608	**$ 316,512**
2.10	Direct Embed Foundations - 6' x 21'	15	EA	$ 2,141	$ 32,110	$ 21,541	$ 323,113	$ 23,681	**$ 355,222**
2.11	Direct Embed Foundations - 6' x 22'	7	EA	$ 2,235	$ 15,645	$ 22,520	$ 157,640	$ 24,755	**$ 173,285**
2.12	Direct Embed Foundations - 6' x 25'	6	EA	$ 2,518	$ 15,109	$ 25,457	$ 152,744	$ 27,976	**$ 167,854**
2.13	Direct Embed Foundations - 6' x 26'	1	EA	$ 2,613	$ 2,613	$ 26,437	$ 26,437	$ 29,049	**$ 29,049**
2.14	Direct Embed Foundations - 6' x 28'	3	EA	$ 2,707	$ 8,121	$ 27,416	$ 82,247	$ 30,123	**$ 90,368**
2.15	Direct Embed Foundations - 6' x 29'	3	EA	$ 2,896	$ 8,687	$ 29,374	$ 88,122	$ 32,270	**$ 96,809**
2.16	Direct Embed Foundations - 6' x 33'	3	EA	$ 3,273	$ 9,820	$ 33,290	$ 99,871	$ 36,564	**$ 109,691**
2.17	Direct Embed Foundations - 7' x 27'	2	EA	$ 3,337	$ 6,673	$ 37,316	$ 74,631	$ 40,652	**$ 81,305**
2.18	Direct Embed Foundations - 7' x 28'	1	EA	$ 3,452	$ 3,452	$ 38,648	$ 38,648	$ 42,101	**$ 42,101**
2.19	Direct Embed Foundations - 7' x 49'	1	EA	$ 5,880	$ 5,880	$ 66,635	$ 66,635	$ 72,515	**$ 72,515**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Sum	Labor & Equipment Supply Rate	Labor & Equipment Sum	Total Unit Rate	TOTAL
2.20	Direct Embed Foundations - 7' x 61'	1	EA	$ 7,267	$ 7,267	$ 82,628	$ 82,628	$ 89,894	**$ 89,894**
2.21	Drilled Pier - 6' x 20'	54	EA	$ 18,064	$ 975,459	$ 18,261	$ 986,079	$ 36,325	**$ 1,961,539**
2.22	Drilled Pier - 7' x 19'	15	EA	$ 23,416	$ 351,246	$ 23,671	$ 355,070	$ 47,088	**$ 706,315**
2.23	Drilled Pier - 7' x 21'	12	EA	$ 25,758	$ 309,096	$ 26,038	$ 312,461	$ 51,796	**$ 621,558**
2.24	Drilled Pier - 7' x 22'	6	EA	$ 26,929	$ 161,573	$ 27,222	$ 163,332	$ 54,151	**$ 324,905**
2.26	Drilled Pier - 7' x 23'	3	EA	$ 28,100	$ 84,299	$ 28,406	$ 85,217	$ 56,505	**$ 169,516**
2.27	Drilled Pier - 7' x 33'	6	EA	$ 39,808	$ 238,847	$ 40,241	$ 241,447	$ 80,049	**$ 480,295**
2.28	Drilled Pier - 7' x 42'	3	EA	$ 50,345	$ 151,036	$ 50,893	$ 152,680	$ 101,239	**$ 303,716**
2.29	Drilled Pier - 8' x 27'	2	EA	$ 42,819	$ 85,637	$ 57,340	$ 114,680	$ 100,158	**$ 200,317**
2.30	Drilled Pier - 8' x 29'	2	EA	$ 45,877	$ 91,754	$ 61,436	$ 122,871	$ 107,313	**$ 214,625**
2.31	Rock Excavation Adder	1,342	CY	$ -	$ -	$ 2,000	$ 2,684,000	$ 2,000	**$ 2,684,000**
TOTAL - FOUNDATIONS:					$ 3,098,282		$ 10,723,946		**$ 13,822,229**
3. STRUCTURES									
3.1	1-CKT 345KV VERTICAL TANGENT (0°-1°) - 115'	7	Structure	$ 50,024	$ 350,168	$ 30,014	$ 210,101	$ 80,038	**$ 560,269**
3.2	1-CKT 345KV VERTICAL TANGENT (0°-1°) - 120'	4	Structure	$ 52,207	$ 208,828	$ 31,324	$ 125,297	$ 83,531	**$ 334,125**
3.3	1-CKT 345KV VERTICAL TANGENT (0°-1°) - 130'	3	Structure	$ 58,257	$ 174,770	$ 34,954	$ 104,862	$ 93,210	**$ 279,631**
3.4	1-CKT 345KV VERTICAL TANGENT (0°-1°) - 135'	10	Structure	$ 60,884	$ 608,835	$ 36,530	$ 365,301	$ 97,414	**$ 974,136**
3.5	1-CKT 345KV VERTICAL TANGENT (0°-1°) - 145'	1	Structure	$ 64,473	$ 64,473	$ 38,684	$ 38,684	$ 103,156	**$ 103,156**
3.6	1-CKT 345KV VERTICAL SMALL ANGLE (1°-15°) - 115'	1	Structure	$ 72,039	$ 72,039	$ 43,223	$ 43,223	$ 115,262	**$ 115,262**
3.7	1-CKT 345KV VERTICAL SMALL ANGLE (1°-15°) - 130'	3	Structure	$ 85,082	$ 255,245	$ 51,049	$ 153,147	$ 136,130	**$ 408,391**
3.8	1-CKT 345KV VERTICAL SMALL ANGLE (1°-15°) - 135'	1	Structure	$ 92,278	$ 92,278	$ 55,367	$ 55,367	$ 147,645	**$ 147,645**
3.9	1-CKT 345KV VERTICAL MEDIUM ANGLE DEADEND (15°-60°) - 115'	1	Structure	$ 116,328	$ 116,328	$ 69,797	$ 69,797	$ 186,125	**$ 186,125**
3.10	1-CKT 345KV VERTICAL MEDIUM ANGLE DEADEND (15°-60°) - 120'	1	Structure	$ 127,558	$ 127,558	$ 76,535	$ 76,535	$ 204,092	**$ 204,092**
3.11	1-CKT 345KV VERTICAL MEDIUM ANGLE DEADEND (15°-60°) - 150'	1	Structure	$ 208,033	$ 208,033	$ 124,820	$ 124,820	$ 332,852	**$ 332,852**
3.12	1-CKT 345KV VERTICAL MEDIUM ANGLE DEADEND (15°-60°) - 160'	1	Structure	$ 238,595	$ 238,595	$ 143,157	$ 143,157	$ 381,751	**$ 381,751**
3.13	1-CKT 345KV H-FRAME TANGENT (0°-1°) - 75'	1	Structure	$ 24,476	$ 24,476	$ 14,685	$ 14,685	$ 39,161	**$ 39,161**
3.14	1-CKT 345KV H-FRAME TANGENT (0°-1°) - 80'	2	Structure	$ 25,826	$ 51,652	$ 15,496	$ 30,991	$ 41,322	**$ 82,643**
3.15	1-CKT 345KV H-FRAME TANGENT (0°-1°) - 84'	169	Structure	$ 29,526	$ 4,989,894	$ 17,716	$ 2,993,936	$ 47,242	**$ 7,983,830**
3.16	1-CKT 345KV H-FRAME TANGENT (0°-1°) - 89'	36	Structure	$ 32,708	$ 1,177,488	$ 19,625	$ 706,493	$ 52,333	**$ 1,883,981**
3.17	1-CKT 345KV H-FRAME TANGENT (0°-1°) - 93'	23	Structure	$ 34,540	$ 794,409	$ 20,724	$ 476,645	$ 55,263	**$ 1,271,054**
3.18	1-CKT 345KV H-FRAME TANGENT (0°-1°) - 98'	10	Structure	$ 37,500	$ 374,995	$ 22,500	$ 224,997	$ 59,999	**$ 599,992**
3.19	1-CKT 345KV H-FRAME TANGENT (0°-1°) - 102'	4	Structure	$ 43,901	$ 175,602	$ 26,340	$ 105,361	$ 70,241	**$ 280,963**
3.20	1-CKT 345KV H-FRAME TANGENT (0°-1°) - 107'	2	Structure	$ 45,936	$ 91,871	$ 27,561	$ 55,123	$ 73,497	**$ 146,994**
3.21	1-CKT 345KV H-FRAME SMALL ANGLE (1°-15°) - 80'	2	Structure	$ 55,241	$ 110,482	$ 33,145	$ 66,289	$ 88,386	**$ 176,771**
3.22	1-CKT 345KV H-FRAME SMALL ANGLE (1°-15°) - 85'	19	Structure	$ 57,813	$ 1,098,438	$ 34,688	$ 659,063	$ 92,500	**$ 1,757,500**
3.23	1-CKT 345KV H-FRAME SMALL ANGLE (1°-15°) - 90'	2	Structure	$ 61,050	$ 122,100	$ 36,630	$ 73,260	$ 97,680	**$ 195,360**
3.24	1-CKT 345KV H-FRAME SMALL ANGLE (1°-15°) - 95'	2	Structure	$ 65,120	$ 130,240	$ 39,072	$ 78,144	$ 104,192	**$ 208,384**
3.25	1-CKT 345KV H-FRAME SMALL ANGLE (1°-15°) - 100'	1	Structure	$ 68,635	$ 68,635	$ 41,181	$ 41,181	$ 109,816	**$ 109,816**
3.26	1-CKT 345KV H-FRAME SMALL ANGLE (1°-15°) - 105'	1	Structure	$ 72,872	$ 72,872	$ 43,723	$ 43,723	$ 116,594	**$ 116,594**
3.27	1-CKT 345KV 3-POLE TANGENT DEADEND (0°-5°) - 75'	2	Structure	$ 61,513	$ 123,025	$ 36,908	$ 73,815	$ 98,420	**$ 196,840**
3.28	1-CKT 345KV 3-POLE TANGENT DEADEND (0°-5°) - 80'	3	Structure	$ 69,079	$ 207,237	$ 41,447	$ 124,342	$ 110,526	**$ 331,579**
3.29	1-CKT 345KV 3-POLE TANGENT DEADEND (0°-5°) - 85'	4	Structure	$ 75,739	$ 302,956	$ 45,443	$ 181,774	$ 121,182	**$ 484,730**
3.30	1-CKT 345KV 3-POLE TANGENT DEADEND (0°-5°) - 90'	4	Structure	$ 81,493	$ 325,970	$ 48,896	$ 195,582	$ 130,388	**$ 521,552**
3.31	1-CKT 345KV 3-POLE MEDIUM ANGLE DEADEND (15°-60°) - 80'	1	Structure	$ 97,403	$ 97,403	$ 58,442	$ 58,442	$ 155,844	**$ 155,844**
3.32	1-CKT 345KV 3-POLE MEDIUM ANGLE DEADEND (15°-60°) - 85'	6	Structure	$ 105,802	$ 634,809	$ 63,481	$ 380,885	$ 169,282	**$ 1,015,694**
3.33	1-CKT 345KV 3-POLE MEDIUM ANGLE DEADEND (15°-60°) - 90'	6	Structure	$ 117,253	$ 703,518	$ 70,352	$ 422,111	$ 187,605	**$ 1,125,629**
3.34	1-CKT 345KV 3-POLE MEDIUM ANGLE DEADEND (15°-60°) - 95'	1	Structure	$ 129,408	$ 129,408	$ 77,645	$ 77,645	$ 207,052	**$ 207,052**
3.35	1-CKT 345KV 3-POLE MEDIUM ANGLE DEADEND (15°-60°) - 115'	1	Structure	$ 178,026	$ 178,026	$ 106,815	$ 106,815	$ 284,841	**$ 284,841**
3.36	Remove Existing Foundation	50	EA	$ -	$ -	$ 7,500	$ 375,000	$ 7,500	**$ 375,000**
3.37	Remove Existing Structure and Accessories	994	EA	$ -	$ -	$ 12,500	$ 12,425,000	$ 12,500	**$ 12,425,000**
3.38	Install Grounding and Grounding Accessories	666	Pole	$ 506	$ 336,996	$ 5,539	$ 3,688,641	$ 6,045	**$ 4,025,637**
TOTAL - STRUCTURES:					$ 14,839,646		$ 25,190,231		**$ 40,029,876**
4. CONDUCTOR, SHIELDWIRE, OPGW									
4.1	345kV - (1) 954kcmil 54/7 ACSS "Cardinal"	2,228,688	LF	$ 1.90	$ 4,234,507	$ 5.00	$ 11,143,440	$ 6.90	**$ 15,377,947**
4.2	(1) OPGW 36 Fiber AC-33/38/571	301,594	LF	$ 1.35	$ 407,152	$ 5.00	$ 1,507,970	$ 6.35	**$ 1,915,122**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Sum	Labor & Equipment Supply Rate	Labor & Equipment Sum	Total Unit Rate	TOTAL
4.3	(1) 3/8" EHS7 Steel	271,656	LF	$ 0.47	$ 127,678	$ 5.00	$ 1,358,280	$ 5.47	**$ 1,485,958**
4.4									
4.5									
4.6									
4.7	Remove Existing Conductor and Accessories	121.0	Mile	$ -	$ -	$ 30,000	$ 3,630,000	$ 30,000.00	**$ 3,630,000**
4.8	Remove Existing OPGW and Accessories	108.4	Mile	$ -	$ -	$ 12,000	$ 1,300,800	$ 12,000.00	**$ 1,300,800**
4.9	Remove Existing OHSW and Accessories	108.4	Mile	$ -	$ -	$ 12,000	$ 1,300,800	$ 12,000.00	**$ 1,300,800**
4.10									
4.11									
4.12									
4.13	Rider Poles (187 Locations)	93	Set	$ 1,750	$ 162,750	$ 3,500	$ 325,500	$ 5,250.00	**$ 488,250**
4.14	Rider Poles - Relocated	94	Set	$ -	$ -	$ 3,500	$ 329,000	$ 3,500.00	**$ 329,000**
TOTAL: CONDUCTOR, SHIELDWIRE, OPGW:					$ 4,932,087		$ 20,895,790		**$ 25,827,877**
5. INSULATOR, FITTINGS, HARDWARE									
5.1	345kV Tangent (1-Group of 18-Bells Each Assembly)	1,276	Assembly	$ 1,800	$ 2,296,800	$ 720	$ 918,720	$ 2,520	**$ 3,215,520**
5.2	345kV Dead-end & Angle Insulators (1-Group of 18-Bells Each Assembly)	480	Assembly	$ 1,800	$ 864,000	$ 720	$ 345,600	$ 2,520	**$ 1,209,600**
5.3			Assembly		$ -		$ -	$ -	**$ -**
5.4	OPGW Assembly - Tangent	304	Assembly	$ 200	$ 60,800	$ 150	$ 45,600	$ 350	**$ 106,400**
5.5	OPGW Assembly - Angle / DE	64	Assembly	$ 250	$ 16,000	$ 150	$ 9,600	$ 400	**$ 25,600**
5.6	OHSW Assembly - Tangent	274	Assembly	$ 200	$ 54,800	$ 150	$ 41,100	$ 350	**$ 95,900**
5.7	OHSW Assembly - Angle / DE	56	Assembly	$ 250	$ 14,000	$ 150	$ 8,400	$ 400	**$ 22,400**
5.8	OPGW Splice Boxes	27	Assembly	$ 1,746	$ 47,146	$ 2,274	$ 61,398	$ 4,020	**$ 108,544**
5.9	OPGW Splice & Test	27	EA	$ 2,520	$ 68,040	$ 2,520	$ 68,040	$ 5,040	**$ 136,080**
5.10	Spacer - Conductor	5,244	EA	$ 50	$ 262,200	$ 35	$ 183,540	$ 85	**$ 445,740**
5.11	Vibration Dampers - Conductor	4,164	EA	$ 35	$ 145,740	$ 35	$ 145,740	$ 70	**$ 291,480**
5.12	Shield wire / OPGW Dampers, Misc. Fittings	1,087	EA	$ 27	$ 29,349	$ 35	$ 38,045	$ 62	**$ 67,394**
5.13	*Replace - Mono Pole Vertical Tangent (1-Group of 18-Bells Each Assembly)*	480	Assembly	$ 1,800	$ 864,000	$ 720	$ 345,600	$ 2,520	**$ 1,209,600**
5.14	*Replace - Dead-end & Angle Insulators (1, Group of 18-Bells Each Assembly)*	195	Assembly	$ 1,800	$ 351,000	$ 720	$ 140,400	$ 2,520	**$ 491,400**
5.15	Guys, Anchors, and Accessories	-	EA	$ 912	$ -	$ 1,058	$ -	$ 1,970	**$ -**
5.16	Misc. materials (Signs and Markers)	66.8	Mile	$ 770	$ 51,436	$ 1,006	$ 67,201	$ 1,776	**$ 118,637**
TOTAL - INSULATORS, FITTINGS, HARDWARE:					$ 5,125,311		$ 2,418,984		**$ 7,544,295**
A. Transmission Line Edic to Princetown					$ 28,036,826		$ 94,909,827		**$ 122,946,653**
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
6.1	Mob / Demob	1.0	LS	$ -	$ -	$ 1,229,467	$ 1,229,467	$ 1,229,467	**$ 1,229,467**
	Project Management, Material Handling & Amenities								
6.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 4,441,442	$ 4,441,442	$ 4,441,442	**$ 4,441,442**
6.3	Utility PM and Project Oversite	1	LS		$ -	$ 1,229,467	$ 1,229,467	$ 1,229,467	**$ 1,229,467**
6.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 1,229,467	$ 1,229,467	$ 1,229,467	**$ 1,229,467**
	Engineering								
6.5	Design Engineering	1	LS	$ -	$ -	$ 6,147,333	$ 6,147,333	$ 6,147,333	**$ 6,147,333**
6.6	LiDAR	1	LS	$ -	$ -	$ 368,840	$ 368,840	$ 368,840	**$ 368,840**
6.7	Geotech	67	Location	$ -	$ -	$ 3,500	$ 234,500	$ 3,500	**$ 234,500**
6.8	Surveying/Staking	1	LS	$ -	$ -	$ 860,627	$ 860,627	$ 860,627	**$ 860,627**
	Testing & Commissioning								
6.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 40,000	$ 40,000	$ 40,000	**$ 40,000**
	Permitting and Additional Costs								
6.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.12	Warranties / LOC's	1	LS	$ -	$ -	$ 368,840	$ 368,840	$ 368,840	**$ 368,840**
6.13	Real Estate Costs (New ROW)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.14	Real Estate Costs (Incumbent Utility ROW)	1	LS	$ -	$ -	$ 8,640,000	$ 8,640,000	$ 8,640,000	**$ 8,640,000**
6.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Sum	Labor & Equipment Supply Rate	Labor & Equipment Sum	Total Unit Rate	TOTAL
6.17	Compensation for use of 1 Ckt - NYPA Structures (92 Structures)	1	LS	$ -	$ -	$ 8,919,123	$ 8,919,123	$ 8,919,123	**$ 8,919,123**
6.18	Sales Tax on Materials	1	LS	$ 2,242,946	$ 2,242,946	$ -	$ -	$ 2,242,946	**$ 2,242,946**
6.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 122,947	$ 122,947	$ 122,947	**$ 122,947**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 2,242,946		$ 33,832,050		**$ 36,074,996**

NAT & NYPA - T025 - (Segment A, + 765kV)

A1. Marcy Interconnect & New Scotland SS Loop

Estimate Revision: 7

Total: $ 34,180,965

NAT & NYPA - T025 - (Segment A, + 765kV)	*Supply*	*Installation*	*Total*
A1. Marcy Interconnect & New Scotland SS Loop			
1. CLEARING & ACCESS	$ -	$ 4,749,184	$ 4,749,184
2. FOUNDATIONS	$ 5,113,108	$ 6,968,775	$ 12,081,883
3. STRUCTURES	$ 3,973,368	$ 3,182,477	$ 7,155,845
4. CONDUCTOR, SHIELDWIRE, OPGW	$ 682,610	$ 1,278,833	$ 1,961,442
5. INSULATORS, FITTINGS, HARDWARE	$ 706,655	$ 454,742	$ 1,161,397
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 838,059	$ 6,233,155	$ 7,071,214
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 11,313,799	$ 22,867,166	$ 34,180,965
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 11,313,799	$ 22,867,166	$ 34,180,965

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Sum	Labor & Equipment Supply Rate	Labor & Equipment Sum	Total Unit Rate	TOTAL
A1. Marcy Interconnect & New Scotland SS Loop									
1. CLEARING & ACCESS									
1.1	Clearing the ROW - Heavy (mowing & clearing)	98.0	Acre	$ -	$ -	$ 15,000	$ 1,470,000	$ 15,000	**$ 1,470,000**
1.2	Clearing the ROW - Light (mowing)	2.0	Acre		$ -	$ 5,000	$ 10,000	$ 5,000	**$ 10,000**
1.3	Permanent Access Road	2,851.2	LF	$ -	$ -	$ 45	$ 128,304	$ 45	**$ 128,304**
1.4	Silt Fence	14,256.0	LF	$ -	$ -	$ 4	$ 57,024	$ 4	**$ 57,024**
1.5	Matting - Access and ROW	11,404.8	LF	$ -	$ -	$ 70	$ 798,336	$ 70	**$ 798,336**
1.6	Matting - To Work Area	25,200.0	LF	$ -	$ -	$ 70	$ 1,764,000	$ 70	**$ 1,764,000**
1.7	Snow Removal	2.7	Mile	$ -	$ -	$ 16,000	$ 43,200	$ 16,000	**$ 43,200**
1.8	ROW Restoration	2.7	Mile	$ -	$ -	$ 10,000	$ 26,600	$ 10,000	**$ 26,600**
1.9	Work Pads	120,000.0	SF	$ -	$ -	$ 4	$ 422,400	$ 4	**$ 422,400**
1.10	Restoration for Work Pad areas	24,000.0	SF	$ -	$ -	$ 0.15	$ 3,600	$ 0.15	**$ 3,600**
1.11	Temporary Access Bridge	-	EA	$ -	$ -	$ 20,035	$ -	$ 20,035	**$ -**
1.12	Air Bridge	-	EA	$ -	$ -	$ 14,445	$ -	$ 14,445	**$ -**
1.13	Stabilized Construction Entrance	4.0	EA	$ -	$ -	$ 4,580	$ 18,320	$ 4,580	**$ 18,320**
1.14	Maintenance and Protection of Traffic on Public Roads	-	LS	$ -	$ -	$ 300,000	$ -	$ 300,000	**$ -**
1.15	Culverts / Misc. Access	-	EA	$ 750	$ -	$ 1,250	$ -	$ 2,000	**$ -**
1.16	Gates	-	EA	$ 2,000	$ -	$ 2,500	$ -	$ 4,500	**$ -**
1.17	Concrete Washout Station	4.0	EA	$ -	$ -	$ 1,850	$ 7,400	$ 1,850	**$ 7,400**
TOTAL - CLEARING & ACCESS:					$ -		$ 4,749,184		**$ 4,749,184**
2. FOUNDATIONS									
2.1	1-CKT 765KV 3-POLE LARGE ANGLE DEADEND (INNER POLE)	2	EA	$ 130,812	$ 261,624	$ 132,236	$ 264,472	$ 263,048	**$ 526,096**
2.2	1-CKT 765KV 3-POLE LARGE ANGLE DEADEND (OUTER POLE)	4	EA	$ 130,812	$ 523,248	$ 132,236	$ 528,944	$ 263,048	**$ 1,052,192**
2.3	1-CKT 765KV 3-POLE MEDIUM ANGLE DEADEND (INNER POLE)	2	EA	$ 130,812	$ 261,624	$ 132,236	$ 264,472	$ 263,048	**$ 526,096**
2.4	1-CKT 765KV 3-POLE MEDIUM ANGLE DEADEND (OUTER POLE)	4	EA	$ 130,812	$ 523,248	$ 132,236	$ 528,944	$ 263,048	**$ 1,052,192**
2.5	1-CKT 765KV H-FRAME TANGENT	12	EA	$ 130,812	$ 1,569,743	$ 132,236	$ 1,586,833	$ 263,048	**$ 3,156,576**
2.6	1-CKT 765KV 3-POLE LARGE ANGLE DEADEND (INNER POLE)	1	EA	$ 140,973	$ 140,973	$ 142,508	$ 142,508	$ 283,481	**$ 283,481**
2.7	1-CKT 765KV 3-POLE LARGE ANGLE DEADEND (OUTER POLE)	2	EA	$ 140,973	$ 281,946	$ 142,508	$ 285,016	$ 283,481	**$ 566,961**
2.8	1-CKT 765KV 3-POLE MEDIUM ANGLE DEADEND (INNER POLE)	1	EA	$ 140,973	$ 140,973	$ 142,508	$ 142,508	$ 283,481	**$ 283,481**
2.9	1-CKT 765KV 3-POLE MEDIUM ANGLE DEADEND (OUTER POLE)	2	EA	$ 140,973	$ 281,946	$ 142,508	$ 285,016	$ 283,481	**$ 566,961**
2.10	1-CKT 765KV H-FRAME TANGENT	8	EA	$ 140,973	$ 1,127,784	$ 142,508	$ 1,140,062	$ 283,481	**$ 2,267,846**
2.11	Rock Excavation	900	CY	$ -	$ -	$ 2,000	$ 1,800,000	$ 2,000	**$ 1,800,000**
2.12									
2.13									
2.14									
2.15									
TOTAL - FOUNDATIONS:					$ 5,113,108		$ 6,968,775		**$ 12,081,883**
3. STRUCTURES									
3.1	1-CKT 765KV 3-POLE LARGE ANGLE DEADEND	2	Structure	$ 255,540.50	$ 511,081	$ 153,324.30	$ 306,649	$ 408,865	**$ 817,730**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Sum	Labor & Equipment Supply Rate	Labor & Equipment Sum	Total Unit Rate	TOTAL
3.2	1-CKT 765KV 3-POLE MEDIUM ANGLE DEADEND	2	Structure	$ 255,540.50	$ 511,081	$ 153,324.30	$ 306,649	$ 408,865	**$ 817,730**
3.3	1-CKT 765KV H-FRAME TANGENT	6	Structure	$ 255,540.50	$ 1,533,243	$ 153,324.30	$ 919,946	$ 408,865	**$ 2,453,189**
3.4	1-CKT 765KV 3-POLE LARGE ANGLE DEADEND	1	Structure	$ 233,291.17	$ 233,291	$ 139,974.70	$ 139,975	$ 373,266	**$ 373,266**
3.5	1-CKT 765KV 3-POLE MEDIUM ANGLE DEADEND	1	Structure	$ 233,291.17	$ 233,291	$ 139,974.70	$ 139,975	$ 373,266	**$ 373,266**
3.6	1-CKT 765KV H-FRAME TANGENT	4	Structure	$ 233,291.17	$ 933,165	$ 139,974.70	$ 559,899	$ 373,266	**$ 1,493,063**
3.7	Remove Existing Structure and Accessories - Lattice	3	EA	$ -	$ -	$ 12,500	$ 37,500	$ 12,500	**$ 37,500**
3.8	Remove Existing Structure and Accessories - 3-Pole	3	EA	$ -	$ -	$ 37,500	$ 112,500	$ 37,500	**$ 112,500**
3.9	Remove Existing Structure and Accessories - H-Frame	11	EA	$ -	$ -	$ 12,500	$ 137,500	$ 12,500	**$ 137,500**
3.10	Remove Existing Foundation	43	EA	$ -	$ -	$ 7,500	$ 322,500	$ 7,500	**$ 322,500**
3.11	Install Grounding and Grounding Accessories	36	Pole	$ 506	$ 18,216	$ 5,539	$ 199,386	$ 6,045	**$ 217,602**
3.12									
3.13									
3.14									
3.15									
3.16									
3.17									
TOTAL - STRUCTURES:					$ 3,973,368		$ 3,182,477		**$ 7,155,845**
4. CONDUCTOR, SHIELDWIRE, OPGW									
4.1	765kV - (1) 1351.5kcmil 54/19 ACSR "***Martin***"	176,964	LF	$ 3.59	$ 634,770	$ 5.00	$ 884,820	$ 8.59	**$ 1,519,590**
4.2	(1) OPGW 36 Fiber AC-33/38/571	14,747	LF	$ 1.35	$ 19,909	$ 5.00	$ 73,736	$ 6.35	**$ 93,645**
4.3	(1) 3/8" EHS7 Steel	14,747	LF	$ 0.47	$ 6,931	$ 5.00	$ 73,736	$ 5.47	**$ 80,667**
4.4	Remove Existing Conductor and Accessories	2.66	Mile	$ -	$ -	$ 45,000	$ 119,700	$ 45,000.00	**$ 119,700**
4.5	Remove Existing OPGW and Accessories	2.66	Mile	$ -	$ -	$ 12,000	$ 31,920	$ 12,000.00	**$ 31,920**
4.6	Remove Existing OHSW and Accessories	2.66	Mile	$ -	$ -	$ 12,000	$ 31,920	$ 12,000.00	**$ 31,920**
4.7	Rider Poles	12	Set	$ 1,750	$ 21,000	$ 3,500	$ 42,000	$ 5,250.00	**$ 63,000**
4.8	Rider Poles - Relocated	6	Set	$ -	$ -	$ 3,500	$ 21,000	$ 3,500.00	**$ 21,000**
4.9									
4.10									
4.11									
4.12									
4.13									
4.14									
4.15									
4.16									
4.17									
TOTAL: CONDUCTOR, SHIELDWIRE, OPGW:					$ 682,610		$ 1,278,833		**$ 1,961,442**
5. INSULATOR, FITTINGS, HARDWARE									
5.1	765kV Tangent (1-Group of 40-Bells Each Assembly)	60	Assembly	$ 4,000	$ 240,000	$ 1,440	$ 86,400	$ 5,440	**$ 326,400**
5.2	765kV Dead-end & Angle Insulators (1-Group of 40-Bells Each Assembly)	90	Assembly	$ 4,000	$ 360,000	$ 1,440	$ 129,600	$ 5,440	**$ 489,600**
5.3									**$ -**
5.4	OPGW Assembly - Tangent	10	Assembly	$ 200	$ 2,000	$ 150	$ 1,500	$ 350	**$ 3,500**
5.5	OPGW Assembly - Angle / DE	12	Assembly	$ 250	$ 3,000	$ 150	$ 1,800	$ 400	**$ 4,800**
5.6	OHSW Assembly - Tangent	10	Assembly	$ 200	$ 2,000	$ 150	$ 1,500	$ 350	**$ 3,500**
5.7	OHSW Assembly - Angle / DE	12	Assembly	$ 250	$ 3,000	$ 150	$ 1,800	$ 400	**$ 4,800**
5.8	OPGW Splice Boxes	4	Assembly	$ 1,746	$ 6,985	$ 2,274	$ 9,096	$ 4,020	**$ 16,081**
5.9	OPGW Splice & Test	4	EA	$ 2,520	$ 10,080	$ 2,520	$ 10,080	$ 5,040	**$ 20,160**
5.10	Spacer - Conductor	531	EA	$ 50	$ 26,550	$ 35	$ 18,585	$ 85	**$ 45,135**
5.11	Vibration Dampers - Conductor	531	EA	$ 35	$ 18,585	$ 35	$ 18,585	$ 70	**$ 37,170**
5.12	Shield wire / OPGW Dampers, Misc. Fittings	88	EA	$ 27	$ 2,376	$ 35	$ 3,080	$ 62	**$ 5,456**
5.13	Splicing at existing 765kV DE	4	LS	$ 7,500	$ 30,000	$ 42,500	$ 170,000	$ 50,000	**$ 200,000**
5.14	Guys, Anchors, and Accessories	-	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.15	Misc. materials (Signs and Markers)	2.7	Mile	$ 770	$ 2,079	$ 1,006	$ 2,716	$ 1,776	**$ 4,795**
5.16									
5.17									
5.18									
5.19									
5.20									
TOTAL - INSULATORS, FITTINGS, HARDWARE:					$ 706,655		$ 454,742		**$ 1,161,397**
A1. Marcy Interconnect & New Scotland SS Loop					$ 10,475,740		$ 16,634,011		**$ 27,109,751**
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
6.1	Mob / Demob	1	LS	$ -	$ -	$ 271,098	$ 271,098	$ 271,098	**$ 271,098**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Sum	Labor & Equipment Supply Rate	Labor & Equipment Sum	Total Unit Rate	TOTAL
	Project Management, Material Handling & Amenities								
6.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 979,338	$ 979,338	$ 979,338	**$ 979,338**
6.3	Utility PM and Project Oversite	1	LS		$ -	$ 271,098	$ 271,098	$ 271,098	**$ 271,098**
6.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 271,098	$ 271,098	$ 271,098	**$ 271,098**
	Engineering								
6.5	Design Engineering	1	LS	$ -	$ -	$ 1,355,488	$ 1,355,488	$ 1,355,488	**$ 1,355,488**
6.6	LiDAR	1	LS	$ -	$ -	$ 81,329	$ 81,329	$ 81,329	**$ 81,329**
6.7	Geotech	3	Location	$ -	$ -	$ 3,500	$ 10,500	$ 3,500	**$ 10,500**
6.8	Surveying/Staking	1	LS	$ -	$ -	$ 189,768	$ 189,768	$ 189,768	**$ 189,768**
	Testing & Commissioning								
6.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 40,000	$ 40,000	$ 40,000	**$ 40,000**
	Permitting and Additional Costs								
6.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.12	Warranties / LOC's	1	LS	$ -	$ -	$ 81,329	$ 81,329	$ 81,329	**$ 81,329**
6.13	Real Estate Costs (New ROW)	1	LS	$ -	$ -	$ 2,187,000	$ 2,187,000	$ 2,187,000	**$ 2,187,000**
6.14	Real Estate Costs (Incumbent Utility ROW)	1	LS	$ -	$ -	$ 468,000	$ 468,000	$ 468,000	**$ 468,000**
6.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.18	Sales Tax on Materials	1	LS	$ 838,059	$ 838,059	$ -	$ -	$ 838,059	**$ 838,059**
6.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 27,110	$ 27,110	$ 27,110	**$ 27,110**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 838,059		$ 6,233,155		**$ 7,071,214**

NAT & NYPA - T025 - (Segment A, + 765kV)

B. Transmission Line Princetown to Rotterdam

Estimate Revision: 7

Total: $ 24,720,461

NAT & NYPA - T025 - (Segment A, + 765kV)	*Supply*	*Installation*	*Total*
B. Transmission Line Princetown to Rotterdam			
1. CLEARING & ACCESS	$ 6,000	$ 3,038,200	$ 3,044,200
2. FOUNDATIONS	$ 417,002	$ 3,778,708	$ 4,195,711
3. STRUCTURES	$ 3,876,135	$ 4,280,943	$ 8,157,078
4. CONDUCTOR, SHIELDWIRE, OPGW	$ 722,365	$ 2,620,705	$ 3,343,070
5. INSULATORS, FITTINGS, HARDWARE	$ 1,199,031	$ 549,192	$ 1,748,223
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 497,643	$ 3,734,537	$ 4,232,179
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 6,718,177	$ 18,002,285	$ 24,720,461
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 6,718,177	$ 18,002,285	$ 24,720,461

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
B. Transmission Line Princetown to Rotterdam									
1. CLEARING & ACCESS									
1.1	Clearing the ROW - Heavy (mowing & clearing)	-	Acre	$ -	$ -	$ 15,000	$ -	$ 15,000	$ -
1.2	Clearing the ROW - Light (mowing)	24.0	Acre	$ -	$ -	$ 5,000	$ 120,000	$ 5,000	$ 120,000
1.3	Permanent Access Road	5,280	LF	$ -	$ -	$ 45	$ 237,600	$ 45	$ 237,600
1.4	Silt Fence	26,400	LF	$ -	$ -	$ 4	$ 105,600	$ 4	$ 105,600
1.5	Matting - Access and ROW	21,120	LF	$ -	$ -	$ 70	$ 1,478,400	$ 70	$ 1,478,400
1.6	Matting - To Work Area	2,775	LF	$ -	$ -	$ 70	$ 194,250	$ 70	$ 194,250
1.7	Snow Removal	5	Mile	$ -	$ -	$ 16,000	$ 80,000	$ 16,000	$ 80,000
1.8	ROW Restoration	5	Mile	$ -	$ -	$ 10,000	$ 50,000	$ 10,000	$ 50,000
1.9	Work Pads	185,000	SF	$ -	$ -	$ 4	$ 651,200	$ 4	$ 651,200
1.10	Restoration for Work Pad areas	37,000	SF	$ -	$ -	$ 0.2	$ 5,550	$ 0	$ 5,550
1.11	Temporary Access Bridge	-	EA	$ -	$ -	$ 20,035	$ -	$ 20,035	$ -
1.12	Air Bridge	-	EA	$ -	$ -	$ 14,445	$ -	$ 14,445	$ -
1.13	Stabilized Construction Entrance	10	EA	$ -	$ -	$ 4,580	$ 45,800	$ 4,580	$ 45,800
1.14	Maintenance and Protection of Traffic on Public Roads	10	EA	$ -	$ -	$ 4,130	$ 41,300	$ 4,130	$ 41,300
1.15	Gates	-	EA	$ 2,000	$ -	$ 2,500	$ -	$ 4,500	$ -
1.16	Culverts / Misc. Access	8	EA	$ 750	$ 6,000	$ 1,250	$ 10,000	$ 2,000	$ 16,000
1.17	Concrete Washout Station	10	EA	$ -	$ -	$ 1,850	$ 18,500	$ 1,850	$ 18,500
TOTAL - CLEARING & ACCESS:					$ 6,000		$ 3,038,200		$ 3,044,200
2. FOUNDATIONS									
2.1	Direct Embed Foundations - 6' x 18'	56	EA	$ 1,857	$ 104,018	$ 18,603	$ 1,041,794	$ 20,461	$ 1,145,812
2.2	Direct Embed Foundations - 6' x 20'	4	EA	$ 2,046	$ 8,185	$ 20,562	$ 82,247	$ 22,608	$ 90,432
2.3	Direct Embed Foundations - 6' x 22'	8	EA	$ 2,235	$ 17,880	$ 22,520	$ 180,160	$ 24,755	$ 198,040
2.4	Direct Embed Foundations - 7' x 25'	4	EA	$ 3,105	$ 12,422	$ 34,650	$ 138,601	$ 37,756	$ 151,023
2.5	Drilled Pier - 6' x 19'	6	EA	$ 17,204	$ 103,223	$ 17,391	$ 104,347	$ 34,595	$ 207,570
2.6	Drilled Pier - 8' x 27'	4	EA	$ 42,819	$ 171,274	$ 57,340	$ 229,359	$ 100,158	$ 400,633
2.7	Rock Excavation Adder	1,001.1	CY	$ -	$ -	$ 2,000	$ 2,002,200	$ 2,000	$ 2,002,200
TOTAL - FOUNDATIONS:					$ 417,002		$ 3,778,708		$ 4,195,711
3. STRUCTURES									
3.1	2x 1-CKT 345KV DELTA TANGENT (0°-1°) - 115'	24	Structure	$ 85,544	$ 2,053,056	$ 51,326	$ 1,231,834	$ 136,870	$ 3,284,890
3.2	2x 1-CKT 345KV DELTA TANGENT (0°-1°) - 135'	2	Structure	$ 106,005	$ 212,010	$ 63,603	$ 127,206	$ 169,608	$ 339,216
3.3	2x 1-CKT 345KV DELTA SMALL ANGLE (1°-15°) - 115'	2	Structure	$ 141,673	$ 283,346	$ 85,004	$ 170,008	$ 226,677	$ 453,354
3.4	2x 1-CKT 345KV VERTICAL TANGENT DEADEND (0°-5°) - 115'	4	Structure	$ 109,816	$ 439,264	$ 65,890	$ 263,558	$ 175,706	$ 702,822
3.5	2x 1-CKT 345KV VERTICAL MEDIUM ANGLE DEADEND (15°-60°) - 115'	2	Structure	$ 232,656	$ 465,312	$ 139,594	$ 279,187	$ 372,250	$ 744,499
3.6	2x 1-CKT 345KV 3-POLE LARGE ANGLE DEADEND (60°-90°) - 115'	1	Structure	$ 176,342	$ 176,342	$ 105,805	$ 105,805	$ 282,147	$ 282,147
3.7	2x 1-CKT 345KV 3-POLE TANGENT DEADEND (0°-5°) - 65'	1	Structure	$ 99,493	$ 99,493	$ 59,696	$ 59,696	$ 159,189	$ 159,189

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.8	2x 1-CKT 345KV DELTA TANGENT (0°-1°) HD- 115'	1	Structure	$ 105,820	$ 105,820	$ 63,492	$ 63,492	$ 169,312	**$ 169,312**
3.9	Remove Existing Foundation	22	EA	$ -	$ -	$ 7,500	$ 163,500	$ 7,500	**$ 163,500**
3.10	Remove Existing Structure and Accessories	109	EA	$ -	$ -	$ 12,500	$ 1,362,500	$ 12,500	**$ 1,362,500**
3.11	Install Grounding and Grounding Accessories	82	Pole	$ 506	$ 41,492	$ 5,539	$ 454,157	$ 6,045	**$ 495,649**
TOTAL - STRUCTURES PRINCTOWN TO NEW SCOTLAND:					$ 3,876,135		$ 4,280,943		**$ 8,157,078**
4. CONDUCTOR, SHIELDWIRE, OPGW									
4.1	345kV - (1) 954kcmil 54/7 ACSS "Cardinal" (R1 - R36)	339,293	LF	$ 1.90	$ 644,657	$ 5.00	$ 1,696,465	$ 6.90	**$ 2,341,122**
4.2	(1) OPGW 36 Fiber AC-33/38/571 (R1 - R36)	28,274	LF	$ 1.35	$ 38,170	$ 5.00	$ 141,370	$ 6.35	**$ 179,540**
4.3	(1) 3/8" EHS7 Steel (R1 - R36)	28,274	LF	$ 0.47	$ 13,289	$ 5.00	$ 141,370	$ 5.47	**$ 154,659**
4.5	Remove Existing Conductor and Accessories	10.0	Mile	$ -	$ -	$ 30,000	$ 300,000	$ 30,000.00	**$ 300,000**
4.6	Remove Existing OPGW and Accessories	10.0	Mile	$ -	$ -	$ 12,000	$ 120,000	$ 12,000.00	**$ 120,000**
4.7	Remove Existing OHSW and Accessories	10.0	Mile	$ -	$ -	$ 12,000	$ 120,000	$ 12,000.00	**$ 120,000**
4.8	Rider Poles	15	EA	$ 1,750	$ 26,250	$ 3,500	$ 52,500	$ 5,250.00	**$ 78,750**
4.9	Rider Poles - Relocated	14	Set	$ -	$ -	$ 3,500	$ 49,000	$ 3,500.00	**$ 49,000**
TOTAL: CONDUCTOR, SHIELDWIRE, OPGW:					$ 722,365		$ 2,620,705		**$ 3,343,070**
5. INSULATOR, FITTINGS, HARDWARE									
5.1	345kV Tangent (1-Group of 18-Bells Each Assembly)	348	Assembly	$ 1,800	$ 626,400	$ 720	$ 250,560	$ 2,520	**$ 876,960**
5.2	345kV Dead-end & Angle Insulators (1-Group of 18-Bells Each Assembly)	240	Assembly	$ 1,800	$ 432,000	$ 720	$ 172,800	$ 2,520	**$ 604,800**
5.3	OPGW Assembly - Tangent	29	Assembly	$ 200	$ 5,800	$ 150	$ 4,350	$ 350	**$ 10,150**
5.4	OPGW Assembly - Angle / DE	16	Assembly	$ 250	$ 4,000	$ 150	$ 2,400	$ 400	**$ 6,400**
5.5	OHSW Assembly - Tangent	29	Assembly	$ 200	$ 5,800	$ 150	$ 4,350	$ 350	**$ 10,150**
5.6	OHSW Assembly - Angle / DE	16	Assembly	$ 250	$ 4,000	$ 150	$ 2,400	$ 400	**$ 6,400**
5.7	OPGW Splice Boxes	8	Assembly	$ 1,746	$ 13,969	$ 2,274	$ 18,192	$ 4,020	**$ 32,161**
5.8	OPGW Splice & Test	8	EA	$ 2,520	$ 20,160	$ 2,520	$ 20,160	$ 5,040	**$ 40,320**
5.9	Spacer - Conductor	1,002	EA	$ 50	$ 50,100	$ 35	$ 35,070	$ 85	**$ 85,170**
5.10	Vibration Dampers - Conductor	852	EA	$ 35	$ 29,820	$ 35	$ 29,820	$ 70	**$ 59,640**
5.11	Shieldwire / OPGW Dampers, Misc. Fittings	116	EA	$ 27	$ 3,132	$ 35	$ 4,060	$ 62	**$ 7,192**
5.12	Guys, Anchors, and Accessories	-	EA	$ 912	$ -	$ 1,058	$ -	$ 1,970	**$ -**
5.13	Misc. materials (Signs and Markers)	5.0	Mile	$ 770	$ 3,850	$ 1,006	$ 5,030	$ 1,776	**$ 8,880**
TOTAL - INSULATORS, FITTINGS, HARDWARE:					$ 1,199,031		$ 549,192		**$ 1,748,223**
B. Transmission Line Princetown to Rotterdam					$ 6,220,534		$ 14,267,748		**$ 20,488,282**
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS									
	Contractor Mobilization / Demobilization								
6.1	Mob / Demob	1	LS	$ -	$ -	$ 204,883	$ 204,883	$ 204,883	**$ 204,883**
	Project Management, Material Handling & Amenities								
6.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 740,138	$ 740,138	$ 740,138	**$ 740,138**
6.3	Utility PM and Project Oversite	1	LS		$ -	$ 204,883	$ 204,883	$ 204,883	**$ 204,883**
6.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 204,883	$ 204,883	$ 204,883	**$ 204,883**
	Engineering								
6.5	Design Engineering	1	LS	$ -	$ -	$ 1,024,414	$ 1,024,414	$ 1,024,414	**$ 1,024,414**
6.6	LiDAR	1	LS	$ -	$ -	$ 61,465	$ 61,465	$ 61,465	**$ 61,465**
6.7	Geotech	5	Location	$ -	$ -	$ 3,500	$ 17,500	$ 3,500	**$ 17,500**
6.8	Surveying/Staking	1	LS	$ -	$ -	$ 143,418	$ 143,418	$ 143,418	**$ 143,418**
	Testing & Commissioning								
6.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 40,000	$ 40,000	$ 40,000	**$ 40,000**
	Permitting and Additional Costs								
6.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.12	Warranties / LOC's	1	LS	$ -	$ -	$ 61,465	$ 61,465	$ 61,465	**$ 61,465**
6.13	Real Estate Costs (New ROW)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.14	Real Estate Costs (Incumbent Utility ROW)	1	LS	$ -	$ -	$ 1,011,000	$ 1,011,000	$ 1,011,000	**$ 1,011,000**
6.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.18	Sales Tax on Materials	1	LS	$ 497,643	$ 497,643	$ -	$ -	$ 497,643	**$ 497,643**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 20,488	$ 20,488	$ 20,488	**$ 20,488**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 497,643		$ 3,734,537		**$ 4,232,179**

NAT & NYPA - T025 - (Segment A, + 765kV)

C. Transmission Line Princetown to New Scotland

Estimate Revision: 7

Total: $ 47,048,794

NAT & NYPA - T025 - (Segment A, + 765kV)	*Supply*	*Installation*	*Total*
C. Transmission Line Princetown to New Scotland			
1. CLEARING & ACCESS	$ 31,000	$ 11,223,694	$ 11,254,694
2. FOUNDATIONS	$ 1,194,705	$ 4,499,949	$ 5,694,653
3. STRUCTURES	$ 6,879,617	$ 5,578,039	$ 12,457,656
4. CONDUCTOR, SHIELDWIRE, OPGW	$ 1,564,842	$ 4,756,290	$ 6,321,132
5. INSULATORS, FITTINGS, HARDWARE	$ 1,767,073	$ 847,291	$ 2,614,365
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 914,979	$ 7,791,316	$ 8,706,295
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 12,352,215	$ 34,696,579	$ 47,048,794
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 12,352,215	$ 34,696,579	$ 47,048,794

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
C. Transmission Line Princetown to New Scotland									
1. CLEARING & ACCESS									
1.1	Clearing the ROW - Heavy (mowing & clearing)	26.0	Acre	$ -	$ -	$ 15,000	$ 390,000	$ 15,000	**$ 390,000**
1.2	Clearing the ROW - Light (mowing)	57.0	Acre	$ -	$ -	$ 5,000	$ 285,000	$ 5,000	**$ 285,000**
1.3	Permanent Access Road	20,803.2	LF	$ -	$ -	$ 45	$ 936,144	$ 45	**$ 936,144**
1.4	Silt Fence	104,016.0	LF	$ -	$ -	$ 4	$ 416,064	$ 4	**$ 416,064**
1.5	Matting - Access and ROW	83,212.8	LF	$ -	$ -	$ 70	$ 5,824,896	$ 70	**$ 5,824,896**
1.6	Matting - To Work Area	3,375.0	LF	$ -	$ -	$ 70	$ 236,250	$ 70	**$ 236,250**
1.7	Snow Removal	19.7	Mile	$ -	$ -	$ 16,000	$ 315,200	$ 16,000	**$ 315,200**
1.8	ROW Restoration	19.7	Mile	$ -	$ -	$ 10,000	$ 197,000	$ 10,000	**$ 197,000**
1.9	Work Pads	645,000.0	SF	$ -	$ -	$ 4	$ 2,270,400	$ 4	**$ 2,270,400**
1.10	Restoration for Work Pad areas	129,000.0	SF	$ -	$ -	$ 0.2	$ 19,350	$ 0	**$ 19,350**
1.11	Temporary Access Bridge	-	EA	$ -	$ -	$ 20,035	$ -	$ 20,035	**$ -**
1.12	Air Bridge	2	EA	$ -	$ -	$ 14,445	$ 28,890	$ 14,445	**$ 28,890**
1.13	Stabilized Construction Entrance	-	EA	$ -	$ -	$ 4,580	$ -	$ 4,580	**$ -**
1.14	Maintenance and Protection of Traffic on Public Roads	50	EA	$ -	$ -	$ 4,130	$ 206,500	$ 4,130	**$ 206,500**
1.15	Gates	11	EA	$ 2,000	$ 22,000	$ 2,500	$ 27,500	$ 4,500	**$ 49,500**
1.16	Culverts / Misc. Access	12	EA	$ 750	$ 9,000	$ 1,250	$ 15,000	$ 2,000	**$ 24,000**
1.17	Concrete Washout Station	30	EA	$ -	$ -	$ 1,850	$ 55,500	$ 1,850	**$ 55,500**
TOTAL - CLEARING & ACCESS:					$ 31,000		$ 11,223,694		**$ 11,254,694**
2. FOUNDATIONS									
2.1	Direct Embed Foundations - 4' x 16'	100	EA	$ 941	$ 94,073	$ 7,398	$ 739,787	$ 8,339	**$ 833,860**
2.2	Direct Embed Foundations - 4' x 19'	14	EA	$ 1,104	$ 15,455	$ 8,703	$ 121,847	$ 9,807	**$ 137,302**
2.3	Direct Embed Foundations - 4' x 21'	2	EA	$ 1,213	$ 2,425	$ 9,574	$ 19,147	$ 10,786	**$ 21,573**
2.4	Direct Embed Foundations - 6' x 18'	9	EA	$ 1,857	$ 16,717	$ 18,603	$ 167,431	$ 20,461	**$ 184,148**
2.5	Direct Embed Foundations - 6' x 20'	14	EA	$ 2,046	$ 28,648	$ 20,562	$ 287,864	$ 22,608	**$ 316,512**
2.6	Direct Embed Foundations - 6' x 21'	25	EA	$ 2,141	$ 53,516	$ 21,541	$ 538,521	$ 23,681	**$ 592,037**
2.7	Direct Embed Foundations - 6' x 22'	4	EA	$ 2,235	$ 8,940	$ 22,520	$ 90,080	$ 24,755	**$ 99,020**
2.8	Direct Embed Foundations - 6' x 25'	5	EA	$ 2,518	$ 12,591	$ 25,457	$ 127,287	$ 27,976	**$ 139,878**
2.9	Direct Embed Foundations - 6' x 29'	1	EA	$ 2,896	$ 2,896	$ 29,374	$ 29,374	$ 32,270	**$ 32,270**
2.10	Direct Embed Foundations - 6' x 34'	4	EA	$ 3,273	$ 13,093	$ 33,290	$ 133,162	$ 36,564	**$ 146,255**
2.11	Direct Embed Foundations - 6' x 42'	3	EA	$ 4,123	$ 12,369	$ 42,103	$ 126,308	$ 46,225	**$ 138,676**
2.12	Direct Embed Foundations - 7' x 25'	1	EA	$ 3,105	$ 3,105	$ 34,650	$ 34,650	$ 37,756	**$ 37,756**
2.13	Direct Embed Foundations - 7' x 27'	1	EA	$ 3,337	$ 3,337	$ 37,316	$ 37,316	$ 40,652	**$ 40,652**
2.14	Direct Embed Foundations - 7' x 28'	1	EA	$ 3,452	$ 3,452	$ 38,648	$ 38,648	$ 42,101	**$ 42,101**
2.15	Drilled Pier - 6' x 20'	6	EA	$ 18,064	$ 108,384	$ 18,261	$ 109,564	$ 36,325	**$ 217,949**
2.16	Drilled Pier - 7' x 19'	15	EA	$ 23,416	$ 351,246	$ 23,671	$ 355,070	$ 47,088	**$ 706,315**
2.17	Drilled Pier - 7' x 24'	3	EA	$ 29,270	$ 87,811	$ 29,589	$ 88,767	$ 58,860	**$ 176,579**
2.18	Drilled Pier - 8' x 27'	1	EA	$ 42,819	$ 42,819	$ 43,285	$ 43,285	$ 86,103	**$ 86,103**
2.19	Drilled Pier - 8' x 83'	1	EA	$ 128,456	$ 128,456	$ 172,020	$ 172,020	$ 300,475	**$ 300,475**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.20	Drilled Pier - 8' x 89'	1	EA	$ 137,631	$ 137,631	$ 184,307	$ 184,307	$ 321,938	**$ 321,938**
2.21	Drilled Pier - 9' x 34'	1	EA	$ 67,740	$ 67,740	$ 90,713	$ 90,713	$ 158,454	**$ 158,454**
2.22		-		$ -	$ -	$ -	$ -	$ -	**$ -**
2.23	Rock Excavation Adder (20% of Excavation)	482.40	CY	$ -	$ -	$ 2,000	$ 964,800	$ 2,000	**$ 964,800**
TOTAL - FOUNDATIONS:					$ 1,194,705		$ 4,499,949		**$ 5,694,653**
3. STRUCTURES									
3.1	1-CKT 345KV VERTICAL TANGENT (0°-1°) - 115'	7	Structure	$ 50,024	$ 350,168	$ 30,014	$ 210,101	$ 80,038	**$ 560,269**
3.2	1-CKT 345KV VERTICAL TANGENT (0°-1°) - 120'	5	Structure	$ 52,207	$ 261,035	$ 31,324	$ 156,621	$ 83,531	**$ 417,656**
3.3	1-CKT 345KV VERTICAL TANGENT (0°-1°) - 125'	8	Structure	$ 55,685	$ 445,480	$ 33,411	$ 267,288	$ 89,096	**$ 712,768**
3.4	1-CKT 345KV VERTICAL TANGENT (0°-1°) - 130'	9	Structure	$ 58,257	$ 524,309	$ 34,954	$ 314,585	$ 93,210	**$ 838,894**
3.5	1-CKT 345KV VERTICAL TANGENT (0°-1°) - 135'	4	Structure	$ 60,884	$ 243,534	$ 36,530	$ 146,120	$ 97,414	**$ 389,654**
3.6	1-CKT 345KV VERTICAL TANGENT (0°-1°) - 145'	1	Structure	$ 64,473	$ 64,473	$ 38,684	$ 38,684	$ 103,156	**$ 103,156**
3.7	1-CKT 345KV VERTICAL SMALL ANGLE (1°-15°) - 115'	1	Structure	$ 72,039	$ 72,039	$ 43,223	$ 43,223	$ 115,262	**$ 115,262**
3.8	1-CKT 345KV VERTICAL SMALL ANGLE (1°-15°) - 135'	1	Structure	$ 92,278	$ 92,278	$ 55,367	$ 55,367	$ 147,645	**$ 147,645**
3.9	1-CKT 345KV VERTICAL TANGENT DEADEND (0°-5°) - 120'	1	Structure	$ 58,164	$ 58,164	$ 34,898	$ 34,898	$ 93,062	**$ 93,062**
3.10	1-CKT 345KV VERTICAL MEDIUM ANGLE DEADEND (15°-60°) - 105'	1	Structure	$ 98,883	$ 98,883	$ 59,330	$ 59,330	$ 158,212	**$ 158,212**
3.11	1-CKT 345KV H-FRAME TANGENT (0°-1°) - 84'	43	Structure	$ 29,526	$ 1,269,618	$ 17,716	$ 761,771	$ 47,242	**$ 2,031,389**
3.12	1-CKT 345KV H-FRAME TANGENT (0°-1°) - 89'	5	Structure	$ 32,708	$ 163,540	$ 19,625	$ 98,124	$ 52,333	**$ 261,664**
3.13	1-CKT 345KV H-FRAME TANGENT (0°-1°) - 93'	5	Structure	$ 34,540	$ 172,698	$ 20,724	$ 103,619	$ 55,263	**$ 276,316**
3.14	1-CKT 345KV H-FRAME TANGENT (0°-1°) - 107'	5	Structure	$ 45,936	$ 229,678	$ 27,561	$ 137,807	$ 73,497	**$ 367,484**
3.15	1-CKT 345KV H-FRAME SMALL ANGLE (1°-15°) - 80'	3	Structure	$ 55,241	$ 165,723	$ 33,145	$ 99,434	$ 88,386	**$ 265,157**
3.16	1-CKT 345KV 3-POLE TANGENT DEADEND (0°-5°) - 80'	5	Structure	$ 69,079	$ 345,395	$ 41,447	$ 207,237	$ 110,526	**$ 552,632**
3.17	1-CKT 345KV 3-POLE TANGENT DEADEND (0°-5°) - 85'	1	Structure	$ 75,739	$ 75,739	$ 45,443	$ 45,443	$ 121,182	**$ 121,182**
3.18	1-CKT 345KV 3-POLE MEDIUM ANGLE DEADEND (15°-60°) - 80'	5	Structure	$ 97,403	$ 487,013	$ 58,442	$ 292,208	$ 155,844	**$ 779,220**
3.19	1-CKT 345KV 3-POLE MEDIUM ANGLE DEADEND (15°-60°) - 95'	1	Structure	$ 129,408	$ 129,408	$ 77,645	$ 77,645	$ 207,052	**$ 207,052**
3.20	1-CKT 345KV 3-POLE MEDIUM ANGLE DEADEND (15°-60°) - 115'	1	Structure	$ 178,026	$ 178,026	$ 106,815	$ 106,815	$ 284,841	**$ 284,841**
3.21	2-CKT 115KV/345KV VERTICAL TANGENT (0°-1°) - 115'	7	Structure	$ 54,631	$ 382,414	$ 32,778	$ 229,448	$ 87,409	**$ 611,862**
3.22	2-CKT 115KV/345KV VERTICAL TANGENT (0°-1°) - 125'	4	Structure	$ 62,604	$ 250,416	$ 37,562	$ 150,250	$ 100,166	**$ 400,666**
3.23	2-CKT 115KV/345KV VERTICAL TANGENT (0°-1°) - 135'	1	Structure	$ 68,894	$ 68,894	$ 41,336	$ 41,336	$ 110,230	**$ 110,230**
3.24	2-CKT 115KV/345KV VERTICAL SMALL ANGLE (1°-15°) - 155'	1	Structure	$ 149,480	$ 149,480	$ 89,688	$ 89,688	$ 239,168	**$ 239,168**
3.25	2-CKT 115KV/345KV VERTICAL MEDIUM ANGLE DEADEND (15°-60°) - 115'	1	Structure	$ 173,808	$ 173,808	$ 104,285	$ 104,285	$ 278,092	**$ 278,092**
3.26	2-CKT 115KV/345KV VERTICAL MEDIUM ANGLE DEADEND (15°-60°) - 125'	1	Structure	$ 202,797	$ 202,797	$ 121,678	$ 121,678	$ 324,475	**$ 324,475**
3.27	115KV DUMMY DE, Drilled Pier, 85'	2	Structure	$ 58,164	$ 116,328	$ 34,898	$ 69,797	$ 93,062	**$ 186,125**
3.28	Remove Existing Foundation	4	EA	$ -	$ -	$ 7,500	$ 30,000	$ 7,500	**$ 30,000**
3.29	Remove Existing Structure and Accessories	24	EA	$ -	$ -	$ 12,500	$ 300,000	$ 12,500	**$ 300,000**
3.30	Install Grounding and Grounding Accessories	214	Pole	$ 506	$ 108,284	$ 5,539	$ 1,185,239	$ 6,045	**$ 1,293,523**
TOTAL - STRUCTURES:					$ 6,879,617		$ 5,578,039		**$ 12,457,656**
4. CONDUCTOR, SHIELDWIRE, OPGW									
4.1	**345kV** - (1) 954kcmil 54/7 ACSS "Cardinal" (ENS-336 to ENS-464)	661,954	LF	$ 1.90	$ 1,257,713	$ 5.00	$ 3,309,770	$ 6.90	**$ 4,567,483**
4.2	(1) OPGW 36 Fiber AC-33/38/571 (ENS-336 to ENS-464)	110,326	LF	$ 1.35	$ 148,940	$ 5.00	$ 551,630	$ 6.35	**$ 700,570**
4.3	(1) 3/8" EHS7 Steel (ENS-336 to ENS-464)	75,398	LF	$ 0.47	$ 35,437	$ 5.00	$ 376,990	$ 5.47	**$ 412,427**
4.4		-		$ -	$ -	$ -	$ -	$ -	**$ -**
4.5	**115kV** - (1) 954kcmil 54/7 ACSS "Cardinal" (ENS-336 to ENS-464)	41,580	LF	$ 1.90	$ 79,002	$ 5.00	$ 207,900	$ 6.90	**$ 286,902**
4.6	(1) OPGW 36 Fiber AC-33/38/571 (ENS-336 to ENS-464)	-	LF	$ 1.35	$ -	$ 5.00	$ -	$ 6.35	**$ -**
4.7	(1) 3/8" EHS7 Steel (ENS-336 to ENS-464)	-	LF	$ 0.47	$ -	$ 5.00	$ -	$ 5.47	**$ -**
4.8	Remove Existing Conductor and Accessories	2.5	Mile	$ -	$ -	$ 30,000	$ 75,000	$ 30,000.00	**$ 75,000**
4.9	Remove Existing OPGW and Accessories	2.5	Mile	$ -	$ -	$ 12,000	$ 30,000	$ 12,000.00	**$ 30,000**
4.10	Remove Existing OHSW and Accessories	2.5	Mile	$ -	$ -	$ 12,000	$ 30,000	$ 12,000.00	**$ 30,000**
4.11	Rider Poles (50 Locations)	25	Set	$ 1,750	$ 43,750	$ 3,500	$ 87,500	$ 5,250.00	**$ 131,250**
4.12	Rider Poles - Relocated	25	Set	$ -	$ -	$ 3,500	$ 87,500	$ 3,500.00	**$ 87,500**
TOTAL - CONDUCTOR, SHIELDWIRE, OPGW:					$ 1,564,842		$ 4,756,290		**$ 6,321,132**
5. INSULATOR, FITTINGS, HARDWARE									
5.1	345kV Tangent (1-Group of 18-Bells Each Assembly)	538	Assembly	$ 1,800	$ 968,400	$ 720	$ 387,360	$ 2,520	**$ 1,355,760**
5.2	115kV Tangent (1-Group of 9-Bells Each Assembly)	78	Assembly	$ 900	$ 70,200	$ 560	$ 43,680	$ 1,460	**$ 113,880**
5.3	345kV Dead-end & Angle Insulators (1-Group of 18-Bells Each Assembly)	255	Assembly	$ 1,800	$ 459,000	$ 720	$ 183,600	$ 2,520	**$ 642,600**
5.4	115kV Dead-end & Angle Insulators (1-Group of 9-Bells Each Assembly)	21	Assembly	$ 900	$ 18,900	$ 560	$ 11,760	$ 1,460	**$ 30,660**
5.5									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
5.6									
5.7	OPGW Assembly - Tangent	110	Assembly	$ 200	$ 22,000	$ 150	$ 16,500	$ 350	**$ 38,500**
5.8	OPGW Assembly - Angle / DE	34	Assembly	$ 250	$ 8,500	$ 150	$ 5,100	$ 400	**$ 13,600**
5.9	OHSW Assembly - Tangent	61	Assembly	$ 200	$ 12,200	$ 150	$ 9,150	$ 350	**$ 21,350**
5.10	OHSW Assembly - Angle / DE	24	Assembly	$ 250	$ 6,000	$ 150	$ 3,600	$ 400	**$ 9,600**
5.11	OPGW Splice Boxes	8	Assembly	$ 1,746	$ 13,969	$ 2,274	$ 18,192	$ 4,020	**$ 32,161**
5.12	OPGW Splice & Test	8	EA	$ 2,520	$ 20,160	$ 2,520	$ 20,160	$ 5,040	**$ 40,320**
5.13	Spacer - Conductor	1,773	EA	$ 50	$ 88,650	$ 35	$ 62,055	$ 85	**$ 150,705**
5.14	Vibration Dampers - Conductor	1,596	EA	$ 35	$ 55,860	$ 35	$ 55,860	$ 70	**$ 111,720**
5.15	Shieldwire / OPGW Dampers, Misc. Fittings	293	EA	$ 27	$ 7,911	$ 35	$ 10,255	$ 62	**$ 18,166**
5.16	Guys, Anchors, and Accessories	-	EA	$ 912	$ -	$ 1,058	$ -	$ 1,970	**$ -**
5.17	Misc. materials (Signs and Markers)	19.9	Mile	$ 770	$ 15,323	$ 1,006	$ 20,019	$ 1,776	**$ 35,342**
TOTAL - INSULATORS, FITTINGS, HARDWARE:					$ 1,767,073		$ 847,291		**$ 2,614,365**
C. Transmission Line Princetown to New Scotland					$ 11,437,237		$ 26,905,263		**$ 38,342,499**
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
6.1	Mob / Demob	1	LS	$ -	$ -	$ 383,425	$ 383,425	$ 383,425	**$ 383,425**
	Project Management, Material Handling & Amenities								
6.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 1,385,121	$ 1,385,121	$ 1,385,121	**$ 1,385,121**
6.3	Utility PM and Project Oversite	1	LS		$ -	$ 383,425	$ 383,425	$ 383,425	**$ 383,425**
6.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 383,425	$ 383,425	$ 383,425	**$ 383,425**
	Engineering								
6.5	Design Engineering	1	LS	$ -	$ -	$ 1,917,125	$ 1,917,125	$ 1,917,125	**$ 1,917,125**
6.6	LiDAR	1	LS	$ -	$ -	$ 115,027	$ 115,027	$ 115,027	**$ 115,027**
6.7	Geotech	20	Location	$ -	$ -	$ 3,500	$ 70,000	$ 3,500	**$ 70,000**
6.8	Surveying/Staking	1	LS	$ -	$ -	$ 268,397	$ 268,397	$ 268,397	**$ 268,397**
	Testing & Commissioning								
6.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 40,000	$ 40,000	$ 40,000	**$ 40,000**
	Permitting and Additional Costs								
6.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.12	Warranties / LOC's	1	LS	$ -	$ -	$ 115,027	$ 115,027	$ 115,027	**$ 115,027**
6.13	Real Estate Costs (New ROW)	1	LS	$ -	$ -	$ 215,000	$ 215,000	$ 215,000	**$ 215,000**
6.14	Real Estate Costs (Incumbent Utility ROW)	1	LS	$ -	$ -	$ 2,477,000	$ 2,477,000	$ 2,477,000	**$ 2,477,000**
6.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.18	Sales Tax on Materials	1	LS	$ 914,979	$ 914,979	$ -	$ -	$ 914,979	**$ 914,979**
6.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 38,342	$ 38,342	$ 38,342	**$ 38,342**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 914,979		$ 7,791,316		**$ 8,706,295**

NAT & NYPA - T025 - (Segment A, + 765kV)

D. Rotterdam Substation - Install

Estimate Revision: 7

Total: $ 54,261,332

NAT & NYPA - T025 - (Segment A, + 765kV)	*Supply*	*Installation*	*Total*
D. Rotterdam Substation - Install			
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ 2,896,891	$ 8,053,255	$ 10,950,146
2. SUBSTATION FOUNDATIONS	$ 2,443,003	$ 2,616,200	$ 5,059,203
3. SUBSTATION STRUCTURES	$ 944,980	$ 944,980	$ 1,889,960
4. MAJOR EQUIPTMENT	$ 11,915,000	$ 2,970,000	$ 14,885,000
5. SMALL EQUIPTMENT / MATERIALS	$ 1,994,540	$ 1,060,500	$ 3,055,040
6. CONTROL HOUSE / PANELS	$ 2,927,500	$ 1,477,500	$ 4,405,000
7. MISC ITEMS	$ 1,441,675	$ 2,331,950	$ 3,773,625
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 1,965,087	$ 8,278,271	$ 10,243,358
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 26,528,676	$ 27,732,656	$ 54,261,332
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 26,528,676	$ 27,732,656	$ 54,261,332

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
D. Rotterdam Substation - Install									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	3.9	ACRES	$ -	$ -	$ 203,000	$ 786,625	$ 203,000	**$ 786,625**
1.2	Station stone within substation fence.	3,175	CY	$ 27	$ 85,725	$ 75	$ 238,125	$ 102	**$ 323,850**
1.3	Substation Fence	2,130	LF	$ 100	$ 213,000	$ 100	$ 213,000	$ 200	**$ 426,000**
1.4	Retaining Wall (1065' x 13')	1	LS	$ 406,755	$ 406,755	$ 925,345	$ 925,345	$ 1,332,100	**$ 1,332,100**
1.5	Compacted Fill (124,583cy Sand)	124,583	CY	$ 17	$ 2,117,911	$ 20	$ 2,491,660	$ 37	**$ 4,609,571**
1.6	Permanent Access Road - 20'-Wide (From Gordon RD)	2,100	LF	$ 35	$ 73,500	$ 285	$ 598,500	$ 320	**$ 672,000**
1.7	Natural Gas Transmission Line Relocation	1	LS	$ -	$ -	$ 2,800,000	$ 2,800,000	$ 2,800,000	**$ 2,800,000**
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ 2,896,891		$ 8,053,255		$ 10,950,146
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	8	EA	$ 14,940	$ 119,520	$ 16,000	$ 128,000	$ 30,940	**$ 247,520**
2.1b	Capacitor Bank Foundations	0	EA	$ 56,025	$ -	$ 60,000	$ -	$ 116,025	**$ -**
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	32	EA	$ 26,145	$ 836,640	$ 28,000	$ 896,000	$ 54,145	**$ 1,732,640**
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 26,145	$ -	$ 28,000	$ -	$ 54,145	**$ -**
2.1e	Switch Stand Foundations	102	EA	$ 4,482	$ 457,164	$ 4,800	$ 489,600	$ 9,282	**$ 946,764**
2.1f	Station Service Transformer Stand Foundation	1	EA	$ 4,482	$ 4,482	$ 4,800	$ 4,800	$ 9,282	**$ 9,282**
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1h	Bus Support 1 Ph Foundations	42	EA	$ 4,482	$ 188,244	$ 4,800	$ 201,600	$ 9,282	**$ 389,844**
2.1j	Instrument Transformer Stand Foundations	33	EA	$ 4,482	$ 147,906	$ 4,800	$ 158,400	$ 9,282	**$ 306,306**
2.1k	Arrester Stand Foundations	6	EA	$ 4,482	$ 26,892	$ 4,800	$ 28,800	$ 9,282	**$ 55,692**
2.1m	Wave Trap Stand Foundations	2	EA	$ 4,482	$ 8,964	$ 4,800	$ 9,600	$ 9,282	**$ 18,564**
2.1n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.1p									
2.2	**230kV**								
2.2a	Circuit Breaker Foundations	1	EA	$ 11,952	$ 11,952	$ 12,800	$ 12,800	$ 24,752	**$ 24,752**
2.2b	Capacitor Bank Foundations	0	EA	$ 44,820	$ -	$ 48,000	$ -	$ 92,820	**$ -**
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	4	EA	$ 22,410	$ 89,640	$ 24,000	$ 96,000	$ 46,410	**$ 185,640**
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	**$ -**
2.2e	Switch Stand Foundations	8	EA	$ 3,735	$ 29,880	$ 4,000	$ 32,000	$ 7,735	**$ 61,880**
2.2f	Station Service Transformer Stand Foundation	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	**$ -**
2.2g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.2h	Bus Support 1 Ph Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	**$ -**
2.2j	Instrument Transformer Stand Foundations	9	EA	$ 3,735	$ 33,615	$ 4,000	$ 36,000	$ 7,735	**$ 69,615**
2.2k	Arrester Stand Foundations	3	EA	$ 3,735	$ 11,205	$ 4,000	$ 12,000	$ 7,735	**$ 23,205**
2.2m	Wave Trap Stand Foundations	1	EA	$ 3,735	$ 3,735	$ 4,000	$ 4,000	$ 7,735	**$ 7,735**
2.2n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.2p									
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	0	EA	$ 5,229	$ -	$ 5,600	$ -	$ 10,829	**$ -**
2.3b	Capacitor Bank Foundations	0	EA	$ 33,615	$ -	$ 36,000	$ -	$ 69,615	**$ -**
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	4	EA	$ 16,434	$ 65,736	$ 17,600	$ 70,400	$ 34,034	**$ 136,136**
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	**$ -**
2.3e	Switch Stand Foundations	4	EA	$ 2,988	$ 11,952	$ 3,200	$ 12,800	$ 6,188	**$ 24,752**
2.3f	Fuse Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	**$ -**
2.3g	Bus Support 3ph Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	**$ -**
2.3h	Bus Support 1 Ph Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	**$ -**
2.3j	Instrument Transformer Stand Foundations	6	EA	$ 2,988	$ 17,928	$ 3,200	$ 19,200	$ 6,188	**$ 37,128**
2.3k	Arrester Stand Foundations	6	EA	$ 2,988	$ 17,928	$ 3,200	$ 19,200	$ 6,188	**$ 37,128**
2.3m	Wave Trap Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	**$ -**
2.3n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment	1	EA	$ 97,110	$ 97,110	$ 104,000	$ 104,000	$ 201,110	**$ 201,110**
2.4b	345-115kV Transformer Foundation w/ Oil Containment	2	EA	$ 74,700	$ 149,400	$ 80,000	$ 160,000	$ 154,700	**$ 309,400**
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad	1	EA	$ 97,110	$ 97,110	$ 104,000	$ 104,000	$ 201,110	**$ 201,110**
2.5b	Generator Foundation	1	EA	$ 16,000	$ 16,000	$ 17,000	$ 17,000	$ 33,000	**$ 33,000**
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	0	EA	$ 5,229	$ -	$ 5,600	$ -	$ 10,829	**$ -**
2.6b				$ -	$ -	$ -	$ -	$ -	**$ -**
2.6c				$ -	$ -	$ -	$ -	$ -	**$ -**
TOTAL - SUBSTATION FOUNDATIONS					$ 2,443,003		$ 2,616,200		$ 5,059,203
3. SUBSTATION STRUCTURES									
3.1	**345kV**								
3.1a	Substation A-Frame Structures - Stand alone	8	EA	$ 37,000	$ 296,000	$ 37,000	$ 296,000	$ 74,000	**$ 592,000**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.1b	Substation A-Frame Structures - Shared Column	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	**$ -**
3.1c	Switch Stands	17	EA	$ 14,800	$ 251,600	$ 14,800	$ 251,600	$ 29,600	**$ 503,200**
3.1d	Station Service Transformer Stand	1	EA	$ 14,800	$ 14,800	$ 14,800	$ 14,800	$ 29,600	**$ 29,600**
3.1e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.1f	Bus Support 1 Ph	42	EA	$ 3,700	$ 155,400	$ 3,700	$ 155,400	$ 7,400	**$ 310,800**
3.1g	Instrument Transformer Stand	33	EA	$ 1,850	$ 61,050	$ 1,850	$ 61,050	$ 3,700	**$ 122,100**
3.1h	Arrester Stand	6	EA	$ 1,850	$ 11,100	$ 1,850	$ 11,100	$ 3,700	**$ 22,200**
3.1j	Wave Trap Stand	2	EA	$ 7,400	$ 14,800	$ 7,400	$ 14,800	$ 14,800	**$ 29,600**
3.1k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	**$ -**
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone	1	EA	$ 33,300	$ 33,300	$ 33,300	$ 33,300	$ 66,600	**$ 66,600**
3.2b	Substation A-Frame Structures - Shared Column	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	**$ -**
3.2c	Switch Stands	2	EA	$ 12,025	$ 24,050	$ 12,025	$ 24,050	$ 24,050	**$ 48,100**
3.2d	Station Service Transformer Stand	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	**$ -**
3.2e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.2f	Bus Support 1 Ph	0	EA	$ 2,775	$ -	$ 2,775	$ -	$ 5,550	**$ -**
3.2g	Instrument Transformer Stand	9	EA	$ 1,295	$ 11,655	$ 1,295	$ 11,655	$ 2,590	**$ 23,310**
3.2h	Arrester Stand	3	EA	$ 1,295	$ 3,885	$ 1,295	$ 3,885	$ 2,590	**$ 7,770**
3.2j	Wave Trap Stand	1	EA	$ 5,550	$ 5,550	$ 5,550	$ 5,550	$ 11,100	**$ 11,100**
3.2k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	**$ -**
3.3	**115kV**								
3.3a	Substation A-Frame Structures - Stand alone	2	EA	$ 18,500	$ 37,000	$ 18,500	$ 37,000	$ 37,000	**$ 74,000**
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	**$ -**
3.3c	Switch Stands	2	EA	$ 7,955	$ 15,910	$ 7,955	$ 15,910	$ 15,910	**$ 31,820**
3.3d	Fuse Stand	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	**$ -**
3.3e	Bus Support 3ph	0	EA	$ 3,330	$ -	$ 3,330	$ -	$ 6,660	**$ -**
3.3f	Bus Support 1 Ph	0	EA	$ 1,850	$ -	$ 1,850	$ -	$ 3,700	**$ -**
3.3g	Instrument Transformer Stand	6	EA	$ 740	$ 4,440	$ 740	$ 4,440	$ 1,480	**$ 8,880**
3.3h	Arrester Stand	6	EA	$ 740	$ 4,440	$ 740	$ 4,440	$ 1,480	**$ 8,880**
3.3j	Wave Trap Stand	0	EA	$ 3,700	$ -	$ 3,700	$ -	$ 7,400	**$ -**
3.3k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	**$ -**
TOTAL - SUBSTATION STRUCTURES					$ 944,980		$ 944,980		$ 1,889,960
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	8	EA	$ 200,000	$ 1,600,000	$ 80,000	$ 640,000	$ 280,000	**$ 2,240,000**
4.1b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	**$ -**
4.1c	345 kV - 230 kV Auto Transformer	1	EA	$ 3,400,000	$ 3,400,000	$ 750,000	$ 750,000	$ 4,150,000	**$ 4,150,000**
4.1d	345 kV - 115 kV Auto Transformer	2	EA	$ 3,400,000	$ 6,800,000	$ 750,000	$ 1,500,000	$ 4,150,000	**$ 8,300,000**
4.2	**230kV**								
4.2a	Circuit Breakers	1	EA	$ 115,000	$ 115,000	$ 80,000	$ 80,000	$ 195,000	**$ 195,000**
4.2b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	**$ -**
4.3	**115kV**								
4.3a	Circuit Breakers	0	EA	$ 52,000	$ -	$ 60,000	$ -	$ 112,000	**$ -**
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ 60,000	$ -	$ 60,000	**$ -**
TOTAL - MAJOR EQUIPTMENT					$ 11,915,000		$ 2,970,000		$ 14,885,000
5. SMALL EQUIPTMENT / MATERIALS									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator	2	EA	$ 40,000	$ 80,000	$ 15,000	$ 30,000	$ 55,000	**$ 110,000**
5.1b	Disconnect Switches - 3ph w/ manual operator	17	EA	$ 35,000	$ 595,000	$ 17,500	$ 297,500	$ 52,500	**$ 892,500**
5.1c	VT'S	6	EA	$ 25,000	$ 150,000	$ 12,000	$ 72,000	$ 37,000	**$ 222,000**
5.1d	CT'S	6	EA	$ 13,000	$ 78,000	$ 8,000	$ 48,000	$ 21,000	**$ 126,000**
5.1e	CCVT'S	21	EA	$ 13,000	$ 273,000	$ 8,000	$ 168,000	$ 21,000	**$ 441,000**
5.1f	Arresters	15	EA	$ 6,500	$ 97,500	$ 1,500	$ 22,500	$ 8,000	**$ 120,000**
5.1g	Wave Traps	2	EA	$ 13,000	$ 26,000	$ 8,000	$ 16,000	$ 21,000	**$ 42,000**
5.1h	Station Service Transformers	1	EA	$ 200,000	$ 200,000	$ 50,000	$ 50,000	$ 250,000	**$ 250,000**
5.1j									
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator	1	EA	$ 35,000	$ 35,000	$ 15,000	$ 15,000	$ 50,000	**$ 50,000**
5.2b	Disconnect Switches - 3ph w/ manual operator	1	EA	$ 30,000	$ 30,000	$ 17,500	$ 17,500	$ 47,500	**$ 47,500**
5.2c	VT'S	3	EA	$ 13,000	$ 39,000	$ 8,000	$ 24,000	$ 21,000	**$ 63,000**
5.2d	CT'S	3	EA	$ 13,000	$ 39,000	$ 8,000	$ 24,000	$ 21,000	**$ 63,000**
5.2e	CCVT'S	3	EA	$ 10,000	$ 30,000	$ 6,000	$ 18,000	$ 16,000	**$ 48,000**
5.2f	Arresters	6	EA	$ 5,000	$ 30,000	$ 6,000	$ 36,000	$ 11,000	**$ 66,000**
5.2g	Wave Traps	1	EA	$ 13,000	$ 13,000	$ 8,000	$ 8,000	$ 21,000	**$ 21,000**
5.2h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.2j									
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	2	EA	$ 33,000	$ 66,000	$ 15,000	$ 30,000	$ 48,000	**$ 96,000**
5.3b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 28,000	$ -	$ 17,500	$ -	$ 45,500	**$ -**
5.3c	VT'S	6	EA	$ 13,000	$ 78,000	$ 8,000	$ 48,000	$ 21,000	**$ 126,000**
5.3d	CT'S	6	EA	$ 13,000	$ 78,000	$ 8,000	$ 48,000	$ 21,000	**$ 126,000**
5.3e	CCVT'S	2	EA	$ 8,000	$ 16,000	$ 8,000	$ 16,000	$ 16,000	**$ 32,000**
5.3f	Arresters	12	EA	$ 3,420	$ 41,040	$ 6,000	$ 72,000	$ 9,420	**$ 113,040**
5.3g	Wave Traps	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.3h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.3j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ 1,994,540		$ 1,060,500		$ 3,055,040
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE	1	EA	$ 975,000	$ 975,000	$ 170,000	$ 170,000	$ 1,145,000	**$ 1,145,000**
6.2	Protection and Telecom Equipment Panels	29	EA	$ 35,000	$ 1,015,000	$ 10,000	$ 290,000	$ 45,000	**$ 1,305,000**
6.3	125VDC Batteries	2	EA	$ 75,000	$ 150,000	$ 25,000	$ 50,000	$ 100,000	**$ 200,000**
6.4	Control Cables	1	LS	$ 472,500	$ 472,500	$ 472,500	$ 472,500	$ 945,000	**$ 945,000**
6.5	SCADA and Communications	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.6	Low Voltage AC Distribution	2	EA	$ 50,000	$ 100,000	$ 100,000	$ 200,000	$ 150,000	**$ 300,000**
6.7	DC Distribution System	2	EA	$ 50,000	$ 100,000	$ 100,000	$ 200,000	$ 150,000	**$ 300,000**
6.8	Security	1	EA	$ 7,500	$ 7,500	$ 7,500	$ 7,500	$ 15,000	**$ 15,000**
6.9	Fire Alarm	1	EA	$ 7,500	$ 7,500	$ 7,500	$ 7,500	$ 15,000	**$ 15,000**
6.10	Generator	1	EA	$ 100,000	$ 100,000	$ 80,000	$ 80,000	$ 180,000	**$ 180,000**
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ 2,927,500		$ 1,477,500		**$ 4,405,000**
7. MISC ITEMS									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
7.1	Conduit & Cable Trench System	1,950	LF	$ 185.00	$ 360,750	$ 170.00	$ 331,500	$ 355	**$ 692,250**
7.2	Rigid Bus, Fittings & Insulators	2,500	LF	$ 125.07	$ 312,675	$ 237.10	$ 592,750	$ 362	**$ 905,425**
7.3	Strain Bus, Connectors & Insulators	2,000	LF	$ 39.30	$ 78,600	$ 53.35	$ 106,700	$ 93	**$ 185,300**
7.4	Grounding System	25,000	LF	$ 6.93	$ 173,250	$ 32.58	$ 814,500	$ 40	**$ 987,750**
7.5	Strain Bus Insulators - 345kV	48	EA	$ 2,000	$ 96,000	$ 1,050	$ 50,400	$ 3,050	**$ 146,400**
7.6	Strain Bus Insulators - 230kV	6	EA	$ 1,400	$ 8,400	$ 750	$ 4,500	$ 2,150	**$ 12,900**
7.7	Strain Bus Insulators - 115kV	12	EA	$ 1,000	$ 12,000	$ 550	$ 6,600	$ 1,550	**$ 18,600**
7.8	Low Voltage AC Station Service	1	LS	$ 50,000	$ 50,000	$ 75,000	$ 75,000	$ 125,000	**$ 125,000**
7.9	SSVT Service	1	LS	$ 45,000	$ 45,000	$ 45,000	$ 45,000	$ 90,000	**$ 90,000**
7.10	Control Conduits from Trench to Equipment	1	LS	$ 125,000	$ 125,000	$ 125,000	$ 125,000	$ 250,000	**$ 250,000**
7.11	Misc. Materials (Above and Below Ground)	1	LS	$ 180,000	$ 180,000	$ 180,000	$ 180,000	$ 360,000	**$ 360,000**
7.12									
7.13									
7.14									
7.15									
7.16									
7.17									
7.18									
7.19									
7.20									
7.21									
7.22									
7.23									
7.24									
7.25									
TOTAL - MISC ITEMS					$ 1,441,675		$ 2,331,950		$ 3,773,625
D. Rotterdam Substation - Install					$ 24,563,589		$ 19,454,385		**$ 44,017,974**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1.0	LS	$ -	$ -	$ 440,180	$ 440,180	$ 440,180	**$ 440,180**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 1,590,147	$ 1,590,147	$ 1,590,147	**$ 1,590,147**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 440,180	$ 440,180	$ 440,180	**$ 440,180**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 440,180	$ 440,180	$ 440,180	**$ 440,180**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 3,521,438	$ 3,521,438	$ 3,521,438	**$ 3,521,438**
8.6	LiDAR	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.7	Geotech	4	EA	$ -	$ -	$ 3,500	$ 14,000	$ 3,500	**$ 14,000**
8.8	Surveying/Staking	1	Site	$ -	$ -	$ 308,126	$ 308,126	$ 308,126	**$ 308,126**
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 1,100,449	$ 1,100,449	$ 1,100,449	**$ 1,100,449**
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 132,054	$ 132,054	$ 132,054	**$ 132,054**
8.13	Real Estate Costs (New)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.14	Real Estate Costs (Incumbent Utility)	1	LS	$ -	$ -	$ 247,500	$ 247,500	$ 247,500	**$ 247,500**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.18	Sales Tax on Materials	1	LS	$ 1,965,087	$ 1,965,087	$ -	$ -	$ 1,965,087	**$ 1,965,087**
8.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 44,018	$ 44,018	$ 44,018	**$ 44,018**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 1,965,087		$ 8,278,271		**$ 10,243,358**

NAT & NYPA - T025 - (Segment A, + 765kV)

E. Rotterdam Substation - Removal

Estimate Revision: 7

Total: $ 4,153,136

NAT & NYPA - T025 - (Segment A, + 765kV)	*Supply*	*Installation*	*Total*
E. Rotterdam Substation - Removal			
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ -	$ 1,472,750	$ 1,472,750
2. SUBSTATION FOUNDATIONS	$ -	$ 617,400	$ 617,400
3. SUBSTATION STRUCTURES	$ -	$ 534,900	$ 534,900
4. MAJOR EQUIPTMENT	$ -	$ 147,000	$ 147,000
5. SMALL EQUIPTMENT / MATERIALS	$ -	$ 169,500	$ 169,500
6. CONTROL HOUSE / PANELS	$ -	$ 150,000	$ 150,000
7. MISC ITEMS	$ -	$ 519,480	$ 519,480
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ -	$ 542,106	$ 542,106
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ -	$ 4,153,136	$ 4,153,136
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ -	$ 4,153,136	$ 4,153,136

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
E. Rotterdam Substation - Removal									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	6.3	ACRES	$ -	$ -	$ 203,000	$ 1,268,750	$ 203,000	**$ 1,268,750**
1.2	Station stone within substation fence.	2,000	CY	$ -	$ -	$ 102	$ 204,000	$ 102	**$ 204,000**
1.3	Substation Fence	0	LF	$ -	$ -	$ 150	$ -	$ 150	**$ -**
1.4									
1.5									
1.6									
1.7									
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ -		$ 1,472,750		$ 1,472,750
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1e	Switch Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1f	Station Service Transformer Stand Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1k	Arrester Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1p									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.2	**230kV**								
2.2a	Circuit Breaker Foundations	9	EA	$ -	$ -	$ 7,200	$ 64,800	$ 7,200	**$ 64,800**
2.2b	Capacitor Bank Foundations	2	EA	$ -	$ -	$ 32,000	$ 64,000	$ 32,000	**$ 64,000**
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	1	EA	$ -	$ -	$ 22,000	$ 22,000	$ 22,000	**$ 22,000**
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	5	EA	$ -	$ -	$ 11,000	$ 55,000	$ 11,000	**$ 55,000**
2.2e	Switch Stand Foundations	15	EA	$ -	$ -	$ 5,200	$ 78,000	$ 5,200	**$ 78,000**
2.2f	Station Service Transformer Stand Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.2g	Bus Support 3ph Foundations	4	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.2h	Bus Support 1 Ph Foundations	59	EA	$ -	$ -	$ 2,400	$ 141,600	$ 2,400	**$ 141,600**
2.2j	Instrument Transformer Stand Foundations	15	EA	$ -	$ -	$ 2,400	$ 36,000	$ 2,400	**$ 36,000**
2.2k	Arrester Stand Foundations	6	EA	$ -	$ -	$ 2,400	$ 14,400	$ 2,400	**$ 14,400**
2.2m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.2n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.2p									
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3e	Switch Stand Foundations	3	EA	$ -	$ -	$ 5,200	$ 15,600	$ 5,200	**$ 15,600**
2.3f	Fuse Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3k	Arrester Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.4b	345-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment	3	EA	$ -	$ -	$ 42,000	$ 126,000	$ 42,000	**$ 126,000**
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.5b	Generator Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.6b		0		$ -	$ -	$ -	$ -	$ -	**$ -**
2.6c		0		$ -	$ -	$ -	$ -	$ -	**$ -**
TOTAL - SUBSTATION FOUNDATIONS					$ -		$ 617,400		$ 617,400
3. SUBSTATION STRUCTURES									
3.1	**345kV**								
3.1a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.1b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.1c	Switch Stands	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.1d	Station Service Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1f	Bus Support 1 Ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1g	Instrument Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1h	Arrester Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1j	Wave Trap Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone	1	EA	$ -	$ -	$ 27,000	$ 27,000	$ 27,000	**$ 27,000**
3.2b	Substation A-Frame Structures - Shared Column	5	EA	$ -	$ -	$ 27,000	$ 135,000	$ 27,000	**$ 135,000**
3.2c	Switch Stands	15	EA	$ -	$ -	$ 9,750	$ 146,250	$ 9,750	**$ 146,250**
3.2d	Station Service Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2e	Bus Support 3ph	4	EA	$ -	$ -	$ 2,250	$ 9,000	$ 2,250	**$ 9,000**
3.2f	Bus Support 1 Ph	59	EA	$ -	$ -	$ 2,250	$ 132,750	$ 2,250	**$ 132,750**
3.2g	Instrument Transformer Stand	15	EA	$ -	$ -	$ 1,050	$ 15,750	$ 1,050	**$ 15,750**
3.2h	Arrester Stand	6	EA	$ -	$ -	$ 1,050	$ 6,300	$ 1,050	**$ 6,300**
3.2j	Wave Trap Stand	3	EA	$ -	$ -	$ 4,500	$ 13,500	$ 4,500	**$ 13,500**
3.2k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3	**115kV**								
3.3a	Substation A-Frame Structures - Stand alone	2	EA	$ -	$ -	$ 15,000	$ 30,000	$ 15,000	**$ 30,000**
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3c	Switch Stands	3	EA	$ -	$ -	$ 6,450	$ 19,350	$ 6,450	**$ 19,350**
3.3d	Fuse Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3f	Bus Support 1 Ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3g	Instrument Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3h	Arrester Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3j	Wave Trap Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION STRUCTURES					$ -		$ 534,900		$ 534,900
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.2	**230kV**								
4.2a	Circuit Breakers	9	EA	$ -	$ -	$ 7,000	$ 63,000	$ 7,000	**$ 63,000**
4.2b	Capacitor Banks	2	EA	$ -	$ -	$ 42,000	$ 84,000	$ 42,000	**$ 84,000**
4.3	**115kV**								
TOTAL - MAJOR EQUIPTMENT					$ -		$ 147,000		$ 147,000
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.1b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.1c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.1d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.1e	CCVT'S	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.1f	Arresters	0	EA	$ -	$ -	$ 1,500	$ -	$ 1,500	$ -
5.1g	Wave Traps	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.1h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
5.1j									
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator	3	EA	$ -	$ -	$ 5,500	$ 16,500	$ 5,500	**$ 16,500**
5.2b	Disconnect Switches - 3ph w/ manual operator	12	EA	$ -	$ -	$ 5,500	$ 66,000	$ 5,500	**$ 66,000**
5.2c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.2d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.2e	CCVT'S	8	EA	$ -	$ -	$ 1,500	$ 12,000	$ 1,500	**$ 12,000**
5.2f	Arresters	15	EA	$ -	$ -	$ 2,500	$ 37,500	$ 2,500	**$ 37,500**
5.2g	Wave Traps	3	EA	$ -	$ -	$ 2,500	$ 7,500	$ 2,500	**$ 7,500**
5.2h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.2j									
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.3b	Disconnect Switches - 3ph w/ manual operator	3	EA	$ -	$ -	$ 5,500	$ 16,500	$ 5,500	**$ 16,500**
5.3c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.3d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.3e	CCVT'S	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.3f	Arresters	9	EA	$ -	$ -	$ 1,500	$ 13,500	$ 1,500	**$ 13,500**
5.3g	Wave Traps	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.3h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.3j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ -		$ 169,500		$ 169,500
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE	1	EA	$ -	$ -	$ 150,000	$ 150,000	$ 150,000	**$ 150,000**
6.2	Protection and Telecom Equipment Panels	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.3	125VDC Batteries	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.4	Control Cables	0	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.5	SCADA and Communications	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.6	Low Voltage AC Distribution	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.7	DC Distribution System	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.8	Security	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.9	Fire Alarm	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.10	Generator	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ -		$ 150,000		**$ 150,000**
7. MISC ITEMS									
7.1	Conduit & Cable Trench System	1	LS	$ -	$ -	$ 42,000.00	$ 42,000	$ 42,000	**$ 42,000**
7.2	Rigid Bus, Fittings & Insulators	3,200	LF	$ -	$ -	$ 126.25	$ 404,000	$ 126	**$ 404,000**
7.3	Strain Bus, Connectors & Insulators	800	LF	$ -	$ -	$ 39.35	$ 31,480	$ 39	**$ 31,480**
7.4	Grounding System	1	LS	$ -	$ -	$ 42,000.00	$ 42,000	$ 42,000	**$ 42,000**
7.5									
7.6									
7.7									
7.8									
7.9									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
7.10									
7.11									
7.12									
7.13									
7.14									
7.15									
TOTAL - MISC ITEMS					$ -		$ 519,480		$ 519,480
E. Rotterdam Substation - Removal					$ -		$ 3,611,030		**$ 3,611,030**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1	LS	$ -	$ -	$ 36,110	$ 36,110	$ 36,110	**$ 36,110**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 130,448	$ 130,448	$ 130,448	**$ 130,448**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 36,110	$ 36,110	$ 36,110	**$ 36,110**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 36,110	$ 36,110	$ 36,110	**$ 36,110**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 288,882	$ 288,882	$ 288,882	**$ 288,882**
8.6	LiDAR	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.7	Geotech	-	EA	$ -	$ -	$ 3,500	$ -	$ 3,500	**$ -**
8.8	Surveying/Staking	-	Site	$ -	$ -	$ 25,277	$ -	$ 25,277	**$ -**
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	-	LS	$ -	$ -	$ 90,276	$ -	$ 90,276	**$ -**
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 10,833	$ 10,833	$ 10,833	**$ 10,833**
8.13	Real Estate Costs (New)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.14	Real Estate Costs (Incumbent Utility)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.18	Sales Tax on Materials	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 3,611	$ 3,611	$ 3,611	**$ 3,611**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ -		$ 542,106		**$ 542,106**

Estimate Revision:	7	Total:	$ 2,607,956

NAT & NYPA - T025 - (Segment A, + 765kV)	Supply	Installation	Total
F. Edic Substation - Install			
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ 2,025	$ 5,625	$ 7,650
2. SUBSTATION FOUNDATIONS	$ 100,098	$ 107,200	$ 207,298
3. SUBSTATION STRUCTURES	$ 44,400	$ 44,400	$ 88,800
4. MAJOR EQUIPTMENT	$ 200,000	$ 80,000	$ 280,000
5. SMALL EQUIPTMENT / MATERIALS	$ 280,000	$ 133,500	$ 413,500
6. CONTROL HOUSE / PANELS	$ 173,850	$ 98,850	$ 272,700
7. MISC ITEMS	$ 339,357	$ 507,880	$ 847,237
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 91,178	$ 399,592	$ 490,771
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 1,230,908	$ 1,377,047	$ 2,607,956
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 1,230,908	$ 1,377,047	$ 2,607,956

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
F. Edic Substation - Install									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	0	ACRES	$ -	$ -	$ 203,000	$ -	$ 203,000	$ -
1.2	Station stone within substation fence.	75	CY	$ 27	$ 2,025	$ 75	$ 5,625	$ 102	**$ 7,650**
1.3	Substation Fence	0	LF	$ 100	$ -	$ 100	$ -	$ 200	$ -
1.4	Permanent Access Road - 20'-Wide (From Gordon RD)	0	LF	$ 35	$ -	$ 285	$ -	$ 320	$ -
1.5									
1.6									
1.7									
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ 2,025		$ 5,625		$ 7,650
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	1	EA	$ 14,940	$ 14,940	$ 16,000	$ 16,000	$ 30,940	**$ 30,940**
2.1b	Capacitor Bank Foundations	0	EA	$ 56,025	$ -	$ 60,000	$ -	$ 116,025	$ -
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 26,145	$ -	$ 28,000	$ -	$ 54,145	$ -
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 26,145	$ -	$ 28,000	$ -	$ 54,145	$ -
2.1e	Switch Stand Foundations	6	EA	$ 4,482	$ 26,892	$ 4,800	$ 28,800	$ 9,282	**$ 55,692**
2.1f	Station Service Transformer Stand Foundation	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1h	Bus Support 1 Ph Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1j	Instrument Transformer Stand Foundations	9	EA	$ 4,482	$ 40,338	$ 4,800	$ 43,200	$ 9,282	**$ 83,538**
2.1k	Arrester Stand Foundations	3	EA	$ 4,482	$ 13,446	$ 4,800	$ 14,400	$ 9,282	**$ 27,846**
2.1m	Wave Trap Stand Foundations	1	EA	$ 4,482	$ 4,482	$ 4,800	$ 4,800	$ 9,282	**$ 9,282**
2.1n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1p									
2.2	**230kV**								
2.2a	Circuit Breaker Foundations	0	EA	$ 11,952	$ -	$ 12,800	$ -	$ 24,752	$ -
2.2b	Capacitor Bank Foundations	0	EA	$ 44,820	$ -	$ 48,000	$ -	$ 92,820	$ -
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	$ -
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	$ -
2.2e	Switch Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2f	Station Service Transformer Stand Foundation	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.2h	Bus Support 1 Ph Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2j	Instrument Transformer Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2k	Arrester Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2m	Wave Trap Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2p									
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	0	EA	$ 5,229	$ -	$ 5,600	$ -	$ 10,829	$ -
2.3b	Capacitor Bank Foundations	0	EA	$ 33,615	$ -	$ 36,000	$ -	$ 69,615	$ -
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	$ -
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	$ -
2.3e	Switch Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3f	Fuse Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3g	Bus Support 3ph Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3h	Bus Support 1 Ph Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3j	Instrument Transformer Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3k	Arrester Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3m	Wave Trap Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment	0	EA	$ 97,110	$ -	$ 104,000	$ -	$ 201,110	$ -
2.4b	345-115kV Transformer Foundation w/ Oil Containment	0	EA	$ 74,700	$ -	$ 80,000	$ -	$ 154,700	$ -
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad	0	EA	$ 76,194	$ -	$ 81,600	$ -	$ 157,794	$ -
2.5b	Generator Foundation	0	EA	$ 16,000	$ -	$ 17,000	$ -	$ 33,000	$ -
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	0	EA	$ 5,229	$ -	$ 5,600	$ -	$ 10,829	$ -
2.6b	60' Lightning Mast Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6c	50' Lightning Mast Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION FOUNDATIONS					$ 100,098		$ 107,200		$ 207,298
3. SUBSTATION STRUCTURES									
3.1	**345kV**								
3.1a	Substation A-Frame Structures - Stand alone	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	$ -
3.1b	Substation A-Frame Structures - Shared Column	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	$ -
3.1c	Switch Stands	1	EA	$ 14,800	$ 14,800	$ 14,800	$ 14,800	$ 29,600	**$ 29,600**
3.1d	Station Service Transformer Stand	0	EA	$ 14,800	$ -	$ 14,800	$ -	$ 29,600	$ -
3.1e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1f	Bus Support 1 Ph	0	EA	$ 3,700	$ -	$ 3,700	$ -	$ 7,400	$ -
3.1g	Instrument Transformer Stand	9	EA	$ 1,850	$ 16,650	$ 1,850	$ 16,650	$ 3,700	**$ 33,300**
3.1h	Arrester Stand	3	EA	$ 1,850	$ 5,550	$ 1,850	$ 5,550	$ 3,700	**$ 11,100**
3.1j	Wave Trap Stand	1	EA	$ 7,400	$ 7,400	$ 7,400	$ 7,400	$ 14,800	**$ 14,800**
3.1k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	$ -
3.2b	Substation A-Frame Structures - Shared Column	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	$ -
3.2c	Switch Stands	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	$ -
3.2d	Station Service Transformer Stand	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	$ -
3.2e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2f	Bus Support 1 Ph	0	EA	$ 2,775	$ -	$ 2,775	$ -	$ 5,550	$ -
3.2g	Instrument Transformer Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	$ -
3.2h	Arrester Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	$ -
3.2j	Wave Trap Stand	0	EA	$ 5,550	$ -	$ 5,550	$ -	$ 11,100	$ -
3.2k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
3.3	**115kV**								

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.3a	Substation A-Frame Structures - Stand alone	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	$ -
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	$ -
3.3c	Switch Stands	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	$ -
3.3d	Fuse Stand	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	$ -
3.3e	Bus Support 3ph	0	EA	$ 3,330	$ -	$ 3,330	$ -	$ 6,660	$ -
3.3f	Bus Support 1 Ph	0	EA	$ 1,850	$ -	$ 1,850	$ -	$ 3,700	$ -
3.3g	Instrument Transformer Stand	0	EA	$ 740	$ -	$ 740	$ -	$ 1,480	$ -
3.3h	Arrester Stand	0	EA	$ 740	$ -	$ 740	$ -	$ 1,480	$ -
3.3j	Wave Trap Stand	0	EA	$ 3,700	$ -	$ 3,700	$ -	$ 7,400	$ -
3.3k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
TOTAL - SUBSTATION STRUCTURES					$ 44,400		$ 44,400		$ 88,800
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	1	EA	$ 200,000	$ 200,000	$ 80,000	$ 80,000	$ 280,000	**$ 280,000**
4.1b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	$ -
4.1c	345 kV - 230 kV Auto Transformer	0	EA	$ -	$ -	$ 750,000	$ -	$ 750,000	$ -
4.1d	345 kV - 115 kV Auto Transformer	0	EA	$ -	$ -	$ 750,000	$ -	$ 750,000	$ -
4.2	**230kV**								
4.2a	Circuit Breakers	0	EA	$ 115,000	$ -	$ 80,000	$ -	$ 195,000	$ -
4.2b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	$ -
4.3	**115kV**								
4.3a	Circuit Breakers	0	EA	$ 52,000	$ -	$ 60,000	$ -	$ 112,000	$ -
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ 60,000	$ -	$ 60,000	$ -
TOTAL - MAJOR EQUIPTMENT					$ 200,000		$ 80,000		$ 280,000
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator	1	EA	$ 40,000	$ 40,000	$ 15,000	$ 15,000	$ 55,000	**$ 55,000**
5.1b	Disconnect Switches - 3ph w/ manual operator	1	EA	$ 35,000	$ 35,000	$ 17,500	$ 17,500	$ 52,500	**$ 52,500**
5.1c	VT'S	3	EA	$ 25,000	$ 75,000	$ 12,000	$ 36,000	$ 37,000	**$ 111,000**
5.1d	CT'S	3	EA	$ 13,000	$ 39,000	$ 8,000	$ 24,000	$ 21,000	**$ 63,000**
5.1e	CCVT'S	3	EA	$ 13,000	$ 39,000	$ 8,000	$ 24,000	$ 21,000	**$ 63,000**
5.1f	Arresters	6	EA	$ 6,500	$ 39,000	$ 1,500	$ 9,000	$ 8,000	**$ 48,000**
5.1g	Wave Traps	1	EA	$ 13,000	$ 13,000	$ 8,000	$ 8,000	$ 21,000	**$ 21,000**
5.1h	Station Service Transformers	0	EA	$ 200,000	$ -	$ 50,000	$ -	$ 250,000	$ -
5.1j									
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator	0	EA	$ 35,000	$ -	$ 15,000	$ -	$ 50,000	$ -
5.2b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 30,000	$ -	$ 17,500	$ -	$ 47,500	$ -
5.2c	VT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2e	CCVT'S	0	EA	$ 10,000	$ -	$ 6,000	$ -	$ 16,000	$ -
5.2f	Arresters	0	EA	$ 5,000	$ -	$ 6,000	$ -	$ 11,000	$ -
5.2g	Wave Traps	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2j									
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	0	EA	$ 33,000	$ -	$ 15,000	$ -	$ 48,000	$ -
5.3b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 28,000	$ -	$ 17,500	$ -	$ 45,500	$ -
5.3c	VT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.3d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.3e	CCVT'S	0	EA	$ 8,000	$ -	$ 8,000	$ -	$ 16,000	$ -
5.3f	Arresters	0	EA	$ 3,420	$ -	$ 6,000	$ -	$ 9,420	$ -
5.3g	Wave Traps	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ 280,000		$ 133,500		$ 413,500
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE	0	EA	$ 551,250	$ -	$ 85,000	$ -	$ 636,250	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6.2	Protection and Telecom Equipment Panels	3	EA	$ 35,000	$ 105,000	$ 10,000	$ 30,000	$ 45,000	**$ 135,000**
6.3	125VDC Batteries	0	EA	$ 75,000	$ -	$ 25,000	$ -	$ 100,000	**$ -**
6.4	Control Cables	1	LS	$ 68,850	$ 68,850	$ 68,850	$ 68,850	$ 137,700	**$ 137,700**
6.5	SCADA and Communications	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.6	Low Voltage AC Distribution	0	EA	$ 50,000	$ -	$ 100,000	$ -	$ 150,000	**$ -**
6.7	DC Distribution System	0	EA	$ 50,000	$ -	$ 100,000	$ -	$ 150,000	**$ -**
6.8	Security	0	EA	$ 7,500	$ -	$ 7,500	$ -	$ 15,000	**$ -**
6.9	Fire Alarm	0	EA	$ 7,500	$ -	$ 7,500	$ -	$ 15,000	**$ -**
6.10	Generator	0	EA	$ 100,000	$ -	$ 80,000	$ -	$ 180,000	**$ -**
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ 173,850		$ 98,850		**$ 272,700**
7. MISC ITEMS									
7.1	Conduit & Cable Trench System	800	LF	$ 185.00	$ 148,000	$ 170.00	$ 136,000	$ 355	**$ 284,000**
7.2	Rigid Bus, Fittings & Insulators	0	L.S.	$ -	$ -	$ -	$ -	$ -	**$ -**
7.3	Strain Bus, Connectors & Insulators	2,500	LF	$ 39.30	$ 98,250	$ 53.35	$ 133,375	$ 93	**$ 231,625**
7.4	Grounding System	1	L.S.	$ 10,395.00	$ 10,395	$ 73,305.00	$ 73,305	$ 83,700	**$ 83,700**
7.5	Strain Bus Insulators - 345kV	24	EA	$ 2,000	$ 48,000	$ 1,050	$ 25,200	$ 3,050	**$ 73,200**
7.6	Strain Bus Insulators - 230kV	0	EA	$ 1,400	$ -	$ 750	$ -	$ 2,150	**$ -**
7.7	Strain Bus Insulators - 115kV	0	EA	$ 1,000	$ -	$ 550	$ -	$ 1,550	**$ -**
7.8	Low Voltage AC Station Service	0	LS	$ 50,000	$ -	$ 75,000	$ -	$ 125,000	**$ -**
7.9	SSVT Service	0	LS	$ 45,000	$ -	$ 45,000	$ -	$ 90,000	**$ -**
7.10	Control Conduits from Trench to Equipment	1	LS	$ 14,000	$ 14,000	$ 70,000	$ 70,000	$ 84,000	**$ 84,000**
7.11	Misc. Materials (Above and Below Ground)	1	LS	$ 20,712	$ 20,712	$ 70,000	$ 70,000	$ 90,712	**$ 90,712**
7.12									
7.13									
7.14									
7.15									
7.16									
7.17									
7.18									
7.19									
7.20									
7.21									
7.22									
7.23									
7.24									
7.25									
TOTAL - MISC ITEMS					$ 339,357		$ 507,880		$ 847,237
F. Edic Substation - Install					$ 1,139,730		$ 977,455		**$ 2,117,185**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1	LS	$ -	$ -	$ 21,172	$ 21,172	$ 21,172	**$ 21,172**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 76,483	$ 76,483	$ 76,483	**$ 76,483**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 21,172	$ 21,172	$ 21,172	**$ 21,172**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 21,172	$ 21,172	$ 21,172	**$ 21,172**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 169,375	$ 169,375	$ 169,375	**$ 169,375**
8.6	LiDAR	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.7	Geotech	4	EA	$ -	$ -	$ 3,500	$ 14,000	$ 3,500	**$ 14,000**
8.8	Surveying/Staking	1	Site	$ -	$ -	$ 14,820	$ 14,820	$ 14,820	**$ 14,820**
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 52,930	$ 52,930	$ 52,930	**$ 52,930**
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 6,352	$ 6,352	$ 6,352	**$ 6,352**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
8.13	Real Estate Costs (New)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.14	Real Estate Costs (Incumbent Utility)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.18	Sales Tax on Materials	1	LS	$ 91,178	$ 91,178	$ -	$ -	$ 91,178	**$ 91,178**
8.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 2,117	$ 2,117	$ 2,117	**$ 2,117**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 91,178		$ 399,592		**$ 490,771**

NAT & NYPA - T025 - (Segment A, + 765kV)

G. Edic Substation - Removal

Estimate Revision: 7

Total: $ 41,311

NAT & NYPA - T025 - (Segment A, + 765kV)	*Supply*	*Installation*	*Total*
G. Edic Substation - Removal			
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ -	$ -	$ -
2. SUBSTATION FOUNDATIONS	$ -	$ 14,200	$ 14,200
3. SUBSTATION STRUCTURES	$ -	$ 6,750	$ 6,750
4. MAJOR EQUIPTMENT	$ -	$ -	$ -
5. SMALL EQUIPTMENT / MATERIALS	$ -	$ 4,500	$ 4,500
6. CONTROL HOUSE / PANELS	$ -	$ -	$ -
7. MISC ITEMS	$ -	$ 10,500	$ 10,500
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ -	$ 5,361	$ 5,361
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ -	$ 41,311	$ 41,311
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ -	$ 41,311	$ 41,311

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
G. Edic Substation - Removal									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	0	ACRES	$ -	$ -	$ 203,000	$ -	$ 203,000	$ -
1.2	Station stone within substation fence.	0	CY	$ -	$ -	$ 75	$ -	$ 75	$ -
1.3	Substation Fence	0	LF	$ -	$ -	$ 150	$ -	$ 150	$ -
1.4									
1.5									
1.6									
1.7									
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ -		$ -		$ -
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	1	EA	$ -	$ -	$ 14,200	$ 14,200	$ 14,200	**$ 14,200**
2.1b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1e	Switch Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1f	Station Service Transformer Stand Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.1j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1k	Arrester Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1p		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2	**230kV**								
2.2a	Circuit Breaker Foundations	0	EA	$ -	$ -	$ 7,200	$ -	$ 7,200	$ -
2.2b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ 32,000	$ -	$ 32,000	$ -
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ 22,000	$ -	$ 22,000	$ -
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ 11,000	$ -	$ 11,000	$ -
2.2e	Switch Stand Foundations	0	EA	$ -	$ -	$ 5,200	$ -	$ 5,200	$ -
2.2f	Station Service Transformer Stand Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.2h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.2j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.2k	Arrester Stand Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.2m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2p		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3e	Switch Stand Foundations	0	EA	$ -	$ -	$ 5,200	$ -	$ 5,200	$ -
2.3f	Fuse Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3k	Arrester Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4b	345-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ 42,000	$ -	$ 42,000	$ -
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5b	Generator Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6b		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6c		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION FOUNDATIONS					$ -		$ 14,200		$ 14,200
3. SUBSTATION STRUCTURES									
3.1	**345kV**								
3.1a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1c	Switch Stands	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1d	Station Service Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1f	Bus Support 1 Ph	3	EA	$ -	$ -	$ 2,250	$ 6,750	$ 2,250	**$ 6,750**
3.1g	Instrument Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1h	Arrester Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1j	Wave Trap Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ 27,000	$ -	$ 27,000	$ -
3.2b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ 27,000	$ -	$ 27,000	$ -
3.2c	Switch Stands	0	EA	$ -	$ -	$ 9,750	$ -	$ 9,750	$ -
3.2d	Station Service Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2f	Bus Support 1 Ph	0	EA	$ -	$ -	$ 2,250	$ -	$ 2,250	$ -
3.2g	Instrument Transformer Stand	0	EA	$ -	$ -	$ 1,050	$ -	$ 1,050	$ -
3.2h	Arrester Stand	0	EA	$ -	$ -	$ 1,050	$ -	$ 1,050	$ -
3.2j	Wave Trap Stand	0	EA	$ -	$ -	$ 4,500	$ -	$ 4,500	$ -
3.2k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3	**115kV**								

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.3a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ 15,000	$ -	$ 15,000	$ -
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3c	Switch Stands	0	EA	$ -	$ -	$ 6,450	$ -	$ 6,450	$ -
3.3d	Fuse Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3f	Bus Support 1 Ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3g	Instrument Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3h	Arrester Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3j	Wave Trap Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION STRUCTURES					$ -		$ 6,750		$ 6,750
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.1b	Capacitor Banks	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.1c		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.1d									
4.2	**230kV**								
4.2a	Circuit Breakers	0	EA	$ -	$ -	$ 7,000	$ -	$ 7,000	$ -
4.2b	Capacitor Banks	0	EA	$ -	$ -	$ 42,000	$ -	$ 42,000	$ -
4.3	**115kV**								
4.3a	Circuit Breakers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - MAJOR EQUIPTMENT					$ -		$ -		$ -
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.1b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.1c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.1d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.1e	CCVT'S	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.1f	Arresters	3	EA	$ -	$ -	$ 1,500	$ 4,500	$ 1,500	**$ 4,500**
5.1g	Wave Traps	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.1h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.1j		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.2b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.2c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2e	CCVT'S	0	EA	$ -	$ -	$ 1,500	$ -	$ 1,500	$ -
5.2f	Arresters	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.2g	Wave Traps	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.2h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2j		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.3c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3e	CCVT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3f	Arresters	0	EA	$ -	$ -	$ 1,500	$ -	$ 1,500	$ -
5.3g	Wave Traps	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ -		$ 4,500		$ 4,500
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE	0	EA	$ -	$ -	$ 150,000	$ -	$ 150,000	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6.2	Protection and Telecom Equipment Panels	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.3	125VDC Batteries	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.4	Control Cables	0	LS	$ -	$ -	$ -	$ -	$ -	$ -
6.5	SCADA and Communications	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.6	Low Voltage AC Distribution	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.7	DC Distribution System	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.8	Security	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.9	Fire Alarm	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.10	Generator	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ -		$ -		$ -
7. MISC ITEMS									
7.1	Conduit & Cable Trench System	0	EA	$ -	$ -	$ 42,000.00	$ -	$ 42,000	$ -
7.2	Rigid Bus, Fittings & Insulators	1	LS	$ -	$ -	$ 10,500.00	$ 10,500	$ 10,500	**$ 10,500**
7.3	Strain Bus, Connectors & Insulators	0	EA	$ -	$ -	$ 39.35	$ -	$ 39	$ -
7.4	Grounding System	0	EA	$ -	$ -	$ 42,000.00	$ -	$ 42,000	$ -
7.5									
7.6									
7.7									
7.8									
7.9									
7.10									
7.11									
7.12									
7.13									
7.14									
7.15									
TOTAL - MISC ITEMS					$ -		$ 10,500		$ 10,500
G. Edic Substation - Removal					$ -		$ 35,950		**$ 35,950**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1.0	LS	$ -	$ -	$ 360	$ 360	$ 360	**$ 360**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 1,299	$ 1,299	$ 1,299	**$ 1,299**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 360	$ 360	$ 360	**$ 360**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 360	$ 360	$ 360	**$ 360**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 2,876	$ 2,876	$ 2,876	**$ 2,876**
8.6	LiDAR	-	Mile	$ -	$ -	$ -	$ -	$ -	$ -
8.7	Geotech	-	Site	$ -	$ -	$ -	$ -	$ -	$ -
8.8	Surveying/Staking	-	Site	$ -	$ -	$ 252	$ -	$ 252	$ -
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	-	LS	$ -	$ -	$ 899	$ -	$ 899	$ -
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 108	$ 108	$ 108	**$ 108**
8.13	Real Estate Costs (New)	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.14	Real Estate Costs (Incumbent Utility)	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.18	Sales Tax on Materials	1	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.19	Fees for permits, including roadway, railroad, building or other local permits	-	LS		$ -	$ 36	$ -	$ 36	$ -
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ -		$ 5,361		**$ 5,361**

NAT & NYPA - T025 - (Segment A, + 765kV)

H. Princetown Switchyard - Install

Estimate Revision: 7

Total: $ 15,771,722

NAT & NYPA - T025 - (Segment A, + 765kV)	*Supply*	*Installation*	*Total*
H. Princetown Switchyard - Install			
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ 163,560	$ 904,700	$ 1,068,260
2. SUBSTATION FOUNDATIONS	$ 1,193,706	$ 1,213,490	$ 2,407,196
3. SUBSTATION STRUCTURES	$ 582,750	$ 582,750	$ 1,165,500
4. MAJOR EQUIPTMENT	$ 800,000	$ 320,000	$ 1,120,000
5. SMALL EQUIPTMENT / MATERIALS	$ 1,382,000	$ 636,000	$ 2,018,000
6. CONTROL HOUSE / PANELS	$ 1,621,800	$ 1,043,550	$ 2,665,350
7. MISC ITEMS	$ 895,854	$ 1,373,004	$ 2,268,858
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 531,174	$ 2,527,384	$ 3,058,558
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 7,170,844	$ 8,600,878	$ 15,771,722
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 7,170,844	$ 8,600,878	$ 15,771,722

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
H. Princetown Switchyard - Install									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	3.1	ACRES	$ -	$ -	$ 203,000	$ 629,300	$ 203,000	**$ 629,300**
1.2	Station stone within substation fence.	1,080	CY	$ 27	$ 29,160	$ 75	$ 81,000	$ 102	**$ 110,160**
1.3	Substation Fence	1,260	LF	$ 100	$ 126,000	$ 100	$ 126,000	$ 200	**$ 252,000**
1.4	Permanent Access Road - 20'-Wide (Extend Existing)	240	LF	$ 35	$ 8,400	$ 285	$ 68,400	$ 320	**$ 76,800**
1.5									
1.6									
1.7									
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ 163,560		$ 904,700		$ 1,068,260
2. SUBSTATION FOUNDATIONS									
2.1	**765kV**								
2.1a	Circuit Breaker Foundations		EA.	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	**$ -**
2.1b	Capacitor Bank Foundations		EA	$ 56,025	$ -	$ 60,000	$ -	$ 116,025	**$ -**
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)		EA.	$ 52,290	$ -	$ 56,000	$ -	$ 108,290	**$ -**
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)		EA.	$ 52,290	$ -	$ 56,000	$ -	$ 108,290	**$ -**
2.1e	Switch Stand Foundations		EA.	$ 8,964	$ -	$ 8,964	$ -	$ 17,928	**$ -**
2.1f	Station Service Transformer Stand Foundation	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	**$ -**
2.1g	Bus Support 1ph Foundations (High Bus)		EA.	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1h	Bus Support 1 Ph Foundations (Low Bus)		EA.	$ 8,964	$ -	$ 8,964	$ -	$ 17,928	**$ -**
2.1j	Instrument Transformer Stand Foundations		EA.	$ 8,964	$ -	$ 8,964	$ -	$ 17,928	**$ -**
2.1k	Arrester Stand Foundations		EA.	$ 8,964	$ -	$ 8,964	$ -	$ 17,928	**$ -**
2.1m	Wave Trap Stand Foundations		EA.	$ 8,964	$ -	$ 8,964	$ -	$ 17,928	**$ -**
2.1n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1p									
2.2	**345kV**								
2.2a	Circuit Breaker Foundations	4	EA.	$ 14,940	$ 59,760	$ 14,940	$ 59,760	$ 29,880	**$ 119,520**
2.2b	Capacitor Bank Foundations	0	EA	$ 44,820	$ -	$ 48,000	$ -	$ 92,820	**$ -**
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	16	EA.	$ 26,145	$ 418,320	$ 26,145	$ 418,320	$ 52,290	**$ 836,640**
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA.	$ 26,145	$ -	$ 26,145	$ -	$ 52,290	**$ -**
2.2e	Switch Stand Foundations	48	EA.	$ 4,482	$ 215,136	$ 4,482	$ 215,136	$ 8,964	**$ 430,272**
2.2f	Station Service Transformer Stand Foundation	6	EA.	$ 4,482	$ 26,892	$ 4,482	$ 26,892	$ 8,964	**$ 53,784**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.2g	Bus Support 1ph Foundations (High Bus)	0	EA.	$ -	$ -	$ -	$ -	$ -	$ -
2.2h	Bus Support 1 Ph Foundations (Low Bus)	39	EA.	$ 4,482	$ 174,798	$ 4,482	$ 174,798	$ 8,964	**$ 349,596**
2.2j	Instrument Transformer Stand Foundations	36	EA.	$ 4,482	$ 161,352	$ 4,482	$ 161,352	$ 8,964	**$ 322,704**
2.2k	Arrester Stand Foundations	12	EA.	$ 4,482	$ 53,784	$ 4,482	$ 53,784	$ 8,964	**$ 107,568**
2.2m	Wave Trap Stand Foundations	4	EA.	$ 4,482	$ 17,928	$ 4,482	$ 17,928	$ 8,964	**$ 35,856**
2.2n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2p									
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	0	EA	$ 5,229	$ -	$ 5,600	$ -	$ 10,829	$ -
2.3b	Capacitor Bank Foundations	0	EA	$ 33,615	$ -	$ 36,000	$ -	$ 69,615	$ -
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	$ -
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	$ -
2.3e	Switch Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3f	Fuse Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3g	Bus Support 3ph Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3h	Bus Support 1 Ph Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3j	Instrument Transformer Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3k	Arrester Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3m	Wave Trap Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4	**Transformer Foundations**								
2.4a	765-345kV Transformer Foundation w/ Oil Containment		EA.	$ -	$ -	$ -	$ -	$ -	$ -
2.4b	765-345kV Transformer Fire Wall		EA.	$ 106,074	$ -	$ 113,600	$ -	$ 219,674	$ -
2.4c				$ -	$ -	$ -	$ -	$ -	$ -
2.4d				$ -	$ -	$ -	$ -	$ -	$ -
2.5	**Control House Foundations / Pad / Generator / Station Service Distribution Line**								
2.5a	Control House / Pad - 25' x 50'	1	EA	$ 17,928	$ 17,928	$ 19,200	$ 19,200	$ 37,128	**$ 37,128**
2.5b	Generator Foundation	1	EA	$ 16,434	$ 16,434	$ 17,600	$ 17,600	$ 34,034	**$ 34,034**
2.5c	Station Service Distribution Line - 3ph.	1	LS	$ -	$ -	$ 15,120	$ 15,120	$ 15,120	**$ 15,120**
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	6	EA	$ 5,229	$ 31,374	$ 5,600	$ 33,600	$ 10,829	**$ 64,974**
2.6b				$ -	$ -	$ -	$ -	$ -	$ -
2.6c				$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION FOUNDATIONS					$ 1,193,706		$ 1,213,490		$ 2,407,196
3. SUBSTATION STRUCTURES									
3.1	**765kV**								
3.1a	Substation A-Frame Structures - Stand alone		EA.	$ 111,000	$ -	$ 111,000	$ -	$ 222,000	$ -
3.1b	Substation A-Frame Structures - Shared Column		EA.	$ 111,000	$ -	$ 111,000	$ -	$ 222,000	$ -
3.1c	Switch Stands		EA.	$ 22,200	$ -	$ 22,200	$ -	$ 44,400	$ -
3.1d	Station Service Transformer Stand		EA.	$ -	$ -	$ -	$ -	$ -	$ -
3.1e	Bus Support 1ph (High Bus)		EA.	$ 7,400	$ -	$ 7,400	$ -	$ 14,800	$ -
3.1f	Bus Support 1 Ph (low Bus)		EA.	$ 5,550	$ -	$ 5,550	$ -	$ 11,100	$ -
3.1g	Instrument Transformer Stand		EA.	$ 3,700	$ -	$ 3,700	$ -	$ 7,400	$ -
3.1h	Arrester Stand		EA.	$ 3,700	$ -	$ 3,700	$ -	$ 7,400	$ -
3.1j	Wave Trap Stand		EA.	$ 9,250	$ -	$ 9,250	$ -	$ 18,500	$ -
3.1k	Lightning Mast		EA.	$ 9,250	$ -	$ 9,250	$ -	$ 18,500	$ -
3.2	**345kV**								
3.2a	Substation A-Frame Structures - Stand alone	4	EA	$ 37,000	$ 148,000	$ 37,000	$ 148,000	$ 74,000	**$ 296,000**
3.2b	Substation A-Frame Structures - Shared Column	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	$ -
3.2c	Switch Stands	8	EA	$ 14,800	$ 118,400	$ 14,800	$ 118,400	$ 29,600	**$ 236,800**
3.2d	Station Service Transformer Stand	1	EA	$ 14,800	$ 14,800	$ 14,800	$ 14,800	$ 29,600	**$ 29,600**
3.2e	Bus Support 3ph	0	EA	$ 5,550	$ -	$ 5,550	$ -	$ 11,100	$ -
3.2f	Bus Support 1 Ph	39	EA	$ 3,700	$ 144,300	$ 3,700	$ 144,300	$ 7,400	**$ 288,600**
3.2g	Instrument Transformer Stand	36	EA	$ 1,850	$ 66,600	$ 1,850	$ 66,600	$ 3,700	**$ 133,200**
3.2h	Arrester Stand	12	EA	$ 1,850	$ 22,200	$ 1,850	$ 22,200	$ 3,700	**$ 44,400**
3.2j	Wave Trap Stand	4	EA	$ 7,400	$ 29,600	$ 7,400	$ 29,600	$ 14,800	**$ 59,200**
3.2k	Misc. Structures	6	EA	$ 6,475	$ 38,850	$ 6,475	$ 38,850	$ 12,950	**$ 77,700**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.3	**115kV**								
3.3a	Substation A-Frame Structures - Stand alone	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	**$ -**
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	**$ -**
3.3c	Switch Stands	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	**$ -**
3.3d	Fuse Stand	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	**$ -**
3.3e	Bus Support 3ph	0	EA	$ 3,330	$ -	$ 3,330	$ -	$ 6,660	**$ -**
3.3f	Bus Support 1 Ph	0	EA	$ 1,850	$ -	$ 1,850	$ -	$ 3,700	**$ -**
3.3g	Instrument Transformer Stand	0	EA	$ 740	$ -	$ 740	$ -	$ 1,480	**$ -**
3.3h	Arrester Stand	0	EA	$ 740	$ -	$ 740	$ -	$ 1,480	**$ -**
3.3j	Wave Trap Stand	0	EA	$ 3,700	$ -	$ 3,700	$ -	$ 7,400	**$ -**
3.3k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	**$ -**
TOTAL - SUBSTATION STRUCTURES					$ 582,750		$ 582,750		$ 1,165,500
4. MAJOR EQUIPTMENT									
4.2	**345kV**								
4.2a	Circuit Breakers	4	EA	$ 200,000	$ 800,000	$ 80,000	$ 320,000	$ 280,000	**$ 1,120,000**
4.2b	Capacitor Banks		EA	$ -	$ -	$ 80,000	$ -	$ 80,000	**$ -**
4.3	**115kV**								
4.3a	Circuit Breakers	0	EA	$ 52,000	$ -	$ 60,000	$ -	$ 112,000	**$ -**
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ 60,000	$ -	$ 60,000	**$ -**
TOTAL - MAJOR EQUIPTMENT					$ 800,000		$ 320,000		$ 1,120,000
5. SMALL EQUIPTMENT / MATERIALS									
5.2	**345kV**								
5.2a	Line Switches - 3ph w/ motor operator	4	EA	$ 40,000	$ 160,000	$ 15,000	$ 60,000	$ 55,000	**$ 220,000**
5.2b	Disconnect Switches - 3ph w/ manual operator	8	EA	$ 35,000	$ 280,000	$ 17,500	$ 140,000	$ 52,500	**$ 420,000**
5.2c	VT'S	12	EA	$ 25,000	$ 300,000	$ 12,000	$ 144,000	$ 37,000	**$ 444,000**
5.2d	CT'S	12	EA	$ 13,000	$ 156,000	$ 8,000	$ 96,000	$ 21,000	**$ 252,000**
5.2e	CCVT'S	12	EA	$ 13,000	$ 156,000	$ 8,000	$ 96,000	$ 21,000	**$ 252,000**
5.2f	Arresters	12	EA	$ 6,500	$ 78,000	$ 1,500	$ 18,000	$ 8,000	**$ 96,000**
5.2g	Wave Traps	4	EA	$ 13,000	$ 52,000	$ 8,000	$ 32,000	$ 21,000	**$ 84,000**
5.2h	Station Service Transformers	1	EA	$ 200,000	$ 200,000	$ 50,000	$ 50,000	$ 250,000	**$ 250,000**
5.2j									
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	0	EA	$ 33,000	$ -	$ 15,000	$ -	$ 48,000	**$ -**
5.3b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 28,000	$ -	$ 17,500	$ -	$ 45,500	**$ -**
5.3c	VT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	**$ -**
5.3d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	**$ -**
5.3e	CCVT'S	0	EA	$ 8,000	$ -	$ 8,000	$ -	$ 16,000	**$ -**
5.3f	Arresters	0	EA	$ 3,420	$ -	$ 6,000	$ -	$ 9,420	**$ -**
5.3g	Wave Traps	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.3h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.3j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ 1,382,000		$ 636,000		$ 2,018,000
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE	1	EA	$ 245,750	$ 245,750	$ 37,500	$ 37,500	$ 283,250	**$ 283,250**
6.2	Protection and Telecom Equipment Panels	18	EA	$ 35,000	$ 630,000	$ 10,000	$ 180,000	$ 45,000	**$ 810,000**
6.3	125VDC Batteries	2	EA	$ 75,000	$ 150,000	$ 25,000	$ 50,000	$ 100,000	**$ 200,000**
6.4	Control Cables	1	LS	$ 281,050	$ 281,050	$ 281,050	$ 281,050	$ 562,100	**$ 562,100**
6.5	SCADA and Communications	0	EA	$ 35,000	$ -	$ 12,500	$ -	$ 47,500	**$ -**
6.6	Low Voltage AC Distribution	2	EA	$ 50,000	$ 100,000	$ 100,000	$ 200,000	$ 150,000	**$ 300,000**
6.7	DC Distribution System	2	EA	$ 50,000	$ 100,000	$ 100,000	$ 200,000	$ 150,000	**$ 300,000**
6.8	Security	1	EA	$ 7,500	$ 7,500	$ 7,500	$ 7,500	$ 15,000	**$ 15,000**
6.9	Fire Alarm	1	EA	$ 7,500	$ 7,500	$ 7,500	$ 7,500	$ 15,000	**$ 15,000**
6.10	Generator	1	EA	$ 100,000	$ 100,000	$ 80,000	$ 80,000	$ 180,000	**$ 180,000**
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ 1,621,800		$ 1,043,550		**$ 2,665,350**
7. MISC ITEMS 345kV									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
7.15	Conduit & Cable Trench System	1,200	LF	$ 125.07	$ 150,084	$ 170.00	$ 204,000	$ 295	**$ 354,084**
7.16	Rigid Bus, Fittings & Insulators	1,000	LF	$ 125.07	$ 125,070	$ 237.10	$ 237,100	$ 362	**$ 362,170**
7.17	Strain Bus, Connectors & Insulators	1,600	LF	$ 61.50	$ 98,400	$ 78.69	$ 125,904	$ 140	**$ 224,304**
7.18	Grounding System	10,000	LF	$ 6.93	$ 69,300	$ 32.58	$ 325,800	$ 40	**$ 395,100**
7.19	Strain Bus Insulators - 345kV	24	EA	$ 2,000	$ 48,000	$ 1,050	$ 25,200	$ 3,050	**$ 73,200**
7.20	Low Voltage AC Station Service	1	LS	$ 50,000	$ 50,000	$ 75,000	$ 75,000	$ 125,000	**$ 125,000**
7.21	SSVT Service	1	LS	$ 50,000	$ 50,000	$ 75,000	$ 75,000	$ 125,000	**$ 125,000**
7.22	Control Conduits from Trench to Equipment	1	LS	$ 125,000	$ 125,000	$ 125,000	$ 125,000	$ 250,000	**$ 250,000**
7.23	Misc. Materials (Above and Below Ground)	1	LS	$ 180,000	$ 180,000	$ 180,000	$ 180,000	$ 360,000	**$ 360,000**
7.24									
7.25									
7.26									
7.27									
7.28									
7.29									
TOTAL - MISC ITEMS					$ 895,854		$ 1,373,004		$ 2,268,858
H. Princetown Switchyard - Install					$ 6,639,670		$ 6,073,494		**$ 12,713,164**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1.0	LS	$ -	$ -	$ 127,132	$ 127,132	$ 127,132	**$ 127,132**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 459,262	$ 459,262	$ 459,262	**$ 459,262**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 127,132	$ 127,132	$ 127,132	**$ 127,132**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 127,132	$ 127,132	$ 127,132	**$ 127,132**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 1,017,053	$ 1,017,053	$ 1,017,053	**$ 1,017,053**
8.6	LiDAR	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.7	Geotech	4	EA	$ -	$ -	$ 3,500	$ 14,000	$ 3,500	**$ 14,000**
8.8	Surveying/Staking	1	Site	$ -	$ -	$ 88,992	$ 88,992	$ 88,992	**$ 88,992**
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 317,829	$ 317,829	$ 317,829	**$ 317,829**
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 38,139	$ 38,139	$ 38,139	**$ 38,139**
8.13	Real Estate Costs (New)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.14	Real Estate Costs (Incumbent Utility)	1	LS	$ -	$ -	$ 198,000	$ 198,000	$ 198,000	**$ 198,000**
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.18	Sales Tax on Materials	1	LS	$ 531,174	$ 531,174	$ -	$ -	$ 531,174	**$ 531,174**
8.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 12,713	$ 12,713	$ 12,713	**$ 12,713**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 531,174		$ 2,527,384		**$ 3,058,558**

NAT & NYPA - T025 - (Segment A, + 765kV)

J. Porter Substation - Install

Estimate Revision: 7

Total: $ 86,210

NAT & NYPA - T025 - (Segment A, + 765kV)	*Supply*	*Installation*	*Total*
J. Porter Substation - Install			
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ -	$ -	$ -
2. SUBSTATION FOUNDATIONS	$ -	$ -	$ -
3. SUBSTATION STRUCTURES	$ -	$ -	$ -
4. MAJOR EQUIPTMENT	$ -	$ -	$ -
5. SMALL EQUIPTMENT / MATERIALS	$ -	$ -	$ -
6. CONTROL HOUSE / PANELS	$ -	$ -	$ -
7. MISC ITEMS	$ 15,008	$ 56,904	$ 71,912
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 1,201	$ 13,097	$ 14,298
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 16,209	$ 70,001	$ 86,210
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 16,209	$ 70,001	$ 86,210

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
J. Porter Substation - Install									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	0	ACRES	$ -	$ -	$ 203,000	$ -	$ 203,000	$ -
1.2	Station stone within substation fence.	0	CY	$ 27	$ -	$ 75	$ -	$ 102	$ -
1.3	Substation Fence	0	LF	$ 100	$ -	$ 100	$ -	$ 200	$ -
1.4									
1.5									
1.6									
1.7									
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ -		$ -		$ -
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	0	EA	$ 14,940	$ -	$ 16,000	$ -	$ 30,940	$ -
2.1b	Capacitor Bank Foundations	0	EA	$ 56,025	$ -	$ 60,000	$ -	$ 116,025	$ -
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 26,145	$ -	$ 28,000	$ -	$ 54,145	$ -
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 26,145	$ -	$ 28,000	$ -	$ 54,145	$ -
2.1e	Switch Stand Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1f	Station Service Transformer Stand Foundation	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1h	Bus Support 1 Ph Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1j	Instrument Transformer Stand Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1k	Arrester Stand Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1m	Wave Trap Stand Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1p									
2.2	**230kV**								
2.2a	Circuit Breaker Foundations	0	EA	$ 11,952	$ -	$ 12,800	$ -	$ 24,752	$ -
2.2b	Capacitor Bank Foundations	0	EA	$ 44,820	$ -	$ 48,000	$ -	$ 92,820	$ -
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	$ -
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	$ -
2.2e	Switch Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2f	Station Service Transformer Stand Foundation	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.2g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2h	Bus Support 1 Ph Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2j	Instrument Transformer Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2k	Arrester Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2m	Wave Trap Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2p									
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	0	EA	$ 5,229	$ -	$ 5,600	$ -	$ 10,829	$ -
2.3b	Capacitor Bank Foundations	0	EA	$ 33,615	$ -	$ 36,000	$ -	$ 69,615	$ -
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	$ -
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	$ -
2.3e	Switch Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3f	Fuse Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3g	Bus Support 3ph Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3h	Bus Support 1 Ph Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3j	Instrument Transformer Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3k	Arrester Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3m	Wave Trap Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment	0	EA	$ 97,110	$ -	$ 104,000	$ -	$ 201,110	$ -
2.4b	345-115kV Transformer Foundation w/ Oil Containment	0	EA	$ 74,700	$ -	$ 80,000	$ -	$ 154,700	$ -
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad	0	EA	$ 76,194	$ -	$ 81,600	$ -	$ 157,794	$ -
2.5b	Generator Foundation	0	EA	$ 16,000	$ -	$ 17,000	$ -	$ 33,000	$ -
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	0	EA	$ 5,229	$ -	$ 5,600	$ -	$ 10,829	$ -
2.6b		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6c		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION FOUNDATIONS					$ -		$ -		$ -
3. SUBSTATION STRUCTURES									
3.1	**345kV**								
3.1a	Substation A-Frame Structures - Stand alone	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	$ -
3.1b	Substation A-Frame Structures - Shared Column	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	$ -
3.1c	Switch Stands	0	EA	$ 14,800	$ -	$ 14,800	$ -	$ 29,600	$ -
3.1d	Station Service Transformer Stand	0	EA	$ 14,800	$ -	$ 14,800	$ -	$ 29,600	$ -
3.1e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1f	Bus Support 1 Ph	0	EA	$ 3,700	$ -	$ 3,700	$ -	$ 7,400	$ -
3.1g	Instrument Transformer Stand	0	EA	$ 1,850	$ -	$ 1,850	$ -	$ 3,700	$ -
3.1h	Arrester Stand	0	EA	$ 1,850	$ -	$ 1,850	$ -	$ 3,700	$ -
3.1j	Wave Trap Stand	0	EA	$ 7,400	$ -	$ 7,400	$ -	$ 14,800	$ -
3.1k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	$ -
3.2b	Substation A-Frame Structures - Shared Column	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	$ -
3.2c	Switch Stands	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	$ -
3.2d	Station Service Transformer Stand	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	$ -
3.2e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2f	Bus Support 1 Ph	0	EA	$ 2,775	$ -	$ 2,775	$ -	$ 5,550	$ -
3.2g	Instrument Transformer Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	$ -
3.2h	Arrester Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	$ -
3.2j	Wave Trap Stand	0	EA	$ 5,550	$ -	$ 5,550	$ -	$ 11,100	$ -
3.2k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.3	**115kV**								
3.3a	Substation A-Frame Structures - Stand alone	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	$ -
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	$ -
3.3c	Switch Stands	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	$ -
3.3d	Fuse Stand	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	$ -
3.3e	Bus Support 3ph	0	EA	$ 3,330	$ -	$ 3,330	$ -	$ 6,660	$ -
3.3f	Bus Support 1 Ph	0	EA	$ 1,850	$ -	$ 1,850	$ -	$ 3,700	$ -
3.3g	Instrument Transformer Stand	0	EA	$ 740	$ -	$ 740	$ -	$ 1,480	$ -
3.3h	Arrester Stand	0	EA	$ 740	$ -	$ 740	$ -	$ 1,480	$ -
3.3j	Wave Trap Stand	0	EA	$ 3,700	$ -	$ 3,700	$ -	$ 7,400	$ -
3.3k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
TOTAL - SUBSTATION STRUCTURES					$ -		$ -		$ -
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	$ -
4.1b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	$ -
4.1c	345 kV - 230 kV Auto Transformer	0	EA	$ -	$ -	$ 750,000	$ -	$ 750,000	$ -
4.1d	345 kV - 115 kV Auto Transformer	0	EA	$ -	$ -	$ 750,000	$ -	$ 750,000	$ -
4.2	**230kV**								
4.2a	Circuit Breakers	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	$ -
4.2b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	$ -
4.3	**115kV**								
4.3a	Circuit Breakers	0	EA	$ -	$ -	$ 60,000	$ -	$ 60,000	$ -
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ 60,000	$ -	$ 60,000	$ -
TOTAL - MAJOR EQUIPTMENT					$ -		$ -		$ -
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator	0	EA	$ 40,000	$ -	$ 15,000	$ -	$ 55,000	$ -
5.1b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 35,000	$ -	$ 17,500	$ -	$ 52,500	$ -
5.1c	VT'S	0	EA	$ -	$ -	$ 12,000	$ -	$ 12,000	$ -
5.1d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.1e	CCVT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.1f	Arresters	0	EA	$ 6,500	$ -	$ 1,500	$ -	$ 8,000	$ -
5.1g	Wave Traps	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.1h	Station Service Transformers	0	EA	$ 200,000	$ -	$ 50,000	$ -	$ 250,000	$ -
5.1j									
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator	0	EA	$ 35,000	$ -	$ 15,000	$ -	$ 50,000	$ -
5.2b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 30,000	$ -	$ 17,500	$ -	$ 47,500	$ -
5.2c	VT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2e	CCVT'S	0	EA	$ 10,000	$ -	$ 6,000	$ -	$ 16,000	$ -
5.2f	Arresters	0	EA	$ 5,000	$ -	$ 6,000	$ -	$ 11,000	$ -
5.2g	Wave Traps	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2j									
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	0	EA	$ 33,000	$ -	$ 15,000	$ -	$ 48,000	$ -
5.3b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 28,000	$ -	$ 17,500	$ -	$ 45,500	$ -
5.3c	VT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.3d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.3e	CCVT'S	0	EA	$ 8,000	$ -	$ 8,000	$ -	$ 16,000	$ -
5.3f	Arresters	0	EA	$ 3,420	$ -	$ 6,000	$ -	$ 9,420	$ -
5.3g	Wave Traps	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ -		$ -		$ -
6. CONTROL HOUSE / PANELS / GENERATOR									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6.1	CONTROL HOUSE	0	EA	$ 551,250	$ -	$ 85,000	$ -	$ 636,250	$ -
6.2	Protection and Telecom Equipment Panels	0	EA	$ 35,000	$ -	$ 10,000	$ -	$ 45,000	$ -
6.3	125VDC Batteries	0	EA	$ 75,000	$ -	$ 25,000	$ -	$ 100,000	$ -
6.4	Control Cables	0	LS	$ -	$ -	$ -	$ -	$ -	$ -
6.5	SCADA and Communications	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.6	Low Voltage AC Distribution	0	EA	$ 50,000	$ -	$ 100,000	$ -	$ 150,000	$ -
6.7	DC Distribution System	0	EA	$ 50,000	$ -	$ 100,000	$ -	$ 150,000	$ -
6.8	Security	0	EA	$ 7,500	$ -	$ 7,500	$ -	$ 15,000	$ -
6.9	Fire Alarm	0	EA	$ 7,500	$ -	$ 7,500	$ -	$ 15,000	$ -
6.10	Generator	0	EA	$ 100,000	$ -	$ 80,000	$ -	$ 180,000	$ -
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ -		$ -		$ -
7. MISC ITEMS									
7.1	Conduit & Cable Trench System	0	LF	$ 185.00	$ -	$ 170.00	$ -	$ 355	$ -
7.2	Rigid Bus, Fittings & Insulators	1	LS	$ 15,008.40	$ 15,008	$ 56,904.00	$ 56,904	$ 71,912	**$ 71,912**
7.3	Strain Bus, Connectors & Insulators	0	LF	$ 13.38	$ -	$ 39.35	$ -	$ 53	$ -
7.4	Grounding System	0	LF	$ 6.93	$ -	$ 32.58	$ -	$ 40	$ -
7.5	Strain Bus Insulators - 345kV	0	EA	$ 2,000	$ -	$ 1,050	$ -	$ 3,050	$ -
7.6	Strain Bus Insulators - 230kV	0	EA	$ 1,400	$ -	$ 750	$ -	$ 2,150	$ -
7.7	Strain Bus Insulators - 115kV	0	EA	$ 1,000	$ -	$ 550	$ -	$ 1,550	$ -
7.8	Low Voltage AC Station Service	0	LS	$ 50,000	$ -	$ 75,000	$ -	$ 125,000	$ -
7.9	SSVT Service	0	LS	$ 45,000	$ -	$ 45,000	$ -	$ 90,000	$ -
7.10	Control Conduits from Trench to Equipment	0	LS	$ 125,000	$ -	$ 125,000	$ -	$ 250,000	$ -
7.11	Misc. Materials (Above and Below Ground)	0	LS	$ 180,000	$ -	$ 180,000	$ -	$ 360,000	$ -
7.12									
7.13									
7.14									
7.15									
7.16									
7.17									
7.18									
7.19									
7.20									
7.21									
7.22									
7.23									
7.24									
7.25									
TOTAL - MISC ITEMS					$ 15,008		$ 56,904		$ 71,912
J. Porter Substation - Install					$ 15,008		$ 56,904		**$ 71,912**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1	LS	$ -	$ -	$ 719	$ 719	$ 719	**$ 719**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 2,598	$ 2,598	$ 2,598	**$ 2,598**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 719	$ 719	$ 719	**$ 719**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 719	$ 719	$ 719	**$ 719**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 5,753	$ 5,753	$ 5,753	**$ 5,753**
8.6	LiDAR	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.7	Geotech	-	EA	$ -	$ -	$ 3,500	$ -	$ 3,500	$ -
8.8	Surveying/Staking	1	Site	$ -	$ -	$ 503	$ 503	$ 503	**$ 503**
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 1,798	$ 1,798	$ 1,798	**$ 1,798**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 216	$ 216	$ 216	**$ 216**
8.13	Real Estate Costs (New)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.14	Real Estate Costs (Incumbent Utility)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.18	Sales Tax on Materials	1	LS	$ 1,201	$ 1,201	$ -	$ -	$ 1,201	**$ 1,201**
8.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 72	$ 72	$ 72	**$ 72**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 1,201		$ 13,097		**$ 14,298**

NAT & NYPA - T025 - (Segment A, + 765kV)

K. Porter Substation - Removal

Estimate Revision: 7

Total: $ 545,044

NAT & NYPA - T025 - (Segment A, + 765kV)	*Supply*	*Installation*	*Total*
K. Porter Substation - Removal			
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ -	$ -	$ -
2. SUBSTATION FOUNDATIONS	$ -	$ 126,600	$ 126,600
3. SUBSTATION STRUCTURES	$ -	$ 206,100	$ 206,100
4. MAJOR EQUIPTMENT	$ -	$ 43,500	$ 43,500
5. SMALL EQUIPTMENT / MATERIALS	$ -	$ 59,500	$ 59,500
6. CONTROL HOUSE / PANELS	$ -	$ -	$ -
7. MISC ITEMS	$ -	$ 38,613	$ 38,613
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ -	$ 70,732	$ 70,732
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ -	$ 545,044	$ 545,044
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ -	$ 545,044	$ 545,044

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
K. Porter Substation - Removal									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	0	ACRES	$ -	$ -	$ 203,000	$ -	$ 203,000	$ -
1.2	Station stone within substation fence.	0	CY	$ -	$ -	$ 75	$ -	$ 75	$ -
1.3	Substation Fence	0	LF	$ -	$ -	$ 150	$ -	$ 150	$ -
1.4									
1.5									
1.6									
1.7									
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ -		$ -		$ -
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1e	Switch Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1f	Station Service Transformer Stand Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1k	Arrester Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1p									
2.2	**230kV**								
2.2a	Circuit Breaker Foundations	3	EA	$ -	$ -	$ 7,200	$ 21,600	$ 7,200	**$ 21,600**
2.2b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ 32,000	$ -	$ 32,000	$ -
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ 22,000	$ -	$ 22,000	$ -
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	5	EA	$ -	$ -	$ 11,000	$ 55,000	$ 11,000	**$ 55,000**
2.2e	Switch Stand Foundations	5	EA	$ -	$ -	$ 5,200	$ 26,000	$ 5,200	**$ 26,000**
2.2f	Station Service Transformer Stand Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.2g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.2j	Instrument Transformer Stand Foundations	4	EA	$ -	$ -	$ 2,400	$ 9,600	$ 2,400	**$ 9,600**
2.2k	Arrester Stand Foundations	6	EA	$ -	$ -	$ 2,400	$ 14,400	$ 2,400	**$ 14,400**
2.2m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2p									
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3e	Switch Stand Foundations	0	EA	$ -	$ -	$ 5,200	$ -	$ 5,200	$ -
2.3f	Fuse Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3k	Arrester Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4b	345-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ 42,000	$ -	$ 42,000	$ -
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5b	Generator Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6b		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6c		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION FOUNDATIONS					$ -		$ 126,600		$ 126,600
3. SUBSTATION STRUCTURES									
3.1	**345kV**								
3.1a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1c	Switch Stands	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1d	Station Service Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1f	Bus Support 1 Ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1g	Instrument Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1h	Arrester Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1j	Wave Trap Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ 27,000	$ -	$ 27,000	$ -
3.2b	Substation A-Frame Structures - Shared Column	5	EA	$ -	$ -	$ 27,000	$ 135,000	$ 27,000	**$ 135,000**
3.2c	Switch Stands	6	EA	$ -	$ -	$ 9,750	$ 58,500	$ 9,750	**$ 58,500**
3.2d	Station Service Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2f	Bus Support 1 Ph	0	EA	$ -	$ -	$ 2,250	$ -	$ 2,250	$ -
3.2g	Instrument Transformer Stand	6	EA	$ -	$ -	$ 1,050	$ 6,300	$ 1,050	**$ 6,300**
3.2h	Arrester Stand	6	EA	$ -	$ -	$ 1,050	$ 6,300	$ 1,050	**$ 6,300**
3.2j	Wave Trap Stand	0	EA	$ -	$ -	$ 4,500	$ -	$ 4,500	$ -
3.2k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.3	**115kV**								
3.3a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ 15,000	$ -	$ 15,000	**$ -**
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.3c	Switch Stands	0	EA	$ -	$ -	$ 6,450	$ -	$ 6,450	**$ -**
3.3d	Fuse Stand	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.3e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.3f	Bus Support 1 Ph	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.3g	Instrument Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.3h	Arrester Stand	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.3j	Wave Trap Stand	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.3k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
TOTAL - SUBSTATION STRUCTURES					$ -		$ 206,100		$ 206,100
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
4.1b	Capacitor Banks	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
4.1c		0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
4.1d									
4.2	**230kV**								
4.2a	Circuit Breakers	3	EA	$ -	$ -	$ 14,500	$ 43,500	$ 14,500	**$ 43,500**
4.2b	Capacitor Banks	0	EA	$ -	$ -	$ 42,000	$ -	$ 42,000	**$ -**
4.3	**115kV**								
4.3a	Circuit Breakers	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
TOTAL - MAJOR EQUIPTMENT					$ -		$ 43,500		$ 43,500
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	**$ -**
5.1b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	**$ -**
5.1c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.1d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.1e	CCVT'S	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	**$ -**
5.1f	Arresters	0	EA	$ -	$ -	$ 1,500	$ -	$ 1,500	**$ -**
5.1g	Wave Traps	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	**$ -**
5.1h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.1j									
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator	2	EA	$ -	$ -	$ 5,500	$ 11,000	$ 5,500	**$ 11,000**
5.2b	Disconnect Switches - 3ph w/ manual operator	3	EA	$ -	$ -	$ 5,500	$ 16,500	$ 5,500	**$ 16,500**
5.2c	VT'S	2	EA	$ -	$ -	$ 1,500	$ 3,000	$ 1,500	**$ 3,000**
5.2d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.2e	CCVT'S	6	EA	$ -	$ -	$ 1,500	$ 9,000	$ 1,500	**$ 9,000**
5.2f	Arresters	6	EA	$ -	$ -	$ 2,500	$ 15,000	$ 2,500	**$ 15,000**
5.2g	Wave Traps	2	EA	$ -	$ -	$ 2,500	$ 5,000	$ 2,500	**$ 5,000**
5.2h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.2j									
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.3b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	**$ -**
5.3c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.3d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.3e	CCVT'S	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.3f	Arresters	0	EA	$ -	$ -	$ 1,500	$ -	$ 1,500	**$ -**
5.3g	Wave Traps	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.3h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.3j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ -		$ 59,500		$ 59,500

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE	0	EA	$ -	$ -	$ 150,000	$ -	$ 150,000	$ -
6.2	Protection and Telecom Equipment Panels	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.3	125VDC Batteries	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.4	Control Cables	0	LS	$ -	$ -	$ -	$ -	$ -	$ -
6.5	SCADA and Communications	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.6	Low Voltage AC Distribution	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.7	DC Distribution System	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.8	Security	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.9	Fire Alarm	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.10	Generator	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ -		$ -		$ -
7. MISC ITEMS									
7.1	Conduit & Cable Trench System	0	EA	$ -	$ -	$ 42,000.00	$ -	$ 42,000	$ -
7.2	Rigid Bus, Fittings & Insulators	1	L.S.	$ -	$ -	$ 18,937.50	$ 18,938	$ 18,938	**$ 18,938**
7.3	Strain Bus, Connectors & Insulators	1	L.S.	$ -	$ -	$ 19,675.00	$ 19,675	$ 19,675	**$ 19,675**
7.4	Grounding System	0	EA	$ -	$ -	$ 42,000.00	$ -	$ 42,000	$ -
7.5									
7.6									
7.7									
7.8									
7.9									
7.10									
7.11									
7.12									
7.13									
7.14									
7.15									
TOTAL - MISC ITEMS					$ -		$ 38,613		$ 38,613
K. Porter Substation - Removal					$ -		$ 474,313		**$ 474,313**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1	LS	$ -	$ -	$ 4,743	$ 4,743	$ 4,743	**$ 4,743**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 17,135	$ 17,135	$ 17,135	**$ 17,135**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 4,743	$ 4,743	$ 4,743	**$ 4,743**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 4,743	$ 4,743	$ 4,743	**$ 4,743**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 37,945	$ 37,945	$ 37,945	**$ 37,945**
8.6	LiDAR	-	Mile	$ -	$ -	$ -	$ -	$ -	$ -
8.7	Geotech	-	Site	$ -	$ -	$ -	$ -	$ -	$ -
8.8	Surveying/Staking	-	Site	$ -	$ -	$ 3,320	$ -	$ 3,320	$ -
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	-	LS	$ -	$ -	$ 11,858	$ -	$ 11,858	$ -
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 1,423	$ 1,423	$ 1,423	**$ 1,423**
8.13	Real Estate Costs (New)	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.14	Real Estate Costs (Incumbent Utility)	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.18	Sales Tax on Materials	1	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.19	Fees for permits, including roadway, railroad, building or other local permits	-	LS		$ -	$ 474	$ -	$ 474	$ -
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ -		$ 70,732		**$ 70,732**

NAT & NYPA - T025 - (Segment A, + 765kV)

L. Interconnection Edic Station

Estimate Revision: 7

Total: $ 2,100,762

NAT & NYPA - T025 - (Segment A, + 765kV)	*Supply*	*Installation*	*Total*
L. Interconnection Edic Station			
1. CLEARING & ACCESS	$ -	$ 367,850	$ 367,850
2. FOUNDATIONS	$ 168,366	$ 170,169	$ 338,536
3. STRUCTURES	$ 501,469	$ 321,821	$ 823,289
4. CONDUCTOR, SHIELDWIRE, OPGW	$ -	$ -	$ -
5. INSULATORS, FITTINGS, HARDWARE	$ 160,000	$ 94,400	$ 254,400
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 66,387	$ 250,300	$ 316,687
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 896,222	$ 1,204,541	$ 2,100,762
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 896,222	$ 1,204,541	$ 2,100,762

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
L. Interconnection Edic Station									
1. CLEARING & ACCESS									
1.1	Clearing the ROW - Heavy (mowing & clearing)	-	Acre	$ -	$ -	$ 15,000	$ -	$ 15,000	$ -
1.2	Clearing the ROW - Light (mowing)	2.0	Acre	$ -	$ -	$ 5,000	$ 10,000	$ 5,000	**$ 10,000**
1.3	Access Road	-	LF	$ -	$ -	$ 45	$ -	$ 45	$ -
1.4	Silt Fence	3,500.0	LF	$ -	$ -	$ 4	$ 14,000	$ 4	**$ 14,000**
1.5	Matting - Access and ROW	3,500.0	LF	$ -	$ -	$ 70	$ 245,000	$ 70	**$ 245,000**
1.6	Matting - To Work Area	300.0	LF	$ -	$ -	$ 70	$ 21,000	$ 70	**$ 21,000**
1.7	Snow Removal	-	LS	$ -	$ -	$ 516,800	$ -	$ 516,800	$ -
1.8	ROW Restoration	0.5	Mile	$ -	$ -	$ 10,000	$ 5,000	$ 10,000	**$ 5,000**
1.9	Work Pads	20,000.0	SF	$ -	$ -	$ 4	$ 70,400	$ 4	**$ 70,400**
1.10	Restoration for Work Pad areas	4,000.0	SF	$ -	$ -	$ 0.2	$ 600	$ 0	**$ 600**
1.11	Temporary Access Bridge	-	EA	$ -	$ -	$ 20,035	$ -	$ 20,035	$ -
1.12	Air Bridge	-	EA	$ -	$ -	$ 14,445	$ -	$ 14,445	$ -
1.13	Stabilized Construction Entrance	-	EA	$ -	$ -	$ 4,580	$ -	$ 4,580	$ -
1.14	Maintenance and Protection of Traffic on Public Roads	-	EA	$ -	$ -	$ 4,130	$ -	$ 4,130	$ -
1.15	Gates	-	EA	$ 2,000	$ -	$ 2,500	$ -	$ 4,500	$ -
1.16	Culverts / Misc. Access	-	EA	$ 750	$ -	$ 1,250	$ -	$ 2,000	$ -
1.17	Concrete Washout Station	1	EA	$ -	$ -	$ 1,850	$ 1,850	$ 1,850	**$ 1,850**
1.18					$ -		$ -		$ -
1.19					$ -		$ -		$ -
1.20	Crushed Rock	0	CY	$ 27	$ -	$ 75	$ -	$ 102	$ -
TOTAL - CLEARING & ACCESS					$ -		$ 367,850		$ 367,850
2. FOUNDATIONS									
2.1	Foundation – Drilled Pier – 8'X 27'	3	EA	$ 41,332	$ 123,995	$ 41,774	$ 125,322	$ 83,106	**$ 249,317**
2.2	Foundation – Drilled Pier – 8'X 29'	1	EA	$ 44,372	$ 44,372	$ 44,847	$ 44,847	$ 89,219	**$ 89,219**
2.3	Rock Excavation Adder	-	CY	$ -	$ -	$ 2,000	$ -	$ 2,000	$ -
2.4									
2.5									
2.6									
2.7									
2.8									
2.9									
2.10									
2.11									
2.12									
2.13									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.14									
2.15									
TOTAL - FOUNDATIONS					$ 168,366		$ 170,169		$ 338,536
3. STRUCTURES									
3.1	1-CKT 345KV VERTICAL MEDIUM ANGLE DEADEND (15°-60°) – 105'	3	Structure	$ 98,883	$ 296,648	$ 59,330	$ 177,989	$ 158,212	**$ 474,636**
3.2	2-CKT 345KV VERTICAL MEDIUM ANGLE DEADEND (15°-60°) - 115'	1	Structure	$ 202,797	$ 202,797	$ 121,678	$ 121,678	$ 324,475	**$ 324,475**
3.3	Install Grounding and Grounding Accessories	4	Pole	$ 506	$ 2,024	$ 5,539	$ 22,154	$ 6,045	**$ 24,178**
3.4					$ -		$ -		$ -
3.5									
3.6					$ -		$ -		$ -
3.7					$ -		$ -		$ -
3.8					$ -		$ -		$ -
3.9					$ -		$ -		$ -
3.10					$ -		$ -		$ -
3.11					$ -		$ -		$ -
3.12					$ -		$ -		$ -
3.13					$ -		$ -		$ -
3.14					$ -		$ -		$ -
3.15					$ -		$ -		$ -
TOTAL - STRUCTURES					$ 501,469		$ 321,821		$ 823,289
4. CONDUCTOR, SHIELDWIRE, OPGW									
4.1	345kV - (2) 954kcmil 54/7 ACSS "Cardinal"	-	LF	$ 3.53	$ -	$ 5.00	$ -	$ 8.53	$ -
4.2	(1) OPGW 36 Fiber AC-33/38/571	-	LF	$ 1.55	$ -	$ 5.00	$ -	$ 6.55	$ -
4.3	(1) 3/8" EHS7 Steel	-	LF	$ 0.72	$ -	$ 5.00	$ -	$ 5.72	$ -
4.5	Remove Existing Cable From Existing Structures	-	Mile	$ -	$ -	$ 30,000	$ -	$ 30,000.00	$ -
4.6	Remove Existing OPGW Cable	-	Mile	$ -	$ -	$ 12,000	$ -	$ 12,000.00	$ -
4.7	Remove Existing EH7	-	Mile	$ -	$ -	$ 12,000	$ -	$ 12,000.00	$ -
4.8									
4.9		-							
4.10	Rider Poles - Relocated	-	Set	$ -	$ -	$ 3,500	$ -	$ 3,500.00	$ -
4.11	Rider Poles	-	EA	$ 1,750	$ -	$ 3,500	$ -	$ 5,250.00	$ -
TOTAL: CONDUCTOR, SHIELDWIRE, OPGW:					$ -		$ -		$ -
5. INSULATOR, FITTINGS, HARDWARE									
5.1	345kV Tangent (1-Group of 18-Bells Each Assembly)								
5.2	115kV Tangent (1-Group of 9-Bells Each Assembly)								
5.3	345kV Dead-end & Angle Insulators (1-Group of 18-Bells Each Assembly)	60	Assembly	$ 1,800	$ 108,000	$ 720	$ 43,200	$ 2,520	**$ 151,200**
5.4	115kV Dead-end & Angle Insulators (1-Group of 9-Bells Each Assembly)								
5.5	OPGW Assembly - Tangent	-	Assembly	$ 200	$ -	$ 150	$ -	$ 350	$ -
5.6	OPGW Assembly - Angle / DE	4	Assembly	$ 250	$ 1,000	$ 150	$ 600	$ 400	**$ 1,600**
5.7	OHSW Assembly - Angle / DE	4	Assembly	$ 250	$ 1,000	$ 150	$ 600	$ 400	**$ 1,600**
5.8	OPGW Splice Boxes	-	Set	$ 1,750	$ -	$ 1,746	$ -	$ 3,496	$ -
5.9	OPGW Splice & Test	-	EA	$ 1,400	$ -	$ 2,520	$ -	$ 3,920	$ -
5.10	Spacer - Conductor	-	EA	$ 50	$ -	$ 35	$ -	$ 85	$ -
5.11	Vibration Dampers - Conductor	-	EA	$ 35	$ -	$ 35	$ -	$ 70	$ -
5.12	Shieldwire / OPGW Dampers, Misc. Fittings	-	EA	$ 27	$ -	$ 35	$ -	$ 62	$ -
5.13	Guys, Anchors, and Accessories	-	EA	$ 720	$ -	$ 885	$ -	$ 1,605	$ -
5.14	Misc. materials (Signs and Markers)	-	Mile	$ 770	$ -	$ 1,006	$ -	$ 1,776	$ -
5.15					$ -		$ -		$ -
5.16									
5.17					$ -		$ -		$ -
5.18					$ -		$ -		$ -
5.19	Interconnection Arrangements	1	EA	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 100,000	**$ 100,000**
5.20					$ -		$ -		$ -
TOTAL - INSULATOR, FITTINGS, HARDWARE					$ 160,000		$ 94,400		$ 254,400
L. Interconnection Edic Station					$ 829,835		$ 954,240		$ 1,784,075
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
6.1	Mob / Demob	1	LS	$ -	$ -	$ 17,841	$ 17,841	$ 17,841	**$ 17,841**
	Project Management, Material Handling & Amenities								
6.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 64,450	$ 64,450	$ 64,450	**$ 64,450**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6.3	Utility PM and Project Oversite	1	LS		$ -	$ 17,841	$ 17,841	$ 17,841	**$ 17,841**
6.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 17,841	$ 17,841	$ 17,841	**$ 17,841**
	Engineering								
6.5	Design Engineering	1	LS	$ -	$ -	$ 89,204	$ 89,204	$ 89,204	**$ 89,204**
6.6	LiDAR	-	LS	$ -	$ -	$ 5,352	$ -	$ 5,352	**$ -**
6.7	Geotech	1	Location	$ -	$ -	$ 3,500	$ 3,500	$ 3,500	**$ 3,500**
6.8	Surveying/Staking	1	LS	$ -	$ -	$ 12,489	$ 12,489	$ 12,489	**$ 12,489**
	Testing & Commissioning								
6.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 20,000	$ 20,000	$ 20,000	**$ 20,000**
	Permitting and Additional Costs								
6.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.12	Warranties / LOC's	1	LS	$ -	$ -	$ 5,352	$ 5,352	$ 5,352	**$ 5,352**
6.13	Real Estate Costs (New ROW)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.14	Real Estate Costs (Incumbent Utility ROW)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.18	Sales Tax on Materials	1	LS	$ 66,387	$ 66,387	$ -	$ -	$ 66,387	**$ 66,387**
6.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 1,784	$ 1,784	$ 1,784	**$ 1,784**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 66,387		$ 250,300		**$ 316,687**

NAT & NYPA - T025 - (Segment A, + 765kV)

M. Interconnection New Scotland Station

Estimate Revision: 7

Total: $ 3,070,215

NAT & NYPA - T025 - (Segment A, + 765kV)	*Supply*	*Installation*	*Total*
M. Interconnection New Scotland Station			
1. CLEARING & ACCESS	$ -	$ 367,850	$ 367,850
2. FOUNDATIONS	$ 365,657	$ 473,093	$ 838,749
3. STRUCTURES	$ 655,465	$ 445,628	$ 1,101,092
4. CONDUCTOR, SHIELDWIRE, OPGW	$ 3,555	$ 26,100	$ 29,655
5. INSULATORS, FITTINGS, HARDWARE	$ 161,130	$ 95,795	$ 256,925
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 94,864	$ 381,079	$ 475,944
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 1,280,670	$ 1,789,545	$ 3,070,215
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 1,280,670	$ 1,789,545	$ 3,070,215

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
M. Interconnection New Scotland Station									
1. CLEARING & ACCESS									
1.1	Clearing the ROW - Heavy (mowing & clearing)	-	Acre	$ -	$ -	$ 15,000	$ -	$ 15,000	$ -
1.2	Clearing the ROW - Light (mowing)	2.0	Acre	$ -	$ -	$ 5,000	$ 10,000	$ 5,000	**$ 10,000**
1.3	Access Road	-	LF	$ -	$ -	$ 45	$ -	$ 45	$ -
1.4	Silt Fence	3,500.0	LF	$ -	$ -	$ 4	$ 14,000	$ 4	**$ 14,000**
1.5	Matting - Access and ROW	3,500.0	LF	$ -	$ -	$ 70	$ 245,000	$ 70	**$ 245,000**
1.6	Matting - To Work Area	300.0	LF	$ -	$ -	$ 70	$ 21,000	$ 70	**$ 21,000**
1.7	Snow Removal	-	LS	$ -	$ -	$ 516,800	$ -	$ 516,800	$ -
1.8	ROW Restoration	0.5	Mile	$ -	$ -	$ 10,000	$ 5,000	$ 10,000	**$ 5,000**
1.9	Work Pads	20,000.0	SF	$ -	$ -	$ 4	$ 70,400	$ 4	**$ 70,400**
1.10	Restoration for Work Pad areas	4,000.0	SF	$ -	$ -	$ 0.2	$ 600	$ 0	**$ 600**
1.11	Temporary Access Bridge	-	EA	$ -	$ -	$ 20,035	$ -	$ 20,035	$ -
1.12	Air Bridge	-	EA	$ -	$ -	$ 14,445	$ -	$ 14,445	$ -
1.13	Stabilized Construction Entrance	-	EA	$ -	$ -	$ 4,580	$ -	$ 4,580	$ -
1.14	Maintenance and Protection of Traffic on Public Roads	-	EA	$ -	$ -	$ 4,130	$ -	$ 4,130	$ -
1.15	Gates	-	EA	$ 2,000	$ -	$ 2,500	$ -	$ 4,500	$ -
1.16	Culverts / Misc. Access	-	EA	$ 750	$ -	$ 1,250	$ -	$ 2,000	$ -
1.17	Concrete Washout Station	1	EA	$ -	$ -	$ 1,850	$ 1,850	$ 1,850	**$ 1,850**
1.18					$ -		$ -		$ -
1.19					$ -		$ -		$ -
1.20	Crushed Rock	0	CY	$ 27	$ -	$ 75	$ -	$ 102	$ -
TOTAL - CLEARING & ACCESS					$ -		$ 367,850		$ 367,850
2. FOUNDATIONS									
2.1	Foundation – Drilled Pier – 8'X 50'	3	EA	$ 76,500	$ 229,501	$ 77,320	$ 231,959	$ 153,820	**$ 461,459**
2.2	Foundation – Drilled Pier – 8'X 89'	1	EA	$ 136,156	$ 136,156	$ 137,614	$ 137,614	$ 273,770	**$ 273,770**
2.3	Rock Excavation Adder	51.8	CY	$ -	$ -	$ 2,000	$ 103,520	$ 2,000	**$ 103,520**
2.4									
2.5									
2.6									
2.7									
2.8									
2.9									
2.10									
2.11									
2.12									
2.13									
2.14									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.15									
TOTAL - FOUNDATIONS					$ 365,657		$ 473,093		$ 838,749
3. STRUCTURES									
3.1	1-CKT 345KV 3-POLE MEDIUM ANGLE DEADEND (15°-60°) - 115'	3	Structure	$ 178,026	$ 534,077	$ 106,815	$ 320,446	$ 284,841	**$ 854,522**
3.2	1-CKT 345KV VERTICAL MEDIUM ANGLE DEADEND (15°-60°) - 115'	1	Structure	$ 116,328	$ 116,328	$ 69,797	$ 69,797	$ 186,125	**$ 186,125**
3.3	Install Grounding and Grounding Accessories	10	Structure	$ 506	$ 5,060	$ 5,539	$ 55,385	$ 6,045	**$ 60,445**
3.4					$ -		$ -		
3.5									
3.6					$ -		$ -		
3.7					$ -		$ -		
3.8					$ -		$ -		
3.9					$ -		$ -		
3.10					$ -		$ -		
3.11					$ -		$ -		
3.12					$ -		$ -		
3.13					$ -		$ -		
3.14					$ -		$ -		
3.15					$ -		$ -		
TOTAL - STRUCTURES					$ 655,465		$ 445,628		$ 1,101,092
4. CONDUCTOR, SHIELDWIRE, OPGW									
4.1	345kV - (2) 954kcmil 54/7 ACSS "Cardinal"	1,500	LF	$ 1.90	$ 2,850	$ 5.00	$ 7,500	$ 6.90	**$ 10,350**
4.2	(1) OPGW 36 Fiber AC-33/38/571	-	LF	$ 1.35	$ -	$ 5.00	$ -	$ 6.35	**$ -**
4.3	(1) 3/8" EHS7 Steel	1,500	LF	$ 0.47	$ 705	$ 5.00	$ 7,500	$ 5.47	**$ 8,205**
4.5	Remove Existing 345kV Cable From Existing Structures	0.3	Mile	$ -	$ -	$ 30,000	$ 7,500	$ 30,000.00	**$ 7,500**
4.6	Remove Existing OPGW Cable	-	Mile	$ -	$ -	$ 12,000	$ -	$ 12,000.00	**$ -**
4.7	Remove Existing EH7	0.3	Mile	$ -	$ -	$ 12,000	$ 3,600	$ 12,000.00	**$ 3,600**
4.8									
4.9									
4.10	Rider Poles - Relocated	-	Set	$ -	$ -	$ 3,500	$ -	$ 3,500.00	**$ -**
4.11	Rider Poles	-	EA	$ 1,750	$ -	$ 3,500	$ -	$ 5,250.00	**$ -**
TOTAL: CONDUCTOR, SHIELDWIRE, OPGW:					$ 3,555		$ 26,100		**$ 29,655**
5. INSULATOR, FITTINGS, HARDWARE									
5.1	345kV Tangent (1-Group of 18-Bells Each Assembly)	-	Assembly	$ 1,800	$ -	$ 720	$ -	$ 2,520	**$ -**
5.2	115kV Tangent (1-Group of 9-Bells Each Assembly)	-	Assembly	$ 900	$ -	$ 560	$ -	$ 1,460	**$ -**
5.3	345kV Dead-end & Angle Insulators (1-Group of 18-Bells Each Assembly)	60	Assembly	$ 1,800	$ 108,000	$ 720	$ 43,200	$ 2,520	**$ 151,200**
5.4	115kV Dead-end & Angle Insulators (1-Group of 9-Bells Each Assembly)	-	Assembly	$ 900	$ -	$ 560	$ -	$ 1,460	**$ -**
5.5	OPGW Assembly - Tangent	-	Assembly	$ 200	$ -	$ 150	$ -	$ 350	**$ -**
5.6	OPGW Assembly - Angle / DE	-	Assembly	$ 250	$ -	$ 150	$ -	$ 400	**$ -**
5.7	OHSW Assembly - Angle / DE	4	Assembly	$ 250	$ 1,000	$ 150	$ 600	$ 400	**$ 1,600**
5.8	OPGW Splice Boxes	-	Set	$ 1,750	$ -	$ 1,746	$ -	$ 3,496	**$ -**
5.9	OPGW Splice & Test	-	EA	$ 1,400	$ -	$ 2,520	$ -	$ 3,920	**$ -**
5.10	Spacer - Conductor	9	EA	$ 50	$ 450	$ 35	$ 315	$ 85	**$ 765**
5.11	Vibration Dampers - Conductor	48	EA	$ 35	$ 1,680	$ 35	$ 1,680	$ 70	**$ 3,360**
5.12	Shieldwire / OPGW Dampers, Misc. Fittings	-	EA	$ 27	$ -	$ 35	$ -	$ 62	**$ -**
5.13	Guys, Anchors, and Accessories	-	EA	$ 720	$ -	$ 885	$ -	$ 1,605	**$ -**
5.14	Misc. materials (Signs and Markers)	-	Mile	$ 770	$ -	$ 1,006	$ -	$ 1,776	**$ -**
5.15					$ -		$ -		**$ -**
5.16	Interconnection Arrangements	1	EA	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 100,000	**$ 100,000**
5.17					$ -		$ -		**$ -**
5.18					$ -		$ -		**$ -**
5.19					$ -		$ -		**$ -**
5.20					$ -		$ -		**$ -**
TOTAL - INSULATOR, FITTINGS, HARDWARE					$ 161,130		$ 95,795		$ 256,925
M. Interconnection New Scotland Station					$ 1,185,806		$ 1,408,465		$ 2,594,271
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
6.1	Mob / Demob	1	LS	$ -	$ -	$ 25,943	$ 25,943	$ 25,943	**$ 25,943**
	Project Management, Material Handling & Amenities								
6.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 93,718	$ 93,718	$ 93,718	**$ 93,718**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6.3	Utility PM and Project Oversite	1	LS		$ -	$ 25,943	$ 25,943	$ 25,943	**$ 25,943**
6.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 25,943	$ 25,943	$ 25,943	**$ 25,943**
	Engineering								
6.5	Design Engineering	1	LS	$ -	$ -	$ 129,714	$ 129,714	$ 129,714	**$ 129,714**
6.6	LiDAR	1	LS	$ -	$ -	$ 7,783	$ 7,783	$ 7,783	**$ 7,783**
6.7	Geotech	1	Location	$ -	$ -	$ 3,500	$ 3,500	$ 3,500	**$ 3,500**
6.8	Surveying/Staking	1	LS	$ -	$ -	$ 18,160	$ 18,160	$ 18,160	**$ 18,160**
	Testing & Commissioning								
6.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 40,000	$ 40,000	$ 40,000	**$ 40,000**
	Permitting and Additional Costs								
6.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.12	Warranties / LOC's	1	LS	$ -	$ -	$ 7,783	$ 7,783	$ 7,783	**$ 7,783**
6.13	Real Estate Costs (New ROW)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.14	Real Estate Costs (Incumbent Utility ROW)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.18	Sales Tax on Materials	1	LS	$ 94,864	$ 94,864	$ -	$ -	$ 94,864	**$ 94,864**
6.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 2,594	$ 2,594	$ 2,594	**$ 2,594**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 94,864		$ 381,079		**$ 475,944**

NAT & NYPA - T025 - (Segment A, + 765kV)

N. Interconnection Rotterdam Station

Estimate Revision: 7

Total: $ 4,553,958

NAT & NYPA - T025 - (Segment A, + 765kV)	*Supply*	*Installation*	*Total*
N. Interconnection Rotterdam Station			
1. CLEARING & ACCESS	$ -	$ 1,233,050	$ 1,233,050
2. FOUNDATIONS	$ 192,145	$ 325,963	$ 518,108
3. STRUCTURES	$ 546,722	$ 837,150	$ 1,383,872
4. CONDUCTOR, SHIELDWIRE, OPGW	$ 65,923	$ 437,250	$ 503,173
5. INSULATORS, FITTINGS, HARDWARE	$ 165,730	$ 118,480	$ 284,210
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 77,642	$ 553,904	$ 631,545
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 1,048,161	$ 3,505,797	$ 4,553,958
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 1,048,161	$ 3,505,797	$ 4,553,958

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
N. Interconnection Rotterdam Station									
1. CLEARING & ACCESS									
1.1	Clearing the ROW - Heavy (mowing & clearing)	7.0	Acre	$ -	$ -	$ 15,000	$ 105,000	$ 15,000	**$ 105,000**
1.2	Clearing the ROW - Light (mowing)	5.0	Acre	$ -	$ -	$ 5,000	$ 25,000	$ 5,000	**$ 25,000**
1.3	Access Road	-	LF	$ -	$ -	$ 45	$ -	$ 45	$ -
1.4	Silt Fence	4,800.0	LF	$ -	$ -	$ 4	$ 19,200	$ 4	**$ 19,200**
1.5	Matting - Access and ROW	4,800.0	LF	$ -	$ -	$ 70	$ 336,000	$ 70	**$ 336,000**
1.6	Matting - To Work Area	2,400.0	LF	$ -	$ -	$ 70	$ 168,000	$ 70	**$ 168,000**
1.7	Snow Removal	-	LS	$ -	$ -	$ 516,800	$ -	$ 516,800	$ -
1.8	ROW Restoration	1.0	Mile	$ -	$ -	$ 10,000	$ 10,000	$ 10,000	**$ 10,000**
1.9	Work Pads	160,000.0	SF	$ -	$ -	$ 4	$ 563,200	$ 4	**$ 563,200**
1.10	Restoration for Work Pad areas	32,000.0	SF	$ -	$ -	$ 0.2	$ 4,800	$ 0	**$ 4,800**
1.11	Temporary Access Bridge	-	EA	$ -	$ -	$ 20,035	$ -	$ 20,035	$ -
1.12	Air Bridge	-	EA	$ -	$ -	$ 14,445	$ -	$ 14,445	$ -
1.13	Stabilized Construction Entrance	-	EA	$ -	$ -	$ 4,580	$ -	$ 4,580	$ -
1.14	Maintenance and Protection of Traffic on Public Roads	-	EA	$ -	$ -	$ 4,130	$ -	$ 4,130	$ -
1.15	Gates	-	EA	$ 2,000	$ -	$ 2,500	$ -	$ 4,500	$ -
1.16	Culverts / Misc. Access	-	EA	$ 750	$ -	$ 1,250	$ -	$ 2,000	$ -
1.17	Concrete Washout Station	1	EA	$ -	$ -	$ 1,850	$ 1,850	$ 1,850	**$ 1,850**
1.18					$ -		$ -		$ -
1.19					$ -		$ -		$ -
1.20	Crushed Rock	0	CY	$ 27	$ -	$ 75	$ -	$ 102	$ -
TOTAL - CLEARING & ACCESS					$ -		$ 1,233,050		$ 1,233,050
2. FOUNDATIONS									
2.1	10' ED Rock BF	6	EA	$ 358	$ 2,145	$ 3,575	$ 21,450	$ 3,933	**$ 23,595**
2.2	15' ED Rock BF	18	EA	$ 536	$ 9,653	$ 5,363	$ 96,525	$ 5,899	**$ 106,178**
2.3	20' ED Rock BF	4	EA	$ 715	$ 2,860	$ 7,150	$ 28,600	$ 7,865	**$ 31,460**
2.4	Foundation – Drilled Pier – 8'X 29'	4	EA	$ 44,372	$ 177,487	$ 44,847	$ 179,388	$ 89,219	**$ 356,875**
2.5	Rock Excavation Adder	-	CY	$ -	$ -	$ 2,000	$ -	$ 2,000	$ -
2.6					$ -		$ -		$ -
2.7					$ -		$ -		$ -
2.8					$ -		$ -		$ -
2.9					$ -		$ -		$ -
2.10					$ -		$ -		$ -
2.11					$ -		$ -		$ -
2.12					$ -		$ -		$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.13					$ -		$ -		$ -
2.14					$ -		$ -		$ -
2.15					$ -		$ -		$ -
TOTAL - FOUNDATIONS					$ 192,145		$ 325,963		$ 518,108
3. STRUCTURES									
3.1	15kV 3-CKT TANGENT DIST. - WOOD POLE	3	Pole	$ 3,500	$ 10,500	$ 3,600	$ 10,800	$ 7,100	**$ 21,300**
3.2	15Kv 3-CKT MA DIST. - WOOD POLE	1	Pole	$ 3,500	$ 3,500	$ 3,600	$ 3,600	$ 7,100	**$ 7,100**
3.3	15kV 3-CKT DE - WOOD POLE	2	Pole	$ 3,500	$ 7,000	$ 3,600	$ 7,200	$ 7,100	**$ 14,200**
3.4	115kV 1-CKT TANGENT - WOOD POLE	5	Pole	$ 4,500	$ 22,500	$ 4,400	$ 22,000	$ 8,900	**$ 44,500**
3.5	115kV 1-CKT MA - WOOD POLE	2	Pole	$ 4,500	$ 9,000	$ 4,400	$ 8,800	$ 8,900	**$ 17,800**
3.6	115kV 1-CKT DE - WOOD POLE	11	Pole	$ 5,500	$ 60,500	$ 5,000	$ 55,000	$ 10,500	**$ 115,500**
3.7	115kV 2-CKT TANGENT - WOOD POLE	4	Pole	$ 5,500	$ 22,000	$ 5,000	$ 20,000	$ 10,500	**$ 42,000**
3.8	115kV 2-CKT DE - STEEL POLE	4	Pole	$ 98,883	$ 395,530	$ 59,330	$ 237,318	$ 158,212	**$ 632,848**
3.9	Remove Existing Structure	24	EA		$ -	$ 12,300	$ 295,200	$ 12,300	**$ 295,200**
3.10					$ -		$ -		$ -
3.11					$ -		$ -		$ -
3.12	Install Grounding and Grounding Accessories	32	Structure	$ 506	$ 16,192	$ 5,539	$ 177,232	$ 6,045	**$ 193,424**
3.13					$ -		$ -		$ -
3.14					$ -		$ -		$ -
3.15					$ -		$ -		$ -
TOTAL - STRUCTURES					$ 546,722		$ 837,150		$ 1,383,872
4. CONDUCTOR, SHIELDWIRE, OPGW									
4.1	345kV - (1) 954kcmil 54/7 ACSS "Cardinal"	23,400	LF	$ 1.90	$ 44,460	$ 5.00	$ 117,000	$ 6.90	**$ 161,460**
4.2	(1) OPGW 36 Fiber AC-33/38/571	-	LF	$ 1.35	$ -	$ 5.00	$ -	$ 6.35	**$ -**
4.3	(1) 3/8" EHS7 Steel	7,800	LF	$ 0.47	$ 3,666	$ 5.00	$ 39,000	$ 5.47	**$ 42,666**
4.5	Remove Existing Cable	6.6	Mile	$ -	$ -	$ 30,000	$ 197,700	$ 30,000.00	**$ 197,700**
4.6	Remove Existing EH7	2.2	Mile	$ -	$ -	$ 12,000	$ 26,400	$ 12,000.00	**$ 26,400**
4.7	15kV - (1) 477kcmil 26/7 ACSR "Hawk"	9,630	LF	$ 1.62	$ 15,601	$ 5.00	$ 48,150	$ 6.62	**$ 63,751**
4.8	15kV - (1) 336kcmil 26/7 ACSR "Linnet"	1,800	LF	$ 1.22	$ 2,196	$ 5.00	$ 9,000	$ 6.22	**$ 11,196**
4.9		-							
4.10	Rider Poles - Relocated	-	Set	$ -	$ -	$ 3,500	$ -	$ 3,500.00	**$ -**
4.11	Rider Poles	-	EA	$ 1,750	$ -	$ 3,500	$ -	$ 5,250.00	**$ -**
TOTAL: CONDUCTOR, SHIELDWIRE, OPGW:					$ 65,923		$ 437,250		**$ 503,173**
5. INSULATOR, FITTINGS, HARDWARE									
5.1	115kV Tangent (1-Group of 9-Bells Each Assembly)	33	Assembly	$ 1,000	$ 33,000	$ 560	$ 18,480	$ 1,560	**$ 51,480**
5.2	115kV Dead-end & Angle Insulators (1-Group of 9-Bells Each Assembly)	66	Assembly	$ 1,000	$ 66,000	$ 560	$ 36,960	$ 1,560	**$ 102,960**
5.3	15kV Tangent	12	Assembly	$ 100	$ 1,200	$ 75	$ 900	$ 175	**$ 2,100**
5.4	15kV Dead-end & Angle Insulators	18	Assembly	$ 100	$ 1,800	$ 75	$ 1,350	$ 175	**$ 3,150**
5.5	Neutral, Distribution, Tangent	4	Assembly	$ 100	$ 400	$ 75	$ 300	$ 175	**$ 700**
5.6	Neutral, Distribution, DE/Side	2	Assembly	$ 100	$ 200	$ 75	$ 150	$ 175	**$ 350**
5.7	Jumper, DE/Angle, 3PH	4	Assembly	$ 100	$ 400	$ 75	$ 300	$ 175	**$ 700**
5.8	OPGW Assembly - Tangent	2	Assembly	$ 200	$ 400	$ 150	$ 300	$ 350	**$ 700**
5.9	OSHW Assembly - Tangent	11	Assembly	$ 250	$ 2,750	$ 150	$ 1,650	$ 400	**$ 4,400**
5.10	OHSW Assembly - Angle / DE	38	Assembly	$ 250	$ 9,500	$ 150	$ 5,700	$ 400	**$ 15,200**
5.11	OPGW Splice Boxes	-	Set	$ 1,750	$ -	$ 1,746	$ -	$ 3,496	**$ -**
5.12	OPGW Splice & Test	-	EA	$ 1,400	$ -	$ 2,520	$ -	$ 3,920	**$ -**
5.13	Spacer - Conductor	-	EA	$ 50	$ -	$ 35	$ -	$ 85	**$ -**
5.14	Vibration Dampers - Conductor	-	EA	$ 35	$ -	$ 35	$ -	$ 70	**$ -**
5.15	Shieldwire / OPGW Dampers, Misc. Fittings	-	EA	$ 27	$ -	$ 35	$ -	$ 62	**$ -**
5.16	Guys, Anchors, and Accessories	14.0	EA	$ 720	$ 10,080	$ 885	$ 12,390	$ 1,605	**$ 22,470**
5.17	Misc. materials (Signs and Markers)	-	Mile	$ 770	$ -	$ 1,006	$ -	$ 1,776	**$ -**
5.18					$ -		$ -		**$ -**
5.19	Interconnection Arrangements	8	EA	$ 5,000	$ 40,000	$ 5,000	$ 40,000	$ 10,000	**$ 80,000**
5.20					$ -		$ -		**$ -**
5.21					$ -		$ -		**$ -**
5.22					$ -		$ -		**$ -**
5.23					$ -		$ -		**$ -**
TOTAL - INSULATOR, FITTINGS, HARDWARE					$ 165,730		$ 118,480		$ 284,210
N. Interconnection Rotterdam Station					$ 970,519		$ 2,951,893		$ 3,922,412
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6.1	Mob / Demob	1	LS	$ -	$ -	$ 39,224	$ 39,224	$ 39,224	**$ 39,224**
	Project Management, Material Handling & Amenities								
6.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 141,697	$ 141,697	$ 141,697	**$ 141,697**
6.3	Utility PM and Project Oversite	1	LS		$ -	$ 39,224	$ 39,224	$ 39,224	**$ 39,224**
6.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 39,224	$ 39,224	$ 39,224	**$ 39,224**
	Engineering								
6.5	Design Engineering	1	LS	$ -	$ -	$ 196,121	$ 196,121	$ 196,121	**$ 196,121**
6.6	LiDAR	1	LS	$ -	$ -	$ 11,767	$ 11,767	$ 11,767	**$ 11,767**
6.7	Geotech	1	Location	$ -	$ -	$ 3,500	$ 3,500	$ 3,500	**$ 3,500**
6.8	Surveying/Staking	1	LS	$ -	$ -	$ 27,457	$ 27,457	$ 27,457	**$ 27,457**
	Testing & Commissioning								
6.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 40,000	$ 40,000	$ 40,000	**$ 40,000**
	Permitting and Additional Costs								
6.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.12	Warranties / LOC's	1	LS	$ -	$ -	$ 11,767	$ 11,767	$ 11,767	**$ 11,767**
6.13	Real Estate Costs (New ROW)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.14	Real Estate Costs (Incumbent Utility ROW)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.18	Sales Tax on Materials	1	LS	$ 77,642	$ 77,642	$ -	$ -	$ 77,642	**$ 77,642**
6.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 3,922	$ 3,922	$ 3,922	**$ 3,922**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 77,642		$ 553,904		**$ 631,545**

NAT & NYPA - T025 - (Segment A, + 765kV)

System Upgrade Facilities (765kV Corona Mitigation)

Estimate Revision: **7**

Total: **$ 103,575,563**

SYSTEM UPGRADE FACILITIES		Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Sum	Labor & Equipment Supply Rate	Labor & Equipment Sum	Total Unit Rate	TOTAL
SUF 1	**Transmission**								
1.1	765kV S/C (2)-Steel H-Pole Tangent Structure (125ft.) w/ Foundation	48.00	EA	$ 238,985	$ 11,471,280	$ 194,435	$ 9,332,880	$ 433,420	$ 20,804,160
1.2	765kV S/C (2)-Steel H-Pole Tangent Structure (145ft.) w/ Foundation	10.00	EA	$ 275,985	$ 2,759,850	$ 216,635	$ 2,166,350	$ 492,620	$ 4,926,200
1.3	765kV S/C (2)-Steel H-Pole Tangent Structure (265ft.) w/ Foundation	1.00	EA	$ 585,200	$ 585,200	$ 451,850	$ 451,850	$ 1,037,050	$ 1,037,050
1.4	765kV S/C (2)-Steel H-Pole Tangent Structure (275ft.) w/ Foundation	1.00	EA	$ 540,700	$ 540,700	$ 398,150	$ 398,150	$ 938,850	$ 938,850
1.5	765kV S/C 3-Steel Pole Medium Angle Structure (130ft.) W/ Foundation	15.00	EA	$ 947,650	$ 14,214,750	$ 776,150	$ 11,642,250	$ 1,723,800	$ 25,857,000
1.6	765kV S/C 3-Steel Pole Medium Angle Structure (150ft.) W/ Foundation	2.00	EA	$ 1,086,400	$ 2,172,800	$ 859,400	$ 1,718,800	$ 1,945,800	$ 3,891,600
1.7	Conductor and Accessories	1.00	LS	$ 5,209,340	$ 5,209,340	$ 5,819,250	$ 5,819,250	$ 11,028,590	$ 11,028,590
1.8	Hardware Replacement on Existing Tangent Structures (From Church Rd to New Scotland Bypass)	1.00	LS	$ 3,150,000	$ 3,150,000	$ 4,725,000	$ 4,725,000	$ 7,875,000	$ 7,875,000
1.9	Hardware Replacement on Existing Angle/Deadend Structures (From Church Rd to New Scotland Bypass)	1.00	LS	$ 1,530,000	$ 1,530,000	$ 2,652,000	$ 2,652,000	$ 4,182,000	$ 4,182,000
1.10	Removal of Existing Structures and Conductor (From New Scotland Bypass to Knickerbocker)	1.00	LS	$ -	$ -	$ 2,320,000	$ 2,320,000	$ 2,320,000	$ 2,320,000
	Subtotal Direct Cost				$ 41,633,920		$ 41,226,530		$ 82,860,450
1.11	**Indirect Cost (25% of Direct Cost)**								$ 20,715,113
	TOTAL:								**$ 103,575,563**

NAT & NYPA - T025 - (Segment A, + 765kV)

System Upgrade Facilities (Various Stations for Edic/Marcy to New Scotland)

Estimate Revision: 7

Total: $ 6,899,000

SYSTEM UPGRADE FACILITIES		Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Sum	Labor & Equipment Supply Rate	Labor & Equipment Sum	Total Unit Rate	TOTAL
SUF SS1	**Marcy 345kV Bay 3300 - Reconductor Strain Bus UNS-18 Marcy-New Scotland Line**	1	LS	$ -	$ -	$ -	$ -	$ 664,560	$ 665,000
SUF SS1	Removals	1	LS	$ -	$ -	$ -	$ -	$ 30,000	$ 30,000
SUF SS1	Engineering, T&C, PM, Indirects (25%)		LS %						$ 174,000
SUF SS1	**SUF SS1 - TOTAL:**				**$ -**		**$ -**		**$ 869,000**
SUF SS2	**Marcy 345kV Bay 3100 - Reconductor Strain Bus, Replace (3) breakers and wave trap UE1-7- Marcy-Edic Line**	1	LS	$ -	$ -	$ -	$ -	$ 2,946,086	$ 2,947,000
SUF SS2	Removals	1	LS	$ -	$ -	$ -	$ -	$ 120,720	$ 121,000
SUF SS2	Engineering, T&C, PM, Indirects (25%)		LS %						$ 767,000
SUF SS2	**SUFSS 2 - TOTAL:**				**$ -**		**$ -**		**$ 3,835,000**
SUF SS3	**Edic 345kV Bay - UE1-7- Marcy-Edic Line Replace (2) breakers and wave trap**	1	LS					$ 1,661,294	$ 1,662,000
SUF SS3	Removals	1	LS	$ -	$ -	$ -	$ -	$ 93,120	$ 94,000
SUF SS3	Engineering, T&C, PM, Indirects (25%)		LS %						$ 439,000
SUF SS3	**SUF SS3 - TOTAL:**				**$ -**		**$ -**		**$ 2,195,000**
SUF SS4		-	LS	$ -	$ -	$ -	$ -		$ -
SUF SS4	Removals		LS %					$ -	$ -
SUF SS4	Engineering, T&C, PM, Indirects (25%)		LS %						$ -
SUF SS4	**SUF SS4 - TOTAL:**				**$ -**		**$ -**		**$ -**
SUF SS5		-	LS	$ -	$ -	$ -	$ -		$ -
SUF SS5	Removals		LS %					$ -	$ -
SUF SS5	Engineering, T&C, PM, Indirects (25%)		LS %						$ -
SUF SS5	**SUF SS4 - TOTAL:**				**$ -**		**$ -**		**$ -**
	STATIONS SUF DIRECT TOTAL:								**$ 5,519,000**
	STATIONS SUF INDIRECT TOTAL:								**$ 1,380,000**
	STATIONS SUF TOTAL								**$ 6,899,000**

NAT & NYPA - T025 - (Segment A, + 765kV) — **R. Knickerbocker Substation - Install**

Estimate Revision: 7 — **Total: $ 82,734,279**

NAT & NYPA - T025 - (Segment A, + 765kV)	*Supply*	*Installation*	*Total*
R. Knickerbocker Substation - Install			
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ 926,950	$ 10,925,250	$ 11,852,200
2. SUBSTATION FOUNDATIONS	$ 3,740,976	$ 3,864,890	$ 7,605,866
3. SUBSTATION STRUCTURES	$ 1,874,050	$ 1,874,050	$ 3,748,100
4. MAJOR EQUIPTMENT	$ 12,366,667	$ 2,400,000	$ 14,766,667
5. SMALL EQUIPTMENT / MATERIALS	$ 4,105,500	$ 1,165,500	$ 5,271,000
6. CONTROL HOUSE / PANELS	$ 3,114,700	$ 1,556,200	$ 4,670,900
7. MISC ITEMS	$ 7,876,951	$ 11,375,341	$ 19,252,292
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 2,720,463	$ 12,846,791	$ 15,567,255
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 36,726,257	$ 46,008,022	$ 82,734,279
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 36,726,257	$ 46,008,022	$ 82,734,279

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
R. Knickerbocker Substation - Install									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	45	ACRES	$ -	$ -	$ 203,000	$ 9,135,000	$ 203,000	**$ 9,135,000**
1.2	Station stone within substation fence.	14,600	CY	$ 27	$ 394,200	$ 75	$ 1,095,000	$ 102	**$ 1,489,200**
1.3	Substation Fence	5,100	LF	$ 100	$ 510,000	$ 100	$ 510,000	$ 200	**$ 1,020,000**
1.4									
1.5									
1.6	Permanent Access Road - 20'-Wide (From Muitzeskill RD)	650	LF	$ 35	$ 22,750	$ 285	$ 185,250	$ 320	**$ 208,000**
1.7									
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ 926,950		$ 10,925,250		$ 11,852,200
2. SUBSTATION FOUNDATIONS									
2.1	**765kV**								
2.1a	Circuit Breaker Foundations	3	EA.	$ 22,410	$ 67,230	$ 24,000	$ 72,000	$ 46,410	**$ 139,230**
2.1b	Capacitor Bank Foundations	0	EA	$ 56,025	$ -	$ 60,000	$ -	$ 116,025	**$ -**
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	4	EA.	$ 52,290	$ 209,160	$ 56,000	$ 224,000	$ 108,290	**$ 433,160**
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA.	$ 52,290	$ -	$ 56,000	$ -	$ 108,290	**$ -**
2.1e	Switch Stand Foundations	36	EA.	$ 8,964	$ 322,704	$ 8,964	$ 322,704	$ 17,928	**$ 645,408**
2.1f									
2.1g	Bus Support 1ph Foundations (High Bus)	54	EA.	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1h	Bus Support 1 Ph Foundations (Low Bus)	70	EA.	$ 8,964	$ 627,480	$ 8,964	$ 627,480	$ 17,928	**$ 1,254,960**
2.1j	Instrument Transformer Stand Foundations	15	EA.	$ 8,964	$ 134,460	$ 8,964	$ 134,460	$ 17,928	**$ 268,920**
2.1k	Arrester Stand Foundations	3	EA.	$ 8,964	$ 26,892	$ 8,964	$ 26,892	$ 17,928	**$ 53,784**
2.1m	Wave Trap Stand Foundations	1	EA.	$ 8,964	$ 8,964	$ 8,964	$ 8,964	$ 17,928	**$ 17,928**
2.1n									
2.1p	Misc. Structure Foundations	0	EA.	$ -	$ -	$ -	$ -	$ -	**$ -**
				$ -	$ -	$ -	$ -	$ -	**$ -**
2.2	**345kV**								
2.2a	Circuit Breaker Foundations	4	EA.	$ 14,940	$ 59,760	$ 14,940	$ 59,760	$ 29,880	**$ 119,520**
2.2b	Capacitor Bank Foundations	0	EA	$ 44,820	$ -	$ 48,000	$ -	$ 92,820	**$ -**
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	8	EA.	$ 26,145	$ 209,160	$ 26,145	$ 209,160	$ 52,290	**$ 418,320**
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA.	$ 26,145	$ -	$ 26,145	$ -	$ 52,290	**$ -**
2.2e	Switch Stand Foundations	48	EA.	$ 4,482	$ 215,136	$ 4,482	$ 215,136	$ 8,964	**$ 430,272**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.2f	Station Service Transformer Stand Foundation	0	EA.	$ 4,482	$ -	$ 4,482	$ -	$ 8,964	$ -
2.2g	Bus Support 1ph Foundations (High Bus)	27	EA.	$ -	$ -	$ -	$ -	$ -	$ -
2.2h	Bus Support 1 Ph Foundations (Low Bus)	51	EA.	$ 4,482	$ 228,582	$ 4,482	$ 228,582	$ 8,964	$ 457,164
2.2j	Instrument Transformer Stand Foundations	24	EA.	$ 4,482	$ 107,568	$ 4,482	$ 107,568	$ 8,964	$ 215,136
2.2k	Arrester Stand Foundations	6	EA.	$ 4,482	$ 26,892	$ 4,482	$ 26,892	$ 8,964	$ 53,784
2.2m	Wave Trap Stand Foundations	2	EA.	$ 4,482	$ 8,964	$ 4,482	$ 8,964	$ 8,964	$ 17,928
2.2n	Misc. Structure Foundations	2	EA.	$ 8,964	$ 17,928	$ 8,964	$ 17,928	$ 17,928	$ 35,856
2.2p									
2.4	**Transformer Foundations**								
2.4a	765-345kV Transformer Foundation w/ Oil Containment	7	EA.	$ 97,110	$ 679,770	$ 104,000	$ 728,000	$ 201,110	$ 1,407,770
2.4b	765-345kV Transformer Fire Wall	6	EA.	$ 106,074	$ 636,444	$ 113,600	$ 681,600	$ 219,674	$ 1,318,044
2.4c				$ -	$ -	$ -	$ -	$ -	$ -
2.4d				$ -	$ -	$ -	$ -	$ -	$ -
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad	1	EA	$ 74,700	$ 74,700	$ 80,000	$ 80,000	$ 154,700	$ 154,700
2.5b	Generator Foundation	1	EA	$ 16,434	$ 16,434	$ 17,600	$ 17,600	$ 34,034	$ 34,034
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	12	EA	$ 5,229	$ 62,748	$ 5,600	$ 67,200	$ 10,829	$ 129,948
2.6b				$ -	$ -	$ -	$ -	$ -	$ -
2.6c				$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION FOUNDATIONS					$ 3,740,976		$ 3,864,890		$ 7,605,866
3. SUBSTATION STRUCTURES									
3.1	**765kV**								
3.1a	Substation A-Frame Structures - Stand alone	1	EA.	$ 111,000	$ 111,000	$ 111,000	$ 111,000	$ 222,000	$ 222,000
3.1b	Substation A-Frame Structures - Shared Column	0	EA.	$ 111,000	$ -	$ 111,000	$ -	$ 222,000	$ -
3.1c	Switch Stands	6	EA.	$ 22,200	$ 133,200	$ 22,200	$ 133,200	$ 44,400	$ 266,400
3.1d									
3.1e	Bus Support 1ph (High Bus)	54	EA.	$ 7,400	$ 399,600	$ 7,400	$ 399,600	$ 14,800	$ 799,200
3.1f	Bus Support 1 Ph (low Bus)	70	EA.	$ 5,550	$ 388,500	$ 5,550	$ 388,500	$ 11,100	$ 777,000
3.1g	Instrument Transformer Stand	15	EA.	$ 3,700	$ 55,500	$ 3,700	$ 55,500	$ 7,400	$ 111,000
3.1h	Arrester Stand	3	EA.	$ 3,700	$ 11,100	$ 3,700	$ 11,100	$ 7,400	$ 22,200
3.1j	Wave Trap Stand	1	EA.	$ 9,250	$ 9,250	$ 9,250	$ 9,250	$ 18,500	$ 18,500
3.1k	Lightning Mast	12	EA.	$ 9,250	$ 111,000	$ 9,250	$ 111,000	$ 18,500	$ 222,000
3.2	**345kV**								
3.2a	Substation A-Frame Structures - Stand alone	2	EA	$ 37,000	$ 74,000	$ 37,000	$ 74,000	$ 74,000	$ 148,000
3.2b	Substation A-Frame Structures - Shared Column	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	$ -
3.2c	Switch Stands	8	EA	$ 14,800	$ 118,400	$ 14,800	$ 118,400	$ 29,600	$ 236,800
3.2d	Station Service Transformer Stand	1	EA	$ 14,800	$ 14,800	$ 14,800	$ 14,800	$ 29,600	$ 29,600
3.2e	Bus Support 3ph	27	EA	$ 5,550	$ 149,850	$ 5,550	$ 149,850	$ 11,100	$ 299,700
3.2f	Bus Support 1 Ph	51	EA	$ 3,700	$ 188,700	$ 3,700	$ 188,700	$ 7,400	$ 377,400
3.2g	Instrument Transformer Stand	24	EA	$ 1,850	$ 44,400	$ 1,850	$ 44,400	$ 3,700	$ 88,800
3.2h	Arrester Stand	6	EA	$ 1,850	$ 11,100	$ 1,850	$ 11,100	$ 3,700	$ 22,200
3.2j	Wave Trap Stand	2	EA	$ 7,400	$ 14,800	$ 7,400	$ 14,800	$ 14,800	$ 29,600
3.2k	Misc. Structures	6	EA	$ 6,475	$ 38,850	$ 6,475	$ 38,850	$ 12,950	$ 77,700
TOTAL - SUBSTATION STRUCTURES					$ 1,874,050		$ 1,874,050		$ 3,748,100
4. MAJOR EQUIPTMENT									
4.1	**765kV**								
4.1a	Circuit Breakers	3	EA.	$ 900,000	$ 2,700,000	$ 110,000	$ 330,000	$ 1,010,000	$ 3,030,000
4.1b	Capacitor Banks	0	EA.	$ -	$ -	$ -	$ -	$ -	$ -
4.1c	765-345kV Transformer (1ph)	7	EA.	$ 1,266,667	$ 8,866,667	$ 250,000	$ 1,750,000	$ 1,516,667	$ 10,616,667
4.1d									
4.2	**345kV**								
4.2a	Circuit Breakers	4	EA	$ 200,000	$ 800,000	$ 80,000	$ 320,000	$ 280,000	$ 1,120,000
4.2b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	$ -
TOTAL - MAJOR EQUIPTMENT					$ 12,366,667		$ 2,400,000		$ 14,766,667
5. SMALL EQUIPTMENT / MATERIALS									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
5.1	**765kV**								
5.1a	Line Switches - 3ph w/ motor operator	1	EA	$ 400,000	$ 400,000	$ 50,000	$ 50,000	$ 450,000	**$ 450,000**
5.1b	Disconnect Switches - 3ph w/ manual operator	6	EA	$ 350,000	$ 2,100,000	$ 45,000	$ 270,000	$ 395,000	**$ 2,370,000**
5.1c	VT'S	3	EA	$ 13,000	$ 39,000	$ 16,000	$ 48,000	$ 29,000	**$ 87,000**
5.1d	CT'S	3	EA	$ 13,000	$ 39,000	$ 12,000	$ 36,000	$ 25,000	**$ 75,000**
5.1e	CCVT'S	9	EA	$ 12,000	$ 108,000	$ 12,000	$ 108,000	$ 24,000	**$ 216,000**
5.1f	Arresters	10	EA	$ 15,000	$ 150,000	$ 12,000	$ 120,000	$ 27,000	**$ 270,000**
5.1g	Wave Traps	1	EA	$ 15,000	$ 15,000	$ 12,000	$ 12,000	$ 27,000	**$ 27,000**
5.1h									
5.1j									
5.2	**345kV**								
5.2a	Line Switches - 3ph w/ motor operator	2	EA	$ 40,000	$ 80,000	$ 15,000	$ 30,000	$ 55,000	**$ 110,000**
5.2b	Disconnect Switches - 3ph w/ manual operator	8	EA	$ 35,000	$ 280,000	$ 17,500	$ 140,000	$ 52,500	**$ 420,000**
5.2c	VT'S	6	EA	$ 25,000	$ 150,000	$ 12,000	$ 72,000	$ 37,000	**$ 222,000**
5.2d	CT'S	6	EA	$ 13,000	$ 78,000	$ 8,000	$ 48,000	$ 21,000	**$ 126,000**
5.2e	CCVT'S	12	EA	$ 13,000	$ 156,000	$ 8,000	$ 96,000	$ 21,000	**$ 252,000**
5.2f	Arresters	13	EA	$ 6,500	$ 84,500	$ 1,500	$ 19,500	$ 8,000	**$ 104,000**
5.2g	Wave Traps	2	EA	$ 13,000	$ 26,000	$ 8,000	$ 16,000	$ 21,000	**$ 42,000**
5.2h	Station Service Transformers	2	EA	$ 200,000	$ 400,000	$ 50,000	$ 100,000	$ 250,000	**$ 500,000**
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ 4,105,500		$ 1,165,500		$ 5,271,000
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE	1	EA	$ 1,053,000	$ 1,053,000	$ 162,000	$ 162,000	$ 1,215,000	**$ 1,215,000**
6.2	Protection and Telecom Equipment Panels	29	EA	$ 35,000	$ 1,015,000	$ 10,000	$ 290,000	$ 45,000	**$ 1,305,000**
6.3	125VDC Batteries	2	EA	$ 75,000	$ 150,000	$ 25,000	$ 50,000	$ 100,000	**$ 200,000**
6.4	Control Cables	1	LS	$ 546,700	$ 546,700	$ 546,700	$ 546,700	$ 1,093,400	**$ 1,093,400**
6.5	SCADA and Communications	1	EA	$ 35,000	$ 35,000	$ 12,500	$ 12,500	$ 47,500	**$ 47,500**
6.6	Low Voltage AC Distribution	2	EA	$ 50,000	$ 100,000	$ 100,000	$ 200,000	$ 150,000	**$ 300,000**
6.7	DC Distribution System	2	EA	$ 50,000	$ 100,000	$ 100,000	$ 200,000	$ 150,000	**$ 300,000**
6.8	Security	1	EA	$ 7,500	$ 7,500	$ 7,500	$ 7,500	$ 15,000	**$ 15,000**
6.9	Fire Alarm	1	EA	$ 7,500	$ 7,500	$ 7,500	$ 7,500	$ 15,000	**$ 15,000**
6.10	Generator	1	EA	$ 100,000	$ 100,000	$ 80,000	$ 80,000	$ 180,000	**$ 180,000**
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ 3,114,700		$ 1,556,200		**$ 4,670,900**
7. MISC ITEMS 765kV									
7.1	Conduit & Cable Trench System	6,000	LF	$ 185.00	$ 1,110,000	$ 231.27	$ 1,387,620	$ 416.27	**$ 2,497,620**
7.2	Rigid Bus, Fittings & Insulators	6,500	LF	$ 515.95	$ 3,353,675	$ 237.10	$ 1,541,150	$ 753.05	**$ 4,894,825**
7.3	Strain Bus, Connectors & Insulators	2,000	LF	$ 61.50	$ 123,000	$ 78.69	$ 157,380	$ 140.19	**$ 280,380**
7.4	Grounding System	167,000	LF	$ 6.93	$ 1,157,310	$ 32.58	$ 5,440,860	$ 39.51	**$ 6,598,170**
7.5	Strain Bus Insulators	18	EA	$ 4,000	$ 72,000	$ 2,100	$ 37,800	$ 6,100	**$ 109,800**
7.6	Control Conduits from Trench to Equipment	1	LS	$ 125,000	$ 125,000	$ 125,000	$ 125,000	$ 250,000	**$ 250,000**
7.7	Misc. Materials (Above and Below Ground)	1	LS	$ 180,000	$ 180,000	$ 180,000	$ 180,000	$ 360,000	**$ 360,000**
7.8									
7.9									
7.10									
7.11									
7.12									
7.13									
7.14									
7. MISC ITEMS 345kV									
7.15	Conduit & Cable Trench System	4,500	LF	$ 125.07	$ 562,815	$ 170.00	$ 765,000	$ 295	**$ 1,327,815**
7.16	Rigid Bus, Fittings & Insulators	4,300	LF	$ 125.07	$ 537,801	$ 237.10	$ 1,019,530	$ 362	**$ 1,557,331**
7.17	Strain Bus, Connectors & Insulators	2,900	LF	$ 61.50	$ 178,350	$ 78.69	$ 228,201	$ 140	**$ 406,551**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
7.18	Grounding System	0	LF	$ 6.93	$ -	$ 32.58	$ -	$ 40	**$ -**
7.19	Strain Bus Insulators - 345kV	36	EA	$ 2,000	$ 72,000	$ 1,050	$ 37,800	$ 3,050	**$ 109,800**
7.20	Low Voltage AC Station Service	1	LS	$ 50,000	$ 50,000	$ 75,000	$ 75,000	$ 125,000	**$ 125,000**
7.21	SSVT Service	1	LS	$ 50,000	$ 50,000	$ 75,000	$ 75,000	$ 125,000	**$ 125,000**
7.22	Control Conduits from Trench to Equipment	1	LS	$ 125,000	$ 125,000	$ 125,000	$ 125,000	$ 250,000	**$ 250,000**
7.23	Misc. Materials (Above and Below Ground)	1	LS	$ 180,000	$ 180,000	$ 180,000	$ 180,000	$ 360,000	**$ 360,000**
7.24									
7.25									
7.26									
7.27									
7.28									
7.29									
TOTAL - MISC ITEMS					$ 7,876,951		$ 11,375,341		$ 19,252,292
R. Knickerbocker Substation - Install					$ 34,005,794		$ 33,161,231		**$ 67,167,025**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1.0	LS	$ -	$ -	$ 671,670	$ 671,670	$ 671,670	**$ 671,670**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 2,426,405	$ 2,426,405	$ 2,426,405	**$ 2,426,405**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 671,670	$ 671,670	$ 671,670	**$ 671,670**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 671,670	$ 671,670	$ 671,670	**$ 671,670**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 5,373,362	$ 5,373,362	$ 5,373,362	**$ 5,373,362**
8.6	LiDAR	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.7	Geotech	4	EA	$ -	$ -	$ 3,500	$ 14,000	$ 3,500	**$ 14,000**
8.8	Surveying/Staking	1	Site	$ -	$ -	$ 470,169	$ 470,169	$ 470,169	**$ 470,169**
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 1,679,176	$ 1,679,176	$ 1,679,176	**$ 1,679,176**
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 201,501	$ 201,501	$ 201,501	**$ 201,501**
8.13	Real Estate Costs (New)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.14	Real Estate Costs (Incumbent Utility)	1	LS	$ -	$ -	$ 600,000	$ 600,000	$ 600,000	**$ 600,000**
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.17	Carrying Charges	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.18	Sales Tax on Materials	1	LS	$ 2,720,463	$ 2,720,463	$ -	$ -	$ 2,720,463	**$ 2,720,463**
8.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 67,167	$ 67,167	$ 67,167	**$ 67,167**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 2,720,463		$ 12,846,791		**$ 15,567,255**

NAT & NYPA - T025 - (Segment A, + 765kV) — S. Marcy Substation - Install

Estimate Revision: 7 **Total: $ 21,526,138**

NAT & NYPA - T025 - (Segment A, + 765kV)	*Supply*	*Installation*	*Total*
S. Marcy Substation - Install			
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ 134,000	$ 991,250	$ 1,125,250
2. SUBSTATION FOUNDATIONS	$ 2,312,712	$ 2,405,568	$ 4,718,280
3. SUBSTATION STRUCTURES	$ 1,283,900	$ 1,283,900	$ 2,567,800
4. MAJOR EQUIPTMENT	$ 900,000	$ 110,000	$ 1,010,000
5. SMALL EQUIPTMENT / MATERIALS	$ 1,361,000	$ 392,000	$ 1,753,000
6. CONTROL HOUSE / PANELS	$ 432,250	$ 364,750	$ 797,000
7. MISC ITEMS	$ 3,112,180	$ 2,468,996	$ 5,581,176
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 762,883	$ 3,210,749	$ 3,973,633
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 10,298,925	$ 11,227,213	$ 21,526,138
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 10,298,925	$ 11,227,213	$ 21,526,138

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
S. Marcy Substation - Install									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	3.8	ACRES	$ -	$ -	$ 203,000	$ 761,250	$ 203,000	**$ 761,250**
1.2	Station stone within substation fence.	2,000	CY	$ 27	$ 54,000	$ 75	$ 150,000	$ 102	**$ 204,000**
1.3	Substation Fence	800	LF	$ 100	$ 80,000	$ 100	$ 80,000	$ 200	**$ 160,000**
1.4									
1.5									
1.6									
1.7									
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ 134,000		$ 991,250		$ 1,125,250
2. SUBSTATION FOUNDATIONS									
2.1	**765kV**								
2.1a	Circuit Breaker Foundations	1	EA.	$ 22,410	$ 22,410	$ 24,000	$ 24,000	$ 46,410	**$ 46,410**
2.1b	Capacitor Bank Foundations	0	EA.	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	24	EA.	$ 52,290	$ 1,254,960	$ 56,000	$ 1,344,000	$ 108,290	**$ 2,598,960**
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA.	$ 52,290	$ -	$ 56,000	$ -	$ 108,290	**$ -**
2.1e	Switch Stand Foundations	18	EA.	$ 8,964	$ 161,352	$ 8,964	$ 161,352	$ 17,928	**$ 322,704**
2.1f									
2.1g	Bus Support 1ph Foundations (High Bus)	0	EA.	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1h	Bus Support 1 Ph Foundations (Low Bus)	74	EA.	$ 8,964	$ 663,336	$ 8,964	$ 663,336	$ 17,928	**$ 1,326,672**
2.1j	Instrument Transformer Stand Foundations	15	EA.	$ 8,964	$ 134,460	$ 8,964	$ 134,460	$ 17,928	**$ 268,920**
2.1k	Arrester Stand Foundations	3	EA.	$ 8,964	$ 26,892	$ 8,964	$ 26,892	$ 17,928	**$ 53,784**
2.1m	Wave Trap Stand Foundations	2	EA.	$ 8,964	$ 17,928	$ 8,964	$ 17,928	$ 17,928	**$ 35,856**
2.1n	Misc. Structure Foundations	0	EA.	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1p									
2.2	**345kV**								
2.2a	Circuit Breaker Foundations	0	EA.	$ 14,940	$ -	$ 14,940	$ -	$ 29,880	**$ -**
2.2b	Capacitor Bank Foundations	0	EA	$ 56,025	$ -	$ 60,000	$ -	$ 116,025	**$ -**
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA.	$ 26,145	$ -	$ 26,145	$ -	$ 52,290	**$ -**
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA.	$ 26,145	$ -	$ 26,145	$ -	$ 52,290	**$ -**
2.2e	Switch Stand Foundations	0	EA.	$ 4,482	$ -	$ 4,482	$ -	$ 8,964	**$ -**
2.2f	Station Service Transformer Stand Foundation	0	EA.	$ 4,482	$ -	$ 4,482	$ -	$ 8,964	**$ -**
2.2g	Bus Support 1ph Foundations (High Bus)	0	EA.	$ -	$ -	$ -	$ -	$ -	**$ -**
2.2h	Bus Support 1 Ph Foundations (Low Bus)	0	EA.	$ 4,482	$ -	$ 4,482	$ -	$ 8,964	**$ -**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.2j	Instrument Transformer Stand Foundations	0	EA.	$ 4,482	$ -	$ 4,482	$ -	$ 8,964	$ -
2.2k	Arrester Stand Foundations	0	EA.	$ 4,482	$ -	$ 4,482	$ -	$ 8,964	$ -
2.2m	Wave Trap Stand Foundations	0	EA.	$ 4,482	$ -	$ 4,482	$ -	$ 8,964	$ -
2.2n	Misc. Structure Foundations	0	EA.	$ -	$ -	$ -	$ -	$ -	$ -
2.2p									
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	0	EA	$ 5,229	$ -	$ 5,600	$ -	$ 10,829	$ -
2.3b	Capacitor Bank Foundations	0	EA	$ 33,615	$ -	$ 36,000	$ -	$ 69,615	$ -
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	$ -
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	$ -
2.3e	Switch Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3f	Fuse Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3g	Bus Support 3ph Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3h	Bus Support 1 Ph Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3j	Instrument Transformer Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3k	Arrester Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3m	Wave Trap Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4	**Transformer Foundations**								
2.4a	765-345kV Transformer Foundation w/ Oil Containment	0	EA.	$ -	$ -	$ -	$ -	$ -	$ -
2.4b	765-345kV Transformer Fire Wall	0	EA.	$ 106,074	$ -	$ 113,600	$ -	$ 219,674	$ -
2.4c		0		$ -	$ -	$ -	$ -	$ -	$ -
2.4d		0		$ -	$ -	$ -	$ -	$ -	$ -
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad	0	EA	$ 74,700	$ -	$ 80,000	$ -	$ 154,700	$ -
2.5b	Generator Foundation	0	EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	$ -
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	6	EA	$ 5,229	$ 31,374	$ 5,600	$ 33,600	$ 10,829	**$ 64,974**
2.6b		0		$ -	$ -	$ -	$ -	$ -	$ -
2.6c		0		$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION FOUNDATIONS					$ 2,312,712		$ 2,405,568		$ 4,718,280
3. SUBSTATION STRUCTURES									
3.1	**765kV**								
3.1a	Substation A-Frame Structures - Stand alone	6	EA.	$ 111,000	$ 666,000	$ 111,000	$ 666,000	$ 222,000	**$ 1,332,000**
3.1b	Substation A-Frame Structures - Shared Column	0	EA.	$ 111,000	$ -	$ 111,000	$ -	$ 222,000	$ -
3.1c	Switch Stands	3	EA.	$ 22,200	$ 66,600	$ 22,200	$ 66,600	$ 44,400	**$ 133,200**
3.1d									
3.1e	Bus Support 1ph (High Bus)	0	EA.	$ 7,400	$ -	$ 7,400	$ -	$ 14,800	$ -
3.1f	Bus Support 1 Ph (low Bus)	74	EA.	$ 5,550	$ 410,700	$ 5,550	$ 410,700	$ 11,100	**$ 821,400**
3.1g	Instrument Transformer Stand	15	EA.	$ 3,700	$ 55,500	$ 3,700	$ 55,500	$ 7,400	**$ 111,000**
3.1h	Arrester Stand	3	EA.	$ 3,700	$ 11,100	$ 3,700	$ 11,100	$ 7,400	**$ 22,200**
3.1j	Wave Trap Stand	2	EA.	$ 9,250	$ 18,500	$ 9,250	$ 18,500	$ 18,500	**$ 37,000**
3.1k	Lightning Mast	6	EA.	$ 9,250	$ 55,500	$ 9,250	$ 55,500	$ 18,500	**$ 111,000**
3.2	**345kV**								
3.2a	Substation A-Frame Structures - Stand alone	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	$ -
3.2b	Substation A-Frame Structures - Shared Column	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	$ -
3.2c	Switch Stands	0	EA	$ 14,800	$ -	$ 14,800	$ -	$ 29,600	$ -
3.2d	Station Service Transformer Stand	0	EA	$ 14,800	$ -	$ 14,800	$ -	$ 29,600	$ -
3.2e	Bus Support 3ph	0	EA	$ 5,550	$ -	$ 5,550	$ -	$ 11,100	$ -
3.2f	Bus Support 1 Ph	0	EA	$ 3,700	$ -	$ 3,700	$ -	$ 7,400	$ -
3.2g	Instrument Transformer Stand	0	EA	$ 1,850	$ -	$ 1,850	$ -	$ 3,700	$ -
3.2h	Arrester Stand	0	EA	$ 1,850	$ -	$ 1,850	$ -	$ 3,700	$ -
3.2j	Wave Trap Stand	0	EA	$ 7,400	$ -	$ 7,400	$ -	$ 14,800	$ -
3.2k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
3.3	**115kV**								

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.3a	Substation A-Frame Structures - Stand alone	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	$ -
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	$ -
3.3c	Switch Stands	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	$ -
3.3d	Fuse Stand	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	$ -
3.3e	Bus Support 3ph	0	EA	$ 3,330	$ -	$ 3,330	$ -	$ 6,660	$ -
3.3f	Bus Support 1 Ph	0	EA	$ 1,850	$ -	$ 1,850	$ -	$ 3,700	$ -
3.3g	Instrument Transformer Stand	0	EA	$ 740	$ -	$ 740	$ -	$ 1,480	$ -
3.3h	Arrester Stand	0	EA	$ 740	$ -	$ 740	$ -	$ 1,480	$ -
3.3j	Wave Trap Stand	0	EA	$ 3,700	$ -	$ 3,700	$ -	$ 7,400	$ -
3.3k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
TOTAL - SUBSTATION STRUCTURES					$ 1,283,900		$ 1,283,900		$ 2,567,800
4. MAJOR EQUIPTMENT									
4.1	**765kV**								
4.1a	Circuit Breakers	1	EA.	$ 900,000	$ 900,000	$ 110,000	$ 110,000	$ 1,010,000	**$ 1,010,000**
4.1b	Capacitor Banks	0	EA.	$ -	$ -	$ -	$ -	$ -	$ -
4.1c	765-345kV Transformer (1ph)	0	EA.	$ -	$ -	$ 250,000	$ -	$ 250,000	$ -
4.1d									
4.2	**345kV**								
4.2a	Circuit Breakers	0	EA	$ 200,000	$ -	$ 80,000	$ -	$ 280,000	$ -
4.2b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	$ -
4.3	**115kV**								
4.3a	Circuit Breakers	0	EA	$ 52,000	$ -	$ 60,000	$ -	$ 112,000	$ -
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ 60,000	$ -	$ 60,000	$ -
TOTAL - MAJOR EQUIPTMENT					$ 900,000		$ 110,000		$ 1,010,000
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**765kV**								
5.1a	Line Switches - 3ph w/ motor operator	1	EA	$ 400,000	$ 400,000	$ 50,000	$ 50,000	$ 450,000	**$ 450,000**
5.1b	Disconnect Switches - 3ph w/ manual operator	2	EA	$ 350,000	$ 700,000	$ 45,000	$ 90,000	$ 395,000	**$ 790,000**
5.1c	VT'S	3	EA	$ 13,000	$ 39,000	$ 16,000	$ 48,000	$ 29,000	**$ 87,000**
5.1d	CT'S	3	EA	$ 13,000	$ 39,000	$ 12,000	$ 36,000	$ 25,000	**$ 75,000**
5.1e	CCVT'S	9	EA	$ 12,000	$ 108,000	$ 12,000	$ 108,000	$ 24,000	**$ 216,000**
5.1f	Arresters	3	EA	$ 15,000	$ 45,000	$ 12,000	$ 36,000	$ 27,000	**$ 81,000**
5.1g	Wave Traps	2	EA	$ 15,000	$ 30,000	$ 12,000	$ 24,000	$ 27,000	**$ 54,000**
5.1h									
5.1j									
5.2	**345kV**								
5.2a	Line Switches - 3ph w/ motor operator	0	EA	$ 40,000	$ -	$ 15,000	$ -	$ 55,000	$ -
5.2b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 35,000	$ -	$ 17,500	$ -	$ 52,500	$ -
5.2c	VT'S	0	EA	$ -	$ -	$ 12,000	$ -	$ 12,000	$ -
5.2d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2e	CCVT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2f	Arresters	0	EA	$ 6,500	$ -	$ 1,500	$ -	$ 8,000	$ -
5.2g	Wave Traps	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2j									
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	0	EA	$ 33,000	$ -	$ 15,000	$ -	$ 48,000	$ -
5.3b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 28,000	$ -	$ 17,500	$ -	$ 45,500	$ -
5.3c	VT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.3d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.3e	CCVT'S	0	EA	$ 8,000	$ -	$ 8,000	$ -	$ 16,000	$ -
5.3f	Arresters	0	EA	$ 3,420	$ -	$ 6,000	$ -	$ 9,420	$ -
5.3g	Wave Traps	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ 1,361,000		$ 392,000		$ 1,753,000
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE	0	EA	$ -	$ -	$ -	$ -	$ -	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6.2	Protection and Telecom Equipment Panels	3	EA	$ 35,000	$ 105,000	$ 12,500	$ 37,500	$ 47,500	**$ 142,500**
6.3	125VDC Batteries	0	EA	$ 75,000	$ -	$ 25,000	$ -	$ 100,000	**$ -**
6.4	Control Cables	1	LS	$ 327,250	$ 327,250	$ 327,250	$ 327,250	$ 654,500	**$ 654,500**
6.5	SCADA and Communications	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.6	Low Voltage AC Distribution	0	EA	$ 50,000	$ -	$ 100,000	$ -	$ 150,000	**$ -**
6.7	DC Distribution System	0	EA	$ 50,000	$ -	$ 100,000	$ -	$ 150,000	**$ -**
6.8	Security	0	EA	$ 7,500	$ -	$ 7,500	$ -	$ 15,000	**$ -**
6.9	Fire Alarm	0	EA	$ 7,500	$ -	$ 7,500	$ -	$ 15,000	**$ -**
6.10	Generator	0	EA	$ 100,000	$ -	$ 80,000	$ -	$ 180,000	**$ -**
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ 432,250		$ 364,750		**$ 797,000**
7. MISC ITEMS 765kV									
7.1	Conduit & Cable Trench System	1,400	LF	$ 185.00	$ 259,000	$ 231.27	$ 323,778	$ 416.27	**$ 582,778**
7.2	Rigid Bus, Fittings & Insulators	4,500	LF	$ 515.95	$ 2,321,775	$ 237.10	$ 1,066,950	$ 753.05	**$ 3,388,725**
7.3	Strain Bus, Connectors & Insulators	3,750	LF	$ 61.50	$ 230,625	$ 78.69	$ 295,088	$ 140.19	**$ 525,713**
7.4	Grounding System	16,000	LF	$ 6.93	$ 110,880	$ 32.58	$ 521,280	$ 39.51	**$ 632,160**
7.5	Strain Bus Insulators	0	EA	$ 4,000	$ -	$ 2,100	$ -	$ 6,100	**$ -**
7.6	Control Conduits from Trench to Equipment	1	LS	$ 81,900	$ 81,900	$ 81,900	$ 81,900	$ 163,800	**$ 163,800**
7.7	Misc. Materials (Above and Below Ground)	1	LS	$ 108,000	$ 108,000	$ 180,000	$ 180,000	$ 288,000	**$ 288,000**
7.8									
7.9									
7.10									
7.11									
7.12									
7.13									
7.14									
7. MISC ITEMS 345kV									
7.15	Conduit & Cable Trench System	0	LF	$ 125.07	$ -	$ 170.00	$ -	$ 295	**$ -**
7.16	Rigid Bus, Fittings & Insulators	0	LF	$ 125.07	$ -	$ 237.10	$ -	$ 362	**$ -**
7.17	Strain Bus, Connectors & Insulators	0	LF	$ 61.50	$ -	$ 78.69	$ -	$ 140	**$ -**
7.18	Grounding System	0	LF	$ 6.93	$ -	$ 32.58	$ -	$ 40	**$ -**
7.19	Strain Bus Insulators - 345kV	0	EA	$ 2,000	$ -	$ 1,050	$ -	$ 3,050	**$ -**
7.20	Low Voltage AC Station Service	0	LS	$ 50,000	$ -	$ 75,000	$ -	$ 125,000	**$ -**
7.21	SSVT Service	0	LS	$ 50,000	$ -	$ 75,000	$ -	$ 125,000	**$ -**
7.22	Control Cables	0	LS	$ 531,300	$ -	$ 531,300	$ -	$ 1,062,600	**$ -**
7.23	Control Conduits from Trench to Equipment	0	LS	$ 125,000	$ -	$ 125,000	$ -	$ 250,000	**$ -**
7.24	Misc. Materials (Above and Below Ground)	0	LS	$ 180,000	$ -	$ 180,000	$ -	$ 360,000	**$ -**
7.25									
7.26									
7.27									
7.28									
7.29									
TOTAL - MISC ITEMS					$ 3,112,180		$ 2,468,996		$ 5,581,176
S. Marcy Substation - Install					$ 9,536,042		$ 8,016,464		**$ 17,552,506**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1	LS	$ -	$ -	$ 175,525	$ 175,525	$ 175,525	**$ 175,525**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 634,083	$ 634,083	$ 634,083	**$ 634,083**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 175,525	$ 175,525	$ 175,525	**$ 175,525**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 175,525	$ 175,525	$ 175,525	**$ 175,525**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 1,404,200	$ 1,404,200	$ 1,404,200	**$ 1,404,200**
8.6	LiDAR	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.7	Geotech	4	EA	$ -	$ -	$ 3,500	$ 14,000	$ 3,500	**$ 14,000**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
8.8	Surveying/Staking	1	Site	$ -	$ -	$ 122,868	$ 122,868	$ 122,868	**$ 122,868**
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 438,813	$ 438,813	$ 438,813	**$ 438,813**
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 52,658	$ 52,658	$ 52,658	**$ 52,658**
8.13	Real Estate Costs (New)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.14	Real Estate Costs (Incumbent Utility)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.18	Sales Tax on Materials	1	LS	$ 762,883	$ 762,883	$ -	$ -	$ 762,883	**$ 762,883**
8.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 17,553	$ 17,553	$ 17,553	**$ 17,553**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 762,883		$ 3,210,749		**$ 3,973,633**

NAT & NYPA - T025 - (Segment A, + 765kV)	
ESTIMATE ASSUMPTIONS & CLARIFICATIONS	
1	Cost Estimate is based on 2017 rates.
2	Construction schedule is in accordance with proposed schedule - we have assumed continuous working with no breaks in the schedule. Six months have been added to the construction schedule for start up and close out works and assisting in pre-construction activities (i.e. permitting activities, material procurement etc.).
3	We have assumed a typical work week of five-(5) days per week at ten-(10) hours per day (5 x 10 hour days).
4	All labor rates and benefits used for estimating purposes are taken from IBEW Local 1249 working agreement as updated 5-8-2017.
5	We have assumed that the Access Road included in Developer Estimate will be Type 1 Gravel Type.
6	Costs will vary for handling and disposal of contaminated spoils, depending on type of contaminants and availability / location of the appropriate tipping facility. Since there is not enough information to provide a quantified estimate for this item, allowance is included in the contingency monies.
7	Costs have been developed based on historical data from Projects of a similar nature (AACE Class 5 and 4 Estimating Practices). We have not engaged any subcontractors for formal quotes.
8	Foundation rates include supply and installation of materials. Drilled Pier rates include supply and testing of concrete, rebar cage and the use of temp or permanent casing.
9	A Contractor Mark-Up (OH&P) of 15% has been included in the Total section.
10	We have assumed that all project details provided are accurate unless noted otherwise.
11	Any SUF pricing includes 35% to cover Contractor markup (15%) and contingency (20%)
12	A contractor allowance of 1% for mobilization and demobilization has been included in the total section.
13	A contractor allowance of 3.132% for project management and staffing has been included in the total section. This also includes agricultural inspector, engineering inspector, safety inspector, compliance inspector, environmental inspector, and SWPP inspector.
14	An allowance of 1% for Utility PM and Project Oversite staffing has been included in the total section.
15	A contractor allowance of 1% for site accommodation, facilities, and storage has been included in the total section.
16	An allowance of 5% for transmission design and engineering has been included in the total section.
17	An allowance of 8% for substation design and engineering has been included in the total section.
18	An allowance of 0.7% for survey and staking of the transmission line and substation layout has been included in the total section.
19	An allowance of 0.3% for LIDAR of the transmission line has been included in the total section.
20	An allowance of 3.75% for substation testing and commissioning has been included in the total section.
21	An allowance of $20,000.00 per circuit for transmission line testing and commissioning has been included in the total section.
22	New York state sales tax of 8% is included in all material pricing.
23	An allowance of 1.5% for insurance is included in the DPS sheet.
24	The SUF estimates for the stations are rough order of magnitude estimates. No engineering was performed and SECo did not have access to record drawings.

NY Power Authority and North American Transmission (T026)			
		Description	**Total Amount** (In thousand $)
Direct Cost	1	**Transmission Lines**	
	1.1	Clearing & Access	$50,021
	1.2	Foundations	$23,713
	1.3	Structures	$60,645
	1.4	Conductor, Shiedwire and Optical Ground Wire	$35,492
	1.5	Insulators, Fitting and Hardwares	$11,907
		Subtotal (1)	**$181,777**
	2	**Substations**	
	2.1	Rotterdam Substation	$48,340
	2.2	Edic Substation	$2,153
	2.3	Princetown Substation	$0
	2.4	New Scotland Substation	$5,264
	2.5	Porter Substation	$546
	2.6	Knickerbocker Substation	$0
	2.7	Marcy Substation	$0
	2.8	Substation Interconnections	$8,301
		Subtotal (2)	**$64,603**
		Total (1+2)	$246,381
		Contractors Mark-up (15% of Total 1+2)	$36,957
		Total Direct Cost (A)	**$283,338**
Indirect Cost	3	**Technical Services Costs**	
	3.1	Contractor Mobilization / Demobilization	$2,464
	3.2	Project Management, Material Handling & Amenities	$18,148
	3.3	Engineering	$16,643
	3.4	Testing & Commissioning	$1,523
	3.5	Permitting, Real Estate, Sales Tax and Additional Costs	$19,753
	3.6	Compensation for use of NYPA Structures (1 Circuit)	$8,919
	3.7	Legal, Environmental Licensing & Permitting and Environmental Mitigation	$7,920
		Total Indirect Cost (3)	**$75,369**
		Subtotal Project Cost (B=A+3) 2017 $	**$358,707**
	4	**Network Upgrade Facilities (NUF)**	
	4.1	NUF proposed as element of the Project (Marcy and Edic Terminals)	$7,727
	4.2	NUF identified during Evaluation	$0
		Subtotal NUF Cost (C)	**$7,727**

Total Project Cost (B+C) 2017 $	**$366,434**

Total Project Cost 2018 $	**$377,427**

NAT & NYPA - T026 - (Segment A, Base)

Estimate Revision: 7

NAT & NYPA - T026 - (Segment A, Base)) - Direct Costs		*Total Each Segment*
Direct Labor, Material & Equipment Costs	A. Transmission Line Edic to Princetown	$ 122,946,653
Direct Labor, Material & Equipment Costs	B. Transmission Line Princetown to Rotterdam	$ 20,488,282
Direct Labor, Material & Equipment Costs	C. Transmission Line Princetown to New Scotland	$ 38,342,499
Direct Labor, Material & Equipment Costs	D. Rotterdam Substation - Install	$ 44,728,474
Direct Labor, Material & Equipment Costs	E. Rotterdam Substation - Removal	$ 3,611,030
Direct Labor, Material & Equipment Costs	F. Edic Substation - Install	$ 2,117,185
Direct Labor, Material & Equipment Costs	G. Edic Substation - Removal	$ 35,750
Direct Labor, Material & Equipment Costs	H. New Scotland Substation - Install	$ 5,182,753
Direct Labor, Material & Equipment Costs	I. New Scotland Substation - Removal	$ 81,300
Direct Labor, Material & Equipment Costs	J. Porter Substation - Install	$ 71,912
Direct Labor, Material & Equipment Costs	K. Porter Substation - Removal	$ 474,313
Direct Labor, Material & Equipment Costs	L. Interconnection Edic Station	$ 1,784,075
Direct Labor, Material & Equipment Costs	M. Interconnection New Scotland Station	$ 2,594,271
Direct Labor, Material & Equipment Costs	N. Interconnection Rotterdam Station	$ 3,922,412
Direct Labor, Material & Equipment Costs	O. System Upgrade Facilities (Various Lines for Edic to New Scotland)	$ -
Direct Labor, Material & Equipment Costs	P. System Upgrade Facilities (Various Stations for Edic to New Scotland)	$ 5,519,000
	SUBTOTAL:	$ 251,899,910
	CONTRACTOR MARK-UP (OH&P)	$ 37,784,986
	CONTINGENCY ON ENTIRE PROJECT	$ -
	TOTAL DIRECT:	$ 289,684,896

NAT & NYPA - T026 - (Segment A, Base) - Indirect Costs		*Total Each Segment*
Indirect Costs	A. Transmission Line Edic to Princetown	$ 38,230,749
Indirect Costs	B. Transmission Line Princetown to Rotterdam	$ 4,591,422
Indirect Costs	C. Transmission Line Princetown to New Scotland	$ 9,378,594
Indirect Costs	D. Rotterdam Substation - Install	$ 11,157,029
Indirect Costs	E. Rotterdam Substation - Removal	$ 605,422
Indirect Costs	F. Edic Substation - Install	$ 527,893
Indirect Costs	G. Edic Substation - Removal	$ 5,958
Indirect Costs	H. New Scotland Substation - Install	$ 1,274,027
Indirect Costs	I. New Scotland Substation - Removal	$ 13,549
Indirect Costs	J. Porter Substation - Install	$ 15,559
Indirect Costs	K. Porter Substation - Removal	$ 79,048
Indirect Costs	L. Interconnection Edic Station	$ 347,969
Indirect Costs	M. Interconnection New Scotland Station	$ 521,432
Indirect Costs	N. Interconnection Rotterdam Station	$ 700,321
Indirect Costs	O. System Upgrade Facilities (Various Lines for Edic to New Scotland)	$ -
Indirect Costs	P. System Upgrade Facilities (Various Stations for Edic to New Scotland)	$ 1,380,000
Indirect Costs	Legal and Permitting (Includes Legal, Envir. Lisc. & Permit., and Envir. Mitagation)	$ 7,919,694
	TOTAL INDIRECT:	$ 76,748,667

TOTAL ESTIMATED COST:	$ 366,433,564

NAT & NYPA - T026 - (Segment A, Base)

A. Transmission Line Edic to Princetown

Estimate Revision: 7

Total: $ 161,177,402

NAT & NYPA - T026 - (Segment A, Base)	*Supply*	*Installation*	*Total*	
A. Transmission Line Edic to Princetown				
1. CLEARING & ACCESS	$ 41,500	$ 35,680,876	$ 35,722,376	
2. FOUNDATIONS	$ 3,098,282	$ 10,723,946	$ 13,822,229	
3. STRUCTURES	$ 14,839,646	$ 25,190,231	$ 40,029,876	
4. CONDUCTOR, SHIELDWIRE, OPGW	$ 4,932,087	$ 20,895,790	$ 25,827,877	
5. INSULATORS, FITTINGS, HARDWARE	$ 5,125,311	$ 2,418,984	$ 7,544,295	
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 2,242,946	$ 35,987,803	$ 38,230,749	
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -	0.0%
SUBTOTAL:	$ 30,279,773	$ 130,897,630	$ 161,177,402	
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -	0.0%
TOTAL:	$ 30,279,773	$ 130,897,630	$ 161,177,402	

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Sum	Labor & Equipment Supply Rate	Labor & Equipment Sum	Total Unit Rate	TOTAL
A. Transmission Line Edic to Princetown									
1. CLEARING & ACCESS									
1.1	Clearing the ROW - Heavy (mowing & clearing)	8.0	Acre	$ -	$ -	$ 15,000	$ 120,000	$ 15,000	**$ 120,000**
1.2	Clearing the ROW - Light (mowing)	194.0	Acre		$ -	$ 5,000	$ 970,000	$ 5,000	**$ 970,000**
1.3	Access Road	70,540.8	LF	$ -	$ -	$ 45	$ 3,174,336	$ 45	**$ 3,174,336**
1.4	Silt Fence	352,704.0	LF	$ -	$ -	$ 4	$ 1,410,816	$ 4	**$ 1,410,816**
1.5	Matting - Access and ROW	282,163.2	LF	$ -	$ -	$ 70	$ 19,751,424	$ 70	**$ 19,751,424**
1.6	Matting - To Work Area	25,200.0	LF	$ -	$ -	$ 70	$ 1,764,000	$ 70	**$ 1,764,000**
1.7	Snow Removal	66.8	Mile	$ -	$ -	$ 16,000	$ 1,068,800	$ 16,000	**$ 1,068,800**
1.8	ROW Restoration	66.8	Mile	$ -	$ -	$ 10,000	$ 668,000	$ 10,000	**$ 668,000**
1.9	Work Pads	1,680,000.0	SF	$ -	$ -	$ 4	$ 5,913,600	$ 4	**$ 5,913,600**
1.10	Restoration for Work Pad areas	336,000.0	SF	$ -	$ -	$ 0.15	$ 50,400	$ 0	**$ 50,400**
1.11	Temporary Access Bridge	-	EA	$ -	$ -	$ 20,035	$ -	$ 20,035	**$ -**
1.12	Air Bridge	-	EA	$ -	$ -	$ 14,445	$ -	$ 14,445	**$ -**
1.13	Stabilized Construction Entrance	50	EA	$ -	$ -	$ 4,580	$ 229,000	$ 4,580	**$ 229,000**
1.14	Maintenance and Protection of Traffic on Public Roads	100	EA	$ -	$ -	$ 4,130	$ 413,000	$ 4,130	**$ 413,000**
1.15	Culverts / Misc. Access	10	EA	$ 750	$ 7,500	$ 1,250	$ 12,500	$ 2,000	**$ 20,000**
1.16	Gates	17	EA	$ 2,000	$ 34,000	$ 2,500	$ 42,500	$ 4,500	**$ 76,500**
1.17	Concrete Washout Station	50	EA	$ -	$ -	$ 1,850	$ 92,500	$ 1,850	**$ 92,500**
TOTAL - CLEARING & ACCESS:					$ 41,500		$ 35,680,876		**$ 35,722,376**
2. FOUNDATIONS									
2.1	Direct Embed Foundations - 4' x 16'	416	EA	$ 941	$ 391,345	$ 7,398	$ 3,077,513	$ 8,339	**$ 3,468,858**
2.2	Direct Embed Foundations - 4' x 17'	2	EA	$ 995	$ 1,990	$ 7,833	$ 15,666	$ 8,828	**$ 17,656**
2.3	Direct Embed Foundations - 4' x 19'	52	EA	$ 1,104	$ 57,404	$ 8,703	$ 452,576	$ 9,807	**$ 509,979**
2.4	Direct Embed Foundations - 4' x 21'	4	EA	$ 1,213	$ 4,851	$ 9,574	$ 38,295	$ 10,786	**$ 43,146**
2.5	Direct Embed Foundations - 4' x 23'	16	EA	$ 1,322	$ 21,144	$ 10,444	$ 167,105	$ 11,766	**$ 188,249**
2.6	Direct Embed Foundations - 4' x 25'	4	EA	$ 1,430	$ 5,721	$ 11,314	$ 45,258	$ 12,745	**$ 50,979**
2.7	Direct Embed Foundations - 6' x 18'	6	EA	$ 1,857	$ 11,145	$ 18,603	$ 111,621	$ 20,461	**$ 122,766**
2.8	Direct Embed Foundations - 6' x 19'	6	EA	$ 1,952	$ 11,711	$ 19,583	$ 117,496	$ 21,534	**$ 129,207**
2.9	Direct Embed Foundations - 6' x 20'	14	EA	$ 2,046	$ 28,648	$ 20,562	$ 287,864	$ 22,608	**$ 316,512**
2.10	Direct Embed Foundations - 6' x 21'	15	EA	$ 2,141	$ 32,110	$ 21,541	$ 323,113	$ 23,681	**$ 355,222**
2.11	Direct Embed Foundations - 6' x 22'	7	EA	$ 2,235	$ 15,645	$ 22,520	$ 157,640	$ 24,755	**$ 173,285**
2.12	Direct Embed Foundations - 6' x 25'	6	EA	$ 2,518	$ 15,109	$ 25,457	$ 152,744	$ 27,976	**$ 167,854**
2.13	Direct Embed Foundations - 6' x 26'	1	EA	$ 2,613	$ 2,613	$ 26,437	$ 26,437	$ 29,049	**$ 29,049**
2.14	Direct Embed Foundations - 6' x 28'	3	EA	$ 2,707	$ 8,121	$ 27,416	$ 82,247	$ 30,123	**$ 90,368**
2.15	Direct Embed Foundations - 6' x 29'	3	EA	$ 2,896	$ 8,687	$ 29,374	$ 88,122	$ 32,270	**$ 96,809**
2.16	Direct Embed Foundations - 6' x 33'	3	EA	$ 3,273	$ 9,820	$ 33,290	$ 99,871	$ 36,564	**$ 109,691**
2.17	Direct Embed Foundations - 7' x 27'	2	EA	$ 3,337	$ 6,673	$ 37,316	$ 74,631	$ 40,652	**$ 81,305**
2.18	Direct Embed Foundations - 7' x 28'	1	EA	$ 3,452	$ 3,452	$ 38,648	$ 38,648	$ 42,101	**$ 42,101**
2.19	Direct Embed Foundations - 7' x 49'	1	EA	$ 5,880	$ 5,880	$ 66,635	$ 66,635	$ 72,515	**$ 72,515**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Sum	Labor & Equipment Supply Rate	Labor & Equipment Sum	Total Unit Rate	TOTAL
2.20	Direct Embed Foundations - 7' x 61'	1	EA	$ 7,267	$ 7,267	$ 82,628	$ 82,628	$ 89,894	**$ 89,894**
2.21	Drilled Pier - 6' x 20'	54	EA	$ 18,064	$ 975,459	$ 18,261	$ 986,079	$ 36,325	**$ 1,961,539**
2.22	Drilled Pier - 7' x 19'	15	EA	$ 23,416	$ 351,246	$ 23,671	$ 355,070	$ 47,088	**$ 706,315**
2.23	Drilled Pier - 7' x 21'	12	EA	$ 25,758	$ 309,096	$ 26,038	$ 312,461	$ 51,796	**$ 621,558**
2.24	Drilled Pier - 7' x 22'	6	EA	$ 26,929	$ 161,573	$ 27,222	$ 163,332	$ 54,151	**$ 324,905**
2.26	Drilled Pier - 7' x 23'	3	EA	$ 28,100	$ 84,299	$ 28,406	$ 85,217	$ 56,505	**$ 169,516**
2.27	Drilled Pier - 7' x 33'	6	EA	$ 39,808	$ 238,847	$ 40,241	$ 241,447	$ 80,049	**$ 480,295**
2.28	Drilled Pier - 7' x 42'	3	EA	$ 50,345	$ 151,036	$ 50,893	$ 152,680	$ 101,239	**$ 303,716**
2.29	Drilled Pier - 8' x 27'	2	EA	$ 42,819	$ 85,637	$ 57,340	$ 114,680	$ 100,158	**$ 200,317**
2.30	Drilled Pier - 8' x 29'	2	EA	$ 45,877	$ 91,754	$ 61,436	$ 122,871	$ 107,313	**$ 214,625**
2.31	Rock Excavation Adder	1,342	CY	$ -	$ -	$ 2,000	$ 2,684,000	$ 2,000	**$ 2,684,000**
TOTAL - FOUNDATIONS:					$ 3,098,282		$ 10,723,946		**$ 13,822,229**
3. STRUCTURES									
3.1	1-CKT 345KV VERTICAL TANGENT (0°-1°) - 115'	7	Structure	$ 50,024	$ 350,168	$ 30,014	$ 210,101	$ 80,038	**$ 560,269**
3.2	1-CKT 345KV VERTICAL TANGENT (0°-1°) - 120'	4	Structure	$ 52,207	$ 208,828	$ 31,324	$ 125,297	$ 83,531	**$ 334,125**
3.3	1-CKT 345KV VERTICAL TANGENT (0°-1°) - 130'	3	Structure	$ 58,257	$ 174,770	$ 34,954	$ 104,862	$ 93,210	**$ 279,631**
3.4	1-CKT 345KV VERTICAL TANGENT (0°-1°) - 135'	10	Structure	$ 60,884	$ 608,835	$ 36,530	$ 365,301	$ 97,414	**$ 974,136**
3.5	1-CKT 345KV VERTICAL TANGENT (0°-1°) - 145'	1	Structure	$ 64,473	$ 64,473	$ 38,684	$ 38,684	$ 103,156	**$ 103,156**
3.6	1-CKT 345KV VERTICAL SMALL ANGLE (1°-15°) - 115'	1	Structure	$ 72,039	$ 72,039	$ 43,223	$ 43,223	$ 115,262	**$ 115,262**
3.7	1-CKT 345KV VERTICAL SMALL ANGLE (1°-15°) - 130'	3	Structure	$ 85,082	$ 255,245	$ 51,049	$ 153,147	$ 136,130	**$ 408,391**
3.8	1-CKT 345KV VERTICAL SMALL ANGLE (1°-15°) - 135'	1	Structure	$ 92,278	$ 92,278	$ 55,367	$ 55,367	$ 147,645	**$ 147,645**
3.9	1-CKT 345KV VERTICAL MEDIUM ANGLE DEADEND (15°-60°) - 115'	1	Structure	$ 116,328	$ 116,328	$ 69,797	$ 69,797	$ 186,125	**$ 186,125**
3.10	1-CKT 345KV VERTICAL MEDIUM ANGLE DEADEND (15°-60°) - 120'	1	Structure	$ 127,558	$ 127,558	$ 76,535	$ 76,535	$ 204,092	**$ 204,092**
3.11	1-CKT 345KV VERTICAL MEDIUM ANGLE DEADEND (15°-60°) - 150'	1	Structure	$ 208,033	$ 208,033	$ 124,820	$ 124,820	$ 332,852	**$ 332,852**
3.12	1-CKT 345KV VERTICAL MEDIUM ANGLE DEADEND (15°-60°) - 160'	1	Structure	$ 238,595	$ 238,595	$ 143,157	$ 143,157	$ 381,751	**$ 381,751**
3.13	1-CKT 345KV H-FRAME TANGENT (0°-1°) - 75'	1	Structure	$ 24,476	$ 24,476	$ 14,685	$ 14,685	$ 39,161	**$ 39,161**
3.14	1-CKT 345KV H-FRAME TANGENT (0°-1°) - 80'	2	Structure	$ 25,826	$ 51,652	$ 15,496	$ 30,991	$ 41,322	**$ 82,643**
3.15	1-CKT 345KV H-FRAME TANGENT (0°-1°) - 84'	169	Structure	$ 29,526	$ 4,989,894	$ 17,716	$ 2,993,936	$ 47,242	**$ 7,983,830**
3.16	1-CKT 345KV H-FRAME TANGENT (0°-1°) - 89'	36	Structure	$ 32,708	$ 1,177,488	$ 19,625	$ 706,493	$ 52,333	**$ 1,883,981**
3.17	1-CKT 345KV H-FRAME TANGENT (0°-1°) - 93'	23	Structure	$ 34,540	$ 794,409	$ 20,724	$ 476,645	$ 55,263	**$ 1,271,054**
3.18	1-CKT 345KV H-FRAME TANGENT (0°-1°) - 98'	10	Structure	$ 37,500	$ 374,995	$ 22,500	$ 224,997	$ 59,999	**$ 599,992**
3.19	1-CKT 345KV H-FRAME TANGENT (0°-1°) - 102'	4	Structure	$ 43,901	$ 175,602	$ 26,340	$ 105,361	$ 70,241	**$ 280,963**
3.20	1-CKT 345KV H-FRAME TANGENT (0°-1°) - 107'	2	Structure	$ 45,936	$ 91,871	$ 27,561	$ 55,123	$ 73,497	**$ 146,994**
3.21	1-CKT 345KV H-FRAME SMALL ANGLE (1°-15°) - 80'	2	Structure	$ 55,241	$ 110,482	$ 33,145	$ 66,289	$ 88,386	**$ 176,771**
3.22	1-CKT 345KV H-FRAME SMALL ANGLE (1°-15°) - 85'	19	Structure	$ 57,813	$ 1,098,438	$ 34,688	$ 659,063	$ 92,500	**$ 1,757,500**
3.23	1-CKT 345KV H-FRAME SMALL ANGLE (1°-15°) - 90'	2	Structure	$ 61,050	$ 122,100	$ 36,630	$ 73,260	$ 97,680	**$ 195,360**
3.24	1-CKT 345KV H-FRAME SMALL ANGLE (1°-15°) - 95'	2	Structure	$ 65,120	$ 130,240	$ 39,072	$ 78,144	$ 104,192	**$ 208,384**
3.25	1-CKT 345KV H-FRAME SMALL ANGLE (1°-15°) - 100'	1	Structure	$ 68,635	$ 68,635	$ 41,181	$ 41,181	$ 109,816	**$ 109,816**
3.26	1-CKT 345KV H-FRAME SMALL ANGLE (1°-15°) - 105'	1	Structure	$ 72,872	$ 72,872	$ 43,723	$ 43,723	$ 116,594	**$ 116,594**
3.27	1-CKT 345KV 3-POLE TANGENT DEADEND (0°-5°) - 75'	2	Structure	$ 61,513	$ 123,025	$ 36,908	$ 73,815	$ 98,420	**$ 196,840**
3.28	1-CKT 345KV 3-POLE TANGENT DEADEND (0°-5°) - 80'	3	Structure	$ 69,079	$ 207,237	$ 41,447	$ 124,342	$ 110,526	**$ 331,579**
3.29	1-CKT 345KV 3-POLE TANGENT DEADEND (0°-5°) - 85'	4	Structure	$ 75,739	$ 302,956	$ 45,443	$ 181,774	$ 121,182	**$ 484,730**
3.30	1-CKT 345KV 3-POLE TANGENT DEADEND (0°-5°) - 90'	4	Structure	$ 81,493	$ 325,970	$ 48,896	$ 195,582	$ 130,388	**$ 521,552**
3.31	1-CKT 345KV 3-POLE MEDIUM ANGLE DEADEND (15°-60°) - 80'	1	Structure	$ 97,403	$ 97,403	$ 58,442	$ 58,442	$ 155,844	**$ 155,844**
3.32	1-CKT 345KV 3-POLE MEDIUM ANGLE DEADEND (15°-60°) - 85'	6	Structure	$ 105,802	$ 634,809	$ 63,481	$ 380,885	$ 169,282	**$ 1,015,694**
3.33	1-CKT 345KV 3-POLE MEDIUM ANGLE DEADEND (15°-60°) - 90'	6	Structure	$ 117,253	$ 703,518	$ 70,352	$ 422,111	$ 187,605	**$ 1,125,629**
3.34	1-CKT 345KV 3-POLE MEDIUM ANGLE DEADEND (15°-60°) - 95'	1	Structure	$ 129,408	$ 129,408	$ 77,645	$ 77,645	$ 207,052	**$ 207,052**
3.35	1-CKT 345KV 3-POLE MEDIUM ANGLE DEADEND (15°-60°) - 115'	1	Structure	$ 178,026	$ 178,026	$ 106,815	$ 106,815	$ 284,841	**$ 284,841**
3.36	Remove Existing Foundation	50	EA	$ -	$ -	$ 7,500	$ 375,000	$ 7,500	**$ 375,000**
3.37	Remove Existing Structure and Accessories	994	EA	$ -	$ -	$ 12,500	$ 12,425,000	$ 12,500	**$ 12,425,000**
3.38	Install Grounding and Grounding Accessories	666	Pole	$ 506	$ 336,996	$ 5,539	$ 3,688,641	$ 6,045	**$ 4,025,637**
TOTAL - STRUCTURES:					$ 14,839,646		$ 25,190,231		**$ 40,029,876**
4. CONDUCTOR, SHIELDWIRE, OPGW									
4.1	345kV - (1) 954kcmil 54/7 ACSS "Cardinal" (Edic to 12.6 Miles)	2,228,688	LF	$ 1.90	$ 4,234,507	$ 5.00	$ 11,143,440	$ 6.90	**$ 15,377,947**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Sum	Labor & Equipment Supply Rate	Labor & Equipment Sum	Total Unit Rate	TOTAL
4.2	(1) OPGW 36 Fiber AC-33/38/571 (Edic to 12.6 Miles)	301,594	LF	$ 1.35	$ 407,152	$ 5.00	$ 1,507,970	$ 6.35	**$ 1,915,122**
4.3	(1) 3/8" EHS7 Steel (Edic to 12.6 Miles)	271,656	LF	$ 0.47	$ 127,678	$ 5.00	$ 1,358,280	$ 5.47	**$ 1,485,958**
4.4									
4.5									
4.6									
4.7	Remove Existing Conductor and Accessories	121.0	Mile	$ -	$ -	$ 30,000	$ 3,630,000	$ 30,000.00	**$ 3,630,000**
4.8	Remove Existing OPGW and Accessories	108.4	Mile	$ -	$ -	$ 12,000	$ 1,300,800	$ 12,000.00	**$ 1,300,800**
4.9	Remove Existing OHSW and Accessories	108.4	Mile	$ -	$ -	$ 12,000	$ 1,300,800	$ 12,000.00	**$ 1,300,800**
4.10									
4.11									
4.12									
4.13	Rider Poles (187 Locations)	93	Set	$ 1,750	$ 162,750	$ 3,500	$ 325,500	$ 5,250.00	**$ 488,250**
4.14	Rider Poles - Relocated	94	Set	$ -	$ -	$ 3,500	$ 329,000	$ 3,500.00	**$ 329,000**
TOTAL: CONDUCTOR, SHIELDWIRE, OPGW:					$ 4,932,087		$ 20,895,790		**$ 25,827,877**
5. INSULATOR, FITTINGS, HARDWARE									
5.1	345kV Tangent (1-Group of 18-Bells Each Assembly)	1,276	Assembly	$ 1,800	$ 2,296,800	$ 720	$ 918,720	$ 2,520	**$ 3,215,520**
5.2	345kV Dead-end & Angle Insulators (1-Group of 18-Bells Each Assembly)	480	Assembly	$ 1,800	$ 864,000	$ 720	$ 345,600	$ 2,520	**$ 1,209,600**
5.3			Assembly		$ -		$ -	$ -	**$ -**
5.4	OPGW Assembly - Tangent	304	Assembly	$ 200	$ 60,800	$ 150	$ 45,600	$ 350	**$ 106,400**
5.5	OPGW Assembly - Angle / DE	64	Assembly	$ 250	$ 16,000	$ 150	$ 9,600	$ 400	**$ 25,600**
5.6	OHSW Assembly - Tangent	274	Assembly	$ 200	$ 54,800	$ 150	$ 41,100	$ 350	**$ 95,900**
5.7	OHSW Assembly - Angle / DE	56	Assembly	$ 250	$ 14,000	$ 150	$ 8,400	$ 400	**$ 22,400**
5.8	OPGW Splice Boxes	27	Assembly	$ 1,746	$ 47,146	$ 2,274	$ 61,398	$ 4,020	**$ 108,544**
5.9	OPGW Splice & Test	27	EA	$ 2,520	$ 68,040	$ 2,520	$ 68,040	$ 5,040	**$ 136,080**
5.10	Spacer - Conductor	5,244	EA	$ 50	$ 262,200	$ 35	$ 183,540	$ 85	**$ 445,740**
5.11	Vibration Dampers - Conductor	4,164	EA	$ 35	$ 145,740	$ 35	$ 145,740	$ 70	**$ 291,480**
5.12	Shield wire / OPGW Dampers, Misc. Fittings	1,087	EA	$ 27	$ 29,349	$ 35	$ 38,045	$ 62	**$ 67,394**
5.13	*Replace - Mono Pole Vertical Tangent (1-Group of 18-Bells Each Assembly)*	480	Assembly	$ 1,800	$ 864,000	$ 720	$ 345,600	$ 2,520	**$ 1,209,600**
5.14	*Replace - Dead-end & Angle Insulators (1, Group of 18-Bells Each Assembly)*	195	Assembly	$ 1,800	$ 351,000	$ 720	$ 140,400	$ 2,520	**$ 491,400**
5.15	Guys, Anchors, and Accessories	-	EA	$ 912	$ -	$ 1,058	$ -	$ 1,970	**$ -**
5.16	Misc. materials (Signs and Markers)	66.8	Mile	$ 770	$ 51,436	$ 1,006	$ 67,201	$ 1,776	**$ 118,637**
TOTAL - INSULATORS, FITTINGS, HARDWARE:					$ 5,125,311		$ 2,418,984		**$ 7,544,295**
A. Transmission Line Edic to Princetown					$ 28,036,826		$ 94,909,827		**$ 122,946,653**
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
6.1	Mob / Demob	1	LS	$ -	$ -	$ 1,229,467	$ 1,229,467	$ 1,229,467	**$ 1,229,467**
	Project Management, Material Handling & Amenities								
6.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 6,597,194	$ 6,597,194	$ 6,597,194	**$ 6,597,194**
6.3	Utility PM and Project Oversite	1	LS		$ -	$ 1,229,467	$ 1,229,467	$ 1,229,467	**$ 1,229,467**
6.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 1,229,467	$ 1,229,467	$ 1,229,467	**$ 1,229,467**
	Engineering								
6.5	Design Engineering	1	LS	$ -	$ -	$ 6,147,333	$ 6,147,333	$ 6,147,333	**$ 6,147,333**
6.6	LiDAR	1	LS	$ -	$ -	$ 368,840	$ 368,840	$ 368,840	**$ 368,840**
6.7	Geotech	67	Location	$ -	$ -	$ 3,500	$ 234,500	$ 3,500	**$ 234,500**
6.8	Surveying/Staking	1	LS	$ -	$ -	$ 860,627	$ 860,627	$ 860,627	**$ 860,627**
	Testing & Commissioning								
6.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 40,000	$ 40,000	$ 40,000	**$ 40,000**
	Permitting and Additional Costs								
6.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.12	Warranties / LOC's	1	LS	$ -	$ -	$ 368,840	$ 368,840	$ 368,840	**$ 368,840**
6.13	Real Estate Costs (New ROW)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.14	Real Estate Costs (Incumbent Utility ROW)	1	LS	$ -	$ -	$ 8,640,000	$ 8,640,000	$ 8,640,000	**$ 8,640,000**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Sum	Labor & Equipment Supply Rate	Labor & Equipment Sum	Total Unit Rate	TOTAL
6.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.17	Compensation for use of 1 Ckt - NYPA Structures (92 Structures)	1	LS	$ -	$ -	$ 8,919,123	$ 8,919,123	$ 8,919,123	**$ 8,919,123**
6.18	Sales Tax on Materials	1	LS	$ 2,242,946	$ 2,242,946	$ -	$ -	$ 2,242,946	**$ 2,242,946**
6.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 122,947	$ 122,947	$ 122,947	**$ 122,947**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 2,242,946		$ 35,987,803		**$ 38,230,749**

NAT & NYPA - T026 - (Segment A, Base)

B. Transmission Line Princetown to Rotterdam

Estimate Revision: 7

Total: $ 25,079,704

NAT & NYPA - T026 - (Segment A, Base)	*Supply*	*Installation*	*Total*	
B. Transmission Line Princetown to Rotterdam				
1. CLEARING & ACCESS	$ 6,000	$ 3,038,200	$ 3,044,200	
2. FOUNDATIONS	$ 417,002	$ 3,778,708	$ 4,195,711	
3. STRUCTURES	$ 3,876,135	$ 4,280,943	$ 8,157,078	
4. CONDUCTOR, SHIELDWIRE, OPGW	$ 722,365	$ 2,620,705	$ 3,343,070	
5. INSULATORS, FITTINGS, HARDWARE	$ 1,199,031	$ 549,192	$ 1,748,223	
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 497,643	$ 4,093,779	$ 4,591,422	
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -	0.0%
SUBTOTAL:	$ 6,718,177	$ 18,361,527	$ 25,079,704	
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -	0.0%
TOTAL:	$ 6,718,177	$ 18,361,527	$ 25,079,704	

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
B. Transmission Line Princetown to Rotterdam									
1. CLEARING & ACCESS									
1.1	Clearing the ROW - Heavy (mowing & clearing)	-	Acre	$ -	$ -	$ 15,000	$ -	$ 15,000	$ -
1.2	Clearing the ROW - Light (mowing)	24.0	Acre	$ -	$ -	$ 5,000	$ 120,000	$ 5,000	**$ 120,000**
1.3	Access Road	5,280	LF	$ -	$ -	$ 45	$ 237,600	$ 45	**$ 237,600**
1.4	Silt Fence	26,400	LF	$ -	$ -	$ 4	$ 105,600	$ 4	**$ 105,600**
1.5	Matting - Access and ROW	21,120	LF	$ -	$ -	$ 70	$ 1,478,400	$ 70	**$ 1,478,400**
1.6	Matting - To Work Area	2,775	LF	$ -	$ -	$ 70	$ 194,250	$ 70	**$ 194,250**
1.7	Snow Removal	5	Mile	$ -	$ -	$ 16,000	$ 80,000	$ 16,000	**$ 80,000**
1.8	ROW Restoration	5	Mile	$ -	$ -	$ 10,000	$ 50,000	$ 10,000	**$ 50,000**
1.9	Work Pads	185,000	SF	$ -	$ -	$ 4	$ 651,200	$ 4	**$ 651,200**
1.10	Restoration for Work Pad areas	37,000	SF	$ -	$ -	$ 0.2	$ 5,550	$ 0	**$ 5,550**
1.11	Temporary Access Bridge	-	EA	$ -	$ -	$ 20,035	$ -	$ 20,035	$ -
1.12	Air Bridge	-	EA	$ -	$ -	$ 14,445	$ -	$ 14,445	$ -
1.13	Stabilized Construction Entrance	10	EA	$ -	$ -	$ 4,580	$ 45,800	$ 4,580	**$ 45,800**
1.14	Maintenance and Protection of Traffic on Public Roads	10	EA	$ -	$ -	$ 4,130	$ 41,300	$ 4,130	**$ 41,300**
1.15	Gates	-	EA	$ 2,000	$ -	$ 2,500	$ -	$ 4,500	$ -
1.16	Culverts / Misc. Access	8	EA	$ 750	$ 6,000	$ 1,250	$ 10,000	$ 2,000	**$ 16,000**
1.17	Concrete Washout Station	10	EA	$ -	$ -	$ 1,850	$ 18,500	$ 1,850	**$ 18,500**
TOTAL - CLEARING & ACCESS:					$ 6,000		$ 3,038,200		**$ 3,044,200**
2. FOUNDATIONS									
2.1	Direct Embed Foundations - 6' x 18'	56	EA	$ 1,857	$ 104,018	$ 18,603	$ 1,041,794	$ 20,461	**$ 1,145,812**
2.2	Direct Embed Foundations - 6' x 20'	4	EA	$ 2,046	$ 8,185	$ 20,562	$ 82,247	$ 22,608	**$ 90,432**
2.3	Direct Embed Foundations - 6' x 22'	8	EA	$ 2,235	$ 17,880	$ 22,520	$ 180,160	$ 24,755	**$ 198,040**
2.4	Direct Embed Foundations - 7' x 25'	4	EA	$ 3,105	$ 12,422	$ 34,650	$ 138,601	$ 37,756	**$ 151,023**
2.5	Drilled Pier - 6' x 19'	6	EA	$ 17,204	$ 103,223	$ 17,391	$ 104,347	$ 34,595	**$ 207,570**
2.6	Drilled Pier - 8' x 27'	4	EA	$ 42,819	$ 171,274	$ 57,340	$ 229,359	$ 100,158	**$ 400,633**
2.7	Rock Excavation Adder	1,001.1	CY	$ -	$ -	$ 2,000	$ 2,002,200	$ 2,000	**$ 2,002,200**
TOTAL - FOUNDATIONS:					$ 417,002		$ 3,778,708		**$ 4,195,711**
3. STRUCTURES									
3.1	2x 1-CKT 345KV DELTA TANGENT (0°-1°) - 115'	24	Structure	$ 85,544	$ 2,053,056	$ 51,326	$ 1,231,834	$ 136,870	**$ 3,284,890**
3.2	2x 1-CKT 345KV DELTA TANGENT (0°-1°) - 135'	2	Structure	$ 106,005	$ 212,010	$ 63,603	$ 127,206	$ 169,608	**$ 339,216**
3.3	2x 1-CKT 345KV DELTA SMALL ANGLE (1°-15°) - 115'	2	Structure	$ 141,673	$ 283,346	$ 85,004	$ 170,008	$ 226,677	**$ 453,354**
3.4	2x 1-CKT 345KV VERTICAL TANGENT DEADEND (0°-5°) - 115'	4	Structure	$ 109,816	$ 439,264	$ 65,890	$ 263,558	$ 175,706	**$ 702,822**
3.5	2x 1-CKT 345KV VERTICAL MEDIUM ANGLE DEADEND (15°-60°) - 115'	2	Structure	$ 232,656	$ 465,312	$ 139,594	$ 279,187	$ 372,250	**$ 744,499**
3.6	2x 1-CKT 345KV 3-POLE LARGE ANGLE DEADEND (60°-90°) - 115'	1	Structure	$ 176,342	$ 176,342	$ 105,805	$ 105,805	$ 282,147	**$ 282,147**
3.7	2x 1-CKT 345KV 3-POLE TANGENT DEADEND (0°-5°) - 65'	1	Structure	$ 99,493	$ 99,493	$ 59,696	$ 59,696	$ 159,189	**$ 159,189**
3.8	2x 1-CKT 345KV DELTA TANGENT (0°-1°) HD- 115'	1	Structure	$ 105,820	$ 105,820	$ 63,492	$ 63,492	$ 169,312	**$ 169,312**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.9	Remove Existing Foundation	22	EA	$ -	$ -	$ 7,500	$ 163,500	$ 7,500	**$ 163,500**
3.10	Remove Existing Structure and Accessories	109	EA	$ -	$ -	$ 12,500	$ 1,362,500	$ 12,500	**$ 1,362,500**
3.11	Install Grounding and Grounding Accessories	82	Pole	$ 506	$ 41,492	$ 5,539	$ 454,157	$ 6,045	**$ 495,649**
TOTAL - STRUCTURES PRINCTOWN TO NEW SCOTLAND:					$ 3,876,135		$ 4,280,943		**$ 8,157,078**
4. CONDUCTOR, SHIELDWIRE, OPGW									
4.1	345kV - (1) 954kcmil 54/7 ACSS "Cardinal" (R1 - R36)	339,293	LF	$ 1.90	$ 644,657	$ 5.00	$ 1,696,465	$ 6.90	**$ 2,341,122**
4.2	(1) OPGW 36 Fiber AC-33/38/571 (R1 - R36)	28,274	LF	$ 1.35	$ 38,170	$ 5.00	$ 141,370	$ 6.35	**$ 179,540**
4.3	(1) 3/8" EHS7 Steel (R1 - R36)	28,274	LF	$ 0.47	$ 13,289	$ 5.00	$ 141,370	$ 5.47	**$ 154,659**
4.5	Remove Existing Conductor and Accessories	10.0	Mile	$ -	$ -	$ 30,000	$ 300,000	$ 30,000.00	**$ 300,000**
4.6	Remove Existing OPGW and Accessories	10.0	Mile	$ -	$ -	$ 12,000	$ 120,000	$ 12,000.00	**$ 120,000**
4.7	Remove Existing OHSW and Accessories	10.0	Mile	$ -	$ -	$ 12,000	$ 120,000	$ 12,000.00	**$ 120,000**
4.8	Rider Poles	15	EA	$ 1,750	$ 26,250	$ 3,500	$ 52,500	$ 5,250.00	**$ 78,750**
4.9	Rider Poles - Relocated	14	Set	$ -	$ -	$ 3,500	$ 49,000	$ 3,500.00	**$ 49,000**
TOTAL: CONDUCTOR, SHIELDWIRE, OPGW:					$ 722,365		$ 2,620,705		**$ 3,343,070**
5. INSULATOR, FITTINGS, HARDWARE									
5.1	345kV Tangent (1-Group of 18-Bells Each Assembly)	348	Assembly	$ 1,800	$ 626,400	$ 720	$ 250,560	$ 2,520	**$ 876,960**
5.2	345kV Dead-end & Angle Insulators (1-Group of 18-Bells Each Assembly)	240	Assembly	$ 1,800	$ 432,000	$ 720	$ 172,800	$ 2,520	**$ 604,800**
5.3	OPGW Assembly - Tangent	29	Assembly	$ 200	$ 5,800	$ 150	$ 4,350	$ 350	**$ 10,150**
5.4	OPGW Assembly - Angle / DE	16	Assembly	$ 250	$ 4,000	$ 150	$ 2,400	$ 400	**$ 6,400**
5.5	OHSW Assembly - Tangent	29	Assembly	$ 200	$ 5,800	$ 150	$ 4,350	$ 350	**$ 10,150**
5.6	OHSW Assembly - Angle / DE	16	Assembly	$ 250	$ 4,000	$ 150	$ 2,400	$ 400	**$ 6,400**
5.7	OPGW Splice Boxes	8	Assembly	$ 1,746	$ 13,969	$ 2,274	$ 18,192	$ 4,020	**$ 32,161**
5.8	OPGW Splice & Test	8	EA	$ 2,520	$ 20,160	$ 2,520	$ 20,160	$ 5,040	**$ 40,320**
5.9	Spacer - Conductor	1,002	EA	$ 50	$ 50,100	$ 35	$ 35,070	$ 85	**$ 85,170**
5.10	Vibration Dampers - Conductor	852	EA	$ 35	$ 29,820	$ 35	$ 29,820	$ 70	**$ 59,640**
5.11	Shieldwire / OPGW Dampers, Misc. Fittings	116	EA	$ 27	$ 3,132	$ 35	$ 4,060	$ 62	**$ 7,192**
5.12	Guys, Anchors, and Accessories	-	EA	$ 912	$ -	$ 1,058	$ -	$ 1,970	**$ -**
5.13	Misc. materials (Signs and Markers)	5.0	Mile	$ 770	$ 3,850	$ 1,006	$ 5,030	$ 1,776	**$ 8,880**
TOTAL - INSULATORS, FITTINGS, HARDWARE:					$ 1,199,031		$ 549,192		**$ 1,748,223**
B. Transmission Line Princetown to Rotterdam					$ 6,220,534		$ 14,267,748		**$ 20,488,282**
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS									
	Contractor Mobilization / Demobilization								
6.1	Mob / Demob	1	LS	$ -	$ -	$ 204,883	$ 204,883	$ 204,883	**$ 204,883**
	Project Management, Material Handling & Amenities								
6.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 1,099,381	$ 1,099,381	$ 1,099,381	**$ 1,099,381**
6.3	Utility PM and Project Oversite	1	LS		$ -	$ 204,883	$ 204,883	$ 204,883	**$ 204,883**
6.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 204,883	$ 204,883	$ 204,883	**$ 204,883**
	Engineering								
6.5	Design Engineering	1	LS	$ -	$ -	$ 1,024,414	$ 1,024,414	$ 1,024,414	**$ 1,024,414**
6.6	LiDAR	1	LS	$ -	$ -	$ 61,465	$ 61,465	$ 61,465	**$ 61,465**
6.7	Geotech	5	Location	$ -	$ -	$ 3,500	$ 17,500	$ 3,500	**$ 17,500**
6.8	Surveying/Staking	1	LS	$ -	$ -	$ 143,418	$ 143,418	$ 143,418	**$ 143,418**
	Testing & Commissioning								
6.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 40,000	$ 40,000	$ 40,000	**$ 40,000**
	Permitting and Additional Costs								
6.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.12	Warranties / LOC's	1	LS	$ -	$ -	$ 61,465	$ 61,465	$ 61,465	**$ 61,465**
6.13	Real Estate Costs (New ROW)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.14	Real Estate Costs (Incumbent Utility ROW)	1	LS	$ -	$ -	$ 1,011,000	$ 1,011,000	$ 1,011,000	**$ 1,011,000**
6.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.18	Sales Tax on Materials	1	LS	$ 497,643	$ 497,643	$ -	$ -	$ 497,643	**$ 497,643**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 20,488	$ 20,488	$ 20,488	**$ 20,488**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 497,643		$ 4,093,779		**$ 4,591,422**

NAT & NYPA - T026 - (Segment A, Base)

C. Transmission Line Princetown to New Scotland

Estimate Revision: 7

Total: $ 47,721,093

NAT & NYPA - T026 - (Segment A, Base)	*Supply*	*Installation*	*Total*
C. Transmission Line Princetown to New Scotland			
1. CLEARING & ACCESS	**$ 31,000**	**$ 11,223,694**	**$ 11,254,694**
2. FOUNDATIONS	**$ 1,194,705**	**$ 4,499,949**	**$ 5,694,653**
3. STRUCTURES	**$ 6,879,617**	**$ 5,578,039**	**$ 12,457,656**
4. CONDUCTOR, SHIELDWIRE, OPGW	**$ 1,564,842**	**$ 4,756,290**	**$ 6,321,132**
5. INSULATORS, FITTINGS, HARDWARE	**$ 1,767,073**	**$ 847,291**	**$ 2,614,365**
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	**$ 914,979**	**$ 8,463,615**	**$ 9,378,594**
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	**$ 12,352,215**	**$ 35,368,878**	**$ 47,721,093**
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	**$ 12,352,215**	**$ 35,368,878**	**$ 47,721,093**

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
C. Transmission Line Princetown to New Scotland									
1. CLEARING & ACCESS									
1.1	Clearing the ROW - Heavy (mowing & clearing)	26.0	Acre	$ -	$ -	$ 15,000	$ 390,000	$ 15,000	**$ 390,000**
1.2	Clearing the ROW - Light (mowing)	57.0	Acre	$ -	$ -	$ 5,000	$ 285,000	$ 5,000	**$ 285,000**
1.3	Access Road	20,803.2	LF	$ -	$ -	$ 45	$ 936,144	$ 45	**$ 936,144**
1.4	Silt Fence	104,016.0	LF	$ -	$ -	$ 4	$ 416,064	$ 4	**$ 416,064**
1.5	Matting - Access and ROW	83,212.8	LF	$ -	$ -	$ 70	$ 5,824,896	$ 70	**$ 5,824,896**
1.6	Matting - To Work Area	3,375.0	LF	$ -	$ -	$ 70	$ 236,250	$ 70	**$ 236,250**
1.7	Snow Removal	19.7	Mile	$ -	$ -	$ 16,000	$ 315,200	$ 16,000	**$ 315,200**
1.8	ROW Restoration	19.7	Mile	$ -	$ -	$ 10,000	$ 197,000	$ 10,000	**$ 197,000**
1.9	Work Pads	645,000.0	SF	$ -	$ -	$ 4	$ 2,270,400	$ 4	**$ 2,270,400**
1.10	Restoration for Work Pad areas	129,000.0	SF	$ -	$ -	$ 0.2	$ 19,350	$ 0	**$ 19,350**
1.11	Temporary Access Bridge	-	EA	$ -	$ -	$ 20,035	$ -	$ 20,035	**$ -**
1.12	Air Bridge	2	EA	$ -	$ -	$ 14,445	$ 28,890	$ 14,445	**$ 28,890**
1.13	Stabilized Construction Entrance	-	EA	$ -	$ -	$ 4,580	$ -	$ 4,580	**$ -**
1.14	Maintenance and Protection of Traffic on Public Roads	50	EA	$ -	$ -	$ 4,130	$ 206,500	$ 4,130	**$ 206,500**
1.15	Gates	11	EA	$ 2,000	$ 22,000	$ 2,500	$ 27,500	$ 4,500	**$ 49,500**
1.16	Culverts / Misc. Access	12	EA	$ 750	$ 9,000	$ 1,250	$ 15,000	$ 2,000	**$ 24,000**
1.17	Concrete Washout Station	30	EA	$ -	$ -	$ 1,850	$ 55,500	$ 1,850	**$ 55,500**
TOTAL - CLEARING & ACCESS:					$ 31,000		$ 11,223,694		**$ 11,254,694**
2. FOUNDATIONS									
2.1	Direct Embed Foundations - 4' x 16'	100	EA	$ 941	$ 94,073	$ 7,398	$ 739,787	$ 8,339	**$ 833,860**
2.2	Direct Embed Foundations - 4' x 19'	14	EA	$ 1,104	$ 15,455	$ 8,703	$ 121,847	$ 9,807	**$ 137,302**
2.3	Direct Embed Foundations - 4' x 21'	2	EA	$ 1,213	$ 2,425	$ 9,574	$ 19,147	$ 10,786	**$ 21,573**
2.4	Direct Embed Foundations - 6' x 18'	9	EA	$ 1,857	$ 16,717	$ 18,603	$ 167,431	$ 20,461	**$ 184,148**
2.5	Direct Embed Foundations - 6' x 20'	14	EA	$ 2,046	$ 28,648	$ 20,562	$ 287,864	$ 22,608	**$ 316,512**
2.6	Direct Embed Foundations - 6' x 21'	25	EA	$ 2,141	$ 53,516	$ 21,541	$ 538,521	$ 23,681	**$ 592,037**
2.7	Direct Embed Foundations - 6' x 22'	4	EA	$ 2,235	$ 8,940	$ 22,520	$ 90,080	$ 24,755	**$ 99,020**
2.8	Direct Embed Foundations - 6' x 25'	5	EA	$ 2,518	$ 12,591	$ 25,457	$ 127,287	$ 27,976	**$ 139,878**
2.9	Direct Embed Foundations - 6' x 29'	1	EA	$ 2,896	$ 2,896	$ 29,374	$ 29,374	$ 32,270	**$ 32,270**
2.10	Direct Embed Foundations - 6' x 34'	4	EA	$ 3,273	$ 13,093	$ 33,290	$ 133,162	$ 36,564	**$ 146,255**
2.11	Direct Embed Foundations - 6' x 42'	3	EA	$ 4,123	$ 12,369	$ 42,103	$ 126,308	$ 46,225	**$ 138,676**
2.12	Direct Embed Foundations - 7' x 25'	1	EA	$ 3,105	$ 3,105	$ 34,650	$ 34,650	$ 37,756	**$ 37,756**
2.13	Direct Embed Foundations - 7' x 27'	1	EA	$ 3,337	$ 3,337	$ 37,316	$ 37,316	$ 40,652	**$ 40,652**
2.14	Direct Embed Foundations - 7' x 28'	1	EA	$ 3,452	$ 3,452	$ 38,648	$ 38,648	$ 42,101	**$ 42,101**
2.15	Drilled Pier - 6' x 20'	6	EA	$ 18,064	$ 108,384	$ 18,261	$ 109,564	$ 36,325	**$ 217,949**
2.16	Drilled Pier - 7' x 19'	15	EA	$ 23,416	$ 351,246	$ 23,671	$ 355,070	$ 47,088	**$ 706,315**
2.17	Drilled Pier - 7' x 24'	3	EA	$ 29,270	$ 87,811	$ 29,589	$ 88,767	$ 58,860	**$ 176,579**
2.18	Drilled Pier - 8' x 27'	1	EA	$ 42,819	$ 42,819	$ 43,285	$ 43,285	$ 86,103	**$ 86,103**
2.19	Drilled Pier - 8' x 83'	1	EA	$ 128,456	$ 128,456	$ 172,020	$ 172,020	$ 300,475	**$ 300,475**
2.20	Drilled Pier - 8' x 89'	1	EA	$ 137,631	$ 137,631	$ 184,307	$ 184,307	$ 321,938	**$ 321,938**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.21	Drilled Pier - 9' x 34'	1	EA	$ 67,740	$ 67,740	$ 90,713	$ 90,713	$ 158,454	**$ 158,454**
2.22	Rock Excavation Adder	482.40	CY	$ -	$ -	$ 2,000	$ 964,800	$ 2,000	**$ 964,800**
TOTAL - FOUNDATIONS:					$ 1,194,705		$ 4,499,949		**$ 5,694,653**
3. STRUCTURES									
3.1	1-CKT 345KV VERTICAL TANGENT (0°-1°) - 115'	7	Structure	$ 50,024	$ 350,168	$ 30,014	$ 210,101	$ 80,038	**$ 560,269**
3.2	1-CKT 345KV VERTICAL TANGENT (0°-1°) - 120'	5	Structure	$ 52,207	$ 261,035	$ 31,324	$ 156,621	$ 83,531	**$ 417,656**
3.3	1-CKT 345KV VERTICAL TANGENT (0°-1°) - 125'	8	Structure	$ 55,685	$ 445,480	$ 33,411	$ 267,288	$ 89,096	**$ 712,768**
3.4	1-CKT 345KV VERTICAL TANGENT (0°-1°) - 130'	9	Structure	$ 58,257	$ 524,309	$ 34,954	$ 314,585	$ 93,210	**$ 838,894**
3.5	1-CKT 345KV VERTICAL TANGENT (0°-1°) - 135'	4	Structure	$ 60,884	$ 243,534	$ 36,530	$ 146,120	$ 97,414	**$ 389,654**
3.6	1-CKT 345KV VERTICAL TANGENT (0°-1°) - 145'	1	Structure	$ 64,473	$ 64,473	$ 38,684	$ 38,684	$ 103,156	**$ 103,156**
3.7	1-CKT 345KV VERTICAL SMALL ANGLE (1°-15°) - 115'	1	Structure	$ 72,039	$ 72,039	$ 43,223	$ 43,223	$ 115,262	**$ 115,262**
3.8	1-CKT 345KV VERTICAL SMALL ANGLE (1°-15°) - 135'	1	Structure	$ 92,278	$ 92,278	$ 55,367	$ 55,367	$ 147,645	**$ 147,645**
3.9	1-CKT 345KV VERTICAL TANGENT DEADEND (0°-5°) - 120'	1	Structure	$ 58,164	$ 58,164	$ 34,898	$ 34,898	$ 93,062	**$ 93,062**
3.10	1-CKT 345KV VERTICAL MEDIUM ANGLE DEADEND (15°-60°) - 105'	1	Structure	$ 98,883	$ 98,883	$ 59,330	$ 59,330	$ 158,212	**$ 158,212**
3.11	1-CKT 345KV H-FRAME TANGENT (0°-1°) - 84'	43	Structure	$ 29,526	$ 1,269,618	$ 17,716	$ 761,771	$ 47,242	**$ 2,031,389**
3.12	1-CKT 345KV H-FRAME TANGENT (0°-1°) - 89'	5	Structure	$ 32,708	$ 163,540	$ 19,625	$ 98,124	$ 52,333	**$ 261,664**
3.13	1-CKT 345KV H-FRAME TANGENT (0°-1°) - 93'	5	Structure	$ 34,540	$ 172,698	$ 20,724	$ 103,619	$ 55,263	**$ 276,316**
3.14	1-CKT 345KV H-FRAME TANGENT (0°-1°) - 107'	5	Structure	$ 45,936	$ 229,678	$ 27,561	$ 137,807	$ 73,497	**$ 367,484**
3.15	1-CKT 345KV H-FRAME SMALL ANGLE (1°-15°) - 80'	3	Structure	$ 55,241	$ 165,723	$ 33,145	$ 99,434	$ 88,386	**$ 265,157**
3.16	1-CKT 345KV 3-POLE TANGENT DEADEND (0°-5°) - 80'	5	Structure	$ 69,079	$ 345,395	$ 41,447	$ 207,237	$ 110,526	**$ 552,632**
3.17	1-CKT 345KV 3-POLE TANGENT DEADEND (0°-5°) - 85'	1	Structure	$ 75,739	$ 75,739	$ 45,443	$ 45,443	$ 121,182	**$ 121,182**
3.18	1-CKT 345KV 3-POLE MEDIUM ANGLE DEADEND (15°-60°) - 80'	5	Structure	$ 97,403	$ 487,013	$ 58,442	$ 292,208	$ 155,844	**$ 779,220**
3.19	1-CKT 345KV 3-POLE MEDIUM ANGLE DEADEND (15°-60°) - 95'	1	Structure	$ 129,408	$ 129,408	$ 77,645	$ 77,645	$ 207,052	**$ 207,052**
3.20	1-CKT 345KV 3-POLE MEDIUM ANGLE DEADEND (15°-60°) - 115'	1	Structure	$ 178,026	$ 178,026	$ 106,815	$ 106,815	$ 284,841	**$ 284,841**
3.21	2-CKT 115KV/345KV VERTICAL TANGENT (0°-1°) - 115'	7	Structure	$ 54,631	$ 382,414	$ 32,778	$ 229,448	$ 87,409	**$ 611,862**
3.22	2-CKT 115KV/345KV VERTICAL TANGENT (0°-1°) - 125'	4	Structure	$ 62,604	$ 250,416	$ 37,562	$ 150,250	$ 100,166	**$ 400,666**
3.23	2-CKT 115KV/345KV VERTICAL TANGENT (0°-1°) - 135'	1	Structure	$ 68,894	$ 68,894	$ 41,336	$ 41,336	$ 110,230	**$ 110,230**
3.24	2-CKT 115KV/345KV VERTICAL SMALL ANGLE (1°-15°) - 155'	1	Structure	$ 149,480	$ 149,480	$ 89,688	$ 89,688	$ 239,168	**$ 239,168**
3.25	2-CKT 115KV/345KV VERTICAL MEDIUM ANGLE DEADEND (15°-60°) - 115'	1	Structure	$ 173,808	$ 173,808	$ 104,285	$ 104,285	$ 278,092	**$ 278,092**
3.26	2-CKT 115KV/345KV VERTICAL MEDIUM ANGLE DEADEND (15°-60°) - 125'	1	Structure	$ 202,797	$ 202,797	$ 121,678	$ 121,678	$ 324,475	**$ 324,475**
3.27	115KV DUMMY DE, Drilled Pier, 85'	2	Structure	$ 58,164	$ 116,328	$ 34,898	$ 69,797	$ 93,062	**$ 186,125**
3.28	Remove Existing Foundation	4	EA	$ -	$ -	$ 7,500	$ 30,000	$ 7,500	**$ 30,000**
3.29	Remove Existing Structure and Accessories	24	EA	$ -	$ -	$ 12,500	$ 300,000	$ 12,500	**$ 300,000**
3.30	Install Grounding and Grounding Accessories	214	Pole	$ 506	$ 108,284	$ 5,539	$ 1,185,239	$ 6,045	**$ 1,293,523**
TOTAL - STRUCTURES:					$ 6,879,617		$ 5,578,039		**$ 12,457,656**
4. CONDUCTOR, SHIELDWIRE, OPGW									
4.1	**345kV** - (1) 954kcmil 54/7 ACSS "Cardinal" (ENS-336 to ENS-464)	661,954	LF	$ 1.90	$ 1,257,713	$ 5.00	$ 3,309,770	$ 6.90	**$ 4,567,483**
4.2	(1) OPGW 36 Fiber AC-33/38/571 (ENS-336 to ENS-464)	110,326	LF	$ 1.35	$ 148,940	$ 5.00	$ 551,630	$ 6.35	**$ 700,570**
4.3	(1) 3/8" EHS7 Steel (ENS-336 to ENS-464)	75,398	LF	$ 0.47	$ 35,437	$ 5.00	$ 376,990	$ 5.47	**$ 412,427**
4.4		-		$ -	$ -	$ -	$ -	$ -	**$ -**
4.5	**115kV** - (1) 954kcmil 54/7 ACSS "Cardinal" (ENS-336 to ENS-464)	41,580	LF	$ 1.90	$ 79,002	$ 5.00	$ 207,900	$ 6.90	**$ 286,902**
4.6	(1) OPGW 36 Fiber AC-33/38/571 (ENS-336 to ENS-464)	-	LF	$ 1.35	$ -	$ 5.00	$ -	$ 6.35	**$ -**
4.7	(1) 3/8" EHS7 Steel (ENS-336 to ENS-464)	-	LF	$ 0.47	$ -	$ 5.00	$ -	$ 5.47	**$ -**
4.8	Remove Existing Conductor and Accessories	2.5	Mile	$ -	$ -	$ 30,000	$ 75,000	$ 30,000.00	**$ 75,000**
4.9	Remove Existing OPGW and Accessories	2.5	Mile	$ -	$ -	$ 12,000	$ 30,000	$ 12,000.00	**$ 30,000**
4.10	Remove Existing OHSW and Accessories	2.5	Mile	$ -	$ -	$ 12,000	$ 30,000	$ 12,000.00	**$ 30,000**
4.11	Rider Poles (50 Locations)	25	Set	$ 1,750	$ 43,750	$ 3,500	$ 87,500	$ 5,250.00	**$ 131,250**
4.12	Rider Poles - Relocated	25	Set	$ -	$ -	$ 3,500	$ 87,500	$ 3,500.00	**$ 87,500**
TOTAL - CONDUCTOR, SHIELDWIRE, OPGW:					$ 1,564,842		$ 4,756,290		**$ 6,321,132**
5. INSULATOR, FITTINGS, HARDWARE									
5.1	345kV Tangent (1-Group of 18-Bells Each Assembly)	538	Assembly	$ 1,800	$ 968,400	$ 720	$ 387,360	$ 2,520	**$ 1,355,760**
5.2	115kV Tangent (1-Group of 9-Bells Each Assembly)	78	Assembly	$ 900	$ 70,200	$ 560	$ 43,680	$ 1,460	**$ 113,880**
5.3	345kV Dead-end & Angle Insulators (1-Group of 18-Bells Each Assembly)	255	Assembly	$ 1,800	$ 459,000	$ 720	$ 183,600	$ 2,520	**$ 642,600**
5.4	115kV Dead-end & Angle Insulators (1-Group of 9-Bells Each Assembly)	21	Assembly	$ 900	$ 18,900	$ 560	$ 11,760	$ 1,460	**$ 30,660**
5.5			Assembly		$ -		$ -	$ -	**$ -**
5.6			Assembly		$ -		$ -	$ -	**$ -**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
5.7	OPGW Assembly - Tangent	110	Assembly	$ 200	$ 22,000	$ 150	$ 16,500	$ 350	**$ 38,500**
5.8	OPGW Assembly - Angle / DE	34	Assembly	$ 250	$ 8,500	$ 150	$ 5,100	$ 400	**$ 13,600**
5.9	OHSW Assembly - Tangent	61	Assembly	$ 200	$ 12,200	$ 150	$ 9,150	$ 350	**$ 21,350**
5.10	OHSW Assembly - Angle / DE	24	Assembly	$ 250	$ 6,000	$ 150	$ 3,600	$ 400	**$ 9,600**
5.11	OPGW Splice Boxes	8	Assembly	$ 1,746	$ 13,969	$ 2,274	$ 18,192	$ 4,020	**$ 32,161**
5.12	OPGW Splice & Test	8	EA	$ 2,520	$ 20,160	$ 2,520	$ 20,160	$ 5,040	**$ 40,320**
5.13	Spacer - Conductor	1,773	EA	$ 50	$ 88,650	$ 35	$ 62,055	$ 85	**$ 150,705**
5.14	Vibration Dampers - Conductor	1,596	EA	$ 35	$ 55,860	$ 35	$ 55,860	$ 70	**$ 111,720**
5.15	Shieldwire / OPGW Dampers, Misc. Fittings	293	EA	$ 27	$ 7,911	$ 35	$ 10,255	$ 62	**$ 18,166**
5.16	Guys, Anchors, and Accessories	-	EA	$ 912	$ -	$ 1,058	$ -	$ 1,970	**$ -**
5.17	Misc. materials (Signs and Markers)	19.9	Mile	$ 770	$ 15,323	$ 1,006	$ 20,019	$ 1,776	**$ 35,342**
TOTAL - INSULATORS, FITTINGS, HARDWARE:					$ 1,767,073		$ 847,291		**$ 2,614,365**
C. Transmission Line Princetown to New Scotland					$ 11,437,237		$ 26,905,263		**$ 38,342,499**
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
6.1	Mob / Demob	1	LS	$ -	$ -	$ 383,425	$ 383,425	$ 383,425	**$ 383,425**
	Project Management, Material Handling & Amenities								
6.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 2,057,420	$ 2,057,420	$ 2,057,420	**$ 2,057,420**
6.3	Utility PM and Project Oversite	1	LS		$ -	$ 383,425	$ 383,425	$ 383,425	**$ 383,425**
6.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 383,425	$ 383,425	$ 383,425	**$ 383,425**
	Engineering								
6.5	Design Engineering	1	LS	$ -	$ -	$ 1,917,125	$ 1,917,125	$ 1,917,125	**$ 1,917,125**
6.6	LiDAR	1	LS	$ -	$ -	$ 115,027	$ 115,027	$ 115,027	**$ 115,027**
6.7	Geotech	20	Location	$ -	$ -	$ 3,500	$ 70,000	$ 3,500	**$ 70,000**
6.8	Surveying/Staking	1	LS	$ -	$ -	$ 268,397	$ 268,397	$ 268,397	**$ 268,397**
	Testing & Commissioning								
6.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 40,000	$ 40,000	$ 40,000	**$ 40,000**
	Permitting and Additional Costs								
6.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.12	Warranties / LOC's	1	LS	$ -	$ -	$ 115,027	$ 115,027	$ 115,027	**$ 115,027**
6.13	Real Estate Costs (New ROW)	1	LS	$ -	$ -	$ 215,000	$ 215,000	$ 215,000	**$ 215,000**
6.14	Real Estate Costs (Incumbent Utility ROW)	1	LS	$ -	$ -	$ 2,477,000	$ 2,477,000	$ 2,477,000	**$ 2,477,000**
6.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.18	Sales Tax on Materials	1	LS	$ 914,979	$ 914,979	$ -	$ -	$ 914,979	**$ 914,979**
6.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 38,342	$ 38,342	$ 38,342	**$ 38,342**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 914,979		$ 8,463,615		**$ 9,378,594**

NAT & NYPA - T026 - (Segment A, Base)

D. Rotterdam Substation - Install

Estimate Revision: 7

Total: $ 55,885,503

NAT & NYPA - T026 - (Segment A, Base)	*Supply*	*Installation*	*Total*
D. Rotterdam Substation - Install			
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ 2,896,891	$ 8,763,755	$ 11,660,646
2. SUBSTATION FOUNDATIONS	$ 2,443,003	$ 2,616,200	$ 5,059,203
3. SUBSTATION STRUCTURES	$ 944,980	$ 944,980	$ 1,889,960
4. MAJOR EQUIPTMENT	$ 11,915,000	$ 2,970,000	$ 14,885,000
5. SMALL EQUIPTMENT / MATERIALS	$ 1,994,540	$ 1,060,500	$ 3,055,040
6. CONTROL HOUSE / PANELS	$ 2,927,500	$ 1,477,500	$ 4,405,000
7. MISC ITEMS	$ 1,441,675	$ 2,331,950	$ 3,773,625
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 1,965,087	$ 9,191,942	$ 11,157,029
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 26,528,676	$ 29,356,827	$ 55,885,503
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 26,528,676	$ 29,356,827	$ 55,885,503

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
D. Rotterdam Substation - Install									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	7.4	ACRES	$ -	$ -	$ 203,000	$ 1,497,125	$ 203,000	**$ 1,497,125**
1.2	Station stone within substation fence.	3,175	CY	$ 27	$ 85,725	$ 75	$ 238,125	$ 102	**$ 323,850**
1.3	Substation Fence	2,130	LF	$ 100	$ 213,000	$ 100	$ 213,000	$ 200	**$ 426,000**
1.4	Retaining Wall (1065' x 13')	1	LS	$ 406,755	$ 406,755	$ 925,345	$ 925,345	$ 1,332,100	**$ 1,332,100**
1.5	Compacted Fill (124,583cy Sand)	124,583	CY	$ 17	$ 2,117,911	$ 20	$ 2,491,660	$ 37	**$ 4,609,571**
1.6	Permanent Access Road - 20'-Wide (From Gordon RD)	2,100	LF	$ 35	$ 73,500	$ 285	$ 598,500	$ 320	**$ 672,000**
1.7	Natural Gas Transmission Line Relocation	1	LS	$ -		$ 2,800,000	$ 2,800,000	$ 2,800,000	**$ 2,800,000**
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ 2,896,891		$ 8,763,755		$ 11,660,646
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	8	EA	$ 14,940	$ 119,520	$ 16,000	$ 128,000	$ 30,940	**$ 247,520**
2.1b	Capacitor Bank Foundations	0	EA	$ 56,025	$ -	$ 60,000	$ -	$ 116,025	**$ -**
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	32	EA	$ 26,145	$ 836,640	$ 28,000	$ 896,000	$ 54,145	**$ 1,732,640**
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 26,145	$ -	$ 28,000	$ -	$ 54,145	**$ -**
2.1e	Switch Stand Foundations	102	EA	$ 4,482	$ 457,164	$ 4,800	$ 489,600	$ 9,282	**$ 946,764**
2.1f	Station Service Transformer Stand Foundation	1	EA	$ 4,482	$ 4,482	$ 4,800	$ 4,800	$ 9,282	**$ 9,282**
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1h	Bus Support 1 Ph Foundations	42	EA	$ 4,482	$ 188,244	$ 4,800	$ 201,600	$ 9,282	**$ 389,844**
2.1j	Instrument Transformer Stand Foundations	33	EA	$ 4,482	$ 147,906	$ 4,800	$ 158,400	$ 9,282	**$ 306,306**
2.1k	Arrester Stand Foundations	6	EA	$ 4,482	$ 26,892	$ 4,800	$ 28,800	$ 9,282	**$ 55,692**
2.1m	Wave Trap Stand Foundations	2	EA	$ 4,482	$ 8,964	$ 4,800	$ 9,600	$ 9,282	**$ 18,564**
2.1n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1p									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.2	**230kV**								
2.2a	Circuit Breaker Foundations	1	EA	$ 11,952	$ 11,952	$ 12,800	$ 12,800	$ 24,752	**$ 24,752**
2.2b	Capacitor Bank Foundations	0	EA	$ 44,820	$ -	$ 48,000	$ -	$ 92,820	**$ -**
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	4	EA	$ 22,410	$ 89,640	$ 24,000	$ 96,000	$ 46,410	**$ 185,640**
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	**$ -**
2.2e	Switch Stand Foundations	8	EA	$ 3,735	$ 29,880	$ 4,000	$ 32,000	$ 7,735	**$ 61,880**
2.2f	Station Service Transformer Stand Foundation	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	**$ -**
2.2g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.2h	Bus Support 1 Ph Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	**$ -**
2.2j	Instrument Transformer Stand Foundations	9	EA	$ 3,735	$ 33,615	$ 4,000	$ 36,000	$ 7,735	**$ 69,615**
2.2k	Arrester Stand Foundations	3	EA	$ 3,735	$ 11,205	$ 4,000	$ 12,000	$ 7,735	**$ 23,205**
2.2m	Wave Trap Stand Foundations	1	EA	$ 3,735	$ 3,735	$ 4,000	$ 4,000	$ 7,735	**$ 7,735**
2.2n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.2p									
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	0	EA	$ 5,229	$ -	$ 5,600	$ -	$ 10,829	**$ -**
2.3b	Capacitor Bank Foundations	0	EA	$ 33,615	$ -	$ 36,000	$ -	$ 69,615	**$ -**
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	4	EA	$ 16,434	$ 65,736	$ 17,600	$ 70,400	$ 34,034	**$ 136,136**
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	**$ -**
2.3e	Switch Stand Foundations	4	EA	$ 2,988	$ 11,952	$ 3,200	$ 12,800	$ 6,188	**$ 24,752**
2.3f	Fuse Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	**$ -**
2.3g	Bus Support 3ph Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	**$ -**
2.3h	Bus Support 1 Ph Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	**$ -**
2.3j	Instrument Transformer Stand Foundations	6	EA	$ 2,988	$ 17,928	$ 3,200	$ 19,200	$ 6,188	**$ 37,128**
2.3k	Arrester Stand Foundations	6	EA	$ 2,988	$ 17,928	$ 3,200	$ 19,200	$ 6,188	**$ 37,128**
2.3m	Wave Trap Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	**$ -**
2.3n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment	1	EA	$ 97,110	$ 97,110	$ 104,000	$ 104,000	$ 201,110	**$ 201,110**
2.4b	345-115kV Transformer Foundation w/ Oil Containment	2	EA	$ 74,700	$ 149,400	$ 80,000	$ 160,000	$ 154,700	**$ 309,400**
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad	1	EA	$ 97,110	$ 97,110	$ 104,000	$ 104,000	$ 201,110	**$ 201,110**
2.5b	Generator Foundation	1	EA	$ 16,000	$ 16,000	$ 17,000	$ 17,000	$ 33,000	**$ 33,000**
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	0	EA	$ 5,229	$ -	$ 5,600	$ -	$ 10,829	**$ -**
2.6b				$ -	$ -	$ -	$ -	$ -	**$ -**
2.6c				$ -	$ -	$ -	$ -	$ -	**$ -**
TOTAL - SUBSTATION FOUNDATIONS					$ 2,443,003		$ 2,616,200		$ 5,059,203
3. SUBSTATION STRUCTURES									
3.1	**345kV**								
3.1a	Substation A-Frame Structures - Stand alone	8	EA	$ 37,000	$ 296,000	$ 37,000	$ 296,000	$ 74,000	**$ 592,000**
3.1b	Substation A-Frame Structures - Shared Column	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	**$ -**
3.1c	Switch Stands	17	EA	$ 14,800	$ 251,600	$ 14,800	$ 251,600	$ 29,600	**$ 503,200**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.1d	Station Service Transformer Stand	1	EA	$ 14,800	$ 14,800	$ 14,800	$ 14,800	$ 29,600	**$ 29,600**
3.1e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.1f	Bus Support 1 Ph	42	EA	$ 3,700	$ 155,400	$ 3,700	$ 155,400	$ 7,400	**$ 310,800**
3.1g	Instrument Transformer Stand	33	EA	$ 1,850	$ 61,050	$ 1,850	$ 61,050	$ 3,700	**$ 122,100**
3.1h	Arrester Stand	6	EA	$ 1,850	$ 11,100	$ 1,850	$ 11,100	$ 3,700	**$ 22,200**
3.1j	Wave Trap Stand	2	EA	$ 7,400	$ 14,800	$ 7,400	$ 14,800	$ 14,800	**$ 29,600**
3.1k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	**$ -**
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone	1	EA	$ 33,300	$ 33,300	$ 33,300	$ 33,300	$ 66,600	**$ 66,600**
3.2b	Substation A-Frame Structures - Shared Column	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	**$ -**
3.2c	Switch Stands	2	EA	$ 12,025	$ 24,050	$ 12,025	$ 24,050	$ 24,050	**$ 48,100**
3.2d	Station Service Transformer Stand	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	**$ -**
3.2e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.2f	Bus Support 1 Ph	0	EA	$ 2,775	$ -	$ 2,775	$ -	$ 5,550	**$ -**
3.2g	Instrument Transformer Stand	9	EA	$ 1,295	$ 11,655	$ 1,295	$ 11,655	$ 2,590	**$ 23,310**
3.2h	Arrester Stand	3	EA	$ 1,295	$ 3,885	$ 1,295	$ 3,885	$ 2,590	**$ 7,770**
3.2j	Wave Trap Stand	1	EA	$ 5,550	$ 5,550	$ 5,550	$ 5,550	$ 11,100	**$ 11,100**
3.2k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	**$ -**
3.3	**115kV**								
3.3a	Substation A-Frame Structures - Stand alone	2	EA	$ 18,500	$ 37,000	$ 18,500	$ 37,000	$ 37,000	**$ 74,000**
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	**$ -**
3.3c	Switch Stands	2	EA	$ 7,955	$ 15,910	$ 7,955	$ 15,910	$ 15,910	**$ 31,820**
3.3d	Fuse Stand	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	**$ -**
3.3e	Bus Support 3ph	0	EA	$ 3,330	$ -	$ 3,330	$ -	$ 6,660	**$ -**
3.3f	Bus Support 1 Ph	0	EA	$ 1,850	$ -	$ 1,850	$ -	$ 3,700	**$ -**
3.3g	Instrument Transformer Stand	6	EA	$ 740	$ 4,440	$ 740	$ 4,440	$ 1,480	**$ 8,880**
3.3h	Arrester Stand	6	EA	$ 740	$ 4,440	$ 740	$ 4,440	$ 1,480	**$ 8,880**
3.3j	Wave Trap Stand	0	EA	$ 3,700	$ -	$ 3,700	$ -	$ 7,400	**$ -**
3.3k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	**$ -**
TOTAL - SUBSTATION STRUCTURES					$ 944,980		$ 944,980		$ 1,889,960
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	8	EA	$ 200,000	$ 1,600,000	$ 80,000	$ 640,000	$ 280,000	**$ 2,240,000**
4.1b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	**$ -**
4.1c	345 kV - 230 kV Auto Transformer	1	EA	$ 3,400,000	$ 3,400,000	$ 750,000	$ 750,000	$ 4,150,000	**$ 4,150,000**
4.1d	345 kV - 115 kV Auto Transformer	2	EA	$ 3,400,000	$ 6,800,000	$ 750,000	$ 1,500,000	$ 4,150,000	**$ 8,300,000**
4.2	**230kV**								
4.2a	Circuit Breakers	1	EA	$ 115,000	$ 115,000	$ 80,000	$ 80,000	$ 195,000	**$ 195,000**
4.2b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	**$ -**
4.3	**115kV**								
4.3a	Circuit Breakers	0	EA	$ 52,000	$ -	$ 60,000	$ -	$ 112,000	**$ -**
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ 60,000	$ -	$ 60,000	**$ -**
TOTAL - MAJOR EQUIPTMENT					$ 11,915,000		$ 2,970,000		$ 14,885,000
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator	2	EA	$ 40,000	$ 80,000	$ 15,000	$ 30,000	$ 55,000	**$ 110,000**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
5.1b	Disconnect Switches - 3ph w/ manual operator	17	EA	$ 35,000	$ 595,000	$ 17,500	$ 297,500	$ 52,500	**$ 892,500**
5.1c	VT'S	6	EA	$ 25,000	$ 150,000	$ 12,000	$ 72,000	$ 37,000	**$ 222,000**
5.1d	CT'S	6	EA	$ 13,000	$ 78,000	$ 8,000	$ 48,000	$ 21,000	**$ 126,000**
5.1e	CCVT'S	21	EA	$ 13,000	$ 273,000	$ 8,000	$ 168,000	$ 21,000	**$ 441,000**
5.1f	Arresters	15	EA	$ 6,500	$ 97,500	$ 1,500	$ 22,500	$ 8,000	**$ 120,000**
5.1g	Wave Traps	2	EA	$ 13,000	$ 26,000	$ 8,000	$ 16,000	$ 21,000	**$ 42,000**
5.1h	Station Service Transformers	1	EA	$ 200,000	$ 200,000	$ 50,000	$ 50,000	$ 250,000	**$ 250,000**
5.1j									
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator	1	EA	$ 35,000	$ 35,000	$ 15,000	$ 15,000	$ 50,000	**$ 50,000**
5.2b	Disconnect Switches - 3ph w/ manual operator	1	EA	$ 30,000	$ 30,000	$ 17,500	$ 17,500	$ 47,500	**$ 47,500**
5.2c	VT'S	3	EA	$ 13,000	$ 39,000	$ 8,000	$ 24,000	$ 21,000	**$ 63,000**
5.2d	CT'S	3	EA	$ 13,000	$ 39,000	$ 8,000	$ 24,000	$ 21,000	**$ 63,000**
5.2e	CCVT'S	3	EA	$ 10,000	$ 30,000	$ 6,000	$ 18,000	$ 16,000	**$ 48,000**
5.2f	Arresters	6	EA	$ 5,000	$ 30,000	$ 6,000	$ 36,000	$ 11,000	**$ 66,000**
5.2g	Wave Traps	1	EA	$ 13,000	$ 13,000	$ 8,000	$ 8,000	$ 21,000	**$ 21,000**
5.2h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.2j									
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	2	EA	$ 33,000	$ 66,000	$ 15,000	$ 30,000	$ 48,000	**$ 96,000**
5.3b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 28,000	$ -	$ 17,500	$ -	$ 45,500	**$ -**
5.3c	VT'S	6	EA	$ 13,000	$ 78,000	$ 8,000	$ 48,000	$ 21,000	**$ 126,000**
5.3d	CT'S	6	EA	$ 13,000	$ 78,000	$ 8,000	$ 48,000	$ 21,000	**$ 126,000**
5.3e	CCVT'S	2	EA	$ 8,000	$ 16,000	$ 8,000	$ 16,000	$ 16,000	**$ 32,000**
5.3f	Arresters	12	EA	$ 3,420	$ 41,040	$ 6,000	$ 72,000	$ 9,420	**$ 113,040**
5.3g	Wave Traps	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.3h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.3j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ 1,994,540		$ 1,060,500		$ 3,055,040
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE	1	EA	$ 975,000	$ 975,000	$ 170,000	$ 170,000	$ 1,145,000	**$ 1,145,000**
6.2	Protection and Telecom Equipment Panels	29	EA	$ 35,000	$ 1,015,000	$ 10,000	$ 290,000	$ 45,000	**$ 1,305,000**
6.3	125VDC Batteries	2	EA	$ 75,000	$ 150,000	$ 25,000	$ 50,000	$ 100,000	**$ 200,000**
6.4	Control Cables	1	LS	$ 472,500	$ 472,500	$ 472,500	$ 472,500	$ 945,000	**$ 945,000**
6.5	SCADA and Communications	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.6	Low Voltage AC Distribution	2	EA	$ 50,000	$ 100,000	$ 100,000	$ 200,000	$ 150,000	**$ 300,000**
6.7	DC Distribution System	2	EA	$ 50,000	$ 100,000	$ 100,000	$ 200,000	$ 150,000	**$ 300,000**
6.8	Security	1	EA	$ 7,500	$ 7,500	$ 7,500	$ 7,500	$ 15,000	**$ 15,000**
6.9	Fire Alarm	1	EA	$ 7,500	$ 7,500	$ 7,500	$ 7,500	$ 15,000	**$ 15,000**
6.10	Generator	1	EA	$ 100,000	$ 100,000	$ 80,000	$ 80,000	$ 180,000	**$ 180,000**
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ 2,927,500		$ 1,477,500		**$ 4,405,000**
7. MISC ITEMS									
7.1	Conduit & Cable Trench System	1,950	LF	$ 185.00	$ 360,750	$ 170.00	$ 331,500	$ 355	**$ 692,250**
7.2	Rigid Bus, Fittings & Insulators	2,500	LF	$ 125.07	$ 312,675	$ 237.10	$ 592,750	$ 362	**$ 905,425**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
7.3	Strain Bus, Connectors & Insulators	2,000	LF	$ 39.30	$ 78,600	$ 53.35	$ 106,700	$ 93	**$ 185,300**
7.4	Grounding System	25,000	LF	$ 6.93	$ 173,250	$ 32.58	$ 814,500	$ 40	**$ 987,750**
7.5	Strain Bus Insulators - 345kV	48	EA	$ 2,000	$ 96,000	$ 1,050	$ 50,400	$ 3,050	**$ 146,400**
7.6	Strain Bus Insulators - 230kV	6	EA	$ 1,400	$ 8,400	$ 750	$ 4,500	$ 2,150	**$ 12,900**
7.7	Strain Bus Insulators - 115kV	12	EA	$ 1,000	$ 12,000	$ 550	$ 6,600	$ 1,550	**$ 18,600**
7.8	Low Voltage AC Station Service	1	LS	$ 50,000	$ 50,000	$ 75,000	$ 75,000	$ 125,000	**$ 125,000**
7.9	SSVT Service	1	LS	$ 45,000	$ 45,000	$ 45,000	$ 45,000	$ 90,000	**$ 90,000**
7.10	Control Conduits from Trench to Equipment	1	LS	$ 125,000	$ 125,000	$ 125,000	$ 125,000	$ 250,000	**$ 250,000**
7.11	Misc. Materials (Above and Below Ground)	1	LS	$ 180,000	$ 180,000	$ 180,000	$ 180,000	$ 360,000	**$ 360,000**
7.12									
7.13									
7.14									
7.15									
7.16									
7.17									
7.18									
7.19									
7.20									
TOTAL - MISC ITEMS					$ 1,441,675		$ 2,331,950		$ 3,773,625
D. Rotterdam Substation - Install					$ 24,563,589		$ 20,164,885		**$ 44,728,474**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1	LS	$ -	$ -	$ 447,285	$ 447,285	$ 447,285	**$ 447,285**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 2,400,085	$ 2,400,085	$ 2,400,085	**$ 2,400,085**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 447,285	$ 447,285	$ 447,285	**$ 447,285**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 447,285	$ 447,285	$ 447,285	**$ 447,285**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 3,578,278	$ 3,578,278	$ 3,578,278	**$ 3,578,278**
8.6	LiDAR	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.7	Geotech	4	EA	$ -	$ -	$ 3,500	$ 14,000	$ 3,500	**$ 14,000**
8.8	Surveying/Staking	1	Site	$ -	$ -	$ 313,099	$ 313,099	$ 313,099	**$ 313,099**
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 1,118,212	$ 1,118,212	$ 1,118,212	**$ 1,118,212**
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 134,185	$ 134,185	$ 134,185	**$ 134,185**
8.13	Real Estate Costs (New)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.14	Real Estate Costs (Incumbent Utility)	1	LS	$ -	$ -	$ 247,500	$ 247,500	$ 247,500	**$ 247,500**
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.18	Sales Tax on Materials	1	LS	$ 1,965,087	$ 1,965,087	$ -	$ -	$ 1,965,087	**$ 1,965,087**
8.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 44,728	$ 44,728	$ 44,728	**$ 44,728**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 1,965,087		$ 9,191,942		**$ 11,157,029**

NAT & NYPA - T026 - (Segment A, Base)

E. Rotterdam Substation - Removal

Estimate Revision: 7

Total: $ 4,216,452

NAT & NYPA - T026 - (Segment A, Base)	*Supply*	*Installation*	*Total*
E. Rotterdam Substation - Removal			
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ -	$ 1,472,750	$ 1,472,750
2. SUBSTATION FOUNDATIONS	$ -	$ 617,400	$ 617,400
3. SUBSTATION STRUCTURES	$ -	$ 534,900	$ 534,900
4. MAJOR EQUIPTMENT	$ -	$ 147,000	$ 147,000
5. SMALL EQUIPTMENT / MATERIALS	$ -	$ 169,500	$ 169,500
6. CONTROL HOUSE / PANELS	$ -	$ 150,000	$ 150,000
7. MISC ITEMS	$ -	$ 519,480	$ 519,480
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ -	$ 605,422	$ 605,422
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ -	$ 4,216,452	$ 4,216,452
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ -	$ 4,216,452	$ 4,216,452

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
E. Rotterdam Substation - Removal									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	6.3	ACRES	$ -	$ -	$ 203,000	$ 1,268,750	$ 203,000	**$ 1,268,750**
1.2	Station stone within substation fence.	2,000	CY	$ -	$ -	$ 102	$ 204,000	$ 102	**$ 204,000**
1.3	Substation Fence	0	LF	$ -	$ -	$ 150	$ -	$ 150	**$ -**
1.4									
1.5									
1.6									
1.7									
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ -		$ 1,472,750		$ 1,472,750
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1e	Switch Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1f	Station Service Transformer Stand Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1k	Arrester Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1p		0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.2	**230kV**								
2.2a	Circuit Breaker Foundations	9	EA	$ -	$ -	$ 7,200	$ 64,800	$ 7,200	**$ 64,800**
2.2b	Capacitor Bank Foundations	2	EA	$ -	$ -	$ 32,000	$ 64,000	$ 32,000	**$ 64,000**
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	1	EA	$ -	$ -	$ 22,000	$ 22,000	$ 22,000	**$ 22,000**
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	5	EA	$ -	$ -	$ 11,000	$ 55,000	$ 11,000	**$ 55,000**
2.2e	Switch Stand Foundations	15	EA	$ -	$ -	$ 5,200	$ 78,000	$ 5,200	**$ 78,000**
2.2f	Station Service Transformer Stand Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.2g	Bus Support 3ph Foundations	4	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.2h	Bus Support 1 Ph Foundations	59	EA	$ -	$ -	$ 2,400	$ 141,600	$ 2,400	**$ 141,600**
2.2j	Instrument Transformer Stand Foundations	15	EA	$ -	$ -	$ 2,400	$ 36,000	$ 2,400	**$ 36,000**
2.2k	Arrester Stand Foundations	6	EA	$ -	$ -	$ 2,400	$ 14,400	$ 2,400	**$ 14,400**
2.2m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.2n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.2p		0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3e	Switch Stand Foundations	3	EA	$ -	$ -	$ 5,200	$ 15,600	$ 5,200	**$ 15,600**
2.3f	Fuse Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3k	Arrester Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.4b	345-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment	3	EA	$ -	$ -	$ 42,000	$ 126,000	$ 42,000	**$ 126,000**
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.5b	Generator Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.6b		0		$ -	$ -	$ -	$ -	$ -	**$ -**
2.6c		0		$ -	$ -	$ -	$ -	$ -	**$ -**
TOTAL - SUBSTATION FOUNDATIONS					$ -		$ 617,400		$ 617,400
3. SUBSTATION STRUCTURES									
3.1	**345kV**								
3.1a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.1b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.1c	Switch Stands	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1d	Station Service Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1f	Bus Support 1 Ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1g	Instrument Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1h	Arrester Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1j	Wave Trap Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone	1	EA	$ -	$ -	$ 27,000	$ 27,000	$ 27,000	**$ 27,000**
3.2b	Substation A-Frame Structures - Shared Column	5	EA	$ -	$ -	$ 27,000	$ 135,000	$ 27,000	**$ 135,000**
3.2c	Switch Stands	15	EA	$ -	$ -	$ 9,750	$ 146,250	$ 9,750	**$ 146,250**
3.2d	Station Service Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2e	Bus Support 3ph	4	EA	$ -	$ -	$ 2,250	$ 9,000	$ 2,250	**$ 9,000**
3.2f	Bus Support 1 Ph	59	EA	$ -	$ -	$ 2,250	$ 132,750	$ 2,250	**$ 132,750**
3.2g	Instrument Transformer Stand	15	EA	$ -	$ -	$ 1,050	$ 15,750	$ 1,050	**$ 15,750**
3.2h	Arrester Stand	6	EA	$ -	$ -	$ 1,050	$ 6,300	$ 1,050	**$ 6,300**
3.2j	Wave Trap Stand	3	EA	$ -	$ -	$ 4,500	$ 13,500	$ 4,500	**$ 13,500**
3.2k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3	**115kV**								
3.3a	Substation A-Frame Structures - Stand alone	2	EA	$ -	$ -	$ 15,000	$ 30,000	$ 15,000	**$ 30,000**
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3c	Switch Stands	3	EA	$ -	$ -	$ 6,450	$ 19,350	$ 6,450	**$ 19,350**
3.3d	Fuse Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3f	Bus Support 1 Ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3g	Instrument Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3h	Arrester Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3j	Wave Trap Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION STRUCTURES					$ -		$ 534,900		$ 534,900
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.1b	Capacitor Banks	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.1c		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.1d									
4.2	**230kV**								
4.2a	Circuit Breakers	9	EA	$ -	$ -	$ 7,000	$ 63,000	$ 7,000	**$ 63,000**
4.2b	Capacitor Banks	2	EA	$ -	$ -	$ 42,000	$ 84,000	$ 42,000	**$ 84,000**
4.3	**115kV**								
4.3a	Circuit Breakers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - MAJOR EQUIPTMENT					$ -		$ 147,000		$ 147,000
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
5.1a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.1b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.1c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.1d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.1e	CCVT'S	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.1f	Arresters	0	EA	$ -	$ -	$ 1,500	$ -	$ 1,500	$ -
5.1g	Wave Traps	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.1h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.1j		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator	3	EA	$ -	$ -	$ 5,500	$ 16,500	$ 5,500	**$ 16,500**
5.2b	Disconnect Switches - 3ph w/ manual operator	12	EA	$ -	$ -	$ 5,500	$ 66,000	$ 5,500	**$ 66,000**
5.2c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2e	CCVT'S	8	EA	$ -	$ -	$ 1,500	$ 12,000	$ 1,500	**$ 12,000**
5.2f	Arresters	15	EA	$ -	$ -	$ 2,500	$ 37,500	$ 2,500	**$ 37,500**
5.2g	Wave Traps	3	EA	$ -	$ -	$ 2,500	$ 7,500	$ 2,500	**$ 7,500**
5.2h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2j		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3b	Disconnect Switches - 3ph w/ manual operator	3	EA	$ -	$ -	$ 5,500	$ 16,500	$ 5,500	**$ 16,500**
5.3c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3e	CCVT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3f	Arresters	9	EA	$ -	$ -	$ 1,500	$ 13,500	$ 1,500	**$ 13,500**
5.3g	Wave Traps	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ -		$ 169,500		$ 169,500
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE	1	EA	$ -	$ -	$ 150,000	$ 150,000	$ 150,000	**$ 150,000**
6.2	Protection and Telecom Equipment Panels	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.3	125VDC Batteries	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.4	Control Cables	0	LS	$ -	$ -	$ -	$ -	$ -	$ -
6.5	SCADA and Communications	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.6	Low Voltage AC Distribution	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.7	DC Distribution System	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.8	Security	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.9	Fire Alarm	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.10	Generator	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ -		$ 150,000		**$ 150,000**
7. MISC ITEMS									
7.1	Conduit & Cable Trench System	1	LS	$ -	$ -	$ 42,000.00	$ 42,000	$ 42,000	**$ 42,000**
7.2	Rigid Bus, Fittings & Insulators	3,200	LF	$ -	$ -	$ 126.25	$ 404,000	$ 126	**$ 404,000**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
7.3	Strain Bus, Connectors & Insulators	800	LF	$ -	$ -	$ 39.35	$ 31,480	$ 39	**$ 31,480**
7.4	Grounding System	1	LS	$ -	$ -	$ 42,000.00	$ 42,000	$ 42,000	**$ 42,000**
7.5									
7.6									
7.7									
7.8									
7.9									
7.10									
7.11									
7.12									
7.13									
7.14									
7.15									
TOTAL - MISC ITEMS					$ -		$ 519,480		$ 519,480
E. Rotterdam Substation - Removal					$ -		$ 3,611,030		**$ 3,611,030**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1	LS	$ -	$ -	$ 36,110	$ 36,110	$ 36,110	**$ 36,110**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		$ -	$ 193,764	$ 193,764	$ 193,764	**$ 193,764**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 36,110	$ 36,110	$ 36,110	**$ 36,110**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 36,110	$ 36,110	$ 36,110	**$ 36,110**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 288,882	$ 288,882	$ 288,882	**$ 288,882**
8.6	LiDAR	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.7	Geotech	-	EA	$ -	$ -	$ 3,500	$ -	$ 3,500	**$ -**
8.8	Surveying/Staking	-	Site	$ -	$ -	$ 25,277	$ -	$ 25,277	**$ -**
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	-	LS	$ -	$ -	$ 90,276	$ -	$ 90,276	**$ -**
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 10,833	$ 10,833	$ 10,833	**$ 10,833**
8.13	Real Estate Costs (New)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.14	Real Estate Costs (Incumbent Utility)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.18	Sales Tax on Materials	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 3,611	$ 3,611	$ 3,611	**$ 3,611**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ -		$ 605,422		**$ 605,422**

NAT & NYPA - T026 - (Segment A, Base)

F. Edic Substation - Install

Estimate Revision: 7

Total: $ 2,645,078

NAT & NYPA - T026 - (Segment A, Base)	*Supply*	*Installation*	*Total*
F. Edic Substation - Install			
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ 2,025	$ 5,625	$ 7,650
2. SUBSTATION FOUNDATIONS	$ 100,098	$ 107,200	$ 207,298
3. SUBSTATION STRUCTURES	$ 44,400	$ 44,400	$ 88,800
4. MAJOR EQUIPTMENT	$ 200,000	$ 80,000	$ 280,000
5. SMALL EQUIPTMENT / MATERIALS	$ 280,000	$ 133,500	$ 413,500
6. CONTROL HOUSE / PANELS	$ 173,850	$ 98,850	$ 272,700
7. MISC ITEMS	$ 339,357	$ 507,880	$ 847,237
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 91,178	$ 436,715	$ 527,893
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 1,230,908	$ 1,414,170	$ 2,645,078
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 1,230,908	$ 1,414,170	$ 2,645,078

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
F. Edic Substation - Install									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	0	ACRES	$ -	$ -	$ 203,000	$ -	$ 203,000	$ -
1.2	Station stone within substation fence.	75	CY	$ 27	$ 2,025	$ 75	$ 5,625	$ 102	**$ 7,650**
1.3	Substation Fence	0	LF	$ 100	$ -	$ 100	$ -	$ 200	$ -
1.4									
1.5									
1.6									
1.7									
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ 2,025		$ 5,625		$ 7,650
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	1	EA	$ 14,940	$ 14,940	$ 16,000	$ 16,000	$ 30,940	**$ 30,940**
2.1b	Capacitor Bank Foundations	0	EA	$ 56,025	$ -	$ 60,000	$ -	$ 116,025	$ -
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 26,145	$ -	$ 28,000	$ -	$ 54,145	$ -
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 26,145	$ -	$ 28,000	$ -	$ 54,145	$ -
2.1e	Switch Stand Foundations	6	EA	$ 4,482	$ 26,892	$ 4,800	$ 28,800	$ 9,282	**$ 55,692**
2.1f	Station Service Transformer Stand Foundation	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1h	Bus Support 1 Ph Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1j	Instrument Transformer Stand Foundations	9	EA	$ 4,482	$ 40,338	$ 4,800	$ 43,200	$ 9,282	**$ 83,538**
2.1k	Arrester Stand Foundations	3	EA	$ 4,482	$ 13,446	$ 4,800	$ 14,400	$ 9,282	**$ 27,846**
2.1m	Wave Trap Stand Foundations	1	EA	$ 4,482	$ 4,482	$ 4,800	$ 4,800	$ 9,282	**$ 9,282**
2.1n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1p									
2.2	**230kV**								
2.2a	Circuit Breaker Foundations	0	EA	$ 11,952	$ -	$ 12,800	$ -	$ 24,752	$ -
2.2b	Capacitor Bank Foundations	0	EA	$ 44,820	$ -	$ 48,000	$ -	$ 92,820	$ -
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	$ -
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	$ -
2.2e	Switch Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.2f	Station Service Transformer Stand Foundation	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2h	Bus Support 1 Ph Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2j	Instrument Transformer Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2k	Arrester Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2m	Wave Trap Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2p									
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	0	EA	$ 5,229	$ -	$ 5,600	$ -	$ 10,829	$ -
2.3b	Capacitor Bank Foundations	0	EA	$ 33,615	$ -	$ 36,000	$ -	$ 69,615	$ -
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	$ -
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	$ -
2.3e	Switch Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3f	Fuse Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3g	Bus Support 3ph Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3h	Bus Support 1 Ph Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3j	Instrument Transformer Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3k	Arrester Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3m	Wave Trap Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment	0	EA	$ 97,110	$ -	$ 104,000	$ -	$ 201,110	$ -
2.4b	345-115kV Transformer Foundation w/ Oil Containment	0	EA	$ 74,700	$ -	$ 80,000	$ -	$ 154,700	$ -
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad	0	EA	$ 76,194	$ -	$ 81,600	$ -	$ 157,794	$ -
2.5b	Generator Foundation	0	EA	$ 16,000	$ -	$ 17,000	$ -	$ 33,000	$ -
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	0	EA	$ 5,229	$ -	$ 5,600	$ -	$ 10,829	$ -
2.6b	60' Lightning Mast Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6c	50' Lightning Mast Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION FOUNDATIONS					$ 100,098		$ 107,200		$ 207,298
3. SUBSTATION STRUCTURES									
3.1	**345kV**								
3.1a	Substation A-Frame Structures - Stand alone	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	$ -
3.1b	Substation A-Frame Structures - Shared Column	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	$ -
3.1c	Switch Stands	1	EA	$ 14,800	$ 14,800	$ 14,800	$ 14,800	$ 29,600	**$ 29,600**
3.1d	Station Service Transformer Stand	0	EA	$ 14,800	$ -	$ 14,800	$ -	$ 29,600	$ -
3.1e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1f	Bus Support 1 Ph	0	EA	$ 3,700	$ -	$ 3,700	$ -	$ 7,400	$ -
3.1g	Instrument Transformer Stand	9	EA	$ 1,850	$ 16,650	$ 1,850	$ 16,650	$ 3,700	**$ 33,300**
3.1h	Arrester Stand	3	EA	$ 1,850	$ 5,550	$ 1,850	$ 5,550	$ 3,700	**$ 11,100**
3.1j	Wave Trap Stand	1	EA	$ 7,400	$ 7,400	$ 7,400	$ 7,400	$ 14,800	**$ 14,800**
3.1k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	$ -
3.2b	Substation A-Frame Structures - Shared Column	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	$ -
3.2c	Switch Stands	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	$ -
3.2d	Station Service Transformer Stand	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	$ -
3.2e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2f	Bus Support 1 Ph	0	EA	$ 2,775	$ -	$ 2,775	$ -	$ 5,550	$ -
3.2g	Instrument Transformer Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	$ -
3.2h	Arrester Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	$ -
3.2j	Wave Trap Stand	0	EA	$ 5,550	$ -	$ 5,550	$ -	$ 11,100	$ -
3.2k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.3	**115kV**								
3.3a	Substation A-Frame Structures - Stand alone	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	**$** -
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	**$** -
3.3c	Switch Stands	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	**$** -
3.3d	Fuse Stand	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	**$** -
3.3e	Bus Support 3ph	0	EA	$ 3,330	$ -	$ 3,330	$ -	$ 6,660	**$** -
3.3f	Bus Support 1 Ph	0	EA	$ 1,850	$ -	$ 1,850	$ -	$ 3,700	**$** -
3.3g	Instrument Transformer Stand	0	EA	$ 740	$ -	$ 740	$ -	$ 1,480	**$** -
3.3h	Arrester Stand	0	EA	$ 740	$ -	$ 740	$ -	$ 1,480	**$** -
3.3j	Wave Trap Stand	0	EA	$ 3,700	$ -	$ 3,700	$ -	$ 7,400	**$** -
3.3k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	**$** -
TOTAL - SUBSTATION STRUCTURES					$ 44,400		$ 44,400		$ 88,800
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	1	EA	$ 200,000	$ 200,000	$ 80,000	$ 80,000	$ 280,000	**$ 280,000**
4.1b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	**$** -
4.1c	345 kV - 230 kV Auto Transformer	0	EA	$ -	$ -	$ 750,000	$ -	$ 750,000	**$** -
4.1d	345 kV - 115 kV Auto Transformer	0	EA	$ -	$ -	$ 750,000	$ -	$ 750,000	**$** -
4.2	**230kV**								
4.2a	Circuit Breakers	0	EA	$ 115,000	$ -	$ 80,000	$ -	$ 195,000	**$** -
4.2b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	**$** -
4.3	**115kV**								
4.3a	Circuit Breakers	0	EA	$ 52,000	$ -	$ 60,000	$ -	$ 112,000	**$** -
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ 60,000	$ -	$ 60,000	**$** -
TOTAL - MAJOR EQUIPTMENT					$ 200,000		$ 80,000		$ 280,000
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator	1	EA	$ 40,000	$ 40,000	$ 15,000	$ 15,000	$ 55,000	**$ 55,000**
5.1b	Disconnect Switches - 3ph w/ manual operator	1	EA	$ 35,000	$ 35,000	$ 17,500	$ 17,500	$ 52,500	**$ 52,500**
5.1c	VT'S	3	EA	$ 25,000	$ 75,000	$ 12,000	$ 36,000	$ 37,000	**$ 111,000**
5.1d	CT'S	3	EA	$ 13,000	$ 39,000	$ 8,000	$ 24,000	$ 21,000	**$ 63,000**
5.1e	CCVT'S	3	EA	$ 13,000	$ 39,000	$ 8,000	$ 24,000	$ 21,000	**$ 63,000**
5.1f	Arresters	6	EA	$ 6,500	$ 39,000	$ 1,500	$ 9,000	$ 8,000	**$ 48,000**
5.1g	Wave Traps	1	EA	$ 13,000	$ 13,000	$ 8,000	$ 8,000	$ 21,000	**$ 21,000**
5.1h	Station Service Transformers	0	EA	$ 200,000	$ -	$ 50,000	$ -	$ 250,000	**$** -
5.1j									
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator	0	EA	$ 35,000	$ -	$ 15,000	$ -	$ 50,000	**$** -
5.2b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 30,000	$ -	$ 17,500	$ -	$ 47,500	**$** -
5.2c	VT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	**$** -
5.2d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	**$** -
5.2e	CCVT'S	0	EA	$ 10,000	$ -	$ 6,000	$ -	$ 16,000	**$** -
5.2f	Arresters	0	EA	$ 5,000	$ -	$ 6,000	$ -	$ 11,000	**$** -
5.2g	Wave Traps	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	**$** -
5.2h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
5.2j		0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	0	EA	$ 33,000	$ -	$ 15,000	$ -	$ 48,000	**$** -
5.3b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 28,000	$ -	$ 17,500	$ -	$ 45,500	**$** -
5.3c	VT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	**$** -
5.3d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	**$** -
5.3e	CCVT'S	0	EA	$ 8,000	$ -	$ 8,000	$ -	$ 16,000	**$** -
5.3f	Arresters	0	EA	$ 3,420	$ -	$ 6,000	$ -	$ 9,420	**$** -
5.3g	Wave Traps	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
5.3h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
5.3j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ 280,000		$ 133,500		$ 413,500

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE	0	EA	$ 551,250	$ -	$ 85,000	$ -	$ 636,250	**$ -**
6.2	Protection and Telecom Equipment Panels	3	EA	$ 35,000	$ 105,000	$ 10,000	$ 30,000	$ 45,000	**$ 135,000**
6.3	125VDC Batteries	0	EA	$ 75,000	$ -	$ 25,000	$ -	$ 100,000	**$ -**
6.4	Control Cables	1	LS	$ 68,850	$ 68,850	$ 68,850	$ 68,850	$ 137,700	**$ 137,700**
6.5	SCADA and Communications	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.6	Low Voltage AC Distribution	0	EA	$ 50,000	$ -	$ 100,000	$ -	$ 150,000	**$ -**
6.7	DC Distribution System	0	EA	$ 50,000	$ -	$ 100,000	$ -	$ 150,000	**$ -**
6.8	Security	0	EA	$ 7,500	$ -	$ 7,500	$ -	$ 15,000	**$ -**
6.9	Fire Alarm	0	EA	$ 7,500	$ -	$ 7,500	$ -	$ 15,000	**$ -**
6.10	Generator	0	EA	$ 100,000	$ -	$ 80,000	$ -	$ 180,000	**$ -**
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ 173,850		$ 98,850		**$ 272,700**
7. MISC ITEMS									
7.1	Conduit & Cable Trench System	800	LF	$ 185.00	$ 148,000	$ 170.00	$ 136,000	$ 355	**$ 284,000**
7.2	Rigid Bus, Fittings & Insulators	0	L.S.	$ 75,042.00	$ -	$ 142,260.00	$ -	$ 217,302	**$ -**
7.3	Strain Bus, Connectors & Insulators	2,500	LF	$ 39.30	$ 98,250	$ 53.35	$ 133,375	$ 93	**$ 231,625**
7.4	Grounding System	1	L.S.	$ 10,395.00	$ 10,395	$ 73,305.00	$ 73,305	$ 83,700	**$ 83,700**
7.5	Strain Bus Insulators - 345kV	24	EA	$ 2,000	$ 48,000	$ 1,050	$ 25,200	$ 3,050	**$ 73,200**
7.6	Strain Bus Insulators - 230kV	0	EA	$ 1,400	$ -	$ 750	$ -	$ 2,150	**$ -**
7.7	Strain Bus Insulators - 115kV	0	EA	$ 1,000	$ -	$ 550	$ -	$ 1,550	**$ -**
7.8	Low Voltage AC Station Service	0	LS	$ 50,000	$ -	$ 75,000	$ -	$ 125,000	**$ -**
7.9	SSVT Service	0	LS	$ 45,000	$ -	$ 45,000	$ -	$ 90,000	**$ -**
7.10	Control Conduits from Trench to Equipment	1	LS	$ 14,000	$ 14,000	$ 70,000	$ 70,000	$ 84,000	**$ 84,000**
7.11	Misc. Materials (Above and Below Ground)	1	LS	$ 20,712	$ 20,712	$ 70,000	$ 70,000	$ 90,712	**$ 90,712**
7.12									
7.13									
7.14									
7.15									
7.16									
7.17									
7.18									
7.19									
7.20									
7.21									
7.22									
7.23									
7.24									
7.25									
TOTAL - MISC ITEMS					$ 339,357		$ 507,880		$ 847,237
F. Edic Substation - Install					$ 1,139,730		$ 977,455		**$ 2,117,185**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1	LS	$ -	$ -	$ 21,172	$ 21,172	$ 21,172	**$ 21,172**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 113,606	$ 113,606	$ 113,606	**$ 113,606**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 21,172	$ 21,172	$ 21,172	**$ 21,172**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 21,172	$ 21,172	$ 21,172	**$ 21,172**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 169,375	$ 169,375	$ 169,375	**$ 169,375**
8.6	LiDAR	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.7	Geotech	4	EA	$ -	$ -	$ 3,500	$ 14,000	$ 3,500	**$ 14,000**
8.8	Surveying/Staking	1	Site	$ -	$ -	$ 14,820	$ 14,820	$ 14,820	**$ 14,820**
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 52,930	$ 52,930	$ 52,930	**$ 52,930**
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 6,352	$ 6,352	$ 6,352	**$ 6,352**
8.13	Real Estate Costs (New)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
8.14	Real Estate Costs (Incumbent Utility)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.18	Sales Tax on Materials	1	LS	$ 91,178	$ 91,178	$ -	$ -	$ 91,178	**$ 91,178**
8.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 2,117	$ 2,117	$ 2,117	**$ 2,117**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 91,178		$ 436,715		**$ 527,893**

NAT & NYPA - T026 - (Segment A, Base)

G. Edic Substation - Removal

Estimate Revision: 7

Total: $ 41,708

NAT & NYPA - T026 - (Segment A, Base)	*Supply*	*Installation*	*Total*
G. Edic Substation - Removal			
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ -	$ -	$ -
2. SUBSTATION FOUNDATIONS	$ -	$ 14,000	$ 14,000
3. SUBSTATION STRUCTURES	$ -	$ 6,750	$ 6,750
4. MAJOR EQUIPTMENT	$ -	$ -	$ -
5. SMALL EQUIPTMENT / MATERIALS	$ -	$ 4,500	$ 4,500
6. CONTROL HOUSE / PANELS	$ -	$ -	$ -
7. MISC ITEMS	$ -	$ -	$ 10,500
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ -	$ 5,958	$ 5,958
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ -	$ 31,208	$ 41,708
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ -	$ 31,208	$ 41,708

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
G. Edic Substation - Removal									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	0	ACRES	$ -	$ -	$ 203,000	$ -	$ 203,000	$ -
1.2	Station stone within substation fence.			$ -	$ -	$ 75	$ -	$ 75	$ -
1.3	Substation Fence			$ -	$ -	$ 150	$ -	$ 150	$ -
1.4									
1.5									
1.6									
1.7									
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ -		$ -		$ -
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	1	EA	$ -	$ -	$ 14,000	$ 14,000	$ 14,000	$ 14,000
2.1b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1e	Switch Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1f	Station Service Transformer Stand Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.1j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1k	Arrester Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1p		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2	**230kV**								
2.2a	Circuit Breaker Foundations	0	EA	$ -	$ -	$ 7,200	$ -	$ 7,200	$ -
2.2b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ 32,000	$ -	$ 32,000	$ -
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ 22,000	$ -	$ 22,000	$ -
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ 11,000	$ -	$ 11,000	$ -
2.2e	Switch Stand Foundations	0	EA	$ -	$ -	$ 5,200	$ -	$ 5,200	$ -
2.2f	Station Service Transformer Stand Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.2g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.2j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.2k	Arrester Stand Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.2m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2p		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3e	Switch Stand Foundations	0	EA	$ -	$ -	$ 5,200	$ -	$ 5,200	$ -
2.3f	Fuse Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3k	Arrester Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4b	345-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ 42,000	$ -	$ 42,000	$ -
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5b	Generator Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6b		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6c		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION FOUNDATIONS					$ -		$ 14,000		$ 14,000
3. SUBSTATION STRUCTURES									
3.1	**345kV**								
3.1a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1c	Switch Stands	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1d	Station Service Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1f	Bus Support 1 Ph	3	EA	$ -	$ -	$ 2,250	$ 6,750	$ 2,250	**$ 6,750**
3.1g	Instrument Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1h	Arrester Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1j	Wave Trap Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ 27,000	$ -	$ 27,000	$ -
3.2b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ 27,000	$ -	$ 27,000	$ -
3.2c	Switch Stands	0	EA	$ -	$ -	$ 9,750	$ -	$ 9,750	$ -
3.2d	Station Service Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2f	Bus Support 1 Ph	0	EA	$ -	$ -	$ 2,250	$ -	$ 2,250	$ -
3.2g	Instrument Transformer Stand	0	EA	$ -	$ -	$ 1,050	$ -	$ 1,050	$ -
3.2h	Arrester Stand	0	EA	$ -	$ -	$ 1,050	$ -	$ 1,050	$ -
3.2j	Wave Trap Stand	0	EA	$ -	$ -	$ 4,500	$ -	$ 4,500	$ -
3.2k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.3	**115kV**								
3.3a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ 15,000	$ -	$ 15,000	**$** -
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
3.3c	Switch Stands	0	EA	$ -	$ -	$ 6,450	$ -	$ 6,450	**$** -
3.3d	Fuse Stand	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
3.3e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
3.3f	Bus Support 1 Ph	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
3.3g	Instrument Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
3.3h	Arrester Stand	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
3.3j	Wave Trap Stand	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
3.3k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
TOTAL - SUBSTATION STRUCTURES					$ -		$ 6,750		$ 6,750
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
4.1b	Capacitor Banks	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
4.1c		0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
4.1d									
4.2	**230kV**								
4.2a	Circuit Breakers	0	EA	$ -	$ -	$ 7,000	$ -	$ 7,000	**$** -
4.2b	Capacitor Banks	0	EA	$ -	$ -	$ 42,000	$ -	$ 42,000	**$** -
4.3	**115kV**								
4.3a	Circuit Breakers	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
TOTAL - MAJOR EQUIPTMENT					$ -		$ -		$ -
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	**$** -
5.1b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	**$** -
5.1c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
5.1d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
5.1e	CCVT'S	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	**$** -
5.1f	Arresters	3	EA	$ -	$ -	$ 1,500	$ 4,500	$ 1,500	**$ 4,500**
5.1g	Wave Traps	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	**$** -
5.1h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
5.1j		0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	**$** -
5.2b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	**$** -
5.2c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
5.2d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
5.2e	CCVT'S	0	EA	$ -	$ -	$ 1,500	$ -	$ 1,500	**$** -
5.2f	Arresters	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	**$** -
5.2g	Wave Traps	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	**$** -
5.2h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
5.2j		0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
5.3b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	**$** -
5.3c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
5.3d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
5.3e	CCVT'S	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
5.3f	Arresters	0	EA	$ -	$ -	$ 1,500	$ -	$ 1,500	**$** -
5.3g	Wave Traps	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
5.3h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
5.3j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ -		$ 4,500		$ 4,500
6. CONTROL HOUSE / PANELS / GENERATOR									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6.1	CONTROL HOUSE	0	EA	$ -	$ -	$ 150,000	$ -	$ 150,000	$ -
6.2	Protection and Telecom Equipment Panels	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.3	125VDC Batteries	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.4	Control Cables	0	LS	$ -	$ -	$ -	$ -	$ -	$ -
6.5	SCADA and Communications	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.6	Low Voltage AC Distribution	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.7	DC Distribution System	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.8	Security	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.9	Fire Alarm	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.10	Generator	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ -		$ -		$ -
7. MISC ITEMS									
7.1	Conduit & Cable Trench System	0	EA	$ -	$ -	$ 42,000.00	$ -	$ 42,000	$ -
7.2	Rigid Bus, Fittings & Insulators	1	LS	$ -	$ -	$ 10,500.00	$ 10,500	$ 10,500	**$ 10,500**
7.3	Strain Bus, Connectors & Insulators	0	EA	$ -	$ -	$ 39.35	$ -	$ 39	$ -
7.4	Grounding System	0	EA	$ -	$ -	$ 42,000.00	$ -	$ 42,000	$ -
7.5									
7.6									
7.7									
7.8									
7.9									
7.10									
7.11									
7.12									
7.13									
7.14									
7.15									
TOTAL - MISC ITEMS					$ -		$ 10,500		$ 10,500
G. Edic Substation - Removal					$ -		$ 35,750		**$ 35,750**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1	LS	$ -	$ -	$ 358	$ 358	$ 358	**$ 358**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		$ -	$ 1,918	$ 1,918	$ 1,918	**$ 1,918**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 358	$ 358	$ 358	**$ 358**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 358	$ 358	$ 358	**$ 358**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 2,860	$ 2,860	$ 2,860	**$ 2,860**
8.6	LiDAR	-	Mile	$ -	$ -	$ -	$ -	$ -	$ -
8.7	Geotech	-	Site	$ -	$ -	$ -	$ -	$ -	$ -
8.8	Surveying/Staking	-	Site	$ -	$ -	$ 250	$ -	$ 250	$ -
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	-	LS	$ -	$ -	$ 894	$ -	$ 894	$ -
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 107	$ 107	$ 107	**$ 107**
8.13	Real Estate Costs (New)	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.14	Real Estate Costs (Incumbent Utility)	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.18	Sales Tax on Materials	1	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.19	Fees for permits, including roadway, railroad, building or other local permits	-	LS		$ -	$ 36	$ -	$ 36	$ -
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ -		$ 5,958		**$ 5,958**

NAT & NYPA - T026 - (Segment A, Base)

H. New Scotland Substation - Install

Estimate Revision: 7

Total: $ 6,456,780

NAT & NYPA - T026 - (Segment A, Base)	*Supply*	*Installation*	*Total*
H. New Scotland Substation - Install			
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ 4,050	$ 11,250	$ 15,300
2. SUBSTATION FOUNDATIONS	$ 406,368	$ 435,200	$ 841,568
3. SUBSTATION STRUCTURES	$ 199,800	$ 199,800	$ 399,600
4. MAJOR EQUIPTMENT	$ 600,000	$ 240,000	$ 840,000
5. SMALL EQUIPTMENT / MATERIALS	$ 353,000	$ 192,500	$ 545,500
6. CONTROL HOUSE / PANELS	$ 726,650	$ 500,400	$ 1,227,050
7. MISC ITEMS	$ 525,680	$ 788,055	$ 1,313,735
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 225,244	$ 1,048,783	$ 1,274,027
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 3,040,792	$ 3,415,988	$ 6,456,780
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 3,040,792	$ 3,415,988	$ 6,456,780

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
H. New Scotland Substation - Install									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	0	ACRES	$ -	$ -	$ 203,000	$ -	$ 203,000	$ -
1.2	Station stone within substation fence.	150	CY	$ 27	$ 4,050	$ 75	$ 11,250	$ 102	**$ 15,300**
1.3	Substation Fence	0	LF	$ 100	$ -	$ 100	$ -	$ 200	$ -
1.4	Permanent Access Road - 20'-Wide (From Gordon RD)	0	LF	$ 35	$ -	$ 285	$ -	$ 320	$ -
1.5									
1.6									
1.7									
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ 4,050		$ 11,250		$ 15,300
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	3	EA	$ 14,940	$ 44,820	$ 16,000	$ 48,000	$ 30,940	**$ 92,820**
2.1b	Capacitor Bank Foundations	0	EA	$ 56,025	$ -	$ 60,000	$ -	$ 116,025	$ -
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	4	EA	$ 26,145	$ 104,580	$ 28,000	$ 112,000	$ 54,145	**$ 216,580**
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 26,145	$ -	$ 28,000	$ -	$ 54,145	$ -
2.1e	Switch Stand Foundations	24	EA	$ 4,482	$ 107,568	$ 4,800	$ 115,200	$ 9,282	**$ 222,768**
2.1f	Station Service Transformer Stand Foundation	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1h	Bus Support 1 Ph Foundations	15	EA	$ 4,482	$ 67,230	$ 4,800	$ 72,000	$ 9,282	**$ 139,230**
2.1j	Instrument Transformer Stand Foundations	12	EA	$ 4,482	$ 53,784	$ 4,800	$ 57,600	$ 9,282	**$ 111,384**
2.1k	Arrester Stand Foundations	3	EA	$ 4,482	$ 13,446	$ 4,800	$ 14,400	$ 9,282	**$ 27,846**
2.1m	Wave Trap Stand Foundations	1	EA	$ 4,482	$ 4,482	$ 4,800	$ 4,800	$ 9,282	**$ 9,282**
2.1n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1p									
				$ -	$ -	$ -	$ -	$ -	$ -
2.2	**230kV**								
2.2a	Circuit Breaker Foundations	0	EA	$ 11,952	$ -	$ 12,800	$ -	$ 24,752	$ -
2.2b	Capacitor Bank Foundations	0	EA	$ 44,820	$ -	$ 48,000	$ -	$ 92,820	$ -
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	$ -
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	$ -
2.2e	Switch Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2f	Station Service Transformer Stand Foundation	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.2h	Bus Support 1 Ph Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2j	Instrument Transformer Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2k	Arrester Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2m	Wave Trap Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2p									
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	0	EA	$ 5,229	$ -	$ 5,600	$ -	$ 10,829	$ -
2.3b	Capacitor Bank Foundations	0	EA	$ 33,615	$ -	$ 36,000	$ -	$ 69,615	$ -
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	$ -
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	$ -
2.3e	Switch Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3f	Fuse Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3g	Bus Support 3ph Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3h	Bus Support 1 Ph Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3j	Instrument Transformer Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3k	Arrester Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3m	Wave Trap Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment	0	EA	$ 97,110	$ -	$ 104,000	$ -	$ 201,110	$ -
2.4b	345-115kV Transformer Foundation w/ Oil Containment	0	EA	$ 74,700	$ -	$ 80,000	$ -	$ 154,700	$ -
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad	0	EA	$ 76,194	$ -	$ 81,600	$ -	$ 157,794	$ -
2.5b	Generator Foundation	0	EA	$ 16,000	$ -	$ 17,000	$ -	$ 33,000	$ -
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	2	EA	$ 5,229	$ 10,458	$ 5,600	$ 11,200	$ 10,829	**$ 21,658**
2.6b		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6c		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION FOUNDATIONS					$ 406,368		$ 435,200		$ 841,568
3. SUBSTATION STRUCTURES									
3.1	**345kV**								
3.1a	Substation A-Frame Structures - Stand alone	1	EA	$ 37,000	$ 37,000	$ 37,000	$ 37,000	$ 74,000	**$ 74,000**
3.1b	Substation A-Frame Structures - Shared Column	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	$ -
3.1c	Switch Stands	4	EA	$ 14,800	$ 59,200	$ 14,800	$ 59,200	$ 29,600	**$ 118,400**
3.1d	Station Service Transformer Stand	0	EA	$ 14,800	$ -	$ 14,800	$ -	$ 29,600	$ -
3.1e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1f	Bus Support 1 Ph	15	EA	$ 3,700	$ 55,500	$ 3,700	$ 55,500	$ 7,400	**$ 111,000**
3.1g	Instrument Transformer Stand	12	EA	$ 1,850	$ 22,200	$ 1,850	$ 22,200	$ 3,700	**$ 44,400**
3.1h	Arrester Stand	3	EA	$ 1,850	$ 5,550	$ 1,850	$ 5,550	$ 3,700	**$ 11,100**
3.1j	Wave Trap Stand	1	EA	$ 7,400	$ 7,400	$ 7,400	$ 7,400	$ 14,800	**$ 14,800**
3.1k	Lightning Masts - 70'	2	EA	$ 6,475	$ 12,950	$ 6,475	$ 12,950	$ 12,950	**$ 25,900**
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	$ -
3.2b	Substation A-Frame Structures - Shared Column	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	$ -
3.2c	Switch Stands	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	$ -
3.2d	Station Service Transformer Stand	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	$ -
3.2e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2f	Bus Support 1 Ph	0	EA	$ 2,775	$ -	$ 2,775	$ -	$ 5,550	$ -
3.2g	Instrument Transformer Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	$ -
3.2h	Arrester Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	$ -
3.2j	Wave Trap Stand	0	EA	$ 5,550	$ -	$ 5,550	$ -	$ 11,100	$ -
3.2k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
3.3	**115kV**								

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.3a	Substation A-Frame Structures - Stand alone	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	$ -
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	$ -
3.3c	Switch Stands	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	$ -
3.3d	Fuse Stand	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	$ -
3.3e	Bus Support 3ph	0	EA	$ 3,330	$ -	$ 3,330	$ -	$ 6,660	$ -
3.3f	Bus Support 1 Ph	0	EA	$ 1,850	$ -	$ 1,850	$ -	$ 3,700	$ -
3.3g	Instrument Transformer Stand	0	EA	$ 740	$ -	$ 740	$ -	$ 1,480	$ -
3.3h	Arrester Stand	0	EA	$ 740	$ -	$ 740	$ -	$ 1,480	$ -
3.3j	Wave Trap Stand	0	EA	$ 3,700	$ -	$ 3,700	$ -	$ 7,400	$ -
3.3k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
TOTAL - SUBSTATION STRUCTURES					$ 199,800		$ 199,800		$ 399,600
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	3	EA	$ 200,000	$ 600,000	$ 80,000	$ 240,000	$ 280,000	**$ 840,000**
4.1b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	$ -
4.1c	345 kV - 230 kV Auto Transformer	0	EA	$ -	$ -	$ 750,000	$ -	$ 750,000	$ -
4.1d	345 kV - 115 kV Auto Transformer	0	EA	$ -	$ -	$ 750,000	$ -	$ 750,000	$ -
4.2	**230kV**								
4.2a	Circuit Breakers	0	EA	$ 115,000	$ -	$ 80,000	$ -	$ 195,000	$ -
4.2b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	$ -
4.3	**115kV**								
4.3a	Circuit Breakers	0	EA	$ 52,000	$ -	$ 60,000	$ -	$ 112,000	$ -
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ 60,000	$ -	$ 60,000	$ -
TOTAL - MAJOR EQUIPTMENT					$ 600,000		$ 240,000		$ 840,000
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator	1	EA	$ 40,000	$ 40,000	$ 15,000	$ 15,000	$ 55,000	**$ 55,000**
5.1b	Disconnect Switches - 3ph w/ manual operator	3	EA	$ 35,000	$ 105,000	$ 17,500	$ 52,500	$ 52,500	**$ 157,500**
5.1c	VT'S	3	EA	$ 13,000	$ 39,000	$ 12,000	$ 36,000	$ 25,000	**$ 75,000**
5.1d	CT'S	3	EA	$ 13,000	$ 39,000	$ 8,000	$ 24,000	$ 21,000	**$ 63,000**
5.1e	CCVT'S	6	EA	$ 13,000	$ 78,000	$ 8,000	$ 48,000	$ 21,000	**$ 126,000**
5.1f	Arresters	6	EA	$ 6,500	$ 39,000	$ 1,500	$ 9,000	$ 8,000	**$ 48,000**
5.1g	Wave Traps	1	EA	$ 13,000	$ 13,000	$ 8,000	$ 8,000	$ 21,000	**$ 21,000**
5.1h	Station Service Transformers	0	EA	$ 200,000	$ -	$ 50,000	$ -	$ 250,000	$ -
5.1j		0	EA	$ 15,000	$ -	$ 7,500	$ -	$ 22,500	$ -
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator	0	EA	$ 35,000	$ -	$ 15,000	$ -	$ 50,000	$ -
5.2b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 30,000	$ -	$ 17,500	$ -	$ 47,500	$ -
5.2c	VT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2e	CCVT'S	0	EA	$ 10,000	$ -	$ 6,000	$ -	$ 16,000	$ -
5.2f	Arresters	0	EA	$ 5,000	$ -	$ 6,000	$ -	$ 11,000	$ -
5.2g	Wave Traps	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2j		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	0	EA	$ 33,000	$ -	$ 15,000	$ -	$ 48,000	$ -
5.3b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 28,000	$ -	$ 17,500	$ -	$ 45,500	$ -
5.3c	VT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.3d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.3e	CCVT'S	0	EA	$ 8,000	$ -	$ 8,000	$ -	$ 16,000	$ -
5.3f	Arresters	0	EA	$ 3,420	$ -	$ 6,000	$ -	$ 9,420	$ -
5.3g	Wave Traps	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ 353,000		$ 192,500		$ 545,500
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE	1	EA	$ 243,750	$ 243,750	$ 42,500	$ 42,500	$ 286,250	**$ 286,250**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6.2	Protection and Telecom Equipment Panels	5	EA	$ 35,000	$ 175,000	$ 10,000	$ 50,000	$ 45,000	**$ 225,000**
6.3	125VDC Batteries	0	EA	$ 75,000	$ -	$ 25,000	$ -	$ 100,000	**$ -**
6.4	Control Cables	1	LS	$ 207,900	$ 207,900	$ 207,900	$ 207,900	$ 415,800	**$ 415,800**
6.5	SCADA and Communications	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.6	Low Voltage AC Distribution	1	EA	$ 50,000	$ 50,000	$ 100,000	$ 100,000	$ 150,000	**$ 150,000**
6.7	DC Distribution System	1	EA	$ 50,000	$ 50,000	$ 100,000	$ 100,000	$ 150,000	**$ 150,000**
6.8	Security	0	EA	$ 7,500	$ -	$ 7,500	$ -	$ 15,000	**$ -**
6.9	Fire Alarm	0	EA	$ 7,500	$ -	$ 7,500	$ -	$ 15,000	**$ -**
6.10	Generator	0	EA	$ 100,000	$ -	$ 80,000	$ -	$ 180,000	**$ -**
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ 726,650		$ 500,400		**$ 1,227,050**
7. MISC ITEMS									
7.1	Conduit & Cable Trench System	1	L.S.	$ 55,500.00	$ 55,500	$ 76,500.00	$ 76,500	$ 132,000	**$ 132,000**
7.2	Rigid Bus, Fittings & Insulators	1	L.S.	$ 62,535.00	$ 62,535	$ 118,550.00	$ 118,550	$ 181,085	**$ 181,085**
7.3	Strain Bus, Connectors & Insulators	1	L.S.	$ 92,250.00	$ 92,250	$ 114,135.00	$ 114,135	$ 206,385	**$ 206,385**
7.4	Grounding System	1	L.S.	$ 10,395.00	$ 10,395	$ 48,870.00	$ 48,870	$ 59,265	**$ 59,265**
7.5	Strain Bus Insulators - 345kV	0	EA	$ 2,000	$ -	$ 1,050	$ -	$ 3,050	**$ -**
7.6	Strain Bus Insulators - 230kV	0	EA	$ 1,400	$ -	$ 750	$ -	$ 2,150	**$ -**
7.7	Strain Bus Insulators - 115kV	0	EA	$ 1,000	$ -	$ 550	$ -	$ 1,550	**$ -**
7.8	Low Voltage AC Station Service	0	LS	$ 50,000	$ -	$ 75,000	$ -	$ 125,000	**$ -**
7.9	SSVT Service	0	LS	$ 45,000	$ -	$ 45,000	$ -	$ 90,000	**$ -**
7.10	Control Conduits from Trench to Equipment	1	LS	$ 125,000	$ 125,000	$ 125,000	$ 125,000	$ 250,000	**$ 250,000**
7.11	Misc. Materials (Above and Below Ground)	1	LS	$ 180,000	$ 180,000	$ 180,000	$ 180,000	$ 360,000	**$ 360,000**
7.12	Install new communication tower foundation.	1	LS		$ -	$ 75,000	$ 75,000	$ 75,000	**$ 75,000**
7.13	Relocate exiting communication tower.	1	LS		$ -	$ 50,000	$ 50,000	$ 50,000	**$ 50,000**
7.14									
7.15									
7.16									
7.17									
7.18									
7.19									
7.20									
7.21									
7.22									
7.23									
7.24									
7.25									
TOTAL - MISC ITEMS					$ 525,680		$ 788,055		$ 1,313,735
H. New Scotland Substation - Install					$ 2,815,548		$ 2,367,205		**$ 5,182,753**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1	LS	$ -	$ -	$ 51,828	$ 51,828	$ 51,828	**$ 51,828**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 278,101	$ 278,101	$ 278,101	**$ 278,101**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 51,828	$ 51,828	$ 51,828	**$ 51,828**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 51,828	$ 51,828	$ 51,828	**$ 51,828**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 414,620	$ 414,620	$ 414,620	**$ 414,620**
8.6	LiDAR	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.7	Geotech	4	EA	$ -	$ -	$ 3,500	$ 14,000	$ 3,500	**$ 14,000**
8.8	Surveying/Staking	1	Site	$ -	$ -	$ 36,279	$ 36,279	$ 36,279	**$ 36,279**
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 129,569	$ 129,569	$ 129,569	**$ 129,569**
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 15,548	$ 15,548	$ 15,548	**$ 15,548**
8.13	Real Estate Costs (New)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.14	Real Estate Costs (Incumbent Utility)	-	LS	$ -	$ -	$ 247,500	$ -	$ 247,500	**$ -**
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.18	Sales Tax on Materials	1	LS	$ 225,244	$ 225,244	$ -	$ -	$ 225,244	**$ 225,244**
8.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 5,183	$ 5,183	$ 5,183	**$ 5,183**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 225,244		$ 1,048,783		**$ 1,274,027**

NAT & NYPA - T026 - (Segment A, Base)

I. New Scotland Substation - Removal

Estimate Revision: 7

Total: $ 94,849

NAT & NYPA - T026 - (Segment A, Base)	*Supply*	*Installation*	*Total*
I. New Scotland Substation - Removal			
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ -	$ -	$ -
2. SUBSTATION FOUNDATIONS	$ -	$ 28,800	$ 28,800
3. SUBSTATION STRUCTURES	$ -	$ 27,000	$ 27,000
4. MAJOR EQUIPTMENT	$ -	$ -	$ -
5. SMALL EQUIPTMENT / MATERIALS	$ -	$ 4,500	$ 4,500
6. CONTROL HOUSE / PANELS	$ -	$ -	$ -
7. MISC ITEMS	$ -	$ 21,000	$ 21,000
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ -	$ 13,549	$ 13,549
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ -	$ 94,849	$ 94,849
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ -	$ 94,849	$ 94,849

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
I. New Scotland Substation - Removal									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	0	ACRES	$ -	$ -	$ 203,000	$ -	$ 203,000	$ -
1.2	Station stone within substation fence.	0	CY	$ -	$ -	$ 75	$ -	$ 75	$ -
1.3	Substation Fence	0	LF	$ -	$ -	$ 150	$ -	$ 150	$ -
1.4									
1.5									
1.6									
1.7									
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ -		$ -		$ -
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1e	Switch Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1f	Station Service Transformer Stand Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1h	Bus Support 1 Ph Foundations	12	EA	$ -	$ -	$ 2,400	$ 28,800	$ 2,400	**$ 28,800**
2.1j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1k	Arrester Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1p		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2	**230kV**								
2.2a	Circuit Breaker Foundations	0	EA	$ -	$ -	$ 7,200	$ -	$ 7,200	$ -
2.2b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ 32,000	$ -	$ 32,000	$ -
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ 22,000	$ -	$ 22,000	$ -
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ 11,000	$ -	$ 11,000	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.2e	Switch Stand Foundations	0	EA	$ -	$ -	$ 5,200	$ -	$ 5,200	$ -
2.2f	Station Service Transformer Stand Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.2j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.2k	Arrester Stand Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.2m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2p		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3e	Switch Stand Foundations	0	EA	$ -	$ -	$ 5,200	$ -	$ 5,200	$ -
2.3f	Fuse Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3k	Arrester Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4b	345-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ 42,000	$ -	$ 42,000	$ -
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5b	Generator Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6b		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6c		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION FOUNDATIONS					$ -		$ 28,800		$ 28,800
3. SUBSTATION STRUCTURES									
3.1	**345kV**								
3.1a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1c	Switch Stands	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1d	Station Service Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1f	Bus Support 1 Ph	12	EA	$ -	$ -	$ 2,250	$ 27,000	$ 2,250	**$ 27,000**
3.1g	Instrument Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1h	Arrester Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1j	Wave Trap Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ 27,000	$ -	$ 27,000	$ -
3.2b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ 27,000	$ -	$ 27,000	$ -
3.2c	Switch Stands	0	EA	$ -	$ -	$ 9,750	$ -	$ 9,750	$ -
3.2d	Station Service Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2f	Bus Support 1 Ph	0	EA	$ -	$ -	$ 2,250	$ -	$ 2,250	$ -
3.2g	Instrument Transformer Stand	0	EA	$ -	$ -	$ 1,050	$ -	$ 1,050	$ -
3.2h	Arrester Stand	0	EA	$ -	$ -	$ 1,050	$ -	$ 1,050	$ -
3.2j	Wave Trap Stand	0	EA	$ -	$ -	$ 4,500	$ -	$ 4,500	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.2k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3	**115kV**								
3.3a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ 15,000	$ -	$ 15,000	$ -
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3c	Switch Stands	0	EA	$ -	$ -	$ 6,450	$ -	$ 6,450	$ -
3.3d	Fuse Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3f	Bus Support 1 Ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3g	Instrument Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3h	Arrester Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3j	Wave Trap Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION STRUCTURES					$ -		$ 27,000		$ 27,000
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.1b	Capacitor Banks	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.1c		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.1d									
4.2	**230kV**								
4.2a	Circuit Breakers	0	EA	$ -	$ -	$ 7,000	$ -	$ 7,000	$ -
4.2b	Capacitor Banks	0	EA	$ -	$ -	$ 42,000	$ -	$ 42,000	$ -
4.3	**115kV**								
4.3a	Circuit Breakers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - MAJOR EQUIPTMENT					$ -		$ -		$ -
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.1b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.1c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.1d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.1e	CCVT'S	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.1f	Arresters	3	EA	$ -	$ -	$ 1,500	$ 4,500	$ 1,500	**$ 4,500**
5.1g	Wave Traps	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.1h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.1j		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.2b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.2c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2e	CCVT'S	0	EA	$ -	$ -	$ 1,500	$ -	$ 1,500	$ -
5.2f	Arresters	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.2g	Wave Traps	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.2h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2j		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.3c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3e	CCVT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3f	Arresters	0	EA	$ -	$ -	$ 1,500	$ -	$ 1,500	$ -
5.3g	Wave Traps	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ -		$ 4,500		$ 4,500
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE	0	EA	$ -	$ -	$ 150,000	$ -	$ 150,000	**$ -**
6.2	Protection and Telecom Equipment Panels	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.3	125VDC Batteries	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.4	Control Cable	0	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.5	SCADA and Communications	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.6	Low Voltage AC Distribution	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.7	DC Distribution System	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.8	Security	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.9	Fire Alarm	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.10	Generator	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ -		$ -		**$ -**
7. MISC ITEMS									
7.1	Conduit & Cable Trench System	0	EA	$ -	$ -	$ 42,000.00	$ -	$ 42,000	**$ -**
7.2	Rigid Bus, Fittings & Insulators	1	LS	$ -	$ -	$ 21,000.00	$ 21,000	$ 21,000	**$ 21,000**
7.3	Strain Bus, Connectors & Insulators	0	LS	$ -	$ -	$ 21,000.00	$ -	$ 21,000	**$ -**
7.4	Grounding System	0	EA	$ -	$ -	$ 42,000.00	$ -	$ 42,000	**$ -**
7.5									
7.6									
7.7									
7.8									
7.9									
7.10									
7.11									
7.12									
7.13									
7.14									
7.15									
TOTAL - MISC ITEMS					$ -		$ 21,000		$ 21,000
I. New Scotland Substation - Removal					$ -		$ 81,300		**$ 81,300**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1	LS	$ -	$ -	$ 813	$ 813	$ 813	**$ 813**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 4,362	$ 4,362	$ 4,362	**$ 4,362**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 813	$ 813	$ 813	**$ 813**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 813	$ 813	$ 813	**$ 813**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 6,504	$ 6,504	$ 6,504	**$ 6,504**
8.6	LiDAR	-	Mile	$ -	$ -	$ -	$ -	$ -	**$ -**
8.7	Geotech	-	Site	$ -	$ -	$ -	$ -	$ -	**$ -**
8.8	Surveying/Staking	-	Site	$ -	$ -	$ 569	$ -	$ 569	**$ -**
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	-	LS	$ -	$ -	$ 2,033	$ -	$ 2,033	**$ -**
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 244	$ 244	$ 244	**$ 244**
8.13	Real Estate Costs (New)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.14	Real Estate Costs (Incumbent Utility)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.18	Sales Tax on Materials	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.19	Fees for permits, including roadway, railroad, building or other local permits	-	LS		$ -	$ 81	$ -	$ 81	**$ -**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ -		$ 13,549		**$ 13,549**

NAT & NYPA - T027 - (Segment A, Double Circuit)

J. Porter Substation - Install

Estimate Revision: 7

Total: $ 87,471

NAT & NYPA - T027 - (Segment A, Double Circuit)	*Supply*	*Installation*	*Total*
J. Porter Substation - Install			
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ -	$ -	$ -
2. SUBSTATION FOUNDATIONS	$ -	$ -	$ -
3. SUBSTATION STRUCTURES	$ -	$ -	$ -
4. MAJOR EQUIPTMENT	$ -	$ -	$ -
5. SMALL EQUIPTMENT / MATERIALS	$ -	$ -	$ -
6. CONTROL HOUSE / PANELS	$ -	$ -	$ -
7. MISC ITEMS	$ 15,008	$ 56,904	$ 71,912
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 1,201	$ 14,358	$ 15,559
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 16,209	$ 71,262	$ 87,471
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 16,209	$ 71,262	$ 87,471

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
J. Porter Substation - Install									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	0	ACRES	$ -	$ -	$ 203,000	$ -	$ 203,000	$ -
1.2	Station stone within substation fence.	0	CY	$ 27	$ -	$ 75	$ -	$ 102	$ -
1.3	Substation Fence	0	LF	$ 100	$ -	$ 100	$ -	$ 200	$ -
1.4	Permanent Access Road - 20'-Wide	0	LF	$ 35	$ -	$ 285	$ -	$ 320	$ -
1.5									
1.6									
1.7									
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ -		$ -		$ -
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	0	EA	$ 14,940	$ -	$ 16,000	$ -	$ 30,940	$ -
2.1b	Capacitor Bank Foundations	0	EA	$ 56,025	$ -	$ 60,000	$ -	$ 116,025	$ -
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 26,145	$ -	$ 28,000	$ -	$ 54,145	$ -
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 26,145	$ -	$ 28,000	$ -	$ 54,145	$ -
2.1e	Switch Stand Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1f	Station Service Transformer Stand Foundation	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1h	Bus Support 1 Ph Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1j	Instrument Transformer Stand Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1k	Arrester Stand Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1m	Wave Trap Stand Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1p									
2.2	**230kV**								
2.2a	Circuit Breaker Foundations	0	EA	$ 11,952	$ -	$ 12,800	$ -	$ 24,752	$ -
2.2b	Capacitor Bank Foundations	0	EA	$ 44,820	$ -	$ 48,000	$ -	$ 92,820	$ -
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	$ -
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	$ -
2.2e	Switch Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2f	Station Service Transformer Stand Foundation	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2h	Bus Support 1 Ph Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.2j	Instrument Transformer Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2k	Arrester Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2m	Wave Trap Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2p									
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	0	EA	$ 5,229	$ -	$ 5,600	$ -	$ 10,829	$ -
2.3b	Capacitor Bank Foundations	0	EA	$ 33,615	$ -	$ 36,000	$ -	$ 69,615	$ -
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	$ -
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	$ -
2.3e	Switch Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3f	Fuse Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3g	Bus Support 3ph Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3h	Bus Support 1 Ph Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3j	Instrument Transformer Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3k	Arrester Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3m	Wave Trap Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment	0	EA	$ 97,110	$ -	$ 104,000	$ -	$ 201,110	$ -
2.4b	345-115kV Transformer Foundation w/ Oil Containment	0	EA	$ 74,700	$ -	$ 80,000	$ -	$ 154,700	$ -
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad	0	EA	$ 76,194	$ -	$ 81,600	$ -	$ 157,794	$ -
2.5b	Generator Foundation	0	EA	$ 16,000	$ -	$ 17,000	$ -	$ 33,000	$ -
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	0	EA	$ 5,229	$ -	$ 5,600	$ -	$ 10,829	$ -
2.6b		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6c		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION FOUNDATIONS					$ -		$ -		$ -
3. SUBSTATION STRUCTURES									
3.1	**345kV**								
3.1a	Substation A-Frame Structures - Stand alone	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	$ -
3.1b	Substation A-Frame Structures - Shared Column	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	$ -
3.1c	Switch Stands	0	EA	$ 14,800	$ -	$ 14,800	$ -	$ 29,600	$ -
3.1d	Station Service Transformer Stand	0	EA	$ 14,800	$ -	$ 14,800	$ -	$ 29,600	$ -
3.1e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1f	Bus Support 1 Ph	0	EA	$ 3,700	$ -	$ 3,700	$ -	$ 7,400	$ -
3.1g	Instrument Transformer Stand	0	EA	$ 1,850	$ -	$ 1,850	$ -	$ 3,700	$ -
3.1h	Arrester Stand	0	EA	$ 1,850	$ -	$ 1,850	$ -	$ 3,700	$ -
3.1j	Wave Trap Stand	0	EA	$ 7,400	$ -	$ 7,400	$ -	$ 14,800	$ -
3.1k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	$ -
3.2b	Substation A-Frame Structures - Shared Column	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	$ -
3.2c	Switch Stands	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	$ -
3.2d	Station Service Transformer Stand	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	$ -
3.2e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2f	Bus Support 1 Ph	0	EA	$ 2,775	$ -	$ 2,775	$ -	$ 5,550	$ -
3.2g	Instrument Transformer Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	$ -
3.2h	Arrester Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	$ -
3.2j	Wave Trap Stand	0	EA	$ 5,550	$ -	$ 5,550	$ -	$ 11,100	$ -
3.2k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
3.3	**115kV**								
3.3a	Substation A-Frame Structures - Stand alone	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	$ -
3.3c	Switch Stands	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	$ -
3.3d	Fuse Stand	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	$ -
3.3e	Bus Support 3ph	0	EA	$ 3,330	$ -	$ 3,330	$ -	$ 6,660	$ -
3.3f	Bus Support 1 Ph	0	EA	$ 1,850	$ -	$ 1,850	$ -	$ 3,700	$ -
3.3g	Instrument Transformer Stand	0	EA	$ 740	$ -	$ 740	$ -	$ 1,480	$ -
3.3h	Arrester Stand	0	EA	$ 740	$ -	$ 740	$ -	$ 1,480	$ -
3.3j	Wave Trap Stand	0	EA	$ 3,700	$ -	$ 3,700	$ -	$ 7,400	$ -
3.3k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
TOTAL - SUBSTATION STRUCTURES					$ -		$ -		$ -
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	$ -
4.1b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	$ -
4.1c	345 kV - 230 kV Auto Transformer	0	EA	$ -	$ -	$ 750,000	$ -	$ 750,000	$ -
4.1d	345 kV - 115 kV Auto Transformer	0	EA	$ -	$ -	$ 750,000	$ -	$ 750,000	$ -
4.2	**230kV**								
4.2a	Circuit Breakers	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	$ -
4.2b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	$ -
4.3	**115kV**								
4.3a	Circuit Breakers	0	EA	$ -	$ -	$ 60,000	$ -	$ 60,000	$ -
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ 60,000	$ -	$ 60,000	$ -
TOTAL - MAJOR EQUIPTMENT					$ -		$ -		$ -
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator	0	EA	$ 40,000	$ -	$ 15,000	$ -	$ 55,000	$ -
5.1b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 35,000	$ -	$ 17,500	$ -	$ 52,500	$ -
5.1c	VT'S	0	EA	$ -	$ -	$ 12,000	$ -	$ 12,000	$ -
5.1d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.1e	CCVT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.1f	Arresters	0	EA	$ 6,500	$ -	$ 1,500	$ -	$ 8,000	$ -
5.1g	Wave Traps	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.1h	Station Service Transformers	0	EA	$ 200,000	$ -	$ 50,000	$ -	$ 250,000	$ -
5.1j		0	EA	$ 15,000	$ -	$ 7,500	$ -	$ 22,500	$ -
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator	0	EA	$ 35,000	$ -	$ 15,000	$ -	$ 50,000	$ -
5.2b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 30,000	$ -	$ 17,500	$ -	$ 47,500	$ -
5.2c	VT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2e	CCVT'S	0	EA	$ 10,000	$ -	$ 6,000	$ -	$ 16,000	$ -
5.2f	Arresters	0	EA	$ 5,000	$ -	$ 6,000	$ -	$ 11,000	$ -
5.2g	Wave Traps	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2j		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	0	EA	$ 33,000	$ -	$ 15,000	$ -	$ 48,000	$ -
5.3b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 28,000	$ -	$ 17,500	$ -	$ 45,500	$ -
5.3c	VT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.3d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.3e	CCVT'S	0	EA	$ 8,000	$ -	$ 8,000	$ -	$ 16,000	$ -
5.3f	Arresters	0	EA	$ 3,420	$ -	$ 6,000	$ -	$ 9,420	$ -
5.3g	Wave Traps	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ -		$ -		$ -
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE	0	EA	$ 551,250	$ -	$ 85,000	$ -	$ 636,250	$ -
6.2	Protection and Telecom Equipment Panels	0	EA	$ 35,000	$ -	$ 10,000	$ -	$ 45,000	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6.3	125VDC Batteries	0	EA	$ 75,000	$ -	$ 25,000	$ -	$ 100,000	$ -
6.4	Control Cable	0	LS	$ -	$ -	$ -	$ -	$ -	$ -
6.5	SCADA and Communications	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.6	Low Voltage AC Distribution	0	EA	$ 50,000	$ -	$ 100,000	$ -	$ 150,000	$ -
6.7	DC Distribution System	0	EA	$ 50,000	$ -	$ 100,000	$ -	$ 150,000	$ -
6.8	Security	0	EA	$ 7,500	$ -	$ 7,500	$ -	$ 15,000	$ -
6.9	Fire Alarm	0	EA	$ 7,500	$ -	$ 7,500	$ -	$ 15,000	$ -
6.10	Generator	0	EA	$ 100,000	$ -	$ 80,000	$ -	$ 180,000	$ -
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ -		$ -		$ -
7. MISC ITEMS									
7.1	Conduit & Cable Trench System	0	LF	$ 185.00	$ -	$ 170.00	$ -	$ 355	$ -
7.2	Rigid Bus, Fittings & Insulators	1	LS	$ 15,008.40	$ 15,008	$ 56,904.00	$ 56,904	$ 71,912	**$ 71,912**
7.3	Strain Bus, Connectors & Insulators	0	LF	$ 13.38	$ -	$ 39.35	$ -	$ 53	$ -
7.4	Grounding System	0	LF	$ 6.93	$ -	$ 32.58	$ -	$ 40	$ -
7.5	Strain Bus Insulators - 345kV	0	EA	$ 2,000	$ -	$ 1,050	$ -	$ 3,050	$ -
7.6	Strain Bus Insulators - 230kV	0	EA	$ 1,400	$ -	$ 750	$ -	$ 2,150	$ -
7.7	Strain Bus Insulators - 115kV	0	EA	$ 1,000	$ -	$ 550	$ -	$ 1,550	$ -
7.8	Low Voltage AC Station Service	0	LS	$ 50,000	$ -	$ 75,000	$ -	$ 125,000	$ -
7.9	SSVT Service	0	LS	$ 45,000	$ -	$ 45,000	$ -	$ 90,000	$ -
7.10	Control Cables	0	LS	$ 472,500	$ -	$ 472,500	$ -	$ 945,000	$ -
7.11	Control Conduits from Trench to Equipment	0	LS	$ 125,000	$ -	$ 125,000	$ -	$ 250,000	$ -
7.12	Misc. Materials (Above and Below Ground)	0	LS	$ 180,000	$ -	$ 180,000	$ -	$ 360,000	$ -
7.13									
7.14									
7.15									
7.16									
7.17									
7.18									
7.19									
7.20									
7.21									
7.22									
7.23									
7.24									
7.25									
TOTAL - MISC ITEMS					$ 15,008		$ 56,904		$ 71,912
J. Porter Substation - Install					$ 15,008		$ 56,904		**$ 71,912**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1	LS	$ -	$ -	$ 719	$ 719	$ 719	**$ 719**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		$ -	$ 3,859	$ 3,859	$ 3,859	**$ 3,859**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 719	$ 719	$ 719	**$ 719**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 719	$ 719	$ 719	**$ 719**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 5,753	$ 5,753	$ 5,753	**$ 5,753**
8.6	LiDAR	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.7	Geotech	-	EA	$ -	$ -	$ 3,500	$ -	$ 3,500	$ -
8.8	Surveying/Staking	1	Site	$ -	$ -	$ 503	$ 503	$ 503	**$ 503**
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 1,798	$ 1,798	$ 1,798	**$ 1,798**
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 216	$ 216	$ 216	**$ 216**
8.13	Real Estate Costs (New)	-	LS	$ -	$ -	$ -	$ -	$ -	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
8.14	Real Estate Costs (Incumbent Utility)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.18	Sales Tax on Materials	1	LS	$ 1,201	$ 1,201	$ -	$ -	$ 1,201	**$ 1,201**
8.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 72	$ 72	$ 72	**$ 72**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 1,201		$ 14,358		**$ 15,559**

NAT & NYPA - T026 - (Segment A, Base)

K. Porter Substation - Removal

Estimate Revision: 7

Total: $ 553,361

NAT & NYPA - T026 - (Segment A, Base)	*Supply*	*Installation*	*Total*
K. Porter Substation - Removal			
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ -	$ -	$ -
2. SUBSTATION FOUNDATIONS	$ -	$ 126,600	$ 126,600
3. SUBSTATION STRUCTURES	$ -	$ 206,100	$ 206,100
4. MAJOR EQUIPTMENT	$ -	$ 43,500	$ 43,500
5. SMALL EQUIPTMENT / MATERIALS	$ -	$ 59,500	$ 59,500
6. CONTROL HOUSE / PANELS	$ -	$ -	$ -
7. MISC ITEMS	$ -	$ 38,613	$ 38,613
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ -	$ 79,048	$ 79,048
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ -	$ 553,361	$ 553,361
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ -	$ 553,361	$ 553,361

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
K. Porter Substation - Removal									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	0	ACRES	$ -	$ -	$ 203,000	$ -	$ 203,000	$ -
1.2	Station stone within substation fence.	0	CY	$ -	$ -	$ 75	$ -	$ 75	$ -
1.3	Substation Fence	0	LF	$ -	$ -	$ 150	$ -	$ 150	$ -
1.4									
1.5									
1.6									
1.7									
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ -		$ -		$ -
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1e	Switch Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1f	Station Service Transformer Stand Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1k	Arrester Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1p		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2	**230kV**								
2.2a	Circuit Breaker Foundations	3	EA	$ -	$ -	$ 7,200	$ 21,600	$ 7,200	**$ 21,600**
2.2b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ 32,000	$ -	$ 32,000	$ -
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ 22,000	$ -	$ 22,000	$ -
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	5	EA	$ -	$ -	$ 11,000	$ 55,000	$ 11,000	**$ 55,000**
2.2e	Switch Stand Foundations	5	EA	$ -	$ -	$ 5,200	$ 26,000	$ 5,200	**$ 26,000**
2.2f	Station Service Transformer Stand Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.2h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.2j	Instrument Transformer Stand Foundations	4	EA	$ -	$ -	$ 2,400	$ 9,600	$ 2,400	**$ 9,600**
2.2k	Arrester Stand Foundations	6	EA	$ -	$ -	$ 2,400	$ 14,400	$ 2,400	**$ 14,400**
2.2m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2p		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3e	Switch Stand Foundations	0	EA	$ -	$ -	$ 5,200	$ -	$ 5,200	$ -
2.3f	Fuse Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3k	Arrester Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4b	345-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ 42,000	$ -	$ 42,000	$ -
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad (40'x125')	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5b	Generator Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6b		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6c		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION FOUNDATIONS					$ -		$ 126,600		$ 126,600
3. SUBSTATION STRUCTURES									
3.1	**345kV**								
3.1a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1c	Switch Stands	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1d	Station Service Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1f	Bus Support 1 Ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1g	Instrument Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1h	Arrester Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1j	Wave Trap Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ 27,000	$ -	$ 27,000	$ -
3.2b	Substation A-Frame Structures - Shared Column	5	EA	$ -	$ -	$ 27,000	$ 135,000	$ 27,000	**$ 135,000**
3.2c	Switch Stands	6	EA	$ -	$ -	$ 9,750	$ 58,500	$ 9,750	**$ 58,500**
3.2d	Station Service Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2f	Bus Support 1 Ph	0	EA	$ -	$ -	$ 2,250	$ -	$ 2,250	$ -
3.2g	Instrument Transformer Stand	6	EA	$ -	$ -	$ 1,050	$ 6,300	$ 1,050	**$ 6,300**
3.2h	Arrester Stand	6	EA	$ -	$ -	$ 1,050	$ 6,300	$ 1,050	**$ 6,300**
3.2j	Wave Trap Stand	0	EA	$ -	$ -	$ 4,500	$ -	$ 4,500	$ -
3.2k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3	**115kV**								

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.3a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ 15,000	$ -	$ 15,000	$ -
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3c	Switch Stands	0	EA	$ -	$ -	$ 6,450	$ -	$ 6,450	$ -
3.3d	Fuse Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3f	Bus Support 1 Ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3g	Instrument Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3h	Arrester Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3j	Wave Trap Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION STRUCTURES					$ -		$ 206,100		$ 206,100
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.1b	Capacitor Banks	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.1c		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.1d									
4.2	**230kV**								
4.2a	Circuit Breakers	3	EA	$ -	$ -	$ 14,500	$ 43,500	$ 14,500	**$ 43,500**
4.2b	Capacitor Banks	0	EA	$ -	$ -	$ 42,000	$ -	$ 42,000	$ -
4.3	**115kV**								
4.3a	Circuit Breakers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - MAJOR EQUIPTMENT					$ -		$ 43,500		$ 43,500
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.1b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.1c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.1d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.1e	CCVT'S	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.1f	Arresters	0	EA	$ -	$ -	$ 1,500	$ -	$ 1,500	$ -
5.1g	Wave Traps	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.1h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.1j		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator	2	EA	$ -	$ -	$ 5,500	$ 11,000	$ 5,500	**$ 11,000**
5.2b	Disconnect Switches - 3ph w/ manual operator	3	EA	$ -	$ -	$ 5,500	$ 16,500	$ 5,500	**$ 16,500**
5.2c	VT'S	2	EA	$ -	$ -	$ 1,500	$ 3,000	$ 1,500	**$ 3,000**
5.2d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2e	CCVT'S	6	EA	$ -	$ -	$ 1,500	$ 9,000	$ 1,500	**$ 9,000**
5.2f	Arresters	6	EA	$ -	$ -	$ 2,500	$ 15,000	$ 2,500	**$ 15,000**
5.2g	Wave Traps	2	EA	$ -	$ -	$ 2,500	$ 5,000	$ 2,500	**$ 5,000**
5.2h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2j		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.3c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3e	CCVT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3f	Arresters	0	EA	$ -	$ -	$ 1,500	$ -	$ 1,500	$ -
5.3g	Wave Traps	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ -		$ 59,500		$ 59,500
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE	0	EA	$ -	$ -	$ 150,000	$ -	$ 150,000	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6.2	Protection and Telecom Equipment Panels	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.3	125VDC Batteries	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.4	Control Cable	0	LS	$ -	$ -	$ -	$ -	$ -	$ -
6.5	SCADA and Communications	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.6	Low Voltage AC Distribution	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.7	DC Distribution System	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.8	Security	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.9	Fire Alarm	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.10	Generator	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ -		$ -		$ -
7. MISC ITEMS									
7.1	Conduit & Cable Trench System	0	EA	$ -	$ -	$ 42,000.00	$ -	$ 42,000	$ -
7.2	Rigid Bus, Fittings & Insulators	1	L.S.	$ -	$ -	$ 18,937.50	$ 18,938	$ 18,938	**$ 18,938**
7.3	Strain Bus, Connectors & Insulators	1	L.S.	$ -	$ -	$ 19,675.00	$ 19,675	$ 19,675	**$ 19,675**
7.4	Grounding System	0	EA	$ -	$ -	$ 42,000.00	$ -	$ 42,000	$ -
7.5									
7.6									
7.7									
7.8									
7.9									
7.10									
7.11									
7.12									
7.13									
7.14									
7.15									
TOTAL - MISC ITEMS					$ -		$ 38,613		$ 38,613
K. Porter Substation - Removal					$ -		$ 474,313		**$ 474,313**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1.0	LS	$ -	$ -	$ 4,743	$ 4,743	$ 4,743	**$ 4,743**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		$ -	$ 25,451	$ 25,451	$ 25,451	**$ 25,451**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 4,743	$ 4,743	$ 4,743	**$ 4,743**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 4,743	$ 4,743	$ 4,743	**$ 4,743**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 37,945	$ 37,945	$ 37,945	**$ 37,945**
8.6	LiDAR	-	Mile	$ -	$ -	$ -	$ -	$ -	$ -
8.7	Geotech	-	Site	$ -	$ -	$ -	$ -	$ -	$ -
8.8	Surveying/Staking	-	Site	$ -	$ -	$ 3,320	$ -	$ 3,320	$ -
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	-	LS	$ -	$ -	$ 11,858	$ -	$ 11,858	$ -
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 1,423	$ 1,423	$ 1,423	**$ 1,423**
8.13	Real Estate Costs (New)	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.14	Real Estate Costs (Incumbent Utility)	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.18	Sales Tax on Materials	1	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.19	Fees for permits, including roadway, railroad, building or other local permits	-	LS		$ -	$ 474	$ -	$ 474	$ -
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ -		$ 79,048		**$ 79,048**

NAT & NYPA - T026 - (Segment A, Base)

L. Interconnection Edic Station

Estimate Revision: 7

Total: $ 2,132,044

NAT & NYPA - T026 - (Segment A, Base)	*Supply*	*Installation*	*Total*
L. Interconnection Edic Station			
1. CLEARING & ACCESS	$ -	$ 367,850	$ 367,850
2. FOUNDATIONS	$ 168,366	$ 170,169	$ 338,536
3. STRUCTURES	$ 501,469	$ 321,821	$ 823,289
4. CONDUCTOR, SHIELDWIRE, OPGW	$ -	$ -	$ -
5. INSULATORS, FITTINGS, HARDWARE	$ 160,000	$ 94,400	$ 254,400
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 66,387	$ 281,583	$ 347,969
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 896,222	$ 1,235,823	$ 2,132,044
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 896,222	$ 1,235,823	$ 2,132,044

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
L. Interconnection Edic Station									
1. CLEARING & ACCESS									
1.1	Clearing the ROW - Heavy (mowing & clearing)	-	Acre	$ -	$ -	$ 15,000	$ -	$ 15,000	$ -
1.2	Clearing the ROW - Light (mowing)	2.0	Acre	$ -	$ -	$ 5,000	$ 10,000	$ 5,000	**$ 10,000**
1.3	Access Road	-	LF	$ -	$ -	$ 45	$ -	$ 45	$ -
1.4	Silt Fence	3,500.0	LF	$ -	$ -	$ 4	$ 14,000	$ 4	**$ 14,000**
1.5	Matting - Access and ROW	3,500.0	LF	$ -	$ -	$ 70	$ 245,000	$ 70	**$ 245,000**
1.6	Matting - To Work Area	300.0	LF	$ -	$ -	$ 70	$ 21,000	$ 70	**$ 21,000**
1.7	Snow Removal	-	LS	$ -	$ -	$ 516,800	$ -	$ 516,800	$ -
1.8	ROW Restoration	0.5	Mile	$ -	$ -	$ 10,000	$ 5,000	$ 10,000	**$ 5,000**
1.9	Work Pads	20,000.0	SF	$ -	$ -	$ 4	$ 70,400	$ 4	**$ 70,400**
1.10	Restoration for Work Pad areas	4,000.0	SF	$ -	$ -	$ 0.2	$ 600	$ 0	**$ 600**
1.11	Temporary Access Bridge	-	EA	$ -	$ -	$ 20,035	$ -	$ 20,035	$ -
1.12	Air Bridge	-	EA	$ -	$ -	$ 14,445	$ -	$ 14,445	$ -
1.13	Stabilized Construction Entrance	-	EA	$ -	$ -	$ 4,580	$ -	$ 4,580	$ -
1.14	Maintenance and Protection of Traffic on Public Roads	-	EA	$ -	$ -	$ 4,130	$ -	$ 4,130	$ -
1.15	Gates	-	EA	$ 2,000	$ -	$ 2,500	$ -	$ 4,500	$ -
1.16	Culverts / Misc. Access	-	EA	$ 750	$ -	$ 1,250	$ -	$ 2,000	$ -
1.17	Concrete Washout Station	1	EA	$ -	$ -	$ 1,850	$ 1,850	$ 1,850	**$ 1,850**
1.18					$ -		$ -		$ -
1.19					$ -		$ -		$ -
1.20	Crushed Rock	0	CY	$ 27	$ -	$ 75	$ -	$ 102	$ -
TOTAL - CLEARING & ACCESS					$ -		$ 367,850		$ 367,850
2. FOUNDATIONS									
2.1	Foundation – Drilled Pier – 8'X 27'	3	EA	$ 41,332	$ 123,995	$ 41,774	$ 125,322	$ 83,106	**$ 249,317**
2.2	Foundation – Drilled Pier – 8'X 29'	1	EA	$ 44,372	$ 44,372	$ 44,847	$ 44,847	$ 89,219	**$ 89,219**
2.3	Rock Excavation Adder	-	CY	$ -	$ -	$ 2,000	$ -	$ 2,000	$ -
2.4									
2.5									
2.6									
2.7									
2.8									
2.9									
2.10									
2.11									
2.12									
2.13									
2.14									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.15									
TOTAL - FOUNDATIONS					$ 168,366		$ 170,169		$ 338,536
3. STRUCTURES									
3.1	1-CKT 345KV VERTICAL MEDIUM ANGLE DEADEND (15°-60°) – 105'	3	Structure	$ 98,883	$ 296,648	$ 59,330	$ 177,989	$ 158,212	**$ 474,636**
3.2	2-CKT 345KV VERTICAL MEDIUM ANGLE DEADEND (15°-60°) - 115'	1	Structure	$ 202,797	$ 202,797	$ 121,678	$ 121,678	$ 324,475	**$ 324,475**
3.3	Install Grounding and Grounding Accessories	4	Pole	$ 506	$ 2,024	$ 5,539	$ 22,154	$ 6,045	**$ 24,178**
3.4					$ -		$ -		**$ -**
3.5									
3.6					$ -		$ -		**$ -**
3.7					$ -		$ -		**$ -**
3.8					$ -		$ -		**$ -**
3.9					$ -		$ -		**$ -**
3.10					$ -		$ -		**$ -**
3.11					$ -		$ -		**$ -**
3.12					$ -		$ -		**$ -**
3.13					$ -		$ -		**$ -**
3.14					$ -		$ -		**$ -**
3.15					$ -		$ -		**$ -**
TOTAL - STRUCTURES					$ 501,469		$ 321,821		$ 823,289
4. CONDUCTOR, SHIELDWIRE, OPGW									
4.1	345kV - (1) 954kcmil 54/7 ACSS "Cardinal"	-	LF	$ 1.90	$ -	$ 5.00	$ -	$ 6.90	**$ -**
4.2	(1) OPGW 36 Fiber AC-33/38/571	-	LF	$ 1.35	$ -	$ 5.00	$ -	$ 6.35	**$ -**
4.3	(1) 3/8" EHS7 Steel	-	LF	$ 0.47	$ -	$ 5.00	$ -	$ 5.47	**$ -**
4.5	Remove Existing Cable From Existing Structures	-	Mile	$ -	$ -	$ 30,000	$ -	$ 30,000.00	**$ -**
4.6	Remove Existing OPGW Cable	-	Mile	$ -	$ -	$ 12,000	$ -	$ 12,000.00	**$ -**
4.7	Remove Existing EH7	-	Mile	$ -	$ -	$ 12,000	$ -	$ 12,000.00	**$ -**
4.8									
4.9		-							
4.10	Rider Poles - Relocated	-	Set	$ -	$ -	$ 3,500	$ -	$ 3,500.00	**$ -**
4.11	Rider Poles	-	EA	$ 1,750	$ -	$ 3,500	$ -	$ 5,250.00	**$ -**
TOTAL: CONDUCTOR, SHIELDWIRE, OPGW:					$ -		$ -		**$ -**
5. INSULATOR, FITTINGS, HARDWARE									
5.1	345kV Tangent (1-Group of 18-Bells Each Assembly)								
5.2	115kV Tangent (1-Group of 9-Bells Each Assembly)								
5.3	345kV Dead-end & Angle Insulators (1-Group of 18-Bells Each Assembly)	60	Assembly	$ 1,800	$ 108,000	$ 720	$ 43,200	$ 2,520	**$ 151,200**
5.4	115kV Dead-end & Angle Insulators (1-Group of 9-Bells Each Assembly)								
5.5	OPGW Assembly - Tangent	-	Assembly	$ 200	$ -	$ 150	$ -	$ 350	**$ -**
5.6	OPGW Assembly - Angle / DE	4	Assembly	$ 250	$ 1,000	$ 150	$ 600	$ 400	**$ 1,600**
5.7	OHSW Assembly - Angle / DE	4	Assembly	$ 250	$ 1,000	$ 150	$ 600	$ 400	**$ 1,600**
5.8	OPGW Splice Boxes	-	Set	$ 1,746	$ -	$ 2,274	$ -	$ 4,020	**$ -**
5.9	OPGW Splice & Test	-	EA	$ 2,520	$ -	$ 2,520	$ -	$ 5,040	**$ -**
5.10	Spacer - Conductor	-	EA	$ 50	$ -	$ 35	$ -	$ 85	**$ -**
5.11	Vibration Dampers - Conductor	-	EA	$ 35	$ -	$ 35	$ -	$ 70	**$ -**
5.12	Shieldwire / OPGW Dampers, Misc. Fittings	-	EA	$ 27	$ -	$ 35	$ -	$ 62	**$ -**
5.13	Guys, Anchors, and Accessories	-	EA	$ 720	$ -	$ 885	$ -	$ 1,605	**$ -**
5.14	Misc. materials (Signs and Markers)	-	Mile	$ 770	$ -	$ 1,006	$ -	$ 1,776	**$ -**
5.15									
5.16									
5.17									
5.18									
5.19	Interconnection Arrangements	1	EA	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 100,000	**$ 100,000**
5.20									
TOTAL - INSULATOR, FITTINGS, HARDWARE					$ 160,000		$ 94,400		$ 254,400
L. Interconnection Edic Station					$ 829,835		$ 954,240		$ 1,784,075
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
6.1	Mob / Demob	1	LS	$ -	$ -	$ 17,841	$ 17,841	$ 17,841	**$ 17,841**
	Project Management, Material Handling & Amenities								
6.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 95,732	$ 95,732	$ 95,732	**$ 95,732**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6.3	Utility PM and Project Oversite	1	LS		$ -	$ 17,841	$ 17,841	$ 17,841	**$ 17,841**
6.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 17,841	$ 17,841	$ 17,841	**$ 17,841**
	Engineering								
6.5	Design Engineering	1	LS	$ -	$ -	$ 89,204	$ 89,204	$ 89,204	**$ 89,204**
6.6	LiDAR	-	LS	$ -	$ -	$ 5,352	$ -	$ 5,352	**$ -**
6.7	Geotech	1	Location	$ -	$ -	$ 3,500	$ 3,500	$ 3,500	**$ 3,500**
6.8	Surveying/Staking	1	LS	$ -	$ -	$ 12,489	$ 12,489	$ 12,489	**$ 12,489**
	Testing & Commissioning								
6.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 20,000	$ 20,000	$ 20,000	**$ 20,000**
	Permitting and Additional Costs								
6.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.12	Warranties / LOC's	1	LS	$ -	$ -	$ 5,352	$ 5,352	$ 5,352	**$ 5,352**
6.13	Real Estate Costs (New ROW)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.14	Real Estate Costs (Incumbent Utility ROW)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.18	Sales Tax on Materials	1	LS	$ 66,387	$ 66,387	$ -	$ -	$ 66,387	**$ 66,387**
6.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 1,784	$ 1,784	$ 1,784	**$ 1,784**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 66,387		$ 281,583		**$ 347,969**

NAT & NYPA - T026 - (Segment A, Base)

M. Interconnection New Scotland Station

Estimate Revision: 7

Total: $ 3,115,703

NAT & NYPA - T026 - (Segment A, Base)	*Supply*	*Installation*	*Total*
M. Interconnection New Scotland Station			
1. CLEARING & ACCESS	$ -	$ 367,850	$ 367,850
2. FOUNDATIONS	$ 365,657	$ 473,093	$ 838,749
3. STRUCTURES	$ 655,465	$ 445,628	$ 1,101,092
4. CONDUCTOR, SHIELDWIRE, OPGW	$ 3,555	$ 26,100	$ 29,655
5. INSULATORS, FITTINGS, HARDWARE	$ 161,130	$ 95,795	$ 256,925
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 94,864	$ 426,567	$ 521,432
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 1,280,670	$ 1,835,033	$ 3,115,703
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 1,280,670	$ 1,835,033	$ 3,115,703

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
M. Interconnection New Scotland Station									
1. CLEARING & ACCESS									
1.1	Clearing the ROW - Heavy (mowing & clearing)	-	Acre	$ -	$ -	$ 15,000	$ -	$ 15,000	$ -
1.2	Clearing the ROW - Light (mowing)	2.0	Acre	$ -	$ -	$ 5,000	$ 10,000	$ 5,000	**$ 10,000**
1.3	Access Road	-	LF	$ -	$ -	$ 45	$ -	$ 45	$ -
1.4	Silt Fence	3,500.0	LF	$ -	$ -	$ 4	$ 14,000	$ 4	**$ 14,000**
1.5	Matting - Access and ROW	3,500.0	LF	$ -	$ -	$ 70	$ 245,000	$ 70	**$ 245,000**
1.6	Matting - To Work Area	300.0	LF	$ -	$ -	$ 70	$ 21,000	$ 70	**$ 21,000**
1.7	Snow Removal	-	LS	$ -	$ -	$ 516,800	$ -	$ 516,800	$ -
1.8	ROW Restoration	0.5	Mile	$ -	$ -	$ 10,000	$ 5,000	$ 10,000	**$ 5,000**
1.9	Work Pads	20,000.0	SF	$ -	$ -	$ 4	$ 70,400	$ 4	**$ 70,400**
1.10	Restoration for Work Pad areas	4,000.0	SF	$ -	$ -	$ 0.2	$ 600	$ 0	**$ 600**
1.11	Temporary Access Bridge	-	EA	$ -	$ -	$ 20,035	$ -	$ 20,035	$ -
1.12	Air Bridge	-	EA	$ -	$ -	$ 14,445	$ -	$ 14,445	$ -
1.13	Stabilized Construction Entrance	-	EA	$ -	$ -	$ 4,580	$ -	$ 4,580	$ -
1.14	Maintenance and Protection of Traffic on Public Roads	-	EA	$ -	$ -	$ 4,130	$ -	$ 4,130	$ -
1.15	Gates	-	EA	$ 2,000	$ -	$ 2,500	$ -	$ 4,500	$ -
1.16	Culverts / Misc. Access	-	EA	$ 750	$ -	$ 1,250	$ -	$ 2,000	$ -
1.17	Concrete Washout Station	1	EA	$ -	$ -	$ 1,850	$ 1,850	$ 1,850	**$ 1,850**
1.18					$ -		$ -		$ -
1.19					$ -		$ -		$ -
1.20	Crushed Rock	0	CY	$ 27	$ -	$ 75	$ -	$ 102	$ -
TOTAL - CLEARING & ACCESS					$ -		$ 367,850		$ 367,850
2. FOUNDATIONS									
2.1	Foundation – Drilled Pier – 8'X 50'	3	EA	$ 76,500	$ 229,501	$ 77,320	$ 231,959	$ 153,820	**$ 461,459**
2.2	Foundation – Drilled Pier – 8'X 89'	1	EA	$ 136,156	$ 136,156	$ 137,614	$ 137,614	$ 273,770	**$ 273,770**
2.3	Rock Excavation Adder	51.8	CY	$ -	$ -	$ 2,000	$ 103,520	$ 2,000	**$ 103,520**
2.4									
2.5									
2.6									
2.7									
2.8									
2.9									
2.10									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.11									
2.12									
2.13									
2.14									
2.15									
TOTAL - FOUNDATIONS					$ 365,657		$ 473,093		$ 838,749
3. STRUCTURES									
3.1	1-CKT 345KV 3-POLE MEDIUM ANGLE DEADEND (15°-60°) - 115'	3	Structure	$ 178,026	$ 534,077	$ 106,815	$ 320,446	$ 284,841	**$ 854,522**
3.2	1-CKT 345KV VERTICAL MEDIUM ANGLE DEADEND (15°-60°) - 115'	1	Structure	$ 116,328	$ 116,328	$ 69,797	$ 69,797	$ 186,125	**$ 186,125**
3.3	Install Grounding and Grounding Accessories	10	Pole	$ 506	$ 5,060	$ 5,539	$ 55,385	$ 6,045	**$ 60,445**
3.4					$ -		$ -		
3.5									
3.6					$ -		$ -		
3.7					$ -		$ -		
3.8					$ -		$ -		
3.9					$ -		$ -		
3.10					$ -		$ -		
3.11					$ -		$ -		
3.12					$ -		$ -		
3.13					$ -		$ -		
3.14					$ -		$ -		
3.15					$ -		$ -		
TOTAL - STRUCTURES					$ 655,465		$ 445,628		$ 1,101,092
4. CONDUCTOR, SHIELDWIRE, OPGW									
4.1	345kV - (1) 954kcmil 54/7 ACSS "Cardinal"	1,500	LF	$ 1.90	$ 2,850	$ 5.00	$ 7,500	$ 6.90	**$ 10,350**
4.2	(1) OPGW 36 Fiber AC-33/38/571	-	LF	$ 1.35	$ -	$ 5.00	$ -	$ 6.35	**$ -**
4.3	(1) 3/8" EHS7 Steel	1,500	LF	$ 0.47	$ 705	$ 5.00	$ 7,500	$ 5.47	**$ 8,205**
4.5	Remove Existing 345kV Cable From Existing Structures	0.3	Mile	$ -	$ -	$ 30,000	$ 7,500	$ 30,000.00	**$ 7,500**
4.6	Remove Existing OPGW Cable	-	Mile	$ -	$ -	$ 12,000	$ -	$ 12,000.00	**$ -**
4.7	Remove Existing EH7	0.3	Mile	$ -	$ -	$ 12,000	$ 3,600	$ 12,000.00	**$ 3,600**
4.8									
4.9									
4.10	Rider Poles - Relocated	-	Set	$ -	$ -	$ 3,500	$ -	$ 3,500.00	**$ -**
4.11	Rider Poles	-	EA	$ 1,750	$ -	$ 3,500	$ -	$ 5,250.00	**$ -**
TOTAL: CONDUCTOR, SHIELDWIRE, OPGW:					$ 3,555		$ 26,100		**$ 29,655**
5. INSULATOR, FITTINGS, HARDWARE									
5.1	345kV Tangent (1-Group of 18-Bells Each Assembly)	-	Assembly	$ 1,800	$ -	$ 720	$ -	$ 2,520	**$ -**
5.2	115kV Tangent (1-Group of 9-Bells Each Assembly)	-	Assembly	$ 900	$ -	$ 560	$ -	$ 1,460	**$ -**
5.3	345kV Dead-end & Angle Insulators (1-Group of 18-Bells Each Assembly)	60	Assembly	$ 1,800	$ 108,000	$ 720	$ 43,200	$ 2,520	**$ 151,200**
5.4	115kV Dead-end & Angle Insulators (1-Group of 9-Bells Each Assembly)	-	Assembly	$ 900	$ -	$ 560	$ -	$ 1,460	**$ -**
5.5	OPGW Assembly - Tangent	-	Assembly	$ 200	$ -	$ 150	$ -	$ 350	**$ -**
5.6	OPGW Assembly - Angle / DE	-	Assembly	$ 250	$ -	$ 150	$ -	$ 400	**$ -**
5.7	OHSW Assembly - Angle / DE	4	Assembly	$ 250	$ 1,000	$ 150	$ 600	$ 400	**$ 1,600**
5.8	OPGW Splice Boxes	-	Set	$ 1,746	$ -	$ 2,274	$ -	$ 4,020	**$ -**
5.9	OPGW Splice & Test	-	EA	$ 2,520	$ -	$ 2,520	$ -	$ 5,040	**$ -**
5.10	Spacer - Conductor	9	EA	$ 50	$ 450	$ 35	$ 315	$ 85	**$ 765**
5.11	Vibration Dampers - Conductor	48	EA	$ 35	$ 1,680	$ 35	$ 1,680	$ 70	**$ 3,360**
5.12	Shieldwire / OPGW Dampers, Misc. Fittings	-	EA	$ 27	$ -	$ 35	$ -	$ 62	**$ -**
5.13	Guys, Anchors, and Accessories	-	EA	$ 720	$ -	$ 885	$ -	$ 1,605	**$ -**
5.14	Misc. materials (Signs and Markers)	-	Mile	$ 770	$ -	$ 1,006	$ -	$ 1,776	**$ -**
5.15					$ -		$ -		**$ -**
5.16	Interconnection Arrangements	1	EA	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 100,000	**$ 100,000**
5.17					$ -		$ -		**$ -**
5.18					$ -		$ -		**$ -**
5.19					$ -		$ -		**$ -**
5.20					$ -		$ -		**$ -**
TOTAL - INSULATOR, FITTINGS, HARDWARE					$ 161,130		$ 95,795		$ 256,925
M. Interconnection New Scotland Station					$ 1,185,806		$ 1,408,465		$ 2,594,271
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
6.1	Mob / Demob	1	LS	$ -	$ -	$ 25,943	$ 25,943	$ 25,943	**$ 25,943**
	Project Management, Material Handling & Amenities								

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 139,206	$ 139,206	$ 139,206	**$ 139,206**
6.3	Utility PM and Project Oversite	1	LS		$ -	$ 25,943	$ 25,943	$ 25,943	**$ 25,943**
6.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 25,943	$ 25,943	$ 25,943	**$ 25,943**
	Engineering								
6.5	Design Engineering	1	LS	$ -	$ -	$ 129,714	$ 129,714	$ 129,714	**$ 129,714**
6.6	LiDAR	1	LS	$ -	$ -	$ 7,783	$ 7,783	$ 7,783	**$ 7,783**
6.7	Geotech	1	Location	$ -	$ -	$ 3,500	$ 3,500	$ 3,500	**$ 3,500**
6.8	Surveying/Staking	1	LS	$ -	$ -	$ 18,160	$ 18,160	$ 18,160	**$ 18,160**
	Testing & Commissioning								
6.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 40,000	$ 40,000	$ 40,000	**$ 40,000**
	Permitting and Additional Costs								
6.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.12	Warranties / LOC's	1	LS	$ -	$ -	$ 7,783	$ 7,783	$ 7,783	**$ 7,783**
6.13	Real Estate Costs (New ROW)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.14	Real Estate Costs (Incumbent Utility ROW)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.18	Sales Tax on Materials	1	LS	$ 94,864	$ 94,864	$ -	$ -	$ 94,864	**$ 94,864**
6.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 2,594	$ 2,594	$ 2,594	**$ 2,594**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 94,864		$ 426,567		**$ 521,432**

NAT & NYPA - T026 - (Segment A, Base)

N. Interconnection Rotterdam Station

Estimate Revision: 7

Total: $ 4,622,733

NAT & NYPA - T026 - (Segment A, Base)	*Supply*	*Installation*	*Total*
N. Interconnection Rotterdam Station			
1. CLEARING & ACCESS	$ -	$ 1,233,050	$ 1,233,050
2. FOUNDATIONS	$ 192,145	$ 325,963	$ 518,108
3. STRUCTURES	$ 546,722	$ 837,150	$ 1,383,872
4. CONDUCTOR, SHIELDWIRE, OPGW	$ 65,923	$ 437,250	$ 503,173
5. INSULATORS, FITTINGS, HARDWARE	$ 165,730	$ 118,480	$ 284,210
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 77,642	$ 622,679	$ 700,321
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 1,048,161	$ 3,574,572	$ 4,622,733
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 1,048,161	$ 3,574,572	$ 4,622,733

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
N. Interconnection Rotterdam Station									
1. CLEARING & ACCESS									
1.1	Clearing the ROW - Heavy (mowing & clearing)	7.0	Acre	$ -	$ -	$ 15,000	$ 105,000	$ 15,000	**$ 105,000**
1.2	Clearing the ROW - Light (mowing)	5.0	Acre	$ -	$ -	$ 5,000	$ 25,000	$ 5,000	**$ 25,000**
1.3	Access Road	-	LF	$ -	$ -	$ 45	$ -	$ 45	**$ -**
1.4	Silt Fence	4,800.0	LF	$ -	$ -	$ 4	$ 19,200	$ 4	**$ 19,200**
1.5	Matting - Access and ROW	4,800.0	LF	$ -	$ -	$ 70	$ 336,000	$ 70	**$ 336,000**
1.6	Matting - To Work Area	2,400.0	LF	$ -	$ -	$ 70	$ 168,000	$ 70	**$ 168,000**
1.7	Snow Removal	-	LS	$ -	$ -	$ 516,800	$ -	$ 516,800	**$ -**
1.8	ROW Restoration	1.0	Mile	$ -	$ -	$ 10,000	$ 10,000	$ 10,000	**$ 10,000**
1.9	Work Pads	160,000.0	SF	$ -	$ -	$ 4	$ 563,200	$ 4	**$ 563,200**
1.10	Restoration for Work Pad areas	32,000.0	SF	$ -	$ -	$ 0.2	$ 4,800	$ 0	**$ 4,800**
1.11	Temporary Access Bridge	-	EA	$ -	$ -	$ 20,035	$ -	$ 20,035	**$ -**
1.12	Air Bridge	-	EA	$ -	$ -	$ 14,445	$ -	$ 14,445	**$ -**
1.13	Stabilized Construction Entrance	-	EA	$ -	$ -	$ 4,580	$ -	$ 4,580	**$ -**
1.14	Maintenance and Protection of Traffic on Public Roads	-	EA	$ -	$ -	$ 4,130	$ -	$ 4,130	**$ -**
1.15	Gates	-	EA	$ 2,000	$ -	$ 2,500	$ -	$ 4,500	**$ -**
1.16	Culverts / Misc. Access	-	EA	$ 750	$ -	$ 1,250	$ -	$ 2,000	**$ -**
1.17	Concrete Washout Station	1	EA	$ -	$ -	$ 1,850	$ 1,850	$ 1,850	**$ 1,850**
1.18					$ -		$ -		**$ -**
1.19					$ -		$ -		**$ -**
1.20	Crushed Rock	0	CY	$ 27	$ -	$ 75	$ -	$ 102	**$ -**
TOTAL - CLEARING & ACCESS					$ -		$ 1,233,050		$ 1,233,050
2. FOUNDATIONS									
2.1	10' ED Rock BF	6	EA	$ 358	$ 2,145	$ 3,575	$ 21,450	$ 3,933	**$ 23,595**
2.2	15' ED Rock BF	18	EA	$ 536	$ 9,653	$ 5,363	$ 96,525	$ 5,899	**$ 106,178**
2.3	20' ED Rock BF	4	EA	$ 715	$ 2,860	$ 7,150	$ 28,600	$ 7,865	**$ 31,460**
2.4	Foundation – Drilled Pier – 8'X 29'	4	EA	$ 44,372	$ 177,487	$ 44,847	$ 179,388	$ 89,219	**$ 356,875**
2.5	Rock Excavation Adder	-	CY	$ -	$ -	$ 2,000	$ -	$ 2,000	**$ -**
2.6					$ -		$ -		**$ -**
2.7					$ -		$ -		**$ -**
2.8					$ -		$ -		**$ -**
2.9					$ -		$ -		**$ -**
2.10					$ -		$ -		**$ -**
2.11					$ -		$ -		**$ -**
2.12					$ -		$ -		**$ -**
2.13					$ -		$ -		**$ -**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.14					$ -		$ -		$ -
2.15					$ -		$ -		$ -
TOTAL - FOUNDATIONS					$ 192,145		$ 325,963		$ 518,108
3. STRUCTURES									
3.1	15kV 3-CKT TANGENT DIST. - WOOD POLE	3	Pole	$ 3,500	$ 10,500	$ 3,600	$ 10,800	$ 7,100	**$ 21,300**
3.2	15Kv 3-CKT MA DIST. - WOOD POLE	1	Pole	$ 3,500	$ 3,500	$ 3,600	$ 3,600	$ 7,100	**$ 7,100**
3.3	15kV 3-CKT DE - WOOD POLE	2	Pole	$ 3,500	$ 7,000	$ 3,600	$ 7,200	$ 7,100	**$ 14,200**
3.4	115kV 1-CKT TANGENT - WOOD POLE	5	Pole	$ 4,500	$ 22,500	$ 4,400	$ 22,000	$ 8,900	**$ 44,500**
3.5	115kV 1-CKT MA - WOOD POLE	2	Pole	$ 4,500	$ 9,000	$ 4,400	$ 8,800	$ 8,900	**$ 17,800**
3.6	115kV 1-CKT DE - WOOD POLE	11	Pole	$ 5,500	$ 60,500	$ 5,000	$ 55,000	$ 10,500	**$ 115,500**
3.7	115kV 2-CKT TANGENT - WOOD POLE	4	Pole	$ 5,500	$ 22,000	$ 5,000	$ 20,000	$ 10,500	**$ 42,000**
3.8	115kV 2-CKT DE - STEEL POLE	4	Pole	$ 98,883	$ 395,530	$ 59,330	$ 237,318	$ 158,212	**$ 632,848**
3.9	Remove Existing Structure	24	EA		$ -	$ 12,300	$ 295,200	$ 12,300	**$ 295,200**
3.10					$ -		$ -		$ -
3.11					$ -		$ -		$ -
3.12	Install Grounding and Grounding Accessories	32	Pole	$ 506	$ 16,192	$ 5,539	$ 177,232	$ 6,045	**$ 193,424**
3.13					$ -		$ -		$ -
3.14					$ -		$ -		$ -
3.15					$ -		$ -		$ -
TOTAL - STRUCTURES					$ 546,722		$ 837,150		$ 1,383,872
4. CONDUCTOR, SHIELDWIRE, OPGW									
4.1	345kV - (1) 954kcmil 54/7 ACSS "Cardinal"	23,400	LF	$ 1.90	$ 44,460	$ 5.00	$ 117,000	$ 6.90	**$ 161,460**
4.2	(1) OPGW 36 Fiber AC-33/38/571	-	LF	$ 1.35	$ -	$ 5.00	$ -	$ 6.35	**$ -**
4.3	(1) 3/8" EHS7 Steel	7,800	LF	$ 0.47	$ 3,666	$ 5.00	$ 39,000	$ 5.47	**$ 42,666**
4.5	Remove Existing Cable	6.6	Mile	$ -	$ -	$ 30,000	$ 197,700	$ 30,000.00	**$ 197,700**
4.6	Remove Existing EH7	2.2	Mile	$ -	$ -	$ 12,000	$ 26,400	$ 12,000.00	**$ 26,400**
4.7	15kV - (1) 477kcmil 26/7 ACSR "Hawk"	9,630	LF	$ 1.62	$ 15,601	$ 5.00	$ 48,150	$ 6.62	**$ 63,751**
4.8	15kV - (1) 336kcmil 26/7 ACSR "Linnet"	1,800	LF	$ 1.22	$ 2,196	$ 5.00	$ 9,000	$ 6.22	**$ 11,196**
4.9		-							
4.10	Rider Poles - Relocated	-	Set	$ -	$ -	$ 3,500	$ -	$ 3,500.00	**$ -**
4.11	Rider Poles	-	EA	$ 1,750	$ -	$ 3,500	$ -	$ 5,250.00	**$ -**
TOTAL: CONDUCTOR, SHIELDWIRE, OPGW:					$ 65,923		$ 437,250		**$ 503,173**
5. INSULATOR, FITTINGS, HARDWARE									
5.1	115kV Tangent (1-Group of 9-Bells Each Assembly)	33	Assembly	$ 1,000	$ 33,000	$ 560	$ 18,480	$ 1,560	**$ 51,480**
5.2	115kV Dead-end & Angle Insulators (1-Group of 9-Bells Each Assembly)	66	Assembly	$ 1,000	$ 66,000	$ 560	$ 36,960	$ 1,560	**$ 102,960**
5.3	15kV Tangent	12	Assembly	$ 100	$ 1,200	$ 75	$ 900	$ 175	**$ 2,100**
5.4	15kV Dead-end & Angle Insulators	18	Assembly	$ 100	$ 1,800	$ 75	$ 1,350	$ 175	**$ 3,150**
5.5	Neutral, Distribution, Tangent	4	Assembly	$ 100	$ 400	$ 75	$ 300	$ 175	**$ 700**
5.6	Neutral, Distribution, DE/Side	2	Assembly	$ 100	$ 200	$ 75	$ 150	$ 175	**$ 350**
5.7	Jumper, DE/Angle, 3PH	4	Assembly	$ 100	$ 400	$ 75	$ 300	$ 175	**$ 700**
5.8	OPGW Assembly - Tangent	2	Assembly	$ 200	$ 400	$ 150	$ 300	$ 350	**$ 700**
5.9	OSHW Assembly - Tangent	11	Assembly	$ 250	$ 2,750	$ 150	$ 1,650	$ 400	**$ 4,400**
5.10	OHSW Assembly - Angle / DE	38	Assembly	$ 250	$ 9,500	$ 150	$ 5,700	$ 400	**$ 15,200**
5.11	OPGW Splice Boxes	-	Set	$ 1,746	$ -	$ 2,274	$ -	$ 4,020	**$ -**
5.12	OPGW Splice & Test	-	EA	$ 2,520	$ -	$ 2,520	$ -	$ 5,040	**$ -**
5.13	Spacer - Conductor	-	EA	$ 50	$ -	$ 35	$ -	$ 85	**$ -**
5.14	Vibration Dampers - Conductor	-	EA	$ 35	$ -	$ 35	$ -	$ 70	**$ -**
5.15	Shieldwire / OPGW Dampers, Misc. Fittings	-	EA	$ 27	$ -	$ 35	$ -	$ 62	**$ -**
5.16	Guys, Anchors, and Accessories	14.0	EA	$ 720	$ 10,080	$ 885	$ 12,390	$ 1,605	**$ 22,470**
5.17	Misc. materials (Signs and Markers)	-	Mile	$ 770	$ -	$ 1,006	$ -	$ 1,776	**$ -**
5.18					$ -		$ -		**$ -**
5.19	Interconnection Arrangements	8	EA	$ 5,000	$ 40,000	$ 5,000	$ 40,000	$ 10,000	**$ 80,000**
5.20					$ -		$ -		**$ -**
5.21					$ -		$ -		**$ -**
5.22					$ -		$ -		**$ -**
5.23					$ -		$ -		**$ -**
TOTAL - INSULATOR, FITTINGS, HARDWARE					$ 165,730		$ 118,480		$ 284,210
N. Interconnection Rotterdam Station					$ 970,519		$ 2,951,893		$ 3,922,412
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
6.1	Mob / Demob	1	LS	$ -	$ -	$ 39,224	$ 39,224	$ 39,224	**$ 39,224**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
	Project Management, Material Handling & Amenities								
6.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 210,473	$ 210,473	$ 210,473	**$ 210,473**
6.3	Utility PM and Project Oversite	1	LS		$ -	$ 39,224	$ 39,224	$ 39,224	**$ 39,224**
6.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 39,224	$ 39,224	$ 39,224	**$ 39,224**
	Engineering								
6.5	Design Engineering	1	LS	$ -	$ -	$ 196,121	$ 196,121	$ 196,121	**$ 196,121**
6.6	LiDAR	1	LS	$ -	$ -	$ 11,767	$ 11,767	$ 11,767	**$ 11,767**
6.7	Geotech	1	Location	$ -	$ -	$ 3,500	$ 3,500	$ 3,500	**$ 3,500**
6.8	Surveying/Staking	1	LS	$ -	$ -	$ 27,457	$ 27,457	$ 27,457	**$ 27,457**
	Testing & Commissioning								
6.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 40,000	$ 40,000	$ 40,000	**$ 40,000**
	Permitting and Additional Costs								
6.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.12	Warranties / LOC's	1	LS	$ -	$ -	$ 11,767	$ 11,767	$ 11,767	**$ 11,767**
6.13	Real Estate Costs (New ROW)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.14	Real Estate Costs (Incumbent Utility ROW)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.18	Sales Tax on Materials	1	LS	$ 77,642	$ 77,642	$ -	$ -	$ 77,642	**$ 77,642**
6.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 3,922	$ 3,922	$ 3,922	**$ 3,922**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 77,642		$ 622,679		**$ 700,321**

NAT & NYPA - T026 - (Segment A, Base)

System Upgrade Facilities (Various Stations for Edic/Marcy to New Scotland)

Estimate Revision: 7

Total: $ 6,899,000

SYSTEM UPGRADE FACILITIES		Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Sum	Labor & Equipment Supply Rate	Labor & Equipment Sum	Total Unit Rate	TOTAL
SUF SS1	**Marcy 345kV Bay 3300 - Reconductor Strain Bus UNS-18 Marcy-New Scotland Line**	1	LS	$ -	$ -	$ -	$ -	$ 664,560	$ 665,000
SUF SS1	Removals	1	LS	$ -	$ -	$ -	$ -	$ 30,000	$ 30,000
SUF SS1	Engineering, T&C, PM, Indirects (25%)		LS %						$ 174,000
SUF SS1	**SUF SS1 - TOTAL:**				**$ -**		**$ -**		**$ 869,000**
SUF SS2	**Marcy 345kV Bay 3100 - Reconductor Strain Bus, Replace (3) breakers and wave trap UE1-7- Marcy-Edic Line**	1	LS	$ -	$ -	$ -	$ -	$ 2,946,086	$ 2,947,000
SUF SS2	Removals	1	LS	$ -	$ -	$ -	$ -	$ 120,720	$ 121,000
SUF SS2	Engineering, T&C, PM, Indirects (25%)		LS %						$ 767,000
SUF SS2	**SUFSS 2 - TOTAL:**				**$ -**		**$ -**		**$ 3,835,000**
SUF SS3	**Edic 345kV Bay - UE1-7- Marcy-Edic Line Replace (2) breakers and wave trap**	1	LS					$ 1,661,294	$ 1,662,000
SUF SS3	Removals	1	LS	$ -	$ -	$ -	$ -	$ 93,120	$ 94,000
SUF SS3	Engineering, T&C, PM, Indirects (25%)		LS %						$ 439,000
SUF SS3	**SUF SS3 - TOTAL:**				**$ -**		**$ -**		**$ 2,195,000**
SUF SS4		-	LS	$ -	$ -	$ -	$ -		$ -
SUF SS4	Removals		LS %					$ -	$ -
SUF SS4	Engineering, T&C, PM, Indirects (25%)		LS %						$ -
SUF SS4	**SUF SS4 - TOTAL:**				**$ -**		**$ -**		**$ -**
SUF SS5		-	LS	$ -	$ -	$ -	$ -		$ -
SUF SS5	Removals		LS %					$ -	$ -
SUF SS5	Engineering, T&C, PM, Indirects (25%)		LS %						$ -
SUF SS5	**SUF SS4 - TOTAL:**				**$ -**		**$ -**		**$ -**
	STATIONS SUF DIRECT TOTAL:								**$ 5,519,000**
	STATIONS SUF INDIRECT TOTAL:								**$ 1,380,000**
	STATIONS SUF TOTAL								**$ 6,899,000**

NAT & NYPA - T026 - (Segment A, Base)	
ESTIMATE ASSUMPTIONS & CLARIFICATIONS	
1	Cost Estimate is based on 2017 rates.
2	Construction schedule is in accordance with proposed schedule - we have assumed continuous working with no breaks in the schedule. Six months have been added to the construction schedule for start up and close out works and assisting in pre-construction activities (i.e. permitting activities, material procurement etc.).
3	We have assumed a typical work week of five-(5) days per week at ten-(10) hours per day (5 x 10 hour days).
4	All labor rates and benefits used for estimating purposes are taken from IBEW Local 1249 working agreement as updated 5-8-2017.
5	We have assumed that the Access Road included in Developer Estimate will be Type 1 Gravel Type.
6	Costs will vary for handling and disposal of contaminated spoils, depending on type of contaminants and availability / location of the appropriate tipping facility. Since there is not enough information to provide a quantified estimate for this item, allowance is included in the contingency monies.
7	Costs have been developed based on historical data from Projects of a similar nature (AACE Class 5 and 4 Estimating Practices). We have not engaged any subcontractors for formal quotes.
8	Foundation rates include supply and installation of materials. Drilled Pier rates include supply and testing of concrete, rebar cage and the use of temp or permanent casing.
9	A Contractor Mark-Up (OH&P) of 15% has been included in the Total section.
10	We have assumed that all project details provided are accurate unless noted otherwise.
11	Any SUF pricing includes 35% to cover Contractor markup (15%) and contingency (20%)
12	A contractor allowance of 1% for mobilization and demobilization has been included in the total section.
13	A contractor allowance of 4.644% for project management and staffing has been included in the total section. This also includes agricultural inspector, engineering inspector, safety inspector, compliance inspector, environmental inspector, and SWPP inspector.
14	An allowance of 1% for Utility PM and Project Oversite staffing has been included in the total section.
15	A contractor allowance of 1% for site accommodation, facilities, and storage has been included in the total section.
16	An allowance of 5% for transmission design and engineering has been included in the total section.
17	An allowance of 8% for substation design and engineering has been included in the total section.
18	An allowance of 0.7% for survey and staking of the transmission line and substation layout has been included in the total section.
19	An allowance of 0.3% for LIDAR of the transmission line has been included in the total section.
20	An allowance of 3.75% for substation testing and commissioning has been included in the total section.
21	An allowance of $20,000.00 per circuit for transmission line testing and commissioning has been included in the total section.
22	New York state sales tax of 8% is included in all material pricing.
23	An allowance of 1.5% for insurance is included in the DPS sheet.
24	The SUF estimates for the stations are rough order of magnitude estimates. No engineering was performed and SECo did not have access to record drawings.

NY Power Authority and North American Transmission (T027)			
		Description	**Total Amount** (In thousand $)
Direct Cost	1	**Transmission Lines**	
	1.1	Clearing & Access	$56,801
	1.2	Foundations	$31,116
	1.3	Structures	$106,166
	1.4	Conductor, Shiedwire and Optical Ground Wire	$62,279
	1.5	Insulators, Fitting and Hardwares	$26,553
		Subtotal (1)	**$282,915**
	2	**Substations**	
	2.1	Rotterdam Substation	$48,340
	2.2	Edic Substation	$5,333
	2.3	Princetown Substation	$29,872
	2.4	New Scotland Substation	$7,717
	2.5	Porter Substation	$546
	2.6	Knickerbocker Substation	$0
	2.7	Marcy Substation	$0
	2.8	Substation Interconnections	$8,301
		Subtotal (2)	**$100,109**
		Total (1+2)	$383,023
		Contractors Mark-up (15% of Total 1+2)	$57,453
		Total Direct Cost (A)	**$440,477**
Indirect Cost	3	**Technical Services Costs**	
	3.1	Contractor Mobilization / Demobilization	$3,830
	3.2	Project Management, Material Handling & Amenities	$22,218
	3.3	Engineering	$25,799
	3.4	Testing & Commissioning	$2,557
	3.5	Permitting, Real Estate, Sales Tax and Additional Costs	$26,351
	3.6	Compensation for use of NYPA Structures (2 Circuit)	$17,838
	3.7	Legal, Environmental Licensing & Permitting and Environmental Mitigation	$8,278
		Total Indirect Cost (3)	**$106,872**
		Subtotal Project Cost (B=A+3) 2017 $	**$547,348**
	4	**Network Upgrade Facilities (NUF)**	
	4.1	NUF proposed as element of the Project (Marcy and Edic Terminals)	$7,727
	4.2	NUF identified during Evaluation (Everett - Wolf Road 115kV Upgrade)	$5,000
		Subtotal NUF Cost (C)	**$12,727**

Total Project Cost (B+C) 2017 $	**$560,075**

Total Project Cost 2018 $	**$576,878**

NAT & NYPA - T027 - (Segment A, Double Circuit)

Estimate Revision: 8

NAT & NYPA - T027 - (Segment A, Double Circuit) - Direct Costs		*Total Each Segment*
Direct Labor, Material & Equipment Costs	A. Transmission Line Edic to Princetown	$ 192,806,381
Direct Labor, Material & Equipment Costs	B. Transmission Line Princetown to Rotterdam	$ 20,488,282
Direct Labor, Material & Equipment Costs	C. Transmission Line Princetown to New Scotland	$ 69,619,908
Direct Labor, Material & Equipment Costs	D. Rotterdam Substation - Install	$ 44,728,474
Direct Labor, Material & Equipment Costs	E. Rotterdam Substation - Removal	$ 3,611,030
Direct Labor, Material & Equipment Costs	F. Edic Substation - Install	$ 5,211,229
Direct Labor, Material & Equipment Costs	G. Edic Substation - Removal	$ 122,000
Direct Labor, Material & Equipment Costs	H. New Scotland Substation - Install	$ 7,635,864
Direct Labor, Material & Equipment Costs	I. New Scotland Substation - Removal	$ 81,300
Direct Labor, Material & Equipment Costs	J. Porter Substation - Install	$ 71,912
Direct Labor, Material & Equipment Costs	K. Porter Substation - Removal	$ 474,313
Direct Labor, Material & Equipment Costs	L. Interconnection Edic Station	$ 1,784,075
Direct Labor, Material & Equipment Costs	M. Interconnection New Scotland Station	$ 2,594,271
Direct Labor, Material & Equipment Costs	N. Interconnection Rotterdam Station	$ 3,922,412
Direct Labor, Material & Equipment Costs	O. System Upgrade Facilities (Everett - Wolf Road 115kV Upgrade)	$ 3,571,500
Direct Labor, Material & Equipment Costs	P. System Upgrade Facilities (Various Stations for Edic to New Scotland)	$ 5,519,000
Direct Labor, Material & Equipment Costs	Q. Princetown GIS Substation - Install	$ 29,871,757
	SUBTOTAL:	$ 392,113,708
	CONTRACTOR MARK-UP (OH&P)	$ 58,817,056
	CONTINGENCY ON ENTIRE PROJECT	$ -
	TOTAL DIRECT:	$ 450,930,765

NAT & NYPA - T027 - (Segment A, Double Circuit) - Indirect Costs		*Total Each Segment*
Indirect Costs	A. Transmission Line Edic to Princetown	$ 57,168,362
Indirect Costs	B. Transmission Line Princetown to Rotterdam	$ 4,270,750
Indirect Costs	C. Transmission Line Princetown to New Scotland	$ 14,220,805
Indirect Costs	D. Rotterdam Substation - Install	$ 10,456,962
Indirect Costs	E. Rotterdam Substation - Removal	$ 548,904
Indirect Costs	F. Edic Substation - Install	$ 1,207,020
Indirect Costs	G. Edic Substation - Removal	$ 18,423
Indirect Costs	H. New Scotland Substation - Install	$ 1,746,869
Indirect Costs	I. New Scotland Substation - Removal	$ 12,277
Indirect Costs	J. Porter Substation - Install	$ 14,217
Indirect Costs	K. Porter Substation - Removal	$ 71,625
Indirect Costs	L. Interconnection Edic Station	$ 320,046
Indirect Costs	M. Interconnection New Scotland Station	$ 480,828
Indirect Costs	N. Interconnection Rotterdam Station	$ 638,929
Indirect Costs	O. System Upgrade Facilities (Everett - Wolf Road 115kV Upgrade)	$ 892,875
Indirect Costs	P. System Upgrade Facilities (Various Stations for Edic to New Scotland)	$ 1,380,000
Indirect Costs	Q. Princetown GIS Substation - Install	$ 7,418,414
Indirect Costs	Legal and Permitting (Includes Legal, Envir. Lisc. & Permit., and Envir. Mitagation)	$ 8,277,824
	TOTAL INDIRECT:	$ 109,145,128

	TOTAL ESTIMATED COST:	$ 560,075,893

NAT & NYPA - T027 - (Segment A, Double Circuit)

A. Transmission Line Edic to Princetown

Estimate Revision: 8

Total: $ 249,974,743

NAT & NYPA - T027 - (Segment A, Double Circuit)	*Supply*	*Installation*	*Total*	
A. Transmission Line Edic to Princetown				
1. CLEARING & ACCESS	$ 75,250	$ 41,489,402	$ 41,564,652	
2. FOUNDATIONS	$ 3,930,221	$ 14,264,968	$ 18,195,189	
3. STRUCTURES	$ 34,672,483	$ 35,692,215	$ 70,364,698	
4. CONDUCTOR, SHIELDWIRE, OPGW	$ 9,535,493	$ 34,842,335	$ 44,377,828	
5. INSULATORS, FITTINGS, HARDWARE	$ 12,595,660	$ 5,708,354	$ 18,304,014	
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 4,864,729	$ 52,303,633	$ 57,168,362	
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -	0.0%
SUBTOTAL:	$ 65,673,835	$ 184,300,907	$ 249,974,743	
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -	0.0%
TOTAL:	$ 65,673,835	$ 184,300,907	$ 249,974,743	

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Sum	Labor & Equipment Supply Rate	Labor & Equipment Sum	Total Unit Rate	TOTAL
A. Transmission Line Edic to Princetown									
1. CLEARING & ACCESS									
1.1	Clearing the ROW - Heavy (mowing & clearing)	-	Acre	$ -	$ -	$ 15,000	$ -	$ 15,000	$ -
1.2	Clearing the ROW - Light (mowing)	198.0	Acre		$ -	$ 5,000	$ 990,000	$ 5,000	**$ 990,000**
1.3	Permanent Access Road	83,001.6	LF	$ -	$ -	$ 45	$ 3,735,072	$ 45	**$ 3,735,072**
1.4	Silt Fence	415,008	LF	$ -	$ -	$ 4	$ 1,660,032	$ 4	**$ 1,660,032**
1.5	Matting - Access and ROW	332,006.4	LF	$ -	$ -	$ 70	$ 23,240,448	$ 70	**$ 23,240,448**
1.6	Matting - To Work Area	29,325	LF	$ -	$ -	$ 70	$ 2,052,750	$ 70	**$ 2,052,750**
1.7	Snow Removal	78.6	Mile	$ -	$ -	$ 16,000	$ 1,257,600	$ 16,000	**$ 1,257,600**
1.8	ROW Restoration	78.6	Mile	$ -	$ -	$ 10,000	$ 786,000	$ 10,000	**$ 786,000**
1.9	Work Pads	1,955,000	SF	$ -	$ -	$ 4	$ 6,881,600	$ 4	**$ 6,881,600**
1.10	Restoration for Work Pad areas	391,000	SF	$ -	$ -	$ 0.15	$ 58,650	$ 0	**$ 58,650**
1.11	Temporary Access Bridge	-	EA	$ -	$ -	$ 20,035	$ -	$ 20,035	$ -
1.12	Air Bridge	-	EA	$ -	$ -	$ 14,445	$ -	$ 14,445	$ -
1.13	Stabilized Construction Entrance	50	EA	$ -	$ -	$ 4,580	$ 229,000	$ 4,580	**$ 229,000**
1.14	Maintenance and Protection of Traffic on Public Roads	100	EA	$ -	$ -	$ 4,130	$ 413,000	$ 4,130	**$ 413,000**
1.15	Culverts / Misc. Access	55	EA	$ 750	$ 41,250	$ 1,250	$ 68,750	$ 2,000	**$ 110,000**
1.16	Gates	17	EA	$ 2,000	$ 34,000	$ 2,500	$ 42,500	$ 4,500	**$ 76,500**
1.17	Concrete Washout Station	40	EA	$ -	$ -	$ 1,850	$ 74,000	$ 1,850	**$ 74,000**
TOTAL - CLEARING & ACCESS:					$ 75,250		$ 41,489,402		**$ 41,564,652**
2. FOUNDATIONS									
2.1	1-CKT 345KV 3-POLE TANGENT DEADEND (0°-5°)	4	EA	$ 9,391	$ 37,565	$ 63,861	$ 255,442	$ 73,252	**$ 293,007**
2.2	1-CKT 345KV VERTICAL SMALL ANGLE (1°-15°)	10	EA	$ 3,622	$ 36,218	$ 24,628	$ 246,279	$ 28,250	**$ 282,497**
2.3	1-CKT 345KV VERTICAL TANGENT (0°-1°)	76	EA	$ 2,542	$ 193,221	$ 17,288	$ 1,313,899	$ 19,831	**$ 1,507,120**
2.4	2-CKT 345KV VERTICAL SMALL ANGLE (1°-15°)	26	EA	$ 3,845	$ 99,957	$ 26,143	$ 679,708	$ 29,987	**$ 779,665**
2.5	2-CKT 345KV VERTICAL TANGENT (0°-1°)	233	EA	$ 2,863	$ 667,021	$ 19,467	$ 4,535,741	$ 22,329	**$ 5,202,762**
2.6	1-CKT 345KV VERTICAL MEDIUM ANGLE DEADEND (15°-60°)	20	EA	$ 72,091	$ 1,441,825	$ 80,164	$ 1,603,275	$ 152,255	**$ 3,045,099**
2.7	2-CKT 345KV VERTICAL MEDIUM ANGLE DEADEND (15°-60°)	22	EA	$ 66,110	$ 1,454,415	$ 73,512	$ 1,617,275	$ 139,622	**$ 3,071,690**
2.8	Rock Excavation Adder	2,006.675	CY	$ -	$ -	$ 2,000	$ 4,013,350	$ 2,000	**$ 4,013,350**
2.9			EA	$ -	$ -	$ -	$ -	$ -	$ -
2.10			EA	$ -	$ -	$ -	$ -	$ -	$ -
2.11			EA	$ -	$ -	$ -	$ -	$ -	$ -
2.12			EA	$ -	$ -	$ -	$ -	$ -	$ -
2.13			EA	$ -	$ -	$ -	$ -	$ -	$ -
2.14			EA	$ -	$ -	$ -	$ -	$ -	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Sum	Labor & Equipment Supply Rate	Labor & Equipment Sum	Total Unit Rate	TOTAL
2.15			EA	$ -	$ -	$ -	$ -	$ -	$ -
2.16			EA	$ -	$ -	$ -	$ -	$ -	$ -
2.17			EA	$ -	$ -	$ -	$ -	$ -	$ -
2.18			EA	$ -	$ -	$ -	$ -	$ -	$ -
2.19			EA	$ -	$ -	$ -	$ -	$ -	$ -
2.20			EA	$ -	$ -	$ -	$ -	$ -	$ -
2.21			EA	$ -	$ -	$ -	$ -	$ -	$ -
2.22			EA	$ -	$ -	$ -	$ -	$ -	$ -
2.23			EA	$ -	$ -	$ -	$ -	$ -	$ -
2.24			EA	$ -	$ -	$ -	$ -	$ -	$ -
2.26			EA	$ -	$ -	$ -	$ -	$ -	$ -
2.27			EA	$ -	$ -	$ -	$ -	$ -	$ -
2.28			EA	$ -	$ -	$ -	$ -	$ -	$ -
2.29			EA	$ -	$ -	$ -	$ -	$ -	$ -
2.30			EA	$ -	$ -	$ -	$ -	$ -	$ -
2.31									
TOTAL - FOUNDATIONS:					$ 3,930,221		$ 14,264,968		**$ 18,195,189**
3. STRUCTURES									
3.1	1-CKT 345KV 3-POLE TANGENT DEADEND (0°-5°) 80'	4	Structure	$ 69,079	$ 276,316	$ 41,447	$ 165,790	$ 110,526	**$ 442,106**
3.2	1-CKT 345KV VERTICAL MEDIUM ANGLE DEADEND (15°-60°) 115'-150'	20	Structure	$ 139,161	$ 2,783,214	$ 83,496	$ 1,669,928	$ 222,657	**$ 4,453,142**
3.3	1-CKT 345KV VERTICAL SMALL ANGLE (1°-15°) 130'-135'	10	Structure	$ 87,960	$ 879,601	$ 52,776	$ 527,761	$ 140,736	**$ 1,407,362**
3.4	1-CKT 345KV VERTICAL TANGENT (0°-1°) 115'-145'	73	Structure	$ 57,278	$ 4,181,283	$ 34,367	$ 2,508,770	$ 91,645	**$ 6,690,053**
3.5	1-CKT 345KV VERTICAL TANGENT (0°-1°) HD 130'	2	Structure	$ 67,026	$ 134,051	$ 40,215	$ 80,431	$ 107,241	**$ 214,482**
3.6	2-CKT 345KV VERTICAL MEDIUM ANGLE DEADEND (15°-60°) 115'-145'	23	Structure	$ 198,553	$ 4,566,721	$ 119,132	$ 2,740,033	$ 317,685	**$ 7,306,754**
3.7	2-CKT 345KV VERTICAL SMALL ANGLE (1°-15°) 125'-155'	26	Structure	$ 119,083	$ 3,096,149	$ 71,450	$ 1,857,689	$ 190,532	**$ 4,953,838**
3.8	2-CKT 345KV VERTICAL TANGENT (0°-1°) 115'-155'	233	Structure	$ 79,628	$ 18,553,254	$ 47,777	$ 11,131,952	$ 127,404	**$ 29,685,207**
3.9	Remove Existing Foundation	50	EA	$ -	$ -	$ 7,500	$ 375,000	$ 7,500	**$ 375,000**
3.10	Remove Existing Structure and Accessories	994	EA	$ -	$ -	$ 12,500	$ 12,425,000	$ 12,500	**$ 12,425,000**
3.11	Install Grounding and Grounding Accessories	399	Pole	$ 506	$ 201,894	$ 5,539	$ 2,209,862	$ 6,045	**$ 2,411,756**
3.12									
3.13									
3.14									
3.15									
TOTAL - STRUCTURES:					$ 34,672,483		$ 35,692,215		**$ 70,364,698**
4. CONDUCTOR, SHIELDWIRE, OPGW									
4.1	345kV - (1) 954kcmil 54/7 ACSS "Cardinal"	4,563,821	LF	$ 1.90	$ 8,671,260	$ 5.00	$ 22,819,105	$ 6.90	**$ 31,490,365**
4.2	(1) OPGW 36 Fiber AC-33/38/571	390,298	LF	$ 1.35	$ 526,902	$ 5.00	$ 1,951,490	$ 6.35	**$ 2,478,392**
4.3	(1) 3/8" EHS7 Steel	371,448	LF	$ 0.47	$ 174,581	$ 5.00	$ 1,857,240	$ 5.47	**$ 2,031,821**
4.4									
4.5									
4.6									
4.7	Remove Existing Conductor and Accessories	140.0	Mile	$ -	$ -	$ 30,000	$ 4,200,000	$ 30,000.00	**$ 4,200,000**
4.8	Remove Existing OPGW and Accessories	140.0	Mile	$ -	$ -	$ 12,000	$ 1,680,000	$ 12,000.00	**$ 1,680,000**
4.9	Remove Existing OHSW and Accessories	140.0	Mile	$ -	$ -	$ 12,000	$ 1,680,000	$ 12,000.00	**$ 1,680,000**
4.10									
4.11									
4.12									
4.13	Rider Poles (187 Locations)	93	Set	$ 1,750	$ 162,750	$ 3,500	$ 325,500	$ 5,250.00	**$ 488,250**
4.14	Rider Poles - Relocated	94	Set	$ -	$ -	$ 3,500	$ 329,000	$ 3,500.00	**$ 329,000**
4.15									
TOTAL: CONDUCTOR, SHIELDWIRE, OPGW:					$ 9,535,493		$ 34,842,335		**$ 44,377,828**
5. INSULATOR, FITTINGS, HARDWARE									
5.1	345kV Tangent (1-Group of 18-Bells Each Assembly)	3,696	Assembly	$ 1,800	$ 6,652,800	$ 720	$ 2,661,120	$ 2,520	**$ 9,313,920**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Sum	Labor & Equipment Supply Rate	Labor & Equipment Sum	Total Unit Rate	TOTAL
5.2	345kV Dead-end & Angle Insulators (1-Group of 18-Bells Each Assembly)	1,020	Assembly	$ 1,800	$ 1,836,000	$ 720	$ 734,400	$ 2,520	**$ 2,570,400**
5.3			Assembly		$ -		$ -	$ -	**$ -**
5.4	OPGW Assembly - Tangent	345	Assembly	$ 200	$ 69,000	$ 150	$ 51,750	$ 350	**$ 120,750**
5.5	OPGW Assembly - Angle / DE	92	Assembly	$ 250	$ 23,000	$ 150	$ 13,800	$ 400	**$ 36,800**
5.6	OHSW Assembly - Tangent	259	Assembly	$ 200	$ 51,800	$ 150	$ 38,850	$ 350	**$ 90,650**
5.7	OHSW Assembly - Angle / DE	44	Assembly	$ 250	$ 11,000	$ 150	$ 6,600	$ 400	**$ 17,600**
5.8	OPGW Splice Boxes	27	Assembly	$ 1,746	$ 47,146	$ 2,274	$ 61,398	$ 4,020	**$ 108,544**
5.9	OPGW Splice & Test	27	EA	$ 2,520	$ 68,040	$ 2,520	$ 68,040	$ 5,040	**$ 136,080**
5.10	Spacer - Conductor	21,901	EA	$ 50	$ 1,095,050	$ 35	$ 766,535	$ 85	**$ 1,861,585**
5.11	Vibration Dampers - Conductor	4,692	EA	$ 35	$ 164,220	$ 35	$ 164,220	$ 70	**$ 328,440**
5.12	Shield wire / OPGW Dampers, Misc. Fittings	784	EA	$ 27	$ 21,168	$ 35	$ 27,440	$ 62	**$ 48,608**
5.13	Jumpers at Existing Structures (New Cable to Existing)	3	EA	$ 25,000	$ 75,000	$ 25,000	$ 75,000	$ 50,000	**$ 150,000**
5.14	*Replace - Mono Pole Vertical Tangent (1-Group of 18-Bells Each Assembly)*	960	Assembly	$ 1,800	$ 1,728,000	$ 720	$ 691,200	$ 2,520	**$ 2,419,200**
5.15	*Replace - Dead-end & Angle Insulators (1, Group of 18-Bells Each Assembly)*	390	Assembly	$ 1,800	$ 702,000	$ 720	$ 280,800	$ 2,520	**$ 982,800**
5.16	Guys, Anchors, and Accessories	-	EA	$ 719	$ -	$ 883	$ -	$ 1,602	**$ -**
5.17	Misc. materials (Signs and Markers)	66.8	Mile	$ 770	$ 51,436	$ 1,006	$ 67,201	$ 1,776	**$ 118,637**
5.18									
TOTAL - INSULATORS, FITTINGS, HARDWARE:					$ 12,595,660		$ 5,708,354		**$ 18,304,014**
A. Transmission Line Edic to Princetown					$ 60,809,107		$ 131,997,274		**$ 192,806,381**
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
6.1	Mob / Demob	1.0	LS	$ -	$ -	$ 1,928,064	$ 1,928,064	$ 1,928,064	**$ 1,928,064**
	Project Management, Material Handling & Amenities								
6.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 7,328,089	$ 7,328,089	$ 7,328,089	**$ 7,328,089**
6.3	Utility PM and Project Oversite	1	LS		$ -	$ 1,928,064	$ 1,928,064	$ 1,928,064	**$ 1,928,064**
6.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 1,928,064	$ 1,928,064	$ 1,928,064	**$ 1,928,064**
	Engineering								
6.5	Design Engineering	1	LS	$ -	$ -	$ 9,640,319	$ 9,640,319	$ 9,640,319	**$ 9,640,319**
6.6	LiDAR	1	LS	$ -	$ -	$ 578,419	$ 578,419	$ 578,419	**$ 578,419**
6.7	Geotech	67	Location	$ -	$ -	$ 3,500	$ 234,500	$ 3,500	**$ 234,500**
6.8	Surveying/Staking	1	LS	$ -	$ -	$ 1,349,645	$ 1,349,645	$ 1,349,645	**$ 1,349,645**
	Testing & Commissioning								
6.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 40,000	$ 40,000	$ 40,000	**$ 40,000**
	Permitting and Additional Costs								
6.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.12	Warranties / LOC's	1	LS	$ -	$ -	$ 578,419	$ 578,419	$ 578,419	**$ 578,419**
6.13	Real Estate Costs (New ROW)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.14	Real Estate Costs (Incumbent Utility ROW)	1	LS	$ -	$ -	$ 8,739,000	$ 8,739,000	$ 8,739,000	**$ 8,739,000**
6.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.17	Compensation for use of 2 Ckts - NYPA Structures (92 Structures)	1	LS	$ -	$ -	$ 17,838,245	$ 17,838,245	$ 17,838,245	**$ 17,838,245**
6.18	Sales Tax on Materials	1	LS	$ 4,864,729	$ 4,864,729	$ -	$ -	$ 4,864,729	**$ 4,864,729**
6.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 192,806	$ 192,806	$ 192,806	**$ 192,806**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 4,864,729		$ 52,303,633		**$ 57,168,362**

NAT & NYPA - T027 - (Segment A, Double Circuit)

B. Transmission Line Princetown to Rotterdam

Estimate Revision: 8

Total: $ 24,759,032

NAT & NYPA - T027 - (Segment A, Double Circuit)	*Supply*	*Installation*	*Total*
B. Transmission Line Princetown to Rotterdam			
1. CLEARING & ACCESS	$ 6,000	$ 3,038,200	$ 3,044,200
2. FOUNDATIONS	$ 417,002	$ 3,778,708	$ 4,195,711
3. STRUCTURES	$ 3,876,135	$ 4,280,943	$ 8,157,078
4. CONDUCTOR, SHIELDWIRE, OPGW	$ 722,365	$ 2,620,705	$ 3,343,070
5. INSULATORS, FITTINGS, HARDWARE	$ 1,199,031	$ 549,192	$ 1,748,223
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 497,643	$ 3,773,107	$ 4,270,750
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 6,718,177	$ 18,040,855	$ 24,759,032
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 6,718,177	$ 18,040,855	$ 24,759,032

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
B. Transmission Line Princetown to Rotterdam									
1. CLEARING & ACCESS									
1.1	Clearing the ROW - Heavy (mowing & clearing)	-	Acre	$ -	$ -	$ 15,000	$ -	$ 15,000	$ -
1.2	Clearing the ROW - Light (mowing)	24.0	Acre	$ -	$ -	$ 5,000	$ 120,000	$ 5,000	**$ 120,000**
1.3	Access Road	5,280	LF	$ -	$ -	$ 45	$ 237,600	$ 45	**$ 237,600**
1.4	Silt Fence	26,400	LF	$ -	$ -	$ 4	$ 105,600	$ 4	**$ 105,600**
1.5	Matting - Access and ROW	21,120	LF	$ -	$ -	$ 70	$ 1,478,400	$ 70	**$ 1,478,400**
1.6	Matting - To Work Area	2,775	LF	$ -	$ -	$ 70	$ 194,250	$ 70	**$ 194,250**
1.7	Snow Removal	5	Mile	$ -	$ -	$ 16,000	$ 80,000	$ 16,000	**$ 80,000**
1.8	ROW Restoration	5	Mile	$ -	$ -	$ 10,000	$ 50,000	$ 10,000	**$ 50,000**
1.9	Work Pads	185,000	SF	$ -	$ -	$ 4	$ 651,200	$ 4	**$ 651,200**
1.10	Restoration for Work Pad areas	37,000	SF	$ -	$ -	$ 0.2	$ 5,550	$ 0	**$ 5,550**
1.11	Temporary Access Bridge	-	EA	$ -	$ -	$ 20,035	$ -	$ 20,035	$ -
1.12	Air Bridge	-	EA	$ -	$ -	$ 14,445	$ -	$ 14,445	$ -
1.13	Stabilized Construction Entrance	10	EA	$ -	$ -	$ 4,580	$ 45,800	$ 4,580	**$ 45,800**
1.14	Maintenance and Protection of Traffic on Public Roads	10	EA	$ -	$ -	$ 4,130	$ 41,300	$ 4,130	**$ 41,300**
1.15	Gates	-	EA	$ 2,000	$ -	$ 2,500	$ -	$ 4,500	$ -
1.16	Culverts / Misc. Access	8	EA	$ 750	$ 6,000	$ 1,250	$ 10,000	$ 2,000	**$ 16,000**
1.17	Concrete Washout Station	10	EA	$ -	$ -	$ 1,850	$ 18,500	$ 1,850	**$ 18,500**
TOTAL - CLEARING & ACCESS:					$ 6,000		$ 3,038,200		**$ 3,044,200**
2. FOUNDATIONS									
2.1	Direct Embed Foundations - 6' x 18'	56	EA	$ 1,857	$ 104,018	$ 18,603	$ 1,041,794	$ 20,461	**$ 1,145,812**
2.2	Direct Embed Foundations - 6' x 20'	4	EA	$ 2,046	$ 8,185	$ 20,562	$ 82,247	$ 22,608	**$ 90,432**
2.3	Direct Embed Foundations - 6' x 22'	8	EA	$ 2,235	$ 17,880	$ 22,520	$ 180,160	$ 24,755	**$ 198,040**
2.4	Direct Embed Foundations - 7' x 25'	4	EA	$ 3,105	$ 12,422	$ 34,650	$ 138,601	$ 37,756	**$ 151,023**
2.5	Drilled Pier - 6' x 19'	6	EA	$ 17,204	$ 103,223	$ 17,391	$ 104,347	$ 34,595	**$ 207,570**
2.6	Drilled Pier - 8' x 27'	4	EA	$ 42,819	$ 171,274	$ 57,340	$ 229,359	$ 100,158	**$ 400,633**
2.7	Rock Excavation Adder	1,001.1	CY	$ -	$ -	$ 2,000	$ 2,002,200	$ 2,000	**$ 2,002,200**
TOTAL - FOUNDATIONS:					$ 417,002		$ 3,778,708		**$ 4,195,711**
3. STRUCTURES									
3.1	2x 1-CKT 345KV DELTA TANGENT (0°-1°) - 115'	24	Structure	$ 85,544	$ 2,053,056	$ 51,326	$ 1,231,834	$ 136,870	**$ 3,284,890**
3.2	2x 1-CKT 345KV DELTA TANGENT (0°-1°) - 135'	2	Structure	$ 106,005	$ 212,010	$ 63,603	$ 127,206	$ 169,608	**$ 339,216**
3.3	2x 1-CKT 345KV DELTA SMALL ANGLE (1°-15°) - 115'	2	Structure	$ 141,673	$ 283,346	$ 85,004	$ 170,008	$ 226,677	**$ 453,354**
3.4	2x 1-CKT 345KV VERTICAL TANGENT DEADEND (0°-5°) - 115'	4	Structure	$ 109,816	$ 439,264	$ 65,890	$ 263,558	$ 175,706	**$ 702,822**
3.5	2x 1-CKT 345KV VERTICAL MEDIUM ANGLE DEADEND (15°-60°) - 115'	2	Structure	$ 232,656	$ 465,312	$ 139,594	$ 279,187	$ 372,250	**$ 744,499**
3.6	2x 1-CKT 345KV 3-POLE LARGE ANGLE DEADEND (60°-90°) - 115'	1	Structure	$ 176,342	$ 176,342	$ 105,805	$ 105,805	$ 282,147	**$ 282,147**
3.7	2x 1-CKT 345KV 3-POLE TANGENT DEADEND (0°-5°) - 65'	1	Structure	$ 99,493	$ 99,493	$ 59,696	$ 59,696	$ 159,189	**$ 159,189**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.8	2x 1-CKT 345KV DELTA TANGENT (0°-1°) HD- 115'	1	Structure	$ 105,820	$ 105,820	$ 63,492	$ 63,492	$ 169,312	**$ 169,312**
3.9	Remove Existing Foundation	22	EA	$ -	$ -	$ 7,500	$ 163,500	$ 7,500	**$ 163,500**
3.10	Remove Existing Structure and Accessories	109	EA	$ -	$ -	$ 12,500	$ 1,362,500	$ 12,500	**$ 1,362,500**
3.11	Install Grounding and Grounding Accessories	82	Pole	$ 506	$ 41,492	$ 5,539	$ 454,157	$ 6,045	**$ 495,649**
TOTAL - STRUCTURES PRINCTOWN TO NEW SCOTLAND:					$ 3,876,135		$ 4,280,943		**$ 8,157,078**
4. CONDUCTOR, SHIELDWIRE, OPGW									
4.1	345kV - (1) 954kcmil 54/7 ACSS "Cardinal" (R1 - R36)	339,293	LF	$ 1.90	$ 644,657	$ 5.00	$ 1,696,465	$ 6.90	**$ 2,341,122**
4.2	(1) OPGW 36 Fiber AC-33/38/571 (R1 - R36)	28,274	LF	$ 1.35	$ 38,170	$ 5.00	$ 141,370	$ 6.35	**$ 179,540**
4.3	(1) 3/8" EHS7 Steel (R1 - R36)	28,274	LF	$ 0.47	$ 13,289	$ 5.00	$ 141,370	$ 5.47	**$ 154,659**
4.5	Remove Existing Conductor and Accessories	10.0	Mile	$ -	$ -	$ 30,000	$ 300,000	$ 30,000.00	**$ 300,000**
4.6	Remove Existing OPGW and Accessories	10.0	Mile	$ -	$ -	$ 12,000	$ 120,000	$ 12,000.00	**$ 120,000**
4.7	Remove Existing OHSW and Accessories	10.0	Mile	$ -	$ -	$ 12,000	$ 120,000	$ 12,000.00	**$ 120,000**
4.8	Rider Poles	15	EA	$ 1,750	$ 26,250	$ 3,500	$ 52,500	$ 5,250.00	**$ 78,750**
4.9	Rider Poles - Relocated	14	Set	$ -	$ -	$ 3,500	$ 49,000	$ 3,500.00	**$ 49,000**
TOTAL: CONDUCTOR, SHIELDWIRE, OPGW:					$ 722,365		$ 2,620,705		**$ 3,343,070**
5. INSULATOR, FITTINGS, HARDWARE									
5.1	345kV Tangent (1-Group of 18-Bells Each Assembly)	348	Assembly	$ 1,800	$ 626,400	$ 720	$ 250,560	$ 2,520	**$ 876,960**
5.2	345kV Dead-end & Angle Insulators (1-Group of 18-Bells Each Assembly)	240	Assembly	$ 1,800	$ 432,000	$ 720	$ 172,800	$ 2,520	**$ 604,800**
5.3	OPGW Assembly - Tangent	29	Assembly	$ 200	$ 5,800	$ 150	$ 4,350	$ 350	**$ 10,150**
5.4	OPGW Assembly - Angle / DE	16	Assembly	$ 250	$ 4,000	$ 150	$ 2,400	$ 400	**$ 6,400**
5.5	OHSW Assembly - Tangent	29	Assembly	$ 200	$ 5,800	$ 150	$ 4,350	$ 350	**$ 10,150**
5.6	OHSW Assembly - Angle / DE	16	Assembly	$ 250	$ 4,000	$ 150	$ 2,400	$ 400	**$ 6,400**
5.7	OPGW Splice Boxes	8	Assembly	$ 1,746	$ 13,969	$ 2,274	$ 18,192	$ 4,020	**$ 32,161**
5.8	OPGW Splice & Test	8	EA	$ 2,520	$ 20,160	$ 2,520	$ 20,160	$ 5,040	**$ 40,320**
5.9	Spacer - Conductor	1,002	EA	$ 50	$ 50,100	$ 35	$ 35,070	$ 85	**$ 85,170**
5.10	Vibration Dampers - Conductor	852	EA	$ 35	$ 29,820	$ 35	$ 29,820	$ 70	**$ 59,640**
5.11	Shieldwire / OPGW Dampers, Misc. Fittings	116	EA	$ 27	$ 3,132	$ 35	$ 4,060	$ 62	**$ 7,192**
5.12	Guys, Anchors, and Accessories	-	EA	$ 912	$ -	$ 1,058	$ -	$ 1,970	**$ -**
5.13	Misc. materials (Signs and Markers)	5.0	Mile	$ 770	$ 3,850	$ 1,006	$ 5,030	$ 1,776	**$ 8,880**
TOTAL - INSULATORS, FITTINGS, HARDWARE:					$ 1,199,031		$ 549,192		**$ 1,748,223**
B. Transmission Line Princetown to Rotterdam					$ 6,220,534		$ 14,267,748		**$ 20,488,282**
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS									
	Contractor Mobilization / Demobilization								
6.1	Mob / Demob	1	LS	$ -	$ -	$ 204,883	$ 204,883	$ 204,883	**$ 204,883**
	Project Management, Material Handling & Amenities								
6.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 778,708	$ 778,708	$ 778,708	**$ 778,708**
6.3	Utility PM and Project Oversite	1	LS		$ -	$ 204,883	$ 204,883	$ 204,883	**$ 204,883**
6.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 204,883	$ 204,883	$ 204,883	**$ 204,883**
	Engineering								
6.5	Design Engineering	1	LS	$ -	$ -	$ 1,024,414	$ 1,024,414	$ 1,024,414	**$ 1,024,414**
6.6	LiDAR	1	LS	$ -	$ -	$ 61,465	$ 61,465	$ 61,465	**$ 61,465**
6.7	Geotech	5	Location	$ -	$ -	$ 3,500	$ 17,500	$ 3,500	**$ 17,500**
6.8	Surveying/Staking	1	LS	$ -	$ -	$ 143,418	$ 143,418	$ 143,418	**$ 143,418**
	Testing & Commissioning								
6.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 40,000	$ 40,000	$ 40,000	**$ 40,000**
	Permitting and Additional Costs								
6.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.12	Warranties / LOC's	1	LS	$ -	$ -	$ 61,465	$ 61,465	$ 61,465	**$ 61,465**
6.13	Real Estate Costs (New ROW)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.14	Real Estate Costs (Incumbent Utility ROW)	1	LS	$ -	$ -	$ 1,011,000	$ 1,011,000	$ 1,011,000	**$ 1,011,000**
6.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6.18	Sales Tax on Materials	1	LS	$ 497,643	$ 497,643	$ -	$ -	$ 497,643	**$ 497,643**
6.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 20,488	$ 20,488	$ 20,488	**$ 20,488**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 497,643		$ 3,773,107		**$ 4,270,750**

NAT & NYPA - T027 - (Segment A, Double Circuit)

C. Transmission Line Princetown to New Scotland

Estimate Revision: 8

Total: $ 83,840,713

NAT & NYPA - T027 - (Segment A, Double Circuit)	*Supply*	*Installation*	*Total*
C. Transmission Line Princetown to New Scotland			
1. CLEARING & ACCESS	$ 31,000	$ 12,160,694	$ 12,191,694
2. FOUNDATIONS	$ 1,906,579	$ 6,818,398	$ 8,724,977
3. STRUCTURES	$ 14,926,511	$ 12,717,400	$ 27,643,911
4. CONDUCTOR, SHIELDWIRE, OPGW	$ 3,406,079	$ 11,152,295	$ 14,558,374
5. INSULATORS, FITTINGS, HARDWARE	$ 4,435,513	$ 2,065,439	$ 6,500,952
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 1,976,455	$ 12,244,350	$ 14,220,805
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 26,682,137	$ 57,158,576	$ 83,840,713
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 26,682,137	$ 57,158,576	$ 83,840,713

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
C. Transmission Line Princetown to New Scotland									
1. CLEARING & ACCESS									
1.1	Clearing the ROW - Heavy (mowing & clearing)	-	Acre	$ -	$ -	$ 15,000	$ -	$ 15,000	$ -
1.2	Clearing the ROW - Light (mowing)	64.0	Acre	$ -	$ -	$ 5,000	$ 320,000	$ 5,000	**$ 320,000**
1.3	Permanent Access Road	20,803.2	LF	$ -	$ -	$ 45	$ 936,144	$ 45	**$ 936,144**
1.4	Silt Fence	104,016.0	LF	$ -	$ -	$ 4	$ 416,064	$ 4	**$ 416,064**
1.5	Matting - Access and ROW	83,212.8	LF	$ -	$ -	$ 70	$ 5,824,896	$ 70	**$ 5,824,896**
1.6	Matting - To Work Area	12,450	LF	$ -	$ -	$ 70	$ 871,500	$ 70	**$ 871,500**
1.7	Snow Removal	19.7	Mile	$ -	$ -	$ 16,000	$ 315,200	$ 16,000	**$ 315,200**
1.8	ROW Restoration	19.7	Mile	$ -	$ -	$ 10,000	$ 197,000	$ 10,000	**$ 197,000**
1.9	Work Pads	830,000	SF	$ -	$ -	$ 4	$ 2,921,600	$ 4	**$ 2,921,600**
1.10	Restoration for Work Pad areas	166,000	SF	$ -	$ -	$ 0.2	$ 24,900	$ 0	**$ 24,900**
1.11	Temporary Access Bridge	-	EA	$ -	$ -	$ 20,035	$ -	$ 20,035	$ -
1.12	Air Bridge	2	EA	$ -	$ -	$ 14,445	$ 28,890	$ 14,445	**$ 28,890**
1.13	Stabilized Construction Entrance	-	EA	$ -	$ -	$ 4,580	$ -	$ 4,580	$ -
1.14	Maintenance and Protection of Traffic on Public Roads	50	EA	$ -	$ -	$ 4,130	$ 206,500	$ 4,130	**$ 206,500**
1.15	Gates	11	EA	$ 2,000	$ 22,000	$ 2,500	$ 27,500	$ 4,500	**$ 49,500**
1.16	Culverts / Misc. Access	12	EA	$ 750	$ 9,000	$ 1,250	$ 15,000	$ 2,000	**$ 24,000**
1.17	Concrete Washout Station	30	EA	$ -	$ -	$ 1,850	$ 55,500	$ 1,850	**$ 55,500**
TOTAL - CLEARING & ACCESS:					$ 31,000		$ 12,160,694		**$ 12,191,694**
2. FOUNDATIONS									
2.1	1-CKT 345KV VERTICAL SMALL ANGLE (1°-15°)	2	EA	$ 4,993	$ 9,985	$ 33,950	$ 67,900	$ 38,942	**$ 77,885**
2.2	1-CKT 345KV VERTICAL TANGENT (0°-1°)	33	EA	$ 4,364	$ 144,020	$ 29,677	$ 979,338	$ 34,041	**$ 1,123,358**
2.3	2-CKT 345KV VERTICAL SMALL ANGLE (1°-15°)	7	EA	$ 3,880	$ 27,162	$ 26,386	$ 184,700	$ 30,266	**$ 211,862**
2.4	2-CKT 345KV VERTICAL TANGENT (0°-1°)	105	EA	$ 2,848	$ 299,001	$ 19,364	$ 2,033,204	$ 22,211	**$ 2,332,205**
2.5	1-CKT 345KV VERTICAL MEDIUM ANGLE DEADEND (15°-60°)	3	EA	$ 58,386	$ 175,157	$ 64,912	$ 194,736	$ 123,297	**$ 369,892**
2.6	2-CKT 345KV VERTICAL MEDIUM ANGLE DEADEND (15°-60°)	16	EA	$ 78,203	$ 1,251,255	$ 86,945	$ 1,391,121	$ 165,148	**$ 2,642,376**
2.7	Rock Excavation Adder	983.7	CY	$ -	$ -	$ 2,000	$ 1,967,400	$ 2,000	**$ 1,967,400**
2.8									
2.9									
2.10									
2.11									
2.12									
2.13									
2.14									
2.15									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.16									
2.17									
2.18									
2.19									
2.20									
2.21									
2.22									
2.23									
TOTAL - FOUNDATIONS:					$ 1,906,579		$ 6,818,398		**$ 8,724,977**
3. STRUCTURES									
3.1	1-CKT 345KV VERTICAL MEDIUM ANGLE DEADEND (15°-60°) 115'	3	Structure	$ 116,328	$ 348,984	$ 69,797	$ 209,390	$ 186,125	**$ 558,374**
3.2	1-CKT 345KV VERTICAL SMALL ANGLE (1°-15°) 130'	2	Structure	$ 85,082	$ 170,163	$ 51,049	$ 102,098	$ 136,130	**$ 272,261**
3.3	1-CKT 345KV VERTICAL TANGENT (0°-1°) 115'-135'	33	Structure	$ 56,569	$ 1,866,787	$ 33,942	$ 1,120,072	$ 90,511	**$ 2,986,859**
3.4	2-CKT 345KV VERTICAL MEDIUM ANGLE DEADEND (15°-60°) 115'-145'	16	Structure	$ 201,043	$ 3,216,691	$ 120,626	$ 1,930,015	$ 321,669	**$ 5,146,706**
3.5	2-CKT 345KV VERTICAL SMALL ANGLE (1°-15°) 115'-165'	7	Structure	$ 124,542	$ 871,794	$ 74,725	$ 523,076	$ 199,267	**$ 1,394,870**
3.6	2-CKT 345KV VERTICAL TANGENT (0°-1°) 115'-145'	105	Structure	$ 79,696	$ 8,368,096	$ 47,818	$ 5,020,857	$ 127,514	**$ 13,388,953**
3.7	Remove Existing Foundation	124	EA	$ -	$ -	$ 7,500	$ 930,000	$ 7,500	**$ 930,000**
3.8	Remove Existing Lattice Structure and Accessories	30	EA	$ -	$ -	$ 12,500	$ 375,000	$ 12,500	**$ 375,000**
3.9	Remove Existing Structure and Accessories	127	EA		$ -	$ 12,500	$ 1,587,500	$ 12,500	**$ 1,587,500**
3.10	Install Grounding and Grounding Accessories	166	Pole	$ 506	$ 83,996	$ 5,539	$ 919,391	$ 6,045	**$ 1,003,387**
3.11									
TOTAL - STRUCTURES:					$ 14,926,511		$ 12,717,400		**$ 27,643,911**
4. CONDUCTOR, SHIELDWIRE, OPGW									
4.1	**345kV** - (1) 954kcmil 54/7 ACSS "Cardinal"	1,533,470	LF	$ 1.90	$ 2,913,593	$ 5.00	$ 7,667,350	$ 6.90	**$ 10,580,943**
4.2	(1) OPGW 36 Fiber AC-33/38/571	255,578	LF	$ 1.35	$ 345,030	$ 5.00	$ 1,277,890	$ 6.35	**$ 1,622,920**
4.3	(1) 3/8" EHS7 Steel	220,651	LF	$ 0.47	$ 103,706	$ 5.00	$ 1,103,255	$ 5.47	**$ 1,206,961**
4.4	Remove Existing Conductor and Accessories	17.2	Mile	$ -	$ -	$ 30,000	$ 516,000	$ 30,000.00	**$ 516,000**
4.5	Remove Existing OPGW and Accessories	17.2	Mile	$ -	$ -	$ 12,000	$ 206,400	$ 12,000.00	**$ 206,400**
4.6	Remove Existing OHSW and Accessories	17.2	Mile	$ -	$ -	$ 12,000	$ 206,400	$ 12,000.00	**$ 206,400**
4.7	**115kV** - (1) 954kcmil 54/7 ACSS "Cardinal"	-	LF	$ 1.90	$ -	$ 5.00	$ -	$ 6.90	**$ -**
4.8	(1) OPGW 36 Fiber AC-33/38/571	-	LF	$ 1.35	$ -	$ 5.00	$ -	$ 6.35	**$ -**
4.9	(1) 3/8" EHS7 Steel	-	LF	$ 0.47	$ -	$ 5.00	$ -	$ 5.47	**$ -**
4.10	Rider Poles (50 Locations)	25	EA	$ 1,750	$ 43,750	$ 3,500	$ 87,500	$ 5,250.00	**$ 131,250**
4.11	Rider Poles - Relocated	25	Set	$ -	$ -	$ 3,500	$ 87,500	$ 3,500.00	**$ 87,500**
4.12									
TOTAL - CONDUCTOR, SHIELDWIRE, OPGW:					$ 3,406,079		$ 11,152,295		**$ 14,558,374**
5. INSULATOR, FITTINGS, HARDWARE									
5.1	345kV Tangent (1-Group of 18-Bells Each Assembly)	1,554	Assembly	$ 1,800	$ 2,797,200	$ 720	$ 1,118,880	$ 2,520	**$ 3,916,080**
5.2	115kV Tangent (1-Group of 9-Bells Each Assembly)		Assembly	$ 900	$ -	$ 560	$ -	$ 1,460	**$ -**
5.3	345kV Dead-end & Angle Insulators (1-Group of 18-Bells Each Assembly)	525	Assembly	$ 1,800	$ 945,000	$ 720	$ 378,000	$ 2,520	**$ 1,323,000**
5.4	115kV Dead-end & Angle Insulators (1-Group of 9-Bells Each Assembly)	-	Assembly	$ 900	$ -	$ 560	$ -	$ 1,460	**$ -**
5.5	OPGW Assembly - Tangent	147	Assembly	$ 200	$ 29,400	$ 150	$ 22,050	$ 350	**$ 51,450**
5.6	OPGW Assembly - Angle / DE	38	Assembly	$ 250	$ 9,500	$ 150	$ 5,700	$ 400	**$ 15,200**
5.7	OHSW Assembly - Tangent	112	Assembly	$ 200	$ 22,400	$ 150	$ 16,800	$ 350	**$ 39,200**
5.8	OHSW Assembly - Angle / DE	32	Assembly	$ 250	$ 8,000	$ 150	$ 4,800	$ 400	**$ 12,800**
5.9	OPGW Splice Boxes	8	Assembly	$ 1,746	$ 13,969	$ 2,274	$ 18,192	$ 4,020	**$ 32,161**
5.10	OPGW Splice & Test	8	EA	$ 2,520	$ 20,160	$ 2,520	$ 20,160	$ 5,040	**$ 40,320**
5.11	Spacer - Conductor	8,395	EA	$ 50	$ 419,750	$ 35	$ 293,825	$ 85	**$ 713,575**
5.12	Vibration Dampers - Conductor	1,536	EA	$ 35	$ 53,760	$ 35	$ 53,760	$ 70	**$ 107,520**
5.13	Shieldwire / OPGW Dampers, Misc. Fittings	293	EA	$ 27	$ 7,911	$ 35	$ 10,255	$ 62	**$ 18,166**
5.14	Guys, Anchors, and Accessories	60.0	EA	$ 719	$ 43,140	$ 883	$ 52,997	$ 1,602	**$ 96,137**
5.15	Misc. materials (Signs and Markers)	19.9	Mile	$ 770	$ 15,323	$ 1,006	$ 20,019	$ 1,776	**$ 35,342**
5.16	Jumpers at Existing Structures (New Cable to Existing)	2	EA	$ 25,000	$ 50,000	$ 25,000	$ 50,000	$ 50,000	**$ 100,000**
TOTAL - INSULATORS, FITTINGS, HARDWARE:					$ 4,435,513		$ 2,065,439		**$ 6,500,952**
C. Transmission Line Princetown to New Scotland					$ 24,705,683		$ 44,914,226		**$ 69,619,908**
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6.1	Mob / Demob	1	LS	$ -	$ -	$ 696,199	$ 696,199	$ 696,199	**$ 696,199**
	Project Management, Material Handling & Amenities								
6.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 2,646,079	$ 2,646,079	$ 2,646,079	**$ 2,646,079**
6.3	Utility PM and Project Oversite	1	LS		$ -	$ 696,199	$ 696,199	$ 696,199	**$ 696,199**
6.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 696,199	$ 696,199	$ 696,199	**$ 696,199**
	Engineering								
6.5	Design Engineering	1	LS	$ -	$ -	$ 3,480,995	$ 3,480,995	$ 3,480,995	**$ 3,480,995**
6.6	LiDAR	1	LS	$ -	$ -	$ 208,860	$ 208,860	$ 208,860	**$ 208,860**
6.7	Geotech	20	Location	$ -	$ -	$ 3,500	$ 70,000	$ 3,500	**$ 70,000**
6.8	Surveying/Staking	1	LS	$ -	$ -	$ 487,339	$ 487,339	$ 487,339	**$ 487,339**
	Testing & Commissioning								
6.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 40,000	$ 40,000	$ 40,000	**$ 40,000**
	Permitting and Additional Costs								
6.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.12	Warranties / LOC's	1	LS	$ -	$ -	$ 208,860	$ 208,860	$ 208,860	**$ 208,860**
6.13	Real Estate Costs (New ROW)	1	LS	$ -	$ -	$ 147,000	$ 147,000	$ 147,000	**$ 147,000**
6.14	Real Estate Costs (Incumbent Utility ROW)	1	LS	$ -	$ -	$ 2,797,000	$ 2,797,000	$ 2,797,000	**$ 2,797,000**
6.15	Legal Fees	1	LS	$ -	$ -		$ -	$ -	**$ -**
6.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.18	Sales Tax on Materials	1	LS	$ 1,976,455	$ 1,976,455	$ -	$ -	$ 1,976,455	**$ 1,976,455**
6.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 69,620	$ 69,620	$ 69,620	**$ 69,620**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 1,976,455		$ 12,244,350		**$ 14,220,805**

NAT & NYPA - T027 - (Segment A, Double Circuit)

D. Rotterdam Substation - Install

Estimate Revision: 8

Total: $ 55,185,436

NAT & NYPA - T027 - (Segment A, Double Circuit)	*Supply*	*Installation*	*Total*
D. Rotterdam Substation - Install			
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ 2,896,891	$ 8,763,755	$ 11,660,646
2. SUBSTATION FOUNDATIONS	$ 2,443,003	$ 2,616,200	$ 5,059,203
3. SUBSTATION STRUCTURES	$ 944,980	$ 944,980	$ 1,889,960
4. MAJOR EQUIPTMENT	$ 11,915,000	$ 2,970,000	$ 14,885,000
5. SMALL EQUIPTMENT / MATERIALS	$ 1,994,540	$ 1,060,500	$ 3,055,040
6. CONTROL HOUSE / PANELS	$ 2,927,500	$ 1,477,500	$ 4,405,000
7. MISC ITEMS	$ 1,441,675	$ 2,331,950	$ 3,773,625
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 1,965,087	$ 8,491,875	$ 10,456,962
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 26,528,676	$ 28,656,759	$ 55,185,436
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 26,528,676	$ 28,656,759	$ 55,185,436

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
D. Rotterdam Substation - Install									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	7.4	ACRES	$ -	$ -	$ 203,000	$ 1,497,125	$ 203,000	**$ 1,497,125**
1.2	Station stone within substation fence.	3,175	CY	$ 27	$ 85,725	$ 75	$ 238,125	$ 102	**$ 323,850**
1.3	Substation Fence	2,130	LF	$ 100	$ 213,000	$ 100	$ 213,000	$ 200	**$ 426,000**
1.4	Retaining Wall (1065' x 13')	1	LS	$ 406,755	$ 406,755	$ 925,345	$ 925,345	$ 1,332,100	**$ 1,332,100**
1.5	Compacted Fill (124,583cy Sand)	124,583	CY	$ 17	$ 2,117,911	$ 20	$ 2,491,660	$ 37	**$ 4,609,571**
1.6	Permanent Access Road - 20'-Wide (From Gordon RD)	2,100	LF	$ 35	$ 73,500	$ 285	$ 598,500	$ 320	**$ 672,000**
1.7	Natural Gas Transmission Line Relocation	1	LS	$ -		$ 2,800,000	$ 2,800,000	$ 2,800,000	**$ 2,800,000**
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ 2,896,891		$ 8,763,755		$ 11,660,646
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	8	EA	$ 14,940	$ 119,520	$ 16,000	$ 128,000	$ 30,940	**$ 247,520**
2.1b	Capacitor Bank Foundations	0	EA	$ 56,025	$ -	$ 60,000	$ -	$ 116,025	**$ -**
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	32	EA	$ 26,145	$ 836,640	$ 28,000	$ 896,000	$ 54,145	**$ 1,732,640**
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 26,145	$ -	$ 28,000	$ -	$ 54,145	**$ -**
2.1e	Switch Stand Foundations	102	EA	$ 4,482	$ 457,164	$ 4,800	$ 489,600	$ 9,282	**$ 946,764**
2.1f	Station Service Transformer Stand Foundation	1	EA	$ 4,482	$ 4,482	$ 4,800	$ 4,800	$ 9,282	**$ 9,282**
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1h	Bus Support 1 Ph Foundations	42	EA	$ 4,482	$ 188,244	$ 4,800	$ 201,600	$ 9,282	**$ 389,844**
2.1j	Instrument Transformer Stand Foundations	33	EA	$ 4,482	$ 147,906	$ 4,800	$ 158,400	$ 9,282	**$ 306,306**
2.1k	Arrester Stand Foundations	6	EA	$ 4,482	$ 26,892	$ 4,800	$ 28,800	$ 9,282	**$ 55,692**
2.1m	Wave Trap Stand Foundations	2	EA	$ 4,482	$ 8,964	$ 4,800	$ 9,600	$ 9,282	**$ 18,564**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.1n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1p									
2.2	**230kV**								
2.2a	Circuit Breaker Foundations	1	EA	$ 11,952	$ 11,952	$ 12,800	$ 12,800	$ 24,752	**$ 24,752**
2.2b	Capacitor Bank Foundations	0	EA	$ 44,820	$ -	$ 48,000	$ -	$ 92,820	$ -
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	4	EA	$ 22,410	$ 89,640	$ 24,000	$ 96,000	$ 46,410	**$ 185,640**
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	$ -
2.2e	Switch Stand Foundations	8	EA	$ 3,735	$ 29,880	$ 4,000	$ 32,000	$ 7,735	**$ 61,880**
2.2f	Station Service Transformer Stand Foundation	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2h	Bus Support 1 Ph Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2j	Instrument Transformer Stand Foundations	9	EA	$ 3,735	$ 33,615	$ 4,000	$ 36,000	$ 7,735	**$ 69,615**
2.2k	Arrester Stand Foundations	3	EA	$ 3,735	$ 11,205	$ 4,000	$ 12,000	$ 7,735	**$ 23,205**
2.2m	Wave Trap Stand Foundations	1	EA	$ 3,735	$ 3,735	$ 4,000	$ 4,000	$ 7,735	**$ 7,735**
2.2n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2p									
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	0	EA	$ 5,229	$ -	$ 5,600	$ -	$ 10,829	$ -
2.3b	Capacitor Bank Foundations	0	EA	$ 33,615	$ -	$ 36,000	$ -	$ 69,615	$ -
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	4	EA	$ 16,434	$ 65,736	$ 17,600	$ 70,400	$ 34,034	**$ 136,136**
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	$ -
2.3e	Switch Stand Foundations	4	EA	$ 2,988	$ 11,952	$ 3,200	$ 12,800	$ 6,188	**$ 24,752**
2.3f	Fuse Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3g	Bus Support 3ph Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3h	Bus Support 1 Ph Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3j	Instrument Transformer Stand Foundations	6	EA	$ 2,988	$ 17,928	$ 3,200	$ 19,200	$ 6,188	**$ 37,128**
2.3k	Arrester Stand Foundations	6	EA	$ 2,988	$ 17,928	$ 3,200	$ 19,200	$ 6,188	**$ 37,128**
2.3m	Wave Trap Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment	1	EA	$ 97,110	$ 97,110	$ 104,000	$ 104,000	$ 201,110	**$ 201,110**
2.4b	345-115kV Transformer Foundation w/ Oil Containment	2	EA	$ 74,700	$ 149,400	$ 80,000	$ 160,000	$ 154,700	**$ 309,400**
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad	1	EA	$ 97,110	$ 97,110	$ 104,000	$ 104,000	$ 201,110	**$ 201,110**
2.5b	Generator Foundation	1	EA	$ 16,000	$ 16,000	$ 17,000	$ 17,000	$ 33,000	**$ 33,000**
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	0	EA	$ 5,229	$ -	$ 5,600	$ -	$ 10,829	$ -
2.6b				$ -	$ -	$ -	$ -	$ -	$ -
2.6c				$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION FOUNDATIONS					$ 2,443,003		$ 2,616,200		$ 5,059,203
3. SUBSTATION STRUCTURES									
3.1	**345kV**								

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.1a	Substation A-Frame Structures - Stand alone	8	EA	$ 37,000	$ 296,000	$ 37,000	$ 296,000	$ 74,000	**$ 592,000**
3.1b	Substation A-Frame Structures - Shared Column	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	**$ -**
3.1c	Switch Stands	17	EA	$ 14,800	$ 251,600	$ 14,800	$ 251,600	$ 29,600	**$ 503,200**
3.1d	Station Service Transformer Stand	1	EA	$ 14,800	$ 14,800	$ 14,800	$ 14,800	$ 29,600	**$ 29,600**
3.1e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.1f	Bus Support 1 Ph	42	EA	$ 3,700	$ 155,400	$ 3,700	$ 155,400	$ 7,400	**$ 310,800**
3.1g	Instrument Transformer Stand	33	EA	$ 1,850	$ 61,050	$ 1,850	$ 61,050	$ 3,700	**$ 122,100**
3.1h	Arrester Stand	6	EA	$ 1,850	$ 11,100	$ 1,850	$ 11,100	$ 3,700	**$ 22,200**
3.1j	Wave Trap Stand	2	EA	$ 7,400	$ 14,800	$ 7,400	$ 14,800	$ 14,800	**$ 29,600**
3.1k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	**$ -**
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone	1	EA	$ 33,300	$ 33,300	$ 33,300	$ 33,300	$ 66,600	**$ 66,600**
3.2b	Substation A-Frame Structures - Shared Column	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	**$ -**
3.2c	Switch Stands	2	EA	$ 12,025	$ 24,050	$ 12,025	$ 24,050	$ 24,050	**$ 48,100**
3.2d	Station Service Transformer Stand	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	**$ -**
3.2e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.2f	Bus Support 1 Ph	0	EA	$ 2,775	$ -	$ 2,775	$ -	$ 5,550	**$ -**
3.2g	Instrument Transformer Stand	9	EA	$ 1,295	$ 11,655	$ 1,295	$ 11,655	$ 2,590	**$ 23,310**
3.2h	Arrester Stand	3	EA	$ 1,295	$ 3,885	$ 1,295	$ 3,885	$ 2,590	**$ 7,770**
3.2j	Wave Trap Stand	1	EA	$ 5,550	$ 5,550	$ 5,550	$ 5,550	$ 11,100	**$ 11,100**
3.2k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	**$ -**
3.3	**115kV**								
3.3a	Substation A-Frame Structures - Stand alone	2	EA	$ 18,500	$ 37,000	$ 18,500	$ 37,000	$ 37,000	**$ 74,000**
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	**$ -**
3.3c	Switch Stands	2	EA	$ 7,955	$ 15,910	$ 7,955	$ 15,910	$ 15,910	**$ 31,820**
3.3d	Fuse Stand	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	**$ -**
3.3e	Bus Support 3ph	0	EA	$ 3,330	$ -	$ 3,330	$ -	$ 6,660	**$ -**
3.3f	Bus Support 1 Ph	0	EA	$ 1,850	$ -	$ 1,850	$ -	$ 3,700	**$ -**
3.3g	Instrument Transformer Stand	6	EA	$ 740	$ 4,440	$ 740	$ 4,440	$ 1,480	**$ 8,880**
3.3h	Arrester Stand	6	EA	$ 740	$ 4,440	$ 740	$ 4,440	$ 1,480	**$ 8,880**
3.3j	Wave Trap Stand	0	EA	$ 3,700	$ -	$ 3,700	$ -	$ 7,400	**$ -**
3.3k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	**$ -**
TOTAL - SUBSTATION STRUCTURES					$ 944,980		$ 944,980		$ 1,889,960
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	8	EA	$ 200,000	$ 1,600,000	$ 80,000	$ 640,000	$ 280,000	**$ 2,240,000**
4.1b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	**$ -**
4.1c	345 kV - 230 kV Auto Transformer	1	EA	$ 3,400,000	$ 3,400,000	$ 750,000	$ 750,000	$ 4,150,000	**$ 4,150,000**
4.1d	345 kV - 115 kV Auto Transformer	2	EA	$ 3,400,000	$ 6,800,000	$ 750,000	$ 1,500,000	$ 4,150,000	**$ 8,300,000**
4.2	**230kV**								
4.2a	Circuit Breakers	1	EA	$ 115,000	$ 115,000	$ 80,000	$ 80,000	$ 195,000	**$ 195,000**
4.2b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	**$ -**
4.3	**115kV**								
4.3a	Circuit Breakers	0	EA	$ 52,000	$ -	$ 60,000	$ -	$ 112,000	**$ -**
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ 60,000	$ -	$ 60,000	**$ -**
TOTAL - MAJOR EQUIPTMENT					$ 11,915,000		$ 2,970,000		$ 14,885,000

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator	2	EA	$ 40,000	$ 80,000	$ 15,000	$ 30,000	$ 55,000	**$ 110,000**
5.1b	Disconnect Switches - 3ph w/ manual operator	17	EA	$ 35,000	$ 595,000	$ 17,500	$ 297,500	$ 52,500	**$ 892,500**
5.1c	VT'S	6	EA	$ 25,000	$ 150,000	$ 12,000	$ 72,000	$ 37,000	**$ 222,000**
5.1d	CT'S	6	EA	$ 13,000	$ 78,000	$ 8,000	$ 48,000	$ 21,000	**$ 126,000**
5.1e	CCVT'S	21	EA	$ 13,000	$ 273,000	$ 8,000	$ 168,000	$ 21,000	**$ 441,000**
5.1f	Arresters	15	EA	$ 6,500	$ 97,500	$ 1,500	$ 22,500	$ 8,000	**$ 120,000**
5.1g	Wave Traps	2	EA	$ 13,000	$ 26,000	$ 8,000	$ 16,000	$ 21,000	**$ 42,000**
5.1h	Station Service Transformers	1	EA	$ 200,000	$ 200,000	$ 50,000	$ 50,000	$ 250,000	**$ 250,000**
5.1j		0	EA	$ 15,000	$ -	$ 7,500	$ -	$ 22,500	**$ -**
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator	1	EA	$ 35,000	$ 35,000	$ 15,000	$ 15,000	$ 50,000	**$ 50,000**
5.2b	Disconnect Switches - 3ph w/ manual operator	1	EA	$ 30,000	$ 30,000	$ 17,500	$ 17,500	$ 47,500	**$ 47,500**
5.2c	VT'S	3	EA	$ 13,000	$ 39,000	$ 8,000	$ 24,000	$ 21,000	**$ 63,000**
5.2d	CT'S	3	EA	$ 13,000	$ 39,000	$ 8,000	$ 24,000	$ 21,000	**$ 63,000**
5.2e	CCVT'S	3	EA	$ 10,000	$ 30,000	$ 6,000	$ 18,000	$ 16,000	**$ 48,000**
5.2f	Arresters	6	EA	$ 5,000	$ 30,000	$ 6,000	$ 36,000	$ 11,000	**$ 66,000**
5.2g	Wave Traps	1	EA	$ 13,000	$ 13,000	$ 8,000	$ 8,000	$ 21,000	**$ 21,000**
5.2h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.2j		0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	2	EA	$ 33,000	$ 66,000	$ 15,000	$ 30,000	$ 48,000	**$ 96,000**
5.3b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 28,000	$ -	$ 17,500	$ -	$ 45,500	**$ -**
5.3c	VT'S	6	EA	$ 13,000	$ 78,000	$ 8,000	$ 48,000	$ 21,000	**$ 126,000**
5.3d	CT'S	6	EA	$ 13,000	$ 78,000	$ 8,000	$ 48,000	$ 21,000	**$ 126,000**
5.3e	CCVT'S	2	EA	$ 8,000	$ 16,000	$ 8,000	$ 16,000	$ 16,000	**$ 32,000**
5.3f	Arresters	12	EA	$ 3,420	$ 41,040	$ 6,000	$ 72,000	$ 9,420	**$ 113,040**
5.3g	Wave Traps	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.3h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.3j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ 1,994,540		$ 1,060,500		$ 3,055,040
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE	1	EA	$ 975,000	$ 975,000	$ 170,000	$ 170,000	$ 1,145,000	**$ 1,145,000**
6.2	Protection and Telecom Equipment Panels	29	EA	$ 35,000	$ 1,015,000	$ 10,000	$ 290,000	$ 45,000	**$ 1,305,000**
6.3	125VDC Batteries	2	EA	$ 75,000	$ 150,000	$ 25,000	$ 50,000	$ 100,000	**$ 200,000**
6.4	Control Cables	1	LS	$ 472,500	$ 472,500	$ 472,500	$ 472,500	$ 945,000	**$ 945,000**
6.5	SCADA and Communications	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.6	Low Voltage AC Distribution	2	EA	$ 50,000	$ 100,000	$ 100,000	$ 200,000	$ 150,000	**$ 300,000**
6.7	DC Distribution System	2	EA	$ 50,000	$ 100,000	$ 100,000	$ 200,000	$ 150,000	**$ 300,000**
6.8	Security	1	EA	$ 7,500	$ 7,500	$ 7,500	$ 7,500	$ 15,000	**$ 15,000**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6.9	Fire Alarm	1	EA	$ 7,500	$ 7,500	$ 7,500	$ 7,500	$ 15,000	**$ 15,000**
6.10	Generator	1	EA	$ 100,000	$ 100,000	$ 80,000	$ 80,000	$ 180,000	**$ 180,000**
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ 2,927,500		$ 1,477,500		**$ 4,405,000**
7. MISC ITEMS									
7.1	Conduit & Cable Trench System	1,950	LF	$ 185.00	$ 360,750	$ 170.00	$ 331,500	$ 355	**$ 692,250**
7.2	Rigid Bus, Fittings & Insulators	2,500	LF	$ 125.07	$ 312,675	$ 237.10	$ 592,750	$ 362	**$ 905,425**
7.3	Strain Bus, Connectors & Insulators	2,000	LF	$ 39.30	$ 78,600	$ 53.35	$ 106,700	$ 93	**$ 185,300**
7.4	Grounding System	25,000	LF	$ 6.93	$ 173,250	$ 32.58	$ 814,500	$ 40	**$ 987,750**
7.5	Strain Bus Insulators - 345kV	48	EA	$ 2,000	$ 96,000	$ 1,050	$ 50,400	$ 3,050	**$ 146,400**
7.6	Strain Bus Insulators - 230kV	6	EA	$ 1,400	$ 8,400	$ 750	$ 4,500	$ 2,150	**$ 12,900**
7.7	Strain Bus Insulators - 115kV	12	EA	$ 1,000	$ 12,000	$ 550	$ 6,600	$ 1,550	**$ 18,600**
7.8	Low Voltage AC Station Service	1	LS	$ 50,000	$ 50,000	$ 75,000	$ 75,000	$ 125,000	**$ 125,000**
7.9	SSVT Service	1	LS	$ 45,000	$ 45,000	$ 45,000	$ 45,000	$ 90,000	**$ 90,000**
7.10	Control Conduits from Trench to Equipment	1	LS	$ 125,000	$ 125,000	$ 125,000	$ 125,000	$ 250,000	**$ 250,000**
7.11	Misc. Materials (Above and Below Ground)	1	LS	$ 180,000	$ 180,000	$ 180,000	$ 180,000	$ 360,000	**$ 360,000**
7.12									
7.13									
7.14									
7.15									
7.16									
7.17									
7.18									
7.19									
7.20									
TOTAL - MISC ITEMS					$ 1,441,675		$ 2,331,950		$ 3,773,625
D. Rotterdam Substation - Install					$ 24,563,589		$ 20,164,885		**$ 44,728,474**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1	LS	$ -	$ -	$ 447,285	$ 447,285	$ 447,285	**$ 447,285**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 1,700,017	$ 1,700,017	$ 1,700,017	**$ 1,700,017**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 447,285	$ 447,285	$ 447,285	**$ 447,285**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 447,285	$ 447,285	$ 447,285	**$ 447,285**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 3,578,278	$ 3,578,278	$ 3,578,278	**$ 3,578,278**
8.6	LiDAR	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.7	Geotech	4	EA	$ -	$ -	$ 3,500	$ 14,000	$ 3,500	**$ 14,000**
8.8	Surveying/Staking	1	Site	$ -	$ -	$ 313,099	$ 313,099	$ 313,099	**$ 313,099**
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 1,118,212	$ 1,118,212	$ 1,118,212	**$ 1,118,212**
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 134,185	$ 134,185	$ 134,185	**$ 134,185**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
8.13	Real Estate Costs (New)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.14	Real Estate Costs (Incumbent Utility)	1	LS	$ -	$ -	$ 247,500	$ 247,500	$ 247,500	**$ 247,500**
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.18	Sales Tax on Materials	1	LS	$ 1,965,087	$ 1,965,087	$ -	$ -	$ 1,965,087	**$ 1,965,087**
8.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 44,728	$ 44,728	$ 44,728	**$ 44,728**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 1,965,087		$ 8,491,875		**$ 10,456,962**

NAT & NYPA - T027 - (Segment A, Double Circuit)

E. Rotterdam Substation - Removal

Estimate Revision: 8

Total: $ 4,159,934

NAT & NYPA - T027 - (Segment A, Double Circuit)	*Supply*	*Installation*	*Total*
E. Rotterdam Substation - Removal			
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ -	$ 1,472,750	$ 1,472,750
2. SUBSTATION FOUNDATIONS	$ -	$ 617,400	$ 617,400
3. SUBSTATION STRUCTURES	$ -	$ 534,900	$ 534,900
4. MAJOR EQUIPTMENT	$ -	$ 147,000	$ 147,000
5. SMALL EQUIPTMENT / MATERIALS	$ -	$ 169,500	$ 169,500
6. CONTROL HOUSE / PANELS	$ -	$ 150,000	$ 150,000
7. MISC ITEMS	$ -	$ 519,480	$ 519,480
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ -	$ 548,904	$ 548,904
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ -	$ 4,159,934	$ 4,159,934
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ -	$ 4,159,934	$ 4,159,934

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
E. Rotterdam Substation - Removal									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	6.3	ACRES	$ -	$ -	$ 203,000	$ 1,268,750	$ 203,000	**$ 1,268,750**
1.2	Station stone within substation fence.	2,000	CY	$ -	$ -	$ 102	$ 204,000	$ 102	**$ 204,000**
1.3	Substation Fence	0	LF	$ -	$ -	$ 150	$ -	$ 150	**$ -**
1.4									
1.5									
1.6									
1.7									
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ -		$ 1,472,750		$ 1,472,750
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1e	Switch Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1f	Station Service Transformer Stand Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1k	Arrester Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.1p		0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.2	**230kV**								
2.2a	Circuit Breaker Foundations	9	EA	$ -	$ -	$ 7,200	$ 64,800	$ 7,200	**$ 64,800**
2.2b	Capacitor Bank Foundations	2	EA	$ -	$ -	$ 32,000	$ 64,000	$ 32,000	**$ 64,000**
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	1	EA	$ -	$ -	$ 22,000	$ 22,000	$ 22,000	**$ 22,000**
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	5	EA	$ -	$ -	$ 11,000	$ 55,000	$ 11,000	**$ 55,000**
2.2e	Switch Stand Foundations	15	EA	$ -	$ -	$ 5,200	$ 78,000	$ 5,200	**$ 78,000**
2.2f	Station Service Transformer Stand Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.2g	Bus Support 3ph Foundations	4	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.2h	Bus Support 1 Ph Foundations	59	EA	$ -	$ -	$ 2,400	$ 141,600	$ 2,400	**$ 141,600**
2.2j	Instrument Transformer Stand Foundations	15	EA	$ -	$ -	$ 2,400	$ 36,000	$ 2,400	**$ 36,000**
2.2k	Arrester Stand Foundations	6	EA	$ -	$ -	$ 2,400	$ 14,400	$ 2,400	**$ 14,400**
2.2m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.2n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.2p		0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3e	Switch Stand Foundations	3	EA	$ -	$ -	$ 5,200	$ 15,600	$ 5,200	**$ 15,600**
2.3f	Fuse Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3k	Arrester Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.4b	345-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment	3	EA	$ -	$ -	$ 42,000	$ 126,000	$ 42,000	**$ 126,000**
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.5b	Generator Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.6b		0		$ -	$ -	$ -	$ -	$ -	**$ -**
2.6c		0		$ -	$ -	$ -	$ -	$ -	**$ -**
TOTAL - SUBSTATION FOUNDATIONS					$ -		$ 617,400		$ 617,400
3. SUBSTATION STRUCTURES									
3.1	**345kV**								
3.1a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.1b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.1c	Switch Stands	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.1d	Station Service Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.1e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.1f	Bus Support 1 Ph	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.1g	Instrument Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.1h	Arrester Stand	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.1j	Wave Trap Stand	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.1k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone	1	EA	$ -	$ -	$ 27,000	$ 27,000	$ 27,000	**$ 27,000**
3.2b	Substation A-Frame Structures - Shared Column	5	EA	$ -	$ -	$ 27,000	$ 135,000	$ 27,000	**$ 135,000**
3.2c	Switch Stands	15	EA	$ -	$ -	$ 9,750	$ 146,250	$ 9,750	**$ 146,250**
3.2d	Station Service Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.2e	Bus Support 3ph	4	EA	$ -	$ -	$ 2,250	$ 9,000	$ 2,250	**$ 9,000**
3.2f	Bus Support 1 Ph	59	EA	$ -	$ -	$ 2,250	$ 132,750	$ 2,250	**$ 132,750**
3.2g	Instrument Transformer Stand	15	EA	$ -	$ -	$ 1,050	$ 15,750	$ 1,050	**$ 15,750**
3.2h	Arrester Stand	6	EA	$ -	$ -	$ 1,050	$ 6,300	$ 1,050	**$ 6,300**
3.2j	Wave Trap Stand	3	EA	$ -	$ -	$ 4,500	$ 13,500	$ 4,500	**$ 13,500**
3.2k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.3	**115kV**								
3.3a	Substation A-Frame Structures - Stand alone	2	EA	$ -	$ -	$ 15,000	$ 30,000	$ 15,000	**$ 30,000**
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.3c	Switch Stands	3	EA	$ -	$ -	$ 6,450	$ 19,350	$ 6,450	**$ 19,350**
3.3d	Fuse Stand	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.3e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.3f	Bus Support 1 Ph	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.3g	Instrument Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.3h	Arrester Stand	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.3j	Wave Trap Stand	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.3k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
TOTAL - SUBSTATION STRUCTURES					$ -		$ 534,900		$ 534,900
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
4.1b	Capacitor Banks	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
4.1c		0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
4.1d									
4.2	**230kV**								
4.2a	Circuit Breakers	9	EA	$ -	$ -	$ 7,000	$ 63,000	$ 7,000	**$ 63,000**
4.2b	Capacitor Banks	2	EA	$ -	$ -	$ 42,000	$ 84,000	$ 42,000	**$ 84,000**
4.3	**115kV**								
4.3a	Circuit Breakers	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
TOTAL - MAJOR EQUIPTMENT					$ -		$ 147,000		$ 147,000
5. SMALL EQUIPTMENT / MATERIALS									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	**$ -**
5.1b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	**$ -**
5.1c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.1d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.1e	CCVT'S	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	**$ -**
5.1f	Arresters	0	EA	$ -	$ -	$ 1,500	$ -	$ 1,500	**$ -**
5.1g	Wave Traps	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	**$ -**
5.1h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.1j		0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator	3	EA	$ -	$ -	$ 5,500	$ 16,500	$ 5,500	**$ 16,500**
5.2b	Disconnect Switches - 3ph w/ manual operator	12	EA	$ -	$ -	$ 5,500	$ 66,000	$ 5,500	**$ 66,000**
5.2c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.2d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.2e	CCVT'S	8	EA	$ -	$ -	$ 1,500	$ 12,000	$ 1,500	**$ 12,000**
5.2f	Arresters	15	EA	$ -	$ -	$ 2,500	$ 37,500	$ 2,500	**$ 37,500**
5.2g	Wave Traps	3	EA	$ -	$ -	$ 2,500	$ 7,500	$ 2,500	**$ 7,500**
5.2h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.2j		0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.3b	Disconnect Switches - 3ph w/ manual operator	3	EA	$ -	$ -	$ 5,500	$ 16,500	$ 5,500	**$ 16,500**
5.3c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.3d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.3e	CCVT'S	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.3f	Arresters	9	EA	$ -	$ -	$ 1,500	$ 13,500	$ 1,500	**$ 13,500**
5.3g	Wave Traps	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.3h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.3j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ -		$ 169,500		$ 169,500
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE	1	EA	$ -	$ -	$ 150,000	$ 150,000	$ 150,000	**$ 150,000**
6.2	PANELS	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.3	125VDC Batteries	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.4	Protection and Telecom Equipment	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.5	SCADA and Communications	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.6	Low Voltage AC Distribution	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.7	DC Distribution System	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.8	Security	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.9	Fire Alarm	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.10	Generator	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ -		$ 150,000		**$ 150,000**
7. MISC ITEMS									
7.1	Conduit & Cable Trench System	1	LS	$ -	$ -	$ 42,000.00	$ 42,000	$ 42,000	**$ 42,000**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
7.2	Rigid Bus, Fittings & Insulators	3,200	LF	$ -	$ -	$ 126.25	$ 404,000	$ 126	**$ 404,000**
7.3	Strain Bus, Connectors & Insulators	800	LF	$ -	$ -	$ 39.35	$ 31,480	$ 39	**$ 31,480**
7.4	Grounding System	1	LS	$ -	$ -	$ 42,000.00	$ 42,000	$ 42,000	**$ 42,000**
7.5									
7.6									
7.7									
7.8									
7.9									
7.10									
7.11									
7.12									
7.13									
7.14									
7.15									
TOTAL - MISC ITEMS					$ -		$ 519,480		$ 519,480
E. Rotterdam Substation - Removal					$ -		$ 3,611,030		**$ 3,611,030**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1	LS	$ -	$ -	$ 36,110	$ 36,110	$ 36,110	**$ 36,110**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		$ -	$ 137,246	$ 137,246	$ 137,246	**$ 137,246**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 36,110	$ 36,110	$ 36,110	**$ 36,110**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 36,110	$ 36,110	$ 36,110	**$ 36,110**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 288,882	$ 288,882	$ 288,882	**$ 288,882**
8.6	LiDAR	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.7	Geotech	-	EA	$ -	$ -	$ 3,500	$ -	$ 3,500	**$ -**
8.8	Surveying/Staking	-	Site	$ -	$ -	$ 25,277	$ -	$ 25,277	**$ -**
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	-	LS	$ -	$ -	$ 90,276	$ -	$ 90,276	**$ -**
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 10,833	$ 10,833	$ 10,833	**$ 10,833**
8.13	Real Estate Costs (New)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.14	Real Estate Costs (Incumbent Utility)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.18	Sales Tax on Materials	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 3,611	$ 3,611	$ 3,611	**$ 3,611**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ -		$ 548,904		**$ 548,904**

NAT & NYPA - T027 - (Segment A, Double Circuit)

F. Edic Substation - Install

Estimate Revision: 8

Total: $ 6,418,249

NAT & NYPA - T027 - (Segment A, Double Circuit)	*Supply*	*Installation*	*Total*
F. Edic Substation - Install			
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ 99,300	$ 396,250	$ 495,550
2. SUBSTATION FOUNDATIONS	$ 425,790	$ 456,000	$ 881,790
3. SUBSTATION STRUCTURES	$ 299,700	$ 299,700	$ 599,400
4. MAJOR EQUIPTMENT	$ 600,000	$ 240,000	$ 840,000
5. SMALL EQUIPTMENT / MATERIALS	$ 645,500	$ 315,000	$ 960,500
6. CONTROL HOUSE / PANELS	$ 313,850	$ 138,850	$ 452,700
7. MISC ITEMS	$ 292,289	$ 689,000	$ 981,289
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 214,114	$ 992,905	$ 1,207,020
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 2,890,543	$ 3,527,705	$ 6,418,249
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 2,890,543	$ 3,527,705	$ 6,418,249

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
F. Edic Substation - Install									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	1.25	ACRES	$ -	$ -	$ 203,000	$ 253,750	$ 203,000	**$ 253,750**
1.2	Station stone within substation fence.	900	CY	$ 27	$ 24,300	$ 75	$ 67,500	$ 102	**$ 91,800**
1.3	Substation Fence	750	LF	$ 100	$ 75,000	$ 100	$ 75,000	$ 200	**$ 150,000**
1.4									
1.5									
1.6									
1.7									
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ 99,300		$ 396,250		$ 495,550
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	3	EA	$ 14,940	$ 44,820	$ 16,000	$ 48,000	$ 30,940	**$ 92,820**
2.1b	Capacitor Bank Foundations	0	EA	$ 56,025	$ -	$ 60,000	$ -	$ 116,025	**$ -**
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 26,145	$ -	$ 28,000	$ -	$ 54,145	**$ -**
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 26,145	$ -	$ 28,000	$ -	$ 54,145	**$ -**
2.1e	Switch Stand Foundations	42	EA	$ 4,482	$ 188,244	$ 4,800	$ 201,600	$ 9,282	**$ 389,844**
2.1f	Station Service Transformer Stand Foundation	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	**$ -**
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1h	Bus Support 1 Ph Foundations	17	EA	$ 4,482	$ 76,194	$ 4,800	$ 81,600	$ 9,282	**$ 157,794**
2.1j	Instrument Transformer Stand Foundations	18	EA	$ 4,482	$ 80,676	$ 4,800	$ 86,400	$ 9,282	**$ 167,076**
2.1k	Arrester Stand Foundations	6	EA	$ 4,482	$ 26,892	$ 4,800	$ 28,800	$ 9,282	**$ 55,692**
2.1m	Wave Trap Stand Foundations	2	EA	$ 4,482	$ 8,964	$ 4,800	$ 9,600	$ 9,282	**$ 18,564**
2.1n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1p									
				$ -	$ -	$ -	$ -	$ -	**$ -**
				$ -	$ -	$ -	$ -	$ -	**$ -**
TOTAL - SUBSTATION FOUNDATIONS					$ 425,790		$ 456,000		$ 881,790

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3. SUBSTATION STRUCTURES									
3.1	**345kV**								
3.1a	Substation A-Frame Structures - Stand alone	2	EA	$ 37,000	$ 74,000	$ 37,000	$ 74,000	$ 74,000	**$ 148,000**
3.1b	Substation A-Frame Structures - Shared Column	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	**$ -**
3.1c	Switch Stands	7	EA	$ 14,800	$ 103,600	$ 14,800	$ 103,600	$ 29,600	**$ 207,200**
3.1d	Station Service Transformer Stand	0	EA	$ 14,800	$ -	$ 14,800	$ -	$ 29,600	**$ -**
3.1e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.1f	Bus Support 1 Ph	17	EA	$ 3,700	$ 62,900	$ 3,700	$ 62,900	$ 7,400	**$ 125,800**
3.1g	Instrument Transformer Stand	18	EA	$ 1,850	$ 33,300	$ 1,850	$ 33,300	$ 3,700	**$ 66,600**
3.1h	Arrester Stand	6	EA	$ 1,850	$ 11,100	$ 1,850	$ 11,100	$ 3,700	**$ 22,200**
3.1j	Wave Trap Stand	2	EA	$ 7,400	$ 14,800	$ 7,400	$ 14,800	$ 14,800	**$ 29,600**
3.1k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	**$ -**
TOTAL - SUBSTATION STRUCTURES					$ 299,700		$ 299,700		$ 599,400
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	3	EA	$ 200,000	$ 600,000	$ 80,000	$ 240,000	$ 280,000	**$ 840,000**
4.1b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	**$ -**
4.1c	345 kV - 230 kV Auto Transformer	0	EA	$ -	$ -	$ 750,000	$ -	$ 750,000	**$ -**
4.1d	345 kV - 115 kV Auto Transformer	0	EA	$ -	$ -	$ 750,000	$ -	$ 750,000	**$ -**
4.2	**230kV**								
4.2a	Circuit Breakers	0	EA	$ 115,000	$ -	$ 80,000	$ -	$ 195,000	**$ -**
4.2b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	**$ -**
4.3	**115kV**								
4.3a	Circuit Breakers	0	EA	$ 52,000	$ -	$ 60,000	$ -	$ 112,000	**$ -**
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ 60,000	$ -	$ 60,000	**$ -**
TOTAL - MAJOR EQUIPTMENT					$ 600,000		$ 240,000		$ 840,000
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator	2	EA	$ 40,000	$ 80,000	$ 15,000	$ 30,000	$ 55,000	**$ 110,000**
5.1b	Disconnect Switches - 3ph w/ manual operator	5	EA	$ 35,000	$ 175,000	$ 17,500	$ 87,500	$ 52,500	**$ 262,500**
5.1c	VT'S	6	EA	$ 25,000	$ 150,000	$ 12,000	$ 72,000	$ 37,000	**$ 222,000**
5.1d	CT'S	6	EA	$ 13,000	$ 78,000	$ 8,000	$ 48,000	$ 21,000	**$ 126,000**
5.1e	CCVT'S	6	EA	$ 13,000	$ 78,000	$ 8,000	$ 48,000	$ 21,000	**$ 126,000**
5.1f	Arresters	9	EA	$ 6,500	$ 58,500	$ 1,500	$ 13,500	$ 8,000	**$ 72,000**
5.1g	Wave Traps	2	EA	$ 13,000	$ 26,000	$ 8,000	$ 16,000	$ 21,000	**$ 42,000**
5.1h	Station Service Transformers	0	EA	$ 200,000	$ -	$ 50,000	$ -	$ 250,000	**$ -**
5.1j									
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ 645,500		$ 315,000		$ 960,500
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE	0	EA	$ 551,250	$ -	$ 85,000	$ -	$ 636,250	**$ -**
6.2	Protection and Telecom Equipment Panels	7	EA	$ 35,000	$ 245,000	$ 10,000	$ 70,000	$ 45,000	**$ 315,000**
6.3	125VDC Batteries	0	EA	$ 75,000	$ -	$ 25,000	$ -	$ 100,000	**$ -**
6.4	Control Cables	1	LS	$ 68,850	$ 68,850	$ 68,850	$ 68,850	$ 137,700	**$ 137,700**
6.5	SCADA and Communications	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.6	Low Voltage AC Distribution	0	EA	$ 50,000	$ -	$ 100,000	$ -	$ 150,000	**$ -**
6.7	DC Distribution System	0	EA	$ 50,000	$ -	$ 100,000	$ -	$ 150,000	**$ -**
6.8	Security	0	EA	$ 7,500	$ -	$ 7,500	$ -	$ 15,000	**$ -**
6.9	Fire Alarm	0	EA	$ 7,500	$ -	$ 7,500	$ -	$ 15,000	**$ -**
6.10	Generator	0	EA	$ 100,000	$ -	$ 80,000	$ -	$ 180,000	**$ -**
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ 313,850		$ 138,850		**$ 452,700**
7. MISC ITEMS									
7.1	Conduit & Cable Trench System	1	L.S.	$ 44,400.00	$ 44,400	$ 81,600.00	$ 81,600	$ 126,000	**$ 126,000**
7.2	Rigid Bus, Fittings & Insulators	1	L.S.	$ 75,042.00	$ 75,042	$ 142,260.00	$ 142,260	$ 217,302	**$ 217,302**
7.3	Strain Bus, Connectors & Insulators	1	L.S.	$ 58,950.00	$ 58,950	$ 80,025.00	$ 80,025	$ 138,975	**$ 138,975**
7.4	Grounding System	1	L.S.	$ 31,185.00	$ 31,185	$ 219,915.00	$ 219,915	$ 251,100	**$ 251,100**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
7.5	Strain Bus Insulators - 345kV	24	EA	$ 2,000	$ 48,000	$ 1,050	$ 25,200	$ 3,050	**$ 73,200**
7.6	Strain Bus Insulators - 230kV	0	EA	$ 1,400	$ -	$ 750	$ -	$ 2,150	**$ -**
7.7	Strain Bus Insulators - 115kV	0	EA	$ 1,000	$ -	$ 550	$ -	$ 1,550	**$ -**
7.8	Low Voltage AC Station Service	0	LS	$ 50,000	$ -	$ 75,000	$ -	$ 125,000	**$ -**
7.9	SSVT Service	0	LS	$ 45,000	$ -	$ 45,000	$ -	$ 90,000	**$ -**
7.10	Control Conduits from Trench to Equipment	1	LS	$ 14,000	$ 14,000	$ 70,000	$ 70,000	$ 84,000	**$ 84,000**
7.11	Misc. Materials (Above and Below Ground)	1	LS	$ 20,712	$ 20,712	$ 70,000	$ 70,000	$ 90,712	**$ 90,712**
7.12									
7.13									
7.14									
7.15									
7.16									
7.17									
7.18									
7.19									
7.20									
7.21									
7.22									
7.23									
7.24									
7.25									
TOTAL - MISC ITEMS					$ 292,289		$ 689,000		$ 981,289
F. Edic Substation - Install					$ 2,676,429		$ 2,534,800		**$ 5,211,229**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1	LS	$ -	$ -	$ 52,112	$ 52,112	$ 52,112	**$ 52,112**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 198,066	$ 198,066	$ 198,066	**$ 198,066**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 52,112	$ 52,112	$ 52,112	**$ 52,112**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 52,112	$ 52,112	$ 52,112	**$ 52,112**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 416,898	$ 416,898	$ 416,898	**$ 416,898**
8.6	LiDAR	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.7	Geotech	4	EA	$ -	$ -	$ 3,500	$ 14,000	$ 3,500	**$ 14,000**
8.8	Surveying/Staking	1	Site	$ -	$ -	$ 36,479	$ 36,479	$ 36,479	**$ 36,479**
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 130,281	$ 130,281	$ 130,281	**$ 130,281**
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 15,634	$ 15,634	$ 15,634	**$ 15,634**
8.13	Real Estate Costs (New)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.14	Real Estate Costs (Incumbent Utility)	1	LS	$ -	$ -	$ 20,000	$ 20,000	$ 20,000	**$ 20,000**
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.18	Sales Tax on Materials	1	LS	$ 214,114	$ 214,114	$ -	$ -	$ 214,114	**$ 214,114**
8.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 5,211	$ 5,211	$ 5,211	**$ 5,211**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 214,114		$ 992,905		**$ 1,207,020**

NAT & NYPA - T027 - (Segment A, Double Circuit)

G. Edic Substation - Removal

Estimate Revision: 8

Total: $ 140,423

NAT & NYPA - T027 - (Segment A, Double Circuit)	*Supply*	*Installation*	*Total*	
G. Edic Substation - Removal				
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ -	$ 86,250	$ 86,250	
2. SUBSTATION FOUNDATIONS	$ -	$ 14,000	$ 14,000	
3. SUBSTATION STRUCTURES	$ -	$ 6,750	$ 6,750	
4. MAJOR EQUIPTMENT	$ -	$ -	$ -	
5. SMALL EQUIPTMENT / MATERIALS	$ -	$ 4,500	$ 4,500	
6. CONTROL HOUSE / PANELS	$ -	$ -	$ -	
7. MISC ITEMS	$ -	$ -	$ 10,500	
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ -	$ 18,423	$ 18,423	
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -	0.0%
SUBTOTAL:	$ -	$ 129,923	$ 140,423	
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -	0.0%
TOTAL:	$ -	$ 129,923	$ 140,423	

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
G. Edic Substation - Removal									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	0	ACRES	$ -	$ -	$ 203,000	$ -	$ 203,000	$ -
1.2	Station stone within substation fence.			$ -	$ -	$ 75	$ -	$ 75	$ -
1.3	Substation Fence	575	LF	$ -	$ -	$ 150	$ 86,250	$ 150	**$ 86,250**
1.4									
1.5									
1.6									
1.7									
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ -		$ 86,250		$ 86,250
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	1	EA	$ -	$ -	$ 14,000	$ 14,000	$ 14,000	**$ 14,000**
2.1b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1e	Switch Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1f	Station Service Transformer Stand Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.1j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1k	Arrester Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1p		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2	**230kV**								
2.2a	Circuit Breaker Foundations	0	EA	$ -	$ -	$ 7,200	$ -	$ 7,200	$ -
2.2b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ 32,000	$ -	$ 32,000	$ -
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ 22,000	$ -	$ 22,000	$ -
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ 11,000	$ -	$ 11,000	$ -
2.2e	Switch Stand Foundations	0	EA	$ -	$ -	$ 5,200	$ -	$ 5,200	$ -
2.2f	Station Service Transformer Stand Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.2h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.2j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.2k	Arrester Stand Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.2m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2p		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3e	Switch Stand Foundations	0	EA	$ -	$ -	$ 5,200	$ -	$ 5,200	$ -
2.3f	Fuse Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3k	Arrester Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4b	345-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ 42,000	$ -	$ 42,000	$ -
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5b	Generator Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6b		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6c		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION FOUNDATIONS					$ -		$ 14,000		$ 14,000
3. SUBSTATION STRUCTURES									
3.1	**345kV**								
3.1a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1c	Switch Stands	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1d	Station Service Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1f	Bus Support 1 Ph	3	EA	$ -	$ -	$ 2,250	$ 6,750	$ 2,250	**$ 6,750**
3.1g	Instrument Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1h	Arrester Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1j	Wave Trap Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ 27,000	$ -	$ 27,000	$ -
3.2b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ 27,000	$ -	$ 27,000	$ -
3.2c	Switch Stands	0	EA	$ -	$ -	$ 9,750	$ -	$ 9,750	$ -
3.2d	Station Service Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2f	Bus Support 1 Ph	0	EA	$ -	$ -	$ 2,250	$ -	$ 2,250	$ -
3.2g	Instrument Transformer Stand	0	EA	$ -	$ -	$ 1,050	$ -	$ 1,050	$ -
3.2h	Arrester Stand	0	EA	$ -	$ -	$ 1,050	$ -	$ 1,050	$ -
3.2j	Wave Trap Stand	0	EA	$ -	$ -	$ 4,500	$ -	$ 4,500	$ -
3.2k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3	**115kV**								

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.3a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ 15,000	$ -	$ 15,000	$ -
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3c	Switch Stands	0	EA	$ -	$ -	$ 6,450	$ -	$ 6,450	$ -
3.3d	Fuse Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3f	Bus Support 1 Ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3g	Instrument Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3h	Arrester Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3j	Wave Trap Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION STRUCTURES					$ -		$ 6,750		$ 6,750
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.1b	Capacitor Banks	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.1c		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.1d									
4.2	**230kV**								
4.2a	Circuit Breakers	0	EA	$ -	$ -	$ 7,000	$ -	$ 7,000	$ -
4.2b	Capacitor Banks	0	EA	$ -	$ -	$ 42,000	$ -	$ 42,000	$ -
4.3	**115kV**								
4.3a	Circuit Breakers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - MAJOR EQUIPTMENT					$ -		$ -		$ -
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.1b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.1c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.1d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.1e	CCVT'S	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.1f	Arresters	3	EA	$ -	$ -	$ 1,500	$ 4,500	$ 1,500	**$ 4,500**
5.1g	Wave Traps	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.1h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.1j		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.2b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.2c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2e	CCVT'S	0	EA	$ -	$ -	$ 1,500	$ -	$ 1,500	$ -
5.2f	Arresters	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.2g	Wave Traps	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.2h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2j		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.3c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3e	CCVT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3f	Arresters	0	EA	$ -	$ -	$ 1,500	$ -	$ 1,500	$ -
5.3g	Wave Traps	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ -		$ 4,500		$ 4,500
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE	0	EA	$ -	$ -	$ 150,000	$ -	$ 150,000	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6.2	Protection and Telecom Equipment Panels	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.3	125VDC Batteries	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.4	Control Cables	0	LS	$ -	$ -	$ -	$ -	$ -	$ -
6.5	SCADA and Communications	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.6	Low Voltage AC Distribution	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.7	DC Distribution System	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.8	Security	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.9	Fire Alarm	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.10	Generator	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ -		$ -		$ -
7. MISC ITEMS									
7.1	Conduit & Cable Trench System	0	EA	$ -	$ -	$ 42,000.00	$ -	$ 42,000	$ -
7.2	Rigid Bus, Fittings & Insulators	1	LS	$ -	$ -	$ 10,500.00	$ 10,500	$ 10,500	**$ 10,500**
7.3	Strain Bus, Connectors & Insulators	0	EA	$ -	$ -	$ 39.35	$ -	$ 39	$ -
7.4	Grounding System	0	EA	$ -	$ -	$ 42,000.00	$ -	$ 42,000	$ -
7.5									
7.6									
7.7									
7.8									
7.9									
7.10									
7.11									
7.12									
7.13									
7.14									
7.15									
TOTAL - MISC ITEMS					$ -		$ 10,500		$ 10,500
G. Edic Substation - Removal					$ -		$ 122,000		**$ 122,000**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1	LS	$ -	$ -	$ 1,220	$ 1,220	$ 1,220	**$ 1,220**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		$ -	$ 4,637	$ 4,637	$ 4,637	**$ 4,637**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 1,220	$ 1,220	$ 1,220	**$ 1,220**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 1,220	$ 1,220	$ 1,220	**$ 1,220**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 9,760	$ 9,760	$ 9,760	**$ 9,760**
8.6	LiDAR	-	Mile	$ -	$ -	$ -	$ -	$ -	$ -
8.7	Geotech	-	Site	$ -	$ -	$ -	$ -	$ -	$ -
8.8	Surveying/Staking	-	Site	$ -	$ -	$ 854	$ -	$ 854	$ -
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	-	LS	$ -	$ -	$ 3,050	$ -	$ 3,050	$ -
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 366	$ 366	$ 366	**$ 366**
8.13	Real Estate Costs (New)	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.14	Real Estate Costs (Incumbent Utility)	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.18	Sales Tax on Materials	1	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.19	Fees for permits, including roadway, railroad, building or other local permits	-	LS		$ -	$ 122	$ -	$ 122	$ -
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ -		$ 18,423		**$ 18,423**

NAT & NYPA - T027 - (Segment A, Double Circuit)

H. New Scotland Substation - Install

Estimate Revision: 8

Total: $ 9,382,733

NAT & NYPA - T027 - (Segment A, Double Circuit)	*Supply*	*Installation*	*Total*
H. New Scotland Substation - Install			
1. SITE PREP/ GRADING/ FENCING / CIVIL	**$ 32,400**	**$ 90,000**	**$ 122,400**
2. SUBSTATION FOUNDATIONS	**$ 615,528**	**$ 659,200**	**$ 1,274,728**
3. SUBSTATION STRUCTURES	**$ 296,000**	**$ 296,000**	**$ 592,000**
4. MAJOR EQUIPTMENT	**$ 800,000**	**$ 320,000**	**$ 1,120,000**
5. SMALL EQUIPTMENT / MATERIALS	**$ 590,500**	**$ 329,500**	**$ 920,000**
6. CONTROL HOUSE / PANELS	**$ 937,050**	**$ 660,000**	**$ 1,597,050**
7. MISC ITEMS	**$ 826,181**	**$ 1,183,505**	**$ 2,009,686**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	**$ 327,813**	**$ 1,419,056**	**$ 1,746,869**
CONTRACTOR MARK-UP (OH&P)	**$ -**	**$ -**	**$ -**
SUBTOTAL:	**$ 4,425,472**	**$ 4,957,261**	**$ 9,382,733**
CONTINGENCY ON ENTIRE PROJECT	**$ -**	**$ -**	**$ -**
TOTAL:	**$ 4,425,472**	**$ 4,957,261**	**$ 9,382,733**

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
H. New Scotland Substation - Install									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	0	ACRES	$ -	$ -	$ 203,000	$ -	$ 203,000	**$ -**
1.2	Station stone within substation fence.	1,200	CY	$ 27	$ 32,400	$ 75	$ 90,000	$ 102	**$ 122,400**
1.3	Substation Fence	0	LF	$ 100	$ -	$ 100	$ -	$ 200	**$ -**
1.4	Permanent Access Road - 20'-Wide	0	LF	$ 35	$ -	$ 285	$ -	$ 320	**$ -**
1.5									
1.6									
1.7									
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ 32,400		$ 90,000		$ 122,400
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	4	EA	$ 14,940	$ 59,760	$ 16,000	$ 64,000	$ 30,940	**$ 123,760**
2.1b	Capacitor Bank Foundations	0	EA	$ 56,025	$ -	$ 60,000	$ -	$ 116,025	**$ -**
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	8	EA	$ 26,145	$ 209,160	$ 28,000	$ 224,000	$ 54,145	**$ 433,160**
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 26,145	$ -	$ 28,000	$ -	$ 54,145	**$ -**
2.1e	Switch Stand Foundations	24	EA	$ 4,482	$ 107,568	$ 4,800	$ 115,200	$ 9,282	**$ 222,768**
2.1f	Station Service Transformer Stand Foundation	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	**$ -**
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1h	Bus Support 1 Ph Foundations	21	EA	$ 4,482	$ 94,122	$ 4,800	$ 100,800	$ 9,282	**$ 194,922**
2.1j	Instrument Transformer Stand Foundations	21	EA	$ 4,482	$ 94,122	$ 4,800	$ 100,800	$ 9,282	**$ 194,922**
2.1k	Arrester Stand Foundations	6	EA	$ 4,482	$ 26,892	$ 4,800	$ 28,800	$ 9,282	**$ 55,692**
2.1m	Wave Trap Stand Foundations	3	EA	$ 4,482	$ 13,446	$ 4,800	$ 14,400	$ 9,282	**$ 27,846**
2.1n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1p									
2.2	**230kV**								
2.2a	Circuit Breaker Foundations	0	EA	$ 11,952	$ -	$ 12,800	$ -	$ 24,752	**$ -**
2.2b	Capacitor Bank Foundations	0	EA	$ 44,820	$ -	$ 48,000	$ -	$ 92,820	**$ -**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	$ -
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	$ -
2.2e	Switch Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2f	Station Service Transformer Stand Foundation	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2h	Bus Support 1 Ph Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2j	Instrument Transformer Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2k	Arrester Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2m	Wave Trap Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2p									
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	0	EA	$ 5,229	$ -	$ 5,600	$ -	$ 10,829	$ -
2.3b	Capacitor Bank Foundations	0	EA	$ 33,615	$ -	$ 36,000	$ -	$ 69,615	$ -
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	$ -
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	$ -
2.3e	Switch Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3f	Fuse Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3g	Bus Support 3ph Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3h	Bus Support 1 Ph Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3j	Instrument Transformer Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3k	Arrester Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3m	Wave Trap Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment	0	EA	$ 97,110	$ -	$ 104,000	$ -	$ 201,110	$ -
2.4b	345-115kV Transformer Foundation w/ Oil Containment	0	EA	$ 74,700	$ -	$ 80,000	$ -	$ 154,700	$ -
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad	0	EA	$ 76,194	$ -	$ 81,600	$ -	$ 157,794	$ -
2.5b	Generator Foundation	0	EA	$ 16,000	$ -	$ 17,000	$ -	$ 33,000	$ -
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	2	EA	$ 5,229	$ 10,458	$ 5,600	$ 11,200	$ 10,829	**$ 21,658**
2.6b		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6c		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION FOUNDATIONS					$ 615,528		$ 659,200		$ 1,274,728
3. SUBSTATION STRUCTURES									
3.1	**345kV**								
3.1a	Substation A-Frame Structures - Stand alone	2	EA	$ 37,000	$ 74,000	$ 37,000	$ 74,000	$ 74,000	**$ 148,000**
3.1b	Substation A-Frame Structures - Shared Column	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	$ -
3.1c	Switch Stands	4	EA	$ 14,800	$ 59,200	$ 14,800	$ 59,200	$ 29,600	**$ 118,400**
3.1d	Station Service Transformer Stand	0	EA	$ 14,800	$ -	$ 14,800	$ -	$ 29,600	$ -
3.1e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1f	Bus Support 1 Ph	21	EA	$ 3,700	$ 77,700	$ 3,700	$ 77,700	$ 7,400	**$ 155,400**
3.1g	Instrument Transformer Stand	21	EA	$ 1,850	$ 38,850	$ 1,850	$ 38,850	$ 3,700	**$ 77,700**
3.1h	Arrester Stand	6	EA	$ 1,850	$ 11,100	$ 1,850	$ 11,100	$ 3,700	**$ 22,200**
3.1j	Wave Trap Stand	3	EA	$ 7,400	$ 22,200	$ 7,400	$ 22,200	$ 14,800	**$ 44,400**
3.1k	Lightning Masts - 70'	2	EA	$ 6,475	$ 12,950	$ 6,475	$ 12,950	$ 12,950	**$ 25,900**
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	$ -
3.2b	Substation A-Frame Structures - Shared Column	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	$ -
3.2c	Switch Stands	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	$ -
3.2d	Station Service Transformer Stand	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	$ -
3.2e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2f	Bus Support 1 Ph	0	EA	$ 2,775	$ -	$ 2,775	$ -	$ 5,550	$ -
3.2g	Instrument Transformer Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.2h	Arrester Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	$ -
3.2j	Wave Trap Stand	0	EA	$ 5,550	$ -	$ 5,550	$ -	$ 11,100	$ -
3.2k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
3.3	**115kV**								
3.3a	Substation A-Frame Structures - Stand alone	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	$ -
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	$ -
3.3c	Switch Stands	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	$ -
3.3d	Fuse Stand	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	$ -
3.3e	Bus Support 3ph	0	EA	$ 3,330	$ -	$ 3,330	$ -	$ 6,660	$ -
3.3f	Bus Support 1 Ph	0	EA	$ 1,850	$ -	$ 1,850	$ -	$ 3,700	$ -
3.3g	Instrument Transformer Stand	0	EA	$ 740	$ -	$ 740	$ -	$ 1,480	$ -
3.3h	Arrester Stand	0	EA	$ 740	$ -	$ 740	$ -	$ 1,480	$ -
3.3j	Wave Trap Stand	0	EA	$ 3,700	$ -	$ 3,700	$ -	$ 7,400	$ -
3.3k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
TOTAL - SUBSTATION STRUCTURES					$ 296,000		$ 296,000		$ 592,000
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	4	EA	$ 200,000	$ 800,000	$ 80,000	$ 320,000	$ 280,000	**$ 1,120,000**
4.1b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	$ -
4.1c	345 kV - 230 kV Auto Transformer	0	EA	$ -	$ -	$ 750,000	$ -	$ 750,000	$ -
4.1d	345 kV - 115 kV Auto Transformer	0	EA	$ -	$ -	$ 750,000	$ -	$ 750,000	$ -
4.2	**230kV**								
4.2a	Circuit Breakers	0	EA	$ 115,000	$ -	$ 80,000	$ -	$ 195,000	$ -
4.2b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	$ -
4.3	**115kV**								
4.3a	Circuit Breakers	0	EA	$ 52,000	$ -	$ 60,000	$ -	$ 112,000	$ -
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ 60,000	$ -	$ 60,000	$ -
TOTAL - MAJOR EQUIPTMENT					$ 800,000		$ 320,000		$ 1,120,000
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator	2	EA	$ 40,000	$ 80,000	$ 15,000	$ 30,000	$ 55,000	**$ 110,000**
5.1b	Disconnect Switches - 3ph w/ manual operator	4	EA	$ 35,000	$ 140,000	$ 17,500	$ 70,000	$ 52,500	**$ 210,000**
5.1c	VT'S	6	EA	$ 13,000	$ 78,000	$ 12,000	$ 72,000	$ 25,000	**$ 150,000**
5.1d	CT'S	6	EA	$ 13,000	$ 78,000	$ 8,000	$ 48,000	$ 21,000	**$ 126,000**
5.1e	CCVT'S	9	EA	$ 13,000	$ 117,000	$ 8,000	$ 72,000	$ 21,000	**$ 189,000**
5.1f	Arresters	9	EA	$ 6,500	$ 58,500	$ 1,500	$ 13,500	$ 8,000	**$ 72,000**
5.1g	Wave Traps	3	EA	$ 13,000	$ 39,000	$ 8,000	$ 24,000	$ 21,000	**$ 63,000**
5.1h	Station Service Transformers	0	EA	$ 200,000	$ -	$ 50,000	$ -	$ 250,000	$ -
5.1j									
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator	0	EA	$ 35,000	$ -	$ 15,000	$ -	$ 50,000	$ -
5.2b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 30,000	$ -	$ 17,500	$ -	$ 47,500	$ -
5.2c	VT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2e	CCVT'S	0	EA	$ 10,000	$ -	$ 6,000	$ -	$ 16,000	$ -
5.2f	Arresters	0	EA	$ 5,000	$ -	$ 6,000	$ -	$ 11,000	$ -
5.2g	Wave Traps	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2j									
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	0	EA	$ 33,000	$ -	$ 15,000	$ -	$ 48,000	$ -
5.3b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 28,000	$ -	$ 17,500	$ -	$ 45,500	$ -
5.3c	VT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.3d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.3e	CCVT'S	0	EA	$ 8,000	$ -	$ 8,000	$ -	$ 16,000	$ -
5.3f	Arresters	0	EA	$ 3,420	$ -	$ 6,000	$ -	$ 9,420	$ -
5.3g	Wave Traps	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
5.3j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ 590,500		$ 329,500		$ 920,000
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE	1	EA	$ 243,750	$ 243,750	$ 42,500	$ 42,500	$ 286,250	**$ 286,250**
6.2	Protection and Telecom Equipment Panels	8	EA	$ 35,000	$ 280,000	$ 15,000	$ 120,000	$ 50,000	**$ 400,000**
6.3	125VDC Batteries	1	EA	$ 75,000	$ 75,000	$ 25,000	$ 25,000	$ 100,000	**$ 100,000**
6.4	Control Cables	1	LS	$ 338,300	$ 338,300	$ 472,500	$ 472,500	$ 810,800	**$ 810,800**
6.5	SCADA and Communications	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.6	Low Voltage AC Distribution	0	EA	$ 50,000	$ -	$ 100,000	$ -	$ 150,000	**$ -**
6.7	DC Distribution System	0	EA	$ 50,000	$ -	$ 100,000	$ -	$ 150,000	**$ -**
6.8	Security	0	EA	$ 7,500	$ -	$ 7,500	$ -	$ 15,000	**$ -**
6.9	Fire Alarm	0	EA	$ 7,500	$ -	$ 7,500	$ -	$ 15,000	**$ -**
6.10	Generator	0	EA	$ 100,000	$ -	$ 80,000	$ -	$ 180,000	**$ -**
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ 937,050		$ 660,000		**$ 1,597,050**
7. MISC ITEMS									
7.1	Conduit & Cable Trench System	1,500	LF	$ 185.00	$ 277,500	$ 170.00	$ 255,000	$ 355	**$ 532,500**
7.2	Rigid Bus, Fittings & Insulators	800	LF	$ 125.07	$ 100,056	$ 237.10	$ 189,680	$ 362	**$ 289,736**
7.3	Strain Bus, Connectors & Insulators	500	LF	$ 39.30	$ 19,650	$ 53.35	$ 26,675	$ 93	**$ 46,325**
7.4	Grounding System	7,500	LF	$ 6.93	$ 51,975	$ 32.58	$ 244,350	$ 40	**$ 296,325**
7.5	Strain Bus Insulators - 345kV	36	EA	$ 2,000	$ 72,000	$ 1,050	$ 37,800	$ 3,050	**$ 109,800**
7.6	Strain Bus Insulators - 230kV	0	EA	$ 1,400	$ -	$ 750	$ -	$ 2,150	**$ -**
7.7	Strain Bus Insulators - 115kV	0	EA	$ 1,000	$ -	$ 550	$ -	$ 1,550	**$ -**
7.8	Low Voltage AC Station Service	0	LS	$ 50,000	$ -	$ 75,000	$ -	$ 125,000	**$ -**
7.9	SSVT Service	0	LS	$ 45,000	$ -	$ 45,000	$ -	$ 90,000	**$ -**
7.10	Control Conduits from Trench to Equipment	1	LS	$ 125,000	$ 125,000	$ 125,000	$ 125,000	$ 250,000	**$ 250,000**
7.11	Misc. Materials (Above and Below Ground)	1	LS	$ 180,000	$ 180,000	$ 180,000	$ 180,000	$ 360,000	**$ 360,000**
7.12	Install new communication tower foundation.	1	LS			$ 75,000	$ 75,000	$ 75,000	**$ 75,000**
7.13	Relocate existing communication tower.	1	LS			$ 50,000	$ 50,000	$ 50,000	**$ 50,000**
7.14									
7.15									
7.16									
7.17									
7.18									
7.19									
7.20									
7.21									
7.22									
7.23									
7.24									
7.25									
TOTAL - MISC ITEMS					$ 826,181		$ 1,183,505		$ 2,009,686
H. New Scotland Substation - Install					$ 4,097,659		$ 3,538,205		**$ 7,635,864**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1	LS	$ -	$ -	$ 76,359	$ 76,359	$ 76,359	**$ 76,359**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 290,220	$ 290,220	$ 290,220	**$ 290,220**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 76,359	$ 76,359	$ 76,359	**$ 76,359**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 76,359	$ 76,359	$ 76,359	**$ 76,359**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 610,869	$ 610,869	$ 610,869	**$ 610,869**
8.6	LiDAR	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.7	Geotech	4	EA	$ -	$ -	$ 3,500	$ 14,000	$ 3,500	**$ 14,000**
8.8	Surveying/Staking	1	Site	$ -	$ -	$ 53,451	$ 53,451	$ 53,451	**$ 53,451**
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 190,897	$ 190,897	$ 190,897	**$ 190,897**
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 22,908	$ 22,908	$ 22,908	**$ 22,908**
8.13	Real Estate Costs (New)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.14	Real Estate Costs (Incumbent Utility)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.18	Sales Tax on Materials	1	LS	$ 327,813	$ 327,813	$ -	$ -	$ 327,813	**$ 327,813**
8.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 7,636	$ 7,636	$ 7,636	**$ 7,636**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 327,813		$ 1,419,056		**$ 1,746,869**

NAT & NYPA - T027 - (Segment A, Double Circuit)

I. New Scotland Substation - Removal

Estimate Revision: 8

Total: $ 93,577

NAT & NYPA - T027 - (Segment A, Double Circuit)	*Supply*	*Installation*	*Total*
I. New Scotland Substation - Removal			
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ -	$ -	$ -
2. SUBSTATION FOUNDATIONS	$ -	$ 28,800	$ 28,800
3. SUBSTATION STRUCTURES	$ -	$ 27,000	$ 27,000
4. MAJOR EQUIPTMENT	$ -	$ -	$ -
5. SMALL EQUIPTMENT / MATERIALS	$ -	$ 4,500	$ 4,500
6. CONTROL HOUSE / PANELS	$ -	$ -	$ -
7. MISC ITEMS	$ -	$ 21,000	$ 21,000
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ -	$ 12,277	$ 12,277
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ -	$ 93,577	$ 93,577
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ -	$ 93,577	$ 93,577

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
I. New Scotland Substation - Removal									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	0	ACRES	$ -	$ -	$ 203,000	$ -	$ 203,000	$ -
1.2	Station stone within substation fence.	0	CY	$ -	$ -	$ 75	$ -	$ 75	$ -
1.3	Substation Fence	0	LF	$ -	$ -	$ 150	$ -	$ 150	$ -
1.4									
1.5									
1.6									
1.7									
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ -		$ -		$ -
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1e	Switch Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1f	Station Service Transformer Stand Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1h	Bus Support 1 Ph Foundations	12	EA	$ -	$ -	$ 2,400	$ 28,800	$ 2,400	$ 28,800
2.1j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1k	Arrester Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1p		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2	**230kV**								
2.2a	Circuit Breaker Foundations	0	EA	$ -	$ -	$ 7,200	$ -	$ 7,200	$ -
2.2b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ 32,000	$ -	$ 32,000	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ 22,000	$ -	$ 22,000	$ -
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ 11,000	$ -	$ 11,000	$ -
2.2e	Switch Stand Foundations	0	EA	$ -	$ -	$ 5,200	$ -	$ 5,200	$ -
2.2f	Station Service Transformer Stand Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.2j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.2k	Arrester Stand Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.2m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2p		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3e	Switch Stand Foundations	0	EA	$ -	$ -	$ 5,200	$ -	$ 5,200	$ -
2.3f	Fuse Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3k	Arrester Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4b	345-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ 42,000	$ -	$ 42,000	$ -
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5b	Generator Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6b		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6c		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION FOUNDATIONS					$ -		$ 28,800		$ 28,800
3. SUBSTATION STRUCTURES									
3.1	**345kV**								
3.1a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1c	Switch Stands	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1d	Station Service Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1f	Bus Support 1 Ph	12	EA	$ -	$ -	$ 2,250	$ 27,000	$ 2,250	**$ 27,000**
3.1g	Instrument Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1h	Arrester Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1j	Wave Trap Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1k	Lightning Masts - 70'	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ 27,000	$ -	$ 27,000	$ -
3.2b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ 27,000	$ -	$ 27,000	$ -
3.2c	Switch Stands	0	EA	$ -	$ -	$ 9,750	$ -	$ 9,750	$ -
3.2d	Station Service Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2f	Bus Support 1 Ph	0	EA	$ -	$ -	$ 2,250	$ -	$ 2,250	$ -
3.2g	Instrument Transformer Stand	0	EA	$ -	$ -	$ 1,050	$ -	$ 1,050	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.2h	Arrester Stand	0	EA	$ -	$ -	$ 1,050	$ -	$ 1,050	$ -
3.2j	Wave Trap Stand	0	EA	$ -	$ -	$ 4,500	$ -	$ 4,500	$ -
3.2k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3	**115kV**								
3.3a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ 15,000	$ -	$ 15,000	$ -
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3c	Switch Stands	0	EA	$ -	$ -	$ 6,450	$ -	$ 6,450	$ -
3.3d	Fuse Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3f	Bus Support 1 Ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3g	Instrument Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3h	Arrester Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3j	Wave Trap Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION STRUCTURES					$ -		$ 27,000		$ 27,000
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.1b	Capacitor Banks	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.1c		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.1d									
4.2	**230kV**								
4.2a	Circuit Breakers	0	EA	$ -	$ -	$ 7,000	$ -	$ 7,000	$ -
4.2b	Capacitor Banks	0	EA	$ -	$ -	$ 42,000	$ -	$ 42,000	$ -
4.3	**115kV**								
4.3a	Circuit Breakers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - MAJOR EQUIPTMENT					$ -		$ -		$ -
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.1b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.1c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.1d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.1e	CCVT'S	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.1f	Arresters	3	EA	$ -	$ -	$ 1,500	$ 4,500	$ 1,500	**$ 4,500**
5.1g	Wave Traps	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.1h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.1j									
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.2b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.2c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2e	CCVT'S	0	EA	$ -	$ -	$ 1,500	$ -	$ 1,500	$ -
5.2f	Arresters	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.2g	Wave Traps	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.2h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2j									
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.3c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3e	CCVT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3f	Arresters	0	EA	$ -	$ -	$ 1,500	$ -	$ 1,500	$ -
5.3g	Wave Traps	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
5.3j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ -		$ 4,500		$ 4,500
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE	0	EA	$ -	$ -	$ 150,000	$ -	$ 150,000	$ -
6.2	PANELS	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.3	125VDC Batteries	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.4	Protection and Telecom Equipment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.5	SCADA and Communications	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.6	Low Voltage AC Distribution	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.7	DC Distribution System	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.8	Security	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.9	Fire Alarm	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.10	Generator	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ -		$ -		$ -
7. MISC ITEMS									
7.1	Conduit & Cable Trench System	0	EA	$ -	$ -	$ 42,000.00	$ -	$ 42,000	$ -
7.2	Rigid Bus, Fittings & Insulators	1	LS	$ -	$ -	$ 21,000.00	$ 21,000	$ 21,000	**$ 21,000**
7.3	Strain Bus, Connectors & Insulators	0	LS	$ -	$ -	$ 21,000.00	$ -	$ 21,000	$ -
7.4	Grounding System	0	EA	$ -	$ -	$ 42,000.00	$ -	$ 42,000	$ -
7.5									
7.6									
7.7									
7.8									
7.9									
7.10									
7.11									
7.12									
7.13									
7.14									
7.15									
TOTAL - MISC ITEMS					$ -		$ 21,000		$ 21,000
I. New Scotland Substation - Removal					$ -		$ 81,300		**$ 81,300**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1.0	LS	$ -	$ -	$ 813	$ 813	$ 813	**$ 813**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 3,090	$ 3,090	$ 3,090	**$ 3,090**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 813	$ 813	$ 813	**$ 813**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 813	$ 813	$ 813	**$ 813**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 6,504	$ 6,504	$ 6,504	**$ 6,504**
8.6	LiDAR	-	Mile	$ -	$ -	$ -	$ -	$ -	$ -
8.7	Geotech	-	Site	$ -	$ -	$ -	$ -	$ -	$ -
8.8	Surveying/Staking	-	Site	$ -	$ -	$ 569	$ -	$ 569	$ -
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	-	LS	$ -	$ -	$ 2,033	$ -	$ 2,033	$ -
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 244	$ 244	$ 244	**$ 244**
8.13	Real Estate Costs (New)	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.14	Real Estate Costs (Incumbent Utility)	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.18	Sales Tax on Materials	1	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.19	Fees for permits, including roadway, railroad, building or other local permits	-	LS		$ -	$ 81	$ -	$ 81	$ -
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ -		$ 12,277		**$ 12,277**

NAT & NYPA - T027 - (Segment A, Double Circuit)

J. Porter Substation - Install

Estimate Revision: 8

Total: $ 86,130

NAT & NYPA - T027 - (Segment A, Double Circuit)	*Supply*	*Installation*	*Total*
J. Porter Substation - Install			
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ -	$ -	$ -
2. SUBSTATION FOUNDATIONS	$ -	$ -	$ -
3. SUBSTATION STRUCTURES	$ -	$ -	$ -
4. MAJOR EQUIPTMENT	$ -	$ -	$ -
5. SMALL EQUIPTMENT / MATERIALS	$ -	$ -	$ -
6. CONTROL HOUSE / PANELS	$ -	$ -	$ -
7. MISC ITEMS	$ 15,008	$ 56,904	$ 71,912
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 1,201	$ 13,017	$ 14,217
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 16,209	$ 69,921	$ 86,130
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 16,209	$ 69,921	$ 86,130

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
J. Porter Substation - Install									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	0	ACRES	$ -	$ -	$ 203,000	$ -	$ 203,000	$ -
1.2	Station stone within substation fence.	0	CY	$ 27	$ -	$ 75	$ -	$ 102	$ -
1.3	Substation Fence	0	LF	$ 100	$ -	$ 100	$ -	$ 200	$ -
1.4	Permanent Access Road - 20'-Wide	0	LF	$ 35	$ -	$ 285	$ -	$ 320	$ -
1.5									
1.6									
1.7									
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ -		$ -		$ -
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	0	EA	$ 14,940	$ -	$ 16,000	$ -	$ 30,940	$ -
2.1b	Capacitor Bank Foundations	0	EA	$ 56,025	$ -	$ 60,000	$ -	$ 116,025	$ -
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 26,145	$ -	$ 28,000	$ -	$ 54,145	$ -
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 26,145	$ -	$ 28,000	$ -	$ 54,145	$ -
2.1e	Switch Stand Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1f	Station Service Transformer Stand Foundation	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1h	Bus Support 1 Ph Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1j	Instrument Transformer Stand Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1k	Arrester Stand Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1m	Wave Trap Stand Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1p									
2.2	**230kV**								
2.2a	Circuit Breaker Foundations	0	EA	$ 11,952	$ -	$ 12,800	$ -	$ 24,752	$ -
2.2b	Capacitor Bank Foundations	0	EA	$ 44,820	$ -	$ 48,000	$ -	$ 92,820	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	$ -
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	$ -
2.2e	Switch Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2f	Station Service Transformer Stand Foundation	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2h	Bus Support 1 Ph Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2j	Instrument Transformer Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2k	Arrester Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2m	Wave Trap Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2p									
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	0	EA	$ 5,229	$ -	$ 5,600	$ -	$ 10,829	$ -
2.3b	Capacitor Bank Foundations	0	EA	$ 33,615	$ -	$ 36,000	$ -	$ 69,615	$ -
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	$ -
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	$ -
2.3e	Switch Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3f	Fuse Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3g	Bus Support 3ph Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3h	Bus Support 1 Ph Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3j	Instrument Transformer Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3k	Arrester Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3m	Wave Trap Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment	0	EA	$ 97,110	$ -	$ 104,000	$ -	$ 201,110	$ -
2.4b	345-115kV Transformer Foundation w/ Oil Containment	0	EA	$ 74,700	$ -	$ 80,000	$ -	$ 154,700	$ -
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad	0	EA	$ 76,194	$ -	$ 81,600	$ -	$ 157,794	$ -
2.5b	Generator Foundation	0	EA	$ 16,000	$ -	$ 17,000	$ -	$ 33,000	$ -
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	0	EA	$ 5,229	$ -	$ 5,600	$ -	$ 10,829	$ -
2.6b		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6c		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION FOUNDATIONS					$ -		$ -		$ -
3. SUBSTATION STRUCTURES									
3.1	**345kV**								
3.1a	Substation A-Frame Structures - Stand alone	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	$ -
3.1b	Substation A-Frame Structures - Shared Column	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	$ -
3.1c	Switch Stands	0	EA	$ 14,800	$ -	$ 14,800	$ -	$ 29,600	$ -
3.1d	Station Service Transformer Stand	0	EA	$ 14,800	$ -	$ 14,800	$ -	$ 29,600	$ -
3.1e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1f	Bus Support 1 Ph	0	EA	$ 3,700	$ -	$ 3,700	$ -	$ 7,400	$ -
3.1g	Instrument Transformer Stand	0	EA	$ 1,850	$ -	$ 1,850	$ -	$ 3,700	$ -
3.1h	Arrester Stand	0	EA	$ 1,850	$ -	$ 1,850	$ -	$ 3,700	$ -
3.1j	Wave Trap Stand	0	EA	$ 7,400	$ -	$ 7,400	$ -	$ 14,800	$ -
3.1k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	$ -
3.2b	Substation A-Frame Structures - Shared Column	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	$ -
3.2c	Switch Stands	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	$ -
3.2d	Station Service Transformer Stand	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	$ -
3.2e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2f	Bus Support 1 Ph	0	EA	$ 2,775	$ -	$ 2,775	$ -	$ 5,550	$ -
3.2g	Instrument Transformer Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.2h	Arrester Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	$ -
3.2j	Wave Trap Stand	0	EA	$ 5,550	$ -	$ 5,550	$ -	$ 11,100	$ -
3.2k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
3.3	**115kV**								
3.3a	Substation A-Frame Structures - Stand alone	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	$ -
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	$ -
3.3c	Switch Stands	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	$ -
3.3d	Fuse Stand	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	$ -
3.3e	Bus Support 3ph	0	EA	$ 3,330	$ -	$ 3,330	$ -	$ 6,660	$ -
3.3f	Bus Support 1 Ph	0	EA	$ 1,850	$ -	$ 1,850	$ -	$ 3,700	$ -
3.3g	Instrument Transformer Stand	0	EA	$ 740	$ -	$ 740	$ -	$ 1,480	$ -
3.3h	Arrester Stand	0	EA	$ 740	$ -	$ 740	$ -	$ 1,480	$ -
3.3j	Wave Trap Stand	0	EA	$ 3,700	$ -	$ 3,700	$ -	$ 7,400	$ -
3.3k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
TOTAL - SUBSTATION STRUCTURES					$ -		$ -		$ -
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	0	EA	$ 200,000	$ -	$ 80,000	$ -	$ 280,000	$ -
4.1b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	$ -
4.1c	345 kV - 230 kV Auto Transformer	0	EA	$ -	$ -	$ 750,000	$ -	$ 750,000	$ -
4.1d	345 kV - 115 kV Auto Transformer	0	EA	$ -	$ -	$ 750,000	$ -	$ 750,000	$ -
4.2	**230kV**								
4.2a	Circuit Breakers	0	EA	$ 115,000	$ -	$ 80,000	$ -	$ 195,000	$ -
4.2b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	$ -
4.3	**115kV**								
4.3a	Circuit Breakers	0	EA	$ 52,000	$ -	$ 60,000	$ -	$ 112,000	$ -
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ 60,000	$ -	$ 60,000	$ -
TOTAL - MAJOR EQUIPTMENT					$ -		$ -		$ -
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator	0	EA	$ 40,000	$ -	$ 15,000	$ -	$ 55,000	$ -
5.1b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 35,000	$ -	$ 17,500	$ -	$ 52,500	$ -
5.1c	VT'S	0	EA	$ -	$ -	$ 12,000	$ -	$ 12,000	$ -
5.1d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.1e	CCVT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.1f	Arresters	0	EA	$ 6,500	$ -	$ 1,500	$ -	$ 8,000	$ -
5.1g	Wave Traps	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.1h	Station Service Transformers	0	EA	$ 200,000	$ -	$ 50,000	$ -	$ 250,000	$ -
5.1j		0	EA	$ 15,000	$ -	$ 7,500	$ -	$ 22,500	$ -
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator	0	EA	$ 35,000	$ -	$ 15,000	$ -	$ 50,000	$ -
5.2b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 30,000	$ -	$ 17,500	$ -	$ 47,500	$ -
5.2c	VT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2e	CCVT'S	0	EA	$ 10,000	$ -	$ 6,000	$ -	$ 16,000	$ -
5.2f	Arresters	0	EA	$ 5,000	$ -	$ 6,000	$ -	$ 11,000	$ -
5.2g	Wave Traps	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2j		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	0	EA	$ 33,000	$ -	$ 15,000	$ -	$ 48,000	$ -
5.3b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 28,000	$ -	$ 17,500	$ -	$ 45,500	$ -
5.3c	VT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.3d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.3e	CCVT'S	0	EA	$ 8,000	$ -	$ 8,000	$ -	$ 16,000	$ -
5.3f	Arresters	0	EA	$ 3,420	$ -	$ 6,000	$ -	$ 9,420	$ -
5.3g	Wave Traps	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
5.3j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ -		$ -		$ -
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE	0	EA	$ 551,250	$ -	$ 85,000	$ -	$ 636,250	$ -
6.2	Protection and Telecom Equipment Panels	0	EA	$ 35,000	$ -	$ 10,000	$ -	$ 45,000	$ -
6.3	125VDC Batteries	0	EA	$ 75,000	$ -	$ 25,000	$ -	$ 100,000	$ -
6.4	Control Cable	0	LS	$ -	$ -	$ -	$ -	$ -	$ -
6.5	SCADA and Communications	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.6	Low Voltage AC Distribution	0	EA	$ 50,000	$ -	$ 100,000	$ -	$ 150,000	$ -
6.7	DC Distribution System	0	EA	$ 50,000	$ -	$ 100,000	$ -	$ 150,000	$ -
6.8	Security	0	EA	$ 7,500	$ -	$ 7,500	$ -	$ 15,000	$ -
6.9	Fire Alarm	0	EA	$ 7,500	$ -	$ 7,500	$ -	$ 15,000	$ -
6.10	Generator	0	EA	$ 100,000	$ -	$ 80,000	$ -	$ 180,000	$ -
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ -		$ -		$ -
7. MISC ITEMS									
7.1	Conduit & Cable Trench System	0	LF	$ 185.00	$ -	$ 170.00	$ -	$ 355	$ -
7.2	Rigid Bus, Fittings & Insulators	1	LS	$ 15,008.40	$ 15,008	$ 56,904.00	$ 56,904	$ 71,912	**$ 71,912**
7.3	Strain Bus, Connectors & Insulators	0	LF	$ 13.38	$ -	$ 39.35	$ -	$ 53	$ -
7.4	Grounding System	0	LF	$ 6.93	$ -	$ 32.58	$ -	$ 40	$ -
7.5	Strain Bus Insulators - 345kV	0	EA	$ 2,000	$ -	$ 1,050	$ -	$ 3,050	$ -
7.6	Strain Bus Insulators - 230kV	0	EA	$ 1,400	$ -	$ 750	$ -	$ 2,150	$ -
7.7	Strain Bus Insulators - 115kV	0	EA	$ 1,000	$ -	$ 550	$ -	$ 1,550	$ -
7.8	Low Voltage AC Station Service	0	LS	$ 50,000	$ -	$ 75,000	$ -	$ 125,000	$ -
7.9	SSVT Service	0	LS	$ 45,000	$ -	$ 45,000	$ -	$ 90,000	$ -
7.10	Control Cables	0	LS	$ 472,500	$ -	$ 472,500	$ -	$ 945,000	$ -
7.11	Control Conduits from Trench to Equipment	0	LS	$ 125,000	$ -	$ 125,000	$ -	$ 250,000	$ -
7.12	Misc. Materials (Above and Below Ground)	0	LS	$ 180,000	$ -	$ 180,000	$ -	$ 360,000	$ -
7.13									
7.14									
7.15									
7.16									
7.17									
7.18									
7.19									
7.20									
7.21									
7.22									
7.23									
7.24									
7.25									
TOTAL - MISC ITEMS					$ 15,008		$ 56,904		$ 71,912
J. Porter Substation - Install					$ 15,008		$ 56,904		**$ 71,912**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1	LS	$ -	$ -	$ 719	$ 719	$ 719	**$ 719**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		$ -	$ 2,733	$ 2,733	$ 2,733	**$ 2,733**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 719	$ 719	$ 719	**$ 719**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 719	$ 719	$ 719	**$ 719**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 5,753	$ 5,753	$ 5,753	**$ 5,753**
8.6	LiDAR	-	LS	$ -	$ -	$ 216	$ -	$ 216	$ -
8.7	Geotech	-	EA	$ -	$ -	$ 3,500	$ -	$ 3,500	$ -
8.8	Surveying/Staking	1	Site	$ -	$ -	$ 503	$ 503	$ 503	**$ 503**
	Testing & Commissioning								

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
8.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 1,798	$ 1,798	$ 1,798	**$ 1,798**
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.13	Real Estate Costs (New)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.14	Real Estate Costs (Incumbent Utility)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.18	Sales Tax on Materials	1	LS	$ 1,201	$ 1,201	$ -	$ -	$ 1,201	**$ 1,201**
8.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 72	$ 72	$ 72	**$ 72**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 1,201		$ 13,017		**$ 14,217**

NAT & NYPA - T027 - (Segment A, Double Circuit)

K. Porter Substation - Removal

Estimate Revision: 8 **Total: $ 545,937**

NAT & NYPA - T027 - (Segment A, Double Circuit)	*Supply*	*Installation*	*Total*	
K. Porter Substation - Removal				
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ -	$ -	$ -	
2. SUBSTATION FOUNDATIONS	$ -	$ 126,600	$ 126,600	
3. SUBSTATION STRUCTURES	$ -	$ 206,100	$ 206,100	
4. MAJOR EQUIPTMENT	$ -	$ 43,500	$ 43,500	
5. SMALL EQUIPTMENT / MATERIALS	$ -	$ 59,500	$ 59,500	
6. CONTROL HOUSE / PANELS	$ -	$ -	$ -	
7. MISC ITEMS	$ -	$ 38,613	$ 38,613	
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ -	$ 71,625	$ 71,625	
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -	0.0%
SUBTOTAL:	$ -	$ 545,937	$ 545,937	
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -	0.0%
TOTAL:	$ -	$ 545,937	$ 545,937	

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
K. Porter Substation - Removal									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	0	ACRES	$ -	$ -	$ 203,000	$ -	$ 203,000	$ -
1.2	Station stone within substation fence.	0	CY	$ -	$ -	$ 75	$ -	$ 75	$ -
1.3	Substation Fence	0	LF	$ -	$ -	$ 150	$ -	$ 150	$ -
1.4									
1.5									
1.6									
1.7									
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ -		$ -		$ -
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1e	Switch Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1f	Station Service Transformer Stand Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1k	Arrester Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1p		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2	**230kV**								
2.2a	Circuit Breaker Foundations	3	EA	$ -	$ -	$ 7,200	$ 21,600	$ 7,200	**$ 21,600**
2.2b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ 32,000	$ -	$ 32,000	$ -
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ 22,000	$ -	$ 22,000	$ -
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	5	EA	$ -	$ -	$ 11,000	$ 55,000	$ 11,000	**$ 55,000**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.2e	Switch Stand Foundations	5	EA	$ -	$ -	$ 5,200	$ 26,000	$ 5,200	**$ 26,000**
2.2f	Station Service Transformer Stand Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.2g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.2h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	**$ -**
2.2j	Instrument Transformer Stand Foundations	4	EA	$ -	$ -	$ 2,400	$ 9,600	$ 2,400	**$ 9,600**
2.2k	Arrester Stand Foundations	6	EA	$ -	$ -	$ 2,400	$ 14,400	$ 2,400	**$ 14,400**
2.2m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.2n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.2p		0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3e	Switch Stand Foundations	0	EA	$ -	$ -	$ 5,200	$ -	$ 5,200	**$ -**
2.3f	Fuse Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3k	Arrester Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.4b	345-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ 42,000	$ -	$ 42,000	**$ -**
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad (40'x125')	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.5b	Generator Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.6b		0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.6c		0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
TOTAL - SUBSTATION FOUNDATIONS					$ -		$ 126,600		$ 126,600
3. SUBSTATION STRUCTURES									
3.1	**345kV**								
3.1a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.1b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.1c	Switch Stands	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.1d	Station Service Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.1e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.1f	Bus Support 1 Ph	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.1g	Instrument Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.1h	Arrester Stand	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.1j	Wave Trap Stand	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.1k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ 27,000	$ -	$ 27,000	**$ -**
3.2b	Substation A-Frame Structures - Shared Column	5	EA	$ -	$ -	$ 27,000	$ 135,000	$ 27,000	**$ 135,000**
3.2c	Switch Stands	6	EA	$ -	$ -	$ 9,750	$ 58,500	$ 9,750	**$ 58,500**
3.2d	Station Service Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.2e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.2f	Bus Support 1 Ph	0	EA	$ -	$ -	$ 2,250	$ -	$ 2,250	**$ -**
3.2g	Instrument Transformer Stand	6	EA	$ -	$ -	$ 1,050	$ 6,300	$ 1,050	**$ 6,300**
3.2h	Arrester Stand	6	EA	$ -	$ -	$ 1,050	$ 6,300	$ 1,050	**$ 6,300**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.2j	Wave Trap Stand	0	EA	$ -	$ -	$ 4,500	$ -	$ 4,500	$ -
3.2k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3	**115kV**								
3.3a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ 15,000	$ -	$ 15,000	$ -
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3c	Switch Stands	0	EA	$ -	$ -	$ 6,450	$ -	$ 6,450	$ -
3.3d	Fuse Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3f	Bus Support 1 Ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3g	Instrument Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3h	Arrester Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3j	Wave Trap Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION STRUCTURES					$ -		$ 206,100		$ 206,100
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.1b	Capacitor Banks	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.1c		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.1d									
4.2	**230kV**								
4.2a	Circuit Breakers	3	EA	$ -	$ -	$ 14,500	$ 43,500	$ 14,500	**$ 43,500**
4.2b	Capacitor Banks	0	EA	$ -	$ -	$ 42,000	$ -	$ 42,000	$ -
4.3	**115kV**								
4.3a	Circuit Breakers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - MAJOR EQUIPTMENT					$ -		$ 43,500		$ 43,500
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.1b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.1c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.1d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.1e	CCVT'S	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.1f	Arresters	0	EA	$ -	$ -	$ 1,500	$ -	$ 1,500	$ -
5.1g	Wave Traps	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.1h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.1j		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator	2	EA	$ -	$ -	$ 5,500	$ 11,000	$ 5,500	**$ 11,000**
5.2b	Disconnect Switches - 3ph w/ manual operator	3	EA	$ -	$ -	$ 5,500	$ 16,500	$ 5,500	**$ 16,500**
5.2c	VT'S	2	EA	$ -	$ -	$ 1,500	$ 3,000	$ 1,500	**$ 3,000**
5.2d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2e	CCVT'S	6	EA	$ -	$ -	$ 1,500	$ 9,000	$ 1,500	**$ 9,000**
5.2f	Arresters	6	EA	$ -	$ -	$ 2,500	$ 15,000	$ 2,500	**$ 15,000**
5.2g	Wave Traps	2	EA	$ -	$ -	$ 2,500	$ 5,000	$ 2,500	**$ 5,000**
5.2h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2j		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.3c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3e	CCVT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3f	Arresters	0	EA	$ -	$ -	$ 1,500	$ -	$ 1,500	$ -
5.3g	Wave Traps	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
5.3j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ -		$ 59,500		$ 59,500
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE	0	EA	$ -	$ -	$ 150,000	$ -	$ 150,000	$ -
6.2	PANELS	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.3	125VDC Batteries	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.4	Protection and Telecom Equipment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.5	SCADA and Communications	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.6	Low Voltage AC Distribution	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.7	DC Distribution System	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.8	Security	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.9	Fire Alarm	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.10	Generator	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ -		$ -		$ -
7. MISC ITEMS									
7.1	Conduit & Cable Trench System	0	EA	$ -	$ -	$ 42,000.00	$ -	$ 42,000	$ -
7.2	Rigid Bus, Fittings & Insulators	1	L.S.	$ -	$ -	$ 18,937.50	$ 18,938	$ 18,938	**$ 18,938**
7.3	Strain Bus, Connectors & Insulators	1	L.S.	$ -	$ -	$ 19,675.00	$ 19,675	$ 19,675	**$ 19,675**
7.4	Grounding System	0	EA	$ -	$ -	$ 42,000.00	$ -	$ 42,000	$ -
7.5									
7.6									
7.7									
7.8									
7.9									
7.10									
7.11									
7.12									
7.13									
7.14									
7.15									
TOTAL - MISC ITEMS					$ -		$ 38,613		$ 38,613
K. Porter Substation - Removal					$ -		$ 474,313		**$ 474,313**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1.0	LS	$ -	$ -	$ 4,743	$ 4,743	$ 4,743	**$ 4,743**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		$ -	$ 18,027	$ 18,027	$ 18,027	**$ 18,027**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 4,743	$ 4,743	$ 4,743	**$ 4,743**
8.4	Site Accommodation, Facilities, Storage	1.0	LS	$ -	$ -	$ 4,743	$ 4,743	$ 4,743	**$ 4,743**
	Engineering								
8.5	Design Engineering	1.0	LS	$ -	$ -	$ 37,945	$ 37,945	$ 37,945	**$ 37,945**
8.6	LiDAR	-	Mile	$ -	$ -	$ -	$ -	$ -	$ -
8.7	Geotech	-	Site	$ -	$ -	$ -	$ -	$ -	$ -
8.8	Surveying/Staking	-	Site	$ -	$ -	$ 3,320	$ -	$ 3,320	$ -
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	-	LS	$ -	$ -	$ 11,858	$ -	$ 11,858	$ -
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 1,423	$ 1,423	$ 1,423	**$ 1,423**
8.13	Real Estate Costs (New)	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.14	Real Estate Costs (Incumbent Utility)	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.18	Sales Tax on Materials	1.0	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.19	Fees for permits, including roadway, railroad, building or other local permits	-	LS		$ -	$ 474	$ -	$ 474	$ -
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ -		$ 71,625		**$ 71,625**

NAT & NYPA - T027 - (Segment A, Double Circuit)

L. Interconnection Edic Station

Estimate Revision: 8

Total: $ 2,104,121

NAT & NYPA - T027 - (Segment A, Double Circuit)	*Supply*	*Installation*	*Total*
L. Interconnection Edic Station			
1. CLEARING & ACCESS	$ -	$ 367,850	$ 367,850
2. FOUNDATIONS	$ 168,366	$ 170,169	$ 338,536
3. STRUCTURES	$ 501,469	$ 321,821	$ 823,289
4. CONDUCTOR, SHIELDWIRE, OPGW	$ -	$ -	$ -
5. INSULATORS, FITTINGS, HARDWARE	$ 160,000	$ 94,400	$ 254,400
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 66,387	$ 253,659	$ 320,046
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 896,222	$ 1,207,899	$ 2,104,121
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 896,222	$ 1,207,899	$ 2,104,121

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
L. Interconnection Edic Station									
1. CLEARING & ACCESS									
1.1	Clearing the ROW - Heavy (mowing & clearing)	-	Acre	$ -	$ -	$ 15,000	$ -	$ 15,000	$ -
1.2	Clearing the ROW - Light (mowing)	2.0	Acre	$ -	$ -	$ 5,000	$ 10,000	$ 5,000	**$ 10,000**
1.3	Access Road	-	LF	$ -	$ -	$ 45	$ -	$ 45	$ -
1.4	Silt Fence	3,500.0	LF	$ -	$ -	$ 4	$ 14,000	$ 4	**$ 14,000**
1.5	Matting - Access and ROW	3,500.0	LF	$ -	$ -	$ 70	$ 245,000	$ 70	**$ 245,000**
1.6	Matting - To Work Area	300.0	LF	$ -	$ -	$ 70	$ 21,000	$ 70	**$ 21,000**
1.7	Snow Removal	-	LS	$ -	$ -	$ 516,800	$ -	$ 516,800	$ -
1.8	ROW Restoration	0.5	Mile	$ -	$ -	$ 10,000	$ 5,000	$ 10,000	**$ 5,000**
1.9	Work Pads	20,000.0	SF	$ -	$ -	$ 4	$ 70,400	$ 4	**$ 70,400**
1.10	Restoration for Work Pad areas	4,000.0	SF	$ -	$ -	$ 0.2	$ 600	$ 0	**$ 600**
1.11	Temporary Access Bridge	-	EA	$ -	$ -	$ 20,035	$ -	$ 20,035	$ -
1.12	Air Bridge	-	EA	$ -	$ -	$ 14,445	$ -	$ 14,445	$ -
1.13	Stabilized Construction Entrance	-	EA	$ -	$ -	$ 4,580	$ -	$ 4,580	$ -
1.14	Maintenance and Protection of Traffic on Public Roads	-	EA	$ -	$ -	$ 4,130	$ -	$ 4,130	$ -
1.15	Gates	-	EA	$ 2,000	$ -	$ 2,500	$ -	$ 4,500	$ -
1.16	Culverts / Misc. Access	-	EA	$ 750	$ -	$ 1,250	$ -	$ 2,000	$ -
1.17	Concrete Washout Station	1	EA	$ -	$ -	$ 1,850	$ 1,850	$ 1,850	**$ 1,850**
1.18					$ -		$ -		$ -
1.19					$ -		$ -		$ -
1.20	Crushed Rock	0	CY	$ 27	$ -	$ 75	$ -	$ 102	$ -
TOTAL - CLEARING & ACCESS					$ -		$ 367,850		$ 367,850
2. FOUNDATIONS									
2.1	Foundation – Drilled Pier – 8'X 27'	3	EA	$ 41,332	$ 123,995	$ 41,774	$ 125,322	$ 83,106	**$ 249,317**
2.2	Foundation – Drilled Pier – 8'X 29'	1	EA	$ 44,372	$ 44,372	$ 44,847	$ 44,847	$ 89,219	**$ 89,219**
2.3	Rock Excavation Adder	-	CY	$ -	$ -	$ 2,000	$ -	$ 2,000	$ -
2.4									
2.5									
2.6									
2.7									
2.8									
2.9									
2.10									
2.11									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.12									
2.13									
2.14									
2.15									
TOTAL - FOUNDATIONS					$ 168,366		$ 170,169		$ 338,536
3. STRUCTURES									
3.1	1-CKT 345KV VERTICAL MEDIUM ANGLE DEADEND (15°-60°) – 105'	3	Structure	$ 98,883	$ 296,648	$ 59,330	$ 177,989	$ 158,212	**$ 474,636**
3.2	2-CKT 345KV VERTICAL MEDIUM ANGLE DEADEND (15°-60°) - 115'	1	Structure	$ 202,797	$ 202,797	$ 121,678	$ 121,678	$ 324,475	**$ 324,475**
3.3	Install Grounding and Grounding Accessories	4	Pole	$ 506	$ 2,024	$ 5,539	$ 22,154	$ 6,045	**$ 24,178**
3.4					$ -		$ -		**$ -**
3.5									
3.6					$ -		$ -		**$ -**
3.7					$ -		$ -		**$ -**
3.8					$ -		$ -		**$ -**
3.9					$ -		$ -		**$ -**
3.10					$ -		$ -		**$ -**
3.11					$ -		$ -		**$ -**
3.12					$ -		$ -		**$ -**
3.13					$ -		$ -		**$ -**
3.14					$ -		$ -		**$ -**
3.15					$ -		$ -		**$ -**
TOTAL - STRUCTURES					$ 501,469		$ 321,821		$ 823,289
4. CONDUCTOR, SHIELDWIRE, OPGW									
4.1	345kV - (1) 954kcmil 54/7 ACSS "Cardinal"	-	LF	$ 1.90	$ -	$ 5.00	$ -	$ 6.90	**$ -**
4.2	(1) OPGW 36 Fiber AC-33/38/571	-	LF	$ 1.35	$ -	$ 5.00	$ -	$ 6.35	**$ -**
4.3	(1) 3/8" EHS7 Steel	-	LF	$ 0.47	$ -	$ 5.00	$ -	$ 5.47	**$ -**
4.5	Remove Existing Cable From Existing Structures	-	Mile	$ -	$ -	$ 30,000	$ -	$ 30,000.00	**$ -**
4.6	Remove Existing OPGW Cable	-	Mile	$ -	$ -	$ 12,000	$ -	$ 12,000.00	**$ -**
4.7	Remove Existing EH7	-	Mile	$ -	$ -	$ 12,000	$ -	$ 12,000.00	**$ -**
4.8									
4.9		-							
4.10	Rider Poles - Relocated	-	Set	$ -	$ -	$ 3,500	$ -	$ 3,500.00	**$ -**
4.11	Rider Poles	-	EA	$ 1,750	$ -	$ 3,500	$ -	$ 5,250.00	**$ -**
TOTAL: CONDUCTOR, SHIELDWIRE, OPGW:					$ -		$ -		**$ -**
5. INSULATOR, FITTINGS, HARDWARE									
5.1	345kV Tangent (1-Group of 18-Bells Each Assembly)								
5.2	115kV Tangent (1-Group of 9-Bells Each Assembly)								
5.3	345kV Dead-end & Angle Insulators (1-Group of 18-Bells Each Assembly)	60	Assembly	$ 1,800	$ 108,000	$ 720	$ 43,200	$ 2,520	**$ 151,200**
5.4	115kV Dead-end & Angle Insulators (1-Group of 9-Bells Each Assembly)								
5.5	OPGW Assembly - Tangent	-	Assembly	$ 200	$ -	$ 150	$ -	$ 350	**$ -**
5.6	OPGW Assembly - Angle / DE	4	Assembly	$ 250	$ 1,000	$ 150	$ 600	$ 400	**$ 1,600**
5.7	OHSW Assembly - Angle / DE	4	Assembly	$ 250	$ 1,000	$ 150	$ 600	$ 400	**$ 1,600**
5.8	OPGW Splice Boxes	-	Set	$ 1,746	$ -	$ 2,274	$ -	$ 4,020	**$ -**
5.9	OPGW Splice & Test	-	EA	$ 2,520	$ -	$ 2,520	$ -	$ 5,040	**$ -**
5.10	Spacer - Conductor	-	EA	$ 50	$ -	$ 35	$ -	$ 85	**$ -**
5.11	Vibration Dampers - Conductor	-	EA	$ 35	$ -	$ 35	$ -	$ 70	**$ -**
5.12	Shieldwire / OPGW Dampers, Misc. Fittings	-	EA	$ 27	$ -	$ 35	$ -	$ 62	**$ -**
5.13	Guys, Anchors, and Accessories	-	EA	$ 720	$ -	$ 885	$ -	$ 1,605	**$ -**
5.14	Misc. materials (Signs and Markers)	-	Mile	$ 770	$ -	$ 1,006	$ -	$ 1,776	**$ -**
5.15									
5.16									
5.17									
5.18									
5.19	Interconnection Arrangements	1	EA	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 100,000	**$ 100,000**
5.20									
TOTAL - INSULATOR, FITTINGS, HARDWARE					$ 160,000		$ 94,400		$ 254,400
L. Interconnection Edic Station					$ 829,835		$ 954,240		$ 1,784,075
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
6.1	Mob / Demob	1	LS	$ -	$ -	$ 17,841	$ 17,841	$ 17,841	**$ 17,841**
	Project Management, Material Handling & Amenities								

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 67,808	$ 67,808	$ 67,808	**$ 67,808**
6.3	Utility PM and Project Oversite	1	LS		$ -	$ 17,841	$ 17,841	$ 17,841	**$ 17,841**
6.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 17,841	$ 17,841	$ 17,841	**$ 17,841**
	Engineering								
6.5	Design Engineering	1	LS	$ -	$ -	$ 89,204	$ 89,204	$ 89,204	**$ 89,204**
6.6	LiDAR	-	LS	$ -	$ -	$ 5,352	$ -	$ 5,352	**$ -**
6.7	Geotech	1	Location	$ -	$ -	$ 3,500	$ 3,500	$ 3,500	**$ 3,500**
6.8	Surveying/Staking	1	LS	$ -	$ -	$ 12,489	$ 12,489	$ 12,489	**$ 12,489**
	Testing & Commissioning								
6.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 20,000	$ 20,000	$ 20,000	**$ 20,000**
	Permitting and Additional Costs								
6.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.12	Warranties / LOC's	1	LS	$ -	$ -	$ 5,352	$ 5,352	$ 5,352	**$ 5,352**
6.13	Real Estate Costs (New ROW)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.14	Real Estate Costs (Incumbent Utility ROW)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.18	Sales Tax on Materials	1	LS	$ 66,387	$ 66,387	$ -	$ -	$ 66,387	**$ 66,387**
6.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 1,784	$ 1,784	$ 1,784	**$ 1,784**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 66,387		$ 253,659		**$ 320,046**

NAT & NYPA - T027 - (Segment A, Double Circuit)

M. Interconnection New Scotland Station

Estimate Revision: 8

Total: $ 3,075,099

NAT & NYPA - T027 - (Segment A, Double Circuit)	*Supply*	*Installation*	*Total*
M. Interconnection New Scotland Station			
1. CLEARING & ACCESS	$ -	$ 367,850	$ 367,850
2. FOUNDATIONS	$ 365,657	$ 473,093	$ 838,749
3. STRUCTURES	$ 655,465	$ 445,628	$ 1,101,092
4. CONDUCTOR, SHIELDWIRE, OPGW	$ 3,555	$ 26,100	$ 29,655
5. INSULATORS, FITTINGS, HARDWARE	$ 161,130	$ 95,795	$ 256,925
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 94,864	$ 385,963	$ 480,828
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 1,280,670	$ 1,794,428	$ 3,075,099
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 1,280,670	$ 1,794,428	$ 3,075,099

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
M. Interconnection New Scotland Station									
1. CLEARING & ACCESS									
1.1	Clearing the ROW - Heavy (mowing & clearing)	-	Acre	$ -	$ -	$ 15,000	$ -	$ 15,000	$ -
1.2	Clearing the ROW - Light (mowing)	2.0	Acre	$ -	$ -	$ 5,000	$ 10,000	$ 5,000	**$ 10,000**
1.3	Access Road	-	LF	$ -	$ -	$ 45	$ -	$ 45	$ -
1.4	Silt Fence	3,500.0	LF	$ -	$ -	$ 4	$ 14,000	$ 4	**$ 14,000**
1.5	Matting - Access and ROW	3,500.0	LF	$ -	$ -	$ 70	$ 245,000	$ 70	**$ 245,000**
1.6	Matting - To Work Area	300.0	LF	$ -	$ -	$ 70	$ 21,000	$ 70	**$ 21,000**
1.7	Snow Removal	-	LS	$ -	$ -	$ 516,800	$ -	$ 516,800	$ -
1.8	ROW Restoration	0.5	Mile	$ -	$ -	$ 10,000	$ 5,000	$ 10,000	**$ 5,000**
1.9	Work Pads	20,000.0	SF	$ -	$ -	$ 4	$ 70,400	$ 4	**$ 70,400**
1.10	Restoration for Work Pad areas	4,000.0	SF	$ -	$ -	$ 0.2	$ 600	$ 0	**$ 600**
1.11	Temporary Access Bridge	-	EA	$ -	$ -	$ 20,035	$ -	$ 20,035	$ -
1.12	Air Bridge	-	EA	$ -	$ -	$ 14,445	$ -	$ 14,445	$ -
1.13	Stabilized Construction Entrance	-	EA	$ -	$ -	$ 4,580	$ -	$ 4,580	$ -
1.14	Maintenance and Protection of Traffic on Public Roads	-	EA	$ -	$ -	$ 4,130	$ -	$ 4,130	$ -
1.15	Gates	-	EA	$ 2,000	$ -	$ 2,500	$ -	$ 4,500	$ -
1.16	Culverts / Misc. Access	-	EA	$ 750	$ -	$ 1,250	$ -	$ 2,000	$ -
1.17	Concrete Washout Station	1	EA	$ -	$ -	$ 1,850	$ 1,850	$ 1,850	**$ 1,850**
1.18					$ -		$ -		$ -
1.19					$ -		$ -		$ -
1.20	Crushed Rock	0	CY	$ 27	$ -	$ 75	$ -	$ 102	$ -
TOTAL - CLEARING & ACCESS					$ -		$ 367,850		$ 367,850
2. FOUNDATIONS									
2.1	Foundation – Drilled Pier – 8'X 50'	3	EA	$ 76,500	$ 229,501	$ 77,320	$ 231,959	$ 153,820	**$ 461,459**
2.2	Foundation – Drilled Pier – 8'X 89'	1	EA	$ 136,156	$ 136,156	$ 137,614	$ 137,614	$ 273,770	**$ 273,770**
2.3	Rock Excavation Adder	51.8	CY	$ -	$ -	$ 2,000	$ 103,520	$ 2,000	**$ 103,520**
2.4									
2.5									
2.6									
2.7									
2.8									
2.9									
2.10									
2.11									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.12									
2.13									
2.14									
2.15									
TOTAL - FOUNDATIONS					$ 365,657		$ 473,093		$ 838,749
3. STRUCTURES									
3.1	1-CKT 345KV 3-POLE MEDIUM ANGLE DEADEND (15°-60°) - 115'	3	Structure	$ 178,026	$ 534,077	$ 106,815	$ 320,446	$ 284,841	**$ 854,522**
3.2	1-CKT 345KV VERTICAL MEDIUM ANGLE DEADEND (15°-60°) - 115'	1	Structure	$ 116,328	$ 116,328	$ 69,797	$ 69,797	$ 186,125	**$ 186,125**
3.3	Install Grounding and Grounding Accessories	10	Pole	$ 506	$ 5,060	$ 5,539	$ 55,385	$ 6,045	**$ 60,445**
3.4					$ -		$ -		
3.5									
3.6					$ -		$ -		
3.7					$ -		$ -		
3.8					$ -		$ -		
3.9					$ -		$ -		
3.10					$ -		$ -		
3.11					$ -		$ -		
3.12					$ -		$ -		
3.13					$ -		$ -		
3.14					$ -		$ -		
3.15					$ -		$ -		
TOTAL - STRUCTURES					$ 655,465		$ 445,628		$ 1,101,092
4. CONDUCTOR, SHIELDWIRE, OPGW									
4.1	345kV - (1) 954kcmil 54/7 ACSS "Cardinal"	1,500	LF	$ 1.90	$ 2,850	$ 5.00	$ 7,500	$ 6.90	**$ 10,350**
4.2	(1) OPGW 36 Fiber AC-33/38/571	-	LF	$ 1.35	$ -	$ 5.00	$ -	$ 6.35	**$ -**
4.3	(1) 3/8" EHS7 Steel	1,500	LF	$ 0.47	$ 705	$ 5.00	$ 7,500	$ 5.47	**$ 8,205**
4.5	Remove Existing 345kV Cable From Existing Structures	0.3	Mile	$ -	$ -	$ 30,000	$ 7,500	$ 30,000.00	**$ 7,500**
4.6	Remove Existing OPGW Cable	-	Mile	$ -	$ -	$ 12,000	$ -	$ 12,000.00	**$ -**
4.7	Remove Existing EH7	0.3	Mile	$ -	$ -	$ 12,000	$ 3,600	$ 12,000.00	**$ 3,600**
4.8									
4.9									
4.10	Rider Poles - Relocated	-	Set	$ -	$ -	$ 3,500	$ -	$ 3,500.00	**$ -**
4.11	Rider Poles	-	EA	$ 1,750	$ -	$ 3,500	$ -	$ 5,250.00	**$ -**
TOTAL: CONDUCTOR, SHIELDWIRE, OPGW:					$ 3,555		$ 26,100		**$ 29,655**
5. INSULATOR, FITTINGS, HARDWARE									
5.1	345kV Tangent (1-Group of 18-Bells Each Assembly)	-	Assembly	$ 1,800	$ -	$ 720	$ -	$ 2,520	**$ -**
5.2	115kV Tangent (1-Group of 9-Bells Each Assembly)	-	Assembly	$ 900	$ -	$ 560	$ -	$ 1,460	**$ -**
5.3	345kV Dead-end & Angle Insulators (1-Group of 18-Bells Each Assembly)	60	Assembly	$ 1,800	$ 108,000	$ 720	$ 43,200	$ 2,520	**$ 151,200**
5.4	115kV Dead-end & Angle Insulators (1-Group of 9-Bells Each Assembly)	-	Assembly	$ 900	$ -	$ 725	$ -	$ 1,625	**$ -**
5.5	OPGW Assembly - Tangent	-	Assembly	$ 200	$ -	$ 150	$ -	$ 350	**$ -**
5.6	OPGW Assembly - Angle / DE	-	Assembly	$ 250	$ -	$ 150	$ -	$ 400	**$ -**
5.7	OHSW Assembly - Angle / DE	4	Assembly	$ 250	$ 1,000	$ 150	$ 600	$ 400	**$ 1,600**
5.8	OPGW Splice Boxes	-	Set	$ 1,746	$ -	$ 2,274	$ -	$ 4,020	**$ -**
5.9	OPGW Splice & Test	-	EA	$ 2,520	$ -	$ 2,520	$ -	$ 5,040	**$ -**
5.10	Spacer - Conductor	9	EA	$ 50	$ 450	$ 35	$ 315	$ 85	**$ 765**
5.11	Vibration Dampers - Conductor	48	EA	$ 35	$ 1,680	$ 35	$ 1,680	$ 70	**$ 3,360**
5.12	Shieldwire / OPGW Dampers, Misc. Fittings	-	EA	$ 27	$ -	$ 35	$ -	$ 62	**$ -**
5.13	Guys, Anchors, and Accessories	-	EA	$ 720	$ -	$ 885	$ -	$ 1,605	**$ -**
5.14	Misc. materials (Signs and Markers)	-	Mile	$ 770	$ -	$ 1,006	$ -	$ 1,776	**$ -**
5.15					$ -		$ -		**$ -**
5.16	Interconnection Arrangements	1	EA	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 100,000	**$ 100,000**
5.17					$ -		$ -		**$ -**
5.18					$ -		$ -		**$ -**
5.19					$ -		$ -		**$ -**
5.20					$ -		$ -		**$ -**
TOTAL - INSULATOR, FITTINGS, HARDWARE					$ 161,130		$ 95,795		$ 256,925
M. Interconnection New Scotland Station					$ 1,185,806		$ 1,408,465		$ 2,594,271
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
6.1	Mob / Demob	1	LS	$ -	$ -	$ 25,943	$ 25,943	$ 25,943	**$ 25,943**
	Project Management, Material Handling & Amenities								

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 98,602	$ 98,602	$ 98,602	**$ 98,602**
6.3	Utility PM and Project Oversite	1	LS		$ -	$ 25,943	$ 25,943	$ 25,943	**$ 25,943**
6.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 25,943	$ 25,943	$ 25,943	**$ 25,943**
	Engineering								
6.5	Design Engineering	1	LS	$ -	$ -	$ 129,714	$ 129,714	$ 129,714	**$ 129,714**
6.6	LiDAR	1	LS	$ -	$ -	$ 7,783	$ 7,783	$ 7,783	**$ 7,783**
6.7	Geotech	1	Location	$ -	$ -	$ 3,500	$ 3,500	$ 3,500	**$ 3,500**
6.8	Surveying/Staking	1	LS	$ -	$ -	$ 18,160	$ 18,160	$ 18,160	**$ 18,160**
	Testing & Commissioning								
6.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 40,000	$ 40,000	$ 40,000	**$ 40,000**
	Permitting and Additional Costs								
6.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$** -
6.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$** -
6.12	Warranties / LOC's	1	LS	$ -	$ -	$ 7,783	$ 7,783	$ 7,783	**$ 7,783**
6.13	Real Estate Costs (New ROW)	1	LS	$ -	$ -	$ -	$ -	$ -	**$** -
6.14	Real Estate Costs (Incumbent Utility ROW)	1	LS	$ -	$ -	$ -	$ -	$ -	**$** -
6.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$** -
6.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$** -
6.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$** -
6.18	Sales Tax on Materials	1	LS	$ 94,864	$ 94,864	$ -	$ -	$ 94,864	**$ 94,864**
6.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 2,594	$ 2,594	$ 2,594	**$ 2,594**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 94,864		$ 385,963		**$ 480,828**

NAT & NYPA - T027 - (Segment A, Double Circuit)

N. Interconnection Rotterdam Station

Estimate Revision: 8

Total: $ 4,561,342

NAT & NYPA - T027 - (Segment A, Double Circuit)	*Supply*	*Installation*	*Total*
N. Interconnection Rotterdam Station			
1. CLEARING & ACCESS	$ -	$ 1,233,050	$ 1,233,050
2. FOUNDATIONS	$ 192,145	$ 325,963	$ 518,108
3. STRUCTURES	$ 546,722	$ 837,150	$ 1,383,872
4. CONDUCTOR, SHIELDWIRE, OPGW	$ 65,923	$ 437,250	$ 503,173
5. INSULATORS, FITTINGS, HARDWARE	$ 165,730	$ 118,480	$ 284,210
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 77,642	$ 561,288	$ 638,929
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 1,048,161	$ 3,513,181	$ 4,561,342
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 1,048,161	$ 3,513,181	$ 4,561,342

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
N. Interconnection Rotterdam Station									
1. CLEARING & ACCESS									
1.1	Clearing the ROW - Heavy (mowing & clearing)	7.0	Acre	$ -	$ -	$ 15,000	$ 105,000	$ 15,000	**$ 105,000**
1.2	Clearing the ROW - Light (mowing)	5.0	Acre	$ -	$ -	$ 5,000	$ 25,000	$ 5,000	**$ 25,000**
1.3	Access Road	-	LF	$ -	$ -	$ 45	$ -	$ 45	$ -
1.4	Silt Fence	4,800.0	LF	$ -	$ -	$ 4	$ 19,200	$ 4	**$ 19,200**
1.5	Matting - Access and ROW	4,800.0	LF	$ -	$ -	$ 70	$ 336,000	$ 70	**$ 336,000**
1.6	Matting - To Work Area	2,400.0	LF	$ -	$ -	$ 70	$ 168,000	$ 70	**$ 168,000**
1.7	Snow Removal	-	LS	$ -	$ -	$ 516,800	$ -	$ 516,800	$ -
1.8	ROW Restoration	1.0	Mile	$ -	$ -	$ 10,000	$ 10,000	$ 10,000	**$ 10,000**
1.9	Work Pads	160,000.0	SF	$ -	$ -	$ 4	$ 563,200	$ 4	**$ 563,200**
1.10	Restoration for Work Pad areas	32,000.0	SF	$ -	$ -	$ 0.2	$ 4,800	$ 0	**$ 4,800**
1.11	Temporary Access Bridge	-	EA	$ -	$ -	$ 20,035	$ -	$ 20,035	$ -
1.12	Air Bridge	-	EA	$ -	$ -	$ 14,445	$ -	$ 14,445	$ -
1.13	Stabilized Construction Entrance	-	EA	$ -	$ -	$ 4,580	$ -	$ 4,580	$ -
1.14	Maintenance and Protection of Traffic on Public Roads	-	EA	$ -	$ -	$ 4,130	$ -	$ 4,130	$ -
1.15	Gates	-	EA	$ 2,000	$ -	$ 2,500	$ -	$ 4,500	$ -
1.16	Culverts / Misc. Access	-	EA	$ 750	$ -	$ 1,250	$ -	$ 2,000	$ -
1.17	Concrete Washout Station	1	EA	$ -	$ -	$ 1,850	$ 1,850	$ 1,850	**$ 1,850**
1.18					$ -		$ -		$ -
1.19					$ -		$ -		$ -
1.20	Crushed Rock	0	CY	$ 27	$ -	$ 75	$ -	$ 102	$ -
TOTAL - CLEARING & ACCESS					$ -		$ 1,233,050		$ 1,233,050
2. FOUNDATIONS									
2.1	10' ED Rock BF	6	EA	$ 358	$ 2,145	$ 3,575	$ 21,450	$ 3,933	**$ 23,595**
2.2	15' ED Rock BF	18	EA	$ 536	$ 9,653	$ 5,363	$ 96,525	$ 5,899	**$ 106,178**
2.3	20' ED Rock BF	4	EA	$ 715	$ 2,860	$ 7,150	$ 28,600	$ 7,865	**$ 31,460**
2.4	Foundation – Drilled Pier – 8'X 29'	4	EA	$ 44,372	$ 177,487	$ 44,847	$ 179,388	$ 89,219	**$ 356,875**
2.5	Rock Excavation Adder	-	CY	$ -	$ -	$ 2,000	$ -	$ 2,000	$ -
2.6					$ -		$ -		$ -
2.7					$ -		$ -		$ -
2.8					$ -		$ -		$ -
2.9					$ -		$ -		$ -
2.10					$ -		$ -		$ -
2.11					$ -		$ -		$ -
2.12					$ -		$ -		$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.13					$ -		$ -		$ -
2.14					$ -		$ -		$ -
2.15					$ -		$ -		$ -
TOTAL - FOUNDATIONS					$ 192,145		$ 325,963		$ 518,108
3. STRUCTURES									
3.1	15kV 3-CKT TANGENT DIST. - WOOD POLE	3	Pole	$ 3,500	$ 10,500	$ 3,600	$ 10,800	$ 7,100	**$ 21,300**
3.2	15Kv 3-CKT MA DIST. - WOOD POLE	1	Pole	$ 3,500	$ 3,500	$ 3,600	$ 3,600	$ 7,100	**$ 7,100**
3.3	15kV 3-CKT DE - WOOD POLE	2	Pole	$ 3,500	$ 7,000	$ 3,600	$ 7,200	$ 7,100	**$ 14,200**
3.4	115kV 1-CKT TANGENT - WOOD POLE	5	Pole	$ 4,500	$ 22,500	$ 4,400	$ 22,000	$ 8,900	**$ 44,500**
3.5	115kV 1-CKT MA - WOOD POLE	2	Pole	$ 4,500	$ 9,000	$ 4,400	$ 8,800	$ 8,900	**$ 17,800**
3.6	115kV 1-CKT DE - WOOD POLE	11	Pole	$ 5,500	$ 60,500	$ 5,000	$ 55,000	$ 10,500	**$ 115,500**
3.7	115kV 2-CKT TANGENT - WOOD POLE	4	Pole	$ 5,500	$ 22,000	$ 5,000	$ 20,000	$ 10,500	**$ 42,000**
3.8	115kV 2-CKT DE - STEEL POLE	4	Pole	$ 98,883	$ 395,530	$ 59,330	$ 237,318	$ 158,212	**$ 632,848**
3.9	Remove Existing Structure and Accessories	24	EA		$ -	$ 12,300	$ 295,200	$ 12,300	**$ 295,200**
3.10					$ -		$ -		$ -
3.11					$ -		$ -		$ -
3.12	Install Grounding and Grounding Accessories	32	Pole	$ 506	$ 16,192	$ 5,539	$ 177,232	$ 6,045	**$ 193,424**
3.13					$ -		$ -		$ -
3.14					$ -		$ -		$ -
3.15					$ -		$ -		$ -
TOTAL - STRUCTURES					$ 546,722		$ 837,150		$ 1,383,872
4. CONDUCTOR, SHIELDWIRE, OPGW									
4.1	345kV - (1) 954kcmil 54/7 ACSS "Cardinal"	23,400	LF	$ 1.90	$ 44,460	$ 5.00	$ 117,000	$ 6.90	**$ 161,460**
4.2	(1) OPGW 36 Fiber AC-33/38/571	-	LF	$ 1.35	$ -	$ 5.00	$ -	$ 6.35	**$ -**
4.3	(1) 3/8" EHS7 Steel	7,800	LF	$ 0.47	$ 3,666	$ 5.00	$ 39,000	$ 5.47	**$ 42,666**
4.5	Remove Existing Cable	6.6	Mile	$ -	$ -	$ 30,000	$ 197,700	$ 30,000.00	**$ 197,700**
4.6	Remove Existing EH7	2.2	Mile	$ -	$ -	$ 12,000	$ 26,400	$ 12,000.00	**$ 26,400**
4.7	15kV - (1) 477kcmil 26/7 ACSR "Hawk"	9,630	LF	$ 1.62	$ 15,601	$ 5.00	$ 48,150	$ 6.62	**$ 63,751**
4.8	15kV - (1) 336kcmil 26/7 ACSR "Linnet"	1,800	LF	$ 1.22	$ 2,196	$ 5.00	$ 9,000	$ 6.22	**$ 11,196**
4.9		-							
4.10	Rider Poles - Relocated	-	Set	$ -	$ -	$ 3,500	$ -	$ 3,500.00	**$ -**
4.11	Rider Poles	-	EA	$ 1,750	$ -	$ 3,500	$ -	$ 5,250.00	**$ -**
TOTAL: CONDUCTOR, SHIELDWIRE, OPGW:					$ 65,923		$ 437,250		**$ 503,173**
5. INSULATOR, FITTINGS, HARDWARE									
5.1	115kV Tangent (1-Group of 9-Bells Each Assembly)	33	Assembly	$ 1,000	$ 33,000	$ 560	$ 18,480	$ 1,560	**$ 51,480**
5.2	115kV Dead-end & Angle Insulators (1-Group of 9-Bells Each Assembly)	66	Assembly	$ 1,000	$ 66,000	$ 560	$ 36,960	$ 1,560	**$ 102,960**
5.3	15kV Tangent	12	Assembly	$ 100	$ 1,200	$ 75	$ 900	$ 175	**$ 2,100**
5.4	15kV Dead-end & Angle Insulators	18	Assembly	$ 100	$ 1,800	$ 75	$ 1,350	$ 175	**$ 3,150**
5.5	Neutral, Distribution, Tangent	4	Assembly	$ 100	$ 400	$ 75	$ 300	$ 175	**$ 700**
5.6	Neutral, Distribution, DE/Side	2	Assembly	$ 100	$ 200	$ 75	$ 150	$ 175	**$ 350**
5.7	Jumper, DE/Angle, 3PH	4	Assembly	$ 100	$ 400	$ 75	$ 300	$ 175	**$ 700**
5.8	OPGW Assembly - Tangent	2	Assembly	$ 200	$ 400	$ 150	$ 300	$ 350	**$ 700**
5.9	OSHW Assembly - Tangent	11	Assembly	$ 250	$ 2,750	$ 150	$ 1,650	$ 400	**$ 4,400**
5.10	OHSW Assembly - Angle / DE	38	Assembly	$ 250	$ 9,500	$ 150	$ 5,700	$ 400	**$ 15,200**
5.11	OPGW Splice Boxes	-	Set	$ 1,746	$ -	$ 2,274	$ -	$ 4,020	**$ -**
5.12	OPGW Splice & Test	-	EA	$ 2,520	$ -	$ 2,520	$ -	$ 5,040	**$ -**
5.13	Spacer - Conductor	-	EA	$ 50	$ -	$ 35	$ -	$ 85	**$ -**
5.14	Vibration Dampers - Conductor	-	EA	$ 35	$ -	$ 35	$ -	$ 70	**$ -**
5.15	Shieldwire / OPGW Dampers, Misc. Fittings	-	EA	$ 27	$ -	$ 35	$ -	$ 62	**$ -**
5.16	Guys, Anchors, and Accessories	14.0	EA	$ 720	$ 10,080	$ 885	$ 12,390	$ 1,605	**$ 22,470**
5.17	Misc. materials (Signs and Markers)	-	Mile	$ 770	$ -	$ 1,006	$ -	$ 1,776	**$ -**
5.18					$ -		$ -		**$ -**
5.19	Interconnection Arrangements	8	EA	$ 5,000	$ 40,000	$ 5,000	$ 40,000	$ 10,000	**$ 80,000**
5.20					$ -		$ -		**$ -**
5.21					$ -		$ -		**$ -**
5.22					$ -		$ -		**$ -**
5.23					$ -		$ -		**$ -**
TOTAL - INSULATOR, FITTINGS, HARDWARE					$ 165,730		$ 118,480		$ 284,210
N. Interconnection Rotterdam Station					$ 970,519		$ 2,951,893		$ 3,922,412
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6.1	Mob / Demob	1	LS	$ -	$ -	$ 39,224	$ 39,224	$ 39,224	**$ 39,224**
	Project Management, Material Handling & Amenities								
6.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 149,081	$ 149,081	$ 149,081	**$ 149,081**
6.3	Utility PM and Project Oversite	1	LS		$ -	$ 39,224	$ 39,224	$ 39,224	**$ 39,224**
6.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 39,224	$ 39,224	$ 39,224	**$ 39,224**
	Engineering								
6.5	Design Engineering	1	LS	$ -	$ -	$ 196,121	$ 196,121	$ 196,121	**$ 196,121**
6.6	LiDAR	1	LS	$ -	$ -	$ 11,767	$ 11,767	$ 11,767	**$ 11,767**
6.7	Geotech	1	Location	$ -	$ -	$ 3,500	$ 3,500	$ 3,500	**$ 3,500**
6.8	Surveying/Staking	1	LS	$ -	$ -	$ 27,457	$ 27,457	$ 27,457	**$ 27,457**
	Testing & Commissioning								
6.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 40,000	$ 40,000	$ 40,000	**$ 40,000**
	Permitting and Additional Costs								
6.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.12	Warranties / LOC's	1	LS	$ -	$ -	$ 11,767	$ 11,767	$ 11,767	**$ 11,767**
6.13	Real Estate Costs (New ROW)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.14	Real Estate Costs (Incumbent Utility ROW)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.18	Sales Tax on Materials	1	LS	$ 77,642	$ 77,642	$ -	$ -	$ 77,642	**$ 77,642**
6.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 3,922	$ 3,922	$ 3,922	**$ 3,922**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 77,642		$ 561,288		**$ 638,929**

NAT & NYPA - T027 - (Segment A, Double Circuit)

System Upgrade Facilities (Everett - Wolf Road 115kV - 1.3 mile Line Upgrade)

Estimate Revision: 8

Total: $ 4,464,375

SYSTEM UPGRADE FACILITIES		Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Sum	Labor & Equipment Su	Labor & Equipment Su	Total Unit Rate	TOTAL
SUF 1	**Everett - Wolf Road 115kV 1.3 mile line upgrade**	1.00	LS	$ -	$ -	$ -	$ -	$ 35,714,286	$ 3,571,500
SUF SS1	Engineering, T&C, PM, Indirects (25%)		LS %						$ 892,875
SUF 1	**SUF 1 - TOTAL:**				**$ -**		**$ -**		**$ 4,464,375**

NAT & NYPA - T027 - (Segment A, Double Circuit)

System Upgrade Facilities (Various Stations for Edic/Marcy to New Scotland)

Estimate Revision: 8

Total: $ 6,899,000

SYSTEM UPGRADE FACILITIES		Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Sum	Labor & Equipment Supply Rate	Labor & Equipment Sum	Total Unit Rate	TOTAL
SUF SS1	**Marcy 345kV Bay 3300 - Reconductor Strain Bus UNS-18 Marcy-New Scotland Line**	1	LS	$ -	$ -	$ -	$ -	$ 664,560	$ 665,000
SUF SS1	Removals	1	LS	$ -	$ -	$ -	$ -	$ 30,000	$ 30,000
SUF SS1	Engineering, T&C, PM, Indirects (25%)		LS %						$ 174,000
SUF SS1	**SUF SS1 - TOTAL:**				**$ -**		**$ -**		**$ 869,000**
SUF SS2	**Marcy 345kV Bay 3100 - Reconductor Strain Bus, Replace (3) breakers and wave trap UE1-7- Marcy-Edic Line**	1	LS	$ -	$ -	$ -	$ -	$ 2,946,086	$ 2,947,000
SUF SS2	Removals	1	LS	$ -	$ -	$ -	$ -	$ 120,720	$ 121,000
SUF SS2	Engineering, T&C, PM, Indirects (25%)		LS %						$ 767,000
SUF SS2	**SUFSS 2 - TOTAL:**				**$ -**		**$ -**		**$ 3,835,000**
SUF SS3	**Edic 345kV Bay - UE1-7- Marcy-Edic Line Replace (2) breakers and wave trap**	1	LS					$ 1,661,294	$ 1,662,000
SUF SS3	Removals	1	LS	$ -	$ -	$ -	$ -	$ 93,120	$ 94,000
SUF SS3	Engineering, T&C, PM, Indirects (25%)		LS %						$ 439,000
SUF SS3	**SUF SS3 - TOTAL:**				**$ -**		**$ -**		**$ 2,195,000**
SUF SS4		-	LS	$ -	$ -	$ -	$ -		$ -
SUF SS4	Removals		LS %					$ -	$ -
SUF SS4	Engineering, T&C, PM, Indirects (25%)		LS %						$ -
SUF SS4	**SUF SS4 - TOTAL:**				**$ -**		**$ -**		**$ -**
SUF SS5		-	LS	$ -	$ -	$ -	$ -		$ -
SUF SS5	Removals		LS %					$ -	$ -
SUF SS5	Engineering, T&C, PM, Indirects (25%)		LS %						$ -
SUF SS5	**SUF SS4 - TOTAL:**				**$ -**		**$ -**		**$ -**
	STATIONS SUF DIRECT TOTAL:								**$ 5,519,000**
	STATIONS SUF INDIRECT TOTAL:								**$ 1,380,000**
	STATIONS SUF TOTAL								**$ 6,899,000**

NAT & NYPA - T027 - (Segment A, Double Circuit)

Q. Princetown Substation GIS - Install

Estimate Revision: 8

Total: $ 37,290,171

NAT & NYPA - T027 - (Segment A, Double Circuit)	*Supply*	*Installation*	*Total*
Q. Princetown Substation GIS - Install			
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ 176,795	$ 963,025	$ 1,139,820
2. SUBSTATION FOUNDATIONS	$ 1,377,110	$ 1,474,680	$ 2,851,790
3. SUBSTATION STRUCTURES	$ 381,100	$ 381,100	$ 762,200
4. MAJOR EQUIPTMENT	$ 12,700,000	$ 4,266,670	$ 16,966,670
5. SMALL EQUIPTMENT / MATERIALS	$ 1,319,000	$ 590,000	$ 1,909,000
6. CONTROL HOUSE / PANELS	$ 3,727,920	$ 1,422,920	$ 5,150,840
7. MISC ITEMS	$ 358,177	$ 733,260	$ 1,091,437
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 1,603,208	$ 5,815,206	$ 7,418,414
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 21,643,310	$ 15,646,861	$ 37,290,171
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 21,643,310	$ 15,646,861	$ 37,290,171

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
Q. Princetown Substation GIS - Install									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	3.3	ACRES	$ -	$ -	$ 203,000	$ 659,750	$ 203,000	**$ 659,750**
1.2	Station stone within substation fence.	1,385	CY	$ 27	$ 37,395	$ 75	$ 103,875	$ 102	**$ 141,270**
1.3	Substation Fence	1,310	LF	$ 100	$ 131,000	$ 100	$ 131,000	$ 200	**$ 262,000**
1.4									
1.5									
1.6	Permanent Access Road - 20'-Wide (From Gordon RD)	240	LF	$ 35	$ 8,400	$ 285	$ 68,400	$ 320	**$ 76,800**
1.7									
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ 176,795		$ 963,025		$ 1,139,820
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	0	EA	$ 14,940	$ -	$ 16,000	$ -	$ 30,940	**$ -**
2.1b	Capacitor Bank Foundations	0	EA	$ 56,025	$ -	$ 60,000	$ -	$ 116,025	**$ -**
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 26,145	$ -	$ 28,000	$ -	$ 54,145	**$ -**
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	16	EA	$ 26,145	$ 418,320	$ 28,000	$ 448,000	$ 54,145	**$ 866,320**
2.1e	Switch Stand Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	**$ -**
2.1f	Station Service Transformer Stand Foundation	1	EA	$ 2,988	$ 2,988	$ 3,200	$ 3,200	$ 6,188	**$ 6,188**
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1h	Bus Support 1 Ph Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	**$ -**
2.1j	Instrument Transformer Stand Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	**$ -**
2.1k	Arrester Stand Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	**$ -**
2.1m	Wave Trap Stand Foundations	6	EA	$ 4,482	$ 26,892	$ 4,800	$ 28,800	$ 9,282	**$ 55,692**
2.1n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1p									
2.2	**230kV**								
2.2a	Circuit Breaker Foundations	0	EA	$ 11,952	$ -	$ 12,800	$ -	$ 24,752	**$ -**
2.2b	Capacitor Bank Foundations	0	EA	$ 44,820	$ -	$ 48,000	$ -	$ 92,820	**$ -**
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	**$ -**
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	**$ -**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.2e	Switch Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2f	Station Service Transformer Stand Foundation	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2h	Bus Support 1 Ph Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2j	Instrument Transformer Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2k	Arrester Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2m	Wave Trap Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2p									
				$ -	$ -	$ -	$ -	$ -	$ -
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	0	EA	$ 5,229	$ -	$ 5,600	$ -	$ 10,829	$ -
2.3b	Capacitor Bank Foundations	0	EA	$ 33,615	$ -	$ 36,000	$ -	$ 69,615	$ -
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	$ -
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	$ -
2.3e	Switch Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3f	Fuse Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3g	Bus Support 3ph Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3h	Bus Support 1 Ph Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3j	Instrument Transformer Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3k	Arrester Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3m	Wave Trap Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment	0	EA	$ 97,110	$ -	$ 104,000	$ -	$ 201,110	$ -
2.4b	345-115kV Transformer Foundation w/ Oil Containment	0	EA	$ 74,700	$ -	$ 80,000	$ -	$ 154,700	$ -
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad	1	EA	$ 912,910	$ 912,910	$ 977,680	$ 977,680	$ 1,890,590	**$ 1,890,590**
2.5b	Generator Foundation	1	EA	$ 16,000	$ 16,000	$ 17,000	$ 17,000	$ 33,000	**$ 33,000**
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	0	EA	$ 5,229	$ -	$ 5,600	$ -	$ 10,829	$ -
2.6b				$ -	$ -	$ -	$ -	$ -	$ -
2.6c				$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION FOUNDATIONS					$ 1,377,110		$ 1,474,680		$ 2,851,790
3. SUBSTATION STRUCTURES									
3.1	**345kV**								
3.1a	Substation A-Frame Structures - Stand alone	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	$ -
3.1b	Substation A-Frame Structures - Shared Column	6	EA	$ 37,000	$ 222,000	$ 37,000	$ 222,000	$ 74,000	**$ 444,000**
3.1c	Switch Stands	0	EA	$ 14,800	$ -	$ 14,800	$ -	$ 29,600	$ -
3.1d	Station Service Transformer Stand	1	EA	$ 14,800	$ 14,800	$ 14,800	$ 14,800	$ 29,600	**$ 29,600**
3.1e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1f	Bus Support 1 Ph	0	EA	$ 3,700	$ -	$ 3,700	$ -	$ 7,400	$ -
3.1g	Instrument Transformer Stand	36	EA	$ 1,850	$ 66,600	$ 1,850	$ 66,600	$ 3,700	**$ 133,200**
3.1h	Arrester Stand	18	EA	$ 1,850	$ 33,300	$ 1,850	$ 33,300	$ 3,700	**$ 66,600**
3.1j	Wave Trap Stand	6	EA	$ 7,400	$ 44,400	$ 7,400	$ 44,400	$ 14,800	**$ 88,800**
3.1k	Lightning Masts	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	$ -
3.2b	Substation A-Frame Structures - Shared Column	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	$ -
3.2c	Switch Stands	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	$ -
3.2d	Station Service Transformer Stand	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	$ -
3.2e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2f	Bus Support 1 Ph	0	EA	$ 2,775	$ -	$ 2,775	$ -	$ 5,550	$ -
3.2g	Instrument Transformer Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	$ -
3.2h	Arrester Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.2j	Wave Trap Stand	0	EA	$ 5,550	$ -	$ 5,550	$ -	$ 11,100	$ -
3.2k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
3.3	**115kV**								
3.3a	Substation A-Frame Structures - Stand alone	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	$ -
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	$ -
3.3c	Switch Stands	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	$ -
3.3d	Fuse Stand	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	$ -
3.3e	Bus Support 3ph	0	EA	$ 3,330	$ -	$ 3,330	$ -	$ 6,660	$ -
3.3f	Bus Support 1 Ph	0	EA	$ 1,850	$ -	$ 1,850	$ -	$ 3,700	$ -
3.3g	Instrument Transformer Stand	0	EA	$ 740	$ -	$ 740	$ -	$ 1,480	$ -
3.3h	Arrester Stand	0	EA	$ 740	$ -	$ 740	$ -	$ 1,480	$ -
3.3j	Wave Trap Stand	0	EA	$ 3,700	$ -	$ 3,700	$ -	$ 7,400	$ -
3.3k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
TOTAL - SUBSTATION STRUCTURES					$ 381,100		$ 381,100		$ 762,200
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	0	EA	$ 220,000	$ -	$ 80,000	$ -	$ 300,000	$ -
4.1b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	$ -
4.1c	345 kV - 230 kV Auto Transformer	0	EA	$ 3,300,000	$ -	$ 750,000	$ -	$ 4,050,000	$ -
4.1d	345 kV - 115 kV Auto Transformer	0	EA	$ 3,300,000	$ -	$ 750,000	$ -	$ 4,050,000	$ -
4.1e	345 kV (3) Bay Breaker-and-a-half GIS system	1	EA	$ 12,700,000	$ 12,700,000	$ 4,266,670	$ 4,266,670	$ 16,966,670	**$ 16,966,670**
4.2	**230kV**								
4.2a	Circuit Breakers	0	EA	$ 115,000	$ -	$ 80,000	$ -	$ 195,000	$ -
4.2b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	$ -
4.3	**115kV**								
4.3a	Circuit Breakers	0	EA	$ 52,000	$ -	$ 60,000	$ -	$ 112,000	$ -
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ 60,000	$ -	$ 60,000	$ -
TOTAL - MAJOR EQUIPTMENT					$ 12,700,000		$ 4,266,670		$ 16,966,670
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator	6	EA	$ 40,000	$ 240,000	$ 17,500	$ 105,000	$ 57,500	**$ 345,000**
5.1b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 35,000	$ -	$ 15,000	$ -	$ 50,000	$ -
5.1c	VT'S	18	EA	$ 25,000	$ 450,000	$ 12,000	$ 216,000	$ 37,000	**$ 666,000**
5.1d	CT'S	18	EA	$ 13,000	$ 234,000	$ 8,000	$ 144,000	$ 21,000	**$ 378,000**
5.1e	CCVT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.1f	Arresters	18	EA	$ 6,500	$ 117,000	$ 1,500	$ 27,000	$ 8,000	**$ 144,000**
5.1g	Wave Traps	6	EA	$ 13,000	$ 78,000	$ 8,000	$ 48,000	$ 21,000	**$ 126,000**
5.1h	Station Service Transformers	1	EA	$ 200,000	$ 200,000	$ 50,000	$ 50,000	$ 250,000	**$ 250,000**
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator	0	EA	$ 35,000	$ -	$ 15,000	$ -	$ 50,000	$ -
5.2b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 30,000	$ -	$ 17,500	$ -	$ 47,500	$ -
5.2c	VT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2e	CCVT'S	0	EA	$ 10,000	$ -	$ 6,000	$ -	$ 16,000	$ -
5.2f	Arresters	0	EA	$ 5,000	$ -	$ 6,000	$ -	$ 11,000	$ -
5.2g	Wave Traps	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2j									
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	0	EA	$ 33,000	$ -	$ 15,000	$ -	$ 48,000	$ -
5.3b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 28,000	$ -	$ 17,500	$ -	$ 45,500	$ -
5.3c	VT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.3d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.3e	CCVT'S	0	EA	$ 8,000	$ -	$ 8,000	$ -	$ 16,000	$ -
5.3f	Arresters	0	EA	$ 3,420	$ -	$ 6,000	$ -	$ 9,420	$ -
5.3g	Wave Traps	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
5.3j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ 1,319,000		$ 590,000		$ 1,909,000
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE	1	EA	$ 1,950,000	$ 1,950,000	$ 340,000	$ 340,000	$ 2,290,000	**$ 2,290,000**
6.2	Protection and Telecom Equipment Panels	31	EA	$ 35,000	$ 1,085,000	$ 10,000	$ 310,000	$ 45,000	**$ 1,395,000**
6.3	125VDC Batteries	2	EA	$ 75,000	$ 150,000	$ 25,000	$ 50,000	$ 100,000	**$ 200,000**
6.4	Control Cables	1	LS	$ 227,920	$ 227,920	$ 227,920	$ 227,920	$ 455,840	**$ 455,840**
6.5	SCADA and Communications	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.6	Low Voltage AC Distribution	2	EA	$ 50,000	$ 100,000	$ 100,000	$ 200,000	$ 150,000	**$ 300,000**
6.7	DC Distribution System	2	EA	$ 50,000	$ 100,000	$ 100,000	$ 200,000	$ 150,000	**$ 300,000**
6.8	Security	1	EA	$ 7,500	$ 7,500	$ 7,500	$ 7,500	$ 15,000	**$ 15,000**
6.9	Fire Alarm	1	EA	$ 7,500	$ 7,500	$ 7,500	$ 7,500	$ 15,000	**$ 15,000**
6.10	Generator	1	EA	$ 100,000	$ 100,000	$ 80,000	$ 80,000	$ 180,000	**$ 180,000**
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ 3,727,920		$ 1,422,920		**$ 5,150,840**
7. MISC ITEMS									
7.1	Conduit & Cable Trench System	200	LF	$ 185.00	$ 37,000	$ 170.00	$ 34,000	$ 355	**$ 71,000**
7.2	Rigid Bus	100	LF	$ 125.07	$ 12,507	$ 237.10	$ 23,710	$ 362	**$ 36,217**
7.3	Strain Bus	600	LF	$ 39.30	$ 23,580	$ 53.35	$ 32,010	$ 93	**$ 55,590**
7.4	Grounding System	13,000	LF	$ 6.93	$ 90,090	$ 32.58	$ 423,540	$ 40	**$ 513,630**
7.5	Strain Bus Insulators - 345kV	0	EA	$ 2,000	$ -	$ 1,050	$ -	$ 3,050	**$ -**
7.6	Strain Bus Insulators - 230kV	0	EA	$ 1,400	$ -	$ 750	$ -	$ 2,150	**$ -**
7.7	Strain Bus Insulators - 115kV	0	EA	$ 1,000	$ -	$ 550	$ -	$ 1,550	**$ -**
7.8	Low Voltage AC Station Service	1	LS	$ 50,000	$ 50,000	$ 75,000	$ 75,000	$ 125,000	**$ 125,000**
7.9	SSVT Service	1	LS	$ 45,000	$ 45,000	$ 45,000	$ 45,000	$ 90,000	**$ 90,000**
7.10	Control Conduits from Trench to Equipment	1	LS	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 100,000	**$ 100,000**
7.11	Misc. Materials (Above and Below Ground)	1	LS	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 100,000	**$ 100,000**
7.12									
7.13									
7.14									
7.15									
7.16									
7.17									
7.18									
7.19									
7.20									
TOTAL - MISC ITEMS					$ 358,177		$ 733,260		$ 1,091,437
Q. Princetown Substation GIS - Install					$ 20,040,102		$ 9,831,655		**$ 29,871,757**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1.0	LS	$ -	$ -	$ 298,718	$ 298,718	$ 298,718	**$ 298,718**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		$ -	$ 1,135,351	$ 1,135,351	$ 1,135,351	**$ 1,135,351**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 298,718	$ 298,718	$ 298,718	**$ 298,718**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 298,718	$ 298,718	$ 298,718	**$ 298,718**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 2,389,741	$ 2,389,741	$ 2,389,741	**$ 2,389,741**
8.6	LiDAR	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.7	Geotech	-	EA	$ -	$ -	$ 3,500	$ -	$ 3,500	**$ -**
8.8	Surveying/Staking	1	Site	$ -	$ -	$ 209,102	$ 209,102	$ 209,102	**$ 209,102**
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 896,153	$ 896,153	$ 896,153	**$ 896,153**
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 89,615	$ 89,615	$ 89,615	**$ 89,615**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
8.13	Real Estate Costs (New)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.14	Real Estate Costs (Incumbent Utility)	1	LS	$ -	$ -	$ 198,000	$ 198,000	$ 198,000	**$ 198,000**
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.18	Sales Tax on Materials	1	LS	$ 1,603,208	$ 1,603,208	$ -	$ -	$ 1,603,208	**$ 1,603,208**
8.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 1,091	$ 1,091	$ 1,091	**$ 1,091**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 1,603,208		$ 5,815,206		**$ 7,418,414**

NAT & NYPA - T027 - (Segment A, Double Circuit)	
ESTIMATE ASSUMPTIONS & CLARIFICATIONS	
1	Cost Estimate is based on 2017 rates.
2	Construction schedule is in accordance with proposed schedule - we have assumed continuous working with no breaks in the schedule. Six months have been added to the construction schedule for start up and close out works and assisting in pre-construction activities (i.e. permitting activities, material procurement etc.).
3	We have assumed a typical work week of five-(5) days per week at ten-(10) hours per day (5 x 10 hour days).
4	All labor rates and benefits used for estimating purposes are taken from IBEW Local 1249 working agreement as updated 5-8-2017.
5	We have assumed that the Access Road included in Developer Estimate will be Type 1 Gravel Type.
6	Costs will vary for handling and disposal of contaminated spoils, depending on type of contaminants and availability / location of the appropriate tipping facility. Since there is not enough information to provide a quantified estimate for this item, allowance is included in the contingency monies.
7	Costs have been developed based on historical data from Projects of a similar nature (AACE Class 5 and 4 Estimating Practices). We have not engaged any subcontractors for formal quotes.
8	Foundation rates include supply and installation of materials. Drilled Pier rates include supply and testing of concrete, rebar cage and the use of temp or permanent casing.
9	A Contractor Mark-Up (OH&P) of 15% has been included in the Total section.
10	We have assumed that all project details provided are accurate unless noted otherwise.
11	Any SUF pricing includes 35% to cover Contractor markup (15%) and contingency (20%)
12	A contractor allowance of 1% for mobilization and demobilization has been included in the total section.
13	A contractor allowance of 3.289% for project management and staffing has been included in the total section. This also includes agricultural inspector, engineering inspector, safety inspector, compliance inspector, environmental inspector, and SWPP inspector.
14	An allowance of 1% for Utility PM and Project Oversite staffing has been included in the total section.
15	A contractor allowance of 1% for site accommodation, facilities, and storage has been included in the total section.
16	An allowance of 5% for transmission design and engineering has been included in the total section.
17	An allowance of 8% for substation design and engineering has been included in the total section.
18	An allowance of 0.7% for survey and staking of the transmission line and substation layout has been included in the total section.
19	An allowance of 0.3% for LIDAR of the transmission line has been included in the total section.
20	An allowance of 3.75% for substation testing and commissioning has been included in the total section.
21	An allowance of $20,000.00 per circuit for transmission line testing and commissioning has been included in the total section.
22	New York state sales tax of 8% is included in all material pricing.
23	An allowance of 1.5% for insurance is included in the DPS sheet.
24	The SUF estimates for the stations are rough order of magnitude estimates. No engineering was performed and SECo did not have access to record drawings.
25	The SUF estimates for the Everett - Wolf Road 115kV 1.3 mile line segment upgrade was obtained from the SIS. SECo did not estimate.

NY Power Authority and North American Transmission (T028)			
		Description	**Total Amount** (In thousand $)
Direct Cost	1	**Transmission Lines**	
	1.1	Clearing & Access	$50,021
	1.2	Foundations	$23,713
	1.3	Structures	$60,645
	1.4	Conductor, Shiedwire and Optical Ground Wire	$35,494
	1.5	Insulators, Fitting and Hardwares	$11,907
		Subtotal (1)	**$181,780**
	2	**Substations**	
	2.1	Rotterdam Substation	$48,340
	2.2	Edic Substation	$2,153
	2.3	Princetown Substation	$12,718
	2.4	New Scotland Substation	$5,264
	2.5	Porter Substation	$546
	2.6	Knickerbocker Substation	$0
	2.7	Marcy Substation	$0
	2.8	Substation Interconnections	$8,301
		Subtotal (2)	**$77,322**
		Total (1+2)	$259,101
		Contractors Mark-up (15% of Total 1+2)	$38,865
		Total Direct Cost (A)	**$297,967**
Indirect Cost	3	**Technical Services Costs**	
	3.1	Contractor Mobilization / Demobilization	$2,591
	3.2	Project Management, Material Handling & Amenities	$18,417
	3.3	Engineering	$17,763
	3.4	Testing & Commissioning	$1,840
	3.5	Permitting, Real Estate, Sales Tax and Additional Costs	$20,533
	3.6	Compensation for use of NYPA Structures (1 Circuit)	$8,919
	3.7	Legal, Environmental Licensing & Permitting and Environmental Mitigation	$8,096
		Total Indirect Cost (3)	**$78,159**
		Subtotal Project Cost (B=A+3) 2017 $	**$376,125**
	4	**Network Upgrade Facilities (NUF)**	
	4.1	Network upgrade facility proposed as element of the Project (Marcy and Edic Terminals)	$7,727
	4.2	Network upgrade facility identified during Evaluation	$0
		Subtotal NUF Cost (C)	**$7,727**
		Total Project Cost (B+C) 2017 $	**$383,852**
		Total Project Cost 2018 $	**$395,368**

NAT & NYPA - T028 - (Segment A, Enhanced)

Estimate Revision: 7

NAT & NYPA - T028 - (Segment A, Enhanced) - Direct Costs		*Total Each Segment*
Direct Labor, Material & Equipment Costs	A. Transmission Line Edic to Princetown	$ 122,948,939
Direct Labor, Material & Equipment Costs	B. Transmission Line Princetown to Rotterdam	$ 20,488,282
Direct Labor, Material & Equipment Costs	C. Transmission Line Princetown to New Scotland	$ 38,342,499
Direct Labor, Material & Equipment Costs	D. Rotterdam Substation - Install	$ 44,728,474
Direct Labor, Material & Equipment Costs	E. Rotterdam Substation - Removal	$ 3,611,030
Direct Labor, Material & Equipment Costs	F. Edic Substation - Install	$ 2,117,185
Direct Labor, Material & Equipment Costs	G. Edic Substation - Removal	$ 35,750
Direct Labor, Material & Equipment Costs	H. New Scotland Substation - Install	$ 5,182,753
Direct Labor, Material & Equipment Costs	I. New Scotland Substation - Removal	$ 81,300
Direct Labor, Material & Equipment Costs	J. Porter Substation - Install	$ 71,912
Direct Labor, Material & Equipment Costs	K. Porter Substation - Removal	$ 474,313
Direct Labor, Material & Equipment Costs	L. Interconnection Edic Station	$ 1,784,075
Direct Labor, Material & Equipment Costs	M. Interconnection New Scotland Station	$ 2,594,271
Direct Labor, Material & Equipment Costs	N. Interconnections (Various Lines for Edic to New Scotland)	$ -
Direct Labor, Material & Equipment Costs	O. System Upgrade Facilities (Various Lines for Edic to New Scotland)	$ -
Direct Labor, Material & Equipment Costs	P. System Upgrade Facilities (Various Stations for Edic to New Scotland)	$ 5,519,000
Direct Labor, Material & Equipment Costs	Q. Interconnection Rotterdam Station	$ 3,922,412
Direct Labor, Material & Equipment Costs	R. Princetown Switchyard - Install	$ 12,718,239
	SUBTOTAL:	**$ 264,620,435**
	CONTRACTOR MARK-UP (OH&P)	**$ 39,693,065**
	CONTINGENCY ON ENTIRE PROJECT	**$ -**
	TOTAL DIRECT:	**$ 304,313,500**

NAT & NYPA - T028 - (Segment A, Enhanced) - Indirect Costs		*Total Each Segment*
Indirect Costs	A. Transmission Line Edic to Princetown	$ 37,913,843
Indirect Costs	B. Transmission Line Princetown to Rotterdam	$ 4,538,550
Indirect Costs	C. Transmission Line Princetown to New Scotland	$ 9,279,647
Indirect Costs	D. Rotterdam Substation - Install	$ 11,041,603
Indirect Costs	E. Rotterdam Substation - Removal	$ 596,103
Indirect Costs	F. Edic Substation - Install	$ 522,430
Indirect Costs	G. Edic Substation - Removal	$ 5,866
Indirect Costs	H. New Scotland Substation - Install	$ 1,260,653
Indirect Costs	I. New Scotland Substation - Removal	$ 13,340
Indirect Costs	J. Porter Substation - Install	$ 14,798
Indirect Costs	K. Porter Substation - Removal	$ 77,824
Indirect Costs	L. Interconnection Edic Station	$ 343,365
Indirect Costs	M. Interconnection New Scotland Station	$ 514,737
Indirect Costs	N. Interconnections (Various Lines for Edic to New Scotland)	$ -
Indirect Costs	O. System Upgrade Facilities (Various Lines for Edic to New Scotland)	$ -
Indirect Costs	P. System Upgrade Facilities (Various Stations for Edic to New Scotland)	$ 1,380,000
Indirect Costs	Q. Interconnection Rotterdam Station	$ 690,199
Indirect Costs	R. Princetown Switchyard - Install	$ 3,249,664
Indirect Costs	Legal and Permitting (Includes Legal, Envir. Lisc. & Permit., and Envir. Mitagation)	$ 8,095,924
	TOTAL INDIRECT:	**$ 79,538,546**

TOTAL ESTIMATED COST:	**$ 383,852,046**

NAT & NYPA - T028 - (Segment A, Enhanced)

A. Transmission Line Edic to Princetown

Estimate Revision: 7

Total: $ 160,862,783

NAT & NYPA - T028 - (Segment A, Enhanced)	*Supply*	*Installation*	*Total*
A. Transmission Line Edic to Princetown			
1. CLEARING & ACCESS	$ 41,500	$ 35,680,876	$ 35,722,376
2. FOUNDATIONS	$ 3,098,282	$ 10,723,946	$ 13,822,229
3. STRUCTURES	$ 14,839,646	$ 25,190,231	$ 40,029,876
4. CONDUCTOR, SHIELDWIRE, OPGW	$ 4,932,573	$ 20,897,590	$ 25,830,163
5. INSULATORS, FITTINGS, HARDWARE	$ 5,125,311	$ 2,418,984	$ 7,544,295
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 2,242,985	$ 35,670,858	$ 37,913,843
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 30,280,297	$ 130,582,485	$ 160,862,783
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 30,280,297	$ 130,582,485	$ 160,862,783

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Sum	Labor & Equipment Supply Rate	Labor & Equipment Sum	Total Unit Rate	TOTAL
A. Transmission Line Edic to Princetown									
1. CLEARING & ACCESS									
1.1	Clearing the ROW - Heavy (mowing & clearing)	8.0	Acre	$ -	$ -	$ 15,000	$ 120,000	$ 15,000	**$ 120,000**
1.2	Clearing the ROW - Light (mowing)	194.0	Acre		$ -	$ 5,000	$ 970,000	$ 5,000	**$ 970,000**
1.3	Permanent Access Road	70,540.8	LF	$ -	$ -	$ 45	$ 3,174,336	$ 45	**$ 3,174,336**
1.4	Silt Fence	352,704.0	LF	$ -	$ -	$ 4	$ 1,410,816	$ 4	**$ 1,410,816**
1.5	Matting - Access and ROW	282,163.2	LF	$ -	$ -	$ 70	$ 19,751,424	$ 70	**$ 19,751,424**
1.6	Matting - To Work Area	25,200.0	LF	$ -	$ -	$ 70	$ 1,764,000	$ 70	**$ 1,764,000**
1.7	Snow Removal	66.8	Mile	$ -	$ -	$ 16,000	$ 1,068,800	$ 16,000	**$ 1,068,800**
1.8	ROW Restoration	66.8	Mile	$ -	$ -	$ 10,000	$ 668,000	$ 10,000	**$ 668,000**
1.9	Work Pads	1,680,000.0	SF	$ -	$ -	$ 4	$ 5,913,600	$ 4	**$ 5,913,600**
1.10	Restoration for Work Pad areas	336,000.0	SF	$ -	$ -	$ 0.15	$ 50,400	$ 0	**$ 50,400**
1.11	Temporary Access Bridge	-	EA	$ -	$ -	$ 20,035	$ -	$ 20,035	**$ -**
1.12	Air Bridge	-	EA	$ -	$ -	$ 14,445	$ -	$ 14,445	**$ -**
1.13	Stabilized Construction Entrance	50	EA	$ -	$ -	$ 4,580	$ 229,000	$ 4,580	**$ 229,000**
1.14	Maintenance and Protection of Traffic on Public Roads	100	LS	$ -	$ -	$ 4,130	$ 413,000	$ 4,130	**$ 413,000**
1.15	Culverts / Misc. Access	10	EA	$ 750	$ 7,500	$ 1,250	$ 12,500	$ 2,000	**$ 20,000**
1.16	Gates	17	EA	$ 2,000	$ 34,000	$ 2,500	$ 42,500	$ 4,500	**$ 76,500**
1.17	Concrete Washout Station	50	EA	$ -	$ -	$ 1,850	$ 92,500	$ 1,850	**$ 92,500**
TOTAL - CLEARING & ACCESS:					$ 41,500		$ 35,680,876		**$ 35,722,376**
2. FOUNDATIONS									
2.1	Direct Embed Foundations - 4' x 16'	416	EA	$ 941	$ 391,345	$ 7,398	$ 3,077,513	$ 8,339	**$ 3,468,858**
2.2	Direct Embed Foundations - 4' x 17'	2	EA	$ 995	$ 1,990	$ 7,833	$ 15,666	$ 8,828	**$ 17,656**
2.3	Direct Embed Foundations - 4' x 19'	52	EA	$ 1,104	$ 57,404	$ 8,703	$ 452,576	$ 9,807	**$ 509,979**
2.4	Direct Embed Foundations - 4' x 21'	4	EA	$ 1,213	$ 4,851	$ 9,574	$ 38,295	$ 10,786	**$ 43,146**
2.5	Direct Embed Foundations - 4' x 23'	16	EA	$ 1,322	$ 21,144	$ 10,444	$ 167,105	$ 11,766	**$ 188,249**
2.6	Direct Embed Foundations - 4' x 25'	4	EA	$ 1,430	$ 5,721	$ 11,314	$ 45,258	$ 12,745	**$ 50,979**
2.7	Direct Embed Foundations - 6' x 18'	6	EA	$ 1,857	$ 11,145	$ 18,603	$ 111,621	$ 20,461	**$ 122,766**
2.8	Direct Embed Foundations - 6' x 19'	6	EA	$ 1,952	$ 11,711	$ 19,583	$ 117,496	$ 21,534	**$ 129,207**
2.9	Direct Embed Foundations - 6' x 20'	14	EA	$ 2,046	$ 28,648	$ 20,562	$ 287,864	$ 22,608	**$ 316,512**
2.10	Direct Embed Foundations - 6' x 21'	15	EA	$ 2,141	$ 32,110	$ 21,541	$ 323,113	$ 23,681	**$ 355,222**
2.11	Direct Embed Foundations - 6' x 22'	7	EA	$ 2,235	$ 15,645	$ 22,520	$ 157,640	$ 24,755	**$ 173,285**
2.12	Direct Embed Foundations - 6' x 25'	6	EA	$ 2,518	$ 15,109	$ 25,457	$ 152,744	$ 27,976	**$ 167,854**
2.13	Direct Embed Foundations - 6' x 26'	1	EA	$ 2,613	$ 2,613	$ 26,437	$ 26,437	$ 29,049	**$ 29,049**
2.14	Direct Embed Foundations - 6' x 28'	3	EA	$ 2,707	$ 8,121	$ 27,416	$ 82,247	$ 30,123	**$ 90,368**
2.15	Direct Embed Foundations - 6' x 29'	3	EA	$ 2,896	$ 8,687	$ 29,374	$ 88,122	$ 32,270	**$ 96,809**
2.16	Direct Embed Foundations - 6' x 33'	3	EA	$ 3,273	$ 9,820	$ 33,290	$ 99,871	$ 36,564	**$ 109,691**
2.17	Direct Embed Foundations - 7' x 27'	2	EA	$ 3,337	$ 6,673	$ 37,316	$ 74,631	$ 40,652	**$ 81,305**
2.18	Direct Embed Foundations - 7' x 28'	1	EA	$ 3,452	$ 3,452	$ 38,648	$ 38,648	$ 42,101	**$ 42,101**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Sum	Labor & Equipment Supply Rate	Labor & Equipment Sum	Total Unit Rate	TOTAL
2.19	Direct Embed Foundations - 7' x 49'	1	EA	$ 5,880	$ 5,880	$ 66,635	$ 66,635	$ 72,515	**$ 72,515**
2.20	Direct Embed Foundations - 7' x 61'	1	EA	$ 7,267	$ 7,267	$ 82,628	$ 82,628	$ 89,894	**$ 89,894**
2.21	Drilled Pier - 6' x 20'	54	EA	$ 18,064	$ 975,459	$ 18,261	$ 986,079	$ 36,325	**$ 1,961,539**
2.22	Drilled Pier - 7' x 19'	15	EA	$ 23,416	$ 351,246	$ 23,671	$ 355,070	$ 47,088	**$ 706,315**
2.23	Drilled Pier - 7' x 21'	12	EA	$ 25,758	$ 309,096	$ 26,038	$ 312,461	$ 51,796	**$ 621,558**
2.24	Drilled Pier - 7' x 22'	6	EA	$ 26,929	$ 161,573	$ 27,222	$ 163,332	$ 54,151	**$ 324,905**
2.26	Drilled Pier - 7' x 23'	3	EA	$ 28,100	$ 84,299	$ 28,406	$ 85,217	$ 56,505	**$ 169,516**
2.27	Drilled Pier - 7' x 33'	6	EA	$ 39,808	$ 238,847	$ 40,241	$ 241,447	$ 80,049	**$ 480,295**
2.28	Drilled Pier - 7' x 42'	3	EA	$ 50,345	$ 151,036	$ 50,893	$ 152,680	$ 101,239	**$ 303,716**
2.29	Drilled Pier - 8' x 27'	2	EA	$ 42,819	$ 85,637	$ 57,340	$ 114,680	$ 100,158	**$ 200,317**
2.30	Drilled Pier - 8' x 29'	2	EA	$ 45,877	$ 91,754	$ 61,436	$ 122,871	$ 107,313	**$ 214,625**
2.31	Rock Excavation Adder	1,342	CY	$ -	$ -	$ 2,000	$ 2,684,000	$ 2,000	**$ 2,684,000**
TOTAL - FOUNDATIONS:					$ 3,098,282		$ 10,723,946		**$ 13,822,229**
3. STRUCTURES									
3.1	1-CKT 345KV VERTICAL TANGENT (0°-1°) - 115'	7	Structure	$ 50,024	$ 350,168	$ 30,014	$ 210,101	$ 80,038	**$ 560,269**
3.2	1-CKT 345KV VERTICAL TANGENT (0°-1°) - 120'	4	Structure	$ 52,207	$ 208,828	$ 31,324	$ 125,297	$ 83,531	**$ 334,125**
3.3	1-CKT 345KV VERTICAL TANGENT (0°-1°) - 130'	3	Structure	$ 58,257	$ 174,770	$ 34,954	$ 104,862	$ 93,210	**$ 279,631**
3.4	1-CKT 345KV VERTICAL TANGENT (0°-1°) - 135'	10	Structure	$ 60,884	$ 608,835	$ 36,530	$ 365,301	$ 97,414	**$ 974,136**
3.5	1-CKT 345KV VERTICAL TANGENT (0°-1°) - 145'	1	Structure	$ 64,473	$ 64,473	$ 38,684	$ 38,684	$ 103,156	**$ 103,156**
3.6	1-CKT 345KV VERTICAL SMALL ANGLE (1°-15°) - 115'	1	Structure	$ 72,039	$ 72,039	$ 43,223	$ 43,223	$ 115,262	**$ 115,262**
3.7	1-CKT 345KV VERTICAL SMALL ANGLE (1°-15°) - 130'	3	Structure	$ 85,082	$ 255,245	$ 51,049	$ 153,147	$ 136,130	**$ 408,391**
3.8	1-CKT 345KV VERTICAL SMALL ANGLE (1°-15°) - 135'	1	Structure	$ 92,278	$ 92,278	$ 55,367	$ 55,367	$ 147,645	**$ 147,645**
3.9	1-CKT 345KV VERTICAL MEDIUM ANGLE DEADEND (15°-60°) - 115'	1	Structure	$ 116,328	$ 116,328	$ 69,797	$ 69,797	$ 186,125	**$ 186,125**
3.10	1-CKT 345KV VERTICAL MEDIUM ANGLE DEADEND (15°-60°) - 120'	1	Structure	$ 127,558	$ 127,558	$ 76,535	$ 76,535	$ 204,092	**$ 204,092**
3.11	1-CKT 345KV VERTICAL MEDIUM ANGLE DEADEND (15°-60°) - 150'	1	Structure	$ 208,033	$ 208,033	$ 124,820	$ 124,820	$ 332,852	**$ 332,852**
3.12	1-CKT 345KV VERTICAL MEDIUM ANGLE DEADEND (15°-60°) - 160'	1	Structure	$ 238,595	$ 238,595	$ 143,157	$ 143,157	$ 381,751	**$ 381,751**
3.13	1-CKT 345KV H-FRAME TANGENT (0°-1°) - 75'	1	Structure	$ 24,476	$ 24,476	$ 14,685	$ 14,685	$ 39,161	**$ 39,161**
3.14	1-CKT 345KV H-FRAME TANGENT (0°-1°) - 80'	2	Structure	$ 25,826	$ 51,652	$ 15,496	$ 30,991	$ 41,322	**$ 82,643**
3.15	1-CKT 345KV H-FRAME TANGENT (0°-1°) - 84'	169	Structure	$ 29,526	$ 4,989,894	$ 17,716	$ 2,993,936	$ 47,242	**$ 7,983,830**
3.16	1-CKT 345KV H-FRAME TANGENT (0°-1°) - 89'	36	Structure	$ 32,708	$ 1,177,488	$ 19,625	$ 706,493	$ 52,333	**$ 1,883,981**
3.17	1-CKT 345KV H-FRAME TANGENT (0°-1°) - 93'	23	Structure	$ 34,540	$ 794,409	$ 20,724	$ 476,645	$ 55,263	**$ 1,271,054**
3.18	1-CKT 345KV H-FRAME TANGENT (0°-1°) - 98'	10	Structure	$ 37,500	$ 374,995	$ 22,500	$ 224,997	$ 59,999	**$ 599,992**
3.19	1-CKT 345KV H-FRAME TANGENT (0°-1°) - 102'	4	Structure	$ 43,901	$ 175,602	$ 26,340	$ 105,361	$ 70,241	**$ 280,963**
3.20	1-CKT 345KV H-FRAME TANGENT (0°-1°) - 107'	2	Structure	$ 45,936	$ 91,871	$ 27,561	$ 55,123	$ 73,497	**$ 146,994**
3.21	1-CKT 345KV H-FRAME SMALL ANGLE (1°-15°) - 80'	2	Structure	$ 55,241	$ 110,482	$ 33,145	$ 66,289	$ 88,386	**$ 176,771**
3.22	1-CKT 345KV H-FRAME SMALL ANGLE (1°-15°) - 85'	19	Structure	$ 57,813	$ 1,098,438	$ 34,688	$ 659,063	$ 92,500	**$ 1,757,500**
3.23	1-CKT 345KV H-FRAME SMALL ANGLE (1°-15°) - 90'	2	Structure	$ 61,050	$ 122,100	$ 36,630	$ 73,260	$ 97,680	**$ 195,360**
3.24	1-CKT 345KV H-FRAME SMALL ANGLE (1°-15°) - 95'	2	Structure	$ 65,120	$ 130,240	$ 39,072	$ 78,144	$ 104,192	**$ 208,384**
3.25	1-CKT 345KV H-FRAME SMALL ANGLE (1°-15°) - 100'	1	Structure	$ 68,635	$ 68,635	$ 41,181	$ 41,181	$ 109,816	**$ 109,816**
3.26	1-CKT 345KV H-FRAME SMALL ANGLE (1°-15°) - 105'	1	Structure	$ 72,872	$ 72,872	$ 43,723	$ 43,723	$ 116,594	**$ 116,594**
3.27	1-CKT 345KV 3-POLE TANGENT DEADEND (0°-5°) - 75'	2	Structure	$ 61,513	$ 123,025	$ 36,908	$ 73,815	$ 98,420	**$ 196,840**
3.28	1-CKT 345KV 3-POLE TANGENT DEADEND (0°-5°) - 80'	3	Structure	$ 69,079	$ 207,237	$ 41,447	$ 124,342	$ 110,526	**$ 331,579**
3.29	1-CKT 345KV 3-POLE TANGENT DEADEND (0°-5°) - 85'	4	Structure	$ 75,739	$ 302,956	$ 45,443	$ 181,774	$ 121,182	**$ 484,730**
3.30	1-CKT 345KV 3-POLE TANGENT DEADEND (0°-5°) - 90'	4	Structure	$ 81,493	$ 325,970	$ 48,896	$ 195,582	$ 130,388	**$ 521,552**
3.31	1-CKT 345KV 3-POLE MEDIUM ANGLE DEADEND (15°-60°) - 80'	1	Structure	$ 97,403	$ 97,403	$ 58,442	$ 58,442	$ 155,844	**$ 155,844**
3.32	1-CKT 345KV 3-POLE MEDIUM ANGLE DEADEND (15°-60°) - 85'	6	Structure	$ 105,802	$ 634,809	$ 63,481	$ 380,885	$ 169,282	**$ 1,015,694**
3.33	1-CKT 345KV 3-POLE MEDIUM ANGLE DEADEND (15°-60°) - 90'	6	Structure	$ 117,253	$ 703,518	$ 70,352	$ 422,111	$ 187,605	**$ 1,125,629**
3.34	1-CKT 345KV 3-POLE MEDIUM ANGLE DEADEND (15°-60°) - 95'	1	Structure	$ 129,408	$ 129,408	$ 77,645	$ 77,645	$ 207,052	**$ 207,052**
3.35	1-CKT 345KV 3-POLE MEDIUM ANGLE DEADEND (15°-60°) - 115'	1	Structure	$ 178,026	$ 178,026	$ 106,815	$ 106,815	$ 284,841	**$ 284,841**
3.36	Remove Existing Foundation	50	EA	$ -	$ -	$ 7,500	$ 375,000	$ 7,500	**$ 375,000**
3.37	Remove Existing Structure and Accessories	994	EA	$ -	$ -	$ 12,500	$ 12,425,000	$ 12,500	**$ 12,425,000**
3.38	Install Grounding and Grounding Accessories	666	Pole	$ 506	$ 336,996	$ 5,539	$ 3,688,641	$ 6,045	**$ 4,025,637**
3.39									
3.40									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Sum	Labor & Equipment Supply Rate	Labor & Equipment Sum	Total Unit Rate	TOTAL
TOTAL - STRUCTURES:					$ 14,839,646		$ 25,190,231		**$ 40,029,876**
4. CONDUCTOR, SHIELDWIRE, OPGW									
4.1	345kV - (1) 954kcmil 54/7 ACSS "Cardinal" (Edic to 12.6 Miles)	2,228,688	LF	$ 1.90	$ 4,234,507	$ 5.00	$ 11,143,440	$ 6.90	**$ 15,377,947**
4.2	(1) OPGW 36 Fiber AC-33/38/571 (Edic to 12.6 Miles)	301,954	LF	$ 1.35	$ 407,638	$ 5.00	$ 1,509,770	$ 6.35	**$ 1,917,408**
4.3	(1) 3/8" EHS7 Steel (Edic to 12.6 Miles)	271,656	LF	$ 0.47	$ 127,678	$ 5.00	$ 1,358,280	$ 5.47	**$ 1,485,958**
4.4									
4.5									
4.6									
4.7	Remove Existing Conductor and Accessories	121.0	Mile	$ -	$ -	$ 30,000	$ 3,630,000	$ 30,000.00	**$ 3,630,000**
4.8	Remove Existing OPGW and Accessories	108.4	Mile	$ -	$ -	$ 12,000	$ 1,300,800	$ 12,000.00	**$ 1,300,800**
4.9	Remove Existing OHSW and Accessories	108.4	Mile	$ -	$ -	$ 12,000	$ 1,300,800	$ 12,000.00	**$ 1,300,800**
4.10									
4.11									
4.12									
4.13	Rider Poles (187 Locations)	93	Set	$ 1,750	$ 162,750	$ 3,500	$ 325,500	$ 5,250.00	**$ 488,250**
4.14	Rider Poles - Relocated	94	Set	$ -	$ -	$ 3,500	$ 329,000	$ 3,500.00	**$ 329,000**
TOTAL: CONDUCTOR, SHIELDWIRE, OPGW:					$ 4,932,573		$ 20,897,590		**$ 25,830,163**
5. INSULATOR, FITTINGS, HARDWARE									
5.1	345kV Tangent (1-Group of 18-Bells Each Assembly)	1,276	Assembly	$ 1,800	$ 2,296,800	$ 720	$ 918,720	$ 2,520	**$ 3,215,520**
5.2	345kV Dead-end & Angle Insulators (1-Group of 18-Bells Each Assembly)	480	Assembly	$ 1,800	$ 864,000	$ 720	$ 345,600	$ 2,520	**$ 1,209,600**
5.3		-	Assembly		$ -		$ -	$ -	**$ -**
5.4	OPGW Assembly - Tangent	304	Assembly	$ 200	$ 60,800	$ 150	$ 45,600	$ 350	**$ 106,400**
5.5	OPGW Assembly - Angle / DE	64	Assembly	$ 250	$ 16,000	$ 150	$ 9,600	$ 400	**$ 25,600**
5.6	OHSW Assembly - Tangent	274	Assembly	$ 200	$ 54,800	$ 150	$ 41,100	$ 350	**$ 95,900**
5.7	OHSW Assembly - Angle / DE	56	Assembly	$ 250	$ 14,000	$ 150	$ 8,400	$ 400	**$ 22,400**
5.8	OPGW Splice Boxes	27	Assembly	$ 1,746	$ 47,146	$ 2,274	$ 61,398	$ 4,020	**$ 108,544**
5.9	OPGW Splice & Test	27	EA	$ 2,520	$ 68,040	$ 2,520	$ 68,040	$ 5,040	**$ 136,080**
5.10	Spacer - Conductor	5,244	EA	$ 50	$ 262,200	$ 35	$ 183,540	$ 85	**$ 445,740**
5.11	Vibration Dampers - Conductor	4,164	EA	$ 35	$ 145,740	$ 35	$ 145,740	$ 70	**$ 291,480**
5.12	Shield wire / OPGW Dampers, Misc. Fittings	1,087	EA	$ 27	$ 29,349	$ 35	$ 38,045	$ 62	**$ 67,394**
5.13	*Replace - Mono Pole Vertical Tangent (1-Group of 18-Bells Each Assembly)*	480	Assembly	$ 1,800	$ 864,000	$ 720	$ 345,600	$ 2,520	**$ 1,209,600**
5.14	*Replace - Dead-end & Angle Insulators (1, Group of 18-Bells Each Assembly)*	195	Assembly	$ 1,800	$ 351,000	$ 720	$ 140,400	$ 2,520	**$ 491,400**
5.15	Guys, Anchors, and Accessories	-	EA	$ 912	$ -	$ 1,058	$ -	$ 1,970	**$ -**
5.16	Misc. materials (Signs and Markers)	66.8	Mile	$ 770	$ 51,436	$ 1,006	$ 67,201	$ 1,776	**$ 118,637**
TOTAL - INSULATORS, FITTINGS, HARDWARE:					$ 5,125,311		$ 2,418,984		**$ 7,544,295**
A. Transmission Line Edic to Princetown					$ 28,037,312		$ 94,911,627		**$ 122,948,939**
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
6.1	Mob / Demob	1.0	LS	$ -	$ -	$ 1,229,489	$ 1,229,489	$ 1,229,489	**$ 1,229,489**
	Project Management, Material Handling & Amenities								
6.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 6,280,035	$ 6,280,035	$ 6,280,035	**$ 6,280,035**
6.3	Utility PM and Project Oversite	1	LS		$ -	$ 1,229,489	$ 1,229,489	$ 1,229,489	**$ 1,229,489**
6.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 1,229,489	$ 1,229,489	$ 1,229,489	**$ 1,229,489**
	Engineering								
6.5	Design Engineering	1	LS	$ -	$ -	$ 6,147,447	$ 6,147,447	$ 6,147,447	**$ 6,147,447**
6.6	LiDAR	1	LS	$ -	$ -	$ 368,847	$ 368,847	$ 368,847	**$ 368,847**
6.7	Geotech	67	Location	$ -	$ -	$ 3,500	$ 234,500	$ 3,500	**$ 234,500**
6.8	Surveying/Staking	1	LS	$ -	$ -	$ 860,643	$ 860,643	$ 860,643	**$ 860,643**
	Testing & Commissioning								
6.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 40,000	$ 40,000	$ 40,000	**$ 40,000**
	Permitting and Additional Costs								
6.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Sum	Labor & Equipment Supply Rate	Labor & Equipment Sum	Total Unit Rate	TOTAL
6.12	Warranties / LOC's	1	LS	$ -	$ -	$ 368,847	$ 368,847	$ 368,847	**$ 368,847**
6.13	Real Estate Costs (New ROW)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.14	Real Estate Costs (Incumbent Utility ROW)	1	LS	$ -	$ -	$ 8,640,000	$ 8,640,000	$ 8,640,000	**$ 8,640,000**
6.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.17	Compensation for use of 1 Ckt - NYPA Structures (92 Structures)	1	LS	$ -	$ -	$ 8,919,123	$ 8,919,123	$ 8,919,123	**$ 8,919,123**
6.18	Sales Tax on Materials	1	LS	$ 2,242,985	$ 2,242,985	$ -	$ -	$ 2,242,985	**$ 2,242,985**
6.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 122,949	$ 122,949	$ 122,949	**$ 122,949**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 2,242,985		$ 35,670,858		**$ 37,913,843**

NAT & NYPA - T028 - (Segment A, Enhanced)

B. Transmission Line Princetown to Rotterdam

Estimate Revision: 7

Total: $ 25,026,832

NAT & NYPA - T028 - (Segment A, Enhanced)	*Supply*	*Installation*	*Total*
B. Transmission Line Princetown to Rotterdam			
1. CLEARING & ACCESS	$ 6,000	$ 3,038,200	$ 3,044,200
2. FOUNDATIONS	$ 417,002	$ 3,778,708	$ 4,195,711
3. STRUCTURES	$ 3,876,135	$ 4,280,943	$ 8,157,078
4. CONDUCTOR, SHIELDWIRE, OPGW	$ 722,365	$ 2,620,705	$ 3,343,070
5. INSULATORS, FITTINGS, HARDWARE	$ 1,199,031	$ 549,192	$ 1,748,223
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 497,643	$ 4,040,907	$ 4,538,550
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 6,718,177	$ 18,308,655	$ 25,026,832
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 6,718,177	$ 18,308,655	$ 25,026,832

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
B. Transmission Line Princetown to Rotterdam									
1. CLEARING & ACCESS									
1.1	Clearing the ROW - Heavy (mowing & clearing)	-	Acre	$ -	$ -	$ 15,000	$ -	$ 15,000	$ -
1.2	Clearing the ROW - Light (mowing)	24.0	Acre	$ -	$ -	$ 5,000	$ 120,000	$ 5,000	**$ 120,000**
1.3	Permanent Access Road	5,280	LF	$ -	$ -	$ 45	$ 237,600	$ 45	**$ 237,600**
1.4	Silt Fence	26,400	LF	$ -	$ -	$ 4	$ 105,600	$ 4	**$ 105,600**
1.5	Matting - Access and ROW	21,120	LF	$ -	$ -	$ 70	$ 1,478,400	$ 70	**$ 1,478,400**
1.6	Matting - To Work Area	2,775	LF	$ -	$ -	$ 70	$ 194,250	$ 70	**$ 194,250**
1.7	Snow Removal	5	Mile	$ -	$ -	$ 16,000	$ 80,000	$ 16,000	**$ 80,000**
1.8	ROW Restoration	5	Mile	$ -	$ -	$ 10,000	$ 50,000	$ 10,000	**$ 50,000**
1.9	Work Pads	185,000	SF	$ -	$ -	$ 4	$ 651,200	$ 4	**$ 651,200**
1.10	Restoration for Work Pad areas	37,000	SF	$ -	$ -	$ 0.2	$ 5,550	$ 0	**$ 5,550**
1.11	Temporary Access Bridge	-	EA	$ -	$ -	$ 20,035	$ -	$ 20,035	$ -
1.12	Air Bridge	-	EA	$ -	$ -	$ 14,445	$ -	$ 14,445	$ -
1.13	Stabilized Construction Entrance	10	EA	$ -	$ -	$ 4,580	$ 45,800	$ 4,580	**$ 45,800**
1.14	Maintenance and Protection of Traffic on Public Roads	10	EA	$ -	$ -	$ 4,130	$ 41,300	$ 4,130	**$ 41,300**
1.15	Gates	-	EA	$ 2,000	$ -	$ 2,500	$ -	$ 4,500	$ -
1.16	Culverts / Misc. Access	8	EA	$ 750	$ 6,000	$ 1,250	$ 10,000	$ 2,000	**$ 16,000**
1.17	Concrete Washout Station	10	EA	$ -	$ -	$ 1,850	$ 18,500	$ 1,850	**$ 18,500**
TOTAL - CLEARING & ACCESS:					$ 6,000		$ 3,038,200		**$ 3,044,200**
2. FOUNDATIONS									
2.1	Direct Embed Foundations - 6' x 18'	56	EA	$ 1,857	$ 104,018	$ 18,603	$ 1,041,794	$ 20,461	**$ 1,145,812**
2.2	Direct Embed Foundations - 6' x 20'	4	EA	$ 2,046	$ 8,185	$ 20,562	$ 82,247	$ 22,608	**$ 90,432**
2.3	Direct Embed Foundations - 6' x 22'	8	EA	$ 2,235	$ 17,880	$ 22,520	$ 180,160	$ 24,755	**$ 198,040**
2.4	Direct Embed Foundations - 7' x 25'	4	EA	$ 3,105	$ 12,422	$ 34,650	$ 138,601	$ 37,756	**$ 151,023**
2.5	Drilled Pier - 6' x 19'	6	EA	$ 17,204	$ 103,223	$ 17,391	$ 104,347	$ 34,595	**$ 207,570**
2.6	Drilled Pier - 8' x 27'	4	EA	$ 42,819	$ 171,274	$ 57,340	$ 229,359	$ 100,158	**$ 400,633**
2.7	Rock Excavation Adder	1,001.1	CY	$ -	$ -	$ 2,000	$ 2,002,200	$ 2,000	**$ 2,002,200**
TOTAL - FOUNDATIONS:					$ 417,002		$ 3,778,708		**$ 4,195,711**
3. STRUCTURES									
3.1	2x 1-CKT 345KV DELTA TANGENT (0°-1°) - 115'	24	Structure	$ 85,544	$ 2,053,056	$ 51,326	$ 1,231,834	$ 136,870	**$ 3,284,890**
3.2	2x 1-CKT 345KV DELTA TANGENT (0°-1°) - 135'	2	Structure	$ 106,005	$ 212,010	$ 63,603	$ 127,206	$ 169,608	**$ 339,216**
3.3	2x 1-CKT 345KV DELTA SMALL ANGLE (1°-15°) - 115'	2	Structure	$ 141,673	$ 283,346	$ 85,004	$ 170,008	$ 226,677	**$ 453,354**
3.4	2x 1-CKT 345KV VERTICAL TANGENT DEADEND (0°-5°) - 115'	4	Structure	$ 109,816	$ 439,264	$ 65,890	$ 263,558	$ 175,706	**$ 702,822**
3.5	2x 1-CKT 345KV VERTICAL MEDIUM ANGLE DEADEND (15°-60°) - 115'	2	Structure	$ 232,656	$ 465,312	$ 139,594	$ 279,187	$ 372,250	**$ 744,499**
3.6	2x 1-CKT 345KV 3-POLE LARGE ANGLE DEADEND (60°-90°) - 115'	1	Structure	$ 176,342	$ 176,342	$ 105,805	$ 105,805	$ 282,147	**$ 282,147**
3.7	2x 1-CKT 345KV 3-POLE TANGENT DEADEND (0°-5°) - 65'	1	Structure	$ 99,493	$ 99,493	$ 59,696	$ 59,696	$ 159,189	**$ 159,189**
3.8	2x 1-CKT 345KV DELTA TANGENT (0°-1°) HD- 115'	1	Structure	$ 105,820	$ 105,820	$ 63,492	$ 63,492	$ 169,312	**$ 169,312**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.9	Remove Existing Foundation	22	EA	$ -	$ -	$ 7,500	$ 163,500	$ 7,500	**$ 163,500**
3.10	Remove Existing Structure and Accessories	109	EA	$ -	$ -	$ 12,500	$ 1,362,500	$ 12,500	**$ 1,362,500**
3.11	Install Grounding and Grounding Accessories	82	Pole	$ 506	$ 41,492	$ 5,539	$ 454,157	$ 6,045	**$ 495,649**
TOTAL - STRUCTURES PRINCTOWN TO NEW SCOTLAND:					$ 3,876,135		$ 4,280,943		**$ 8,157,078**
4. CONDUCTOR, SHIELDWIRE, OPGW									
4.1	345kV - (1) 954kcmil 54/7 ACSS "Cardinal" (R1 - R36)	339,293	LF	$ 1.90	$ 644,657	$ 5.00	$ 1,696,465	$ 6.90	**$ 2,341,122**
4.2	(1) OPGW 36 Fiber AC-33/38/571 (R1 - R36)	28,274	LF	$ 1.35	$ 38,170	$ 5.00	$ 141,370	$ 6.35	**$ 179,540**
4.3	(1) 3/8" EHS7 Steel (R1 - R36)	28,274	LF	$ 0.47	$ 13,289	$ 5.00	$ 141,370	$ 5.47	**$ 154,659**
4.5	Remove Existing Conductor and Accessories	10.0	Mile	$ -	$ -	$ 30,000	$ 300,000	$ 30,000.00	**$ 300,000**
4.6	Remove Existing OPGW and Accessories	10.0	Mile	$ -	$ -	$ 12,000	$ 120,000	$ 12,000.00	**$ 120,000**
4.7	Remove Existing OHSW and Accessories	10.0	Mile	$ -	$ -	$ 12,000	$ 120,000	$ 12,000.00	**$ 120,000**
4.8	Rider Poles	15	EA	$ 1,750	$ 26,250	$ 3,500	$ 52,500	$ 5,250.00	**$ 78,750**
4.9	Rider Poles - Relocated	14	Set	$ -	$ -	$ 3,500	$ 49,000	$ 3,500.00	**$ 49,000**
TOTAL: CONDUCTOR, SHIELDWIRE, OPGW:					$ 722,365		$ 2,620,705		**$ 3,343,070**
5. INSULATOR, FITTINGS, HARDWARE									
5.1	345kV Tangent (1-Group of 18-Bells Each Assembly)	348	Assembly	$ 1,800	$ 626,400	$ 720	$ 250,560	$ 2,520	**$ 876,960**
5.2	345kV Dead-end & Angle Insulators (1-Group of 18-Bells Each Assembly)	240	Assembly	$ 1,800	$ 432,000	$ 720	$ 172,800	$ 2,520	**$ 604,800**
5.3	OPGW Assembly - Tangent	29	Assembly	$ 200	$ 5,800	$ 150	$ 4,350	$ 350	**$ 10,150**
5.4	OPGW Assembly - Angle / DE	16	Assembly	$ 250	$ 4,000	$ 150	$ 2,400	$ 400	**$ 6,400**
5.5	OHSW Assembly - Tangent	29	Assembly	$ 200	$ 5,800	$ 150	$ 4,350	$ 350	**$ 10,150**
5.6	OHSW Assembly - Angle / DE	16	Assembly	$ 250	$ 4,000	$ 150	$ 2,400	$ 400	**$ 6,400**
5.7	OPGW Splice Boxes	8	Assembly	$ 1,746	$ 13,969	$ 2,274	$ 18,192	$ 4,020	**$ 32,161**
5.8	OPGW Splice & Test	8	EA	$ 2,520	$ 20,160	$ 2,520	$ 20,160	$ 5,040	**$ 40,320**
5.9	Spacer - Conductor	1,002	EA	$ 50	$ 50,100	$ 35	$ 35,070	$ 85	**$ 85,170**
5.10	Vibration Dampers - Conductor	852	EA	$ 35	$ 29,820	$ 35	$ 29,820	$ 70	**$ 59,640**
5.11	Shieldwire / OPGW Dampers, Misc. Fittings	116	EA	$ 27	$ 3,132	$ 35	$ 4,060	$ 62	**$ 7,192**
5.12	Guys, Anchors, and Accessories	-	EA	$ 912	$ -	$ 1,058	$ -	$ 1,970	**$ -**
5.13	Misc. materials (Signs and Markers)	5.0	Mile	$ 770	$ 3,850	$ 1,006	$ 5,030	$ 1,776	**$ 8,880**
TOTAL - INSULATORS, FITTINGS, HARDWARE:					$ 1,199,031		$ 549,192		**$ 1,748,223**
B. Transmission Line Princetown to Rotterdam					$ 6,220,534		$ 14,267,748		**$ 20,488,282**
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS									
	Contractor Mobilization / Demobilization								
6.1	Mob / Demob	1	LS	$ -	$ -	$ 204,883	$ 204,883	$ 204,883	**$ 204,883**
	Project Management, Material Handling & Amenities								
6.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 1,046,509	$ 1,046,509	$ 1,046,509	**$ 1,046,509**
6.3	Utility PM and Project Oversite	1	LS		$ -	$ 204,883	$ 204,883	$ 204,883	**$ 204,883**
6.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 204,883	$ 204,883	$ 204,883	**$ 204,883**
	Engineering								
6.5	Design Engineering	1	LS	$ -	$ -	$ 1,024,414	$ 1,024,414	$ 1,024,414	**$ 1,024,414**
6.6	LiDAR	1	LS	$ -	$ -	$ 61,465	$ 61,465	$ 61,465	**$ 61,465**
6.7	Geotech	5	Location	$ -	$ -	$ 3,500	$ 17,500	$ 3,500	**$ 17,500**
6.8	Surveying/Staking	1	LS	$ -	$ -	$ 143,418	$ 143,418	$ 143,418	**$ 143,418**
	Testing & Commissioning								
6.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 40,000	$ 40,000	$ 40,000	**$ 40,000**
	Permitting and Additional Costs								
6.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.12	Warranties / LOC's	1	LS	$ -	$ -	$ 61,465	$ 61,465	$ 61,465	**$ 61,465**
6.13	Real Estate Costs (New ROW)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.14	Real Estate Costs (Incumbent Utility ROW)	1	LS	$ -	$ -	$ 1,011,000	$ 1,011,000	$ 1,011,000	**$ 1,011,000**
6.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.18	Sales Tax on Materials	1	LS	$ 497,643	$ 497,643	$ -	$ -	$ 497,643	**$ 497,643**
6.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 20,488	$ 20,488	$ 20,488	**$ 20,488**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 497,643		$ 4,040,907		**$ 4,538,550**

NAT & NYPA - T028 - (Segment A, Enhanced)

C. Transmission Line Princetown to New Scotland

Estimate Revision: 7

Total: $ 47,622,147

NAT & NYPA - T028 - (Segment A, Enhanced)	*Supply*	*Installation*	*Total*
C. Transmission Line Princetown to New Scotland			
1. CLEARING & ACCESS	$ 31,000	$ 11,223,694	$ 11,254,694
2. FOUNDATIONS	$ 1,194,705	$ 4,499,949	$ 5,694,653
3. STRUCTURES	$ 6,879,617	$ 5,578,039	$ 12,457,656
4. CONDUCTOR, SHIELDWIRE, OPGW	$ 1,564,842	$ 4,756,290	$ 6,321,132
5. INSULATORS, FITTINGS, HARDWARE	$ 1,767,073	$ 847,291	$ 2,614,365
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 914,979	$ 8,364,668	$ 9,279,647
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 12,352,215	$ 35,269,931	$ 47,622,147
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 12,352,215	$ 35,269,931	$ 47,622,147

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
C. Transmission Line Princetown to New Scotland									
1. CLEARING & ACCESS									
1.1	Clearing the ROW - Heavy (mowing & clearing)	26.0	Acre	$ -	$ -	$ 15,000	$ 390,000	$ 15,000	**$ 390,000**
1.2	Clearing the ROW - Light (mowing)	57.0	Acre	$ -	$ -	$ 5,000	$ 285,000	$ 5,000	**$ 285,000**
1.3	Permanent Access Road	20,803.2	LF	$ -	$ -	$ 45	$ 936,144	$ 45	**$ 936,144**
1.4	Silt Fence	104,016.0	LF	$ -	$ -	$ 4	$ 416,064	$ 4	**$ 416,064**
1.5	Matting - Access and ROW	83,212.8	LF	$ -	$ -	$ 70	$ 5,824,896	$ 70	**$ 5,824,896**
1.6	Matting - To Work Area	3,375.0	LF	$ -	$ -	$ 70	$ 236,250	$ 70	**$ 236,250**
1.7	Snow Removal	19.7	Mile	$ -	$ -	$ 16,000	$ 315,200	$ 16,000	**$ 315,200**
1.8	ROW Restoration	19.7	Mile	$ -	$ -	$ 10,000	$ 197,000	$ 10,000	**$ 197,000**
1.9	Work Pads	645,000.0	SF	$ -	$ -	$ 4	$ 2,270,400	$ 4	**$ 2,270,400**
1.10	Restoration for Work Pad areas	129,000.0	SF	$ -	$ -	$ 0.2	$ 19,350	$ 0	**$ 19,350**
1.11	Temporary Access Bridge	-	EA	$ -	$ -	$ 20,035	$ -	$ 20,035	**$ -**
1.12	Air Bridge	2	EA	$ -	$ -	$ 14,445	$ 28,890	$ 14,445	**$ 28,890**
1.13	Stabilized Construction Entrance	-	EA	$ -	$ -	$ 4,580	$ -	$ 4,580	**$ -**
1.14	Maintenance and Protection of Traffic on Public Roads	50	EA	$ -	$ -	$ 4,130	$ 206,500	$ 4,130	**$ 206,500**
1.15	Gates	11	EA	$ 2,000	$ 22,000	$ 2,500	$ 27,500	$ 4,500	**$ 49,500**
1.16	Culverts / Misc. Access	12	EA	$ 750	$ 9,000	$ 1,250	$ 15,000	$ 2,000	**$ 24,000**
1.17	Concrete Washout Station	30	EA	$ -	$ -	$ 1,850	$ 55,500	$ 1,850	**$ 55,500**
TOTAL - CLEARING & ACCESS:					$ 31,000		$ 11,223,694		**$ 11,254,694**
2. FOUNDATIONS									
2.1	Direct Embed Foundations - 4' x 16'	100	EA	$ 941	$ 94,073	$ 7,398	$ 739,787	$ 8,339	**$ 833,860**
2.2	Direct Embed Foundations - 4' x 19'	14	EA	$ 1,104	$ 15,455	$ 8,703	$ 121,847	$ 9,807	**$ 137,302**
2.3	Direct Embed Foundations - 4' x 21'	2	EA	$ 1,213	$ 2,425	$ 9,574	$ 19,147	$ 10,786	**$ 21,573**
2.4	Direct Embed Foundations - 6' x 18'	9	EA	$ 1,857	$ 16,717	$ 18,603	$ 167,431	$ 20,461	**$ 184,148**
2.5	Direct Embed Foundations - 6' x 20'	14	EA	$ 2,046	$ 28,648	$ 20,562	$ 287,864	$ 22,608	**$ 316,512**
2.6	Direct Embed Foundations - 6' x 21'	25	EA	$ 2,141	$ 53,516	$ 21,541	$ 538,521	$ 23,681	**$ 592,037**
2.7	Direct Embed Foundations - 6' x 22'	4	EA	$ 2,235	$ 8,940	$ 22,520	$ 90,080	$ 24,755	**$ 99,020**
2.8	Direct Embed Foundations - 6' x 25'	5	EA	$ 2,518	$ 12,591	$ 25,457	$ 127,287	$ 27,976	**$ 139,878**
2.9	Direct Embed Foundations - 6' x 29'	1	EA	$ 2,896	$ 2,896	$ 29,374	$ 29,374	$ 32,270	**$ 32,270**
2.10	Direct Embed Foundations - 6' x 34'	4	EA	$ 3,273	$ 13,093	$ 33,290	$ 133,162	$ 36,564	**$ 146,255**
2.11	Direct Embed Foundations - 6' x 42'	3	EA	$ 4,123	$ 12,369	$ 42,103	$ 126,308	$ 46,225	**$ 138,676**
2.12	Direct Embed Foundations - 7' x 25'	1	EA	$ 3,105	$ 3,105	$ 34,650	$ 34,650	$ 37,756	**$ 37,756**
2.13	Direct Embed Foundations - 7' x 27'	1	EA	$ 3,337	$ 3,337	$ 37,316	$ 37,316	$ 40,652	**$ 40,652**
2.14	Direct Embed Foundations - 7' x 28'	1	EA	$ 3,452	$ 3,452	$ 38,648	$ 38,648	$ 42,101	**$ 42,101**
2.15	Drilled Pier - 6' x 20'	6	EA	$ 18,064	$ 108,384	$ 18,261	$ 109,564	$ 36,325	**$ 217,949**
2.16	Drilled Pier - 7' x 19'	15	EA	$ 23,416	$ 351,246	$ 23,671	$ 355,070	$ 47,088	**$ 706,315**
2.17	Drilled Pier - 7' x 24'	3	EA	$ 29,270	$ 87,811	$ 29,589	$ 88,767	$ 58,860	**$ 176,579**
2.18	Drilled Pier - 8' x 27'	1	EA	$ 42,819	$ 42,819	$ 43,285	$ 43,285	$ 86,103	**$ 86,103**
2.19	Drilled Pier - 8' x 83'	1	EA	$ 128,456	$ 128,456	$ 172,020	$ 172,020	$ 300,475	**$ 300,475**
2.20	Drilled Pier - 8' x 89'	1	EA	$ 137,631	$ 137,631	$ 184,307	$ 184,307	$ 321,938	**$ 321,938**
2.21	Drilled Pier - 9' x 34'	1	EA	$ 67,740	$ 67,740	$ 90,713	$ 90,713	$ 158,454	**$ 158,454**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.22	Rock Excavation Adder	482.40	CY	$ -	$ -	$ 2,000	$ 964,800	$ 2,000	**$ 964,800**
TOTAL - FOUNDATIONS:					$ 1,194,705		$ 4,499,949		**$ 5,694,653**
3. STRUCTURES									
3.1	1-CKT 345KV VERTICAL TANGENT (0°-1°) - 115'	7	Structure	$ 50,024	$ 350,168	$ 30,014	$ 210,101	$ 80,038	**$ 560,269**
3.2	1-CKT 345KV VERTICAL TANGENT (0°-1°) - 120'	5	Structure	$ 52,207	$ 261,035	$ 31,324	$ 156,621	$ 83,531	**$ 417,656**
3.3	1-CKT 345KV VERTICAL TANGENT (0°-1°) - 125'	8	Structure	$ 55,685	$ 445,480	$ 33,411	$ 267,288	$ 89,096	**$ 712,768**
3.4	1-CKT 345KV VERTICAL TANGENT (0°-1°) - 130'	9	Structure	$ 58,257	$ 524,309	$ 34,954	$ 314,585	$ 93,210	**$ 838,894**
3.5	1-CKT 345KV VERTICAL TANGENT (0°-1°) - 135'	4	Structure	$ 60,884	$ 243,534	$ 36,530	$ 146,120	$ 97,414	**$ 389,654**
3.6	1-CKT 345KV VERTICAL TANGENT (0°-1°) - 145'	1	Structure	$ 64,473	$ 64,473	$ 38,684	$ 38,684	$ 103,156	**$ 103,156**
3.7	1-CKT 345KV VERTICAL SMALL ANGLE (1°-15°) - 115'	1	Structure	$ 72,039	$ 72,039	$ 43,223	$ 43,223	$ 115,262	**$ 115,262**
3.8	1-CKT 345KV VERTICAL SMALL ANGLE (1°-15°) - 135'	1	Structure	$ 92,278	$ 92,278	$ 55,367	$ 55,367	$ 147,645	**$ 147,645**
3.9	1-CKT 345KV VERTICAL TANGENT DEADEND (0°-5°) - 120'	1	Structure	$ 58,164	$ 58,164	$ 34,898	$ 34,898	$ 93,062	**$ 93,062**
3.10	1-CKT 345KV VERTICAL MEDIUM ANGLE DEADEND (15°-60°) - 105'	1	Structure	$ 98,883	$ 98,883	$ 59,330	$ 59,330	$ 158,212	**$ 158,212**
3.11	1-CKT 345KV H-FRAME TANGENT (0°-1°) - 84'	43	Structure	$ 29,526	$ 1,269,618	$ 17,716	$ 761,771	$ 47,242	**$ 2,031,389**
3.12	1-CKT 345KV H-FRAME TANGENT (0°-1°) - 89'	5	Structure	$ 32,708	$ 163,540	$ 19,625	$ 98,124	$ 52,333	**$ 261,664**
3.13	1-CKT 345KV H-FRAME TANGENT (0°-1°) - 93'	5	Structure	$ 34,540	$ 172,698	$ 20,724	$ 103,619	$ 55,263	**$ 276,316**
3.14	1-CKT 345KV H-FRAME TANGENT (0°-1°) - 107'	5	Structure	$ 45,936	$ 229,678	$ 27,561	$ 137,807	$ 73,497	**$ 367,484**
3.15	1-CKT 345KV H-FRAME SMALL ANGLE (1°-15°) - 80'	3	Structure	$ 55,241	$ 165,723	$ 33,145	$ 99,434	$ 88,386	**$ 265,157**
3.16	1-CKT 345KV 3-POLE TANGENT DEADEND (0°-5°) - 80'	5	Structure	$ 69,079	$ 345,395	$ 41,447	$ 207,237	$ 110,526	**$ 552,632**
3.17	1-CKT 345KV 3-POLE TANGENT DEADEND (0°-5°) - 85'	1	Structure	$ 75,739	$ 75,739	$ 45,443	$ 45,443	$ 121,182	**$ 121,182**
3.18	1-CKT 345KV 3-POLE MEDIUM ANGLE DEADEND (15°-60°) - 80'	5	Structure	$ 97,403	$ 487,013	$ 58,442	$ 292,208	$ 155,844	**$ 779,220**
3.19	1-CKT 345KV 3-POLE MEDIUM ANGLE DEADEND (15°-60°) - 95'	1	Structure	$ 129,408	$ 129,408	$ 77,645	$ 77,645	$ 207,052	**$ 207,052**
3.20	1-CKT 345KV 3-POLE MEDIUM ANGLE DEADEND (15°-60°) - 115'	1	Structure	$ 178,026	$ 178,026	$ 106,815	$ 106,815	$ 284,841	**$ 284,841**
3.21	2-CKT 115KV/345KV VERTICAL TANGENT (0°-1°) - 115'	7	Structure	$ 54,631	$ 382,414	$ 32,778	$ 229,448	$ 87,409	**$ 611,862**
3.22	2-CKT 115KV/345KV VERTICAL TANGENT (0°-1°) - 125'	4	Structure	$ 62,604	$ 250,416	$ 37,562	$ 150,250	$ 100,166	**$ 400,666**
3.23	2-CKT 115KV/345KV VERTICAL TANGENT (0°-1°) - 135'	1	Structure	$ 68,894	$ 68,894	$ 41,336	$ 41,336	$ 110,230	**$ 110,230**
3.24	2-CKT 115KV/345KV VERTICAL SMALL ANGLE (1°-15°) - 155'	1	Structure	$ 149,480	$ 149,480	$ 89,688	$ 89,688	$ 239,168	**$ 239,168**
3.25	2-CKT 115KV/345KV VERTICAL MEDIUM ANGLE DEADEND (15°-60°) - 115'	1	Structure	$ 173,808	$ 173,808	$ 104,285	$ 104,285	$ 278,092	**$ 278,092**
3.26	2-CKT 115KV/345KV VERTICAL MEDIUM ANGLE DEADEND (15°-60°) - 125'	1	Structure	$ 202,797	$ 202,797	$ 121,678	$ 121,678	$ 324,475	**$ 324,475**
3.27	115KV DUMMY DE, Drilled Pier, 85'	2	Structure	$ 58,164	$ 116,328	$ 34,898	$ 69,797	$ 93,062	**$ 186,125**
3.28	Remove Existing Foundation	4	EA	$ -	$ -	$ 7,500	$ 30,000	$ 7,500	**$ 30,000**
3.29	Remove Existing Structure and Accessories	24	EA	$ -	$ -	$ 12,500	$ 300,000	$ 12,500	**$ 300,000**
3.30	Install Grounding and Grounding Accessories	214	Pole	$ 506	$ 108,284	$ 5,539	$ 1,185,239	$ 6,045	**$ 1,293,523**
TOTAL - STRUCTURES:					$ 6,879,617		$ 5,578,039		**$ 12,457,656**
4. CONDUCTOR, SHIELDWIRE, OPGW									
4.1	**345kV** - (1) 954kcmil 54/7 ACSS "Cardinal" (ENS-336 to ENS-464)	661,954	LF	$ 1.90	$ 1,257,713	$ 5.00	$ 3,309,770	$ 6.90	**$ 4,567,483**
4.2	(1) OPGW 36 Fiber AC-33/38/571 (ENS-336 to ENS-464)	110,326	LF	$ 1.35	$ 148,940	$ 5.00	$ 551,630	$ 6.35	**$ 700,570**
4.3	(1) 3/8" EHS7 Steel (ENS-336 to ENS-464)	75,398	LF	$ 0.47	$ 35,437	$ 5.00	$ 376,990	$ 5.47	**$ 412,427**
4.4		-		$ -	$ -	$ -	$ -	$ -	**$ -**
4.5	**115kV** - (1) 954kcmil 54/7 ACSS "Cardinal" (ENS-336 to ENS-464)	41,580	LF	$ 1.90	$ 79,002	$ 5.00	$ 207,900	$ 6.90	**$ 286,902**
4.6	(1) OPGW 36 Fiber AC-33/38/571 (ENS-336 to ENS-464)	-	LF	$ 1.35	$ -	$ 5.00	$ -	$ 6.35	**$ -**
4.7	(1) 3/8" EHS7 Steel (ENS-336 to ENS-464)	-	LF	$ 0.47	$ -	$ 5.00	$ -	$ 5.47	**$ -**
4.8	Remove Existing Conductor and Accessories	2.5	Mile	$ -	$ -	$ 30,000	$ 75,000	$ 30,000.00	**$ 75,000**
4.9	Remove Existing OPGW and Accessories	2.5	Mile	$ -	$ -	$ 12,000	$ 30,000	$ 12,000.00	**$ 30,000**
4.10	Remove Existing OHSW and Accessories	2.5	Mile	$ -	$ -	$ 12,000	$ 30,000	$ 12,000.00	**$ 30,000**
4.11	Rider Poles (50 Locations)	25	Set	$ 1,750	$ 43,750	$ 3,500	$ 87,500	$ 5,250.00	**$ 131,250**
4.12	Rider Poles - Relocated	25	Set	$ -	$ -	$ 3,500	$ 87,500	$ 3,500.00	**$ 87,500**
TOTAL - CONDUCTOR, SHIELDWIRE, OPGW:					$ 1,564,842		$ 4,756,290		**$ 6,321,132**
5. INSULATOR, FITTINGS, HARDWARE									
5.1	345kV Tangent (1-Group of 18-Bells Each Assembly)	538	Assembly	$ 1,800	$ 968,400	$ 720	$ 387,360	$ 2,520	**$ 1,355,760**
5.2	115kV Tangent (1-Group of 9-Bells Each Assembly)	78	Assembly	$ 900	$ 70,200	$ 560	$ 43,680	$ 1,460	**$ 113,880**
5.3	345kV Dead-end & Angle Insulators (1-Group of 18-Bells Each Assembly)	255	Assembly	$ 1,800	$ 459,000	$ 720	$ 183,600	$ 2,520	**$ 642,600**
5.4	115kV Dead-end & Angle Insulators (1-Group of 9-Bells Each Assembly)	21	Assembly	$ 900	$ 18,900	$ 560	$ 11,760	$ 1,460	**$ 30,660**
5.5			Assembly		$ -		$ -	$ -	**$ -**
5.6			Assembly		$ -		$ -	$ -	**$ -**
5.7	OPGW Assembly - Tangent	110	Assembly	$ 200	$ 22,000	$ 150	$ 16,500	$ 350	**$ 38,500**
5.8	OPGW Assembly - Angle / DE	34	Assembly	$ 250	$ 8,500	$ 150	$ 5,100	$ 400	**$ 13,600**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
5.9	OHSW Assembly - Tangent	61	Assembly	$ 200	$ 12,200	$ 150	$ 9,150	$ 350	**$ 21,350**
5.10	OHSW Assembly - Angle / DE	24	Assembly	$ 250	$ 6,000	$ 150	$ 3,600	$ 400	**$ 9,600**
5.11	OPGW Splice Boxes	8	Assembly	$ 1,746	$ 13,969	$ 2,274	$ 18,192	$ 4,020	**$ 32,161**
5.12	OPGW Splice & Test	8	EA	$ 2,520	$ 20,160	$ 2,520	$ 20,160	$ 5,040	**$ 40,320**
5.13	Spacer - Conductor	1,773	EA	$ 50	$ 88,650	$ 35	$ 62,055	$ 85	**$ 150,705**
5.14	Vibration Dampers - Conductor	1,596	EA	$ 35	$ 55,860	$ 35	$ 55,860	$ 70	**$ 111,720**
5.15	Shieldwire / OPGW Dampers, Misc. Fittings	293	EA	$ 27	$ 7,911	$ 35	$ 10,255	$ 62	**$ 18,166**
5.16	Guys, Anchors, and Accessories	-	EA	$ 912	$ -	$ 1,058	$ -	$ 1,970	**$ -**
5.17	Misc. materials (Signs and Markers)	19.9	Mile	$ 770	$ 15,323	$ 1,006	$ 20,019	$ 1,776	**$ 35,342**
TOTAL - INSULATORS, FITTINGS, HARDWARE:					$ 1,767,073		$ 847,291		**$ 2,614,365**
C. Transmission Line Princetown to New Scotland					$ 11,437,237		$ 26,905,263		**$ 38,342,499**
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
6.1	Mob / Demob	1	LS	$ -	$ -	$ 383,425	$ 383,425	$ 383,425	**$ 383,425**
	Project Management, Material Handling & Amenities								
6.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 1,958,474	$ 1,958,474	$ 1,958,474	**$ 1,958,474**
6.3	Utility PM and Project Oversite	1	LS		$ -	$ 383,425	$ 383,425	$ 383,425	**$ 383,425**
6.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 383,425	$ 383,425	$ 383,425	**$ 383,425**
	Engineering								
6.5	Design Engineering	1	LS	$ -	$ -	$ 1,917,125	$ 1,917,125	$ 1,917,125	**$ 1,917,125**
6.6	LiDAR	1	LS	$ -	$ -	$ 115,027	$ 115,027	$ 115,027	**$ 115,027**
6.7	Geotech	20	Location	$ -	$ -	$ 3,500	$ 70,000	$ 3,500	**$ 70,000**
6.8	Surveying/Staking	1	LS	$ -	$ -	$ 268,397	$ 268,397	$ 268,397	**$ 268,397**
	Testing & Commissioning								
6.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 40,000	$ 40,000	$ 40,000	**$ 40,000**
	Permitting and Additional Costs								
6.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.12	Warranties / LOC's	1	LS	$ -	$ -	$ 115,027	$ 115,027	$ 115,027	**$ 115,027**
6.13	Real Estate Costs (New ROW)	1	LS	$ -	$ -	$ 215,000	$ 215,000	$ 215,000	**$ 215,000**
6.14	Real Estate Costs (Incumbent Utility ROW)	1	LS	$ -	$ -	$ 2,477,000	$ 2,477,000	$ 2,477,000	**$ 2,477,000**
6.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.18	Sales Tax on Materials	1	LS	$ 914,979	$ 914,979	$ -	$ -	$ 914,979	**$ 914,979**
6.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 38,342	$ 38,342	$ 38,342	**$ 38,342**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 914,979		$ 8,364,668		**$ 9,279,647**

NAT & NYPA - T026 - (Segment A, Base)

D. Rotterdam Substation - Install

Estimate Revision: 7

Total: $ 55,770,077

NAT & NYPA - T026 - (Segment A, Base)	Supply	Installation	Total	
D. Rotterdam Substation - Install				
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ 2,896,891	$ 8,763,755	$ 11,660,646	
2. SUBSTATION FOUNDATIONS	$ 2,443,003	$ 2,616,200	$ 5,059,203	
3. SUBSTATION STRUCTURES	$ 944,980	$ 944,980	$ 1,889,960	
4. MAJOR EQUIPTMENT	$ 11,915,000	$ 2,970,000	$ 14,885,000	
5. SMALL EQUIPTMENT / MATERIALS	$ 1,994,540	$ 1,060,500	$ 3,055,040	
6. CONTROL HOUSE / PANELS	$ 2,927,500	$ 1,477,500	$ 4,405,000	
7. MISC ITEMS	$ 1,441,675	$ 2,331,950	$ 3,773,625	
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 1,965,087	$ 9,076,516	$ 11,041,603	
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -	0.0%
SUBTOTAL:	$ 26,528,676	$ 29,241,401	$ 55,770,077	
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -	0.0%
TOTAL:	$ 26,528,676	$ 29,241,401	$ 55,770,077	

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
D. Rotterdam Substation - Install									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	7.4	ACRES	$ -	$ -	$ 203,000	$ 1,497,125	$ 203,000	**$ 1,497,125**
1.2	Station stone within substation fence.	3,175	CY	$ 27	$ 85,725	$ 75	$ 238,125	$ 102	**$ 323,850**
1.3	Substation Fence	2,130	LF	$ 100	$ 213,000	$ 100	$ 213,000	$ 200	**$ 426,000**
1.4	Retaining Wall (1065' x 13')	1	LS	$ 406,755	$ 406,755	$ 925,345	$ 925,345	$ 1,332,100	**$ 1,332,100**
1.5	Compacted Fill (124,583cy Sand)	124,583	CY	$ 17	$ 2,117,911	$ 20	$ 2,491,660	$ 37	**$ 4,609,571**
1.6	Permanent Access Road - 20'-Wide (From Gordon RD)	2,100	LF	$ 35	$ 73,500	$ 285	$ 598,500	$ 320	**$ 672,000**
1.7	Natural Gas Transmission Line Relocation	1	LS	$ -		$ 2,800,000	$ 2,800,000	$ 2,800,000	**$ 2,800,000**
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ 2,896,891		$ 8,763,755		$ 11,660,646
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	8	EA	$ 14,940	$ 119,520	$ 16,000	$ 128,000	$ 30,940	**$ 247,520**
2.1b	Capacitor Bank Foundations	0	EA	$ 56,025	$ -	$ 60,000	$ -	$ 116,025	**$ -**
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	32	EA	$ 26,145	$ 836,640	$ 28,000	$ 896,000	$ 54,145	**$ 1,732,640**
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 26,145	$ -	$ 28,000	$ -	$ 54,145	**$ -**
2.1e	Switch Stand Foundations	102	EA	$ 4,482	$ 457,164	$ 4,800	$ 489,600	$ 9,282	**$ 946,764**
2.1f	Station Service Transformer Stand Foundation	1	EA	$ 4,482	$ 4,482	$ 4,800	$ 4,800	$ 9,282	**$ 9,282**
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1h	Bus Support 1 Ph Foundations	42	EA	$ 4,482	$ 188,244	$ 4,800	$ 201,600	$ 9,282	**$ 389,844**
2.1j	Instrument Transformer Stand Foundations	33	EA	$ 4,482	$ 147,906	$ 4,800	$ 158,400	$ 9,282	**$ 306,306**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.1k	Arrester Stand Foundations	6	EA	$ 4,482	$ 26,892	$ 4,800	$ 28,800	$ 9,282	**$ 55,692**
2.1m	Wave Trap Stand Foundations	2	EA	$ 4,482	$ 8,964	$ 4,800	$ 9,600	$ 9,282	**$ 18,564**
2.1n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1p									
2.2	**230kV**								
2.2a	Circuit Breaker Foundations	1	EA	$ 11,952	$ 11,952	$ 12,800	$ 12,800	$ 24,752	**$ 24,752**
2.2b	Capacitor Bank Foundations	0	EA	$ 44,820	$ -	$ 48,000	$ -	$ 92,820	**$ -**
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	4	EA	$ 22,410	$ 89,640	$ 24,000	$ 96,000	$ 46,410	**$ 185,640**
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	**$ -**
2.2e	Switch Stand Foundations	8	EA	$ 3,735	$ 29,880	$ 4,000	$ 32,000	$ 7,735	**$ 61,880**
2.2f	Station Service Transformer Stand Foundation	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	**$ -**
2.2g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.2h	Bus Support 1 Ph Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	**$ -**
2.2j	Instrument Transformer Stand Foundations	9	EA	$ 3,735	$ 33,615	$ 4,000	$ 36,000	$ 7,735	**$ 69,615**
2.2k	Arrester Stand Foundations	3	EA	$ 3,735	$ 11,205	$ 4,000	$ 12,000	$ 7,735	**$ 23,205**
2.2m	Wave Trap Stand Foundations	1	EA	$ 3,735	$ 3,735	$ 4,000	$ 4,000	$ 7,735	**$ 7,735**
2.2n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.2p									
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	0	EA	$ 5,229	$ -	$ 5,600	$ -	$ 10,829	**$ -**
2.3b	Capacitor Bank Foundations	0	EA	$ 33,615	$ -	$ 36,000	$ -	$ 69,615	**$ -**
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	4	EA	$ 16,434	$ 65,736	$ 17,600	$ 70,400	$ 34,034	**$ 136,136**
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	**$ -**
2.3e	Switch Stand Foundations	4	EA	$ 2,988	$ 11,952	$ 3,200	$ 12,800	$ 6,188	**$ 24,752**
2.3f	Fuse Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	**$ -**
2.3g	Bus Support 3ph Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	**$ -**
2.3h	Bus Support 1 Ph Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	**$ -**
2.3j	Instrument Transformer Stand Foundations	6	EA	$ 2,988	$ 17,928	$ 3,200	$ 19,200	$ 6,188	**$ 37,128**
2.3k	Arrester Stand Foundations	6	EA	$ 2,988	$ 17,928	$ 3,200	$ 19,200	$ 6,188	**$ 37,128**
2.3m	Wave Trap Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	**$ -**
2.3n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment	1	EA	$ 97,110	$ 97,110	$ 104,000	$ 104,000	$ 201,110	**$ 201,110**
2.4b	345-115kV Transformer Foundation w/ Oil Containment	2	EA	$ 74,700	$ 149,400	$ 80,000	$ 160,000	$ 154,700	**$ 309,400**
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad	1	EA	$ 97,110	$ 97,110	$ 104,000	$ 104,000	$ 201,110	**$ 201,110**
2.5b	Generator Foundation	1	EA	$ 16,000	$ 16,000	$ 17,000	$ 17,000	$ 33,000	**$ 33,000**
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	0	EA	$ 5,229	$ -	$ 5,600	$ -	$ 10,829	**$ -**
2.6b				$ -	$ -	$ -	$ -	$ -	**$ -**
2.6c				$ -	$ -	$ -	$ -	$ -	**$ -**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
TOTAL - SUBSTATION FOUNDATIONS					$ 2,443,003		$ 2,616,200		$ 5,059,203
3. SUBSTATION STRUCTURES									
3.1	**345kV**								
3.1a	Substation A-Frame Structures - Stand alone	8	EA	$ 37,000	$ 296,000	$ 37,000	$ 296,000	$ 74,000	**$ 592,000**
3.1b	Substation A-Frame Structures - Shared Column	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	**$ -**
3.1c	Switch Stands	17	EA	$ 14,800	$ 251,600	$ 14,800	$ 251,600	$ 29,600	**$ 503,200**
3.1d	Station Service Transformer Stand	1	EA	$ 14,800	$ 14,800	$ 14,800	$ 14,800	$ 29,600	**$ 29,600**
3.1e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.1f	Bus Support 1 Ph	42	EA	$ 3,700	$ 155,400	$ 3,700	$ 155,400	$ 7,400	**$ 310,800**
3.1g	Instrument Transformer Stand	33	EA	$ 1,850	$ 61,050	$ 1,850	$ 61,050	$ 3,700	**$ 122,100**
3.1h	Arrester Stand	6	EA	$ 1,850	$ 11,100	$ 1,850	$ 11,100	$ 3,700	**$ 22,200**
3.1j	Wave Trap Stand	2	EA	$ 7,400	$ 14,800	$ 7,400	$ 14,800	$ 14,800	**$ 29,600**
3.1k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	**$ -**
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone	1	EA	$ 33,300	$ 33,300	$ 33,300	$ 33,300	$ 66,600	**$ 66,600**
3.2b	Substation A-Frame Structures - Shared Column	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	**$ -**
3.2c	Switch Stands	2	EA	$ 12,025	$ 24,050	$ 12,025	$ 24,050	$ 24,050	**$ 48,100**
3.2d	Station Service Transformer Stand	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	**$ -**
3.2e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.2f	Bus Support 1 Ph	0	EA	$ 2,775	$ -	$ 2,775	$ -	$ 5,550	**$ -**
3.2g	Instrument Transformer Stand	9	EA	$ 1,295	$ 11,655	$ 1,295	$ 11,655	$ 2,590	**$ 23,310**
3.2h	Arrester Stand	3	EA	$ 1,295	$ 3,885	$ 1,295	$ 3,885	$ 2,590	**$ 7,770**
3.2j	Wave Trap Stand	1	EA	$ 5,550	$ 5,550	$ 5,550	$ 5,550	$ 11,100	**$ 11,100**
3.2k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	**$ -**
3.3	**115kV**								
3.3a	Substation A-Frame Structures - Stand alone	2	EA	$ 18,500	$ 37,000	$ 18,500	$ 37,000	$ 37,000	**$ 74,000**
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	**$ -**
3.3c	Switch Stands	2	EA	$ 7,955	$ 15,910	$ 7,955	$ 15,910	$ 15,910	**$ 31,820**
3.3d	Fuse Stand	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	**$ -**
3.3e	Bus Support 3ph	0	EA	$ 3,330	$ -	$ 3,330	$ -	$ 6,660	**$ -**
3.3f	Bus Support 1 Ph	0	EA	$ 1,850	$ -	$ 1,850	$ -	$ 3,700	**$ -**
3.3g	Instrument Transformer Stand	6	EA	$ 740	$ 4,440	$ 740	$ 4,440	$ 1,480	**$ 8,880**
3.3h	Arrester Stand	6	EA	$ 740	$ 4,440	$ 740	$ 4,440	$ 1,480	**$ 8,880**
3.3j	Wave Trap Stand	0	EA	$ 3,700	$ -	$ 3,700	$ -	$ 7,400	**$ -**
3.3k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	**$ -**
TOTAL - SUBSTATION STRUCTURES					$ 944,980		$ 944,980		$ 1,889,960
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	8	EA	$ 200,000	$ 1,600,000	$ 80,000	$ 640,000	$ 280,000	**$ 2,240,000**
4.1b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	**$ -**
4.1c	345 kV - 230 kV Auto Transformer	1	EA	$ 3,400,000	$ 3,400,000	$ 750,000	$ 750,000	$ 4,150,000	**$ 4,150,000**
4.1d	345 kV - 115 kV Auto Transformer	2	EA	$ 3,400,000	$ 6,800,000	$ 750,000	$ 1,500,000	$ 4,150,000	**$ 8,300,000**
4.2	**230kV**								
4.2a	Circuit Breakers	1	EA	$ 115,000	$ 115,000	$ 80,000	$ 80,000	$ 195,000	**$ 195,000**
4.2b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	**$ -**
4.3	**115kV**								

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
4.3a	Circuit Breakers	0	EA	$ 52,000	$ -	$ 60,000	$ -	$ 112,000	$ -
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ 60,000	$ -	$ 60,000	$ -
TOTAL - MAJOR EQUIPTMENT					$ 11,915,000		$ 2,970,000		$ 14,885,000
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator	2	EA	$ 40,000	$ 80,000	$ 15,000	$ 30,000	$ 55,000	**$ 110,000**
5.1b	Disconnect Switches - 3ph w/ manual operator	17	EA	$ 35,000	$ 595,000	$ 17,500	$ 297,500	$ 52,500	**$ 892,500**
5.1c	VT'S	6	EA	$ 25,000	$ 150,000	$ 12,000	$ 72,000	$ 37,000	**$ 222,000**
5.1d	CT'S	6	EA	$ 13,000	$ 78,000	$ 8,000	$ 48,000	$ 21,000	**$ 126,000**
5.1e	CCVT'S	21	EA	$ 13,000	$ 273,000	$ 8,000	$ 168,000	$ 21,000	**$ 441,000**
5.1f	Arresters	15	EA	$ 6,500	$ 97,500	$ 1,500	$ 22,500	$ 8,000	**$ 120,000**
5.1g	Wave Traps	2	EA	$ 13,000	$ 26,000	$ 8,000	$ 16,000	$ 21,000	**$ 42,000**
5.1h	Station Service Transformers	1	EA	$ 200,000	$ 200,000	$ 50,000	$ 50,000	$ 250,000	**$ 250,000**
5.1j									
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator	1	EA	$ 35,000	$ 35,000	$ 15,000	$ 15,000	$ 50,000	**$ 50,000**
5.2b	Disconnect Switches - 3ph w/ manual operator	1	EA	$ 30,000	$ 30,000	$ 17,500	$ 17,500	$ 47,500	**$ 47,500**
5.2c	VT'S	3	EA	$ 13,000	$ 39,000	$ 8,000	$ 24,000	$ 21,000	**$ 63,000**
5.2d	CT'S	3	EA	$ 13,000	$ 39,000	$ 8,000	$ 24,000	$ 21,000	**$ 63,000**
5.2e	CCVT'S	3	EA	$ 10,000	$ 30,000	$ 6,000	$ 18,000	$ 16,000	**$ 48,000**
5.2f	Arresters	6	EA	$ 5,000	$ 30,000	$ 6,000	$ 36,000	$ 11,000	**$ 66,000**
5.2g	Wave Traps	1	EA	$ 13,000	$ 13,000	$ 8,000	$ 8,000	$ 21,000	**$ 21,000**
5.2h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.2j									
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	2	EA	$ 33,000	$ 66,000	$ 15,000	$ 30,000	$ 48,000	**$ 96,000**
5.3b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 28,000	$ -	$ 17,500	$ -	$ 45,500	**$ -**
5.3c	VT'S	6	EA	$ 13,000	$ 78,000	$ 8,000	$ 48,000	$ 21,000	**$ 126,000**
5.3d	CT'S	6	EA	$ 13,000	$ 78,000	$ 8,000	$ 48,000	$ 21,000	**$ 126,000**
5.3e	CCVT'S	2	EA	$ 8,000	$ 16,000	$ 8,000	$ 16,000	$ 16,000	**$ 32,000**
5.3f	Arresters	12	EA	$ 3,420	$ 41,040	$ 6,000	$ 72,000	$ 9,420	**$ 113,040**
5.3g	Wave Traps	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.3h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.3j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ 1,994,540		$ 1,060,500		$ 3,055,040
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE	1	EA	$ 975,000	$ 975,000	$ 170,000	$ 170,000	$ 1,145,000	**$ 1,145,000**
6.2	Protection and Telecom Equipment Panels	29	EA	$ 35,000	$ 1,015,000	$ 10,000	$ 290,000	$ 45,000	**$ 1,305,000**
6.3	125VDC Batteries	2	EA	$ 75,000	$ 150,000	$ 25,000	$ 50,000	$ 100,000	**$ 200,000**
6.4	Control Cables	1	LS	$ 472,500	$ 472,500	$ 472,500	$ 472,500	$ 945,000	**$ 945,000**
6.5	SCADA and Communications	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.6	Low Voltage AC Distribution	2	EA	$ 50,000	$ 100,000	$ 100,000	$ 200,000	$ 150,000	**$ 300,000**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6.7	DC Distribution System	2	EA	$ 50,000	$ 100,000	$ 100,000	$ 200,000	$ 150,000	**$ 300,000**
6.8	Security	1	EA	$ 7,500	$ 7,500	$ 7,500	$ 7,500	$ 15,000	**$ 15,000**
6.9	Fire Alarm	1	EA	$ 7,500	$ 7,500	$ 7,500	$ 7,500	$ 15,000	**$ 15,000**
6.10	Generator	1	EA	$ 100,000	$ 100,000	$ 80,000	$ 80,000	$ 180,000	**$ 180,000**
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ 2,927,500		$ 1,477,500		**$ 4,405,000**
7. MISC ITEMS									
7.1	Conduit & Cable Trench System	1,950	LF	$ 185.00	$ 360,750	$ 170.00	$ 331,500	$ 355	**$ 692,250**
7.2	Rigid Bus, Fittings & Insulators	2,500	LF	$ 125.07	$ 312,675	$ 237.10	$ 592,750	$ 362	**$ 905,425**
7.3	Strain Bus, Connectors & Insulators	2,000	LF	$ 39.30	$ 78,600	$ 53.35	$ 106,700	$ 93	**$ 185,300**
7.4	Grounding System	25,000	LF	$ 6.93	$ 173,250	$ 32.58	$ 814,500	$ 40	**$ 987,750**
7.5	Strain Bus Insulators - 345kV	48	EA	$ 2,000	$ 96,000	$ 1,050	$ 50,400	$ 3,050	**$ 146,400**
7.6	Strain Bus Insulators - 230kV	6	EA	$ 1,400	$ 8,400	$ 750	$ 4,500	$ 2,150	**$ 12,900**
7.7	Strain Bus Insulators - 115kV	12	EA	$ 1,000	$ 12,000	$ 550	$ 6,600	$ 1,550	**$ 18,600**
7.8	Low Voltage AC Station Service	1	LS	$ 50,000	$ 50,000	$ 75,000	$ 75,000	$ 125,000	**$ 125,000**
7.9	SSVT Service	1	LS	$ 45,000	$ 45,000	$ 45,000	$ 45,000	$ 90,000	**$ 90,000**
7.10	Control Conduits from Trench to Equipment	1	LS	$ 125,000	$ 125,000	$ 125,000	$ 125,000	$ 250,000	**$ 250,000**
7.11	Misc. Materials (Above and Below Ground)	1	LS	$ 180,000	$ 180,000	$ 180,000	$ 180,000	$ 360,000	**$ 360,000**
7.12									
7.13									
7.14									
7.15									
7.16									
7.17									
7.18									
7.19									
7.20									
TOTAL - MISC ITEMS					$ 1,441,675		$ 2,331,950		$ 3,773,625
D. Rotterdam Substation - Install					$ 24,563,589		$ 20,164,885		**$ 44,728,474**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1.0	LS	$ -	$ -	$ 447,285	$ 447,285	$ 447,285	**$ 447,285**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 2,284,659	$ 2,284,659	$ 2,284,659	**$ 2,284,659**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 447,285	$ 447,285	$ 447,285	**$ 447,285**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 447,285	$ 447,285	$ 447,285	**$ 447,285**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 3,578,278	$ 3,578,278	$ 3,578,278	**$ 3,578,278**
8.6	LiDAR	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.7	Geotech	4	EA	$ -	$ -	$ 3,500	$ 14,000	$ 3,500	**$ 14,000**
8.8	Surveying/Staking	1	Site	$ -	$ -	$ 313,099	$ 313,099	$ 313,099	**$ 313,099**
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 1,118,212	$ 1,118,212	$ 1,118,212	**$ 1,118,212**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 134,185	$ 134,185	$ 134,185	**$ 134,185**
8.13	Real Estate Costs (New)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.14	Real Estate Costs (Incumbent Utility)	1	LS	$ -	$ -	$ 247,500	$ 247,500	$ 247,500	**$ 247,500**
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.18	Sales Tax on Materials	1	LS	$ 1,965,087	$ 1,965,087	$ -	$ -	$ 1,965,087	**$ 1,965,087**
8.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 44,728	$ 44,728	$ 44,728	**$ 44,728**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 1,965,087		$ 9,076,516		**$ 11,041,603**

NAT & NYPA - T028 - (Segment A, Enhanced)

E. Rotterdam Substation - Removal

Estimate Revision: 7

Total: $ 4,207,133

NAT & NYPA - T028 - (Segment A, Enhanced)	*Supply*	*Installation*	*Total*
E. Rotterdam Substation - Removal			
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ -	$ 1,472,750	$ 1,472,750
2. SUBSTATION FOUNDATIONS	$ -	$ 617,400	$ 617,400
3. SUBSTATION STRUCTURES	$ -	$ 534,900	$ 534,900
4. MAJOR EQUIPTMENT	$ -	$ 147,000	$ 147,000
5. SMALL EQUIPTMENT / MATERIALS	$ -	$ 169,500	$ 169,500
6. CONTROL HOUSE / PANELS	$ -	$ 150,000	$ 150,000
7. MISC ITEMS	$ -	$ 519,480	$ 519,480
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ -	$ 596,103	$ 596,103
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ -	$ 4,207,133	$ 4,207,133
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ -	$ 4,207,133	$ 4,207,133

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
E. Rotterdam Substation - Removal									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	6.3	ACRES	$ -	$ -	$ 203,000	$ 1,268,750	$ 203,000	**$ 1,268,750**
1.2	Station stone within substation fence.	2,000	CY	$ -	$ -	$ 102	$ 204,000	$ 102	**$ 204,000**
1.3	Substation Fence	0	LF	$ -	$ -	$ 150	$ -	$ 150	**$ -**
1.4									
1.5									
1.6									
1.7									
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ -		$ 1,472,750		$ 1,472,750
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1e	Switch Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1f	Fuse Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1k	Arrester Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1p									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.2	**230kV**								
2.2a	Circuit Breaker Foundations	9	EA	$ -	$ -	$ 7,200	$ 64,800	$ 7,200	**$ 64,800**
2.2b	Capacitor Bank Foundations	2	EA	$ -	$ -	$ 32,000	$ 64,000	$ 32,000	**$ 64,000**
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	1	EA	$ -	$ -	$ 22,000	$ 22,000	$ 22,000	**$ 22,000**
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	5	EA	$ -	$ -	$ 11,000	$ 55,000	$ 11,000	**$ 55,000**
2.2e	Switch Stand Foundations	15	EA	$ -	$ -	$ 5,200	$ 78,000	$ 5,200	**$ 78,000**
2.2f	Fuse Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.2g	Bus Support 3ph Foundations	4	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.2h	Bus Support 1 Ph Foundations	59	EA	$ -	$ -	$ 2,400	$ 141,600	$ 2,400	**$ 141,600**
2.2j	Instrument Transformer Stand Foundations	15	EA	$ -	$ -	$ 2,400	$ 36,000	$ 2,400	**$ 36,000**
2.2k	Arrester Stand Foundations	6	EA	$ -	$ -	$ 2,400	$ 14,400	$ 2,400	**$ 14,400**
2.2m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.2n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.2p									
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3e	Switch Stand Foundations	3	EA	$ -	$ -	$ 5,200	$ 15,600	$ 5,200	**$ 15,600**
2.3f	Fuse Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3k	Arrester Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.4b	345-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment	3	EA	$ -	$ -	$ 42,000	$ 126,000	$ 42,000	**$ 126,000**
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.5b	Generator Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.6b		0		$ -	$ -	$ -	$ -	$ -	**$ -**
2.6c		0		$ -	$ -	$ -	$ -	$ -	**$ -**
TOTAL - SUBSTATION FOUNDATIONS					$ -		$ 617,400		$ 617,400
3. SUBSTATION STRUCTURES									
3.1	**345kV**								
3.1a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.1b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.1c	Switch Stands	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1d	Station Service Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1f	Bus Support 1 Ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1g	Instrument Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1h	Arrester Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1j	Wave Trap Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone	1	EA	$ -	$ -	$ 27,000	$ 27,000	$ 27,000	**$ 27,000**
3.2b	Substation A-Frame Structures - Shared Column	5	EA	$ -	$ -	$ 27,000	$ 135,000	$ 27,000	**$ 135,000**
3.2c	Switch Stands	15	EA	$ -	$ -	$ 9,750	$ 146,250	$ 9,750	**$ 146,250**
3.2d	Station Service Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2e	Bus Support 3ph	4	EA	$ -	$ -	$ 2,250	$ 9,000	$ 2,250	**$ 9,000**
3.2f	Bus Support 1 Ph	59	EA	$ -	$ -	$ 2,250	$ 132,750	$ 2,250	**$ 132,750**
3.2g	Instrument Transformer Stand	15	EA	$ -	$ -	$ 1,050	$ 15,750	$ 1,050	**$ 15,750**
3.2h	Arrester Stand	6	EA	$ -	$ -	$ 1,050	$ 6,300	$ 1,050	**$ 6,300**
3.2j	Wave Trap Stand	3	EA	$ -	$ -	$ 4,500	$ 13,500	$ 4,500	**$ 13,500**
3.2k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3	**115kV**								
3.3a	Substation A-Frame Structures - Stand alone	2	EA	$ -	$ -	$ 15,000	$ 30,000	$ 15,000	**$ 30,000**
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3c	Switch Stands	3	EA	$ -	$ -	$ 6,450	$ 19,350	$ 6,450	**$ 19,350**
3.3d	Fuse Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3f	Bus Support 1 Ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3g	Instrument Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3h	Arrester Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3j	Wave Trap Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION STRUCTURES					$ -		$ 534,900		$ 534,900
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.1b	Capacitor Banks	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.1c		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.1d									
4.2	**230kV**								
4.2a	Circuit Breakers	9	EA	$ -	$ -	$ 7,000	$ 63,000	$ 7,000	**$ 63,000**
4.2b	Capacitor Banks	2	EA	$ -	$ -	$ 42,000	$ 84,000	$ 42,000	**$ 84,000**
4.3	**115kV**								
4.3a	Circuit Breakers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - MAJOR EQUIPTMENT					$ -		$ 147,000		$ 147,000
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
5.1a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.1b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.1c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.1d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.1e	CCVT'S	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.1f	Arresters	0	EA	$ -	$ -	$ 1,500	$ -	$ 1,500	$ -
5.1g	Wave Traps	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.1h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.1j									
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator	3	EA	$ -	$ -	$ 5,500	$ 16,500	$ 5,500	**$ 16,500**
5.2b	Disconnect Switches - 3ph w/ manual operator	12	EA	$ -	$ -	$ 5,500	$ 66,000	$ 5,500	**$ 66,000**
5.2c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2e	CCVT'S	8	EA	$ -	$ -	$ 1,500	$ 12,000	$ 1,500	**$ 12,000**
5.2f	Arresters	15	EA	$ -	$ -	$ 2,500	$ 37,500	$ 2,500	**$ 37,500**
5.2g	Wave Traps	3	EA	$ -	$ -	$ 2,500	$ 7,500	$ 2,500	**$ 7,500**
5.2h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2j									
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3b	Disconnect Switches - 3ph w/ manual operator	3	EA	$ -	$ -	$ 5,500	$ 16,500	$ 5,500	**$ 16,500**
5.3c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3e	CCVT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3f	Arresters	9	EA	$ -	$ -	$ 1,500	$ 13,500	$ 1,500	**$ 13,500**
5.3g	Wave Traps	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ -		$ 169,500		$ 169,500
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE	1	EA	$ -	$ -	$ 150,000	$ 150,000	$ 150,000	**$ 150,000**
6.2	PANELS	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.3	125VDC Batteries	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.4	Protection and Telecom Equipment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.5	SCADA and Communications	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.6	Low Voltage AC Distribution	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.7	DC Distribution System	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.8	Security	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.9	Fire Alarm	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.10	Generator	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ -		$ 150,000		**$ 150,000**
7. MISC ITEMS									
7.1	Conduit & Cable Trench System	1	LS	$ -	$ -	$ 42,000.00	$ 42,000	$ 42,000	**$ 42,000**
7.2	Rigid Bus, Fittings & Insulators	3,200	LF	$ -	$ -	$ 126.25	$ 404,000	$ 126	**$ 404,000**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
7.3	Strain Bus, Connectors & Insulators	800	LF	$ -	$ -	$ 39.35	$ 31,480	$ 39	**$ 31,480**
7.4	Grounding System	1	LS	$ -	$ -	$ 42,000.00	$ 42,000	$ 42,000	**$ 42,000**
7.5									
7.6									
7.7									
7.8									
7.9									
7.10									
7.11									
7.12									
7.13									
7.14									
7.15									
TOTAL - MISC ITEMS					$ -		$ 519,480		$ 519,480
E. Rotterdam Substation - Removal					$ -		$ 3,611,030		**$ 3,611,030**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1	LS	$ -	$ -	$ 36,110	$ 36,110	$ 36,110	**$ 36,110**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 184,446	$ 184,446	$ 184,446	**$ 184,446**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 36,110	$ 36,110	$ 36,110	**$ 36,110**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 36,110	$ 36,110	$ 36,110	**$ 36,110**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 288,882	$ 288,882	$ 288,882	**$ 288,882**
8.6	LiDAR	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.7	Geotech	-	EA	$ -	$ -	$ 3,500	$ -	$ 3,500	**$ -**
8.8	Surveying/Staking	-	Site	$ -	$ -	$ 25,277	$ -	$ 25,277	**$ -**
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	-	LS	$ -	$ -	$ 90,276	$ -	$ 90,276	**$ -**
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 10,833	$ 10,833	$ 10,833	**$ 10,833**
8.13	Real Estate Costs (New)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.14	Real Estate Costs (Incumbent Utility)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.18	Sales Tax on Materials	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 3,611	$ 3,611	$ 3,611	**$ 3,611**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ -		$ 596,103		**$ 596,103**

NAT & NYPA - T028 - (Segment A, Enhanced)

F. Edic Substation - Install

Estimate Revision: 7

Total: $ 2,639,615

NAT & NYPA - T028 - (Segment A, Enhanced)	*Supply*	*Installation*	*Total*
F. Edic Substation - Install			
1. SITE PREP/ GRADING/ FENCING / CIVIL	**$ 2,025**	**$ 5,625**	**$ 7,650**
2. SUBSTATION FOUNDATIONS	**$ 100,098**	**$ 107,200**	**$ 207,298**
3. SUBSTATION STRUCTURES	**$ 44,400**	**$ 44,400**	**$ 88,800**
4. MAJOR EQUIPTMENT	**$ 200,000**	**$ 80,000**	**$ 280,000**
5. SMALL EQUIPTMENT / MATERIALS	**$ 280,000**	**$ 133,500**	**$ 413,500**
6. CONTROL HOUSE / PANELS	**$ 173,850**	**$ 98,850**	**$ 272,700**
7. MISC ITEMS	**$ 339,357**	**$ 507,880**	**$ 847,237**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	**$ 91,178**	**$ 431,251**	**$ 522,430**
CONTRACTOR MARK-UP (OH&P)	**$ -**	**$ -**	**$ -**
SUBTOTAL:	**$ 1,230,908**	**$ 1,408,706**	**$ 2,639,615**
CONTINGENCY ON ENTIRE PROJECT	**$ -**	**$ -**	**$ -**
TOTAL:	**$ 1,230,908**	**$ 1,408,706**	**$ 2,639,615**

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
F. Edic Substation - Install									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	0	ACRES	$ -	$ -	$ 203,000	$ -	$ 203,000	**$ -**
1.2	Station stone within substation fence.	75	CY	$ 27	$ 2,025	$ 75	$ 5,625	$ 102	**$ 7,650**
1.3	Substation Fence	0	LF	$ 100	$ -	$ 100	$ -	$ 200	**$ -**
1.4	Permanent Access Road - 20'-Wide	0	LF	$ 35	$ -	$ 285	$ -	$ 320	**$ -**
1.5									
1.6									
1.7									
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ 2,025		$ 5,625		$ 7,650
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	1	EA	$ 14,940	$ 14,940	$ 16,000	$ 16,000	$ 30,940	**$ 30,940**
2.1b	Capacitor Bank Foundations	0	EA	$ 56,025	$ -	$ 60,000	$ -	$ 116,025	**$ -**
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 26,145	$ -	$ 28,000	$ -	$ 54,145	**$ -**
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 26,145	$ -	$ 28,000	$ -	$ 54,145	**$ -**
2.1e	Switch Stand Foundations	6	EA	$ 4,482	$ 26,892	$ 4,800	$ 28,800	$ 9,282	**$ 55,692**
2.1f	Station Service Transformer Stand Foundation	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	**$ -**
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1h	Bus Support 1 Ph Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	**$ -**
2.1j	Instrument Transformer Stand Foundations	9	EA	$ 4,482	$ 40,338	$ 4,800	$ 43,200	$ 9,282	**$ 83,538**
2.1k	Arrester Stand Foundations	3	EA	$ 4,482	$ 13,446	$ 4,800	$ 14,400	$ 9,282	**$ 27,846**
2.1m	Wave Trap Stand Foundations	1	EA	$ 4,482	$ 4,482	$ 4,800	$ 4,800	$ 9,282	**$ 9,282**
2.1n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1p									
2.2	**230kV**								
2.2a	Circuit Breaker Foundations	0	EA	$ 11,952	$ -	$ 12,800	$ -	$ 24,752	**$ -**
2.2b	Capacitor Bank Foundations	0	EA	$ 44,820	$ -	$ 48,000	$ -	$ 92,820	**$ -**
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	**$ -**
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	**$ -**
2.2e	Switch Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	**$ -**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.2f	Fuse Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2h	Bus Support 1 Ph Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2j	Instrument Transformer Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2k	Arrester Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2m	Wave Trap Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2p									
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	0	EA	$ 5,229	$ -	$ 5,600	$ -	$ 10,829	$ -
2.3b	Capacitor Bank Foundations	0	EA	$ 33,615	$ -	$ 36,000	$ -	$ 69,615	$ -
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	$ -
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	$ -
2.3e	Switch Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3f	Fuse Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3g	Bus Support 3ph Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3h	Bus Support 1 Ph Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3j	Instrument Transformer Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3k	Arrester Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3m	Wave Trap Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment	0	EA	$ 97,110	$ -	$ 104,000	$ -	$ 201,110	$ -
2.4b	345-115kV Transformer Foundation w/ Oil Containment	0	EA	$ 74,700	$ -	$ 80,000	$ -	$ 154,700	$ -
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad	0	EA	$ 76,194	$ -	$ 81,600	$ -	$ 157,794	$ -
2.5b	Generator Foundation	0	EA	$ 16,000	$ -	$ 17,000	$ -	$ 33,000	$ -
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	0	EA	$ 5,229	$ -	$ 5,600	$ -	$ 10,829	$ -
2.6b	60' Lightning Mast Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6c	50' Lightning Mast Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION FOUNDATIONS					$ 100,098		$ 107,200		$ 207,298
3. SUBSTATION STRUCTURES									
3.1	**345kV**								
3.1a	Substation A-Frame Structures - Stand alone	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	$ -
3.1b	Substation A-Frame Structures - Shared Column	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	$ -
3.1c	Switch Stands	1	EA	$ 14,800	$ 14,800	$ 14,800	$ 14,800	$ 29,600	**$ 29,600**
3.1d	Station Service Transformer Stand	0	EA	$ 14,800	$ -	$ 14,800	$ -	$ 29,600	$ -
3.1e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1f	Bus Support 1 Ph	0	EA	$ 3,700	$ -	$ 3,700	$ -	$ 7,400	$ -
3.1g	Instrument Transformer Stand	9	EA	$ 1,850	$ 16,650	$ 1,850	$ 16,650	$ 3,700	**$ 33,300**
3.1h	Arrester Stand	3	EA	$ 1,850	$ 5,550	$ 1,850	$ 5,550	$ 3,700	**$ 11,100**
3.1j	Wave Trap Stand	1	EA	$ 7,400	$ 7,400	$ 7,400	$ 7,400	$ 14,800	**$ 14,800**
3.1k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	$ -
3.2b	Substation A-Frame Structures - Shared Column	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	$ -
3.2c	Switch Stands	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	$ -
3.2d	Station Service Transformer Stand	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	$ -
3.2e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2f	Bus Support 1 Ph	0	EA	$ 2,775	$ -	$ 2,775	$ -	$ 5,550	$ -
3.2g	Instrument Transformer Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	$ -
3.2h	Arrester Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	$ -
3.2j	Wave Trap Stand	0	EA	$ 5,550	$ -	$ 5,550	$ -	$ 11,100	$ -
3.2k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.3	**115kV**								
3.3a	Substation A-Frame Structures - Stand alone	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	**$ -**
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	**$ -**
3.3c	Switch Stands	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	**$ -**
3.3d	Fuse Stand	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	**$ -**
3.3e	Bus Support 3ph	0	EA	$ 3,330	$ -	$ 3,330	$ -	$ 6,660	**$ -**
3.3f	Bus Support 1 Ph	0	EA	$ 1,850	$ -	$ 1,850	$ -	$ 3,700	**$ -**
3.3g	Instrument Transformer Stand	0	EA	$ 740	$ -	$ 740	$ -	$ 1,480	**$ -**
3.3h	Arrester Stand	0	EA	$ 740	$ -	$ 740	$ -	$ 1,480	**$ -**
3.3j	Wave Trap Stand	0	EA	$ 3,700	$ -	$ 3,700	$ -	$ 7,400	**$ -**
3.3k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	**$ -**
TOTAL - SUBSTATION STRUCTURES					$ 44,400		$ 44,400		$ 88,800
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	1	EA	$ 200,000	$ 200,000	$ 80,000	$ 80,000	$ 280,000	**$ 280,000**
4.1b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	**$ -**
4.1c	345 kV - 230 kV Auto Transformer	0	EA	$ -	$ -	$ 750,000	$ -	$ 750,000	**$ -**
4.1d	345 kV - 115 kV Auto Transformer	0	EA	$ -	$ -	$ 750,000	$ -	$ 750,000	**$ -**
4.2	**230kV**								
4.2a	Circuit Breakers	0	EA	$ 115,000	$ -	$ 80,000	$ -	$ 195,000	**$ -**
4.2b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	**$ -**
4.3	**115kV**								
4.3a	Circuit Breakers	0	EA	$ 52,000	$ -	$ 60,000	$ -	$ 112,000	**$ -**
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ 60,000	$ -	$ 60,000	**$ -**
TOTAL - MAJOR EQUIPTMENT					$ 200,000		$ 80,000		$ 280,000
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator	1	EA	$ 40,000	$ 40,000	$ 15,000	$ 15,000	$ 55,000	**$ 55,000**
5.1b	Disconnect Switches - 3ph w/ manual operator	1	EA	$ 35,000	$ 35,000	$ 17,500	$ 17,500	$ 52,500	**$ 52,500**
5.1c	VT'S	3	EA	$ 25,000	$ 75,000	$ 12,000	$ 36,000	$ 37,000	**$ 111,000**
5.1d	CT'S	3	EA	$ 13,000	$ 39,000	$ 8,000	$ 24,000	$ 21,000	**$ 63,000**
5.1e	CCVT'S	3	EA	$ 13,000	$ 39,000	$ 8,000	$ 24,000	$ 21,000	**$ 63,000**
5.1f	Arresters	6	EA	$ 6,500	$ 39,000	$ 1,500	$ 9,000	$ 8,000	**$ 48,000**
5.1g	Wave Traps	1	EA	$ 13,000	$ 13,000	$ 8,000	$ 8,000	$ 21,000	**$ 21,000**
5.1h	Station Service Transformers	0	EA	$ 200,000	$ -	$ 50,000	$ -	$ 250,000	**$ -**
5.1j									
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator	0	EA	$ 35,000	$ -	$ 15,000	$ -	$ 50,000	**$ -**
5.2b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 30,000	$ -	$ 17,500	$ -	$ 47,500	**$ -**
5.2c	VT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	**$ -**
5.2d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	**$ -**
5.2e	CCVT'S	0	EA	$ 10,000	$ -	$ 6,000	$ -	$ 16,000	**$ -**
5.2f	Arresters	0	EA	$ 5,000	$ -	$ 6,000	$ -	$ 11,000	**$ -**
5.2g	Wave Traps	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	**$ -**
5.2h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.2j									
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	0	EA	$ 33,000	$ -	$ 15,000	$ -	$ 48,000	**$ -**
5.3b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 28,000	$ -	$ 17,500	$ -	$ 45,500	**$ -**
5.3c	VT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	**$ -**
5.3d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	**$ -**
5.3e	CCVT'S	0	EA	$ 8,000	$ -	$ 8,000	$ -	$ 16,000	**$ -**
5.3f	Arresters	0	EA	$ 3,420	$ -	$ 6,000	$ -	$ 9,420	**$ -**
5.3g	Wave Traps	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.3h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.3j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ 280,000		$ 133,500		$ 413,500

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE	0	EA	$ 551,250	$ -	$ 85,000	$ -	$ 636,250	**$ -**
6.2	Protection and Telecom Equipment Panels	3	EA	$ 35,000	$ 105,000	$ 10,000	$ 30,000	$ 45,000	**$ 135,000**
6.3	125VDC Batteries	0	EA	$ 75,000	$ -	$ 25,000	$ -	$ 100,000	**$ -**
6.4	Control Cables	1	LS	$ 68,850	$ 68,850	$ 68,850	$ 68,850	$ 137,700	**$ 137,700**
6.5	SCADA and Communications	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.6	Low Voltage AC Distribution	0	EA	$ 50,000	$ -	$ 100,000	$ -	$ 150,000	**$ -**
6.7	DC Distribution System	0	EA	$ 50,000	$ -	$ 100,000	$ -	$ 150,000	**$ -**
6.8	Security	0	EA	$ 7,500	$ -	$ 7,500	$ -	$ 15,000	**$ -**
6.9	Fire Alarm	0	EA	$ 7,500	$ -	$ 7,500	$ -	$ 15,000	**$ -**
6.10	Generator	0	EA	$ 100,000	$ -	$ 80,000	$ -	$ 180,000	**$ -**
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ 173,850		$ 98,850		**$ 272,700**
7. MISC ITEMS									
7.1	Conduit & Cable Trench System	800	LF	$ 185.00	$ 148,000	$ 170.00	$ 136,000	$ 355	**$ 284,000**
7.2	Rigid Bus, Fittings & Insulators	0	L.S.	$ -	$ -	$ -	$ -	$ -	**$ -**
7.3	Strain Bus, Connectors & Insulators	2,500	LF	$ 39.30	$ 98,250	$ 53.35	$ 133,375	$ 93	**$ 231,625**
7.4	Grounding System	1	L.S.	$ 10,395.00	$ 10,395	$ 73,305.00	$ 73,305	$ 83,700	**$ 83,700**
7.5	Strain Bus Insulators - 345kV	24	EA	$ 2,000	$ 48,000	$ 1,050	$ 25,200	$ 3,050	**$ 73,200**
7.6	Strain Bus Insulators - 230kV	0	EA	$ 1,400	$ -	$ 750	$ -	$ 2,150	**$ -**
7.7	Strain Bus Insulators - 115kV	0	EA	$ 1,000	$ -	$ 550	$ -	$ 1,550	**$ -**
7.8	Low Voltage AC Station Service	0	LS	$ 50,000	$ -	$ 75,000	$ -	$ 125,000	**$ -**
7.9	SSVT Service	0	LS	$ 45,000	$ -	$ 45,000	$ -	$ 90,000	**$ -**
7.10	Control Conduits from Trench to Equipment	1	LS	$ 14,000	$ 14,000	$ 70,000	$ 70,000	$ 84,000	**$ 84,000**
7.11	Misc. Materials (Above and Below Ground)	1	LS	$ 20,712	$ 20,712	$ 70,000	$ 70,000	$ 90,712	**$ 90,712**
7.12									
7.13									
7.14									
7.15									
7.16									
7.17									
7.18									
7.19									
7.20									
7.21									
7.22									
7.23									
7.24									
7.25									
TOTAL - MISC ITEMS					$ 339,357		$ 507,880		$ 847,237
F. Edic Substation - Install					$ 1,139,730		$ 977,455		**$ 2,117,185**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1.0	LS	$ -	$ -	$ 21,172	$ 21,172	$ 21,172	**$ 21,172**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 108,142	$ 108,142	$ 108,142	**$ 108,142**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 21,172	$ 21,172	$ 21,172	**$ 21,172**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 21,172	$ 21,172	$ 21,172	**$ 21,172**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 169,375	$ 169,375	$ 169,375	**$ 169,375**
8.6	LiDAR	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.7	Geotech	4	EA	$ -	$ -	$ 3,500	$ 14,000	$ 3,500	**$ 14,000**
8.8	Surveying/Staking	1	Site	$ -	$ -	$ 14,820	$ 14,820	$ 14,820	**$ 14,820**
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 52,930	$ 52,930	$ 52,930	**$ 52,930**
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 6,352	$ 6,352	$ 6,352	**$ 6,352**
8.13	Real Estate Costs (New)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.14	Real Estate Costs (Incumbent Utility)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.18	Sales Tax on Materials	1	LS	$ 91,178	$ 91,178	$ -	$ -	$ 91,178	**$ 91,178**
8.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 2,117	$ 2,117	$ 2,117	**$ 2,117**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 91,178		$ 431,251		**$ 522,430**

NAT & NYPA - T028 - (Segment A, Enhanced)

G. Edic Substation - Removal

Estimate Revision: 7

Total: $ 41,616

NAT & NYPA - T028 - (Segment A, Enhanced)	*Supply*	*Installation*	*Total*
G. Edic Substation - Removal			
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ -	$ -	$ -
2. SUBSTATION FOUNDATIONS	$ -	$ 14,000	$ 14,000
3. SUBSTATION STRUCTURES	$ -	$ 6,750	$ 6,750
4. MAJOR EQUIPTMENT	$ -	$ -	$ -
5. SMALL EQUIPTMENT / MATERIALS	$ -	$ 4,500	$ 4,500
6. CONTROL HOUSE / PANELS	$ -	$ -	$ -
7. MISC ITEMS	$ -	$ -	$ 10,500
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ -	$ 5,866	$ 5,866
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ -	$ 31,116	$ 41,616
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ -	$ 31,116	$ 41,616

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
G. Edic Substation - Removal									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	0	ACRES	$ -	$ -	$ 203,000	$ -	$ 203,000	$ -
1.2	Station stone within substation fence.	0	CY	$ -	$ -	$ 75	$ -	$ 75	$ -
1.3	Substation Fence	0	LF	$ -	$ -	$ 150	$ -	$ 150	$ -
1.4									
1.5									
1.6									
1.7									
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ -		$ -		$ -
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	1	EA	$ -	$ -	$ 14,000	$ 14,000	$ 14,000	**$ 14,000**
2.1b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1e	Switch Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1f	Station Service Transformer Stand Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.1j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1k	Arrester Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1p		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2	**230kV**								
2.2a	Circuit Breaker Foundations	0	EA	$ -	$ -	$ 7,200	$ -	$ 7,200	$ -
2.2b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ 32,000	$ -	$ 32,000	$ -
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ 22,000	$ -	$ 22,000	$ -
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ 11,000	$ -	$ 11,000	$ -
2.2e	Switch Stand Foundations	0	EA	$ -	$ -	$ 5,200	$ -	$ 5,200	$ -
2.2f	Station Service Transformer Stand Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.2g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.2j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.2k	Arrester Stand Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.2m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2p		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3e	Switch Stand Foundations	0	EA	$ -	$ -	$ 5,200	$ -	$ 5,200	$ -
2.3f	Fuse Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3k	Arrester Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4b	345-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ 42,000	$ -	$ 42,000	$ -
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5b	Generator Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6b		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6c		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION FOUNDATIONS					$ -		$ 14,000		$ 14,000
3. SUBSTATION STRUCTURES									
3.1	**345kV**								
3.1a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1c	Switch Stands	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1d	Station Service Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1f	Bus Support 1 Ph	3	EA	$ -	$ -	$ 2,250	$ 6,750	$ 2,250	**$ 6,750**
3.1g	Instrument Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1h	Arrester Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1j	Wave Trap Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ 27,000	$ -	$ 27,000	$ -
3.2b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ 27,000	$ -	$ 27,000	$ -
3.2c	Switch Stands	0	EA	$ -	$ -	$ 9,750	$ -	$ 9,750	$ -
3.2d	Station Service Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2f	Bus Support 1 Ph	0	EA	$ -	$ -	$ 2,250	$ -	$ 2,250	$ -
3.2g	Instrument Transformer Stand	0	EA	$ -	$ -	$ 1,050	$ -	$ 1,050	$ -
3.2h	Arrester Stand	0	EA	$ -	$ -	$ 1,050	$ -	$ 1,050	$ -
3.2j	Wave Trap Stand	0	EA	$ -	$ -	$ 4,500	$ -	$ 4,500	$ -
3.2k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.3	**115kV**								
3.3a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ 15,000	$ -	$ 15,000	$ -
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3c	Switch Stands	0	EA	$ -	$ -	$ 6,450	$ -	$ 6,450	$ -
3.3d	Fuse Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3f	Bus Support 1 Ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3g	Instrument Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3h	Arrester Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3j	Wave Trap Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION STRUCTURES					$ -		$ 6,750		$ 6,750
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.1b	Capacitor Banks	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.1c		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.1d									
4.2	**230kV**								
4.2a	Circuit Breakers	0	EA	$ -	$ -	$ 7,000	$ -	$ 7,000	$ -
4.2b	Capacitor Banks	0	EA	$ -	$ -	$ 42,000	$ -	$ 42,000	$ -
4.3	**115kV**								
4.3a	Circuit Breakers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - MAJOR EQUIPTMENT					$ -		$ -		$ -
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.1b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.1c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.1d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.1e	CCVT'S	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.1f	Arresters	3	EA	$ -	$ -	$ 1,500	$ 4,500	$ 1,500	**$ 4,500**
5.1g	Wave Traps	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.1h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.1j		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.2b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.2c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2e	CCVT'S	0	EA	$ -	$ -	$ 1,500	$ -	$ 1,500	$ -
5.2f	Arresters	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.2g	Wave Traps	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.2h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2j		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.3c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3e	CCVT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3f	Arresters	0	EA	$ -	$ -	$ 1,500	$ -	$ 1,500	$ -
5.3g	Wave Traps	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ -		$ 4,500		$ 4,500
6. CONTROL HOUSE / PANELS / GENERATOR									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6.1	CONTROL HOUSE	0	EA	$ -	$ -	$ 150,000	$ -	$ 150,000	$ -
6.2	Protection and Telecom Equipment Panels	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.3	125VDC Batteries	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.4	Control Cables	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.5	SCADA and Communications	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.6	Low Voltage AC Distribution	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.7	DC Distribution System	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.8	Security	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.9	Fire Alarm	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.10	Generator	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ -		$ -		$ -
7. MISC ITEMS									
7.1	Conduit & Cable Trench System	0	EA	$ -	$ -	$ 42,000.00	$ -	$ 42,000	$ -
7.2	Rigid Bus, Fittings & Insulators	1	LS	$ -	$ -	$ 10,500.00	$ 10,500	$ 10,500	**$ 10,500**
7.3	Strain Bus, Connectors & Insulators	0	EA	$ -	$ -	$ 39.35	$ -	$ 39	$ -
7.4	Grounding System	0	EA	$ -	$ -	$ 42,000.00	$ -	$ 42,000	$ -
7.5									
7.6									
7.7									
7.8									
7.9									
7.10									
7.11									
7.12									
7.13									
7.14									
7.15									
TOTAL - MISC ITEMS					$ -		$ 10,500		$ 10,500
G. Edic Substation - Removal					$ -		$ 35,750		**$ 35,750**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1.0	LS	$ -	$ -	$ 358	$ 358	$ 358	**$ 358**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 1,826	$ 1,826	$ 1,826	**$ 1,826**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 358	$ 358	$ 358	**$ 358**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 358	$ 358	$ 358	**$ 358**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 2,860	$ 2,860	$ 2,860	**$ 2,860**
8.6	LiDAR	-	Mile	$ -	$ -	$ -	$ -	$ -	$ -
8.7	Geotech	-	Site	$ -	$ -	$ -	$ -	$ -	$ -
8.8	Surveying/Staking	-	Site	$ -	$ -	$ 250	$ -	$ 250	$ -
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	-	LS	$ -	$ -	$ 894	$ -	$ 894	$ -
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 107	$ 107	$ 107	**$ 107**
8.13	Real Estate Costs (New)	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.14	Real Estate Costs (Incumbent Utility)	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.18	Sales Tax on Materials	1	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.19	Fees for permits, including roadway, railroad, building or other local permits	-	LS		$ -	$ 36	$ -	$ 36	$ -
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ -		$ 5,866		**$ 5,866**

NAT & NYPA - T028 - (Segment A, Enhanced)

H. New Scotland Substation - Install

Estimate Revision: 7

Total: $ 6,443,406

NAT & NYPA - T028 - (Segment A, Enhanced)	*Supply*	*Installation*	*Total*
H. New Scotland Substation - Install			
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ 4,050	$ 11,250	$ 15,300
2. SUBSTATION FOUNDATIONS	$ 406,368	$ 435,200	$ 841,568
3. SUBSTATION STRUCTURES	$ 199,800	$ 199,800	$ 399,600
4. MAJOR EQUIPTMENT	$ 600,000	$ 240,000	$ 840,000
5. SMALL EQUIPTMENT / MATERIALS	$ 353,000	$ 192,500	$ 545,500
6. CONTROL HOUSE / PANELS	$ 726,650	$ 500,400	$ 1,227,050
7. MISC ITEMS	$ 525,680	$ 788,055	$ 1,313,735
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 225,244	$ 1,035,409	$ 1,260,653
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 3,040,792	$ 3,402,614	$ 6,443,406
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 3,040,792	$ 3,402,614	$ 6,443,406

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
H. New Scotland Substation - Install									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	0	ACRES	$ -	$ -	$ 203,000	$ -	$ 203,000	$ -
1.2	Station stone within substation fence.	150	CY	$ 27	$ 4,050	$ 75	$ 11,250	$ 102	$ 15,300
1.3	Substation Fence	0	LF	$ 100	$ -	$ 100	$ -	$ 200	$ -
1.4	Permanent Access Road - 20'-Wide (From Gordon RD)	0	LF	$ 35	$ -	$ 285	$ -	$ 320	$ -
1.5									
1.6									
1.7									
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ 4,050		$ 11,250		$ 15,300
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	3	EA	$ 14,940	$ 44,820	$ 16,000	$ 48,000	$ 30,940	$ 92,820
2.1b	Capacitor Bank Foundations	0	EA	$ 56,025	$ -	$ 60,000	$ -	$ 116,025	$ -
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	4	EA	$ 26,145	$ 104,580	$ 28,000	$ 112,000	$ 54,145	$ 216,580
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 26,145	$ -	$ 28,000	$ -	$ 54,145	$ -
2.1e	Switch Stand Foundations	24	EA	$ 4,482	$ 107,568	$ 4,800	$ 115,200	$ 9,282	$ 222,768
2.1f	Station Service Transformer Stand Foundation	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1h	Bus Support 1 Ph Foundations	15	EA	$ 4,482	$ 67,230	$ 4,800	$ 72,000	$ 9,282	$ 139,230
2.1j	Instrument Transformer Stand Foundations	12	EA	$ 4,482	$ 53,784	$ 4,800	$ 57,600	$ 9,282	$ 111,384
2.1k	Arrester Stand Foundations	3	EA	$ 4,482	$ 13,446	$ 4,800	$ 14,400	$ 9,282	$ 27,846
2.1m	Wave Trap Stand Foundations	1	EA	$ 4,482	$ 4,482	$ 4,800	$ 4,800	$ 9,282	$ 9,282
2.1n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1p		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2	**230kV**								
2.2a	Circuit Breaker Foundations	0	EA	$ 11,952	$ -	$ 12,800	$ -	$ 24,752	$ -
2.2b	Capacitor Bank Foundations	0	EA	$ 44,820	$ -	$ 48,000	$ -	$ 92,820	$ -
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	$ -
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	$ -
2.2e	Switch Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.2f	Station Service Transformer Stand Foundation	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2h	Bus Support 1 Ph Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2j	Instrument Transformer Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2k	Arrester Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2m	Wave Trap Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2p		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	0	EA	$ 5,229	$ -	$ 5,600	$ -	$ 10,829	$ -
2.3b	Capacitor Bank Foundations	0	EA	$ 33,615	$ -	$ 36,000	$ -	$ 69,615	$ -
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	$ -
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	$ -
2.3e	Switch Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3f	Fuse Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3g	Bus Support 3ph Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3h	Bus Support 1 Ph Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3j	Instrument Transformer Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3k	Arrester Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3m	Wave Trap Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment	0	EA	$ 97,110	$ -	$ 104,000	$ -	$ 201,110	$ -
2.4b	345-115kV Transformer Foundation w/ Oil Containment	0	EA	$ 74,700	$ -	$ 80,000	$ -	$ 154,700	$ -
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad	0	EA	$ 76,194	$ -	$ 81,600	$ -	$ 157,794	$ -
2.5b	Generator Foundation	0	EA	$ 16,000	$ -	$ 17,000	$ -	$ 33,000	$ -
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	2	EA	$ 5,229	$ 10,458	$ 5,600	$ 11,200	$ 10,829	**$ 21,658**
2.6b		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6c		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION FOUNDATIONS					$ 406,368		$ 435,200		$ 841,568
3. SUBSTATION STRUCTURES									
3.1	**345kV**								
3.1a	Substation A-Frame Structures - Stand alone	1	EA	$ 37,000	$ 37,000	$ 37,000	$ 37,000	$ 74,000	**$ 74,000**
3.1b	Substation A-Frame Structures - Shared Column	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	$ -
3.1c	Switch Stands	4	EA	$ 14,800	$ 59,200	$ 14,800	$ 59,200	$ 29,600	**$ 118,400**
3.1d	Station Service Transformer Stand	0	EA	$ 14,800	$ -	$ 14,800	$ -	$ 29,600	$ -
3.1e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1f	Bus Support 1 Ph	15	EA	$ 3,700	$ 55,500	$ 3,700	$ 55,500	$ 7,400	**$ 111,000**
3.1g	Instrument Transformer Stand	12	EA	$ 1,850	$ 22,200	$ 1,850	$ 22,200	$ 3,700	**$ 44,400**
3.1h	Arrester Stand	3	EA	$ 1,850	$ 5,550	$ 1,850	$ 5,550	$ 3,700	**$ 11,100**
3.1j	Wave Trap Stand	1	EA	$ 7,400	$ 7,400	$ 7,400	$ 7,400	$ 14,800	**$ 14,800**
3.1k	Lightning Masts - 70'	2	EA	$ 6,475	$ 12,950	$ 6,475	$ 12,950	$ 12,950	**$ 25,900**
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	$ -
3.2b	Substation A-Frame Structures - Shared Column	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	$ -
3.2c	Switch Stands	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	$ -
3.2d	Station Service Transformer Stand	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	$ -
3.2e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2f	Bus Support 1 Ph	0	EA	$ 2,775	$ -	$ 2,775	$ -	$ 5,550	$ -
3.2g	Instrument Transformer Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	$ -
3.2h	Arrester Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	$ -
3.2j	Wave Trap Stand	0	EA	$ 5,550	$ -	$ 5,550	$ -	$ 11,100	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.2k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
3.3	**115kV**								
3.3a	Substation A-Frame Structures - Stand alone	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	$ -
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	$ -
3.3c	Switch Stands	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	$ -
3.3d	Fuse Stand	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	$ -
3.3e	Bus Support 3ph	0	EA	$ 3,330	$ -	$ 3,330	$ -	$ 6,660	$ -
3.3f	Bus Support 1 Ph	0	EA	$ 1,850	$ -	$ 1,850	$ -	$ 3,700	$ -
3.3g	Instrument Transformer Stand	0	EA	$ 740	$ -	$ 740	$ -	$ 1,480	$ -
3.3h	Arrester Stand	0	EA	$ 740	$ -	$ 740	$ -	$ 1,480	$ -
3.3j	Wave Trap Stand	0	EA	$ 3,700	$ -	$ 3,700	$ -	$ 7,400	$ -
3.3k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
TOTAL - SUBSTATION STRUCTURES					$ 199,800		$ 199,800		$ 399,600
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	3	EA	$ 200,000	$ 600,000	$ 80,000	$ 240,000	$ 280,000	**$ 840,000**
4.1b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	$ -
4.1c	345 kV - 230 kV Auto Transformer	0	EA	$ -	$ -	$ 750,000	$ -	$ 750,000	$ -
4.1d	345 kV - 115 kV Auto Transformer	0	EA	$ -	$ -	$ 750,000	$ -	$ 750,000	$ -
4.2	**230kV**								
4.2a	Circuit Breakers	0	EA	$ 115,000	$ -	$ 80,000	$ -	$ 195,000	$ -
4.2b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	$ -
4.3	**115kV**								
4.3a	Circuit Breakers	0	EA	$ 52,000	$ -	$ 60,000	$ -	$ 112,000	$ -
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ 60,000	$ -	$ 60,000	$ -
TOTAL - MAJOR EQUIPTMENT					$ 600,000		$ 240,000		$ 840,000
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator	1	EA	$ 40,000	$ 40,000	$ 15,000	$ 15,000	$ 55,000	**$ 55,000**
5.1b	Disconnect Switches - 3ph w/ manual operator	3	EA	$ 35,000	$ 105,000	$ 17,500	$ 52,500	$ 52,500	**$ 157,500**
5.1c	VT'S	3	EA	$ 13,000	$ 39,000	$ 12,000	$ 36,000	$ 25,000	**$ 75,000**
5.1d	CT'S	3	EA	$ 13,000	$ 39,000	$ 8,000	$ 24,000	$ 21,000	**$ 63,000**
5.1e	CCVT'S	6	EA	$ 13,000	$ 78,000	$ 8,000	$ 48,000	$ 21,000	**$ 126,000**
5.1f	Arresters	6	EA	$ 6,500	$ 39,000	$ 1,500	$ 9,000	$ 8,000	**$ 48,000**
5.1g	Wave Traps	1	EA	$ 13,000	$ 13,000	$ 8,000	$ 8,000	$ 21,000	**$ 21,000**
5.1h	Station Service Transformers	0	EA	$ 200,000	$ -	$ 50,000	$ -	$ 250,000	$ -
5.1j									
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator	0	EA	$ 35,000	$ -	$ 15,000	$ -	$ 50,000	$ -
5.2b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 30,000	$ -	$ 17,500	$ -	$ 47,500	$ -
5.2c	VT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2e	CCVT'S	0	EA	$ 10,000	$ -	$ 6,000	$ -	$ 16,000	$ -
5.2f	Arresters	0	EA	$ 5,000	$ -	$ 6,000	$ -	$ 11,000	$ -
5.2g	Wave Traps	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2j									
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	0	EA	$ 33,000	$ -	$ 15,000	$ -	$ 48,000	$ -
5.3b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 28,000	$ -	$ 17,500	$ -	$ 45,500	$ -
5.3c	VT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.3d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.3e	CCVT'S	0	EA	$ 8,000	$ -	$ 8,000	$ -	$ 16,000	$ -
5.3f	Arresters	0	EA	$ 3,420	$ -	$ 6,000	$ -	$ 9,420	$ -
5.3g	Wave Traps	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ 353,000		$ 192,500		$ 545,500
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE	1	EA	$ 243,750	$ 243,750	$ 42,500	$ 42,500	$ 286,250	**$ 286,250**
6.2	Protection and Telecom Equipment Panels	5	EA	$ 35,000	$ 175,000	$ 10,000	$ 50,000	$ 45,000	**$ 225,000**
6.3	125VDC Batteries	0	EA	$ 75,000	$ -	$ 25,000	$ -	$ 100,000	**$ -**
6.4	Control Cables	1	LS	$ 207,900	$ 207,900	$ 207,900	$ 207,900	$ 415,800	**$ 415,800**
6.5	SCADA and Communications	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.6	Low Voltage AC Distribution	1	EA	$ 50,000	$ 50,000	$ 100,000	$ 100,000	$ 150,000	**$ 150,000**
6.7	DC Distribution System	1	EA	$ 50,000	$ 50,000	$ 100,000	$ 100,000	$ 150,000	**$ 150,000**
6.8	Security	0	EA	$ 7,500	$ -	$ 7,500	$ -	$ 15,000	**$ -**
6.9	Fire Alarm	0	EA	$ 7,500	$ -	$ 7,500	$ -	$ 15,000	**$ -**
6.10	Generator	0	EA	$ 100,000	$ -	$ 80,000	$ -	$ 180,000	**$ -**
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ 726,650		$ 500,400		**$ 1,227,050**
7. MISC ITEMS									
7.1	Conduit & Cable Trench System	1	L.S.	$ 55,500.00	$ 55,500	$ 76,500.00	$ 76,500	$ 132,000	**$ 132,000**
7.2	Rigid Bus, Fittings & Insulators	1	L.S.	$ 62,535.00	$ 62,535	$ 118,550.00	$ 118,550	$ 181,085	**$ 181,085**
7.3	Strain Bus, Connectors & Insulators	1	L.S.	$ 92,250.00	$ 92,250	$ 114,135.00	$ 114,135	$ 206,385	**$ 206,385**
7.4	Grounding System	1	L.S.	$ 10,395.00	$ 10,395	$ 48,870.00	$ 48,870	$ 59,265	**$ 59,265**
7.5	Strain Bus Insulators - 345kV	0	EA	$ 2,000	$ -	$ 1,050	$ -	$ 3,050	**$ -**
7.6	Strain Bus Insulators - 230kV	0	EA	$ 1,400	$ -	$ 750	$ -	$ 2,150	**$ -**
7.7	Strain Bus Insulators - 115kV	0	EA	$ 1,000	$ -	$ 550	$ -	$ 1,550	**$ -**
7.8	Low Voltage AC Station Service	0	LS	$ 125,000	$ -	$ 125,000	$ -	$ 250,000	**$ -**
7.9	SSVT Service	0	LS	$ 180,000	$ -	$ 180,000	$ -	$ 360,000	**$ -**
7.10	Control Conduits from Trench to Equipment	1	LS	$ 125,000	$ 125,000	$ 125,000	$ 125,000	$ 250,000	**$ 250,000**
7.11	Misc. Materials (Above and Below Ground)	1	LS	$ 180,000	$ 180,000	$ 180,000	$ 180,000	$ 360,000	**$ 360,000**
7.12	Install new communication tower foundation.	1	LS		$ -	$ 75,000	$ 75,000	$ 75,000	**$ 75,000**
7.13	Relocate exiting communication tower.	1	LS		$ -	$ 50,000	$ 50,000	$ 50,000	**$ 50,000**
7.14									
7.15									
7.16									
7.17									
7.18									
7.19									
7.20									
7.21									
7.22									
7.23									
7.24									
7.25									
TOTAL - MISC ITEMS					$ 525,680		$ 788,055		$ 1,313,735
H. New Scotland Substation - Install					$ 2,815,548		$ 2,367,205		**$ 5,182,753**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1	LS	$ -	$ -	$ 51,828	$ 51,828	$ 51,828	**$ 51,828**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 264,727	$ 264,727	$ 264,727	**$ 264,727**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 51,828	$ 51,828	$ 51,828	**$ 51,828**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 51,828	$ 51,828	$ 51,828	**$ 51,828**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 414,620	$ 414,620	$ 414,620	**$ 414,620**
8.6	LiDAR	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.7	Geotech	4	EA	$ -	$ -	$ 3,500	$ 14,000	$ 3,500	**$ 14,000**
8.8	Surveying/Staking	1	Site	$ -	$ -	$ 36,279	$ 36,279	$ 36,279	**$ 36,279**
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 129,569	$ 129,569	$ 129,569	**$ 129,569**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 15,548	$ 15,548	$ 15,548	**$ 15,548**
8.13	Real Estate Costs (New)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.14	Real Estate Costs (Incumbent Utility)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.18	Sales Tax on Materials	1	LS	$ 225,244	$ 225,244	$ -	$ -	$ 225,244	**$ 225,244**
8.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 5,183	$ 5,183	$ 5,183	**$ 5,183**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 225,244		$ 1,035,409		**$ 1,260,653**

NAT & NYPA - T028 - (Segment A, Enhanced)

I. New Scotland Substation - Removal

Estimate Revision: 7

Total: $ 94,640

NAT & NYPA - T028 - (Segment A, Enhanced)	*Supply*	*Installation*	*Total*
I. New Scotland Substation - Removal			
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ -	$ -	$ -
2. SUBSTATION FOUNDATIONS	$ -	$ 28,800	$ 28,800
3. SUBSTATION STRUCTURES	$ -	$ 27,000	$ 27,000
4. MAJOR EQUIPTMENT	$ -	$ -	$ -
5. SMALL EQUIPTMENT / MATERIALS	$ -	$ 4,500	$ 4,500
6. CONTROL HOUSE / PANELS	$ -	$ -	$ -
7. MISC ITEMS	$ -	$ 21,000	$ 21,000
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ -	$ 13,340	$ 13,340
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ -	$ 94,640	$ 94,640
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ -	$ 94,640	$ 94,640

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
I. New Scotland Substation - Removal									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	0	ACRES	$ -	$ -	$ 203,000	$ -	$ 203,000	$ -
1.2	Station stone within substation fence.	0	CY	$ -	$ -	$ 75	$ -	$ 75	$ -
1.3	Substation Fence	0	LF	$ -	$ -	$ 150	$ -	$ 150	$ -
1.4									
1.5									
1.6									
1.7									
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ -		$ -		$ -
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1e	Switch Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1f	Station Service Transformer Stand Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1h	Bus Support 1 Ph Foundations	12	EA	$ -	$ -	$ 2,400	$ 28,800	$ 2,400	$ 28,800
2.1j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1k	Arrester Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1p		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2	**230kV**								
2.2a	Circuit Breaker Foundations	0	EA	$ -	$ -	$ 7,200	$ -	$ 7,200	$ -
2.2b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ 32,000	$ -	$ 32,000	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ 22,000	$ -	$ 22,000	$ -
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ 11,000	$ -	$ 11,000	$ -
2.2e	Switch Stand Foundations	0	EA	$ -	$ -	$ 5,200	$ -	$ 5,200	$ -
2.2f	Station Service Transformer Stand Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.2j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.2k	Arrester Stand Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.2m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2p		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3e	Switch Stand Foundations	0	EA	$ -	$ -	$ 5,200	$ -	$ 5,200	$ -
2.3f	Fuse Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3k	Arrester Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4b	345-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ 42,000	$ -	$ 42,000	$ -
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5b	Generator Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6b		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6c		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION FOUNDATIONS					$ -		$ 28,800		$ 28,800
3. SUBSTATION STRUCTURES									
3.1	**345kV**								
3.1a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1c	Switch Stands	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1d	Station Service Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1f	Bus Support 1 Ph	12	EA	$ -	$ -	$ 2,250	$ 27,000	$ 2,250	**$ 27,000**
3.1g	Instrument Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1h	Arrester Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1j	Wave Trap Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ 27,000	$ -	$ 27,000	$ -
3.2b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ 27,000	$ -	$ 27,000	$ -
3.2c	Switch Stands	0	EA	$ -	$ -	$ 9,750	$ -	$ 9,750	$ -
3.2d	Station Service Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2f	Bus Support 1 Ph	0	EA	$ -	$ -	$ 2,250	$ -	$ 2,250	$ -
3.2g	Instrument Transformer Stand	0	EA	$ -	$ -	$ 1,050	$ -	$ 1,050	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.2h	Arrester Stand	0	EA	$ -	$ -	$ 1,050	$ -	$ 1,050	$ -
3.2j	Wave Trap Stand	0	EA	$ -	$ -	$ 4,500	$ -	$ 4,500	$ -
3.2k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3	**115kV**								
3.3a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ 15,000	$ -	$ 15,000	$ -
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3c	Switch Stands	0	EA	$ -	$ -	$ 6,450	$ -	$ 6,450	$ -
3.3d	Fuse Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3f	Bus Support 1 Ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3g	Instrument Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3h	Arrester Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3j	Wave Trap Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION STRUCTURES					$ -		$ 27,000		$ 27,000
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.1b	Capacitor Banks	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.1c		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.1d									
4.2	**230kV**								
4.2a	Circuit Breakers	0	EA	$ -	$ -	$ 7,000	$ -	$ 7,000	$ -
4.2b	Capacitor Banks	0	EA	$ -	$ -	$ 42,000	$ -	$ 42,000	$ -
4.3	**115kV**								
4.3a	Circuit Breakers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - MAJOR EQUIPTMENT					$ -		$ -		$ -
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.1b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.1c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.1d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.1e	CCVT'S	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.1f	Arresters	3	EA	$ -	$ -	$ 1,500	$ 4,500	$ 1,500	**$ 4,500**
5.1g	Wave Traps	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.1h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.1j									
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.2b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.2c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2e	CCVT'S	0	EA	$ -	$ -	$ 1,500	$ -	$ 1,500	$ -
5.2f	Arresters	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.2g	Wave Traps	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.2h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2j									
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.3c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3e	CCVT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3f	Arresters	0	EA	$ -	$ -	$ 1,500	$ -	$ 1,500	$ -
5.3g	Wave Traps	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
5.3j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ -		$ 4,500		$ 4,500
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE	0	EA	$ -	$ -	$ 150,000	$ -	$ 150,000	$ -
6.2	Protection and Telecom Equipment Panels	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.3	125VDC Batteries	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.4	Control Cables	0	LS	$ -	$ -	$ -	$ -	$ -	$ -
6.5	SCADA and Communications	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.6	Low Voltage AC Distribution	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.7	DC Distribution System	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.8	Security	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.9	Fire Alarm	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.10	Generator	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ -		$ -		$ -
7. MISC ITEMS									
7.1	Conduit & Cable Trench System	0	EA	$ -	$ -	$ 42,000.00	$ -	$ 42,000	$ -
7.2	Rigid Bus, Fittings & Insulators	1	LS	$ -	$ -	$ 21,000.00	$ 21,000	$ 21,000	**$ 21,000**
7.3	Strain Bus, Connectors & Insulators	0	LS	$ -	$ -	$ 21,000.00	$ -	$ 21,000	$ -
7.4	Grounding System	0	EA	$ -	$ -	$ 42,000.00	$ -	$ 42,000	$ -
7.5									
7.6									
7.7									
7.8									
7.9									
7.10									
7.11									
7.12									
7.13									
7.14									
7.15									
TOTAL - MISC ITEMS					$ -		$ 21,000		$ 21,000
I. New Scotland Substation - Removal					$ -		$ 81,300		**$ 81,300**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1.0	LS	$ -	$ -	$ 813	$ 813	$ 813	**$ 813**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		$ -	$ 4,153	$ 4,153	$ 4,153	**$ 4,153**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 813	$ 813	$ 813	**$ 813**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 813	$ 813	$ 813	**$ 813**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 6,504	$ 6,504	$ 6,504	**$ 6,504**
8.6	LiDAR	-	Mile	$ -	$ -	$ -	$ -	$ -	$ -
8.7	Geotech	-	Site	$ -	$ -	$ -	$ -	$ -	$ -
8.8	Surveying/Staking	-	Site	$ -	$ -	$ 569	$ -	$ 569	$ -
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	-	LS	$ -	$ -	$ 2,033	$ -	$ 2,033	$ -
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 244	$ 244	$ 244	**$ 244**
8.13	Real Estate Costs (New)	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.14	Real Estate Costs (Incumbent Utility)	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.18	Sales Tax on Materials	1	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.19	Fees for permits, including roadway, railroad, building or other local permits	-	LS		$ -	$ 81	$ -	$ 81	$ -
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ -		$ 13,340		**$ 13,340**

NAT & NYPA - T028 - (Segment A, Enhanced)

J. Porter Substation - Install

Estimate Revision: 7 **Total: $ 86,710**

NAT & NYPA - T028 - (Segment A, Enhanced)	*Supply*	*Installation*	*Total*
J. Porter Substation - Install			
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ -	$ -	$ -
2. SUBSTATION FOUNDATIONS	$ -	$ -	$ -
3. SUBSTATION STRUCTURES	$ -	$ -	$ -
4. MAJOR EQUIPTMENT	$ -	$ -	$ -
5. SMALL EQUIPTMENT / MATERIALS	$ -	$ -	$ -
6. CONTROL HOUSE / PANELS	$ -	$ -	$ -
7. MISC ITEMS	$ 15,008	$ 56,904	$ 71,912
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 1,201	$ 13,597	$ 14,798
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 16,209	$ 70,501	$ 86,710
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 16,209	$ 70,501	$ 86,710

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
J. Porter Substation - Install									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	0	ACRES	$ -	$ -	$ 203,000	$ -	$ 203,000	$ -
1.2	Station stone within substation fence.	0	CY	$ 27	$ -	$ 75	$ -	$ 102	$ -
1.3	Substation Fence	0	LF	$ 100	$ -	$ 100	$ -	$ 200	$ -
1.4									
1.5									
1.6									
1.7									
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ -		$ -		$ -
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	0	EA	$ 14,940	$ -	$ 16,000	$ -	$ 30,940	$ -
2.1b	Capacitor Bank Foundations	0	EA	$ 56,025	$ -	$ 60,000	$ -	$ 116,025	$ -
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 26,145	$ -	$ 28,000	$ -	$ 54,145	$ -
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 26,145	$ -	$ 28,000	$ -	$ 54,145	$ -
2.1e	Switch Stand Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1f	Station Service Transformer Stand Foundation	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1h	Bus Support 1 Ph Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1j	Instrument Transformer Stand Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1k	Arrester Stand Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1m	Wave Trap Stand Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1p									
				$ -	$ -	$ -	$ -	$ -	$ -
2.2	**230kV**								
2.2a	Circuit Breaker Foundations	0	EA	$ 11,952	$ -	$ 12,800	$ -	$ 24,752	$ -
2.2b	Capacitor Bank Foundations	0	EA	$ 44,820	$ -	$ 48,000	$ -	$ 92,820	$ -
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	$ -
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.2e	Switch Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2f	Station Service Transformer Stand Foundation	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2h	Bus Support 1 Ph Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2j	Instrument Transformer Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2k	Arrester Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2m	Wave Trap Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2p									
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	0	EA	$ 5,229	$ -	$ 5,600	$ -	$ 10,829	$ -
2.3b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	$ -
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	$ -
2.3e	Switch Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3f	Fuse Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3g	Bus Support 3ph Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3h	Bus Support 1 Ph Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3j	Instrument Transformer Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3k	Arrester Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3m	Wave Trap Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment	0	EA	$ 97,110	$ -	$ 104,000	$ -	$ 201,110	$ -
2.4b	345-115kV Transformer Foundation w/ Oil Containment	0	EA	$ 74,700	$ -	$ 80,000	$ -	$ 154,700	$ -
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad	0	EA	$ 76,194	$ -	$ 81,600	$ -	$ 157,794	$ -
2.5b	Generator Foundation	0	EA	$ 16,000	$ -	$ 17,000	$ -	$ 33,000	$ -
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	0	EA	$ 5,229	$ -	$ 5,600	$ -	$ 10,829	$ -
2.6b		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6c		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION FOUNDATIONS					$ -		$ -		$ -
3. SUBSTATION STRUCTURES									
3.1	**345kV**								
3.1a	Substation A-Frame Structures - Stand alone	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	$ -
3.1b	Substation A-Frame Structures - Shared Column	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	$ -
3.1c	Switch Stands	0	EA	$ 14,800	$ -	$ 14,800	$ -	$ 29,600	$ -
3.1d	Station Service Transformer Stand	0	EA	$ 14,800	$ -	$ 14,800	$ -	$ 29,600	$ -
3.1e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1f	Bus Support 1 Ph	0	EA	$ 3,700	$ -	$ 3,700	$ -	$ 7,400	$ -
3.1g	Instrument Transformer Stand	0	EA	$ 1,850	$ -	$ 1,850	$ -	$ 3,700	$ -
3.1h	Arrester Stand	0	EA	$ 1,850	$ -	$ 1,850	$ -	$ 3,700	$ -
3.1j	Wave Trap Stand	0	EA	$ 7,400	$ -	$ 7,400	$ -	$ 14,800	$ -
3.1k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	$ -
3.2b	Substation A-Frame Structures - Shared Column	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	$ -
3.2c	Switch Stands	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	$ -
3.2d	Station Service Transformer Stand	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	$ -
3.2e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2f	Bus Support 1 Ph	0	EA	$ 2,775	$ -	$ 2,775	$ -	$ 5,550	$ -
3.2g	Instrument Transformer Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	$ -
3.2h	Arrester Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	$ -
3.2j	Wave Trap Stand	0	EA	$ 5,550	$ -	$ 5,550	$ -	$ 11,100	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.2k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
3.3	**115kV**								
3.3a	Substation A-Frame Structures - Stand alone	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	$ -
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	$ -
3.3c	Switch Stands	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	$ -
3.3d	Fuse Stand	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	$ -
3.3e	Bus Support 3ph	0	EA	$ 3,330	$ -	$ 3,330	$ -	$ 6,660	$ -
3.3f	Bus Support 1 Ph	0	EA	$ 1,850	$ -	$ 1,850	$ -	$ 3,700	$ -
3.3g	Instrument Transformer Stand	0	EA	$ 740	$ -	$ 740	$ -	$ 1,480	$ -
3.3h	Arrester Stand	0	EA	$ 740	$ -	$ 740	$ -	$ 1,480	$ -
3.3j	Wave Trap Stand	0	EA	$ 3,700	$ -	$ 3,700	$ -	$ 7,400	$ -
3.3k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
TOTAL - SUBSTATION STRUCTURES					$ -		$ -		$ -
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	$ -
4.1b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	$ -
4.1c	345 kV - 230 kV Auto Transformer	0	EA	$ -	$ -	$ 750,000	$ -	$ 750,000	$ -
4.1d	345 kV - 115 kV Auto Transformer	0	EA	$ -	$ -	$ 750,000	$ -	$ 750,000	$ -
4.2	**230kV**								
4.2a	Circuit Breakers	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	$ -
4.2b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	$ -
4.3	**115kV**								
4.3a	Circuit Breakers	0	EA	$ -	$ -	$ 60,000	$ -	$ 60,000	$ -
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ 60,000	$ -	$ 60,000	$ -
TOTAL - MAJOR EQUIPTMENT					$ -		$ -		$ -
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator	0	EA	$ 35,000	$ -	$ 15,000	$ -	$ 50,000	$ -
5.1b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 40,000	$ -	$ 17,500	$ -	$ 57,500	$ -
5.1c	VT'S	0	EA	$ -	$ -	$ 12,000	$ -	$ 12,000	$ -
5.1d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.1e	CCVT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.1f	Arresters	0	EA	$ 6,500	$ -	$ 1,500	$ -	$ 8,000	$ -
5.1g	Wave Traps	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.1h	Station Service Transformers	0	EA	$ 200,000	$ -	$ 50,000	$ -	$ 250,000	$ -
5.1j									
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator	0	EA	$ 30,000	$ -	$ 15,000	$ -	$ 45,000	$ -
5.2b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 35,000	$ -	$ 17,500	$ -	$ 52,500	$ -
5.2c	VT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2e	CCVT'S	0	EA	$ 10,000	$ -	$ 6,000	$ -	$ 16,000	$ -
5.2f	Arresters	0	EA	$ 5,000	$ -	$ 6,000	$ -	$ 11,000	$ -
5.2g	Wave Traps	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2j									
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	0	EA	$ 28,000	$ -	$ 15,000	$ -	$ 43,000	$ -
5.3b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 33,000	$ -	$ 17,500	$ -	$ 50,500	$ -
5.3c	VT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.3d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.3e	CCVT'S	0	EA	$ 8,000	$ -	$ 8,000	$ -	$ 16,000	$ -
5.3f	Arresters	0	EA	$ 3,420	$ -	$ 6,000	$ -	$ 9,420	$ -
5.3g	Wave Traps	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ -		$ -		$ -
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE	0	EA	$ 551,250	$ -	$ 85,000	$ -	$ 636,250	**$ -**
6.2	Protection and Telecom Equipment Panels	0	EA	$ 35,000	$ -	$ 10,000	$ -	$ 45,000	**$ -**
6.3	125VDC Batteries	0	EA	$ 75,000	$ -	$ 25,000	$ -	$ 100,000	**$ -**
6.4	Control Cables	0	LS	$ 35,000	$ -	$ 12,500	$ -	$ 47,500	**$ -**
6.5	SCADA and Communications	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.6	Low Voltage AC Distribution	0	EA	$ 50,000	$ -	$ 100,000	$ -	$ 150,000	**$ -**
6.7	DC Distribution System	0	EA	$ 50,000	$ -	$ 100,000	$ -	$ 150,000	**$ -**
6.8	Security	0	EA	$ 7,500	$ -	$ 7,500	$ -	$ 15,000	**$ -**
6.9	Fire Alarm	0	EA	$ 7,500	$ -	$ 7,500	$ -	$ 15,000	**$ -**
6.10	Generator	0	EA	$ 100,000	$ -	$ 80,000	$ -	$ 180,000	**$ -**
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ -		$ -		**$ -**
7. MISC ITEMS									
7.1	Conduit & Cable Trench System	0	LF	$ 185.00	$ -	$ 170.00	$ -	$ 355	**$ -**
7.2	Rigid Bus, Fittings & Insulators	1	LS	$ 15,008.40	$ 15,008	$ 56,904.00	$ 56,904	$ 71,912	**$ 71,912**
7.3	Strain Bus, Connectors & Insulators	0	LF	$ 13.38	$ -	$ 39.35	$ -	$ 53	**$ -**
7.4	Grounding System	0	LF	$ 6.93	$ -	$ 32.58	$ -	$ 40	**$ -**
7.5	Strain Bus Insulators - 345kV	0	EA	$ 2,000	$ -	$ 1,050	$ -	$ 3,050	**$ -**
7.6	Strain Bus Insulators - 230kV	0	EA	$ 1,400	$ -	$ 750	$ -	$ 2,150	**$ -**
7.7	Strain Bus Insulators - 115kV	0	EA	$ 1,000	$ -	$ 550	$ -	$ 1,550	**$ -**
7.8	Low Voltage AC Station Service	0	LS	$ 50,000	$ -	$ 75,000	$ -	$ 125,000	**$ -**
7.9	SSVT Service	0	LS	$ 45,000	$ -	$ 45,000	$ -	$ 90,000	**$ -**
7.10	Control Conduits from Trench to Equipment	0	LS	$ 125,000	$ -	$ 125,000	$ -	$ 250,000	**$ -**
7.11	Misc. Materials (Above and Below Ground)	0	LS	$ 180,000	$ -	$ 180,000	$ -	$ 360,000	**$ -**
7.12									
7.13									
7.14									
7.15									
7.16									
7.17									
7.18									
7.19									
7.20									
7.21									
7.22									
7.23									
7.24									
7.25									
TOTAL - MISC ITEMS					$ 15,008		$ 56,904		$ 71,912
J. Porter Substation - Install					$ 15,008		$ 56,904		**$ 71,912**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1.0	LS	$ -	$ -	$ 719	$ 719	$ 719	**$ 719**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		$ -	$ 3,673	$ 3,673	$ 3,673	**$ 3,673**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 719	$ 719	$ 719	**$ 719**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 719	$ 719	$ 719	**$ 719**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 5,753	$ 5,753	$ 5,753	**$ 5,753**
8.6	LiDAR	-	Mile	$ -	$ -	$ -	$ -	$ -	**$ -**
8.7	Geotech	-	Site	$ -	$ -	$ -	$ -	$ -	**$ -**
8.8	Surveying/Staking	-	Site	$ -	$ -	$ 503	$ -	$ 503	**$ -**
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 1,798	$ 1,798	$ 1,798	**$ 1,798**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 216	$ 216	$ 216	**$ 216**
8.13	Real Estate Costs (New)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.14	Real Estate Costs (Incumbent Utility)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.18	Sales Tax on Materials	1	LS	$ 1,201	$ 1,201	$ -	$ -	$ 1,201	**$ 1,201**
8.19	Fees for permits, including roadway, railroad, building or other local permits	-	LS		$ -	$ 72	$ -	$ 72	**$ -**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 1,201		$ 13,597		**$ 14,798**

NAT & NYPA - T028 - (Segment A, Enhanced)

K. Porter Substation - Removal

Estimate Revision: 7

Total: $ 552,137

NAT & NYPA - T028 - (Segment A, Enhanced)	*Supply*	*Installation*	*Total*
K. Porter Substation - Removal			
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ -	$ -	$ -
2. SUBSTATION FOUNDATIONS	$ -	$ 126,600	$ 126,600
3. SUBSTATION STRUCTURES	$ -	$ 206,100	$ 206,100
4. MAJOR EQUIPTMENT	$ -	$ 43,500	$ 43,500
5. SMALL EQUIPTMENT / MATERIALS	$ -	$ 59,500	$ 59,500
6. CONTROL HOUSE / PANELS	$ -	$ -	$ -
7. MISC ITEMS	$ -	$ 38,613	$ 38,613
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ -	$ 77,824	$ 77,824
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ -	$ 552,137	$ 552,137
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ -	$ 552,137	$ 552,137

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
K. Porter Substation - Removal									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	0	ACRES	$ -	$ -	$ 203,000	$ -	$ 203,000	$ -
1.2	Station stone within substation fence.	0	CY	$ -	$ -	$ 75	$ -	$ 75	$ -
1.3	Substation Fence	0	LF	$ -	$ -	$ 150	$ -	$ 150	$ -
1.4									
1.5									
1.6									
1.7									
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ -		$ -		$ -
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1e	Switch Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1f	Station Service Transformer Stand Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1k	Arrester Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1p									
2.2	**230kV**								
2.2a	Circuit Breaker Foundations	3	EA	$ -	$ -	$ 7,200	$ 21,600	$ 7,200	$ 21,600
2.2b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ 32,000	$ -	$ 32,000	$ -
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ 22,000	$ -	$ 22,000	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	5	EA	$ -	$ -	$ 11,000	$ 55,000	$ 11,000	**$ 55,000**
2.2e	Switch Stand Foundations	5	EA	$ -	$ -	$ 5,200	$ 26,000	$ 5,200	**$ 26,000**
2.2f	Station Service Transformer Stand Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.2g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.2h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	**$ -**
2.2j	Instrument Transformer Stand Foundations	4	EA	$ -	$ -	$ 2,400	$ 9,600	$ 2,400	**$ 9,600**
2.2k	Arrester Stand Foundations	6	EA	$ -	$ -	$ 2,400	$ 14,400	$ 2,400	**$ 14,400**
2.2m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.2n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.2p									
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3e	Switch Stand Foundations	0	EA	$ -	$ -	$ 5,200	$ -	$ 5,200	**$ -**
2.3f	Fuse Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3k	Arrester Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.4b	345-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ 42,000	$ -	$ 42,000	**$ -**
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.5b	Generator Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.6b		0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.6c		0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
TOTAL - SUBSTATION FOUNDATIONS					$ -		$ 126,600		$ 126,600
3. SUBSTATION STRUCTURES									
3.1	**345kV**								
3.1a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.1b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.1c	Switch Stands	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.1d	Station Service Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.1e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.1f	Bus Support 1 Ph	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.1g	Instrument Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.1h	Arrester Stand	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.1j	Wave Trap Stand	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.1k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ 27,000	$ -	$ 27,000	**$ -**
3.2b	Substation A-Frame Structures - Shared Column	5	EA	$ -	$ -	$ 27,000	$ 135,000	$ 27,000	**$ 135,000**
3.2c	Switch Stands	6	EA	$ -	$ -	$ 9,750	$ 58,500	$ 9,750	**$ 58,500**
3.2d	Station Service Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.2e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.2f	Bus Support 1 Ph	0	EA	$ -	$ -	$ 2,250	$ -	$ 2,250	**$ -**
3.2g	Instrument Transformer Stand	6	EA	$ -	$ -	$ 1,050	$ 6,300	$ 1,050	**$ 6,300**
3.2h	Arrester Stand	6	EA	$ -	$ -	$ 1,050	$ 6,300	$ 1,050	**$ 6,300**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.2j	Wave Trap Stand	0	EA	$ -	$ -	$ 4,500	$ -	$ 4,500	$ -
3.2k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3	**115kV**								
3.3a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ 15,000	$ -	$ 15,000	$ -
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3c	Switch Stands	0	EA	$ -	$ -	$ 6,450	$ -	$ 6,450	$ -
3.3d	Fuse Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3f	Bus Support 1 Ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3g	Instrument Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3h	Arrester Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3j	Wave Trap Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION STRUCTURES					$ -		$ 206,100		$ 206,100
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.1b	Capacitor Banks	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.1c		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.1d									
4.2	**230kV**								
4.2a	Circuit Breakers	3	EA	$ -	$ -	$ 14,500	$ 43,500	$ 14,500	**$ 43,500**
4.2b	Capacitor Banks	0	EA	$ -	$ -	$ 42,000	$ -	$ 42,000	$ -
4.3	**115kV**								
4.3a	Circuit Breakers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - MAJOR EQUIPTMENT					$ -		$ 43,500		$ 43,500
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.1b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.1c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.1d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.1e	CCVT'S	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.1f	Arresters	0	EA	$ -	$ -	$ 1,500	$ -	$ 1,500	$ -
5.1g	Wave Traps	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.1h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.1j									
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator	2	EA	$ -	$ -	$ 5,500	$ 11,000	$ 5,500	**$ 11,000**
5.2b	Disconnect Switches - 3ph w/ manual operator	3	EA	$ -	$ -	$ 5,500	$ 16,500	$ 5,500	**$ 16,500**
5.2c	VT'S	2	EA	$ -	$ -	$ 1,500	$ 3,000	$ 1,500	**$ 3,000**
5.2d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2e	CCVT'S	6	EA	$ -	$ -	$ 1,500	$ 9,000	$ 1,500	**$ 9,000**
5.2f	Arresters	6	EA	$ -	$ -	$ 2,500	$ 15,000	$ 2,500	**$ 15,000**
5.2g	Wave Traps	2	EA	$ -	$ -	$ 2,500	$ 5,000	$ 2,500	**$ 5,000**
5.2h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2j									
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.3c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3e	CCVT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3f	Arresters	0	EA	$ -	$ -	$ 1,500	$ -	$ 1,500	$ -
5.3g	Wave Traps	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ -		$ 59,500		$ 59,500
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE	0	EA	$ -	$ -	$ 150,000	$ -	$ 150,000	$ -
6.2	Protection and Telecom Equipment Panels	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.3	125VDC Batteries	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.4	Control Cable	0	LS	$ -	$ -	$ -	$ -	$ -	$ -
6.5	SCADA and Communications	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.6	Low Voltage AC Distribution	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.7	DC Distribution System	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.8	Security	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.9	Fire Alarm	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.10	Generator	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ -		$ -		$ -
7. MISC ITEMS									
7.1	Conduit & Cable Trench System	0	EA	$ -	$ -	$ 42,000.00	$ -	$ 42,000	$ -
7.2	Rigid Bus, Fittings & Insulators	1	L.S.	$ -	$ -	$ 18,937.50	$ 18,938	$ 18,938	**$ 18,938**
7.3	Strain Bus, Connectors & Insulators	1	L.S.	$ -	$ -	$ 19,675.00	$ 19,675	$ 19,675	**$ 19,675**
7.4	Grounding System	0	EA	$ -	$ -	$ 42,000.00	$ -	$ 42,000	$ -
7.5									
7.6									
7.7									
7.8									
7.9									
7.10									
7.11									
7.12									
7.13									
7.14									
7.15									
TOTAL - MISC ITEMS					$ -		$ 38,613		$ 38,613
K. Porter Substation - Removal					$ -		$ 474,313		**$ 474,313**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1.0	LS	$ -	$ -	$ 4,743	$ 4,743	$ 4,743	**$ 4,743**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		$ -	$ 24,227	$ 24,227	$ 24,227	**$ 24,227**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 4,743	$ 4,743	$ 4,743	**$ 4,743**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 4,743	$ 4,743	$ 4,743	**$ 4,743**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 37,945	$ 37,945	$ 37,945	**$ 37,945**
8.6	LiDAR	-	Mile	$ -	$ -	$ -	$ -	$ -	$ -
8.7	Geotech	-	Site	$ -	$ -	$ -	$ -	$ -	$ -
8.8	Surveying/Staking	-	Site	$ -	$ -	$ 3,320	$ -	$ 3,320	$ -
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	-	LS	$ -	$ -	$ 11,858	$ -	$ 11,858	$ -
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 1,423	$ 1,423	$ 1,423	**$ 1,423**
8.13	Real Estate Costs (New)	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.14	Real Estate Costs (Incumbent Utility)	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.18	Sales Tax on Materials	1	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.19	Fees for permits, including roadway, railroad, building or other local permits	-	LS		$ -	$ 474	$ -	$ 474	$ -
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ -		$ 77,824		**$ 77,824**

NAT & NYPA - T028 - (Segment A, Enhanced)

L. Interconnection Edic Station

Estimate Revision: 7

Total: $ 2,127,440

NAT & NYPA - T028 - (Segment A, Enhanced)	*Supply*	*Installation*	*Total*
L. Interconnection Edic Station			
1. CLEARING & ACCESS	$ -	$ 367,850	$ 367,850
2. FOUNDATIONS	$ 168,366	$ 170,169	$ 338,536
3. STRUCTURES	$ 501,469	$ 321,821	$ 823,289
4. CONDUCTOR, SHIELDWIRE, OPGW	$ -	$ -	$ -
5. INSULATORS, FITTINGS, HARDWARE	$ 160,000	$ 94,400	$ 254,400
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 66,387	$ 276,979	$ 343,365
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 896,222	$ 1,231,219	$ 2,127,440
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 896,222	$ 1,231,219	$ 2,127,440

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
L. Interconnection Edic Station									
1. CLEARING & ACCESS									
1.1	Clearing the ROW - Heavy (mowing & clearing)	-	Acre	$ -	$ -	$ 15,000	$ -	$ 15,000	$ -
1.2	Clearing the ROW - Light (mowing)	2.0	Acre	$ -	$ -	$ 5,000	$ 10,000	$ 5,000	**$ 10,000**
1.3	Access Road	-	LF	$ -	$ -	$ 45	$ -	$ 45	$ -
1.4	Silt Fence	3,500.0	LF	$ -	$ -	$ 4	$ 14,000	$ 4	**$ 14,000**
1.5	Matting - Access and ROW	3,500.0	LF	$ -	$ -	$ 70	$ 245,000	$ 70	**$ 245,000**
1.6	Matting - To Work Area	300.0	LF	$ -	$ -	$ 70	$ 21,000	$ 70	**$ 21,000**
1.7	Snow Removal	-	LS	$ -	$ -	$ 516,800	$ -	$ 516,800	$ -
1.8	ROW Restoration	0.5	Mile	$ -	$ -	$ 10,000	$ 5,000	$ 10,000	**$ 5,000**
1.9	Work Pads	20,000.0	SF	$ -	$ -	$ 4	$ 70,400	$ 4	**$ 70,400**
1.10	Restoration for Work Pad areas	4,000.0	SF	$ -	$ -	$ 0.2	$ 600	$ 0	**$ 600**
1.11	Temporary Access Bridge	-	EA	$ -	$ -	$ 20,035	$ -	$ 20,035	$ -
1.12	Air Bridge	-	EA	$ -	$ -	$ 14,445	$ -	$ 14,445	$ -
1.13	Stabilized Construction Entrance	-	EA	$ -	$ -	$ 4,580	$ -	$ 4,580	$ -
1.14	Maintenance and Protection of Traffic on Public Roads	-	EA	$ -	$ -	$ 4,130	$ -	$ 4,130	$ -
1.15	Gates	-	EA	$ 2,000	$ -	$ 2,500	$ -	$ 4,500	$ -
1.16	Culverts / Misc. Access	-	EA	$ 750	$ -	$ 1,250	$ -	$ 2,000	$ -
1.17	Concrete Washout Station	1	EA	$ -	$ -	$ 1,850	$ 1,850	$ 1,850	**$ 1,850**
1.18					$ -		$ -		$ -
1.19					$ -		$ -		$ -
1.20	Crushed Rock	0	CY	$ 27	$ -	$ 75	$ -	$ 102	$ -
TOTAL - CLEARING & ACCESS					$ -		$ 367,850		$ 367,850
2. FOUNDATIONS									
2.1	Foundation – Drilled Pier – 8'X 27'	3	EA	$ 41,332	$ 123,995	$ 41,774	$ 125,322	$ 83,106	**$ 249,317**
2.2	Foundation – Drilled Pier – 8'X 29'	1	EA	$ 44,372	$ 44,372	$ 44,847	$ 44,847	$ 89,219	**$ 89,219**
2.3	Rock Excavation Adder	-	CY	$ -	$ -	$ 2,000	$ -	$ 2,000	$ -
2.4									
2.5									
2.6									
2.7									
2.8									
2.9									
2.10									
2.11									
2.12									
2.13									
2.14									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.15									
TOTAL - FOUNDATIONS					$ 168,366		$ 170,169		$ 338,536
3. STRUCTURES									
3.1	1-CKT 345KV VERTICAL MEDIUM ANGLE DEADEND (15°-60°) – 105'	3	Structure	$ 98,883	$ 296,648	$ 59,330	$ 177,989	$ 158,212	**$ 474,636**
3.2	2-CKT 345KV VERTICAL MEDIUM ANGLE DEADEND (15°-60°) - 115'	1	Structure	$ 202,797	$ 202,797	$ 121,678	$ 121,678	$ 324,475	**$ 324,475**
3.3	Install Grounding and Grounding Accessories	4	Pole	$ 506	$ 2,024	$ 5,539	$ 22,154	$ 6,045	**$ 24,178**
3.4					$ -		$ -		**$ -**
3.5									
3.6					$ -		$ -		**$ -**
3.7					$ -		$ -		**$ -**
3.8					$ -		$ -		**$ -**
3.9					$ -		$ -		**$ -**
3.10					$ -		$ -		**$ -**
3.11					$ -		$ -		**$ -**
3.12					$ -		$ -		**$ -**
3.13					$ -		$ -		**$ -**
3.14					$ -		$ -		**$ -**
3.15					$ -		$ -		**$ -**
TOTAL - STRUCTURES					$ 501,469		$ 321,821		$ 823,289
4. CONDUCTOR, SHIELDWIRE, OPGW									
4.1	345kV - (1) 954kcmil 54/7 ACSS "Cardinal"	-	LF	$ 1.90	$ -	$ 5.00	$ -	$ 6.90	**$ -**
4.2	(1) OPGW 36 Fiber AC-33/38/571	-	LF	$ 1.35	$ -	$ 5.00	$ -	$ 6.35	**$ -**
4.3	(1) 3/8" EHS7 Steel	-	LF	$ 0.47	$ -	$ 5.00	$ -	$ 5.47	**$ -**
4.5	Remove Existing Cable From Existing Structures	-	Mile	$ -	$ -	$ 30,000	$ -	$ 30,000.00	**$ -**
4.6	Remove Existing OPGW Cable	-	Mile	$ -	$ -	$ 12,000	$ -	$ 12,000.00	**$ -**
4.7	Remove Existing EH7	-	Mile	$ -	$ -	$ 12,000	$ -	$ 12,000.00	**$ -**
4.8									
4.9		-							
4.10	Rider Poles - Relocated	-	Set	$ -	$ -	$ 3,500	$ -	$ 3,500.00	**$ -**
4.11	Rider Poles	-	EA	$ 1,750	$ -	$ 3,500	$ -	$ 5,250.00	**$ -**
TOTAL: CONDUCTOR, SHIELDWIRE, OPGW:					$ -		$ -		**$ -**
5. INSULATOR, FITTINGS, HARDWARE									
5.1	345kV Tangent (1-Group of 18-Bells Each Assembly)								
5.2	115kV Tangent (1-Group of 9-Bells Each Assembly)								
5.3	345kV Dead-end & Angle Insulators (1-Group of 18-Bells Each Assembly)	60	Assembly	$ 1,800	$ 108,000	$ 720	$ 43,200	$ 2,520	**$ 151,200**
5.4	115kV Dead-end & Angle Insulators (1-Group of 9-Bells Each Assembly)								
5.5	OPGW Assembly - Tangent	-	Assembly	$ 200	$ -	$ 150	$ -	$ 350	**$ -**
5.6	OPGW Assembly - Angle / DE	4	Assembly	$ 250	$ 1,000	$ 150	$ 600	$ 400	**$ 1,600**
5.7	OHSW Assembly - Angle / DE	4	Assembly	$ 250	$ 1,000	$ 150	$ 600	$ 400	**$ 1,600**
5.8	OPGW Splice Boxes	-	Set	$ 1,750	$ -	$ 1,746	$ -	$ 3,496	**$ -**
5.9	OPGW Splice & Test	-	EA	$ 1,400	$ -	$ 2,520	$ -	$ 3,920	**$ -**
5.10	Spacer - Conductor	-	EA	$ 50	$ -	$ 35	$ -	$ 85	**$ -**
5.11	Vibration Dampers - Conductor	-	EA	$ 35	$ -	$ 35	$ -	$ 70	**$ -**
5.12	Shieldwire / OPGW Dampers, Misc. Fittings	-	EA	$ 27	$ -	$ 35	$ -	$ 62	**$ -**
5.13	Guys, Anchors, and Accessories	-	EA	$ 720	$ -	$ 885	$ -	$ 1,605	**$ -**
5.14	Misc. materials (Signs and Markers)	-	Mile	$ 770	$ -	$ 1,006	$ -	$ 1,776	**$ -**
5.15									
5.16									
5.17									
5.18									
5.19	Interconnection Arrangements	1	EA	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 100,000	**$ 100,000**
5.20									
TOTAL - INSULATOR, FITTINGS, HARDWARE					$ 160,000		$ 94,400		$ 254,400
L. Interconnection Edic Station					$ 829,835		$ 954,240		$ 1,784,075
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
6.1	Mob / Demob	1	LS	$ -	$ -	$ 17,841	$ 17,841	$ 17,841	**$ 17,841**
	Project Management, Material Handling & Amenities								
6.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 91,128	$ 91,128	$ 91,128	**$ 91,128**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6.3	Utility PM and Project Oversite	1	LS		$ -	$ 17,841	$ 17,841	$ 17,841	**$ 17,841**
6.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 17,841	$ 17,841	$ 17,841	**$ 17,841**
	Engineering								
6.5	Design Engineering	1	LS	$ -	$ -	$ 89,204	$ 89,204	$ 89,204	**$ 89,204**
6.6	LiDAR	-	LS	$ -	$ -	$ 5,352	$ -	$ 5,352	**$ -**
6.7	Geotech	1	Location	$ -	$ -	$ 3,500	$ 3,500	$ 3,500	**$ 3,500**
6.8	Surveying/Staking	1	LS	$ -	$ -	$ 12,489	$ 12,489	$ 12,489	**$ 12,489**
	Testing & Commissioning								
6.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 20,000	$ 20,000	$ 20,000	**$ 20,000**
	Permitting and Additional Costs								
6.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.12	Warranties / LOC's	1	LS	$ -	$ -	$ 5,352	$ 5,352	$ 5,352	**$ 5,352**
6.13	Real Estate Costs (New ROW)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.14	Real Estate Costs (Incumbent Utility ROW)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.18	Sales Tax on Materials	1	LS	$ 66,387	$ 66,387	$ -	$ -	$ 66,387	**$ 66,387**
6.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 1,784	$ 1,784	$ 1,784	**$ 1,784**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 66,387		$ 276,979		**$ 343,365**

NAT & NYPA - T028 - (Segment A, Enhanced)

M. Interconnection New Scotland Station

Estimate Revision: 7

Total: $ 3,109,008

NAT & NYPA - T028 - (Segment A, Enhanced)	*Supply*	*Installation*	*Total*
M. Interconnection New Scotland Station			
1. CLEARING & ACCESS	$ -	$ 367,850	$ 367,850
2. FOUNDATIONS	$ 365,657	$ 473,093	$ 838,749
3. STRUCTURES	$ 655,465	$ 445,628	$ 1,101,092
4. CONDUCTOR, SHIELDWIRE, OPGW	$ 3,555	$ 26,100	$ 29,655
5. INSULATORS, FITTINGS, HARDWARE	$ 161,130	$ 95,795	$ 256,925
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 94,864	$ 419,873	$ 514,737
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 1,280,670	$ 1,828,338	$ 3,109,008
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 1,280,670	$ 1,828,338	$ 3,109,008

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
M. Interconnection New Scotland Station									
1. CLEARING & ACCESS									
1.1	Clearing the ROW - Heavy (mowing & clearing)	-	Acre	$ -	$ -	$ 15,000	$ -	$ 15,000	$ -
1.2	Clearing the ROW - Light (mowing)	2.0	Acre	$ -	$ -	$ 5,000	$ 10,000	$ 5,000	**$ 10,000**
1.3	Access Road	-	LF	$ -	$ -	$ 45	$ -	$ 45	$ -
1.4	Silt Fence	3,500.0	LF	$ -	$ -	$ 4	$ 14,000	$ 4	**$ 14,000**
1.5	Matting - Access and ROW	3,500.0	LF	$ -	$ -	$ 70	$ 245,000	$ 70	**$ 245,000**
1.6	Matting - To Work Area	300.0	LF	$ -	$ -	$ 70	$ 21,000	$ 70	**$ 21,000**
1.7	Snow Removal	-	LS	$ -	$ -	$ 516,800	$ -	$ 516,800	$ -
1.8	ROW Restoration	0.5	Mile	$ -	$ -	$ 10,000	$ 5,000	$ 10,000	**$ 5,000**
1.9	Work Pads	20,000.0	SF	$ -	$ -	$ 4	$ 70,400	$ 4	**$ 70,400**
1.10	Restoration for Work Pad areas	4,000.0	SF	$ -	$ -	$ 0.2	$ 600	$ 0	**$ 600**
1.11	Temporary Access Bridge	-	EA	$ -	$ -	$ 20,035	$ -	$ 20,035	$ -
1.12	Air Bridge	-	EA	$ -	$ -	$ 14,445	$ -	$ 14,445	$ -
1.13	Stabilized Construction Entrance	-	EA	$ -	$ -	$ 4,580	$ -	$ 4,580	$ -
1.14	Maintenance and Protection of Traffic on Public Roads	-	EA	$ -	$ -	$ 4,130	$ -	$ 4,130	$ -
1.15	Gates	-	EA	$ 2,000	$ -	$ 2,500	$ -	$ 4,500	$ -
1.16	Culverts / Misc. Access	-	EA	$ 750	$ -	$ 1,250	$ -	$ 2,000	$ -
1.17	Concrete Washout Station	1	EA	$ -	$ -	$ 1,850	$ 1,850	$ 1,850	**$ 1,850**
1.18					$ -		$ -		$ -
1.19					$ -		$ -		$ -
1.20	Crushed Rock	0	CY	$ 27	$ -	$ 75	$ -	$ 102	$ -
TOTAL - CLEARING & ACCESS					$ -		$ 367,850		$ 367,850
2. FOUNDATIONS									
2.1	Foundation – Drilled Pier – 8'X 50'	3	EA	$ 76,500	$ 229,501	$ 77,320	$ 231,959	$ 153,820	**$ 461,459**
2.2	Foundation – Drilled Pier – 8'X 89'	1	EA	$ 136,156	$ 136,156	$ 137,614	$ 137,614	$ 273,770	**$ 273,770**
2.3	Rock Excavation Adder	51.8	CY	$ -	$ -	$ 2,000	$ 103,520	$ 2,000	**$ 103,520**
2.4									
2.5									
2.6									
2.7									
2.8									
2.9									
2.10									
2.11									
2.12									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.13									
2.14									
2.15									
TOTAL - FOUNDATIONS					$ 365,657		$ 473,093		$ 838,749
3. STRUCTURES									
3.1	1-CKT 345KV 3-POLE MEDIUM ANGLE DEADEND (15°-60°) - 115'	3	Structure	$ 178,026	$ 534,077	$ 106,815	$ 320,446	$ 284,841	**$ 854,522**
3.2	1-CKT 345KV VERTICAL MEDIUM ANGLE DEADEND (15°-60°) - 115'	1	Structure	$ 116,328	$ 116,328	$ 69,797	$ 69,797	$ 186,125	**$ 186,125**
3.3	Install Grounding and Grounding Accessories	10	Structure	$ 506	$ 5,060	$ 5,539	$ 55,385	$ 6,045	**$ 60,445**
3.4					$ -		$ -		
3.5									
3.6					$ -		$ -		
3.7					$ -		$ -		
3.8					$ -		$ -		
3.9					$ -		$ -		
3.10					$ -		$ -		
3.11					$ -		$ -		
3.12					$ -		$ -		
3.13					$ -		$ -		
3.14					$ -		$ -		
3.15					$ -		$ -		
TOTAL - STRUCTURES					$ 655,465		$ 445,628		$ 1,101,092
4. CONDUCTOR, SHIELDWIRE, OPGW									
4.1	345kV - (2) 954kcmil 54/7 ACSS "Cardinal"	1,500	LF	$ 1.90	$ 2,850	$ 5.00	$ 7,500	$ 6.90	**$ 10,350**
4.2	(1) OPGW 36 Fiber AC-33/38/571	-	LF	$ 1.35	$ -	$ 5.00	$ -	$ 6.35	**$ -**
4.3	(1) 3/8" EHS7 Steel	1,500	LF	$ 0.47	$ 705	$ 5.00	$ 7,500	$ 5.47	**$ 8,205**
4.5	Remove Existing 345kV Cable From Existing Structures	0.3	Mile	$ -	$ -	$ 30,000	$ 7,500	$ 30,000.00	**$ 7,500**
4.6	Remove Existing OPGW Cable	-	Mile	$ -	$ -	$ 12,000	$ -	$ 12,000.00	**$ -**
4.7	Remove Existing EH7	0.3	Mile	$ -	$ -	$ 12,000	$ 3,600	$ 12,000.00	**$ 3,600**
4.8									
4.9									
4.10	Rider Poles - Relocated	-	Set	$ -	$ -	$ 3,500	$ -	$ 3,500.00	**$ -**
4.11	Rider Poles	-	EA	$ 1,750	$ -	$ 3,500	$ -	$ 5,250.00	**$ -**
TOTAL: CONDUCTOR, SHIELDWIRE, OPGW:					$ 3,555		$ 26,100		**$ 29,655**
5. INSULATOR, FITTINGS, HARDWARE									
5.1	345kV Tangent (1-Group of 18-Bells Each Assembly)	-	Assembly	$ 1,800	$ -	$ 720	$ -	$ 2,520	**$ -**
5.2	115kV Tangent (1-Group of 9-Bells Each Assembly)	-	Assembly	$ 900	$ -	$ 560	$ -	$ 1,460	**$ -**
5.3	345kV Dead-end & Angle Insulators (1-Group of 18-Bells Each Assembly)	60	Assembly	$ 1,800	$ 108,000	$ 720	$ 43,200	$ 2,520	**$ 151,200**
5.4	115kV Dead-end & Angle Insulators (1-Group of 9-Bells Each Assembly)	-	Assembly	$ 900	$ -	$ 560	$ -	$ 1,460	**$ -**
5.5	OPGW Assembly - Tangent	-	Assembly	$ 200	$ -	$ 150	$ -	$ 350	**$ -**
5.6	OPGW Assembly - Angle / DE	-	Assembly	$ 250	$ -	$ 150	$ -	$ 400	**$ -**
5.7	OHSW Assembly - Angle / DE	4	Assembly	$ 250	$ 1,000	$ 150	$ 600	$ 400	**$ 1,600**
5.8	OPGW Splice Boxes	-	Set	$ 1,750	$ -	$ 1,746	$ -	$ 3,496	**$ -**
5.9	OPGW Splice & Test	-	EA	$ 1,400	$ -	$ 2,520	$ -	$ 3,920	**$ -**
5.10	Spacer - Conductor	9	EA	$ 50	$ 450	$ 35	$ 315	$ 85	**$ 765**
5.11	Vibration Dampers - Conductor	48	EA	$ 35	$ 1,680	$ 35	$ 1,680	$ 70	**$ 3,360**
5.12	Shieldwire / OPGW Dampers, Misc. Fittings	-	EA	$ 27	$ -	$ 35	$ -	$ 62	**$ -**
5.13	Guys, Anchors, and Accessories	-	EA	$ 720	$ -	$ 885	$ -	$ 1,605	**$ -**
5.14	Misc. materials (Signs and Markers)	-	Mile	$ 770	$ -	$ 1,006	$ -	$ 1,776	**$ -**
5.15					$ -		$ -		**$ -**
5.16	Interconnection Arrangements	1	EA	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 100,000	**$ 100,000**
5.17					$ -		$ -		**$ -**
5.18					$ -		$ -		**$ -**
5.19					$ -		$ -		**$ -**
5.20					$ -		$ -		**$ -**
TOTAL - INSULATOR, FITTINGS, HARDWARE					$ 161,130		$ 95,795		$ 256,925
M. Interconnection New Scotland Station					$ 1,185,806		$ 1,408,465		$ 2,594,271
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
6.1	Mob / Demob	1	LS	$ -	$ -	$ 25,943	$ 25,943	$ 25,943	**$ 25,943**
	Project Management, Material Handling & Amenities								

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 132,511	$ 132,511	$ 132,511	**$ 132,511**
6.3	Utility PM and Project Oversite	1	LS		$ -	$ 25,943	$ 25,943	$ 25,943	**$ 25,943**
6.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 25,943	$ 25,943	$ 25,943	**$ 25,943**
	Engineering								
6.5	Design Engineering	1	LS	$ -	$ -	$ 129,714	$ 129,714	$ 129,714	**$ 129,714**
6.6	LiDAR	1	LS	$ -	$ -	$ 7,783	$ 7,783	$ 7,783	**$ 7,783**
6.7	Geotech	1	Location	$ -	$ -	$ 3,500	$ 3,500	$ 3,500	**$ 3,500**
6.8	Surveying/Staking	1	LS	$ -	$ -	$ 18,160	$ 18,160	$ 18,160	**$ 18,160**
	Testing & Commissioning								
6.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 40,000	$ 40,000	$ 40,000	**$ 40,000**
	Permitting and Additional Costs								
6.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.12	Warranties / LOC's	1	LS	$ -	$ -	$ 7,783	$ 7,783	$ 7,783	**$ 7,783**
6.13	Real Estate Costs (New ROW)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.14	Real Estate Costs (Incumbent Utility ROW)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.18	Sales Tax on Materials	1	LS	$ 94,864	$ 94,864	$ -	$ -	$ 94,864	**$ 94,864**
6.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 2,594	$ 2,594	$ 2,594	**$ 2,594**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 94,864		$ 419,873		**$ 514,737**

NAT & NYPA - T028 - (Segment A, Enhanced)

System Upgrade Facilities (Various Stations for Edic/Marcy to New Scotland)

Estimate Revision: 7

Total: $ 6,899,000

SYSTEM UPGRADE FACILITIES		Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Sum	Labor & Equipment Supply Rate	Labor & Equipment Sum	Total Unit Rate	TOTAL
SUF SS1	**Marcy 345kV Bay 3300 - Reconductor Strain Bus UNS-18 Marcy-New Scotland Line**	1	LS	$ -	$ -	$ -	$ -	$ 664,560	$ 665,000
SUF SS1	Removals	1	LS	$ -	$ -	$ -	$ -	$ 30,000	$ 30,000
SUF SS1	Engineering, T&C, PM, Indirects (25%)		LS %						$ 174,000
SUF SS1	**SUF SS1 - TOTAL:**				**$ -**		**$ -**		**$ 869,000**
SUF SS2	**Marcy 345kV Bay 3100 - Reconductor Strain Bus, Replace (3) breakers and wave trap UE1-7- Marcy-Edic Line**	1	LS	$ -	$ -	$ -	$ -	$ 2,946,086	$ 2,947,000
SUF SS2	Removals	1	LS	$ -	$ -	$ -	$ -	$ 120,720	$ 121,000
SUF SS2	Engineering, T&C, PM, Indirects (25%)		LS %						$ 767,000
SUF SS2	**SUFSS 2 - TOTAL:**				**$ -**		**$ -**		**$ 3,835,000**
SUF SS3	**Edic 345kV Bay - UE1-7- Marcy-Edic Line Replace (2) breakers and wave trap**	1	LS					$ 1,661,294	$ 1,662,000
SUF SS3	Removals	1	LS	$ -	$ -	$ -	$ -	$ 93,120	$ 94,000
SUF SS3	Engineering, T&C, PM, Indirects (25%)		LS %						$ 439,000
SUF SS3	**SUF SS3 - TOTAL:**				**$ -**		**$ -**		**$ 2,195,000**
SUF SS4		-	LS	$ -	$ -	$ -	$ -		$ -
SUF SS4	Removals		LS %					$ -	$ -
SUF SS4	Engineering, T&C, PM, Indirects (25%)		LS %						$ -
SUF SS4	**SUF SS4 - TOTAL:**				**$ -**		**$ -**		**$ -**
SUF SS5		-	LS	$ -	$ -	$ -	$ -		$ -
SUF SS5	Removals		LS %					$ -	$ -
SUF SS5	Engineering, T&C, PM, Indirects (25%)		LS %						$ -
SUF SS5	**SUF SS4 - TOTAL:**				**$ -**		**$ -**		**$ -**
	STATIONS SUF DIRECT TOTAL:								**$ 5,519,000**
	STATIONS SUF INDIRECT TOTAL:								**$ 1,380,000**
	STATIONS SUF TOTAL								**$ 6,899,000**

NAT & NYPA - T028 - (Segment A, Enhanced)

N. Interconnection Rotterdam Station

Estimate Revision: 7

Total: $ 4,612,611

NAT & NYPA - T028 - (Segment A, Enhanced)	*Supply*	*Installation*	*Total*
N. Interconnection Rotterdam Station			
1. CLEARING & ACCESS	$ -	$ 1,233,050	$ 1,233,050
2. FOUNDATIONS	$ 192,145	$ 325,963	$ 518,108
3. STRUCTURES	$ 546,722	$ 837,150	$ 1,383,872
4. CONDUCTOR, SHIELDWIRE, OPGW	$ 65,923	$ 437,250	$ 503,173
5. INSULATORS, FITTINGS, HARDWARE	$ 165,730	$ 118,480	$ 284,210
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 77,642	$ 612,557	$ 690,199
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 1,048,161	$ 3,564,450	$ 4,612,611
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 1,048,161	$ 3,564,450	$ 4,612,611

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
N. Interconnection Rotterdam Station									
1. CLEARING & ACCESS									
1.1	Clearing the ROW - Heavy (mowing & clearing)	7.0	Acre	$ -	$ -	$ 15,000	$ 105,000	$ 15,000	**$ 105,000**
1.2	Clearing the ROW - Light (mowing)	5.0	Acre	$ -	$ -	$ 5,000	$ 25,000	$ 5,000	**$ 25,000**
1.3	Access Road	-	LF	$ -	$ -	$ 45	$ -	$ 45	**$ -**
1.4	Silt Fence	4,800.0	LF	$ -	$ -	$ 4	$ 19,200	$ 4	**$ 19,200**
1.5	Matting - Access and ROW	4,800.0	LF	$ -	$ -	$ 70	$ 336,000	$ 70	**$ 336,000**
1.6	Matting - To Work Area	2,400.0	LF	$ -	$ -	$ 70	$ 168,000	$ 70	**$ 168,000**
1.7	Snow Removal	-	LS	$ -	$ -	$ 516,800	$ -	$ 516,800	**$ -**
1.8	ROW Restoration	1.0	Mile	$ -	$ -	$ 10,000	$ 10,000	$ 10,000	**$ 10,000**
1.9	Work Pads	160,000.0	SF	$ -	$ -	$ 4	$ 563,200	$ 4	**$ 563,200**
1.10	Restoration for Work Pad areas	32,000.0	SF	$ -	$ -	$ 0.2	$ 4,800	$ 0	**$ 4,800**
1.11	Temporary Access Bridge	-	EA	$ -	$ -	$ 20,035	$ -	$ 20,035	**$ -**
1.12	Air Bridge	-	EA	$ -	$ -	$ 14,445	$ -	$ 14,445	**$ -**
1.13	Stabilized Construction Entrance	-	EA	$ -	$ -	$ 4,580	$ -	$ 4,580	**$ -**
1.14	Maintenance and Protection of Traffic on Public Roads	-	EA	$ -	$ -	$ 4,130	$ -	$ 4,130	**$ -**
1.15	Gates	-	EA	$ 2,000	$ -	$ 2,500	$ -	$ 4,500	**$ -**
1.16	Culverts / Misc. Access	-	EA	$ 750	$ -	$ 1,250	$ -	$ 2,000	**$ -**
1.17	Concrete Washout Station	1	EA	$ -	$ -	$ 1,850	$ 1,850	$ 1,850	**$ 1,850**
1.18					$ -		$ -		**$ -**
1.19					$ -		$ -		**$ -**
1.20	Crushed Rock	0	CY	$ 27	$ -	$ 75	$ -	$ 102	**$ -**
TOTAL - CLEARING & ACCESS					$ -		$ 1,233,050		$ 1,233,050
2. FOUNDATIONS									
2.1	10' ED Rock BF	6	EA	$ 358	$ 2,145	$ 3,575	$ 21,450	$ 3,933	**$ 23,595**
2.2	15' ED Rock BF	18	EA	$ 536	$ 9,653	$ 5,363	$ 96,525	$ 5,899	**$ 106,178**
2.3	20' ED Rock BF	4	EA	$ 715	$ 2,860	$ 7,150	$ 28,600	$ 7,865	**$ 31,460**
2.4	Foundation – Drilled Pier – 8'X 29'	4	EA	$ 44,372	$ 177,487	$ 44,847	$ 179,388	$ 89,219	**$ 356,875**
2.5	Rock Excavation Adder	-	CY	$ -	$ -	$ 2,000	$ -	$ 2,000	**$ -**
2.6					$ -		$ -		**$ -**
2.7					$ -		$ -		**$ -**
2.8					$ -		$ -		**$ -**
2.9					$ -		$ -		**$ -**
2.10					$ -		$ -		**$ -**
2.11					$ -		$ -		**$ -**
2.12					$ -		$ -		**$ -**
2.13					$ -		$ -		**$ -**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.14					$ -		$ -		$ -
2.15					$ -		$ -		$ -
TOTAL - FOUNDATIONS					$ 192,145		$ 325,963		$ 518,108
3. STRUCTURES									
3.1	15kV 3-CKT TANGENT DIST. - WOOD POLE	3	Pole	$ 3,500	$ 10,500	$ 3,600	$ 10,800	$ 7,100	**$ 21,300**
3.2	15Kv 3-CKT MA DIST. - WOOD POLE	1	Pole	$ 3,500	$ 3,500	$ 3,600	$ 3,600	$ 7,100	**$ 7,100**
3.3	15kV 3-CKT DE - WOOD POLE	2	Pole	$ 3,500	$ 7,000	$ 3,600	$ 7,200	$ 7,100	**$ 14,200**
3.4	115kV 1-CKT TANGENT - WOOD POLE	5	Pole	$ 4,500	$ 22,500	$ 4,400	$ 22,000	$ 8,900	**$ 44,500**
3.5	115kV 1-CKT MA - WOOD POLE	2	Pole	$ 4,500	$ 9,000	$ 4,400	$ 8,800	$ 8,900	**$ 17,800**
3.6	115kV 1-CKT DE - WOOD POLE	11	Pole	$ 5,500	$ 60,500	$ 5,000	$ 55,000	$ 10,500	**$ 115,500**
3.7	115kV 2-CKT TANGENT - WOOD POLE	4	Pole	$ 5,500	$ 22,000	$ 5,000	$ 20,000	$ 10,500	**$ 42,000**
3.8	115kV 2-CKT DE - STEEL POLE	4	Pole	$ 98,883	$ 395,530	$ 59,330	$ 237,318	$ 158,212	**$ 632,848**
3.9	Remove Existing Structure and Accessories	24	EA		$ -	$ 12,300	$ 295,200	$ 12,300	**$ 295,200**
3.10					$ -		$ -		**$** -
3.11					$ -		$ -		**$** -
3.12	Install Grounding and Grounding Accessories	32	Structure	$ 506	$ 16,192	$ 5,539	$ 177,232	$ 6,045	**$ 193,424**
3.13					$ -		$ -		**$** -
3.14					$ -		$ -		**$** -
3.15					$ -		$ -		**$** -
TOTAL - STRUCTURES					$ 546,722		$ 837,150		$ 1,383,872
4. CONDUCTOR, SHIELDWIRE, OPGW									
4.1	345kV - (1) 954kcmil 54/7 ACSS "Cardinal"	23,400	LF	$ 1.90	$ 44,460	$ 5.00	$ 117,000	$ 6.90	**$ 161,460**
4.2	(1) OPGW 36 Fiber AC-33/38/571	-	LF	$ 1.35	$ -	$ 5.00	$ -	$ 6.35	**$** -
4.3	(1) 3/8" EHS7 Steel	7,800	LF	$ 0.47	$ 3,666	$ 5.00	$ 39,000	$ 5.47	**$ 42,666**
4.5	Remove Existing Cable	6.6	Mile	$ -	$ -	$ 30,000	$ 197,700	$ 30,000.00	**$ 197,700**
4.6	Remove Existing EH7	2.2	Mile	$ -	$ -	$ 12,000	$ 26,400	$ 12,000.00	**$ 26,400**
4.7	15kV - (1) 477kcmil 26/7 ACSR "Hawk"	9,630	LF	$ 1.62	$ 15,601	$ 5.00	$ 48,150	$ 6.62	**$ 63,751**
4.8	15kV - (1) 336kcmil 26/7 ACSR "Linnet"	1,800	LF	$ 1.22	$ 2,196	$ 5.00	$ 9,000	$ 6.22	**$ 11,196**
4.9		-							
4.10	Rider Poles - Relocated	-	Set	$ -	$ -	$ 3,500	$ -	$ 3,500.00	**$** -
4.11	Rider Poles	-	EA	$ 1,750	$ -	$ 3,500	$ -	$ 5,250.00	**$** -
TOTAL: CONDUCTOR, SHIELDWIRE, OPGW:					$ 65,923		$ 437,250		**$ 503,173**
5. INSULATOR, FITTINGS, HARDWARE									
5.1	115kV Tangent (1-Group of 9-Bells Each Assembly)	33	Assembly	$ 1,000	$ 33,000	$ 560	$ 18,480	$ 1,560	**$ 51,480**
5.2	115kV Dead-end & Angle Insulators (1-Group of 9-Bells Each Assembly)	66	Assembly	$ 1,000	$ 66,000	$ 560	$ 36,960	$ 1,560	**$ 102,960**
5.3	15kV Tangent	12	Assembly	$ 100	$ 1,200	$ 75	$ 900	$ 175	**$ 2,100**
5.4	15kV Dead-end & Angle Insulators	18	Assembly	$ 100	$ 1,800	$ 75	$ 1,350	$ 175	**$ 3,150**
5.5	Neutral, Distribution, Tangent	4	Assembly	$ 100	$ 400	$ 75	$ 300	$ 175	**$ 700**
5.6	Neutral, Distribution, DE/Side	2	Assembly	$ 100	$ 200	$ 75	$ 150	$ 175	**$ 350**
5.7	Jumper, DE/Angle, 3PH	4	Assembly	$ 100	$ 400	$ 75	$ 300	$ 175	**$ 700**
5.8	OPGW Assembly - Tangent	2	Assembly	$ 200	$ 400	$ 150	$ 300	$ 350	**$ 700**
5.9	OSHW Assembly - Tangent	11	Assembly	$ 250	$ 2,750	$ 150	$ 1,650	$ 400	**$ 4,400**
5.10	OHSW Assembly - Angle / DE	38	Assembly	$ 250	$ 9,500	$ 150	$ 5,700	$ 400	**$ 15,200**
5.11	OPGW Splice Boxes	-	Set	$ 1,750	$ -	$ 1,746	$ -	$ 3,496	**$** -
5.12	OPGW Splice & Test	-	EA	$ 1,400	$ -	$ 2,520	$ -	$ 3,920	**$** -
5.13	Spacer - Conductor	-	EA	$ 50	$ -	$ 35	$ -	$ 85	**$** -
5.14	Vibration Dampers - Conductor	-	EA	$ 35	$ -	$ 35	$ -	$ 70	**$** -
5.15	Shieldwire / OPGW Dampers, Misc. Fittings	-	EA	$ 27	$ -	$ 35	$ -	$ 62	**$** -
5.16	Guys, Anchors, and Accessories	14.0	EA	$ 720	$ 10,080	$ 885	$ 12,390	$ 1,605	**$ 22,470**
5.17	Misc. materials (Signs and Markers)	-	Mile	$ 770	$ -	$ 1,006	$ -	$ 1,776	**$** -
5.18					$ -		$ -		**$** -
5.19	Interconnection Arrangements	8	EA	$ 5,000	$ 40,000	$ 5,000	$ 40,000	$ 10,000	**$ 80,000**
5.20					$ -		$ -		**$** -
5.21					$ -		$ -		**$** -
5.22					$ -		$ -		**$** -
5.23					$ -		$ -		**$** -
TOTAL - INSULATOR, FITTINGS, HARDWARE					$ 165,730		$ 118,480		$ 284,210
N. Interconnection Rotterdam Station					$ 970,519		$ 2,951,893		$ 3,922,412
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
6.1	Mob / Demob	1	LS	$ -	$ -	$ 39,224	$ 39,224	$ 39,224	**$ 39,224**
	Project Management, Material Handling & Amenities								

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 200,351	$ 200,351	$ 200,351	**$ 200,351**
6.3	Utility PM and Project Oversite	1	LS		$ -	$ 39,224	$ 39,224	$ 39,224	**$ 39,224**
6.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 39,224	$ 39,224	$ 39,224	**$ 39,224**
	Engineering								
6.5	Design Engineering	1	LS	$ -	$ -	$ 196,121	$ 196,121	$ 196,121	**$ 196,121**
6.6	LiDAR	1	LS	$ -	$ -	$ 11,767	$ 11,767	$ 11,767	**$ 11,767**
6.7	Geotech	1	Location	$ -	$ -	$ 3,500	$ 3,500	$ 3,500	**$ 3,500**
6.8	Surveying/Staking	1	LS	$ -	$ -	$ 27,457	$ 27,457	$ 27,457	**$ 27,457**
	Testing & Commissioning								
6.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 40,000	$ 40,000	$ 40,000	**$ 40,000**
	Permitting and Additional Costs								
6.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.12	Warranties / LOC's	1	LS	$ -	$ -	$ 11,767	$ 11,767	$ 11,767	**$ 11,767**
6.13	Real Estate Costs (New ROW)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.14	Real Estate Costs (Incumbent Utility ROW)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.18	Sales Tax on Materials	1	LS	$ 77,642	$ 77,642	$ -	$ -	$ 77,642	**$ 77,642**
6.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 3,922	$ 3,922	$ 3,922	**$ 3,922**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 77,642		$ 612,557		**$ 690,199**

NAT & NYPA - T028 - (Segment A, Enhanced)

Q. Princetown Switchyard - Install

Estimate Revision: 7

Total: $ 15,967,903

NAT & NYPA - T028 - (Segment A, Enhanced)	*Supply*	*Installation*	*Total*
Q. Princetown Switchyard - Install			
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ 163,560	$ 909,775	$ 1,073,335
2. SUBSTATION FOUNDATIONS	$ 1,193,706	$ 1,213,490	$ 2,407,196
3. SUBSTATION STRUCTURES	$ 582,750	$ 582,750	$ 1,165,500
4. MAJOR EQUIPTMENT	$ 800,000	$ 320,000	$ 1,120,000
5. SMALL EQUIPTMENT / MATERIALS	$ 1,382,000	$ 636,000	$ 2,018,000
6. CONTROL HOUSE / PANELS	$ 1,621,800	$ 1,043,550	$ 2,665,350
7. MISC ITEMS	$ 895,854	$ 1,373,004	$ 2,268,858
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 531,174	$ 2,718,490	$ 3,249,664
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 7,170,844	$ 8,797,059	$ 15,967,903
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 7,170,844	$ 8,797,059	$ 15,967,903

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
Q. Princetown Switchyard - Install									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	3.1	ACRES	$ -	$ -	$ 203,000	$ 634,375	$ 203,000	**$ 634,375**
1.2	Station stone within substation fence.	1,080	CY	$ 27	$ 29,160	$ 75	$ 81,000	$ 102	**$ 110,160**
1.3	Substation Fence	1,260	LF	$ 100	$ 126,000	$ 100	$ 126,000	$ 200	**$ 252,000**
1.4	Permanent Access Road - 20'-Wide (Extend Existing)	240	LF	$ 35	$ 8,400	$ 285	$ 68,400	$ 320	**$ 76,800**
1.5									
1.6									
1.7									
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ 163,560		$ 909,775		$ 1,073,335
2. SUBSTATION FOUNDATIONS									
2.1	**765kV**								
2.1a	Circuit Breaker Foundations		EA.	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	**$ -**
2.1b	Capacitor Bank Foundations		EA.	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)		EA.	$ 52,290	$ -	$ 56,000	$ -	$ 108,290	**$ -**
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)		EA.	$ 52,290	$ -	$ 56,000	$ -	$ 108,290	**$ -**
2.1e	Switch Stand Foundations		EA.	$ 8,964	$ -	$ 8,964	$ -	$ 17,928	**$ -**
2.1f	Fuse Stand Foundations		EA.	$ 8,964	$ -	$ 8,964	$ -	$ 17,928	**$ -**
2.1g	Bus Support 1ph Foundations (High Bus)		EA.	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1h	Bus Support 1 Ph Foundations (Low Bus)		EA.	$ 8,964	$ -	$ 8,964	$ -	$ 17,928	**$ -**
2.1j	Instrument Transformer Stand Foundations		EA.	$ 8,964	$ -	$ 8,964	$ -	$ 17,928	**$ -**
2.1k	Arrester Stand Foundations		EA.	$ 8,964	$ -	$ 8,964	$ -	$ 17,928	**$ -**
2.1m	Wave Trap Stand Foundations		EA.	$ 8,964	$ -	$ 8,964	$ -	$ 17,928	**$ -**
2.1n	Misc. Structure Foundations		EA.	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1p									
2.2	**345kV**								
2.2a	Circuit Breaker Foundations	4	EA.	$ 14,940	$ 59,760	$ 14,940	$ 59,760	$ 29,880	**$ 119,520**
2.2b	Capacitor Bank Foundations	0	EA	$ 56,025	$ -	$ 60,000	$ -	$ 116,025	**$ -**
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	16	EA.	$ 26,145	$ 418,320	$ 26,145	$ 418,320	$ 52,290	**$ 836,640**
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA.	$ 26,145	$ -	$ 26,145	$ -	$ 52,290	**$ -**
2.2e	Switch Stand Foundations	48	EA.	$ 4,482	$ 215,136	$ 4,482	$ 215,136	$ 8,964	**$ 430,272**
2.2f	Fuse Stand Foundations	6	EA.	$ 4,482	$ 26,892	$ 4,482	$ 26,892	$ 8,964	**$ 53,784**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.2g	Bus Support 1ph Foundations (High Bus)	0	EA.	$ -	$ -	$ -	$ -	$ -	$ -
2.2h	Bus Support 1 Ph Foundations (Low Bus)	39	EA.	$ 4,482	$ 174,798	$ 4,482	$ 174,798	$ 8,964	**$ 349,596**
2.2j	Instrument Transformer Stand Foundations	36	EA.	$ 4,482	$ 161,352	$ 4,482	$ 161,352	$ 8,964	**$ 322,704**
2.2k	Arrester Stand Foundations	12	EA.	$ 4,482	$ 53,784	$ 4,482	$ 53,784	$ 8,964	**$ 107,568**
2.2m	Wave Trap Stand Foundations	4	EA.	$ 4,482	$ 17,928	$ 4,482	$ 17,928	$ 8,964	**$ 35,856**
2.2n	Misc. Structure Foundations		EA.	$ -	$ -	$ -	$ -	$ -	$ -
2.2p									
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	0	EA	$ 5,229	$ -	$ 5,600	$ -	$ 10,829	$ -
2.3b	Capacitor Bank Foundations	0	EA	$ 33,615	$ -	$ 36,000	$ -	$ 69,615	$ -
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	$ -
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	$ -
2.3e	Switch Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3f	Fuse Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3g	Bus Support 3ph Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3h	Bus Support 1 Ph Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3j	Instrument Transformer Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3k	Arrester Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3m	Wave Trap Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4	**Transformer Foundations**								
2.4a	765-345kV Transformer Foundation w/ Oil Containment		EA.	$ -	$ -	$ -	$ -	$ -	$ -
2.4b	765-345kV Transformer Fire Wall		EA.	$ 106,074	$ -	$ 113,600	$ -	$ 219,674	$ -
2.4c				$ -	$ -	$ -	$ -	$ -	$ -
2.4d				$ -	$ -	$ -	$ -	$ -	$ -
2.5	**Control House Foundations / Pad / Generator / Station Service Distribution Line**								
2.5a	Control House / Pad - 25' x 50'	1	EA	$ 17,928	$ 17,928	$ 19,200	$ 19,200	$ 37,128	**$ 37,128**
2.5b	Generator Foundation	1	EA	$ 16,434	$ 16,434	$ 17,600	$ 17,600	$ 34,034	**$ 34,034**
2.5c	Station Service Distribution Line - 3ph.	1	LS	$ -	$ -	$ 15,120	$ 15,120	$ 15,120	**$ 15,120**
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	6	EA	$ 5,229	$ 31,374	$ 5,600	$ 33,600	$ 10,829	**$ 64,974**
2.6b				$ -	$ -	$ -	$ -	$ -	$ -
2.6c				$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION FOUNDATIONS					$ 1,193,706		$ 1,213,490		$ 2,407,196
3. SUBSTATION STRUCTURES									
3.1	**765kV**								
3.1a	Substation A-Frame Structures - Stand alone		EA.	$ 111,000	$ -	$ 111,000	$ -	$ 222,000	$ -
3.1b	Substation A-Frame Structures - Shared Column		EA.	$ 111,000	$ -	$ 111,000	$ -	$ 222,000	$ -
3.1c	Switch Stands		EA.	$ 22,200	$ -	$ 22,200	$ -	$ 44,400	$ -
3.1d	Station Service Transformer Stand		EA.	$ -	$ -	$ -	$ -	$ -	$ -
3.1e	Bus Support 1ph (High Bus)		EA.	$ 7,400	$ -	$ 7,400	$ -	$ 14,800	$ -
3.1f	Bus Support 1 Ph (low Bus)		EA.	$ 5,550	$ -	$ 5,550	$ -	$ 11,100	$ -
3.1g	Instrument Transformer Stand		EA.	$ 3,700	$ -	$ 3,700	$ -	$ 7,400	$ -
3.1h	Arrester Stand		EA.	$ 3,700	$ -	$ 3,700	$ -	$ 7,400	$ -
3.1j	Wave Trap Stand		EA.	$ 9,250	$ -	$ 9,250	$ -	$ 18,500	$ -
3.1k	Lightning Mast		EA.	$ 9,250	$ -	$ 9,250	$ -	$ 18,500	$ -
3.2	**345kV**								
3.2a	Substation A-Frame Structures - Stand alone	4	EA	$ 37,000	$ 148,000	$ 37,000	$ 148,000	$ 74,000	**$ 296,000**
3.2b	Substation A-Frame Structures - Shared Column	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	$ -
3.2c	Switch Stands	8	EA	$ 14,800	$ 118,400	$ 14,800	$ 118,400	$ 29,600	**$ 236,800**
3.2d	Station Service Transformer Stand	1	EA	$ 14,800	$ 14,800	$ 14,800	$ 14,800	$ 29,600	**$ 29,600**
3.2e	Bus Support 3ph	0	EA	$ 5,550	$ -	$ 5,550	$ -	$ 11,100	$ -
3.2f	Bus Support 1 Ph	39	EA	$ 3,700	$ 144,300	$ 3,700	$ 144,300	$ 7,400	**$ 288,600**
3.2g	Instrument Transformer Stand	36	EA	$ 1,850	$ 66,600	$ 1,850	$ 66,600	$ 3,700	**$ 133,200**
3.2h	Arrester Stand	12	EA	$ 1,850	$ 22,200	$ 1,850	$ 22,200	$ 3,700	**$ 44,400**
3.2j	Wave Trap Stand	4	EA	$ 7,400	$ 29,600	$ 7,400	$ 29,600	$ 14,800	**$ 59,200**
3.2k	Misc. Structures	6	EA	$ 6,475	$ 38,850	$ 6,475	$ 38,850	$ 12,950	**$ 77,700**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.3	**115kV**								
3.3a	Substation A-Frame Structures - Stand alone	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	**$** -
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	**$** -
3.3c	Switch Stands	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	**$** -
3.3d	Fuse Stand	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	**$** -
3.3e	Bus Support 3ph	0	EA	$ 3,330	$ -	$ 3,330	$ -	$ 6,660	**$** -
3.3f	Bus Support 1 Ph	0	EA	$ 1,850	$ -	$ 1,850	$ -	$ 3,700	**$** -
3.3g	Instrument Transformer Stand	0	EA	$ 740	$ -	$ 740	$ -	$ 1,480	**$** -
3.3h	Arrester Stand	0	EA	$ 740	$ -	$ 740	$ -	$ 1,480	**$** -
3.3j	Wave Trap Stand	0	EA	$ 3,700	$ -	$ 3,700	$ -	$ 7,400	**$** -
3.3k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	**$** -
TOTAL - SUBSTATION STRUCTURES					$ 582,750		$ 582,750		$ 1,165,500
4. MAJOR EQUIPTMENT									
4.2	**345kV**								
4.2a	Circuit Breakers	4	EA	$ 200,000	$ 800,000	$ 80,000	$ 320,000	$ 280,000	**$ 1,120,000**
4.2b	Capacitor Banks		EA	$ -	$ -	$ 80,000	$ -	$ 80,000	**$** -
4.3	**115kV**								
4.3a	Circuit Breakers	0	EA	$ 52,000	$ -	$ 60,000	$ -	$ 112,000	**$** -
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ 60,000	$ -	$ 60,000	**$** -
TOTAL - MAJOR EQUIPTMENT					$ 800,000		$ 320,000		$ 1,120,000
5. SMALL EQUIPTMENT / MATERIALS									
5.2	**345kV**								
5.2a	Line Switches - 3ph w/ motor operator	4	EA	$ 40,000	$ 160,000	$ 15,000	$ 60,000	$ 55,000	**$ 220,000**
5.2b	Disconnect Switches - 3ph w/ manual operator	8	EA	$ 35,000	$ 280,000	$ 17,500	$ 140,000	$ 52,500	**$ 420,000**
5.2c	VT'S	12	EA	$ 25,000	$ 300,000	$ 12,000	$ 144,000	$ 37,000	**$ 444,000**
5.2d	CT'S	12	EA	$ 13,000	$ 156,000	$ 8,000	$ 96,000	$ 21,000	**$ 252,000**
5.2e	CCVT'S	12	EA	$ 13,000	$ 156,000	$ 8,000	$ 96,000	$ 21,000	**$ 252,000**
5.2f	Arresters	12	EA	$ 6,500	$ 78,000	$ 1,500	$ 18,000	$ 8,000	**$ 96,000**
5.2g	Wave Traps	4	EA	$ 13,000	$ 52,000	$ 8,000	$ 32,000	$ 21,000	**$ 84,000**
5.2h	Station Service Transformers	1	EA	$ 200,000	$ 200,000	$ 50,000	$ 50,000	$ 250,000	**$ 250,000**
5.2j									
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	0	EA	$ 33,000	$ -	$ 15,000	$ -	$ 48,000	**$** -
5.3b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 28,000	$ -	$ 17,500	$ -	$ 45,500	**$** -
5.3c	VT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	**$** -
5.3d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	**$** -
5.3e	CCVT'S	0	EA	$ 8,000	$ -	$ 8,000	$ -	$ 16,000	**$** -
5.3f	Arresters	0	EA	$ 3,420	$ -	$ 6,000	$ -	$ 9,420	**$** -
5.3g	Wave Traps	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
5.3h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
5.3j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ 1,382,000		$ 636,000		$ 2,018,000
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE	1	EA	$ 245,750	$ 245,750	$ 37,500	$ 37,500	$ 283,250	**$ 283,250**
6.2	Protection and Telecom Equipment Panels	18	EA	$ 35,000	$ 630,000	$ 10,000	$ 180,000	$ 45,000	**$ 810,000**
6.3	125VDC Batteries	2	EA	$ 75,000	$ 150,000	$ 25,000	$ 50,000	$ 100,000	**$ 200,000**
6.4	Control Cables	1	LS	$ 281,050	$ 281,050	$ 281,050	$ 281,050	$ 562,100	**$ 562,100**
6.5	SCADA and Communications	0	EA	$ 35,000	$ -	$ 12,500	$ -	$ 47,500	**$** -
6.6	Low Voltage AC Distribution	2	EA	$ 50,000	$ 100,000	$ 100,000	$ 200,000	$ 150,000	**$ 300,000**
6.7	DC Distribution System	2	EA	$ 50,000	$ 100,000	$ 100,000	$ 200,000	$ 150,000	**$ 300,000**
6.8	Security	1	EA	$ 7,500	$ 7,500	$ 7,500	$ 7,500	$ 15,000	**$ 15,000**
6.9	Fire Alarm	1	EA	$ 7,500	$ 7,500	$ 7,500	$ 7,500	$ 15,000	**$ 15,000**
6.10	Generator	1	EA	$ 100,000	$ 100,000	$ 80,000	$ 80,000	$ 180,000	**$ 180,000**
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ 1,621,800		$ 1,043,550		**$ 2,665,350**
7. MISC ITEMS 345kV									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
7.15	Conduit & Cable Trench System	1,200	LF	$ 125.07	$ 150,084	$ 170.00	$ 204,000	$ 295	**$ 354,084**
7.16	Rigid Bus, Fittings & Insulators	1,000	LF	$ 125.07	$ 125,070	$ 237.10	$ 237,100	$ 362	**$ 362,170**
7.17	Strain Bus, Connectors & Insulators	1,600	LF	$ 61.50	$ 98,400	$ 78.69	$ 125,904	$ 140	**$ 224,304**
7.18	Grounding System	10,000	LF	$ 6.93	$ 69,300	$ 32.58	$ 325,800	$ 40	**$ 395,100**
7.19	Strain Bus Insulators - 345kV	24	EA	$ 2,000	$ 48,000	$ 1,050	$ 25,200	$ 3,050	**$ 73,200**
7.20	Low Voltage AC Station Service	1	LS	$ 50,000	$ 50,000	$ 75,000	$ 75,000	$ 125,000	**$ 125,000**
7.21	SSVT Service	1	LS	$ 50,000	$ 50,000	$ 75,000	$ 75,000	$ 125,000	**$ 125,000**
7.22	Control Conduits from Trench to Equipment	1	LS	$ 125,000	$ 125,000	$ 125,000	$ 125,000	$ 250,000	**$ 250,000**
7.23	Misc. Materials (Above and Below Ground)	1	LS	$ 180,000	$ 180,000	$ 180,000	$ 180,000	$ 360,000	**$ 360,000**
7.24									
7.25									
7.26									
7.27									
7.28									
7.29									
TOTAL - MISC ITEMS					$ 895,854		$ 1,373,004		$ 2,268,858
Q. Princetown Switchyard - Install					$ 6,639,670		$ 6,078,569		**$ 12,718,239**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1	LS	$ -	$ -	$ 127,182	$ 127,182	$ 127,182	**$ 127,182**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 649,627	$ 649,627	$ 649,627	**$ 649,627**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 127,182	$ 127,182	$ 127,182	**$ 127,182**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 127,182	$ 127,182	$ 127,182	**$ 127,182**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 1,017,459	$ 1,017,459	$ 1,017,459	**$ 1,017,459**
8.6	LiDAR	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.7	Geotech	4	EA	$ -	$ -	$ 3,500	$ 14,000	$ 3,500	**$ 14,000**
8.8	Surveying/Staking	1	Site	$ -	$ -	$ 89,028	$ 89,028	$ 89,028	**$ 89,028**
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 317,956	$ 317,956	$ 317,956	**$ 317,956**
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 38,155	$ 38,155	$ 38,155	**$ 38,155**
8.13	Real Estate Costs (New)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.14	Real Estate Costs (Incumbent Utility)	1	LS	$ -	$ -	$ 198,000	$ 198,000	$ 198,000	**$ 198,000**
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.18	Sales Tax on Materials	1	LS	$ 531,174	$ 531,174	$ -	$ -	$ 531,174	**$ 531,174**
8.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 12,718	$ 12,718	$ 12,718	**$ 12,718**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 531,174		$ 2,718,490		**$ 3,249,664**

NAT & NYPA - T028 - (Segment A, Enhanced)	
ESTIMATE ASSUMPTIONS & CLARIFICATIONS	
1	Cost Estimate is based on 2017 rates.
2	Construction schedule is in accordance with proposed schedule - we have assumed continuous working with no breaks in the schedule. Six months have been added to the construction schedule for start up and close out works and assisting in pre-construction activities (i.e. permitting activities, material procurement etc.).
3	We have assumed a typical work week of five-(5) days per week at ten-(10) hours per day (5 x 10 hour days).
4	All labor rates and benefits used for estimating purposes are taken from IBEW Local 1249 working agreement as updated 5-8-2017.
5	We have assumed that the Access Road included in Developer Estimate will be Type 1 Gravel Type.
6	Costs will vary for handling and disposal of contaminated spoils, depending on type of contaminants and availability / location of the appropriate tipping facility. Since there is not enough information to provide a quantified estimate for this item, allowance is included in the contingency monies.
7	Costs have been developed based on historical data from Projects of a similar nature (AACE Class 5 and 4 Estimating Practices). We have not engaged any subcontractors for formal quotes.
8	Foundation rates include supply and installation of materials. Drilled Pier rates include supply and testing of concrete, rebar cage and the use of temp or permanent casing.
9	A Contractor Mark-Up (OH&P) of 15% has been included in the Total section.
10	We have assumed that all project details provided are accurate unless noted otherwise.
11	Any SUF pricing includes 35% to cover Contractor markup (15%) and contingency (20%)
12	A contractor allowance of 1% for mobilization and demobilization has been included in the total section.
13	A contractor allowance of 4.44% for project management and staffing has been included in the total section. This also includes agricultural inspector, engineering inspector, safety inspector, compliance inspector, environmental inspector, and SWPP inspector.
14	An allowance of 1% for Utility PM and Project Oversite staffing has been included in the total section.
15	A contractor allowance of 1% for site accommodation, facilities, and storage has been included in the total section.
16	An allowance of 5% for transmission design and engineering has been included in the total section.
17	An allowance of 8% for substation design and engineering has been included in the total section.
18	An allowance of 0.7% for survey and staking of the transmission line and substation layout has been included in the total section.
19	An allowance of 0.3% for LIDAR of the transmission line has been included in the total section.
20	An allowance of 3.75% for substation testing and commissioning has been included in the total section.
21	An allowance of $20,000.00 per circuit for transmission line testing and commissioning has been included in the total section.
22	New York state sales tax of 8% is included in all material pricing.
23	An allowance of 1.5% for insurance is included in the DPS sheet.
24	The SUF estimates for the stations are rough order of magnitude estimates. No engineering was performed and SECo did not have access to record drawings.

SECO SUBSTATION ENGINEERING COMPANY

ITC (T031)			
		Description	**Total Amount** (In thousand $)
Direct Cost	1	**Transmission Lines**	
	1.1	Clearing & Access	$53,084
	1.2	Foundations	$43,503
	1.3	Structures	$80,620
	1.4	Conductor, Shiedwire and Optical Ground Wire	$41,525
	1.5	Insulators, Fitting and Hardwares	$18,615
		Subtotal (1)	**$237,347**
	2	**Substations**	
	2.1	Rotterdam Substation	$19,805
	2.2	Edic Substation	$2,185
	2.3	Princetown Substation	$27,974
	2.4	New Scotland Substation	$3,615
	2.5	Porter Substation	$546
	2.6	Knickerbocker Substation	$0
	2.7	Marcy Substation	$0
	2.8	Substation Interconnections	$8,383
		Subtotal (2)	**$62,507**
		Total (1+2)	$299,855
		Contractors Mark-up (15% of Total 1+2)	$44,978
		Total Direct Cost (A)	**$344,833**
Indirect Cost	3	**Technical Services Costs**	
	3.1	Contractor Mobilization / Demobilization	$2,999
	3.2	Project Management, Material Handling & Amenities	$18,925
	3.3	Engineering	$19,832
	3.4	Testing & Commissioning	$1,560
	3.5	Permitting, Real Estate, Sales Tax and Additional Costs	$20,688
	3.6	Compensation for use of NYPA Structures (1 Circuit)	$8,919
	3.7	Legal, Environmental Licensing & Permitting and Environmental Mitigation	$7,941
		Total Indirect Cost (3)	**$80,864**
		Subtotal Project Cost (B=A+3) 2017 $	**$425,697**
	4	**Network Upgrade Facilities (NUF)**	
	4.1	NUF proposed as element of the Project	$0
	4.2	NUF identified during Evaluation	$0
		Subtotal NUF Cost (C)	**$0**

Total Project Cost (B+C) 2017 $	**$425,697**
Total Project Cost 2018 $	**$438,468**

ITC - T031 - (Segment A)

Estimate Revision: 5

ITC - T031 - (Segment A) - Direct Costs		*Total Each Segment*
Direct Labor, Material & Equipment Costs	A. Transmission Line Edic to Princetown	$ 147,955,377
Direct Labor, Material & Equipment Costs	B. Transmission Line Princetown to Rotterdam	$ 26,168,326
Direct Labor, Material & Equipment Costs	C. Transmission Line Princetown to New Scotland	$ 63,223,686
Direct Labor, Material & Equipment Costs	D. Rotterdam Substation - Install	$ 19,804,932
Direct Labor, Material & Equipment Costs	E. Rotterdam Substation - Removal	$ -
Direct Labor, Material & Equipment Costs	F. Edic Substation - Install	$ 2,148,785
Direct Labor, Material & Equipment Costs	G. Edic Substation - Removal	$ 35,950
Direct Labor, Material & Equipment Costs	H. New Scotland Substation - Install	$ 3,614,529
Direct Labor, Material & Equipment Costs	I. New Scotland Substation - Removal	$ -
Direct Labor, Material & Equipment Costs	J. Porter Substation - Install	$ 71,912
Direct Labor, Material & Equipment Costs	K. Porter Substation - Removal	$ 474,313
Direct Labor, Material & Equipment Costs	L. Interconnection Edic Station	$ 1,784,075
Direct Labor, Material & Equipment Costs	M. Interconnection New Scotland Station	$ 2,676,471
Direct Labor, Material & Equipment Costs	N. Interconnection Rotterdam Station	$ 3,922,412
Direct Labor, Material & Equipment Costs	O. System Upgrade Facilities (Various Lines for Edic to New Scotland)	$ -
Direct Labor, Material & Equipment Costs	P. System Upgrade Facilities (Various Stations for Edic to New Scotland)	$ -
Direct Labor, Material & Equipment Costs	Q. Princetown Switchyard - Install	$ 27,974,019
	SUBTOTAL:	$ 299,854,787
	CONTRACTOR MARK-UP (OH&P)	$ 44,978,218
	CONTINGENCY ON ENTIRE PROJECT	$ -
	TOTAL DIRECT:	$ 344,833,005

ITC - T031 - (Segment A) - Indirect Costs		*Total Each Segment*
Indirect Costs	A. Transmission Line Edic to Princetown	$ 39,405,617
Indirect Costs	B. Transmission Line Princetown to Rotterdam	$ 5,266,851
Indirect Costs	C. Transmission Line Princetown to New Scotland	$ 13,535,116
Indirect Costs	D. Rotterdam Substation - Install	$ 4,760,643
Indirect Costs	E. Rotterdam Substation - Removal	$ -
Indirect Costs	F. Edic Substation - Install	$ 511,515
Indirect Costs	G. Edic Substation - Removal	$ 5,612
Indirect Costs	H. New Scotland Substation - Install	$ 852,011
Indirect Costs	I. New Scotland Substation - Removal	$ -
Indirect Costs	J. Porter Substation - Install	$ 14,225
Indirect Costs	K. Porter Substation - Removal	$ 74,047
Indirect Costs	L. Interconnection Edic Station	$ 329,155
Indirect Costs	M. Interconnection New Scotland Station	$ 508,897
Indirect Costs	N. Interconnection Rotterdam Station	$ 658,957
Indirect Costs	O. System Upgrade Facilities (Various Lines for Edic to New Scotland)	$ -
Indirect Costs	P. System Upgrade Facilities (Various Stations for Edic to New Scotland)	$ -
Indirect Costs	Q. Princetown Switchyard - Install	$ 7,000,251
Indirect Costs	Legal and Permitting (Includes Legal, Envir. Lisc. & Permit., and Envir. Mitagation)	$ 7,940,904
	TOTAL INDIRECT:	$ 80,863,802

TOTAL ESTIMATED COST	$ 425,696,808

ITC - T031 - (Segment A)

A. Transmission Line Edic to Princetown

Estimate Revision: 5

Total: $ 187,360,994

ITC - T031 - (Segment A)	*Supply*	*Installation*	*Total*
A. Transmission Line Edic to Princetown			
1. CLEARING & ACCESS	$ 75,250	$ 37,260,504	$ 37,335,754
2. FOUNDATIONS	$ 6,908,556	$ 17,295,145	$ 24,203,701
3. STRUCTURES	$ 19,810,382	$ 29,562,906	$ 49,373,288
4. CONDUCTOR, SHIELDWIRE, OPGW	$ 4,975,475	$ 21,134,180	$ 26,109,655
5. INSULATORS, FITTINGS, HARDWARE	$ 7,521,769	$ 3,411,210	$ 10,932,979
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 3,143,315	$ 36,262,303	$ 39,405,617
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 42,434,746	$ 144,926,248	$ 187,360,994
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 42,434,746	$ 144,926,248	$ 187,360,994

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Sum	Labor & Equipment Supply Rate	Labor & Equipment Sum	Total Unit Rate	TOTAL
A. Transmission Line Edic to Princetown									
1. CLEARING & ACCESS									
1.1	Clearing the ROW - Heavy (mowing & clearing)	-	Acre	$ -	$ -	$ 15,000	$ -	$ 15,000	**$ -**
1.2	Clearing the ROW - Light (mowing)	154.0	Acre		$ -	$ 5,000	$ 770,000	$ 5,000	**$ 770,000**
1.3	Access Road	70,963.2	LF	$ -	$ -	$ 45	$ 3,193,344	$ 45	**$ 3,193,344**
1.4	Silt Fence	354,816.0	LF	$ -	$ -	$ 4	$ 1,419,264	$ 4	**$ 1,419,264**
1.5	Matting - Access and ROW	283,852.8	LF	$ -	$ -	$ 70	$ 19,869,696	$ 70	**$ 19,869,696**
1.6	Matting - To Work Area	25,200.0	LF	$ -	$ -	$ 70	$ 1,764,000	$ 70	**$ 1,764,000**
1.7	Snow Removal	67.2	Mile	$ -	$ -	$ 16,000	$ 1,075,200	$ 16,000	**$ 1,075,200**
1.8	ROW Restoration	67.2	Mile	$ -	$ -	$ 10,000	$ 672,000	$ 10,000	**$ 672,000**
1.9	Work Pads	2,225,000.0	SF	$ -	$ -	$ 4	$ 7,832,000	$ 4	**$ 7,832,000**
1.10	Restoration for Work Pad areas	445,000.0	SF	$ -	$ -	$ 0.15	$ 66,750	$ 0	**$ 66,750**
1.11	Temporary Access Bridge	-	EA	$ -	$ -	$ 20,035	$ -	$ 20,035	**$ -**
1.12	Air Bridge	-	EA	$ -	$ -	$ 14,445	$ -	$ 14,445	**$ -**
1.13	Stabilized Construction Entrance	-	EA	$ -	$ -	$ 4,580	$ -	$ 4,580	**$ -**
1.14	Maintenance and Protection of Traffic on Public Roads	100	EA	$ -	$ -	$ 4,130	$ 413,000	$ 4,130	**$ 413,000**
1.15	Culverts / Misc. Access	55	EA	$ 750	$ 41,250	$ 1,250	$ 68,750	$ 2,000	**$ 110,000**
1.16	Gates	17	EA	$ 2,000	$ 34,000	$ 2,500	$ 42,500	$ 4,500	**$ 76,500**
1.17	Concrete Washout Station	40	EA	$ -	$ -	$ 1,850	$ 74,000	$ 1,850	**$ 74,000**
TOTAL - CLEARING & ACCESS:					$ 75,250		$ 37,260,504		**$ 37,335,754**
2. FOUNDATIONS									
2.1	***Direct Embed*** **-** 345kV SC 2-Pole Steel H-Frame - V-String - Tangent	806	EA	$ 1,635	$ 1,317,709	$ 11,117	$ 8,960,423	$ 12,752	**$ 10,278,132**
2.2	***Drilled Pier*** **-** 345KV SC Steel 3-Pole Deadend	90	EA	$ 44,372	$ 3,993,462	$ 44,847	$ 4,036,230	$ 89,219	**$ 8,029,692**
2.3	***Drilled Pier*** **-** 345KV SC Steel 3-Pole Storm Deadend	36	EA	$ 44,372	$ 1,597,385	$ 44,847	$ 1,614,492	$ 89,219	**$ 3,211,877**
2.4									
2.5									
2.6									
2.7									
2.8	Rock Excavation Adder	1,342	CY	$ -	$ -	$ 2,000	$ 2,684,000	$ 2,000	**$ 2,684,000**
2.9									
2.10									
TOTAL - FOUNDATIONS:					$ 6,908,556		$ 17,295,145		**$ 24,203,701**
3. STRUCTURES									
3.1	***Direct Embed*** **-** 345kV SC 2-Pole Steel H-Frame - V-String - Tangent	403	Structure	$ 42,550	$ 17,147,650	$ 25,530	$ 10,288,590	$ 68,080	**$ 27,436,240**
3.2	***Drilled Pier*** **-** 345KV SC Steel 3-Pole Deadend	30	Structure	$ 52,170	$ 1,565,100	$ 31,302	$ 939,060	$ 83,472	**$ 2,504,160**
3.3	***Drilled Pier*** **-** 345KV SC Steel 3-Pole Storm Deadend	12	Structure	$ 52,170	$ 626,040	$ 31,302	$ 375,624	$ 83,472	**$ 1,001,664**
3.4									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Sum	Labor & Equipment Supply Rate	Labor & Equipment Sum	Total Unit Rate	TOTAL
3.5									
3.6									
3.7									
3.8	Remove Existing Foundation	50	EA	$ -	$ -	$ 7,500	$ 372,750	$ 7,500	**$ 372,750**
3.9	Remove Existing Structure and Accessories	994	EA	$ -	$ -	$ 12,500	$ 12,425,000	$ 12,500	**$ 12,425,000**
3.10	Install Grounding and Grounding Accessories	932	Pole	$ 506	$ 471,592	$ 5,539	$ 5,161,882	$ 6,045	**$ 5,633,474**
TOTAL - STRUCTURES:					$ 19,810,382		$ 29,562,906		**$ 49,373,288**
4. CONDUCTOR, SHIELDWIRE, OPGW									
4.1	345kV - (1) 954kcmil 54/7 ACSR "Cardinal" (Existing Structures 12.5 Miles)	2,241,994	LF	$ 1.90	$ 4,259,789	$ 5.00	$ 11,209,970	$ 6.90	**$ 15,469,759**
4.2	(1) OPGW 36 Fiber AC-33/38/571 (Existing Structures 12.5 Miles)	303,811	LF	$ 1.35	$ 410,145	$ 5.00	$ 1,519,055	$ 6.35	**$ 1,929,200**
4.3	(1) 3/8" EHS7 Steel (Existing Structures 12.5 Miles)	303,811	LF	$ 0.47	$ 142,791	$ 5.00	$ 1,519,055	$ 5.47	**$ 1,661,846**
4.4									
4.5									
4.6									
4.7	Remove Existing Conductor and Accessories	121.0	Mile	$ -	$ -	$ 30,000	$ 3,630,000	$ 30,000.00	**$ 3,630,000**
4.8	Remove Existing OPGW and Accessories	108.4	Mile	$ -	$ -	$ 12,000	$ 1,300,800	$ 12,000.00	**$ 1,300,800**
4.9	Remove Existing OHSW and Accessories	108.4	Mile	$ -	$ -	$ 12,000	$ 1,300,800	$ 12,000.00	**$ 1,300,800**
4.10									
4.11									
4.12									
4.13									
4.14									
4.15									
4.16	Rider Poles (187 Locations)	93	Set	$ 1,750	$ 162,750	$ 3,500	$ 325,500	$ 5,250.00	**$ 488,250**
4.17	Rider Poles - Relocated	94	Set	$ -	$ -	$ 3,500	$ 329,000	$ 3,500.00	**$ 329,000**
4.18									
4.19									
4.20									
TOTAL: CONDUCTOR, SHIELDWIRE, OPGW:					$ 4,975,475		$ 21,134,180		**$ 26,109,655**
5. INSULATOR, FITTINGS, HARDWARE									
5.1	345kV Tangent (1-Group of 18-Bells Each Assembly)	2,418	Assembly	$ 1,800	$ 4,352,400	$ 720	$ 1,740,960	$ 2,520	**$ 6,093,360**
5.2	115kV Tangent (1-Group of 9-Bells Each Assembly)	-	Assembly	$ 900	$ -	$ 560	$ -	$ 1,460	**$ -**
5.3	345kV Dead-end & Angle Insulators (1-Group of 18-Bells Each Assembly)	504	Assembly	$ 1,800	$ 907,200	$ 720	$ 362,880	$ 2,520	**$ 1,270,080**
5.4	115kV Dead-end & Angle Insulators (1-Group of 9-Bells Each Assembly)	-	Assembly	$ 900	$ -	$ 560	$ -	$ 1,460	**$ -**
5.5	OPGW Assembly - Tangent	403	Assembly	$ 200	$ 80,600	$ 150	$ 60,450	$ 350	**$ 141,050**
5.6	OPGW Assembly - Angle / DE	84	Assembly	$ 250	$ 21,000	$ 150	$ 12,600	$ 400	**$ 33,600**
5.7	OHSW Assembly - Tangent	403	Assembly	$ 200	$ 80,600	$ 150	$ 60,450	$ 350	**$ 141,050**
5.8	OHSW Assembly - Angle / DE	84	Assembly	$ 250	$ 21,000	$ 150	$ 12,600	$ 400	**$ 33,600**
5.9	OPGW Splice Boxes	27	Set	$ 1,746	$ 47,146	$ 2,145	$ 57,915	$ 3,891	**$ 105,061**
5.10	OPGW Splice & Test	27	EA	$ 2,520	$ 68,040	$ 989	$ 26,712	$ 3,509	**$ 94,752**
5.11	Spacer - Conductor	10,977	EA	$ 50	$ 548,850	$ 35	$ 384,195	$ 85	**$ 933,045**
5.12	Vibration Dampers - Conductor	2,635	EA	$ 35	$ 92,225	$ 35	$ 92,225	$ 70	**$ 184,450**
5.13	Shield wire / OPGW Dampers, Misc. Fittings	1,332	EA	$ 27	$ 35,964	$ 35	$ 46,620	$ 62	**$ 82,584**
5.14	Jumpers at Existing Structures (New Cable to Existing)	-	EA	$ 25,000	$ -	$ 25,000	$ -	$ 50,000	**$ -**
5.15	*Replace - Mono Pole Vertical Tangent (1-Group of 18-Bells Each Assembly)*	480	Assembly	$ 1,800	$ 864,000	$ 720	$ 345,600	$ 2,520	**$ 1,209,600**
5.16	*Replace - Dead-end & Angle Insulators (1, Group of 18-Bells Each Assembly)*	195	Assembly	$ 1,800	$ 351,000	$ 720	$ 140,400	$ 2,520	**$ 491,400**
5.17	Guys, Anchors, and Accessories	-	EA	$ 719	$ -	$ 883	$ -	$ 1,602	**$ -**
5.18	Misc. materials (Signs and Markers)	67.2	Mile	$ 770	$ 51,744	$ 1,006	$ 67,603	$ 1,776	**$ 119,347**
5.19		-		$ -	$ -	$ -	$ -	$ -	**$ -**
TOTAL - INSULATORS, FITTINGS, HARDWARE:					$ 7,521,769		$ 3,411,210		**$ 10,932,979**
A. Transmission Line Edic to Princetown					$ 39,291,432		$ 108,663,945		**$ 147,955,377**
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
6.1	Mob / Demob	1	LS	$ -	$ -	$ 1,479,554	$ 1,479,554	$ 1,479,554	**$ 1,479,554**
	Project Management, Material Handling & Amenities								

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Sum	Labor & Equipment Supply Rate	Labor & Equipment Sum	Total Unit Rate	TOTAL
6.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 6,378,874	$ 6,378,874	$ 6,378,874	**$ 6,378,874**
6.3	Utility PM and Project Oversite	1	LS		$ -	$ 1,479,554	$ 1,479,554	$ 1,479,554	**$ 1,479,554**
6.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 1,479,554	$ 1,479,554	$ 1,479,554	**$ 1,479,554**
	Engineering								
6.5	Design Engineering	1	LS	$ -	$ -	$ 7,397,769	$ 7,397,769	$ 7,397,769	**$ 7,397,769**
6.6	LiDAR	1	LS	$ -	$ -	$ 443,866	$ 443,866	$ 443,866	**$ 443,866**
6.7	Geotech	67	Location	$ -	$ -	$ 3,500	$ 234,500	$ 3,500	**$ 234,500**
6.8	Surveying/Staking	1	LS	$ -	$ -	$ 1,035,688	$ 1,035,688	$ 1,035,688	**$ 1,035,688**
	Testing & Commissioning								
6.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 40,000	$ 40,000	$ 40,000	**$ 40,000**
	Permitting and Additional Costs								
6.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.12	Warranties / LOC's	1	LS	$ -	$ -	$ 443,866	$ 443,866	$ 443,866	**$ 443,866**
6.13	Real Estate Costs (New ROW)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.14	Real Estate Costs (Incumbent Utility ROW)	1	LS	$ -	$ -	$ 6,782,000	$ 6,782,000	$ 6,782,000	**$ 6,782,000**
6.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.17	Compensation for use of 1 Ckt - NYPA Structures (92 Structures)	1	LS	$ -	$ -	$ 8,919,123	$ 8,919,123	$ 8,919,123	**$ 8,919,123**
6.18	Sales Tax on Materials	1	LS	$ 3,143,315	$ 3,143,315	$ -	$ -	$ 3,143,315	**$ 3,143,315**
6.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 147,955	$ 147,955	$ 147,955	**$ 147,955**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 3,143,315		$ 36,262,303		**$ 39,405,617**

ITC - T031 - (Segment A)

B. Transmission Line Princetown to Rotterdam

Estimate Revision: 5

Total: $ 31,435,177

ITC - T031 - (Segment A)	*Supply*	*Installation*	*Total*
B. Transmission Line Princetown to Rotterdam			
1. CLEARING & ACCESS	$ 2,250	$ 4,182,670	$ 4,184,920
2. FOUNDATIONS	$ 1,369,010	$ 5,146,318	$ 6,515,328
3. STRUCTURES	$ 4,480,770	$ 5,315,291	$ 9,796,061
4. CONDUCTOR, SHIELDWIRE, OPGW	$ 773,826	$ 2,903,455	$ 3,677,281
5. INSULATORS, FITTINGS, HARDWARE	$ 1,365,652	$ 629,084	$ 1,994,736
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 639,321	$ 4,627,531	$ 5,266,851
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 8,630,828	$ 22,804,349	$ 31,435,177
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 8,630,828	$ 22,804,349	$ 31,435,177

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
B. Transmission Line Princetown to Rotterdam									
1. CLEARING & ACCESS									
1.1	Clearing the ROW - Heavy (mowing & clearing)	-	Acre	$ -	$ -	$ 15,000	$ -	$ 15,000	**$ -**
1.2	Clearing the ROW - Light (mowing)	23.0	Acre	$ -	$ -	$ 5,000	$ 115,000	$ 5,000	**$ 115,000**
1.3	Access Road	5,280.0	LF	$ -	$ -	$ 45	$ 237,600	$ 45	**$ 237,600**
1.4	Silt Fence	26,400.0	LF	$ -	$ -	$ 4	$ 105,600	$ 4	**$ 105,600**
1.5	Matting - Access and ROW	21,120.0	LF	$ -	$ -	$ 70	$ 1,478,400	$ 70	**$ 1,478,400**
1.6	Matting - To Work Area	2,775.0	LF	$ -	$ -	$ 70	$ 194,250	$ 70	**$ 194,250**
1.7	Snow Removal	5.0	Mile	$ -	$ -	$ 16,000	$ 80,000	$ 16,000	**$ 80,000**
1.8	ROW Restoration	5.0	Mile	$ -	$ -	$ 10,000	$ 50,000	$ 10,000	**$ 50,000**
1.9	Work Pads	505,000.0	SF	$ -	$ -	$ 4	$ 1,777,600	$ 4	**$ 1,777,600**
1.10	Restoration for Work Pad areas	101,000.0	SF	$ -	$ -	$ 0.2	$ 15,150	$ 0	**$ 15,150**
1.11	Temporary Access Bridge	-	EA	$ -	$ -	$ 20,035	$ -	$ 20,035	**$ -**
1.12	Air Bridge	-	EA	$ -	$ -	$ 14,445	$ -	$ 14,445	**$ -**
1.13	Stabilized Construction Entrance	-	EA	$ -	$ -	$ 4,580	$ -	$ 4,580	**$ -**
1.14	Maintenance and Protection of Traffic on Public Roads	29.0	EA	$ -	$ -	$ 4,130	$ 119,770	$ 4,130	**$ 119,770**
1.15	Gates	-	EA	$ 2,000	$ -	$ 2,500	$ -	$ 4,500	**$ -**
1.16	Culverts / Misc. Access	3.0	EA	$ 750	$ 2,250	$ 1,250	$ 3,750	$ 2,000	**$ 6,000**
1.17	Concrete Washout Station	3.0	EA	$ -	$ -	$ 1,850	$ 5,550	$ 1,850	**$ 5,550**
TOTAL - CLEARING & ACCESS:					$ 2,250		$ 4,182,670		**$ 4,184,920**
2. FOUNDATIONS									
2.1	Direct Embed - 345kV SC 2-Pole Steel H-Frame - V-String - Tangent	186	EA	$ 1,635	$ 304,087	$ 11,117	$ 2,067,790	$ 12,752	**$ 2,371,877**
2.2	Drilled Pier - 345KV SC Steel 3-Pole Deadend	18	EA	$ 44,372	$ 798,692	$ 44,847	$ 807,246	$ 89,219	**$ 1,605,938**
2.3	Drilled Pier - 345KV SC Steel 3-Pole Storm Deadend	6	EA	$ 44,372	$ 266,231	$ 44,847	$ 269,082	$ 89,219	**$ 535,313**
2.4									
2.5	Rock Excavation Adder	1,001.1	CY	$ -	$ -	$ 2,000	$ 2,002,200	$ 2,000	**$ 2,002,200**
2.6									
2.7									
2.8									
TOTAL - FOUNDATIONS:					$ 1,369,010		$ 5,146,318		**$ 6,515,328**
3. STRUCTURES									
3.1	Direct Embed - 345kV SC 2-Pole Steel H-Frame - V-String - Tangent	93	Structure	$ 42,550	$ 3,957,150	$ 25,530	$ 2,374,290	$ 68,080	**$ 6,331,440**
3.2	Drilled Pier - 345KV SC Steel 3-Pole Deadend	6	Structure	$ 52,170	$ 313,020	$ 31,302	$ 187,812	$ 83,472	**$ 500,832**
3.3	Drilled Pier - 345KV SC Steel 3-Pole Storm Deadend	2	Structure	$ 52,170	$ 104,340	$ 31,302	$ 62,604	$ 83,472	**$ 166,944**
3.4									
3.5									
3.6									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.7	Remove Existing Foundation	22	EA	$ -	$ -	$ 7,500	$ 165,000	$ 7,500	**$ 165,000**
3.8	Remove Existing Structure and Accessories	109	EA	$ -	$ -	$ 12,500	$ 1,362,500	$ 12,500	**$ 1,362,500**
3.9									
3.10	Install Grounding and Grounding Accessories	210	Pole	$ 506	$ 106,260	$ 5,539	$ 1,163,085	$ 6,045	**$ 1,269,345**
TOTAL - STRUCTURES PRINCTOWN TO NEW SCOTLAND:					$ 4,480,770		$ 5,315,291		**$ 9,796,061**
4. CONDUCTOR, SHIELDWIRE, OPGW									
4.1	345kV - (1) 954kcmil 54/7 ACSR "Cardinal"	339,293	LF	$ 1.90	$ 644,657	$ 5.00	$ 1,696,465	$ 6.90	**$ 2,341,122**
4.2	(1) OPGW 36 Fiber AC-33/38/571	56,549	LF	$ 1.35	$ 76,341	$ 5.00	$ 282,745	$ 6.35	**$ 359,086**
4.3	(1) 3/8" EHS7 Steel	56,549	LF	$ 0.47	$ 26,578	$ 5.00	$ 282,745	$ 5.47	**$ 309,323**
4.5	Remove Existing Conductor and Accessories	10.0	Mile	$ -	$ -	$ 30,000	$ 300,000	$ 30,000.00	**$ 300,000**
4.6	Remove Existing OPGW and Accessories	10.0	Mile	$ -	$ -	$ 12,000	$ 120,000	$ 12,000.00	**$ 120,000**
4.7	Remove Existing OHSW and Accessories	10.0	Mile	$ -	$ -	$ 12,000	$ 120,000	$ 12,000.00	**$ 120,000**
4.8	Rider Poles	15	Set	$ 1,750	$ 26,250	$ 3,500	$ 52,500	$ 5,250.00	**$ 78,750**
4.9	Rider Poles - Relocated	14	Set	$ -	$ -	$ 3,500	$ 49,000	$ 3,500.00	**$ 49,000**
TOTAL: CONDUCTOR, SHIELDWIRE, OPGW:					$ 773,826		$ 2,903,455		**$ 3,677,281**
5. INSULATOR, FITTINGS, HARDWARE									
5.1	345kV Tangent (1-Group of 18-Bells Each Assembly)	558	Assembly	$ 1,800	$ 1,004,400	$ 720	$ 401,760	$ 2,520	**$ 1,406,160**
5.2	115kV Tangent (1-Group of 9-Bells Each Assembly)	-	Assembly	$ 900	$ -	$ 560	$ -	$ 1,460	**$ -**
5.3	345kV Dead-end & Angle Insulators (1-Group of 18-Bells Each Assembly)	96	Assembly	$ 1,800	$ 172,800	$ 720	$ 69,120	$ 2,520	**$ 241,920**
5.4	115kV Dead-end & Angle Insulators (1-Group of 9-Bells Each Assembly)	-	Assembly	$ 900	$ -	$ 560	$ -	$ 1,460	**$ -**
5.5	OPGW Assembly - Tangent	93	Assembly	$ 200	$ 18,600	$ 150	$ 13,950	$ 350	**$ 32,550**
5.6	OPGW Assembly - Angle / DE	16	Assembly	$ 250	$ 4,000	$ 150	$ 2,400	$ 400	**$ 6,400**
5.7	OHSW Assembly - Tangent	93	Assembly	$ 200	$ 18,600	$ 150	$ 13,950	$ 350	**$ 32,550**
5.8	OHSW Assembly - Angle / DE	16	Assembly	$ 250	$ 4,000	$ 150	$ 2,400	$ 400	**$ 6,400**
5.9	OPGW Splice Boxes	8	Set	$ 1,750	$ 14,000	$ 1,746	$ 13,969	$ 3,496	**$ 27,969**
5.10	OPGW Splice & Test	8	EA	$ 1,400	$ 11,200	$ 2,520	$ 20,160	$ 3,920	**$ 31,360**
5.11	Spacer - Conductor	1,919	EA	$ 50	$ 95,950	$ 35	$ 67,165	$ 85	**$ 163,115**
5.12	Vibration Dampers - Conductor	432	EA	$ 35	$ 15,120	$ 35	$ 15,120	$ 70	**$ 30,240**
5.13	Shieldwire / OPGW Dampers, Misc. Fittings	116	EA	$ 27	$ 3,132	$ 35	$ 4,060	$ 62	**$ 7,192**
5.14	Jumpers at Existing Structures (New Cable to Existing)	-	EA	$ 25,000	$ -	$ 25,000	$ -	$ 50,000	**$ -**
5.15	Guys, Anchors, and Accessories	-	EA	$ 719	$ -	$ 883	$ -	$ 1,602	**$ -**
5.16	Misc. materials (Signs and Markers)	5.0	Mile	$ 770	$ 3,850	$ 1,006	$ 5,030	$ 1,776	**$ 8,880**
TOTAL - INSULATORS, FITTINGS, HARDWARE:					$ 1,365,652		$ 629,084		**$ 1,994,736**
B. Transmission Line Princetown to Rotterdam					$ 7,991,508		$ 18,176,818		**$ 26,168,326**
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS									
	Contractor Mobilization / Demobilization								
6.1	Mob / Demob	1	LS	$ -	$ -	$ 261,683	$ 261,683	$ 261,683	**$ 261,683**
	Project Management, Material Handling & Amenities								
6.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 1,128,208	$ 1,128,208	$ 1,128,208	**$ 1,128,208**
6.3	Utility PM and Project Oversite	1	LS		$ -	$ 261,683	$ 261,683	$ 261,683	**$ 261,683**
6.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 261,683	$ 261,683	$ 261,683	**$ 261,683**
	Engineering								
6.5	Design Engineering	1	LS	$ -	$ -	$ 1,308,416	$ 1,308,416	$ 1,308,416	**$ 1,308,416**
6.6	LiDAR	1	LS	$ -	$ -	$ 78,505	$ 78,505	$ 78,505	**$ 78,505**
6.7	Geotech	5	Location	$ -	$ -	$ 3,500	$ 17,500	$ 3,500	**$ 17,500**
6.8	Surveying/Staking	1	LS	$ -	$ -	$ 183,178	$ 183,178	$ 183,178	**$ 183,178**
	Testing & Commissioning								
6.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 40,000	$ 40,000	$ 40,000	**$ 40,000**
	Permitting and Additional Costs								
6.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.12	Warranties / LOC's	1	LS	$ -	$ -	$ 78,505	$ 78,505	$ 78,505	**$ 78,505**
6.13	Real Estate Costs (New ROW)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.14	Real Estate Costs (Incumbent Utility ROW)	1	LS	$ -	$ -	$ 982,000	$ 982,000	$ 982,000	**$ 982,000**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.18	Sales Tax on Materials	1	LS	$ 639,321	$ 639,321	$ -	$ -	$ 639,321	**$ 639,321**
6.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 26,168	$ 26,168	$ 26,168	**$ 26,168**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 639,321		$ 4,627,531		**$ 5,266,851**

ITC - T031 - (Segment A)

C. Transmission Line Princetown to New Scotland

Estimate Revision: 5

Total: $ 76,758,803

ITC - T031 - (Segment A)	Supply	Installation	Total
C. Transmission Line Princetown to New Scotland			
1. CLEARING & ACCESS	$ 31,000	$ 11,532,694	$ 11,563,694
2. FOUNDATIONS	$ 5,878,220	$ 6,905,973	$ 12,784,193
3. STRUCTURES	$ 10,575,689	$ 10,875,263	$ 21,450,952
4. CONDUCTOR, SHIELDWIRE, OPGW	$ 2,759,967	$ 8,977,795	$ 11,737,762
5. INSULATORS, FITTINGS, HARDWARE	$ 3,933,818	$ 1,753,268	$ 5,687,086
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 1,854,296	$ 11,680,821	$ 13,535,116
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 25,032,990	$ 51,725,813	$ 76,758,803
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 25,032,990	$ 51,725,813	$ 76,758,803

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
C. Transmission Line Princetown to New Scotland									
1. CLEARING & ACCESS									
1.1	Clearing the ROW - Heavy (mowing & clearing)	26.0	Acre	$ -	$ -	$ 15,000	$ 390,000	$ 15,000	**$ 390,000**
1.2	Clearing the ROW - Light (mowing)	62.0	Acre	$ -	$ -	$ 5,000	$ 310,000	$ 5,000	**$ 310,000**
1.3	Access Road	20,803.2	LF	$ -	$ -	$ 45	$ 936,144	$ 45	**$ 936,144**
1.4	Silt Fence	104,016.0	LF	$ -	$ -	$ 4	$ 416,064	$ 4	**$ 416,064**
1.5	Matting - Access and ROW	83,212.8	LF	$ -	$ -	$ 70	$ 5,824,896	$ 70	**$ 5,824,896**
1.6	Matting - To Work Area	3,375.0	LF	$ -	$ -	$ 70	$ 236,250	$ 70	**$ 236,250**
1.7	Snow Removal	19.7	Mile	$ -	$ -	$ 16,000	$ 315,200	$ 16,000	**$ 315,200**
1.8	ROW Restoration	19.7	Mile	$ -	$ -	$ 10,000	$ 197,000	$ 10,000	**$ 197,000**
1.9	Work Pads	725,000	SF	$ -	$ -	$ 4	$ 2,552,000	$ 4	**$ 2,552,000**
1.10	Restoration for Work Pad areas	145,000	SF	$ -	$ -	$ 0.2	$ 21,750	$ 0	**$ 21,750**
1.11	Temporary Access Bridge	-	EA	$ -	$ -	$ 20,035	$ -	$ 20,035	**$ -**
1.12	Air Bridge	2	EA	$ -	$ -	$ 14,445	$ 28,890	$ 14,445	**$ 28,890**
1.13	Stabilized Construction Entrance	-	EA	$ -	$ -	$ 4,580	$ -	$ 4,580	**$ -**
1.14	Maintenance and Protection of Traffic on Public Roads	50	EA	$ -	$ -	$ 4,130	$ 206,500	$ 4,130	**$ 206,500**
1.15	Gates	11	EA	$ 2,000	$ 22,000	$ 2,500	$ 27,500	$ 4,500	**$ 49,500**
1.16	Culverts / Misc. Access	12	EA	$ 750	$ 9,000	$ 1,250	$ 15,000	$ 2,000	**$ 24,000**
1.17	Concrete Washout Station	30	EA	$ -	$ -	$ 1,850	$ 55,500	$ 1,850	**$ 55,500**
TOTAL - CLEARING & ACCESS:					$ 31,000		$ 11,532,694		**$ 11,563,694**
2. FOUNDATIONS									
2.1	Drilled Pier - 345KV DC Steel Mono-Pole Delta - V-String - Tangent	131	EA	$ 26,483	$ 3,469,324	$ 26,767	$ 3,506,479	$ 53,250	**$ 6,975,803**
2.2	Drilled Pier - 345KV DC Steel 2-Pole Delta - Deadend	20	EA	$ 86,032	$ 1,720,640	$ 86,953	$ 1,739,067	$ 172,985	**$ 3,459,707**
2.3	Drilled Pier - 345KV DC Steel 2-Pole Delta Storm - Deadend	8	EA	$ 86,032	$ 688,256	$ 86,953	$ 695,627	$ 172,985	**$ 1,383,883**
2.4									
2.5	Rock Excavation Adder	482.4	CY	$ -	$ -	$ 2,000	$ 964,800	$ 2,000	**$ 964,800**
2.6									
2.7									
2.8									
2.9									
2.10									
TOTAL - FOUNDATIONS:					$ 5,878,220		$ 6,905,973		**$ 12,784,193**
3. STRUCTURES									
3.1	Drilled Pier - 345KV DC Steel Mono-Pole Delta - V-String - Tangent	131	Structure	$ 69,005	$ 9,039,655	$ 41,403	$ 5,423,793	$ 110,408	**$ 14,463,448**
3.2	Drilled Pier - 345KV DC Steel 2-Pole Delta - Deadend	10	Structure	$ 103,970	$ 1,039,700	$ 62,382	$ 623,820	$ 166,352	**$ 1,663,520**
3.3	Drilled Pier - 345KV DC Steel 2-Pole Delta Storm - Deadend	4	Structure	$ 103,970	$ 415,880	$ 62,382	$ 249,528	$ 166,352	**$ 665,408**
3.4									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.5	Remove Existing Foundation	348	EA	$ -	$ -	$ 7,500	$ 2,610,000	$ 7,500	**$ 2,610,000**
3.6	Remove Existing Structure and Accessories	87	EA	$ -	$ -	$ 12,500	$ 1,087,500	$ 12,500	**$ 1,087,500**
3.7									
3.8	Install Grounding and Grounding Accessories	159	Pole	$ 506	$ 80,454	$ 5,539	$ 880,622	$ 6,045	**$ 961,076**
3.9									
3.10									
3.11									
3.12									
3.13									
3.14									
3.15									
3.16									
3.17									
3.18									
3.19									
3.20									
TOTAL - STRUCTURES:					$ 10,575,689		$ 10,875,263		**$ 21,450,952**
4. CONDUCTOR, SHIELDWIRE, OPGW									
4.1	345kV - (1) 954kcmil 54/7 ACSR "Cardinal"	1,323,907	LF	$ 1.90	$ 2,515,423	$ 5.00	$ 6,619,535	$ 6.90	**$ 9,134,958**
4.2	(1) OPGW 36 Fiber AC-33/38/571	110,326	LF	$ 1.35	$ 148,940	$ 5.00	$ 551,630	$ 6.35	**$ 700,570**
4.3	(1) 3/8" EHS7 Steel	110,326	LF	$ 0.47	$ 51,853	$ 5.00	$ 551,630	$ 5.47	**$ 603,483**
4.4	Remove Existing Conductor and Accessories	20.0	Mile	$ -	$ -	$ 30,000	$ 600,000	$ 30,000.00	**$ 600,000**
4.5	Remove Existing OPGW and Accessories	20.0	Mile	$ -	$ -	$ 12,000	$ 240,000	$ 12,000.00	**$ 240,000**
4.6	Remove Existing OHSW and Accessories	20.0	Mile	$ -	$ -	$ 12,000	$ 240,000	$ 12,000.00	**$ 240,000**
4.7	Rider Poles	25	EA	$ 1,750	$ 43,750	$ 3,500	$ 87,500	$ 5,250.00	**$ 131,250**
4.8	Rider Poles - Relocated	25	Set	$ -	$ -	$ 3,500	$ 87,500	$ 3,500.00	**$ 87,500**
4.9									
4.10									
TOTAL - CONDUCTOR, SHIELDWIRE, OPGW:					$ 2,759,967		$ 8,977,795		**$ 11,737,762**
5. INSULATOR, FITTINGS, HARDWARE									
5.1	345kV Tangent (1-Group of 18-Bells Each Assembly)	1,572	Assembly	$ 1,800	$ 2,829,600	$ 720	$ 1,131,840	$ 2,520	**$ 3,961,440**
5.2	115kV Tangent (1-Group of 9-Bells Each Assembly)	-	Assembly	$ 900	$ -	$ 560	$ -	$ 1,460	**$ -**
5.3	345kV Dead-end & Angle Insulators (1-Group of 18-Bells Each Assembly)	336	Assembly	$ 1,800	$ 604,800	$ 720	$ 241,920	$ 2,520	**$ 846,720**
5.4	115kV Dead-end & Angle Insulators (1-Group of 9-Bells Each Assembly)		Assembly	$ 900	$ -	$ 560	$ -	$ 1,460	**$ -**
5.5	OPGW Assembly - Tangent	131	Assembly	$ 200	$ 26,200	$ 150	$ 19,650	$ 350	**$ 45,850**
5.6	OPGW Assembly - Angle / DE	28	Assembly	$ 250	$ 7,000	$ 150	$ 4,200	$ 400	**$ 11,200**
5.7	OHSW Assembly - Tangent	131	Assembly	$ 200	$ 26,200	$ 150	$ 19,650	$ 350	**$ 45,850**
5.8	OHSW Assembly - Angle / DE	28	Assembly	$ 250	$ 7,000	$ 150	$ 4,200	$ 400	**$ 11,200**
5.9	OPGW Splice Boxes	3	Set	$ 1,746	$ 5,238	$ 2,145	$ 6,435	$ 3,891	**$ 11,673**
5.10	OPGW Splice & Test	8	EA	$ 2,520	$ 20,160	$ 989	$ 7,915	$ 3,509	**$ 28,075**
5.11	Spacer - Conductor	6,533	EA	$ 50	$ 326,650	$ 35	$ 228,655	$ 85	**$ 555,305**
5.12	Vibration Dampers - Conductor	1,573	EA	$ 35	$ 55,055	$ 35	$ 55,055	$ 70	**$ 110,110**
5.13	Shieldwire / OPGW Dampers, Misc. Fittings	398	EA	$ 27	$ 10,746	$ 35	$ 13,930	$ 62	**$ 24,676**
5.14	Guys, Anchors, and Accessories	-	EA	$ 719	$ -	$ 883	$ -	$ 1,602	**$ -**
5.15	Misc. materials (Signs and Markers)	19.7	Mile	$ 770	$ 15,169	$ 1,006	$ 19,818	$ 1,776	**$ 34,987**
5.16	Jumpers at Existing Structures (New Cable to Existing)	-	EA	$ 25,000	$ -	$ 25,000	$ -	$ 50,000	**$ -**
TOTAL - INSULATORS, FITTINGS, HARDWARE:					$ 3,933,818		$ 1,753,268		**$ 5,687,086**
C. Transmission Line Princetown to New Scotland					$ 23,178,694		$ 40,044,992		**$ 63,223,686**
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
6.1	Mob / Demob	1	LS	$ -	$ -	$ 632,237	$ 632,237	$ 632,237	**$ 632,237**
	Project Management, Material Handling & Amenities								
6.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 2,725,794	$ 2,725,794	$ 2,725,794	**$ 2,725,794**
6.3	Utility PM and Project Oversite	1	LS		$ -	$ 632,237	$ 632,237	$ 632,237	**$ 632,237**
6.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 632,237	$ 632,237	$ 632,237	**$ 632,237**
	Engineering								
6.5	Design Engineering	1	LS	$ -	$ -	$ 3,161,184	$ 3,161,184	$ 3,161,184	**$ 3,161,184**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6.6	LiDAR	1	LS	$ -	$ -	$ 189,671	$ 189,671	$ 189,671	**$ 189,671**
6.7	Geotech	20	Location	$ -	$ -	$ 3,500	$ 70,000	$ 3,500	**$ 70,000**
6.8	Surveying/Staking	1	LS	$ -	$ -	$ 442,566	$ 442,566	$ 442,566	**$ 442,566**
	Testing & Commissioning								
6.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 40,000	$ 40,000	$ 40,000	**$ 40,000**
	Permitting and Additional Costs								
6.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.12	Warranties / LOC's	1	LS	$ -	$ -	$ 189,671	$ 189,671	$ 189,671	**$ 189,671**
6.13	Real Estate Costs (New ROW)	1	LS	$ -	$ -	$ 215,000	$ 215,000	$ 215,000	**$ 215,000**
6.14	Real Estate Costs (Incumbent Utility ROW)	1	LS	$ -	$ -	$ 2,687,000	$ 2,687,000	$ 2,687,000	**$ 2,687,000**
6.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.18	Sales Tax on Materials	1	LS	$ 1,854,296	$ 1,854,296	$ -	$ -	$ 1,854,296	**$ 1,854,296**
6.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 63,224	$ 63,224	$ 63,224	**$ 63,224**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 1,854,296		$ 11,680,821		**$ 13,535,116**

ITC - T031 - (Segment A)

D. Rotterdam Substation - Install

Estimate Revision: 5

Total: $ 24,565,575

ITC - T031 - (Segment A)	Supply	Installation	Total
D. Rotterdam Substation - Install			
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ 189,890	$ 2,766,050	$ 2,955,940
2. SUBSTATION FOUNDATIONS	$ 1,035,342	$ 1,108,800	$ 2,144,142
3. SUBSTATION STRUCTURES	$ 432,900	$ 432,900	$ 865,800
4. MAJOR EQUIPTMENT	$ 7,515,000	$ 1,820,000	$ 9,335,000
5. SMALL EQUIPTMENT / MATERIALS	$ 673,000	$ 333,000	$ 1,006,000
6. CONTROL HOUSE / PANELS	$ 893,900	$ 818,900	$ 1,712,800
7. MISC ITEMS	$ 744,510	$ 1,040,740	$ 1,785,250
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 918,763	$ 3,841,880	$ 4,760,643
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 12,403,305	$ 12,162,270	$ 24,565,575
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 12,403,305	$ 12,162,270	$ 24,565,575

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
D. Rotterdam Substation - Install									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	1.3	ACRES	$ -	$ -	$ 1,300,000	$ 1,625,000	$ 1,300,000	**$ 1,625,000**
1.2	Station stone within substation fence.	1,170	CY	$ 27	$ 31,590	$ 75	$ 87,750	$ 102	**$ 119,340**
1.3	Substation Fence	1,100	LF	$ 100	$ 110,000	$ 100	$ 110,000	$ 200	**$ 220,000**
1.4	Permanent Access Road - 20'-Wide (From Gordon RD)	1,380	LF	$ 35	$ 48,300	$ 285	$ 393,300	$ 320	**$ 441,600**
1.5									
1.6									
1.7	Natural Gas Transmission Line Relocation	1	LS	$ -		$ 550,000	$ 550,000	$ 550,000	**$ 550,000**
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ 189,890		$ 2,766,050		$ 2,955,940
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	3	EA	$ 14,940	$ 44,820	$ 16,000	$ 48,000	$ 30,940	**$ 92,820**
2.1b	Capacitor Bank Foundations	0	EA	$ 56,025	$ -	$ 60,000	$ -	$ 116,025	**$ -**
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	8	EA	$ 26,145	$ 209,160	$ 28,000	$ 224,000	$ 54,145	**$ 433,160**
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 26,145	$ -	$ 28,000	$ -	$ 54,145	**$ -**
2.1e	Switch Stand Foundations	40	EA	$ 4,482	$ 179,280	$ 4,800	$ 192,000	$ 9,282	**$ 371,280**
2.1f	Station Service Transformer Stand Foundation	4	EA	$ 4,482	$ 17,928	$ 4,800	$ 19,200	$ 9,282	**$ 37,128**
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1h	Bus Support 1 Ph Foundations	14	EA	$ 4,482	$ 62,748	$ 4,800	$ 67,200	$ 9,282	**$ 129,948**
2.1j	Instrument Transformer Stand Foundations	18	EA	$ 4,482	$ 80,676	$ 4,800	$ 86,400	$ 9,282	**$ 167,076**
2.1k	Arrester Stand Foundations	6	EA	$ 4,482	$ 26,892	$ 4,800	$ 28,800	$ 9,282	**$ 55,692**
2.1m	Wave Trap Stand Foundations	2	EA	$ 4,482	$ 8,964	$ 4,800	$ 9,600	$ 9,282	**$ 18,564**
2.1n	Misc. Structure Foundations		EA.	$ -	$ -	$ -	$ -	$ -	**$ -**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.1p									
2.2	**230kV**								
2.2a	Circuit Breaker Foundations	1	EA	$ 11,952	$ 11,952	$ 12,800	$ 12,800	$ 24,752	**$ 24,752**
2.2b	Capacitor Bank Foundations	0	EA	$ 44,820	$ -	$ 48,000	$ -	$ 92,820	**$ -**
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	**$ -**
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	**$ -**
2.2e	Switch Stand Foundations	8	EA	$ 3,735	$ 29,880	$ 4,000	$ 32,000	$ 7,735	**$ 61,880**
2.2f	Station Service Transformer Stand Foundation	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	**$ -**
2.2g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.2h	Bus Support 1 Ph Foundations	9	EA	$ 3,735	$ 33,615	$ 4,000	$ 36,000	$ 7,735	**$ 69,615**
2.2j	Instrument Transformer Stand Foundations	3	EA	$ 3,735	$ 11,205	$ 4,000	$ 12,000	$ 7,735	**$ 23,205**
2.2k	Arrester Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	**$ -**
2.2m	Wave Trap Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	**$ -**
2.2n	Misc. Structure Foundations		EA.	$ -	$ -	$ -	$ -	$ -	**$ -**
2.2p									
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	0	EA	$ 5,229	$ -	$ 5,600	$ -	$ 10,829	**$ -**
2.3b	Capacitor Bank Foundations	0	EA	$ 33,615	$ -	$ 36,000	$ -	$ 69,615	**$ -**
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	4	EA	$ 16,434	$ 65,736	$ 17,600	$ 70,400	$ 34,034	**$ 136,136**
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	**$ -**
2.3e	Switch Stand Foundations	4	EA	$ 2,988	$ 11,952	$ 3,200	$ 12,800	$ 6,188	**$ 24,752**
2.3f	Fuse Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	**$ -**
2.3g	Bus Support 3ph Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	**$ -**
2.3h	Bus Support 1 Ph Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	**$ -**
2.3j	Instrument Transformer Stand Foundations	6	EA	$ 2,988	$ 17,928	$ 3,200	$ 19,200	$ 6,188	**$ 37,128**
2.3k	Arrester Stand Foundations	6	EA	$ 2,988	$ 17,928	$ 3,200	$ 19,200	$ 6,188	**$ 37,128**
2.3m	Wave Trap Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	**$ -**
2.3n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment	2	EA	$ 97,110	$ 194,220	$ 104,000	$ 208,000	$ 201,110	**$ 402,220**
2.4b	345-115kV Transformer Foundation w/ Oil Containment	0	EA	$ 74,700	$ -	$ 80,000	$ -	$ 154,700	**$ -**
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad	0	EA	$ 76,194	$ -	$ 81,600	$ -	$ 157,794	**$ -**
2.5b	Generator Foundation	0	EA	$ 16,000	$ -	$ 17,000	$ -	$ 33,000	**$ -**
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	2	EA	$ 5,229	$ 10,458	$ 5,600	$ 11,200	$ 10,829	**$ 21,658**
2.6b				$ -	$ -	$ -	$ -	$ -	**$ -**
2.6c				$ -	$ -	$ -	$ -	$ -	**$ -**
TOTAL - SUBSTATION FOUNDATIONS					$ 1,035,342		$ 1,108,800		$ 2,144,142
3. SUBSTATION STRUCTURES									
3.1	**345kV**								
3.1a	Substation A-Frame Structures - Stand alone	2	EA	$ 37,000	$ 74,000	$ 37,000	$ 74,000	$ 74,000	**$ 148,000**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.1b	Substation A-Frame Structures - Shared Column	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	**$ -**
3.1c	Switch Stands	8	EA	$ 14,800	$ 118,400	$ 14,800	$ 118,400	$ 29,600	**$ 236,800**
3.1d	Station Service Transformer Stand	1	EA	$ 14,800	$ 14,800	$ 14,800	$ 14,800	$ 29,600	**$ 29,600**
3.1e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.1f	Bus Support 1 Ph	14	EA	$ 3,700	$ 51,800	$ 3,700	$ 51,800	$ 7,400	**$ 103,600**
3.1g	Instrument Transformer Stand	18	EA	$ 1,850	$ 33,300	$ 1,850	$ 33,300	$ 3,700	**$ 66,600**
3.1h	Arrester Stand	6	EA	$ 1,850	$ 11,100	$ 1,850	$ 11,100	$ 3,700	**$ 22,200**
3.1j	Wave Trap Stand	2	EA	$ 7,400	$ 14,800	$ 7,400	$ 14,800	$ 14,800	**$ 29,600**
3.1k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	**$ -**
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	**$ -**
3.2b	Substation A-Frame Structures - Shared Column	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	**$ -**
3.2c	Switch Stands	2	EA	$ 12,025	$ 24,050	$ 12,025	$ 24,050	$ 24,050	**$ 48,100**
3.2d	Station Service Transformer Stand	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	**$ -**
3.2e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.2f	Bus Support 1 Ph	9	EA	$ 2,775	$ 24,975	$ 2,775	$ 24,975	$ 5,550	**$ 49,950**
3.2g	Instrument Transformer Stand	3	EA	$ 1,295	$ 3,885	$ 1,295	$ 3,885	$ 2,590	**$ 7,770**
3.2h	Arrester Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	**$ -**
3.2j	Wave Trap Stand	0	EA	$ 5,550	$ -	$ 5,550	$ -	$ 11,100	**$ -**
3.2k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	**$ -**
3.3	**115kV**								
3.3a	Substation A-Frame Structures - Stand alone	2	EA	$ 18,500	$ 37,000	$ 18,500	$ 37,000	$ 37,000	**$ 74,000**
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	**$ -**
3.3c	Switch Stands	2	EA	$ 7,955	$ 15,910	$ 7,955	$ 15,910	$ 15,910	**$ 31,820**
3.3d	Fuse Stand	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	**$ -**
3.3e	Bus Support 3ph	0	EA	$ 3,330	$ -	$ 3,330	$ -	$ 6,660	**$ -**
3.3f	Bus Support 1 Ph	0	EA	$ 1,850	$ -	$ 1,850	$ -	$ 3,700	**$ -**
3.3g	Instrument Transformer Stand	6	EA	$ 740	$ 4,440	$ 740	$ 4,440	$ 1,480	**$ 8,880**
3.3h	Arrester Stand	6	EA	$ 740	$ 4,440	$ 740	$ 4,440	$ 1,480	**$ 8,880**
3.3j	Wave Trap Stand	0	EA	$ 3,700	$ -	$ 3,700	$ -	$ 7,400	**$ -**
3.3k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	**$ -**
TOTAL - SUBSTATION STRUCTURES					$ 432,900		$ 432,900		$ 865,800
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	3	EA	$ 200,000	$ 600,000	$ 80,000	$ 240,000	$ 280,000	**$ 840,000**
4.1b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	**$ -**
4.1c	345 kV - 230 kV Auto Transformer	2	EA	$ 3,400,000	$ 6,800,000	$ 750,000	$ 1,500,000	$ 4,150,000	**$ 8,300,000**
4.1d	345 kV - 115 kV Auto Transformer	0	EA	$ 3,400,000	$ -	$ 750,000	$ -	$ 4,150,000	**$ -**
4.2	**230kV**								
4.2a	Circuit Breakers	1	EA	$ 115,000	$ 115,000	$ 80,000	$ 80,000	$ 195,000	**$ 195,000**
4.2b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	**$ -**
4.3	**115kV**								
4.3a	Circuit Breakers	0	EA	$ 52,000	$ -	$ 60,000	$ -	$ 112,000	**$ -**
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ 60,000	$ -	$ 60,000	**$ -**
TOTAL - MAJOR EQUIPTMENT					$ 7,515,000		$ 1,820,000		$ 9,335,000
5. SMALL EQUIPTMENT / MATERIALS									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator	2	EA	$ 40,000	$ 80,000	$ 15,000	$ 30,000	$ 55,000	**$ 110,000**
5.1b	Disconnect Switches - 3ph w/ manual operator	6	EA	$ 35,000	$ 210,000	$ 17,500	$ 105,000	$ 52,500	**$ 315,000**
5.1c	VT'S	6	EA	$ 25,000	$ 150,000	$ 12,000	$ 72,000	$ 37,000	**$ 222,000**
5.1d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	**$ -**
5.1e	CCVT'S	6	EA	$ 13,000	$ 78,000	$ 8,000	$ 48,000	$ 21,000	**$ 126,000**
5.1f	Arresters	6	EA	$ 6,500	$ 39,000	$ 1,500	$ 9,000	$ 8,000	**$ 48,000**
5.1g	Wave Traps	2	EA	$ 13,000	$ 26,000	$ 8,000	$ 16,000	$ 21,000	**$ 42,000**
5.1h	Station Service Transformers	0	EA	$ 200,000	$ -	$ 50,000	$ -	$ 250,000	**$ -**
5.1j									
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator	0	EA	$ 35,000	$ -	$ 15,000	$ -	$ 50,000	**$ -**
5.2b	Disconnect Switches - 3ph w/ manual operator	2	EA	$ 30,000	$ 60,000	$ 17,500	$ 35,000	$ 47,500	**$ 95,000**
5.2c	VT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	**$ -**
5.2d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	**$ -**
5.2e	CCVT'S	3	EA	$ 10,000	$ 30,000	$ 6,000	$ 18,000	$ 16,000	**$ 48,000**
5.2f	Arresters	0	EA	$ 5,000	$ -	$ 6,000	$ -	$ 11,000	**$ -**
5.2g	Wave Traps	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	**$ -**
5.2h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.2j									
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	0	EA	$ 33,000	$ -	$ 15,000	$ -	$ 48,000	**$ -**
5.3b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 28,000	$ -	$ 17,500	$ -	$ 45,500	**$ -**
5.3c	VT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	**$ -**
5.3d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	**$ -**
5.3e	CCVT'S	0	EA	$ 8,000	$ -	$ 8,000	$ -	$ 16,000	**$ -**
5.3f	Arresters	0	EA	$ 3,420	$ -	$ 6,000	$ -	$ 9,420	**$ -**
5.3g	Wave Traps	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.3h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.3j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ 673,000		$ 333,000		$ 1,006,000
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE	0	EA	$ -	$ -	$ 85,000	$ -	$ 85,000	**$ -**
6.2	Protection and Telecom Equipment Panels	8	EA	$ 35,000	$ 280,000	$ 10,000	$ 80,000	$ 45,000	**$ 360,000**
6.3	125VDC Batteries	0	EA	$ 75,000	$ -	$ 25,000	$ -	$ 100,000	**$ -**
6.4	Control Cables	1	LS	$ 438,900	$ 438,900	$ 438,900	$ 438,900	$ 877,800	**$ 877,800**
6.5	SCADA and Communications	1	EA	$ 75,000	$ 75,000	$ 100,000	$ 100,000	$ 175,000	**$ 175,000**
6.6	Low Voltage AC Distribution	1	EA	$ 50,000	$ 50,000	$ 100,000	$ 100,000	$ 150,000	**$ 150,000**
6.7	DC Distribution System	1	EA	$ 50,000	$ 50,000	$ 100,000	$ 100,000	$ 150,000	**$ 150,000**
6.8	Security	0	EA	$ 7,500	$ -	$ 7,500	$ -	$ 15,000	**$ -**
6.9	Fire Alarm	0	EA	$ 7,500	$ -	$ 7,500	$ -	$ 15,000	**$ -**
6.10	Generator	0	EA	$ 100,000	$ -	$ 80,000	$ -	$ 180,000	**$ -**
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ 893,900		$ 818,900		**$ 1,712,800**
7. MISC ITEMS									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
7.1	Conduit & Cable Trench System	1,400	LF	$ 185.00	$ 259,000	$ 170.00	$ 238,000	$ 355	**$ 497,000**
7.2	Rigid Bus, Fittings & Insulators	1,000	LF	$ 125.07	$ 125,070	$ 237.10	$ 237,100	$ 362	**$ 362,170**
7.3	Strain Bus, Connectors & Insulators	0	LF	$ 39.30	$ -	$ 53.35	$ -	$ 93	**$ -**
7.4	Grounding System	8,000	LF	$ 6.93	$ 55,440	$ 32.58	$ 260,640	$ 40	**$ 316,080**
7.5	Strain Bus Insulators - 345kV	0	EA	$ 2,000	$ -	$ 1,050	$ -	$ 3,050	**$ -**
7.6	Strain Bus Insulators - 230kV	0	EA	$ 1,400	$ -	$ 750	$ -	$ 2,150	**$ -**
7.7	Strain Bus Insulators - 115kV	0	EA	$ 1,000	$ -	$ 550	$ -	$ 1,550	**$ -**
7.8	Low Voltage AC Station Service	0	LS	$ 50,000	$ -	$ 75,000	$ -	$ 125,000	**$ -**
7.9	SSVT Service	0	LS	$ 45,000	$ -	$ 45,000	$ -	$ 90,000	**$ -**
7.10	Control Conduits from Trench to Equipment	1	LS	$ 125,000	$ 125,000	$ 125,000	$ 125,000	$ 250,000	**$ 250,000**
7.11	Misc. Materials (Above and Below Ground)	1	LS	$ 180,000	$ 180,000	$ 180,000	$ 180,000	$ 360,000	**$ 360,000**
7.12									
7.13									
7.14									
7.15									
7.16									
7.17									
7.18									
7.19									
7.20									
TOTAL - MISC ITEMS					$ 744,510		$ 1,040,740		$ 1,785,250
D. Rotterdam Substation - Install					$ 11,484,542		$ 8,320,390		**$ 19,804,932**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1	LS	$ -	$ -	$ 198,049	$ 198,049	$ 198,049	**$ 198,049**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 853,860	$ 853,860	$ 853,860	**$ 853,860**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 198,049	$ 198,049	$ 198,049	**$ 198,049**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 198,049	$ 198,049	$ 198,049	**$ 198,049**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 1,584,395	$ 1,584,395	$ 1,584,395	**$ 1,584,395**
8.6	LiDAR	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.7	Geotech	4	EA	$ -	$ -	$ 3,500	$ 14,000	$ 3,500	**$ 14,000**
8.8	Surveying/Staking	1	Site	$ -	$ -	$ 138,635	$ 138,635	$ 138,635	**$ 138,635**
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 495,123	$ 495,123	$ 495,123	**$ 495,123**
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 59,415	$ 59,415	$ 59,415	**$ 59,415**
8.13	Real Estate Costs (New)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.14	Real Estate Costs (Incumbent Utility)	1	LS	$ -	$ -	$ 82,500	$ 82,500	$ 82,500	**$ 82,500**
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.18	Sales Tax on Materials	1	LS	$ 918,763	$ 918,763	$ -	$ -	$ 918,763	**$ 918,763**
8.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 19,805	$ 19,805	$ 19,805	**$ 19,805**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 918,763		$ 3,841,880		**$ 4,760,643**

ITC - T031 - (Segment A)

F. Edic Substation - Install

Estimate Revision: 5

Total: $ 2,660,300

ITC - T031 - (Segment A)			
	Supply	*Installation*	*Total*
F. Edic Substation - Install			
1. SITE PREP/ GRADING/ FENCING / CIVIL	**$ 2,025**	**$ 5,625**	**$ 7,650**
2. SUBSTATION FOUNDATIONS	**$ 100,098**	**$ 107,200**	**$ 207,298**
3. SUBSTATION STRUCTURES	**$ 44,400**	**$ 44,400**	**$ 88,800**
4. MAJOR EQUIPTMENT	**$ 200,000**	**$ 80,000**	**$ 280,000**
5. SMALL EQUIPTMENT / MATERIALS	**$ 280,000**	**$ 133,500**	**$ 413,500**
6. CONTROL HOUSE / PANELS	**$ 173,500**	**$ 130,800**	**$ 304,300**
7. MISC ITEMS	**$ 339,357**	**$ 507,880**	**$ 847,237**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	**$ 91,150**	**$ 420,364**	**$ 511,515**
CONTRACTOR MARK-UP (OH&P)	**$ -**	**$ -**	**$ -**
SUBTOTAL:	**$ 1,230,530**	**$ 1,429,769**	**$ 2,660,300**
CONTINGENCY ON ENTIRE PROJECT	**$ -**	**$ -**	**$ -**
TOTAL:	**$ 1,230,530**	**$ 1,429,769**	**$ 2,660,300**

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
F. Edic Substation - Install									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	0	ACRES	$ -	$ -	$ 203,000	$ -	$ 203,000	**$** -
1.2	Station stone within substation fence.	75	CY	$ 27	$ 2,025	$ 75	$ 5,625	$ 102	**$ 7,650**
1.3	Substation Fence	0	LF	$ 100	$ -	$ 100	$ -	$ 200	**$** -
1.4	Permanent Access Road - 20'-Wide (From Gordon RD)	0	LF	$ 35	$ -	$ 285	$ -	$ 320	**$** -
1.5									
1.6									
1.7									
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ 2,025		$ 5,625		$ 7,650
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	1	EA	$ 14,940	$ 14,940	$ 16,000	$ 16,000	$ 30,940	**$ 30,940**
2.1b	Capacitor Bank Foundations	0	EA	$ 56,025	$ -	$ 60,000	$ -	$ 116,025	**$** -
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 26,145	$ -	$ 28,000	$ -	$ 54,145	**$** -
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 26,145	$ -	$ 28,000	$ -	$ 54,145	**$** -
2.1e	Switch Stand Foundations	6	EA	$ 4,482	$ 26,892	$ 4,800	$ 28,800	$ 9,282	**$ 55,692**
2.1f	Station Service Transformer Stand Foundation	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	**$** -
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
2.1h	Bus Support 1 Ph Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	**$** -
2.1j	Instrument Transformer Stand Foundations	9	EA	$ 4,482	$ 40,338	$ 4,800	$ 43,200	$ 9,282	**$ 83,538**
2.1k	Arrester Stand Foundations	3	EA	$ 4,482	$ 13,446	$ 4,800	$ 14,400	$ 9,282	**$ 27,846**
2.1m	Wave Trap Stand Foundations	1	EA	$ 4,482	$ 4,482	$ 4,800	$ 4,800	$ 9,282	**$ 9,282**
2.1n	Misc. Structure Foundations		EA.	$ -	$ -	$ -	$ -	$ -	**$** -
2.1p									
2.2	**230kV**								
2.2a	Circuit Breaker Foundations	0	EA	$ 11,952	$ -	$ 12,800	$ -	$ 24,752	**$** -
2.2b	Capacitor Bank Foundations	0	EA	$ 44,820	$ -	$ 48,000	$ -	$ 92,820	**$** -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	$ -
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	$ -
2.2e	Switch Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2f	Station Service Transformer Stand Foundation	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2h	Bus Support 1 Ph Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2j	Instrument Transformer Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2k	Arrester Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2m	Wave Trap Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2n	Misc. Structure Foundations		EA.	$ -	$ -	$ -	$ -	$ -	$ -
2.2p									
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	0	EA	$ 5,229	$ -	$ 5,600	$ -	$ 10,829	$ -
2.3b	Capacitor Bank Foundations	0	EA	$ 33,615	$ -	$ 36,000	$ -	$ 69,615	$ -
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	$ -
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	$ -
2.3e	Switch Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3f	Fuse Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3g	Bus Support 3ph Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3h	Bus Support 1 Ph Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3j	Instrument Transformer Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3k	Arrester Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3m	Wave Trap Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment	0	EA	$ 97,110	$ -	$ 104,000	$ -	$ 201,110	$ -
2.4b	345-115kV Transformer Foundation w/ Oil Containment	0	EA	$ 74,700	$ -	$ 80,000	$ -	$ 154,700	$ -
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad (40'x125')	0	EA	$ 76,194	$ -	$ 81,600	$ -	$ 157,794	$ -
2.5b	Generator Foundation	0	EA	$ 16,000	$ -	$ 17,000	$ -	$ 33,000	$ -
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	0	EA	$ 5,229	$ -	$ 5,600	$ -	$ 10,829	$ -
2.6b	60' Lightning Mast Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6c	50' Lightning Mast Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION FOUNDATIONS					$ 100,098		$ 107,200		$ 207,298
3. SUBSTATION STRUCTURES									
3.1	**345kV**								
3.1a	Substation A-Frame Structures - Stand alone	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	$ -
3.1b	Substation A-Frame Structures - Shared Column	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	$ -
3.1c	Switch Stands	1	EA	$ 14,800	$ 14,800	$ 14,800	$ 14,800	$ 29,600	**$ 29,600**
3.1d	Station Service Transformer Stand	0	EA	$ 14,800	$ -	$ 14,800	$ -	$ 29,600	$ -
3.1e									
3.1f	Bus Support 1 Ph	0	EA	$ 3,700	$ -	$ 3,700	$ -	$ 7,400	$ -
3.1g	Instrument Transformer Stand	9	EA	$ 1,850	$ 16,650	$ 1,850	$ 16,650	$ 3,700	**$ 33,300**
3.1h	Arrester Stand	3	EA	$ 1,850	$ 5,550	$ 1,850	$ 5,550	$ 3,700	**$ 11,100**
3.1j	Wave Trap Stand	1	EA	$ 7,400	$ 7,400	$ 7,400	$ 7,400	$ 14,800	**$ 14,800**
3.1k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	$ -
3.2b	Substation A-Frame Structures - Shared Column	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	$ -
3.2c	Switch Stands	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	$ -
3.2d	Station Service Transformer Stand	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	$ -
3.2e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2f	Bus Support 1 Ph	0	EA	$ 2,775	$ -	$ 2,775	$ -	$ 5,550	$ -
3.2g	Instrument Transformer Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.2h	Arrester Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	$ -
3.2j	Wave Trap Stand	0	EA	$ 5,550	$ -	$ 5,550	$ -	$ 11,100	$ -
3.2k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
3.3	**115kV**								
3.3a	Substation A-Frame Structures - Stand alone	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	$ -
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	$ -
3.3c	Switch Stands	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	$ -
3.3d	Fuse Stand	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	$ -
3.3e	Bus Support 3ph	0	EA	$ 3,330	$ -	$ 3,330	$ -	$ 6,660	$ -
3.3f	Bus Support 1 Ph	0	EA	$ 1,850	$ -	$ 1,850	$ -	$ 3,700	$ -
3.3g	Instrument Transformer Stand	0	EA	$ 740	$ -	$ 740	$ -	$ 1,480	$ -
3.3h	Arrester Stand	0	EA	$ 740	$ -	$ 740	$ -	$ 1,480	$ -
3.3j	Wave Trap Stand	0	EA	$ 3,700	$ -	$ 3,700	$ -	$ 7,400	$ -
3.3k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
TOTAL - SUBSTATION STRUCTURES					$ 44,400		$ 44,400		$ 88,800
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	1	EA	$ 200,000	$ 200,000	$ 80,000	$ 80,000	$ 280,000	**$ 280,000**
4.1b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	$ -
4.1c	345 kV - 230 kV Auto Transformer	0	EA	$ -	$ -	$ 750,000	$ -	$ 750,000	$ -
4.1d	345 kV - 115 kV Auto Transformer	0	EA	$ -	$ -	$ 750,000	$ -	$ 750,000	$ -
4.2	**230kV**								
4.2a	Circuit Breakers	0	EA	$ 115,000	$ -	$ 80,000	$ -	$ 195,000	$ -
4.2b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	$ -
4.3	**115kV**								
4.3a	Circuit Breakers	0	EA	$ 52,000	$ -	$ 60,000	$ -	$ 112,000	$ -
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ 60,000	$ -	$ 60,000	$ -
TOTAL - MAJOR EQUIPTMENT					$ 200,000		$ 80,000		$ 280,000
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator	1	EA	$ 40,000	$ 40,000	$ 15,000	$ 15,000	$ 55,000	**$ 55,000**
5.1b	Disconnect Switches - 3ph w/ manual operator	1	EA	$ 35,000	$ 35,000	$ 17,500	$ 17,500	$ 52,500	**$ 52,500**
5.1c	VT'S	3	EA	$ 25,000	$ 75,000	$ 12,000	$ 36,000	$ 37,000	**$ 111,000**
5.1d	CT'S	3	EA	$ 13,000	$ 39,000	$ 8,000	$ 24,000	$ 21,000	**$ 63,000**
5.1e	CCVT'S	3	EA	$ 13,000	$ 39,000	$ 8,000	$ 24,000	$ 21,000	**$ 63,000**
5.1f	Arresters	6	EA	$ 6,500	$ 39,000	$ 1,500	$ 9,000	$ 8,000	**$ 48,000**
5.1g	Wave Traps	1	EA	$ 13,000	$ 13,000	$ 8,000	$ 8,000	$ 21,000	**$ 21,000**
5.1h	Station Service Transformers	0	EA	$ 200,000	$ -	$ 50,000	$ -	$ 250,000	$ -
5.1j									
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator	0	EA	$ 35,000	$ -	$ 15,000	$ -	$ 50,000	$ -
5.2b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 30,000	$ -	$ 17,500	$ -	$ 47,500	$ -
5.2c	VT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2e	CCVT'S	0	EA	$ 10,000	$ -	$ 6,000	$ -	$ 16,000	$ -
5.2f	Arresters	0	EA	$ 5,000	$ -	$ 6,000	$ -	$ 11,000	$ -
5.2g	Wave Traps	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2j									
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	0	EA	$ 33,000	$ -	$ 15,000	$ -	$ 48,000	$ -
5.3b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 28,000	$ -	$ 17,500	$ -	$ 45,500	$ -
5.3c	VT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.3d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.3e	CCVT'S	0	EA	$ 8,000	$ -	$ 8,000	$ -	$ 16,000	$ -
5.3f	Arresters	0	EA	$ 3,420	$ -	$ 6,000	$ -	$ 9,420	$ -
5.3g	Wave Traps	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
5.3j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ 280,000		$ 133,500		$ 413,500
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE	0	EA	$ 551,250	$ -	$ 85,000	$ -	$ 636,250	$ -
6.2	Protection and Telecom Equipment Panels	3	EA	$ 35,000	$ 105,000	$ 10,000	$ 30,000	$ 45,000	$ 135,000
6.3	125VDC Batteries	0	EA	$ 75,000	$ -	$ 25,000	$ -	$ 100,000	$ -
6.4	Control Cables	1	LS	$ 68,500	$ 68,500	$ 100,800	$ 100,800	$ 169,300	$ 169,300
6.5	SCADA and Communications	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.6	Low Voltage AC Distribution	0	EA	$ 50,000	$ -	$ 100,000	$ -	$ 150,000	$ -
6.7	DC Distribution System	0	EA	$ 50,000	$ -	$ 100,000	$ -	$ 150,000	$ -
6.8	Security	0	EA	$ 7,500	$ -	$ 7,500	$ -	$ 15,000	$ -
6.9	Fire Alarm	0	EA	$ 7,500	$ -	$ 7,500	$ -	$ 15,000	$ -
6.10	Generator	0	EA	$ 100,000	$ -	$ 80,000	$ -	$ 180,000	$ -
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ 173,500		$ 130,800		**$ 304,300**
7. MISC ITEMS									
7.1	Conduit & Cable Trench System	800	L.S.	$ 185.00	$ 148,000	$ 170.00	$ 136,000	$ 355	$ 284,000
7.2	Rigid Bus, Fittings & Insulators	0	L.S.	$ 125.07	$ -	$ 237.10	$ -	$ 362	$ -
7.3	Strain Bus, Connectors & Insulators	2,500.0	L.S.	$ 39.30	$ 98,250	$ 53.35	$ 133,375	$ 93	$ 231,625
7.4	Grounding System	1	L.S.	$ 10,395.00	$ 10,395	$ 73,305.00	$ 73,305	$ 83,700	$ 83,700
7.5	Strain Bus Insulators - 345kV	24	EA	$ 2,000	$ 48,000	$ 1,050	$ 25,200	$ 3,050	$ 73,200
7.6	Strain Bus Insulators - 230kV	0	EA	$ 1,400	$ -	$ 750	$ -	$ 2,150	$ -
7.7	Strain Bus Insulators - 115kV	0	EA	$ 1,000	$ -	$ 550	$ -	$ 1,550	$ -
7.8	Low Voltage AC Station Service	0	LS	$ 50,000	$ -	$ 75,000	$ -	$ 125,000	$ -
7.9	SSVT Service	0	LS	$ 45,000	$ -	$ 45,000	$ -	$ 90,000	$ -
7.10	Control Conduits from Trench to Equipment	1	LS	$ 14,000	$ 14,000	$ 70,000	$ 70,000	$ 84,000	$ 84,000
7.11	Misc. Materials (Above and Below Ground)	1	LS	$ 20,712	$ 20,712	$ 70,000	$ 70,000	$ 90,712	$ 90,712
7.12									
7.13									
7.14									
7.15									
7.16									
7.17									
7.18									
7.19									
7.20									
7.21									
7.22									
7.23									
7.24									
7.25									
TOTAL - MISC ITEMS					$ 339,357		$ 507,880		$ 847,237
F. Edic Substation - Install					$ 1,139,380		$ 1,009,405		**$ 2,148,785**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1.0	LS	$ -	$ -	$ 21,488	$ 21,488	$ 21,488	$ 21,488
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 92,642	$ 92,642	$ 92,642	$ 92,642
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 21,488	$ 21,488	$ 21,488	$ 21,488
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 21,488	$ 21,488	$ 21,488	$ 21,488
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 171,903	$ 171,903	$ 171,903	$ 171,903
8.6	LiDAR	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.7	Geotech	4	EA	$ -	$ -	$ 3,500	$ 14,000	$ 3,500	$ 14,000
8.8	Surveying/Staking	1	Site	$ -	$ -	$ 15,041	$ 15,041	$ 15,041	$ 15,041
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 53,720	$ 53,720	$ 53,720	$ 53,720
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 6,446	$ 6,446	$ 6,446	**$ 6,446**
8.13	Real Estate Costs (New)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.14	Real Estate Costs (Incumbent Utility)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.18	Sales Tax on Materials	1	LS	$ 91,150	$ 91,150	$ -	$ -	$ 91,150	**$ 91,150**
8.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 2,149	$ 2,149	$ 2,149	**$ 2,149**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 91,150		$ 420,364		**$ 511,515**

ITC - T031 - (Segment A)

G. Edic Substation - Removal

Estimate Revision: 5

Total: $ 41,562

ITC - T031 - (Segment A)	*Supply*	*Installation*	*Total*
G. Edic Substation - Removal			
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ -	$ -	$ -
2. SUBSTATION FOUNDATIONS	$ -	$ 14,200	$ 14,200
3. SUBSTATION STRUCTURES	$ -	$ 6,750	$ 6,750
4. MAJOR EQUIPTMENT	$ -	$ -	$ -
5. SMALL EQUIPTMENT / MATERIALS	$ -	$ 4,500	$ 4,500
6. CONTROL HOUSE / PANELS	$ -	$ -	$ -
7. MISC ITEMS	$ -	$ 10,500	$ 10,500
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ -	$ 5,612	$ 5,612
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ -	$ 41,562	$ 41,562
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ -	$ 41,562	$ 41,562

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
G. Edic Substation - Removal									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	0	ACRES	$ -	$ -	$ 203,000	$ -	$ 203,000	$ -
1.2	Station stone within substation fence.	0	CY	$ -	$ -	$ 75	$ -	$ 75	$ -
1.3	Substation Fence	0	LF	$ -	$ -	$ 150	$ -	$ 150	$ -
1.4									
1.5									
1.6									
1.7									
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ -		$ -		$ -
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	1	EA	$ -	$ -	$ 14,200	$ 14,200	$ 14,200	**$ 14,200**
2.1b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1e	Switch Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1f	Station Service Transformer Stand Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.1j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1k	Arrester Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1n	Misc. Structure Foundations		EA.	$ -	$ -	$ -	$ -	$ -	$ -
2.1p									
2.2	**230kV**								
2.2a	Circuit Breaker Foundations	0	EA	$ -	$ -	$ 7,200	$ -	$ 7,200	$ -
2.2b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ 32,000	$ -	$ 32,000	$ -
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ 22,000	$ -	$ 22,000	$ -
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ 11,000	$ -	$ 11,000	$ -
2.2e	Switch Stand Foundations	0	EA	$ -	$ -	$ 5,200	$ -	$ 5,200	$ -
2.2f	Station Service Transformer Stand Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.2h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.2j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.2k	Arrester Stand Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.2m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2n	Misc. Structure Foundations		EA.	$ -	$ -	$ -	$ -	$ -	$ -
2.2p									
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3e	Switch Stand Foundations	0	EA	$ -	$ -	$ 5,200	$ -	$ 5,200	$ -
2.3f	Fuse Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3k	Arrester Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4b	345-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ 42,000	$ -	$ 42,000	$ -
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5b	Generator Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6b		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6c		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION FOUNDATIONS					$ -		$ 14,200		$ 14,200
3. SUBSTATION STRUCTURES									
3.1	**345kV**								
3.1a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1c	Switch Stands	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1d	Station Service Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1f	Bus Support 1 Ph	3	EA	$ -	$ -	$ 2,250	$ 6,750	$ 2,250	**$ 6,750**
3.1g	Instrument Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1h	Arrester Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1j	Wave Trap Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ 27,000	$ -	$ 27,000	$ -
3.2b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ 27,000	$ -	$ 27,000	$ -
3.2c	Switch Stands	0	EA	$ -	$ -	$ 9,750	$ -	$ 9,750	$ -
3.2d	Station Service Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2f	Bus Support 1 Ph	0	EA	$ -	$ -	$ 2,250	$ -	$ 2,250	$ -
3.2g	Instrument Transformer Stand	0	EA	$ -	$ -	$ 1,050	$ -	$ 1,050	$ -
3.2h	Arrester Stand	0	EA	$ -	$ -	$ 1,050	$ -	$ 1,050	$ -
3.2j	Wave Trap Stand	0	EA	$ -	$ -	$ 4,500	$ -	$ 4,500	$ -
3.2k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3	**115kV**								

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.3a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ 15,000	$ -	$ 15,000	$ -
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3c	Switch Stands	0	EA	$ -	$ -	$ 6,450	$ -	$ 6,450	$ -
3.3d	Fuse Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3f	Bus Support 1 Ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3g	Instrument Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3h	Arrester Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3j	Wave Trap Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION STRUCTURES					$ -		$ 6,750		$ 6,750
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.1b	Capacitor Banks	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.1c		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.1d									
4.2	**230kV**								
4.2a	Circuit Breakers	0	EA	$ -	$ -	$ 7,000	$ -	$ 7,000	$ -
4.2b	Capacitor Banks	0	EA	$ -	$ -	$ 42,000	$ -	$ 42,000	$ -
4.3	**115kV**								
4.3a	Circuit Breakers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - MAJOR EQUIPTMENT					$ -		$ -		$ -
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.1b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.1c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.1d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.1e	CCVT'S	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.1f	Arresters	3	EA	$ -	$ -	$ 1,500	$ 4,500	$ 1,500	**$ 4,500**
5.1g	Wave Traps	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.1h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.1j									
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.2b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.2c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2e	CCVT'S	0	EA	$ -	$ -	$ 1,500	$ -	$ 1,500	$ -
5.2f	Arresters	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.2g	Wave Traps	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.2h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2j									
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.3c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3e	CCVT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3f	Arresters	0	EA	$ -	$ -	$ 1,500	$ -	$ 1,500	$ -
5.3g	Wave Traps	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ -		$ 4,500		$ 4,500
6. CONTROL HOUSE / PANELS / GENERATOR									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6.1	CONTROL HOUSE	0	EA	$ -	$ -	$ 150,000	$ -	$ 150,000	$ -
6.2	Protection and Telecom Equipment Panels	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.3	125VDC Batteries	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.4	Control Cables	0	LS	$ -	$ -	$ -	$ -	$ -	$ -
6.5	SCADA and Communications	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.6	Low Voltage AC Distribution	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.7	DC Distribution System	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.8	Security	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.9	Fire Alarm	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.10	Generator	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ -		$ -		$ -
7. MISC ITEMS									
7.1	Conduit & Cable Trench System	0	EA	$ -	$ -	$ 42,000.00	$ -	$ 42,000	$ -
7.2	Rigid Bus, Fittings & Insulators	1	LS	$ -	$ -	$ 10,500.00	$ 10,500	$ 10,500	**$ 10,500**
7.3	Strain Bus, Connectors & Insulators	0	EA	$ -	$ -	$ 39.35	$ -	$ 39	$ -
7.4	Grounding System	0	EA	$ -	$ -	$ 42,000.00	$ -	$ 42,000	$ -
7.5									
7.6									
7.7									
7.8									
7.9									
7.10									
7.11									
7.12									
7.13									
7.14									
7.15									
TOTAL - MISC ITEMS					$ -		$ 10,500		$ 10,500
G. Edic Substation - Removal					$ -		$ 35,950		**$ 35,950**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1	LS	$ -	$ -	$ 360	$ 360	$ 360	**$ 360**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 1,550	$ 1,550	$ 1,550	**$ 1,550**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 360	$ 360	$ 360	**$ 360**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 360	$ 360	$ 360	**$ 360**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 2,876	$ 2,876	$ 2,876	**$ 2,876**
8.6	LiDAR	-	Mile	$ -	$ -	$ -	$ -	$ -	$ -
8.7	Geotech	-	Site	$ -	$ -	$ -	$ -	$ -	$ -
8.8	Surveying/Staking	-	Site	$ -	$ -	$ 252	$ -	$ 252	$ -
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	-	LS	$ -	$ -	$ 899	$ -	$ 899	$ -
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 108	$ 108	$ 108	**$ 108**
8.13	Real Estate Costs (New)	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.14	Real Estate Costs (Incumbent Utility)	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.18	Sales Tax on Materials	1	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.19	Fees for permits, including roadway, railroad, building or other local permits	-	LS		$ -	$ 36	$ -	$ 36	$ -
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ -		$ 5,612		**$ 5,612**

ITC - T031 - (Segment A)

H. New Scotland Substation - Install

Estimate Revision: 5

Total: $ 4,466,540

ITC - T031 - (Segment A)	*Supply*	*Installation*	*Total*
H. New Scotland Substation - Install			
1. SITE PREP/ GRADING/ FENCING / CIVIL	**$ 4,050**	**$ 112,750**	**$ 116,800**
2. SUBSTATION FOUNDATIONS	**$ 283,113**	**$ 303,200**	**$ 586,313**
3. SUBSTATION STRUCTURES	**$ 114,700**	**$ 114,700**	**$ 229,400**
4. MAJOR EQUIPTMENT	**$ 200,000**	**$ 80,000**	**$ 280,000**
5. SMALL EQUIPTMENT / MATERIALS	**$ 260,500**	**$ 129,000**	**$ 389,500**
6. CONTROL HOUSE / PANELS	**$ 471,950**	**$ 210,700**	**$ 682,650**
7. MISC ITEMS	**$ 596,373**	**$ 733,493**	**$ 1,329,866**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	**$ 154,455**	**$ 697,556**	**$ 852,011**
CONTRACTOR MARK-UP (OH&P)	**$ -**	**$ -**	**$ -**
SUBTOTAL:	**$ 2,085,140**	**$ 2,381,399**	**$ 4,466,540**
CONTINGENCY ON ENTIRE PROJECT	**$ -**	**$ -**	**$ -**
TOTAL:	**$ 2,085,140**	**$ 2,381,399**	**$ 4,466,540**

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
H. New Scotland Substation - Install									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	0.50	ACRES	$ -	$ -	$ 203,000	$ 101,500	$ 203,000	**$ 101,500**
1.2	Station stone within substation fence.	150	CY	$ 27	$ 4,050	$ 75	$ 11,250	$ 102	**$ 15,300**
1.3	Substation Fence	0	LF	$ 100	$ -	$ 100	$ -	$ 200	**$ -**
1.4	Permanent Access Road - 20'-Wide	0	LF	$ 35	$ -	$ 285	$ -	$ 320	**$ -**
1.5									
1.6									
1.7									
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ 4,050		$ 112,750		$ 116,800
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	1	EA	$ 14,940	$ 14,940	$ 16,000	$ 16,000	$ 30,940	**$ 30,940**
2.1b	Capacitor Bank Foundations	0	EA	$ 56,025	$ -	$ 60,000	$ -	$ 116,025	**$ -**
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	4	EA	$ 26,145	$ 104,580	$ 28,000	$ 112,000	$ 54,145	**$ 216,580**
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 26,145	$ -	$ 28,000	$ -	$ 54,145	**$ -**
2.1e	Switch Stand Foundations	6	EA	$ 4,482	$ 26,892	$ 4,800	$ 28,800	$ 9,282	**$ 55,692**
2.1f	Station Service Transformer Stand Foundation	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	**$ -**
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1h	Bus Support 1 Ph Foundations	9	EA	$ 4,482	$ 40,338	$ 4,800	$ 43,200	$ 9,282	**$ 83,538**
2.1j	Instrument Transformer Stand Foundations	9	EA	$ 4,482	$ 40,338	$ 4,800	$ 43,200	$ 9,282	**$ 83,538**
2.1k	Arrester Stand Foundations	3	EA	$ 4,482	$ 13,446	$ 4,800	$ 14,400	$ 9,282	**$ 27,846**
2.1m	Wave Trap Stand Foundations	1	EA	$ 4,482	$ 4,482	$ 4,800	$ 4,800	$ 9,282	**$ 9,282**
2.1n	Misc. Structure Foundations	0	EA.	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1p									
2.2	**230kV**								
2.2a	Circuit Breaker Foundations	0	EA	$ 11,952	$ -	$ 12,800	$ -	$ 24,752	**$ -**
2.2b	Capacitor Bank Foundations	0	EA	$ 44,820	$ -	$ 48,000	$ -	$ 92,820	**$ -**
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	**$ -**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	$ -
2.2e	Switch Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2f	Station Service Transformer Stand Foundation	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2h	Bus Support 1 Ph Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2j	Instrument Transformer Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2k	Arrester Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2m	Wave Trap Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2n	Misc. Structure Foundations	0	EA.	$ -	$ -	$ -	$ -	$ -	$ -
2.2p									
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	0	EA	$ 5,229	$ -	$ 5,600	$ -	$ 10,829	$ -
2.3b	Capacitor Bank Foundations	0	EA	$ 33,615	$ -	$ 36,000	$ -	$ 69,615	$ -
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	$ -
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	$ -
2.3e	Switch Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3f	Fuse Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3g	Bus Support 3ph Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3h	Bus Support 1 Ph Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3j	Instrument Transformer Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3k	Arrester Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3m	Wave Trap Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment	0	EA	$ 97,110	$ -	$ 104,000	$ -	$ 201,110	$ -
2.4b	345-115kV Transformer Foundation w/ Oil Containment	0	EA	$ 74,700	$ -	$ 80,000	$ -	$ 154,700	$ -
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad 25' x 50'	1	EA	$ 27,639	$ 27,639	$ 29,600	$ 29,600	$ 57,239	**$ 57,239**
2.5b	Generator Foundation	0	EA	$ 16,000	$ -	$ 17,000	$ -	$ 33,000	$ -
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	2	EA	$ 5,229	$ 10,458	$ 5,600	$ 11,200	$ 10,829	**$ 21,658**
2.6b		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6c		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION FOUNDATIONS					$ 283,113		$ 303,200		$ 586,313
3. SUBSTATION STRUCTURES									
3.1	**345kV**								
3.1a	Substation A-Frame Structures - Stand alone	1	EA	$ 37,000	$ 37,000	$ 37,000	$ 37,000	$ 74,000	**$ 74,000**
3.1b	Substation A-Frame Structures - Shared Column	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	$ -
3.1c	Switch Stands	1	EA	$ 14,800	$ 14,800	$ 14,800	$ 14,800	$ 29,600	**$ 29,600**
3.1d	Station Service Transformer Stand	0	EA	$ 14,800	$ -	$ 14,800	$ -	$ 29,600	$ -
3.1e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1f	Bus Support 1 Ph	9	EA	$ 3,700	$ 33,300	$ 3,700	$ 33,300	$ 7,400	**$ 66,600**
3.1g	Instrument Transformer Stand	9	EA	$ 1,850	$ 16,650	$ 1,850	$ 16,650	$ 3,700	**$ 33,300**
3.1h	Arrester Stand	3	EA	$ 1,850	$ 5,550	$ 1,850	$ 5,550	$ 3,700	**$ 11,100**
3.1j	Wave Trap Stand	1	EA	$ 7,400	$ 7,400	$ 7,400	$ 7,400	$ 14,800	**$ 14,800**
3.1k	Lightning Masts - 70'	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	$ -
3.2b	Substation A-Frame Structures - Shared Column	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	$ -
3.2c	Switch Stands	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	$ -
3.2d	Station Service Transformer Stand	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	$ -
3.2e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2f	Bus Support 1 Ph	0	EA	$ 2,775	$ -	$ 2,775	$ -	$ 5,550	$ -
3.2g	Instrument Transformer Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	$ -
3.2h	Arrester Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.2j	Wave Trap Stand	0	EA	$ 5,550	$ -	$ 5,550	$ -	$ 11,100	$ -
3.2k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
3.3	**115kV**								
3.3a	Substation A-Frame Structures - Stand alone	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	$ -
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	$ -
3.3c	Switch Stands	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	$ -
3.3d	Fuse Stand	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	$ -
3.3e	Bus Support 3ph	0	EA	$ 3,330	$ -	$ 3,330	$ -	$ 6,660	$ -
3.3f	Bus Support 1 Ph	0	EA	$ 1,850	$ -	$ 1,850	$ -	$ 3,700	$ -
3.3g	Instrument Transformer Stand	0	EA	$ 740	$ -	$ 740	$ -	$ 1,480	$ -
3.3h	Arrester Stand	0	EA	$ 740	$ -	$ 740	$ -	$ 1,480	$ -
3.3j	Wave Trap Stand	0	EA	$ 3,700	$ -	$ 3,700	$ -	$ 7,400	$ -
3.3k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
TOTAL - SUBSTATION STRUCTURES					$ 114,700		$ 114,700		$ 229,400
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	1	EA	$ 200,000	$ 200,000	$ 80,000	$ 80,000	$ 280,000	**$ 280,000**
4.1b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	$ -
4.1c	345 kV - 230 kV Auto Transformer	0	EA	$ -	$ -	$ 750,000	$ -	$ 750,000	$ -
4.1d	345 kV - 115 kV Auto Transformer	0	EA	$ -	$ -	$ 750,000	$ -	$ 750,000	$ -
4.2	**230kV**								
4.2a	Circuit Breakers	0	EA	$ 115,000	$ -	$ 80,000	$ -	$ 195,000	$ -
4.2b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	$ -
4.3	**115kV**								
4.3a	Circuit Breakers	0	EA	$ 52,000	$ -	$ 60,000	$ -	$ 112,000	$ -
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ 60,000	$ -	$ 60,000	$ -
TOTAL - MAJOR EQUIPTMENT					$ 200,000		$ 80,000		$ 280,000
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator	1	EA	$ 40,000	$ 40,000	$ 15,000	$ 15,000	$ 55,000	**$ 55,000**
5.1b	Disconnect Switches - 3ph w/ manual operator	1	EA	$ 35,000	$ 35,000	$ 17,500	$ 17,500	$ 52,500	**$ 52,500**
5.1c	VT'S	3	EA	$ 25,000	$ 75,000	$ 12,000	$ 36,000	$ 37,000	**$ 111,000**
5.1d	CT'S	3	EA	$ 13,000	$ 39,000	$ 8,000	$ 24,000	$ 21,000	**$ 63,000**
5.1e	CCVT'S	3	EA	$ 13,000	$ 39,000	$ 8,000	$ 24,000	$ 21,000	**$ 63,000**
5.1f	Arresters	3	EA	$ 6,500	$ 19,500	$ 1,500	$ 4,500	$ 8,000	**$ 24,000**
5.1g	Wave Traps	1	EA	$ 13,000	$ 13,000	$ 8,000	$ 8,000	$ 21,000	**$ 21,000**
5.1h	Station Service Transformers	0	EA	$ 200,000	$ -	$ 50,000	$ -	$ 250,000	$ -
5.1j									
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator	0	EA	$ 30,000	$ -	$ 15,000	$ -	$ 45,000	$ -
5.2b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 35,000	$ -	$ 17,500	$ -	$ 52,500	$ -
5.2c	VT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2e	CCVT'S	0	EA	$ 10,000	$ -	$ 6,000	$ -	$ 16,000	$ -
5.2f	Arresters	0	EA	$ 5,000	$ -	$ 6,000	$ -	$ 11,000	$ -
5.2g	Wave Traps	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2j									
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	0	EA	$ 28,000	$ -	$ 15,000	$ -	$ 43,000	$ -
5.3b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 33,000	$ -	$ 17,500	$ -	$ 50,500	$ -
5.3c	VT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.3d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.3e	CCVT'S	0	EA	$ 8,000	$ -	$ 8,000	$ -	$ 16,000	$ -
5.3f	Arresters	0	EA	$ 3,420	$ -	$ 6,000	$ -	$ 9,420	$ -
5.3g	Wave Traps	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ 260,500		$ 129,000		$ 389,500
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE	1	EA	$ 243,750	$ 243,750	$ 42,500	$ 42,500	$ 286,250	**$ 286,250**
6.2	Protection and Telecom Equipment Panels	3	EA	$ 35,000	$ 105,000	$ 15,000	$ 45,000	$ 50,000	**$ 150,000**
6.3	125VDC Batteries	0	EA	$ 75,000	$ -	$ 25,000	$ -	$ 100,000	**$ -**
6.4	Control Cables	1	LS	$ 123,200	$ 123,200	$ 123,200	$ 123,200	$ 246,400	**$ 246,400**
6.5	SCADA and Communications	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.6	Low Voltage AC Distribution	0	EA	$ 50,000	$ -	$ 100,000	$ -	$ 150,000	**$ -**
6.7	DC Distribution System	0	EA	$ 50,000	$ -	$ 100,000	$ -	$ 150,000	**$ -**
6.8	Security	0	EA	$ 7,500	$ -	$ 7,500	$ -	$ 15,000	**$ -**
6.9	Fire Alarm	0	EA	$ 7,500	$ -	$ 7,500	$ -	$ 15,000	**$ -**
6.10	Generator	0	EA	$ 100,000	$ -	$ 80,000	$ -	$ 180,000	**$ -**
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ 471,950		$ 210,700		**$ 682,650**
7. MISC ITEMS									
7.1	Conduit & Cable Trench System	1,200.0	LF	$ 185.00	$ 222,000	$ 170.00	$ 204,000	$ 355	**$ 426,000**
7.2	Rigid Bus, Fittings & Insulators	180.0	LF	$ 125.07	$ 22,513	$ 237.10	$ 42,678	$ 362	**$ 65,191**
7.3	Strain Bus, Connectors & Insulators	100.0	LF	$ 39.30	$ 3,930	$ 53.35	$ 5,335	$ 93	**$ 9,265**
7.4	Grounding System	1,000.0	LF	$ 6.93	$ 6,930	$ 32.58	$ 32,580	$ 40	**$ 39,510**
7.5	Strain Bus Insulators - 345kV	18	EA	$ 2,000	$ 36,000	$ 1,050	$ 18,900	$ 3,050	**$ 54,900**
7.6	Strain Bus Insulators - 230kV	0	EA	$ 1,400	$ -	$ 750	$ -	$ 2,150	**$ -**
7.7	Strain Bus Insulators - 115kV	0	EA	$ 1,000	$ -	$ 550	$ -	$ 1,550	**$ -**
7.8	Low Voltage AC Station Service	0	LS	$ 50,000	$ -	$ 75,000	$ -	$ 125,000	**$ -**
7.9	SSVT Service	0	LS	$ 45,000	$ -	$ 45,000	$ -	$ 90,000	**$ -**
7.10									
7.11	Control Conduits from Trench to Equipment	1	LS	$ 125,000	$ 125,000	$ 125,000	$ 125,000	$ 250,000	**$ 250,000**
7.12	Misc. Materials (Above and Below Ground)	1	LS	$ 180,000	$ 180,000	$ 180,000	$ 180,000	$ 360,000	**$ 360,000**
7.13	Install new communication tower foundation.	1	LS		$ -	$ 75,000	$ 75,000	$ 75,000	**$ 75,000**
7.14	Relocate existing communication tower.	1	LS		$ -	$ 50,000	$ 50,000	$ 50,000	**$ 50,000**
7.15									
7.16									
7.17									
7.18									
7.19									
7.20									
7.21									
7.22									
7.23									
7.24									
7.25									
TOTAL - MISC ITEMS					$ 596,373		$ 733,493		$ 1,329,866
H. New Scotland Substation - Install					$ 1,930,686		$ 1,683,843		**$ 3,614,529**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1	LS	$ -	$ -	$ 36,145	$ 36,145	$ 36,145	**$ 36,145**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 155,835	$ 155,835	$ 155,835	**$ 155,835**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 36,145	$ 36,145	$ 36,145	**$ 36,145**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 36,145	$ 36,145	$ 36,145	**$ 36,145**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 289,162	$ 289,162	$ 289,162	**$ 289,162**
8.6	LiDAR	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.7	Geotech	4	EA	$ -	$ -	$ 3,500	$ 14,000	$ 3,500	**$ 14,000**
8.8	Surveying/Staking	1	Site	$ -	$ -	$ 25,302	$ 25,302	$ 25,302	**$ 25,302**
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 90,363	$ 90,363	$ 90,363	**$ 90,363**
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 10,844	$ 10,844	$ 10,844	**$ 10,844**
8.13	Real Estate Costs (New)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.14	Real Estate Costs (Incumbent Utility)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.18	Sales Tax on Materials	1	LS	$ 154,455	$ 154,455	$ -	$ -	$ 154,455	**$ 154,455**
8.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 3,615	$ 3,615	$ 3,615	**$ 3,615**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 154,455		$ 697,556		**$ 852,011**

ITC - T031 - (Segment A)

J. Porter Substation - Install

Estimate Revision: 5

Total: $ 86,137

ITC - T031 - (Segment A)			
	Supply	*Installation*	*Total*
J. Porter Substation - Install			
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ -	$ -	$ -
2. SUBSTATION FOUNDATIONS	$ -	$ -	$ -
3. SUBSTATION STRUCTURES	$ -	$ -	$ -
4. MAJOR EQUIPTMENT	$ -	$ -	$ -
5. SMALL EQUIPTMENT / MATERIALS	$ -	$ -	$ -
6. CONTROL HOUSE / PANELS	$ -	$ -	$ -
7. MISC ITEMS	$ 15,008	$ 56,904	$ 71,912
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 1,201	$ 13,024	$ 14,225
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 16,209	$ 69,928	$ 86,137
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 16,209	$ 69,928	$ 86,137

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
J. Porter Substation - Install									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	0	ACRES	$ -	$ -	$ 203,000	$ -	$ 203,000	$ -
1.2	Station stone within substation fence.	0	CY	$ -	$ -	$ 75	$ -	$ 75	$ -
1.3	Substation Fence	0	LF	$ -	$ -	$ 100	$ -	$ 100	$ -
1.4									
1.5									
1.6									
1.7									
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ -		$ -		$ -
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	0	EA	$ 14,940	$ -	$ 16,000	$ -	$ 30,940	$ -
2.1b	Capacitor Bank Foundations	0	EA	$ 56,025	$ -	$ 60,000	$ -	$ 116,025	$ -
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 26,145	$ -	$ 28,000	$ -	$ 54,145	$ -
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 26,145	$ -	$ 28,000	$ -	$ 54,145	$ -
2.1e	Switch Stand Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1f	Station Service Transformer Stand Foundation	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1h	Bus Support 1 Ph Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1j	Instrument Transformer Stand Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1k	Arrester Stand Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1m	Wave Trap Stand Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1n	Misc. Structure Foundations		EA.	$ -	$ -	$ -	$ -	$ -	$ -
2.1p									
2.2	**230kV**								
2.2a	Circuit Breaker Foundations	0	EA	$ 11,952	$ -	$ 12,800	$ -	$ 24,752	$ -
2.2b	Capacitor Bank Foundations	0	EA	$ 44,820	$ -	$ 48,000	$ -	$ 92,820	$ -
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	$ -
2.2e	Switch Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2f	Station Service Transformer Stand Foundation	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2h	Bus Support 1 Ph Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2j	Instrument Transformer Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2k	Arrester Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2m	Wave Trap Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2n	Misc. Structure Foundations		EA.	$ -	$ -	$ -	$ -	$ -	$ -
2.2p									
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	0	EA	$ 5,229	$ -	$ 5,600	$ -	$ 10,829	$ -
2.3b	Capacitor Bank Foundations	0	EA	$ 33,615	$ -	$ 36,000	$ -	$ 69,615	$ -
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	$ -
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	$ -
2.3e	Switch Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3f	Fuse Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3g	Bus Support 3ph Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3h	Bus Support 1 Ph Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3j	Instrument Transformer Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3k	Arrester Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3m	Wave Trap Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment	0	EA	$ 97,110	$ -	$ 104,000	$ -	$ 201,110	$ -
2.4b	345-115kV Transformer Foundation w/ Oil Containment	0	EA	$ 74,700	$ -	$ 80,000	$ -	$ 154,700	$ -
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad	0	EA	$ 76,194	$ -	$ 81,600	$ -	$ 157,794	$ -
2.5b	Generator Foundation	0	EA	$ 16,000	$ -	$ 17,000	$ -	$ 33,000	$ -
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	0	EA	$ 5,229	$ -	$ 5,600	$ -	$ 10,829	$ -
2.6b		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6c		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION FOUNDATIONS					$ -		$ -		$ -
3. SUBSTATION STRUCTURES									
3.1	**345kV**								
3.1a	Substation A-Frame Structures - Stand alone	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	$ -
3.1b	Substation A-Frame Structures - Shared Column	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	$ -
3.1c	Switch Stands	0	EA	$ 14,800	$ -	$ 14,800	$ -	$ 29,600	$ -
3.1d	Station Service Transformer Stand	0	EA	$ 14,800	$ -	$ 14,800	$ -	$ 29,600	$ -
3.1e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1f	Bus Support 1 Ph	0	EA	$ 3,700	$ -	$ 3,700	$ -	$ 7,400	$ -
3.1g	Instrument Transformer Stand	0	EA	$ 1,850	$ -	$ 1,850	$ -	$ 3,700	$ -
3.1h	Arrester Stand	0	EA	$ 1,850	$ -	$ 1,850	$ -	$ 3,700	$ -
3.1j	Wave Trap Stand	0	EA	$ 7,400	$ -	$ 7,400	$ -	$ 14,800	$ -
3.1k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	$ -
3.2b	Substation A-Frame Structures - Shared Column	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	$ -
3.2c	Switch Stands	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	$ -
3.2d	Station Service Transformer Stand	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	$ -
3.2e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2f	Bus Support 1 Ph	0	EA	$ 2,775	$ -	$ 2,775	$ -	$ 5,550	$ -
3.2g	Instrument Transformer Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	$ -
3.2h	Arrester Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.2j	Wave Trap Stand	0	EA	$ 5,550	$ -	$ 5,550	$ -	$ 11,100	$ -
3.2k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
3.3	**115kV**								
3.3a	Substation A-Frame Structures - Stand alone	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	$ -
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	$ -
3.3c	Switch Stands	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	$ -
3.3d	Fuse Stand	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	$ -
3.3e	Bus Support 3ph	0	EA	$ 3,330	$ -	$ 3,330	$ -	$ 6,660	$ -
3.3f	Bus Support 1 Ph	0	EA	$ 1,850	$ -	$ 1,850	$ -	$ 3,700	$ -
3.3g	Instrument Transformer Stand	0	EA	$ 740	$ -	$ 740	$ -	$ 1,480	$ -
3.3h	Arrester Stand	0	EA	$ 740	$ -	$ 740	$ -	$ 1,480	$ -
3.3j	Wave Trap Stand	0	EA	$ 3,700	$ -	$ 3,700	$ -	$ 7,400	$ -
3.3k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
TOTAL - SUBSTATION STRUCTURES					$ -		$ -		$ -
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	0	EA	$ 300,000	$ -	$ 80,000	$ -	$ 380,000	$ -
4.1b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	$ -
4.1c	345 kV - 230 kV Auto Transformer	0	EA	$ -	$ -	$ 750,000	$ -	$ 750,000	$ -
4.1d	345 kV - 115 kV Auto Transformer	0	EA	$ -	$ -	$ 750,000	$ -	$ 750,000	$ -
4.2	**230kV**								
4.2a	Circuit Breakers	0	EA	$ 250,000	$ -	$ 80,000	$ -	$ 330,000	$ -
4.2b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	$ -
4.3	**115kV**								
4.3a	Circuit Breakers	0	EA	$ 225,000	$ -	$ 60,000	$ -	$ 285,000	$ -
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ 60,000	$ -	$ 60,000	$ -
TOTAL - MAJOR EQUIPTMENT					$ -		$ -		$ -
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator	0	EA	$ 35,000	$ -	$ 15,000	$ -	$ 50,000	$ -
5.1b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 40,000	$ -	$ 17,500	$ -	$ 57,500	$ -
5.1c	VT'S	0	EA	$ -	$ -	$ 12,000	$ -	$ 12,000	$ -
5.1d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.1e	CCVT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.1f	Arresters	0	EA	$ 6,500	$ -	$ 1,500	$ -	$ 8,000	$ -
5.1g	Wave Traps	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.1h	Station Service Transformers	0	EA	$ 200,000	$ -	$ 50,000	$ -	$ 250,000	$ -
5.1j									
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator	0	EA	$ 30,000	$ -	$ 15,000	$ -	$ 45,000	$ -
5.2b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 35,000	$ -	$ 17,500	$ -	$ 52,500	$ -
5.2c	VT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2e	CCVT'S	0	EA	$ 10,000	$ -	$ 6,000	$ -	$ 16,000	$ -
5.2f	Arresters	0	EA	$ 5,000	$ -	$ 6,000	$ -	$ 11,000	$ -
5.2g	Wave Traps	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2j									
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	0	EA	$ 28,000	$ -	$ 15,000	$ -	$ 43,000	$ -
5.3b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 33,000	$ -	$ 17,500	$ -	$ 50,500	$ -
5.3c	VT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.3d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.3e	CCVT'S	0	EA	$ 8,000	$ -	$ 8,000	$ -	$ 16,000	$ -
5.3f	Arresters	0	EA	$ 3,420	$ -	$ 6,000	$ -	$ 9,420	$ -
5.3g	Wave Traps	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ -		$ -		$ -
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE	0	EA	$ 551,250	$ -	$ 85,000	$ -	$ 636,250	$ -
6.2	Protection and Telecom Equipment Panels	0	EA	$ 35,000	$ -	$ 10,000	$ -	$ 45,000	$ -
6.3	125VDC Batteries	0	EA	$ 75,000	$ -	$ 25,000	$ -	$ 100,000	$ -
6.4	Control Cables	0	LS	$ 35,000	$ -	$ 12,500	$ -	$ 47,500	$ -
6.5	SCADA and Communications	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.6	Low Voltage AC Distribution	0	EA	$ 50,000	$ -	$ 100,000	$ -	$ 150,000	$ -
6.7	DC Distribution System	0	EA	$ 50,000	$ -	$ 100,000	$ -	$ 150,000	$ -
6.8	Security	0	EA	$ 7,500	$ -	$ 7,500	$ -	$ 15,000	$ -
6.9	Fire Alarm	0	EA	$ 7,500	$ -	$ 7,500	$ -	$ 15,000	$ -
6.10	Generator	0	EA	$ 100,000	$ -	$ 80,000	$ -	$ 180,000	$ -
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ -		$ -		$ -
7. MISC ITEMS									
7.1	Conduit & Cable Trench System	0	LF	$ 185.00	$ -	$ 170.00	$ -	$ 355	$ -
7.2	Rigid Bus, Fittings & Insulators	1	LS	$ 15,008.40	$ 15,008	$ 56,904.00	$ 56,904	$ 71,912	**$ 71,912**
7.3	Strain Bus, Connectors & Insulators	0	LF	$ 13.38	$ -	$ 39.35	$ -	$ 53	$ -
7.4	Grounding System	0	LF	$ 6.93	$ -	$ 32.58	$ -	$ 40	$ -
7.5	Strain Bus Insulators - 345kV	0	EA	$ 2,000	$ -	$ 1,050	$ -	$ 3,050	$ -
7.6	Strain Bus Insulators - 230kV	0	EA	$ 1,400	$ -	$ 750	$ -	$ 2,150	$ -
7.7	Strain Bus Insulators - 115kV	0	EA	$ 1,000	$ -	$ 550	$ -	$ 1,550	$ -
7.8	Low Voltage AC Station Service	0	LS	$ 50,000	$ -	$ 75,000	$ -	$ 125,000	$ -
7.9	SSVT Service	0	LS	$ 45,000	$ -	$ 45,000	$ -	$ 90,000	$ -
7.10	Control Cables	0	LS	$ 472,500	$ -	$ 472,500	$ -	$ 945,000	$ -
7.11	Control Conduits from Trench to Equipment	0	LS	$ 125,000	$ -	$ 125,000	$ -	$ 250,000	$ -
7.12	Misc. Materials (Above and Below Ground)	0	LS	$ 180,000	$ -	$ 180,000	$ -	$ 360,000	$ -
7.13									
7.14									
7.15									
7.16									
7.17									
7.18									
7.19									
7.20									
TOTAL - MISC ITEMS					$ 15,008		$ 56,904		$ 71,912
J. Porter Substation - Install					$ 15,008		$ 56,904		**$ 71,912**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1	LS	$ -	$ -	$ 719	$ 719	$ 719	**$ 719**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		$ -	$ 3,100	$ 3,100	$ 3,100	**$ 3,100**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 719	$ 719	$ 719	**$ 719**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 719	$ 719	$ 719	**$ 719**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 5,753	$ 5,753	$ 5,753	**$ 5,753**
8.6	LiDAR	-	Mile	$ -	$ -	$ -	$ -	$ -	$ -
8.7	Geotech	-	Site	$ -	$ -	$ -	$ -	$ -	$ -
8.8	Surveying/Staking	-	Site	$ -	$ -	$ 503	$ -	$ 503	$ -
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 1,798	$ 1,798	$ 1,798	**$ 1,798**
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 216	$ 216	$ 216	**$ 216**
8.13	Real Estate Costs (New)	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.14	Real Estate Costs (Incumbent Utility)	-	LS	$ -	$ -	$ -	$ -	$ -	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.18	Sales Tax on Materials	1	LS	$ 1,201	$ 1,201	$ -	$ -	$ 1,201	**$ 1,201**
8.19	Fees for permits, including roadway, railroad, building or other local permits	-	LS		$ -	$ 72	$ -	$ 72	**$ -**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 1,201		$ 13,024		**$ 14,225**

ITC - T031 - (Segment A)

K. Porter Substation - Removal

Estimate Revision: 5

Total: $ 548,359

ITC - T031 - (Segment A)	Supply	Installation	Total
K. Porter Substation - Removal			
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ -	$ -	$ -
2. SUBSTATION FOUNDATIONS	$ -	$ 126,600	$ 126,600
3. SUBSTATION STRUCTURES	$ -	$ 206,100	$ 206,100
4. MAJOR EQUIPTMENT	$ -	$ 43,500	$ 43,500
5. SMALL EQUIPTMENT / MATERIALS	$ -	$ 59,500	$ 59,500
6. CONTROL HOUSE / PANELS	$ -	$ -	$ -
7. MISC ITEMS	$ -	$ 38,613	$ 38,613
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ -	$ 74,047	$ 74,047
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ -	$ 548,359	$ 548,359
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ -	$ 548,359	$ 548,359

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
K. Porter Substation - Removal									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	0	ACRES	$ -	$ -	$ 203,000	$ -	$ 203,000	$ -
1.2	Station stone within substation fence.	0	CY	$ -	$ -	$ 75	$ -	$ 75	$ -
1.3	Substation Fence	0	LF	$ -	$ -	$ 150	$ -	$ 150	$ -
1.4									
1.5									
1.6									
1.7									
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ -		$ -		$ -
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1e	Switch Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1f	Station Service Transformer Stand Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1k	Arrester Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1n	Misc. Structure Foundations		EA.	$ -	$ -	$ -	$ -	$ -	$ -
2.1p									
2.2	**230kV**								
2.2a	Circuit Breaker Foundations	3	EA	$ -	$ -	$ 7,200	$ 21,600	$ 7,200	**$ 21,600**
2.2b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ 32,000	$ -	$ 32,000	$ -
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ 22,000	$ -	$ 22,000	$ -
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	5	EA	$ -	$ -	$ 11,000	$ 55,000	$ 11,000	**$ 55,000**
2.2e	Switch Stand Foundations	5	EA	$ -	$ -	$ 5,200	$ 26,000	$ 5,200	**$ 26,000**
2.2f	Station Service Transformer Stand Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.2h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.2j	Instrument Transformer Stand Foundations	4	EA	$ -	$ -	$ 2,400	$ 9,600	$ 2,400	**$ 9,600**
2.2k	Arrester Stand Foundations	6	EA	$ -	$ -	$ 2,400	$ 14,400	$ 2,400	**$ 14,400**
2.2m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2n	Misc. Structure Foundations		EA.	$ -	$ -	$ -	$ -	$ -	$ -
2.2p									
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3e	Switch Stand Foundations	0	EA	$ -	$ -	$ 5,200	$ -	$ 5,200	$ -
2.3f	Fuse Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3k	Arrester Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4b	345-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ 42,000	$ -	$ 42,000	$ -
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5b	Generator Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6b		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6c		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION FOUNDATIONS					$ -		$ 126,600		$ 126,600
3. SUBSTATION STRUCTURES									
3.1	**345kV**								
3.1a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1c	Switch Stands	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1d	Station Service Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1f	Bus Support 1 Ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1g	Instrument Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1h	Arrester Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1j	Wave Trap Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ 27,000	$ -	$ 27,000	$ -
3.2b	Substation A-Frame Structures - Shared Column	5	EA	$ -	$ -	$ 27,000	$ 135,000	$ 27,000	**$ 135,000**
3.2c	Switch Stands	6	EA	$ -	$ -	$ 9,750	$ 58,500	$ 9,750	**$ 58,500**
3.2d	Station Service Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2f	Bus Support 1 Ph	0	EA	$ -	$ -	$ 2,250	$ -	$ 2,250	$ -
3.2g	Instrument Transformer Stand	6	EA	$ -	$ -	$ 1,050	$ 6,300	$ 1,050	**$ 6,300**
3.2h	Arrester Stand	6	EA	$ -	$ -	$ 1,050	$ 6,300	$ 1,050	**$ 6,300**
3.2j	Wave Trap Stand	0	EA	$ -	$ -	$ 4,500	$ -	$ 4,500	$ -
3.2k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3	**115kV**								

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.3a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ 15,000	$ -	$ 15,000	$ -
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3c	Switch Stands	0	EA	$ -	$ -	$ 6,450	$ -	$ 6,450	$ -
3.3d	Fuse Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3f	Bus Support 1 Ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3g	Instrument Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3h	Arrester Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3j	Wave Trap Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION STRUCTURES					$ -		$ 206,100		$ 206,100
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.1b	Capacitor Banks	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.1c		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.1d									
4.2	**230kV**								
4.2a	Circuit Breakers	3	EA	$ -	$ -	$ 14,500	$ 43,500	$ 14,500	**$ 43,500**
4.2b	Capacitor Banks	0	EA	$ -	$ -	$ 42,000	$ -	$ 42,000	$ -
4.3	**115kV**								
4.3a	Circuit Breakers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - MAJOR EQUIPTMENT					$ -		$ 43,500		$ 43,500
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.1b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.1c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.1d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.1e	CCVT'S	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.1f	Arresters	0	EA	$ -	$ -	$ 1,500	$ -	$ 1,500	$ -
5.1g	Wave Traps	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.1h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.1j									
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator	2	EA	$ -	$ -	$ 5,500	$ 11,000	$ 5,500	**$ 11,000**
5.2b	Disconnect Switches - 3ph w/ manual operator	3	EA	$ -	$ -	$ 5,500	$ 16,500	$ 5,500	**$ 16,500**
5.2c	VT'S	2	EA	$ -	$ -	$ 1,500	$ 3,000	$ 1,500	**$ 3,000**
5.2d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2e	CCVT'S	6	EA	$ -	$ -	$ 1,500	$ 9,000	$ 1,500	**$ 9,000**
5.2f	Arresters	6	EA	$ -	$ -	$ 2,500	$ 15,000	$ 2,500	**$ 15,000**
5.2g	Wave Traps	2	EA	$ -	$ -	$ 2,500	$ 5,000	$ 2,500	**$ 5,000**
5.2h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2j									
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.3c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3e	CCVT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3f	Arresters	0	EA	$ -	$ -	$ 1,500	$ -	$ 1,500	$ -
5.3g	Wave Traps	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ -		$ 59,500		$ 59,500
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE	0	EA	$ -	$ -	$ 150,000	$ -	$ 150,000	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6.2	Protection and Telecom Equipment Panels	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.3	125VDC Batteries	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.4	Control Cables	0	LS	$ -	$ -	$ -	$ -	$ -	$ -
6.5	SCADA and Communications	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.6	Low Voltage AC Distribution	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.7	DC Distribution System	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.8	Security	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.9	Fire Alarm	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.10	Generator	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ -		$ -		$ -
7. MISC ITEMS									
7.1	Conduit & Cable Trench System	0	EA	$ -	$ -	$ 42,000.00	$ -	$ 42,000	$ -
7.2	Rigid Bus, Fittings & Insulators	1	L.S.	$ -	$ -	$ 18,937.50	$ 18,938	$ 18,938	**$ 18,938**
7.3	Strain Bus, Connectors & Insulators	1	L.S.	$ -	$ -	$ 19,675.00	$ 19,675	$ 19,675	**$ 19,675**
7.4	Grounding System	0	EA	$ -	$ -	$ 42,000.00	$ -	$ 42,000	$ -
7.5									
7.6									
7.7									
7.8									
7.9									
7.10									
7.11									
7.12									
7.13									
7.14									
7.15									
TOTAL - MISC ITEMS					$ -		$ 38,613		$ 38,613
K. Porter Substation - Removal					$ -		$ 474,313		**$ 474,313**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1	LS	$ -	$ -	$ 4,743	$ 4,743	$ 4,743	**$ 4,743**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS		$ -	$ 20,449	$ 20,449	$ 20,449	**$ 20,449**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 4,743	$ 4,743	$ 4,743	**$ 4,743**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 4,743	$ 4,743	$ 4,743	**$ 4,743**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 37,945	$ 37,945	$ 37,945	**$ 37,945**
8.6	LiDAR	-	Mile	$ -	$ -	$ -	$ -	$ -	$ -
8.7	Geotech	-	Site	$ -	$ -	$ -	$ -	$ -	$ -
8.8	Surveying/Staking	-	Site	$ -	$ -	$ 3,320	$ -	$ 3,320	$ -
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	-	LS	$ -	$ -	$ 11,858	$ -	$ 11,858	$ -
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 1,423	$ 1,423	$ 1,423	**$ 1,423**
8.13	Real Estate Costs (New)	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.14	Real Estate Costs (Incumbent Utility)	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.18	Sales Tax on Materials	1	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.19	Fees for permits, including roadway, railroad, building or other local permits	-	LS		$ -	$ 474	$ -	$ 474	$ -
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ -		$ 74,047		**$ 74,047**

ITC - T031 - (Segment A)

L. Interconnection Edic Station

Estimate Revision: 5

Total: $ 2,113,230

ITC - T031 - (Segment A)	*Supply*	*Installation*	*Total*
L. Interconnection Edic Station			
1. CLEARING & ACCESS	$ -	$ 367,850	$ 367,850
2. FOUNDATIONS	$ 168,366	$ 170,169	$ 338,536
3. STRUCTURES	$ 501,469	$ 321,821	$ 823,289
4. CONDUCTOR, SHIELDWIRE, OPGW	$ -	$ -	$ -
5. INSULATORS, FITTINGS, HARDWARE	$ 160,000	$ 94,400	$ 254,400
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 66,387	$ 262,769	$ 329,155
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 896,222	$ 1,217,009	$ 2,113,230
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 896,222	$ 1,217,009	$ 2,113,230

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
L. Interconnection Edic Station									
1. CLEARING & ACCESS									
1.1	Clearing the ROW - Heavy (mowing & clearing)	-	Acre	$ -	$ -	$ 15,000	$ -	$ 15,000	$ -
1.2	Clearing the ROW - Light (mowing)	2.0	Acre	$ -	$ -	$ 5,000	$ 10,000	$ 5,000	**$ 10,000**
1.3	Access Road	-	LF	$ -	$ -	$ 45	$ -	$ 45	$ -
1.4	Silt Fence	3,500.0	LF	$ -	$ -	$ 4	$ 14,000	$ 4	**$ 14,000**
1.5	Matting - Access and ROW	3,500.0	LF	$ -	$ -	$ 70	$ 245,000	$ 70	**$ 245,000**
1.6	Matting - To Work Area	300.0	LF	$ -	$ -	$ 70	$ 21,000	$ 70	**$ 21,000**
1.7	Snow Removal	-	LS	$ -	$ -	$ 516,800	$ -	$ 516,800	$ -
1.8	ROW Restoration	0.5	Mile	$ -	$ -	$ 10,000	$ 5,000	$ 10,000	**$ 5,000**
1.9	Work Pads	20,000.0	SF	$ -	$ -	$ 4	$ 70,400	$ 4	**$ 70,400**
1.10	Restoration for Work Pad areas	4,000.0	SF	$ -	$ -	$ 0.2	$ 600	$ 0	**$ 600**
1.11	Temporary Access Bridge	-	EA	$ -	$ -	$ 20,035	$ -	$ 20,035	$ -
1.12	Air Bridge	-	EA	$ -	$ -	$ 14,445	$ -	$ 14,445	$ -
1.13	Stabilized Construction Entrance	-	EA	$ -	$ -	$ 4,580	$ -	$ 4,580	$ -
1.14	Maintenance and Protection of Traffic on Public Roads	-	EA	$ -	$ -	$ 4,130	$ -	$ 4,130	$ -
1.15	Gates	-	EA	$ 2,000	$ -	$ 2,500	$ -	$ 4,500	$ -
1.16	Culverts / Misc. Access	-	EA	$ 750	$ -	$ 1,250	$ -	$ 2,000	$ -
1.17	Concrete Washout Station	1	EA	$ -	$ -	$ 1,850	$ 1,850	$ 1,850	**$ 1,850**
1.18					$ -		$ -		$ -
1.19					$ -		$ -		$ -
1.20	Crushed Rock	0	CY	$ 27	$ -	$ 75	$ -	$ 102	$ -
TOTAL - CLEARING & ACCESS					$ -		$ 367,850		$ 367,850
2. FOUNDATIONS									
2.1	Foundation – Drilled Pier – 8'X 27'	3	EA	$ 41,332	$ 123,995	$ 41,774	$ 125,322	$ 83,106	**$ 249,317**
2.2	Foundation – Drilled Pier – 8'X 29'	1	EA	$ 44,372	$ 44,372	$ 44,847	$ 44,847	$ 89,219	**$ 89,219**
2.3	Rock Excavation Adder	-	CY	$ -	$ -	$ 2,000	$ -	$ 2,000	$ -
2.4									
2.5									
2.6									
2.7									
2.8									
2.9									
2.10									
2.11									
2.12									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.13									
2.14									
2.15									
TOTAL - FOUNDATIONS					$ 168,366		$ 170,169		$ 338,536
3. STRUCTURES									
3.1	1-CKT 345KV VERTICAL MEDIUM ANGLE DEADEND (15°-60°) – 105'	3	Structure	$ 98,883	$ 296,648	$ 59,330	$ 177,989	$ 158,212	**$ 474,636**
3.2	2-CKT 345KV VERTICAL MEDIUM ANGLE DEADEND (15°-60°) - 115'	1	Structure	$ 202,797	$ 202,797	$ 121,678	$ 121,678	$ 324,475	**$ 324,475**
3.3	Install Grounding and Grounding Accessories	4	Pole	$ 506	$ 2,024	$ 5,539	$ 22,154	$ 6,045	**$ 24,178**
3.4									
3.5									
3.6									
3.7									
3.8									
3.9									
3.10									
3.11									
3.12									
3.13									
3.14									
3.15									
TOTAL - STRUCTURES					$ 501,469		$ 321,821		$ 823,289
4. CONDUCTOR, SHIELDWIRE, OPGW									
4.1	345kV - (2) 954kcmil 54/7 ACSS "Cardinal"	-	LF	$ 3.53	$ -	$ 5.00	$ -	$ 8.53	**$ -**
4.2	(1) OPGW 36 Fiber AC-33/38/571	-	LF	$ 1.55	$ -	$ 5.00	$ -	$ 6.55	**$ -**
4.3	(1) 3/8" EHS7 Steel	-	LF	$ 0.72	$ -	$ 5.00	$ -	$ 5.72	**$ -**
4.5	Remove Existing Cable From Existing Structures	-	Mile	$ -	$ -	$ 30,000	$ -	$ 30,000.00	**$ -**
4.6	Remove Existing OPGW Cable	-	Mile	$ -	$ -	$ 12,000	$ -	$ 12,000.00	**$ -**
4.7	Remove Existing EH7	-	Mile	$ -	$ -	$ 12,000	$ -	$ 12,000.00	**$ -**
4.8									
4.9		-							
4.10	Rider Poles - Relocated	-	Set	$ -	$ -	$ 3,500	$ -	$ 3,500.00	**$ -**
4.11	Rider Poles	-	EA	$ 1,750	$ -	$ 3,500	$ -	$ 5,250.00	**$ -**
TOTAL: CONDUCTOR, SHIELDWIRE, OPGW:					$ -		$ -		**$ -**
5. INSULATOR, FITTINGS, HARDWARE									
5.1	345kV Tangent (1-Group of 18-Bells Each Assembly)		Assembly	$ 1,800	$ -	$ 720	$ -	$ 2,520	**$ -**
5.2	115kV Tangent (1-Group of 9-Bells Each Assembly)		Assembly	$ 900	$ -	$ 560	$ -	$ 1,460	**$ -**
5.3	345kV Dead-end & Angle Insulators (1-Group of 18-Bells Each Assembly)	60	Assembly	$ 1,800	$ 108,000	$ 720	$ 43,200	$ 2,520	**$ 151,200**
5.4	115kV Dead-end & Angle Insulators (1-Group of 9-Bells Each Assembly)		Assembly	$ 900	$ -	$ 560	$ -	$ 1,460	**$ -**
5.5	OPGW Assembly - Tangent	-	Assembly	$ 200	$ -	$ 150	$ -	$ 350	**$ -**
5.6	OPGW Assembly - Angle / DE	8	Assembly	$ 250	$ 2,000	$ 150	$ 1,200	$ 400	**$ 3,200**
5.7	OHSW Assembly - Angle / DE	-	Assembly	$ 250	$ -	$ 150	$ -	$ 400	**$ -**
5.8	OPGW Splice Boxes	-	Set	$ 1,750	$ -	$ 1,746	$ -	$ 3,496	**$ -**
5.9	OPGW Splice & Test	-	EA	$ 1,400	$ -	$ 2,520	$ -	$ 3,920	**$ -**
5.10	Spacer - Conductor	-	EA	$ 50	$ -	$ 35	$ -	$ 85	**$ -**
5.11	Vibration Dampers - Conductor	-	EA	$ 35	$ -	$ 35	$ -	$ 70	**$ -**
5.12	Shieldwire / OPGW Dampers, Misc. Fittings	-	EA	$ 27	$ -	$ 35	$ -	$ 62	**$ -**
5.13	Guys, Anchors, and Accessories	-	EA	$ 720	$ -	$ 885	$ -	$ 1,605	**$ -**
5.14	Misc. materials (Signs and Markers)	-	Mile	$ 770	$ -	$ 1,006	$ -	$ 1,776	**$ -**
5.15									
5.16									
5.17									
5.18									
5.19	Interconnection Arrangements	1	EA	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 100,000	**$ 100,000**
5.20									
TOTAL - INSULATOR, FITTINGS, HARDWARE					$ 160,000		$ 94,400		$ 254,400
L. Interconnection Edic Station					$ 829,835		$ 954,240		$ 1,784,075
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
6.1	Mob / Demob	1	LS	$ -	$ -	$ 17,841	$ 17,841	$ 17,841	**$ 17,841**
	Project Management, Material Handling & Amenities								

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 76,918	$ 76,918	$ 76,918	**$ 76,918**
6.3	Utility PM and Project Oversite	1	LS		$ -	$ 17,841	$ 17,841	$ 17,841	**$ 17,841**
6.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 17,841	$ 17,841	$ 17,841	**$ 17,841**
	Engineering								
6.5	Design Engineering	1	LS	$ -	$ -	$ 89,204	$ 89,204	$ 89,204	**$ 89,204**
6.6	LiDAR	-	LS	$ -	$ -	$ 5,352	$ -	$ 5,352	**$ -**
6.7	Geotech	1	Location	$ -	$ -	$ 3,500	$ 3,500	$ 3,500	**$ 3,500**
6.8	Surveying/Staking	1	LS	$ -	$ -	$ 12,489	$ 12,489	$ 12,489	**$ 12,489**
	Testing & Commissioning								
6.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 20,000	$ 20,000	$ 20,000	**$ 20,000**
	Permitting and Additional Costs								
6.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.12	Warranties / LOC's	1	LS	$ -	$ -	$ 5,352	$ 5,352	$ 5,352	**$ 5,352**
6.13	Real Estate Costs (New ROW)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.14	Real Estate Costs (Incumbent Utility ROW)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.18	Sales Tax on Materials	1	LS	$ 66,387	$ 66,387	$ -	$ -	$ 66,387	**$ 66,387**
6.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 1,784	$ 1,784	$ 1,784	**$ 1,784**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 66,387		$ 262,769		**$ 329,155**

ITC - T031 - (Segment A)

M. Interconnection New Scotland Station

Estimate Revision: 5

Total: $ 3,185,368

ITC - T031 - (Segment A)	*Supply*	*Installation*	*Total*
M. Interconnection New Scotland Station			
1. CLEARING & ACCESS	$ -	$ 367,850	$ 367,850
2. FOUNDATIONS	$ 365,657	$ 473,093	$ 838,749
3. STRUCTURES	$ 655,465	$ 445,628	$ 1,101,092
4. CONDUCTOR, SHIELDWIRE, OPGW	$ 3,555	$ 26,100	$ 29,655
5. INSULATORS, FITTINGS, HARDWARE	$ 205,530	$ 133,595	$ 339,125
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 98,416	$ 410,480	$ 508,897
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 1,328,622	$ 1,856,746	$ 3,185,368
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 1,328,622	$ 1,856,746	$ 3,185,368

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
M. Interconnection New Scotland Station									
1. CLEARING & ACCESS									
1.1	Clearing the ROW - Heavy (mowing & clearing)	-	Acre	$ -	$ -	$ 15,000	$ -	$ 15,000	$ -
1.2	Clearing the ROW - Light (mowing)	2.0	Acre	$ -	$ -	$ 5,000	$ 10,000	$ 5,000	**$ 10,000**
1.3	Access Road	-	LF	$ -	$ -	$ 45	$ -	$ 45	$ -
1.4	Silt Fence	3,500.0	LF	$ -	$ -	$ 4	$ 14,000	$ 4	**$ 14,000**
1.5	Matting - Access and ROW	3,500.0	LF	$ -	$ -	$ 70	$ 245,000	$ 70	**$ 245,000**
1.6	Matting - To Work Area	300.0	LF	$ -	$ -	$ 70	$ 21,000	$ 70	**$ 21,000**
1.7	Snow Removal	-	LS	$ -	$ -	$ 516,800	$ -	$ 516,800	$ -
1.8	ROW Restoration	0.5	Mile	$ -	$ -	$ 10,000	$ 5,000	$ 10,000	**$ 5,000**
1.9	Work Pads	20,000.0	SF	$ -	$ -	$ 4	$ 70,400	$ 4	**$ 70,400**
1.10	Restoration for Work Pad areas	4,000.0	SF	$ -	$ -	$ 0.2	$ 600	$ 0	**$ 600**
1.11	Temporary Access Bridge	-	EA	$ -	$ -	$ 20,035	$ -	$ 20,035	$ -
1.12	Air Bridge	-	EA	$ -	$ -	$ 14,445	$ -	$ 14,445	$ -
1.13	Stabilized Construction Entrance	-	EA	$ -	$ -	$ 4,580	$ -	$ 4,580	$ -
1.14	Maintenance and Protection of Traffic on Public Roads	-	EA	$ -	$ -	$ 4,130	$ -	$ 4,130	$ -
1.15	Gates	-	EA	$ 2,000	$ -	$ 2,500	$ -	$ 4,500	$ -
1.16	Culverts / Misc. Access	-	EA	$ 750	$ -	$ 1,250	$ -	$ 2,000	$ -
1.17	Concrete Washout Station	1	EA	$ -	$ -	$ 1,850	$ 1,850	$ 1,850	**$ 1,850**
1.18					$ -		$ -		$ -
1.19					$ -		$ -		$ -
1.20	Crushed Rock	0	CY	$ 27	$ -	$ 75	$ -	$ 102	$ -
TOTAL - CLEARING & ACCESS					$ -		$ 367,850		$ 367,850
2. FOUNDATIONS									
2.1	Foundation – Drilled Pier – 8'X 50'	3	EA	$ 76,500	$ 229,501	$ 77,320	$ 231,959	$ 153,820	**$ 461,459**
2.2	Foundation – Drilled Pier – 8'X 89'	1	EA	$ 136,156	$ 136,156	$ 137,614	$ 137,614	$ 273,770	**$ 273,770**
2.3	Rock Excavation Adder	51.8	CY	$ -	$ -	$ 2,000	$ 103,520	$ 2,000	**$ 103,520**
2.4									
2.5									
2.6									
2.7									
2.8									
2.9									
2.10									
2.11									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.12									
2.13									
2.14									
2.15									
TOTAL - FOUNDATIONS					$ 365,657		$ 473,093		$ 838,749
3. STRUCTURES									
3.1	1-CKT 345KV 3-POLE MEDIUM ANGLE DEADEND (15°-60°) - 115'	3	Structure	$ 178,026	$ 534,077	$ 106,815	$ 320,446	$ 284,841	**$ 854,522**
3.2	1-CKT 345KV VERTICAL MEDIUM ANGLE DEADEND (15°-60°) - 115'	1	Structure	$ 116,328	$ 116,328	$ 69,797	$ 69,797	$ 186,125	**$ 186,125**
3.3	Install Grounding and Grounding Accessories	10	Pole	$ 506	$ 5,060	$ 5,539	$ 55,385	$ 6,045	**$ 60,445**
3.4					$ -		$ -		
3.5									
3.6					$ -		$ -		
3.7					$ -		$ -		
3.8					$ -		$ -		
3.9					$ -		$ -		
3.10					$ -		$ -		
3.11					$ -		$ -		
3.12					$ -		$ -		
3.13					$ -		$ -		
3.14					$ -		$ -		
3.15					$ -		$ -		
TOTAL - STRUCTURES					$ 655,465		$ 445,628		$ 1,101,092
4. CONDUCTOR, SHIELDWIRE, OPGW									
4.1	345kV - (2) 954kcmil 54/7 ACSS "Cardinal"	1,500	LF	$ 1.90	$ 2,850	$ 5.00	$ 7,500	$ 6.90	**$ 10,350**
4.2	(1) OPGW 36 Fiber AC-33/38/571	-	LF	$ 1.35	$ -	$ 5.00	$ -	$ 6.35	**$ -**
4.3	(1) 3/8" EHS7 Steel	1,500	LF	$ 0.47	$ 705	$ 5.00	$ 7,500	$ 5.47	**$ 8,205**
4.5	Remove Existing 345kV Cable From Existing Structures	0.3	Mile	$ -	$ -	$ 30,000	$ 7,500	$ 30,000.00	**$ 7,500**
4.6	Remove Existing OPGW Cable	-	Mile	$ -	$ -	$ 12,000	$ -	$ 12,000.00	**$ -**
4.7	Remove Existing EH7	0.3	Mile	$ -	$ -	$ 12,000	$ 3,600	$ 12,000.00	**$ 3,600**
4.8									
4.9									
4.10	Rider Poles - Relocated	-	Set	$ -	$ -	$ 3,500	$ -	$ 3,500.00	**$ -**
4.11	Rider Poles	-	EA	$ 1,750	$ -	$ 3,500	$ -	$ 5,250.00	**$ -**
TOTAL: CONDUCTOR, SHIELDWIRE, OPGW:					$ 3,555		$ 26,100		**$ 29,655**
5. INSULATOR, FITTINGS, HARDWARE									
5.1	345kV Tangent (1-Group of 18-Bells Each Assembly)	-	Assembly	$ 1,800	$ -	$ 720	$ -	$ 2,520	**$ -**
5.2	115kV Tangent (1-Group of 9-Bells Each Assembly)	-	Assembly	$ 900	$ -	$ 560	$ -	$ 1,460	**$ -**
5.3	345kV Dead-end & Angle Insulators (1-Group of 18-Bells Each Assembly)	60	Assembly	$ 2,540	$ 152,400	$ 1,350	$ 81,000	$ 3,890	**$ 233,400**
5.4	115kV Dead-end & Angle Insulators (1-Group of 9-Bells Each Assembly)	-	Assembly	$ 1,270	$ -	$ 725	$ -	$ 1,995	**$ -**
5.5	OPGW Assembly - Tangent	-	Assembly	$ 200	$ -	$ 150	$ -	$ 350	**$ -**
5.6	OPGW Assembly - Angle / DE	-	Assembly	$ 250	$ -	$ 150	$ -	$ 400	**$ -**
5.7	OHSW Assembly - Angle / DE	4	Assembly	$ 250	$ 1,000	$ 150	$ 600	$ 400	**$ 1,600**
5.8	OPGW Splice Boxes	-	Set	$ 1,750	$ -	$ 1,746	$ -	$ 3,496	**$ -**
5.9	OPGW Splice & Test	-	EA	$ 1,400	$ -	$ 2,520	$ -	$ 3,920	**$ -**
5.10	Spacer - Conductor	9	EA	$ 50	$ 450	$ 35	$ 315	$ 85	**$ 765**
5.11	Vibration Dampers - Conductor	48	EA	$ 35	$ 1,680	$ 35	$ 1,680	$ 70	**$ 3,360**
5.12	Shieldwire / OPGW Dampers, Misc. Fittings	-	EA	$ 27	$ -	$ 35	$ -	$ 62	**$ -**
5.13	Guys, Anchors, and Accessories	-	EA	$ 720	$ -	$ 885	$ -	$ 1,605	**$ -**
5.14	Misc. materials (Signs and Markers)	-	Mile	$ 770	$ -	$ 1,006	$ -	$ 1,776	**$ -**
5.15					$ -		$ -		**$ -**
5.16	Interconnection Arrangements	1	EA	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 100,000	**$ 100,000**
5.17					$ -		$ -		**$ -**
5.18					$ -		$ -		**$ -**
5.19					$ -		$ -		**$ -**
5.20					$ -		$ -		**$ -**
TOTAL - INSULATOR, FITTINGS, HARDWARE					$ 205,530		$ 133,595		$ 339,125
M. Interconnection New Scotland Station					$ 1,230,206		$ 1,446,265		$ 2,676,471
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
6.1	Mob / Demob	1	LS	$ -	$ -	$ 26,765	$ 26,765	$ 26,765	**$ 26,765**
	Project Management, Material Handling & Amenities								

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 115,392	$ 115,392	$ 115,392	**$ 115,392**
6.3	Utility PM and Project Oversite	1	LS		$ -	$ 26,765	$ 26,765	$ 26,765	**$ 26,765**
6.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 26,765	$ 26,765	$ 26,765	**$ 26,765**
	Engineering								
6.5	Design Engineering	1	LS	$ -	$ -	$ 133,824	$ 133,824	$ 133,824	**$ 133,824**
6.6	LiDAR	1	LS	$ -	$ -	$ 8,029	$ 8,029	$ 8,029	**$ 8,029**
6.7	Geotech	1	Location	$ -	$ -	$ 3,500	$ 3,500	$ 3,500	**$ 3,500**
6.8	Surveying/Staking	1	LS	$ -	$ -	$ 18,735	$ 18,735	$ 18,735	**$ 18,735**
	Testing & Commissioning								
6.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 40,000	$ 40,000	$ 40,000	**$ 40,000**
	Permitting and Additional Costs								
6.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.12	Warranties / LOC's	1	LS	$ -	$ -	$ 8,029	$ 8,029	$ 8,029	**$ 8,029**
6.13	Real Estate Costs (New ROW)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.14	Real Estate Costs (Incumbent Utility ROW)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.18	Sales Tax on Materials	1	LS	$ 98,416	$ 98,416	$ -	$ -	$ 98,416	**$ 98,416**
6.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 2,676	$ 2,676	$ 2,676	**$ 2,676**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 98,416		$ 410,480		**$ 508,897**

NAT & NYPA - T026 - (Segment A, Base)

N. Interconnection Rotterdam Station

Estimate Revision: 5

Total: $ 4,581,370

NAT & NYPA - T026 - (Segment A, Base)	*Supply*	*Installation*	*Total*
N. Interconnection Rotterdam Station			
1. CLEARING & ACCESS	$ -	$ 1,233,050	$ 1,233,050
2. FOUNDATIONS	$ 192,145	$ 325,963	$ 518,108
3. STRUCTURES	$ 546,722	$ 837,150	$ 1,383,872
4. CONDUCTOR, SHIELDWIRE, OPGW	$ 65,923	$ 437,250	$ 503,173
5. INSULATORS, FITTINGS, HARDWARE	$ 165,730	$ 118,480	$ 284,210
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 77,642	$ 581,316	$ 658,957
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 1,048,161	$ 3,533,209	$ 4,581,370
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 1,048,161	$ 3,533,209	$ 4,581,370

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
N. Interconnection Rotterdam Station									
1. CLEARING & ACCESS									
1.1	Clearing the ROW - Heavy (mowing & clearing)	7.0	Acre	$ -	$ -	$ 15,000	$ 105,000	$ 15,000	**$ 105,000**
1.2	Clearing the ROW - Light (mowing)	5.0	Acre	$ -	$ -	$ 5,000	$ 25,000	$ 5,000	**$ 25,000**
1.3	Access Road	-	LF	$ -	$ -	$ 45	$ -	$ 45	$ -
1.4	Silt Fence	4,800.0	LF	$ -	$ -	$ 4	$ 19,200	$ 4	**$ 19,200**
1.5	Matting - Access and ROW	4,800.0	LF	$ -	$ -	$ 70	$ 336,000	$ 70	**$ 336,000**
1.6	Matting - To Work Area	2,400.0	LF	$ -	$ -	$ 70	$ 168,000	$ 70	**$ 168,000**
1.7	Snow Removal	-	LS	$ -	$ -	$ 516,800	$ -	$ 516,800	$ -
1.8	ROW Restoration	1.0	Mile	$ -	$ -	$ 10,000	$ 10,000	$ 10,000	**$ 10,000**
1.9	Work Pads	160,000.0	SF	$ -	$ -	$ 4	$ 563,200	$ 4	**$ 563,200**
1.10	Restoration for Work Pad areas	32,000.0	SF	$ -	$ -	$ 0.2	$ 4,800	$ 0	**$ 4,800**
1.11	Temporary Access Bridge	-	EA	$ -	$ -	$ 20,035	$ -	$ 20,035	$ -
1.12	Air Bridge	-	EA	$ -	$ -	$ 14,445	$ -	$ 14,445	$ -
1.13	Stabilized Construction Entrance	-	EA	$ -	$ -	$ 4,580	$ -	$ 4,580	$ -
1.14	Maintenance and Protection of Traffic on Public Roads	-	EA	$ -	$ -	$ 4,130	$ -	$ 4,130	$ -
1.15	Gates	-	EA	$ 2,000	$ -	$ 2,500	$ -	$ 4,500	$ -
1.16	Culverts / Misc. Access	-	EA	$ 750	$ -	$ 1,250	$ -	$ 2,000	$ -
1.17	Concrete Washout Station	1	EA	$ -	$ -	$ 1,850	$ 1,850	$ 1,850	**$ 1,850**
1.18					$ -		$ -		$ -
1.19					$ -		$ -		$ -
1.20	Crushed Rock	0	CY	$ 27	$ -	$ 75	$ -	$ 102	$ -
TOTAL - CLEARING & ACCESS					$ -		$ 1,233,050		$ 1,233,050
2. FOUNDATIONS									
2.1	10' ED Rock BF	6	EA	$ 358	$ 2,145	$ 3,575	$ 21,450	$ 3,933	**$ 23,595**
2.2	15' ED Rock BF	18	EA	$ 536	$ 9,653	$ 5,363	$ 96,525	$ 5,899	**$ 106,178**
2.3	20' ED Rock BF	4	EA	$ 715	$ 2,860	$ 7,150	$ 28,600	$ 7,865	**$ 31,460**
2.4	Foundation – Drilled Pier – 8'X 29'	4	EA	$ 44,372	$ 177,487	$ 44,847	$ 179,388	$ 89,219	**$ 356,875**
2.5	Rock Excavation Adder	-	CY	$ -	$ -	$ 2,000	$ -	$ 2,000	$ -
2.6					$ -		$ -		$ -
2.7					$ -		$ -		$ -
2.8					$ -		$ -		$ -
2.9					$ -		$ -		$ -
2.10					$ -		$ -		$ -
2.11					$ -		$ -		$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.12					$ -		$ -		$ -
2.13					$ -		$ -		$ -
2.14					$ -		$ -		$ -
2.15					$ -		$ -		$ -
TOTAL - FOUNDATIONS					$ 192,145		$ 325,963		$ 518,108
3. STRUCTURES									
3.1	15kV 3-CKT TANGENT DIST. - WOOD POLE	3	Pole	$ 3,500	$ 10,500	$ 3,600	$ 10,800	$ 7,100	**$ 21,300**
3.2	15Kv 3-CKT MA DIST. - WOOD POLE	1	Pole	$ 3,500	$ 3,500	$ 3,600	$ 3,600	$ 7,100	**$ 7,100**
3.3	15kV 3-CKT DE - WOOD POLE	2	Pole	$ 3,500	$ 7,000	$ 3,600	$ 7,200	$ 7,100	**$ 14,200**
3.4	115kV 1-CKT TANGENT - WOOD POLE	5	Pole	$ 4,500	$ 22,500	$ 4,400	$ 22,000	$ 8,900	**$ 44,500**
3.5	115kV 1-CKT MA - WOOD POLE	2	Pole	$ 4,500	$ 9,000	$ 4,400	$ 8,800	$ 8,900	**$ 17,800**
3.6	115kV 1-CKT DE - WOOD POLE	11	Pole	$ 5,500	$ 60,500	$ 5,000	$ 55,000	$ 10,500	**$ 115,500**
3.7	115kV 2-CKT TANGENT - WOOD POLE	4	Pole	$ 5,500	$ 22,000	$ 5,000	$ 20,000	$ 10,500	**$ 42,000**
3.8	115kV 2-CKT DE - STEEL POLE	4	Pole	$ 98,883	$ 395,530	$ 59,330	$ 237,318	$ 158,212	**$ 632,848**
3.9	Remove Existing Structure	24	EA		$ -	$ 12,300	$ 295,200	$ 12,300	**$ 295,200**
3.10					$ -		$ -		$ -
3.11					$ -		$ -		$ -
3.12	Install Grounding and Grounding Accessories	32	Pole	$ 506	$ 16,192	$ 5,539	$ 177,232	$ 6,045	**$ 193,424**
3.13					$ -		$ -		$ -
3.14					$ -		$ -		$ -
3.15					$ -		$ -		$ -
TOTAL - STRUCTURES					$ 546,722		$ 837,150		$ 1,383,872
4. CONDUCTOR, SHIELDWIRE, OPGW									
4.1	345kV - (1) 954kcmil 54/7 ACSS "Cardinal"	23,400	LF	$ 1.90	$ 44,460	$ 5.00	$ 117,000	$ 6.90	**$ 161,460**
4.2	(1) OPGW 36 Fiber AC-33/38/571	-	LF	$ 1.35	$ -	$ 5.00	$ -	$ 6.35	**$ -**
4.3	(1) 3/8" EHS7 Steel	7,800	LF	$ 0.47	$ 3,666	$ 5.00	$ 39,000	$ 5.47	**$ 42,666**
4.5	Remove Existing Cable	6.6	Mile	$ -	$ -	$ 30,000	$ 197,700	$ 30,000.00	**$ 197,700**
4.6	Remove Existing EH7	2.2	Mile	$ -	$ -	$ 12,000	$ 26,400	$ 12,000.00	**$ 26,400**
4.7	15kV - (1) 477kcmil 26/7 ACSR "Hawk"	9,630	LF	$ 1.62	$ 15,601	$ 5.00	$ 48,150	$ 6.62	**$ 63,751**
4.8	15kV - (1) 336kcmil 26/7 ACSR "Linnet"	1,800	LF	$ 1.22	$ 2,196	$ 5.00	$ 9,000	$ 6.22	**$ 11,196**
4.9		-							
4.10	Rider Poles - Relocated	-	Set	$ -	$ -	$ 3,500	$ -	$ 3,500.00	**$ -**
4.11	Rider Poles	-	EA	$ 1,750	$ -	$ 3,500	$ -	$ 5,250.00	**$ -**
TOTAL: CONDUCTOR, SHIELDWIRE, OPGW:					$ 65,923		$ 437,250		**$ 503,173**
5. INSULATOR, FITTINGS, HARDWARE									
5.1	115kV Tangent (1-Group of 9-Bells Each Assembly)	33	Assembly	$ 1,000	$ 33,000	$ 560	$ 18,480	$ 1,560	**$ 51,480**
5.2	115kV Dead-end & Angle Insulators (1-Group of 9-Bells Each Assembly)	66	Assembly	$ 1,000	$ 66,000	$ 560	$ 36,960	$ 1,560	**$ 102,960**
5.3	15kV Tangent	12	Assembly	$ 100	$ 1,200	$ 75	$ 900	$ 175	**$ 2,100**
5.4	15kV Dead-end & Angle Insulators	18	Assembly	$ 100	$ 1,800	$ 75	$ 1,350	$ 175	**$ 3,150**
5.5	Neutral, Distribution, Tangent	4	Assembly	$ 100	$ 400	$ 75	$ 300	$ 175	**$ 700**
5.6	Neutral, Distribution, DE/Side	2	Assembly	$ 100	$ 200	$ 75	$ 150	$ 175	**$ 350**
5.7	Jumper, DE/Angle, 3PH	4	Assembly	$ 100	$ 400	$ 75	$ 300	$ 175	**$ 700**
5.8	OPGW Assembly - Tangent	2	Assembly	$ 200	$ 400	$ 150	$ 300	$ 350	**$ 700**
5.9	OSHW Assembly - Tangent	11	Assembly	$ 250	$ 2,750	$ 150	$ 1,650	$ 400	**$ 4,400**
5.10	OHSW Assembly - Angle / DE	38	Assembly	$ 250	$ 9,500	$ 150	$ 5,700	$ 400	**$ 15,200**
5.11	OPGW Splice Boxes	-	Set	$ 1,750	$ -	$ 1,746	$ -	$ 3,496	**$ -**
5.12	OPGW Splice & Test	-	EA	$ 1,400	$ -	$ 2,520	$ -	$ 3,920	**$ -**
5.13	Spacer - Conductor	-	EA	$ 50	$ -	$ 35	$ -	$ 85	**$ -**
5.14	Vibration Dampers - Conductor	-	EA	$ 35	$ -	$ 35	$ -	$ 70	**$ -**
5.15	Shieldwire / OPGW Dampers, Misc. Fittings	-	EA	$ 27	$ -	$ 35	$ -	$ 62	**$ -**
5.16	Guys, Anchors, and Accessories	14.0	EA	$ 720	$ 10,080	$ 885	$ 12,390	$ 1,605	**$ 22,470**
5.17	Misc. materials (Signs and Markers)	-	Mile	$ 770	$ -	$ 1,006	$ -	$ 1,776	**$ -**
5.18					$ -		$ -		**$ -**
5.19	Interconnection Arrangements	8	EA	$ 5,000	$ 40,000	$ 5,000	$ 40,000	$ 10,000	**$ 80,000**
5.20					$ -		$ -		**$ -**
5.21					$ -		$ -		**$ -**
5.22					$ -		$ -		**$ -**
5.23					$ -		$ -		**$ -**
TOTAL - INSULATOR, FITTINGS, HARDWARE					$ 165,730		$ 118,480		$ 284,210
N. Interconnection Rotterdam Station					$ 970,519		$ 2,951,893		$ 3,922,412
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
	Contractor Mobilization / Demobilization								
6.1	Mob / Demob	1	LS	$ -	$ -	$ 39,224	$ 39,224	$ 39,224	**$ 39,224**
	Project Management, Material Handling & Amenities								
6.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 169,109	$ 169,109	$ 169,109	**$ 169,109**
6.3	Utility PM and Project Oversite	1	LS		$ -	$ 39,224	$ 39,224	$ 39,224	**$ 39,224**
6.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 39,224	$ 39,224	$ 39,224	**$ 39,224**
	Engineering								
6.5	Design Engineering	1	LS	$ -	$ -	$ 196,121	$ 196,121	$ 196,121	**$ 196,121**
6.6	LiDAR	1	LS	$ -	$ -	$ 11,767	$ 11,767	$ 11,767	**$ 11,767**
6.7	Geotech	1	Location	$ -	$ -	$ 3,500	$ 3,500	$ 3,500	**$ 3,500**
6.8	Surveying/Staking	1	LS	$ -	$ -	$ 27,457	$ 27,457	$ 27,457	**$ 27,457**
	Testing & Commissioning								
6.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 40,000	$ 40,000	$ 40,000	**$ 40,000**
	Permitting and Additional Costs								
6.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.12	Warranties / LOC's	1	LS	$ -	$ -	$ 11,767	$ 11,767	$ 11,767	**$ 11,767**
6.13	Real Estate Costs (New ROW)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.14	Real Estate Costs (Incumbent Utility ROW)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.18	Sales Tax on Materials	1	LS	$ 77,642	$ 77,642	$ -	$ -	$ 77,642	**$ 77,642**
6.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 3,922	$ 3,922	$ 3,922	**$ 3,922**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 77,642		$ 581,316		**$ 658,957**

ITC - T031 - (Segment A)

Q. Princetown Switchyard - Install

Estimate Revision: 5

Total: $ 34,974,270

ITC - T031 - (Segment A)	*Supply*	*Installation*	*Total*
Q. Princetown Switchyard - Install			
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ 294,850	$ 2,117,725	$ 2,412,575
2. SUBSTATION FOUNDATIONS	$ 2,731,032	$ 2,787,932	$ 5,518,964
3. SUBSTATION STRUCTURES	$ 1,315,350	$ 1,315,350	$ 2,630,700
4. MAJOR EQUIPTMENT	$ 2,400,000	$ 960,000	$ 3,360,000
5. SMALL EQUIPTMENT / MATERIALS	$ 2,922,000	$ 1,410,000	$ 4,332,000
6. CONTROL HOUSE / PANELS	$ 3,361,350	$ 2,023,350	$ 5,384,700
7. MISC ITEMS	$ 1,492,750	$ 2,842,330	$ 4,335,080
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 1,161,387	$ 5,838,865	$ 7,000,251
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 15,678,719	$ 19,295,552	$ 34,974,270
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 15,678,719	$ 19,295,552	$ 34,974,270

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
Q. Princetown Switchyard - Install									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	8.13	ACRES	$ -	$ -	$ 203,000	$ 1,649,375	$ 203,000	**$ 1,649,375**
1.2	Station stone within substation fence.	2,000	CY	$ 27	$ 54,000	$ 75	$ 150,000	$ 102	**$ 204,000**
1.3	Substation Fence	2,300	LF	$ 100	$ 230,000	$ 100	$ 230,000	$ 200	**$ 460,000**
1.4									
1.5									
1.6	Permanent Access Road - 20'-Wide (Extend Existing)	310	LF	$ 35	$ 10,850	$ 285	$ 88,350	$ 320	**$ 99,200**
1.7									
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ 294,850		$ 2,117,725		$ 2,412,575
2. SUBSTATION FOUNDATIONS									
2.1	**765kV**								
2.1a	Circuit Breaker Foundations		EA.	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	**$ -**
2.1b	Capacitor Bank Foundations	0	EA	$ 56,025	$ -	$ 60,000	$ -	$ 116,025	**$ -**
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)		EA.	$ 52,290	$ -	$ 56,000	$ -	$ 108,290	**$ -**
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)		EA.	$ 52,290	$ -	$ 56,000	$ -	$ 108,290	**$ -**
2.1e	Switch Stand Foundations		EA.	$ 8,964	$ -	$ 8,964	$ -	$ 17,928	**$ -**
2.1f	Station Service Transformer Stand Foundation	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	**$ -**
2.1g	Bus Support 1ph Foundations (High Bus)		EA.	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1h	Bus Support 1 Ph Foundations (Low Bus)		EA.	$ 8,964	$ -	$ 8,964	$ -	$ 17,928	**$ -**
2.1j	Instrument Transformer Stand Foundations		EA.	$ 8,964	$ -	$ 8,964	$ -	$ 17,928	**$ -**
2.1k	Arrester Stand Foundations		EA.	$ 8,964	$ -	$ 8,964	$ -	$ 17,928	**$ -**
2.1m	Wave Trap Stand Foundations		EA.	$ 8,964	$ -	$ 8,964	$ -	$ 17,928	**$ -**
2.1n	Misc. Structure Foundations		EA.	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1p									
2.2	**345kV**								
2.2a	Circuit Breaker Foundations	12	EA.	$ 14,940	$ 179,280	$ 14,940	$ 179,280	$ 29,880	**$ 358,560**
2.2b	Capacitor Bank Foundations	0	EA	$ 44,820	$ -	$ 48,000	$ -	$ 92,820	**$ -**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	32	EA.	$ 26,145	$ 836,640	$ 26,145	$ 836,640	$ 52,290	**$ 1,673,280**
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA.	$ 26,145	$ -	$ 26,145	$ -	$ 52,290	**$ -**
2.2e	Switch Stand Foundations	144	EA.	$ 4,482	$ 645,408	$ 4,482	$ 645,408	$ 8,964	**$ 1,290,816**
2.2f	Station Service Transformer Stand Foundation	6	EA.	$ 4,482	$ 26,892	$ 4,482	$ 26,892	$ 8,964	**$ 53,784**
2.2g	Bus Support 1ph Foundations (High Bus)	0	EA.	$ -	$ -	$ -	$ -	$ -	**$ -**
2.2h	Bus Support 1 Ph Foundations (Low Bus)	86	EA.	$ 4,482	$ 385,452	$ 4,482	$ 385,452	$ 8,964	**$ 770,904**
2.2j	Instrument Transformer Stand Foundations	78	EA.	$ 4,482	$ 349,596	$ 4,482	$ 349,596	$ 8,964	**$ 699,192**
2.2k	Arrester Stand Foundations	24	EA.	$ 4,482	$ 107,568	$ 4,482	$ 107,568	$ 8,964	**$ 215,136**
2.2m	Wave Trap Stand Foundations	8	EA.	$ 4,482	$ 35,856	$ 4,482	$ 35,856	$ 8,964	**$ 71,712**
2.2n	Misc. Structure Foundations		EA.	$ -	$ -	$ -	$ -	$ -	**$ -**
2.2p									
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	0	EA	$ 5,229	$ -	$ 5,600	$ -	$ 10,829	**$ -**
2.3b	Capacitor Bank Foundations	0	EA	$ 33,615	$ -	$ 36,000	$ -	$ 69,615	**$ -**
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	**$ -**
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	**$ -**
2.3e	Switch Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	**$ -**
2.3f	Fuse Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	**$ -**
2.3g	Bus Support 3ph Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	**$ -**
2.3h	Bus Support 1 Ph Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	**$ -**
2.3j	Instrument Transformer Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	**$ -**
2.3k	Arrester Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	**$ -**
2.3m	Wave Trap Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	**$ -**
2.3n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.4	**Transformer Foundations**								
2.4a	765-345kV Transformer Foundation w/ Oil Containment	0	EA.	$ -	$ -	$ -	$ -	$ -	**$ -**
2.4b	765-345kV Transformer Fire Wall	0	EA.	$ 106,074	$ -	$ 113,600	$ -	$ 219,674	**$ -**
2.4c				$ -	$ -	$ -	$ -	$ -	**$ -**
2.4d				$ -	$ -	$ -	$ -	$ -	**$ -**
2.5	**Control House Foundations / Pad / Generator / Station Service Distribution Line**								
2.5a	Control House / Pad - 35' x 95'	1	EA	$ 100,845	$ 100,845	$ 108,000	$ 108,000	$ 208,845	**$ 208,845**
2.5b	Generator Foundation	1	EA	$ 16,434	$ 16,434	$ 17,600	$ 17,600	$ 34,034	**$ 34,034**
2.5c	Station Service Distribution Line - 3ph.	1	LS	$ -	$ -	$ 45,240	$ 45,240	$ 45,240	**$ 45,240**
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	9	EA	$ 5,229	$ 47,061	$ 5,600	$ 50,400	$ 10,829	**$ 97,461**
2.6b				$ -	$ -	$ -	$ -	$ -	**$ -**
2.6c				$ -	$ -	$ -	$ -	$ -	**$ -**
TOTAL - SUBSTATION FOUNDATIONS					$ 2,731,032		$ 2,787,932		$ 5,518,964
3. SUBSTATION STRUCTURES									
3.1	**765kV**								
3.1a	Substation A-Frame Structures - Stand alone		EA.	$ 111,000	$ -	$ 111,000	$ -	$ 222,000	**$ -**
3.1b	Substation A-Frame Structures - Shared Column		EA.	$ 111,000	$ -	$ 111,000	$ -	$ 222,000	**$ -**
3.1c	Switch Stands		EA.	$ 22,200	$ -	$ 22,200	$ -	$ 44,400	**$ -**
3.1d	Station Service Transformer Stand		EA.	$ -	$ -	$ -	$ -	$ -	**$ -**
3.1e	Bus Support 1ph (High Bus)		EA.	$ 7,400	$ -	$ 7,400	$ -	$ 14,800	**$ -**
3.1f	Bus Support 1 Ph (low Bus)		EA.	$ 5,550	$ -	$ 5,550	$ -	$ 11,100	**$ -**
3.1g	Instrument Transformer Stand		EA.	$ 3,700	$ -	$ 3,700	$ -	$ 7,400	**$ -**
3.1h	Arrester Stand		EA.	$ 3,700	$ -	$ 3,700	$ -	$ 7,400	**$ -**
3.1j	Wave Trap Stand		EA.	$ 9,250	$ -	$ 9,250	$ -	$ 18,500	**$ -**
3.1k	Lightning Mast		EA.	$ 9,250	$ -	$ 9,250	$ -	$ 18,500	**$ -**
3.2	**345kV**								
3.2a	Substation A-Frame Structures - Stand alone	8	EA	$ 37,000	$ 296,000	$ 37,000	$ 296,000	$ 74,000	**$ 592,000**
3.2b	Substation A-Frame Structures - Shared Column	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	**$ -**
3.2c	Switch Stands	24	EA	$ 14,800	$ 355,200	$ 14,800	$ 355,200	$ 29,600	**$ 710,400**
3.2d	Station Service Transformer Stand	1	EA	$ 14,800	$ 14,800	$ 14,800	$ 14,800	$ 29,600	**$ 29,600**
3.2e	Bus Support 3ph	0	EA	$ 5,550	$ -	$ 5,550	$ -	$ 11,100	**$ -**
3.2f	Bus Support 1 Ph	86	EA	$ 3,700	$ 318,200	$ 3,700	$ 318,200	$ 7,400	**$ 636,400**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.2g	Instrument Transformer Stand	78	EA	$ 1,850	$ 144,300	$ 1,850	$ 144,300	$ 3,700	**$ 288,600**
3.2h	Arrester Stand	24	EA	$ 1,850	$ 44,400	$ 1,850	$ 44,400	$ 3,700	**$ 88,800**
3.2i	Wave Trap Stand	8	EA	$ 7,400	$ 59,200	$ 7,400	$ 59,200	$ 14,800	**$ 118,400**
3.2j	Lightning Mast	9	EA.	$ 9,250	$ 83,250	$ 9,250	$ 83,250	$ 18,500	**$ 166,500**
3.3	**115kV**								
3.3a	Substation A-Frame Structures - Stand alone	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	**$ -**
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	**$ -**
3.3c	Switch Stands	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	**$ -**
3.3d	Fuse Stand	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	**$ -**
3.3e	Bus Support 3ph	0	EA	$ 3,330	$ -	$ 3,330	$ -	$ 6,660	**$ -**
3.3f	Bus Support 1 Ph	0	EA	$ 1,850	$ -	$ 1,850	$ -	$ 3,700	**$ -**
3.3g	Instrument Transformer Stand	0	EA	$ 740	$ -	$ 740	$ -	$ 1,480	**$ -**
3.3h	Arrester Stand	0	EA	$ 740	$ -	$ 740	$ -	$ 1,480	**$ -**
3.3j	Wave Trap Stand	0	EA	$ 3,700	$ -	$ 3,700	$ -	$ 7,400	**$ -**
3.3k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	**$ -**
TOTAL - SUBSTATION STRUCTURES					$ 1,315,350		$ 1,315,350		$ 2,630,700
4. MAJOR EQUIPTMENT									
4.2	**345kV**								
4.2a	Circuit Breakers	12	EA	$ 200,000	$ 2,400,000	$ 80,000	$ 960,000	$ 280,000	**$ 3,360,000**
4.2b	Capacitor Banks		EA	$ -	$ -	$ 80,000	$ -	$ 80,000	**$ -**
4.3	**115kV**								
4.3a	Circuit Breakers	0	EA	$ 115,000	$ -	$ 60,000	$ -	$ 175,000	**$ -**
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ 60,000	$ -	$ 60,000	**$ -**
TOTAL - MAJOR EQUIPTMENT					$ 2,400,000		$ 960,000		$ 3,360,000
5. SMALL EQUIPTMENT / MATERIALS									
5.2	**345kV**								
5.2a	Line Switches - 3ph w/ motor operator	8	EA	$ 40,000	$ 320,000	$ 15,000	$ 120,000	$ 55,000	**$ 440,000**
5.2b	Disconnect Switches - 3ph w/ manual operator	24	EA	$ 35,000	$ 840,000	$ 17,500	$ 420,000	$ 52,500	**$ 1,260,000**
5.2c	VT'S	24	EA	$ 25,000	$ 600,000	$ 12,000	$ 288,000	$ 37,000	**$ 888,000**
5.2d	CT'S	24	EA	$ 13,000	$ 312,000	$ 8,000	$ 192,000	$ 21,000	**$ 504,000**
5.2e	CCVT'S	30	EA	$ 13,000	$ 390,000	$ 8,000	$ 240,000	$ 21,000	**$ 630,000**
5.2f	Arresters	24	EA	$ 6,500	$ 156,000	$ 1,500	$ 36,000	$ 8,000	**$ 192,000**
5.2g	Wave Traps	8	EA	$ 13,000	$ 104,000	$ 8,000	$ 64,000	$ 21,000	**$ 168,000**
5.2h	Station Service Transformers	1	EA	$ 200,000	$ 200,000	$ 50,000	$ 50,000	$ 250,000	**$ 250,000**
5.2j									
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	0	EA	$ 28,000	$ -	$ 15,000	$ -	$ 43,000	**$ -**
5.3b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 33,000	$ -	$ 17,500	$ -	$ 50,500	**$ -**
5.3c	VT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	**$ -**
5.3d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	**$ -**
5.3e	CCVT'S	0	EA	$ 8,000	$ -	$ 8,000	$ -	$ 16,000	**$ -**
5.3f	Arresters	0	EA	$ 3,420	$ -	$ 6,000	$ -	$ 9,420	**$ -**
5.3g	Wave Traps	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.3h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.3j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ 2,922,000		$ 1,410,000		$ 4,332,000
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE	1	EA	$ 526,500	$ 526,500	$ 81,000	$ 81,000	$ 607,500	**$ 607,500**
6.2	Protection and Telecom Equipment Panels	38	EA	$ 35,000	$ 1,330,000	$ 10,000	$ 380,000	$ 45,000	**$ 1,710,000**
6.3	125VDC Batteries	2	EA	$ 75,000	$ 150,000	$ 25,000	$ 50,000	$ 100,000	**$ 200,000**
6.4	Control Cables	1	LS	$ 1,004,850	$ 1,004,850	$ 1,004,850	$ 1,004,850	$ 2,009,700	**$ 2,009,700**
6.5	SCADA and Communications	1	EA	$ 35,000	$ 35,000	$ 12,500	$ 12,500	$ 47,500	**$ 47,500**
6.6	Low Voltage AC Distribution	2	EA	$ 50,000	$ 100,000	$ 100,000	$ 200,000	$ 150,000	**$ 300,000**
6.7	DC Distribution System	2	EA	$ 50,000	$ 100,000	$ 100,000	$ 200,000	$ 150,000	**$ 300,000**
6.8	Security	1	EA	$ 7,500	$ 7,500	$ 7,500	$ 7,500	$ 15,000	**$ 15,000**
6.9	Fire Alarm	1	EA	$ 7,500	$ 7,500	$ 7,500	$ 7,500	$ 15,000	**$ 15,000**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6.10	Generator	1	EA	$ 100,000	$ 100,000	$ 80,000	$ 80,000	$ 180,000	**$ 180,000**
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ 3,361,350		$ 2,023,350		**$ 5,384,700**
7. MISC ITEMS 765kV									
7.1	Conduit & Cable Trench System		LF	$ 185.00	$ -	$ 231.27	$ -	$ 416.27	**$ -**
7.2	Rigid Bus, Fittings & Insulators		LF	$ 515.95	$ -	$ 237.10	$ -	$ 753.05	**$ -**
7.3	Strain Bus, Connectors & Insulators		LF	$ 61.50	$ -	$ 78.69	$ -	$ 140.19	**$ -**
7.4	Grounding System		LF	$ 6.93	$ -	$ 32.58	$ -	$ 39.51	**$ -**
7.5	Strain Bus Insulators		EA	$ 4,000	$ -	$ 2,100	$ -	$ 6,100	**$ -**
7.6	Control Cables		LS	$ 546,700	$ -	$ 546,700	$ -	$ 1,093,400	**$ -**
7.7	Control Conduits from Trench to Equipment		LS	$ 125,000	$ -	$ 125,000	$ -	$ 250,000	**$ -**
7.8	Misc. Materials (Above and Below Ground)		LS	$ 180,000	$ -	$ 180,000	$ -	$ 360,000	**$ -**
7.9									
7.10									
7.11									
7.12									
7.13									
7.14									
7. MISC ITEMS 345kV									
7.15	Conduit & Cable Trench System	2,500	LF	$ 125.07	$ 312,675	$ 170.00	$ 425,000	$ 295	**$ 737,675**
7.16	Rigid Bus, Fittings & Insulators	3,500	LF	$ 125.07	$ 437,745	$ 237.10	$ 829,850	$ 362	**$ 1,267,595**
7.17	Strain Bus, Connectors & Insulators	0	LF	$ 61.50	$ -	$ 78.69	$ -	$ 140	**$ -**
7.18	Grounding System	31,000	LF	$ 6.93	$ 214,830	$ 32.58	$ 1,009,980	$ 40	**$ 1,224,810**
7.19	Strain Bus Insulators - 345kV	0	EA	$ 2,000	$ -	$ 1,050	$ -	$ 3,050	**$ -**
7.20	Low Voltage AC Station Service	1	LS	$ 50,000	$ 50,000	$ 75,000	$ 75,000	$ 125,000	**$ 125,000**
7.21	SSVT Service	1	LS	$ 50,000	$ 50,000	$ 75,000	$ 75,000	$ 125,000	**$ 125,000**
7.22	Control Conduits from Trench to Equipment	1	LS	$ 247,500	$ 247,500	$ 247,500	$ 247,500	$ 495,000	**$ 495,000**
7.23	Misc. Materials (Above and Below Ground)	1	LS	$ 180,000	$ 180,000	$ 180,000	$ 180,000	$ 360,000	**$ 360,000**
7.24									
7.25									
7.26									
7.27									
7.28									
7.29									
TOTAL - MISC ITEMS					$ 1,492,750		$ 2,842,330		$ 4,335,080
Q. Princetown Switchyard - Install					$ 14,517,332		$ 13,456,687		**$ 27,974,019**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1	LS	$ -	$ -	$ 279,740	$ 279,740	$ 279,740	**$ 279,740**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 1,206,058	$ 1,206,058	$ 1,206,058	**$ 1,206,058**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 279,740	$ 279,740	$ 279,740	**$ 279,740**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 279,740	$ 279,740	$ 279,740	**$ 279,740**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 2,237,922	$ 2,237,922	$ 2,237,922	**$ 2,237,922**
8.6	LiDAR	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.7	Geotech	4	EA	$ -	$ -	$ 3,500	$ 14,000	$ 3,500	**$ 14,000**
8.8	Surveying/Staking	1	Site	$ -	$ -	$ 195,818	$ 195,818	$ 195,818	**$ 195,818**
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 699,350	$ 699,350	$ 699,350	**$ 699,350**
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 83,922	$ 83,922	$ 83,922	**$ 83,922**
8.13	Real Estate Costs (New)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.14	Real Estate Costs (Incumbent Utility)	1	LS	$ -	$ -	$ 534,600	$ 534,600	$ 534,600	**$ 534,600**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.18	Sales Tax on Materials	1	LS	$ 1,161,387	$ 1,161,387	$ -	$ -	$ 1,161,387	**$ 1,161,387**
8.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 27,974	$ 27,974	$ 27,974	**$ 27,974**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 1,161,387		$ 5,838,865		**$ 7,000,251**

ITC - T031 - (Segment A)	
ESTIMATE ASSUMPTIONS & CLARIFICATIONS	
1	Cost Estimate is based on 2017 rates.
2	Construction schedule is in accordance with proposed schedule - we have assumed continuous working with no breaks in the schedule. Six months have been added to the construction schedule for start up and close out works and assisting in pre-construction activities (i.e. permitting activities, material procurement etc.).
3	We have assumed a typical work week of five-(5) days per week at ten-(10) hours per day (5 x 10 hour days).
4	All labor rates and benefits used for estimating purposes are taken from IBEW Local 1249 working agreement as updated 5-8-2017.
5	We have assumed that the Access Road included in Developer Estimate will be Type 1 Gravel Type.
6	Costs will vary for handling and disposal of contaminated spoils, depending on type of contaminants and availability / location of the appropriate tipping facility. Since there is not enough information to provide a quantified estimate for this item, allowance is included in the contingency monies.
7	Costs have been developed based on historical data from Projects of a similar nature (AACE Class 5 and 4 Estimating Practices). We have not engaged any subcontractors for formal quotes.
8	Foundation rates include supply and installation of materials. Drilled Pier rates include supply and testing of concrete, rebar cage and the use of temp or permanent casing.
9	A Contractor Mark-Up (OH&P) of 15% has been included in the Total section.
10	We have assumed that all project details provided are accurate unless noted otherwise.
11	Any SUF pricing includes 35% to cover Contractor markup (15%) and contingency (20%)
12	A contractor allowance of 1% for mobilization and demobilization has been included in the total section.
13	A contractor allowance of 3.698% for project management and staffing has been included in the total section. This also includes agricultural inspector, engineering inspector, safety inspector, compliance inspector, environmental inspector, and SWPP inspector.
14	An allowance of 1% for Utility PM and Project Oversite staffing has been included in the total section.
15	A contractor allowance of 1% for site accommodation, facilities, and storage has been included in the total section.
16	An allowance of 5% for transmission design and engineering has been included in the total section.
17	An allowance of 8% for substation design and engineering has been included in the total section.
18	An allowance of 0.7% for survey and staking of the transmission line and substation layout has been included in the total section.
19	An allowance of 0.3% for LIDAR of the transmission line has been included in the total section.
20	An allowance of 3.75% for substation testing and commissioning has been included in the total section.
21	An allowance of $20,000.00 per circuit for transmission line testing and commissioning has been included in the total section.
22	New York state sales tax of 8% is included in all material pricing.
23	An allowance of 1.5% for insurance is included in the DPS sheet.

National Grid and NY Transco (T019)			
		Description	**Total Amount** (In thousand $)
Direct Cost	1	**Transmission Lines**	
	1.1	Clearing & Access	$34,641
	1.2	Foundations	$44,405
	1.3	Structures	$56,279
	1.4	Conductor, Shiedwire and Optical Ground Wire	$30,070
	1.5	Insulators, Fitting and Hardwares	$11,200
		Subtotal (1)	**$176,595**
	2	**Substations**	
	2.1	Knickerbocker Substation	$26,306
	2.2	East Greenbush Substation	$61
	2.3	Schodack Substation	$2,226
	2.4	Churchtown Substation	$14,616
	2.5	Pleasant Valley Substation	$6,939
	2.6	Substation Interconnections	$5,534
		Subtotal (2)	**$55,682**
		Total (1+2)	$232,277
		Contractors Mark-up (15% of Total 1+2)	$34,842
		Total Direct Cost (A)	**$267,118**
Indirect Cost	3	**Technical Services Costs**	
	3.1	Contractor Mobilization / Demobilization	$2,323
	3.2	Project Management, Material Handling & Amenities	$16,172
	3.3	Engineering	$15,527
	3.4	Testing & Commissioning	$1,324
	3.5	Permitting, Real Estate, Sales Tax and Additional Costs	$16,982
	3.6	Legal, Environmental Licensing & Permitting and Environmental Mitigation	$7,428
		Total Indirect Cost (3)	**$59,755**
		Subtotal Project Cost (B=A+3) 2017 $	**$326,874**
	4	**Network Upgrade Facilities (NUF)**	
	4.1	NUF proposed as element of the Project (Fishkill and New Scotland Terminals)	$1,085
	4.2	NUF to mitigate NY to NE interface transfer limit degradation	$30,000
		Subtotal NUF Cost (C)	**$31,085**
		Total Project Cost (B+C) 2017 $	**$357,959**
		Total Project Cost 2018 $	**$368,698**

NG & NY Transco - T019 - (Segment B)

Estimate Revision: 8

NG & NY Transco - T019 - (Segment B)		*Total Each Segment*
Direct Labor, Material & Equipment Costs	A. Transmission Line Knickerbocker to Churchtown	$ 70,736,799
Direct Labor, Material & Equipment Costs	B. Transmission Line Churchtown to Pleasant Valley	$ 101,111,607
Direct Labor, Material & Equipment Costs	C. Blue Stores Junction to Blue Stores Substation	$ 4,746,361
Direct Labor, Material & Equipment Costs	D. Knickerbocker 345kV Substation - Install	$ 26,306,261
Direct Labor, Material & Equipment Costs	E. Greenbush Substation - Removal	$ 61,200
Direct Labor, Material & Equipment Costs	F. Schodack Substation - Install	$ 2,089,357
Direct Labor, Material & Equipment Costs	G. Schodack Substation - Removal	$ 136,200
Direct Labor, Material & Equipment Costs	H. Churchtown Substation - Install	$ 13,652,332
Direct Labor, Material & Equipment Costs	I. Churchtown Substation - Removal	$ 963,678
Direct Labor, Material & Equipment Costs	J. Pleasant Valley Substation - Install	$ 6,898,903
Direct Labor, Material & Equipment Costs	K. Pleasant Valley Substation - Removal	$ 40,500
Direct Labor, Material & Equipment Costs	L. Interconnection Knickerbocker Station	$ 3,068,229
Direct Labor, Material & Equipment Costs	M. Interconnection Churchtown Station	$ 1,881,925
Direct Labor, Material & Equipment Costs	N. Interconnection Milan Station	$ 583,388
Direct Labor, Material & Equipment Costs	O. NUF to mitigate NY to NE interface transfer limit degradation	$ 21,428,571
Direct Labor, Material & Equipment Costs	P.NUF proposed as element of the Project (Fishkill and New Scotland Terminals)	$ 774,000
	SUBTOTAL:	$ 254,479,311
	CONTRACTOR MARK-UP (OH&P)	$ 38,171,897
	CONTINGENCY ON ENTIRE PROJECT	$ -
	TOTAL DIRECT:	$ 292,651,208

NG & NY Transco - T019 - (Segment B)		*Total Each Segment*
Indirect Costs	A. Transmission Line Knickerbocker to Churchtown	$ 15,568,288
Indirect Costs	B. Transmission Line Churchtown to Pleasant Valley	$ 22,500,395
Indirect Costs	C. Blue Stores Junction to Blue Stores Substation	$ 943,735
Indirect Costs	D. Knickerbocker 345kV Substation - Install	$ 6,607,256
Indirect Costs	E. Greenbush Substation - Removal	$ 9,952
Indirect Costs	F. Schodack Substation - Install	$ 490,500
Indirect Costs	G. Schodack Substation - Removal	$ 22,149
Indirect Costs	H. Churchtown Substation - Install	$ 3,282,774
Indirect Costs	I. Churchtown Substation - Removal	$ 156,716
Indirect Costs	J. Pleasant Valley Substation - Install	$ 1,753,769
Indirect Costs	K. Pleasant Valley Substation - Removal	$ 7,477
Indirect Costs	L. Interconnection Knickerbocker Station	$ 559,427
Indirect Costs	M. Interconnection Churchtown Station	$ 319,787
Indirect Costs	N. Interconnection Milan Station	$ 105,632
Indirect Costs	O. NUF to mitigate NY to NE interface transfer limit degradation	$ 5,357,143
Indirect Costs	P.NUF proposed as element of the Project (Fishkill and New Scotland Terminals)	$ 195,000
Indirect Costs	Legal and Permitting (Includes Legal, Envir. Lisc. & Permit., and Envir. Mitigation)	$ 7,427,609
	TOTAL INDIRECT :	$ 65,307,611

TOTAL ESTMATED COST :	$ 357,958,819

NG & NY Transco - T019 - (Segment B)

A. Transmission Line Knickerbocker to Churchtown

Estimate Revision: 8

Total: $ 86,305,087

NG & NY Transco - T019 - (Segment B)	*Supply*	*Installation*	*Total*
A. Transmission Line Knickerbocker to Churchtown			
1. CLEARING & ACCESS	$ 11,500	$ 13,799,703	$ 13,811,203
2. FOUNDATIONS	$ 9,710,029	$ 10,978,019	$ 20,688,047
3. STRUCTURES	$ 9,422,041	$ 10,929,158	$ 20,351,199
4. CONDUCTOR, SHIELDWIRE, OPGW	$ 2,367,420	$ 8,759,465	$ 11,126,885
5. INSULATORS, FITTINGS, HARDWARE	$ 3,150,161	$ 1,609,303	$ 4,759,465
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 1,972,892	$ 13,595,396	$ 15,568,288
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 26,634,043	$ 59,671,044	$ 86,305,087
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 26,634,043	$ 59,671,044	$ 86,305,087

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Sum	Labor & Equipment Supply Rate	Labor & Equipment Sum	Total Unit Rate	TOTAL
A. Transmission Line Knickerbocker to Churchtown									
1. CLEARING & ACCESS									
1.1	Clearing the ROW - Heavy (mowing & clearing)	23.0	Acre	$ -	$ -	$ 15,000	$ 345,000	$ 15,000	**$ 345,000**
1.2	Clearing the ROW - Light (mowing)	63.0	Acre		$ -	$ 5,000	$ 315,000	$ 5,000	**$ 315,000**
1.3	Access Road	23,126	LF	$ -	$ -	$ 45.00	$ 1,040,688	$ 45	**$ 1,040,688**
1.4	Silt Fence	115,632	LF	$ -	$ -	$ 4.00	$ 462,528	$ 4	**$ 462,528**
1.5	Matting - Access and ROW	92,506	LF	$ -	$ -	$ 70.00	$ 6,475,392	$ 70	**$ 6,475,392**
1.6	Matting - To Work Area	16,575	LF	$ -	$ -	$ 70.00	$ 1,160,250	$ 70	**$ 1,160,250**
1.7	Snow Removal	21.9	Mile	$ -	$ -	$ 16,000	$ 350,400	$ 16,000	**$ 350,400**
1.8	ROW Restoration	21.9	Mile	$ -	$ -	$ 10,000	$ 219,000	$ 10,000	**$ 219,000**
1.9	Work Pads	850,000	SF	$ -	$ -	$ 3.52	$ 2,992,000	$ 4	**$ 2,992,000**
1.10	Restoration for Work Pad areas	170,000	SF	$ -	$ -	$ 0.15	$ 25,500	$ 0	**$ 25,500**
1.11	Temporary Access Bridge	9	EA	$ -	$ -	$ 20,035	$ 180,315	$ 20,035	**$ 180,315**
1.12	Air Bridge	-	EA	$ -	$ -	$ 14,445	$ -	$ 14,445	**$ -**
1.13	Stabilized Construction Entrance	4	EA	$ -	$ -	$ 4,580	$ 18,320	$ 4,580	**$ 18,320**
1.14	Maintenance and Protection of Traffic on Public Roads	47	EA	$ -	$ -	$ 4,130	$ 194,110	$ 4,130	**$ 194,110**
1.15	Culverts / Misc. Access	10	EA	$ 750	$ 7,500	$ 1,250	$ 12,500	$ 2,000	**$ 20,000**
1.16	Gates	2	EA	$ 2,000	$ 4,000	$ 2,500	$ 5,000	$ 4,500	**$ 9,000**
1.17	Concrete Washout Station	2	EA	$ -	$ -	$ 1,850	$ 3,700	$ 1,850	**$ 3,700**
TOTAL - CLEARING & ACCESS:					$ 11,500		$ 13,799,703		**$ 13,811,203**
2. FOUNDATIONS									
2.1	Drilled Pier - 115/345kV Double Ckt H- Pole Angle/DE	3	EA	$ 133,937	$ 401,811	$ 135,372	$ 406,115	$ 269,309	**$ 807,926**
2.2	Drilled Pier - 115/345kV Double Ckt Single Pole Angle/ DE	21	EA	$ 156,123	$ 3,278,583	$ 157,795	$ 3,313,695	$ 313,918	**$ 6,592,278**
2.3	Drilled Pier - 115/345kV Double Ckt Single Pole Tangent	133	EA	$ 35,333	$ 4,699,302	$ 35,712	$ 4,749,630	$ 71,045	**$ 9,448,932**
2.4	Drilled Pier - 115kV Single Circuit H-Pole Angle/ DE	2	EA	$ 125,720	$ 251,440	$ 127,067	$ 254,133	$ 252,787	**$ 505,573**
2.5	Drilled Pier - 115kV Single Circuit H-Pole Tangent	2	EA	$ 81,348	$ 162,697	$ 82,220	$ 164,439	$ 163,568	**$ 327,136**
2.6	Drilled Pier - 115kV Single Circuit Single Pole Angle/ DE	5	EA	$ 78,062	$ 390,308	$ 78,898	$ 394,488	$ 156,959	**$ 784,795**
2.7	Drilled Pier - 345kV Single Circuit Single Pole DE	4	EA	$ 131,472	$ 525,888	$ 132,880	$ 531,520	$ 264,352	**$ 1,057,408**
2.8	Rock Excavation Adder	582	CY	$ -	$ -	$ 2,000	$ 1,164,000	$ 2,000	**$ 1,164,000**
2.9									
2.10									
2.11									
2.12									
2.13									
2.14									
2.15									
2.16									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Sum	Labor & Equipment Supply Rate	Labor & Equipment Sum	Total Unit Rate	TOTAL
2.17									
2.18									
TOTAL - FOUNDATIONS:					$ 9,710,029		$ 10,978,019		**$ 20,688,047**
3. STRUCTURES									
3.1	115/345kV Double Ckt H- Pole Angle/DE	3	Structure	$ 99,985	$ 299,955	$ 59,991	$ 179,973	$ 159,976	**$ 479,928**
3.2	115/345kV Double Ckt Single Pole Angle/ DE	21	Structure	$ 112,378	$ 2,359,943	$ 67,427	$ 1,415,966	$ 179,805	**$ 3,775,909**
3.3	115/345kV Double Ckt Single Pole Tangent	133	Structure	$ 44,517	$ 5,920,701	$ 26,710	$ 3,552,421	$ 71,226	**$ 9,473,122**
3.4	115kV Single Circuit H-Pole Angle/ DE	2	Structure	$ 42,263	$ 84,527	$ 25,358	$ 50,716	$ 67,621	**$ 135,242**
3.5	115kV Single Circuit H-Pole Tangent	2	Structure	$ 39,442	$ 78,884	$ 23,665	$ 47,330	$ 63,107	**$ 126,214**
3.6	115kV Single Circuit Single Pole Angle/ DE	5	Structure	$ 52,041	$ 260,203	$ 31,224	$ 156,122	$ 83,265	**$ 416,324**
3.7	345kV Single Circuit Single Pole DE	4	Structure	$ 82,952	$ 331,809	$ 49,771	$ 199,085	$ 132,723	**$ 530,894**
3.8									
3.9									
3.10									
3.11									
3.12	Remove Existing Foundation	688	EA	$ -	$ -	$ 3,250	$ 2,236,000	$ 3,250	**$ 2,236,000**
3.13	Remove Existing Structure and Accessories	172	EA	$ -	$ -	$ 12,500	$ 2,150,000	$ 12,500	**$ 2,150,000**
3.14	Install Grounding and Grounding Accessories	170	Pole	$ 506	$ 86,020	$ 5,539	$ 941,545	$ 6,045	**$ 1,027,565**
3.15									
TOTAL - STRUCTURES:					$ 9,422,041		$ 10,929,158		**$ 20,351,199**
4. CONDUCTOR, SHIELDWIRE, OPGW									
4.1	345kV - (1) 954kcmil 54/7 ACSS "Cardinal"	741,787	LF	$ 1.90	$ 1,409,395	$ 5.00	$ 3,708,935	$ 6.90	**$ 5,118,330**
4.2	(1) OPGW 36 Fiber AC-33/38/571	123,631	LF	$ 1.35	$ 166,902	$ 5.00	$ 618,155	$ 6.35	**$ 785,057**
4.3	(1) 3/8" EHS7 Steel	121,414	LF	$ 0.47	$ 57,065	$ 5.00	$ 607,070	$ 5.47	**$ 664,135**
4.4	Remove Existing Cable From Existing Structures	43.8	Mile	$ -	$ -	$ 30,000	$ 1,314,000	$ 30,000.00	**$ 1,314,000**
4.5	Remove Existing OPGW Cable and Accessories	21.9	Mile	$ -	$ -	$ 12,000	$ 262,800	$ 12,000.00	**$ 262,800**
4.6	Remove Existing OHSW and Accessories	21.9	Mile	$ -	$ -	$ 12,000	$ 262,800	$ 12,000.00	**$ 262,800**
4.7	115kV - (1) 954kcmil 54/7 ACSS "Cardinal"	364,241	LF	$ 1.90	$ 692,058	$ 5.00	$ 1,821,205	$ 6.90	**$ 2,513,263**
4.8	Rider Poles (47 Locations)	24	Set	$ 1,750	$ 42,000	$ 3,500	$ 84,000	$ 5,250.00	**$ 126,000**
4.9	Rider Poles - Relocated	23	Set	$ -	$ -	$ 3,500	$ 80,500	$ 3,500.00	**$ 80,500**
4.10									
4.11									
4.12									
4.13									
4.14									
4.15									
4.16									
4.17									
TOTAL: CONDUCTOR, SHIELDWIRE, OPGW:					$ 2,367,420		$ 8,759,465		**$ 11,126,885**
5. INSULATOR, FITTINGS, HARDWARE									
5.1	345kV Tangent (1-Group of 18-Bells Each Assembly)	665	Assembly	$ 1,800	$ 1,197,000	$ 720	$ 478,800	$ 2,520	**$ 1,675,800**
5.2	115kV Tangent (1-Group of 9-Bells Each Assembly)	671	Assembly	$ 900	$ 603,900	$ 560	$ 375,760	$ 1,460	**$ 979,660**
5.3	345kV Dead-end & Angle Insulators (1-Group of 18-Bells Each Assembly)	420	Assembly	$ 1,800	$ 756,000	$ 720	$ 302,400	$ 2,520	**$ 1,058,400**
5.4	115kV Dead-end & Angle Insulators (1-Group of 9-Bells Each Assembly)	217	Assembly	$ 900	$ 195,300	$ 560	$ 121,520	$ 1,460	**$ 316,820**
5.5			Assembly		$ -		$ -	$ -	**$ -**
5.6	OPGW Assembly - Tangent	135	Assembly	$ 200	$ 27,000	$ 150	$ 20,250	$ 350	**$ 47,250**
5.7	OPGW Assembly - Angle / DE	62	Assembly	$ 250	$ 15,500	$ 150	$ 9,300	$ 400	**$ 24,800**
5.8	OHSW Assembly - Tangent	135	Assembly	$ 200	$ 27,000	$ 150	$ 20,250	$ 350	**$ 47,250**
5.9	OHSW Assembly - Angle / DE	56	Assembly	$ 250	$ 14,000	$ 150	$ 8,400	$ 400	**$ 22,400**
5.10	OPGW Splice Boxes	8	Set	$ 1,746	$ 13,969	$ 2,274	$ 18,192	$ 4,020	**$ 32,161**
5.11	OPGW Splice & Test	8	EA	$ 2,520	$ 20,160	$ 2,520	$ 20,160	$ 5,040	**$ 40,320**
5.12	Spacer - Conductor	3,651	EA	$ 50	$ 182,550	$ 35	$ 127,785	$ 85	**$ 310,335**
5.13	Vibration Dampers - Conductor	1,971	EA	$ 35	$ 68,985	$ 35	$ 68,985	$ 70	**$ 137,970**
5.14	Shield wire / OPGW Dampers, Misc. Fittings	442	EA	$ 27	$ 11,934	$ 35	$ 15,470	$ 62	**$ 27,404**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Sum	Labor & Equipment Supply Rate	Labor & Equipment Sum	Total Unit Rate	TOTAL
5.15	Guys, Anchors, and Accessories	-	EA	$ 720	$ -	$ 885	$ -	$ 1,605	$ -
5.16	Misc. materials (Signs and Markers)	22	Mile	$ 770	$ 16,863	$ 1,006	$ 22,031	$ 1,776	$ 38,894
5.17		-		$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - INSULATORS, FITTINGS, HARDWARE:					$ 3,150,161		$ 1,609,303		$ 4,759,465
A. Transmission Line Knickerbocker to Churchtown					$ 24,661,151		$ 46,075,648		$ 70,736,799
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
6.1	Mob / Demob	1	LS	$ -	$ -	$ 707,368	$ 707,368	$ 707,368	$ 707,368
	Project Management, Material Handling & Amenities								
6.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 3,510,137	$ 3,510,137	$ 3,510,137	$ 3,510,137
6.3	Utility PM and Project Oversite	1	LS		$ -	$ 707,368	$ 707,368	$ 707,368	$ 707,368
6.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 707,368	$ 707,368	$ 707,368	$ 707,368
	Engineering								
6.5	Design Engineering	1	LS	$ -	$ -	$ 3,536,840	$ 3,536,840	$ 3,536,840	$ 3,536,840
6.6	LiDAR	1	LS	$ -	$ -	$ 212,210	$ 212,210	$ 212,210	$ 212,210
6.7	Geotech	22	Location	$ -	$ -	$ 3,500	$ 77,000	$ 3,500	$ 77,000
6.8	Surveying/Staking	1	LS	$ -	$ -	$ 495,158	$ 495,158	$ 495,158	$ 495,158
	Testing & Commissioning								
6.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 40,000	$ 40,000	$ 40,000	$ 40,000
	Permitting and Additional Costs								
6.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
6.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
6.12	Warranties / LOC's	1	LS	$ -	$ -	$ 212,210	$ 212,210	$ 212,210	$ 212,210
6.13	Real Estate Costs (New ROW)	1	LS	$ -	$ -	$ -	$ -	$ -	$ -
6.14	Real Estate Costs (Incumbent Utility ROW)	1	LS	$ -	$ -	$ 3,319,000	$ 3,319,000	$ 3,319,000	$ 3,319,000
6.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
6.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
6.17		-	LS	$ -	$ -	$ -	$ -	$ -	$ -
6.18	Sales Tax on Materials	1	LS	$ 1,972,892	$ 1,972,892	$ -	$ -	$ 1,972,892	$ 1,972,892
6.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 70,737	$ 70,737	$ 70,737	$ 70,737
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 1,972,892		$ 13,595,396		$ 15,568,288

NG & NY Transco - T019 - (Segment B)

B. Transmission Line Churchtown to Pleasant Valley

Estimate Revision: 8

Total: $ 123,612,003

NG & NY Transco - T019 - (Segment B)	*Supply*	*Installation*	*Total*
B. Transmission Line Churchtown to Pleasant Valley			
1. CLEARING & ACCESS	$ 14,000	$ 19,410,966	$ 19,424,966
2. FOUNDATIONS	$ 5,416,314	$ 17,138,320	$ 22,554,633
3. STRUCTURES	$ 12,430,954	$ 21,953,334	$ 34,384,288
4. CONDUCTOR, SHIELDWIRE, OPGW	$ 3,505,234	$ 14,965,685	$ 18,470,919
5. INSULATORS, FITTINGS, HARDWARE	$ 4,145,919	$ 2,130,882	$ 6,276,801
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 2,040,994	$ 20,459,402	$ 22,500,395
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 27,553,414	$ 96,058,589	$ 123,612,003
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 27,553,414	$ 96,058,589	$ 123,612,003

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
B. Transmission Line Churchtown to Pleasant Valley									
1. CLEARING & ACCESS									
1.1	Clearing the ROW - Heavy (mowing & clearing)	17.0	Acre	$ -	$ -	$ 15,000	$ 255,000	$ 15,000	**$ 255,000**
1.2	Clearing the ROW - Light (mowing)	116.0	Acre	$ -	$ -	$ 5,000	$ 580,000	$ 5,000	**$ 580,000**
1.3	Access Road	34,109	LF	$ -	$ -	$ 45	$ 1,534,896	$ 45	**$ 1,534,896**
1.4	Silt Fence	170,544.0	LF	$ -	$ -	$ 4	$ 682,176	$ 4	**$ 682,176**
1.5	Matting - Access and ROW	136,435	LF	$ -	$ -	$ 70	$ 9,550,464	$ 70	**$ 9,550,464**
1.6	Matting - To Work Area	16,275.0	LF	$ -	$ -	$ 70	$ 1,139,250	$ 70	**$ 1,139,250**
1.7	Snow Removal	32.3	Mile	$ -	$ -	$ 16,000	$ 516,800	$ 16,000	**$ 516,800**
1.8	ROW Restoration	32.3	Mile	$ -	$ -	$ 10,000	$ 323,000	$ 10,000	**$ 323,000**
1.9	Work Pads	1,155,000.0	SF	$ -	$ -	$ 4	$ 4,065,600	$ 4	**$ 4,065,600**
1.10	Restoration for Work Pad areas	231,000.0	SF	$ -	$ -	$ 0.2	$ 34,650	$ 0	**$ 34,650**
1.11	Temporary Access Bridge	14	EA	$ -	$ -	$ 20,035	$ 280,490	$ 20,035	**$ 280,490**
1.12	Air Bridge	-	EA	$ -	$ -	$ 14,445	$ -	$ 14,445	**$ -**
1.13	Stabilized Construction Entrance	12	EA	$ -	$ -	$ 4,580	$ 54,960	$ 4,580	**$ 54,960**
1.14	Maintenance and Protection of Traffic on Public Roads	86	EA	$ -	$ -	$ 4,130	$ 355,180	$ 4,130	**$ 355,180**
1.15	Gates	4	EA	$ 2,000	$ 8,000	$ 2,500	$ 10,000	$ 4,500	**$ 18,000**
1.16	Culverts / Misc. Access	8	EA	$ 750	$ 6,000	$ 1,250	$ 10,000	$ 2,000	**$ 16,000**
1.17	Concrete Washout Station	10	EA	$ -	$ -	$ 1,850	$ 18,500	$ 1,850	**$ 18,500**
TOTAL - CLEARING & ACCESS:					$ 14,000		$ 19,410,966		**$ 19,424,966**
2. FOUNDATIONS									
2.1	Drilled Pier - 115/345kV Double Ckt Single Pole Angle/ DE	25	EA	$ 52,589	$ 1,314,720	$ 53,152	$ 1,328,800	$ 105,741	**$ 2,643,520**
2.2	Drilled Pier - 115/345kV Double Ckt Single Pole Tangent	202	EA	$ 19,349	$ 3,908,494	$ 19,556	$ 3,950,352	$ 38,905	**$ 7,858,846**
2.3	Drilled Pier - 115kV Single Circuit Single Pole Angle/ DE	3	EA	$ 46,837	$ 140,511	$ 47,339	$ 142,016	$ 94,175	**$ 282,526**
2.4	Drilled Pier - 345kV Single Circuit Single Pole DE	1	EA	$ 52,589	$ 52,589	$ 53,152	$ 53,152	$ 105,741	**$ 105,741**
2.5	Rock Excavation Adder	5,832.0	CY	$ -	$ -	$ 2,000	$ 11,664,000	$ 2,000	**$ 11,664,000**
2.6									
2.7									
2.8									
2.9									
2.10									
2.11									
2.12									
TOTAL - FOUNDATIONS:					$ 5,416,314		$ 17,138,320		**$ 22,554,633**
3. STRUCTURES									
3.1	115/345kV Double Ckt Single Pole Angle/ DE	25	Structure	$ 115,090	$ 2,877,259	$ 69,054	$ 1,726,355	$ 184,145	**$ 4,603,614**
3.2	115/345kV Double Ckt Single Pole Tangent	202	Structure	$ 45,131	$ 9,116,367	$ 27,078	$ 5,469,820	$ 72,209	**$ 14,586,187**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.3	115kV Single Circuit Single Pole Angle/ DE	3	Structure	$ 79,163	$ 237,490	$ 47,498	$ 142,494	$ 126,661	**$ 379,984**
3.4	345kV Single Circuit Single Pole DE	1	Structure	$ 82,952	$ 82,952	$ 49,771	$ 49,771	$ 132,723	**$ 132,723**
3.5									
3.6									
3.7									
3.8									
3.9									
3.10									
3.11									
3.12	Remove Existing Foundation	2,084	EA	$ -	$ -	$ 3,250	$ 6,773,000	$ 3,250	**$ 6,773,000**
3.13	Remove Existing Structure and Accessories	521	EA	$ -	$ -	$ 12,500	$ 6,512,500	$ 12,500	**$ 6,512,500**
3.14									
3.15	Install Grounding and Grounding Accessories	231	Pole	$ 506	$ 116,886	$ 5,539	$ 1,279,394	$ 6,045	**$ 1,396,280**
3.16									
3.17									
TOTAL - STRUCTURES PRINCTOWN TO NEW SCOTLAND:					$ 12,430,954		$ 21,953,334		**$ 34,384,288**
4. CONDUCTOR, SHIELDWIRE, OPGW									
4.1	345kV - (1) 954kcmil 54/7 ACSS "Cardinal"	1,087,733	LF	$ 1.90	$ 2,066,693	$ 5.00	$ 5,438,665	$ 6.90	**$ 7,505,358**
4.2	(1) OPGW 36 Fiber AC-33/38/571	181,289	LF	$ 1.35	$ 244,740	$ 5.00	$ 906,445	$ 6.35	**$ 1,151,185**
4.3	(1) 3/8" EHS7 Steel	181,289	LF	$ 0.47	$ 85,206	$ 5.00	$ 906,445	$ 5.47	**$ 991,651**
4.5	Remove Existing 115kV Cable From Existing Structures	130.4	Mile	$ -	$ -	$ 30,000	$ 3,912,000	$ 30,000.00	**$ 3,912,000**
4.6	Remove Existing OPGW Cable and Accessories	32.6	Mile	$ -	$ -	$ 12,000	$ 390,600	$ 12,000.00	**$ 390,600**
4.7	Remove Existing OHSW and Accessories	32.6	Mile	$ -	$ -	$ 12,000	$ 391,200	$ 12,000.00	**$ 391,200**
4.8	115kV - (1) 954kcmil 54/7 ACSS "Cardinal"	543,866	LF	$ 1.90	$ 1,033,345	$ 5.00	$ 2,719,330	$ 6.90	**$ 3,752,675**
4.9									
4.10	Rider Poles - Relocated	43	Set	$ -	$ -	$ 3,500	$ 150,500	$ 3,500.00	**$ 150,500**
4.11	Rider Poles (86 Total)	43	EA	$ 1,750	$ 75,250	$ 3,500	$ 150,500	$ 5,250.00	**$ 225,750**
TOTAL: CONDUCTOR, SHIELDWIRE, OPGW:					$ 3,505,234		$ 14,965,685		**$ 18,470,919**
5. INSULATOR, FITTINGS, HARDWARE									
5.1	345kV Tangent (1-Group of 18-Bells Each Assembly)	1,010	Assembly	$ 1,800	$ 1,818,000	$ 720	$ 727,200	$ 2,520	**$ 2,545,200**
5.2	115kV Tangent (1-Group of 9-Bells Each Assembly)	1,010	Assembly	$ 900	$ 909,000	$ 560	$ 565,600	$ 1,460	**$ 1,474,600**
5.3	345kV Dead-end & Angle Insulators (1-Group of 18-Bells Each Assembly)	390	Assembly	$ 1,800	$ 702,000	$ 720	$ 280,800	$ 2,520	**$ 982,800**
5.4	115kV Dead-end & Angle Insulators (1-Group of 9-Bells Each Assembly)	196	Assembly	$ 900	$ 176,400	$ 560	$ 109,760	$ 1,460	**$ 286,160**
5.5			Assembly		$ -		$ -	$ -	**$ -**
5.6	OPGW Assembly - Tangent	202	Assembly	$ 200	$ 40,400	$ 150	$ 30,300	$ 350	**$ 70,700**
5.7	OPGW Assembly - Angle / DE	52	Assembly	$ 250	$ 13,000	$ 150	$ 7,800	$ 400	**$ 20,800**
5.8	OHSW Assembly - Tangent	202	Assembly	$ 200	$ 40,400	$ 150	$ 30,300	$ 350	**$ 70,700**
5.9	OHSW Assembly - Angle / DE	56	Assembly	$ 250	$ 14,000	$ 150	$ 8,400	$ 400	**$ 22,400**
5.10	OPGW Splice Boxes	12	Set	$ 1,746	$ 20,954	$ 2,274	$ 27,288	$ 4,020	**$ 48,242**
5.11	OPGW Splice & Test	12	EA	$ 2,520	$ 30,240	$ 2,520	$ 30,240	$ 5,040	**$ 60,480**
5.12	Spacer - Conductor	5,414	EA	$ 50	$ 270,700	$ 35	$ 189,490	$ 85	**$ 460,190**
5.13	Vibration Dampers - Conductor	1,949	EA	$ 35	$ 68,215	$ 35	$ 68,215	$ 70	**$ 136,430**
5.14	Shieldwire / OPGW Dampers, Misc. Fittings	657	EA	$ 27	$ 17,739	$ 35	$ 22,995	$ 62	**$ 40,734**
5.15	Guys, Anchors, and Accessories	-	EA	$ 720	$ -	$ 885	$ -	$ 1,605	**$ -**
5.16	Misc. materials (Signs and Markers)	32.3	Mile	$ 770	$ 24,871	$ 1,006	$ 32,494	$ 1,776	**$ 57,365**
TOTAL - INSULATORS, FITTINGS, HARDWARE:					$ 4,145,919		$ 2,130,882		**$ 6,276,801**
B. Transmission Line Churchtown to Pleasant Valley					$ 25,512,421		$ 75,599,187		**$ 101,111,607**
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS									
	Contractor Mobilization / Demobilization								
6.1	Mob / Demob	1	LS	$ -	$ -	$ 1,011,116	$ 1,011,116	$ 1,011,116	**$ 1,011,116**
	Project Management, Material Handling & Amenities								
6.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 5,017,411	$ 5,017,411	$ 5,017,411	**$ 5,017,411**
6.3	Utility PM and Project Oversite	1	LS		$ -	$ 1,011,116	$ 1,011,116	$ 1,011,116	**$ 1,011,116**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 1,011,116	$ 1,011,116	$ 1,011,116	**$ 1,011,116**
	Engineering								
6.5	Design Engineering	1	LS	$ -	$ -	$ 5,055,580	$ 5,055,580	$ 5,055,580	**$ 5,055,580**
6.6	LiDAR	1	LS	$ -	$ -	$ 303,335	$ 303,335	$ 303,335	**$ 303,335**
6.7	Geotech	33.0	Location	$ -	$ -	$ 3,500	$ 115,500	$ 3,500	**$ 115,500**
6.8	Surveying/Staking	1	LS	$ -	$ -	$ 707,781	$ 707,781	$ 707,781	**$ 707,781**
	Testing & Commissioning								
6.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 40,000	$ 40,000	$ 40,000	**$ 40,000**
	Permitting and Additional Costs								
6.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.12	Warranties / LOC's	1	LS	$ -	$ -	$ 303,335	$ 303,335	$ 303,335	**$ 303,335**
6.13	Real Estate Costs (New ROW)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.14	Real Estate Costs (Incumbent Utility ROW)	1	LS	$ -	$ -	$ 5,782,000	$ 5,782,000	$ 5,782,000	**$ 5,782,000**
6.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.18	Sales Tax on Materials	1	LS	$ 2,040,994	$ 2,040,994	$ -	$ -	$ 2,040,994	**$ 2,040,994**
6.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 101,112	$ 101,112	$ 101,112	**$ 101,112**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 2,040,994		$ 20,459,402		**$ 22,500,395**

NG & NY Transco - T019 - (Segment B)

C. Blue Stores Junction to Blue Stores Substation

Estimate Revision: 8

Total: $ 5,690,096

NG & NY Transco - T019 - (Segment B)	*Supply*	*Installation*	*Total*	
C. Blue Stores Junction to Blue Stores Substation				
1. CLEARING & ACCESS	$ -	$ 1,404,512	$ 1,404,512	
2. FOUNDATIONS	$ 236,848	$ 925,954	$ 1,162,802	
3. STRUCTURES	$ 596,484	$ 946,665	$ 1,543,149	
4. CONDUCTOR, SHIELDWIRE, OPGW	$ 84,763	$ 387,095	$ 471,858	
5. INSULATORS, FITTINGS, HARDWARE	$ 107,544	$ 56,496	$ 164,040	
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 82,051	$ 861,684	$ 943,735	
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -	0.0%
SUBTOTAL:	$ 1,107,690	$ 4,582,406	$ 5,690,096	
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -	0.0%
TOTAL:	$ 1,107,690	$ 4,582,406	$ 5,690,096	

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
C. Blue Stores Junction to Blue Stores Substation									
1. CLEARING & ACCESS									
1.1	Clearing the ROW - Heavy (mowing & clearing)	-	Acre	$ -	$ -	$ 15,000	$ -	$ 15,000	**$ -**
1.2	Clearing the ROW - Light (mowing)	4.0	Acre	$ -	$ -	$ 5,000	$ 20,000	$ 5,000	**$ 20,000**
1.3	Access Road	2,218	LF	$ -	$ -	$ 45	$ 99,792	$ 45	**$ 99,792**
1.4	Silt Fence	11,088.0	LF	$ -	$ -	$ 4	$ 44,352	$ 4	**$ 44,352**
1.5	Matting - Access and ROW	8,870	LF	$ -	$ -	$ 70	$ 620,928	$ 70	**$ 620,928**
1.6	Matting - To Work Area	1,800.0	LF	$ -	$ -	$ 70	$ 126,000	$ 70	**$ 126,000**
1.7	Snow Removal	2.1	Mile	$ -	$ -	$ 16,000	$ 33,600	$ 16,000	**$ 33,600**
1.8	ROW Restoration	2.1	Mile	$ -	$ -	$ 10,000	$ 21,000	$ 10,000	**$ 21,000**
1.9	Work Pads	120,000.0	SF	$ -	$ -	$ 4	$ 422,400	$ 4	**$ 422,400**
1.10	Restoration for Work Pad areas	24,000.0	SF	$ -	$ -	$ 0.2	$ 3,600	$ 0	**$ 3,600**
1.11	Temporary Access Bridge	-	EA	$ -	$ -	$ 20,035	$ -	$ 20,035	$ -
1.12	Air Bridge	-	EA	$ -	$ -	$ 14,445	$ -	$ 14,445	$ -
1.13	Stabilized Construction Entrance	1	EA	$ -	$ -	$ 4,580	$ 4,580	$ 4,580	**$ 4,580**
1.14	Maintenance and Protection of Traffic on Public Roads	2	EA	$ -	$ -	$ 4,130	$ 8,260	$ 4,130	**$ 8,260**
1.15	Gates	-	EA	$ 2,000	$ -	$ 2,500	$ -	$ 4,500	$ -
1.16	Culverts / Misc. Access	-	EA	$ 750	$ -	$ 1,250	$ -	$ 2,000	$ -
1.17	Concrete Washout Station	-	EA	$ -	$ -	$ 1,850	$ -	$ 1,850	$ -
TOTAL - CLEARING & ACCESS:					$ -		$ 1,404,512		**$ 1,404,512**
2. FOUNDATIONS									
2.1	Drilled Pier - 115kV Single Circuit H- Pole Angle/ DE	6	EA	$ 31,225	$ 187,348	$ 31,559	$ 189,354	$ 62,784	**$ 376,702**
2.2	Direct Embed - 115kV Single Circuit H- Pole Tangent	18	EA	$ 2,750	$ 49,500	$ 18,700	$ 336,600	$ 21,450	**$ 386,100**
2.3	Rock Excavation Adder	200.0	CY	$ -	$ -	$ 2,000	$ 400,000	$ 2,000	**$ 400,000**
2.4									
2.5									
2.6									
2.7									
2.8									
2.9									
2.10									
2.11									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.12									
2.13									
2.14									
2.15									
TOTAL - FOUNDATIONS:					$ 236,848		$ 925,954		**$ 1,162,802**
3. STRUCTURES									
3.1	115kV Single Circuit H- Pole Angle/ DE	6	Structure	$ 39,822	$ 238,929	$ 23,893	$ 143,358	$ 63,714	**$ 382,287**
3.2	115kV Single Circuit H- Pole Tangent	18	Structure	$ 18,515	$ 333,266	$ 11,109	$ 199,960	$ 29,624	**$ 533,226**
3.3	Remove Existing Foundation	-	EA	$ -	$ -	$ 7,500	$ -	$ 7,500	**$ -**
3.4	Remove Existing Structure and Accessories	27	EA	$ -	$ -	$ 12,500	$ 337,500	$ 12,500	**$ 337,500**
3.5									
3.6	Install Grounding and Grounding Accessories	48	Pole	$ 506	$ 24,288	$ 5,539	$ 265,848	$ 6,045	**$ 290,136**
3.7									
3.8									
3.9									
3.10									
3.11									
3.12									
3.13									
3.14									
3.15									
TOTAL - STRUCTURES:					$ 596,484		$ 946,665		**$ 1,543,149**
4. CONDUCTOR, SHIELDWIRE, OPGW									
4.1	**345kV** - (1) 954kcmil 54/7 ACSS "Cardinal"	-	LF	$ -	$ -	$ 5.00	$ -	$ 5.00	**$ -**
4.2	(1) OPGW 36 Fiber AC-33/38/571	-	LF	$ -	$ -	$ 5.00	$ -	$ 5.00	**$ -**
4.3	(1) 3/8" EHS7 Steel	-	LF	$ -	$ -	$ 5.00	$ -	$ 5.00	**$ -**
4.4	**115kV** - (1) 795kcmil 26/7 ACSR "Drake"	34,927.0	LF	$ 1.72	$ 60,074	$ 5.00	$ 174,635	$ 6.72	**$ 234,709**
4.5	(1) OPGW 36 Fiber AC-33/38/571	11,642.0	LF	$ 1.35	$ 15,717	$ 5.00	$ 58,210	$ 6.35	**$ 73,927**
4.6	(1) 3/8" EHS7 Steel	11,642.0	LF	$ 0.47	$ 5,472	$ 5.00	$ 58,210	$ 5.47	**$ 63,682**
4.7	Remove Existing Cable	2.1	Mile	$ -	$ -	$ 30,000	$ 63,600	$ 30,000.00	**$ 63,600**
4.8	Remove Existing OPGW Cable and Accessories	-	Mile	$ -	$ -	$ 12,000	$ -	$ 12,000.00	**$ -**
4.9	Remove Existing OHSW and Accessories	2.1	Mile	$ -	$ -	$ 12,000	$ 25,440	$ 12,000.00	**$ 25,440**
4.10		-							
4.11		-							
4.12	Rider Poles (Locations)	2.0	EA	$ 1,750	$ 3,500	$ 3,500	$ 7,000	$ 5,250.00	**$ 10,500**
4.13									
TOTAL - CONDUCTOR, SHIELDWIRE, OPGW:					$ 84,763		$ 387,095		**$ 471,858**
5. INSULATOR, FITTINGS, HARDWARE									
5.1	345kV Tangent (1-Group of 18-Bells Each Assembly)	-	Assembly	$ 1,800	$ -	$ 720	$ -	$ 2,520	**$ -**
5.2	115kV Tangent (1-Group of 9-Bells Each Assembly)	54	Assembly	$ 900	$ 48,600	$ 360	$ 19,440	$ 1,260	**$ 68,040**
5.3	345kV Dead-end & Angle Insulators (1-Group of 18-Bells Each Assembly)	-	Assembly	$ 1,800	$ -	$ 720	$ -	$ 2,520	**$ -**
5.4	115kV Dead-end & Angle Insulators (1-Group of 9-Bells Each Assembly)	36	Assembly	$ 900	$ 32,400	$ 360	$ 12,960	$ 1,260	**$ 45,360**
5.5			Assembly		$ -		$ -	$ -	**$ -**
5.6	OPGW Assembly - Tangent	18	Assembly	$ 200	$ 3,600	$ 150	$ 2,700	$ 350	**$ 6,300**
5.7	OPGW Assembly - Angle / DE	12	Assembly	$ 250	$ 3,000	$ 150	$ 1,800	$ 400	**$ 4,800**
5.8	OHSW Assembly - Tangent	18	Assembly	$ 200	$ 3,600	$ 150	$ 2,700	$ 350	**$ 6,300**
5.9	OHSW Assembly - Angle / DE	12	Assembly	$ 250	$ 3,000	$ 150	$ 1,800	$ 400	**$ 4,800**
5.10	OPGW Splice Boxes	2	Set	$ 1,746	$ 3,492	$ 2,274	$ 4,548	$ 4,020	**$ 8,040**
5.11	OPGW Splice & Test	2	EA	$ 2,520	$ 5,040	$ 2,520	$ 5,040	$ 5,040	**$ 10,080**
5.12	Spacer - Conductor	-	EA	$ 50	$ -	$ 35	$ -	$ 85	**$ -**
5.13	Vibration Dampers - Conductor	72	EA	$ 35	$ 2,520	$ 35	$ 2,520	$ 70	**$ 5,040**
5.14	Shieldwire / OPGW Dampers, Misc. Fittings	25	EA	$ 27	$ 675	$ 35	$ 875	$ 62	**$ 1,550**
5.15	Guys, Anchors, and Accessories	-	EA	$ 720	$ -	$ 885	$ -	$ 1,605	**$ -**
5.16	Misc. materials (Signs and Markers)	2.1	Mile	$ 770	$ 1,617	$ 1,006	$ 2,113	$ 1,776	**$ 3,730**
5.17									
TOTAL - INSULATORS, FITTINGS, HARDWARE:					$ 107,544		$ 56,496		**$ 164,040**
C. Blue Stores Junction to Blue Stores Substation					$ 1,025,639		$ 3,720,722		**$ 4,746,361**
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
	Contractor Mobilization / Demobilization								
6.1	Mob / Demob	1	LS	$ -	$ -	$ 47,464	$ 47,464	$ 47,464	**$ 47,464**
	Project Management, Material Handling & Amenities								
6.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 235,526	$ 235,526	$ 235,526	**$ 235,526**
6.3	Utility PM and Project Oversite	1	LS		$ -	$ 47,464	$ 47,464	$ 47,464	**$ 47,464**
6.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 47,464	$ 47,464	$ 47,464	**$ 47,464**
	Engineering								
6.5	Design Engineering	1	LS	$ -	$ -	$ 237,318	$ 237,318	$ 237,318	**$ 237,318**
6.6	LiDAR	1	LS	$ -	$ -	$ 14,239	$ 14,239	$ 14,239	**$ 14,239**
6.7	Geotech	2	Location	$ -	$ -	$ 3,500	$ 7,000	$ 3,500	**$ 7,000**
6.8	Surveying/Staking	1	LS	$ -	$ -	$ 33,225	$ 33,225	$ 33,225	**$ 33,225**
	Testing & Commissioning								
6.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 20,000	$ 20,000	$ 20,000	**$ 20,000**
	Permitting and Additional Costs								
6.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.12	Warranties / LOC's	1	LS	$ -	$ -	$ 14,239	$ 14,239	$ 14,239	**$ 14,239**
6.13	Real Estate Costs (New ROW)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.14	Real Estate Costs (Incumbent Utility ROW)	1	LS	$ -	$ -	$ 153,000	$ 153,000	$ 153,000	**$ 153,000**
6.15	Legal Fees	-	LS	$ -	$ -		$ -	$ -	**$ -**
6.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.18	Sales Tax on Materials	1	LS	$ 82,051	$ 82,051	$ -	$ -	$ 82,051	**$ 82,051**
6.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 4,746	$ 4,746	$ 4,746	**$ 4,746**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 82,051		$ 861,684		**$ 943,735**

NG & NY Transco - T019 - (Segment B)

D. Knickerbocker 345kV Substation - Install

Estimate Revision: 8

Total: $ 32,913,517

NG & NY Transco - T019 - (Segment B)	*Supply*	*Installation*	*Total*
D. Knickerbocker 345kV Substation - Install			
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ 339,050	$ 4,006,475	$ 4,345,525
2. SUBSTATION FOUNDATIONS	$ 1,920,103	$ 2,065,950	$ 3,986,053
3. SUBSTATION STRUCTURES	$ 912,975	$ 912,975	$ 1,825,950
4. MAJOR EQUIPTMENT	$ 7,100,000	$ 940,000	$ 8,040,000
5. SMALL EQUIPTMENT / MATERIALS	$ 1,206,500	$ 534,500	$ 1,741,000
6. CONTROL HOUSE / PANELS	$ 2,098,800	$ 1,355,800	$ 3,454,600
7. MISC ITEMS	$ 1,012,063	$ 1,901,070	$ 2,913,133
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 1,167,159	$ 5,440,097	$ 6,607,256
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 15,756,650	$ 17,156,867	$ 32,913,517
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 15,756,650	$ 17,156,867	$ 32,913,517

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
D. Knickerbocker 345kV Substation - Install									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	9.125	ACRES	$ -	$ -	$ 355,000	$ 3,239,375	$ 355,000	**$ 3,239,375**
1.2	Station stone within substation fence.	3,900	CY	$ 27	$ 105,300	$ 75	$ 292,500	$ 102	**$ 397,800**
1.3	Substation Fence	2,100	LF	$ 100	$ 210,000	$ 100	$ 210,000	$ 200	**$ 420,000**
1.4									
1.5									
1.6	Permanent Access Road - 20'-Wide	600	LF	$ 35	$ 21,000	$ 285	$ 171,000	$ 320	**$ 192,000**
1.7	Pavement	1,600	SY	$ -	$ -	$ 55	$ 88,000	$ 55	**$ 88,000**
1.8	Gates	1	EA	$ 2,000	$ 2,000	$ 2,500	$ 2,500	$ 4,500	**$ 4,500**
1.9	Culverts / Misc. Access	1	EA	$ 750	$ 750	$ 1,250	$ 1,250	$ 2,000	**$ 2,000**
1.10	Concrete Washout Station	1	EA	$ -	$ -	$ 1,850	$ 1,850	$ 1,850	**$ 1,850**
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ 339,050		$ 4,006,475		$ 4,345,525
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	3	EA	$ 14,940	$ 44,820	$ 16,000	$ 48,000	$ 30,940	**$ 92,820**
2.1b	Capacitor Bank Foundations	0	EA	$ 56,025	$ -	$ 60,000	$ -	$ 116,025	**$ -**
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	4	EA	$ 26,145	$ 104,580	$ 28,000	$ 112,000	$ 54,145	**$ 216,580**
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	18	EA	$ 26,145	$ 470,610	$ 28,000	$ 504,000	$ 54,145	**$ 974,610**
2.1e	Switch Stand Foundations	90	EA	$ 4,482	$ 403,380	$ 4,800	$ 432,000	$ 9,282	**$ 835,380**
2.1f	Station Service Transformer Stand Foundation	4	EA	$ 4,482	$ 17,928	$ 4,800	$ 19,200	$ 9,282	**$ 37,128**
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1h	Bus Support 1 Ph Foundations	72	EA	$ 4,482	$ 322,704	$ 4,800	$ 345,600	$ 9,282	**$ 668,304**
2.1j	Instrument Transformer Stand Foundations	27	EA	$ 4,482	$ 121,014	$ 4,800	$ 129,600	$ 9,282	**$ 250,614**
2.1k	Arrester Stand Foundations	9	EA	$ 4,482	$ 40,338	$ 4,800	$ 43,200	$ 9,282	**$ 83,538**
2.1m	Wave Trap Stand Foundations	3	EA	$ 4,482	$ 13,446	$ 4,800	$ 14,400	$ 9,282	**$ 27,846**
2.1n	Reactor Foundations	0	EA	$ 7,470	$ -	$ 8,000	$ -	$ 15,470	**$ -**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.1p	Series Compensation System	1	EA	$ 112,050	$ 112,050	$ 120,000	$ 120,000	$ 232,050	**$ 232,050**
2.1q									
2.2	**230kV**								
2.2a	Circuit Breaker Foundations	0	EA	$ 11,952	$ -	$ 12,800	$ -	$ 24,752	$ -
2.2b	Capacitor Bank Foundations	0	EA	$ 44,820	$ -	$ 48,000	$ -	$ 92,820	$ -
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	$ -
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	$ -
2.2e	Switch Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2f	Station Service Transformer Stand Foundation	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2h	Bus Support 1 Ph Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2j	Instrument Transformer Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2k	Arrester Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2m	Wave Trap Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2p									
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	0	EA	$ 5,229	$ -	$ 5,600	$ -	$ 10,829	$ -
2.3b	Capacitor Bank Foundations	0	EA	$ 33,615	$ -	$ 36,000	$ -	$ 69,615	$ -
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	8	EA	$ 16,434	$ 131,472	$ 17,600	$ 140,800	$ 34,034	**$ 272,272**
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	$ -
2.3e	Switch Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3f	Fuse Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3g	Bus Support 3ph Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3h	Bus Support 1 Ph Foundations	6	EA	$ 2,988	$ 17,928	$ 3,200	$ 19,200	$ 6,188	**$ 37,128**
2.3j	Instrument Transformer Stand Foundations	6	EA	$ 2,988	$ 17,928	$ 3,200	$ 19,200	$ 6,188	**$ 37,128**
2.3k	Arrester Stand Foundations	6	EA	$ 2,988	$ 17,928	$ 3,200	$ 19,200	$ 6,188	**$ 37,128**
2.3m	Wave Trap Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment	0	EA	$ 97,110	$ -	$ 104,000	$ -	$ 201,110	$ -
2.4b	345-115kV Transformer Foundation w/ Oil Containment	0	EA	$ 74,700	$ -	$ 80,000	$ -	$ 154,700	$ -
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad	1	EA	$ 41,832	$ 41,832	$ 44,800	$ 44,800	$ 86,632	**$ 86,632**
2.5b	Generator Foundation	1	EA	$ 16,000	$ 16,000	$ 17,000	$ 17,000	$ 33,000	**$ 33,000**
2.5c	Station Service Distribution Line - 3ph.	1	LS	$ -	$ -	$ 9,750	$ 9,750	$ 9,750	**$ 9,750**
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	5	EA	$ 5,229	$ 26,145	$ 5,600	$ 28,000	$ 10,829	**$ 54,145**
2.6b				$ -	$ -	$ -	$ -	$ -	$ -
2.6c				$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION FOUNDATIONS					$ 1,920,103		$ 2,065,950		$ 3,986,053
3. SUBSTATION STRUCTURES									
3.1	**345kV**								

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.1a	Substation A-Frame Structures - Stand alone	1	EA	$ 37,000	$ 37,000	$ 37,000	$ 37,000	$ 74,000	**$ 74,000**
3.1b	Substation A-Frame Structures - Shared Column	6	EA	$ 37,000	$ 222,000	$ 37,000	$ 222,000	$ 74,000	**$ 444,000**
3.1c	Switch Stands	15	EA	$ 14,800	$ 222,000	$ 14,800	$ 222,000	$ 29,600	**$ 444,000**
3.1d	Station Service Transformer Stand	3	EA	$ 14,800	$ 44,400	$ 14,800	$ 44,400	$ 29,600	**$ 88,800**
3.1e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.1f	Bus Support 1 Ph	72	EA	$ 3,700	$ 266,400	$ 3,700	$ 266,400	$ 7,400	**$ 532,800**
3.1g	Instrument Transformer Stand	27	EA	$ 1,850	$ 49,950	$ 1,850	$ 49,950	$ 3,700	**$ 99,900**
3.1h	Arrester Stand	9	EA	$ 1,850	$ 16,650	$ 1,850	$ 16,650	$ 3,700	**$ 33,300**
3.1j	Wave Trap Stand	3	EA	$ 7,400	$ 22,200	$ 7,400	$ 22,200	$ 14,800	**$ 44,400**
3.1k	Lightning Mast - 70'	5	EA	$ 6,475	$ 32,375	$ 6,475	$ 32,375	$ 12,950	**$ 64,750**
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	**$ -**
3.2b	Substation A-Frame Structures - Shared Column	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	**$ -**
3.2c	Switch Stands	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	**$ -**
3.2d	Station Service Transformer Stand	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	**$ -**
3.2e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.2f	Bus Support 1 Ph	0	EA	$ 2,775	$ -	$ 2,775	$ -	$ 5,550	**$ -**
3.2g	Instrument Transformer Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	**$ -**
3.2h	Arrester Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	**$ -**
3.2j	Wave Trap Stand	0	EA	$ 5,550	$ -	$ 5,550	$ -	$ 11,100	**$ -**
3.2k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	**$ -**
3.3	**115kV**								
3.3a	Substation A-Frame Structures - Stand alone	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	**$ -**
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	**$ -**
3.3c	Switch Stands	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	**$ -**
3.3d	Fuse Stand	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	**$ -**
3.3e	Bus Support 3ph	0	EA	$ 3,330	$ -	$ 3,330	$ -	$ 6,660	**$ -**
3.3f	Bus Support 1 Ph	0	EA	$ 1,850	$ -	$ 1,850	$ -	$ 3,700	**$ -**
3.3g	Instrument Transformer Stand	0	EA	$ 740	$ -	$ 740	$ -	$ 1,480	**$ -**
3.3h	Arrester Stand	0	EA	$ 740	$ -	$ 740	$ -	$ 1,480	**$ -**
3.3j	Wave Trap Stand	0	EA	$ 3,700	$ -	$ 3,700	$ -	$ 7,400	**$ -**
3.3k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	**$ -**
TOTAL - SUBSTATION STRUCTURES					$ 912,975		$ 912,975		$ 1,825,950
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	3	EA	$ 200,000	$ 600,000	$ 80,000	$ 240,000	$ 280,000	**$ 840,000**
4.1b	Capacitor Banks with Reactors	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	**$ -**
4.1c	Series Compensation System	1	EA	$ 6,500,000	$ 6,500,000	$ 700,000	$ 700,000	$ 7,200,000	**$ 7,200,000**
4.1d									
4.1e									
4.2	**230kV**								
4.2a	Circuit Breakers	0	EA	$ 115,000	$ -	$ 80,000	$ -	$ 195,000	**$ -**
4.2b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	**$ -**
4.3	**115kV**								
4.3a	Circuit Breakers	0	EA	$ 52,000	$ -	$ 60,000	$ -	$ 112,000	**$ -**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ 60,000	$ -	$ 60,000	$ -
TOTAL - MAJOR EQUIPTMENT					$ 7,100,000		$ 940,000		$ 8,040,000
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator	6	EA	$ 40,000	$ 240,000	$ 15,000	$ 90,000	$ 55,000	**$ 330,000**
5.1b	Disconnect Switches - 3ph w/ manual operator	6	EA	$ 35,000	$ 210,000	$ 17,500	$ 105,000	$ 52,500	**$ 315,000**
5.1c	VT'S	9	EA	$ 25,000	$ 225,000	$ 12,000	$ 108,000	$ 37,000	**$ 333,000**
5.1d	CT'S	9	EA	$ 13,000	$ 117,000	$ 8,000	$ 72,000	$ 21,000	**$ 189,000**
5.1e	CCVT'S	9	EA	$ 13,000	$ 117,000	$ 8,000	$ 72,000	$ 21,000	**$ 189,000**
5.1f	Arresters	9	EA	$ 6,500	$ 58,500	$ 1,500	$ 13,500	$ 8,000	**$ 72,000**
5.1g	Wave Traps	3	EA	$ 13,000	$ 39,000	$ 8,000	$ 24,000	$ 21,000	**$ 63,000**
5.1h	Station Service Transformers	1	EA	$ 200,000	$ 200,000	$ 50,000	$ 50,000	$ 250,000	**$ 250,000**
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator	0	EA	$ 35,000	$ -	$ 15,000	$ -	$ 50,000	$ -
5.2b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 30,000	$ -	$ 17,500	$ -	$ 47,500	$ -
5.2c	VT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2e	CCVT'S	0	EA	$ 10,000	$ -	$ 6,000	$ -	$ 16,000	$ -
5.2f	Arresters	0	EA	$ 5,000	$ -	$ 6,000	$ -	$ 11,000	$ -
5.2g	Wave Traps	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	0	EA	$ 33,000	$ -	$ 15,000	$ -	$ 48,000	$ -
5.3b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 28,000	$ -	$ 17,500	$ -	$ 45,500	$ -
5.3c	VT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.3d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.3e	CCVT'S	0	EA	$ 8,000	$ -	$ 8,000	$ -	$ 16,000	$ -
5.3f	Arresters	0	EA	$ 3,420	$ -	$ 6,000	$ -	$ 9,420	$ -
5.3g	Wave Traps	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ 1,206,500		$ 534,500		$ 1,741,000
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE	1	EA	$ 468,000	$ 468,000	$ 95,000	$ 95,000	$ 563,000	**$ 563,000**
6.2	Protection and Telecom Equipment Panels	20	EA	$ 35,000	$ 700,000	$ 10,000	$ 200,000	$ 45,000	**$ 900,000**
6.3	125VDC Batteries	2	EA	$ 75,000	$ 150,000	$ 25,000	$ 50,000	$ 100,000	**$ 200,000**
6.4	Control Cables	1	LS	$ 415,800	$ 415,800	$ 415,800	$ 415,800	$ 831,600	**$ 831,600**
6.5	SCADA and Communications	1	EA	$ 50,000	$ 50,000	$ 100,000	$ 100,000	$ 150,000	**$ 150,000**
6.6	Low Voltage AC Distribution	2	EA	$ 50,000	$ 100,000	$ 100,000	$ 200,000	$ 150,000	**$ 300,000**
6.7	DC Distribution System	2	EA	$ 50,000	$ 100,000	$ 100,000	$ 200,000	$ 150,000	**$ 300,000**
6.8	Security	1	EA	$ 7,500	$ 7,500	$ 7,500	$ 7,500	$ 15,000	**$ 15,000**
6.9	Fire Alarm	1	EA	$ 7,500	$ 7,500	$ 7,500	$ 7,500	$ 15,000	**$ 15,000**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6.10	Generator	1	EA	$ 100,000	$ 100,000	$ 80,000	$ 80,000	$ 180,000	**$ 180,000**
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ 2,098,800		$ 1,355,800		**$ 3,454,600**
7. MISC ITEMS									
7.1	Conduit & Cable Trench System	1,050.0	LF	$ 185.00	$ 194,250	$ 170.00	$ 178,500	$ 355	**$ 372,750**
7.2	Rigid Bus, Fittings & Insulators	1,900.0	LF	$ 125.07	$ 237,633	$ 237.10	$ 450,490	$ 362	**$ 688,123**
7.3	Strain Bus, Connectors & Insulators	0.0	LF	$ 39.30	$ -	$ 53.35	$ -	$ 93	**$ -**
7.4	Grounding System	26,000.0	LF	$ 6.93	$ 180,180	$ 32.58	$ 847,080	$ 40	**$ 1,027,260**
7.5	Strain Bus Insulators - 345kV	0	EA	$ 2,000	$ -	$ 1,050	$ -	$ 3,050	**$ -**
7.6	Strain Bus Insulators - 230kV	0	EA	$ 1,400	$ -	$ 750	$ -	$ 2,150	**$ -**
7.7	Strain Bus Insulators - 115kV	0	EA	$ 1,000	$ -	$ 550	$ -	$ 1,550	**$ -**
7.8	Low Voltage AC Station Service	1	LS	$ 50,000	$ 50,000	$ 75,000	$ 75,000	$ 125,000	**$ 125,000**
7.9	SSVT Service	1	LS	$ 45,000	$ 45,000	$ 45,000	$ 45,000	$ 90,000	**$ 90,000**
7.10	Control Conduits from Trench to Equipment	1	LS	$ 125,000	$ 125,000	$ 125,000	$ 125,000	$ 250,000	**$ 250,000**
7.11	Misc. Materials (Above and Below Ground)	1	LS	$ 180,000	$ 180,000	$ 180,000	$ 180,000	$ 360,000	**$ 360,000**
7.12									
7.13									
7.14									
7.15									
7.16									
7.17									
7.18									
7.19									
7.20									
7.21									
7.22									
7.23									
7.24									
7.25									
TOTAL - MISC ITEMS					$ 1,012,063		$ 1,901,070		$ 2,913,133
D. Knickerbocker 345kV Substation - Install					$ 14,589,491		$ 11,716,770		**$ 26,306,261**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1	LS	$ -	$ -	$ 263,063	$ 263,063	$ 263,063	**$ 263,063**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 1,305,382	$ 1,305,382	$ 1,305,382	**$ 1,305,382**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 263,063	$ 263,063	$ 263,063	**$ 263,063**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 263,063	$ 263,063	$ 263,063	**$ 263,063**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 2,104,501	$ 2,104,501	$ 2,104,501	**$ 2,104,501**
8.6	LiDAR	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.7	Geotech	4	EA	$ -	$ -	$ 3,500	$ 14,000	$ 3,500	**$ 14,000**
8.8	Surveying/Staking	1	Site	$ -	$ -	$ 184,144	$ 184,144	$ 184,144	**$ 184,144**
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 657,657	$ 657,657	$ 657,657	**$ 657,657**
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 78,919	$ 78,919	$ 78,919	**$ 78,919**
8.13	Real Estate Costs (New)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.14	Real Estate Costs (Incumbent Utility)	1	LS	$ -	$ -	$ 280,000	$ 280,000	$ 280,000	**$ 280,000**
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.18	Sales Tax on Materials	1	LS	$ 1,167,159	$ 1,167,159	$ -	$ -	$ 1,167,159	**$ 1,167,159**
8.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 26,306	$ 26,306	$ 26,306	**$ 26,306**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 1,167,159		$ 5,440,097		**$ 6,607,256**

NG & NY Transco - T019 - (Segment B)

E. Greenbush Substation - Removal

Estimate Revision: 8

Total: $ 71,152

NG & NY Transco - T019 - (Segment B)	*Supply*	*Installation*	*Total*
E. Greenbush Substation - Removal			
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ -	$ -	$ -
2. SUBSTATION FOUNDATIONS	$ -	$ 12,000	$ 12,000
3. SUBSTATION STRUCTURES	$ -	$ -	$ -
4. MAJOR EQUIPTMENT	$ -	$ 7,000	$ 7,000
5. SMALL EQUIPTMENT / MATERIALS	$ -	$ 35,000	$ 35,000
6. CONTROL HOUSE / PANELS	$ -	$ 7,200	$ 7,200
7. MISC ITEMS	$ -	$ -	$ -
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ -	$ 9,952	$ 9,952
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ -	$ 71,152	$ 71,152
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ -	$ 71,152	$ 71,152

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
E. Greenbush Substation - Removal									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.		ACRES	$ -	$ -	$ 203,000	$ -	$ 203,000	$ -
1.2	Station stone within substation fence.		CY	$ -	$ -	$ 75	$ -	$ 75	$ -
1.3	Substation Fence		LF	$ -	$ -	$ 150	$ -	$ 150	$ -
1.4									
1.5									
1.6									
1.7									
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ -		$ -		$ -
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	0	EA	$ -	$ -	$ 14,200	$ -	$ 14,200	$ -
2.1b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1e	Switch Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1f	Station Service Transformer Stand Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.1j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1k	Arrester Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1n	Reactor Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1p									
2.2	**230kV**								
2.2a	Circuit Breaker Foundations	0	EA	$ -	$ -	$ 7,200	$ -	$ 7,200	$ -
2.2b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ 32,000	$ -	$ 32,000	$ -
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ 22,000	$ -	$ 22,000	$ -
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ 11,000	$ -	$ 11,000	$ -
2.2e	Switch Stand Foundations	0	EA	$ -	$ -	$ 5,200	$ -	$ 5,200	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.2f	Station Service Transformer Stand Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.2j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.2k	Arrester Stand Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.2m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2p									
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	1	EA	$ -	$ -	$ 7,200	$ 7,200	$ 7,200	**$ 7,200**
2.3b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3e	Switch Stand Foundations	0	EA	$ -	$ -	$ 5,200	$ -	$ 5,200	$ -
2.3f	Fuse Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3j	Instrument Transformer Stand Foundations	2	EA	$ -	$ -	$ 2,400	$ 4,800	$ 2,400	**$ 4,800**
2.3k	Arrester Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4b	345-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ 42,000	$ -	$ 42,000	$ -
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5b	Generator Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6b		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6c		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION FOUNDATIONS					$ -		$ 12,000		$ 12,000
3. SUBSTATION STRUCTURES									
3.1	**345kV**								
3.1a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1c	Switch Stands	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1d	Station Service Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1f	Bus Support 1 Ph	0	EA	$ -	$ -	$ 2,250	$ -	$ 2,250	$ -
3.1g	Instrument Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1h	Arrester Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1j	Wave Trap Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ 27,000	$ -	$ 27,000	$ -
3.2b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ 27,000	$ -	$ 27,000	$ -
3.2c	Switch Stands	0	EA	$ -	$ -	$ 9,750	$ -	$ 9,750	$ -
3.2d	Station Service Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2f	Bus Support 1 Ph	0	EA	$ -	$ -	$ 2,250	$ -	$ 2,250	$ -
3.2g	Instrument Transformer Stand	0	EA	$ -	$ -	$ 1,050	$ -	$ 1,050	$ -
3.2h	Arrester Stand	0	EA	$ -	$ -	$ 1,050	$ -	$ 1,050	$ -
3.2j	Wave Trap Stand	0	EA	$ -	$ -	$ 4,500	$ -	$ 4,500	$ -
3.2k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.3	**115kV**								
3.3a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ 15,000	$ -	$ 15,000	**$** -
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
3.3c	Switch Stands	0	EA	$ -	$ -	$ 6,450	$ -	$ 6,450	**$** -
3.3d	Fuse Stand	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
3.3e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
3.3f	Bus Support 1 Ph	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
3.3g	Instrument Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
3.3h	Arrester Stand	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
3.3j	Wave Trap Stand	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
3.3k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
TOTAL - SUBSTATION STRUCTURES					$ -		$ -		$ -
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
4.1b	Capacitor Banks	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
4.1c		0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
4.1d									
4.2	**230kV**								
4.2a	Circuit Breakers	0	EA	$ -	$ -	$ 7,000	$ -	$ 7,000	**$** -
4.2b	Capacitor Banks	0	EA	$ -	$ -	$ 42,000	$ -	$ 42,000	**$** -
4.3	**115kV**								
4.3a	Circuit Breakers	1	EA	$ -	$ -	$ 7,000	$ 7,000	$ 7,000	**$ 7,000**
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
TOTAL - MAJOR EQUIPTMENT					$ -		$ 7,000		$ 7,000
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	**$** -
5.1b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	**$** -
5.1c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
5.1d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
5.1e	CCVT'S	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	**$** -
5.1f	Arresters	0	EA	$ -	$ -	$ 1,500	$ -	$ 1,500	**$** -
5.1g	Wave Traps	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	**$** -
5.1h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	**$** -
5.2b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	**$** -
5.2c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
5.2d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
5.2e	CCVT'S	0	EA	$ -	$ -	$ 1,500	$ -	$ 1,500	**$** -
5.2f	Arresters	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	**$** -
5.2g	Wave Traps	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	**$** -
5.2h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
5.3b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	**$** -
5.3c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
5.3d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
5.3e	CCVT'S	2	EA	$ -	$ -	$ 17,500	$ 35,000	$ 17,500	**$ 35,000**
5.3f	Arresters	0	EA	$ -	$ -	$ 1,500	$ -	$ 1,500	**$** -
5.3g	Wave Traps	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
5.3h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ -		$ 35,000		$ 35,000

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE	0	EA	$ -	$ -	$ 150,000	$ -	$ 150,000	**$ -**
6.2	Protection and Telecom Equipment Panels	2	EA	$ -	$ -	$ 3,600	$ 7,200	$ 3,600	**$ 7,200**
6.3	125VDC Batteries	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.4	Control Cable	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.5	SCADA and Communications	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.6	Low Voltage AC Distribution	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.7	DC Distribution System	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.8	Security	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.9	Fire Alarm	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.10	Generator	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ -		$ 7,200		**$ 7,200**
7. MISC ITEMS									
7.1	Conduit & Cable Trench System	0	EA	$ -	$ -	$ 42,000.00	$ -	$ 42,000	**$ -**
7.2	Rigid Bus, Fittings & Insulators	0	EA	$ -	$ -	$ 126.25	$ -	$ 126	**$ -**
7.3	Strain Bus, Connectors & Insulators	0	LS	$ -	$ -	$ 21,000.00	$ -	$ 21,000	**$ -**
7.4	Grounding System	0	EA	$ -	$ -	$ 42,000.00	$ -	$ 42,000	**$ -**
7.5									
7.6									
7.7									
7.8									
7.9									
7.10									
7.11									
7.12									
7.13									
7.14									
7.15									
TOTAL - MISC ITEMS					$ -		$ -		$ -
E. Greenbush Substation - Removal					$ -		$ 61,200		**$ 61,200**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1	LS	$ -	$ -	$ 612	$ 612	$ 612	**$ 612**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 3,037	$ 3,037	$ 3,037	**$ 3,037**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 612	$ 612	$ 612	**$ 612**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 612	$ 612	$ 612	**$ 612**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 4,896	$ 4,896	$ 4,896	**$ 4,896**
8.6	LiDAR	-	Mile	$ -	$ -	$ -	$ -	$ -	**$ -**
8.7	Geotech	-	Site	$ -	$ -	$ -	$ -	$ -	**$ -**
8.8	Surveying/Staking	-	Site	$ -	$ -	$ 428	$ -	$ 428	**$ -**
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	-	LS	$ -	$ -	$ 1,530	$ -	$ 1,530	**$ -**
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 184	$ 184	$ 184	**$ 184**
8.13	Real Estate Costs (New)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.14	Real Estate Costs (Incumbent Utility)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.18	Sales Tax on Materials	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.19	Fees for permits, including roadway, railroad, building or other local permits	-	LS		$ -	$ 61	$ -	$ 61	**$ -**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ -		$ 9,952		**$ 9,952**

NG & NY Transco - T019 - (Segment B) — **F. Schodack Substation - Install**

Estimate Revision: 8 — **Total: $ 2,579,857**

NG & NY Transco - T019 - (Segment B)	*Supply*	*Installation*	*Total*
F. Schodack Substation - Install			
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ 4,050	$ 11,250	$ 15,300
2. SUBSTATION FOUNDATIONS	$ 201,690	$ 216,000	$ 417,690
3. SUBSTATION STRUCTURES	$ 60,680	$ 60,680	$ 121,360
4. MAJOR EQUIPTMENT	$ 104,000	$ 120,000	$ 224,000
5. SMALL EQUIPTMENT / MATERIALS	$ 316,520	$ 226,000	$ 542,520
6. CONTROL HOUSE / PANELS	$ 192,815	$ 147,815	$ 340,630
7. MISC ITEMS	$ 168,552	$ 259,305	$ 427,857
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 83,865	$ 406,636	$ 490,500
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 1,132,172	$ 1,447,686	$ 2,579,857
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 1,132,172	$ 1,447,686	$ 2,579,857

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
F. Schodack Substation - Install									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	0	ACRES	$ -	$ -	$ 203,000	$ -	$ 203,000	$ -
1.2	Station stone within substation fence.	150	CY	$ 27	$ 4,050	$ 75	$ 11,250	$ 102	**$ 15,300**
1.3	Substation Fence	0	LF	$ 100	$ -	$ 100	$ -	$ 200	$ -
1.4	Permanent Access Road - 20'-Wide	0	LF	$ 35	$ -	$ 285	$ -	$ 320	$ -
1.5									
1.6									
1.7									
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ 4,050		$ 11,250		$ 15,300
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	0	EA	$ 14,940	$ -	$ 16,000	$ -	$ 30,940	$ -
2.1b	Capacitor Bank Foundations	0	EA	$ 56,025	$ -	$ 60,000	$ -	$ 116,025	$ -
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 26,145	$ -	$ 28,000	$ -	$ 54,145	$ -
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 26,145	$ -	$ 28,000	$ -	$ 54,145	$ -
2.1e	Switch Stand Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1f	Station Service Transformer Stand Foundation	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1h	Bus Support 1 Ph Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1j	Instrument Transformer Stand Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1k	Arrester Stand Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1m	Wave Trap Stand Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1n	Reactor Foundations	0	EA	$ 7,470	$ -	$ 8,000	$ -	$ 15,470	$ -
2.1p									
				$ -	$ -	$ -	$ -	$ -	$ -
2.2	**230kV**								
2.2a	Circuit Breaker Foundations	0	EA	$ 11,952	$ -	$ 12,800	$ -	$ 24,752	$ -
2.2b	Capacitor Bank Foundations	0	EA	$ 44,820	$ -	$ 48,000	$ -	$ 92,820	$ -
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	$ -
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	$ -
2.2e	Switch Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2f	Station Service Transformer Stand Foundation	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2h	Bus Support 1 Ph Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.2j	Instrument Transformer Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2k	Arrester Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2m	Wave Trap Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2p									
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	2	EA	$ 5,229	$ 10,458	$ 5,600	$ 11,200	$ 10,829	**$ 21,658**
2.3b	Capacitor Bank Foundations	0	EA	$ 33,615	$ -	$ 36,000	$ -	$ 69,615	$ -
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	8	EA	$ 16,434	$ 131,472	$ 17,600	$ 140,800	$ 34,034	**$ 272,272**
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	$ -
2.3e	Switch Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3f	Fuse Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3g	Bus Support 3ph Foundations	4	EA	$ 2,988	$ 11,952	$ 3,200	$ 12,800	$ 6,188	**$ 24,752**
2.3h	Bus Support 1 Ph Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3j	Instrument Transformer Stand Foundations	6	EA	$ 2,988	$ 17,928	$ 3,200	$ 19,200	$ 6,188	**$ 37,128**
2.3k	Arrester Stand Foundations	6	EA	$ 2,988	$ 17,928	$ 3,200	$ 19,200	$ 6,188	**$ 37,128**
2.3m	Wave Trap Stand Foundations	4	EA	$ 2,988	$ 11,952	$ 3,200	$ 12,800	$ 6,188	**$ 24,752**
2.3n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment	0	EA	$ 97,110	$ -	$ 104,000	$ -	$ 201,110	$ -
2.4b	345-115kV Transformer Foundation w/ Oil Containment	0	EA	$ 74,700	$ -	$ 80,000	$ -	$ 154,700	$ -
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad	0	EA	$ 76,194	$ -	$ 81,600	$ -	$ 157,794	$ -
2.5b	Generator Foundation	0	EA	$ 16,000	$ -	$ 17,000	$ -	$ 33,000	$ -
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	0	EA	$ 5,229	$ -	$ 5,600	$ -	$ 10,829	$ -
2.6b	60' Lightning Mast Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6c	50' Lightning Mast Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION FOUNDATIONS					$ 201,690		$ 216,000		$ 417,690
3. SUBSTATION STRUCTURES									
3.1	**345kV**								
3.1a	Substation A-Frame Structures - Stand alone	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	$ -
3.1b	Substation A-Frame Structures - Shared Column	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	$ -
3.1c	Switch Stands	0	EA	$ 14,800	$ -	$ 14,800	$ -	$ 29,600	$ -
3.1d	Station Service Transformer Stand	0	EA	$ 14,800	$ -	$ 14,800	$ -	$ 29,600	$ -
3.1e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1f	Bus Support 1 Ph	0	EA	$ 3,700	$ -	$ 3,700	$ -	$ 7,400	$ -
3.1g	Instrument Transformer Stand	0	EA	$ 1,850	$ -	$ 1,850	$ -	$ 3,700	$ -
3.1h	Arrester Stand	0	EA	$ 1,850	$ -	$ 1,850	$ -	$ 3,700	$ -
3.1j	Wave Trap Stand	0	EA	$ 7,400	$ -	$ 7,400	$ -	$ 14,800	$ -
3.1k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	$ -
3.2b	Substation A-Frame Structures - Shared Column	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	$ -
3.2c	Switch Stands	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	$ -
3.2d	Station Service Transformer Stand	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	$ -
3.2e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2f	Bus Support 1 Ph	0	EA	$ 2,775	$ -	$ 2,775	$ -	$ 5,550	$ -
3.2g	Instrument Transformer Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	$ -
3.2h	Arrester Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	$ -
3.2j	Wave Trap Stand	0	EA	$ 5,550	$ -	$ 5,550	$ -	$ 11,100	$ -
3.2k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
3.3	**115kV**								
3.3a	Substation A-Frame Structures - Stand alone	2	EA	$ 18,500	$ 37,000	$ 18,500	$ 37,000	$ 37,000	**$ 74,000**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	$ -
3.3c	Switch Stands	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	$ -
3.3d	Fuse Stand	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	$ -
3.3e	Bus Support 3ph	0	EA	$ 3,330	$ -	$ 3,330	$ -	$ 6,660	$ -
3.3f	Bus Support 1 Ph	4	EA	$ 1,850	$ 7,400	$ 1,850	$ 7,400	$ 3,700	**$ 14,800**
3.3g	Instrument Transformer Stand	6	EA	$ 740	$ 4,440	$ 740	$ 4,440	$ 1,480	**$ 8,880**
3.3h	Arrester Stand	6	EA	$ 740	$ 4,440	$ 740	$ 4,440	$ 1,480	**$ 8,880**
3.3j	Wave Trap Stand	2	EA	$ 3,700	$ 7,400	$ 3,700	$ 7,400	$ 7,400	**$ 14,800**
3.3k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
TOTAL - SUBSTATION STRUCTURES					$ 60,680		$ 60,680		$ 121,360
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	0	EA	$ 300,000	$ -	$ 80,000	$ -	$ 380,000	$ -
4.1b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	$ -
4.1c	345 kV - 230 kV Auto Transformer	0	EA	$ -	$ -	$ 750,000	$ -	$ 750,000	$ -
4.1d	345 kV - 115 kV Auto Transformer	0	EA	$ -	$ -	$ 750,000	$ -	$ 750,000	$ -
4.2	**230kV**								
4.2a	Circuit Breakers	0	EA	$ 250,000	$ -	$ 80,000	$ -	$ 330,000	$ -
4.2b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	$ -
4.3	**115kV**								
4.3a	Circuit Breakers	2	EA	$ 52,000	$ 104,000	$ 60,000	$ 120,000	$ 112,000	**$ 224,000**
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ 60,000	$ -	$ 60,000	$ -
TOTAL - MAJOR EQUIPTMENT					$ 104,000		$ 120,000		$ 224,000
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator	0	EA	$ 40,000	$ -	$ 15,000	$ -	$ 55,000	$ -
5.1b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 35,000	$ -	$ 17,500	$ -	$ 52,500	$ -
5.1c	VT'S	0	EA	$ 25,000	$ -	$ 12,000	$ -	$ 37,000	$ -
5.1d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.1e	CCVT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.1f	Arresters	0	EA	$ 6,500	$ -	$ 1,500	$ -	$ 8,000	$ -
5.1g	Wave Traps	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.1h	Station Service Transformers	0	EA	$ 200,000	$ -	$ 50,000	$ -	$ 250,000	$ -
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator	0	EA	$ 35,000	$ -	$ 15,000	$ -	$ 50,000	$ -
5.2b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 30,000	$ -	$ 17,500	$ -	$ 47,500	$ -
5.2c	VT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2e	CCVT'S	0	EA	$ 10,000	$ -	$ 6,000	$ -	$ 16,000	$ -
5.2f	Arresters	0	EA	$ 5,000	$ -	$ 6,000	$ -	$ 11,000	$ -
5.2g	Wave Traps	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	2	EA	$ 33,000	$ 66,000	$ 15,000	$ 30,000	$ 48,000	**$ 96,000**
5.3b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 28,000	$ -	$ 17,500	$ -	$ 45,500	$ -
5.3c	VT'S	6	EA	$ 13,000	$ 78,000	$ 8,000	$ 48,000	$ 21,000	**$ 126,000**
5.3d	CT'S	6	EA	$ 13,000	$ 78,000	$ 8,000	$ 48,000	$ 21,000	**$ 126,000**
5.3e	CCVT'S	6	EA	$ 8,000	$ 48,000	$ 8,000	$ 48,000	$ 16,000	**$ 96,000**
5.3f	Arresters	6	EA	$ 3,420	$ 20,520	$ 6,000	$ 36,000	$ 9,420	**$ 56,520**
5.3g	Wave Traps	2	EA	$ 13,000	$ 26,000	$ 8,000	$ 16,000	$ 21,000	**$ 42,000**
5.3h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ 316,520		$ 226,000		$ 542,520
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE	0	EA	$ 551,250	$ -	$ 85,000	$ -	$ 636,250	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6.2	Protection and Telecom Equipment Panels	2	EA	$ 35,000	$ 70,000	$ 12,500	$ 25,000	$ 47,500	**$ 95,000**
6.3	125VDC Batteries	0	EA	$ 75,000	$ -	$ 25,000	$ -	$ 100,000	**$ -**
6.4	Control Cables	1	LS	$ 122,815	$ 122,815	$ 122,815	$ 122,815	$ 245,630	**$ 245,630**
6.5	SCADA and Communications	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.6	Low Voltage AC Distribution	0	EA	$ 50,000	$ -	$ 100,000	$ -	$ 150,000	**$ -**
6.7	DC Distribution System	0	EA	$ 50,000	$ -	$ 100,000	$ -	$ 150,000	**$ -**
6.8	Security	0	EA	$ 7,500	$ -	$ 7,500	$ -	$ 15,000	**$ -**
6.9	Fire Alarm	0	EA	$ 7,500	$ -	$ 7,500	$ -	$ 15,000	**$ -**
6.10	Generator	0	EA	$ 100,000	$ -	$ 80,000	$ -	$ 180,000	**$ -**
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ 192,815		$ 147,815		**$ 340,630**
7. MISC ITEMS									
7.1	Conduit & Cable Trench System	530	LF	$ 185.00	$ 98,050	$ 170.00	$ 90,100	$ 355	**$ 188,150**
7.2	Rigid Bus, Fittings & Insulators	0	LF	$ -	$ -	$ -	$ -	$ -	**$ -**
7.3	Strain Bus, Connectors & Insulators	300	LF	$ 39.30	$ 11,790	$ 53.35	$ 16,005	$ 93	**$ 27,795**
7.4	Grounding System	800	LF	$ -	$ -	$ -	$ -	$ -	**$ -**
7.5	Strain Bus Insulators - 345kV	0	EA	$ 2,000	$ -	$ 1,050	$ -	$ 3,050	**$ -**
7.6	Strain Bus Insulators - 230kV	0	EA	$ 1,400	$ -	$ 750	$ -	$ 2,150	**$ -**
7.7	Strain Bus Insulators - 115kV	24	EA	$ 1,000	$ 24,000	$ 550	$ 13,200	$ 1,550	**$ 37,200**
7.8	Low Voltage AC Station Service	0	LS	$ 50,000	$ -	$ 75,000	$ -	$ 125,000	**$ -**
7.9	SSVT Service	0	LS	$ 45,000	$ -	$ 45,000	$ -	$ 90,000	**$ -**
7.10	Control Conduits from Trench to Equipment	1	LS	$ 14,000	$ 14,000	$ 70,000	$ 70,000	$ 84,000	**$ 84,000**
7.11	Misc. Materials (Above and Below Ground)	1	LS	$ 20,712	$ 20,712	$ 70,000	$ 70,000	$ 90,712	**$ 90,712**
7.12									
7.13									
7.14									
7.15									
7.16									
7.17									
7.18									
7.19									
7.20									
TOTAL - MISC ITEMS					$ 168,552		$ 259,305		$ 427,857
F. Schodack Substation - Install					$ 1,048,307		$ 1,041,050		**$ 2,089,357**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1	LS	$ -	$ -	$ 20,894	$ 20,894	$ 20,894	**$ 20,894**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 103,679	$ 103,679	$ 103,679	**$ 103,679**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 20,894	$ 20,894	$ 20,894	**$ 20,894**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 20,894	$ 20,894	$ 20,894	**$ 20,894**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 167,149	$ 167,149	$ 167,149	**$ 167,149**
8.6	LiDAR	-	Mile	$ -	$ -	$ -	$ -	$ -	**$ -**
8.7	Geotech	-	Site	$ -	$ -	$ -	$ -	$ -	**$ -**
8.8	Surveying/Staking	1	Site	$ -	$ -	$ 14,625	$ 14,625	$ 14,625	**$ 14,625**
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 52,234	$ 52,234	$ 52,234	**$ 52,234**
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 6,268	$ 6,268	$ 6,268	**$ 6,268**
8.13	Real Estate Costs (New)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.14	Real Estate Costs (Incumbent Utility)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.18	Sales Tax on Materials	1	LS	$ 83,865	$ 83,865	$ -	$ -	$ 83,865	**$ 83,865**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
8.19	Fees for permits, including roadway, railroad, building or other local permits	-	LS		$ -	$ -	$ -	$ -	$ -
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 83,865		$ 406,636		**$ 490,500**

NG & NY Transco - T019 - (Segment B)

G. Schodack Substation - Removal

Estimate Revision: 8

Total: $ 158,349

NG & NY Transco - T019 - (Segment B)	*Supply*	*Installation*	*Total*
G. Schodack Substation - Removal			
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ -	$ -	$ -
2. SUBSTATION FOUNDATIONS	$ -	$ 62,400	$ 62,400
3. SUBSTATION STRUCTURES	$ -	$ 73,800	$ 73,800
4. MAJOR EQUIPTMENT	$ -	$ -	$ -
5. SMALL EQUIPTMENT / MATERIALS	$ -	$ -	$ -
6. CONTROL HOUSE / PANELS	$ -	$ -	$ -
7. MISC ITEMS	$ -	$ -	$ -
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:			$ 22,149
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ -	$ 136,200	$ 158,349
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ -	$ 136,200	$ 158,349

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
G. Schodack Substation - Removal									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	0	ACRES	$ -	$ -	$ 203,000	$ -	$ 203,000	$ -
1.2	Station stone within substation fence.	0	CY	$ -	$ -	$ 75	$ -	$ 75	$ -
1.3	Substation Fence	0	LF	$ -	$ -	$ 150	$ -	$ 150	$ -
1.4									
1.5									
1.6									
1.7									
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ -		$ -		$ -
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	0	EA	$ -	$ -	$ 14,200	$ -	$ 14,200	$ -
2.1b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1e	Switch Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1f	Station Service Transformer Stand Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.1j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1k	Arrester Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1n	Reactor Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1p									
2.2	**230kV**								
2.2a	Circuit Breaker Foundations	0	EA	$ -	$ -	$ 7,200	$ -	$ 7,200	$ -
2.2b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ 32,000	$ -	$ 32,000	$ -
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ 22,000	$ -	$ 22,000	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ 11,000	$ -	$ 11,000	$ -
2.2e	Switch Stand Foundations	0	EA	$ -	$ -	$ 5,200	$ -	$ 5,200	$ -
2.2f	Station Service Transformer Stand Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.2j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.2k	Arrester Stand Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.2m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2p									
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3e	Switch Stand Foundations	0	EA	$ -	$ -	$ 5,200	$ -	$ 5,200	$ -
2.3f	Fuse Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3k	Arrester Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3p	Steele Transmission Pole Dead Ends (1ph.) Foundations	6	EA	$ -	$ -	$ 10,400	$ 62,400	$ 10,400	**$ 62,400**
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4b	345-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ 42,000	$ -	$ 42,000	$ -
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5b	Generator Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6b		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6c		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION FOUNDATIONS					$ -		$ 62,400		$ 62,400
3. SUBSTATION STRUCTURES									
3.1	**345kV**								
3.1a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1c	Switch Stands	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1d	Station Service Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1e	Bus Support 3ph	0	EA	$ -	$ -	$ 2,250	$ -	$ 2,250	$ -
3.1f	Bus Support 1 Ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1g	Instrument Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1h	Arrester Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1j	Wave Trap Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ 27,000	$ -	$ 27,000	$ -
3.2b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ 27,000	$ -	$ 27,000	$ -
3.2c	Switch Stands	0	EA	$ -	$ -	$ 9,750	$ -	$ 9,750	$ -
3.2d	Station Service Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2f	Bus Support 1 Ph	0	EA	$ -	$ -	$ 2,250	$ -	$ 2,250	$ -
3.2g	Instrument Transformer Stand	0	EA	$ -	$ -	$ 1,050	$ -	$ 1,050	$ -
3.2h	Arrester Stand	0	EA	$ -	$ -	$ 1,050	$ -	$ 1,050	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.2j	Wave Trap Stand	0	EA	$ -	$ -	$ 4,500	$ -	$ 4,500	$ -
3.2k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3	**115kV**								
3.3a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ 15,000	$ -	$ 15,000	$ -
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3c	Switch Stands	0	EA	$ -	$ -	$ 6,450	$ -	$ 6,450	$ -
3.3d	Fuse Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3f	Bus Support 1 Ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3g	Instrument Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3h	Arrester Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3j	Wave Trap Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3k	Misc. Structures	6	EA	$ -	$ -	$ 12,300	$ 73,800	$ 12,300	**$ 73,800**
TOTAL - SUBSTATION STRUCTURES					$ -		$ 73,800		$ 73,800
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.1b	Capacitor Banks	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.1c		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.1d									
4.2	**230kV**								
4.2a	Circuit Breakers	0	EA	$ -	$ -	$ 7,000	$ -	$ 7,000	$ -
4.2b	Capacitor Banks	0	EA	$ -	$ -	$ 42,000	$ -	$ 42,000	$ -
4.3	**115kV**								
4.3a	Circuit Breakers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - MAJOR EQUIPTMENT					$ -		$ -		$ -
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.1b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.1c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.1d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.1e	CCVT'S	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.1f	Arresters	0	EA	$ -	$ -	$ 1,500	$ -	$ 1,500	$ -
5.1g	Wave Traps	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.1h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.2b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.2c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2e	CCVT'S	0	EA	$ -	$ -	$ 1,500	$ -	$ 1,500	$ -
5.2f	Arresters	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.2g	Wave Traps	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.2h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.3c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3e	CCVT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3f	Arresters	0	EA	$ -	$ -	$ 1,500	$ -	$ 1,500	$ -
5.3g	Wave Traps	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ -		$ -		$ -
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE	0	EA	$ -	$ -	$ 150,000	$ -	$ 150,000	**$ -**
6.2	Protection and Telecom Equipment Panels	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.3	125VDC Batteries	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.4	Control Cables	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.5	SCADA and Communications	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.6	Low Voltage AC Distribution	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.7	DC Distribution System	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.8	Security	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.9	Fire Alarm	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.10	Generator	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ -		$ -		**$ -**
7. MISC ITEMS									
7.1	Conduit & Cable Trench System	0	EA	$ -	$ -	$ 42,000.00	$ -	$ 42,000	**$ -**
7.2	Rigid Bus, Fittings & Insulators	0	LS	$ -	$ -	$ 10,500.00	$ -	$ 10,500	**$ -**
7.3	Strain Bus, Connectors & Insulators	0	EA	$ -	$ -	$ 39.35	$ -	$ 39	**$ -**
7.4	Grounding System	0	EA	$ -	$ -	$ 42,000.00	$ -	$ 42,000	**$ -**
7.5									
7.6									
7.7									
7.8									
7.9									
7.10									
7.11									
7.12									
7.13									
7.14									
7.15									
TOTAL - MISC ITEMS					$ -		$ -		$ -
G. Schodack Substation - Removal					$ -		$ 136,200		**$ 136,200**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1.0	LS	$ -	$ -	$ 1,362	$ 1,362	$ 1,362	**$ 1,362**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 6,759	$ 6,759	$ 6,759	**$ 6,759**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 1,362	$ 1,362	$ 1,362	**$ 1,362**
8.4	Site Accommodation, Facilities, Storage	1.0	LS	$ -	$ -	$ 1,362	$ 1,362	$ 1,362	**$ 1,362**
	Engineering								
8.5	Design Engineering	1.0	LS	$ -	$ -	$ 10,896	$ 10,896	$ 10,896	**$ 10,896**
8.6	LiDAR	-	Mile	$ -	$ -	$ -	$ -	$ -	**$ -**
8.7	Geotech	-	Site	$ -	$ -	$ -	$ -	$ -	**$ -**
8.8	Surveying/Staking	-	Site	$ -	$ -	$ 953	$ -	$ 953	**$ -**
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	-	LS	$ -	$ -	$ 3,405	$ -	$ 3,405	**$ -**
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 409	$ 409	$ 409	**$ 409**
8.13	Real Estate Costs (New)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.14	Real Estate Costs (Incumbent Utility)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.18	Sales Tax on Materials	1.0	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.19	Fees for permits, including roadway, railroad, building or other local permits	-	LS		$ -	$ 136	$ -	$ 136	**$ -**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ -		$ 22,149		**$ 22,149**

NG & NY Transco - T019 - (Segment B)

H. Churchtown Substation - Install

Estimate Revision: 8

Total: $ 16,935,106

NG & NY Transco - T019 - (Segment B)	*Supply*	*Installation*	*Total*
H. Churchtown Substation - Install			
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ 162,650	$ 1,693,950	$ 1,856,600
2. SUBSTATION FOUNDATIONS	$ 943,027	$ 1,009,800	$ 1,952,827
3. SUBSTATION STRUCTURES	$ 416,000	$ 458,060	$ 916,120
4. MAJOR EQUIPTMENT	$ 416,000	$ 480,000	$ 896,000
5. SMALL EQUIPTMENT / MATERIALS	$ 1,384,800	$ 938,800	$ 2,323,600
6. CONTROL HOUSE / PANELS	$ 2,115,975	$ 1,453,475	$ 3,569,450
7. MISC ITEMS	$ 855,378	$ 1,282,357	$ 2,137,735
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 506,871	$ 2,775,903	$ 3,282,774
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 6,800,701	$ 10,092,345	$ 16,935,106
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 6,800,701	$ 10,092,345	$ 16,935,106

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
H. Churchtown Substation - Install									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	2.1	ACRES	$ -	$ -	$ 660,000	$ 1,386,000	$ 660,000	**$ 1,386,000**
1.2	Station stone within substation fence.	1,100	CY	$ 27	$ 29,700	$ 75	$ 82,500	$ 102	**$ 112,200**
1.3	Substation Fence	1,200	LF	$ 100	$ 120,000	$ 100	$ 120,000	$ 200	**$ 240,000**
1.4	Permanent Access Road - 20'-Wide	370	LF	$ 35	$ 12,950	$ 285	$ 105,450	$ 320	**$ 118,400**
1.5									
1.6									
1.7									
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ 162,650		$ 1,693,950		$ 1,856,600
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	0	EA	$ 14,940	$ -	$ 16,000	$ -	$ 30,940	**$ -**
2.1b	Capacitor Bank Foundations	0	EA	$ 56,025	$ -	$ 60,000	$ -	$ 116,025	**$ -**
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 26,145	$ -	$ 28,000	$ -	$ 54,145	**$ -**
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 26,145	$ -	$ 28,000	$ -	$ 54,145	**$ -**
2.1e	Switch Stand Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	**$ -**
2.1f	Station Service Transformer Stand Foundation	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	**$ -**
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1h	Bus Support 1 Ph Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	**$ -**
2.1j	Instrument Transformer Stand Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	**$ -**
2.1k	Arrester Stand Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	**$ -**
2.1m	Wave Trap Stand Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	**$ -**
2.1n	Reactor Foundations	0	EA	$ 7,470	$ -	$ 8,000	$ -	$ 15,470	**$ -**
2.1p									
2.2	**230kV**								
2.2a	Circuit Breaker Foundations	0	EA	$ 11,952	$ -	$ 12,800	$ -	$ 24,752	**$ -**
2.2b	Capacitor Bank Foundations	0	EA	$ 44,820	$ -	$ 48,000	$ -	$ 92,820	**$ -**
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	**$ -**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	$ -
2.2e	Switch Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2f	Station Service Transformer Stand Foundation	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2h	Bus Support 1 Ph Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2j	Instrument Transformer Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2k	Arrester Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2m	Wave Trap Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2p									
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	8	EA	$ 5,229	$ 41,832	$ 5,600	$ 44,800	$ 10,829	**$ 86,632**
2.3b	Capacitor Bank Foundations	0	EA	$ 33,615	$ -	$ 36,000	$ -	$ 69,615	$ -
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	$ -
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	22	EA	$ 16,434	$ 361,548	$ 17,600	$ 387,200	$ 34,034	**$ 748,748**
2.3e	Switch Stand Foundations	34	EA	$ 2,988	$ 101,592	$ 3,200	$ 108,800	$ 6,188	**$ 210,392**
2.3f	Fuse Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3g	Bus Support 3ph Foundations	20	EA	$ 2,988	$ 59,760	$ 3,200	$ 64,000	$ 6,188	**$ 123,760**
2.3h	Bus Support 1 Ph Foundations	36	EA	$ 2,988	$ 107,568	$ 3,200	$ 115,200	$ 6,188	**$ 222,768**
2.3j	Instrument Transformer Stand Foundations	51	EA	$ 2,988	$ 152,388	$ 3,200	$ 163,200	$ 6,188	**$ 315,588**
2.3k	Arrester Stand Foundations	15	EA	$ 2,988	$ 44,820	$ 3,200	$ 48,000	$ 6,188	**$ 92,820**
2.3m	Wave Trap Stand Foundations	5	EA	$ 2,988	$ 14,940	$ 3,200	$ 16,000	$ 6,188	**$ 30,940**
2.3n	Station Service Foundations	1	EA	$ 3,735	$ 3,735	$ 4,000	$ 4,000	$ 7,735	**$ 7,735**
2.3p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment	0	EA	$ 97,110	$ -	$ 104,000	$ -	$ 201,110	$ -
2.4b	345-115kV Transformer Foundation w/ Oil Containment	0	EA	$ 74,700	$ -	$ 80,000	$ -	$ 154,700	$ -
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad	1	EA	$ 33,615	$ 33,615	$ 36,000	$ 36,000	$ 69,615	**$ 69,615**
2.5b	Generator Foundation	1	EA	$ 16,000	$ 16,000	$ 17,000	$ 17,000	$ 33,000	**$ 33,000**
2.5c	Station Service Distribution Line - 1ph.	0	LS	$ -	$ -	$ 6,500	$ -	$ 6,500	$ -
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	1	EA	$ 5,229	$ 5,229	$ 5,600	$ 5,600	$ 10,829	**$ 10,829**
2.6b		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6c		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION FOUNDATIONS					$ 943,027		$ 1,009,800		$ 1,952,827
3. SUBSTATION STRUCTURES									
3.1	**345kV**								
3.1a	Substation A-Frame Structures - Stand alone	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	$ -
3.1b	Substation A-Frame Structures - Shared Column	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	$ -
3.1c	Switch Stands	0	EA	$ 14,800	$ -	$ 14,800	$ -	$ 29,600	$ -
3.1d	Station Service Transformer Stand	0	EA	$ 14,800	$ -	$ 14,800	$ -	$ 29,600	$ -
3.1e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1f	Bus Support 1 Ph	0	EA	$ 3,700	$ -	$ 3,700	$ -	$ 7,400	$ -
3.1g	Instrument Transformer Stand	0	EA	$ 1,850	$ -	$ 1,850	$ -	$ 3,700	$ -
3.1h	Arrester Stand	0	EA	$ 1,850	$ -	$ 1,850	$ -	$ 3,700	$ -
3.1j	Wave Trap Stand	0	EA	$ 7,400	$ -	$ 7,400	$ -	$ 14,800	$ -
3.1k	Lightning Masts - 70'	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	$ -
3.2b	Substation A-Frame Structures - Shared Column	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	$ -
3.2c	Switch Stands	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	$ -
3.2d	Station Service Transformer Stand	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	$ -
3.2e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2f	Bus Support 1 Ph	0	EA	$ 2,775	$ -	$ 2,775	$ -	$ 5,550	$ -
3.2g	Instrument Transformer Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	$ -
3.2h	Arrester Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.2j	Wave Trap Stand	0	EA	$ 5,550	$ -	$ 5,550	$ -	$ 11,100	$ -
3.2k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
3.3	**115kV**								
3.3a	Substation A-Frame Structures - Stand alone	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	$ -
3.3b	Substation A-Frame Structures - Shared Column	8	EA	$ 18,500	$ 148,000	$ 18,500	$ 148,000	$ 37,000	**$ 296,000**
3.3c	Switch Stands	17	EA	$ 7,955	$ 135,235	$ 7,955	$ 135,235	$ 15,910	**$ 270,470**
3.3d	Fuse Stand	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	$ -
3.3e	Bus Support 3ph	10	EA	$ 3,330	$ 33,300	$ 3,330	$ 33,300	$ 6,660	**$ 66,600**
3.3f	Bus Support 1 Ph	36	EA	$ 1,850	$ 66,600	$ 1,850	$ 66,600	$ 3,700	**$ 133,200**
3.3g	Instrument Transformer Stand	51	EA	$ 740	$ 37,740	$ 740	$ 37,740	$ 1,480	**$ 75,480**
3.3h	Arrester Stand	15	EA	$ 740	$ 11,100	$ 740	$ 11,100	$ 1,480	**$ 22,200**
3.3j	Wave Trap Stand	5	EA	$ 3,700	$ 18,500	$ 3,700	$ 18,500	$ 7,400	**$ 37,000**
3.3k	Lightning Mast	1	EA	$ 6,475	$ 6,475	$ 6,475	$ 6,475	$ 12,950	**$ 12,950**
3.3l	Station Service Transformer Support Stand	1	EA	$ 1,110	$ 1,110	$ 1,110	$ 1,110	$ 2,220	**$ 2,220**
TOTAL - SUBSTATION STRUCTURES					$ 458,060		$ 458,060		$ 916,120
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	0	EA	$ 300,000	$ -	$ 80,000	$ -	$ 380,000	$ -
4.1b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	$ -
4.1c	345 kV - 230 kV Auto Transformer	0	EA	$ -	$ -	$ 750,000	$ -	$ 750,000	$ -
4.1d	345 kV - 115 kV Auto Transformer	0	EA	$ -	$ -	$ 750,000	$ -	$ 750,000	$ -
4.2	**230kV**								
4.2a	Circuit Breakers	0	EA	$ 250,000	$ -	$ 80,000	$ -	$ 330,000	$ -
4.2b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	$ -
4.3	**115kV**								
4.3a	Circuit Breakers	8	EA	$ 52,000	$ 416,000	$ 60,000	$ 480,000	$ 112,000	**$ 896,000**
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ 60,000	$ -	$ 60,000	$ -
TOTAL - MAJOR EQUIPTMENT					$ 416,000		$ 480,000		$ 896,000
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator	0	EA	$ 40,000	$ -	$ 15,000	$ -	$ 55,000	$ -
5.1b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 35,000	$ -	$ 17,500	$ -	$ 52,500	$ -
5.1c	VT'S	0	EA	$ 25,000	$ -	$ 12,000	$ -	$ 37,000	$ -
5.1d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.1e	CCVT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.1f	Arresters	0	EA	$ 6,500	$ -	$ 1,500	$ -	$ 8,000	$ -
5.1g	Wave Traps	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.1h	Station Service Transformers	0	EA	$ 200,000	$ -	$ 50,000	$ -	$ 250,000	$ -
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator	0	EA	$ 35,000	$ -	$ 15,000	$ -	$ 50,000	$ -
5.2b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 30,000	$ -	$ 17,500	$ -	$ 47,500	$ -
5.2c	VT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2e	CCVT'S	0	EA	$ 10,000	$ -	$ 6,000	$ -	$ 16,000	$ -
5.2f	Arresters	0	EA	$ 5,000	$ -	$ 6,000	$ -	$ 11,000	$ -
5.2g	Wave Traps	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	5	EA	$ 33,000	$ 165,000	$ 15,000	$ 75,000	$ 48,000	**$ 240,000**
5.3b	Disconnect Switches - 3ph w/ manual operator	16	EA	$ 28,000	$ 448,000	$ 17,500	$ 280,000	$ 45,500	**$ 728,000**
5.3c	VT'S	15	EA	$ 13,000	$ 195,000	$ 8,000	$ 120,000	$ 21,000	**$ 315,000**
5.3d	CT'S	15	EA	$ 13,000	$ 195,000	$ 8,000	$ 120,000	$ 21,000	**$ 315,000**
5.3e	CCVT'S	21	EA	$ 8,000	$ 168,000	$ 8,000	$ 168,000	$ 16,000	**$ 336,000**
5.3f	Arresters	15	EA	$ 3,420	$ 51,300	$ 6,000	$ 90,000	$ 9,420	**$ 141,300**
5.3g	Wave Traps	5	EA	$ 13,000	$ 65,000	$ 8,000	$ 40,000	$ 21,000	**$ 105,000**
5.3h	Station Service Transformers	1	EA	$ 75,000	$ 75,000	$ 35,000	$ 35,000	$ 110,000	**$ 110,000**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
5.3j	Fuses	3	EA	$ 7,500	$ 22,500	$ 3,600	$ 10,800	$ 11,100	**$ 33,300**
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ 1,384,800		$ 938,800		$ 2,323,600
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE	1	EA	$ 292,500	$ 292,500	$ 85,000	$ 85,000	$ 377,500	**$ 377,500**
6.2	Protection and Telecom Equipment Panels	26	EA	$ 35,000	$ 910,000	$ 12,500	$ 325,000	$ 47,500	**$ 1,235,000**
6.3	125VDC Batteries	2	EA	$ 75,000	$ 150,000	$ 25,000	$ 50,000	$ 100,000	**$ 200,000**
6.4	Control Cables	1	LS	$ 398,475	$ 398,475	$ 398,475	$ 398,475	$ 796,950	**$ 796,950**
6.5	SCADA and Communications	1	EA	$ 50,000	$ 50,000	$ 100,000	$ 100,000	$ 150,000	**$ 150,000**
6.6	Low Voltage AC Distribution	2	EA	$ 50,000	$ 100,000	$ 100,000	$ 200,000	$ 150,000	**$ 300,000**
6.7	DC Distribution System	2	EA	$ 50,000	$ 100,000	$ 100,000	$ 200,000	$ 150,000	**$ 300,000**
6.8	Security	1	EA	$ 7,500	$ 7,500	$ 7,500	$ 7,500	$ 15,000	**$ 15,000**
6.9	Fire Alarm	1	EA	$ 7,500	$ 7,500	$ 7,500	$ 7,500	$ 15,000	**$ 15,000**
6.10	Generator	1	EA	$ 100,000	$ 100,000	$ 80,000	$ 80,000	$ 180,000	**$ 180,000**
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ 2,115,975		$ 1,453,475		**$ 3,569,450**
7. MISC ITEMS									
7.1	Conduit & Cable Trench System	400.0	LF	$ 185.00	$ 74,000	$ 170.00	$ 68,000	$ 355	**$ 142,000**
7.2	Rigid Bus, Fittings & Insulators	1,250.0	LF	$ 125.07	$ 156,338	$ 237.10	$ 296,375	$ 362	**$ 452,713**
7.3	Strain Bus, Connectors & Insulators	2,025.0	LF	$ 39.30	$ 79,583	$ 53.35	$ 108,034	$ 93	**$ 187,616**
7.4	Grounding System	10,600.0	LF	$ 6.93	$ 73,458	$ 32.58	$ 345,348	$ 40	**$ 418,806**
7.5	Strain Bus Insulators - 345kV	0	EA	$ 2,000	$ -	$ 1,050	$ -	$ 3,050	**$ -**
7.6	Strain Bus Insulators - 230kV	0	EA	$ 1,400	$ -	$ 750	$ -	$ 2,150	**$ -**
7.7	Strain Bus Insulators - 115kV	72	EA	$ 1,000	$ 72,000	$ 550	$ 39,600	$ 1,550	**$ 111,600**
7.8	Low Voltage AC Station Service	1	LS	$ 50,000	$ 50,000	$ 75,000	$ 75,000	$ 125,000	**$ 125,000**
7.9	SSVT Service	1	LS	$ 45,000	$ 45,000	$ 45,000	$ 45,000	$ 90,000	**$ 90,000**
7.10	Control Conduits from Trench to Equipment	1	LS	$ 125,000	$ 125,000	$ 125,000	$ 125,000	$ 250,000	**$ 250,000**
7.11	Misc. Materials (Above and Below Ground)	1	LS	$ 180,000	$ 180,000	$ 180,000	$ 180,000	$ 360,000	**$ 360,000**
7.12									
7.13									
7.14									
7.15									
7.16									
7.17									
7.18									
7.19									
7.20									
7.21									
7.22									
7.23									
7.24									
7.25									
TOTAL - MISC ITEMS					$ 855,378		$ 1,282,357		$ 2,137,735
H. Churchtown Substation - Install					$ 6,335,890		$ 7,316,442		**$ 13,652,332**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1	LS	$ -	$ -	$ 136,523	$ 136,523	$ 136,523	**$ 136,523**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 677,463	$ 677,463	$ 677,463	**$ 677,463**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 136,523	$ 136,523	$ 136,523	**$ 136,523**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 136,523	$ 136,523	$ 136,523	**$ 136,523**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 1,092,187	$ 1,092,187	$ 1,092,187	**$ 1,092,187**
8.6	LiDAR	-	Mile	$ -	$ -	$ -	$ -	$ -	**$ -**
8.7	Geotech	4	Site	$ -	$ -	$ 3,500	$ 14,000	$ 3,500	**$ 14,000**
8.8	Surveying/Staking	1	Site	$ -	$ -	$ 95,566	$ 95,566	$ 95,566	**$ 95,566**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 341,308	$ 341,308	$ 341,308	**$ 341,308**
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 40,957	$ 40,957	$ 40,957	**$ 40,957**
8.13	Real Estate Costs (New)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.14	Real Estate Costs (Incumbent Utility)	1	LS	$ -	$ -	$ 91,200	$ 91,200	$ 91,200	**$ 91,200**
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.18	Sales Tax on Materials	1	LS	$ 506,871	$ 506,871	$ -	$ -	$ 506,871	**$ 506,871**
8.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 13,652	$ 13,652	$ 13,652	**$ 13,652**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 506,871		$ 2,775,903		**$ 3,282,774**

NG & NY Transco - T019 - (Segment B)

I. Churchtown Substation - Removal

Estimate Revision: 8

Total: $ 1,120,394

NG & NY Transco - T019 - (Segment B)	*Supply*	*Installation*	*Total*	
I. Churchtown Substation - Removal				
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ -	$ 111,000	$ 111,000	
2. SUBSTATION FOUNDATIONS	$ -	$ 340,400	$ 340,400	
3. SUBSTATION STRUCTURES	$ -	$ 252,600	$ 252,600	
4. MAJOR EQUIPTMENT	$ -	$ 24,600	$ 24,600	
5. SMALL EQUIPTMENT / MATERIALS	$ -	$ 60,000	$ 60,000	
6. CONTROL HOUSE / PANELS	$ -	$ 150,000	$ 150,000	
7. MISC ITEMS	$ -	$ 25,078	$ 25,078	
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ -	$ 156,716	$ 156,716	
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -	0.0%
SUBTOTAL:	$ -	$ 1,120,394	$ 1,120,394	
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -	0.0%
TOTAL:	$ -	$ 1,120,394	$ 1,120,394	

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
I. Churchtown Substation - Removal									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.		ACRES	$ -	$ -	$ 250,000	$ -	$ 250,000	$ -
1.2	Station stone within substation fence.		CY	$ -	$ -	$ 75	$ -	$ 75	$ -
1.3	Substation Fence	740	LF	$ -	$ -	$ 150	$ 111,000	$ 150	**$ 111,000**
1.4									
1.5									
1.6									
1.7									
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ -		$ 111,000		$ 111,000
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations		EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1b	Capacitor Bank Foundations		EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)		EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)		EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1e	Switch Stand Foundations		EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1f	Station Service Transformer Stand Foundation		EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1g	Bus Support 3ph Foundations		EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1h	Bus Support 1 Ph Foundations		EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1j	Instrument Transformer Stand Foundations		EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1k	Arrester Stand Foundations		EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1m	Wave Trap Stand Foundations		EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1n	Reactor Foundations		EA	$ -	$ -	$ -	$ -	$ -	**$ -**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.1p									
2.2	**230kV**								
2.2a	Circuit Breaker Foundations		EA	$ -	$ -	$ 7,200	$ -	$ 7,200	**$ -**
2.2b	Capacitor Bank Foundations		EA	$ -	$ -	$ 32,000	$ -	$ 32,000	**$ -**
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)		EA	$ -	$ -	$ 22,000	$ -	$ 22,000	**$ -**
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)		EA	$ -	$ -	$ 11,000	$ -	$ 11,000	**$ -**
2.2e	Switch Stand Foundations		EA	$ -	$ -	$ 5,200	$ -	$ 5,200	**$ -**
2.2f	Station Service Transformer Stand Foundation		EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.2g	Bus Support 3ph Foundations		EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.2h	Bus Support 1 Ph Foundations		EA	$ -	$ -	$ 2,400	$ -	$ 2,400	**$ -**
2.2j	Instrument Transformer Stand Foundations		EA	$ -	$ -	$ 2,400	$ -	$ 2,400	**$ -**
2.2k	Arrester Stand Foundations		EA	$ -	$ -	$ 2,400	$ -	$ 2,400	**$ -**
2.2m	Wave Trap Stand Foundations		EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.2n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.2p									
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	2	EA	$ -	$ -	$ 15,000	$ 30,000	$ 15,000	**$ 30,000**
2.3b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3e	Switch Stand Foundations	18	EA	$ -	$ -	$ 5,200	$ 93,600	$ 5,200	**$ 93,600**
2.3f	Fuse Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3h	Bus Support 1 Ph Foundations	6	EA	$ -	$ -	$ 5,200	$ 31,200	$ 5,200	**$ 31,200**
2.3j	Instrument Transformer Stand Foundations	3	EA	$ -	$ -	$ 5,200	$ 15,600	$ 5,200	**$ 15,600**
2.3k	Arrester Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3p	Steel Transmission Pole Deadend Fnds (1Ph)	9	EA	$ -	$ -	$ 15,000	$ 135,000	$ 15,000	**$ 135,000**
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment		EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.4b	345-115kV Transformer Foundation w/ Oil Containment		EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment		EA	$ -	$ -	$ 67,500	$ -	$ 67,500	**$ -**
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment		EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad	1	EA	$ -	$ -	$ 14,200	$ 14,200	$ 14,200	**$ 14,200**
2.5b	Generator Foundation		EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	4	EA	$ -	$ -	$ 5,200	$ 20,800	$ 5,200	**$ 20,800**
2.6b				$ -	$ -	$ -	$ -	$ -	**$ -**
2.6c				$ -	$ -	$ -	$ -	$ -	**$ -**
TOTAL - SUBSTATION FOUNDATIONS					$ -		$ 340,400		$ 340,400
3. SUBSTATION STRUCTURES									
3.1	**345kV**								
3.1a	Substation A-Frame Structures - Stand alone		EA	$ -	$ -	$ -	$ -	$ -	**$ -**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.1b	Substation A-Frame Structures - Shared Column		EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1c	Switch Stands		EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1d	Station Service Transformer Stand		EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1e	Bus Support 3ph		EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1f	Bus Support 1 Ph		EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1g	Instrument Transformer Stand		EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1h	Arrester Stand		EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1j	Wave Trap Stand		EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1k	Misc. Structures		EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone		EA	$ -	$ -	$ 27,000	$ -	$ 27,000	$ -
3.2b	Substation A-Frame Structures - Shared Column		EA	$ -	$ -	$ 27,000	$ -	$ 27,000	$ -
3.2c	Switch Stands		EA	$ -	$ -	$ 9,750	$ -	$ 9,750	$ -
3.2d	Station Service Transformer Stand		EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2e	Bus Support 3ph		EA	$ -	$ -	$ 2,250	$ -	$ 2,250	$ -
3.2f	Bus Support 1 Ph		EA	$ -	$ -	$ 2,250	$ -	$ 2,250	$ -
3.2g	Instrument Transformer Stand		EA	$ -	$ -	$ 1,050	$ -	$ 1,050	$ -
3.2h	Arrester Stand		EA	$ -	$ -	$ 1,050	$ -	$ 1,050	$ -
3.2j	Wave Trap Stand		EA	$ -	$ -	$ 4,500	$ -	$ 4,500	$ -
3.2k	Misc. Structures		EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3	**115kV**								
3.3a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ 15,000	$ -	$ 15,000	$ -
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3c	Switch Stands	9	EA	$ -	$ -	$ 6,450	$ 58,050	$ 6,450	**$ 58,050**
3.3d	Fuse Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3f	Bus Support 1 Ph	6	EA	$ -	$ -	$ 6,450	$ 38,700	$ 6,450	**$ 38,700**
3.3g	Instrument Transformer Stand	3	EA	$ -	$ -	$ 6,450	$ 19,350	$ 6,450	**$ 19,350**
3.3h	Arrester Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3j	Wave Trap Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3k	Steel Transmission Pole Deadend (1Ph)	9	EA	$ -	$ -	$ 12,300	$ 110,700	$ 12,300	**$ 110,700**
3.4l	Lightning Mast	4	EA	$ -	$ -	$ 6,450	$ 25,800	$ 6,450	**$ 25,800**
TOTAL - SUBSTATION STRUCTURES					$ -		$ 252,600		$ 252,600
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers		EA	$ -	$ -	$ -	$ -	$ -	$ -
4.1b	Capacitor Banks		EA	$ -	$ -	$ -	$ -	$ -	$ -
4.1c			EA	$ -	$ -	$ -	$ -	$ -	$ -
4.1d									
4.2	**230kV**								
4.2a	Circuit Breakers		EA	$ -	$ -	$ 7,000	$ -	$ 7,000	$ -
4.2b	Capacitor Banks		EA	$ -	$ -	$ 42,000	$ -	$ 42,000	$ -
4.3	**115kV**								
4.3a	Circuit Breakers	2	EA	$ -	$ -	$ 12,300	$ 24,600	$ 12,300	**$ 24,600**
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - MAJOR EQUIPTMENT					$ -		$ 24,600		$ 24,600
5. SMALL EQUIPTMENT / MATERIALS									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator		EA	$ -	$ -	$ 5,500	$ -	$ 5,500	**$ -**
5.1b	Disconnect Switches - 3ph w/ manual operator		EA	$ -	$ -	$ 5,500	$ -	$ 5,500	**$ -**
5.1c	VT'S		EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.1d	CT'S		EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.1e	CCVT'S		EA	$ -	$ -	$ 2,500	$ -	$ 2,500	**$ -**
5.1f	Arresters		EA	$ -	$ -	$ 1,500	$ -	$ 1,500	**$ -**
5.1g	Wave Traps		EA	$ -	$ -	$ 2,500	$ -	$ 2,500	**$ -**
5.1h	Station Service Transformers		EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator		EA	$ -	$ -	$ 5,500	$ -	$ 5,500	**$ -**
5.2b	Disconnect Switches - 3ph w/ manual operator		EA	$ -	$ -	$ 5,500	$ -	$ 5,500	**$ -**
5.2c	VT'S		EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.2d	CT'S		EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.2e	CCVT'S		EA	$ -	$ -	$ 1,500	$ -	$ 1,500	**$ -**
5.2f	Arresters		EA	$ -	$ -	$ 2,500	$ -	$ 2,500	**$ -**
5.2g	Wave Traps		EA	$ -	$ -	$ 2,500	$ -	$ 2,500	**$ -**
5.2h	Station Service Transformers		EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	3	EA	$ -	$ -	$ 5,500	$ 16,500	$ 5,500	**$ 16,500**
5.3b	Disconnect Switches - 3ph w/ manual operator	3	EA	$ -	$ -	$ 5,500	$ 16,500	$ 5,500	**$ 16,500**
5.3c	VT'S	3	EA	$ -	$ -	$ 1,500	$ 4,500	$ 1,500	**$ 4,500**
5.3d	CT'S	3	EA	$ -	$ -	$ 1,500	$ 4,500	$ 1,500	**$ 4,500**
5.3e	CCVT'S	3	EA	$ -	$ -	$ 1,500	$ 4,500	$ 1,500	**$ 4,500**
5.3f	Arresters	9	EA	$ -	$ -	$ 1,500	$ 13,500	$ 1,500	**$ 13,500**
5.3g	Wave Traps	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.3h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.3j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ -		$ 60,000		$ 60,000
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE	1	EA	$ -	$ -	$ 150,000	$ 150,000	$ 150,000	**$ 150,000**
6.2	Protection and Telecom Equipment Panels		EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.3	125VDC Batteries		EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.4	Control Cables		LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.5	SCADA and Communications		EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.6	Low Voltage AC Distribution		EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.7	DC Distribution System		EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.8	Security		EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.9	Fire Alarm		EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.10	Generator		EA	$ -	$ -	$ -	$ -	$ -	**$ -**
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ -		$ 150,000		**$ 150,000**
7. MISC ITEMS									
7.1	Conduit & Cable Trench System		LS	$ -	$ -	$ 42,000.00	$ -	$ 42,000	**$ -**
7.2	Rigid Bus, Fittings & Insulators	535.0	LF	$ -	$ -	$ 46.88	$ 25,078	$ 47	**$ 25,078**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
7.3	Strain Bus, Connectors & Insulators		LF	$ -	$ -	$ 39.35	$ -	$ 39	$ -
7.4	Grounding System		LS	$ -	$ -	$ 42,000.00	$ -	$ 42,000	$ -
7.5									
7.6									
7.7									
7.8									
7.9									
7.10									
7.11									
7.12									
7.13									
7.14									
7.15									
TOTAL - MISC ITEMS					$ -		$ 25,078		$ 25,078
I. Churchtown Substation - Removal					$ -		$ 963,678		**$ 963,678**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1.0	LS	$ -	$ -	$ 9,637	$ 9,637	$ 9,637	**$ 9,637**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 47,820	$ 47,820	$ 47,820	**$ 47,820**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 9,637	$ 9,637	$ 9,637	**$ 9,637**
8.4	Site Accommodation, Facilities, Storage	1.0	LS	$ -	$ -	$ 9,637	$ 9,637	$ 9,637	**$ 9,637**
	Engineering								
8.5	Design Engineering	1.0	LS	$ -	$ -	$ 77,094	$ 77,094	$ 77,094	**$ 77,094**
8.6	LiDAR	-	Mile	$ -	$ -	$ -	$ -	$ -	$ -
8.7	Geotech	-	Site	$ -	$ -	$ -	$ -	$ -	$ -
8.8	Surveying/Staking	-	Site	$ -	$ -	$ 6,746	$ -	$ 6,746	$ -
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	-	LS	$ -	$ -	$ 24,092	$ -	$ 24,092	$ -
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 2,891	$ 2,891	$ 2,891	**$ 2,891**
8.13	Real Estate Costs (New)	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.14	Real Estate Costs (Incumbent Utility)	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.18	Sales Tax on Materials	1.0	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.19	Fees for permits, including roadway, railroad, building or other local permits	-	LS		$ -	$ 964	$ -	$ 964	$ -
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ -		$ 156,716		**$ 156,716**

NG & NY Transco - T019 - (Segment B)

J. Pleasant Valley Substation - Install

Estimate Revision: 8

Total: $ 8,652,672

NG & NY Transco - T019 - (Segment B)	*Supply*	*Installation*	*Total*
J. Pleasant Valley Substation - Install			
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ 92,400	$ 380,000	$ 472,400
2. SUBSTATION FOUNDATIONS	$ 414,410	$ 442,500	$ 856,910
3. SUBSTATION STRUCTURES	$ 188,700	$ 188,700	$ 377,400
4. MAJOR EQUIPTMENT	$ 1,380,000	$ 400,000	$ 1,780,000
5. SMALL EQUIPTMENT / MATERIALS	$ 369,500	$ 173,000	$ 542,500
6. CONTROL HOUSE / PANELS	$ 746,400	$ 393,900	$ 1,140,300
7. MISC ITEMS	$ 740,939	$ 988,454	$ 1,729,393
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 314,588	$ 1,439,181	$ 1,753,769
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 4,246,937	$ 4,405,735	$ 8,652,672
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 4,246,937	$ 4,405,735	$ 8,652,672

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
J. Pleasant Valley Substation - Install									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	1.00	ACRES	$ -	$ -	$ 230,000	$ 230,000	$ 230,000	**$ 230,000**
1.2	Station stone within substation fence.	1,200	CY	$ 27	$ 32,400	$ 75	$ 90,000	$ 102	**$ 122,400**
1.3	Substation Fence	600	LF	$ 100	$ 60,000	$ 100	$ 60,000	$ 200	**$ 120,000**
1.4	Permanent Access Road - 20'-Wide	0	LF			$ 285	$ -	$ 285	**$ -**
1.5									
1.6									
1.7									
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ 92,400		$ 380,000		$ 472,400
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	3	EA	$ 14,940	$ 44,820	$ 16,000	$ 48,000	$ 30,940	**$ 92,820**
2.1b	Capacitor Bank Foundations	0	EA	$ 56,025	$ -	$ 60,000	$ -	$ 116,025	**$ -**
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 26,145	$ -	$ 28,000	$ -	$ 54,145	**$ -**
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 26,145	$ -	$ 28,000	$ -	$ 54,145	**$ -**
2.1e	Switch Stand Foundations	18	EA	$ 4,482	$ 80,676	$ 4,800	$ 86,400	$ 9,282	**$ 167,076**
2.1f	Station Service Transformer Stand Foundation	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	**$ -**
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1h	Bus Support 1 Ph Foundations	25	EA	$ 4,482	$ 112,050	$ 4,800	$ 120,000	$ 9,282	**$ 232,050**
2.1j	Instrument Transformer Stand Foundations	18	EA	$ 4,482	$ 80,676	$ 4,800	$ 86,400	$ 9,282	**$ 167,076**
2.1k	Arrester Stand Foundations	9	EA	$ 4,482	$ 40,338	$ 4,800	$ 43,200	$ 9,282	**$ 83,538**
2.1m	Wave Trap Stand Foundations	1	EA	$ 4,482	$ 4,482	$ 4,800	$ 4,800	$ 9,282	**$ 9,282**
2.1n	Reactor Foundations	0	EA	$ 7,470	$ -	$ 8,000	$ -	$ 15,470	**$ -**
2.1p									
				$ -	$ -	$ -	$ -	$ -	**$ -**
2.2	**230kV**								
2.2a	Circuit Breaker Foundations	0	EA	$ 11,952	$ -	$ 12,800	$ -	$ 24,752	**$ -**
2.2b	Capacitor Bank Foundations	0	EA	$ 44,820	$ -	$ 48,000	$ -	$ 92,820	**$ -**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	$ -
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	$ -
2.2e	Switch Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2f	Station Service Transformer Stand Foundation	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2h	Bus Support 1 Ph Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2j	Instrument Transformer Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2k	Arrester Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2m	Wave Trap Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2p									
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	0	EA	$ 5,229	$ -	$ 5,600	$ -	$ 10,829	$ -
2.3b	Capacitor Bank Foundations	0	EA	$ 33,615	$ -	$ 36,000	$ -	$ 69,615	$ -
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	$ -
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	$ -
2.3e	Switch Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3f	Fuse Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3g	Bus Support 3ph Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3h	Bus Support 1 Ph Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3j	Instrument Transformer Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3k	Arrester Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3m	Wave Trap Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment	0	EA	$ 97,110	$ -	$ 104,000	$ -	$ 201,110	$ -
2.4b	345-115kV Transformer Foundation w/ Oil Containment	0	EA	$ 74,700	$ -	$ 80,000	$ -	$ 154,700	$ -
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5	**Control House Foundations / Pad**								
2.5a	Control House Addition Foundation (20-ft x 50-ft)	1	EA	$ 51,368	$ 51,368	$ 53,700	$ 53,700	$ 105,068	**$ 105,068**
2.5b	Generator Foundation	0	EA	$ 16,000	$ -	$ 17,000	$ -	$ 33,000	$ -
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	0	EA	$ 5,229	$ -	$ 5,600	$ -	$ 10,829	$ -
2.6b		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6c		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION FOUNDATIONS					$ 414,410		$ 442,500		$ 856,910
3. SUBSTATION STRUCTURES									
3.1	**345kV**								
3.1a	Substation A-Frame Structures - Stand alone	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	$ -
3.1b	Substation A-Frame Structures - Shared Column	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	$ -
3.1c	Switch Stands	3	EA	$ 14,800	$ 44,400	$ 14,800	$ 44,400	$ 29,600	**$ 88,800**
3.1d	Station Service Transformer Stand	0	EA	$ 14,800	$ -	$ 14,800	$ -	$ 29,600	$ -
3.1e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1f	Bus Support 1 Ph	25	EA	$ 3,700	$ 92,500	$ 3,700	$ 92,500	$ 7,400	**$ 185,000**
3.1g	Instrument Transformer Stand	15	EA	$ 1,850	$ 27,750	$ 1,850	$ 27,750	$ 3,700	**$ 55,500**
3.1h	Arrester Stand	9	EA	$ 1,850	$ 16,650	$ 1,850	$ 16,650	$ 3,700	**$ 33,300**
3.1j	Wave Trap Stand	1	EA	$ 7,400	$ 7,400	$ 7,400	$ 7,400	$ 14,800	**$ 14,800**
3.1k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	$ -
3.2b	Substation A-Frame Structures - Shared Column	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	$ -
3.2c	Switch Stands	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	$ -
3.2d	Station Service Transformer Stand	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.2e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2f	Bus Support 1 Ph	0	EA	$ 2,775	$ -	$ 2,775	$ -	$ 5,550	$ -
3.2g	Instrument Transformer Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	$ -
3.2h	Arrester Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	$ -
3.2j	Wave Trap Stand	0	EA	$ 5,550	$ -	$ 5,550	$ -	$ 11,100	$ -
3.2k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
3.3	**115kV**								
3.3a	Substation A-Frame Structures - Stand alone	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	$ -
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	$ -
3.3c	Switch Stands	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	$ -
3.3d	Fuse Stand	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	$ -
3.3e	Bus Support 3ph	0	EA	$ 3,330	$ -	$ 3,330	$ -	$ 6,660	$ -
3.3f	Bus Support 1 Ph	0	EA	$ 1,850	$ -	$ 1,850	$ -	$ 3,700	$ -
3.3g	Instrument Transformer Stand	0	EA	$ 740	$ -	$ 740	$ -	$ 1,480	$ -
3.3h	Arrester Stand	0	EA	$ 740	$ -	$ 740	$ -	$ 1,480	$ -
3.3j	Wave Trap Stand	0	EA	$ 3,700	$ -	$ 3,700	$ -	$ 7,400	$ -
3.3k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
TOTAL - SUBSTATION STRUCTURES					$ 188,700		$ 188,700		$ 377,400
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	1	EA	$ 200,000	$ 200,000	$ 80,000	$ 80,000	$ 280,000	**$ 280,000**
4.1b	Capacitor Banks - W/ Center Tap VT and Reactors	2	EA	$ 370,000	$ 740,000	$ 80,000	$ 160,000	$ 450,000	**$ 900,000**
4.1c	Circuit Breakers - Cap Switching	2	EA	$ 220,000	$ 440,000	$ 80,000	$ 160,000	$ 300,000	**$ 600,000**
4.1d	345 kV - 115 kV Auto Transformer	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.2	**230kV**								
4.2a	Circuit Breakers	0	EA	$ 250,000	$ -	$ 80,000	$ -	$ 330,000	$ -
4.2b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	$ -
4.3	**115kV**								
4.3a	Circuit Breakers	0	EA	$ 225,000	$ -	$ 60,000	$ -	$ 285,000	$ -
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ 60,000	$ -	$ 60,000	$ -
TOTAL - MAJOR EQUIPTMENT					$ 1,380,000		$ 400,000		$ 1,780,000
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator	1	EA	$ 40,000	$ 40,000	$ 15,000	$ 15,000	$ 55,000	**$ 55,000**
5.1b	Disconnect Switches - 3ph w/ manual operator	3	EA	$ 35,000	$ 105,000	$ 17,500	$ 52,500	$ 52,500	**$ 157,500**
5.1c	VT'S	3	EA	$ 25,000	$ 75,000	$ 12,000	$ 36,000	$ 37,000	**$ 111,000**
5.1d	CT'S	3	EA	$ 13,000	$ 39,000	$ 8,000	$ 24,000	$ 21,000	**$ 63,000**
5.1e	CCVT'S	3	EA	$ 13,000	$ 39,000	$ 8,000	$ 24,000	$ 21,000	**$ 63,000**
5.1f	Arresters	9	EA	$ 6,500	$ 58,500	$ 1,500	$ 13,500	$ 8,000	**$ 72,000**
5.1g	Wave Traps	1	EA	$ 13,000	$ 13,000	$ 8,000	$ 8,000	$ 21,000	**$ 21,000**
5.1h	Station Service Transformers	0	EA	$ 200,000	$ -	$ 50,000	$ -	$ 250,000	$ -
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator	0	EA	$ 35,000	$ -	$ 15,000	$ -	$ 50,000	$ -
5.2b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 30,000	$ -	$ 17,500	$ -	$ 47,500	$ -
5.2c	VT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2e	CCVT'S	0	EA	$ 10,000	$ -	$ 6,000	$ -	$ 16,000	$ -
5.2f	Arresters	0	EA	$ 5,000	$ -	$ 6,000	$ -	$ 11,000	$ -
5.2g	Wave Traps	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	0	EA	$ 33,000	$ -	$ 15,000	$ -	$ 48,000	$ -
5.3b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 28,000	$ -	$ 17,500	$ -	$ 45,500	$ -
5.3c	VT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.3d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.3e	CCVT'S	0	EA	$ 8,000	$ -	$ 8,000	$ -	$ 16,000	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
5.3f	Arresters	0	EA	$ 3,420	$ -	$ 6,000	$ -	$ 9,420	$ -
5.3g	Wave Traps	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ 369,500		$ 173,000		$ 542,500
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE Addition (25-ft x 50-ft)	1	EA	$ 325,000	$ 325,000	$ 85,000	$ 85,000	$ 410,000	**$ 410,000**
6.2	Protection and Telecom Equipment Panels	5	EA	$ 35,000	$ 175,000	$ 12,500	$ 62,500	$ 47,500	**$ 237,500**
6.3	125VDC Batteries	0	EA	$ 75,000	$ -	$ 25,000	$ -	$ 100,000	$ -
6.4	Control Cables	1	LS	$ 246,400	$ 246,400	$ 246,400	$ 246,400	$ 492,800	**$ 492,800**
6.5	SCADA and Communications	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.6	Low Voltage AC Distribution	0	EA	$ 50,000	$ -	$ 100,000	$ -	$ 150,000	$ -
6.7	DC Distribution System	0	EA	$ 50,000	$ -	$ 100,000	$ -	$ 150,000	$ -
6.8	Security	0	EA	$ 7,500	$ -	$ 7,500	$ -	$ 15,000	$ -
6.9	Fire Alarm	0	EA	$ 7,500	$ -	$ 7,500	$ -	$ 15,000	$ -
6.10	Generator	0	EA	$ 100,000	$ -	$ 80,000	$ -	$ 180,000	$ -
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ 746,400		$ 393,900		**$ 1,140,300**
7. MISC ITEMS									
7.1	Conduit & Cable Trench System	1,200	LF	$ 185.00	$ 222,000	$ 170.00	$ 204,000	$ 355	**$ 426,000**
7.2	Rigid Bus, Fittings & Insulators	1,500	LF	$ 125.07	$ 187,605	$ 237.10	$ 355,650	$ 362	**$ 543,255**
7.3	Strain Bus, Connectors & Insulators	0	LF	$ 13.38	$ -	$ 39.35	$ -	$ 53	$ -
7.4	Grounding System	3,800	LF	$ 6.93	$ 26,334	$ 32.58	$ 123,804	$ 40	**$ 150,138**
7.5	Strain Bus Insulators - 345kV	0	EA	$ 2,000	$ -	$ 1,050	$ -	$ 3,050	$ -
7.6	Strain Bus Insulators - 230kV	0	EA	$ 1,400	$ -	$ 750	$ -	$ 2,150	$ -
7.7	Strain Bus Insulators - 115kV	0	EA	$ 1,000	$ -	$ 550	$ -	$ 1,550	$ -
7.8	Low Voltage AC Station Service	0	LS	$ 50,000	$ -	$ 75,000	$ -	$ 125,000	$ -
7.9	SSVT Service	0	LS	$ 45,000	$ -	$ 45,000	$ -	$ 90,000	$ -
7.10	Control Conduits from Trench to Equipment	1	LS	$ 125,000	$ 125,000	$ 125,000	$ 125,000	$ 250,000	**$ 250,000**
7.11	Misc. Materials (Above and Below Ground)	1	LS	$ 180,000	$ 180,000	$ 180,000	$ 180,000	$ 360,000	**$ 360,000**
7.12									
7.13									
7.14									
7.15									
7.16									
7.17									
7.18									
7.19									
7.20									
7.21									
7.22									
7.23									
7.24									
7.25									
TOTAL - MISC ITEMS					$ 740,939		$ 988,454		$ 1,729,393
J. Pleasant Valley Substation - Install					$ 3,932,349		$ 2,966,554		**$ 6,898,903**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1	LS	$ -	$ -	$ 68,989	$ 68,989	$ 68,989	**$ 68,989**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 342,341	$ 342,341	$ 342,341	**$ 342,341**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 68,989	$ 68,989	$ 68,989	**$ 68,989**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 68,989	$ 68,989	$ 68,989	**$ 68,989**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 551,912	$ 551,912	$ 551,912	**$ 551,912**
8.6	LiDAR	-	Mile	$ -	$ -	$ -	$ -	$ -	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
8.7	Geotech	2	EA	$ -	$ -	$ 3,500	$ 7,000	$ 3,500	**$ 7,000**
8.8	Surveying/Staking	1	Site	$ -	$ -	$ 48,292	$ 48,292	$ 48,292	**$ 48,292**
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 172,473	$ 172,473	$ 172,473	**$ 172,473**
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 20,697	$ 20,697	$ 20,697	**$ 20,697**
8.13	Real Estate Costs (New)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.14	Real Estate Costs (Incumbent Utility)	1	LS	$ -	$ -	$ 82,600	$ 82,600	$ 82,600	**$ 82,600**
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.18	Sales Tax on Materials	1	LS	$ 314,588	$ 314,588	$ -	$ -	$ 314,588	**$ 314,588**
8.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 6,899	$ 6,899	$ 6,899	**$ 6,899**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 314,588		$ 1,439,181		**$ 1,753,769**

NG & NY Transco - T019 - (Segment B)

K. Pleasant Valley Substation - Removal

Estimate Revision: 8

Total: $ 47,977

NG & NY Transco - T019 - (Segment B)	*Supply*	*Installation*	*Total*
K. Pleasant Valley Substation - Removal			
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ -	$ 40,500	$ 40,500
2. SUBSTATION FOUNDATIONS	$ -	$ -	$ -
3. SUBSTATION STRUCTURES	$ -	$ -	$ -
4. MAJOR EQUIPTMENT	$ -	$ -	$ -
5. SMALL EQUIPTMENT / MATERIALS	$ -	$ -	$ -
6. CONTROL HOUSE / PANELS	$ -	$ -	$ -
7. MISC ITEMS	$ -	$ -	$ -
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ -	$ -	$ 7,477
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ -	$ 40,500	$ 47,977
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ -	$ 40,500	$ 47,977

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
K. Pleasant Valley Substation - Removal									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	0	ACRES	$ -	$ -	$ 203,000	$ -	$ 203,000	$ -
1.2	Station stone within substation fence.	0	CY	$ -	$ -	$ 75	$ -	$ 75	$ -
1.3	Substation Fence	270	LF	$ -	$ -	$ 150	$ 40,500	$ 150	**$ 40,500**
1.4									
1.5									
1.6									
1.7									
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ -		$ 40,500		$ 40,500
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1e	Switch Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1f	Station Service Transformer Stand Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1k	Arrester Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1n	Reactor Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1p									
2.2	**230kV**								
2.2a	Circuit Breaker Foundations	0	EA	$ -	$ -	$ 7,200	$ -	$ 7,200	$ -
2.2b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ 32,000	$ -	$ 32,000	$ -
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ 22,000	$ -	$ 22,000	$ -
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ 11,000	$ -	$ 11,000	$ -
2.2e	Switch Stand Foundations	0	EA	$ -	$ -	$ 5,200	$ -	$ 5,200	$ -
2.2f	Station Service Transformer Stand Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.2h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.2j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.2k	Arrester Stand Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.2m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2p									
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3e	Switch Stand Foundations	0	EA	$ -	$ -	$ 5,200	$ -	$ 5,200	$ -
2.3f	Fuse Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3k	Arrester Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4b	345-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ 42,000	$ -	$ 42,000	$ -
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5b	Generator Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6b		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6c		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION FOUNDATIONS					$ -		$ -		$ -
3. SUBSTATION STRUCTURES									
3.1	**345kV**								
3.1a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1c	Switch Stands	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1d	Station Service Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1f	Bus Support 1 Ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1g	Instrument Transformer Stand	0	EA	$ -	$ -	$ 1,050	$ -	$ 1,050	$ -
3.1h	Arrester Stand	0	EA	$ -	$ -	$ 1,050	$ -	$ 1,050	$ -
3.1j	Wave Trap Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ 27,000	$ -	$ 27,000	$ -
3.2b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ 27,000	$ -	$ 27,000	$ -
3.2c	Switch Stands	0	EA	$ -	$ -	$ 9,750	$ -	$ 9,750	$ -
3.2d	Station Service Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2f	Bus Support 1 Ph	0	EA	$ -	$ -	$ 2,250	$ -	$ 2,250	$ -
3.2g	Instrument Transformer Stand	0	EA	$ -	$ -	$ 1,050	$ -	$ 1,050	$ -
3.2h	Arrester Stand	0	EA	$ -	$ -	$ 1,050	$ -	$ 1,050	$ -
3.2j	Wave Trap Stand	0	EA	$ -	$ -	$ 4,500	$ -	$ 4,500	$ -
3.2k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3	**115kV**								

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.3a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ 15,000	$ -	$ 15,000	$ -
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3c	Switch Stands	0	EA	$ -	$ -	$ 6,450	$ -	$ 6,450	$ -
3.3d	Fuse Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3f	Bus Support 1 Ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3g	Instrument Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3h	Arrester Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3j	Wave Trap Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION STRUCTURES					$ -		$ -		$ -
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.1b	Capacitor Banks	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.1c		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.1d									
4.2	**230kV**								
4.2a	Circuit Breakers	0	EA	$ -	$ -	$ 14,500	$ -	$ 14,500	$ -
4.2b	Capacitor Banks	0	EA	$ -	$ -	$ 42,000	$ -	$ 42,000	$ -
4.3	**115kV**								
4.3a	Circuit Breakers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - MAJOR EQUIPTMENT					$ -		$ -		$ -
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.1b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.1c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.1d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.1e	CCVT'S	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.1f	Arresters	0	EA	$ -	$ -	$ 1,500	$ -	$ 1,500	$ -
5.1g	Wave Traps	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.1h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.2b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.2c	VT'S	0	EA	$ -	$ -	$ 1,500	$ -	$ 1,500	$ -
5.2d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2e	CCVT'S	0	EA	$ -	$ -	$ 1,500	$ -	$ 1,500	$ -
5.2f	Arresters	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.2g	Wave Traps	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.2h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.3c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3e	CCVT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3f	Arresters	0	EA	$ -	$ -	$ 1,500	$ -	$ 1,500	$ -
5.3g	Wave Traps	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ -		$ -		$ -
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE	0	EA	$ -	$ -	$ 150,000	$ -	$ 150,000	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6.2	Protection and Telecom Equipment Panels	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.3	125VDC Batteries	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.4	Control Cables	0	LS	$ -	$ -	$ -	$ -	$ -	$ -
6.5	SCADA and Communications	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.6	Low Voltage AC Distribution	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.7	DC Distribution System	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.8	Security	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.9	Fire Alarm	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.10	Generator	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ -		$ -		$ -
7. MISC ITEMS									
7.1	Conduit & Cable Trench System	0	EA	$ -	$ -	$ 42,000.00	$ -	$ 42,000	$ -
7.2	Rigid Bus, Fittings & Insulators	0	L.S.	$ -	$ -	$ 18,937.50	$ -	$ 18,938	$ -
7.3	Strain Bus, Connectors & Insulators	0	L.S.	$ -	$ -	$ 19,675.00	$ -	$ 19,675	$ -
7.4	Grounding System	0	EA	$ -	$ -	$ 42,000.00	$ -	$ 42,000	$ -
7.5									
7.6									
7.7									
7.8									
7.9									
7.10									
7.11									
7.12									
7.13									
7.14									
7.15									
TOTAL - MISC ITEMS					$ -		$ -		$ -
K. Pleasant Valley Substation - Removal					$ -		$ 40,500		**$ 40,500**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1	LS	$ -	$ -	$ 1,013	$ 1,013	$ 1,013	**$ 1,013**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 2,010	$ 2,010	$ 2,010	**$ 2,010**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 405	$ 405	$ 405	**$ 405**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 405	$ 405	$ 405	**$ 405**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 3,240	$ 3,240	$ 3,240	**$ 3,240**
8.6	LiDAR	-	Mile	$ -	$ -	$ -	$ -	$ -	$ -
8.7	Geotech	-	Site	$ -	$ -	$ -	$ -	$ -	$ -
8.8	Surveying/Staking	1	Site	$ -	$ -	$ 284	$ 284	$ 284	**$ 284**
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	-	LS	$ -	$ -	$ 1,013	$ -	$ 1,013	$ -
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 122	$ 122	$ 122	**$ 122**
8.13	Real Estate Costs (New)	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.14	Real Estate Costs (Incumbent Utility)	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.18	Sales Tax on Materials	1	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.19	Fees for permits, including roadway, railroad, building or other local permits	-	LS		$ -	$ 41	$ -	$ 41	$ -
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ -		$ 7,477		**$ 7,477**

NG & NY Transco - T019 - (Segment B)

Interconnection Knickerbocker Station

Estimate Revision: 8

Total: $ 3,627,657

NG & NY Transco - T019 - (Segment B)	*Supply*	*Installation*	*Total*
L. Interconnection Knickerbocker Station			
1. CLEARING & ACCESS	$ -	$ 436,850	$ 436,850
2. FOUNDATIONS	$ 756,457	$ 764,558	$ 1,521,015
3. STRUCTURES	$ 556,300	$ 370,424	$ 926,724
4. CONDUCTOR, SHIELDWIRE, OPGW	$ -	$ -	$ -
5. INSULATORS, FITTINGS, HARDWARE	$ 128,000	$ 55,640	$ 183,640
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 115,261	$ 444,167	$ 559,427
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 1,556,017	$ 2,071,639	$ 3,627,657
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 1,556,017	$ 2,071,639	$ 3,627,657

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
L. Interconnection Knickerbocker Station									
1. CLEARING & ACCESS									
1.1	Clearing the ROW - Heavy (mowing & clearing)	-	Acre	$ -	$ -	$ 15,000	$ -	$ 15,000	$ -
1.2	Clearing the ROW - Light (mowing)	2.0	Acre	$ -	$ -	$ 5,000	$ 10,000	$ 5,000	**$ 10,000**
1.3	Access Road	-	LF	$ -	$ -	$ 45	$ -	$ 45	$ -
1.4	Silt Fence	3,500.0	LF	$ -	$ -	$ 4	$ 14,000	$ 4	**$ 14,000**
1.5	Matting - Access and ROW	3,500.0	LF	$ -	$ -	$ 70	$ 245,000	$ 70	**$ 245,000**
1.6	Matting - To Work Area	525.0	LF	$ -	$ -	$ 70	$ 36,750	$ 70	**$ 36,750**
1.7	Snow Removal	-	LS	$ -	$ -	$ 516,800	$ -	$ 516,800	$ -
1.8	ROW Restoration	0.5	Mile	$ -	$ -	$ 10,000	$ 5,000	$ 10,000	**$ 5,000**
1.9	Work Pads	35,000.0	SF	$ -	$ -	$ 4	$ 123,200	$ 4	**$ 123,200**
1.10	Restoration for Work Pad areas	7,000.0	SF	$ -	$ -	$ 0.2	$ 1,050	$ 0	**$ 1,050**
1.11	Temporary Access Bridge	-	EA	$ -	$ -	$ 20,035	$ -	$ 20,035	$ -
1.12	Air Bridge	-	EA	$ -	$ -	$ 14,445	$ -	$ 14,445	$ -
1.13	Stabilized Construction Entrance	-	EA	$ -	$ -	$ 4,580	$ -	$ 4,580	$ -
1.14	Maintenance and Protection of Traffic on Public Roads	-	EA	$ -	$ -	$ 4,130	$ -	$ 4,130	$ -
1.15	Gates	-	EA	$ 2,000	$ -	$ 2,500	$ -	$ 4,500	$ -
1.16	Culverts / Misc. Access	-	EA	$ 750	$ -	$ 1,250	$ -	$ 2,000	$ -
1.17	Concrete Washout Station	1	EA	$ -	$ -	$ 1,850	$ 1,850	$ 1,850	**$ 1,850**
1.18					$ -		$ -		$ -
1.19					$ -		$ -		$ -
1.20	Crushed Rock	0	CY	$ 27	$ -	$ 75	$ -	$ 102	$ -
TOTAL - CLEARING & ACCESS					$ -		$ 436,850		$ 436,850
2. FOUNDATIONS									
2.1	Drilled Pier - 115kV Single Circuit H- Pole Tangent	2	EA	$ 64,635	$ 129,270	$ 65,327	$ 130,654	$ 129,962	**$ 259,924**
2.2	Drilled Pier - 115kV Single Circuit Single Pole Angle/DE	1	EA	$ 76,484	$ 76,484	$ 77,303	$ 77,303	$ 153,787	**$ 153,787**
2.3	Drilled Pier - 345kV Single Circuit H-Pole Angle /DE	4	EA	$ 137,676	$ 550,703	$ 139,150	$ 556,601	$ 276,826	**$ 1,107,304**
2.4									
2.5	Rock Excavation Adder	-	CY	$ -	$ -	$ 2,000	$ -	$ 2,000	$ -
2.6					$ -		$ -		$ -
2.7					$ -		$ -		$ -
2.8					$ -		$ -		$ -
2.9					$ -		$ -		$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.10					$ -		$ -		$ -
2.11					$ -		$ -		$ -
2.12					$ -		$ -		$ -
2.13					$ -		$ -		$ -
2.14					$ -		$ -		$ -
2.15					$ -		$ -		$ -
TOTAL - FOUNDATIONS					$ 756,457		$ 764,558		$ 1,521,015
3. STRUCTURES									
3.1	115kV Single Circuit Single Pole Angle/DE	1	Structure	$ 55,315	$ 55,315	$ 33,189	$ 33,189	$ 88,504	**$ 88,504**
3.2	115kV Single Circuit Single Pole Tangent	2	Structure	$ 39,261	$ 78,521	$ 23,556	$ 47,113	$ 62,817	**$ 125,634**
3.3	345kV Single Circuit Single Pole Angle /DE	4	Structure	$ 104,730	$ 418,921	$ 62,838	$ 251,353	$ 167,569	**$ 670,274**
3.4					$ -		$ -		$ -
3.5	Install Grounding and Grounding Accessories	7	Pole	$ 506	$ 3,542	$ 5,539	$ 38,770	$ 6,045	**$ 42,312**
3.6					$ -		$ -		$ -
3.7					$ -		$ -		$ -
3.8					$ -		$ -		$ -
3.9					$ -		$ -		$ -
3.10					$ -		$ -		$ -
3.11					$ -		$ -		$ -
3.12					$ -		$ -		$ -
3.13					$ -		$ -		$ -
3.14					$ -		$ -		$ -
3.15					$ -		$ -		$ -
TOTAL - STRUCTURES					$ 556,300		$ 370,424		$ 926,724
4. CONDUCTOR, SHIELDWIRE, OPGW									
4.1	345kV - (2) 954kcmil 54/7 ACSS "Cardinal"	-	LF	$ 1.90	$ -	$ 5.00	$ -	$ 6.90	$ -
4.2	(1) OPGW 36 Fiber AC-33/38/571	-	LF	$ 1.35	$ -	$ 5.00	$ -	$ 6.35	$ -
4.3	(1) 3/8" EHS7 Steel	-	LF	$ 0.47	$ -	$ 5.00	$ -	$ 5.47	$ -
4.5	Remove Existing 115kV Cable From Existing Structures	-	Mile	$ -	$ -	$ 30,000	$ -	$ 30,000.00	$ -
4.6	Remove Existing OPGW Cable	-	Mile	$ -	$ -	$ 12,000	$ -	$ 12,000.00	$ -
4.7	Remove Existing EH7	-	Mile	$ -	$ -	$ 12,000	$ -	$ 12,000.00	$ -
4.8	115kV - (1) 954kcmil 54/7 ACSS "Cardinal"	-	LF	$ 1.90	$ -	$ 5.00	$ -	$ 6.90	$ -
4.9		-							
4.10	Rider Poles - Relocated	-	Set	$ -	$ -	$ 3,500	$ -	$ 3,500.00	$ -
4.11	Rider Poles	-	EA	$ 1,750	$ -	$ 3,500	$ -	$ 5,250.00	$ -
TOTAL: CONDUCTOR, SHIELDWIRE, OPGW:					$ -		$ -		$ -
5. INSULATOR, FITTINGS, HARDWARE									
5.1	345kV Tangent (1-Group of 18-Bells Each Assembly)	-	Assembly	$ 1,800	$ -	$ 720	$ -	$ 2,520	$ -
5.2	115kV Tangent (1-Group of 9-Bells Each Assembly)	12	Assembly	$ 900	$ 10,800	$ 560	$ 6,720	$ 1,460	**$ 17,520**
5.3	345kV Dead-end & Angle Insulators (1-Group of 18-Bells Each Assembly)	60	Assembly	$ 1,800	$ 108,000	$ 720	$ 43,200	$ 2,520	**$ 151,200**
5.4	115kV Dead-end & Angle Insulators (1-Group of 9-Bells Each Assembly)	7	Assembly	$ 900	$ 6,300	$ 560	$ 3,920	$ 1,460	**$ 10,220**
5.5					$ -		$ -	$ -	$ -
5.6	OPGW Assembly - Tangent	2	Assembly	$ 200	$ 400	$ 150	$ 300	$ 350	**$ 700**
5.7	OPGW Assembly - Angle / DE	10	Assembly	$ 250	$ 2,500	$ 150	$ 1,500	$ 400	**$ 4,000**
5.8	OHSW Assembly - Tangent	-	Assembly	$ 200	$ -	$ 150	$ -	$ 350	$ -
5.9	OHSW Assembly - Angle / DE	-	Assembly	$ 250	$ -	$ 150	$ -	$ 400	$ -
5.10	OPGW Splice Boxes	-	Set	$ 1,750	$ -	$ 1,746	$ -	$ 3,496	$ -
5.11	OPGW Splice & Test	-	EA	$ 1,400	$ -	$ 2,520	$ -	$ 3,920	$ -
5.12	Spacer - Conductor	-	EA	$ 50	$ -	$ 35	$ -	$ 85	$ -
5.13	Vibration Dampers - Conductor	-	EA	$ 35	$ -	$ 35	$ -	$ 70	$ -
5.14	Shieldwire / OPGW Dampers, Misc. Fittings	-	EA	$ 27	$ -	$ 35	$ -	$ 62	$ -
5.15	Guys, Anchors, and Accessories	-	EA	$ 720	$ -	$ 885	$ -	$ 1,605	$ -
5.16	Misc. materials (Signs and Markers)	-	Mile	$ 770	$ -	$ 1,006	$ -	$ 1,776	$ -
5.17									
5.18									
5.19									
5.20									
TOTAL - INSULATOR, FITTINGS, HARDWARE					$ 128,000		$ 55,640		$ 183,640
L. Interconnection Knickerbocker Station					$ 1,440,757		$ 1,627,472		$ 3,068,229
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
6.1	Mob / Demob	1	LS	$ -	$ -	$ 30,682	$ 30,682	$ 30,682	**$ 30,682**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
	Project Management, Material Handling & Amenities								
6.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 152,253	$ 152,253	$ 152,253	**$ 152,253**
6.3	Utility PM and Project Oversite	1	LS		$ -	$ 30,682	$ 30,682	$ 30,682	**$ 30,682**
6.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 30,682	$ 30,682	$ 30,682	**$ 30,682**
	Engineering								
6.5	Design Engineering	1	LS	$ -	$ -	$ 153,411	$ 153,411	$ 153,411	**$ 153,411**
6.6	LiDAR	1	LS	$ -	$ -	$ 9,205	$ 9,205	$ 9,205	**$ 9,205**
6.7	Geotech	1	Location	$ -	$ -	$ 3,500	$ 3,500	$ 3,500	**$ 3,500**
6.8	Surveying/Staking	1	LS	$ -	$ -	$ 21,478	$ 21,478	$ 21,478	**$ 21,478**
	Testing & Commissioning								
6.9	Testing & Commissioning of T-Line and Equipment	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
	Permitting and Additional Costs								
6.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.12	Warranties / LOC's	1	LS	$ -	$ -	$ 9,205	$ 9,205	$ 9,205	**$ 9,205**
6.13	Real Estate Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.14	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.15	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.16		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.17	Sales Tax on Materials	1	LS	$ 115,261	$ 115,261	$ -	$ -	$ 115,261	**$ 115,261**
6.18	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 3,068	$ 3,068	$ 3,068	**$ 3,068**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 115,261		$ 444,167		**$ 559,427**

NG & NY Transco - T019 - (Segment B)

M. Interconnection Churchtown Station

Estimate Revision: 8

Total: $ 2,201,713

NG & NY Transco - T019 - (Segment B)	*Supply*	*Installation*	*Total*
M. Interconnection Churchtown Station			
1. CLEARING & ACCESS	$ -	$ 436,850	$ 436,850
2. FOUNDATIONS	$ 212,820	$ 615,100	$ 827,920
3. STRUCTURES	$ 318,188	$ 227,557	$ 545,745
4. CONDUCTOR, SHIELDWIRE, OPGW	$ -	$ -	$ -
5. INSULATORS, FITTINGS, HARDWARE	$ 44,000	$ 27,410	$ 71,410
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 46,001	$ 273,787	$ 319,787
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 621,009	$ 1,580,703	$ 2,201,713
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 621,009	$ 1,580,703	$ 2,201,713

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
M. Interconnection Churchtown Station									
1. CLEARING & ACCESS									
1.1	Clearing the ROW - Heavy (mowing & clearing)	-	Acre	$ -	$ -	$ 15,000	$ -	$ 15,000	$ -
1.2	Clearing the ROW - Light (mowing)	2.0	Acre	$ -	$ -	$ 5,000	$ 10,000	$ 5,000	**$ 10,000**
1.3	Access Road	-	LF	$ -	$ -	$ 45	$ -	$ 45	$ -
1.4	Silt Fence	3,500.0	LF	$ -	$ -	$ 4	$ 14,000	$ 4	**$ 14,000**
1.5	Matting - Access and ROW	3,500.0	LF	$ -	$ -	$ 70	$ 245,000	$ 70	**$ 245,000**
1.6	Matting - To Work Area	525.0	LF	$ -	$ -	$ 70	$ 36,750	$ 70	**$ 36,750**
1.7	Snow Removal	-	LS	$ -	$ -	$ 516,800	$ -	$ 516,800	$ -
1.8	ROW Restoration	0.5	Mile	$ -	$ -	$ 10,000	$ 5,000	$ 10,000	**$ 5,000**
1.9	Work Pads	35,000.0	SF	$ -	$ -	$ 4	$ 123,200	$ 4	**$ 123,200**
1.10	Restoration for Work Pad areas	7,000.0	SF	$ -	$ -	$ 0.2	$ 1,050	$ 0	**$ 1,050**
1.11	Temporary Access Bridge	-	EA	$ -	$ -	$ 20,035	$ -	$ 20,035	$ -
1.12	Air Bridge	-	EA	$ -	$ -	$ 14,445	$ -	$ 14,445	$ -
1.13	Stabilized Construction Entrance	-	EA	$ -	$ -	$ 4,580	$ -	$ 4,580	$ -
1.14	Maintenance and Protection of Traffic on Public Roads	-	EA	$ -	$ -	$ 4,130	$ -	$ 4,130	$ -
1.15	Gates	-	EA	$ 2,000	$ -	$ 2,500	$ -	$ 4,500	$ -
1.16	Culverts / Misc. Access	-	EA	$ 750	$ -	$ 1,250	$ -	$ 2,000	$ -
1.17	Concrete Washout Station	1	EA	$ -	$ -	$ 1,850	$ 1,850	$ 1,850	**$ 1,850**
1.18					$ -		$ -		$ -
1.19					$ -		$ -		$ -
1.20	Crushed Rock	0	CY	$ 27	$ -	$ 75	$ -	$ 102	$ -
TOTAL - CLEARING & ACCESS					$ -		$ 436,850		$ 436,850
2. FOUNDATIONS									
2.1	Drilled Pier - 115kV Single Circuit H- Pole Angle/ DE	2	EA	$ 30,403	$ 60,806	$ 30,729	$ 61,457	$ 61,131	**$ 122,263**
2.2	Drilled Pier - 115kV Single Circuit H- Pole Tangent	3	EA	$ 30,403	$ 91,209	$ 30,729	$ 92,186	$ 61,131	**$ 183,394**
2.3	Drilled Pier - 115kV Single Circuit Single Pole Angle/ DE	2	EA	$ 30,403	$ 60,806	$ 30,729	$ 61,457	$ 61,131	**$ 122,263**
2.4									
2.5	Rock Excavation Adder	200	CY	$ -	$ -	$ 2,000	$ 400,000	$ 2,000	**$ 400,000**
2.6					$ -		$ -		$ -
2.7					$ -		$ -		$ -
2.8					$ -		$ -		$ -
2.9					$ -		$ -		$ -
2.10					$ -		$ -		$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.11					$ -		$ -		$ -
2.12					$ -		$ -		$ -
2.13					$ -		$ -		$ -
2.14					$ -		$ -		$ -
2.15					$ -		$ -		$ -
TOTAL - FOUNDATIONS					$ 212,820		$ 615,100		$ 827,920
3. STRUCTURES									
3.1	115kV Single Circuit Single Pole Angle/ DE	4	Structure	$ 49,216	$ 196,864	$ 29,530	$ 118,118	$ 78,746	**$ 314,982**
3.2	115kV Single Circuit Single Pole Tangent	3	Structure	$ 39,261	$ 117,782	$ 23,556	$ 70,669	$ 62,817	**$ 188,451**
3.3									
3.4					$ -		$ -		$ -
3.5	Install Grounding and Grounding Accessories	7	Pole	$ 506	$ 3,542	$ 5,539	$ 38,770	$ 6,045	**$ 42,312**
3.6					$ -		$ -		$ -
3.7					$ -		$ -		$ -
3.8					$ -		$ -		$ -
3.9					$ -		$ -		$ -
3.10					$ -		$ -		$ -
3.11					$ -		$ -		$ -
3.12					$ -		$ -		$ -
3.13					$ -		$ -		$ -
3.14					$ -		$ -		$ -
3.15					$ -		$ -		$ -
TOTAL - STRUCTURES					$ 318,188		$ 227,557		$ 545,745
4. CONDUCTOR, SHIELDWIRE, OPGW									
4.1	345kV - (1) 954kcmil 54/7 ACSS "Cardinal"	-	LF	$ 1.90	$ -	$ 5.00	$ -	$ 6.90	$ -
4.2	(1) OPGW 36 Fiber AC-33/38/571	-	LF	$ 1.35	$ -	$ 5.00	$ -	$ 6.35	$ -
4.3	(1) 3/8" EHS7 Steel	-	LF	$ 0.47	$ -	$ 5.00	$ -	$ 5.47	$ -
4.5	Remove Existing 115kV Cable From Existing Structures	-	Mile	$ -	$ -	$ 30,000	$ -	$ 30,000.00	$ -
4.6	Remove Existing OPGW Cable	-	Mile	$ -	$ -	$ 12,000	$ -	$ 12,000.00	$ -
4.7	Remove Existing EH7	-	Mile	$ -	$ -	$ 12,000	$ -	$ 12,000.00	$ -
4.8	115kV - (1) 954kcmil 54/7 ACSS "Cardinal"	-	LF	$ 1.90	$ -	$ 5.00	$ -	$ 6.90	$ -
4.9		-							
4.10	Rider Poles - Relocated	-	Set	$ -	$ -	$ 3,500	$ -	$ 3,500.00	$ -
4.11	Rider Poles	-	EA	$ 1,750	$ -	$ 3,500	$ -	$ 5,250.00	$ -
TOTAL: CONDUCTOR, SHIELDWIRE, OPGW:					$ -		$ -		$ -
5. INSULATOR, FITTINGS, HARDWARE									
5.1	345kV Tangent (1-Group of 18-Bells Each Assembly)	-	Assembly	$ 1,800	$ -	$ 720	$ -	$ 2,520	$ -
5.2	115kV Tangent (1-Group of 9-Bells Each Assembly)	18	Assembly	$ 900	$ 16,200	$ 560	$ 10,080	$ 1,460	**$ 26,280**
5.3	345kV Dead-end & Angle Insulators (1-Group of 18-Bells Each Assembly)		Assembly	$ 1,800	$ -	$ 720	$ -	$ 2,520	$ -
5.4	115kV Dead-end & Angle Insulators (1-Group of 9-Bells Each Assembly)	28	Assembly	$ 900	$ 25,200	$ 560	$ 15,680	$ 1,460	**$ 40,880**
5.5					$ -		$ -		$ -
5.6	OPGW Assembly - Tangent	3	Assembly	$ 200	$ 600	$ 150	$ 450	$ 350	**$ 1,050**
5.7	OPGW Assembly - Angle / DE	8	Assembly	$ 250	$ 2,000	$ 150	$ 1,200	$ 400	**$ 3,200**
5.8	OHSW Assembly - Tangent	-	Assembly	$ 200	$ -	$ 150	$ -	$ 350	$ -
5.9	OHSW Assembly - Angle / DE	-	Assembly	$ 250	$ -	$ 150	$ -	$ 400	$ -
5.10	OPGW Splice Boxes	-	Set	$ 1,750	$ -	$ 1,746	$ -	$ 3,496	$ -
5.11	OPGW Splice & Test	-	EA	$ 1,400	$ -	$ 2,520	$ -	$ 3,920	$ -
5.12	Spacer - Conductor	-	EA	$ 50	$ -	$ 35	$ -	$ 85	$ -
5.13	Vibration Dampers - Conductor	-	EA	$ 35	$ -	$ 35	$ -	$ 70	$ -
5.14	Shieldwire / OPGW Dampers, Misc. Fittings	-	EA	$ 27	$ -	$ 35	$ -	$ 62	$ -
5.15	Guys, Anchors, and Accessories	-	EA	$ 720	$ -	$ 885	$ -	$ 1,605	$ -
5.16	Misc. materials (Signs and Markers)	-	Mile	$ 770	$ -	$ 1,006	$ -	$ 1,776	$ -
5.17									
5.18									
5.19									
5.20									
TOTAL - INSULATOR, FITTINGS, HARDWARE					$ 44,000		$ 27,410		$ 71,410
M. Interconnection Churchtown Station					$ 575,008		$ 1,306,917		$ 1,881,925
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
6.1	Mob / Demob	1	LS	$ -	$ -	$ 18,819	$ 18,819	$ 18,819	**$ 18,819**
	Project Management, Material Handling & Amenities								

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 93,386	$ 93,386	$ 93,386	**$ 93,386**
6.3	Utility PM and Project Oversite	1	LS		$ -	$ 18,819	$ 18,819	$ 18,819	**$ 18,819**
6.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 18,819	$ 18,819	$ 18,819	**$ 18,819**
	Engineering								
6.5	Design Engineering	1	LS	$ -	$ -	$ 94,096	$ 94,096	$ 94,096	**$ 94,096**
6.6	LiDAR	1	LS	$ -	$ -	$ 5,646	$ 5,646	$ 5,646	**$ 5,646**
6.7	Geotech	1	Location	$ -	$ -	$ 3,500	$ 3,500	$ 3,500	**$ 3,500**
6.8	Surveying/Staking	1	LS	$ -	$ -	$ 13,173	$ 13,173	$ 13,173	**$ 13,173**
	Testing & Commissioning								
6.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
	Permitting and Additional Costs								
6.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.12	Warranties / LOC's	1	LS	$ -	$ -	$ 5,646	$ 5,646	$ 5,646	**$ 5,646**
6.13	Real Estate Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.14	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.15	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.16		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.17	Sales Tax on Materials	1	LS	$ 46,001	$ 46,001	$ -	$ -	$ 46,001	**$ 46,001**
6.18	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 1,882	$ 1,882	$ 1,882	**$ 1,882**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 46,001		$ 273,787		**$ 319,787**

NG & NY Transco - T019 - (Segment B)

N. Interconnection Milan Station

Estimate Revision: 8

Total: $ 689,020

NG & NY Transco - T019 - (Segment B)	*Supply*	*Installation*	*Total*
N. Interconnection Milan Station			
1. CLEARING & ACCESS	$ -	$ 121,100	$ 121,100
2. FOUNDATIONS	$ 84,375	$ 135,279	$ 219,654
3. STRUCTURES	$ 130,328	$ 88,667	$ 218,994
4. CONDUCTOR, SHIELDWIRE, OPGW	$ -	$ -	$ -
5. INSULATORS, FITTINGS, HARDWARE	$ 14,600	$ 9,040	$ 23,640
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 18,344	$ 87,288	$ 105,632
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 247,647	$ 441,373	$ 689,020
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 247,647	$ 441,373	$ 689,020

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
N. Interconnection Milan Station									
1. CLEARING & ACCESS									
1.1	Clearing the ROW - Heavy (mowing & clearing)	-	Acre	$ -	$ -	$ 15,000	$ -	$ 15,000	$ -
1.2	Clearing the ROW - Light (mowing)	1.0	Acre	$ -	$ -	$ 5,000	$ 5,000	$ 5,000	**$ 5,000**
1.3	Access Road	-	LF	$ -	$ -	$ 45	$ -	$ 45	$ -
1.4	Silt Fence	500.0	LF	$ -	$ -	$ 4	$ 2,000	$ 4	**$ 2,000**
1.5	Matting - Access and ROW	500.0	LF	$ -	$ -	$ 70	$ 35,000	$ 70	**$ 35,000**
1.6	Matting - To Work Area	525.0	LF	$ -	$ -	$ 70	$ 36,750	$ 70	**$ 36,750**
1.7	Snow Removal	-	LS	$ -	$ -	$ 516,800	$ -	$ 516,800	$ -
1.8	ROW Restoration	0.5	Mile	$ -	$ -	$ 10,000	$ 5,000	$ 10,000	**$ 5,000**
1.9	Work Pads	10,000.0	SF	$ -	$ -	$ 4	$ 35,200	$ 4	**$ 35,200**
1.10	Restoration for Work Pad areas	2,000.0	SF	$ -	$ -	$ 0.2	$ 300	$ 0	**$ 300**
1.11	Temporary Access Bridge	-	EA	$ -	$ -	$ 20,035	$ -	$ 20,035	$ -
1.12	Air Bridge	-	EA	$ -	$ -	$ 14,445	$ -	$ 14,445	$ -
1.13	Stabilized Construction Entrance	-	EA	$ -	$ -	$ 4,580	$ -	$ 4,580	$ -
1.14	Maintenance and Protection of Traffic on Public Roads	-	EA	$ -	$ -	$ 4,130	$ -	$ 4,130	$ -
1.15	Gates	-	EA	$ 2,000	$ -	$ 2,500	$ -	$ 4,500	$ -
1.16	Culverts / Misc. Access	-	EA	$ 750	$ -	$ 1,250	$ -	$ 2,000	$ -
1.17	Concrete Washout Station	1	EA	$ -	$ -	$ 1,850	$ 1,850	$ 1,850	**$ 1,850**
1.18					$ -		$ -		$ -
1.19					$ -		$ -		$ -
1.20	Crushed Rock	0	CY	$ 27	$ -	$ 75	$ -	$ 102	$ -
TOTAL - CLEARING & ACCESS					$ -		$ 121,100		$ 121,100
2. FOUNDATIONS									
2.1	Drilled Pier - 115kV Single Circuit Single Pole Angle/DE	2	EA	$ 42,187	$ 84,375	$ 42,639	$ 85,279	$ 84,827	**$ 169,654**
2.2									
2.3									
2.4									
2.5	Rock Excavation Adder	25	CY	$ -	$ -	$ 2,000	$ 50,000	$ 2,000	**$ 50,000**
2.6					$ -		$ -		$ -
2.7					$ -		$ -		$ -
2.8					$ -		$ -		$ -
2.9					$ -		$ -		$ -
2.10					$ -		$ -		$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.11					$ -		$ -		$ -
2.12					$ -		$ -		$ -
2.13					$ -		$ -		$ -
2.14					$ -		$ -		$ -
2.15					$ -		$ -		$ -
TOTAL - FOUNDATIONS					$ 84,375		$ 135,279		$ 219,654
3. STRUCTURES									
3.1	115kV Single Circuit Single Pole Angle/DE	2	Structure	$ 64,658	$ 129,316	$ 38,795	$ 77,590	$ 103,453	**$ 206,905**
3.2									
3.3									
3.4					$ -		$ -		$ -
3.5	Install Grounding and Grounding Accessories	2	Pole	$ 506	$ 1,012	$ 5,539	$ 11,077	$ 6,045	**$ 12,089**
3.6					$ -		$ -		$ -
3.7					$ -		$ -		$ -
3.8					$ -		$ -		$ -
3.9					$ -		$ -		$ -
3.10					$ -		$ -		$ -
3.11					$ -		$ -		$ -
3.12					$ -		$ -		$ -
3.13					$ -		$ -		$ -
3.14					$ -		$ -		$ -
3.15					$ -		$ -		$ -
TOTAL - STRUCTURES					$ 130,328		$ 88,667		$ 218,994
4. CONDUCTOR, SHIELDWIRE, OPGW									
4.1	345kV - (2) 954kcmil 54/7 ACSS "Cardinal"	-	LF	$ 1.90	$ -	$ 5.00	$ -	$ 6.90	$ -
4.2	(1) OPGW 36 Fiber AC-33/38/571	-	LF	$ 1.35	$ -	$ 5.00	$ -	$ 6.35	$ -
4.3	(1) 3/8" EHS7 Steel	-	LF	$ 0.47	$ -	$ 5.00	$ -	$ 5.47	$ -
4.5	Remove Existing 115kV Cable From Existing Structures	-	Mile	$ -	$ -	$ 30,000	$ -	$ 30,000.00	$ -
4.6	Remove Existing OPGW Cable	-	Mile	$ -	$ -	$ 12,000	$ -	$ 12,000.00	$ -
4.7	Remove Existing EH7	-	Mile	$ -	$ -	$ 12,000	$ -	$ 12,000.00	$ -
4.8	115kV - (1) 954kcmil 54/7 ACSS "Cardinal"	-	LF	$ 1.90	$ -	$ 5.00	$ -	$ 6.90	$ -
4.9		-							
4.10	Rider Poles - Relocated	-	Set	$ -	$ -	$ 3,500	$ -	$ 3,500.00	$ -
4.11	Rider Poles	-	EA	$ 1,750	$ -	$ 3,500	$ -	$ 5,250.00	$ -
TOTAL: CONDUCTOR, SHIELDWIRE, OPGW:					$ -		$ -		$ -
5. INSULATOR, FITTINGS, HARDWARE									
5.1	345kV Tangent (1-Group of 18-Bells Each Assembly)	-	Assembly	$ 1,800	$ -	$ 720	$ -	$ 2,520	$ -
5.2	115kV Tangent (1-Group of 9-Bells Each Assembly)	-	Assembly	$ 900	$ -	$ 560	$ -	$ 1,460	$ -
5.3	345kV Dead-end & Angle Insulators (1-Group of 18-Bells Each Assembly)	-	Assembly	$ 1,800	$ -	$ 720	$ -	$ 2,520	$ -
5.4	115kV Dead-end & Angle Insulators (1-Group of 9-Bells Each Assembly)	14	Assembly	$ 900	$ 12,600	$ 560	$ 7,840	$ 1,460	**$ 20,440**
5.5		-			$ -		$ -	$ -	$ -
5.6	OPGW Assembly - Tangent	-	Assembly	$ 200	$ -	$ 150	$ -	$ 350	$ -
5.7	OPGW Assembly - Angle / DE	4	Assembly	$ 250	$ 1,000	$ 150	$ 600	$ 400	**$ 1,600**
5.8	OHSW Assembly - Tangent	-	Assembly	$ 200	$ -	$ 150	$ -	$ 350	$ -
5.9	OHSW Assembly - Angle / DE	4	Assembly	$ 250	$ 1,000	$ 150	$ 600	$ 400	**$ 1,600**
5.10	OPGW Splice Boxes	-	Set	$ 1,750	$ -	$ 1,746	$ -	$ 3,496	$ -
5.11	OPGW Splice & Test	-	EA	$ 1,400	$ -	$ 2,520	$ -	$ 3,920	$ -
5.12	Spacer - Conductor	-	EA	$ 50	$ -	$ 35	$ -	$ 85	$ -
5.13	Vibration Dampers - Conductor	-	EA	$ 35	$ -	$ 35	$ -	$ 70	$ -
5.14	Shieldwire / OPGW Dampers, Misc. Fittings	-	EA	$ 27	$ -	$ 35	$ -	$ 62	$ -
5.15	Guys, Anchors, and Accessories	-	EA	$ 720	$ -	$ 885	$ -	$ 1,605	$ -
5.16	Misc. materials (Signs and Markers)	-	Mile	$ 770	$ -	$ 1,006	$ -	$ 1,776	$ -
5.17									
5.18									
5.19									
5.20									
TOTAL - INSULATOR, FITTINGS, HARDWARE					$ 14,600		$ 9,040		$ 23,640
N. Interconnection Milan Station					$ 229,303		$ 354,085		$ 583,388
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
6.1	Mob / Demob	1	LS	$ -	$ -	$ 5,834	$ 5,834	$ 5,834	**$ 5,834**
	Project Management, Material Handling & Amenities								

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 28,949	$ 28,949	$ 28,949	**$ 28,949**
6.3	Utility PM and Project Oversite	1	LS		$ -	$ 5,834	$ 5,834	$ 5,834	**$ 5,834**
6.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 5,834	$ 5,834	$ 5,834	**$ 5,834**
	Engineering								
6.5	Design Engineering	1	LS	$ -	$ -	$ 29,169	$ 29,169	$ 29,169	**$ 29,169**
6.6	LiDAR	1	LS	$ -	$ -	$ 1,750	$ 1,750	$ 1,750	**$ 1,750**
6.7	Geotech	1	Location	$ -	$ -	$ 3,500	$ 3,500	$ 3,500	**$ 3,500**
6.8	Surveying/Staking	1	LS	$ -	$ -	$ 4,084	$ 4,084	$ 4,084	**$ 4,084**
	Testing & Commissioning								
6.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
	Permitting and Additional Costs								
6.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.12	Warranties / LOC's	1	LS	$ -	$ -	$ 1,750	$ 1,750	$ 1,750	**$ 1,750**
6.13	Real Estate Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.14	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.15	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.16		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.17	Sales Tax on Materials	1	LS	$ 18,344	$ 18,344	$ -	$ -	$ 18,344	**$ 18,344**
6.18	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 583	$ 583	$ 583	**$ 583**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 18,344		$ 87,288		**$ 105,632**

NG & NY Transco - T019 - (Segment B)

O. NUF to mitigate NY to NE interface transfer limit degradation

Estimate Revision: **8**

Total: $ 21,428,571

SYSTEM UPGRADE FACILITIES		Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Sum	Labor & Equipment Supply Rate	Labor & Equipment Sum	Total Unit Rate	TOTAL
SUF 1	**Transmission Line Upgrade Cricket Valley - Connecticut Border to Long Mountain**								
1.1	Line Upgrade	1.00	LS		$ -		$ -	$ 21,428,571	$ 21,428,571
	Subtotal SUG 1 Direct Cost				$ -		$ -		$ 21,428,571
2	**Engineering, T&C, PM, Indirects (25%)**				$ -		$ -		$ 5,357,143
	TOTAL:				**$ -**		**$ -**		**$ 26,785,714**

NG & NY Transco - T019 - (Segment B)

P. NUF proposed as element of the Project (Fishkill and New Scotland Terminals)

Estimate Revision: 4

Total: $ 774,000

SYSTEM UPGRADE FACILITIES		Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Sum	Labor & Equipment Supply Rate	Labor & Equipment Sum	Total Unit Rate	TOTAL
SUF SS1	**Replace Disconnect Switch and Wavetrap on Roseton to East Fishkill #305 345kV Line**	1	LS	$ -	$ -	$ -	$ -	$ 222,449	$ 223,000
SUF SS1	Removals	1	LS	$ -	$ -	$ -	$ -	$ 33,480	$ 34,000
SUF SS1	Engineering, T&C, PM, Indirects (25%)		LS %						$ 65,000
SUF SS1	**SUF SS1 - TOTAL:**				**$ -**		**$ -**		**$ 322,000**
SUF SS2	**Replace Line Trap, 3" Bus Tue, Switches 277 & 288, and 3.5" bus Tube at New Scotland**	1	LS	$ -	$ -	$ -	$ -	$ 451,817	$ 452,000
SUF SS2	Removals	1	LS	$ -	$ -	$ -	$ -	$ 64,200	$ 65,000
SUF SS2	Engineering, T&C, PM, Indirects (15%)		LS %						$ 130,000
SUF SS2	**SUFSS 2 - TOTAL:**				**$ -**		**$ -**		**$ 647,000**
SUF SS3		1	LS					$ -	$ -
SUF SS3	Removals	1	LS	$ -	$ -	$ -	$ -	$ -	$ -
SUF SS3	Engineering, T&C, PM, Indirects (15%)		LS %						$ -
SUF SS3	**SUF SS3 - TOTAL:**				**$ -**		**$ -**		**$ -**
SUF SS4		-	LS	$ -	$ -	$ -	$ -		$ -
SUF SS4	Removals	1	LS	$ -	$ -	$ -	$ -	$ -	$ -
SUF SS4	Engineering, T&C, PM, Indirects (15%)		LS %						$ -
SUF SS4	**SUF SS4 - TOTAL:**				**$ -**		**$ -**		**$ -**
SUF SS5		-	LS	$ -	$ -	$ -	$ -		$ -
SUF SS5	Removals	1	LS	$ -	$ -	$ -	$ -	$ -	$ -
SUF SS5	Engineering, T&C, PM, Indirects (15%)		LS %						$ -
SUF SS5	**SUF SS5 - TOTAL:**				**$ -**		**$ -**		**$ -**
	STATIONS SUF DIRECT TOTAL:								**$ 774,000**
	STATIONS SUF INDIRECT TOTAL:								**$ 195,000**
	STATIONS SUF TOTAL								**$ 969,000**

NG & NY Transco - T019 - (Segment B)	
ESTIMATE ASSUMPTIONS & CLARIFICATIONS	
1	Cost Estimate is based on 2017 rates.
2	Construction schedule is in accordance with proposed schedule - we have assumed continuous working with no breaks in the schedule. Six months have been added to the construction schedule for start up and close out works and assisting in pre-construction activities (i.e. permitting activities, material procurement etc.).
3	We have assumed a typical work week of five-(5) days per week at ten-(10) hours per day (5 x 10 hour days).
4	All labor rates and benefits used for estimating purposes are taken from IBEW Local 1249 working agreement as updated 5-8-2017.
5	We have assumed that the Access Road included in Developer Estimate will be Type 1 Gravel Type. 20% of the total length of the line is assumed to use Type 1 Gravel road and 80% of the line length access to be used wood matting. In addition 75 feet of wood matting is included from the access matting to the work pad area matting. The estimate also include 5,000 square feet of wood matting for each structure work area within the ROW. For the ground restoration (seed, straw and woven mat), 20% of the work pad area included.
6	Costs will vary for handling and disposal of contaminated spoils, depending on type of contaminants and availability / location of the appropriate tipping facility. Since there is not enough information to provide a quantified estimate for this item, allowance is included in the contingency monies.
7	Costs have been developed based on historical data from Projects of a similar nature (AACE Class 5 and 4 Estimating Practices). We have not engaged any subcontractors for formal quotes.
8	Foundation rates include supply and installation of materials. Drilled Pier rates include supply and testing of concrete, rebar cage and the use of temp or permanent casing.
9	A Contractor Mark-Up (OH&P) of 15% has been included in the Total section.
10	We have assumed that all project details provided are accurate unless noted otherwise.
11	Any SUF pricing includes 35% to cover Contractor markup (15%) and contingency (20%)
12	A contractor allowance of 1% for mobilization and demobilization has been included in the total section.
13	A contractor allowance of 4.315% for project management and staffing has been included in the total section. This also includes agricultural inspector, engineering inspector, safety inspector, compliance inspector, environmental inspector, and SWPP inspector.
14	An allowance of 1% for Utility PM and Project Oversite staffing has been included in the total section.
15	A contractor allowance of 1% for site accommodation, facilities, and storage has been included in the total section.
16	An allowance of 5% for transmission design and engineering has been included in the total section.
17	An allowance of 8% for substation design and engineering has been included in the total section.
18	An allowance of 0.7% for survey and staking of the transmission line and substation layout has been included in the total section.
19	An allowance of 0.3% for LIDAR of the transmission line has been included in the total section.
20	An allowance of 3.75% for substation testing and commissioning has been included in the total section.
21	An allowance of $20,000.00 per circuit for transmission line testing and commissioning has been included in the total section.
22	New York state sales tax of 8% is included in all material pricing.
23	An allowance of 1.5% for insurance is included in the DPS sheet.
24	Knickerbocker to Churchtown substation; 0.4 miles of 345kV conductor from the junction have been added.
25	An additional Quantity of 5% have been added to conductors, OPGW, & OHSW for sag and jumpers.
26	Rock excavation depth in Foundation data provided in the proposal.
27	Cricket Valley to Long Mountain line upgrade: Network Upgrade (NUF) costs to mitigate NY to NE interface transfer limit degradation were based on possible solutions identified during the June 2018 SIS process
28	The SUF estimates for the stations are rough order of magnitude estimates. No engineering was performed and SECo did not have access to record drawings.

NextEra Energy (T022)			
		Description	**Total Amount** (In thousand $)
Direct Cost	1	**Transmission Lines**	
	1.1	Clearing & Access	$33,783
	1.2	Foundations	$17,271
	1.3	Structures	$49,013
	1.4	Conductor, Shiedwire and Optical Ground Wire	$25,925
	1.5	Insulators, Fitting and Hardwares	$9,609
		Subtotal (1)	**$135,602**
	2	**Substations**	
	2.1	Knickerbocker Substation	$15,110
	2.2	East Greenbush Substation	$61
	2.3	Schodack Substation	$0
	2.4	Churchtown Substation	$14,897
	2.5	Pleasant Valley Substation	$2,798
	2.6	Substation Interconnections	$6,769
		Subtotal (2)	**$39,635**
		Total (1+2)	$175,237
		Contractors Mark-up (15% of Total 1+2)	$26,286
		Total Direct Cost (A)	**$201,523**
Indirect Cost	3	**Technical Services Costs**	
	3.1	Contractor Mobilization / Demobilization	$1,752
	3.2	Project Management, Material Handling & Amenities	$14,399
	3.3	Engineering	$11,654
	3.4	Testing & Commissioning	$920
	3.5	Permitting, Real Estate, Sales Tax and Additional Costs	$10,365
	3.6	Legal, Environmental Licensing & Permitting and Environmental Mitigation	$7,628
		Total Indirect Cost (3)	**$46,718**
		Subtotal Project Cost (B=A+3) 2017 $	**$248,241**
	4	**Network Upgrade Facilities (NUF)**	
	4.1	NUF proposed as element of the Project	$0
	4.2	NUF to mitigate NY to NE interface transfer limit degradation	$30,000
		Subtotal NUF Cost (C)	**$30,000**

Total Project Cost (B+C) 2017 $	**$278,241**

Total Project Cost 2018 $	**$286,588**

NextEra T022 (Segment B)

Estimate Revision: 8

NextEra T022 (Segment B) - Direct Costs		*Total Each Segment*
Direct Labor, Material & Equipment Costs	A. Transmission Line Knickerbocker to Churchtown	$ 59,622,815
Direct Labor, Material & Equipment Costs	B. Transmission Line Churchtown to Pleasant Valley	$ 71,233,183
Direct Labor, Material & Equipment Costs	C. Blue Stores Junction to Blue Stores Substation	$ 4,746,361
Direct Labor, Material & Equipment Costs	D. Knickerbocker 345kV Substation - Install	$ 15,109,913
Direct Labor, Material & Equipment Costs	E.Greenbush Substation Removal	$ 61,200
Direct Labor, Material & Equipment Costs	F.	$ -
Direct Labor, Material & Equipment Costs	G.	$ -
Direct Labor, Material & Equipment Costs	H. North Churchtown Substation - Install	$ 14,897,294
Direct Labor, Material & Equipment Costs	I.	$ -
Direct Labor, Material & Equipment Costs	J. Pleasant Valley Substation - Install	$ 2,797,952
Direct Labor, Material & Equipment Costs	K.	$ -
Direct Labor, Material & Equipment Costs	L. Interconnection Knickerbocker Station	$ 1,534,845
Direct Labor, Material & Equipment Costs	M. Interconnection Churchtown Station	$ 4,610,341
Direct Labor, Material & Equipment Costs	N. Interconnection Milan Station	$ 623,428
Direct Labor, Material & Equipment Costs	O.NUF to mitigate NY to NE interface transfer limit degradation	$ 21,428,571
Direct Labor, Material & Equipment Costs	P.NUF proposed as element of the Project	$ -
	SUBTOTAL:	$ 196,665,904
	CONTRACTOR MARK-UP (OH&P)	$ 29,499,886
	CONTINGENCY ON ENTIRE PROJECT	$ -
	TOTAL DIRECT:	$ 226,165,789

NextEra T022 (Segment B) - Indirect Costs		*Total Each Segment*
Indirect Costs	A. Transmission Line Knickerbocker to Churchtown	$ 13,205,227
Indirect Costs	B. Transmission Line Churchtown to Pleasant Valley	$ 15,145,370
Indirect Costs	C. Blue Stores Junction to Blue Stores Substation	$ 1,003,285
Indirect Costs	D. Knickerbocker 345kV Substation - Install	$ 4,008,194
Indirect Costs	E.Greenbush Substation Removal	$ 11,210
Indirect Costs	F.	$ -
Indirect Costs	G.	$ -
Indirect Costs	H. North Churchtown Substation - Install	$ 3,698,349
Indirect Costs	I.	$ -
Indirect Costs	J. Pleasant Valley Substation - Install	$ 728,283
Indirect Costs	K. Pleasant Valley Substation - Removal	$ -
Indirect Costs	L. Interconnection Knickerbocker Station	$ 292,045
Indirect Costs	M. Interconnection Churchtown Station	$ 876,545
Indirect Costs	N. Interconnection Milan Station	$ 121,652
Indirect Costs	O.NUF to mitigate NY to NE interface transfer limit degradation	$ 5,357,143
Indirect Costs	P.NUF proposed as element of the Project	$ -
Indirect Costs	Legal, Permitting, and Environmental Fees	$ 7,627,609
	TOTAL INDIRECT:	$ 52,074,912

TOTAL ESTIMATED COST:	$ 278,240,701

NextEra T022 (Segment B)

A. Transmission Line Knickerbocker to Churchtown

Estimate Revision: 8

Total: $ 72,828,042

NextEra T022 (Segment B)	*Supply*	*Installation*	*Total*
A. Transmission Line Knickerbocker to Churchtown			
1. CLEARING & ACCESS	$ 11,500	$ 13,043,953	$ 13,055,453
2. FOUNDATIONS	$ 1,519,868	$ 4,432,528	$ 5,952,396
3. STRUCTURES	$ 4,990,679	$ 19,604,107	$ 24,594,786
4. CONDUCTOR, SHIELDWIRE, OPGW	$ 2,943,787	$ 8,681,855	$ 11,625,642
5. INSULATORS, FITTINGS, HARDWARE	$ 2,896,560	$ 1,497,978	$ 4,394,539
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 988,992	$ 12,216,235	$ 13,205,227
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 13,351,386	$ 59,476,656	$ 72,828,042
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 13,351,386	$ 59,476,656	$ 72,828,042

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Sum	Labor & Equipment Supply Rate	Labor & Equipment Sum	Total Unit Rate	TOTAL
A. Transmission Line Knickerbocker to Churchtown									
1. CLEARING & ACCESS									
1.1	Clearing the ROW - Heavy (mowing & clearing)	10.0	Acre	$ -	$ -	$ 15,000	$ 150,000	$ 15,000	**$ 150,000**
1.2	Clearing the ROW - Light (mowing)	55.0	Acre		$ -	$ 5,000	$ 275,000	$ 5,000	**$ 275,000**
1.3	Permanent Access Road	23,126	LF	$ -	$ -	$ 45.00	$ 1,040,688	$ 45	**$ 1,040,688**
1.4	Silt Fence	115,632	LF	$ -	$ -	$ 4.00	$ 462,528	$ 4	**$ 462,528**
1.5	Matting - Access and ROW	92,506	LF	$ -	$ -	$ 70.00	$ 6,475,392	$ 70	**$ 6,475,392**
1.6	Matting - To Work Area	11,925	LF	$ -	$ -	$ 70.00	$ 834,750	$ 70	**$ 834,750**
1.7	Snow Removal	21.9	Mile	$ -	$ -	$ 16,000	$ 350,400	$ 16,000	**$ 350,400**
1.8	ROW Restoration	21.9	Mile	$ -	$ -	$ 10,000	$ 219,000	$ 10,000	**$ 219,000**
1.9	Work Pads	795,000	SF	$ -	$ -	$ 3.52	$ 2,798,400	$ 4	**$ 2,798,400**
1.10	Restoration for Work Pad areas	159,000	SF	$ -	$ -	$ 0.15	$ 23,850	$ 0	**$ 23,850**
1.11	Temporary Access Bridge	9	EA	$ -	$ -	$ 20,035	$ 180,315	$ 20,035	**$ 180,315**
1.12	Air Bridge	-	EA	$ -	$ -	$ 14,445	$ -	$ 14,445	**$ -**
1.13	Stabilized Construction Entrance	4	EA	$ -	$ -	$ 4,580	$ 18,320	$ 4,580	**$ 18,320**
1.14	Maintenance and Protection of Traffic on Public Roads	47	EA	$ -	$ -	$ 4,130	$ 194,110	$ 4,130	**$ 194,110**
1.15	Culverts / Misc. Access	10	EA	$ 750	$ 7,500	$ 1,250	$ 12,500	$ 2,000	**$ 20,000**
1.16	Gates	2	EA	$ 2,000	$ 4,000	$ 2,500	$ 5,000	$ 4,500	**$ 9,000**
1.17	Concrete Washout Station	2	EA	$ -	$ -	$ 1,850	$ 3,700	$ 1,850	**$ 3,700**
TOTAL - CLEARING & ACCESS:					$ 11,500		$ 13,043,953		**$ 13,055,453**
2. FOUNDATIONS									
2.1	Drilled Pier - 115/345KV D/C DEADEND, STEEL	13	EA	$ 86,969	$ 1,130,593	$ 87,900	$ 1,142,702	$ 174,869	**$ 2,273,295**
2.2	Drilled Pier - 345KV S/C DEADEND, STEEL	1	EA	$ 39,770	$ 39,770	$ 40,196	$ 40,196	$ 79,966	**$ 79,966**
2.3	Direct Embed - 115/345KV D/C TANGENT, CONCRETE	145	EA	$ 2,410	$ 349,504	$ 16,391	$ 2,376,630	$ 18,801	**$ 2,726,134**
2.4	Rock Excavation Adder	436.5	CY	$ -	$ -	$ 2,000	$ 873,000	$ 2,000	**$ 873,000**
2.5									
2.6									
2.7									
2.8									
2.9									
2.10									
2.11									
2.12									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Sum	Labor & Equipment Supply Rate	Labor & Equipment Sum	Total Unit Rate	TOTAL
2.13									
2.14									
2.15									
2.16									
2.17									
2.18									
TOTAL - FOUNDATIONS:					$ 1,519,868		$ 4,432,528		**$ 5,952,396**
3. STRUCTURES									
3.1	115/345KV D/C DEADEND, STEEL	13	Structure	$ 131,581	$ 1,710,556	$ 78,949	$ 1,026,334	$ 210,530	**$ 2,736,890**
3.2	345KV S/C DEADEND, STEEL	1	Structure	$ 51,800	$ 51,800	$ 31,080	$ 31,080	$ 82,880	**$ 82,880**
3.3	115/345KV D/C TANGENT, CONCRETE	145	Structure	$ 21,709	$ 3,147,869	$ 91,587	$ 13,280,072	$ 113,296	**$ 16,427,940**
3.4	Remove Existing Concrete Foundation	688	EA	$ -	$ -	$ 3,250	$ 2,236,000	$ 3,250	**$ 2,236,000**
3.5	Remove Existing Structure and Accessories	172	EA	$ -	$ -	$ 12,500	$ 2,150,000	$ 12,500	**$ 2,150,000**
3.6	Install Grounding and Grounding Accessories	159	Pole	$ 506	$ 80,454	$ 5,539	$ 880,622	$ 6,045	**$ 961,076**
3.7									
3.8									
3.9									
3.10									
3.11									
3.12									
3.13									
3.14									
3.15									
TOTAL - STRUCTURES:					$ 4,990,679		$ 19,604,107		**$ 24,594,786**
4. CONDUCTOR, SHIELDWIRE, OPGW									
4.1	345kV - (1) 1,033kcmil 54/7 ACSS "Curlew"	728,482	LF	$ 2.82	$ 2,054,319	$ 5.00	$ 3,642,410	$ 7.82	**$ 5,696,729**
4.2	(1) OPGW 36 Fiber AC-33/38/571	121,414	LF	$ 1.35	$ 163,909	$ 5.00	$ 607,070	$ 6.35	**$ 770,979**
4.3	(1) 3/8" EHS7 Steel	121,414	LF	$ 0.47	$ 57,065	$ 5.00	$ 607,070	$ 5.47	**$ 664,135**
4.4	Remove Existing Cable From Existing Structures	43.8	Mile	$ -	$ -	$ 30,000	$ 1,314,000	$ 30,000.00	**$ 1,314,000**
4.5	Remove Existing OPGW Cable and Accessories	21.9	Mile	$ -	$ -	$ 12,000	$ 262,800	$ 12,000.00	**$ 262,800**
4.6	Remove Existing OHSW and Accessories	21.9	Mile	$ -	$ -	$ 12,000	$ 262,800	$ 12,000.00	**$ 262,800**
4.7	115kV - (1) 795kcmil 26/7 ACSS "Drake"	364,241	LF	$ 1.72	$ 626,495	$ 5.00	$ 1,821,205	$ 6.72	**$ 2,447,700**
4.8	Rider Poles (47 Locations)	24	Set	$ 1,750	$ 42,000	$ 3,500	$ 84,000	$ 5,250.00	**$ 126,000**
4.9	Rider Poles - Relocated	23	Set	$ -	$ -	$ 3,500	$ 80,500	$ 3,500.00	**$ 80,500**
4.10									
4.11									
4.12									
4.13									
4.14									
4.15									
4.16									
4.17									
TOTAL: CONDUCTOR, SHIELDWIRE, OPGW:					$ 2,943,787		$ 8,681,855		**$ 11,625,642**
5. INSULATOR, FITTINGS, HARDWARE									
5.1	345kV Tangent (1-Group of 18-Bells Each Assembly)	725	Assembly	$ 1,800	$ 1,305,000	$ 720	$ 522,000	$ 2,520	**$ 1,827,000**
5.2	115kV Tangent (1-Group of 9-Bells Each Assembly)	870	Assembly	$ 900	$ 783,000	$ 560	$ 487,200	$ 1,460	**$ 1,270,200**
5.3	345kV Dead-end & Angle Insulators (1-Group of 18-Bells Each Assembly)	210	Assembly	$ 1,800	$ 378,000	$ 720	$ 151,200	$ 2,520	**$ 529,200**
5.4	115kV Dead-end & Angle Insulators (1-Group of 9-Bells Each Assembly)	91	Assembly	$ 900	$ 81,900	$ 560	$ 50,960	$ 1,460	**$ 132,860**
5.5					$ -		$ -	$ -	**$ -**
5.6	Angle - V-String (1-Group of 18-Bells Each Assembly)		Assembly	$ 1,800	$ -	$ 720	$ -	$ 2,520	**$ -**
5.7	H-Frame - Tangent Insulators (4-Assemblies Each Structure (2-Groups of 18-Bells Each Assembly))		Assembly	$ 3,600	$ -	$ 1,440	$ -	$ 5,040	**$ -**
5.8	OPGW Assembly - Tangent	145	Assembly	$ 200	$ 29,000	$ 150	$ 21,750	$ 350	**$ 50,750**
5.9	OPGW Assembly - Angle / DE	28	Assembly	$ 250	$ 7,000	$ 150	$ 4,200	$ 400	**$ 11,200**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Sum	Labor & Equipment Supply Rate	Labor & Equipment Sum	Total Unit Rate	TOTAL
5.10	OHSW Assembly - Tangent	145	Assembly	$ 200	$ 29,000	$ 150	$ 21,750	$ 350	**$ 50,750**
5.11	OHSW Assembly - Angle / DE	28	Assembly	$ 250	$ 7,000	$ 150	$ 4,200	$ 400	**$ 11,200**
5.12	OPGW Splice Boxes	8	Set	$ 1,746	$ 13,969	$ 2,274	$ 18,192	$ 4,020	**$ 32,161**
5.13	OPGW Splice & Test	8	EA	$ 2,520	$ 20,160	$ 2,520	$ 20,160	$ 5,040	**$ 40,320**
5.14	Spacer - Conductor	3,659	EA	$ 50	$ 182,950	$ 35	$ 128,065	$ 85	**$ 311,015**
5.15	Vibration Dampers - Conductor	878	EA	$ 35	$ 30,730	$ 35	$ 30,730	$ 70	**$ 61,460**
5.16	Shield wire / OPGW Dampers, Misc. Fittings	444	EA	$ 27	$ 11,988	$ 35	$ 15,540	$ 62	**$ 27,528**
5.17									
5.18									
5.19									
5.20									
5.21	Guys, Anchors, and Accessories	-	EA	$ 720	$ -	$ 885	$ -	$ 1,605	**$ -**
5.22	Misc. materials (Signs and Markers)	21.9	Mile	$ 770	$ 16,863	$ 1,006	$ 22,031	$ 1,776	**$ 38,894**
5.23		-		$ -	$ -	$ -	$ -	$ -	**$ -**
TOTAL - INSULATORS, FITTINGS, HARDWARE:					$ 2,896,560		$ 1,497,978		**$ 4,394,539**
A. Transmission Line Knickerbocker to Churchtown					$ 12,362,395		$ 47,260,421		**$ 59,622,815**
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
6.1	Mob / Demob	1	LS	$ -	$ -	$ 596,228	$ 596,228	$ 596,228	**$ 596,228**
	Project Management, Material Handling & Amenities								
6.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 3,706,691	$ 3,706,691	$ 3,706,691	**$ 3,706,691**
6.3	Utility PM and Project Oversite	1	LS		$ -	$ 596,228	$ 596,228	$ 596,228	**$ 596,228**
6.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 596,228	$ 596,228	$ 596,228	**$ 596,228**
	Engineering								
6.5	Design Engineering	1	LS	$ -	$ -	$ 2,981,141	$ 2,981,141	$ 2,981,141	**$ 2,981,141**
6.6	LiDAR	1	LS	$ -	$ -	$ 178,868	$ 178,868	$ 178,868	**$ 178,868**
6.7	Geotech	22	Location	$ -	$ -	$ 3,500	$ 77,000	$ 3,500	**$ 77,000**
6.8	Surveying/Staking	1	LS	$ -	$ -	$ 417,360	$ 417,360	$ 417,360	**$ 417,360**
	Testing & Commissioning								
6.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 40,000	$ 40,000	$ 40,000	**$ 40,000**
	Permitting and Additional Costs								
6.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.12	Warranties / LOC's	1	LS	$ -	$ -	$ 178,868	$ 178,868	$ 178,868	**$ 178,868**
6.13	Real Estate Costs (New ROW)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.14	Real Estate Costs (Incumbent Utility ROW)	1	LS	$ -	$ -	$ 2,788,000	$ 2,788,000	$ 2,788,000	**$ 2,788,000**
6.15	Legal Fees	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.18	Sales Tax on Materials	1	LS	$ 988,992	$ 988,992	$ -	$ -	$ 988,992	**$ 988,992**
6.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 59,623	$ 59,623	$ 59,623	**$ 59,623**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 988,992		$ 12,216,235		**$ 13,205,227**

NextEra T022 (Segment B)

B. Transmission Line Churchtown to Pleasant Valley

Estimate Revision: 8

Total: $ 86,378,553

NextEra T022 (Segment B)	*Supply*	*Installation*	*Total*
B. Transmission Line Churchtown to Pleasant Valley			
1. CLEARING & ACCESS	$ 14,000	$ 19,309,466	$ 19,323,466
2. FOUNDATIONS	$ 1,106,161	$ 9,049,991	$ 10,156,152
3. STRUCTURES	$ 3,541,211	$ 19,333,959	$ 22,875,169
4. CONDUCTOR, SHIELDWIRE, OPGW	$ 3,493,383	$ 10,334,110	$ 13,827,493
5. INSULATORS, FITTINGS, HARDWARE	$ 3,450,934	$ 1,599,968	$ 5,050,903
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 928,455	$ 14,216,915	$ 15,145,370
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 12,534,144	$ 73,844,409	$ 86,378,553
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 12,534,144	$ 73,844,409	$ 86,378,553

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
B. Transmission Line Churchtown to Pleasant Valley									
1. CLEARING & ACCESS									
1.1	Clearing the ROW - Heavy (mowing & clearing)	-	Acre	$ -	$ -	$ 15,000	$ -	$ 15,000	$ -
1.2	Clearing the ROW - Light (mowing)	63.0	Acre	$ -	$ -	$ 5,000	$ 315,000	$ 5,000	$ 315,000
1.3	Permanent Access Road	34,108.8	LF	$ -	$ -	$ 45	$ 1,534,896	$ 45	$ 1,534,896
1.4	Silt Fence	170,544.0	LF	$ -	$ -	$ 4	$ 682,176	$ 4	$ 682,176
1.5	Matting - Access and ROW	136,435.2	LF	$ -	$ -	$ 70	$ 9,550,464	$ 70	$ 9,550,464
1.6	Matting - To Work Area	18,450.0	LF	$ -	$ -	$ 70	$ 1,291,500	$ 70	$ 1,291,500
1.7	Snow Removal	32.3	Mile	$ -	$ -	$ 16,000	$ 516,800	$ 16,000	$ 516,800
1.8	ROW Restoration	32.3	Mile	$ -	$ -	$ 10,000	$ 323,000	$ 10,000	$ 323,000
1.9	Work Pads	1,230,000.0	SF	$ -	$ -	$ 4	$ 4,329,600	$ 4	$ 4,329,600
1.10	Restoration for Work Pad areas	246,000.0	SF	$ -	$ -	$ 0.2	$ 36,900	$ 0	$ 36,900
1.11	Temporary Access Bridge	14	EA	$ -	$ -	$ 20,035	$ 280,490	$ 20,035	$ 280,490
1.12	Air Bridge	-	EA	$ -	$ -	$ 14,445	$ -	$ 14,445	$ -
1.13	Stabilized Construction Entrance	12	EA	$ -	$ -	$ 4,580	$ 54,960	$ 4,580	$ 54,960
1.14	Maintenance and Protection of Traffic on Public Roads	86	EA	$ -	$ -	$ 4,130	$ 355,180	$ 4,130	$ 355,180
1.15	Gates	4	EA	$ 2,000	$ 8,000	$ 2,500	$ 10,000	$ 4,500	$ 18,000
1.16	Culverts / Misc. Access	8	EA	$ 750	$ 6,000	$ 1,250	$ 10,000	$ 2,000	$ 16,000
1.17	Concrete Washout Station	10	EA	$ -	$ -	$ 1,850	$ 18,500	$ 1,850	$ 18,500
TOTAL - CLEARING & ACCESS:					$ 14,000		$ 19,309,466		$ 19,323,466
2. FOUNDATIONS									
2.1	Drilled Pier - 345KV S/C DEADEND, STEEL	17	EA	$ 43,731	$ 743,425	$ 44,199	$ 751,387	$ 87,930	$ 1,494,811
2.2	Direct Embed - 345KV S/C TANGENT, CONCRETE	229	EA	$ 1,584	$ 362,736	$ 10,771	$ 2,466,605	$ 12,355	$ 2,829,341
2.3									
2.4									
2.5	Rock Excavation Adder	2,916.0	CY	$ -	$ -	$ 2,000	$ 5,832,000	$ 2,000	$ 5,832,000
2.6									
2.7									
2.8									
2.9									
2.10									
2.11									
2.12									
TOTAL - FOUNDATIONS:					$ 1,106,161		$ 9,049,991		$ 10,156,152

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3. STRUCTURES									
3.1	345KV S/C DEADEND, STEEL	17	Structure	$ 49,950	$ 849,150	$ 29,970	$ 509,490	$ 79,920	**$ 1,358,640**
3.2	345KV S/C TANGENT, CONCRETE	229	Structure	$ 11,212	$ 2,567,585	$ 47,301	$ 10,831,998	$ 58,513	**$ 13,399,582**
3.3									
3.4									
3.5									
3.6									
3.7									
3.8									
3.9									
3.10									
3.11									
3.12	Remove Existing Foundation	1,040	EA	$ -	$ -	$ 3,250	$ 3,380,000	$ 3,250	**$ 3,380,000**
3.13	Remove Existing Structure and Accessories	260	EA	$ -	$ -	$ 12,500	$ 3,250,000	$ 12,500	**$ 3,250,000**
3.14	Install Grounding and Grounding Accessories	246	Structure	$ 506	$ 124,476	$ 5,539	$ 1,362,471	$ 6,045	**$ 1,486,947**
3.15									
3.16									
3.17									
TOTAL - STRUCTURES PRINCTOWN TO NEW SCOTLAND:					$ 3,541,211		$ 19,333,959		**$ 22,875,169**
4. CONDUCTOR, SHIELDWIRE, OPGW									
4.1	345kV - (1) 1,033kcmil 54/7 ACSS "Curlew"	1,094,386	LF	$ 2.82	$ 3,086,169	$ 5.00	$ 5,471,930	$ 7.82	**$ 8,558,099**
4.2	(1) OPGW 36 Fiber AC-33/38/571	182,398	LF	$ 1.35	$ 246,237	$ 5.00	$ 911,990	$ 6.35	**$ 1,158,227**
4.3	(1) 3/8" EHS7 Steel	182,398	LF	$ 0.47	$ 85,727	$ 5.00	$ 911,990	$ 5.47	**$ 997,717**
4.5	Remove Existing 115kV Cable From Existing Structures	65.2	Mile	$ -	$ -	$ 30,000	$ 1,956,000	$ 30,000.00	**$ 1,956,000**
4.6	Remove Existing OPGW Cable and Accessories	32.6	Mile	$ -	$ -	$ 12,000	$ 390,600	$ 12,000.00	**$ 390,600**
4.7	Remove Existing OHSW and Accessories	32.6	Mile	$ -	$ -	$ 12,000	$ 390,600	$ 12,000.00	**$ 390,600**
4.8	115kV - (1) 795kcmil 26/7 ACSS "Drake"	-	LF	$ 1.72	$ -	$ 5.00	$ -	$ 6.72	**$ -**
4.9									
4.10	Rider Poles - Relocated	43	Set	$ -	$ -	$ 3,500	$ 150,500	$ 3,500.00	**$ 150,500**
4.11	Rider Poles (86 Total)	43	EA	$ 1,750	$ 75,250	$ 3,500	$ 150,500	$ 5,250.00	**$ 225,750**
TOTAL: CONDUCTOR, SHIELDWIRE, OPGW:					$ 3,493,383		$ 10,334,110		**$ 13,827,493**
5. INSULATOR, FITTINGS, HARDWARE									
5.1	345kV Tangent (1-Group of 18-Bells Each Assembly)	1,374	Assembly	$ 1,800	$ 2,473,200	$ 720	$ 989,280	$ 2,520	**$ 3,462,480**
5.2	115kV Tangent (1-Group of 9-Bells Each Assembly)	-	Assembly	$ 900	$ -	$ 560	$ -	$ 1,460	**$ -**
5.3	345kV Dead-end & Angle Insulators (1-Group of 18-Bells Each Assembly)	255	Assembly	$ 1,800	$ 459,000	$ 720	$ 183,600	$ 2,520	**$ 642,600**
5.4	115kV Dead-end & Angle Insulators (1-Group of 9-Bells Each Assembly)	-	Assembly	$ 900	$ -	$ 560	$ -	$ 1,460	**$ -**
5.5	OPGW Assembly - Tangent	229	Assembly	$ 200	$ 45,800	$ 150	$ 34,350	$ 350	**$ 80,150**
5.6	OPGW Assembly - Angle / DE	34	Assembly	$ 250	$ 8,500	$ 150	$ 5,100	$ 400	**$ 13,600**
5.7	OHSW Assembly - Tangent	229	Assembly	$ 200	$ 45,800	$ 150	$ 34,350	$ 350	**$ 80,150**
5.8	OHSW Assembly - Angle / DE	34	Assembly	$ 250	$ 8,500	$ 150	$ 5,100	$ 400	**$ 13,600**
5.9	OPGW Splice Boxes	12	Set	$ 1,746	$ 20,954	$ 2,274	$ 27,288	$ 4,020	**$ 48,242**
5.10	OPGW Splice & Test	12	EA	$ 2,520	$ 30,240	$ 2,520	$ 30,240	$ 5,040	**$ 60,480**
5.11	Spacer - Conductor	5,414	EA	$ 50	$ 270,700	$ 35	$ 189,490	$ 85	**$ 460,190**
5.12	Vibration Dampers - Conductor	1,299	EA	$ 35	$ 45,465	$ 35	$ 45,465	$ 70	**$ 90,930**
5.13	Shieldwire / OPGW Dampers, Misc. Fittings	656	EA	$ 27	$ 17,712	$ 35	$ 22,960	$ 62	**$ 40,672**
5.14	Guys, Anchors, and Accessories	-	EA	$ 720	$ -	$ 885	$ -	$ 1,605	**$ -**
5.15	Misc. materials (Signs and Markers)	32.6	Mile	$ 770	$ 25,064	$ 1,006	$ 32,745	$ 1,776	**$ 57,809**
TOTAL - INSULATORS, FITTINGS, HARDWARE:					$ 3,450,934		$ 1,599,968		**$ 5,050,903**
B. Transmission Line Churchtown to Pleasant Valley					$ 11,605,689		$ 59,627,494		**$ 71,233,183**
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS									
	Contractor Mobilization / Demobilization								
6.1	Mob / Demob	1	LS	$ -	$ -	$ 712,332	$ 712,332	$ 712,332	**$ 712,332**
	Project Management, Material Handling & Amenities								
6.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 4,428,496	$ 4,428,496	$ 4,428,496	**$ 4,428,496**
6.3	Utility PM and Project Oversite	1	LS		$ -	$ 712,332	$ 712,332	$ 712,332	**$ 712,332**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 712,332	$ 712,332	$ 712,332	**$ 712,332**
	Engineering								
6.5	Design Engineering	1	LS	$ -	$ -	$ 3,561,659	$ 3,561,659	$ 3,561,659	**$ 3,561,659**
6.6	LiDAR	1	LS	$ -	$ -	$ 213,700	$ 213,700	$ 213,700	**$ 213,700**
6.7	Geotech	33	Location	$ -	$ -	$ 3,500	$ 115,500	$ 3,500	**$ 115,500**
6.8	Surveying/Staking	1	LS	$ -	$ -	$ 498,632	$ 498,632	$ 498,632	**$ 498,632**
	Testing & Commissioning								
6.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 40,000	$ 40,000	$ 40,000	**$ 40,000**
	Permitting and Additional Costs								
6.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.12	Warranties / LOC's	1	LS	$ -	$ -	$ 213,700	$ 213,700	$ 213,700	**$ 213,700**
6.13	Real Estate Costs (New ROW)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.14	Real Estate Costs (Incumbent Utility ROW)	1	LS	$ -	$ -	$ 2,937,000	$ 2,937,000	$ 2,937,000	**$ 2,937,000**
6.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.18	Sales Tax on Materials	1	LS	$ 928,455	$ 928,455	$ -	$ -	$ 928,455	**$ 928,455**
6.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 71,233	$ 71,233	$ 71,233	**$ 71,233**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 928,455		$ 14,216,915		**$ 15,145,370**

NextEra T022 (Segment B)

C. Blue Stores Junction to Blue Stores Substation

Estimate Revision: 8

Total: $ 5,749,646

NextEra T022 (Segment B)	*Supply*	*Installation*	*Total*	
C. Blue Stores Junction to Blue Stores Substation				
1. CLEARING & ACCESS	$ -	$ 1,404,512	$ 1,404,512	
2. FOUNDATIONS	$ 236,848	$ 925,954	$ 1,162,802	
3. STRUCTURES	$ 596,484	$ 946,665	$ 1,543,149	
4. CONDUCTOR, SHIELDWIRE, OPGW	$ 84,763	$ 387,095	$ 471,858	
5. INSULATORS, FITTINGS, HARDWARE	$ 107,544	$ 56,496	$ 164,040	
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 82,051	$ 921,234	$ 1,003,285	
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -	0.0%
SUBTOTAL:	$ 1,107,690	$ 4,641,956	$ 5,749,646	
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -	0.0%
TOTAL:	$ 1,107,690	$ 4,641,956	$ 5,749,646	

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
C. Blue Stores Junction to Blue Stores Substation									
1. CLEARING & ACCESS									
1.1	Clearing the ROW - Heavy (mowing & clearing)	-	Acre	$ -	$ -	$ 15,000	$ -	$ 15,000	**$ -**
1.2	Clearing the ROW - Light (mowing)	4.0	Acre	$ -	$ -	$ 5,000	$ 20,000	$ 5,000	**$ 20,000**
1.3	Permanent Access Road	2,217.6	LF	$ -	$ -	$ 45	$ 99,792	$ 45	**$ 99,792**
1.4	Silt Fence	11,088.0	LF	$ -	$ -	$ 4	$ 44,352	$ 4	**$ 44,352**
1.5	Matting - Access and ROW	8,870.4	LF	$ -	$ -	$ 70	$ 620,928	$ 70	**$ 620,928**
1.6	Matting - To Work Area	1,800.0	LF	$ -	$ -	$ 70	$ 126,000	$ 70	**$ 126,000**
1.7	Snow Removal	2.1	Mile	$ -	$ -	$ 16,000	$ 33,600	$ 16,000	**$ 33,600**
1.8	ROW Restoration	2.1	Mile	$ -	$ -	$ 10,000	$ 21,000	$ 10,000	**$ 21,000**
1.9	Work Pads	120,000.0	SF	$ -	$ -	$ 4	$ 422,400	$ 4	**$ 422,400**
1.10	Restoration for Work Pad areas	24,000.0	SF	$ -	$ -	$ 0.2	$ 3,600	$ 0	**$ 3,600**
1.11	Temporary Access Bridge	-	EA	$ -	$ -	$ 20,035	$ -	$ 20,035	**$ -**
1.12	Air Bridge	-	EA	$ -	$ -	$ 14,445	$ -	$ 14,445	**$ -**
1.13	Stabilized Construction Entrance	1	EA	$ -	$ -	$ 4,580	$ 4,580	$ 4,580	**$ 4,580**
1.14	Maintenance and Protection of Traffic on Public Roads	2	EA	$ -	$ -	$ 4,130	$ 8,260	$ 4,130	**$ 8,260**
1.15	Gates	-	EA	$ 2,000	$ -	$ 2,500	$ -	$ 4,500	**$ -**
1.16	Culverts / Misc. Access	-	EA	$ 750	$ -	$ 1,250	$ -	$ 2,000	**$ -**
1.17	Concrete Washout Station	-	EA	$ -	$ -	$ 1,850	$ -	$ 1,850	**$ -**
TOTAL - CLEARING & ACCESS:					$ -		$ 1,404,512		**$ 1,404,512**
2. FOUNDATIONS									
2.1	Drilled Pier - 115kV Single Circuit H- Pole Angle/ DE	6	EA	$ 31,225	$ 187,348	$ 31,559	$ 189,354	$ 62,784	**$ 376,702**
2.2	Direct Embed - 115kV Single Circuit H- Pole Tangent	18	EA	$ 2,750	$ 49,500	$ 18,700	$ 336,600	$ 21,450	**$ 386,100**
2.3	Rock Excavation Adder	200.0	CY	$ -	$ -	$ 2,000	$ 400,000	$ 2,000	**$ 400,000**
2.4									
2.5									
2.6									
2.7									
2.8									
2.9									
2.10									
2.11									
2.12									
2.13									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.14									
2.15									
TOTAL - FOUNDATIONS:					$ 236,848		$ 925,954		**$ 1,162,802**
3. STRUCTURES									
3.1	115kV Single Circuit H- Pole Angle/ DE	6	Structure	$ 39,822	$ 238,929	$ 23,893	$ 143,358	$ 63,714	**$ 382,287**
3.2	115kV Single Circuit H- Pole Tangent	18	Structure	$ 18,515	$ 333,266	$ 11,109	$ 199,960	$ 29,624	**$ 533,226**
3.3	Remove Existing Structure and Accessories	-	EA	$ -	$ -	$ 7,500	$ -	$ 7,500	**$ -**
3.4	Install Grounding and Grounding Accessories	27	EA	$ -	$ -	$ 12,500	$ 337,500	$ 12,500	**$ 337,500**
3.5									
3.6	Install Grounding and Grounding Accessories	48	Structure	$ 506	$ 24,288	$ 5,539	$ 265,848	$ 6,045	**$ 290,136**
3.7									
3.8									
3.9									
3.10									
3.11									
3.12									
3.13									
3.14									
3.15									
TOTAL - STRUCTURES:					$ 596,484		$ 946,665		**$ 1,543,149**
4. CONDUCTOR, SHIELDWIRE, OPGW									
4.1	**345kV** - (1) 954kcmil 54/7 ACSS "Cardinal"	-	LF	$ 3.53	$ -	$ 5.00	$ -	$ 8.53	**$ -**
4.2	(1) OPGW 36 Fiber AC-33/38/571	-	LF	$ 1.55	$ -	$ 5.00	$ -	$ 6.55	**$ -**
4.3	(1) 3/8" EHS7 Steel	-	LF	$ 0.72	$ -	$ 5.00	$ -	$ 5.72	**$ -**
4.4	**115kV** - (1) 795kcmil 26/7 ACSR "Drake"	34,927.0	LF	$ 1.72	$ 60,074	$ 5.00	$ 174,635	$ 6.72	**$ 234,709**
4.5	(1) OPGW 36 Fiber AC-33/38/571	11,642.0	LF	$ 1.35	$ 15,717	$ 5.00	$ 58,210	$ 6.35	**$ 73,927**
4.6	(1) 3/8" EHS7 Steel	11,642.0	LF	$ 0.47	$ 5,472	$ 5.00	$ 58,210	$ 5.47	**$ 63,682**
4.7	Remove Existing Cable	2.1	Mile	$ -	$ -	$ 30,000	$ 63,600	$ 30,000.00	**$ 63,600**
4.8	Remove Existing OPGW Cable	-	Mile	$ -	$ -	$ 12,000	$ -	$ 12,000.00	**$ -**
4.9	Remove Existing EH7	2.1	Mile	$ -	$ -	$ 12,000	$ 25,440	$ 12,000.00	**$ 25,440**
4.10		-							
4.11		-							
4.12	Rider Poles (Locations)	2.0	EA	$ 1,750	$ 3,500	$ 3,500	$ 7,000	$ 5,250.00	**$ 10,500**
4.13									
TOTAL - CONDUCTOR, SHIELDWIRE, OPGW:					$ 84,763		$ 387,095		**$ 471,858**
5. INSULATOR, FITTINGS, HARDWARE									
5.1	345kV Tangent (1-Group of 18-Bells Each Assembly)	-	Assembly	$ 1,800	$ -	$ 720	$ -	$ 2,520	**$ -**
5.2	115kV Tangent (1-Group of 9-Bells Each Assembly)	54	Assembly	$ 900	$ 48,600	$ 360	$ 19,440	$ 1,260	**$ 68,040**
5.3	345kV Dead-end & Angle Insulators (1-Group of 18-Bells Each Assembly)	-	Assembly	$ 1,800	$ -	$ 720	$ -	$ 2,520	**$ -**
5.4	115kV Dead-end & Angle Insulators (1-Group of 9-Bells Each Assembly)	36	Assembly	$ 900	$ 32,400	$ 360	$ 12,960	$ 1,260	**$ 45,360**
5.5					$ -		$ -	$ -	**$ -**
5.6	OPGW Assembly - Tangent	18	Assembly	$ 200	$ 3,600	$ 150	$ 2,700	$ 350	**$ 6,300**
5.7	OPGW Assembly - Angle / DE	12	Assembly	$ 250	$ 3,000	$ 150	$ 1,800	$ 400	**$ 4,800**
5.8	OHSW Assembly - Tangent	18	Assembly	$ 200	$ 3,600	$ 150	$ 2,700	$ 350	**$ 6,300**
5.9	OHSW Assembly - Angle / DE	12	Assembly	$ 250	$ 3,000	$ 150	$ 1,800	$ 400	**$ 4,800**
5.10	OPGW Splice Boxes	2	Set	$ 1,746	$ 3,492	$ 2,274	$ 4,548	$ 4,020	**$ 8,040**
5.11	OPGW Splice & Test	2	EA	$ 2,520	$ 5,040	$ 2,520	$ 5,040	$ 5,040	**$ 10,080**
5.12	Spacer - Conductor	-	EA	$ 50	$ -	$ 35	$ -	$ 85	**$ -**
5.13	Vibration Dampers - Conductor	72	EA	$ 35	$ 2,520	$ 35	$ 2,520	$ 70	**$ 5,040**
5.14	Shieldwire / OPGW Dampers, Misc. Fittings	25	EA	$ 27	$ 675	$ 35	$ 875	$ 62	**$ 1,550**
5.15	Guys, Anchors, and Accessories	-	EA	$ 720	$ -	$ 885	$ -	$ 1,605	**$ -**
5.16	Misc. materials (Signs and Markers)	2.1	Mile	$ 770	$ 1,617	$ 1,006	$ 2,113	$ 1,776	**$ 3,730**
5.17									
5.18									
5.19									
5.20									
TOTAL - INSULATORS, FITTINGS, HARDWARE:					$ 107,544		$ 56,496		**$ 164,040**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
C. Blue Stores Junction to Blue Stores Substation					$ 1,025,639		$ 3,720,722		**$ 4,746,361**
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
6.1	Mob / Demob	1	LS	$ -	$ -	$ 47,464	$ 47,464	$ 47,464	**$ 47,464**
	Project Management, Material Handling & Amenities								
6.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 295,076	$ 295,076	$ 295,076	**$ 295,076**
6.3	Utility PM and Project Oversite	1	LS		$ -	$ 47,464	$ 47,464	$ 47,464	**$ 47,464**
6.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 47,464	$ 47,464	$ 47,464	**$ 47,464**
	Engineering								
6.5	Design Engineering	1	LS	$ -	$ -	$ 237,318	$ 237,318	$ 237,318	**$ 237,318**
6.6	LiDAR	1	LS	$ -	$ -	$ 14,239	$ 14,239	$ 14,239	**$ 14,239**
6.7	Geotech	2	Location	$ -	$ -	$ 3,500	$ 7,000	$ 3,500	**$ 7,000**
6.8	Surveying/Staking	1	LS	$ -	$ -	$ 33,225	$ 33,225	$ 33,225	**$ 33,225**
	Testing & Commissioning								
6.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 20,000	$ 20,000	$ 20,000	**$ 20,000**
	Permitting and Additional Costs								
6.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.12	Warranties / LOC's	1	LS	$ -	$ -	$ 14,239	$ 14,239	$ 14,239	**$ 14,239**
6.13	Real Estate Costs (New ROW)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.14	Real Estate Costs (Incumbent Utility ROW)	1	LS	$ -	$ -	$ 153,000	$ 153,000	$ 153,000	**$ 153,000**
6.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.18	Sales Tax on Materials	1	LS	$ 82,051	$ 82,051	$ -	$ -	$ 82,051	**$ 82,051**
6.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 4,746	$ 4,746	$ 4,746	**$ 4,746**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 82,051		$ 921,234		**$ 1,003,285**

NextEra T022 (Segment B) — **D. Knickerbocker 345kV Substation - Install**

Estimate Revision: 8 — **Total: $ 19,118,107**

NextEra T022 (Segment B)	*Supply*	*Installation*	*Total*
D. Knickerbocker 345kV Substation - Install			
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ 223,675	$ 1,936,115	$ 2,159,790
2. SUBSTATION FOUNDATIONS	$ 1,572,935	$ 1,694,150	$ 3,267,085
3. SUBSTATION STRUCTURES	$ 727,975	$ 727,975	$ 1,455,950
4. MAJOR EQUIPTMENT	$ 600,000	$ 240,000	$ 840,000
5. SMALL EQUIPTMENT / MATERIALS	$ 1,086,500	$ 489,500	$ 1,576,000
6. CONTROL HOUSE / PANELS	$ 1,837,125	$ 1,227,625	$ 3,064,750
7. MISC ITEMS	$ 1,061,528	$ 1,684,810	$ 2,746,338
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 568,779	$ 3,439,415	$ 4,008,194
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 7,678,517	$ 11,439,590	$ 19,118,107
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 7,678,517	$ 11,439,590	$ 19,118,107

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
D. Knickerbocker 345kV Substation - Install									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	3.875	ACRES	$ -	$ -	$ 355,000	$ 1,375,625	$ 355,000	**$ 1,375,625**
1.2	Station stone within substation fence.	1,650	CY	$ 27	$ 44,550	$ 75	$ 123,750	$ 102	**$ 168,300**
1.3	Substation Fence	1,660	LF	$ 100	$ 166,000	$ 100	$ 166,000	$ 200	**$ 332,000**
1.4									
1.5									
1.6	Permanent Access Road - 20'-Wide	275	LF	$ 35	$ 9,625	$ 285	$ 78,375	$ 320	**$ 88,000**
1.7	Pavement	3,373	SY	$ -	$ -	$ 55	$ 185,515	$ 55	**$ 185,515**
1.8	Gates	1	EA	$ 2,000	$ 2,000	$ 2,500	$ 2,500	$ 4,500	**$ 4,500**
1.9	Culverts / Misc. Access	2	EA	$ 750	$ 1,500	$ 1,250	$ 2,500	$ 2,000	**$ 4,000**
1.10	Concrete Washout Station	1	EA	$ -	$ -	$ 1,850	$ 1,850	$ 1,850	**$ 1,850**
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ 223,675		$ 1,936,115		$ 2,159,790
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	3	EA	$ 14,940	$ 44,820	$ 16,000	$ 48,000	$ 30,940	**$ 92,820**
2.1b	Capacitor Bank Foundations	0	EA	$ 56,025	$ -	$ 60,000	$ -	$ 116,025	**$ -**
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	16	EA	$ 26,145	$ 418,320	$ 28,000	$ 448,000	$ 54,145	**$ 866,320**
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 26,145	$ -	$ 28,000	$ -	$ 54,145	**$ -**
2.1e	Switch Stand Foundations	72	EA	$ 4,482	$ 322,704	$ 4,800	$ 345,600	$ 9,282	**$ 668,304**
2.1f	Station Service Transformer Stand Foundation	4	EA	$ 4,482	$ 17,928	$ 4,800	$ 19,200	$ 9,282	**$ 37,128**
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1h	Bus Support 1 Ph Foundations	72	EA	$ 4,482	$ 322,704	$ 4,800	$ 345,600	$ 9,282	**$ 668,304**
2.1j	Instrument Transformer Stand Foundations	27	EA	$ 4,482	$ 121,014	$ 4,800	$ 129,600	$ 9,282	**$ 250,614**
2.1k	Arrester Stand Foundations	9	EA	$ 4,482	$ 40,338	$ 4,800	$ 43,200	$ 9,282	**$ 83,538**
2.1m	Wave Trap Stand Foundations	3	EA	$ 4,482	$ 13,446	$ 4,800	$ 14,400	$ 9,282	**$ 27,846**
2.1n	Reactor Foundations	0	EA	$ 7,470	$ -	$ 8,000	$ -	$ 15,470	**$ -**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.1p	Misc. Structure Foundations		EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1q									
2.2	**230kV**								
2.2a	Circuit Breaker Foundations		EA	$ 11,952	$ -	$ 12,800	$ -	$ 24,752	$ -
2.2b	Capacitor Bank Foundations		EA	$ 44,820	$ -	$ 48,000	$ -	$ 92,820	$ -
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)		EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	$ -
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)		EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	$ -
2.2e	Switch Stand Foundations		EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2f	Station Service Transformer Stand Foundation		EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2g	Bus Support 3ph Foundations		EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2h	Bus Support 1 Ph Foundations		EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2j	Instrument Transformer Stand Foundations		EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2k	Arrester Stand Foundations		EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2m	Wave Trap Stand Foundations		EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2n	Misc. Structure Foundations		EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2p									
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	0	EA	$ 5,229	$ -	$ 5,600	$ -	$ 10,829	$ -
2.3b	Capacitor Bank Foundations	0	EA	$ 33,615	$ -	$ 36,000	$ -	$ 69,615	$ -
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	8	EA	$ 16,434	$ 131,472	$ 17,600	$ 140,800	$ 34,034	**$ 272,272**
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	$ -
2.3e	Switch Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3f	Fuse Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3g	Bus Support 3ph Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3h	Bus Support 1 Ph Foundations	6	EA	$ 2,988	$ 17,928	$ 3,200	$ 19,200	$ 6,188	**$ 37,128**
2.3j	Instrument Transformer Stand Foundations	6	EA	$ 2,988	$ 17,928	$ 3,200	$ 19,200	$ 6,188	**$ 37,128**
2.3k	Arrester Stand Foundations	6	EA	$ 2,988	$ 17,928	$ 3,200	$ 19,200	$ 6,188	**$ 37,128**
2.3m	Wave Trap Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment	0	EA	$ 97,110	$ -	$ 104,000	$ -	$ 201,110	$ -
2.4b	345-115kV Transformer Foundation w/ Oil Containment	0	EA	$ 74,700	$ -	$ 80,000	$ -	$ 154,700	$ -
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad	1	EA	$ 44,260	$ 44,260	$ 47,400	$ 47,400	$ 91,660	**$ 91,660**
2.5b	Generator Foundation	1	EA	$ 16,000	$ 16,000	$ 17,000	$ 17,000	$ 33,000	**$ 33,000**
2.5c	Station Service Distribution Line - 3ph.	1	LS	$ -	$ -	$ 9,750	$ 9,750	$ 9,750	**$ 9,750**
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	5	EA	$ 5,229	$ 26,145	$ 5,600	$ 28,000	$ 10,829	**$ 54,145**
2.6b				$ -	$ -	$ -	$ -	$ -	$ -
2.6c				$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION FOUNDATIONS					$ 1,572,935		$ 1,694,150		$ 3,267,085
3. SUBSTATION STRUCTURES									
3.1	**345kV**								

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.1a	Substation A-Frame Structures - Stand alone	4	EA	$ 37,000	$ 148,000	$ 37,000	$ 148,000	$ 74,000	**$ 296,000**
3.1b	Substation A-Frame Structures - Shared Column	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	**$ -**
3.1c	Switch Stands	12	EA	$ 14,800	$ 177,600	$ 14,800	$ 177,600	$ 29,600	**$ 355,200**
3.1d	Station Service Transformer Stand	1	EA	$ 14,800	$ 14,800	$ 14,800	$ 14,800	$ 29,600	**$ 29,600**
3.1e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.1f	Bus Support 1 Ph	72	EA	$ 3,700	$ 266,400	$ 3,700	$ 266,400	$ 7,400	**$ 532,800**
3.1g	Instrument Transformer Stand	27	EA	$ 1,850	$ 49,950	$ 1,850	$ 49,950	$ 3,700	**$ 99,900**
3.1h	Arrester Stand	9	EA	$ 1,850	$ 16,650	$ 1,850	$ 16,650	$ 3,700	**$ 33,300**
3.1j	Wave Trap Stand	3	EA	$ 7,400	$ 22,200	$ 7,400	$ 22,200	$ 14,800	**$ 44,400**
3.1k	Lightning Mast - 70'	5	EA	$ 6,475	$ 32,375	$ 6,475	$ 32,375	$ 12,950	**$ 64,750**
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	**$ -**
3.2b	Substation A-Frame Structures - Shared Column	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	**$ -**
3.2c	Switch Stands	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	**$ -**
3.2d	Station Service Transformer Stand	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	**$ -**
3.2e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.2f	Bus Support 1 Ph	0	EA	$ 2,775	$ -	$ 2,775	$ -	$ 5,550	**$ -**
3.2g	Instrument Transformer Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	**$ -**
3.2h	Arrester Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	**$ -**
3.2j	Wave Trap Stand	0	EA	$ 5,550	$ -	$ 5,550	$ -	$ 11,100	**$ -**
3.2k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	**$ -**
3.3	**115kV**								
3.3a	Substation A-Frame Structures - Stand alone	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	**$ -**
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	**$ -**
3.3c	Switch Stands	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	**$ -**
3.3d	Fuse Stand	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	**$ -**
3.3e	Bus Support 3ph	0	EA	$ 3,330	$ -	$ 3,330	$ -	$ 6,660	**$ -**
3.3f	Bus Support 1 Ph	0	EA	$ 1,850	$ -	$ 1,850	$ -	$ 3,700	**$ -**
3.3g	Instrument Transformer Stand	0	EA	$ 740	$ -	$ 740	$ -	$ 1,480	**$ -**
3.3h	Arrester Stand	0	EA	$ 740	$ -	$ 740	$ -	$ 1,480	**$ -**
3.3j	Wave Trap Stand	0	EA	$ 3,700	$ -	$ 3,700	$ -	$ 7,400	**$ -**
3.3k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	**$ -**
TOTAL - SUBSTATION STRUCTURES					$ 727,975		$ 727,975		$ 1,455,950
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	3	EA	$ 200,000	$ 600,000	$ 80,000	$ 240,000	$ 280,000	**$ 840,000**
4.1b	Capacitor Banks with Reactors	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	**$ -**
4.1c									
4.1d									
4.1e									
4.2	**230kV**								
4.2a	Circuit Breakers	0	EA	$ 115,000	$ -	$ 80,000	$ -	$ 195,000	**$ -**
4.2b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	**$ -**
4.3	**115kV**								
4.3a	Circuit Breakers	0	EA	$ 52,000	$ -	$ 60,000	$ -	$ 112,000	**$ -**
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ 60,000	$ -	$ 60,000	**$ -**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
TOTAL - MAJOR EQUIPTMENT					$ 600,000		$ 240,000		$ 840,000
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator	3	EA	$ 40,000	$ 120,000	$ 15,000	$ 45,000	$ 55,000	**$ 165,000**
5.1b	Disconnect Switches - 3ph w/ manual operator	6	EA	$ 35,000	$ 210,000	$ 17,500	$ 105,000	$ 52,500	**$ 315,000**
5.1c	VT'S	9	EA	$ 25,000	$ 225,000	$ 12,000	$ 108,000	$ 37,000	**$ 333,000**
5.1d	CT'S	9	EA	$ 13,000	$ 117,000	$ 8,000	$ 72,000	$ 21,000	**$ 189,000**
5.1e	CCVT'S	9	EA	$ 13,000	$ 117,000	$ 8,000	$ 72,000	$ 21,000	**$ 189,000**
5.1f	Arresters	9	EA	$ 6,500	$ 58,500	$ 1,500	$ 13,500	$ 8,000	**$ 72,000**
5.1g	Wave Traps	3	EA	$ 13,000	$ 39,000	$ 8,000	$ 24,000	$ 21,000	**$ 63,000**
5.1h	Station Service Transformers	1	EA	$ 200,000	$ 200,000	$ 50,000	$ 50,000	$ 250,000	**$ 250,000**
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator	0	EA	$ 35,000	$ -	$ 15,000	$ -	$ 50,000	**$ -**
5.2b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 30,000	$ -	$ 17,500	$ -	$ 47,500	**$ -**
5.2c	VT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	**$ -**
5.2d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	**$ -**
5.2e	CCVT'S	0	EA	$ 10,000	$ -	$ 6,000	$ -	$ 16,000	**$ -**
5.2f	Arresters	0	EA	$ 5,000	$ -	$ 6,000	$ -	$ 11,000	**$ -**
5.2g	Wave Traps	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	**$ -**
5.2h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	0	EA	$ 33,000	$ -	$ 15,000	$ -	$ 48,000	**$ -**
5.3b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 28,000	$ -	$ 17,500	$ -	$ 45,500	**$ -**
5.3c	VT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	**$ -**
5.3d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	**$ -**
5.3e	CCVT'S	0	EA	$ 8,000	$ -	$ 8,000	$ -	$ 16,000	**$ -**
5.3f	Arresters	0	EA	$ 3,420	$ -	$ 6,000	$ -	$ 9,420	**$ -**
5.3g	Wave Traps	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.3h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.3j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ 1,086,500		$ 489,500		$ 1,576,000
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE	1	EA	$ 409,500	$ 409,500	$ 95,000	$ 95,000	$ 504,500	**$ 504,500**
6.2	Protection and Telecom Equipment Panels	17	EA	$ 35,000	$ 595,000	$ 10,000	$ 170,000	$ 45,000	**$ 765,000**
6.3	125VDC Batteries	2	EA	$ 75,000	$ 150,000	$ 25,000	$ 50,000	$ 100,000	**$ 200,000**
6.4	Control Cables	1	LS	$ 317,625	$ 317,625	$ 317,625	$ 317,625	$ 635,250	**$ 635,250**
6.5	SCADA and Communications	1	EA	$ 50,000	$ 50,000	$ 100,000	$ 100,000	$ 150,000	**$ 150,000**
6.6	Low Voltage AC Distribution	2	EA	$ 50,000	$ 100,000	$ 100,000	$ 200,000	$ 150,000	**$ 300,000**
6.7	DC Distribution System	2	EA	$ 50,000	$ 100,000	$ 100,000	$ 200,000	$ 150,000	**$ 300,000**
6.8	Security	1	EA	$ 7,500	$ 7,500	$ 7,500	$ 7,500	$ 15,000	**$ 15,000**
6.9	Fire Alarm	1	EA	$ 7,500	$ 7,500	$ 7,500	$ 7,500	$ 15,000	**$ 15,000**
6.10	Generator	1	EA	$ 100,000	$ 100,000	$ 80,000	$ 80,000	$ 180,000	**$ 180,000**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ 1,837,125		$ 1,227,625		**$ 3,064,750**
7. MISC ITEMS									
7.1	Conduit & Cable Trench System	1,050	LF	$ 185.00	$ 194,250	$ 170.00	$ 178,500	$ 355	**$ 372,750**
7.2	Rigid Bus, Fittings & Insulators	1,900	LF	$ 125.07	$ 237,633	$ 237.10	$ 450,490	$ 362	**$ 688,123**
7.3	Strain Bus, Connectors & Insulators	1,000	LF	$ 39.30	$ 39,300	$ 53.35	$ 53,350	$ 93	**$ 92,650**
7.4	Grounding System	16,500	LF	$ 6.93	$ 114,345	$ 32.58	$ 537,570	$ 40	**$ 651,915**
7.5	Strain Bus Insulators - 345kV	38	EA	$ 2,000	$ 76,000	$ 1,050	$ 39,900	$ 3,050	**$ 115,900**
7.6	Strain Bus Insulators - 230kV	0	EA	$ 1,400	$ -	$ 750	$ -	$ 2,150	**$ -**
7.7	Strain Bus Insulators - 115kV	0	EA	$ 1,000	$ -	$ 550	$ -	$ 1,550	**$ -**
7.8	Low Voltage AC Station Service	1	LS	$ 50,000	$ 50,000	$ 75,000	$ 75,000	$ 125,000	**$ 125,000**
7.9	SSVT Service	1	LS	$ 45,000	$ 45,000	$ 45,000	$ 45,000	$ 90,000	**$ 90,000**
7.10	Control Conduits from Trench to Equipment	1	LS	$ 125,000	$ 125,000	$ 125,000	$ 125,000	$ 250,000	**$ 250,000**
7.11	Misc. Materials (Above and Below Ground)	1	LS	$ 180,000	$ 180,000	$ 180,000	$ 180,000	$ 360,000	**$ 360,000**
7.12									
7.13									
7.14									
7.15									
7.16									
7.17									
7.18									
7.19									
7.20									
7.21									
7.22									
7.23									
7.24									
7.25									
TOTAL - MISC ITEMS					$ 1,061,528		$ 1,684,810		$ 2,746,338
D. Knickerbocker 345kV Substation - Install					$ 7,109,738		$ 8,000,175		**$ 15,109,913**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1.0	LS	$ -	$ -	$ 151,099	$ 151,099	$ 151,099	**$ 151,099**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 939,368	$ 939,368	$ 939,368	**$ 939,368**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 151,099	$ 151,099	$ 151,099	**$ 151,099**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 151,099	$ 151,099	$ 151,099	**$ 151,099**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 1,208,793	$ 1,208,793	$ 1,208,793	**$ 1,208,793**
8.6	LiDAR	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.7	Geotech	4	EA	$ -	$ -	$ 3,500	$ 14,000	$ 3,500	**$ 14,000**
8.8	Surveying/Staking	1	Site	$ -	$ -	$ 105,769	$ 105,769	$ 105,769	**$ 105,769**
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 377,748	$ 377,748	$ 377,748	**$ 377,748**
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 45,330	$ 45,330	$ 45,330	**$ 45,330**
8.13	Real Estate Costs (New)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.14	Real Estate Costs (Incumbent Utility)	1	LS	$ -	$ -	$ 280,000	$ 280,000	$ 280,000	**$ 280,000**
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.18	Sales Tax on Materials	1	LS	$ 568,779	$ 568,779	$ -	$ -	$ 568,779	**$ 568,779**
8.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 15,110	$ 15,110	$ 15,110	**$ 15,110**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 568,779		$ 3,439,415		**$ 4,008,194**

NextEra T022 (Segment B) — **E. Greenbush Substation - Removal**

Estimate Revision: 8 — **Total: $ 72,410**

NextEra T022 (Segment B)	*Supply*	*Installation*	*Total*
E. Greenbush Substation - Removal			
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ -	$ -	$ -
2. SUBSTATION FOUNDATIONS	$ -	$ 12,000	$ 12,000
3. SUBSTATION STRUCTURES	$ -	$ -	$ -
4. MAJOR EQUIPTMENT	$ -	$ 7,000	$ 7,000
5. SMALL EQUIPTMENT / MATERIALS	$ -	$ 35,000	$ 35,000
6. CONTROL HOUSE / PANELS	$ -	$ 7,200	$ 7,200
7. MISC ITEMS	$ -	$ -	$ -
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ -	$ 11,210	$ 11,210
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ -	$ 72,410	$ 72,410
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ -	$ 72,410	$ 72,410

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
E. Greenbush Substation - Removal									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	0	ACRES	$ -	$ -	$ 203,000	$ -	$ 203,000	$ -
1.2	Station stone within substation fence.	0	CY	$ -	$ -	$ 75	$ -	$ 75	$ -
1.3	Substation Fence	0	LF	$ -	$ -	$ 150	$ -	$ 150	$ -
1.4									
1.5									
1.6									
1.7									
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ -		$ -		$ -
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	0	EA	$ -	$ -	$ 14,200	$ -	$ 14,200	$ -
2.1b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1e	Switch Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1f	Station Service Transformer Stand Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.1j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1k	Arrester Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1p									
2.2	**230kV**								
2.2a	Circuit Breaker Foundations	0	EA	$ -	$ -	$ 7,200	$ -	$ 7,200	$ -
2.2b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ 32,000	$ -	$ 32,000	$ -
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ 22,000	$ -	$ 22,000	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ 11,000	$ -	$ 11,000	$ -
2.2e	Switch Stand Foundations	0	EA	$ -	$ -	$ 5,200	$ -	$ 5,200	$ -
2.2f	Station Service Transformer Stand Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.2j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.2k	Arrester Stand Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.2m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2p									
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	1	EA	$ -	$ -	$ 7,200	$ 7,200	$ 7,200	**$ 7,200**
2.3b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3e	Switch Stand Foundations	0	EA	$ -	$ -	$ 5,200	$ -	$ 5,200	$ -
2.3f	Fuse Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3j	Instrument Transformer Stand Foundations	2	EA	$ -	$ -	$ 2,400	$ 4,800	$ 2,400	**$ 4,800**
2.3k	Arrester Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4b	345-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ 42,000	$ -	$ 42,000	$ -
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5b	Generator Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6b		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6c		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION FOUNDATIONS					$ -		$ 12,000		$ 12,000
3. SUBSTATION STRUCTURES									
3.1	**345kV**								
3.1a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1c	Switch Stands	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1d	Station Service Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1f	Bus Support 1 Ph	0	EA	$ -	$ -	$ 2,250	$ -	$ 2,250	$ -
3.1g	Instrument Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1h	Arrester Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1j	Wave Trap Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ 27,000	$ -	$ 27,000	$ -
3.2b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ 27,000	$ -	$ 27,000	$ -
3.2c	Switch Stands	0	EA	$ -	$ -	$ 9,750	$ -	$ 9,750	$ -
3.2d	Station Service Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2f	Bus Support 1 Ph	0	EA	$ -	$ -	$ 2,250	$ -	$ 2,250	$ -
3.2g	Instrument Transformer Stand	0	EA	$ -	$ -	$ 1,050	$ -	$ 1,050	$ -
3.2h	Arrester Stand	0	EA	$ -	$ -	$ 1,050	$ -	$ 1,050	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.2j	Wave Trap Stand	0	EA	$ -	$ -	$ 4,500	$ -	$ 4,500	$ -
3.2k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3	**115kV**								
3.3a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ 15,000	$ -	$ 15,000	$ -
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3c	Switch Stands	0	EA	$ -	$ -	$ 6,450	$ -	$ 6,450	$ -
3.3d	Fuse Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3f	Bus Support 1 Ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3g	Instrument Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3h	Arrester Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3j	Wave Trap Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION STRUCTURES					$ -		$ -		$ -
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.1b	Capacitor Banks	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.1c		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.1d									
4.2	**230kV**								
4.2a	Circuit Breakers	0	EA	$ -	$ -	$ 7,000	$ -	$ 7,000	$ -
4.2b	Capacitor Banks	0	EA	$ -	$ -	$ 42,000	$ -	$ 42,000	$ -
4.3	**115kV**								
4.3a	Circuit Breakers	1	EA	$ -	$ -	$ 7,000	$ 7,000	$ 7,000	**$ 7,000**
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - MAJOR EQUIPTMENT					$ -		$ 7,000		$ 7,000
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.1b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.1c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.1d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.1e	CCVT'S	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.1f	Arresters	0	EA	$ -	$ -	$ 1,500	$ -	$ 1,500	$ -
5.1g	Wave Traps	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.1h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.1j									
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.2b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.2c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2e	CCVT'S	0	EA	$ -	$ -	$ 1,500	$ -	$ 1,500	$ -
5.2f	Arresters	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.2g	Wave Traps	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.2h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2j									
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.3c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3e	CCVT'S	2	EA	$ -	$ -	$ 17,500	$ 35,000	$ 17,500	**$ 35,000**
5.3f	Arresters	0	EA	$ -	$ -	$ 1,500	$ -	$ 1,500	$ -
5.3g	Wave Traps	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ -		$ 35,000		$ 35,000
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE	0	EA	$ -	$ -	$ 150,000	$ -	$ 150,000	**$ -**
6.2	Protection and Telecom Equipment Panels	2	EA	$ -	$ -	$ 3,600	$ 7,200	$ 3,600	**$ 7,200**
6.3	125VDC Batteries	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.4	Control Cables	0	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.5	SCADA and Communications	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.6	Low Voltage AC Distribution	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.7	DC Distribution System	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.8	Security	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.9	Fire Alarm	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.10	Generator	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ -		$ 7,200		**$ 7,200**
7. MISC ITEMS									
7.1	Conduit & Cable Trench System	0	EA	$ -	$ -	$ 42,000.00	$ -	$ 42,000	**$ -**
7.2	Rigid Bus, Fittings & Insulators	0	EA	$ -	$ -	$ 126.25	$ -	$ 126	**$ -**
7.3	Strain Bus, Connectors & Insulators	0	LS	$ -	$ -	$ 21,000.00	$ -	$ 21,000	**$ -**
7.4	Grounding System	0	EA	$ -	$ -	$ 42,000.00	$ -	$ 42,000	**$ -**
7.5									
7.6									
7.7									
7.8									
7.9									
7.10									
7.11									
7.12									
7.13									
7.14									
7.15									
TOTAL - MISC ITEMS					$ -		$ -		$ -
E. Greenbush Substation - Removal					$ -		$ 61,200		**$ 61,200**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1	LS	$ -	$ -	$ 612	$ 612	$ 612	**$ 612**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 3,805	$ 3,805	$ 3,805	**$ 3,805**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 612	$ 612	$ 612	**$ 612**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 612	$ 612	$ 612	**$ 612**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 4,896	$ 4,896	$ 4,896	**$ 4,896**
8.6	LiDAR	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.7	Geotech	-	EA	$ -	$ -	$ 3,500	$ -	$ 3,500	**$ -**
8.8	Surveying/Staking	1	Site	$ -	$ -	$ 428	$ 428	$ 428	**$ 428**
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 184	$ 184	$ 184	**$ 184**
8.13	Real Estate Costs (New)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.14	Real Estate Costs (Incumbent Utility)	-	LS	$ -	$ -	$ 280,000	$ -	$ 280,000	**$ -**
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.17	Carrying Charges	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.18	Sales Tax on Materials	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 61	$ 61	$ 61	**$ 61**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ -		$ 11,210		**$ 11,210**

NextEra T022 (Segment B) — **H. North Churchtown Substation - Install**

Estimate Revision: 8 — **Total: $ 18,595,643**

NextEra T022 (Segment B)	*Supply*	*Installation*	*Total*
H. North Churchtown Substation - Install			
1. SITE PREP/ GRADING/ FENCING / CIVIL	**$ 941,645**	**$ 2,992,813**	**$ 3,934,458**
2. SUBSTATION FOUNDATIONS	**$ 1,001,293**	**$ 1,078,700**	**$ 2,079,993**
3. SUBSTATION STRUCTURES	**$ 260,000**	**$ 432,345**	**$ 864,690**
4. MAJOR EQUIPTMENT	**$ 260,000**	**$ 300,000**	**$ 560,000**
5. SMALL EQUIPTMENT / MATERIALS	**$ 1,168,800**	**$ 785,800**	**$ 1,954,600**
6. CONTROL HOUSE / PANELS	**$ 1,962,850**	**$ 1,310,350**	**$ 3,273,200**
7. MISC ITEMS	**$ 972,988**	**$ 1,257,365**	**$ 2,230,353**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	**$ 539,194**	**$ 3,159,155**	**$ 3,698,349**
CONTRACTOR MARK-UP (OH&P)	**$ -**	**$ -**	**$ -**
SUBTOTAL:	**$ 7,106,770**	**$ 11,316,528**	**$ 18,595,643**
CONTINGENCY ON ENTIRE PROJECT	**$ -**	**$ -**	**$ -**
TOTAL:	**$ 7,106,770**	**$ 11,316,528**	**$ 18,595,643**

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
H. North Churchtown Substation - Install									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	2.125	ACRES	$ -	$ -	$ 660,000	$ 1,402,500	$ 660,000	**$ 1,402,500**
1.2	Station stone within substation fence.	1,000	CY	$ 27	$ 27,000	$ 75	$ 75,000	$ 102	**$ 102,000**
1.3	Substation Fence	1,100	LF	$ 100	$ 110,000	$ 100	$ 110,000	$ 200	**$ 220,000**
1.4	Permanent Access Road - 20'-Wide	740	LF	$ 35	$ 25,900	$ 285	$ 210,900	$ 320	**$ 236,800**
1.5	Retaining Wall (1035' x Avg. of 7.15')	1	LS	$ 313,823	$ 313,823	$ 485,213	$ 485,213	$ 799,036	**$ 799,036**
1.6	Compacted Fill (Sand)	27,143	CY	$ 17	$ 461,423	$ 20	$ 542,850	$ 37	**$ 1,004,273**
1.7									
1.8	Pavement	2,900	SY	$ -	$ -	$ 55	$ 159,500	$ 55	**$ 159,500**
1.9	Gates	1	EA	$ 2,000	$ 2,000	$ 2,500	$ 2,500	$ 4,500	**$ 4,500**
1.10	Culverts / Misc. Access	2	EA	$ 750	$ 1,500	$ 1,250	$ 2,500	$ 2,000	**$ 4,000**
1.11	Concrete Washout Station	1	EA	$ -	$ -	$ 1,850	$ 1,850	$ 1,850	**$ 1,850**
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ 941,645		$ 2,992,813		$ 3,934,458
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	0	EA	$ 14,940	$ -	$ 16,000	$ -	$ 30,940	**$ -**
2.1b	Capacitor Bank Foundations	0	EA	$ 56,025	$ -	$ 60,000	$ -	$ 116,025	**$ -**
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 26,145	$ -	$ 28,000	$ -	$ 54,145	**$ -**
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 26,145	$ -	$ 28,000	$ -	$ 54,145	**$ -**
2.1e	Switch Stand Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	**$ -**
2.1f	Station Service Transformer Stand Foundation	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	**$ -**
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1h	Bus Support 1 Ph Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	**$ -**
2.1j	Instrument Transformer Stand Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	**$ -**
2.1k	Arrester Stand Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	**$ -**
2.1m	Wave Trap Stand Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	**$ -**
2.1n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1p									
2.2	**230kV**								
2.2a	Circuit Breaker Foundations	0	EA	$ 11,952	$ -	$ 12,800	$ -	$ 24,752	**$ -**
2.2b	Capacitor Bank Foundations	0	EA	$ 44,820	$ -	$ 48,000	$ -	$ 92,820	**$ -**
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	**$ -**
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	**$ -**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.2e	Switch Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2f	Station Service Transformer Stand Foundation	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2h	Bus Support 1 Ph Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2j	Instrument Transformer Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2k	Arrester Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2m	Wave Trap Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2p									
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	5	EA	$ 5,229	$ 26,145	$ 5,600	$ 28,000	$ 10,829	**$ 54,145**
2.3b	Capacitor Bank Foundations	0	EA	$ 33,615	$ -	$ 36,000	$ -	$ 69,615	$ -
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	8	EA	$ 16,434	$ 131,472	$ 17,600	$ 140,800	$ 34,034	**$ 272,272**
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	24	EA	$ 16,434	$ 394,416	$ 17,600	$ 422,400	$ 34,034	**$ 816,816**
2.3e	Switch Stand Foundations	28	EA	$ 2,988	$ 83,664	$ 3,200	$ 89,600	$ 6,188	**$ 173,264**
2.3f	Fuse Stand Foundations	2	EA	$ 2,988	$ 5,976	$ 3,200	$ 6,400	$ 6,188	**$ 12,376**
2.3g	Bus Support 3ph Foundations	14	EA	$ 2,988	$ 41,832	$ 3,200	$ 44,800	$ 6,188	**$ 86,632**
2.3h	Bus Support 1 Ph Foundations	15	EA	$ 2,988	$ 44,820	$ 3,200	$ 48,000	$ 6,188	**$ 92,820**
2.3j	Instrument Transformer Stand Foundations	45	EA	$ 2,988	$ 134,460	$ 3,200	$ 144,000	$ 6,188	**$ 278,460**
2.3k	Arrester Stand Foundations	15	EA	$ 2,988	$ 44,820	$ 3,200	$ 48,000	$ 6,188	**$ 92,820**
2.3m	Wave Trap Stand Foundations	10	EA	$ 2,988	$ 29,880	$ 3,200	$ 32,000	$ 6,188	**$ 61,880**
2.3n	Station Service Foundations	1	EA	$ 3,735	$ 3,735	$ 4,000	$ 4,000	$ 7,735	**$ 7,735**
2.3p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment	0	EA	$ 97,110	$ -	$ 104,000	$ -	$ 201,110	$ -
2.4b	345-115kV Transformer Foundation w/ Oil Containment	0	EA	$ 74,700	$ -	$ 80,000	$ -	$ 154,700	$ -
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad	1	EA	$ 33,615	$ 33,615	$ 36,000	$ 36,000	$ 69,615	**$ 69,615**
2.5b	Generator Foundation	1	EA	$ 16,000	$ 16,000	$ 17,000	$ 17,000	$ 33,000	**$ 33,000**
2.5c	Station Service Distribution Line - 1ph.	1	LS	$ -	$ -	$ 6,500	$ 6,500	$ 6,500	**$ 6,500**
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	2	EA	$ 5,229	$ 10,458	$ 5,600	$ 11,200	$ 10,829	**$ 21,658**
2.6b		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6c		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION FOUNDATIONS					$ 1,001,293		$ 1,078,700		$ 2,079,993
3. SUBSTATION STRUCTURES									
3.1	**345kV**								
3.1a	Substation A-Frame Structures - Stand alone	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	$ -
3.1b	Substation A-Frame Structures - Shared Column	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	$ -
3.1c	Switch Stands	0	EA	$ 14,800	$ -	$ 14,800	$ -	$ 29,600	$ -
3.1d	Station Service Transformer Stand	0	EA	$ 14,800	$ -	$ 14,800	$ -	$ 29,600	$ -
3.1e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1f	Bus Support 1 Ph	0	EA	$ 3,700	$ -	$ 3,700	$ -	$ 7,400	$ -
3.1g	Instrument Transformer Stand	0	EA	$ 1,850	$ -	$ 1,850	$ -	$ 3,700	$ -
3.1h	Arrester Stand	0	EA	$ 1,850	$ -	$ 1,850	$ -	$ 3,700	$ -
3.1j	Wave Trap Stand	0	EA	$ 7,400	$ -	$ 7,400	$ -	$ 14,800	$ -
3.1k	Lightning Masts - 70'	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	$ -
3.2b	Substation A-Frame Structures - Shared Column	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	$ -
3.2c	Switch Stands	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	$ -
3.2d	Station Service Transformer Stand	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	$ -
3.2e	Bus Support 3ph	0	EA	$ -	$ -	$ 1,078,700	$ -	$ 1,078,700	$ -
3.2f	Bus Support 1 Ph	0	EA	$ 2,775	$ -	$ 2,775	$ -	$ 5,550	$ -
3.2g	Instrument Transformer Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	$ -
3.2h	Arrester Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	$ -
3.2j	Wave Trap Stand	0	EA	$ 5,550	$ -	$ 5,550	$ -	$ 11,100	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.2k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
3.3	**115kV**								
3.3a	Substation A-Frame Structures - Stand alone	2	EA	$ 18,500	$ 37,000	$ 18,500	$ 37,000	$ 37,000	**$ 74,000**
3.3b	Substation A-Frame Structures - Shared Column	8	EA	$ 18,500	$ 148,000	$ 18,500	$ 148,000	$ 37,000	**$ 296,000**
3.3c	Switch Stands	14	EA	$ 7,955	$ 111,370	$ 7,955	$ 111,370	$ 15,910	**$ 222,740**
3.3d	Fuse Stand	1	EA	$ 7,955	$ 7,955	$ 7,955	$ 7,955	$ 15,910	**$ 15,910**
3.3e	Bus Support 3ph	7	EA	$ 3,330	$ 23,310	$ 3,330	$ 23,310	$ 6,660	**$ 46,620**
3.3f	Bus Support 1 Ph	15	EA	$ 1,850	$ 27,750	$ 1,850	$ 27,750	$ 3,700	**$ 55,500**
3.3g	Instrument Transformer Stand	45	EA	$ 740	$ 33,300	$ 740	$ 33,300	$ 1,480	**$ 66,600**
3.3h	Arrester Stand	15	EA	$ 740	$ 11,100	$ 740	$ 11,100	$ 1,480	**$ 22,200**
3.3j	Wave Trap Stand	5	EA	$ 3,700	$ 18,500	$ 3,700	$ 18,500	$ 7,400	**$ 37,000**
3.3k	Lightning Mast	2	EA	$ 6,475	$ 12,950	$ 6,475	$ 12,950	$ 12,950	**$ 25,900**
3.3l	Station Service Transformer Support Stand	1	EA	$ 1,110	$ 1,110	$ 1,110	$ 1,110	$ 2,220	**$ 2,220**
TOTAL - SUBSTATION STRUCTURES					$ 432,345		$ 432,345		$ 864,690
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	0	EA	$ 200,000	$ -	$ 80,000	$ -	$ 280,000	$ -
4.1b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	$ -
4.1c	345 kV - 230 kV Auto Transformer	0	EA	$ -	$ -	$ 750,000	$ -	$ 750,000	$ -
4.1d	345 kV - 115 kV Auto Transformer	0	EA	$ -	$ -	$ 750,000	$ -	$ 750,000	$ -
4.2	**230kV**								
4.2a	Circuit Breakers	0	EA	$ 115,000	$ -	$ 80,000	$ -	$ 195,000	$ -
4.2b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	$ -
4.3	**115kV**								
4.3a	Circuit Breakers	5	EA	$ 52,000	$ 260,000	$ 60,000	$ 300,000	$ 112,000	**$ 560,000**
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ 60,000	$ -	$ 60,000	$ -
TOTAL - MAJOR EQUIPTMENT					$ 260,000		$ 300,000		$ 560,000
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator	0	EA	$ 40,000	$ -	$ 15,000	$ -	$ 55,000	$ -
5.1b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 35,000	$ -	$ 17,500	$ -	$ 52,500	$ -
5.1c	VT'S	0	EA	$ 25,000	$ -	$ 12,000	$ -	$ 37,000	$ -
5.1d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.1e	CCVT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.1f	Arresters	0	EA	$ 6,500	$ -	$ 1,500	$ -	$ 8,000	$ -
5.1g	Wave Traps	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.1h	Station Service Transformers	0	EA	$ 200,000	$ -	$ 50,000	$ -	$ 250,000	$ -
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator	0	EA	$ 35,000	$ -	$ 15,000	$ -	$ 50,000	$ -
5.2b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 30,000	$ -	$ 17,500	$ -	$ 47,500	$ -
5.2c	VT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2e	CCVT'S	0	EA	$ 10,000	$ -	$ 6,000	$ -	$ 16,000	$ -
5.2f	Arresters	0	EA	$ 5,000	$ -	$ 6,000	$ -	$ 11,000	$ -
5.2g	Wave Traps	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	5	EA	$ 33,000	$ 165,000	$ 15,000	$ 75,000	$ 48,000	**$ 240,000**
5.3b	Disconnect Switches - 3ph w/ manual operator	10	EA	$ 28,000	$ 280,000	$ 17,500	$ 175,000	$ 45,500	**$ 455,000**
5.3c	VT'S	15	EA	$ 13,000	$ 195,000	$ 8,000	$ 120,000	$ 21,000	**$ 315,000**
5.3d	CT'S	15	EA	$ 13,000	$ 195,000	$ 8,000	$ 120,000	$ 21,000	**$ 315,000**
5.3e	CCVT'S	15	EA	$ 8,000	$ 120,000	$ 8,000	$ 120,000	$ 16,000	**$ 240,000**
5.3f	Arresters	15	EA	$ 3,420	$ 51,300	$ 6,000	$ 90,000	$ 9,420	**$ 141,300**
5.3g	Wave Traps	5	EA	$ 13,000	$ 65,000	$ 8,000	$ 40,000	$ 21,000	**$ 105,000**
5.3h	Station Service Transformers	1	EA	$ 75,000	$ 75,000	$ 35,000	$ 35,000	$ 110,000	**$ 110,000**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
5.3j	Fuses	3	EA	$ 7,500	$ 22,500	$ 3,600	$ 10,800	$ 11,100	**$ 33,300**
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ 1,168,800		$ 785,800		$ 1,954,600
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE	1	EA	$ 292,500	$ 292,500	$ 85,000	$ 85,000	$ 377,500	**$ 377,500**
6.2	Protection and Telecom Equipment Panels	23	EA	$ 35,000	$ 805,000	$ 10,000	$ 230,000	$ 45,000	**$ 1,035,000**
6.3	125VDC Batteries	2	EA	$ 75,000	$ 150,000	$ 25,000	$ 50,000	$ 100,000	**$ 200,000**
6.4	Control Cables	1	LS	$ 350,350	$ 350,350	$ 350,350	$ 350,350	$ 700,700	**$ 700,700**
6.5	SCADA and Communications	1	EA	$ 50,000	$ 50,000	$ 100,000	$ 100,000	$ 150,000	**$ 150,000**
6.6	Low Voltage AC Distribution	2	EA	$ 50,000	$ 100,000	$ 100,000	$ 200,000	$ 150,000	**$ 300,000**
6.7	DC Distribution System	2	EA	$ 50,000	$ 100,000	$ 100,000	$ 200,000	$ 150,000	**$ 300,000**
6.8	Security	1	EA	$ 7,500	$ 7,500	$ 7,500	$ 7,500	$ 15,000	**$ 15,000**
6.9	Fire Alarm	1	EA	$ 7,500	$ 7,500	$ 7,500	$ 7,500	$ 15,000	**$ 15,000**
6.10	Generator	1	EA	$ 100,000	$ 100,000	$ 80,000	$ 80,000	$ 180,000	**$ 180,000**
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ 1,962,850		$ 1,310,350		**$ 3,273,200**
7. MISC ITEMS									
7.1	Conduit & Cable Trench System	1,500.0	LF	$ 185.00	$ 277,500	$ 170.00	$ 255,000	$ 355	**$ 532,500**
7.2	Rigid Bus, Fittings & Insulators	900.0	LF	$ 125.07	$ 112,563	$ 237.10	$ 213,390	$ 362	**$ 325,953**
7.3	Strain Bus, Connectors & Insulators	1,500.0	LF	$ 39.30	$ 58,950	$ 53.35	$ 80,025	$ 93	**$ 138,975**
7.4	Grounding System	7,500.0	LF	$ 6.93	$ 51,975	$ 32.58	$ 244,350	$ 40	**$ 296,325**
7.5	Strain Bus Insulators - 345kV	0	EA	$ 2,000	$ -	$ 1,050	$ -	$ 3,050	**$ -**
7.6	Strain Bus Insulators - 230kV	0	EA	$ 1,400	$ -	$ 750	$ -	$ 2,150	**$ -**
7.7	Strain Bus Insulators - 115kV	72	EA	$ 1,000	$ 72,000	$ 550	$ 39,600	$ 1,550	**$ 111,600**
7.8	Low Voltage AC Station Service	1	LS	$ 50,000	$ 50,000	$ 75,000	$ 75,000	$ 125,000	**$ 125,000**
7.9	SSVT Service	1	LS	$ 45,000	$ 45,000	$ 45,000	$ 45,000	$ 90,000	**$ 90,000**
7.10	Control Conduits from Trench to Equipment	1	LS	$ 125,000	$ 125,000	$ 125,000	$ 125,000	$ 250,000	**$ 250,000**
7.11	Misc. Materials (Above and Below Ground)	1	LS	$ 180,000	$ 180,000	$ 180,000	$ 180,000	$ 360,000	**$ 360,000**
7.12									
7.13									
7.14									
7.15									
7.16									
7.17									
7.18									
7.19									
7.20									
7.21									
7.22									
7.23									
7.24									
7.25									
TOTAL - MISC ITEMS					$ 972,988		$ 1,257,365		$ 2,230,353
H. North Churchtown Substation - Install					$ 6,739,921		$ 8,157,373		**$ 14,897,294**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1.0	LS	$ -	$ -	$ 148,973	$ 148,973	$ 148,973	**$ 148,973**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 926,150	$ 926,150	$ 926,150	**$ 926,150**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 148,973	$ 148,973	$ 148,973	**$ 148,973**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 148,973	$ 148,973	$ 148,973	**$ 148,973**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 1,191,784	$ 1,191,784	$ 1,191,784	**$ 1,191,784**
8.6	LiDAR	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.7	Geotech	4	EA	$ -	$ -	$ 3,500	$ 14,000	$ 3,500	**$ 14,000**
8.8	Surveying/Staking	1	Site	$ -	$ -	$ 104,281	$ 104,281	$ 104,281	**$ 104,281**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 372,432	$ 372,432	$ 372,432	**$ 372,432**
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 44,692	$ 44,692	$ 44,692	**$ 44,692**
8.13	Real Estate Costs (New)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.14	Real Estate Costs (Incumbent Utility)	1	LS	$ -	$ -	$ 44,000	$ 44,000	$ 44,000	**$ 44,000**
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.17	Carrying Charges	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.18	Sales Tax on Materials	1	LS	$ 539,194	$ 539,194	$ -	$ -	$ 539,194	**$ 539,194**
8.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 14,897	$ 14,897	$ 14,897	**$ 14,897**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 539,194		$ 3,159,155		**$ 3,698,349**

NextEra T022 (Segment B) — **J. Pleasant Valley Substation - Install**

Estimate Revision: 8 — **Total: $ 3,526,235**

NextEra T022 (Segment B)	*Supply*	*Installation*	*Total*
J. Pleasant Valley Substation - Install			
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ 11,025	$ 14,625	$ 25,650
2. SUBSTATION FOUNDATIONS	$ 161,177	$ 171,300	$ 332,477
3. SUBSTATION STRUCTURES	$ 44,400	$ 44,400	$ 88,800
4. MAJOR EQUIPTMENT	$ 200,000	$ 80,000	$ 280,000
5. SMALL EQUIPTMENT / MATERIALS	$ 260,500	$ 129,000	$ 389,500
6. CONTROL HOUSE / PANELS	$ 560,900	$ 253,400	$ 814,300
7. MISC ITEMS	$ 409,950	$ 457,275	$ 867,225
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 131,836	$ 596,447	$ 728,283
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 1,779,788	$ 1,746,447	$ 3,526,235
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 1,779,788	$ 1,746,447	$ 3,526,235

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
J. Pleasant Valley Substation - Install									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	0	ACRES	$ -	$ -	$ 230,000	$ -	$ 230,000	$ -
1.2	Station stone within substation fence.	75	CY	$ 27	$ 2,025	$ 75	$ 5,625	$ 102	**$ 7,650**
1.3	Substation Fence	90	LF	$ 100	$ 9,000	$ 100	$ 9,000	$ 200	**$ 18,000**
1.4	Permanent Access Road - 20'-Wide	0	LF	$ 35	$ -	$ 285	$ -	$ 320	$ -
1.5									
1.6									
1.7									
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ 11,025		$ 14,625		$ 25,650
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	1	EA	$ 14,940	$ 14,940	$ 16,000	$ 16,000	$ 30,940	**$ 30,940**
2.1b	Capacitor Bank Foundations	0	EA	$ 56,025	$ -	$ 60,000	$ -	$ 116,025	$ -
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 26,145	$ -	$ 28,000	$ -	$ 54,145	$ -
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 26,145	$ -	$ 28,000	$ -	$ 54,145	$ -
2.1e	Switch Stand Foundations	6	EA	$ 4,482	$ 26,892	$ 4,800	$ 28,800	$ 9,282	**$ 55,692**
2.1f	Station Service Transformer Stand Foundation	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1h	Bus Support 1 Ph Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1j	Instrument Transformer Stand Foundations	9	EA	$ 4,482	$ 40,338	$ 4,800	$ 43,200	$ 9,282	**$ 83,538**
2.1k	Arrester Stand Foundations	3	EA	$ 4,482	$ 13,446	$ 4,800	$ 14,400	$ 9,282	**$ 27,846**
2.1m	Wave Trap Stand Foundations	1	EA	$ 4,482	$ 4,482	$ 4,800	$ 4,800	$ 9,282	**$ 9,282**
2.1n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1p									
2.2	**230kV**								
2.2a	Circuit Breaker Foundations	0	EA	$ 11,952	$ -	$ 12,800	$ -	$ 24,752	$ -
2.2b	Capacitor Bank Foundations	0	EA	$ 44,820	$ -	$ 48,000	$ -	$ 92,820	$ -
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	$ -
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	$ -
2.2e	Switch Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2f	Station Service Transformer Stand Foundation	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.2g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2h	Bus Support 1 Ph Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2j	Instrument Transformer Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2k	Arrester Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2m	Wave Trap Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2p									
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	0	EA	$ 5,229	$ -	$ 5,600	$ -	$ 10,829	$ -
2.3b	Capacitor Bank Foundations	0	EA	$ 33,615	$ -	$ 36,000	$ -	$ 69,615	$ -
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	$ -
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	$ -
2.3e	Switch Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3f	Fuse Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3g	Bus Support 3ph Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3h	Bus Support 1 Ph Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3j	Instrument Transformer Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3k	Arrester Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3m	Wave Trap Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3p									
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment	0	EA	$ 97,110	$ -	$ 104,000	$ -	$ 201,110	$ -
2.4b	345-115kV Transformer Foundation w/ Oil Containment	0	EA	$ 74,700	$ -	$ 80,000	$ -	$ 154,700	$ -
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5	**Control House Foundations / Pad**								
2.5a	Control House Addition Foundation (25-ft x 50-ft)	1	EA	$ 61,079	$ 61,079	$ 64,100	$ 64,100	$ 125,179	**$ 125,179**
2.5b	Generator Foundation	0	EA	$ 16,000	$ -	$ 17,000	$ -	$ 33,000	$ -
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	0	EA	$ 5,229	$ -	$ 5,600	$ -	$ 10,829	$ -
2.6b		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6c		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION FOUNDATIONS					$ 161,177		$ 171,300		$ 332,477
3. SUBSTATION STRUCTURES									
3.1	**345kV**								
3.1a	Substation A-Frame Structures - Stand alone	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	$ -
3.1b	Substation A-Frame Structures - Shared Column	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	$ -
3.1c	Switch Stands	1	EA	$ 14,800	$ 14,800	$ 14,800	$ 14,800	$ 29,600	**$ 29,600**
3.1d	Station Service Transformer Stand	0	EA	$ 14,800	$ -	$ 14,800	$ -	$ 29,600	$ -
3.1e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1f	Bus Support 1 Ph	0	EA	$ 3,700	$ -	$ 3,700	$ -	$ 7,400	$ -
3.1g	Instrument Transformer Stand	9	EA	$ 1,850	$ 16,650	$ 1,850	$ 16,650	$ 3,700	**$ 33,300**
3.1h	Arrester Stand	3	EA	$ 1,850	$ 5,550	$ 1,850	$ 5,550	$ 3,700	**$ 11,100**
3.1j	Wave Trap Stand	1	EA	$ 7,400	$ 7,400	$ 7,400	$ 7,400	$ 14,800	**$ 14,800**
3.1k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	$ -
3.2b	Substation A-Frame Structures - Shared Column	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	$ -
3.2c	Switch Stands	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	$ -
3.2d	Station Service Transformer Stand	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	$ -
3.2e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2f	Bus Support 1 Ph	0	EA	$ 2,775	$ -	$ 2,775	$ -	$ 5,550	$ -
3.2g	Instrument Transformer Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	$ -
3.2h	Arrester Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	$ -
3.2j	Wave Trap Stand	0	EA	$ 5,550	$ -	$ 5,550	$ -	$ 11,100	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.2k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
3.3	**115kV**								
3.3a	Substation A-Frame Structures - Stand alone	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	$ -
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	$ -
3.3c	Switch Stands	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	$ -
3.3d	Fuse Stand	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	$ -
3.3e	Bus Support 3ph	0	EA	$ 3,330	$ -	$ 3,330	$ -	$ 6,660	$ -
3.3f	Bus Support 1 Ph	0	EA	$ 1,850	$ -	$ 1,850	$ -	$ 3,700	$ -
3.3g	Instrument Transformer Stand	0	EA	$ 740	$ -	$ 740	$ -	$ 1,480	$ -
3.3h	Arrester Stand	0	EA	$ 740	$ -	$ 740	$ -	$ 1,480	$ -
3.3j	Wave Trap Stand	0	EA	$ 3,700	$ -	$ 3,700	$ -	$ 7,400	$ -
3.3k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
TOTAL - SUBSTATION STRUCTURES					$ 44,400		$ 44,400		$ 88,800
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	1	EA	$ 200,000	$ 200,000	$ 80,000	$ 80,000	$ 280,000	**$ 280,000**
4.1b	Capacitor Banks - W/ Center Tap VT and Reactors	0	EA	$ 370,000	$ -	$ 80,000	$ -	$ 450,000	$ -
4.1c	Circuit Breakers - Cap Switching	0	EA	$ 220,000	$ -	$ 750,000	$ -	$ 970,000	$ -
4.1d	345 kV - 115 kV Auto Transformer	0	EA	$ -	$ -	$ 750,000	$ -	$ 750,000	$ -
4.2	**230kV**								
4.2a	Circuit Breakers	0	EA	$ 115,000	$ -	$ 80,000	$ -	$ 195,000	$ -
4.2b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	$ -
4.3	**115kV**								
4.3a	Circuit Breakers	0	EA	$ 52,000	$ -	$ 60,000	$ -	$ 112,000	$ -
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ 60,000	$ -	$ 60,000	$ -
TOTAL - MAJOR EQUIPTMENT					$ 200,000		$ 80,000		$ 280,000
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator	1	EA	$ 40,000	$ 40,000	$ 15,000	$ 15,000	$ 55,000	**$ 55,000**
5.1b	Disconnect Switches - 3ph w/ manual operator	1	EA	$ 35,000	$ 35,000	$ 17,500	$ 17,500	$ 52,500	**$ 52,500**
5.1c	VT'S	3	EA	$ 25,000	$ 75,000	$ 12,000	$ 36,000	$ 37,000	**$ 111,000**
5.1d	CT'S	3	EA	$ 13,000	$ 39,000	$ 8,000	$ 24,000	$ 21,000	**$ 63,000**
5.1e	CCVT'S	3	EA	$ 13,000	$ 39,000	$ 8,000	$ 24,000	$ 21,000	**$ 63,000**
5.1f	Arresters	3	EA	$ 6,500	$ 19,500	$ 1,500	$ 4,500	$ 8,000	**$ 24,000**
5.1g	Wave Traps	1	EA	$ 13,000	$ 13,000	$ 8,000	$ 8,000	$ 21,000	**$ 21,000**
5.1h	Station Service Transformers	0	EA	$ 200,000	$ -	$ 50,000	$ -	$ 250,000	$ -
5.1j									
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator	0	EA	$ 35,000	$ -	$ 15,000	$ -	$ 50,000	$ -
5.2b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 30,000	$ -	$ 17,500	$ -	$ 47,500	$ -
5.2c	VT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2e	CCVT'S	0	EA	$ 10,000	$ -	$ 6,000	$ -	$ 16,000	$ -
5.2f	Arresters	0	EA	$ 5,000	$ -	$ 6,000	$ -	$ 11,000	$ -
5.2g	Wave Traps	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2j									
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	0	EA	$ 33,000	$ -	$ 15,000	$ -	$ 48,000	$ -
5.3b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 28,000	$ -	$ 17,500	$ -	$ 45,500	$ -
5.3c	VT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.3d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.3e	CCVT'S	0	EA	$ 8,000	$ -	$ 8,000	$ -	$ 16,000	$ -
5.3f	Arresters	0	EA	$ 3,420	$ -	$ 6,000	$ -	$ 9,420	$ -
5.3g	Wave Traps	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ 260,500		$ 129,000		$ 389,500
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE Addition (25-ft x 50-ft)	1	EA	$ 325,000	$ 325,000	$ 85,000	$ 85,000	$ 410,000	**$ 410,000**
6.2	Protection and Telecom Equipment Panels	3	EA	$ 35,000	$ 105,000	$ 12,500	$ 37,500	$ 47,500	**$ 142,500**
6.3	125VDC Batteries	0	EA	$ 75,000	$ -	$ 25,000	$ -	$ 100,000	**$ -**
6.4	Control Cables	1	LS	$ 130,900	$ 130,900	$ 130,900	$ 130,900	$ 261,800	**$ 261,800**
6.5	SCADA and Communications	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.6	Low Voltage AC Distribution	0	EA	$ 50,000	$ -	$ 100,000	$ -	$ 150,000	**$ -**
6.7	DC Distribution System	0	EA	$ 50,000	$ -	$ 100,000	$ -	$ 150,000	**$ -**
6.8	Security	0	EA	$ 7,500	$ -	$ 7,500	$ -	$ 15,000	**$ -**
6.9	Fire Alarm	0	EA	$ 7,500	$ -	$ 7,500	$ -	$ 15,000	**$ -**
6.10	Generator	0	EA	$ 100,000	$ -	$ 80,000	$ -	$ 180,000	**$ -**
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ 560,900		$ 253,400		**$ 814,300**
7. MISC ITEMS									
7.1	Conduit & Cable Trench System	800	LF	$ 185.00	$ 148,000	$ 170.00	$ 136,000	$ 355	**$ 284,000**
7.2	Rigid Bus, Fittings & Insulators	0	LF	$ 125.07	$ -	$ 237.10	$ -	$ 362	**$ -**
7.3	Strain Bus, Connectors & Insulators	2,500	LF	$ 13.38	$ 33,450	$ 39.35	$ 98,375	$ 53	**$ 131,825**
7.4	Grounding System	0	LF	$ 6.93	$ -	$ 32.58	$ -	$ 40	**$ -**
7.5	Strain Bus Insulators - 345kV	38	EA	$ 2,000	$ 76,000	$ 1,050	$ 39,900	$ 3,050	**$ 115,900**
7.6	Strain Bus Insulators - 230kV	0	EA	$ 1,400	$ -	$ 750	$ -	$ 2,150	**$ -**
7.7	Strain Bus Insulators - 115kV	0	EA	$ 1,000	$ -	$ 550	$ -	$ 1,550	**$ -**
7.8	Low Voltage AC Station Service	0	LS	$ 50,000	$ -	$ 75,000	$ -	$ 125,000	**$ -**
7.9	SSVT Service	0	LS	$ 45,000	$ -	$ 45,000	$ -	$ 90,000	**$ -**
7.10	Control Conduits from Trench to Equipment	1	LS	$ 62,500	$ 62,500	$ 75,000	$ 75,000	$ 137,500	**$ 137,500**
7.11	Misc. Materials (Above and Below Ground)	1	LS	$ 90,000	$ 90,000	$ 108,000	$ 108,000	$ 198,000	**$ 198,000**
7.12									
7.13									
7.14									
7.15									
7.16									
7.17									
7.18									
7.19									
7.20									
7.21									
7.22									
7.23									
7.24									
7.25									
TOTAL - MISC ITEMS					$ 409,950		$ 457,275		$ 867,225
J. Pleasant Valley Substation - Install					$ 1,647,952		$ 1,150,000		**$ 2,797,952**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1	LS	$ -	$ -	$ 27,980	$ 27,980	$ 27,980	**$ 27,980**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 173,946	$ 173,946	$ 173,946	**$ 173,946**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 27,980	$ 27,980	$ 27,980	**$ 27,980**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 27,980	$ 27,980	$ 27,980	**$ 27,980**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 223,836	$ 223,836	$ 223,836	**$ 223,836**
8.6	LiDAR	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.7	Geotech	4	EA	$ -	$ -	$ 3,500	$ 14,000	$ 3,500	**$ 14,000**
8.8	Surveying/Staking	1	Site	$ -	$ -	$ 19,586	$ 19,586	$ 19,586	**$ 19,586**
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 69,949	$ 69,949	$ 69,949	**$ 69,949**
	Permitting and Additional Costs								

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 8,394	$ 8,394	$ 8,394	**$ 8,394**
8.13	Real Estate Costs (New)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.14	Real Estate Costs (Incumbent Utility)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.17	Carrying Charges	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.18	Sales Tax on Materials	1	LS	$ 131,836	$ 131,836	$ -	$ -	$ 131,836	**$ 131,836**
8.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 2,798	$ 2,798	$ 2,798	**$ 2,798**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 131,836		$ 596,447		**$ 728,283**

NextEra T022 (Segment B) — **Interconnection Knickerbocker Station**

Estimate Revision: 8 — **Total: $ 1,826,890**

NextEra T022 (Segment B)	*Supply*	*Installation*	*Total*
L. Interconnection Knickerbocker Station			
1. CLEARING & ACCESS	$ -	$ 436,850	$ 436,850
2. FOUNDATIONS	$ 238,638	$ 241,194	$ 479,832
3. STRUCTURES	$ 313,836	$ 219,711	$ 533,547
4. CONDUCTOR, SHIELDWIRE, OPGW	$ -	$ -	$ -
5. INSULATORS, FITTINGS, HARDWARE	$ 58,150	$ 26,466	$ 84,616
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 48,850	$ 243,195	$ 292,045
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 659,474	$ 1,167,416	$ 1,826,890
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 659,474	$ 1,167,416	$ 1,826,890

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
L. Interconnection Knickerbocker Station									
1. CLEARING & ACCESS									
1.1	Clearing the ROW - Heavy (mowing & clearing)	-	Acre	$ -	$ -	$ 15,000	$ -	$ 15,000	$ -
1.2	Clearing the ROW - Light (mowing)	2.0	Acre	$ -	$ -	$ 5,000	$ 10,000	$ 5,000	**$ 10,000**
1.3	Access Road	-	LF	$ -	$ -	$ 45	$ -	$ 45	$ -
1.4	Silt Fence	3,500.0	LF	$ -	$ -	$ 4	$ 14,000	$ 4	**$ 14,000**
1.5	Matting - Access and ROW	3,500.0	LF	$ -	$ -	$ 70	$ 245,000	$ 70	**$ 245,000**
1.6	Matting - To Work Area	525.0	LF	$ -	$ -	$ 70	$ 36,750	$ 70	**$ 36,750**
1.7	Snow Removal	-	LS	$ -	$ -	$ 516,800	$ -	$ 516,800	$ -
1.8	ROW Restoration	0.5	Mile	$ -	$ -	$ 10,000	$ 5,000	$ 10,000	**$ 5,000**
1.9	Work Pads	35,000.0	SF	$ -	$ -	$ 4	$ 123,200	$ 4	**$ 123,200**
1.10	Restoration for Work Pad areas	7,000.0	SF	$ -	$ -	$ 0.2	$ 1,050	$ 0	**$ 1,050**
1.11	Temporary Access Bridge	-	EA	$ -	$ -	$ 20,035	$ -	$ 20,035	$ -
1.12	Air Bridge	-	EA	$ -	$ -	$ 14,445	$ -	$ 14,445	$ -
1.13	Stabilized Construction Entrance	-	EA	$ -	$ -	$ 4,580	$ -	$ 4,580	$ -
1.14	Maintenance and Protection of Traffic on Public Roads	-	EA	$ -	$ -	$ 4,130	$ -	$ 4,130	$ -
1.15	Gates	-	EA	$ 2,000	$ -	$ 2,500	$ -	$ 4,500	$ -
1.16	Culverts / Misc. Access	-	EA	$ 750	$ -	$ 1,250	$ -	$ 2,000	$ -
1.17	Concrete Washout Station	1	EA	$ -	$ -	$ 1,850	$ 1,850	$ 1,850	**$ 1,850**
1.18					$ -		$ -		$ -
1.19					$ -		$ -		$ -
1.20	Crushed Rock	0	CY	$ 27	$ -	$ 75	$ -	$ 102	$ -
TOTAL - CLEARING & ACCESS					$ -		$ 436,850		$ 436,850
2. FOUNDATIONS									
2.1	Drilled Pier - 345KV THREE POLE TAP, STEEL	2	Structures	$ 119,319	$ 238,638	$ 120,597	$ 241,194	$ 239,916	**$ 479,832**
2.2									
2.3									
2.4									
2.5	Rock Excavation Adder	-	CY	$ -	$ -	$ 2,000	$ -	$ 2,000	$ -
2.6					$ -		$ -		$ -
2.7					$ -		$ -		$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.8					$ -		$ -		$ -
2.9					$ -		$ -		$ -
2.10					$ -		$ -		$ -
2.11					$ -		$ -		$ -
2.12					$ -		$ -		$ -
2.13					$ -		$ -		$ -
2.14					$ -		$ -		$ -
2.15					$ -		$ -		$ -
TOTAL - FOUNDATIONS					$ 238,638		$ 241,194		$ 479,832
3. STRUCTURES									
3.1	345KV THREE POLE TAP, STEEL	2	Structure	$ 155,400	$ 310,800	$ 93,240	$ 186,480	$ 248,640	**$ 497,280**
3.2									
3.3									
3.4					$ -		$ -		$ -
3.5	Install Grounding and Grounding Accessories	6	Pole	$ 506	$ 3,036	$ 5,539	$ 33,231	$ 6,045	**$ 36,267**
3.6					$ -		$ -		$ -
3.7					$ -		$ -		$ -
3.8					$ -		$ -		$ -
3.9					$ -		$ -		$ -
3.10					$ -		$ -		$ -
3.11					$ -		$ -		$ -
3.12					$ -		$ -		$ -
3.13					$ -		$ -		$ -
3.14					$ -		$ -		$ -
3.15					$ -		$ -		$ -
TOTAL - STRUCTURES					$ 313,836		$ 219,711		$ 533,547
4. CONDUCTOR, SHIELDWIRE, OPGW									
4.1	345kV - (1) 1,033kcmil 54/7 ACSS "Curlew"	-	LF	$ 2.82	$ -	$ 5.00	$ -	$ 7.82	$ -
4.2	(1) OPGW 36 Fiber AC-33/38/571	-	LF	$ 1.35	$ -	$ 5.00	$ -	$ 6.35	$ -
4.3	(1) 3/8" EHS7 Steel	-	LF	$ 0.47	$ -	$ 5.00	$ -	$ 5.47	$ -
4.5	Remove Existing 115kV Cable From Existing Structures	-	Mile	$ -	$ -	$ 30,000	$ -	$ 30,000.00	$ -
4.6	Remove Existing OPGW Cable	-	Mile	$ -	$ -	$ 12,000	$ -	$ 12,000.00	$ -
4.7	Remove Existing EH7	-	Mile	$ -	$ -	$ 12,000	$ -	$ 12,000.00	$ -
4.8	115kV - (1) 954kcmil 54/7 ACSS "Cardinal"	-	LF	$ 1.90	$ -	$ 5.00	$ -	$ 6.90	$ -
4.9		-							
4.10	Rider Poles - Relocated	-	Set	$ -	$ -	$ 3,500	$ -	$ 3,500.00	$ -
4.11	Rider Poles	-	EA	$ 1,750	$ -	$ 3,500	$ -	$ 5,250.00	$ -
TOTAL: CONDUCTOR, SHIELDWIRE, OPGW:					$ -		$ -		$ -
5. INSULATOR, FITTINGS, HARDWARE									
5.1	345kV Tangent (1-Group of 18-Bells Each Assembly)	-	Assembly	$ 1,800	$ -	$ 720	$ -	$ 2,520	$ -
5.2	115kV Tangent (1-Group of 9-Bells Each Assembly)	-	Assembly	$ 900	$ -	$ 560	$ -	$ 1,460	$ -
5.3	345kV Dead-end & Angle Insulators (1-Group of 18-Bells Each Assembly)	30	Assembly	$ 1,800	$ 54,000	$ 720	$ 21,600	$ 2,520	**$ 75,600**
5.4	115kV Dead-end & Angle Insulators (1-Group of 9-Bells Each Assembly)	-	Assembly	$ 900	$ -	$ 560	$ -	$ 1,460	$ -
5.5	OPGW Assembly - Tangent	-	Assembly	$ 200	$ -	$ 150	$ -	$ 350	$ -
5.6	OPGW Assembly - Angle / DE	2	Assembly	$ 250	$ 500	$ 150	$ 300	$ 400	**$ 800**
5.7	OHSW Assembly - Tangent	-	Assembly	$ 200	$ -	$ 150	$ -	$ 350	$ -
5.8	OHSW Assembly - Angle / DE	2	Assembly	$ 250	$ 500	$ 150	$ 300	$ 400	**$ 800**
5.9	OPGW Splice Boxes	1	Set	$ 1,750	$ 1,750	$ 1,746	$ 1,746	$ 3,496	**$ 3,496**
5.10	OPGW Splice & Test	1	EA	$ 1,400	$ 1,400	$ 2,520	$ 2,520	$ 3,920	**$ 3,920**
5.11	Spacer - Conductor	-	EA	$ 50	$ -	$ 35	$ -	$ 85	$ -
5.12	Vibration Dampers - Conductor	-	EA	$ 35	$ -	$ 35	$ -	$ 70	$ -
5.13	Shieldwire / OPGW Dampers, Misc. Fittings	-	EA	$ 27	$ -	$ 35	$ -	$ 62	$ -
5.14	Guys, Anchors, and Accessories	-	EA	$ 720	$ -	$ 885	$ -	$ 1,605	$ -
5.15	Misc. materials (Signs and Markers)	-	Mile	$ 770	$ -	$ 1,006	$ -	$ 1,776	$ -
5.16									
5.17		-							
5.18									
5.19									
5.20									
TOTAL - INSULATOR, FITTINGS, HARDWARE					$ 58,150		$ 26,466		$ 84,616
L. Interconnection Knickerbocker Station					$ 610,624		$ 924,221		$ 1,534,845
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
	Contractor Mobilization / Demobilization								
6.1	Mob / Demob	1	LS	$ -	$ -	$ 15,348	$ 15,348	$ 15,348	**$ 15,348**
	Project Management, Material Handling & Amenities								
6.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 95,420	$ 95,420	$ 95,420	**$ 95,420**
6.3	Utility PM and Project Oversite	1	LS		$ -	$ 15,348	$ 15,348	$ 15,348	**$ 15,348**
6.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 15,348	$ 15,348	$ 15,348	**$ 15,348**
	Engineering								
6.5	Design Engineering	1	LS	$ -	$ -	$ 76,742	$ 76,742	$ 76,742	**$ 76,742**
6.6	LiDAR	1	LS	$ -	$ -	$ 4,605	$ 4,605	$ 4,605	**$ 4,605**
6.7	Geotech	1	Location	$ -	$ -	$ 3,500	$ 3,500	$ 3,500	**$ 3,500**
6.8	Surveying/Staking	1	LS	$ -	$ -	$ 10,744	$ 10,744	$ 10,744	**$ 10,744**
	Testing & Commissioning								
6.9	Testing & Commissioning of T-Line and Equipment	-	LS	$ -	$ -	$ 40,000	$ -	$ 40,000	**$ -**
	Permitting and Additional Costs								
6.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.12	Warranties / LOC's	1	LS	$ -	$ -	$ 4,605	$ 4,605	$ 4,605	**$ 4,605**
6.13	Real Estate Costs (New ROW)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.14	Real Estate Costs (Incumbent Utility ROW)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.15	Legal Fees	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.17	Carrying Charges	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.18	Sales Tax on Materials	1	LS	$ 48,850	$ 48,850	$ -	$ -	$ 48,850	**$ 48,850**
6.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 1,535	$ 1,535	$ 1,535	**$ 1,535**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 48,850		$ 243,195		**$ 292,045**

NextEra T022 (Segment B)

M. Interconnection Churchtown Station

Estimate Revision: 8

Total: $ 5,486,886

NextEra T022 (Segment B)	*Supply*	*Installation*	*Total*
M. Interconnection Churchtown Station			
1. CLEARING & ACCESS	$ -	$ 712,850	$ 712,850
2. FOUNDATIONS	$ 861,128	$ 1,284,831	$ 2,145,960
3. STRUCTURES	$ 570,674	$ 498,922	$ 1,069,596
4. CONDUCTOR, SHIELDWIRE, OPGW	$ -	$ -	$ -
5. INSULATORS, FITTINGS, HARDWARE	$ 481,350	$ 200,586	$ 681,936
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 153,052	$ 723,492	$ 876,545
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 2,066,205	$ 3,420,681	$ 5,486,886
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 2,066,205	$ 3,420,681	$ 5,486,886

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
M. Interconnection Churchtown Station									
1. CLEARING & ACCESS									
1.1	Clearing the ROW - Heavy (mowing & clearing)	-	Acre	$ -	$ -	$ 15,000	$ -	$ 15,000	$ -
1.2	Clearing the ROW - Light (mowing)	2.0	Acre	$ -	$ -	$ 5,000	$ 10,000	$ 5,000	**$ 10,000**
1.3	Access Road	-	LF	$ -	$ -	$ 45	$ -	$ 45	$ -
1.4	Silt Fence	3,500.0	LF	$ -	$ -	$ 4	$ 14,000	$ 4	**$ 14,000**
1.5	Matting - Access and ROW	3,500.0	LF	$ -	$ -	$ 70	$ 245,000	$ 70	**$ 245,000**
1.6	Matting - To Work Area	1,425.0	LF	$ -	$ -	$ 70	$ 99,750	$ 70	**$ 99,750**
1.7	Snow Removal	-	LS	$ -	$ -	$ 516,800	$ -	$ 516,800	$ -
1.8	ROW Restoration	0.5	Mile	$ -	$ -	$ 10,000	$ 5,000	$ 10,000	**$ 5,000**
1.9	Work Pads	95,000.0	SF	$ -	$ -	$ 4	$ 334,400	$ 4	**$ 334,400**
1.10	Restoration for Work Pad areas	19,000.0	SF	$ -	$ -	$ 0.2	$ 2,850	$ 0	**$ 2,850**
1.11	Temporary Access Bridge	-	EA	$ -	$ -	$ 20,035	$ -	$ 20,035	$ -
1.12	Air Bridge	-	EA	$ -	$ -	$ 14,445	$ -	$ 14,445	$ -
1.13	Stabilized Construction Entrance	-	EA	$ -	$ -	$ 4,580	$ -	$ 4,580	$ -
1.14	Maintenance and Protection of Traffic on Public Roads	-	EA	$ -	$ -	$ 4,130	$ -	$ 4,130	$ -
1.15	Gates	-	EA	$ 2,000	$ -	$ 2,500	$ -	$ 4,500	$ -
1.16	Culverts / Misc. Access	-	EA	$ 750	$ -	$ 1,250	$ -	$ 2,000	$ -
1.17	Concrete Washout Station	1	EA	$ -	$ -	$ 1,850	$ 1,850	$ 1,850	**$ 1,850**
1.18					$ -		$ -		$ -
1.19					$ -		$ -		$ -
1.20	Crushed Rock	0	CY	$ 27	$ -	$ 75	$ -	$ 102	$ -
TOTAL - CLEARING & ACCESS					$ -		$ 712,850		$ 712,850
2. FOUNDATIONS									
2.1	Drilled Pier - 345KV S/C DEADEND, STEEL	17	Structures	$ 50,485	$ 858,249	$ 51,026	$ 867,441	$ 101,511	**$ 1,725,690**
2.2	Direct Embed - 115KV DELTA S/C TANGENT, CONCRETE	2	Structures	$ 1,440	$ 2,879	$ 8,695	$ 17,391	$ 10,135	**$ 20,270**
2.3									
2.4									
2.5	Rock Excavation Adder	200	CY	$ -	$ -	$ 2,000	$ 400,000	$ 2,000	**$ 400,000**
2.6					$ -		$ -		$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.7					$ -		$ -		$ -
2.8					$ -		$ -		$ -
2.9					$ -		$ -		$ -
2.10					$ -		$ -		$ -
2.11					$ -		$ -		$ -
2.12					$ -		$ -		$ -
2.13					$ -		$ -		$ -
2.14					$ -		$ -		$ -
2.15					$ -		$ -		$ -
TOTAL - FOUNDATIONS					$ 861,128		$ 1,284,831		$ 2,145,960
3. STRUCTURES									
3.1	345KV S/C DEADEND, STEEL	17	Structure	$ 31,450	$ 534,650	$ 18,870	$ 320,790	$ 50,320	**$ 855,440**
3.2	115KV DELTA S/C TANGENT, CONCRETE	2	Structure	$ 13,205	$ 26,410	$ 36,450	$ 72,900	$ 49,655	**$ 99,310**
3.3									
3.4					$ -		$ -		$ -
3.5	Install Grounding and Grounding Accessories	19	Pole	$ 506	$ 9,614	$ 5,539	$ 105,232	$ 6,045	**$ 114,846**
3.6					$ -		$ -		$ -
3.7					$ -		$ -		$ -
3.8					$ -		$ -		$ -
3.9					$ -		$ -		$ -
3.10					$ -		$ -		$ -
3.11					$ -		$ -		$ -
3.12					$ -		$ -		$ -
3.13					$ -		$ -		$ -
3.14					$ -		$ -		$ -
3.15					$ -		$ -		$ -
TOTAL - STRUCTURES					$ 570,674		$ 498,922		$ 1,069,596
4. CONDUCTOR, SHIELDWIRE, OPGW									
4.1	345kV - (2) 954kcmil 54/7 ACSS "Cardinal"	-	LF	$ 1.90	$ -	$ 5.00	$ -	$ 6.90	$ -
4.2	(1) OPGW 36 Fiber AC-33/38/571	-	LF	$ 1.35	$ -	$ 5.00	$ -	$ 6.35	$ -
4.3	(1) 3/8" EHS7 Steel	-	LF	$ 0.47	$ -	$ 5.00	$ -	$ 5.47	$ -
4.5	Remove Existing 115kV Cable From Existing Structures	-	Mile	$ -	$ -	$ 30,000	$ -	$ 30,000.00	$ -
4.6	Remove Existing OPGW Cable	-	Mile	$ -	$ -	$ 12,000	$ -	$ 12,000.00	$ -
4.7	Remove Existing EH7	-	Mile	$ -	$ -	$ 12,000	$ -	$ 12,000.00	$ -
4.8	115kV - (1) 795kcmil 26/7 ACSS "Drake"	-	LF	$ 1.72	$ -	$ 5.00	$ -	$ 6.72	$ -
4.9		-							
4.10	Rider Poles - Relocated	-	Set	$ -	$ -	$ 3,500	$ -	$ 3,500.00	$ -
4.11	Rider Poles	-	EA	$ 1,750	$ -	$ 3,500	$ -	$ 5,250.00	$ -
TOTAL: CONDUCTOR, SHIELDWIRE, OPGW:					$ -		$ -		$ -
5. INSULATOR, FITTINGS, HARDWARE									
5.1	345kV Tangent (1-Group of 18-Bells Each Assembly)	-	Assembly	$ 1,800	$ -	$ 720	$ -	$ 2,520	$ -
5.2	115kV Tangent (1-Group of 9-Bells Each Assembly)	12	Assembly	$ 900	$ 10,800	$ 560	$ 6,720	$ 1,460	**$ 17,520**
5.3	345kV Dead-end & Angle Insulators (1-Group of 18-Bells Each Assembly)	255	Assembly	$ 1,800	$ 459,000	$ 720	$ 183,600	$ 2,520	**$ 642,600**
5.4	115kV Dead-end & Angle Insulators (1-Group of 9-Bells Each Assembly)	-	Assembly	$ 900	$ -	$ 560	$ -	$ 1,460	$ -
5.5	OPGW Assembly - Tangent	16	Assembly	$ 200	$ 3,200	$ 150	$ 2,400	$ 350	**$ 5,600**
5.6	OPGW Assembly - Angle / DE	4	Assembly	$ 250	$ 1,000	$ 150	$ 600	$ 400	**$ 1,600**
5.7	OHSW Assembly - Tangent	16	Assembly	$ 200	$ 3,200	$ 150	$ 2,400	$ 350	**$ 5,600**
5.8	OHSW Assembly - Angle / DE	4	Assembly	$ 250	$ 1,000	$ 150	$ 600	$ 400	**$ 1,600**
5.9	OPGW Splice Boxes	1	Set	$ 1,750	$ 1,750	$ 1,746	$ 1,746	$ 3,496	**$ 3,496**
5.10	OPGW Splice & Test	1	EA	$ 1,400	$ 1,400	$ 2,520	$ 2,520	$ 3,920	**$ 3,920**
5.11	Spacer - Conductor	-	EA	$ 50	$ -	$ 35	$ -	$ 85	$ -
5.12	Vibration Dampers - Conductor	-	EA	$ 35	$ -	$ 35	$ -	$ 70	$ -
5.13	Shieldwire / OPGW Dampers, Misc. Fittings	-	EA	$ 27	$ -	$ 35	$ -	$ 62	$ -
5.14	Guys, Anchors, and Accessories	-	EA	$ 720	$ -	$ 885	$ -	$ 1,605	$ -
5.15	Misc. materials (Signs and Markers)	-	Mile	$ 770	$ -	$ 1,006	$ -	$ 1,776	$ -
5.16					$ -		$ -		$ -
5.17					$ -		$ -		$ -
5.18					$ -		$ -		$ -
5.19					$ -		$ -		$ -
5.20					$ -		$ -		$ -
TOTAL - INSULATOR, FITTINGS, HARDWARE					$ 481,350		$ 200,586		$ 681,936

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
M. Interconnection Churchtown Station					$ 1,913,152		$ 2,697,189		$ 4,610,341
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
6.1	Mob / Demob	1	LS	$ -	$ -	$ 46,103	$ 46,103	$ 46,103	**$ 46,103**
	Project Management, Material Handling & Amenities								
6.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 286,620	$ 286,620	$ 286,620	**$ 286,620**
6.3	Utility PM and Project Oversite	1	LS		$ -	$ 46,103	$ 46,103	$ 46,103	**$ 46,103**
6.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 46,103	$ 46,103	$ 46,103	**$ 46,103**
	Engineering								
6.5	Design Engineering	1	LS	$ -	$ -	$ 230,517	$ 230,517	$ 230,517	**$ 230,517**
6.6	LiDAR	1	LS	$ -	$ -	$ 13,831	$ 13,831	$ 13,831	**$ 13,831**
6.7	Geotech	1	Location	$ -	$ -	$ 3,500	$ 3,500	$ 3,500	**$ 3,500**
6.8	Surveying/Staking	1	LS	$ -	$ -	$ 32,272	$ 32,272	$ 32,272	**$ 32,272**
	Testing & Commissioning								
6.9	Testing & Commissioning of T-Line and Equipment	-	LS	$ -	$ -	$ 40,000	$ -	$ 40,000	**$ -**
	Permitting and Additional Costs								
6.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.12	Warranties / LOC's	1	LS	$ -	$ -	$ 13,831	$ 13,831	$ 13,831	**$ 13,831**
6.13	Real Estate Costs (New ROW)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.14	Real Estate Costs (Incumbent Utility ROW)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.15	Legal Fees	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.17	Carrying Charges	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.18	Sales Tax on Materials	1	LS	$ 153,052	$ 153,052	$ -	$ -	$ 153,052	**$ 153,052**
6.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 4,610	$ 4,610	$ 4,610	**$ 4,610**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 153,052		$ 723,492		**$ 876,545**

NextEra T022 (Segment B)

N. Interconnection Milan Station

Estimate Revision: 8

Total: $ 745,080

NextEra T022 (Segment B)	*Supply*	*Installation*	*Total*
N. Interconnection Milan Station			
1. CLEARING & ACCESS	$ -	$ 121,100	$ 121,100
2. FOUNDATIONS	$ 84,375	$ 135,279	$ 219,654
3. STRUCTURES	$ 130,328	$ 88,667	$ 218,994
4. CONDUCTOR, SHIELDWIRE, OPGW	$ -	$ -	$ -
5. INSULATORS, FITTINGS, HARDWARE	$ 45,200	$ 18,480	$ 63,680
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 20,792	$ 100,860	$ 121,652
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 280,695	$ 464,385	$ 745,080
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 280,695	$ 464,385	$ 745,080

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
N. Interconnection Milan Station									
1. CLEARING & ACCESS									
1.1	Clearing the ROW - Heavy (mowing & clearing)	-	Acre	$ -	$ -	$ 15,000	$ -	$ 15,000	$ -
1.2	Clearing the ROW - Light (mowing)	1.0	Acre	$ -	$ -	$ 5,000	$ 5,000	$ 5,000	**$ 5,000**
1.3	Access Road	-	LF	$ -	$ -	$ 45	$ -	$ 45	$ -
1.4	Silt Fence	500.0	LF	$ -	$ -	$ 4	$ 2,000	$ 4	**$ 2,000**
1.5	Matting - Access and ROW	500.0	LF	$ -	$ -	$ 70	$ 35,000	$ 70	**$ 35,000**
1.6	Matting - To Work Area	525.0	LF	$ -	$ -	$ 70	$ 36,750	$ 70	**$ 36,750**
1.7	Snow Removal	-	LS	$ -	$ -	$ 516,800	$ -	$ 516,800	$ -
1.8	ROW Restoration	0.5	Mile	$ -	$ -	$ 10,000	$ 5,000	$ 10,000	**$ 5,000**
1.9	Work Pads	10,000.0	SF	$ -	$ -	$ 4	$ 35,200	$ 4	**$ 35,200**
1.10	Restoration for Work Pad areas	2,000.0	SF	$ -	$ -	$ 0.2	$ 300	$ 0	**$ 300**
1.11	Temporary Access Bridge	-	EA	$ -	$ -	$ 20,035	$ -	$ 20,035	$ -
1.12	Air Bridge	-	EA	$ -	$ -	$ 14,445	$ -	$ 14,445	$ -
1.13	Stabilized Construction Entrance	-	EA	$ -	$ -	$ 4,580	$ -	$ 4,580	$ -
1.14	Maintenance and Protection of Traffic on Public Roads	-	EA	$ -	$ -	$ 4,130	$ -	$ 4,130	$ -
1.15	Gates	-	EA	$ 2,000	$ -	$ 2,500	$ -	$ 4,500	$ -
1.16	Culverts / Misc. Access	-	EA	$ 750	$ -	$ 1,250	$ -	$ 2,000	$ -
1.17	Concrete Washout Station	1	EA	$ -	$ -	$ 1,850	$ 1,850	$ 1,850	**$ 1,850**
1.18					$ -		$ -		$ -
1.19					$ -		$ -		$ -
1.20	Crushed Rock	0	CY	$ 27	$ -	$ 75	$ -	$ 102	$ -
TOTAL - CLEARING & ACCESS					$ -		$ 121,100		$ 121,100
2. FOUNDATIONS									
2.1	Drilled Pier - 115kV Single Circuit Single Pole Angle/DE	2	EA	$ 42,187	$ 84,375	$ 42,639	$ 85,279	$ 84,827	**$ 169,654**
2.2									
2.3									
2.4									
2.5	Rock Excavation Adder	25	CY	$ -	$ -	$ 2,000	$ 50,000	$ 2,000	**$ 50,000**
2.6					$ -		$ -		$ -
2.7					$ -		$ -		$ -
2.8					$ -		$ -		$ -
2.9					$ -		$ -		$ -
2.10					$ -		$ -		$ -
2.11					$ -		$ -		$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.12					$ -		$ -		$ -
2.13					$ -		$ -		$ -
2.14					$ -		$ -		$ -
2.15					$ -		$ -		$ -
TOTAL - FOUNDATIONS					$ 84,375		$ 135,279		$ 219,654
3. STRUCTURES									
3.1	115kV Single Circuit Single Pole Angle/DE	2	Structure	$ 64,658	$ 129,316	$ 38,795	$ 77,590	$ 103,453	**$ 206,905**
3.2									
3.3									
3.4					$ -		$ -		$ -
3.5	Install Grounding and Grounding Accessories	2	Pole	$ 506	$ 1,012	$ 5,539	$ 11,077	$ 6,045	**$ 12,089**
3.6					$ -		$ -		$ -
3.7					$ -		$ -		$ -
3.8					$ -		$ -		$ -
3.9					$ -		$ -		$ -
3.10					$ -		$ -		$ -
3.11					$ -		$ -		$ -
3.12					$ -		$ -		$ -
3.13					$ -		$ -		$ -
3.14					$ -		$ -		$ -
3.15					$ -		$ -		$ -
TOTAL - STRUCTURES					$ 130,328		$ 88,667		$ 218,994
4. CONDUCTOR, SHIELDWIRE, OPGW									
4.1	345kV - (2) 954kcmil 54/7 ACSS "Cardinal"	-	LF	$ 1.90	$ -	$ 5.00	$ -	$ 6.90	$ -
4.2	(1) OPGW 36 Fiber AC-33/38/571	-	LF	$ 1.35	$ -	$ 5.00	$ -	$ 6.35	$ -
4.3	(1) 3/8" EHS7 Steel	-	LF	$ 0.47	$ -	$ 5.00	$ -	$ 5.47	$ -
4.5	Remove Existing 115kV Cable From Existing Structures	-	Mile	$ -	$ -	$ 30,000	$ -	$ 30,000.00	$ -
4.6	Remove Existing OPGW Cable	-	Mile	$ -	$ -	$ 12,000	$ -	$ 12,000.00	$ -
4.7	Remove Existing EH7	-	Mile	$ -	$ -	$ 12,000	$ -	$ 12,000.00	$ -
4.8	115kV - (1) 954kcmil 54/7 ACSS "Cardinal"	-	LF	$ 1.90	$ -	$ 5.00	$ -	$ 6.90	$ -
4.9		-							
4.10	Rider Poles - Relocated	-	Set	$ -	$ -	$ 3,500	$ -	$ 3,500.00	$ -
4.11	Rider Poles	-	EA	$ 1,750	$ -	$ 3,500	$ -	$ 5,250.00	$ -
TOTAL: CONDUCTOR, SHIELDWIRE, OPGW:					$ -		$ -		$ -
5. INSULATOR, FITTINGS, HARDWARE									
5.1	345kV Tangent (1-Group of 18-Bells Each Assembly)	-	Assembly	$ 1,800	$ -	$ 720	$ -	$ 2,520	$ -
5.2	115kV Tangent (1-Group of 9-Bells Each Assembly)	-	Assembly	$ 900	$ -	$ 560	$ -	$ 1,460	$ -
5.3	345kV Dead-end & Angle Insulators (1-Group of 18-Bells Each Assembly)	24	Assembly	$ 1,800	$ 43,200	$ 720	$ 17,280	$ 2,520	**$ 60,480**
5.4	115kV Dead-end & Angle Insulators (1-Group of 9-Bells Each Assembly)	-	Assembly	$ 900	$ -	$ 560	$ -	$ 1,460	$ -
5.5		-	Assembly			$ 360	$ -		$ -
5.6	OPGW Assembly - Tangent	-	Assembly	$ 200	$ -	$ 150	$ -	$ 350	$ -
5.7	OPGW Assembly - Angle / DE	4	Assembly	$ 250	$ 1,000	$ 150	$ 600	$ 400	**$ 1,600**
5.8	OHSW Assembly - Tangent	-	Assembly	$ 200	$ -	$ 150	$ -	$ 350	$ -
5.9	OHSW Assembly - Angle / DE	4	Assembly	$ 250	$ 1,000	$ 150	$ 600	$ 400	**$ 1,600**
5.10	OPGW Splice Boxes	-	Set	$ 1,750	$ -	$ 1,746	$ -	$ 3,496	$ -
5.11	OPGW Splice & Test	-	EA	$ 1,400	$ -	$ 2,520	$ -	$ 3,920	$ -
5.12	Spacer - Conductor	-	EA	$ 50	$ -	$ 35	$ -	$ 85	$ -
5.13	Vibration Dampers - Conductor	-	EA	$ 35	$ -	$ 35	$ -	$ 70	$ -
5.14	Shieldwire / OPGW Dampers, Misc. Fittings	-	EA	$ 27	$ -	$ 35	$ -	$ 62	$ -
5.15	Guys, Anchors, and Accessories	-	EA	$ 720	$ -	$ 885	$ -	$ 1,605	$ -
5.16	Misc. materials (Signs and Markers)	-	Mile	$ 770	$ -	$ 1,006	$ -	$ 1,776	$ -
5.17									
5.18									
5.19									
5.20									
TOTAL - INSULATOR, FITTINGS, HARDWARE					$ 45,200		$ 18,480		$ 63,680
N. Interconnection Milan Station					$ 259,903		$ 363,525		$ 623,428
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
6.1	Mob / Demob	1	LS	$ -	$ -	$ 6,234	$ 6,234	$ 6,234	**$ 6,234**
	Project Management, Material Handling & Amenities								

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 38,758	$ 38,758	$ 38,758	**$ 38,758**
6.3	Utility PM and Project Oversite	1	LS		$ -	$ 6,234	$ 6,234	$ 6,234	**$ 6,234**
6.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 6,234	$ 6,234	$ 6,234	**$ 6,234**
	Engineering								
6.5	Design Engineering	1	LS	$ -	$ -	$ 31,171	$ 31,171	$ 31,171	**$ 31,171**
6.6	LiDAR	1	LS	$ -	$ -	$ 1,870	$ 1,870	$ 1,870	**$ 1,870**
6.7	Geotech	1	Location	$ -	$ -	$ 3,500	$ 3,500	$ 3,500	**$ 3,500**
6.8	Surveying/Staking	1	LS	$ -	$ -	$ 4,364	$ 4,364	$ 4,364	**$ 4,364**
	Testing & Commissioning								
6.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
	Permitting and Additional Costs								
6.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.12	Warranties / LOC's	1	LS	$ -	$ -	$ 1,870	$ 1,870	$ 1,870	**$ 1,870**
6.13	Real Estate Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.14	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.15	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.16	Carrying Charges	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.17	Sales Tax on Materials	1	LS	$ 20,792	$ 20,792	$ -	$ -	$ 20,792	**$ 20,792**
6.18	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 623	$ 623	$ 623	**$ 623**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 20,792		$ 100,860		**$ 121,652**

NextEra - T022 - (Segment B)

O. NUF to mitigate NY to NE interface transfer limit degradation

Estimate Revision: **8**

Total: $ 26,785,714

SYSTEM UPGRADE FACILITIES		Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Sum	Labor & Equipment Supply Rate	Labor & Equipment Sum	Total Unit Rate	TOTAL
SUF 1	**Transmission Line Upgrade Cricket Valley - Connecticut Border to Long Mountain**								
1.1	Line Upgrade	1.00	LS		$ -		$ -	$ 21,428,571	$ 21,428,571
	Subtotal SUG 1 Direct Cost				$ -		$ -		$ 21,428,571
2	**Engineering, T&C, PM, Indirects (25%)**				$ -		$ -		$ 5,357,143
	TOTAL:				**$ -**		**$ -**		**$ 26,785,714**

NextEra T022 (Segment B)	
ESTIMATE ASSUMPTIONS & CLARIFICATIONS	
1	Cost Estimate is based on 2017 rates.
2	Construction schedule is in accordance with proposed schedule - we have assumed continuous working with no breaks in the schedule. Six months have been added to the construction schedule for start up and close out works and assisting in pre-construction activities (i.e. permitting activities, material procurement etc.).
3	We have assumed a typical work week of five-(5) days per week at ten-(10) hours per day (5 x 10 hour days).
4	All labor rates and benefits used for estimating purposes are taken from IBEW Local 1249 working agreement as updated 5-8-2017.
5	We have assumed that the Access Road included in Developer Estimate will be Type 1 Gravel Type. 20% of the total length of the line is assumed to use Type 1 Gravel road and 80% of the line length access to be used wood matting. In addition 75 feet of wood matting is included from the access matting to the work pad area matting. The estimate also include 5,000 square feet of wood matting for each structure work area within the ROW. For the ground restoration (seed, straw and woven mat), 20% of the work pad area included.
6	Costs will vary for handling and disposal of contaminated spoils, depending on type of contaminants and availability / location of the appropriate tipping facility. Since there is not enough information to provide a quantified estimate for this item, allowance is included in the contingency monies.
7	Costs have been developed based on historical data from Projects of a similar nature (AACE Class 5 and 4 Estimating Practices). We have not engaged any subcontractors for formal quotes.
8	Foundation rates include supply and installation of materials. Drilled Pier rates include supply and testing of concrete, rebar cage and the use of temp or permanent casing.
9	A Contractor Mark-Up (OH&P) of 15% has been included in the Total section.
10	We have assumed that all project details provided are accurate unless noted otherwise.
11	Any SUF pricing includes 35% to cover Contractor markup (15%) and contingency (20%)
12	A contractor allowance of 1% for mobilization and demobilization has been included in the total section.
13	A contractor allowance of 5.406% for project management and staffing has been included in the total section. This also includes agricultural inspector, engineering inspector, safety inspector, compliance inspector, environmental inspector, and SWPP inspector.
14	An allowance of 1% for Utility PM and Project Oversite staffing has been included in the total section.
15	A contractor allowance of 1% for site accommodation, facilities, and storage has been included in the total section.
16	An allowance of 5% for transmission design and engineering has been included in the total section.
17	An allowance of 8% for substation design and engineering has been included in the total section.
18	An allowance of 0.7% for survey and staking of the transmission line and substation layout has been included in the total section.
19	An allowance of 0.3% for LIDAR of the transmission line has been included in the total section.
20	An allowance of 3.75% for substation testing and commissioning has been included in the total section.
21	An allowance of $20,000.00 per circuit for transmission line testing and commissioning has been included in the total section.
22	New York state sales tax of 8% is included in all material pricing.
23	An allowance of 1.5% for insurance is included in the DPS sheet.
24	From Churchtown to Pleasant Valley only one line of Lattice Structures is to be removed.
25	From Churchtown to Pleasant Valley; Churchtown loop around 345kV conductor 0.3 miles have been added.
26	An additional Quantity of 5% have been added to conductors, OPGW, & OHSW for sag and jumpers.
27	Rock excavation not provided in proposal foundation data, most of the foundation are concrete pole direct embedded, rock excavation assumed 50% for T022 (Churchtown to Pleasant Valley) and rest 75% of quantities of National Grid's proposal.
28	Cricket Valley to Long Mountain line upgrade: Network Upgrade (NUF) costs to mitigate NY to NE interface transfer limit degradation were based on possible solutions identified during the June 2018 SIS process
29	The SUF estimates for the stations are rough order of magnitude estimates. No engineering was performed and SECo did not have access to record drawings.

NextEra Energy (T023)			
		Description	**Total Amount** (In thousand $)
Direct Cost	1	**Transmission Lines**	
	1.1	Clearing & Access	$34,215
	1.2	Foundations	$21,257
	1.3	Structures	$67,904
	1.4	Conductor, Shiedwire and Optical Ground Wire	$30,529
	1.5	Insulators, Fitting and Hardwares	$11,349
		Subtotal (1)	**$165,255**
	2	**Substations**	
	2.1	Knickerbocker Substation	$15,110
	2.2	East Greenbush Substation	$61
	2.3	Schodack Substation	$0
	2.4	Churchtown Substation	$13,040
	2.5	Pleasant Valley Substation	$2,798
	2.6	Substation Interconnections	$6,473
		Subtotal (2)	**$37,482**
		Total (1+2)	$202,736
		Contractors Mark-up (15% of Total 1+2)	$30,410
		Total Direct Cost (A)	**$233,147**
Indirect Cost	3	**Technical Services Costs**	
	3.1	Contractor Mobilization / Demobilization	$2,027
	3.2	Project Management, Material Handling & Amenities	$16,697
	3.3	Engineering	$13,253
	3.4	Testing & Commissioning	$874
	3.5	Permitting, Real Estate, Sales Tax and Additional Costs	$12,954
	3.6	Legal, Environmental Licensing & Permitting and Environmental Mitigation	$7,628
		Total Indirect Cost (3)	**$53,433**
		Subtotal Project Cost (B=A+3) 2017 $	**$286,580**
	4	**Network Upgrade Facilities (NUF)**	
	4.1	NUF proposed as element of the Project	$0
	4.2	NUF to mitigate NY to NE interface transfer limit degradation	$30,000
		Subtotal NUF Cost (C)	**$30,000**
		Total Project Cost (B+C) 2017 $	**$316,580**
		Total Project Cost 2018 $	**$326,077**

NextEra T023 (Segment B Alternate)

Estimate Revision: 8

NextEra T023 (Segment B Alternate) - Direct Costs		*Total Each Segment*
Direct Labor, Material & Equipment Costs	A. Transmission Line Knickerbocker to Churchtown	$ 59,787,815
Direct Labor, Material & Equipment Costs	B. Transmission Line Churchtown to Pleasant Valley	$ 100,720,518
Direct Labor, Material & Equipment Costs	C. Blue Stores Junction to Blue Stores Substation	$ 4,746,361
Direct Labor, Material & Equipment Costs	D. Knickerbocker 345kV Substation - Install	$ 15,109,913
Direct Labor, Material & Equipment Costs	E.	$ -
Direct Labor, Material & Equipment Costs	F.	$ -
Direct Labor, Material & Equipment Costs	G.	$ -
Direct Labor, Material & Equipment Costs	H. North Churchtown Substation - Install	$ 13,039,784
Direct Labor, Material & Equipment Costs	I. Greenbush Substation - Removal	$ 61,200
Direct Labor, Material & Equipment Costs	J. Pleasant Valley Substation - Install	$ 2,797,952
Direct Labor, Material & Equipment Costs	K.	$ -
Direct Labor, Material & Equipment Costs	L. Interconnection Knickerbocker Station	$ 1,534,845
Direct Labor, Material & Equipment Costs	M. Interconnection Churchtown Station	$ 4,339,656
Direct Labor, Material & Equipment Costs	N. Interconnection Milan Station	$ 598,228
Direct Labor, Material & Equipment Costs	O. NUF to mitigate NY to NE interface transfer limit degradation	$ 21,428,571
Direct Labor, Material & Equipment Costs	P. NUF proposed as element of the Project	$ -
	SUBTOTAL:	$ 224,164,843
	CONTRACTOR MARK-UP (OH&P)	$ 33,624,726
	CONTINGENCY ON ENTIRE PROJECT	$ -
	TOTAL DIRECT:	$ 257,789,569

NextEra T023 (Segment B Alternate) - Indirect Costs		*Total Each Segment*
Indirect Costs	A. Transmission Line Knickerbocker to Churchtown	$ 13,640,683
Indirect Costs	B. Transmission Line Churchtown to Pleasant Valley	$ 21,913,317
Indirect Costs	C. Blue Stores Junction to Blue Stores Substation	$ 1,004,213
Indirect Costs	D. Knickerbocker 345kV Substation - Install	$ 4,011,148
Indirect Costs	E.	$ -
Indirect Costs	F.	$ -
Indirect Costs	G.	$ -
Indirect Costs	H. North Churchtown Substation - Install	$ 3,246,034
Indirect Costs	I. Greenbush Substation - Removal	$ 9,439
Indirect Costs	J. Pleasant Valley Substation - Install	$ 728,830
Indirect Costs	K. Pleasant Valley Substation - Removal	$ -
Indirect Costs	L. Interconnection Knickerbocker Station	$ 292,345
Indirect Costs	M. Interconnection Churchtown Station	$ 843,122
Indirect Costs	N. Interconnection Milan Station	$ 116,394
Indirect Costs	O. NUF to mitigate NY to NE interface transfer limit degradation	$ 5,357,143
Indirect Costs	P. NUF proposed as element of the Project	$ -
Indirect Costs	Legal and Permitting (Includes Legal, Envir. Lisc. & Permit., and Envir. Mitigation)	$ 7,627,609
	TOTAL INDIRECT:	$ 58,790,277

TOTAL ESTIMATED COST:	$ 316,579,846

NextEra T023 (Segment B Alternate)

A. Transmission Line Knickerbocker to Churchtown

Estimate Revision: 8

Total: $ 73,428,499

NextEra T023 (Segment B Alternate)	*Supply*	*Installation*	*Total*
A. Transmission Line Knickerbocker to Churchtown			
1. CLEARING & ACCESS	$ 11,500	$ 13,208,953	$ 13,220,453
2. FOUNDATIONS	$ 1,519,868	$ 4,432,528	$ 5,952,396
3. STRUCTURES	$ 4,990,679	$ 19,604,107	$ 24,594,786
4. CONDUCTOR, SHIELDWIRE, OPGW	$ 2,943,787	$ 8,681,855	$ 11,625,642
5. INSULATORS, FITTINGS, HARDWARE	$ 2,896,560	$ 1,497,978	$ 4,394,539
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 988,992	$ 12,651,692	$ 13,640,683
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 13,351,386	$ 60,077,113	$ 73,428,499
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 13,351,386	$ 60,077,113	$ 73,428,499

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Sum	Labor & Equipment Supply Rate	Labor & Equipment Sum	Total Unit Rate	TOTAL
A. Transmission Line Knickerbocker to Churchtown									
1. CLEARING & ACCESS									
1.1	Clearing the ROW - Heavy (mowing & clearing)	19.0	Acre	$ -	$ -	$ 15,000	$ 285,000	$ 15,000	**$ 285,000**
1.2	Clearing the ROW - Light (mowing)	61.0	Acre		$ -	$ 5,000	$ 305,000	$ 5,000	**$ 305,000**
1.3	Permanent Access Road	23,126	LF	$ -	$ -	$ 45.00	$ 1,040,688	$ 45	**$ 1,040,688**
1.4	Silt Fence	115,632	LF	$ -	$ -	$ 4.00	$ 462,528	$ 4	**$ 462,528**
1.5	Matting - Access and ROW	92,506	LF	$ -	$ -	$ 70.00	$ 6,475,392	$ 70	**$ 6,475,392**
1.6	Matting - To Work Area	11,925	LF	$ -	$ -	$ 70.00	$ 834,750	$ 70	**$ 834,750**
1.7	Snow Removal	21.9	Mile	$ -	$ -	$ 16,000	$ 350,400	$ 16,000	**$ 350,400**
1.8	ROW Restoration	21.9	Mile	$ -	$ -	$ 10,000	$ 219,000	$ 10,000	**$ 219,000**
1.9	Work Pads	795,000	SF	$ -	$ -	$ 3.52	$ 2,798,400	$ 4	**$ 2,798,400**
1.10	Restoration for Work Pad areas	159,000	SF	$ -	$ -	$ 0.15	$ 23,850	$ 0	**$ 23,850**
1.11	Temporary Access Bridge	9	EA	$ -	$ -	$ 20,035	$ 180,315	$ 20,035	**$ 180,315**
1.12	Air Bridge	-	EA	$ -	$ -	$ 14,445	$ -	$ 14,445	**$ -**
1.13	Stabilized Construction Entrance	4	EA	$ -	$ -	$ 4,580	$ 18,320	$ 4,580	**$ 18,320**
1.14	Maintenance and Protection of Traffic on Public Roads	47	EA	$ -	$ -	$ 4,130	$ 194,110	$ 4,130	**$ 194,110**
1.15	Culverts / Misc. Access	10	EA	$ 750	$ 7,500	$ 1,250	$ 12,500	$ 2,000	**$ 20,000**
1.16	Gates	2	EA	$ 2,000	$ 4,000	$ 2,500	$ 5,000	$ 4,500	**$ 9,000**
1.17	Concrete Washout Station	2	EA	$ -	$ -	$ 1,850	$ 3,700	$ 1,850	**$ 3,700**
TOTAL - CLEARING & ACCESS:					$ 11,500		$ 13,208,953		**$ 13,220,453**
2. FOUNDATIONS									
2.1	Drilled Pier - 115/345KV D/C DEADEND, STEEL	13	EA	$ 86,969	$ 1,130,593	$ 87,900	$ 1,142,702	$ 174,869	**$ 2,273,295**
2.2	Drilled Pier - 345KV S/C DEADEND, STEEL	1	EA	$ 39,770	$ 39,770	$ 40,196	$ 40,196	$ 79,966	**$ 79,966**
2.3	Direct Embed - 115/345KV D/C TANGENT, CONCRETE	145	EA	$ 2,410	$ 349,504	$ 16,391	$ 2,376,630	$ 18,801	**$ 2,726,134**
2.4	Rock Excavation Adder	436.5	CY	$ -	$ -	$ 2,000	$ 873,000	$ 2,000	**$ 873,000**
2.5									
2.6									
2.7									
2.8									
2.9									
2.10									
2.11									
2.12									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Sum	Labor & Equipment Supply Rate	Labor & Equipment Sum	Total Unit Rate	TOTAL
2.13									
2.14									
2.15									
2.16									
2.17									
2.18									
TOTAL - FOUNDATIONS:					$ 1,519,868		$ 4,432,528		**$ 5,952,396**
3. STRUCTURES									
3.1	115/345KV D/C DEADEND, STEEL	13	Structure	$ 131,581	$ 1,710,556	$ 78,949	$ 1,026,334	$ 210,530	**$ 2,736,890**
3.2	345KV S/C DEADEND, STEEL	1	Structure	$ 51,800	$ 51,800	$ 31,080	$ 31,080	$ 82,880	**$ 82,880**
3.3	115/345KV D/C TANGENT, CONCRETE	145	Structure	$ 21,709	$ 3,147,869	$ 91,587	$ 13,280,072	$ 113,296	**$ 16,427,940**
3.4	Remove Existing Foundation	688	EA	$ -	$ -	$ 3,250	$ 2,236,000	$ 3,250	**$ 2,236,000**
3.5	Remove Existing Structure and Accessories	172	EA	$ -	$ -	$ 12,500	$ 2,150,000	$ 12,500	**$ 2,150,000**
3.6	Install Grounding and Grounding Accessories	159	Pole	$ 506	$ 80,454	$ 5,539	$ 880,622	$ 6,045	**$ 961,076**
3.7									
3.8									
3.9									
3.10									
3.11									
3.12									
3.13									
3.14									
3.15									
TOTAL - STRUCTURES:					$ 4,990,679		$ 19,604,107		**$ 24,594,786**
4. CONDUCTOR, SHIELDWIRE, OPGW									
4.1	345kV - (1) 1,033kcmil 54/7 ACSS "Curlew"	728,482	LF	$ 2.82	$ 2,054,319	$ 5.00	$ 3,642,410	$ 7.82	**$ 5,696,729**
4.2	(1) OPGW 36 Fiber AC-33/38/571	121,414	LF	$ 1.35	$ 163,909	$ 5.00	$ 607,070	$ 6.35	**$ 770,979**
4.3	(1) 3/8" EHS7 Steel	121,414	LF	$ 0.47	$ 57,065	$ 5.00	$ 607,070	$ 5.47	**$ 664,135**
4.4	Remove Existing Cable From Existing Structures	43.8	Mile	$ -	$ -	$ 30,000	$ 1,314,000	$ 30,000.00	**$ 1,314,000**
4.5	Remove Existing OPGW Cable and Accessories	21.9	Mile	$ -	$ -	$ 12,000	$ 262,800	$ 12,000.00	**$ 262,800**
4.6	Remove Existing OHSW and Accessories	21.9	Mile	$ -	$ -	$ 12,000	$ 262,800	$ 12,000.00	**$ 262,800**
4.7	115kV - (1) 795kcmil 26/7 ACSS "Drake"	364,241	LF	$ 1.72	$ 626,495	$ 5.00	$ 1,821,205	$ 6.72	**$ 2,447,700**
4.8	Rider Poles (47 Locations)	24	Set	$ 1,750	$ 42,000	$ 3,500	$ 84,000	$ 5,250.00	**$ 126,000**
4.9	Rider Poles - Relocated	23	Set	$ -	$ -	$ 3,500	$ 80,500	$ 3,500.00	**$ 80,500**
4.10									
4.11									
4.12									
4.13									
4.14									
4.15									
4.16									
4.17									
TOTAL: CONDUCTOR, SHIELDWIRE, OPGW:					$ 2,943,787		$ 8,681,855		**$ 11,625,642**
5. INSULATOR, FITTINGS, HARDWARE									
5.1	345kV Tangent (1-Group of 18-Bells Each Assembly)	725	Assembly	$ 1,800	$ 1,305,000	$ 720	$ 522,000	$ 2,520	**$ 1,827,000**
5.2	115kV Tangent (1-Group of 9-Bells Each Assembly)	870	Assembly	$ 900	$ 783,000	$ 560	$ 487,200	$ 1,460	**$ 1,270,200**
5.3	345kV Dead-end & Angle Insulators (1-Group of 18-Bells Each Assembly)	210	Assembly	$ 1,800	$ 378,000	$ 720	$ 151,200	$ 2,520	**$ 529,200**
5.4	115kV Dead-end & Angle Insulators (1-Group of 9-Bells Each Assembly)	91	Assembly	$ 900	$ 81,900	$ 560	$ 50,960	$ 1,460	**$ 132,860**
5.5					$ -		$ -	$ -	**$ -**
5.6					$ -		$ -	$ -	**$ -**
5.7					$ -		$ -	$ -	**$ -**
5.8	OPGW Assembly - Tangent	145	Assembly	$ 200	$ 29,000	$ 150	$ 21,750	$ 350	**$ 50,750**
5.9	OPGW Assembly - Angle / DE	28	Assembly	$ 250	$ 7,000	$ 150	$ 4,200	$ 400	**$ 11,200**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Sum	Labor & Equipment Supply Rate	Labor & Equipment Sum	Total Unit Rate	TOTAL
5.10	OHSW Assembly - Tangent	145	Assembly	$ 200	$ 29,000	$ 150	$ 21,750	$ 350	**$ 50,750**
5.11	OHSW Assembly - Angle / DE	28	Assembly	$ 250	$ 7,000	$ 150	$ 4,200	$ 400	**$ 11,200**
5.12	OPGW Splice Boxes	8	Set	$ 1,746	$ 13,969	$ 2,274	$ 18,192	$ 4,020	**$ 32,161**
5.13	OPGW Splice & Test	8	EA	$ 2,520	$ 20,160	$ 2,520	$ 20,160	$ 5,040	**$ 40,320**
5.14	Spacer - Conductor	3,659	EA	$ 50	$ 182,950	$ 35	$ 128,065	$ 85	**$ 311,015**
5.15	Vibration Dampers - Conductor	878	EA	$ 35	$ 30,730	$ 35	$ 30,730	$ 70	**$ 61,460**
5.16	Shield wire / OPGW Dampers, Misc. Fittings	444	EA	$ 27	$ 11,988	$ 35	$ 15,540	$ 62	**$ 27,528**
5.17									
5.18									
5.19									
5.20									
5.21	Guys, Anchors, and Accessories	-	EA	$ 720	$ -	$ 885	$ -	$ 1,605	**$ -**
5.22	Misc. materials (Signs and Markers)	21.9	Mile	$ 770	$ 16,863	$ 1,006	$ 22,031	$ 1,776	**$ 38,894**
5.23		-		$ -	$ -	$ -	$ -	$ -	**$ -**
TOTAL - INSULATORS, FITTINGS, HARDWARE:					$ 2,896,560		$ 1,497,978		**$ 4,394,539**
A. Transmission Line Knickerbocker to Churchtown					$ 12,362,395		$ 47,425,421		**$ 59,787,815**
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
6.1	Mob / Demob	1	LS	$ -	$ -	$ 597,878	$ 597,878	$ 597,878	**$ 597,878**
	Project Management, Material Handling & Amenities								
6.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 3,728,637	$ 3,728,637	$ 3,728,637	**$ 3,728,637**
6.3	Utility PM and Project Oversite	1	LS		$ -	$ 597,878	$ 597,878	$ 597,878	**$ 597,878**
6.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 597,878	$ 597,878	$ 597,878	**$ 597,878**
	Engineering								
6.5	Design Engineering	1	LS	$ -	$ -	$ 2,989,391	$ 2,989,391	$ 2,989,391	**$ 2,989,391**
6.6	LiDAR	1	LS	$ -	$ -	$ 179,363	$ 179,363	$ 179,363	**$ 179,363**
6.7	Geotech	22	Location	$ -	$ -	$ 3,500	$ 77,000	$ 3,500	**$ 77,000**
6.8	Surveying/Staking	1	LS	$ -	$ -	$ 418,515	$ 418,515	$ 418,515	**$ 418,515**
	Testing & Commissioning								
6.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 40,000	$ 40,000	$ 40,000	**$ 40,000**
	Permitting and Additional Costs								
6.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.12	Warranties / LOC's	1	LS	$ -	$ -	$ 179,363	$ 179,363	$ 179,363	**$ 179,363**
6.13	Real Estate Costs (New ROW)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.14	Real Estate Costs (Incumbent Utility ROW)	1	LS	$ -	$ -	$ 3,186,000	$ 3,186,000	$ 3,186,000	**$ 3,186,000**
6.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.18	Sales Tax on Materials	1	LS	$ 988,992	$ 988,992	$ -	$ -	$ 988,992	**$ 988,992**
6.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 59,788	$ 59,788	$ 59,788	**$ 59,788**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 988,992		$ 12,651,692		**$ 13,640,683**

NextEra T023 (Segment B Alternate)

B. Transmission Line Churchtown to Pleasant Valley

Estimate Revision: 8

Total: $ 122,633,835

NextEra T023 (Segment B Alternate)	*Supply*	*Installation*	*Total*
B. Transmission Line Churchtown to Pleasant Valley			
1. CLEARING & ACCESS	$ 14,000	$ 19,576,466	$ 19,590,466
2. FOUNDATIONS	$ 1,639,170	$ 12,502,886	$ 14,142,057
3. STRUCTURES	$ 6,814,286	$ 34,951,509	$ 41,765,796
4. CONDUCTOR, SHIELDWIRE, OPGW	$ 3,421,997	$ 15,009,440	$ 18,431,437
5. INSULATORS, FITTINGS, HARDWARE	$ 4,481,834	$ 2,308,928	$ 6,790,763
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 1,309,703	$ 20,603,613	$ 21,913,317
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 17,680,991	$ 104,952,843	$ 122,633,835
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 17,680,991	$ 104,952,843	$ 122,633,835

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
B. Transmission Line Churchtown to Pleasant Valley									
1. CLEARING & ACCESS									
1.1	Clearing the ROW - Heavy (mowing & clearing)	-	Acre	$ -	$ -	$ 15,000	$ -	$ 15,000	$ -
1.2	Clearing the ROW - Light (mowing)	98.0	Acre	$ -	$ -	$ 5,000	$ 490,000	$ 5,000	$ 490,000
1.3	Permanent Access Road	34,108.8	LF	$ -	$ -	$ 45	$ 1,534,896	$ 45	$ 1,534,896
1.4	Silt Fence	170,544.0	LF	$ -	$ -	$ 4	$ 682,176	$ 4	$ 682,176
1.5	Matting - Access and ROW	136,435.2	LF	$ -	$ -	$ 70	$ 9,550,464	$ 70	$ 9,550,464
1.6	Matting - To Work Area	18,750.0	LF	$ -	$ -	$ 70	$ 1,312,500	$ 70	$ 1,312,500
1.7	Snow Removal	32.3	Mile	$ -	$ -	$ 16,000	$ 516,800	$ 16,000	$ 516,800
1.8	ROW Restoration	32.3	Mile	$ -	$ -	$ 10,000	$ 323,000	$ 10,000	$ 323,000
1.9	Work Pads	1,250,000.0	SF	$ -	$ -	$ 4	$ 4,400,000	$ 4	$ 4,400,000
1.10	Restoration for Work Pad areas	250,000.0	SF	$ -	$ -	$ 0.2	$ 37,500	$ 0	$ 37,500
1.11	Temporary Access Bridge	14	EA	$ -	$ -	$ 20,035	$ 280,490	$ 20,035	$ 280,490
1.12	Air Bridge	-	EA	$ -	$ -	$ 14,445	$ -	$ 14,445	$ -
1.13	Stabilized Construction Entrance	12	EA	$ -	$ -	$ 4,580	$ 54,960	$ 4,580	$ 54,960
1.14	Maintenance and Protection of Traffic on Public Roads	86	EA	$ -	$ -	$ 4,130	$ 355,180	$ 4,130	$ 355,180
1.15	Gates	4	EA	$ 2,000	$ 8,000	$ 2,500	$ 10,000	$ 4,500	$ 18,000
1.16	Culverts / Misc. Access	8	EA	$ 750	$ 6,000	$ 1,250	$ 10,000	$ 2,000	$ 16,000
1.17	Concrete Washout Station	10	EA	$ -	$ -	$ 1,850	$ 18,500	$ 1,850	$ 18,500
TOTAL - CLEARING & ACCESS:					$ 14,000		$ 19,576,466		$ 19,590,466
2. FOUNDATIONS									
2.1	Drilled Pier - 345KV S/C DEADEND, STEEL	6	EA	$ 50,485	$ 302,911	$ 51,026	$ 306,156	$ 101,511	$ 609,067
2.2	Drilled Pier - 345KV S/C DEADEND, STEEL	15	EA	$ 64,923	$ 973,838	$ 65,618	$ 984,267	$ 130,540	$ 1,958,105
2.3	Direct Embed - 115/345KV D/C TANGENT, CONCRETE	229	EA	$ 1,583	$ 362,421	$ 10,762	$ 2,464,464	$ 12,344	$ 2,826,885
2.4									
2.5	Rock Excavation Adder	4,374.0	CY	$ -	$ -	$ 2,000	$ 8,748,000	$ 2,000	$ 8,748,000
2.6									
2.7									
2.8									
2.9									
2.10									
2.11									
2.12									
TOTAL - FOUNDATIONS:					$ 1,639,170		$ 12,502,886		$ 14,142,057

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3. STRUCTURES									
3.1	345KV S/C DEADEND, STEEL	6	Structure	$ 90,765	$ 544,588	$ 54,459	$ 326,753	$ 145,224	**$ 871,341**
3.2	345KV S/C DEADEND, STEEL	15	Structure	$ 120,698	$ 1,810,466	$ 72,419	$ 1,086,279	$ 193,116	**$ 2,896,745**
3.3	115/345KV D/C TANGENT, CONCRETE	229	Structure	$ 18,920	$ 4,332,733	$ 82,395	$ 18,868,352	$ 101,315	**$ 23,201,085**
3.4									
3.5									
3.6									
3.7									
3.8									
3.9									
3.10									
3.11									
3.12	Remove Existing Foundation	2,084	EA	$ -	$ -	$ 3,250	$ 6,773,000	$ 3,250	**$ 6,773,000**
3.13	Remove Existing Structure and Accessories	521	EA	$ -	$ -	$ 12,500	$ 6,512,500	$ 12,500	**$ 6,512,500**
3.14	Install Grounding and Grounding Accessories	250	Structure	$ 506	$ 126,500	$ 5,539	$ 1,384,625	$ 6,045	**$ 1,511,125**
3.15									
3.16									
3.17									
TOTAL - STRUCTURES PRINCTOWN TO NEW SCOTLAND:					$ 6,814,286		$ 34,951,509		**$ 41,765,796**
4. CONDUCTOR, SHIELDWIRE, OPGW									
4.1	345kV - (1) 1,033kcmil 54/7 ACSS "Curlew"	1,094,386	LF	$ 1.90	$ 2,079,333	$ 5.00	$ 5,471,930	$ 6.90	**$ 7,551,263**
4.2	(1) OPGW 36 Fiber AC-33/38/571	182,398	LF	$ 1.35	$ 246,237	$ 5.00	$ 911,990	$ 6.35	**$ 1,158,227**
4.3	(1) 3/8" EHS7 Steel	182,398	LF	$ 0.47	$ 85,727	$ 5.00	$ 911,990	$ 5.47	**$ 997,717**
4.5	Remove Existing 115kV Cable From Existing Structures	130.4	Mile	$ -	$ -	$ 30,000	$ 3,912,000	$ 30,000.00	**$ 3,912,000**
4.6	Remove Existing OPGW Cable and Accessories	32.6	Mile	$ -	$ -	$ 12,000	$ 390,600	$ 12,000.00	**$ 390,600**
4.7	Remove Existing OHSW and Accessories	32.6	Mile	$ -	$ -	$ 12,000	$ 390,600	$ 12,000.00	**$ 390,600**
4.8	115kV - (1) 795kcmil 26/7 ACSS "Drake"	543,866	LF	$ 1.72	$ 935,450	$ 5.00	$ 2,719,330	$ 6.72	**$ 3,654,780**
4.9									
4.10	Rider Poles - Relocated	43	Set	$ -	$ -	$ 3,500	$ 150,500	$ 3,500.00	**$ 150,500**
4.11	Rider Poles (86 Total)	43	EA	$ 1,750	$ 75,250	$ 3,500	$ 150,500	$ 5,250.00	**$ 225,750**
TOTAL: CONDUCTOR, SHIELDWIRE, OPGW:					$ 3,421,997		$ 15,009,440		**$ 18,431,437**
5. INSULATOR, FITTINGS, HARDWARE									
5.1	345kV Tangent (1-Group of 18-Bells Each Assembly)	1,145	Assembly	$ 1,800	$ 2,061,000	$ 720	$ 824,400	$ 2,520	**$ 2,885,400**
5.2	115kV Tangent (1-Group of 9-Bells Each Assembly)	1,374	Assembly	$ 900	$ 1,236,600	$ 560	$ 769,440	$ 1,460	**$ 2,006,040**
5.3	345kV Dead-end & Angle Insulators (1-Group of 18-Bells Each Assembly)	315	Assembly	$ 1,800	$ 567,000	$ 720	$ 226,800	$ 2,520	**$ 793,800**
5.4	115kV Dead-end & Angle Insulators (1-Group of 9-Bells Each Assembly)	105	Assembly	$ 900	$ 94,500	$ 560	$ 58,800	$ 1,460	**$ 153,300**
5.5	OPGW Assembly - Tangent	229	Assembly	$ 200	$ 45,800	$ 150	$ 34,350	$ 350	**$ 80,150**
5.6	OPGW Assembly - Angle / DE	42	Assembly	$ 250	$ 10,500	$ 150	$ 6,300	$ 400	**$ 16,800**
5.7	OHSW Assembly - Tangent	229	Assembly	$ 200	$ 45,800	$ 150	$ 34,350	$ 350	**$ 80,150**
5.8	OHSW Assembly - Angle / DE	42	Assembly	$ 250	$ 10,500	$ 150	$ 6,300	$ 400	**$ 16,800**
5.9	OPGW Splice Boxes	12	Set	$ 1,746	$ 20,954	$ 2,274	$ 27,288	$ 4,020	**$ 48,242**
5.10	OPGW Splice & Test	12	EA	$ 2,520	$ 30,240	$ 2,520	$ 30,240	$ 5,040	**$ 60,480**
5.11	Spacer - Conductor	5,414	EA	$ 50	$ 270,700	$ 35	$ 189,490	$ 85	**$ 460,190**
5.12	Vibration Dampers - Conductor	1,299	EA	$ 35	$ 45,465	$ 35	$ 45,465	$ 70	**$ 90,930**
5.13	Shieldwire / OPGW Dampers, Misc. Fittings	656	EA	$ 27	$ 17,712	$ 35	$ 22,960	$ 62	**$ 40,672**
5.14	Guys, Anchors, and Accessories	-	EA	$ 720	$ -	$ 885	$ -	$ 1,605	**$ -**
5.15	Misc. materials (Signs and Markers)	32.6	Mile	$ 770	$ 25,064	$ 1,006	$ 32,745	$ 1,776	**$ 57,809**
TOTAL - INSULATORS, FITTINGS, HARDWARE:					$ 4,481,834		$ 2,308,928		**$ 6,790,763**
B. Transmission Line Churchtown to Pleasant Valley					$ 16,371,288		$ 84,349,230		**$ 100,720,518**
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS									
	Contractor Mobilization / Demobilization								
6.1	Mob / Demob	1	LS	$ -	$ -	$ 1,007,205	$ 1,007,205	$ 1,007,205	**$ 1,007,205**
	Project Management, Material Handling & Amenities								
6.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 6,281,385	$ 6,281,385	$ 6,281,385	**$ 6,281,385**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6.3	Utility PM and Project Oversite	1	LS		$ -	$ 1,007,205	$ 1,007,205	$ 1,007,205	**$ 1,007,205**
6.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 1,007,205	$ 1,007,205	$ 1,007,205	**$ 1,007,205**
	Engineering								
6.5	Design Engineering	1	LS	$ -	$ -	$ 5,036,026	$ 5,036,026	$ 5,036,026	**$ 5,036,026**
6.6	LiDAR	1	LS	$ -	$ -	$ 302,162	$ 302,162	$ 302,162	**$ 302,162**
6.7	Geotech	33	Location	$ -	$ -	$ 3,500	$ 115,500	$ 3,500	**$ 115,500**
6.8	Surveying/Staking	1	LS	$ -	$ -	$ 705,044	$ 705,044	$ 705,044	**$ 705,044**
	Testing & Commissioning								
6.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 40,000	$ 40,000	$ 40,000	**$ 40,000**
	Permitting and Additional Costs								
6.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.12	Warranties / LOC's	1	LS	$ -	$ -	$ 302,162	$ 302,162	$ 302,162	**$ 302,162**
6.13	Real Estate Costs (New ROW)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.14	Real Estate Costs (Incumbent Utility ROW)	1	LS	$ -	$ -	$ 4,699,000	$ 4,699,000	$ 4,699,000	**$ 4,699,000**
6.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.18	Sales Tax on Materials	1	LS	$ 1,309,703	$ 1,309,703	$ -	$ -	$ 1,309,703	**$ 1,309,703**
6.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 100,721	$ 100,721	$ 100,721	**$ 100,721**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 1,309,703		$ 20,603,613		**$ 21,913,317**

NextEra T023 (Segment B Alternate)

C. Blue Stores Junction to Blue Stores Substation

Estimate Revision: 8

Total: $ 5,750,574

NextEra T023 (Segment B Alternate)			
	Supply	*Installation*	*Total*
C. Blue Stores Junction to Blue Stores Substation			
1. CLEARING & ACCESS	$ -	$ 1,404,512	$ 1,404,512
2. FOUNDATIONS	$ 236,848	$ 925,954	$ 1,162,802
3. STRUCTURES	$ 596,484	$ 946,665	$ 1,543,149
4. CONDUCTOR, SHIELDWIRE, OPGW	$ 84,763	$ 387,095	$ 471,858
5. INSULATORS, FITTINGS, HARDWARE	$ 107,544	$ 56,496	$ 164,040
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 82,051	$ 922,162	$ 1,004,213
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 1,107,690	$ 4,642,884	$ 5,750,574
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 1,107,690	$ 4,642,884	$ 5,750,574

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
C. Blue Stores Junction to Blue Stores Substation									
1. CLEARING & ACCESS									
1.1	Clearing the ROW - Heavy (mowing & clearing)	-	Acre	$ -	$ -	$ 15,000	$ -	$ 15,000	**$ -**
1.2	Clearing the ROW - Light (mowing)	4.0	Acre	$ -	$ -	$ 5,000	$ 20,000	$ 5,000	**$ 20,000**
1.3	Permanent Access Road	2,218	LF	$ -	$ -	$ 45	$ 99,792	$ 45	**$ 99,792**
1.4	Silt Fence	11,088.0	LF	$ -	$ -	$ 4	$ 44,352	$ 4	**$ 44,352**
1.5	Matting - Access and ROW	8,870	LF	$ -	$ -	$ 70	$ 620,928	$ 70	**$ 620,928**
1.6	Matting - To Work Area	1,800.0	LF	$ -	$ -	$ 70	$ 126,000	$ 70	**$ 126,000**
1.7	Snow Removal	2.1	Mile	$ -	$ -	$ 16,000	$ 33,600	$ 16,000	**$ 33,600**
1.8	ROW Restoration	2.1	Mile	$ -	$ -	$ 10,000	$ 21,000	$ 10,000	**$ 21,000**
1.9	Work Pads	120,000.0	SF	$ -	$ -	$ 4	$ 422,400	$ 4	**$ 422,400**
1.10	Restoration for Work Pad areas	24,000.0	SF	$ -	$ -	$ 0.2	$ 3,600	$ 0	**$ 3,600**
1.11	Temporary Access Bridge	-	EA	$ -	$ -	$ 20,035	$ -	$ 20,035	**$ -**
1.12	Air Bridge	-	EA	$ -	$ -	$ 14,445	$ -	$ 14,445	**$ -**
1.13	Stabilized Construction Entrance	1	EA	$ -	$ -	$ 4,580	$ 4,580	$ 4,580	**$ 4,580**
1.14	Maintenance and Protection of Traffic on Public Roads	2	EA	$ -	$ -	$ 4,130	$ 8,260	$ 4,130	**$ 8,260**
1.15	Gates	-	EA	$ 2,000	$ -	$ 2,500	$ -	$ 4,500	**$ -**
1.16	Culverts / Misc. Access	-	EA	$ 750	$ -	$ 1,250	$ -	$ 2,000	**$ -**
1.17	Concrete Washout Station	-	EA	$ -	$ -	$ 1,850	$ -	$ 1,850	**$ -**
TOTAL - CLEARING & ACCESS:					$ -		$ 1,404,512		**$ 1,404,512**
2. FOUNDATIONS									
2.1	Drilled Pier - 115kV Single Circuit H- Pole Angle/ DE	6	EA	$ 31,225	$ 187,348	$ 31,559	$ 189,354	$ 62,784	**$ 376,702**
2.2	Direct Embed - 115kV Single Circuit H- Pole Tangent	18	EA	$ 2,750	$ 49,500	$ 18,700	$ 336,600	$ 21,450	**$ 386,100**
2.3	Rock Excavation Adder	200.0	CY	$ -	$ -	$ 2,000	$ 400,000	$ 2,000	**$ 400,000**
2.4									
2.5									
2.6									
2.7									
2.8									
2.9									
2.10									
2.11									
2.12									
2.13									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.14									
2.15									
TOTAL - FOUNDATIONS:					$ 236,848		$ 925,954		**$ 1,162,802**
3. STRUCTURES									
3.1	115kV Single Circuit H- Pole Angle/ DE	6	Structure	$ 39,822	$ 238,929	$ 23,893	$ 143,358	$ 63,714	**$ 382,287**
3.2	115kV Single Circuit H- Pole Tangent	18	Structure	$ 18,515	$ 333,266	$ 11,109	$ 199,960	$ 29,624	**$ 533,226**
3.3	Remove Existing Foundation	-	EA	$ -	$ -	$ 7,500	$ -	$ 7,500	**$ -**
3.4	Remove Existing Structure and Accessories	27	EA	$ -	$ -	$ 12,500	$ 337,500	$ 12,500	**$ 337,500**
3.5									
3.6	Install Grounding and Grounding Accessories	48	Structure	$ 506	$ 24,288	$ 5,539	$ 265,848	$ 6,045	**$ 290,136**
3.7									
3.8									
3.9									
3.10									
3.11									
3.12									
3.13									
3.14									
3.15									
TOTAL - STRUCTURES:					$ 596,484		$ 946,665		**$ 1,543,149**
4. CONDUCTOR, SHIELDWIRE, OPGW									
4.1	**345kV** - (1) 954kcmil 54/7 ACSS "Cardinal"	-	LF	$ 1.90	$ -	$ 5.00	$ -	$ 6.90	**$ -**
4.2	(1) OPGW 36 Fiber AC-33/38/571	-	LF	$ 1.35	$ -	$ 5.00	$ -	$ 6.35	**$ -**
4.3	(1) 3/8" EHS7 Steel	-	LF	$ 0.47	$ -	$ 5.00	$ -	$ 5.47	**$ -**
4.4	**115kV** - (1) 795kcmil 26/7 ACSR "Drake"	34,927.0	LF	$ 1.72	$ 60,074	$ 5.00	$ 174,635	$ 6.72	**$ 234,709**
4.5	(1) OPGW 36 Fiber AC-33/38/571	11,642.0	LF	$ 1.35	$ 15,717	$ 5.00	$ 58,210	$ 6.35	**$ 73,927**
4.6	(1) 3/8" EHS7 Steel	11,642.0	LF	$ 0.47	$ 5,472	$ 5.00	$ 58,210	$ 5.47	**$ 63,682**
4.7	Remove Existing Cable	2.1	Mile	$ -	$ -	$ 30,000	$ 63,600	$ 30,000.00	**$ 63,600**
4.8	Remove Existing OPGW Cable and Accessories	-	Mile	$ -	$ -	$ 12,000	$ -	$ 12,000.00	**$ -**
4.9	Remove Existing OHSW and Accessories	2.1	Mile	$ -	$ -	$ 12,000	$ 25,440	$ 12,000.00	**$ 25,440**
4.10		-							
4.11		-							
4.12	Rider Poles (Locations)	2.0	EA	$ 1,750	$ 3,500	$ 3,500	$ 7,000	$ 5,250.00	**$ 10,500**
4.13									
TOTAL - CONDUCTOR, SHIELDWIRE, OPGW:					$ 84,763		$ 387,095		**$ 471,858**
5. INSULATOR, FITTINGS, HARDWARE									
5.1	345kV Tangent (1-Group of 18-Bells Each Assembly)	-	Assembly	$ 1,800	$ -	$ 720	$ -	$ 2,520	**$ -**
5.2	115kV Tangent (1-Group of 9-Bells Each Assembly)	54	Assembly	$ 900	$ 48,600	$ 360	$ 19,440	$ 1,260	**$ 68,040**
5.3	345kV Dead-end & Angle Insulators (1-Group of 18-Bells Each Assembly)	-	Assembly	$ 1,800	$ -	$ 720	$ -	$ 2,520	**$ -**
5.4	115kV Dead-end & Angle Insulators (1-Group of 9-Bells Each Assembly)	36	Assembly	$ 900	$ 32,400	$ 360	$ 12,960	$ 1,260	**$ 45,360**
5.5			Assembly		$ -		$ -	$ -	**$ -**
5.6	OPGW Assembly - Tangent	18	Assembly	$ 200	$ 3,600	$ 150	$ 2,700	$ 350	**$ 6,300**
5.7	OPGW Assembly - Angle / DE	12	Assembly	$ 250	$ 3,000	$ 150	$ 1,800	$ 400	**$ 4,800**
5.8	OHSW Assembly - Tangent	18	Assembly	$ 200	$ 3,600	$ 150	$ 2,700	$ 350	**$ 6,300**
5.9	OHSW Assembly - Angle / DE	12	Assembly	$ 250	$ 3,000	$ 150	$ 1,800	$ 400	**$ 4,800**
5.10	OPGW Splice Boxes	2	Set	$ 1,746	$ 3,492	$ 2,274	$ 4,548	$ 4,020	**$ 8,040**
5.11	OPGW Splice & Test	2	EA	$ 2,520	$ 5,040	$ 2,520	$ 5,040	$ 5,040	**$ 10,080**
5.12	Spacer - Conductor	-	EA	$ 50	$ -	$ 35	$ -	$ 85	**$ -**
5.13	Vibration Dampers - Conductor	72	EA	$ 35	$ 2,520	$ 35	$ 2,520	$ 70	**$ 5,040**
5.14	Shieldwire / OPGW Dampers, Misc. Fittings	25	EA	$ 27	$ 675	$ 35	$ 875	$ 62	**$ 1,550**
5.15	Guys, Anchors, and Accessories	-	EA	$ 720	$ -	$ 885	$ -	$ 1,605	**$ -**
5.16	Misc. materials (Signs and Markers)	2.1	Mile	$ 770	$ 1,617	$ 1,006	$ 2,113	$ 1,776	**$ 3,730**
5.17									
5.18									
5.19									
5.20									
TOTAL - INSULATORS, FITTINGS, HARDWARE:					$ 107,544		$ 56,496		**$ 164,040**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
C. Blue Stores Junction to Blue Stores Substation					$ 1,025,639		$ 3,720,722		**$ 4,746,361**
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
6.1	Mob / Demob	1	LS	$ -	$ -	$ 47,464	$ 47,464	$ 47,464	**$ 47,464**
	Project Management, Material Handling & Amenities								
6.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 296,004	$ 296,004	$ 296,004	**$ 296,004**
6.3	Utility PM and Project Oversite	1	LS		$ -	$ 47,464	$ 47,464	$ 47,464	**$ 47,464**
6.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 47,464	$ 47,464	$ 47,464	**$ 47,464**
	Engineering								
6.5	Design Engineering	1	LS	$ -	$ -	$ 237,318	$ 237,318	$ 237,318	**$ 237,318**
6.6	LiDAR	1	LS	$ -	$ -	$ 14,239	$ 14,239	$ 14,239	**$ 14,239**
6.7	Geotech	2	Location	$ -	$ -	$ 3,500	$ 7,000	$ 3,500	**$ 7,000**
6.8	Surveying/Staking	1	LS	$ -	$ -	$ 33,225	$ 33,225	$ 33,225	**$ 33,225**
	Testing & Commissioning								
6.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 20,000	$ 20,000	$ 20,000	**$ 20,000**
	Permitting and Additional Costs								
6.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.12	Warranties / LOC's	1	LS	$ -	$ -	$ 14,239	$ 14,239	$ 14,239	**$ 14,239**
6.13	Real Estate Costs (New ROW)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.14	Real Estate Costs (Incumbent Utility ROW)	1	LS	$ -	$ -	$ 153,000	$ 153,000	$ 153,000	**$ 153,000**
6.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.18	Sales Tax on Materials	1	LS	$ 82,051	$ 82,051	$ -	$ -	$ 82,051	**$ 82,051**
6.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 4,746	$ 4,746	$ 4,746	**$ 4,746**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 82,051		$ 922,162		**$ 1,004,213**

NextEra T023 (Segment B Alternate)

D. Knickerbocker 345kV Substation - Install

Estimate Revision: 8

Total: $ 19,121,061

NextEra T023 (Segment B Alternate)	*Supply*	*Installation*	*Total*
D. Knickerbocker 345kV Substation - Install			
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ 223,675	$ 1,936,115	$ 2,159,790
2. SUBSTATION FOUNDATIONS	$ 1,572,935	$ 1,694,150	$ 3,267,085
3. SUBSTATION STRUCTURES	$ 727,975	$ 727,975	$ 1,455,950
4. MAJOR EQUIPTMENT	$ 600,000	$ 240,000	$ 840,000
5. SMALL EQUIPTMENT / MATERIALS	$ 1,086,500	$ 489,500	$ 1,576,000
6. CONTROL HOUSE / PANELS	$ 1,837,125	$ 1,227,625	$ 3,064,750
7. MISC ITEMS	$ 1,061,528	$ 1,684,810	$ 2,746,338
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 568,779	$ 3,442,369	$ 4,011,148
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 7,678,517	$ 11,442,544	$ 19,121,061
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 7,678,517	$ 11,442,544	$ 19,121,061

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
D. Knickerbocker 345kV Substation - Install									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	3.875	ACRES	$ -	$ -	$ 355,000	$ 1,375,625	$ 355,000	**$ 1,375,625**
1.2	Station stone within substation fence.	1,650	CY	$ 27	$ 44,550	$ 75	$ 123,750	$ 102	**$ 168,300**
1.3	Substation Fence	1,660	LF	$ 100	$ 166,000	$ 100	$ 166,000	$ 200	**$ 332,000**
1.4									
1.5									
1.6	Permanent Access Road - 20'-Wide	275	LF	$ 35	$ 9,625	$ 285	$ 78,375	$ 320	**$ 88,000**
1.7	Pavement	3,373	SY	$ -	$ -	$ 55	$ 185,515	$ 55	**$ 185,515**
1.8	Gates	1	EA	$ 2,000	$ 2,000	$ 2,500	$ 2,500	$ 4,500	**$ 4,500**
1.9	Culverts / Misc. Access	2	EA	$ 750	$ 1,500	$ 1,250	$ 2,500	$ 2,000	**$ 4,000**
1.10	Concrete Washout Station	1	EA	$ -	$ -	$ 1,850	$ 1,850	$ 1,850	**$ 1,850**
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ 223,675		$ 1,936,115		$ 2,159,790
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	3	EA	$ 14,940	$ 44,820	$ 16,000	$ 48,000	$ 30,940	**$ 92,820**
2.1b	Capacitor Bank Foundations	0	EA	$ 56,025	$ -	$ 60,000	$ -	$ 116,025	**$ -**
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	16	EA	$ 26,145	$ 418,320	$ 28,000	$ 448,000	$ 54,145	**$ 866,320**
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 26,145	$ -	$ 28,000	$ -	$ 54,145	**$ -**
2.1e	Switch Stand Foundations	72	EA	$ 4,482	$ 322,704	$ 4,800	$ 345,600	$ 9,282	**$ 668,304**
2.1f	Station Service Transformer Stand Foundation	4	EA	$ 4,482	$ 17,928	$ 4,800	$ 19,200	$ 9,282	**$ 37,128**
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1h	Bus Support 1 Ph Foundations	72	EA	$ 4,482	$ 322,704	$ 4,800	$ 345,600	$ 9,282	**$ 668,304**
2.1j	Instrument Transformer Stand Foundations	27	EA	$ 4,482	$ 121,014	$ 4,800	$ 129,600	$ 9,282	**$ 250,614**
2.1k	Arrester Stand Foundations	9	EA	$ 4,482	$ 40,338	$ 4,800	$ 43,200	$ 9,282	**$ 83,538**
2.1m	Wave Trap Stand Foundations	3	EA	$ 4,482	$ 13,446	$ 4,800	$ 14,400	$ 9,282	**$ 27,846**
2.1n	Reactor Foundations	0	EA	$ 7,470	$ -	$ 8,000	$ -	$ 15,470	**$ -**
2.1p									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.1q									
2.2	**230kV**								
2.2a	Circuit Breaker Foundations	0	EA	$ 11,952	$ -	$ 12,800	$ -	$ 24,752	**$ -**
2.2b	Capacitor Bank Foundations	0	EA	$ 44,820	$ -	$ 48,000	$ -	$ 92,820	**$ -**
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	**$ -**
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	**$ -**
2.2e	Switch Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	**$ -**
2.2f	Station Service Transformer Stand Foundation	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	**$ -**
2.2g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.2h	Bus Support 1 Ph Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	**$ -**
2.2j	Instrument Transformer Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	**$ -**
2.2k	Arrester Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	**$ -**
2.2m	Wave Trap Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	**$ -**
2.2n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.2p									
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	0	EA	$ 5,229	$ -	$ 5,600	$ -	$ 10,829	**$ -**
2.3b	Capacitor Bank Foundations	0	EA	$ 33,615	$ -	$ 36,000	$ -	$ 69,615	**$ -**
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	8	EA	$ 16,434	$ 131,472	$ 17,600	$ 140,800	$ 34,034	**$ 272,272**
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	**$ -**
2.3e	Switch Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	**$ -**
2.3f	Fuse Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	**$ -**
2.3g	Bus Support 3ph Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	**$ -**
2.3h	Bus Support 1 Ph Foundations	6	EA	$ 2,988	$ 17,928	$ 3,200	$ 19,200	$ 6,188	**$ 37,128**
2.3j	Instrument Transformer Stand Foundations	6	EA	$ 2,988	$ 17,928	$ 3,200	$ 19,200	$ 6,188	**$ 37,128**
2.3k	Arrester Stand Foundations	6	EA	$ 2,988	$ 17,928	$ 3,200	$ 19,200	$ 6,188	**$ 37,128**
2.3m	Wave Trap Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	**$ -**
2.3n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.3p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment	0	EA	$ 97,110	$ -	$ 104,000	$ -	$ 201,110	**$ -**
2.4b	345-115kV Transformer Foundation w/ Oil Containment	0	EA	$ 74,700	$ -	$ 80,000	$ -	$ 154,700	**$ -**
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad	1	EA	$ 44,260	$ 44,260	$ 47,400	$ 47,400	$ 91,660	**$ 91,660**
2.5b	Generator Foundation	1	EA	$ 16,000	$ 16,000	$ 17,000	$ 17,000	$ 33,000	**$ 33,000**
2.5c	Station Service Distribution Line - 3ph.	1	LS	$ -	$ -	$ 9,750	$ 9,750	$ 9,750	**$ 9,750**
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	5	EA	$ 5,229	$ 26,145	$ 5,600	$ 28,000	$ 10,829	**$ 54,145**
2.6b				$ -	$ -	$ -	$ -	$ -	**$ -**
2.6c				$ -	$ -	$ -	$ -	$ -	**$ -**
TOTAL - SUBSTATION FOUNDATIONS					$ 1,572,935		$ 1,694,150		$ 3,267,085
3. SUBSTATION STRUCTURES									
3.1	**345kV**								
3.1a	Substation A-Frame Structures - Stand alone	4	EA	$ 37,000	$ 148,000	$ 37,000	$ 148,000	$ 74,000	**$ 296,000**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.1b	Substation A-Frame Structures - Shared Column	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	**$ -**
3.1c	Switch Stands	12	EA	$ 14,800	$ 177,600	$ 14,800	$ 177,600	$ 29,600	**$ 355,200**
3.1d	Station Service Transformer Stand	1	EA	$ 14,800	$ 14,800	$ 14,800	$ 14,800	$ 29,600	**$ 29,600**
3.1e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.1f	Bus Support 1 Ph	72	EA	$ 3,700	$ 266,400	$ 3,700	$ 266,400	$ 7,400	**$ 532,800**
3.1g	Instrument Transformer Stand	27	EA	$ 1,850	$ 49,950	$ 1,850	$ 49,950	$ 3,700	**$ 99,900**
3.1h	Arrester Stand	9	EA	$ 1,850	$ 16,650	$ 1,850	$ 16,650	$ 3,700	**$ 33,300**
3.1j	Wave Trap Stand	3	EA	$ 7,400	$ 22,200	$ 7,400	$ 22,200	$ 14,800	**$ 44,400**
3.1k	Lightning Mast - 70'	5	EA	$ 6,475	$ 32,375	$ 6,475	$ 32,375	$ 12,950	**$ 64,750**
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	**$ -**
3.2b	Substation A-Frame Structures - Shared Column	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	**$ -**
3.2c	Switch Stands	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	**$ -**
3.2d	Station Service Transformer Stand	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	**$ -**
3.2e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.2f	Bus Support 1 Ph	0	EA	$ 2,775	$ -	$ 2,775	$ -	$ 5,550	**$ -**
3.2g	Instrument Transformer Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	**$ -**
3.2h	Arrester Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	**$ -**
3.2j	Wave Trap Stand	0	EA	$ 5,550	$ -	$ 5,550	$ -	$ 11,100	**$ -**
3.2k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	**$ -**
3.3	**115kV**								
3.3a	Substation A-Frame Structures - Stand alone	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	**$ -**
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	**$ -**
3.3c	Switch Stands	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	**$ -**
3.3d	Fuse Stand	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	**$ -**
3.3e	Bus Support 3ph	0	EA	$ 3,330	$ -	$ 3,330	$ -	$ 6,660	**$ -**
3.3f	Bus Support 1 Ph	0	EA	$ 1,850	$ -	$ 1,850	$ -	$ 3,700	**$ -**
3.3g	Instrument Transformer Stand	0	EA	$ 740	$ -	$ 740	$ -	$ 1,480	**$ -**
3.3h	Arrester Stand	0	EA	$ 740	$ -	$ 740	$ -	$ 1,480	**$ -**
3.3j	Wave Trap Stand	0	EA	$ 3,700	$ -	$ 3,700	$ -	$ 7,400	**$ -**
3.3k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	**$ -**
TOTAL - SUBSTATION STRUCTURES					$ 727,975		$ 727,975		$ 1,455,950
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	3	EA	$ 200,000	$ 600,000	$ 80,000	$ 240,000	$ 280,000	**$ 840,000**
4.1b	Capacitor Banks with Reactors	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	**$ -**
4.1c									
4.1d									
4.1e									
4.2	**230kV**								
4.2a	Circuit Breakers	0	EA	$ 115,000	$ -	$ 80,000	$ -	$ 195,000	**$ -**
4.2b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	**$ -**
4.3	**115kV**								
4.3a	Circuit Breakers	0	EA	$ 52,000	$ -	$ 60,000	$ -	$ 112,000	**$ -**
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ 60,000	$ -	$ 60,000	**$ -**
TOTAL - MAJOR EQUIPTMENT					$ 600,000		$ 240,000		$ 840,000

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator	3	EA	$ 40,000	$ 120,000	$ 15,000	$ 45,000	$ 55,000	**$ 165,000**
5.1b	Disconnect Switches - 3ph w/ manual operator	6	EA	$ 35,000	$ 210,000	$ 17,500	$ 105,000	$ 52,500	**$ 315,000**
5.1c	VT'S	9	EA	$ 25,000	$ 225,000	$ 12,000	$ 108,000	$ 37,000	**$ 333,000**
5.1d	CT'S	9	EA	$ 13,000	$ 117,000	$ 8,000	$ 72,000	$ 21,000	**$ 189,000**
5.1e	CCVT'S	9	EA	$ 13,000	$ 117,000	$ 8,000	$ 72,000	$ 21,000	**$ 189,000**
5.1f	Arresters	9	EA	$ 6,500	$ 58,500	$ 1,500	$ 13,500	$ 8,000	**$ 72,000**
5.1g	Wave Traps	3	EA	$ 13,000	$ 39,000	$ 8,000	$ 24,000	$ 21,000	**$ 63,000**
5.1h	Station Service Transformers	1	EA	$ 200,000	$ 200,000	$ 50,000	$ 50,000	$ 250,000	**$ 250,000**
5.1j									
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator	0	EA	$ 35,000	$ -	$ 15,000	$ -	$ 50,000	**$ -**
5.2b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 30,000	$ -	$ 17,500	$ -	$ 47,500	**$ -**
5.2c	VT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	**$ -**
5.2d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	**$ -**
5.2e	CCVT'S	0	EA	$ 10,000	$ -	$ 6,000	$ -	$ 16,000	**$ -**
5.2f	Arresters	0	EA	$ 5,000	$ -	$ 6,000	$ -	$ 11,000	**$ -**
5.2g	Wave Traps	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	**$ -**
5.2h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.2j									
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	0	EA	$ 33,000	$ -	$ 15,000	$ -	$ 48,000	**$ -**
5.3b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 28,000	$ -	$ 17,500	$ -	$ 45,500	**$ -**
5.3c	VT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	**$ -**
5.3d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	**$ -**
5.3e	CCVT'S	0	EA	$ 8,000	$ -	$ 8,000	$ -	$ 16,000	**$ -**
5.3f	Arresters	0	EA	$ 3,420	$ -	$ 6,000	$ -	$ 9,420	**$ -**
5.3g	Wave Traps	0	EA	$ 10,000	$ -	$ 8,000	$ -	$ 18,000	**$ -**
5.3h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.3j	Fuses	0	EA	$ 1,500	$ -	$ 1,500	$ -	$ 3,000	**$ -**
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ 1,086,500		$ 489,500		$ 1,576,000
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE	1	EA	$ 409,500	$ 409,500	$ 95,000	$ 95,000	$ 504,500	**$ 504,500**
6.2	Protection and Telecom Equipment Panels	17	EA	$ 35,000	$ 595,000	$ 10,000	$ 170,000	$ 45,000	**$ 765,000**
6.3	125VDC Batteries	2	EA	$ 75,000	$ 150,000	$ 25,000	$ 50,000	$ 100,000	**$ 200,000**
6.4	Control Cables	1	LS	$ 317,625	$ 317,625	$ 317,625	$ 317,625	$ 635,250	**$ 635,250**
6.5	SCADA and Communications	1	EA	$ 50,000	$ 50,000	$ 100,000	$ 100,000	$ 150,000	**$ 150,000**
6.6	Low Voltage AC Distribution	2	EA	$ 50,000	$ 100,000	$ 100,000	$ 200,000	$ 150,000	**$ 300,000**
6.7	DC Distribution System	2	EA	$ 50,000	$ 100,000	$ 100,000	$ 200,000	$ 150,000	**$ 300,000**
6.8	Security	1	EA	$ 7,500	$ 7,500	$ 7,500	$ 7,500	$ 15,000	**$ 15,000**
6.9	Fire Alarm	1	EA	$ 7,500	$ 7,500	$ 7,500	$ 7,500	$ 15,000	**$ 15,000**
6.10	Generator	1	EA	$ 100,000	$ 100,000	$ 80,000	$ 80,000	$ 180,000	**$ 180,000**
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ 1,837,125		$ 1,227,625		**$ 3,064,750**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
7. MISC ITEMS									
7.1	Conduit & Cable Trench System	1,050	LF	$ 185.00	$ 194,250	$ 170.00	$ 178,500	$ 355	**$ 372,750**
7.2	Rigid Bus, Fittings & Insulators	1,900	LF	$ 125.07	$ 237,633	$ 237.10	$ 450,490	$ 362	**$ 688,123**
7.3	Strain Bus, Connectors & Insulators	1,000	LF	$ 39.30	$ 39,300	$ 53.35	$ 53,350	$ 93	**$ 92,650**
7.4	Grounding System	16,500	LF	$ 6.93	$ 114,345	$ 32.58	$ 537,570	$ 40	**$ 651,915**
7.5	Strain Bus Insulators - 345kV	38	EA	$ 2,000	$ 76,000	$ 1,050	$ 39,900	$ 3,050	**$ 115,900**
7.6	Strain Bus Insulators - 230kV	0	EA	$ 1,400	$ -	$ 750	$ -	$ 2,150	**$ -**
7.7	Strain Bus Insulators - 115kV	0	EA	$ 1,000	$ -	$ 550	$ -	$ 1,550	**$ -**
7.8	Low Voltage AC Station Service	1	LS	$ 50,000	$ 50,000	$ 75,000	$ 75,000	$ 125,000	**$ 125,000**
7.9	SSVT Service	1	LS	$ 45,000	$ 45,000	$ 45,000	$ 45,000	$ 90,000	**$ 90,000**
7.10	Control Conduits from Trench to Equipment	1	LS	$ 125,000	$ 125,000	$ 125,000	$ 125,000	$ 250,000	**$ 250,000**
7.11	Misc. Materials (Above and Below Ground)	1	LS	$ 180,000	$ 180,000	$ 180,000	$ 180,000	$ 360,000	**$ 360,000**
7.12									
7.13									
7.14									
7.15									
7.16									
7.17									
7.18									
7.19									
7.20									
7.21									
7.22									
7.23									
7.24									
7.25									
TOTAL - MISC ITEMS					$ 1,061,528		$ 1,684,810		$ 2,746,338
D. Knickerbocker 345kV Substation - Install					$ 7,109,738		$ 8,000,175		**$ 15,109,913**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1.0	LS	$ -	$ -	$ 151,099	$ 151,099	$ 151,099	**$ 151,099**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 942,322	$ 942,322	$ 942,322	**$ 942,322**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 151,099	$ 151,099	$ 151,099	**$ 151,099**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 151,099	$ 151,099	$ 151,099	**$ 151,099**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 1,208,793	$ 1,208,793	$ 1,208,793	**$ 1,208,793**
8.6	LiDAR	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.7	Geotech	4	EA	$ -	$ -	$ 3,500	$ 14,000	$ 3,500	**$ 14,000**
8.8	Surveying/Staking	1	Site	$ -	$ -	$ 105,769	$ 105,769	$ 105,769	**$ 105,769**
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 377,748	$ 377,748	$ 377,748	**$ 377,748**
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 45,330	$ 45,330	$ 45,330	**$ 45,330**
8.13	Real Estate Costs (New)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
8.14	Real Estate Costs (Incumbent Utility)	1	LS	$ -	$ -	$ 280,000	$ 280,000	$ 280,000	**$ 280,000**
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.18	Sales Tax on Materials	1	LS	$ 568,779	$ 568,779	$ -	$ -	$ 568,779	**$ 568,779**
8.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 15,110	$ 15,110	$ 15,110	**$ 15,110**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 568,779		$ 3,442,369		**$ 4,011,148**

NextEra T023 (Segment B Alternate) — **H. North Churchtown Substation - Install**

Estimate Revision: 8 — **Total: $ 16,285,817**

NextEra T023 (Segment B Alternate)	*Supply*	*Installation*	*Total*
H. North Churchtown Substation - Install			
1. SITE PREP/ GRADING/ FENCING / CIVIL	**$ 919,243**	**$ 2,855,295**	**$ 3,774,539**
2. SUBSTATION FOUNDATIONS	**$ 773,458**	**$ 834,700**	**$ 1,608,158**
3. SUBSTATION STRUCTURES	**$ 208,000**	**$ 338,365**	**$ 676,730**
4. MAJOR EQUIPTMENT	**$ 208,000**	**$ 240,000**	**$ 448,000**
5. SMALL EQUIPTMENT / MATERIALS	**$ 954,540**	**$ 637,800**	**$ 1,592,340**
6. CONTROL HOUSE / PANELS	**$ 1,962,850**	**$ 1,310,350**	**$ 3,273,200**
7. MISC ITEMS	**$ 731,113**	**$ 935,704**	**$ 1,666,817**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	**$ 471,006**	**$ 2,775,028**	**$ 3,246,034**
CONTRACTOR MARK-UP (OH&P)	**$ -**	**$ -**	**$ -**
SUBTOTAL:	**$ 6,228,210**	**$ 9,927,242**	**$ 16,285,817**
CONTINGENCY ON ENTIRE PROJECT	**$ -**	**$ -**	**$ -**
TOTAL:	**$ 6,228,210**	**$ 9,927,242**	**$ 16,285,817**

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
H. North Churchtown Substation - Install									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	2.125	ACRES	$ -	$ -	$ 660,000	$ 1,402,500	$ 660,000	**$ 1,402,500**
1.2	Station stone within substation fence.	600	CY	$ 27	$ 16,200	$ 75	$ 45,000	$ 102	**$ 61,200**
1.3	Substation Fence	970	LF	$ 100	$ 97,000	$ 100	$ 97,000	$ 200	**$ 194,000**
1.4	Permanent Access Road - 20'-Wide	650	LF	$ 35	$ 22,750	$ 285	$ 185,250	$ 320	**$ 208,000**
1.5	Retaining Wall (1050' x Avg. of 7.15')	1	LS	$ 318,371	$ 318,371	$ 492,245	$ 492,245	$ 810,616	**$ 810,616**
1.6	Compacted Fill (Sand)	27,143	CY	$ 17	$ 461,423	$ 20	$ 542,850	$ 37	**$ 1,004,273**
1.7									
1.8	Pavement	1,520	SY	$ -	$ -	$ 55	$ 83,600	$ 55	**$ 83,600**
1.9	Gates	1	EA	$ 2,000	$ 2,000	$ 2,500	$ 2,500	$ 4,500	**$ 4,500**
1.10	Culverts / Misc. Access	2	EA	$ 750	$ 1,500	$ 1,250	$ 2,500	$ 2,000	**$ 4,000**
1.11	Concrete Washout Station	1	EA	$ -	$ -	$ 1,850	$ 1,850	$ 1,850	**$ 1,850**
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ 919,243		$ 2,855,295		$ 3,774,539
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	0	EA	$ 14,940	$ -	$ 16,000	$ -	$ 30,940	**$ -**
2.1b	Capacitor Bank Foundations	0	EA	$ 56,025	$ -	$ 60,000	$ -	$ 116,025	**$ -**
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 26,145	$ -	$ 28,000	$ -	$ 54,145	**$ -**
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 26,145	$ -	$ 28,000	$ -	$ 54,145	**$ -**
2.1e	Switch Stand Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	**$ -**
2.1f	Station Service Transformer Stand Foundation	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	**$ -**
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1h	Bus Support 1 Ph Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	**$ -**
2.1j	Instrument Transformer Stand Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	**$ -**
2.1k	Arrester Stand Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	**$ -**
2.1m	Wave Trap Stand Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	**$ -**
2.1n	Reactor Foundations	0	EA	$ 7,470	$ -	$ 8,000	$ -	$ 15,470	**$ -**
2.1p									
				$ -	$ -	$ -	$ -	$ -	**$ -**
2.2	**230kV**								
2.2a	Circuit Breaker Foundations	0	EA	$ 11,952	$ -	$ 12,800	$ -	$ 24,752	**$ -**
2.2b	Capacitor Bank Foundations	0	EA	$ 44,820	$ -	$ 48,000	$ -	$ 92,820	**$ -**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	$ -
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	$ -
2.2e	Switch Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2f	Station Service Transformer Stand Foundation	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2h	Bus Support 1 Ph Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2j	Instrument Transformer Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2k	Arrester Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2m	Wave Trap Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2p									
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	4	EA	$ 5,229	$ 20,916	$ 5,600	$ 22,400	$ 10,829	**$ 43,316**
2.3b	Capacitor Bank Foundations	0	EA	$ 33,615	$ -	$ 36,000	$ -	$ 69,615	$ -
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	$ -
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	24	EA	$ 16,434	$ 394,416	$ 17,600	$ 422,400	$ 34,034	**$ 816,816**
2.3e	Switch Stand Foundations	24	EA	$ 2,988	$ 71,712	$ 3,200	$ 76,800	$ 6,188	**$ 148,512**
2.3f	Fuse Stand Foundations	2	EA	$ 2,988	$ 5,976	$ 3,200	$ 6,400	$ 6,188	**$ 12,376**
2.3g	Bus Support 3ph Foundations	8	EA	$ 2,988	$ 23,904	$ 3,200	$ 25,600	$ 6,188	**$ 49,504**
2.3h	Bus Support 1 Ph Foundations	12	EA	$ 2,988	$ 35,856	$ 3,200	$ 38,400	$ 6,188	**$ 74,256**
2.3j	Instrument Transformer Stand Foundations	36	EA	$ 2,988	$ 107,568	$ 3,200	$ 115,200	$ 6,188	**$ 222,768**
2.3k	Arrester Stand Foundations	12	EA	$ 2,988	$ 35,856	$ 3,200	$ 38,400	$ 6,188	**$ 74,256**
2.3m	Wave Trap Stand Foundations	8	EA	$ 2,988	$ 23,904	$ 3,200	$ 25,600	$ 6,188	**$ 49,504**
2.3n	Station Service Foundations	1	EA	$ 3,735	$ 3,735	$ 4,000	$ 4,000	$ 7,735	**$ 7,735**
2.3p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment	0	EA	$ 97,110	$ -	$ 104,000	$ -	$ 201,110	$ -
2.4b	345-115kV Transformer Foundation w/ Oil Containment	0	EA	$ 74,700	$ -	$ 80,000	$ -	$ 154,700	$ -
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad	1	EA	$ 33,615	$ 33,615	$ 36,000	$ 36,000	$ 69,615	**$ 69,615**
2.5b	Generator Foundation	1	EA	$ 16,000	$ 16,000	$ 17,000	$ 17,000	$ 33,000	**$ 33,000**
2.5c	Station Service Distribution Line - 1ph.	1	LS	$ -	$ -	$ 6,500	$ 6,500	$ 6,500	**$ 6,500**
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	0	EA	$ 5,229	$ -	$ 5,600	$ -	$ 10,829	$ -
2.6b		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6c		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION FOUNDATIONS					$ 773,458		$ 834,700		$ 1,608,158
3. SUBSTATION STRUCTURES									
3.1	**345kV**								
3.1a	Substation A-Frame Structures - Stand alone	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	$ -
3.1b	Substation A-Frame Structures - Shared Column	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	$ -
3.1c	Switch Stands	0	EA	$ 14,800	$ -	$ 14,800	$ -	$ 29,600	$ -
3.1d	Station Service Transformer Stand	0	EA	$ 14,800	$ -	$ 14,800	$ -	$ 29,600	$ -
3.1e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1f	Bus Support 1 Ph	0	EA	$ 3,700	$ -	$ 3,700	$ -	$ 7,400	$ -
3.1g	Instrument Transformer Stand	0	EA	$ 1,850	$ -	$ 1,850	$ -	$ 3,700	$ -
3.1h	Arrester Stand	0	EA	$ 1,850	$ -	$ 1,850	$ -	$ 3,700	$ -
3.1j	Wave Trap Stand	0	EA	$ 7,400	$ -	$ 7,400	$ -	$ 14,800	$ -
3.1k	Lightning Masts - 70'	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	$ -
3.2b	Substation A-Frame Structures - Shared Column	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	$ -
3.2c	Switch Stands	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	$ -
3.2d	Station Service Transformer Stand	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	$ -
3.2e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2f	Bus Support 1 Ph	0	EA	$ 2,775	$ -	$ 2,775	$ -	$ 5,550	$ -
3.2g	Instrument Transformer Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.2h	Arrester Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	$ -
3.2j	Wave Trap Stand	0	EA	$ 5,550	$ -	$ 5,550	$ -	$ 11,100	$ -
3.2k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
3.3	**115kV**								
3.3a	Substation A-Frame Structures - Stand alone	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	$ -
3.3b	Substation A-Frame Structures - Shared Column	8	EA	$ 18,500	$ 148,000	$ 18,500	$ 148,000	$ 37,000	**$ 296,000**
3.3c	Switch Stands	12	EA	$ 7,955	$ 95,460	$ 7,955	$ 95,460	$ 15,910	**$ 190,920**
3.3d	Fuse Stand	1	EA	$ 7,955	$ 7,955	$ 7,955	$ 7,955	$ 15,910	**$ 15,910**
3.3e	Bus Support 3ph	4	EA	$ 3,330	$ 13,320	$ 3,330	$ 13,320	$ 6,660	**$ 26,640**
3.3f	Bus Support 1 Ph	12	EA	$ 1,850	$ 22,200	$ 1,850	$ 22,200	$ 3,700	**$ 44,400**
3.3g	Instrument Transformer Stand	36	EA	$ 740	$ 26,640	$ 740	$ 26,640	$ 1,480	**$ 53,280**
3.3h	Arrester Stand	12	EA	$ 740	$ 8,880	$ 740	$ 8,880	$ 1,480	**$ 17,760**
3.3j	Wave Trap Stand	4	EA	$ 3,700	$ 14,800	$ 3,700	$ 14,800	$ 7,400	**$ 29,600**
3.3k	Lightning Mast	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
3.3l	Station Service Transformer Support Stand	1	EA	$ 1,110	$ 1,110	$ 1,110	$ 1,110	$ 2,220	**$ 2,220**
TOTAL - SUBSTATION STRUCTURES					$ 338,365		$ 338,365		$ 676,730
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	0	EA	$ 300,000	$ -	$ 80,000	$ -	$ 380,000	$ -
4.1b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	$ -
4.1c	345 kV - 230 kV Auto Transformer	0	EA	$ -	$ -	$ 750,000	$ -	$ 750,000	$ -
4.1d	345 kV - 115 kV Auto Transformer	0	EA	$ -	$ -	$ 750,000	$ -	$ 750,000	$ -
4.2	**230kV**								
4.2a	Circuit Breakers	0	EA	$ 250,000	$ -	$ 80,000	$ -	$ 330,000	$ -
4.2b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	$ -
4.3	**115kV**								
4.3a	Circuit Breakers	4	EA	$ 52,000	$ 208,000	$ 60,000	$ 240,000	$ 112,000	**$ 448,000**
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ 60,000	$ -	$ 60,000	$ -
TOTAL - MAJOR EQUIPTMENT					$ 208,000		$ 240,000		$ 448,000
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator	0	EA	$ 40,000	$ -	$ 15,000	$ -	$ 55,000	$ -
5.1b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 35,000	$ -	$ 17,500	$ -	$ 52,500	$ -
5.1c	VT'S	0	EA	$ 25,000	$ -	$ 12,000	$ -	$ 37,000	$ -
5.1d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.1e	CCVT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.1f	Arresters	0	EA	$ 6,500	$ -	$ 1,500	$ -	$ 8,000	$ -
5.1g	Wave Traps	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.1h	Station Service Transformers	0	EA	$ 200,000	$ -	$ 50,000	$ -	$ 250,000	$ -
5.1j									
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator	0	EA	$ 35,000	$ -	$ 15,000	$ -	$ 50,000	$ -
5.2b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 30,000	$ -	$ 17,500	$ -	$ 47,500	$ -
5.2c	VT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2e	CCVT'S	0	EA	$ 10,000	$ -	$ 6,000	$ -	$ 16,000	$ -
5.2f	Arresters	0	EA	$ 5,000	$ -	$ 6,000	$ -	$ 11,000	$ -
5.2g	Wave Traps	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2j									
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	4	EA	$ 33,000	$ 132,000	$ 15,000	$ 60,000	$ 48,000	**$ 192,000**
5.3b	Disconnect Switches - 3ph w/ manual operator	8	EA	$ 28,000	$ 224,000	$ 17,500	$ 140,000	$ 45,500	**$ 364,000**
5.3c	VT'S	12	EA	$ 13,000	$ 156,000	$ 8,000	$ 96,000	$ 21,000	**$ 252,000**
5.3d	CT'S	12	EA	$ 13,000	$ 156,000	$ 8,000	$ 96,000	$ 21,000	**$ 252,000**
5.3e	CCVT'S	12	EA	$ 8,000	$ 96,000	$ 8,000	$ 96,000	$ 16,000	**$ 192,000**
5.3f	Arresters	12	EA	$ 3,420	$ 41,040	$ 6,000	$ 72,000	$ 9,420	**$ 113,040**
5.3g	Wave Traps	4	EA	$ 13,000	$ 52,000	$ 8,000	$ 32,000	$ 21,000	**$ 84,000**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
5.3h	Station Service Transformers	1	EA	$ 75,000	$ 75,000	$ 35,000	$ 35,000	$ 110,000	**$ 110,000**
5.3j	Fuses	3	EA	$ 7,500	$ 22,500	$ 3,600	$ 10,800	$ 11,100	**$ 33,300**
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ 954,540		$ 637,800		$ 1,592,340
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE	1	EA	$ 292,500	$ 292,500	$ 85,000	$ 85,000	$ 377,500	**$ 377,500**
6.2	Protection and Telecom Equipment Panels	23	EA	$ 35,000	$ 805,000	$ 10,000	$ 230,000	$ 45,000	**$ 1,035,000**
6.3	125VDC Batteries	2	EA	$ 75,000	$ 150,000	$ 25,000	$ 50,000	$ 100,000	**$ 200,000**
6.4	Control Cables	1	LS	$ 350,350	$ 350,350	$ 350,350	$ 350,350	$ 700,700	**$ 700,700**
6.5	SCADA and Communications	1	EA	$ 50,000	$ 50,000	$ 100,000	$ 100,000	$ 150,000	**$ 150,000**
6.6	Low Voltage AC Distribution	2	EA	$ 50,000	$ 100,000	$ 100,000	$ 200,000	$ 150,000	**$ 300,000**
6.7	DC Distribution System	2	EA	$ 50,000	$ 100,000	$ 100,000	$ 200,000	$ 150,000	**$ 300,000**
6.8	Security	1	EA	$ 7,500	$ 7,500	$ 7,500	$ 7,500	$ 15,000	**$ 15,000**
6.9	Fire Alarm	1	EA	$ 7,500	$ 7,500	$ 7,500	$ 7,500	$ 15,000	**$ 15,000**
6.10	Generator	1	EA	$ 100,000	$ 100,000	$ 80,000	$ 80,000	$ 180,000	**$ 180,000**
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ 1,962,850		$ 1,310,350		**$ 3,273,200**
7. MISC ITEMS									
7.1	Conduit & Cable Trench System	600.0	LF	$ 185.00	$ 111,000	$ 170.00	$ 102,000	$ 355	**$ 213,000**
7.2	Rigid Bus, Fittings & Insulators	700.0	LF	$ 125.07	$ 87,549	$ 237.10	$ 165,970	$ 362	**$ 253,519**
7.3	Strain Bus, Connectors & Insulators	1,000.0	LF	$ 39.30	$ 39,300	$ 53.35	$ 53,350	$ 93	**$ 92,650**
7.4	Grounding System	4,800.0	LF	$ 6.93	$ 33,264	$ 32.58	$ 156,384	$ 40	**$ 189,648**
7.5	Strain Bus Insulators - 345kV	0	EA	$ 2,000	$ -	$ 1,050	$ -	$ 3,050	**$ -**
7.6	Strain Bus Insulators - 230kV	0	EA	$ 1,400	$ -	$ 750	$ -	$ 2,150	**$ -**
7.7	Strain Bus Insulators - 115kV	60	EA	$ 1,000	$ 60,000	$ 550	$ 33,000	$ 1,550	**$ 93,000**
7.8	Low Voltage AC Station Service	1	LS	$ 50,000	$ 50,000	$ 75,000	$ 75,000	$ 125,000	**$ 125,000**
7.9	SSVT Service	1	LS	$ 45,000	$ 45,000	$ 45,000	$ 45,000	$ 90,000	**$ 90,000**
7.10	Control Conduits from Trench to Equipment	1	LS	$ 125,000	$ 125,000	$ 125,000	$ 125,000	$ 250,000	**$ 250,000**
7.11	Misc. Materials (Above and Below Ground)	1	LS	$ 180,000	$ 180,000	$ 180,000	$ 180,000	$ 360,000	**$ 360,000**
7.12									
7.13									
7.14									
7.15									
7.16									
7.17									
7.18									
7.19									
7.20									
7.21									
7.22									
7.23									
7.24									
7.25									
TOTAL - MISC ITEMS					$ 731,113		$ 935,704		$ 1,666,817
H. North Churchtown Substation - Install					$ 5,887,569		$ 7,152,214		**$ 13,039,784**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1.0	LS	$ -	$ -	$ 130,398	$ 130,398	$ 130,398	**$ 130,398**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 813,220	$ 813,220	$ 813,220	**$ 813,220**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 130,398	$ 130,398	$ 130,398	**$ 130,398**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 130,398	$ 130,398	$ 130,398	**$ 130,398**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 1,043,183	$ 1,043,183	$ 1,043,183	**$ 1,043,183**
8.6	LiDAR	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
8.7	Geotech	4	EA	$ -	$ -	$ 3,500	$ 14,000	$ 3,500	**$ 14,000**
8.8	Surveying/Staking	1	Site	$ -	$ -	$ 91,278	$ 91,278	$ 91,278	**$ 91,278**
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 325,995	$ 325,995	$ 325,995	**$ 325,995**
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 39,119	$ 39,119	$ 39,119	**$ 39,119**
8.13	Real Estate Costs (New)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.14	Real Estate Costs (Incumbent Utility)	1	LS	$ -	$ -	$ 44,000	$ 44,000	$ 44,000	**$ 44,000**
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.18	Sales Tax on Materials	1	LS	$ 471,006	$ 471,006	$ -	$ -	$ 471,006	**$ 471,006**
8.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 13,040	$ 13,040	$ 13,040	**$ 13,040**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 471,006		$ 2,775,028		**$ 3,246,034**

NextEra T023 (Segment B Alternate)

I. Greenbush Substation - Removal

Estimate Revision: 8

Total: $ 70,639

NextEra T023 (Segment B Alternate)	*Supply*	*Installation*	*Total*
I. Greenbush Substation - Removal			
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ -	$ -	$ -
2. SUBSTATION FOUNDATIONS	$ -	$ 12,000	$ 12,000
3. SUBSTATION STRUCTURES	$ -	$ -	$ -
4. MAJOR EQUIPTMENT	$ -	$ 7,000	$ 7,000
5. SMALL EQUIPTMENT / MATERIALS	$ -	$ 35,000	$ 35,000
6. CONTROL HOUSE / PANELS	$ -	$ 7,200	$ 7,200
7. MISC ITEMS	$ -	$ -	$ -
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ -	$ 9,439	$ 9,439
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ -	$ 70,639	$ 70,639
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ -	$ 70,639	$ 70,639

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
I. Greenbush Substation - Removal									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	0	ACRES	$ -	$ -	$ 203,000	$ -	$ 203,000	$ -
1.2	Station stone within substation fence.	0	CY	$ -	$ -	$ 75	$ -	$ 75	$ -
1.3	Substation Fence	0	LF	$ -	$ -	$ 150	$ -	$ 150	$ -
1.4									
1.5									
1.6									
1.7									
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ -		$ -		$ -
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	0	EA	$ -	$ -	$ 14,200	$ -	$ 14,200	$ -
2.1b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1e	Switch Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1f	Station Service Transformer Stand Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.1j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1k	Arrester Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1p									
2.2	**230kV**								
2.2a	Circuit Breaker Foundations	0	EA	$ -	$ -	$ 7,200	$ -	$ 7,200	$ -
2.2b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ 32,000	$ -	$ 32,000	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ 22,000	$ -	$ 22,000	$ -
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ 11,000	$ -	$ 11,000	$ -
2.2e	Switch Stand Foundations	0	EA	$ -	$ -	$ 5,200	$ -	$ 5,200	$ -
2.2f	Station Service Transformer Stand Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.2j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.2k	Arrester Stand Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.2m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2p									
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	1	EA	$ -	$ -	$ 7,200	$ 7,200	$ 7,200	**$ 7,200**
2.3b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3e	Switch Stand Foundations	0	EA	$ -	$ -	$ 5,200	$ -	$ 5,200	$ -
2.3f	Fuse Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3j	Instrument Transformer Stand Foundations	2	EA	$ -	$ -	$ 2,400	$ 4,800	$ 2,400	**$ 4,800**
2.3k	Arrester Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4b	345-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ 42,000	$ -	$ 42,000	$ -
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5b	Generator Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6b		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6c		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION FOUNDATIONS					$ -		$ 12,000		$ 12,000
3. SUBSTATION STRUCTURES									
3.1	**345kV**								
3.1a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1c	Switch Stands	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1d	Station Service Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1f	Bus Support 1 Ph	0	EA	$ -	$ -	$ 2,250	$ -	$ 2,250	$ -
3.1g	Instrument Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1h	Arrester Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1j	Wave Trap Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ 27,000	$ -	$ 27,000	$ -
3.2b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ 27,000	$ -	$ 27,000	$ -
3.2c	Switch Stands	0	EA	$ -	$ -	$ 9,750	$ -	$ 9,750	$ -
3.2d	Station Service Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2f	Bus Support 1 Ph	0	EA	$ -	$ -	$ 2,250	$ -	$ 2,250	$ -
3.2g	Instrument Transformer Stand	0	EA	$ -	$ -	$ 1,050	$ -	$ 1,050	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.2h	Arrester Stand	0	EA	$ -	$ -	$ 1,050	$ -	$ 1,050	$ -
3.2j	Wave Trap Stand	0	EA	$ -	$ -	$ 4,500	$ -	$ 4,500	$ -
3.2k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3	**115kV**								
3.3a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ 15,000	$ -	$ 15,000	$ -
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3c	Switch Stands	0	EA	$ -	$ -	$ 6,450	$ -	$ 6,450	$ -
3.3d	Fuse Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3f	Bus Support 1 Ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3g	Instrument Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3h	Arrester Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3j	Wave Trap Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION STRUCTURES					$ -		$ -		$ -
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.1b	Capacitor Banks	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.1c		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.1d									
4.2	**230kV**								
4.2a	Circuit Breakers	0	EA	$ -	$ -	$ 7,000	$ -	$ 7,000	$ -
4.2b	Capacitor Banks	0	EA	$ -	$ -	$ 42,000	$ -	$ 42,000	$ -
4.3	**115kV**								
4.3a	Circuit Breakers	1	EA	$ -	$ -	$ 7,000	$ 7,000	$ 7,000	**$ 7,000**
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - MAJOR EQUIPTMENT					$ -		$ 7,000		$ 7,000
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.1b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.1c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.1d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.1e	CCVT'S	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.1f	Arresters	0	EA	$ -	$ -	$ 1,500	$ -	$ 1,500	$ -
5.1g	Wave Traps	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.1h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.1j									
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.2b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.2c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2e	CCVT'S	0	EA	$ -	$ -	$ 1,500	$ -	$ 1,500	$ -
5.2f	Arresters	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.2g	Wave Traps	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.2h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2j									
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.3c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3e	CCVT'S	2	EA	$ -	$ -	$ 17,500	$ 35,000	$ 17,500	**$ 35,000**
5.3f	Arresters	0	EA	$ -	$ -	$ 1,500	$ -	$ 1,500	$ -
5.3g	Wave Traps	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
5.3j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ -		$ 35,000		$ 35,000
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE	0	EA	$ -	$ -	$ 150,000	$ -	$ 150,000	$ -
6.2	Protection and Telecom Equipment Panels	2	EA	$ -	$ -	$ 3,600	$ 7,200	$ 3,600	**$ 7,200**
6.3	125VDC Batteries	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.4	Control Cables	0	LS	$ -	$ -	$ -	$ -	$ -	$ -
6.5	SCADA and Communications	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.6	Low Voltage AC Distribution	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.7	DC Distribution System	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.8	Security	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.9	Fire Alarm	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.10	Generator	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ -		$ 7,200		**$ 7,200**
7. MISC ITEMS									
7.1	Conduit & Cable Trench System	0	EA	$ -	$ -	$ 42,000.00	$ -	$ 42,000	$ -
7.2	Rigid Bus, Fittings & Insulators	0	EA	$ -	$ -	$ 126.25	$ -	$ 126	$ -
7.3	Strain Bus, Connectors & Insulators	0	LS	$ -	$ -	$ 21,000.00	$ -	$ 21,000	$ -
7.4	Grounding System	0	EA	$ -	$ -	$ 42,000.00	$ -	$ 42,000	$ -
7.5									
7.6									
7.7									
7.8									
7.9									
7.10									
7.11									
7.12									
7.13									
7.14									
7.15									
TOTAL - MISC ITEMS					$ -		$ -		$ -
I. Greenbush Substation - Removal					$ -		$ 61,200		**$ 61,200**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1.0	LS	$ -	$ -	$ 612	$ 612	$ 612	**$ 612**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, Admin, Materials Management Staff)	1	Months			$ 3,319	$ 3,319	$ 3,319	**$ 3,319**
8.3	Site Accommodation, Facilities, Storage	1.0	LS	$ -	$ -	$ 612	$ 612	$ 612	**$ 612**
	Engineering								
8.4	Design Engineering	1.0	LS	$ -	$ -	$ 4,896	$ 4,896	$ 4,896	**$ 4,896**
8.5	LiDAR	-	Mile	$ -	$ -	$ -	$ -	$ -	$ -
8.6	Geotech	-	Site	$ -	$ -	$ -	$ -	$ -	$ -
8.7	Surveying/Staking	-	Site	$ -	$ -	$ -	$ -	$ -	$ -
	Testing & Commissioning								
8.8	Testing & Commissioning of T-Line and Equipment	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
	Permitting and Additional Costs								
8.9	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.10	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.11	Warranties / LOC's	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.12	Real Estate Costs	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.13	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.14	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.15		-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.16	Sales Tax on Materials	1.0	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.17	Fees for permits, including roadway, railroad, building or other local permits	-	LS		$ -	$ -	$ -	$ -	$ -
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ -		$ 9,439		**$ 9,439**

NextEra T023 (Segment B Alternate)

J. Pleasant Valley Substation - Install

Estimate Revision: 8

Total: $ 3,526,782

NextEra T023 (Segment B Alternate)	*Supply*	*Installation*	*Total*
J. Pleasant Valley Substation - Install			
1. SITE PREP/ GRADING/ FENCING / CIVIL	**$ 11,025**	**$ 14,625**	**$ 25,650**
2. SUBSTATION FOUNDATIONS	**$ 161,177**	**$ 171,300**	**$ 332,477**
3. SUBSTATION STRUCTURES	**$ 44,400**	**$ 44,400**	**$ 88,800**
4. MAJOR EQUIPTMENT	**$ 200,000**	**$ 80,000**	**$ 280,000**
5. SMALL EQUIPTMENT / MATERIALS	**$ 260,500**	**$ 129,000**	**$ 389,500**
6. CONTROL HOUSE / PANELS	**$ 560,900**	**$ 253,400**	**$ 814,300**
7. MISC ITEMS	**$ 409,950**	**$ 457,275**	**$ 867,225**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	**$ 131,836**	**$ 596,994**	**$ 728,830**
CONTRACTOR MARK-UP (OH&P)	**$ -**	**$ -**	**$ -**
SUBTOTAL:	**$ 1,779,788**	**$ 1,746,994**	**$ 3,526,782**
CONTINGENCY ON ENTIRE PROJECT	**$ -**	**$ -**	**$ -**
TOTAL:	**$ 1,779,788**	**$ 1,746,994**	**$ 3,526,782**

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
J. Pleasant Valley Substation - Install									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	0	ACRES	$ -	$ -	$ 230,000	$ -	$ 230,000	**$ -**
1.2	Station stone within substation fence.	75	CY	$ 27	$ 2,025	$ 75	$ 5,625	$ 102	**$ 7,650**
1.3	Substation Fence	90	LF	$ 100	$ 9,000	$ 100	$ 9,000	$ 200	**$ 18,000**
1.4	Permanent Access Road - 20'-Wide	0	LF	$ 35	$ -	$ 285	$ -	$ 320	**$ -**
1.5									
1.6									
1.7									
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ 11,025		$ 14,625		$ 25,650
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	1	EA	$ 14,940	$ 14,940	$ 16,000	$ 16,000	$ 30,940	**$ 30,940**
2.1b	Capacitor Bank Foundations	0	EA	$ 56,025	$ -	$ 60,000	$ -	$ 116,025	**$ -**
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 26,145	$ -	$ 28,000	$ -	$ 54,145	**$ -**
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 26,145	$ -	$ 28,000	$ -	$ 54,145	**$ -**
2.1e	Switch Stand Foundations	6	EA	$ 4,482	$ 26,892	$ 4,800	$ 28,800	$ 9,282	**$ 55,692**
2.1f	Station Service Transformer Stand Foundation	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	**$ -**
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1h	Bus Support 1 Ph Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	**$ -**
2.1j	Instrument Transformer Stand Foundations	9	EA	$ 4,482	$ 40,338	$ 4,800	$ 43,200	$ 9,282	**$ 83,538**
2.1k	Arrester Stand Foundations	3	EA	$ 4,482	$ 13,446	$ 4,800	$ 14,400	$ 9,282	**$ 27,846**
2.1m	Wave Trap Stand Foundations	1	EA	$ 4,482	$ 4,482	$ 4,800	$ 4,800	$ 9,282	**$ 9,282**
2.1n	Reactor Foundations	0	EA	$ 7,470	$ -	$ 8,000	$ -	$ 15,470	**$ -**
2.1p									
2.2	**230kV**								
2.2a	Circuit Breaker Foundations	0	EA	$ 11,952	$ -	$ 12,800	$ -	$ 24,752	**$ -**
2.2b	Capacitor Bank Foundations	0	EA	$ 44,820	$ -	$ 48,000	$ -	$ 92,820	**$ -**
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	**$ -**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	$ -
2.2e	Switch Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2f	Station Service Transformer Stand Foundation	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2h	Bus Support 1 Ph Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2j	Instrument Transformer Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2k	Arrester Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2m	Wave Trap Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2p									
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	0	EA	$ 5,229	$ -	$ 5,600	$ -	$ 10,829	$ -
2.3b	Capacitor Bank Foundations	0	EA	$ 33,615	$ -	$ 36,000	$ -	$ 69,615	$ -
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	$ -
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	$ -
2.3e	Switch Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3f	Fuse Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3g	Bus Support 3ph Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3h	Bus Support 1 Ph Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3j	Instrument Transformer Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3k	Arrester Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3m	Wave Trap Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment	0	EA	$ 97,110	$ -	$ 104,000	$ -	$ 201,110	$ -
2.4b	345-115kV Transformer Foundation w/ Oil Containment	0	EA	$ 74,700	$ -	$ 80,000	$ -	$ 154,700	$ -
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5	**Control House Foundations / Pad**								
2.5a	Control House Addition Foundation (25-ft x 50-ft)	1	EA	$ 61,079	$ 61,079	$ 64,100	$ 64,100	$ 125,179	**$ 125,179**
2.5b	Generator Foundation	0	EA	$ 16,000	$ -	$ 17,000	$ -	$ 33,000	$ -
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	0	EA	$ 5,229	$ -	$ 5,600	$ -	$ 10,829	$ -
2.6b		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6c		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION FOUNDATIONS					$ 161,177		$ 171,300		$ 332,477
3. SUBSTATION STRUCTURES									
3.1	**345kV**								
3.1a	Substation A-Frame Structures - Stand alone	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	$ -
3.1b	Substation A-Frame Structures - Shared Column	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	$ -
3.1c	Switch Stands	1	EA	$ 14,800	$ 14,800	$ 14,800	$ 14,800	$ 29,600	**$ 29,600**
3.1d	Station Service Transformer Stand	0	EA	$ 14,800	$ -	$ 14,800	$ -	$ 29,600	$ -
3.1e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1f	Bus Support 1 Ph	0	EA	$ 3,700	$ -	$ 3,700	$ -	$ 7,400	$ -
3.1g	Instrument Transformer Stand	9	EA	$ 1,850	$ 16,650	$ 1,850	$ 16,650	$ 3,700	**$ 33,300**
3.1h	Arrester Stand	3	EA	$ 1,850	$ 5,550	$ 1,850	$ 5,550	$ 3,700	**$ 11,100**
3.1j	Wave Trap Stand	1	EA	$ 7,400	$ 7,400	$ 7,400	$ 7,400	$ 14,800	**$ 14,800**
3.1k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	$ -
3.2b	Substation A-Frame Structures - Shared Column	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	$ -
3.2c	Switch Stands	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	$ -
3.2d	Station Service Transformer Stand	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	$ -
3.2e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2f	Bus Support 1 Ph	0	EA	$ 2,775	$ -	$ 2,775	$ -	$ 5,550	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.2g	Instrument Transformer Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	$ -
3.2h	Arrester Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	$ -
3.2j	Wave Trap Stand	0	EA	$ 5,550	$ -	$ 5,550	$ -	$ 11,100	$ -
3.2k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
3.3	**115kV**								
3.3a	Substation A-Frame Structures - Stand alone	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	$ -
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	$ -
3.3c	Switch Stands	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	$ -
3.3d	Fuse Stand	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	$ -
3.3e	Bus Support 3ph	0	EA	$ 3,330	$ -	$ 3,330	$ -	$ 6,660	$ -
3.3f	Bus Support 1 Ph	0	EA	$ 1,850	$ -	$ 1,850	$ -	$ 3,700	$ -
3.3g	Instrument Transformer Stand	0	EA	$ 740	$ -	$ 740	$ -	$ 1,480	$ -
3.3h	Arrester Stand	0	EA	$ 740	$ -	$ 740	$ -	$ 1,480	$ -
3.3j	Wave Trap Stand	0	EA	$ 3,700	$ -	$ 3,700	$ -	$ 7,400	$ -
3.3k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
TOTAL - SUBSTATION STRUCTURES					$ 44,400		$ 44,400		$ 88,800
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	1	EA	$ 200,000	$ 200,000	$ 80,000	$ 80,000	$ 280,000	**$ 280,000**
4.1b	Capacitor Banks - W/ Center Tap VT and Reactors	0	EA	$ 370,000	$ -	$ 80,000	$ -	$ 450,000	$ -
4.1c	Circuit Breakers - Cap Switching	0	EA	$ 220,000	$ -	$ 750,000	$ -	$ 970,000	$ -
4.1d	345 kV - 115 kV Auto Transformer	0	EA	$ -	$ -	$ 750,000	$ -	$ 750,000	$ -
4.2	**230kV**								
4.2a	Circuit Breakers	0	EA	$ 250,000	$ -	$ 80,000	$ -	$ 330,000	$ -
4.2b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	$ -
4.3	**115kV**								
4.3a	Circuit Breakers	0	EA	$ 225,000	$ -	$ 60,000	$ -	$ 285,000	$ -
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ 60,000	$ -	$ 60,000	$ -
TOTAL - MAJOR EQUIPTMENT					$ 200,000		$ 80,000		$ 280,000
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator	1	EA	$ 40,000	$ 40,000	$ 15,000	$ 15,000	$ 55,000	**$ 55,000**
5.1b	Disconnect Switches - 3ph w/ manual operator	1	EA	$ 35,000	$ 35,000	$ 17,500	$ 17,500	$ 52,500	**$ 52,500**
5.1c	VT'S	3	EA	$ 25,000	$ 75,000	$ 12,000	$ 36,000	$ 37,000	**$ 111,000**
5.1d	CT'S	3	EA	$ 13,000	$ 39,000	$ 8,000	$ 24,000	$ 21,000	**$ 63,000**
5.1e	CCVT'S	3	EA	$ 13,000	$ 39,000	$ 8,000	$ 24,000	$ 21,000	**$ 63,000**
5.1f	Arresters	3	EA	$ 6,500	$ 19,500	$ 1,500	$ 4,500	$ 8,000	**$ 24,000**
5.1g	Wave Traps	1	EA	$ 13,000	$ 13,000	$ 8,000	$ 8,000	$ 21,000	**$ 21,000**
5.1h	Station Service Transformers	0	EA	$ 200,000	$ -	$ 50,000	$ -	$ 250,000	$ -
5.1j									
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator	0	EA	$ 35,000	$ -	$ 15,000	$ -	$ 50,000	$ -
5.2b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 30,000	$ -	$ 17,500	$ -	$ 47,500	$ -
5.2c	VT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2e	CCVT'S	0	EA	$ 10,000	$ -	$ 6,000	$ -	$ 16,000	$ -
5.2f	Arresters	0	EA	$ 5,000	$ -	$ 6,000	$ -	$ 11,000	$ -
5.2g	Wave Traps	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2j									
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	0	EA	$ 33,000	$ -	$ 15,000	$ -	$ 48,000	$ -
5.3b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 28,000	$ -	$ 17,500	$ -	$ 45,500	$ -
5.3c	VT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.3d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.3e	CCVT'S	0	EA	$ 8,000	$ -	$ 8,000	$ -	$ 16,000	$ -
5.3f	Arresters	0	EA	$ 3,420	$ -	$ 6,000	$ -	$ 9,420	$ -
5.3g	Wave Traps	0	EA	$ -	$ -	$ -	$ -	$ -	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
5.3h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ 260,500		$ 129,000		$ 389,500
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	Control House Addition (25-ft x 50-ft)	1	EA	$ 325,000	$ 325,000	$ 85,000	$ 85,000	$ 410,000	**$ 410,000**
6.2	Protection and Telecom Equipment Panels	3	EA	$ 35,000	$ 105,000	$ 12,500	$ 37,500	$ 47,500	**$ 142,500**
6.3	125VDC Batteries	0	EA	$ 75,000	$ -	$ 25,000	$ -	$ 100,000	**$ -**
6.4	Control Cables	1	LS	$ 130,900	$ 130,900	$ 130,900	$ 130,900	$ 261,800	**$ 261,800**
6.5	SCADA and Communications	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.6	Low Voltage AC Distribution	0	EA	$ 50,000	$ -	$ 100,000	$ -	$ 150,000	**$ -**
6.7	DC Distribution System	0	EA	$ 50,000	$ -	$ 100,000	$ -	$ 150,000	**$ -**
6.8	Security	0	EA	$ 7,500	$ -	$ 7,500	$ -	$ 15,000	**$ -**
6.9	Fire Alarm	0	EA	$ 7,500	$ -	$ 7,500	$ -	$ 15,000	**$ -**
6.10	Generator	0	EA	$ 100,000	$ -	$ 80,000	$ -	$ 180,000	**$ -**
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ 560,900		$ 253,400		**$ 814,300**
7. MISC ITEMS									
7.1	Conduit & Cable Trench System	800	LF	$ 185.00	$ 148,000	$ 170.00	$ 136,000	$ 355	**$ 284,000**
7.2	Rigid Bus, Fittings & Insulators	0	LF	$ 125.07	$ -	$ 237.10	$ -	$ 362	**$ -**
7.3	Strain Bus, Connectors & Insulators	2,500	LF	$ 13.38	$ 33,450	$ 39.35	$ 98,375	$ 53	**$ 131,825**
7.4	Grounding System	0	LF	$ 6.93	$ -	$ 32.58	$ -	$ 40	**$ -**
7.5	Strain Bus Insulators - 345kV	38	EA	$ 2,000	$ 76,000	$ 1,050	$ 39,900	$ 3,050	**$ 115,900**
7.6	Strain Bus Insulators - 230kV	0	EA	$ 1,400	$ -	$ 750	$ -	$ 2,150	**$ -**
7.7	Strain Bus Insulators - 115kV	0	EA	$ 1,000	$ -	$ 550	$ -	$ 1,550	**$ -**
7.8	Low Voltage AC Station Service	0	LS	$ 50,000	$ -	$ 75,000	$ -	$ 125,000	**$ -**
7.9	SSVT Service	0	LS	$ 45,000	$ -	$ 45,000	$ -	$ 90,000	**$ -**
7.10	Control Conduits from Trench to Equipment	1	LS	$ 62,500	$ 62,500	$ 75,000	$ 75,000	$ 137,500	**$ 137,500**
7.11	Misc. Materials (Above and Below Ground)	1	LS	$ 90,000	$ 90,000	$ 108,000	$ 108,000	$ 198,000	**$ 198,000**
7.12									
7.13									
7.14									
7.15									
7.16									
7.17									
7.18									
7.19									
7.20									
7.21									
7.22									
7.23									
7.24									
7.25									
TOTAL - MISC ITEMS					$ 409,950		$ 457,275		$ 867,225
J. Pleasant Valley Substation - Install					$ 1,647,952		$ 1,150,000		**$ 2,797,952**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1.0	LS	$ -	$ -	$ 27,980	$ 27,980	$ 27,980	**$ 27,980**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 174,493	$ 174,493	$ 174,493	**$ 174,493**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 27,980	$ 27,980	$ 27,980	**$ 27,980**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 27,980	$ 27,980	$ 27,980	**$ 27,980**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 223,836	$ 223,836	$ 223,836	**$ 223,836**
8.6	LiDAR	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.7	Geotech	4	EA	$ -	$ -	$ 3,500	$ 14,000	$ 3,500	**$ 14,000**
8.8	Surveying/Staking	1	Site	$ -	$ -	$ 19,586	$ 19,586	$ 19,586	**$ 19,586**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 69,949	$ 69,949	$ 69,949	**$ 69,949**
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 8,394	$ 8,394	$ 8,394	**$ 8,394**
8.13	Real Estate Costs (New)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.14	Real Estate Costs (Incumbent Utility)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.18	Sales Tax on Materials	1	LS	$ 131,836	$ 131,836	$ -	$ -	$ 131,836	**$ 131,836**
8.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 2,798	$ 2,798	$ 2,798	**$ 2,798**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 131,836		$ 596,994		**$ 728,830**

NextEra T023 (Segment B Alternate)

Interconnection Knickerbocker Station

Estimate Revision: 8

Total: $ 1,827,190

NextEra T023 (Segment B Alternate)	*Supply*	*Installation*	*Total*
L. Interconnection Knickerbocker Station			
1. CLEARING & ACCESS	$ -	$ 436,850	$ 436,850
2. FOUNDATIONS	$ 238,638	$ 241,194	$ 479,832
3. STRUCTURES	$ 313,836	$ 219,711	$ 533,547
4. CONDUCTOR, SHIELDWIRE, OPGW	$ -	$ -	$ -
5. INSULATORS, FITTINGS, HARDWARE	$ 58,150	$ 26,466	$ 84,616
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 48,850	$ 243,495	$ 292,345
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 659,474	$ 1,167,716	$ 1,827,190
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 659,474	$ 1,167,716	$ 1,827,190

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
L. Interconnection Knickerbocker Station									
1. CLEARING & ACCESS									
1.1	Clearing the ROW - Heavy (mowing & clearing)	-	Acre	$ -	$ -	$ 15,000	$ -	$ 15,000	$ -
1.2	Clearing the ROW - Light (mowing)	2.0	Acre	$ -	$ -	$ 5,000	$ 10,000	$ 5,000	**$ 10,000**
1.3	Access Road	-	LF	$ -	$ -	$ 45	$ -	$ 45	$ -
1.4	Silt Fence	3,500.0	LF	$ -	$ -	$ 4	$ 14,000	$ 4	**$ 14,000**
1.5	Matting - Access and ROW	3,500.0	LF	$ -	$ -	$ 70	$ 245,000	$ 70	**$ 245,000**
1.6	Matting - To Work Area	525.0	LF	$ -	$ -	$ 70	$ 36,750	$ 70	**$ 36,750**
1.7	Snow Removal	-	LS	$ -	$ -	$ 516,800	$ -	$ 516,800	$ -
1.8	ROW Restoration	0.5	Mile	$ -	$ -	$ 10,000	$ 5,000	$ 10,000	**$ 5,000**
1.9	Work Pads	35,000.0	SF	$ -	$ -	$ 4	$ 123,200	$ 4	**$ 123,200**
1.10	Restoration for Work Pad areas	7,000.0	SF	$ -	$ -	$ 0.2	$ 1,050	$ 0	**$ 1,050**
1.11	Temporary Access Bridge	-	EA	$ -	$ -	$ 20,035	$ -	$ 20,035	$ -
1.12	Air Bridge	-	EA	$ -	$ -	$ 14,445	$ -	$ 14,445	$ -
1.13	Stabilized Construction Entrance	-	EA	$ -	$ -	$ 4,580	$ -	$ 4,580	$ -
1.14	Maintenance and Protection of Traffic on Public Roads	-	EA	$ -	$ -	$ 4,130	$ -	$ 4,130	$ -
1.15	Gates	-	EA	$ 2,000	$ -	$ 2,500	$ -	$ 4,500	$ -
1.16	Culverts / Misc. Access	-	EA	$ 750	$ -	$ 1,250	$ -	$ 2,000	$ -
1.17	Concrete Washout Station	1	EA	$ -	$ -	$ 1,850	$ 1,850	$ 1,850	**$ 1,850**
1.18					$ -		$ -		$ -
1.19					$ -		$ -		$ -
1.20	Crushed Rock	0	CY	$ 27	$ -	$ 75	$ -	$ 102	$ -
TOTAL - CLEARING & ACCESS					$ -		$ 436,850		$ 436,850
2. FOUNDATIONS									
2.1	Drilled Pier - 345KV THREE POLE TAP, STEEL	2	Structures	$ 119,319	$ 238,638	$ 120,597	$ 241,194	$ 239,916	**$ 479,832**
2.2									
2.3									
2.4									
2.5	Rock Excavation Adder	-	CY	$ -	$ -	$ 2,000	$ -	$ 2,000	$ -
2.6					$ -		$ -		$ -
2.7					$ -		$ -		$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.8					$ -		$ -		$ -
2.9					$ -		$ -		$ -
2.10					$ -		$ -		$ -
2.11					$ -		$ -		$ -
2.12					$ -		$ -		$ -
2.13					$ -		$ -		$ -
2.14					$ -		$ -		$ -
2.15					$ -		$ -		$ -
TOTAL - FOUNDATIONS					$ 238,638		$ 241,194		$ 479,832
3. STRUCTURES									
3.1	345KV THREE POLE TAP, STEEL	2	Structure	$ 155,400	$ 310,800	$ 93,240	$ 186,480	$ 248,640	**$ 497,280**
3.2									
3.3									
3.4					$ -		$ -		$ -
3.5	Install Grounding and Grounding Accessories	6	Pole	$ 506	$ 3,036	$ 5,539	$ 33,231	$ 6,045	**$ 36,267**
3.6					$ -		$ -		$ -
3.7					$ -		$ -		$ -
3.8					$ -		$ -		$ -
3.9					$ -		$ -		$ -
3.10					$ -		$ -		$ -
3.11					$ -		$ -		$ -
3.12					$ -		$ -		$ -
3.13					$ -		$ -		$ -
3.14					$ -		$ -		$ -
3.15					$ -		$ -		$ -
TOTAL - STRUCTURES					$ 313,836		$ 219,711		$ 533,547
4. CONDUCTOR, SHIELDWIRE, OPGW									
4.1	345kV - (1) 1,033kcmil 54/7 ACSS "Curlew"	-	LF	$ 2.82	$ -	$ 5.00	$ -	$ 7.82	$ -
4.2	(1) OPGW 36 Fiber AC-33/38/571	-	LF	$ 1.35	$ -	$ 5.00	$ -	$ 6.35	$ -
4.3	(1) 3/8" EHS7 Steel	-	LF	$ 0.47	$ -	$ 5.00	$ -	$ 5.47	$ -
4.5	Remove Existing 115kV Cable From Existing Structures	-	Mile	$ -	$ -	$ 30,000	$ -	$ 30,000.00	$ -
4.6	Remove Existing OPGW Cable	-	Mile	$ -	$ -	$ 12,000	$ -	$ 12,000.00	$ -
4.7	Remove Existing EH7	-	Mile	$ -	$ -	$ 12,000	$ -	$ 12,000.00	$ -
4.8	115kV - (1) 954kcmil 54/7 ACSS "Cardinal"	-	LF	$ 1.90	$ -	$ 5.00	$ -	$ 6.90	$ -
4.9		-							
4.10	Rider Poles - Relocated	-	Set	$ -	$ -	$ 3,500	$ -	$ 3,500.00	$ -
4.11	Rider Poles	-	EA	$ 1,750	$ -	$ 3,500	$ -	$ 5,250.00	$ -
TOTAL: CONDUCTOR, SHIELDWIRE, OPGW:					$ -		$ -		$ -
5. INSULATOR, FITTINGS, HARDWARE									
5.1	345kV Tangent (1-Group of 18-Bells Each Assembly)	-	Assembly	$ 1,800	$ -	$ 720	$ -	$ 2,520	$ -
5.2	115kV Tangent (1-Group of 9-Bells Each Assembly)	-	Assembly	$ 900	$ -	$ 560	$ -	$ 1,460	$ -
5.3	345kV Dead-end & Angle Insulators (1-Group of 18-Bells Each Assembly)	30	Assembly	$ 1,800	$ 54,000	$ 720	$ 21,600	$ 2,520	**$ 75,600**
5.4	115kV Dead-end & Angle Insulators (1-Group of 9-Bells Each Assembly)	-	Assembly	$ 900	$ -	$ 560	$ -	$ 1,460	$ -
5.5	OPGW Assembly - Tangent	-	Assembly	$ 200	$ -	$ 150	$ -	$ 350	$ -
5.6	OPGW Assembly - Angle / DE	2	Assembly	$ 250	$ 500	$ 150	$ 300	$ 400	**$ 800**
5.7	OHSW Assembly - Tangent	-	Assembly	$ 200	$ -	$ 150	$ -	$ 350	$ -
5.8	OHSW Assembly - Angle / DE	2	Assembly	$ 250	$ 500	$ 150	$ 300	$ 400	**$ 800**
5.9	OPGW Splice Boxes	1	Set	$ 1,750	$ 1,750	$ 1,746	$ 1,746	$ 3,496	**$ 3,496**
5.10	OPGW Splice & Test	1	EA	$ 1,400	$ 1,400	$ 2,520	$ 2,520	$ 3,920	**$ 3,920**
5.11	Spacer - Conductor	-	EA	$ 50	$ -	$ 35	$ -	$ 85	$ -
5.12	Vibration Dampers - Conductor	-	EA	$ 35	$ -	$ 35	$ -	$ 70	$ -
5.13	Shieldwire / OPGW Dampers, Misc. Fittings	-	EA	$ 27	$ -	$ 35	$ -	$ 62	$ -
5.14	Guys, Anchors, and Accessories	-	EA	$ 720	$ -	$ 885	$ -	$ 1,605	$ -
5.15	Misc. materials (Signs and Markers)	-	Mile	$ 770	$ -	$ 1,006	$ -	$ 1,776	$ -
5.16									
5.17		-							
5.18									
5.19									
5.20									
TOTAL - INSULATOR, FITTINGS, HARDWARE					$ 58,150		$ 26,466		$ 84,616
L. Interconnection Knickerbocker Station					$ 610,624		$ 924,221		$ 1,534,845
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
	Contractor Mobilization / Demobilization								
6.1	Mob / Demob	1	LS	$ -	$ -	$ 15,348	$ 15,348	$ 15,348	**$ 15,348**
	Project Management, Material Handling & Amenities								
6.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 95,720	$ 95,720	$ 95,720	**$ 95,720**
6.3	Utility PM and Project Oversite	1	LS		$ -	$ 15,348	$ 15,348	$ 15,348	**$ 15,348**
6.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 15,348	$ 15,348	$ 15,348	**$ 15,348**
	Engineering								
6.5	Design Engineering	1	LS	$ -	$ -	$ 76,742	$ 76,742	$ 76,742	**$ 76,742**
6.6	LiDAR	1	LS	$ -	$ -	$ 4,605	$ 4,605	$ 4,605	**$ 4,605**
6.7	Geotech	1	Location	$ -	$ -	$ 3,500	$ 3,500	$ 3,500	**$ 3,500**
6.8	Surveying/Staking	1	LS	$ -	$ -	$ 10,744	$ 10,744	$ 10,744	**$ 10,744**
	Testing & Commissioning								
6.9	Testing & Commissioning of T-Line and Equipment	-	LS	$ -	$ -	$ 40,000	$ -	$ 40,000	**$ -**
	Permitting and Additional Costs								
6.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.12	Warranties / LOC's	1	LS	$ -	$ -	$ 4,605	$ 4,605	$ 4,605	**$ 4,605**
6.13	Real Estate Costs (New ROW)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.14	Real Estate Costs (Incumbent Utility ROW)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.15	Legal Fees	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.18	Sales Tax on Materials	1	LS	$ 48,850	$ 48,850	$ -	$ -	$ 48,850	**$ 48,850**
6.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 1,535	$ 1,535	$ 1,535	**$ 1,535**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 48,850		$ 243,495		**$ 292,345**

NextEra T023 (Segment B Alternate)

M. Interconnection Churchtown Station

Estimate Revision: 8

Total: $ 5,182,778

NextEra T023 (Segment B Alternate)	*Supply*	*Installation*	*Total*
M. Interconnection Churchtown Station			
1. CLEARING & ACCESS	$ -	$ 712,850	$ 712,850
2. FOUNDATIONS	$ 758,142	$ 859,756	$ 1,617,898
3. STRUCTURES	$ 838,481	$ 581,612	$ 1,420,092
4. CONDUCTOR, SHIELDWIRE, OPGW	$ -	$ -	$ -
5. INSULATORS, FITTINGS, HARDWARE	$ 416,550	$ 172,266	$ 588,816
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 161,054	$ 682,068	$ 843,122
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 2,174,226	$ 3,008,553	$ 5,182,778
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 2,174,226	$ 3,008,553	$ 5,182,778

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
M. Interconnection Churchtown Station									
1. CLEARING & ACCESS									
1.1	Clearing the ROW - Heavy (mowing & clearing)	-	Acre	$ -	$ -	$ 15,000	$ -	$ 15,000	$ -
1.2	Clearing the ROW - Light (mowing)	2.0	Acre	$ -	$ -	$ 5,000	$ 10,000	$ 5,000	**$ 10,000**
1.3	Access Road	-	LF	$ -	$ -	$ 45	$ -	$ 45	$ -
1.4	Silt Fence	3,500.0	LF	$ -	$ -	$ 4	$ 14,000	$ 4	**$ 14,000**
1.5	Matting - Access and ROW	3,500.0	LF	$ -	$ -	$ 70	$ 245,000	$ 70	**$ 245,000**
1.6	Matting - To Work Area	1,425.0	LF	$ -	$ -	$ 70	$ 99,750	$ 70	**$ 99,750**
1.7	Snow Removal	-	LS	$ -	$ -	$ 516,800	$ -	$ 516,800	$ -
1.8	ROW Restoration	0.5	Mile	$ -	$ -	$ 10,000	$ 5,000	$ 10,000	**$ 5,000**
1.9	Work Pads	95,000.0	SF	$ -	$ -	$ 4	$ 334,400	$ 4	**$ 334,400**
1.10	Restoration for Work Pad areas	19,000.0	SF	$ -	$ -	$ 0.2	$ 2,850	$ 0	**$ 2,850**
1.11	Temporary Access Bridge	-	EA	$ -	$ -	$ 20,035	$ -	$ 20,035	$ -
1.12	Air Bridge	-	EA	$ -	$ -	$ 14,445	$ -	$ 14,445	$ -
1.13	Stabilized Construction Entrance	-	EA	$ -	$ -	$ 4,580	$ -	$ 4,580	$ -
1.14	Maintenance and Protection of Traffic on Public Roads	-	EA	$ -	$ -	$ 4,130	$ -	$ 4,130	$ -
1.15	Gates	-	EA	$ 2,000	$ -	$ 2,500	$ -	$ 4,500	$ -
1.16	Culverts / Misc. Access	-	EA	$ 750	$ -	$ 1,250	$ -	$ 2,000	$ -
1.17	Concrete Washout Station	1	EA	$ -	$ -	$ 1,850	$ 1,850	$ 1,850	**$ 1,850**
1.18					$ -		$ -		$ -
1.19					$ -		$ -		$ -
1.20	Crushed Rock	0	CY	$ 27	$ -	$ 75	$ -	$ 102	$ -
TOTAL - CLEARING & ACCESS					$ -		$ 712,850		$ 712,850
2. FOUNDATIONS									
2.1	Drilled Pier - 345KV S/C DEADEND, STEEL	15	Structures	$ 50,543	$ 758,142	$ 30,650	$ 459,756	$ 81,193	**$ 1,217,898**
2.2									
2.3									
2.4									
2.5	Rock Excavation Adder	200	CY	$ -	$ -	$ 2,000	$ 400,000	$ 2,000	**$ 400,000**
2.6					$ -		$ -		$ -
2.7					$ -		$ -		$ -
2.8					$ -		$ -		$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.9					$ -		$ -		$ -
2.10					$ -		$ -		$ -
2.11					$ -		$ -		$ -
2.12					$ -		$ -		$ -
2.13					$ -		$ -		$ -
2.14					$ -		$ -		$ -
2.15					$ -		$ -		$ -
TOTAL - FOUNDATIONS					$ 758,142		$ 859,756		$ 1,617,898
3. STRUCTURES									
3.1	345KV S/C DEADEND, STEEL	15	Structure	$ 55,393	$ 830,891	$ 33,236	$ 498,534	$ 88,628	**$ 1,329,425**
3.2									
3.3									
3.4					$ -		$ -		$ -
3.5	Install Grounding and Grounding Accessories	15	Pole	$ 506	$ 7,590	$ 5,539	$ 83,078	$ 6,045	**$ 90,668**
3.6					$ -		$ -		$ -
3.7					$ -		$ -		$ -
3.8					$ -		$ -		$ -
3.9					$ -		$ -		$ -
3.10					$ -		$ -		$ -
3.11					$ -		$ -		$ -
3.12					$ -		$ -		$ -
3.13					$ -		$ -		$ -
3.14					$ -		$ -		$ -
3.15					$ -		$ -		$ -
TOTAL - STRUCTURES					$ 838,481		$ 581,612		$ 1,420,092
4. CONDUCTOR, SHIELDWIRE, OPGW									
4.1	345kV - (2) 954kcmil 54/7 ACSS "Cardinal"	-	LF	$ 1.90	$ -	$ 5.00	$ -	$ 6.90	$ -
4.2	(1) OPGW 36 Fiber AC-33/38/571	-	LF	$ 1.35	$ -	$ 5.00	$ -	$ 6.35	$ -
4.3	(1) 3/8" EHS7 Steel	-	LF	$ 0.47	$ -	$ 5.00	$ -	$ 5.47	$ -
4.5	Remove Existing 115kV Cable From Existing Structures	-	Mile	$ -	$ -	$ 30,000	$ -	$ 30,000.00	$ -
4.6	Remove Existing OPGW Cable	-	Mile	$ -	$ -	$ 12,000	$ -	$ 12,000.00	$ -
4.7	Remove Existing EH7	-	Mile	$ -	$ -	$ 12,000	$ -	$ 12,000.00	$ -
4.8	115kV - (1) 795kcmil 26/7 ACSS "Drake"	-	LF	$ 1.72	$ -	$ 5.00	$ -	$ 6.72	$ -
4.9		-							
4.10	Rider Poles - Relocated	-	Set	$ -	$ -	$ 3,500	$ -	$ 3,500.00	$ -
4.11	Rider Poles	-	EA	$ 1,750	$ -	$ 3,500	$ -	$ 5,250.00	$ -
TOTAL: CONDUCTOR, SHIELDWIRE, OPGW:					$ -		$ -		$ -
5. INSULATOR, FITTINGS, HARDWARE									
5.1	345kV Tangent (1-Group of 18-Bells Each Assembly)	-	Assembly	$ 1,800	$ -	$ 720	$ -	$ 2,520	$ -
5.2	115kV Tangent (1-Group of 9-Bells Each Assembly)	-	Assembly	$ 900	$ -	$ 560	$ -	$ 1,460	$ -
5.3	345kV Dead-end & Angle Insulators (1-Group of 18-Bells Each Assembly)	225	Assembly	$ 1,800	$ 405,000	$ 720	$ 162,000	$ 2,520	**$ 567,000**
5.4	115kV Dead-end & Angle Insulators (1-Group of 9-Bells Each Assembly)	-	Assembly	$ 900	$ -	$ 560	$ -	$ 1,460	$ -
5.5	OPGW Assembly - Tangent	16	Assembly	$ 200	$ 3,200	$ 150	$ 2,400	$ 350	**$ 5,600**
5.6	OPGW Assembly - Angle / DE	4	Assembly	$ 250	$ 1,000	$ 150	$ 600	$ 400	**$ 1,600**
5.7	OHSW Assembly - Tangent	16	Assembly	$ 200	$ 3,200	$ 150	$ 2,400	$ 350	**$ 5,600**
5.8	OHSW Assembly - Angle / DE	4	Assembly	$ 250	$ 1,000	$ 150	$ 600	$ 400	**$ 1,600**
5.9	OPGW Splice Boxes	1	Set	$ 1,750	$ 1,750	$ 1,746	$ 1,746	$ 3,496	**$ 3,496**
5.10	OPGW Splice & Test	1	EA	$ 1,400	$ 1,400	$ 2,520	$ 2,520	$ 3,920	**$ 3,920**
5.11	Spacer - Conductor	-	EA	$ 50	$ -	$ 35	$ -	$ 85	$ -
5.12	Vibration Dampers - Conductor	-	EA	$ 35	$ -	$ 35	$ -	$ 70	$ -
5.13	Shieldwire / OPGW Dampers, Misc. Fittings	-	EA	$ 27	$ -	$ 35	$ -	$ 62	$ -
5.14	Guys, Anchors, and Accessories	-	EA	$ 720	$ -	$ 885	$ -	$ 1,605	$ -
5.15	Misc. materials (Signs and Markers)	-	Mile	$ 770	$ -	$ 1,006	$ -	$ 1,776	$ -
5.16					$ -		$ -		$ -
5.17									
5.18									
5.19									
5.20									
TOTAL - INSULATOR, FITTINGS, HARDWARE					$ 416,550		$ 172,266		$ 588,816
M. Interconnection Churchtown Station					$ 2,013,172		$ 2,326,484		$ 4,339,656
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
	Contractor Mobilization / Demobilization								
6.1	Mob / Demob	1	LS	$ -	$ -	$ 43,397	$ 43,397	$ 43,397	**$ 43,397**
	Project Management, Material Handling & Amenities								
6.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 270,641	$ 270,641	$ 270,641	**$ 270,641**
6.3	Utility PM and Project Oversite	1	LS		$ -	$ 43,397	$ 43,397	$ 43,397	**$ 43,397**
6.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 43,397	$ 43,397	$ 43,397	**$ 43,397**
	Engineering								
6.5	Design Engineering	1	LS	$ -	$ -	$ 216,983	$ 216,983	$ 216,983	**$ 216,983**
6.6	LiDAR	1	LS	$ -	$ -	$ 13,019	$ 13,019	$ 13,019	**$ 13,019**
6.7	Geotech	1	Location	$ -	$ -	$ 3,500	$ 3,500	$ 3,500	**$ 3,500**
6.8	Surveying/Staking	1	LS	$ -	$ -	$ 30,378	$ 30,378	$ 30,378	**$ 30,378**
	Testing & Commissioning								
6.9	Testing & Commissioning of T-Line and Equipment	-	LS	$ -	$ -	$ 40,000	$ -	$ 40,000	**$ -**
	Permitting and Additional Costs								
6.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.12	Warranties / LOC's	1	LS	$ -	$ -	$ 13,019	$ 13,019	$ 13,019	**$ 13,019**
6.13	Real Estate Costs (New ROW)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.14	Real Estate Costs (Incumbent Utility ROW)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.15	Legal Fees	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.18	Sales Tax on Materials	1	LS	$ 161,054	$ 161,054	$ -	$ -	$ 161,054	**$ 161,054**
6.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 4,340	$ 4,340	$ 4,340	**$ 4,340**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 161,054		$ 682,068		**$ 843,122**

NextEra T023 (Segment B Alternate)

N. Interconnection Milan Station

Estimate Revision: 8

Total: $ 714,622

NextEra T023 (Segment B Alternate)	*Supply*	*Installation*	*Total*
N. Interconnection Milan Station			
1. CLEARING & ACCESS	$ -	$ 121,100	$ 121,100
2. FOUNDATIONS	$ 84,375	$ 135,279	$ 219,654
3. STRUCTURES	$ 130,328	$ 88,667	$ 218,994
4. CONDUCTOR, SHIELDWIRE, OPGW	$ -	$ -	$ -
5. INSULATORS, FITTINGS, HARDWARE	$ 27,200	$ 11,280	$ 38,480
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 19,352	$ 97,042	$ 116,394
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 261,255	$ 453,367	$ 714,622
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 261,255	$ 453,367	$ 714,622

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
N. Interconnection Milan Station									
1. CLEARING & ACCESS									
1.1	Clearing the ROW - Heavy (mowing & clearing)	-	Acre	$ -	$ -	$ 15,000	$ -	$ 15,000	$ -
1.2	Clearing the ROW - Light (mowing)	1.0	Acre	$ -	$ -	$ 5,000	$ 5,000	$ 5,000	**$ 5,000**
1.3	Access Road	-	LF	$ -	$ -	$ 45	$ -	$ 45	$ -
1.4	Silt Fence	500.0	LF	$ -	$ -	$ 4	$ 2,000	$ 4	**$ 2,000**
1.5	Matting - Access and ROW	500.0	LF	$ -	$ -	$ 70	$ 35,000	$ 70	**$ 35,000**
1.6	Matting - To Work Area	525.0	LF	$ -	$ -	$ 70	$ 36,750	$ 70	**$ 36,750**
1.7	Snow Removal	-	LS	$ -	$ -	$ 516,800	$ -	$ 516,800	$ -
1.8	ROW Restoration	0.5	Mile	$ -	$ -	$ 10,000	$ 5,000	$ 10,000	**$ 5,000**
1.9	Work Pads	10,000.0	SF	$ -	$ -	$ 4	$ 35,200	$ 4	**$ 35,200**
1.10	Restoration for Work Pad areas	2,000.0	SF	$ -	$ -	$ 0.2	$ 300	$ 0	**$ 300**
1.11	Temporary Access Bridge	-	EA	$ -	$ -	$ 20,035	$ -	$ 20,035	$ -
1.12	Air Bridge	-	EA	$ -	$ -	$ 14,445	$ -	$ 14,445	$ -
1.13	Stabilized Construction Entrance	-	EA	$ -	$ -	$ 4,580	$ -	$ 4,580	$ -
1.14	Maintenance and Protection of Traffic on Public Roads	-	EA	$ -	$ -	$ 4,130	$ -	$ 4,130	$ -
1.15	Gates	-	EA	$ 2,000	$ -	$ 2,500	$ -	$ 4,500	$ -
1.16	Culverts / Misc. Access	-	EA	$ 750	$ -	$ 1,250	$ -	$ 2,000	$ -
1.17	Concrete Washout Station	1	EA	$ -	$ -	$ 1,850	$ 1,850	$ 1,850	**$ 1,850**
1.18					$ -		$ -		$ -
1.19					$ -		$ -		$ -
1.20	Crushed Rock	0	CY	$ 27	$ -	$ 75	$ -	$ 102	$ -
TOTAL - CLEARING & ACCESS					$ -		$ 121,100		$ 121,100
2. FOUNDATIONS									
2.1	Drilled Pier - 115kV Single Circuit Single Pole Angle/DE	2	EA	$ 42,187	$ 84,375	$ 42,639	$ 85,279	$ 84,827	**$ 169,654**
2.2									
2.3									
2.4									
2.5	Rock Excavation Adder	25	CY	$ -	$ -	$ 2,000	$ 50,000	$ 2,000	**$ 50,000**
2.6					$ -		$ -		$ -
2.7					$ -		$ -		$ -
2.8					$ -		$ -		$ -
2.9					$ -		$ -		$ -
2.10					$ -		$ -		$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.11					$ -		$ -		$ -
2.12					$ -		$ -		$ -
2.13					$ -		$ -		$ -
2.14					$ -		$ -		$ -
2.15					$ -		$ -		$ -
TOTAL - FOUNDATIONS					$ 84,375		$ 135,279		$ 219,654
3. STRUCTURES									
3.1	115kV Single Circuit Single Pole Angle/DE	2	Structure	$ 64,658	$ 129,316	$ 38,795	$ 77,590	$ 103,453	**$ 206,905**
3.2									
3.3									
3.4					$ -		$ -		$ -
3.5	Install Grounding and Grounding Accessories	2	Pole	$ 506	$ 1,012	$ 5,539	$ 11,077	$ 6,045	**$ 12,089**
3.6					$ -		$ -		$ -
3.7					$ -		$ -		$ -
3.8					$ -		$ -		$ -
3.9					$ -		$ -		$ -
3.10					$ -		$ -		$ -
3.11					$ -		$ -		$ -
3.12					$ -		$ -		$ -
3.13					$ -		$ -		$ -
3.14					$ -		$ -		$ -
3.15					$ -		$ -		$ -
TOTAL - STRUCTURES					$ 130,328		$ 88,667		$ 218,994
4. CONDUCTOR, SHIELDWIRE, OPGW									
4.1	345kV - (2) 954kcmil 54/7 ACSS "Cardinal"	-	LF	$ 1.90	$ -	$ 5.00	$ -	$ 6.90	$ -
4.2	(1) OPGW 36 Fiber AC-33/38/571	-	LF	$ 1.35	$ -	$ 5.00	$ -	$ 6.35	$ -
4.3	(1) 3/8" EHS7 Steel	-	LF	$ 0.47	$ -	$ 5.00	$ -	$ 5.47	$ -
4.5	Remove Existing 115kV Cable From Existing Structures	-	Mile	$ -	$ -	$ 30,000	$ -	$ 30,000.00	$ -
4.6	Remove Existing OPGW Cable	-	Mile	$ -	$ -	$ 12,000	$ -	$ 12,000.00	$ -
4.7	Remove Existing EH7	-	Mile	$ -	$ -	$ 12,000	$ -	$ 12,000.00	$ -
4.8	115kV - (1) 954kcmil 54/7 ACSS "Cardinal"	-	LF	$ 1.90	$ -	$ 5.00	$ -	$ 6.90	$ -
4.9		-							
4.10	Rider Poles - Relocated	-	Set	$ -	$ -	$ 3,500	$ -	$ 3,500.00	$ -
4.11	Rider Poles	-	EA	$ 1,750	$ -	$ 3,500	$ -	$ 5,250.00	$ -
TOTAL: CONDUCTOR, SHIELDWIRE, OPGW:					$ -		$ -		$ -
5. INSULATOR, FITTINGS, HARDWARE									
5.1	345kV Tangent (1-Group of 18-Bells Each Assembly)	-	Assembly	$ 1,800	$ -	$ 720	$ -	$ 2,520	$ -
5.2	115kV Tangent (1-Group of 9-Bells Each Assembly)	-	Assembly	$ 1,800	$ -	$ 560	$ -	$ 2,360	$ -
5.3	345kV Dead-end & Angle Insulators (1-Group of 18-Bells Each Assembly)	14	Assembly	$ 1,800	$ 25,200	$ 720	$ 10,080	$ 2,520	**$ 35,280**
5.4	115kV Dead-end & Angle Insulators (1-Group of 9-Bells Each Assembly)	-	Assembly	$ 900	$ -	$ 560	$ -	$ 1,460	$ -
5.5		-	Assembly		$ -		$ -	$ -	$ -
5.6	OPGW Assembly - Tangent	-	Assembly	$ 200	$ -	$ 150	$ -	$ 350	$ -
5.7	OPGW Assembly - Angle / DE	4	Assembly	$ 250	$ 1,000	$ 150	$ 600	$ 400	**$ 1,600**
5.8	OHSW Assembly - Tangent	-	Assembly	$ 200	$ -	$ 150	$ -	$ 350	$ -
5.9	OHSW Assembly - Angle / DE	4	Assembly	$ 250	$ 1,000	$ 150	$ 600	$ 400	**$ 1,600**
5.10	OPGW Splice Boxes	-	Set	$ 1,750	$ -	$ 1,746	$ -	$ 3,496	$ -
5.11	OPGW Splice & Test	-	EA	$ 1,400	$ -	$ 2,520	$ -	$ 3,920	$ -
5.12	Spacer - Conductor	-	EA	$ 50	$ -	$ 35	$ -	$ 85	$ -
5.13	Vibration Dampers - Conductor	-	EA	$ 35	$ -	$ 35	$ -	$ 70	$ -
5.14	Shieldwire / OPGW Dampers, Misc. Fittings	-	EA	$ 27	$ -	$ 35	$ -	$ 62	$ -
5.15	Guys, Anchors, and Accessories	-	EA	$ 720	$ -	$ 885	$ -	$ 1,605	$ -
5.16	Misc. materials (Signs and Markers)	-	Mile	$ 770	$ -	$ 1,006	$ -	$ 1,776	$ -
5.17									
5.18									
5.19									
5.20									
TOTAL - INSULATOR, FITTINGS, HARDWARE					$ 27,200		$ 11,280		$ 38,480
N. Interconnection Milan Station					$ 241,903		$ 356,325		$ 598,228
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
6.1	Mob / Demob	1	LS	$ -	$ -	$ 5,982	$ 5,982	$ 5,982	**$ 5,982**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
	Project Management, Material Handling & Amenities								
6.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 37,308	$ 37,308	$ 37,308	**$ 37,308**
6.3	Utility PM and Project Oversite	1	LS		$ -	$ 5,982	$ 5,982	$ 5,982	**$ 5,982**
6.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 5,982	$ 5,982	$ 5,982	**$ 5,982**
	Engineering								
6.5	Design Engineering	1	LS	$ -	$ -	$ 29,911	$ 29,911	$ 29,911	**$ 29,911**
6.6	LiDAR	1	LS	$ -	$ -	$ 1,795	$ 1,795	$ 1,795	**$ 1,795**
6.7	Geotech	1	Location	$ -	$ -	$ 3,500	$ 3,500	$ 3,500	**$ 3,500**
6.8	Surveying/Staking	1	LS	$ -	$ -	$ 4,188	$ 4,188	$ 4,188	**$ 4,188**
	Testing & Commissioning								
6.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
	Permitting and Additional Costs								
6.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.12	Warranties / LOC's	1	LS	$ -	$ -	$ 1,795	$ 1,795	$ 1,795	**$ 1,795**
6.13	Real Estate Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.14	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.15	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.16		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.17	Sales Tax on Materials	1	LS	$ 19,352	$ 19,352	$ -	$ -	$ 19,352	**$ 19,352**
6.18	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 598	$ 598	$ 598	**$ 598**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 19,352		$ 97,042		**$ 116,394**

NextEra - T023 - (Segment B)

O. NUF to mitigate NY to NE interface transfer limit degradation

Estimate Revision: **0**

Total: $ 26,785,714

SYSTEM UPGRADE FACILITIES		Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Sum	Labor & Equipment Supply Rate	Labor & Equipment Sum	Total Unit Rate	TOTAL
SUF 1	**Transmission Line Upgrade Cricket Valley - Connecticut Border to Long Mountain**								
1.1	Line Upgrade	1.00	LS		$ -		$ -	$ 21,428,571	$ 21,428,571
	Subtotal SUG 1 Direct Cost				$ -		$ -		$ 21,428,571
2	**Engineering, T&C, PM, Indirects (25%)**				$ -		$ -		$ 5,357,143
	TOTAL:				**$ -**		**$ -**		**$ 26,785,714**

NextEra T023 (Segment B Alternate)	
ESTIMATE ASSUMPTIONS & CLARIFICATIONS	
1	Cost Estimate is based on 2017 rates.
2	Construction schedule is in accordance with proposed schedule - we have assumed continuous working with no breaks in the schedule. Six months have been added to the construction schedule for start up and close out works and assisting in pre-construction activities (i.e. permitting activities, material procurement etc.).
3	We have assumed a typical work week of five-(5) days per week at ten-(10) hours per day (5 x 10 hour days).
4	All labor rates and benefits used for estimating purposes are taken from IBEW Local 1249 working agreement as updated 5-8-2017.
5	We have assumed that the Access Road included in Developer Estimate will be Type 1 Gravel Type. 20% of the total length of the line is assumed to use Type 1 Gravel road and 80% of the line length access to be used wood matting. In addition 75 feet of wood matting is included from the access matting to the work pad area matting. The estimate also include 5,000 square feet of wood matting for each structure work area within the ROW. For the ground restoration (seed, straw and woven mat), 20% of the work pad area included.
6	Costs will vary for handling and disposal of contaminated spoils, depending on type of contaminants and availability / location of the appropriate tipping facility. Since there is not enough information to provide a quantified estimate for this item, allowance is included in the contingency monies.
7	Costs have been developed based on historical data from Projects of a similar nature (AACE Class 5 and 4 Estimating Practices). We have not engaged any subcontractors for formal quotes.
8	Foundation rates include supply and installation of materials. Drilled Pier rates include supply and testing of concrete, rebar cage and the use of temp or permanent casing.
9	A Contractor Mark-Up (OH&P) of 15% has been included in the Total section.
10	We have assumed that all project details provided are accurate unless noted otherwise.
11	Any SUF pricing includes 35% to cover Contractor markup (15%) and contingency (20%)
12	A contractor allowance of 1% for mobilization and demobilization has been included in the total section.
13	A contractor allowance of 5.423% for project management and staffing has been included in the total section. This also includes agricultural inspector, engineering inspector, safety inspector, compliance inspector, environmental inspector, and SWPP inspector.
14	An allowance of 1% for Utility PM and Project Oversite staffing has been included in the total section.
15	A contractor allowance of 1% for site accommodation, facilities, and storage has been included in the total section.
16	An allowance of 5% for transmission design and engineering has been included in the total section.
17	An allowance of 8% for substation design and engineering has been included in the total section.
18	An allowance of 0.7% for survey and staking of the transmission line and substation layout has been included in the total section.
19	An allowance of 0.3% for LIDAR of the transmission line has been included in the total section.
20	An allowance of 3.75% for substation testing and commissioning has been included in the total section.
21	An allowance of $20,000.00 per circuit for transmission line testing and commissioning has been included in the total section.
22	New York state sales tax of 8% is included in all material pricing.
23	An allowance of 1.5% for insurance is included in the DPS sheet.
24	From Churchtown to Pleasant Valley; Churchtown loop around 345kV conductor 0.3 miles have been added.
25	An additional Quantity of 5% have been added to conductors, OPGW, & OHSW for sag and jumpers.
26	Rock excavation not provided in proposal foundation data, most of the foundation are concrete pole direct embedded, rock excavation assumed 50% for T022 (Churchtown to Pleasant Valley) and rest 75% of quantities of National Grid's proposal.
27	Cricket Valley to Long Mountain line upgrade: Network Upgrade (NUF) costs to mitigate NY to NE interface transfer limit degradation were based on possible solutions identified during the June 2018 SIS process
28	The SUF estimates for the stations are rough order of magnitude estimates. No engineering was performed and SECo did not have access to record drawings.

NY Power Authority and North American Transmission (T029)			
		Description	**Total Amount** (In thousand $)
Direct Cost	1	**Transmission Lines**	
	1.1	Clearing & Access	$34,313
	1.2	Foundations	$17,769
	1.3	Structures	$52,916
	1.4	Conductor, Shiedwire and Optical Ground Wire	$30,069
	1.5	Insulators, Fitting and Hardwares	$11,442
		Subtotal (1)	**$146,509**
	2	**Substations**	
	2.1	Knickerbocker Substation	$14,982
	2.2	East Greenbush Substation	$61
	2.3	Schodack Substation	$2,226
	2.4	Churchtown Substation	$15,925
	2.5	Pleasant Valley Substation	$2,798
	2.6	Substation Interconnections	$5,495
		Subtotal (2)	**$41,487**
		Total (1+2)	$187,996
		Contractors Mark-up (15% of Total 1+2)	$28,199
		Total Direct Cost (A)	**$216,196**
Indirect Cost	3	**Technical Services Costs**	
	3.1	Contractor Mobilization / Demobilization	$1,880
	3.2	Project Management, Material Handling & Amenities	$15,363
	3.3	Engineering	$12,524
	3.4	Testing & Commissioning	$973
	3.5	Permitting, Real Estate, Sales Tax and Additional Costs	$14,136
	3.6	Legal, Environmental Licensing & Permitting and Environmental Mitigation	$7,628
		Total Indirect Cost (3)	**$52,504**
		Subtotal Project Cost (B=A+3) 2017 $	**$268,700**
	4	**Network Upgrade Facilities (NUF)**	
	4.1	NUF proposed as element of the Project (Middletown Line and Terminal)	$16,261
	4.2	NUF to mitigate NY to NE interface transfer limit degradation	$30,000
		Subtotal NUF Cost (C)	**$46,261**
		Total Project Cost (B+C) 2017 $	**$314,961**
		Total Project Cost 2018 $	**$324,410**

NAT - NYPA - T029 - (Segment B)

Estimate Revision: 8

NAT - NYPA - T029 - (Segment B) - Direct Costs		*Total Each Segment*
Direct Labor, Material & Equipment Costs	A. Transmission Line Knickerbocker to Churchtown	$ 53,833,887
Direct Labor, Material & Equipment Costs	B. Transmission Line Churchtown to Pleasant Valley	$ 87,928,556
Direct Labor, Material & Equipment Costs	C. Blue Stores Junction to Blue Stores Substation	$ 4,746,361
Direct Labor, Material & Equipment Costs	D. Knickerbocker 345kV Substation - Install	$ 14,982,000
Direct Labor, Material & Equipment Costs	E. Greenbush Substation - Removal	$ 61,200
Direct Labor, Material & Equipment Costs	F. Schodack Substation - Install	$ 2,089,357
Direct Labor, Material & Equipment Costs	G. Schodack Substation - Removal	$ 136,200
Direct Labor, Material & Equipment Costs	H. Churchtown Substation - Install	$ 15,046,621
Direct Labor, Material & Equipment Costs	I. Churchtown Substation - Removal	$ 878,578
Direct Labor, Material & Equipment Costs	J. Pleasant Valley Substation - Install	$ 2,797,952
Direct Labor, Material & Equipment Costs	K. Interconnection Milan Station	$ 675,154
Direct Labor, Material & Equipment Costs	L. Interconnection Knickerbocker Station	$ 1,206,222
Direct Labor, Material & Equipment Costs	M. Interconnection Churchtown Station	$ 1,775,951
Direct Labor, Material & Equipment Costs	N. Interconnection Pleasant Valley Station	$ 1,838,080
Direct Labor, Material & Equipment Costs	O. NUF to mitigate NY to NE interface transfer limit degradation	$ 21,428,571
Direct Labor, Material & Equipment Costs	P. NUF proposed as element of the Project (Middletown Line and Terminal)	$ 11,615,000
	SUBTOTAL:	$ 221,039,690
	CONTRACTOR MARK-UP (OH&P)	$ 33,155,953
	CONTINGENCY ON ENTIRE PROJECT	$ -
	TOTAL DIRECT:	$ 254,195,643

NAT - NYPA - T029 - (Segment B) - Indirect Costs		*Total Each Segment*
Indirect Costs	A. Transmission Line Knickerbocker to Churchtown	$ 12,932,303
Indirect Costs	B. Transmission Line Churchtown to Pleasant Valley	$ 20,756,469
Indirect Costs	C. Blue Stores Junction to Blue Stores Substation	$ 1,001,157
Indirect Costs	D. Rotterdam Substation - Install	$ 3,969,250
Indirect Costs	E. Greenbush Substation - Removal	$ 10,754
Indirect Costs	F. Schodack Substation - Install	$ 531,867
Indirect Costs	G. Schodack Substation - Removal	$ 23,933
Indirect Costs	H. Churchtown Substation - Install	$ 3,765,943
Indirect Costs	I. Churchtown Substation - Removal	$ 153,506
Indirect Costs	J. Pleasant Valley Substation - Install	$ 727,028
Indirect Costs	K. Interconnection Milan Station	$ 129,428
Indirect Costs	L. Interconnection Knickerbocker Station	$ 218,560
Indirect Costs	M. Interconnection Churchtown Station	$ 329,054
Indirect Costs	N. Interconnection Pleasant Valley Station	$ 327,187
Indirect Costs	O. NUF to mitigate NY to NE interface transfer limit degradation	$ 5,357,143
Indirect Costs	P. NUF proposed as element of the Project (Middletown Line and Terminal)	$ 2,904,000
Indirect Costs	Legal and Permitting (Includes Legal, Envir. Lisc. & Permit., and Envir. Mitigation)	$ 7,627,609
	TOTAL INDIRECT:	$ 60,765,191

TOTAL ESTIMATED COST:	$ 314,960,834

NAT - NYPA - T029 - (Segment B)

A. Transmission Line Knickerbocker to Churchtown

Estimate Revision: 8

Total: $ 66,766,190

NAT - NYPA - T029 - (Segment B)	*Supply*	*Installation*	*Total*
A. Transmission Line Knickerbocker to Churchtown			
1. CLEARING & ACCESS	$ 11,500	$ 13,264,953	$ 13,276,453
2. FOUNDATIONS	$ 1,222,467	$ 5,948,438	$ 7,170,905
3. STRUCTURES	$ 7,893,794	$ 9,965,095	$ 17,858,889
4. CONDUCTOR, SHIELDWIRE, OPGW	$ 2,367,420	$ 8,759,465	$ 11,126,885
5. INSULATORS, FITTINGS, HARDWARE	$ 2,914,366	$ 1,486,388	$ 4,400,755
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 1,152,764	$ 11,779,540	$ 12,932,303
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 15,562,311	$ 51,203,879	$ 66,766,190
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 15,562,311	$ 51,203,879	$ 66,766,190

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Sum	Labor & Equipment Supply Rate	Labor & Equipment Sum	Total Unit Rate	TOTAL
A. Transmission Line Knickerbocker to Churchtown									
1. CLEARING & ACCESS									
1.1	Clearing the ROW - Heavy (mowing & clearing)	19	Acre	$ -	$ -	$ 15,000	$ 285,000	$ 15,000	**$ 285,000**
1.2	Clearing the ROW - Light (mowing)	63	Acre		$ -	$ 5,000	$ 315,000	$ 5,000	**$ 315,000**
1.3	Permanent Access Road	23,126	LF	$ -	$ -	$ 45.00	$ 1,040,688	$ 45	**$ 1,040,688**
1.4	Silt Fence	115,632	LF	$ -	$ -	$ 4.00	$ 462,528	$ 4	**$ 462,528**
1.5	Matting - Access and ROW	92,506	LF	$ -	$ -	$ 70.00	$ 6,475,392	$ 70	**$ 6,475,392**
1.6	Matting - To Work Area	12,075	LF	$ -	$ -	$ 70.00	$ 845,250	$ 70	**$ 845,250**
1.7	Snow Removal	21.9	Mile	$ -	$ -	$ 16,000	$ 350,400	$ 16,000	**$ 350,400**
1.8	ROW Restoration	21.9	Mile	$ -	$ -	$ 10,000	$ 219,000	$ 10,000	**$ 219,000**
1.9	Work Pads	805,000.0	SF	$ -	$ -	$ 3.52	$ 2,833,600	$ 4	**$ 2,833,600**
1.10	Restoration for Work Pad areas	161,000.0	SF	$ -	$ -	$ 0.15	$ 24,150	$ 0	**$ 24,150**
1.11	Temporary Access Bridge	9	EA	$ -	$ -	$ 20,035	$ 180,315	$ 20,035	**$ 180,315**
1.12	Air Bridge	-	EA	$ -	$ -	$ 14,445	$ -	$ 14,445	**$ -**
1.13	Stabilized Construction Entrance	4	EA	$ -	$ -	$ 4,580	$ 18,320	$ 4,580	**$ 18,320**
1.14	Maintenance and Protection of Traffic on Public Roads	47	EA	$ -	$ -	$ 4,130	$ 194,110	$ 4,130	**$ 194,110**
1.15	Culverts / Misc. Access	10	EA	$ 750	$ 7,500	$ 1,250	$ 12,500	$ 2,000	**$ 20,000**
1.16	Gates	2	EA	$ 2,000	$ 4,000	$ 2,500	$ 5,000	$ 4,500	**$ 9,000**
1.17	Concrete Washout Station	2	EA	$ -	$ -	$ 1,850	$ 3,700	$ 1,850	**$ 3,700**
TOTAL - CLEARING & ACCESS:					$ 11,500		$ 13,264,953		**$ 13,276,453**
2. FOUNDATIONS									
2.1	1-CKT 345KV VERTICAL SMALL ANGLE (1°-15°)	1	EA	$ 3,548	$ 3,548	$ 24,123	$ 24,123	$ 27,671	**$ 27,671**
2.2	1-CKT 345KV VERTICAL TANGENT (0°-1°)	1	EA	$ 2,929	$ 2,929	$ 19,916	$ 19,916	$ 22,844	**$ 22,844**
2.3	2-CKT 115KV/345KV DELTA SMALL ANGLE (1°-15°)	7	EA	$ 3,685	$ 25,795	$ 25,058	$ 175,406	$ 28,743	**$ 201,201**
2.4	2-CKT 115KV/345KV DELTA TANGENT (0°-1°)	129	EA	$ 2,720	$ 350,859	$ 18,495	$ 2,385,840	$ 21,215	**$ 2,736,698**
2.5	2-CKT 115KV/345KV DELTA TANGENT (0°-1°) HD	3	EA	$ 2,878	$ 8,635	$ 19,573	$ 58,718	$ 22,451	**$ 67,353**
2.6	2-CKT 115KV/345KV DELTA TANGENT DEADEND (0°-5°)	10	EA	$ 3,193	$ 31,928	$ 21,711	$ 217,107	$ 24,903	**$ 249,035**
2.7	1-CKT 345KV VERTICAL LARGE ANGLE DEADEND (60°-90°)	1	EA	$ 118,078	$ 118,078	$ 119,343	$ 119,343	$ 237,421	**$ 237,421**
2.8	1-CKT 345KV VERTICAL MEDIUM ANGLE DEADEND (15°-60°)	1	EA	$ 93,345	$ 93,345	$ 94,345	$ 94,345	$ 187,690	**$ 187,690**
2.9	2-CKT 115KV/345KV DELTA MEDIUM ANGLE DEADEND (15°-60°)	8	EA	$ 73,419	$ 587,351	$ 74,205	$ 593,641	$ 147,624	**$ 1,180,993**
2.10	Rock Excavation Adder	1,130.0	CY	$ -	$ -	$ 2,000	$ 2,260,000	$ 2,000	**$ 2,260,000**
2.11									
2.12									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Sum	Labor & Equipment Supply Rate	Labor & Equipment Sum	Total Unit Rate	TOTAL
2.13									
2.14									
2.15									
2.16									
2.17									
2.18									
TOTAL - FOUNDATIONS:					$ 1,222,467		$ 5,948,438		**$ 7,170,905**
3. STRUCTURES									
3.1	1-CKT 345KV VERTICAL LARGE ANGLE DEADEND (60°-90°)	1	Structure	$ 239,760	$ 239,760	$ 143,856	$ 143,856	$ 383,616	**$ 383,616**
3.2	1-CKT 345KV VERTICAL MEDIUM ANGLE DEADEND (15°-60°)	1	Structure	$ 116,328	$ 116,328	$ 69,797	$ 69,797	$ 186,125	**$ 186,125**
3.3	1-CKT 345KV VERTICAL SMALL ANGLE (1°-15°)	1	Structure	$ 103,156	$ 103,156	$ 61,894	$ 61,894	$ 165,050	**$ 165,050**
3.4	1-CKT 345KV VERTICAL TANGENT (0°-1°)	1	Structure	$ 50,024	$ 50,024	$ 30,014	$ 30,014	$ 80,038	**$ 80,038**
3.5	2-CKT 115KV/345KV DELTA MEDIUM ANGLE DEADEND (15°-60°)	8	Structure	$ 125,416	$ 1,003,329	$ 75,250	$ 601,997	$ 200,666	**$ 1,605,326**
3.6	2-CKT 115KV/345KV DELTA SMALL ANGLE (1°-15°)	7	Structure	$ 73,812	$ 516,687	$ 44,287	$ 310,012	$ 118,100	**$ 826,698**
3.7	2-CKT 115KV/345KV DELTA TANGENT (0°-1°)	129	Structure	$ 39,107	$ 5,044,765	$ 23,464	$ 3,026,859	$ 62,571	**$ 8,071,624**
3.8	2-CKT 115KV/345KV DELTA TANGENT (0°-1°) HD	3	Structure	$ 54,248	$ 162,745	$ 32,549	$ 97,647	$ 86,797	**$ 260,391**
3.9	2-CKT 115KV/345KV DELTA TANGENT DEADEND (0°-5°)	10	Structure	$ 57,554	$ 575,535	$ 34,532	$ 345,321	$ 92,086	**$ 920,856**
3.10	Remove Existing Concrete Foundation	688	EA	$ -	$ -	$ 3,250	$ 2,236,000	$ 3,250	**$ 2,236,000**
3.11	Remove Existing Structure and Accessories	172	EA	$ -	$ -	$ 12,500	$ 2,150,000	$ 12,500	**$ 2,150,000**
3.12	Install Grounding and Grounding Accessories	161	Pole	$ 506	$ 81,466	$ 5,539	$ 891,699	$ 6,045	**$ 973,165**
3.13									
3.14									
3.15									
TOTAL - STRUCTURES:					$ 7,893,794		$ 9,965,095		**$ 17,858,889**
4. CONDUCTOR, SHIELDWIRE, OPGW									
4.1	345kV - (1) 954kcmil 54/7 ACSS "Cardinal"	741,787	LF	$ 1.90	$ 1,409,395	$ 5.00	$ 3,708,935	$ 6.90	**$ 5,118,330**
4.2	(1) OPGW 36 Fiber AC-33/38/571	123,631	LF	$ 1.35	$ 166,902	$ 5.00	$ 618,155	$ 6.35	**$ 785,057**
4.3	(1) 3/8" EHS7 Steel	121,414	LF	$ 0.47	$ 57,065	$ 5.00	$ 607,070	$ 5.47	**$ 664,135**
4.4	Remove Existing 115kV Cable From Existing Structures	43.8	Mile	$ -	$ -	$ 30,000	$ 1,314,000	$ 30,000.00	**$ 1,314,000**
4.5	Remove Existing OPGW Cable and Accessories	21.9	Mile	$ -	$ -	$ 12,000	$ 262,800	$ 12,000.00	**$ 262,800**
4.6	Remove Existing OHSW and Accessories	21.9	Mile	$ -	$ -	$ 12,000	$ 262,800	$ 12,000.00	**$ 262,800**
4.7	115kV - (1) 954kcmil 54/7 ACSS "Cardinal"	364,241	LF	$ 1.90	$ 692,058	$ 5.00	$ 1,821,205	$ 6.90	**$ 2,513,263**
4.8	Rider Poles (47 Locations)	24	Set	$ 1,750	$ 42,000	$ 3,500	$ 84,000	$ 5,250.00	**$ 126,000**
4.9	Rider Poles - Relocated	23	Set	$ -	$ -	$ 3,500	$ 80,500	$ 3,500.00	**$ 80,500**
4.10									
4.11									
4.12									
4.13									
4.14									
4.15									
4.16									
4.17									
TOTAL: CONDUCTOR, SHIELDWIRE, OPGW:					$ 2,367,420		$ 8,759,465		**$ 11,126,885**
5. INSULATOR, FITTINGS, HARDWARE									
5.1	345kV Tangent (1-Group of 18-Bells Each Assembly)	705	Assembly	$ 1,800	$ 1,269,000	$ 720	$ 507,600	$ 2,520	**$ 1,776,600**
5.2	115kV Tangent (1-Group of 9-Bells Each Assembly)	695	Assembly	$ 900	$ 625,500	$ 560	$ 389,200	$ 1,460	**$ 1,014,700**
5.3	345kV Dead-end & Angle Insulators (1-Group of 18-Bells Each Assembly)	300	Assembly	$ 1,800	$ 540,000	$ 720	$ 216,000	$ 2,520	**$ 756,000**
5.4	115kV Dead-end & Angle Insulators (1-Group of 9-Bells Each Assembly)	126	Assembly	$ 900	$ 113,400	$ 560	$ 70,560	$ 1,460	**$ 183,960**
5.5			Assembly		$ -		$ -	$ -	**$ -**
5.6	OPGW Assembly - Tangent	141	Assembly	$ 200	$ 28,200	$ 150	$ 21,150	$ 350	**$ 49,350**
5.7	OPGW Assembly - Angle / DE	40	Assembly	$ 250	$ 10,000	$ 150	$ 6,000	$ 400	**$ 16,000**
5.8	OHSW Assembly - Tangent	139	Assembly	$ 200	$ 27,800	$ 150	$ 20,850	$ 350	**$ 48,650**
5.9	OHSW Assembly - Angle / DE	36	Assembly	$ 250	$ 9,000	$ 150	$ 5,400	$ 400	**$ 14,400**
5.10	OPGW Splice Boxes	8	Set	$ 1,746	$ 13,969	$ 2,274	$ 18,192	$ 4,020	**$ 32,161**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Sum	Labor & Equipment Supply Rate	Labor & Equipment Sum	Total Unit Rate	TOTAL
5.11	OPGW Splice & Test	8	EA	$ 2,520	$ 20,160	$ 2,520	$ 20,160	$ 5,040	**$ 40,320**
5.12	Spacer - Conductor	3,651	EA	$ 50	$ 182,550	$ 35	$ 127,785	$ 85	**$ 310,335**
5.13	Vibration Dampers - Conductor	1,314	EA	$ 35	$ 45,990	$ 35	$ 45,990	$ 70	**$ 91,980**
5.14	Shield wire / OPGW Dampers, Misc. Fittings	442	EA	$ 27	$ 11,934	$ 35	$ 15,470	$ 62	**$ 27,404**
5.15									
5.16		-	Set		$ -		$ -	$ -	**$ -**
5.17		-	Set		$ -		$ -	$ -	**$ -**
5.18									
5.19	Guys, Anchors, and Accessories	-	EA	$ 720	$ -	$ 885	$ -	$ 1,605	**$ -**
5.20	Misc. materials (Signs and Markers)	21.9	Mile	$ 770	$ 16,863	$ 1,006	$ 22,031	$ 1,776	**$ 38,894**
5.21		-		$ -	$ -	$ -	$ -	$ -	**$ -**
5.22									
5.23									
TOTAL - INSULATORS, FITTINGS, HARDWARE:					$ 2,914,366		$ 1,486,388		**$ 4,400,755**
A. Transmission Line Knickerbocker to Churchtown					$ 14,409,547		$ 39,424,340		**$ 53,833,887**
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
6.1	Mob / Demob	1	LS	$ -	$ -	$ 538,339	$ 538,339	$ 538,339	**$ 538,339**
	Project Management, Material Handling & Amenities								
6.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 3,322,654	$ 3,322,654	$ 3,322,654	**$ 3,322,654**
6.3	Utility PM and Project Oversite	1	LS		$ -	$ 538,339	$ 538,339	$ 538,339	**$ 538,339**
6.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 538,339	$ 538,339	$ 538,339	**$ 538,339**
	Engineering								
6.5	Design Engineering	1	LS	$ -	$ -	$ 2,691,694	$ 2,691,694	$ 2,691,694	**$ 2,691,694**
6.6	LiDAR	1	LS	$ -	$ -	$ 161,502	$ 161,502	$ 161,502	**$ 161,502**
6.7	Geotech	25	Location	$ -	$ -	$ 3,500	$ 87,500	$ 3,500	**$ 87,500**
6.8	Surveying/Staking	1	LS	$ -	$ -	$ 376,837	$ 376,837	$ 376,837	**$ 376,837**
	Testing & Commissioning								
6.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 40,000	$ 40,000	$ 40,000	**$ 40,000**
	Permitting and Additional Costs								
6.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.12	Warranties / LOC's	1	LS	$ -	$ -	$ 161,502	$ 161,502	$ 161,502	**$ 161,502**
6.13	Real Estate Costs (New ROW)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.14	Real Estate Costs (Incumbent Utility ROW)	1	LS	$ -	$ -	$ 3,269,000	$ 3,269,000	$ 3,269,000	**$ 3,269,000**
6.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.18	Sales Tax on Materials	1	LS	$ 1,152,764	$ 1,152,764	$ -	$ -	$ 1,152,764	**$ 1,152,764**
6.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 53,834	$ 53,834	$ 53,834	**$ 53,834**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 1,152,764		$ 11,779,540		**$ 12,932,303**

NAT - NYPA - T029 - (Segment B)

B. Transmission Line Churchtown to Pleasant Valley

Estimate Revision: 8

Total: $ 108,685,025

NAT - NYPA - T029 - (Segment B)	*Supply*	*Installation*	*Total*
B. Transmission Line Churchtown to Pleasant Valley			
1. CLEARING & ACCESS	$ 14,000	$ 19,618,466	$ 19,632,466
2. FOUNDATIONS	$ 832,267	$ 8,602,686	$ 9,434,954
3. STRUCTURES	$ 11,844,213	$ 21,669,343	$ 33,513,556
4. CONDUCTOR, SHIELDWIRE, OPGW	$ 3,505,234	$ 14,965,085	$ 18,470,319
5. INSULATORS, FITTINGS, HARDWARE	$ 4,562,919	$ 2,314,342	$ 6,877,261
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 1,660,691	$ 19,095,779	$ 20,756,469
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 22,419,324	$ 86,265,701	$ 108,685,025
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 22,419,324	$ 86,265,701	$ 108,685,025

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
B. Transmission Line Churchtown to Pleasant Valley									
1. CLEARING & ACCESS									
1.1	Clearing the ROW - Heavy (mowing & clearing)	9.0	Acre	$ -	$ -	$ 15,000	$ 135,000	$ 15,000	**$ 135,000**
1.2	Clearing the ROW - Light (mowing)	107.0	Acre	$ -	$ -	$ 5,000	$ 535,000	$ 5,000	**$ 535,000**
1.3	Access Road	34,108.8	LF	$ -	$ -	$ 45	$ 1,534,896	$ 45	**$ 1,534,896**
1.4	Silt Fence	170,544.0	LF	$ -	$ -	$ 4	$ 682,176	$ 4	**$ 682,176**
1.5	Matting - Access and ROW	136,435.2	LF	$ -	$ -	$ 70	$ 9,550,464	$ 70	**$ 9,550,464**
1.6	Matting - To Work Area	18,300.0	LF	$ -	$ -	$ 70	$ 1,281,000	$ 70	**$ 1,281,000**
1.7	Snow Removal	32.3	Mile	$ -	$ -	$ 16,000	$ 516,800	$ 16,000	**$ 516,800**
1.8	ROW Restoration	32.3	Mile	$ -	$ -	$ 10,000	$ 323,000	$ 10,000	**$ 323,000**
1.9	Work Pads	1,220,000.0	SF	$ -	$ -	$ 4	$ 4,294,400	$ 4	**$ 4,294,400**
1.10	Restoration for Work Pad areas	244,000.0	SF	$ -	$ -	$ 0.2	$ 36,600	$ 0	**$ 36,600**
1.11	Temporary Access Bridge	14	EA	$ -	$ -	$ 20,035	$ 280,490	$ 20,035	**$ 280,490**
1.12	Air Bridge	-	EA	$ -	$ -	$ 14,445	$ -	$ 14,445	**$ -**
1.13	Stabilized Construction Entrance	12	EA	$ -	$ -	$ 4,580	$ 54,960	$ 4,580	**$ 54,960**
1.14	Maintenance and Protection of Traffic on Public Roads	86	EA	$ -	$ -	$ 4,130	$ 355,180	$ 4,130	**$ 355,180**
1.15	Gates	4	EA	$ 2,000	$ 8,000	$ 2,500	$ 10,000	$ 4,500	**$ 18,000**
1.16	Culverts / Misc. Access	8	EA	$ 750	$ 6,000	$ 1,250	$ 10,000	$ 2,000	**$ 16,000**
1.17	Concrete Washout Station	10	EA	$ -	$ -	$ 1,850	$ 18,500	$ 1,850	**$ 18,500**
TOTAL - CLEARING & ACCESS:					$ 14,000		$ 19,618,466		**$ 19,632,466**
2. FOUNDATIONS									
2.1	1-CKT 345KV VERTICAL SMALL ANGLE (1°-15°)	1	EA	$ 3,548	$ 3,548	$ 21,427	$ 21,427	$ 24,974	**$ 24,974**
2.2	1-CKT 345KV VERTICAL TANGENT (0°-1°)	1	EA	$ 2,063	$ 2,063	$ 12,458	$ 12,458	$ 14,520	**$ 14,520**
2.3	2-CKT 115KV/345KV DELTA SMALL ANGLE (1°-15°)	14	EA	$ 3,120	$ 43,684	$ 18,846	$ 263,850	$ 21,967	**$ 307,534**
2.4	2-CKT 115KV/345KV DELTA TANGENT (0°-1°)	187	EA	$ 1,943	$ 363,309	$ 11,735	$ 2,194,384	$ 13,678	**$ 2,557,693**
2.5	2-CKT 115KV/345KV DELTA TANGENT (0°-1°) HD	4	EA	$ 2,073	$ 8,291	$ 12,520	$ 50,079	$ 14,593	**$ 58,370**
2.6	2-CKT 115KV/345KV DELTA TANGENT DEADEND (0°-5°)	29	EA	$ 2,171	$ 62,973	$ 13,116	$ 380,357	$ 15,287	**$ 443,330**
2.7	1-CKT 345KV VERTICAL MEDIUM ANGLE DEADEND (15°-60°)	1	EA	$ 32,046	$ 32,046	$ 32,390	$ 32,390	$ 64,436	**$ 64,436**
2.8	2-CKT 115KV/345KV DELTA MEDIUM ANGLE DEADEND (15°-60°)	7	EA	$ 45,194	$ 316,355	$ 45,678	$ 319,743	$ 90,871	**$ 636,097**
2.9	Rock Excavation Adder	2,664.0	CY	$ -	$ -	$ 2,000	$ 5,328,000	$ 2,000	**$ 5,328,000**
2.10									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.11									
2.12									
TOTAL - FOUNDATIONS:					$ 832,267		$ 8,602,686		**$ 9,434,954**
3. STRUCTURES									
3.1	1-CKT 345KV VERTICAL SMALL ANGLE (1°-15°)	1	Structure	$ 103,156	$ 103,156	$ 61,894	$ 61,894	$ 165,050	**$ 165,050**
3.2	1-CKT 345KV VERTICAL TANGENT (0°-1°)	1	Structure	$ 73,094	$ 73,094	$ 43,856	$ 43,856	$ 116,950	**$ 116,950**
3.3	2-CKT 115KV/345KV DELTA SMALL ANGLE (1°-15°)	14	Structure	$ 78,909	$ 1,104,728	$ 47,345	$ 662,837	$ 126,255	**$ 1,767,564**
3.4	2-CKT 115KV/345KV DELTA TANGENT (0°-1°)	187	Structure	$ 39,764	$ 7,435,835	$ 23,858	$ 4,461,501	$ 63,622	**$ 11,897,335**
3.5	2-CKT 115KV/345KV DELTA TANGENT (0°-1°) HD	4	Structure	$ 51,227	$ 204,906	$ 30,736	$ 122,944	$ 81,962	**$ 327,850**
3.6	2-CKT 115KV/345KV DELTA TANGENT DEADEND (0°-5°)	29	Structure	$ 59,830	$ 1,735,060	$ 35,898	$ 1,041,036	$ 95,727	**$ 2,776,095**
3.7	1-CKT 345KV VERTICAL MEDIUM ANGLE DEADEND (15°-60°)	1	Structure	$ 127,558	$ 127,558	$ 76,535	$ 76,535	$ 204,092	**$ 204,092**
3.8	2-CKT 115KV/345KV DELTA MEDIUM ANGLE DEADEND (15°-60°)	7	Structure	$ 133,774	$ 936,415	$ 80,264	$ 561,849	$ 214,038	**$ 1,498,263**
3.9	Remove Existing Structure and Accessories	2,084	EA	$ -	$ -	$ 3,250	$ 6,773,000	$ 3,250	**$ 6,773,000**
3.10	Install Grounding and Grounding Accessories	521	EA	$ -	$ -	$ 12,500	$ 6,512,500	$ 12,500	**$ 6,512,500**
3.11	Install Grounding and Grounding Accessories	244	Pole	$ 506	$ 123,464	$ 5,539	$ 1,351,394	$ 6,045	**$ 1,474,858**
3.12									
3.13									
3.14									
3.15									
3.16									
3.17									
TOTAL - STRUCTURES PRINCTOWN TO NEW SCOTLAND:					$ 11,844,213		$ 21,669,343		**$ 33,513,556**
4. CONDUCTOR, SHIELDWIRE, OPGW									
4.1	345kV - (1) 954kcmil 54/7 ACSS "Cardinal"	1,087,733	LF	$ 1.90	$ 2,066,693	$ 5.00	$ 5,438,665	$ 6.90	**$ 7,505,358**
4.2	(1) OPGW 36 Fiber AC-33/38/571	181,289	LF	$ 1.35	$ 244,740	$ 5.00	$ 906,445	$ 6.35	**$ 1,151,185**
4.3	(1) 3/8" EHS7 Steel	181,289	LF	$ 0.47	$ 85,206	$ 5.00	$ 906,445	$ 5.47	**$ 991,651**
4.5	Remove Existing 115kV Cable From Existing Structures	130.4	Mile	$ -	$ -	$ 30,000	$ 3,912,000	$ 30,000.00	**$ 3,912,000**
4.6	Remove Existing OPGW Cable and Accessories	32.6	Mile	$ -	$ -	$ 12,000	$ 390,600	$ 12,000.00	**$ 390,600**
4.7	Remove Existing OHSW and Accessories	32.6	Mile	$ -	$ -	$ 12,000	$ 390,600	$ 12,000.00	**$ 390,600**
4.8	115kV - (1) 954kcmil 54/7 ACSS "Cardinal"	543,866	LF	$ 1.90	$ 1,033,345	$ 5.00	$ 2,719,330	$ 6.90	**$ 3,752,675**
4.9									
4.10	Rider Poles - Relocated	43	Set	$ -	$ -	$ 3,500	$ 150,500	$ 3,500.00	**$ 150,500**
4.11	Rider Poles (86 Total)	43	EA	$ 1,750	$ 75,250	$ 3,500	$ 150,500	$ 5,250.00	**$ 225,750**
TOTAL: CONDUCTOR, SHIELDWIRE, OPGW:					$ 3,505,234		$ 14,965,085		**$ 18,470,319**
5. INSULATOR, FITTINGS, HARDWARE									
5.1	345kV Tangent (1-Group of 18-Bells Each Assembly)	1,035	Assembly	$ 1,800	$ 1,863,000	$ 720	$ 745,200	$ 2,520	**$ 2,608,200**
5.2	115kV Tangent (1-Group of 9-Bells Each Assembly)	1,025	Assembly	$ 900	$ 922,500	$ 560	$ 574,000	$ 1,460	**$ 1,496,500**
5.3	345kV Dead-end & Angle Insulators (1-Group of 18-Bells Each Assembly)	555	Assembly	$ 1,800	$ 999,000	$ 720	$ 399,600	$ 2,520	**$ 1,398,600**
5.4	115kV Dead-end & Angle Insulators (1-Group of 9-Bells Each Assembly)	252	Assembly	$ 900	$ 226,800	$ 560	$ 141,120	$ 1,460	**$ 367,920**
5.5			Assembly		$ -		$ -	$ -	**$ -**
5.6	OPGW Assembly - Tangent	207	Assembly	$ 200	$ 41,400	$ 150	$ 31,050	$ 350	**$ 72,450**
5.7	OPGW Assembly - Angle / DE	74	Assembly	$ 250	$ 18,500	$ 150	$ 11,100	$ 400	**$ 29,600**
5.8	OHSW Assembly - Tangent	205	Assembly	$ 200	$ 41,000	$ 150	$ 30,750	$ 350	**$ 71,750**
5.9	OHSW Assembly - Angle / DE	72	Assembly	$ 250	$ 18,000	$ 150	$ 10,800	$ 400	**$ 28,800**
5.10	OPGW Splice Boxes	12	Set	$ 1,746	$ 20,954	$ 2,274	$ 27,288	$ 4,020	**$ 48,242**
5.11	OPGW Splice & Test	12	EA	$ 2,520	$ 30,240	$ 2,520	$ 30,240	$ 5,040	**$ 60,480**
5.12	Spacer - Conductor	5,414	EA	$ 50	$ 270,700	$ 35	$ 189,490	$ 85	**$ 460,190**
5.13	Vibration Dampers - Conductor	1,949	EA	$ 35	$ 68,215	$ 35	$ 68,215	$ 70	**$ 136,430**
5.14	Shieldwire / OPGW Dampers, Misc. Fittings	657	EA	$ 27	$ 17,739	$ 35	$ 22,995	$ 62	**$ 40,734**
5.15	Guys, Anchors, and Accessories	-	EA	$ 720	$ -	$ 885	$ -	$ 1,605	**$ -**
5.16	Misc. materials (Signs and Markers)	32.3	Mile	$ 770	$ 24,871	$ 1,006	$ 32,494	$ 1,776	**$ 57,365**
TOTAL - INSULATORS, FITTINGS, HARDWARE:					$ 4,562,919		$ 2,314,342		**$ 6,877,261**
B. Transmission Line Churchtown to Pleasant Valley					$ 20,758,633		$ 67,169,923		**$ 87,928,556**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS									
	Contractor Mobilization / Demobilization								
6.1	Mob / Demob	1	LS	$ -	$ -	$ 879,286	$ 879,286	$ 879,286	**$ 879,286**
	Project Management, Material Handling & Amenities								
6.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 5,426,994	$ 5,426,994	$ 5,426,994	**$ 5,426,994**
6.3	Utility PM and Project Oversite	1	LS		$ -	$ 879,286	$ 879,286	$ 879,286	**$ 879,286**
6.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 879,286	$ 879,286	$ 879,286	**$ 879,286**
	Engineering								
6.5	Design Engineering	1	LS	$ -	$ -	$ 4,396,428	$ 4,396,428	$ 4,396,428	**$ 4,396,428**
6.6	LiDAR	1	LS	$ -	$ -	$ 263,786	$ 263,786	$ 263,786	**$ 263,786**
6.7	Geotech	33	Location	$ -	$ -	$ 3,500	$ 115,500	$ 3,500	**$ 115,500**
6.8	Surveying/Staking	1	LS	$ -	$ -	$ 615,500	$ 615,500	$ 615,500	**$ 615,500**
	Testing & Commissioning								
6.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 40,000	$ 40,000	$ 40,000	**$ 40,000**
	Permitting and Additional Costs								
6.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.12	Warranties / LOC's	1	LS	$ -	$ -	$ 263,786	$ 263,786	$ 263,786	**$ 263,786**
6.13	Real Estate Costs (New ROW)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.14	Real Estate Costs (Incumbent Utility ROW)	1	LS	$ -	$ -	$ 5,248,000	$ 5,248,000	$ 5,248,000	**$ 5,248,000**
6.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.18	Sales Tax on Materials	1	LS	$ 1,660,691	$ 1,660,691	$ -	$ -	$ 1,660,691	**$ 1,660,691**
6.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 87,929	$ 87,929	$ 87,929	**$ 87,929**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 1,660,691		$ 19,095,779		**$ 20,756,469**

NG & NY Transco - T019 - (Segment B)

C. Blue Stores Junction to Blue Stores Substation

Estimate Revision: 8

Total: $ 5,747,517

NG & NY Transco - T019 - (Segment B)	*Supply*	*Installation*	*Total*
C. Blue Stores Junction to Blue Stores Substation			
1. CLEARING & ACCESS	$ -	$ 1,404,512	$ 1,404,512
2. FOUNDATIONS	$ 236,848	$ 925,954	$ 1,162,802
3. STRUCTURES	$ 596,484	$ 946,665	$ 1,543,149
4. CONDUCTOR, SHIELDWIRE, OPGW	$ 84,763	$ 387,095	$ 471,858
5. INSULATORS, FITTINGS, HARDWARE	$ 107,544	$ 56,496	$ 164,040
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 82,051	$ 919,106	$ 1,001,157
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 1,107,690	$ 4,639,828	$ 5,747,517
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 1,107,690	$ 4,639,828	$ 5,747,517

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
C. Blue Stores Junction to Blue Stores Substation									
1. CLEARING & ACCESS									
1.1	Clearing the ROW - Heavy (mowing & clearing)	-	Acre	$ -	$ -	$ 15,000	$ -	$ 15,000	**$ -**
1.2	Clearing the ROW - Light (mowing)	4.0	Acre	$ -	$ -	$ 5,000	$ 20,000	$ 5,000	**$ 20,000**
1.3	Access Road	2,218	LF	$ -	$ -	$ 45	$ 99,792	$ 45	**$ 99,792**
1.4	Silt Fence	11,088.0	LF	$ -	$ -	$ 4	$ 44,352	$ 4	**$ 44,352**
1.5	Matting - Access and ROW	8,870	LF	$ -	$ -	$ 70	$ 620,928	$ 70	**$ 620,928**
1.6	Matting - To Work Area	1,800.0	LF	$ -	$ -	$ 70	$ 126,000	$ 70	**$ 126,000**
1.7	Snow Removal	2.1	Mile	$ -	$ -	$ 16,000	$ 33,600	$ 16,000	**$ 33,600**
1.8	ROW Restoration	2.1	Mile	$ -	$ -	$ 10,000	$ 21,000	$ 10,000	**$ 21,000**
1.9	Work Pads	120,000.0	SF	$ -	$ -	$ 4	$ 422,400	$ 4	**$ 422,400**
1.10	Restoration for Work Pad areas	24,000.0	SF	$ -	$ -	$ 0.2	$ 3,600	$ 0	**$ 3,600**
1.11	Temporary Access Bridge	-	EA	$ -	$ -	$ 20,035	$ -	$ 20,035	**$ -**
1.12	Air Bridge	-	EA	$ -	$ -	$ 14,445	$ -	$ 14,445	**$ -**
1.13	Stabilized Construction Entrance	1	EA	$ -	$ -	$ 4,580	$ 4,580	$ 4,580	**$ 4,580**
1.14	Maintenance and Protection of Traffic on Public Roads	2	EA	$ -	$ -	$ 4,130	$ 8,260	$ 4,130	**$ 8,260**
1.15	Gates	-	EA	$ 2,000	$ -	$ 2,500	$ -	$ 4,500	**$ -**
1.16	Culverts / Misc. Access	-	EA	$ 750	$ -	$ 1,250	$ -	$ 2,000	**$ -**
1.17	Concrete Washout Station	-	EA	$ -	$ -	$ 1,850	$ -	$ 1,850	**$ -**
TOTAL - CLEARING & ACCESS:					$ -		$ 1,404,512		**$ 1,404,512**
2. FOUNDATIONS									
2.1	Drilled Pier - 115kV Single Circuit H- Pole Angle/ DE	6	EA	$ 31,225	$ 187,348	$ 31,559	$ 189,354	$ 62,784	**$ 376,702**
2.2	Direct Embed - 115kV Single Circuit H- Pole Tangent	18	EA	$ 2,750	$ 49,500	$ 18,700	$ 336,600	$ 21,450	**$ 386,100**
2.3	Rock Excavation Adder	200.0	CY	$ -	$ -	$ 2,000	$ 400,000	$ 2,000	**$ 400,000**
2.4									
2.5									
2.6									
2.7									
2.8									
2.9									
2.10									
2.11									
2.12									
2.13									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.14									
2.15									
TOTAL - FOUNDATIONS:					$ 236,848		$ 925,954		**$ 1,162,802**
3. STRUCTURES									
3.1	115kV Single Circuit H- Pole Angle/ DE	6	Structure	$ 39,822	$ 238,929	$ 23,893	$ 143,358	$ 63,714	**$ 382,287**
3.2	115kV Single Circuit H- Pole Tangent	18	Structure	$ 18,515	$ 333,266	$ 11,109	$ 199,960	$ 29,624	**$ 533,226**
3.3	Remove Existing Structure and Accessories	-	EA	$ -	$ -	$ 7,500	$ -	$ 7,500	**$ -**
3.4	Install Grounding and Grounding Accessories	27	EA	$ -	$ -	$ 12,500	$ 337,500	$ 12,500	**$ 337,500**
3.5									
3.6	Install Grounding and Grounding Accessories	48	Pole	$ 506	$ 24,288	$ 5,539	$ 265,848	$ 6,045	**$ 290,136**
3.7									
3.8									
3.9									
3.10									
3.11									
3.12									
3.13									
3.14									
3.15									
TOTAL - STRUCTURES:					$ 596,484		$ 946,665		**$ 1,543,149**
4. CONDUCTOR, SHIELDWIRE, OPGW									
4.1	**345kV** - (1) 954kcmil 54/7 ACSS "Cardinal"	-	LF	$ -	$ -	$ 5.00	$ -	$ 5.00	**$ -**
4.2	(1) OPGW 36 Fiber AC-33/38/571	-	LF	$ -	$ -	$ 5.00	$ -	$ 5.00	**$ -**
4.3	(1) 3/8" EHS7 Steel	-	LF	$ -	$ -	$ 5.00	$ -	$ 5.00	**$ -**
4.4	**115kV** - (1) 795kcmil 26/7 ACSR "Drake"	34,927.0	LF	$ 1.72	$ 60,074	$ 5.00	$ 174,635	$ 6.72	**$ 234,709**
4.5	(1) OPGW 36 Fiber AC-33/38/571	11,642.0	LF	$ 1.35	$ 15,717	$ 5.00	$ 58,210	$ 6.35	**$ 73,927**
4.6	(1) 3/8" EHS7 Steel	11,642.0	LF	$ 0.47	$ 5,472	$ 5.00	$ 58,210	$ 5.47	**$ 63,682**
4.7	Remove Existing Cable	2.1	Mile	$ -	$ -	$ 30,000	$ 63,600	$ 30,000.00	**$ 63,600**
4.8	Remove Existing OPGW Cable and Accessories	-	Mile	$ -	$ -	$ 12,000	$ -	$ 12,000.00	**$ -**
4.9	Remove Existing OHSW and Accessories	2.1	Mile	$ -	$ -	$ 12,000	$ 25,440	$ 12,000.00	**$ 25,440**
4.10		-							
4.11		-							
4.12	Rider Poles (Locations)	2.0	EA	$ 1,750	$ 3,500	$ 3,500	$ 7,000	$ 5,250.00	**$ 10,500**
4.13									
TOTAL - CONDUCTOR, SHIELDWIRE, OPGW:					$ 84,763		$ 387,095		**$ 471,858**
5. INSULATOR, FITTINGS, HARDWARE									
5.1	345kV Tangent (1-Group of 18-Bells Each Assembly)	-	Assembly	$ 1,800	$ -	$ 720	$ -	$ 2,520	**$ -**
5.2	115kV Tangent (1-Group of 9-Bells Each Assembly)	54	Assembly	$ 900	$ 48,600	$ 360	$ 19,440	$ 1,260	**$ 68,040**
5.3	345kV Dead-end & Angle Insulators (1-Group of 18-Bells Each Assembly)	-	Assembly	$ 1,800	$ -	$ 720	$ -	$ 2,520	**$ -**
5.4	115kV Dead-end & Angle Insulators (1-Group of 9-Bells Each Assembly)	36	Assembly	$ 900	$ 32,400	$ 360	$ 12,960	$ 1,260	**$ 45,360**
5.5			Assembly		$ -		$ -	$ -	**$ -**
5.6	OPGW Assembly - Tangent	18	Assembly	$ 200	$ 3,600	$ 150	$ 2,700	$ 350	**$ 6,300**
5.7	OPGW Assembly - Angle / DE	12	Assembly	$ 250	$ 3,000	$ 150	$ 1,800	$ 400	**$ 4,800**
5.8	OHSW Assembly - Tangent	18	Assembly	$ 200	$ 3,600	$ 150	$ 2,700	$ 350	**$ 6,300**
5.9	OHSW Assembly - Angle / DE	12	Assembly	$ 250	$ 3,000	$ 150	$ 1,800	$ 400	**$ 4,800**
5.10	OPGW Splice Boxes	2	Set	$ 1,746	$ 3,492	$ 2,274	$ 4,548	$ 4,020	**$ 8,040**
5.11	OPGW Splice & Test	2	EA	$ 2,520	$ 5,040	$ 2,520	$ 5,040	$ 5,040	**$ 10,080**
5.12	Spacer - Conductor	-	EA	$ 50	$ -	$ 35	$ -	$ 85	**$ -**
5.13	Vibration Dampers - Conductor	72	EA	$ 35	$ 2,520	$ 35	$ 2,520	$ 70	**$ 5,040**
5.14	Shieldwire / OPGW Dampers, Misc. Fittings	25	EA	$ 27	$ 675	$ 35	$ 875	$ 62	**$ 1,550**
5.15	Guys, Anchors, and Accessories	-	EA	$ 720	$ -	$ 885	$ -	$ 1,605	**$ -**
5.16	Misc. materials (Signs and Markers)	2.1	Mile	$ 770	$ 1,617	$ 1,006	$ 2,113	$ 1,776	**$ 3,730**
5.17									
TOTAL - INSULATORS, FITTINGS, HARDWARE:					$ 107,544		$ 56,496		**$ 164,040**
C. Blue Stores Junction to Blue Stores Substation					$ 1,025,639		$ 3,720,722		**$ 4,746,361**
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
6.1	Mob / Demob	1	LS	$ -	$ -	$ 47,464	$ 47,464	$ 47,464	**$ 47,464**
	Project Management, Material Handling & Amenities								

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 292,948	$ 292,948	$ 292,948	**$ 292,948**
6.3	Utility PM and Project Oversite	1	LS		$ -	$ 47,464	$ 47,464	$ 47,464	**$ 47,464**
6.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 47,464	$ 47,464	$ 47,464	**$ 47,464**
	Engineering								
6.5	Design Engineering	1	LS	$ -	$ -	$ 237,318	$ 237,318	$ 237,318	**$ 237,318**
6.6	LiDAR	1	LS	$ -	$ -	$ 14,239	$ 14,239	$ 14,239	**$ 14,239**
6.7	Geotech	2	Location	$ -	$ -	$ 3,500	$ 7,000	$ 3,500	**$ 7,000**
6.8	Surveying/Staking	1	LS	$ -	$ -	$ 33,225	$ 33,225	$ 33,225	**$ 33,225**
	Testing & Commissioning								
6.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 20,000	$ 20,000	$ 20,000	**$ 20,000**
	Permitting and Additional Costs								
6.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.12	Warranties / LOC's	1	LS	$ -	$ -	$ 14,239	$ 14,239	$ 14,239	**$ 14,239**
6.13	Real Estate Costs (New ROW)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.14	Real Estate Costs (Incumbent Utility ROW)	1	LS	$ -	$ -	$ 153,000	$ 153,000	$ 153,000	**$ 153,000**
6.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.18	Sales Tax on Materials	1	LS	$ 82,051	$ 82,051	$ -	$ -	$ 82,051	**$ 82,051**
6.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 4,746	$ 4,746	$ 4,746	**$ 4,746**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 82,051		$ 919,106		**$ 1,001,157**

NAT - NYPA - T029 - (Segment B)

D. Knickerbocker 345kV Substation - Install

Estimate Revision: 8

Total: $ 18,951,250

NAT - NYPA - T029 - (Segment B)	*Supply*	*Installation*	*Total*
D. Knickerbocker 345kV Substation - Install			
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ 277,200	$ 1,745,500	$ 2,022,700
2. SUBSTATION FOUNDATIONS	$ 1,467,421	$ 1,581,150	$ 3,048,571
3. SUBSTATION STRUCTURES	$ 710,400	$ 710,400	$ 1,420,800
4. MAJOR EQUIPTMENT	$ 600,000	$ 240,000	$ 840,000
5. SMALL EQUIPTMENT / MATERIALS	$ 1,191,500	$ 542,000	$ 1,733,500
6. CONTROL HOUSE / PANELS	$ 1,678,925	$ 1,232,275	$ 2,911,200
7. MISC ITEMS	$ 1,114,327	$ 1,890,902	$ 3,005,229
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 563,182	$ 3,406,069	$ 3,969,250
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 7,602,955	$ 11,348,296	$ 18,951,250
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 7,602,955	$ 11,348,296	$ 18,951,250

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
D. Knickerbocker 345kV Substation - Install									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	4.75	ACRES	$ -	$ -	$ 230,000	$ 1,092,500	$ 230,000	**$ 1,092,500**
1.2	Station stone within substation fence.	2,100	CY	$ 27	$ 56,700	$ 75	$ 157,500	$ 102	**$ 214,200**
1.3	Substation Fence	1,820	LF	$ 100	$ 182,000	$ 100	$ 182,000	$ 200	**$ 364,000**
1.4									
1.5									
1.6	Permanent Access Road - 20'-Wide	1,100	LF	$ 35	$ 38,500	$ 285	$ 313,500	$ 320	**$ 352,000**
1.7									
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ 277,200		$ 1,745,500		$ 2,022,700
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	3	EA	$ 14,940	$ 44,820	$ 16,000	$ 48,000	$ 30,940	**$ 92,820**
2.1b	Capacitor Bank Foundations	0	EA	$ 56,025	$ -	$ 60,000	$ -	$ 116,025	**$ -**
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	4	EA	$ 26,145	$ 104,580	$ 28,000	$ 112,000	$ 54,145	**$ 216,580**
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	6	EA	$ 26,145	$ 156,870	$ 28,000	$ 168,000	$ 54,145	**$ 324,870**
2.1e	Switch Stand Foundations	96	EA	$ 4,482	$ 430,272	$ 4,800	$ 460,800	$ 9,282	**$ 891,072**
2.1f	Station Service Transformer Stand Foundation	4	EA	$ 4,482	$ 17,928	$ 4,800	$ 19,200	$ 9,282	**$ 37,128**
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1h	Bus Support 1 Ph Foundations	63	EA	$ 4,482	$ 282,366	$ 4,800	$ 302,400	$ 9,282	**$ 584,766**
2.1j	Instrument Transformer Stand Foundations	27	EA	$ 4,482	$ 121,014	$ 4,800	$ 129,600	$ 9,282	**$ 250,614**
2.1k	Arrester Stand Foundations	9	EA	$ 4,482	$ 40,338	$ 4,800	$ 43,200	$ 9,282	**$ 83,538**
2.1m	Wave Trap Stand Foundations	3	EA	$ 4,482	$ 13,446	$ 4,800	$ 14,400	$ 9,282	**$ 27,846**
2.1n	Reactor Foundations	0	EA	$ 7,470	$ -	$ 8,000	$ -	$ 15,470	**$ -**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.1p									
2.1q									
2.2	**230kV**								
2.2a	Circuit Breaker Foundations	0	EA	$ 11,952	$ -	$ 12,800	$ -	$ 24,752	**$** -
2.2b	Capacitor Bank Foundations	0	EA	$ 44,820	$ -	$ 48,000	$ -	$ 92,820	**$** -
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	**$** -
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	**$** -
2.2e	Switch Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	**$** -
2.2f	Station Service Transformer Stand Foundation	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	**$** -
2.2g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
2.2h	Bus Support 1 Ph Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	**$** -
2.2j	Instrument Transformer Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	**$** -
2.2k	Arrester Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	**$** -
2.2m	Wave Trap Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	**$** -
2.2n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
2.2p									
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	0	EA	$ 5,229	$ -	$ 5,600	$ -	$ 10,829	**$** -
2.3b	Capacitor Bank Foundations	0	EA	$ 33,615	$ -	$ 36,000	$ -	$ 69,615	**$** -
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	8	EA	$ 16,434	$ 131,472	$ 17,600	$ 140,800	$ 34,034	**$ 272,272**
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	**$** -
2.3e	Switch Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	**$** -
2.3f	Fuse Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	**$** -
2.3g	Bus Support 3ph Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	**$** -
2.3h	Bus Support 1 Ph Foundations	6	EA	$ 2,988	$ 17,928	$ 3,200	$ 19,200	$ 6,188	**$ 37,128**
2.3j	Instrument Transformer Stand Foundations	6	EA	$ 2,988	$ 17,928	$ 3,200	$ 19,200	$ 6,188	**$ 37,128**
2.3k	Arrester Stand Foundations	6	EA	$ 2,988	$ 17,928	$ 3,200	$ 19,200	$ 6,188	**$ 37,128**
2.3m	Wave Trap Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	**$** -
2.3n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
2.3p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment	0	EA	$ 97,110	$ -	$ 104,000	$ -	$ 201,110	**$** -
2.4b	345-115kV Transformer Foundation w/ Oil Containment	0	EA	$ 74,700	$ -	$ 80,000	$ -	$ 154,700	**$** -
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad	1	EA	$ 33,615	$ 33,615	$ 36,000	$ 36,000	$ 69,615	**$ 69,615**
2.5b	Generator Foundation	1	EA	$ 16,000	$ 16,000	$ 17,000	$ 17,000	$ 33,000	**$ 33,000**
2.5c	Station Service Distribution Line - 3ph.	1	LS	$ -	$ -	$ 9,750	$ 9,750	$ 9,750	**$ 9,750**
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	4	EA	$ 5,229	$ 20,916	$ 5,600	$ 22,400	$ 10,829	**$ 43,316**
2.6b				$ -	$ -	$ -	$ -	$ -	**$** -
2.6c				$ -	$ -	$ -	$ -	$ -	**$** -
TOTAL - SUBSTATION FOUNDATIONS					$ 1,467,421		$ 1,581,150		$ 3,048,571
3. SUBSTATION STRUCTURES									
3.1	**345kV**								

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.1a	Substation A-Frame Structures - Stand alone	1	EA	$ 37,000	$ 37,000	$ 37,000	$ 37,000	$ 74,000	**$ 74,000**
3.1b	Substation A-Frame Structures - Shared Column	2	EA	$ 37,000	$ 74,000	$ 37,000	$ 74,000	$ 74,000	**$ 148,000**
3.1c	Switch Stands	16	EA	$ 14,800	$ 236,800	$ 14,800	$ 236,800	$ 29,600	**$ 473,600**
3.1d	Station Service Transformer Stand	1	EA	$ 14,800	$ 14,800	$ 14,800	$ 14,800	$ 29,600	**$ 29,600**
3.1e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.1f	Bus Support 1 Ph	63	EA	$ 3,700	$ 233,100	$ 3,700	$ 233,100	$ 7,400	**$ 466,200**
3.1g	Instrument Transformer Stand	27	EA	$ 1,850	$ 49,950	$ 1,850	$ 49,950	$ 3,700	**$ 99,900**
3.1h	Arrester Stand	9	EA	$ 1,850	$ 16,650	$ 1,850	$ 16,650	$ 3,700	**$ 33,300**
3.1j	Wave Trap Stand	3	EA	$ 7,400	$ 22,200	$ 7,400	$ 22,200	$ 14,800	**$ 44,400**
3.1k	Misc. Structures	4	EA	$ 6,475	$ 25,900	$ 6,475	$ 25,900	$ 12,950	**$ 51,800**
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	**$ -**
3.2b	Substation A-Frame Structures - Shared Column	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	**$ -**
3.2c	Switch Stands	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	**$ -**
3.2d	Station Service Transformer Stand	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	**$ -**
3.2e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.2f	Bus Support 1 Ph	0	EA	$ 2,775	$ -	$ 2,775	$ -	$ 5,550	**$ -**
3.2g	Instrument Transformer Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	**$ -**
3.2h	Arrester Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	**$ -**
3.2j	Wave Trap Stand	0	EA	$ 5,550	$ -	$ 5,550	$ -	$ 11,100	**$ -**
3.2k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	**$ -**
3.3	**115kV**								
3.3a	Substation A-Frame Structures - Stand alone	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	**$ -**
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	**$ -**
3.3c	Switch Stands	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	**$ -**
3.3d	Fuse Stand	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	**$ -**
3.3e	Bus Support 3ph	0	EA	$ 3,330	$ -	$ 3,330	$ -	$ 6,660	**$ -**
3.3f	Bus Support 1 Ph	0	EA	$ 1,850	$ -	$ 1,850	$ -	$ 3,700	**$ -**
3.3g	Instrument Transformer Stand	0	EA	$ 740	$ -	$ 740	$ -	$ 1,480	**$ -**
3.3h	Arrester Stand	0	EA	$ 740	$ -	$ 740	$ -	$ 1,480	**$ -**
3.3j	Wave Trap Stand	0	EA	$ 3,700	$ -	$ 3,700	$ -	$ 7,400	**$ -**
3.3k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	**$ -**
TOTAL - SUBSTATION STRUCTURES					$ 710,400		$ 710,400		$ 1,420,800
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	3	EA	$ 200,000	$ 600,000	$ 80,000	$ 240,000	$ 280,000	**$ 840,000**
4.1b	Capacitor Banks with Reactors	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	**$ -**
4.1c	345 kV - 230 kV Auto Transformer	0	EA	$ -	$ -	$ 750,000	$ -	$ 750,000	**$ -**
4.1d	345 kV - 115 kV Auto Transformer	0	EA			$ 750,000	$ -	$ 750,000	**$ -**
4.1e									
4.2	**230kV**								
4.2a	Circuit Breakers	0	EA	$ 115,000	$ -	$ 80,000	$ -	$ 195,000	**$ -**
4.2b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	**$ -**
4.3	**115kV**								
4.3a	Circuit Breakers	0	EA	$ 52,000	$ -	$ 60,000	$ -	$ 112,000	**$ -**
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ 60,000	$ -	$ 60,000	**$ -**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
TOTAL - MAJOR EQUIPTMENT					$ 600,000		$ 240,000		$ 840,000
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator	3	EA	$ 40,000	$ 120,000	$ 15,000	$ 45,000	$ 55,000	**$ 165,000**
5.1b	Disconnect Switches - 3ph w/ manual operator	9	EA	$ 35,000	$ 315,000	$ 17,500	$ 157,500	$ 52,500	**$ 472,500**
5.1c	VT'S	9	EA	$ 25,000	$ 225,000	$ 12,000	$ 108,000	$ 37,000	**$ 333,000**
5.1d	CT'S	9	EA	$ 13,000	$ 117,000	$ 8,000	$ 72,000	$ 21,000	**$ 189,000**
5.1e	CCVT'S	9	EA	$ 13,000	$ 117,000	$ 8,000	$ 72,000	$ 21,000	**$ 189,000**
5.1f	Arresters	9	EA	$ 6,500	$ 58,500	$ 1,500	$ 13,500	$ 8,000	**$ 72,000**
5.1g	Wave Traps	3	EA	$ 13,000	$ 39,000	$ 8,000	$ 24,000	$ 21,000	**$ 63,000**
5.1h	Station Service Transformers	1	EA	$ 200,000	$ 200,000	$ 50,000	$ 50,000	$ 250,000	**$ 250,000**
5.1j									
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator	0	EA	$ 35,000	$ -	$ 15,000	$ -	$ 50,000	**$ -**
5.2b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 30,000	$ -	$ 17,500	$ -	$ 47,500	**$ -**
5.2c	VT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	**$ -**
5.2d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	**$ -**
5.2e	CCVT'S	0	EA	$ 10,000	$ -	$ 6,000	$ -	$ 16,000	**$ -**
5.2f	Arresters	0	EA	$ 5,000	$ -	$ 6,000	$ -	$ 11,000	**$ -**
5.2g	Wave Traps	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	**$ -**
5.2h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.2j									
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	0	EA	$ 33,000	$ -	$ 15,000	$ -	$ 48,000	**$ -**
5.3b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 28,000	$ -	$ 17,500	$ -	$ 45,500	**$ -**
5.3c	VT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	**$ -**
5.3d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	**$ -**
5.3e	CCVT'S	0	EA	$ 8,000	$ -	$ 8,000	$ -	$ 16,000	**$ -**
5.3f	Arresters	0	EA	$ 3,420	$ -	$ 6,000	$ -	$ 9,420	**$ -**
5.3g	Wave Traps	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.3h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.3j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ 1,191,500		$ 542,000		$ 1,733,500
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE	1	EA	$ 286,650	$ 286,650	$ 85,000	$ 85,000	$ 371,650	**$ 371,650**
6.2	Protection and Telecom Equipment Panels	15	EA	$ 35,000	$ 525,000	$ 10,000	$ 150,000	$ 45,000	**$ 675,000**
6.3	125VDC Batteries	2	EA	$ 75,000	$ 150,000	$ 25,000	$ 50,000	$ 100,000	**$ 200,000**
6.4	Control Cables	1	LS	$ 352,275	$ 352,275	$ 352,275	$ 352,275	$ 704,550	**$ 704,550**
6.5	SCADA and Communications	1	EA	$ 50,000	$ 50,000	$ 100,000	$ 100,000	$ 150,000	**$ 150,000**
6.6	Low Voltage AC Distribution	2	EA	$ 50,000	$ 100,000	$ 100,000	$ 200,000	$ 150,000	**$ 300,000**
6.7	DC Distribution System	2	EA	$ 50,000	$ 100,000	$ 100,000	$ 200,000	$ 150,000	**$ 300,000**
6.8	Security	1	EA	$ 7,500	$ 7,500	$ 7,500	$ 7,500	$ 15,000	**$ 15,000**
6.9	Fire Alarm	1	EA	$ 7,500	$ 7,500	$ 7,500	$ 7,500	$ 15,000	**$ 15,000**
6.10	Generator	1	EA	$ 100,000	$ 100,000	$ 80,000	$ 80,000	$ 180,000	**$ 180,000**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ 1,678,925		$ 1,232,275		**$ 2,911,200**
7. MISC ITEMS									
7.1	Conduit & Cable Trench System	1,200.0	LF	$ 185.00	$ 222,000	$ 170.00	$ 204,000	$ 355	**$ 426,000**
7.2	Rigid Bus, Fittings & Insulators	3,000.0	LF	$ 125.07	$ 375,210	$ 237.10	$ 711,300	$ 362	**$ 1,086,510**
7.3	Strain Bus, Connectors & Insulators	0.0	LF	$ 39.30	$ -	$ 53.35	$ -	$ 93	**$ -**
7.4	Grounding System	16,900.0	LF	$ 6.93	$ 117,117	$ 32.58	$ 550,602	$ 40	**$ 667,719**
7.5	Strain Bus Insulators - 345kV	0	EA	$ 2,000	$ -	$ 1,050	$ -	$ 3,050	**$ -**
7.6	Strain Bus Insulators - 230kV	0	EA	$ 1,400	$ -	$ 750	$ -	$ 2,150	**$ -**
7.7	Strain Bus Insulators - 115kV	0	EA	$ 1,000	$ -	$ 550	$ -	$ 1,550	**$ -**
7.8	Low Voltage AC Station Service	1	LS	$ 50,000	$ 50,000	$ 75,000	$ 75,000	$ 125,000	**$ 125,000**
7.9	SSVT Service	1	LS	$ 45,000	$ 45,000	$ 45,000	$ 45,000	$ 90,000	**$ 90,000**
7.10	Control Conduits from Trench to Equipment	1	LS	$ 125,000	$ 125,000	$ 125,000	$ 125,000	$ 250,000	**$ 250,000**
7.11	Misc. Materials (Above and Below Ground)	1	LS	$ 180,000	$ 180,000	$ 180,000	$ 180,000	$ 360,000	**$ 360,000**
7.12									
7.13									
7.14									
7.15									
7.16									
7.17									
7.18									
7.19									
7.20									
7.21									
7.22									
7.23									
7.24									
7.25									
TOTAL - MISC ITEMS					$ 1,114,327		$ 1,890,902		$ 3,005,229
D. Knickerbocker 345kV Substation - Install					$ 7,039,773		$ 7,942,227		**$ 14,982,000**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1	LS	$ -	$ -	$ 149,820	$ 149,820	$ 149,820	**$ 149,820**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 924,697	$ 924,697	$ 924,697	**$ 924,697**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 149,820	$ 149,820	$ 149,820	**$ 149,820**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 149,820	$ 149,820	$ 149,820	**$ 149,820**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 1,198,560	$ 1,198,560	$ 1,198,560	**$ 1,198,560**
8.6	LiDAR	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.7	Geotech	4	EA	$ -	$ -	$ 3,500	$ 14,000	$ 3,500	**$ 14,000**
8.8	Surveying/Staking	1	Site	$ -	$ -	$ 104,874	$ 104,874	$ 104,874	**$ 104,874**
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 374,550	$ 374,550	$ 374,550	**$ 374,550**
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 44,946	$ 44,946	$ 44,946	**$ 44,946**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
8.13	Real Estate Costs (New)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.14	Real Estate Costs (Incumbent Utility)	1	LS	$ -	$ -	$ 280,000	$ 280,000	$ 280,000	**$ 280,000**
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.18	Sales Tax on Materials	1	LS	$ 563,182	$ 563,182	$ -	$ -	$ 563,182	**$ 563,182**
8.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 14,982	$ 14,982	$ 14,982	**$ 14,982**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 563,182		$ 3,406,069		**$ 3,969,250**

NAT - NYPA - T029 - (Segment B) — **I. Greenbush Substation - Removal**

Estimate Revision: 8 — **Total: $ 71,954**

NAT - NYPA - T029 - (Segment B)	*Supply*	*Installation*	*Total*
I. Greenbush Substation - Removal			
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ -	$ -	$ -
2. SUBSTATION FOUNDATIONS	$ -	$ 12,000	$ 12,000
3. SUBSTATION STRUCTURES	$ -	$ -	$ -
4. MAJOR EQUIPTMENT	$ -	$ 7,000	$ 7,000
5. SMALL EQUIPTMENT / MATERIALS	$ -	$ 35,000	$ 35,000
6. CONTROL HOUSE / PANELS	$ -	$ 7,200	$ 7,200
7. MISC ITEMS	$ -	$ -	$ -
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ -	$ 10,754	$ 10,754
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ -	$ 71,954	$ 71,954
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ -	$ 71,954	$ 71,954

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
I. Greenbush Substation - Removal									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	0	ACRES	$ -	$ -	$ 203,000	$ -	$ 203,000	$ -
1.2	Station stone within substation fence.	0	CY	$ -	$ -	$ 75	$ -	$ 75	$ -
1.3	Substation Fence	0	LF	$ -	$ -	$ 150	$ -	$ 150	$ -
1.4									
1.5									
1.6									
1.7									
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ -		$ -		$ -
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	0	EA	$ -	$ -	$ 14,200	$ -	$ 14,200	$ -
2.1b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1e	Switch Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1f	Station Service Transformer Stand Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.1j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1k	Arrester Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1p									
2.2	**230kV**								
2.2a	Circuit Breaker Foundations	0	EA	$ -	$ -	$ 7,200	$ -	$ 7,200	$ -
2.2b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ 32,000	$ -	$ 32,000	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ 22,000	$ -	$ 22,000	$ -
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ 11,000	$ -	$ 11,000	$ -
2.2e	Switch Stand Foundations	0	EA	$ -	$ -	$ 5,200	$ -	$ 5,200	$ -
2.2f	Station Service Transformer Stand Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.2j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.2k	Arrester Stand Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.2m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2p									
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	1	EA	$ -	$ -	$ 7,200	$ 7,200	$ 7,200	**$ 7,200**
2.3b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3e	Switch Stand Foundations	0	EA	$ -	$ -	$ 5,200	$ -	$ 5,200	$ -
2.3f	Fuse Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3j	Instrument Transformer Stand Foundations	2	EA	$ -	$ -	$ 2,400	$ 4,800	$ 2,400	**$ 4,800**
2.3k	Arrester Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4b	345-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ 42,000	$ -	$ 42,000	$ -
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5b	Generator Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6b		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6c		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION FOUNDATIONS					$ -		$ 12,000		$ 12,000
3. SUBSTATION STRUCTURES									
3.1	**345kV**								
3.1a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1c	Switch Stands	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1d	Station Service Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1f	Bus Support 1 Ph	0	EA	$ -	$ -	$ 2,250	$ -	$ 2,250	$ -
3.1g	Instrument Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1h	Arrester Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1j	Wave Trap Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ 27,000	$ -	$ 27,000	$ -
3.2b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ 27,000	$ -	$ 27,000	$ -
3.2c	Switch Stands	0	EA	$ -	$ -	$ 9,750	$ -	$ 9,750	$ -
3.2d	Station Service Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2f	Bus Support 1 Ph	0	EA	$ -	$ -	$ 2,250	$ -	$ 2,250	$ -
3.2g	Instrument Transformer Stand	0	EA	$ -	$ -	$ 1,050	$ -	$ 1,050	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.2h	Arrester Stand	0	EA	$ -	$ -	$ 1,050	$ -	$ 1,050	$ -
3.2j	Wave Trap Stand	0	EA	$ -	$ -	$ 4,500	$ -	$ 4,500	$ -
3.2k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3	**115kV**								
3.3a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ 15,000	$ -	$ 15,000	$ -
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3c	Switch Stands	0	EA	$ -	$ -	$ 6,450	$ -	$ 6,450	$ -
3.3d	Fuse Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3f	Bus Support 1 Ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3g	Instrument Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3h	Arrester Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3j	Wave Trap Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION STRUCTURES					$ -		$ -		$ -
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.1b	Capacitor Banks	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.1c		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.1d									
4.2	**230kV**								
4.2a	Circuit Breakers	0	EA	$ -	$ -	$ 7,000	$ -	$ 7,000	$ -
4.2b	Capacitor Banks	0	EA	$ -	$ -	$ 42,000	$ -	$ 42,000	$ -
4.3	**115kV**								
4.3a	Circuit Breakers	1	EA	$ -	$ -	$ 7,000	$ 7,000	$ 7,000	**$ 7,000**
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - MAJOR EQUIPTMENT					$ -		$ 7,000		$ 7,000
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.1b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.1c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.1d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.1e	CCVT'S	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.1f	Arresters	0	EA	$ -	$ -	$ 1,500	$ -	$ 1,500	$ -
5.1g	Wave Traps	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.1h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.1j									
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.2b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.2c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2e	CCVT'S	0	EA	$ -	$ -	$ 1,500	$ -	$ 1,500	$ -
5.2f	Arresters	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.2g	Wave Traps	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.2h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2j									
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.3c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3e	CCVT'S	2	EA	$ -	$ -	$ 17,500	$ 35,000	$ 17,500	**$ 35,000**
5.3f	Arresters	0	EA	$ -	$ -	$ 1,500	$ -	$ 1,500	$ -
5.3g	Wave Traps	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
5.3j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ -		$ 35,000		$ 35,000
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE	0	EA	$ -	$ -	$ 150,000	$ -	$ 150,000	$ -
6.2	Protection and Telecom Equipment Panels	2	EA	$ -	$ -	$ 3,600	$ 7,200	$ 3,600	**$ 7,200**
6.3	125VDC Batteries	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.4	Control Cables	0	LS	$ -	$ -	$ -	$ -	$ -	$ -
6.5	SCADA and Communications	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.6	Low Voltage AC Distribution	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.7	DC Distribution System	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.8	Security	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.9	Fire Alarm	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.10	Generator	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ -		$ 7,200		**$ 7,200**
7. MISC ITEMS									
7.1	Conduit & Cable Trench System	0	EA	$ -	$ -	$ 42,000.00	$ -	$ 42,000	$ -
7.2	Rigid Bus, Fittings & Insulators	0	EA	$ -	$ -	$ 126.25	$ -	$ 126	$ -
7.3	Strain Bus, Connectors & Insulators	0	LS	$ -	$ -	$ 21,000.00	$ -	$ 21,000	$ -
7.4	Grounding System	0	EA	$ -	$ -	$ 42,000.00	$ -	$ 42,000	$ -
7.5									
7.6									
7.7									
7.8									
7.9									
7.10									
7.11									
7.12									
7.13									
7.14									
7.15									
TOTAL - MISC ITEMS					$ -		$ -		$ -
I. Greenbush Substation - Removal					$ -		$ 61,200		**$ 61,200**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1.0	LS	$ -	$ -	$ 612	$ 612	$ 612	**$ 612**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 3,777	$ 3,777	$ 3,777	**$ 3,777**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 612	$ 612	$ 612	**$ 612**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 612	$ 612	$ 612	**$ 612**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 4,896	$ 4,896	$ 4,896	**$ 4,896**
8.6	LiDAR	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.7	Geotech	-	EA	$ -	$ -	$ 3,500	$ -	$ 3,500	$ -
8.8	Surveying/Staking	-	Site	$ -	$ -	$ 428	$ -	$ 428	$ -
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	-	LS	$ -	$ -	$ 1,530	$ -	$ 1,530	$ -
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 184	$ 184	$ 184	**$ 184**
8.13	Real Estate Costs (New)	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.14	Real Estate Costs (Incumbent Utility)	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.18	Sales Tax on Materials	1	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 61	$ 61	$ 61	**$ 61**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ -		$ 10,754		**$ 10,754**

NAT - NYPA - T029 - (Segment B) — **F. Schodack Substation - Install**

Estimate Revision: 8 — **Total: $ 2,621,224**

NAT - NYPA - T029 - (Segment B)	*Supply*	*Installation*	*Total*
F. Schodack Substation - Install			
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ 4,050	$ 11,250	$ 15,300
2. SUBSTATION FOUNDATIONS	$ 201,690	$ 216,000	$ 417,690
3. SUBSTATION STRUCTURES	$ 60,680	$ 60,680	$ 121,360
4. MAJOR EQUIPTMENT	$ 104,000	$ 120,000	$ 224,000
5. SMALL EQUIPTMENT / MATERIALS	$ 316,520	$ 226,000	$ 542,520
6. CONTROL HOUSE / PANELS	$ 192,815	$ 147,815	$ 340,630
7. MISC ITEMS	$ 168,552	$ 259,305	$ 427,857
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 83,865	$ 448,002	$ 531,867
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 1,132,172	$ 1,489,052	$ 2,621,224
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 1,132,172	$ 1,489,052	$ 2,621,224

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
F. Schodack Substation - Install									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	0	ACRES	$ -	$ -	$ 203,000	$ -	$ 203,000	$ -
1.2	Station stone within substation fence.	150	CY	$ 27	$ 4,050	$ 75	$ 11,250	$ 102	**$ 15,300**
1.3	Substation Fence	0	LF	$ 100	$ -	$ 100	$ -	$ 200	$ -
1.4	Permanent Access Road - 20'-Wide	0	LF	$ 35	$ -	$ 285	$ -	$ 320	$ -
1.5									
1.6									
1.7									
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ 4,050		$ 11,250		$ 15,300
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	0	EA	$ 14,940	$ -	$ 16,000	$ -	$ 30,940	$ -
2.1b	Capacitor Bank Foundations	0	EA	$ 56,025	$ -	$ 60,000	$ -	$ 116,025	$ -
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 26,145	$ -	$ 28,000	$ -	$ 54,145	$ -
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 26,145	$ -	$ 28,000	$ -	$ 54,145	$ -
2.1e	Switch Stand Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1f	Station Service Transformer Stand Foundation	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1h	Bus Support 1 Ph Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1j	Instrument Transformer Stand Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1k	Arrester Stand Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1m	Wave Trap Stand Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1p									
2.2	**230kV**								
2.2a	Circuit Breaker Foundations	0	EA	$ 11,952	$ -	$ 12,800	$ -	$ 24,752	$ -
2.2b	Capacitor Bank Foundations	0	EA	$ 44,820	$ -	$ 48,000	$ -	$ 92,820	$ -
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	$ -
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	$ -
2.2e	Switch Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2f	Station Service Transformer Stand Foundation	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2h	Bus Support 1 Ph Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.2j	Instrument Transformer Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2k	Arrester Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2m	Wave Trap Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2p									
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	2	EA	$ 5,229	$ 10,458	$ 5,600	$ 11,200	$ 10,829	**$ 21,658**
2.3b	Capacitor Bank Foundations	0	EA	$ 33,615	$ -	$ 36,000	$ -	$ 69,615	$ -
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	8	EA	$ 16,434	$ 131,472	$ 17,600	$ 140,800	$ 34,034	**$ 272,272**
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	$ -
2.3e	Switch Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3f	Fuse Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3g	Bus Support 3ph Foundations	4	EA	$ 2,988	$ 11,952	$ 3,200	$ 12,800	$ 6,188	**$ 24,752**
2.3h	Bus Support 1 Ph Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3j	Instrument Transformer Stand Foundations	6	EA	$ 2,988	$ 17,928	$ 3,200	$ 19,200	$ 6,188	**$ 37,128**
2.3k	Arrester Stand Foundations	6	EA	$ 2,988	$ 17,928	$ 3,200	$ 19,200	$ 6,188	**$ 37,128**
2.3m	Wave Trap Stand Foundations	4	EA	$ 2,988	$ 11,952	$ 3,200	$ 12,800	$ 6,188	**$ 24,752**
2.3n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment	0	EA	$ 97,110	$ -	$ 104,000	$ -	$ 201,110	$ -
2.4b	345-115kV Transformer Foundation w/ Oil Containment	0	EA	$ 74,700	$ -	$ 80,000	$ -	$ 154,700	$ -
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad	0	EA	$ 76,194	$ -	$ 81,600	$ -	$ 157,794	$ -
2.5b	Generator Foundation	0	EA	$ 16,000	$ -	$ 17,000	$ -	$ 33,000	$ -
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	0	EA	$ 5,229	$ -	$ 5,600	$ -	$ 10,829	$ -
2.6b	60' Lightning Mast Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6c	50' Lightning Mast Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION FOUNDATIONS					$ 201,690		$ 216,000		$ 417,690
3. SUBSTATION STRUCTURES									
3.1	**345kV**								
3.1a	Substation A-Frame Structures - Stand alone	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	$ -
3.1b	Substation A-Frame Structures - Shared Column	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	$ -
3.1c	Switch Stands	0	EA	$ 14,800	$ -	$ 14,800	$ -	$ 29,600	$ -
3.1d	Station Service Transformer Stand	0	EA	$ 14,800	$ -	$ 14,800	$ -	$ 29,600	$ -
3.1e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1f	Bus Support 1 Ph	0	EA	$ 3,700	$ -	$ 3,700	$ -	$ 7,400	$ -
3.1g	Instrument Transformer Stand	0	EA	$ 1,850	$ -	$ 1,850	$ -	$ 3,700	$ -
3.1h	Arrester Stand	0	EA	$ 1,850	$ -	$ 1,850	$ -	$ 3,700	$ -
3.1j	Wave Trap Stand	0	EA	$ 7,400	$ -	$ 7,400	$ -	$ 14,800	$ -
3.1k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	$ -
3.2b	Substation A-Frame Structures - Shared Column	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	$ -
3.2c	Switch Stands	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	$ -
3.2d	Station Service Transformer Stand	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	$ -
3.2e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2f	Bus Support 1 Ph	0	EA	$ 2,775	$ -	$ 2,775	$ -	$ 5,550	$ -
3.2g	Instrument Transformer Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	$ -
3.2h	Arrester Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	$ -
3.2j	Wave Trap Stand	0	EA	$ 5,550	$ -	$ 5,550	$ -	$ 11,100	$ -
3.2k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
3.3	**115kV**								
3.3a	Substation A-Frame Structures - Stand alone	2	EA	$ 18,500	$ 37,000	$ 18,500	$ 37,000	$ 37,000	**$ 74,000**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	$ -
3.3c	Switch Stands	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	$ -
3.3d	Fuse Stand	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	$ -
3.3e	Bus Support 3ph	0	EA	$ 3,330	$ -	$ 3,330	$ -	$ 6,660	$ -
3.3f	Bus Support 1 Ph	4	EA	$ 1,850	$ 7,400	$ 1,850	$ 7,400	$ 3,700	**$ 14,800**
3.3g	Instrument Transformer Stand	6	EA	$ 740	$ 4,440	$ 740	$ 4,440	$ 1,480	**$ 8,880**
3.3h	Arrester Stand	6	EA	$ 740	$ 4,440	$ 740	$ 4,440	$ 1,480	**$ 8,880**
3.3j	Wave Trap Stand	2	EA	$ 3,700	$ 7,400	$ 3,700	$ 7,400	$ 7,400	**$ 14,800**
3.3k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
TOTAL - SUBSTATION STRUCTURES					$ 60,680		$ 60,680		$ 121,360
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	0	EA	$ 300,000	$ -	$ 80,000	$ -	$ 380,000	$ -
4.1b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	$ -
4.1c	345 kV - 230 kV Auto Transformer	0	EA	$ -	$ -	$ 750,000	$ -	$ 750,000	$ -
4.1d	345 kV - 115 kV Auto Transformer	0	EA	$ -	$ -	$ 750,000	$ -	$ 750,000	$ -
4.2	**230kV**								
4.2a	Circuit Breakers	0	EA	$ 250,000	$ -	$ 80,000	$ -	$ 330,000	$ -
4.2b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	$ -
4.3	**115kV**								
4.3a	Circuit Breakers	2	EA	$ 52,000	$ 104,000	$ 60,000	$ 120,000	$ 112,000	**$ 224,000**
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ 60,000	$ -	$ 60,000	$ -
TOTAL - MAJOR EQUIPTMENT					$ 104,000		$ 120,000		$ 224,000
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator	0	EA	$ 40,000	$ -	$ 15,000	$ -	$ 55,000	$ -
5.1b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 35,000	$ -	$ 17,500	$ -	$ 52,500	$ -
5.1c	VT'S	0	EA	$ 25,000	$ -	$ 12,000	$ -	$ 37,000	$ -
5.1d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.1e	CCVT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.1f	Arresters	0	EA	$ 6,500	$ -	$ 1,500	$ -	$ 8,000	$ -
5.1g	Wave Traps	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.1h	Station Service Transformers	0	EA	$ 200,000	$ -	$ 50,000	$ -	$ 250,000	$ -
5.1j									
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator	0	EA	$ 35,000	$ -	$ 15,000	$ -	$ 50,000	$ -
5.2b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 30,000	$ -	$ 17,500	$ -	$ 47,500	$ -
5.2c	VT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2e	CCVT'S	0	EA	$ 10,000	$ -	$ 6,000	$ -	$ 16,000	$ -
5.2f	Arresters	0	EA	$ 5,000	$ -	$ 6,000	$ -	$ 11,000	$ -
5.2g	Wave Traps	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2j									
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	2	EA	$ 33,000	$ 66,000	$ 15,000	$ 30,000	$ 48,000	**$ 96,000**
5.3b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 28,000	$ -	$ 17,500	$ -	$ 45,500	$ -
5.3c	VT'S	6	EA	$ 13,000	$ 78,000	$ 8,000	$ 48,000	$ 21,000	**$ 126,000**
5.3d	CT'S	6	EA	$ 13,000	$ 78,000	$ 8,000	$ 48,000	$ 21,000	**$ 126,000**
5.3e	CCVT'S	6	EA	$ 8,000	$ 48,000	$ 8,000	$ 48,000	$ 16,000	**$ 96,000**
5.3f	Arresters	6	EA	$ 3,420	$ 20,520	$ 6,000	$ 36,000	$ 9,420	**$ 56,520**
5.3g	Wave Traps	2	EA	$ 13,000	$ 26,000	$ 8,000	$ 16,000	$ 21,000	**$ 42,000**
5.3h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ 316,520		$ 226,000		$ 542,520
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE	0	EA	$ 551,250	$ -	$ 85,000	$ -	$ 636,250	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6.2	Protection and Telecom Equipment Panels	2	EA	$ 35,000	$ 70,000	$ 12,500	$ 25,000	$ 47,500	**$ 95,000**
6.3	125VDC Batteries	0	EA	$ 75,000	$ -	$ 25,000	$ -	$ 100,000	**$ -**
6.4	Control Cables	1	LS	$ 122,815	$ 122,815	$ 122,815	$ 122,815	$ 245,630	**$ 245,630**
6.5	SCADA and Communications	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.6	Low Voltage AC Distribution	0	EA	$ 50,000	$ -	$ 100,000	$ -	$ 150,000	**$ -**
6.7	DC Distribution System	0	EA	$ 50,000	$ -	$ 100,000	$ -	$ 150,000	**$ -**
6.8	Security	0	EA	$ 7,500	$ -	$ 7,500	$ -	$ 15,000	**$ -**
6.9	Fire Alarm	0	EA	$ 7,500	$ -	$ 7,500	$ -	$ 15,000	**$ -**
6.10	Generator	0	EA	$ 100,000	$ -	$ 80,000	$ -	$ 180,000	**$ -**
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ 192,815		$ 147,815		**$ 340,630**
7. MISC ITEMS									
7.1	Conduit & Cable Trench System	530.0	LF	$ 185.00	$ 98,050	$ 170.00	$ 90,100	$ 355	**$ 188,150**
7.2	Rigid Bus, Fittings & Insulators	0.0	LF	$ -	$ -	$ -	$ -	$ -	**$ -**
7.3	Strain Bus, Connectors & Insulators	300.0	LF	$ 39.30	$ 11,790	$ 53.35	$ 16,005	$ 93	**$ 27,795**
7.4	Grounding System	800.0	LF	$ -	$ -	$ -	$ -	$ -	**$ -**
7.5	Strain Bus Insulators - 345kV	0	EA	$ 2,000	$ -	$ 1,050	$ -	$ 3,050	**$ -**
7.6	Strain Bus Insulators - 230kV	0	EA	$ 1,400	$ -	$ 750	$ -	$ 2,150	**$ -**
7.7	Strain Bus Insulators - 115kV	24	EA	$ 1,000	$ 24,000	$ 550	$ 13,200	$ 1,550	**$ 37,200**
7.8	Low Voltage AC Station Service	0	LS	$ 50,000	$ -	$ 75,000	$ -	$ 125,000	**$ -**
7.9	SSVT Service	0	LS	$ 45,000	$ -	$ 45,000	$ -	$ 90,000	**$ -**
7.10	Control Conduits from Trench to Equipment	1	LS	$ 14,000	$ 14,000	$ 70,000	$ 70,000	$ 84,000	**$ 84,000**
7.11	Misc. Materials (Above and Below Ground)	1	LS	$ 20,712	$ 20,712	$ 70,000	$ 70,000	$ 90,712	**$ 90,712**
7.12									
7.13									
7.14									
7.15									
7.16									
7.17									
7.18									
7.19									
7.20									
7.21									
7.22									
7.23									
7.24									
7.25									
TOTAL - MISC ITEMS					$ 168,552		$ 259,305		$ 427,857
F. Schodack Substation - Install					$ 1,048,307		$ 1,041,050		**$ 2,089,357**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1.0	LS	$ -	$ -	$ 20,894	$ 20,894	$ 20,894	**$ 20,894**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 128,956	$ 128,956	$ 128,956	**$ 128,956**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 20,894	$ 20,894	$ 20,894	**$ 20,894**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 20,894	$ 20,894	$ 20,894	**$ 20,894**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 167,149	$ 167,149	$ 167,149	**$ 167,149**
8.6	LiDAR	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.7	Geotech	4	EA	$ -	$ -	$ 3,500	$ 14,000	$ 3,500	**$ 14,000**
8.8	Surveying/Staking	1	Site	$ -	$ -	$ 14,625	$ 14,625	$ 14,625	**$ 14,625**
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 52,234	$ 52,234	$ 52,234	**$ 52,234**
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 6,268	$ 6,268	$ 6,268	**$ 6,268**
8.13	Real Estate Costs (New)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.14	Real Estate Costs (Incumbent Utility)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.18	Sales Tax on Materials	1	LS	$ 83,865	$ 83,865	$ -	$ -	$ 83,865	**$ 83,865**
8.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 2,089	$ 2,089	$ 2,089	**$ 2,089**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 83,865		$ 448,002		**$ 531,867**

NAT - NYPA - T029 - (Segment B) — **G. Schodack Substation - Removal**

Estimate Revision: 8 — **Total: $ 160,133**

NAT - NYPA - T029 - (Segment B)	*Supply*	*Installation*	*Total*
G. Schodack Substation - Removal			
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ -	$ -	$ -
2. SUBSTATION FOUNDATIONS	$ -	$ 62,400	$ 62,400
3. SUBSTATION STRUCTURES	$ -	$ 73,800	$ 73,800
4. MAJOR EQUIPTMENT	$ -	$ -	$ -
5. SMALL EQUIPTMENT / MATERIALS	$ -	$ -	$ -
6. CONTROL HOUSE / PANELS	$ -	$ -	$ -
7. MISC ITEMS	$ -	$ -	$ -
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ -	$ 23,933	$ 23,933
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ -	$ 160,133	$ 160,133
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ -	$ 160,133	$ 160,133

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
G. Schodack Substation - Removal									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	0	ACRES	$ -	$ -	$ 203,000	$ -	$ 203,000	$ -
1.2	Station stone within substation fence.	0	CY	$ -	$ -	$ 75	$ -	$ 75	$ -
1.3	Substation Fence	0	LF	$ -	$ -	$ 150	$ -	$ 150	$ -
1.4									
1.5									
1.6									
1.7									
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ -		$ -		$ -
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	0	EA	$ -	$ -	$ 14,200	$ -	$ 14,200	$ -
2.1b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1e	Switch Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1f	Station Service Transformer Stand Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.1j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1k	Arrester Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1p									
2.2	**230kV**								
2.2a	Circuit Breaker Foundations	0	EA	$ -	$ -	$ 7,200	$ -	$ 7,200	$ -
2.2b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ 32,000	$ -	$ 32,000	$ -
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ 22,000	$ -	$ 22,000	$ -
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ 11,000	$ -	$ 11,000	$ -
2.2e	Switch Stand Foundations	0	EA	$ -	$ -	$ 5,200	$ -	$ 5,200	$ -
2.2f	Station Service Transformer Stand Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.2g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.2j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.2k	Arrester Stand Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.2m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2p									
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3e	Switch Stand Foundations	0	EA	$ -	$ -	$ 5,200	$ -	$ 5,200	$ -
2.3f	Fuse Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3k	Arrester Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3p	Steel Transmission Pole Dead Ends (1ph.) Foundations	6	EA	$ -	$ -	$ 10,400	$ 62,400	$ 10,400	**$ 62,400**
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4b	345-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ 42,000	$ -	$ 42,000	$ -
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad (40'x125')	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5b	Generator Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6b		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6c		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION FOUNDATIONS					$ -		$ 62,400		$ 62,400
3. SUBSTATION STRUCTURES									
3.1	**345kV**								
3.1a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1c	Switch Stands	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1d	Station Service Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1e	Bus Support 3ph	0	EA	$ -	$ -	$ 2,250	$ -	$ 2,250	$ -
3.1f	Bus Support 1 Ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1g	Instrument Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1h	Arrester Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1j	Wave Trap Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ 27,000	$ -	$ 27,000	$ -
3.2b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ 27,000	$ -	$ 27,000	$ -
3.2c	Switch Stands	0	EA	$ -	$ -	$ 9,750	$ -	$ 9,750	$ -
3.2d	Station Service Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2f	Bus Support 1 Ph	0	EA	$ -	$ -	$ 2,250	$ -	$ 2,250	$ -
3.2g	Instrument Transformer Stand	0	EA	$ -	$ -	$ 1,050	$ -	$ 1,050	$ -
3.2h	Arrester Stand	0	EA	$ -	$ -	$ 1,050	$ -	$ 1,050	$ -
3.2j	Wave Trap Stand	0	EA	$ -	$ -	$ 4,500	$ -	$ 4,500	$ -
3.2k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.3	**115kV**								
3.3a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ 15,000	$ -	$ 15,000	**$** -
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
3.3c	Switch Stands	0	EA	$ -	$ -	$ 6,450	$ -	$ 6,450	**$** -
3.3d	Fuse Stand	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
3.3e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
3.3f	Bus Support 1 Ph	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
3.3g	Instrument Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
3.3h	Arrester Stand	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
3.3j	Wave Trap Stand	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
3.3k	Misc. Structures	6	EA	$ -	$ -	$ 12,300	$ 73,800	$ 12,300	**$ 73,800**
TOTAL - SUBSTATION STRUCTURES					$ -		$ 73,800		$ 73,800
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
4.1b	Capacitor Banks	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
4.1c		0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
4.1d									
4.2	**230kV**								
4.2a	Circuit Breakers	0	EA	$ -	$ -	$ 7,000	$ -	$ 7,000	**$** -
4.2b	Capacitor Banks	0	EA	$ -	$ -	$ 42,000	$ -	$ 42,000	**$** -
4.3	**115kV**								
4.3a	Circuit Breakers	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
TOTAL - MAJOR EQUIPTMENT					$ -		$ -		$ -
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	**$** -
5.1b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	**$** -
5.1c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
5.1d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
5.1e	CCVT'S	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	**$** -
5.1f	Arresters	0	EA	$ -	$ -	$ 1,500	$ -	$ 1,500	**$** -
5.1g	Wave Traps	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	**$** -
5.1h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
5.1j									
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	**$** -
5.2b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	**$** -
5.2c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
5.2d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
5.2e	CCVT'S	0	EA	$ -	$ -	$ 1,500	$ -	$ 1,500	**$** -
5.2f	Arresters	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	**$** -
5.2g	Wave Traps	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	**$** -
5.2h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
5.2j									
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
5.3b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	**$** -
5.3c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
5.3d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
5.3e	CCVT'S	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
5.3f	Arresters	0	EA	$ -	$ -	$ 1,500	$ -	$ 1,500	**$** -
5.3g	Wave Traps	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
5.3h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
5.3j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ -		$ -		$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE	0	EA	$ -	$ -	$ 150,000	$ -	$ 150,000	$ -
6.2	Protection and Telecom Equipment Panels	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.3	125VDC Batteries	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.4	Control Cables	1	LS	$ -	$ -	$ -	$ -	$ -	$ -
6.5	SCADA and Communications	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.6	Low Voltage AC Distribution	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.7	DC Distribution System	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.8	Security	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.9	Fire Alarm	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.10	Generator	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ -		$ -		$ -
7. MISC ITEMS									
7.1	Conduit & Cable Trench System	0	EA	$ -	$ -	$ 42,000.00	$ -	$ 42,000	$ -
7.2	Rigid Bus, Fittings & Insulators	0	LS	$ -	$ -	$ 10,500.00	$ -	$ 10,500	$ -
7.3	Strain Bus, Connectors & Insulators	0	EA	$ -	$ -	$ 39.35	$ -	$ 39	$ -
7.4	Grounding System	0	EA	$ -	$ -	$ 42,000.00	$ -	$ 42,000	$ -
7.5									
7.6									
7.7									
7.8									
7.9									
7.10									
7.11									
7.12									
7.13									
7.14									
7.15									
TOTAL - MISC ITEMS					$ -		$ -		$ -
G. Schodack Substation - Removal					$ -		$ 136,200		**$ 136,200**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1.0	LS	$ -	$ -	$ 1,362	$ 1,362	$ 1,362	**$ 1,362**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 8,406	$ 8,406	$ 8,406	**$ 8,406**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 1,362	$ 1,362	$ 1,362	**$ 1,362**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 1,362	$ 1,362	$ 1,362	**$ 1,362**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 10,896	$ 10,896	$ 10,896	**$ 10,896**
8.6	LiDAR	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.7	Geotech	-	EA	$ -	$ -	$ 3,500	$ -	$ 3,500	$ -
8.8	Surveying/Staking	-	Site	$ -	$ -	$ 953	$ -	$ 953	$ -
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	-	LS	$ -	$ -	$ 3,405	$ -	$ 3,405	$ -
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 409	$ 409	$ 409	**$ 409**
8.13	Real Estate Costs (New)	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.14	Real Estate Costs (Incumbent Utility)	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.18	Sales Tax on Materials	1	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 136	$ 136	$ 136	**$ 136**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ -		$ 23,933		**$ 23,933**

NAT - NYPA - T029 - (Segment B) — **H. Churchtown Substation - Install**

Estimate Revision: 8 — **Total: $ 18,812,564**

NAT - NYPA - T029 - (Segment B)	*Supply*	*Installation*	*Total*
H. Churchtown Substation - Install			
1. SITE PREP/ GRADING/ FENCING / CIVIL	**$ 133,850**	**$ 2,459,550**	**$ 2,593,400**
2. SUBSTATION FOUNDATIONS	**$ 964,690**	**$ 1,039,500**	**$ 2,004,190**
3. SUBSTATION STRUCTURES	**$ 416,000**	**$ 433,085**	**$ 866,170**
4. MAJOR EQUIPTMENT	**$ 416,000**	**$ 480,000**	**$ 896,000**
5. SMALL EQUIPTMENT / MATERIALS	**$ 1,384,800**	**$ 938,800**	**$ 2,323,600**
6. CONTROL HOUSE / PANELS	**$ 2,344,525**	**$ 1,517,025**	**$ 3,861,550**
7. MISC ITEMS	**$ 1,013,691**	**$ 1,488,020**	**$ 2,501,711**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	**$ 535,251**	**$ 3,230,692**	**$ 3,765,943**
CONTRACTOR MARK-UP (OH&P)	**$ -**	**$ -**	**$ -**
SUBTOTAL:	**$ 7,208,807**	**$ 11,586,672**	**$ 18,812,564**
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	**$ 7,208,807**	**$ 11,586,672**	**$ 18,812,564**

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
H. Churchtown Substation - Install									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	2.0	ACRES	$ -	$ -	$ 1,125,000	$ 2,250,000	$ 1,125,000	**$ 2,250,000**
1.2	Station stone within substation fence.	900	CY	$ 27	$ 24,300	$ 75	$ 67,500	$ 102	**$ 91,800**
1.3	Substation Fence	1,050	LF	$ 100	$ 105,000	$ 100	$ 105,000	$ 200	**$ 210,000**
1.4	Permanent Access Road - 20'-Wide	130	LF	$ 35	$ 4,550	$ 285	$ 37,050	$ 320	**$ 41,600**
1.5									
1.6									
1.7									
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ 133,850		$ 2,459,550		$ 2,593,400
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	0	EA	$ 14,940	$ -	$ 16,000	$ -	$ 30,940	$ -
2.1b	Capacitor Bank Foundations	0	EA	$ 56,025	$ -	$ 60,000	$ -	$ 116,025	$ -
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 26,145	$ -	$ 28,000	$ -	$ 54,145	$ -
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 26,145	$ -	$ 28,000	$ -	$ 54,145	$ -
2.1e	Switch Stand Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1f	Station Service Transformer Stand Foundation	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1h	Bus Support 1 Ph Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1j	Instrument Transformer Stand Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1k	Arrester Stand Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1m	Wave Trap Stand Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1p									
2.2	**230kV**								
2.2a	Circuit Breaker Foundations	0	EA	$ 11,952	$ -	$ 12,800	$ -	$ 24,752	$ -
2.2b	Capacitor Bank Foundations	0	EA	$ 44,820	$ -	$ 48,000	$ -	$ 92,820	$ -
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	$ -
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	$ -
2.2e	Switch Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2f	Station Service Transformer Stand Foundation	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.2h	Bus Support 1 Ph Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2j	Instrument Transformer Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2k	Arrester Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2m	Wave Trap Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2p									
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	8	EA	$ 5,229	$ 41,832	$ 5,600	$ 44,800	$ 10,829	**$ 86,632**
2.3b	Capacitor Bank Foundations	0	EA	$ 33,615	$ -	$ 36,000	$ -	$ 69,615	$ -
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	20	EA	$ 16,434	$ 328,680	$ 17,600	$ 352,000	$ 34,034	**$ 680,680**
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	$ -
2.3e	Switch Stand Foundations	32	EA	$ 2,988	$ 95,616	$ 3,200	$ 102,400	$ 6,188	**$ 198,016**
2.3f	Fuse Stand Foundations	2	EA	$ 2,988	$ 5,976	$ 3,200	$ 6,400	$ 6,188	**$ 12,376**
2.3g	Bus Support 3ph Foundations	40	EA	$ 2,988	$ 119,520	$ 3,200	$ 128,000	$ 6,188	**$ 247,520**
2.3h	Bus Support 1 Ph Foundations	24	EA	$ 2,988	$ 71,712	$ 3,200	$ 76,800	$ 6,188	**$ 148,512**
2.3j	Instrument Transformer Stand Foundations	51	EA	$ 2,988	$ 152,388	$ 3,200	$ 163,200	$ 6,188	**$ 315,588**
2.3k	Arrester Stand Foundations	15	EA	$ 2,988	$ 44,820	$ 3,200	$ 48,000	$ 6,188	**$ 92,820**
2.3m	Wave Trap Stand Foundations	10	EA	$ 2,988	$ 29,880	$ 3,200	$ 32,000	$ 6,188	**$ 61,880**
2.3n	Station Service Foundations	1	EA	$ 3,735	$ 3,735	$ 4,000	$ 4,000	$ 7,735	**$ 7,735**
2.3p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment	0	EA	$ 97,110	$ -	$ 104,000	$ -	$ 201,110	$ -
2.4b	345-115kV Transformer Foundation w/ Oil Containment	0	EA	$ 74,700	$ -	$ 80,000	$ -	$ 154,700	$ -
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad	1	EA	$ 33,615	$ 33,615	$ 36,000	$ 36,000	$ 69,615	**$ 69,615**
2.5b	Generator Foundation	1	EA	$ 16,000	$ 16,000	$ 17,000	$ 17,000	$ 33,000	**$ 33,000**
2.5c	Station Service Distribution Line - 1ph.	1	LS	$ -	$ -	$ 6,500	$ 6,500	$ 6,500	**$ 6,500**
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	4	EA	$ 5,229	$ 20,916	$ 5,600	$ 22,400	$ 10,829	**$ 43,316**
2.6b		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6c		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION FOUNDATIONS					$ 964,690		$ 1,039,500		$ 2,004,190
3. SUBSTATION STRUCTURES									
3.1	**345kV**								
3.1a	Substation A-Frame Structures - Stand alone	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	$ -
3.1b	Substation A-Frame Structures - Shared Column	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	$ -
3.1c	Switch Stands	0	EA	$ 14,800	$ -	$ 14,800	$ -	$ 29,600	$ -
3.1d	Station Service Transformer Stand	0	EA	$ 14,800	$ -	$ 14,800	$ -	$ 29,600	$ -
3.1e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1f	Bus Support 1 Ph	0	EA	$ 3,700	$ -	$ 3,700	$ -	$ 7,400	$ -
3.1g	Instrument Transformer Stand	0	EA	$ 1,850	$ -	$ 1,850	$ -	$ 3,700	$ -
3.1h	Arrester Stand	0	EA	$ 1,850	$ -	$ 1,850	$ -	$ 3,700	$ -
3.1j	Wave Trap Stand	0	EA	$ 7,400	$ -	$ 7,400	$ -	$ 14,800	$ -
3.1k	Lightning Masts - 70'	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	$ -
3.2b	Substation A-Frame Structures - Shared Column	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	$ -
3.2c	Switch Stands	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	$ -
3.2d	Station Service Transformer Stand	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	$ -
3.2e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2f	Bus Support 1 Ph	0	EA	$ 2,775	$ -	$ 2,775	$ -	$ 5,550	$ -
3.2g	Instrument Transformer Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	$ -
3.2h	Arrester Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	$ -
3.2j	Wave Trap Stand	0	EA	$ 5,550	$ -	$ 5,550	$ -	$ 11,100	$ -
3.2k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
3.3	**115kV**								

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.3a	Substation A-Frame Structures - Stand alone	5	EA	$ 18,500	$ 92,500	$ 18,500	$ 92,500	$ 37,000	**$ 185,000**
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	**$ -**
3.3c	Switch Stands	16	EA	$ 7,955	$ 127,280	$ 7,955	$ 127,280	$ 15,910	**$ 254,560**
3.3d	Fuse Stand	1	EA	$ 7,955	$ 7,955	$ 7,955	$ 7,955	$ 15,910	**$ 15,910**
3.3e	Bus Support 3ph	20	EA	$ 3,330	$ 66,600	$ 3,330	$ 66,600	$ 6,660	**$ 133,200**
3.3f	Bus Support 1 Ph	24	EA	$ 1,850	$ 44,400	$ 1,850	$ 44,400	$ 3,700	**$ 88,800**
3.3g	Instrument Transformer Stand	51	EA	$ 740	$ 37,740	$ 740	$ 37,740	$ 1,480	**$ 75,480**
3.3h	Arrester Stand	15	EA	$ 740	$ 11,100	$ 740	$ 11,100	$ 1,480	**$ 22,200**
3.3j	Wave Trap Stand	5	EA	$ 3,700	$ 18,500	$ 3,700	$ 18,500	$ 7,400	**$ 37,000**
3.3k	Misc. Structures	4	EA	$ 6,475	$ 25,900	$ 6,475	$ 25,900	$ 12,950	**$ 51,800**
3.3l	Station Service Transformer Support Stand	1	EA	$ 1,110	$ 1,110	$ 1,110	$ 1,110	$ 2,220	**$ 2,220**
TOTAL - SUBSTATION STRUCTURES					$ 433,085		$ 433,085		$ 866,170
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	0	EA	$ 300,000	$ -	$ 80,000	$ -	$ 380,000	**$ -**
4.1b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	**$ -**
4.1c	345 kV - 230 kV Auto Transformer	0	EA	$ -	$ -	$ 750,000	$ -	$ 750,000	**$ -**
4.1d	345 kV - 115 kV Auto Transformer	0	EA	$ -	$ -	$ 750,000	$ -	$ 750,000	**$ -**
4.2	**230kV**								
4.2a	Circuit Breakers	0	EA	$ 250,000	$ -	$ 80,000	$ -	$ 330,000	**$ -**
4.2b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	**$ -**
4.3	**115kV**								
4.3a	Circuit Breakers	8	EA	$ 52,000	$ 416,000	$ 60,000	$ 480,000	$ 112,000	**$ 896,000**
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ 60,000	$ -	$ 60,000	**$ -**
TOTAL - MAJOR EQUIPTMENT					$ 416,000		$ 480,000		$ 896,000
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator	0	EA	$ 40,000	$ -	$ 15,000	$ -	$ 55,000	**$ -**
5.1b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 35,000	$ -	$ 17,500	$ -	$ 52,500	**$ -**
5.1c	VT'S	0	EA	$ 25,000	$ -	$ 12,000	$ -	$ 37,000	**$ -**
5.1d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	**$ -**
5.1e	CCVT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	**$ -**
5.1f	Arresters	0	EA	$ 6,500	$ -	$ 1,500	$ -	$ 8,000	**$ -**
5.1g	Wave Traps	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	**$ -**
5.1h	Station Service Transformers	0	EA	$ 200,000	$ -	$ 50,000	$ -	$ 250,000	**$ -**
5.1j									
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator	0	EA	$ 35,000	$ -	$ 15,000	$ -	$ 50,000	**$ -**
5.2b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 30,000	$ -	$ 17,500	$ -	$ 47,500	**$ -**
5.2c	VT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	**$ -**
5.2d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	**$ -**
5.2e	CCVT'S	0	EA	$ 10,000	$ -	$ 6,000	$ -	$ 16,000	**$ -**
5.2f	Arresters	0	EA	$ 5,000	$ -	$ 6,000	$ -	$ 11,000	**$ -**
5.2g	Wave Traps	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	**$ -**
5.2h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.2j									
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	5	EA	$ 33,000	$ 165,000	$ 15,000	$ 75,000	$ 48,000	**$ 240,000**
5.3b	Disconnect Switches - 3ph w/ manual operator	16	EA	$ 28,000	$ 448,000	$ 17,500	$ 280,000	$ 45,500	**$ 728,000**
5.3c	VT'S	15	EA	$ 13,000	$ 195,000	$ 8,000	$ 120,000	$ 21,000	**$ 315,000**
5.3d	CT'S	15	EA	$ 13,000	$ 195,000	$ 8,000	$ 120,000	$ 21,000	**$ 315,000**
5.3e	CCVT'S	21	EA	$ 8,000	$ 168,000	$ 8,000	$ 168,000	$ 16,000	**$ 336,000**
5.3f	Arresters	15	EA	$ 3,420	$ 51,300	$ 6,000	$ 90,000	$ 9,420	**$ 141,300**
5.3g	Wave Traps	5	EA	$ 13,000	$ 65,000	$ 8,000	$ 40,000	$ 21,000	**$ 105,000**
5.3h	Station Service Transformers	1	EA	$ 75,000	$ 75,000	$ 35,000	$ 35,000	$ 110,000	**$ 110,000**
5.3j	Fuses	3	EA	$ 7,500	$ 22,500	$ 3,600	$ 10,800	$ 11,100	**$ 33,300**
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ 1,384,800		$ 938,800		$ 2,323,600

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE	1	EA	$ 292,500	$ 292,500	$ 85,000	$ 85,000	$ 377,500	**$ 377,500**
6.2	Protection and Telecom Equipment Panels	30	EA	$ 35,000	$ 1,050,000	$ 10,000	$ 300,000	$ 45,000	**$ 1,350,000**
6.3	125VDC Batteries	2	EA	$ 75,000	$ 150,000	$ 25,000	$ 50,000	$ 100,000	**$ 200,000**
6.4	Control Cables	1	LS	$ 487,025	$ 487,025	$ 487,025	$ 487,025	$ 974,050	**$ 974,050**
6.5	SCADA and Communications	1	EA	$ 50,000	$ 50,000	$ 100,000	$ 100,000	$ 150,000	**$ 150,000**
6.6	Low Voltage AC Distribution	2	EA	$ 50,000	$ 100,000	$ 100,000	$ 200,000	$ 150,000	**$ 300,000**
6.7	DC Distribution System	2	EA	$ 50,000	$ 100,000	$ 100,000	$ 200,000	$ 150,000	**$ 300,000**
6.8	Security	1	EA	$ 7,500	$ 7,500	$ 7,500	$ 7,500	$ 15,000	**$ 15,000**
6.9	Fire Alarm	1	EA	$ 7,500	$ 7,500	$ 7,500	$ 7,500	$ 15,000	**$ 15,000**
6.10	Generator	1	EA	$ 100,000	$ 100,000	$ 80,000	$ 80,000	$ 180,000	**$ 180,000**
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ 2,344,525		$ 1,517,025		**$ 3,861,550**
7. MISC ITEMS									
7.1	Conduit & Cable Trench System	1,300.0	LF	$ 185.00	$ 240,500	$ 170.00	$ 221,000	$ 355	**$ 461,500**
7.2	Rigid Bus, Fittings & Insulators	1,800.0	LF	$ 125.07	$ 225,126	$ 237.10	$ 426,780	$ 362	**$ 651,906**
7.3	Strain Bus, Connectors & Insulators	1,000.0	LF	$ 39.30	$ 39,300	$ 53.35	$ 53,350	$ 93	**$ 92,650**
7.4	Grounding System	10,500.0	LF	$ 6.93	$ 72,765	$ 32.58	$ 342,090	$ 40	**$ 414,855**
7.5	Strain Bus Insulators - 345kV	0	EA	$ 2,000	$ -	$ 1,050	$ -	$ 3,050	**$ -**
7.6	Strain Bus Insulators - 230kV	0	EA	$ 1,400	$ -	$ 750	$ -	$ 2,150	**$ -**
7.7	Strain Bus Insulators - 115kV	36	EA	$ 1,000	$ 36,000	$ 550	$ 19,800	$ 1,550	**$ 55,800**
7.8	Low Voltage AC Station Service	1	LS	$ 50,000	$ 50,000	$ 75,000	$ 75,000	$ 125,000	**$ 125,000**
7.9	SSVT Service	1	LS	$ 45,000	$ 45,000	$ 45,000	$ 45,000	$ 90,000	**$ 90,000**
7.10	Control Conduits from Trench to Equipment	1	LS	$ 125,000	$ 125,000	$ 125,000	$ 125,000	$ 250,000	**$ 250,000**
7.11	Misc. Materials (Above and Below Ground)	1	LS	$ 180,000	$ 180,000	$ 180,000	$ 180,000	$ 360,000	**$ 360,000**
7.12									
7.13									
7.14									
7.15									
7.16									
7.17									
7.18									
7.19									
7.20									
7.21									
7.22									
7.23									
7.24									
7.25									
TOTAL - MISC ITEMS					$ 1,013,691		$ 1,488,020		$ 2,501,711
H. Churchtown Substation - Install					$ 6,690,641		$ 8,355,980		**$ 15,046,621**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1.0	LS	$ -	$ -	$ 150,466	$ 150,466	$ 150,466	**$ 150,466**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 928,685	$ 928,685	$ 928,685	**$ 928,685**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 150,466	$ 150,466	$ 150,466	**$ 150,466**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 150,466	$ 150,466	$ 150,466	**$ 150,466**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 1,203,730	$ 1,203,730	$ 1,203,730	**$ 1,203,730**
8.6	LiDAR	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.7	Geotech	4	EA	$ -	$ -	$ 3,500	$ 14,000	$ 3,500	**$ 14,000**
8.8	Surveying/Staking	1	Site	$ -	$ -	$ 105,326	$ 105,326	$ 105,326	**$ 105,326**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 376,166	$ 376,166	$ 376,166	**$ 376,166**
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 45,140	$ 45,140	$ 45,140	**$ 45,140**
8.13	Real Estate Costs (New)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.14	Real Estate Costs (Incumbent Utility)	1	LS	$ -	$ -	$ 91,200	$ 91,200	$ 91,200	**$ 91,200**
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.18	Sales Tax on Materials	1	LS	$ 535,251	$ 535,251	$ -	$ -	$ 535,251	**$ 535,251**
8.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 15,047	$ 15,047	$ 15,047	**$ 15,047**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 535,251		$ 3,230,692		**$ 3,765,943**

NAT - NYPA - T029 - (Segment B)

I. Churchtown Substation - Removal

Estimate Revision: 8

Total: $ 1,032,084

NAT - NYPA - T029 - (Segment B)	*Supply*	*Installation*	*Total*
I. Churchtown Substation - Removal			
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ -	$ 25,900	$ 25,900
2. SUBSTATION FOUNDATIONS	$ -	$ 340,400	$ 340,400
3. SUBSTATION STRUCTURES	$ -	$ 252,600	$ 252,600
4. MAJOR EQUIPTMENT	$ -	$ 24,600	$ 24,600
5. SMALL EQUIPTMENT / MATERIALS	$ -	$ 60,000	$ 60,000
6. CONTROL HOUSE / PANELS	$ -	$ 150,000	$ 150,000
7. MISC ITEMS	$ -	$ 25,078	$ 25,078
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ -	$ 153,506	$ 153,506
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ -	$ 1,032,084	$ 1,032,084
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ -	$ 1,032,084	$ 1,032,084

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
I. Churchtown Substation - Removal									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.		ACRES	$ -	$ -	$ 250,000	$ -	$ 250,000	$ -
1.2	Station stone within substation fence.		CY	$ -	$ -	$ 75	$ -	$ 75	$ -
1.3	Substation Fence	740	LF	$ -	$ -	$ 35	$ 25,900	$ 35	**$ 25,900**
1.4									
1.5									
1.6									
1.7									
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ -		$ 25,900		$ 25,900
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations		EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1b	Capacitor Bank Foundations		EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)		EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)		EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1e	Switch Stand Foundations		EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1f	Station Service Transformer Stand Foundation		EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1g	Bus Support 3ph Foundations		EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1h	Bus Support 1 Ph Foundations		EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1j	Instrument Transformer Stand Foundations		EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1k	Arrester Stand Foundations		EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1m	Wave Trap Stand Foundations		EA	$ -	$ -	$ -	$ -	$ -	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.1n	Reactor Foundations		EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1p									
2.2	**230kV**								
2.2a	Circuit Breaker Foundations		EA	$ -	$ -	$ 7,200	$ -	$ 7,200	$ -
2.2b	Capacitor Bank Foundations		EA	$ -	$ -	$ 32,000	$ -	$ 32,000	$ -
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)		EA	$ -	$ -	$ 22,000	$ -	$ 22,000	$ -
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)		EA	$ -	$ -	$ 11,000	$ -	$ 11,000	$ -
2.2e	Switch Stand Foundations		EA	$ -	$ -	$ 5,200	$ -	$ 5,200	$ -
2.2f	Station Service Transformer Stand Foundation		EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2g	Bus Support 3ph Foundations		EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2h	Bus Support 1 Ph Foundations		EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.2j	Instrument Transformer Stand Foundations		EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.2k	Arrester Stand Foundations		EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.2m	Wave Trap Stand Foundations		EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2n	Misc. Structure Foundations		EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2p									
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	2	EA	$ -	$ -	$ 15,000	$ 30,000	$ 15,000	**$ 30,000**
2.3b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3e	Switch Stand Foundations	18	EA	$ -	$ -	$ 5,200	$ 93,600	$ 5,200	**$ 93,600**
2.3f	Fuse Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3h	Bus Support 1 Ph Foundations	6	EA	$ -	$ -	$ 5,200	$ 31,200	$ 5,200	**$ 31,200**
2.3j	Instrument Transformer Stand Foundations	3	EA	$ -	$ -	$ 5,200	$ 15,600	$ 5,200	**$ 15,600**
2.3k	Arrester Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3p	Steel Transmission Pole Deadend Fnds (1Ph)	9	EA	$ -	$ -	$ 15,000	$ 135,000	$ 15,000	**$ 135,000**
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment		EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4b	345-115kV Transformer Foundation w/ Oil Containment		EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment		EA	$ -	$ -	$ 67,500	$ -	$ 67,500	$ -
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment		EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad	1	EA	$ -	$ -	$ 14,200	$ 14,200	$ 14,200	**$ 14,200**
2.5b	Generator Foundation		EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	4	EA	$ -	$ -	$ 5,200	$ 20,800	$ 5,200	**$ 20,800**
2.6b				$ -	$ -	$ -	$ -	$ -	$ -
2.6c				$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION FOUNDATIONS					$ -		$ 340,400		$ 340,400
3. SUBSTATION STRUCTURES									
3.1	**345kV**								

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.1a	Substation A-Frame Structures - Stand alone		EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1b	Substation A-Frame Structures - Shared Column		EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1c	Switch Stands		EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1d	Station Service Transformer Stand		EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1e	Bus Support 3ph		EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1f	Bus Support 1 Ph		EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1g	Instrument Transformer Stand		EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1h	Arrester Stand		EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1j	Wave Trap Stand		EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1k	Misc. Structures		EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone		EA	$ -	$ -	$ 27,000	$ -	$ 27,000	$ -
3.2b	Substation A-Frame Structures - Shared Column		EA	$ -	$ -	$ 27,000	$ -	$ 27,000	$ -
3.2c	Switch Stands		EA	$ -	$ -	$ 9,750	$ -	$ 9,750	$ -
3.2d	Station Service Transformer Stand		EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2e	Bus Support 3ph		EA	$ -	$ -	$ 2,250	$ -	$ 2,250	$ -
3.2f	Bus Support 1 Ph		EA	$ -	$ -	$ 2,250	$ -	$ 2,250	$ -
3.2g	Instrument Transformer Stand		EA	$ -	$ -	$ 1,050	$ -	$ 1,050	$ -
3.2h	Arrester Stand		EA	$ -	$ -	$ 1,050	$ -	$ 1,050	$ -
3.2j	Wave Trap Stand		EA	$ -	$ -	$ 4,500	$ -	$ 4,500	$ -
3.2k	Misc. Structures		EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3	**115kV**								
3.3a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ 15,000	$ -	$ 15,000	$ -
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3c	Switch Stands	9	EA	$ -	$ -	$ 6,450	$ 58,050	$ 6,450	**$ 58,050**
3.3d	Fuse Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3f	Bus Support 1 Ph	6	EA	$ -	$ -	$ 6,450	$ 38,700	$ 6,450	**$ 38,700**
3.3g	Instrument Transformer Stand	3	EA	$ -	$ -	$ 6,450	$ 19,350	$ 6,450	**$ 19,350**
3.3h	Arrester Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3j	Wave Trap Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3k	Steel Transmission Pole Deadend (1Ph)	9	EA	$ -	$ -	$ 12,300	$ 110,700	$ 12,300	**$ 110,700**
3.4l	Lightning Mast	4	EA	$ -	$ -	$ 6,450	$ 25,800	$ 6,450	**$ 25,800**
TOTAL - SUBSTATION STRUCTURES					$ -		$ 252,600		$ 252,600
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers		EA	$ -	$ -	$ -	$ -	$ -	$ -
4.1b	Capacitor Banks		EA	$ -	$ -	$ -	$ -	$ -	$ -
4.1c			EA	$ -	$ -	$ -	$ -	$ -	$ -
4.1d									
4.2	**230kV**								
4.2a	Circuit Breakers		EA	$ -	$ -	$ 7,000	$ -	$ 7,000	$ -
4.2b	Capacitor Banks		EA	$ -	$ -	$ 42,000	$ -	$ 42,000	$ -
4.3	**115kV**								
4.3a	Circuit Breakers	2	EA	$ -	$ -	$ 12,300	$ 24,600	$ 12,300	**$ 24,600**
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - MAJOR EQUIPTMENT					$ -		$ 24,600		$ 24,600

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator		EA	$ -	$ -	$ 5,500	$ -	$ 5,500	**$ -**
5.1b	Disconnect Switches - 3ph w/ manual operator		EA	$ -	$ -	$ 5,500	$ -	$ 5,500	**$ -**
5.1c	VT'S		EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.1d	CT'S		EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.1e	CCVT'S		EA	$ -	$ -	$ 2,500	$ -	$ 2,500	**$ -**
5.1f	Arresters		EA	$ -	$ -	$ 1,500	$ -	$ 1,500	**$ -**
5.1g	Wave Traps		EA	$ -	$ -	$ 2,500	$ -	$ 2,500	**$ -**
5.1h	Station Service Transformers		EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator		EA	$ -	$ -	$ 5,500	$ -	$ 5,500	**$ -**
5.2b	Disconnect Switches - 3ph w/ manual operator		EA	$ -	$ -	$ 5,500	$ -	$ 5,500	**$ -**
5.2c	VT'S		EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.2d	CT'S		EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.2e	CCVT'S		EA	$ -	$ -	$ 1,500	$ -	$ 1,500	**$ -**
5.2f	Arresters		EA	$ -	$ -	$ 2,500	$ -	$ 2,500	**$ -**
5.2g	Wave Traps		EA	$ -	$ -	$ 2,500	$ -	$ 2,500	**$ -**
5.2h	Station Service Transformers		EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	3	EA	$ -	$ -	$ 5,500	$ 16,500	$ 5,500	**$ 16,500**
5.3b	Disconnect Switches - 3ph w/ manual operator	3	EA	$ -	$ -	$ 5,500	$ 16,500	$ 5,500	**$ 16,500**
5.3c	VT'S	3	EA	$ -	$ -	$ 1,500	$ 4,500	$ 1,500	**$ 4,500**
5.3d	CT'S	3	EA	$ -	$ -	$ 1,500	$ 4,500	$ 1,500	**$ 4,500**
5.3e	CCVT'S	3	EA	$ -	$ -	$ 1,500	$ 4,500	$ 1,500	**$ 4,500**
5.3f	Arresters	9	EA	$ -	$ -	$ 1,500	$ 13,500	$ 1,500	**$ 13,500**
5.3g	Wave Traps	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.3h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.3j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ -		$ 60,000		$ 60,000
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE	1	EA	$ -	$ -	$ 150,000	$ 150,000	$ 150,000	**$ 150,000**
6.2	Protection and Telecom Equipment Panels		EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.3	125VDC Batteries		EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.4	Control Cables		EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.5	SCADA and Communications		EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.6	Low Voltage AC Distribution		EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.7	DC Distribution System		EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.8	Security		EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.9	Fire Alarm		EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.10	Generator		EA	$ -	$ -	$ -	$ -	$ -	**$ -**
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ -		$ 150,000		**$ 150,000**
7. MISC ITEMS									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
7.1	Conduit & Cable Trench System		LS	$ -	$ -	$ 42,000.00	$ -	$ 42,000	$ -
7.2	Rigid Bus, Fittings & Insulators	535.0	LF	$ -	$ -	$ 46.88	$ 25,078	$ 47	$ 25,078
7.3	Strain Bus, Connectors & Insulators		LF	$ -	$ -	$ 39.35	$ -	$ 39	$ -
7.4	Grounding System		LS	$ -	$ -	$ 42,000.00	$ -	$ 42,000	$ -
7.5									
7.6									
7.7									
7.8									
7.9									
7.10									
7.11									
7.12									
7.13									
7.14									
7.15									
TOTAL - MISC ITEMS					$ -		$ 25,078		$ 25,078
I. Churchtown Substation - Removal					$ -		$ 878,578		**$ 878,578**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1	LS	$ -	$ -	$ 8,786	$ 8,786	$ 8,786	$ 8,786
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 54,226	$ 54,226	$ 54,226	$ 54,226
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 8,786	$ 8,786	$ 8,786	$ 8,786
8.4	Site Accommodation, Facilities, Storage	1.0	LS	$ -	$ -	$ 8,786	$ 8,786	$ 8,786	$ 8,786
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 70,286	$ 70,286	$ 70,286	$ 70,286
8.6	LiDAR	-	Mile	$ -	$ -	$ -	$ -	$ -	$ -
8.7	Geotech	-	Site	$ -	$ -	$ -	$ -	$ -	$ -
8.8	Surveying/Staking	-	Site	$ -	$ -	$ 6,150	$ -	$ 6,150	$ -
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	-	LS	$ -	$ -	$ 21,964	$ -	$ 21,964	$ -
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 2,636	$ 2,636	$ 2,636	$ 2,636
8.13	Real Estate Costs (New)	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.14	Real Estate Costs (Incumbent Utility)	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.18	Sales Tax on Materials	1	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.19	Fees for permits, including roadway, railroad, building or other local permits	-	LS		$ -	$ 879	$ -	$ 879	$ -
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ -		$ 153,506		**$ 153,506**

NAT - NYPA - T029 - (Segment B) — **J. Pleasant Valley Substation - Install**

Estimate Revision: 8 — **Total: $ 3,524,980**

NAT - NYPA - T029 - (Segment B)	*Supply*	*Installation*	*Total*
J. Pleasant Valley Substation - Install			
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ 11,025	$ 14,625	$ 25,650
2. SUBSTATION FOUNDATIONS	$ 161,177	$ 171,300	$ 332,477
3. SUBSTATION STRUCTURES	$ 44,400	$ 44,400	$ 88,800
4. MAJOR EQUIPTMENT	$ 200,000	$ 80,000	$ 280,000
5. SMALL EQUIPTMENT / MATERIALS	$ 260,500	$ 129,000	$ 389,500
6. CONTROL HOUSE / PANELS	$ 560,900	$ 253,400	$ 814,300
7. MISC ITEMS	$ 409,950	$ 457,275	$ 867,225
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 131,836	$ 595,192	$ 727,028
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 1,779,788	$ 1,745,192	$ 3,524,980
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 1,779,788	$ 1,745,192	$ 3,524,980

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
J. Pleasant Valley Substation - Install									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	0	ACRES	$ -	$ -	$ 203,000	$ -	$ 203,000	$ -
1.2	Station stone within substation fence.	75	CY	$ 27	$ 2,025	$ 75	$ 5,625	$ 102	**$ 7,650**
1.3	Substation Fence	90	LF	$ 100	$ 9,000	$ 100	$ 9,000	$ 200	**$ 18,000**
1.4	Permanent Access Road - 20'-Wide	0	LF	$ 35	$ -	$ 285	$ -	$ 320	$ -
1.5									
1.6									
1.7									
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ 11,025		$ 14,625		$ 25,650
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	1	EA	$ 14,940	$ 14,940	$ 16,000	$ 16,000	$ 30,940	**$ 30,940**
2.1b	Capacitor Bank Foundations	0	EA	$ 56,025	$ -	$ 60,000	$ -	$ 116,025	$ -
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 26,145	$ -	$ 28,000	$ -	$ 54,145	$ -
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 26,145	$ -	$ 28,000	$ -	$ 54,145	$ -
2.1e	Switch Stand Foundations	6	EA	$ 4,482	$ 26,892	$ 4,800	$ 28,800	$ 9,282	**$ 55,692**
2.1f	Station Service Transformer Stand Foundation	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1h	Bus Support 1 Ph Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1j	Instrument Transformer Stand Foundations	9	EA	$ 4,482	$ 40,338	$ 4,800	$ 43,200	$ 9,282	**$ 83,538**
2.1k	Arrester Stand Foundations	3	EA	$ 4,482	$ 13,446	$ 4,800	$ 14,400	$ 9,282	**$ 27,846**
2.1m	Wave Trap Stand Foundations	1	EA	$ 4,482	$ 4,482	$ 4,800	$ 4,800	$ 9,282	**$ 9,282**
2.1n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
				$ -	$ -	$ -	$ -	$ -	$ -
2.2	**230kV**								
2.2a	Circuit Breaker Foundations	0	EA	$ 11,952	$ -	$ 12,800	$ -	$ 24,752	$ -
2.2b	Capacitor Bank Foundations	0	EA	$ 44,820	$ -	$ 48,000	$ -	$ 92,820	$ -
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	$ -
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	$ -
2.2e	Switch Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2f	Station Service Transformer Stand Foundation	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.2g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2h	Bus Support 1 Ph Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2j	Instrument Transformer Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2k	Arrester Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2m	Wave Trap Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2p									
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	0	EA	$ 5,229	$ -	$ 5,600	$ -	$ 10,829	$ -
2.3b	Capacitor Bank Foundations	0	EA	$ 33,615	$ -	$ 36,000	$ -	$ 69,615	$ -
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	$ -
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	$ -
2.3e	Switch Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3f	Fuse Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3g	Bus Support 3ph Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3h	Bus Support 1 Ph Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3j	Instrument Transformer Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3k	Arrester Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3m	Wave Trap Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3p									
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment	0	EA	$ 97,110	$ -	$ 104,000	$ -	$ 201,110	$ -
2.4b	345-115kV Transformer Foundation w/ Oil Containment	0	EA	$ 74,700	$ -	$ 80,000	$ -	$ 154,700	$ -
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5	**Control House Foundations / Pad**								
2.5a	Control House Addition Foundation (25-ft x 50-ft)	1	EA	$ 61,079	$ 61,079	$ 64,100	$ 64,100	$ 125,179	**$ 125,179**
2.5b	Generator Foundation	0	EA	$ 16,000	$ -	$ 17,000	$ -	$ 33,000	$ -
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	0	EA	$ 5,229	$ -	$ 5,600	$ -	$ 10,829	$ -
2.6b		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6c		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION FOUNDATIONS					$ 161,177		$ 171,300		$ 332,477
3. SUBSTATION STRUCTURES									
3.1	**345kV**								
3.1a	Substation A-Frame Structures - Stand alone	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	$ -
3.1b	Substation A-Frame Structures - Shared Column	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	$ -
3.1c	Switch Stands	1	EA	$ 14,800	$ 14,800	$ 14,800	$ 14,800	$ 29,600	**$ 29,600**
3.1d	Station Service Transformer Stand	0	EA	$ 14,800	$ -	$ 14,800	$ -	$ 29,600	$ -
3.1e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1f	Bus Support 1 Ph	0	EA	$ 3,700	$ -	$ 3,700	$ -	$ 7,400	$ -
3.1g	Instrument Transformer Stand	9	EA	$ 1,850	$ 16,650	$ 1,850	$ 16,650	$ 3,700	**$ 33,300**
3.1h	Arrester Stand	3	EA	$ 1,850	$ 5,550	$ 1,850	$ 5,550	$ 3,700	**$ 11,100**
3.1j	Wave Trap Stand	1	EA	$ 7,400	$ 7,400	$ 7,400	$ 7,400	$ 14,800	**$ 14,800**
3.1k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	$ -
3.2b	Substation A-Frame Structures - Shared Column	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	$ -
3.2c	Switch Stands	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	$ -
3.2d	Station Service Transformer Stand	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	$ -
3.2e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2f	Bus Support 1 Ph	0	EA	$ 2,775	$ -	$ 2,775	$ -	$ 5,550	$ -
3.2g	Instrument Transformer Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	$ -
3.2h	Arrester Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	$ -
3.2j	Wave Trap Stand	0	EA	$ 5,550	$ -	$ 5,550	$ -	$ 11,100	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.2k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
3.3	**115kV**								
3.3a	Substation A-Frame Structures - Stand alone	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	$ -
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	$ -
3.3c	Switch Stands	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	$ -
3.3d	Fuse Stand	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	$ -
3.3e	Bus Support 3ph	0	EA	$ 3,330	$ -	$ 3,330	$ -	$ 6,660	$ -
3.3f	Bus Support 1 Ph	0	EA	$ 1,850	$ -	$ 1,850	$ -	$ 3,700	$ -
3.3g	Instrument Transformer Stand	0	EA	$ 740	$ -	$ 740	$ -	$ 1,480	$ -
3.3h	Arrester Stand	0	EA	$ 740	$ -	$ 740	$ -	$ 1,480	$ -
3.3j	Wave Trap Stand	0	EA	$ 3,700	$ -	$ 3,700	$ -	$ 7,400	$ -
3.3k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
TOTAL - SUBSTATION STRUCTURES					$ 44,400		$ 44,400		$ 88,800
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	1	EA	$ 200,000	$ 200,000	$ 80,000	$ 80,000	$ 280,000	**$ 280,000**
4.1b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	$ -
4.1c	345 kV - 230 kV Auto Transformer	0	EA	$ -	$ -	$ 750,000	$ -	$ 750,000	$ -
4.1d	345 kV - 115 kV Auto Transformer	0	EA	$ -	$ -	$ 750,000	$ -	$ 750,000	$ -
4.2	**230kV**								
4.2a	Circuit Breakers	0	EA	$ 115,000	$ -	$ 80,000	$ -	$ 195,000	$ -
4.2b	Capacitor Banks	0	EA	$ 52,000	$ -	$ 80,000	$ -	$ 132,000	$ -
4.3	**115kV**								
4.3a	Circuit Breakers	0	EA	$ 225,000	$ -	$ 60,000	$ -	$ 285,000	$ -
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ 60,000	$ -	$ 60,000	$ -
TOTAL - MAJOR EQUIPTMENT					$ 200,000		$ 80,000		$ 280,000
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator	1	EA	$ 40,000	$ 40,000	$ 15,000	$ 15,000	$ 55,000	**$ 55,000**
5.1b	Disconnect Switches - 3ph w/ manual operator	1	EA	$ 35,000	$ 35,000	$ 17,500	$ 17,500	$ 52,500	**$ 52,500**
5.1c	VT'S	3	EA	$ 25,000	$ 75,000	$ 12,000	$ 36,000	$ 37,000	**$ 111,000**
5.1d	CT'S	3	EA	$ 13,000	$ 39,000	$ 8,000	$ 24,000	$ 21,000	**$ 63,000**
5.1e	CCVT'S	3	EA	$ 13,000	$ 39,000	$ 8,000	$ 24,000	$ 21,000	**$ 63,000**
5.1f	Arresters	3	EA	$ 6,500	$ 19,500	$ 1,500	$ 4,500	$ 8,000	**$ 24,000**
5.1g	Wave Traps	1	EA	$ 13,000	$ 13,000	$ 8,000	$ 8,000	$ 21,000	**$ 21,000**
5.1h	Station Service Transformers	0	EA	$ 200,000	$ -	$ 50,000	$ -	$ 250,000	$ -
5.1j									
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator	0	EA	$ 35,000	$ -	$ 15,000	$ -	$ 50,000	$ -
5.2b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 30,000	$ -	$ 17,500	$ -	$ 47,500	$ -
5.2c	VT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2e	CCVT'S	0	EA	$ 10,000	$ -	$ 6,000	$ -	$ 16,000	$ -
5.2f	Arresters	0	EA	$ 5,000	$ -	$ 6,000	$ -	$ 11,000	$ -
5.2g	Wave Traps	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2j									
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	0	EA	$ 33,000	$ -	$ 15,000	$ -	$ 48,000	$ -
5.3b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 28,000	$ -	$ 17,500	$ -	$ 45,500	$ -
5.3c	VT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.3d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.3e	CCVT'S	0	EA	$ 8,000	$ -	$ 8,000	$ -	$ 16,000	$ -
5.3f	Arresters	0	EA	$ 3,420	$ -	$ 6,000	$ -	$ 9,420	$ -
5.3g	Wave Traps	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ 260,500		$ 129,000		$ 389,500
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE Addition (25-ft x 50-ft)	1	EA	$ 325,000	$ 325,000	$ 85,000	$ 85,000	$ 410,000	**$ 410,000**
6.2	Protection and Telecom Equipment Panels	3	EA	$ 35,000	$ 105,000	$ 12,500	$ 37,500	$ 47,500	**$ 142,500**
6.3	125VDC Batteries	0	EA	$ 75,000	$ -	$ 25,000	$ -	$ 100,000	**$ -**
6.4	Control Cables	1	LS	$ 130,900	$ 130,900	$ 130,900	$ 130,900	$ 261,800	**$ 261,800**
6.5	SCADA and Communications	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.6	Low Voltage AC Distribution	0	EA	$ 50,000	$ -	$ 100,000	$ -	$ 150,000	**$ -**
6.7	DC Distribution System	0	EA	$ 50,000	$ -	$ 100,000	$ -	$ 150,000	**$ -**
6.8	Security	0	EA	$ 7,500	$ -	$ 7,500	$ -	$ 15,000	**$ -**
6.9	Fire Alarm	0	EA	$ 7,500	$ -	$ 7,500	$ -	$ 15,000	**$ -**
6.10	Generator	0	EA	$ 100,000	$ -	$ 80,000	$ -	$ 180,000	**$ -**
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ 560,900		$ 253,400		**$ 814,300**
7. MISC ITEMS									
7.1	Conduit & Cable Trench System	800	LF	$ 185.00	$ 148,000	$ 170.00	$ 136,000	$ 355	**$ 284,000**
7.2	Rigid Bus, Fittings & Insulators	0	LS	$ 15,008.40	$ -	$ 56,904.00	$ -	$ 71,912	**$ -**
7.3	Strain Bus, Connectors & Insulators	2,500	LF	$ 13.38	$ 33,450	$ 39.35	$ 98,375	$ 53	**$ 131,825**
7.4	Grounding System	0	LF	$ 6.93	$ -	$ 32.58	$ -	$ 40	**$ -**
7.5	Strain Bus Insulators - 345kV	38	EA	$ 2,000	$ 76,000	$ 1,050	$ 39,900	$ 3,050	**$ 115,900**
7.6	Strain Bus Insulators - 230kV	0	EA	$ 1,400	$ -	$ 750	$ -	$ 2,150	**$ -**
7.7	Strain Bus Insulators - 115kV	0	EA	$ 1,000	$ -	$ 550	$ -	$ 1,550	**$ -**
7.8	Low Voltage AC Station Service	0	LS	$ 50,000	$ -	$ 75,000	$ -	$ 125,000	**$ -**
7.9	SSVT Service	0	LS	$ 45,000	$ -	$ 45,000	$ -	$ 90,000	**$ -**
7.10	Control Conduits from Trench to Equipment	1	LS	$ 62,500	$ 62,500	$ 75,000	$ 75,000	$ 137,500	**$ 137,500**
7.11	Misc. Materials (Above and Below Ground)	1	LS	$ 90,000	$ 90,000	$ 108,000	$ 108,000	$ 198,000	**$ 198,000**
7.12									
7.13									
7.14									
7.15									
7.16									
7.17									
7.18									
7.19									
7.20									
7.21									
7.22									
7.23									
7.24									
7.25									
TOTAL - MISC ITEMS					$ 409,950		$ 457,275		$ 867,225
J. Pleasant Valley Substation - Install					$ 1,647,952		$ 1,150,000		**$ 2,797,952**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1	LS	$ -	$ -	$ 27,980	$ 27,980	$ 27,980	**$ 27,980**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 172,691	$ 172,691	$ 172,691	**$ 172,691**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 27,980	$ 27,980	$ 27,980	**$ 27,980**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 27,980	$ 27,980	$ 27,980	**$ 27,980**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 223,836	$ 223,836	$ 223,836	**$ 223,836**
8.6	LiDAR	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.7	Geotech	4	EA	$ -	$ -	$ 3,500	$ 14,000	$ 3,500	**$ 14,000**
8.8	Surveying/Staking	1	Site	$ -	$ -	$ 19,586	$ 19,586	$ 19,586	**$ 19,586**
	Testing & Commissioning								

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
8.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 69,949	$ 69,949	$ 69,949	**$ 69,949**
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 8,394	$ 8,394	$ 8,394	**$ 8,394**
8.13	Real Estate Costs (New)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.14	Real Estate Costs (Incumbent Utility)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.18	Sales Tax on Materials	1	LS	$ 131,836	$ 131,836	$ -	$ -	$ 131,836	**$ 131,836**
8.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 2,798	$ 2,798	$ 2,798	**$ 2,798**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 131,836		$ 595,192		**$ 727,028**

NAT - NYPA - T029 - (Segment B) — **N. Interconnection Milan Station**

Estimate Revision: 8 — **Total: $ 804,582**

NAT - NYPA - T029 - (Segment B)	*Supply*	*Installation*	*Total*
N. Interconnection Milan Station			
1. CLEARING & ACCESS	$ -	$ 121,100	$ 121,100
2. FOUNDATIONS	$ 84,375	$ 135,279	$ 219,654
3. STRUCTURES	$ 130,328	$ 140,393	$ 270,721
4. CONDUCTOR, SHIELDWIRE, OPGW	$ -	$ -	$ -
5. INSULATORS, FITTINGS, HARDWARE	$ 45,200	$ 18,480	$ 63,680
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 20,792	$ 108,635	$ 129,428
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 280,695	$ 523,887	$ 804,582
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 280,695	$ 523,887	$ 804,582

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
N. Interconnection Milan Station									
1. CLEARING & ACCESS									
1.1	Clearing the ROW - Heavy (mowing & clearing)	-	Acre	$ -	$ -	$ 15,000	$ -	$ 15,000	$ -
1.2	Clearing the ROW - Light (mowing)	1.0	Acre	$ -	$ -	$ 5,000	$ 5,000	$ 5,000	**$ 5,000**
1.3	Access Road	-	LF	$ -	$ -	$ 45	$ -	$ 45	$ -
1.4	Silt Fence	500.0	LF	$ -	$ -	$ 4	$ 2,000	$ 4	**$ 2,000**
1.5	Matting - Access and ROW	500.0	LF	$ -	$ -	$ 70	$ 35,000	$ 70	**$ 35,000**
1.6	Matting - To Work Area	525.0	LF	$ -	$ -	$ 70	$ 36,750	$ 70	**$ 36,750**
1.7	Snow Removal	-	LS	$ -	$ -	$ 516,800	$ -	$ 516,800	$ -
1.8	ROW Restoration	0.5	Mile	$ -	$ -	$ 10,000	$ 5,000	$ 10,000	**$ 5,000**
1.9	Work Pads	10,000.0	SF	$ -	$ -	$ 4	$ 35,200	$ 4	**$ 35,200**
1.10	Restoration for Work Pad areas	2,000.0	SF	$ -	$ -	$ 0.2	$ 300	$ 0	**$ 300**
1.11	Temporary Access Bridge	-	EA	$ -	$ -	$ 20,035	$ -	$ 20,035	$ -
1.12	Air Bridge	-	EA	$ -	$ -	$ 14,445	$ -	$ 14,445	$ -
1.13	Stabilized Construction Entrance	-	EA	$ -	$ -	$ 4,580	$ -	$ 4,580	$ -
1.14	Maintenance and Protection of Traffic on Public Roads	-	EA	$ -	$ -	$ 4,130	$ -	$ 4,130	$ -
1.15	Gates	-	EA	$ 2,000	$ -	$ 2,500	$ -	$ 4,500	$ -
1.16	Culverts / Misc. Access	-	EA	$ 750	$ -	$ 1,250	$ -	$ 2,000	$ -
1.17	Concrete Washout Station	1	EA	$ -	$ -	$ 1,850	$ 1,850	$ 1,850	**$ 1,850**
1.18					$ -		$ -		$ -
1.19					$ -		$ -		$ -
1.20	Crushed Rock	0	CY	$ 27	$ -	$ 75	$ -	$ 102	$ -
TOTAL - CLEARING & ACCESS					$ -		$ 121,100		$ 121,100
2. FOUNDATIONS									
2.1	Drilled Pier - 115kV Single Circuit Single Pole Angle/DE	2	EA	$ 42,187	$ 84,375	$ 42,639	$ 85,279	$ 84,827	**$ 169,654**
2.2									
2.3									
2.4									
2.5	Rock Excavation Adder	25	CY	$ -	$ -	$ 2,000	$ 50,000	$ 2,000	**$ 50,000**
2.6					$ -		$ -		$ -
2.7					$ -		$ -		$ -
2.8					$ -		$ -		$ -
2.9					$ -		$ -		$ -
2.10					$ -		$ -		$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.11					$ -		$ -		$ -
2.12					$ -		$ -		$ -
2.13					$ -		$ -		$ -
2.14					$ -		$ -		$ -
2.15					$ -		$ -		$ -
TOTAL - FOUNDATIONS					$ 84,375		$ 135,279		$ 219,654
3. STRUCTURES									
3.1	115kV Single Circuit Single Pole Angle/DE	2	Structure	$ 64,658	$ 129,316	$ 64,658	$ 129,316	$ 129,316	**$ 258,632**
3.2									
3.3									
3.4					$ -		$ -		$ -
3.5	Install Grounding and Grounding Accessories	2	Pole	$ 506	$ 1,012	$ 5,539	$ 11,077	$ 6,045	**$ 12,089**
3.6					$ -		$ -		$ -
3.7					$ -		$ -		$ -
3.8					$ -		$ -		$ -
3.9					$ -		$ -		$ -
3.10					$ -		$ -		$ -
3.11					$ -		$ -		$ -
3.12					$ -		$ -		$ -
3.13					$ -		$ -		$ -
3.14					$ -		$ -		$ -
3.15					$ -		$ -		$ -
TOTAL - STRUCTURES					$ 130,328		$ 140,393		$ 270,721
4. CONDUCTOR, SHIELDWIRE, OPGW									
4.1	345kV - (2) 954kcmil 54/7 ACSS "Cardinal"	-	LF	$ 1.90	$ -	$ 5.00	$ -	$ 6.90	$ -
4.2	(1) OPGW 36 Fiber AC-33/38/571	-	LF	$ 1.35	$ -	$ 5.00	$ -	$ 6.35	$ -
4.3	(1) 3/8" EHS7 Steel	-	LF	$ 0.47	$ -	$ 5.00	$ -	$ 5.47	$ -
4.5	Remove Existing 115kV Cable From Existing Structures	-	Mile	$ -	$ -	$ 30,000	$ -	$ 30,000.00	$ -
4.6	Remove Existing OPGW Cable	-	Mile	$ -	$ -	$ 12,000	$ -	$ 12,000.00	$ -
4.7	Remove Existing EH7	-	Mile	$ -	$ -	$ 12,000	$ -	$ 12,000.00	$ -
4.8	115kV - (1) 954kcmil 54/7 ACSS "Cardinal"	-	LF	$ 1.90	$ -	$ 5.00	$ -	$ 6.90	$ -
4.9		-							
4.10	Rider Poles - Relocated	-	Set	$ -	$ -	$ 3,500	$ -	$ 3,500.00	$ -
4.11	Rider Poles	-	EA	$ 1,750	$ -	$ 3,500	$ -	$ 5,250.00	$ -
TOTAL: CONDUCTOR, SHIELDWIRE, OPGW:					$ -		$ -		$ -
5. INSULATOR, FITTINGS, HARDWARE									
5.1	345kV Tangent (1-Group of 18-Bells Each Assembly)	-	Assembly	$ 1,800	$ -	$ 720	$ -	$ 2,520	$ -
5.2	115kV Tangent (1-Group of 9-Bells Each Assembly)	-	Assembly	$ 900	$ -	$ 560	$ -	$ 1,460	$ -
5.3	345kV Dead-end & Angle Insulators (1-Group of 18-Bells Each Assembly)	24	Assembly	$ 1,800	$ 43,200	$ 720	$ 17,280	$ 2,520	**$ 60,480**
5.4	115kV Dead-end & Angle Insulators (1-Group of 9-Bells Each Assembly)	-	Assembly	$ 900	$ -	$ 560	$ -	$ 1,460	$ -
5.5		-	Assembly		$ -		$ -	$ -	$ -
5.6	OPGW Assembly - Tangent	-	Assembly	$ 200	$ -	$ 150	$ -	$ 350	$ -
5.7	OPGW Assembly - Angle / DE	4	Assembly	$ 250	$ 1,000	$ 150	$ 600	$ 400	**$ 1,600**
5.8	OHSW Assembly - Tangent	-	Assembly	$ 200	$ -	$ 150	$ -	$ 350	$ -
5.9	OHSW Assembly - Angle / DE	4	Assembly	$ 250	$ 1,000	$ 150	$ 600	$ 400	**$ 1,600**
5.10	OPGW Splice Boxes	-	Set	$ 1,750	$ -	$ 1,746	$ -	$ 3,496	$ -
5.11	OPGW Splice & Test	-	EA	$ 1,400	$ -	$ 2,520	$ -	$ 3,920	$ -
5.12	Spacer - Conductor	-	EA	$ 50	$ -	$ 35	$ -	$ 85	$ -
5.13	Vibration Dampers - Conductor	-	EA	$ 35	$ -	$ 35	$ -	$ 70	$ -
5.14	Shieldwire / OPGW Dampers, Misc. Fittings	-	EA	$ 27	$ -	$ 35	$ -	$ 62	$ -
5.15	Guys, Anchors, and Accessories	-	EA	$ 720	$ -	$ 885	$ -	$ 1,605	$ -
5.16	Misc. materials (Signs and Markers)	-	Mile	$ 770	$ -	$ 1,006	$ -	$ 1,776	$ -
5.17									
5.18									
5.19									
5.20									
TOTAL - INSULATOR, FITTINGS, HARDWARE					$ 45,200		$ 18,480		$ 63,680
N. Interconnection Milan Station					$ 259,903		$ 415,251		$ 675,154
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
6.1	Mob / Demob	1	LS	$ -	$ -	$ 6,752	$ 6,752	$ 6,752	**$ 6,752**
	Project Management, Material Handling & Amenities								

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 41,671	$ 41,671	$ 41,671	**$ 41,671**
6.3	Utility PM and Project Oversite	1	LS		$ -	$ 6,752	$ 6,752	$ 6,752	**$ 6,752**
6.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 6,752	$ 6,752	$ 6,752	**$ 6,752**
	Engineering								
6.5	Design Engineering	1	LS	$ -	$ -	$ 33,758	$ 33,758	$ 33,758	**$ 33,758**
6.6	LiDAR	1	LS	$ -	$ -	$ 2,025	$ 2,025	$ 2,025	**$ 2,025**
6.7	Geotech	1	Location	$ -	$ -	$ 3,500	$ 3,500	$ 3,500	**$ 3,500**
6.8	Surveying/Staking	1	LS	$ -	$ -	$ 4,726	$ 4,726	$ 4,726	**$ 4,726**
	Testing & Commissioning								
6.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
	Permitting and Additional Costs								
6.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.12	Warranties / LOC's	1	LS	$ -	$ -	$ 2,025	$ 2,025	$ 2,025	**$ 2,025**
6.13	Real Estate Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.14	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.15	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.16		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.17	Sales Tax on Materials	1	LS	$ 20,792	$ 20,792	$ -	$ -	$ 20,792	**$ 20,792**
6.18	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 675	$ 675	$ 675	**$ 675**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 20,792		$ 108,635		**$ 129,428**

NAT - NYPA - T029 - (Segment B)

Interconnection Knickerbocker Station

Estimate Revision: 8

Total: $ 1,424,781

NAT - NYPA - T029 - (Segment B)	*Supply*	*Installation*	*Total*
L. Interconnection Knickerbocker Station			
1. CLEARING & ACCESS	$ -	$ 482,850	$ 482,850
2. FOUNDATIONS	$ 87,988	$ 184,454	$ 272,441
3. STRUCTURES	$ 222,873	$ 180,838	$ 403,710
4. CONDUCTOR, SHIELDWIRE, OPGW	$ -	$ -	$ -
5. INSULATORS, FITTINGS, HARDWARE	$ 29,466	$ 17,754	$ 47,220
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 27,226	$ 191,333	$ 218,560
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 367,553	$ 1,057,229	$ 1,424,781
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 367,553	$ 1,057,229	$ 1,424,781

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
L. Interconnection Knickerbocker Station									
1. CLEARING & ACCESS									
1.1	Clearing the ROW - Heavy (mowing & clearing)	-	Acre	$ -	$ -	$ 15,000	$ -	$ 15,000	$ -
1.2	Clearing the ROW - Light (mowing)	2.0	Acre	$ -	$ -	$ 5,000	$ 10,000	$ 5,000	**$ 10,000**
1.3	Access Road	-	LF	$ -	$ -	$ 45	$ -	$ 45	$ -
1.4	Silt Fence	3,500.0	LF	$ -	$ -	$ 4	$ 14,000	$ 4	**$ 14,000**
1.5	Matting - Access and ROW	3,500.0	LF	$ -	$ -	$ 70	$ 245,000	$ 70	**$ 245,000**
1.6	Matting - To Work Area	675.0	LF	$ -	$ -	$ 70	$ 47,250	$ 70	**$ 47,250**
1.7	Snow Removal	-	LS	$ -	$ -	$ 516,800	$ -	$ 516,800	$ -
1.8	ROW Restoration	0.5	Mile	$ -	$ -	$ 10,000	$ 5,000	$ 10,000	**$ 5,000**
1.9	Work Pads	45,000.0	SF	$ -	$ -	$ 4	$ 158,400	$ 4	**$ 158,400**
1.10	Restoration for Work Pad areas	9,000.0	SF	$ -	$ -	$ 0.2	$ 1,350	$ 0	**$ 1,350**
1.11	Temporary Access Bridge	-	EA	$ -	$ -	$ 20,035	$ -	$ 20,035	$ -
1.12	Air Bridge	-	EA	$ -	$ -	$ 14,445	$ -	$ 14,445	$ -
1.13	Stabilized Construction Entrance	-	EA	$ -	$ -	$ 4,580	$ -	$ 4,580	$ -
1.14	Maintenance and Protection of Traffic on Public Roads	-	EA	$ -	$ -	$ 4,130	$ -	$ 4,130	$ -
1.15	Gates	-	EA	$ 2,000	$ -	$ 2,500	$ -	$ 4,500	$ -
1.16	Culverts / Misc. Access	-	EA	$ 750	$ -	$ 1,250	$ -	$ 2,000	$ -
1.17	Concrete Washout Station	1	EA	$ -	$ -	$ 1,850	$ 1,850	$ 1,850	**$ 1,850**
1.18					$ -		$ -		$ -
1.19					$ -		$ -		$ -
1.20	Crushed Rock	0	CY	$ 27	$ -	$ 75	$ -	$ 102	$ -
TOTAL - CLEARING & ACCESS					$ -		$ 482,850		$ 482,850
2. FOUNDATIONS									
2.1	1-CKT 115KV 3-POLE TANGENT DEADEND (0°-5°)	6	EA	$ 2,750	$ 16,500	$ 18,700	$ 112,200	$ 21,450	**$ 128,700**
2.2	1-CKT 115KV 3-POLE LARGE ANGLE DEADEND (60°-90°)	3	EA	$ 23,829	$ 71,488	$ 24,085	$ 72,254	$ 47,914	**$ 143,741**
2.3	Rock Excavation Adder	-	CY	$ -	$ -	$ 2,000	$ -	$ 2,000	$ -
2.4									
2.5									
2.6									
2.7									
2.8									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.9									
2.10									
2.11									
2.12									
2.13									
2.14									
2.15									
TOTAL - FOUNDATIONS					$ 87,988		$ 184,454		$ 272,441
3. STRUCTURES									
3.1	1-CKT 115KV 3-POLE TANGENT DEADEND (0°-5°)	2	Structure	$ 67,803	$ 135,605	$ 40,682	$ 81,363	$ 108,484	**$ 216,968**
3.2	1-CKT 115KV 3-POLE LARGE ANGLE DEADEND (60°-90°)	1	Structure	$ 82,714	$ 82,714	$ 49,628	$ 49,628	$ 132,342	**$ 132,342**
3.3	Install Grounding and Grounding Accessories	9	Pole	$ 506	$ 4,554	$ 5,539	$ 49,847	$ 6,045	**$ 54,401**
3.4					$ -		$ -		**$ -**
3.5									
3.6					$ -		$ -		**$ -**
3.7					$ -		$ -		**$ -**
3.8					$ -		$ -		**$ -**
3.9					$ -		$ -		**$ -**
3.10					$ -		$ -		**$ -**
3.11					$ -		$ -		**$ -**
3.12					$ -		$ -		**$ -**
3.13					$ -		$ -		**$ -**
3.14					$ -		$ -		**$ -**
3.15					$ -		$ -		**$ -**
TOTAL - STRUCTURES					$ 222,873		$ 180,838		$ 403,710
4. CONDUCTOR, SHIELDWIRE, OPGW									
4.1	345kV - (1) 954kcmil 54/7 ACSS "Cardinal"	-	LF	$ 1.90	$ -	$ 5.00	$ -	$ 6.90	**$ -**
4.2	(1) OPGW 36 Fiber AC-33/38/571	-	LF	$ 1.35	$ -	$ 5.00	$ -	$ 6.35	**$ -**
4.3	(1) 3/8" EHS7 Steel	-	LF	$ 0.47	$ -	$ 5.00	$ -	$ 5.47	**$ -**
4.5	Remove Existing 115kV Cable From Existing Structures	-	Mile	$ -	$ -	$ 30,000	$ -	$ 30,000.00	**$ -**
4.6	Remove Existing OPGW Cable	-	Mile	$ -	$ -	$ 12,000	$ -	$ 12,000.00	**$ -**
4.7	Remove Existing EH7	-	Mile	$ -	$ -	$ 12,000	$ -	$ 12,000.00	**$ -**
4.8	115kV - (1) 954kcmil 54/7 ACSS "Cardinal"	-	LF	$ 1.90	$ -	$ 5.00	$ -	$ 6.90	**$ -**
4.9		-							
4.10	Rider Poles - Relocated	-	Set	$ -	$ -	$ 3,500	$ -	$ 3,500.00	**$ -**
4.11	Rider Poles	-	EA	$ 1,750	$ -	$ 3,500	$ -	$ 5,250.00	**$ -**
TOTAL: CONDUCTOR, SHIELDWIRE, OPGW:					$ -		$ -		**$ -**
5. INSULATOR, FITTINGS, HARDWARE									
5.1	345kV Tangent (1-Group of 18-Bells Each Assembly)	-	Assembly	$ 1,800	$ -	$ 720	$ -	$ 2,520	**$ -**
5.2	115kV Tangent (1-Group of 9-Bells Each Assembly)	12	Assembly	$ 900	$ 10,800	$ 560	$ 6,720	$ 1,460	**$ 17,520**
5.3	345kV Dead-end & Angle Insulators (1-Group of 18-Bells Each Assembly)	7	Assembly	$ 1,800	$ 12,600	$ 720	$ 5,040	$ 2,520	**$ 17,640**
5.4	115kV Dead-end & Angle Insulators (1-Group of 9-Bells Each Assembly)		Assembly	$ 900	$ -	$ 560	$ -	$ 1,460	**$ -**
5.5			Assembly		$ -		$ -	$ -	**$ -**
5.6	OPGW Assembly - Tangent	2	Assembly	$ 200	$ 400	$ 150	$ 300	$ 350	**$ 700**
5.7	OPGW Assembly - Angle / DE	2	Assembly	$ 250	$ 500	$ 150	$ 300	$ 400	**$ 800**
5.8	OHSW Assembly - Tangent	2	Assembly	$ 200	$ 400	$ 150	$ 300	$ 350	**$ 700**
5.9	OHSW Assembly - Angle / DE	2	Assembly	$ 250	$ 500	$ 150	$ 300	$ 400	**$ 800**
5.10	OPGW Splice Boxes	1	Set	$ 1,746	$ 1,746	$ 2,274	$ 2,274	$ 4,020	**$ 4,020**
5.11	OPGW Splice & Test	1	EA	$ 2,520	$ 2,520	$ 2,520	$ 2,520	$ 5,040	**$ 5,040**
5.12	Spacer - Conductor	-	EA	$ 50	$ -	$ 35	$ -	$ 85	**$ -**
5.13	Vibration Dampers - Conductor	-	EA	$ 35	$ -	$ 35	$ -	$ 70	**$ -**
5.14	Shieldwire / OPGW Dampers, Misc. Fittings	-	EA	$ 27	$ -	$ 35	$ -	$ 62	**$ -**
5.15	Guys, Anchors, and Accessories	-	EA	$ 720	$ -	$ 885	$ -	$ 1,605	**$ -**
5.16	Misc. materials (Signs and Markers)	-	Mile	$ 770	$ -	$ 1,006	$ -	$ 1,776	**$ -**
5.17									
5.18									
5.19									
5.20									
TOTAL - INSULATOR, FITTINGS, HARDWARE					$ 29,466		$ 17,754		$ 47,220
L. Interconnection Knickerbocker Station					$ 340,327		$ 865,895		$ 1,206,222
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6.1	Mob / Demob	1	LS	$ -	$ -	$ 12,062	$ 12,062	$ 12,062	**$ 12,062**
	Project Management, Material Handling & Amenities								
6.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 74,449	$ 74,449	$ 74,449	**$ 74,449**
6.3	Utility PM and Project Oversite	1	LS		$ -	$ 12,062	$ 12,062	$ 12,062	**$ 12,062**
6.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 12,062	$ 12,062	$ 12,062	**$ 12,062**
	Engineering								
6.5	Design Engineering	1	LS	$ -	$ -	$ 60,311	$ 60,311	$ 60,311	**$ 60,311**
6.6	LiDAR	1	LS	$ -	$ -	$ 3,619	$ 3,619	$ 3,619	**$ 3,619**
6.7	Geotech	1	Location	$ -	$ -	$ 3,500	$ 3,500	$ 3,500	**$ 3,500**
6.8	Surveying/Staking	1	LS	$ -	$ -	$ 8,444	$ 8,444	$ 8,444	**$ 8,444**
	Testing & Commissioning								
6.9	Testing & Commissioning of T-Line and Equipment	-	LS	$ -	$ -	$ 40,000	$ -	$ 40,000	**$ -**
	Permitting and Additional Costs								
6.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.12	Warranties / LOC's	1	LS	$ -	$ -	$ 3,619	$ 3,619	$ 3,619	**$ 3,619**
6.13	Real Estate Costs (New ROW)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.14	Real Estate Costs (Incumbent Utility ROW)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.15	Legal Fees	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.18	Sales Tax on Materials	1	LS	$ 27,226	$ 27,226	$ -	$ -	$ 27,226	**$ 27,226**
6.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 1,206	$ 1,206	$ 1,206	**$ 1,206**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 27,226		$ 191,333		**$ 218,560**

NAT - NYPA - T029 - (Segment B)

M. Interconnection Churchtown Station

Estimate Revision: 8

Total: $ 2,105,005

NAT - NYPA - T029 - (Segment B)	*Supply*	*Installation*	*Total*
M. Interconnection Churchtown Station			
1. CLEARING & ACCESS	$ -	$ 551,850	$ 551,850
2. FOUNDATIONS	$ 216,929	$ 319,252	$ 536,181
3. STRUCTURES	$ 336,926	$ 264,974	$ 601,900
4. CONDUCTOR, SHIELDWIRE, OPGW	$ -	$ -	$ -
5. INSULATORS, FITTINGS, HARDWARE	$ 58,666	$ 27,354	$ 86,020
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 49,002	$ 280,052	$ 329,054
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 661,523	$ 1,443,482	$ 2,105,005
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 661,523	$ 1,443,482	$ 2,105,005

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
M. Interconnection Churchtown Station									
1. CLEARING & ACCESS									
1.1	Clearing the ROW - Heavy (mowing & clearing)	-	Acre	$ -	$ -	$ 15,000	$ -	$ 15,000	$ -
1.2	Clearing the ROW - Light (mowing)	2.0	Acre	$ -	$ -	$ 5,000	$ 10,000	$ 5,000	**$ 10,000**
1.3	Access Road	-	LF	$ -	$ -	$ 45	$ -	$ 45	$ -
1.4	Silt Fence	3,500.0	LF	$ -	$ -	$ 4	$ 14,000	$ 4	**$ 14,000**
1.5	Matting - Access and ROW	3,500.0	LF	$ -	$ -	$ 70	$ 245,000	$ 70	**$ 245,000**
1.6	Matting - To Work Area	900.0	LF	$ -	$ -	$ 70	$ 63,000	$ 70	**$ 63,000**
1.7	Snow Removal	-	LS	$ -	$ -	$ 516,800	$ -	$ 516,800	$ -
1.8	ROW Restoration	0.5	Mile	$ -	$ -	$ 10,000	$ 5,000	$ 10,000	**$ 5,000**
1.9	Work Pads	60,000.0	SF	$ -	$ -	$ 4	$ 211,200	$ 4	**$ 211,200**
1.10	Restoration for Work Pad areas	12,000.0	SF	$ -	$ -	$ 0.2	$ 1,800	$ 0	**$ 1,800**
1.11	Temporary Access Bridge	-	EA	$ -	$ -	$ 20,035	$ -	$ 20,035	$ -
1.12	Air Bridge	-	EA	$ -	$ -	$ 14,445	$ -	$ 14,445	$ -
1.13	Stabilized Construction Entrance	-	EA	$ -	$ -	$ 4,580	$ -	$ 4,580	$ -
1.14	Maintenance and Protection of Traffic on Public Roads	-	EA	$ -	$ -	$ 4,130	$ -	$ 4,130	$ -
1.15	Gates	-	EA	$ 2,000	$ -	$ 2,500	$ -	$ 4,500	$ -
1.16	Culverts / Misc. Access	-	EA	$ 750	$ -	$ 1,250	$ -	$ 2,000	$ -
1.17	Concrete Washout Station	1	EA	$ -	$ -	$ 1,850	$ 1,850	$ 1,850	**$ 1,850**
1.18					$ -		$ -		$ -
1.19					$ -		$ -		$ -
1.20	Crushed Rock	0	CY	$ 27	$ -	$ 75	$ -	$ 102	$ -
TOTAL - CLEARING & ACCESS					$ -		$ 551,850		$ 551,850
2. FOUNDATIONS									
2.1	1-CKT 115KV 3-POLE LARGE ANGLE DEADEND (60°-90°)	6	EA	$ 18,077	$ 108,464	$ 18,271	$ 109,626	$ 36,348	**$ 218,090**
2.2	2x 1-CKT 115KV 3-POLE LARGE ANGLE DEADEND (60°-90°)	6	EA	$ 18,077	$ 108,464	$ 18,271	$ 109,626	$ 36,348	**$ 218,090**
2.3	Rock Excavation Adder	50	CY	$ -	$ -	$ 2,000	$ 100,000	$ 2,000	**$ 100,000**
2.4									
2.5									
2.6									
2.7									
2.8									
2.9									
2.10									
2.11									
2.12									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.13									
2.14									
2.15									
TOTAL - FOUNDATIONS					$ 216,929		$ 319,252		$ 536,181
3. STRUCTURES									
3.1	1-CKT 115KV 3-POLE LARGE ANGLE DEADEND (60°-90°)	2	Structure	$ 82,714	$ 165,427	$ 49,628	$ 99,256	$ 132,342	**$ 264,683**
3.2	2x 1-CKT 115KV 3-POLE LARGE ANGLE DEADEND (60°-90°)	2	Structure	$ 82,714	$ 165,427	$ 49,628	$ 99,256	$ 132,342	**$ 264,683**
3.3	Install Grounding and Grounding Accessories	12	Pole	$ 506	$ 6,072	$ 5,539	$ 66,462	$ 6,045	**$ 72,534**
3.4					$ -		$ -		**$ -**
3.5									
3.6									
3.7									
3.8									
3.9									
3.10									
3.11									
3.12									
3.13									
3.14									
3.15									
TOTAL - STRUCTURES					$ 336,926		$ 264,974		$ 601,900
4. CONDUCTOR, SHIELDWIRE, OPGW									
4.1	345kV - (1) 954kcmil 54/7 ACSS "Cardinal"	-	LF	$ 1.90	$ -	$ 5.00	$ -	$ 6.90	**$ -**
4.2	(1) OPGW 36 Fiber AC-33/38/571	-	LF	$ 1.35	$ -	$ 5.00	$ -	$ 6.35	**$ -**
4.3	(1) 3/8" EHS7 Steel	-	LF	$ 0.47	$ -	$ 5.00	$ -	$ 5.47	**$ -**
4.5	Remove Existing 115kV Cable From Existing Structures	-	Mile	$ -	$ -	$ 30,000	$ -	$ 30,000.00	**$ -**
4.6	Remove Existing OPGW Cable	-	Mile	$ -	$ -	$ 12,000	$ -	$ 12,000.00	**$ -**
4.7	Remove Existing EH7	-	Mile	$ -	$ -	$ 12,000	$ -	$ 12,000.00	**$ -**
4.8	115kV - (1) 954kcmil 54/7 ACSS "Cardinal"	-	LF	$ 1.90	$ -	$ 5.00	$ -	$ 6.90	**$ -**
4.9		-							
4.10	Rider Poles - Relocated	-	Set	$ -	$ -	$ 3,500	$ -	$ 3,500.00	**$ -**
4.11	Rider Poles	-	EA	$ 1,750	$ -	$ 3,500	$ -	$ 5,250.00	**$ -**
TOTAL: CONDUCTOR, SHIELDWIRE, OPGW:					$ -		$ -		**$ -**
5. INSULATOR, FITTINGS, HARDWARE									
5.1	345kV Tangent (1-Group of 18-Bells Each Assembly)	-	Assembly	$ 1,800	$ -	$ 720	$ -	$ 2,520	**$ -**
5.2	115kV Tangent (1-Group of 9-Bells Each Assembly)	-	Assembly	$ 900	$ -	$ 560	$ -	$ 1,460	**$ -**
5.3	345kV Dead-end & Angle Insulators (1-Group of 18-Bells Each Assembly)	28	Assembly	$ 1,800	$ 50,400	$ 720	$ 20,160	$ 2,520	**$ 70,560**
5.4	115kV Dead-end & Angle Insulators (1-Group of 9-Bells Each Assembly)	-	Assembly	$ 900	$ -	$ 560	$ -	$ 1,460	**$ -**
5.5			Assembly		$ -		$ -	$ -	**$ -**
5.6	OPGW Assembly - Tangent	-	Assembly	$ 200	$ -	$ 150	$ -	$ 350	**$ -**
5.7	OPGW Assembly - Angle / DE	8	Assembly	$ 250	$ 2,000	$ 150	$ 1,200	$ 400	**$ 3,200**
5.8	OHSW Assembly - Tangent	-	Assembly	$ 200	$ -	$ 150	$ -	$ 350	**$ -**
5.9	OHSW Assembly - Angle / DE	8	Assembly	$ 250	$ 2,000	$ 150	$ 1,200	$ 400	**$ 3,200**
5.10	OPGW Splice Boxes	1	Set	$ 1,746	$ 1,746	$ 2,274	$ 2,274	$ 4,020	**$ 4,020**
5.11	OPGW Splice & Test	1	EA	$ 2,520	$ 2,520	$ 2,520	$ 2,520	$ 5,040	**$ 5,040**
5.12	Spacer - Conductor	-	EA	$ 50	$ -	$ 35	$ -	$ 85	**$ -**
5.13	Vibration Dampers - Conductor	-	EA	$ 35	$ -	$ 35	$ -	$ 70	**$ -**
5.14	Shieldwire / OPGW Dampers, Misc. Fittings	-	EA	$ 27	$ -	$ 35	$ -	$ 62	**$ -**
5.15	Guys, Anchors, and Accessories	-	EA	$ 720	$ -	$ 885	$ -	$ 1,605	**$ -**
5.16	Misc. materials (Signs and Markers)	-	Mile	$ 770	$ -	$ 1,006	$ -	$ 1,776	**$ -**
5.17									
5.18									
5.19									
5.20					$ -		$ -		**$ -**
TOTAL - INSULATOR, FITTINGS, HARDWARE					$ 58,666		$ 27,354		$ 86,020
M. Interconnection Churchtown Station					$ 612,521		$ 1,163,430		$ 1,775,951
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
6.1	Mob / Demob	1	LS	$ -	$ -	$ 17,760	$ 17,760	$ 17,760	**$ 17,760**
	Project Management, Material Handling & Amenities								

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 109,613	$ 109,613	$ 109,613	**$ 109,613**
6.3	Utility PM and Project Oversite	1	LS		$ -	$ 17,760	$ 17,760	$ 17,760	**$ 17,760**
6.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 17,760	$ 17,760	$ 17,760	**$ 17,760**
	Engineering								
6.5	Design Engineering	1	LS	$ -	$ -	$ 88,798	$ 88,798	$ 88,798	**$ 88,798**
6.6	LiDAR	1	LS	$ -	$ -	$ 5,328	$ 5,328	$ 5,328	**$ 5,328**
6.7	Geotech	1	Location	$ -	$ -	$ 3,500	$ 3,500	$ 3,500	**$ 3,500**
6.8	Surveying/Staking	1	LS	$ -	$ -	$ 12,432	$ 12,432	$ 12,432	**$ 12,432**
	Testing & Commissioning								
6.9	Testing & Commissioning of T-Line and Equipment	-	LS	$ -	$ -	$ 40,000	$ -	$ 40,000	**$ -**
	Permitting and Additional Costs								
6.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.12	Warranties / LOC's	1	LS	$ -	$ -	$ 5,328	$ 5,328	$ 5,328	**$ 5,328**
6.13	Real Estate Costs (New ROW)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.14	Real Estate Costs (Incumbent Utility ROW)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.15	Legal Fees	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.18	Sales Tax on Materials	1	LS	$ 49,002	$ 49,002	$ -	$ -	$ 49,002	**$ 49,002**
6.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 1,776	$ 1,776	$ 1,776	**$ 1,776**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 49,002		$ 280,052		**$ 329,054**

NAT - NYPA - T029 - (Segment B)

M. Interconnection Churchtown Station

Estimate Revision: 8

Total: $ 2,165,267

NAT - NYPA - T029 - (Segment B)	*Supply*	*Installation*	*Total*
M. Interconnection Churchtown Station			
1. CLEARING & ACCESS	$ -	$ 620,850	$ 620,850
2. FOUNDATIONS	$ 16,088	$ 415,395	$ 431,483
3. STRUCTURES	$ 346,603	$ 286,485	$ 633,088
4. CONDUCTOR, SHIELDWIRE, OPGW	$ -	$ -	$ -
5. INSULATORS, FITTINGS, HARDWARE	$ 105,566	$ 47,094	$ 152,660
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 37,460	$ 289,727	$ 327,187
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 505,717	$ 1,659,551	$ 2,165,267
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 505,717	$ 1,659,551	$ 2,165,267

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
M. Interconnection Churchtown Station									
1. CLEARING & ACCESS									
1.1	Clearing the ROW - Heavy (mowing & clearing)	-	Acre	$ -	$ -	$ 15,000	$ -	$ 15,000	**$ -**
1.2	Clearing the ROW - Light (mowing)	2.0	Acre	$ -	$ -	$ 5,000	$ 10,000	$ 5,000	**$ 10,000**
1.3	Access Road	-	LF	$ -	$ -	$ 45	$ -	$ 45	**$ -**
1.4	Silt Fence	3,500.0	LF	$ -	$ -	$ 4	$ 14,000	$ 4	**$ 14,000**
1.5	Matting - Access and ROW	3,500.0	LF	$ -	$ -	$ 70	$ 245,000	$ 70	**$ 245,000**
1.6	Matting - To Work Area	1,125.0	LF	$ -	$ -	$ 70	$ 78,750	$ 70	**$ 78,750**
1.7	Snow Removal	-	LS	$ -	$ -	$ 516,800	$ -	$ 516,800	**$ -**
1.8	ROW Restoration	0.5	Mile	$ -	$ -	$ 10,000	$ 5,000	$ 10,000	**$ 5,000**
1.9	Work Pads	75,000.0	SF	$ -	$ -	$ 4	$ 264,000	$ 4	**$ 264,000**
1.10	Restoration for Work Pad areas	15,000.0	SF	$ -	$ -	$ 0.2	$ 2,250	$ 0	**$ 2,250**
1.11	Temporary Access Bridge	-	EA	$ -	$ -	$ 20,035	$ -	$ 20,035	**$ -**
1.12	Air Bridge	-	EA	$ -	$ -	$ 14,445	$ -	$ 14,445	**$ -**
1.13	Stabilized Construction Entrance	-	EA	$ -	$ -	$ 4,580	$ -	$ 4,580	**$ -**
1.14	Maintenance and Protection of Traffic on Public Roads	-	EA	$ -	$ -	$ 4,130	$ -	$ 4,130	**$ -**
1.15	Gates	-	EA	$ 2,000	$ -	$ 2,500	$ -	$ 4,500	**$ -**
1.16	Culverts / Misc. Access	-	EA	$ 750	$ -	$ 1,250	$ -	$ 2,000	**$ -**
1.17	Concrete Washout Station	1	EA	$ -	$ -	$ 1,850	$ 1,850	$ 1,850	**$ 1,850**
1.18					$ -		$ -		**$ -**
1.19					$ -		$ -		**$ -**
1.20	Crushed Rock	0	CY	$ 27	$ -	$ 75	$ -	$ 102	**$ -**
TOTAL - CLEARING & ACCESS					$ -		$ 620,850		$ 620,850
2. FOUNDATIONS									
2.1	1-CKT 115KV 3-POLE TANGENT DEADEND (0°-5°)	15	EA	$ 1,073	$ 16,088	$ 7,293	$ 109,395	$ 8,366	**$ 125,483**
2.5	Rock Excavation Adder	153	CY	$ -	$ -	$ 2,000	$ 306,000	$ 2,000	**$ 306,000**
2.3									
2.4									
2.5									
2.6									
2.7									
2.8									
2.9									
2.10									
2.11									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.12									
2.13									
2.14									
2.15									
TOTAL - FOUNDATIONS					$ 16,088		$ 415,395		$ 431,483
3. STRUCTURES									
3.1	1-CKT 115KV 3-POLE TANGENT DEADEND (0°-5°)	5	Structure	$ 67,803	$ 339,013	$ 40,682	$ 203,408	$ 108,484	**$ 542,420**
3.2	Install Grounding and Grounding Accessories	15	Pole	$ 506	$ 7,590	$ 5,539	$ 83,078	$ 6,045	**$ 90,668**
3.3									
3.4									
3.5									
3.6									
3.7									
3.8									
3.9									
3.10									
3.11									
3.12									
3.13									
3.14									
3.15									
TOTAL - STRUCTURES					$ 346,603		$ 286,485		$ 633,088
4. CONDUCTOR, SHIELDWIRE, OPGW									
4.1	345kV - (1) 954kcmil 54/7 ACSS "Cardinal"	-	LF	$ 1.90	$ -	$ 5.00	$ -	$ 6.90	**$ -**
4.2	(1) OPGW 36 Fiber AC-33/38/571	-	LF	$ 1.35	$ -	$ 5.00	$ -	$ 6.35	**$ -**
4.3	(1) 3/8" EHS7 Steel	-	LF	$ 0.47	$ -	$ 5.00	$ -	$ 5.47	**$ -**
4.5	Remove Existing 115kV Cable From Existing Structures	-	Mile	$ -	$ -	$ 30,000	$ -	$ 30,000.00	**$ -**
4.6	Remove Existing OPGW Cable	-	Mile	$ -	$ -	$ 12,000	$ -	$ 12,000.00	**$ -**
4.7	Remove Existing EH7	-	Mile	$ -	$ -	$ 12,000	$ -	$ 12,000.00	**$ -**
4.8	115kV - (1) 795kcmil 26/7 ACSS "Drake"	-	LF	$ 1.72	$ -	$ 5.00	$ -	$ 6.72	**$ -**
4.9		-							
4.10	Rider Poles - Relocated	-	Set	$ -	$ -	$ 3,500	$ -	$ 3,500.00	**$ -**
4.11	Rider Poles	-	EA	$ 1,750	$ -	$ 3,500	$ -	$ 5,250.00	**$ -**
TOTAL: CONDUCTOR, SHIELDWIRE, OPGW:					$ -		$ -		**$ -**
5. INSULATOR, FITTINGS, HARDWARE									
5.1	345kV Tangent (1-Group of 18-Bells Each Assembly)	-	Assembly	$ 1,800	$ -	$ 720	$ -	$ 2,520	**$ -**
5.2	115kV Tangent (1-Group of 9-Bells Each Assembly)	-	Assembly	$ 900	$ -	$ 560	$ -	$ 1,460	**$ -**
5.3	345kV Dead-end & Angle Insulators (1-Group of 18-Bells Each Assembly)	-	Assembly	$ 1,800	$ -	$ 720	$ -	$ 2,520	**$ -**
5.4	115kV Dead-end & Angle Insulators (1-Group of 9-Bells Each Assembly)	105	Assembly	$ 900	$ 94,500	$ 360	$ 37,800	$ 1,260	**$ 132,300**
5.5			Assembly	$ 900	$ -	$ 360	$ -	$ 1,260	**$ -**
5.6	OPGW Assembly - Tangent	14	Assembly	$ 200	$ 2,800	$ 150	$ 2,100	$ 350	**$ 4,900**
5.7	OPGW Assembly - Angle / DE	1	Assembly	$ 250	$ 250	$ 150	$ 150	$ 400	**$ 400**
5.8	OHSW Assembly - Tangent	-	Assembly	$ 200	$ -	$ 150	$ -	$ 350	**$ -**
5.9	OHSW Assembly - Angle / DE	15	Assembly	$ 250	$ 3,750	$ 150	$ 2,250	$ 400	**$ 6,000**
5.10	OPGW Splice Boxes	1	Set	$ 1,746	$ 1,746	$ 2,274	$ 2,274	$ 4,020	**$ 4,020**
5.11	OPGW Splice & Test	1	EA	$ 2,520	$ 2,520	$ 2,520	$ 2,520	$ 5,040	**$ 5,040**
5.12	Spacer - Conductor	-	EA	$ 50	$ -	$ 35	$ -	$ 85	**$ -**
5.13	Vibration Dampers - Conductor	-	EA	$ 35	$ -	$ 35	$ -	$ 70	**$ -**
5.14	Shieldwire / OPGW Dampers, Misc. Fittings	-	EA	$ 27	$ -	$ 35	$ -	$ 62	**$ -**
5.15	Guys, Anchors, and Accessories	-	EA	$ 720	$ -	$ 885	$ -	$ 1,605	**$ -**
5.16	Misc. materials (Signs and Markers)	-	Mile	$ 770	$ -	$ 1,006	$ -	$ 1,776	**$ -**
5.17									
5.18									
5.19					$ -		$ -		**$ -**
5.20									
TOTAL - INSULATOR, FITTINGS, HARDWARE					$ 105,566		$ 47,094		$ 152,660
M. Interconnection Churchtown Station					$ 468,256		$ 1,369,824		$ 1,838,080
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
6.1	Mob / Demob	1	LS	$ -	$ -	$ 18,381	$ 18,381	$ 18,381	**$ 18,381**
	Project Management, Material Handling & Amenities								

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 113,447	$ 113,447	$ 113,447	**$ 113,447**
6.3	Utility PM and Project Oversite	1	LS		$ -	$ 18,381	$ 18,381	$ 18,381	**$ 18,381**
6.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 18,381	$ 18,381	$ 18,381	**$ 18,381**
	Engineering								
6.5	Design Engineering	1	LS	$ -	$ -	$ 91,904	$ 91,904	$ 91,904	**$ 91,904**
6.6	LiDAR	1	LS	$ -	$ -	$ 5,514	$ 5,514	$ 5,514	**$ 5,514**
6.7	Geotech	1	Location	$ -	$ -	$ 3,500	$ 3,500	$ 3,500	**$ 3,500**
6.8	Surveying/Staking	1	LS	$ -	$ -	$ 12,867	$ 12,867	$ 12,867	**$ 12,867**
	Testing & Commissioning								
6.9	Testing & Commissioning of T-Line and Equipment	-	LS	$ -	$ -	$ 40,000	$ -	$ 40,000	**$ -**
	Permitting and Additional Costs								
6.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.12	Warranties / LOC's	1	LS	$ -	$ -	$ 5,514	$ 5,514	$ 5,514	**$ 5,514**
6.13	Real Estate Costs (New ROW)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.14	Real Estate Costs (Incumbent Utility ROW)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.15	Legal Fees	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.18	Sales Tax on Materials	1	LS	$ 37,460	$ 37,460	$ -	$ -	$ 37,460	**$ 37,460**
6.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 1,838	$ 1,838	$ 1,838	**$ 1,838**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 37,460		$ 289,727		**$ 327,187**

NAT & NYPA - T029 - (Segment B)

O. NUF to mitigate NY to NE interface transfer limit degradation

Estimate Revision: **8**

Total: $ 26,785,714

SYSTEM UPGRADE FACILITIES		Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Sum	Labor & Equipment Supply Rate	Labor & Equipment Sum	Total Unit Rate	TOTAL
SUF 1	**Transmission Line Upgrade Cricket Valley - Connecticut Border to Long Mountain**								
1.1	Line Upgrade	1.00	LS		$ -		$ -	$ 21,428,571	$ 21,428,571
	Subtotal SUF 1 Direct Cost				$ -		$ -		$ 21,428,571
1.2	**Engineering, T&C, PM, Indirects (25%)**				$ -		$ -		$ 5,357,143
	TOTAL:				**$ -**		**$ -**		**$ 26,785,714**

NAT - NYPA - T029 - (Segment B)

P. NUF proposed as element of the Project (Middletown Line and Terminal)

Estimate Revision: **8**

Total: $ 14,519,000

SYSTEM UPGRADE FACILITIES		Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Sum	Labor & Equipment Supply Rate	Labor & Equipment Sum	Total Unit Rate	TOTAL
SUF SS1	**Middletown Tap Transformer Replacement**	1	LS	$ -	$ -	$ -	$ -	$ 10,878,348	$ 10,879,000
SUF SS1	Removals	1	LS	$ -	$ -	$ -	$ -	$ 360,000	$ 360,000
SUF SS1	Engineering, T&C, PM, Indirects (25%)		LS %						$ 2,810,000
SUF SS1	**SUF SS1 - TOTAL:**				**$ -**		**$ -**		**$ 14,049,000**
SUF SS2	**Middletown Line Upgrade**	1	LS	$ -	$ -	$ -	$ -	$ -	$ -
SUF SS2	138kV - (1) 1113kcmil 45/7 ACSS "Bluejay" Conductor	29,272.32	LF	$ 4.00	$ 117,089	$ 5.00	$ 146,362	$ 9	$ 263,451
SUF SS2	Remove Existing 1033.5kmil ACSR "Ortalon" Conductor and Accessories	0.88	Mile	$ -	$ -	$ 30,000.00	$ 26,400	$ 30,000	$ 26,400
SUF SS2	Rider Poles	3.00	Sets	$ 1,750.00	$ 5,250	$ 3,500.00	$ 10,500	$ 5,250	$ 15,750
SUF SS2	138kV Vertical Tangent Insulator Assembly	18.00	Assembly	$ 900.00	$ 16,200	$ 560.00	$ 10,080	$ 1,460	$ 26,280
SUF SS2	138kV Deadend Insulator Assembly	30.00	Assembly	$ 900.00	$ 27,000	$ 560.00	$ 16,800	$ 1,460	$ 43,800
SUF SS2	Engineering, T&C, PM, Indirects (25%)		LS %						$ 94,000
SUF SS2	**SUFSS 2 - TOTAL:**				**$ 165,539**		**$ 210,142**		**$ 469,681**
	STATIONS SUF DIRECT TOTAL:								**$ 11,615,000**
	STATIONS SUF INDIRECT TOTAL:								**$ 2,904,000**
	STATIONS SUF TOTAL								**$ 14,519,000**

NAT - NYPA - T029 - (Segment B)	
ESTIMATE ASSUMPTIONS & CLARIFICATIONS	
1	Cost Estimate is based on 2017 rates.
2	Construction schedule is in accordance with proposed schedule - we have assumed continuous working with no breaks in the schedule. Six months have been added to the construction schedule for start up and close out works and assisting in pre-construction activities (i.e. permitting activities, material procurement etc.).
3	We have assumed a typical work week of five-(5) days per week at ten-(10) hours per day (5 x 10 hour days).
4	All labor rates and benefits used for estimating purposes are taken from IBEW Local 1249 working agreement as updated 5-8-2017.
5	We have assumed that the Access Road included in Developer Estimate will be Type 1 Gravel Type. 20% of the total length of the line is assumed to use Type 1 Gravel road and 80% of the line length access to be used wood matting. In addition 75 feet of wood matting is included from the access matting to the work pad area matting. The estimate also include 5,000 square feet of wood matting for each structure work area within the ROW. For the ground restoration (seed, straw and woven mat), 20% of the work pad area included.
6	Costs will vary for handling and disposal of contaminated spoils, depending on type of contaminants and availability / location of the appropriate tipping facility. Since there is not enough information to provide a quantified estimate for this item, allowance is included in the contingency monies.
7	Costs have been developed based on historical data from Projects of a similar nature (AACE Class 5 and 4 Estimating Practices). We have not engaged any subcontractors for formal quotes.
8	Foundation rates include supply and installation of materials. Drilled Pier rates include supply and testing of concrete, rebar cage and the use of temp or permanent casing.
9	A Contractor Mark-Up (OH&P) of 15% has been included in the Total section.
10	We have assumed that all project details provided are accurate unless noted otherwise.
11	Any SUF pricing includes 35% to cover Contractor markup (15%) and contingency (20%)
12	A contractor allowance of 1% for mobilization and demobilization has been included in the total section.
13	A contractor allowance of 5.367% for project management and staffing has been included in the total section. This also includes agricultural inspector, engineering inspector, safety inspector, compliance inspector, environmental inspector, and SWPP inspector.
14	An allowance of 1% for Utility PM and Project Oversite staffing has been included in the total section.
15	A contractor allowance of 1% for site accommodation, facilities, and storage has been included in the total section.
16	An allowance of 5% for transmission design and engineering has been included in the total section.
17	An allowance of 8% for substation design and engineering has been included in the total section.
18	An allowance of 0.7% for survey and staking of the transmission line and substation layout has been included in the total section.
19	An allowance of 0.3% for LIDAR of the transmission line has been included in the total section.
20	An allowance of 3.75% for substation testing and commissioning has been included in the total section.
21	An allowance of $20,000.00 per circuit for transmission line testing and commissioning has been included in the total section.
22	New York state sales tax of 8% is included in all material pricing.
23	An allowance of 1.5% for insurance is included in the DPS sheet.
24	Knickerbocker to Churchtown substation; 0.4 miles of 345kV conductor from the junction have been added.
25	An additional Quantity of 5% have been added to conductors, OPGW, & OHSW for sag and jumpers.
26	Rock excavation depth in Foundation data provided in the proposal.
27	Middletown to Shoemaker Line upgrade: The length of the line segment is 0.88 miles -The re-conductor will remove the existing 2 bundle 1033.5 ACSR conductor and install new 2 bundle Bluejay 1113 ACSS conductor -The Insulators and associated conductor hardware will be replaced -The existing structures are assumed to have adequate strength to support the new conductors -The estimate is a rough order of magnitude estimate as no engineering was performed and SECo did not have access to record drawings.
28	Cricket Valley to Long Mountain line upgrade: Network Upgrade (NUF) costs to mitigate NY to NE interface transfer limit degradation were based on possible solutions identified during the June 2018 SIS process
29	The SUF estimates for the stations are rough order of magnitude estimates. No engineering was performed and SECo did not have access to record drawings.

NY Power Authority and North American Transmission (T030)			
	Description		Total Amount (In thousand $)
Direct Cost	1	**Transmission Lines**	
	1.1	Clearing & Access	$34,378
	1.2	Foundations	$18,131
	1.3	Structures	$56,775
	1.4	Conductor, Shiedwire and Optical Ground Wire	$35,969
	1.5	Insulators, Fitting and Hardwares	$11,553
		Subtotal (1)	**$156,807**
	2	**Substations**	
	2.1	Knickerbocker Substation	$14,982
	2.2	East Greenbush Substation	$61
	2.3	Schodack Substation	$2,226
	2.4	Churchtown Substation	$16,010
	2.5	Pleasant Valley Substation	$2,778
	2.6	Substation Interconnections	$6,312
		Subtotal (2)	**$42,369**
		Total (1+2)	$199,176
		Contractors Mark-up (15% of Total 1+2)	$29,876
		Total Direct Cost (A)	**$229,052**
Indirect Cost	3	**Technical Services Costs**	
	3.1	Contractor Mobilization / Demobilization	$1,992
	3.2	Project Management, Material Handling & Amenities	$15,576
	3.3	Engineering	$13,164
	3.4	Testing & Commissioning	$972
	3.5	Permitting, Real Estate, Sales Tax and Additional Costs	$14,389
	3.6	Legal, Environmental Licensing & Permitting and Environmental Mitigation	$7,628
		Total Indirect Cost (3)	**$53,721**
		Subtotal Project Cost (B=A+3) 2017 $	**$282,773**
	4	**Network Upgrade Facilities (NUF)**	
	4.1	NUF proposed as element of the Project (Middletown Line and Terminal)	$16,261
	4.2	NUF to mitigate NY to NE interface transfer limit degradation	$30,000
		Subtotal NUF Cost (C)	**$46,261**
		Total Project Cost (B+C) 2017 $	**$329,034**
		Total Project Cost 2018 $	**$338,905**

NAT - NYPA - T030 - (Segment B Enhanced)

Estimate Revision: 8

NAT - NYPA - T030 - (Segment B Enhanced) - Direct Costs		*Total Each Segment*
Direct Labor, Material & Equipment Costs	A. Transmission Line Knickerbocker to Churchtown	$ 57,825,407
Direct Labor, Material & Equipment Costs	B. Transmission Line Churchtown to Pleasant Valley	$ 94,235,274
Direct Labor, Material & Equipment Costs	C. Blue Stores Junction to Blue Stores Substation	$ 4,746,361
Direct Labor, Material & Equipment Costs	D. Knickerbocker 345kV Substation - Install	$ 14,982,000
Direct Labor, Material & Equipment Costs	E. Greenbush Substation - Removal	$ 61,200
Direct Labor, Material & Equipment Costs	F. Schodack Substation - Install	$ 2,089,357
Direct Labor, Material & Equipment Costs	G. Schodack Substation - Removal	$ 136,200
Direct Labor, Material & Equipment Costs	H. Churchtown Substation - Install	$ 15,046,621
Direct Labor, Material & Equipment Costs	I.Churchtown Substation - Removal	$ 963,678
Direct Labor, Material & Equipment Costs	J. Pleasant Valley Substation - Install	$ 2,777,841
Direct Labor, Material & Equipment Costs	K. Interconnection Milan Station	$ 623,428
Direct Labor, Material & Equipment Costs	L. Interconnection Knickerbocker Station	$ 1,262,237
Direct Labor, Material & Equipment Costs	M. Interconnection Churchtown Station	$ 2,142,195
Direct Labor, Material & Equipment Costs	N. Interconnection Pleasant Valley Station	$ 2,284,222
Direct Labor, Material & Equipment Costs	O. NUF to mitigate NY to NE interface transfer limit degradation	$ 21,428,571
Direct Labor, Material & Equipment Costs	P. NUF proposed as element of the Project (Middletown Line and Terminal)	$ 11,615,000
	SUBTOTAL:	$ 232,219,592
	CONTRACTOR MARK-UP (OH&P)	$ 34,832,939
	CONTINGENCY ON ENTIRE PROJECT	$ -
	TOTAL DIRECT:	$ 267,052,530

NAT - NYPA - T030 - (Segment B Enhanced) - Indirect Costs		*Total Each Segment*
Indirect Costs	A. Transmission Line Knickerbocker to Churchtown	$ 13,461,432
Indirect Costs	B. Transmission Line Churchtown to Pleasant Valley	$ 21,467,279
Indirect Costs	C. Blue Stores Junction to Blue Stores Substation	$ 984,454
Indirect Costs	D. Knickerbocker 345kV Substation - Install	$ 3,909,529
Indirect Costs	E. Greenbush Substation - Removal	$ 10,478
Indirect Costs	F. Schodack Substation - Install	$ 508,425
Indirect Costs	G. Schodack Substation - Removal	$ 23,318
Indirect Costs	H. Churchtown Substation - Install	$ 3,712,994
Indirect Costs	I.Churchtown Substation - Removal	$ 164,983
Indirect Costs	J. Pleasant Valley Substation - Install	$ 712,299
Indirect Costs	K. Interconnection Milan Station	$ 119,179
Indirect Costs	L. Interconnection Knickerbocker Station	$ 225,130
Indirect Costs	M. Interconnection Churchtown Station	$ 397,868
Indirect Costs	N. Interconnection Pleasant Valley Station	$ 395,636
Indirect Costs	O. NUF to mitigate NY to NE interface transfer limit degradation	$ 5,357,143
Indirect Costs	P. NUF proposed as element of the Project (Middletown Line and Terminal)	$ 2,904,000
Indirect Costs	Legal and Permitting (Includes Legal, Envir. Lisc. & Permit., and Envir. Mitigation)	$ 7,627,609
	TOTAL INDIRECT:	$ 61,981,753

	TOTAL ESTIMATED COST:	$ 329,034,284

NAT - NYPA - T030 - (Segment B Enhanced)

A. Transmission Line Knickerbocker to Churchtown

Estimate Revision: 8

Total: $ 71,286,839

NAT - NYPA - T030 - (Segment B Enhanced)	*Supply*	*Installation*	*Total*
A. Transmission Line Knickerbocker to Churchtown			
1. CLEARING & ACCESS	$ 11,500	$ 13,264,953	$ 13,276,453
2. FOUNDATIONS	$ 1,216,320	$ 5,964,195	$ 7,180,515
3. STRUCTURES	$ 8,858,578	$ 10,543,966	$ 19,402,544
4. CONDUCTOR, SHIELDWIRE, OPGW	$ 2,905,216	$ 10,613,935	$ 13,519,151
5. INSULATORS, FITTINGS, HARDWARE	$ 2,937,361	$ 1,509,383	$ 4,446,745
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 1,274,318	$ 12,187,114	$ 13,461,432
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 17,203,293	$ 54,083,546	$ 71,286,839
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 17,203,293	$ 54,083,546	$ 71,286,839

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Sum	Labor & Equipment Supply Rate	Labor & Equipment Sum	Total Unit Rate	TOTAL
A. Transmission Line Knickerbocker to Churchtown									
1. CLEARING & ACCESS									
1.1	Clearing the ROW - Heavy (mowing & clearing)	19	Acre		$ -	$ 15,000	$ 285,000	$ 15,000	**$ 285,000**
1.2	Clearing the ROW - Light (mowing)	63	Acre		$ -	$ 5,000	$ 315,000	$ 5,000	**$ 315,000**
1.3	Permanent Access Road	23,126	LF		$ -	$ 45.00	$ 1,040,688	$ 45	**$ 1,040,688**
1.4	Silt Fence	115,632	LF		$ -	$ 4.00	$ 462,528	$ 4	**$ 462,528**
1.5	Matting - Access and ROW	92,506	LF		$ -	$ 70.00	$ 6,475,392	$ 70	**$ 6,475,392**
1.6	Matting - To Work Area	12,075	LF		$ -	$ 70.00	$ 845,250	$ 70	**$ 845,250**
1.7	Snow Removal	21.9	Mile		$ -	$ 16,000	$ 350,400	$ 16,000	**$ 350,400**
1.8	ROW Restoration	21.9	Mile		$ -	$ 10,000	$ 219,000	$ 10,000	**$ 219,000**
1.9	Work Pads	805,000	SF		$ -	$ 3.52	$ 2,833,600	$ 4	**$ 2,833,600**
1.10	Restoration for Work Pad areas	161,000	SF		$ -	$ 0.15	$ 24,150	$ 0	**$ 24,150**
1.11	Temporary Access Bridge	9	EA		$ -	$ 20,035	$ 180,315	$ 20,035	**$ 180,315**
1.12	Air Bridge	-	EA		$ -	$ 14,445	$ -	$ 14,445	**$ -**
1.13	Stabilized Construction Entrance	4	EA		$ -	$ 4,580	$ 18,320	$ 4,580	**$ 18,320**
1.14	Maintenance and Protection of Traffic on Public Roads	47	EA		$ -	$ 4,130	$ 194,110	$ 4,130	**$ 194,110**
1.15	Culverts / Misc. Access	10	EA	$ 750	$ 7,500	$ 1,250	$ 12,500	$ 2,000	**$ 20,000**
1.16	Gates	2	EA	$ 2,000	$ 4,000	$ 2,500	$ 5,000	$ 4,500	**$ 9,000**
1.17	Concrete Washout Station	2	EA		$ -	$ 1,850	$ 3,700	$ 1,850	**$ 3,700**
TOTAL - CLEARING & ACCESS:					$ 11,500		$ 13,264,953		**$ 13,276,453**
2. FOUNDATIONS									
2.1	1-CKT 345KV VERTICAL SMALL ANGLE (1°-15°)	1	EA	$ 3,575	$ 3,575	$ 24,310	$ 24,310	$ 27,885	**$ 27,885**
2.2	1-CKT 345KV VERTICAL TANGENT (0°-1°)	1	EA	$ 2,888	$ 2,888	$ 19,635	$ 19,635	$ 22,523	**$ 22,523**
2.3	2-CKT 115KV/345KV DELTA SMALL ANGLE (1°-15°)	7	EA	$ 3,713	$ 25,988	$ 25,245	$ 176,715	$ 28,958	**$ 202,703**
2.4	2-CKT 115KV/345KV DELTA TANGENT (0°-1°)	129	EA	$ 2,750	$ 354,750	$ 18,700	$ 2,412,300	$ 21,450	**$ 2,767,050**
2.5	2-CKT 115KV/345KV DELTA TANGENT (0°-1°) HD	3	EA	$ 2,888	$ 8,663	$ 19,635	$ 58,905	$ 22,523	**$ 67,568**
2.6	2-CKT 115KV/345KV DELTA TANGENT DEADEND (0°-5°)	10	EA	$ 3,163	$ 31,625	$ 21,505	$ 215,050	$ 24,668	**$ 246,675**
2.7	1-CKT 345KV VERTICAL LARGE ANGLE DEADEND (60°-90°)	1	EA	$ 118,325	$ 118,325	$ 119,592	$ 119,592	$ 237,917	**$ 237,917**
2.8	1-CKT 345KV VERTICAL MEDIUM ANGLE DEADEND (15°-60°)	1	EA	$ 92,030	$ 92,030	$ 93,016	$ 93,016	$ 185,046	**$ 185,046**
2.9	2-CKT 115KV/345KV DELTA MEDIUM ANGLE DEADEND (15°-60°)	8	EA	$ 72,310	$ 578,477	$ 73,084	$ 584,672	$ 145,394	**$ 1,163,149**
2.10									
2.11									
2.12									
2.13	Rock Excavation Adder	1,130.0	CY	$ -	$ -	$ 2,000	$ 2,260,000	$ 2,000	**$ 2,260,000**
2.14									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Sum	Labor & Equipment Supply Rate	Labor & Equipment Sum	Total Unit Rate	TOTAL
2.15									
2.16									
2.17									
2.18									
TOTAL - FOUNDATIONS:					$ 1,216,320		$ 5,964,195		**$ 7,180,515**
3. STRUCTURES									
3.1	1-CKT 345KV VERTICAL SMALL ANGLE (1°-15°)	1	Structure	$ 115,897	$ 115,897	$ 69,538	$ 69,538	$ 185,435	**$ 185,435**
3.2	1-CKT 345KV VERTICAL TANGENT (0°-1°)	1	Structure	$ 56,203	$ 56,203	$ 33,722	$ 33,722	$ 89,925	**$ 89,925**
3.3	2-CKT 115KV/345KV DELTA SMALL ANGLE (1°-15°)	7	Structure	$ 82,929	$ 580,502	$ 49,757	$ 348,301	$ 132,686	**$ 928,804**
3.4	2-CKT 115KV/345KV DELTA TANGENT (0°-1°)	129	Structure	$ 43,936	$ 5,667,734	$ 26,362	$ 3,400,640	$ 70,297	**$ 9,068,374**
3.5	2-CKT 115KV/345KV DELTA TANGENT (0°-1°) HD	3	Structure	$ 60,948	$ 182,845	$ 36,569	$ 109,707	$ 97,517	**$ 292,552**
3.6	2-CKT 115KV/345KV DELTA TANGENT DEADEND (0°-5°)	10	Structure	$ 64,662	$ 646,619	$ 38,797	$ 387,972	$ 103,459	**$ 1,034,591**
3.7	1-CKT 345KV VERTICAL LARGE ANGLE DEADEND (60°-90°)	1	Structure	$ 269,373	$ 269,373	$ 161,624	$ 161,624	$ 430,997	**$ 430,997**
3.8	1-CKT 345KV VERTICAL MEDIUM ANGLE DEADEND (15°-60°)	1	Structure	$ 130,695	$ 130,695	$ 78,417	$ 78,417	$ 209,112	**$ 209,112**
3.9	2-CKT 115KV/345KV DELTA MEDIUM ANGLE DEADEND (15°-60°)	8	Structure	$ 140,905	$ 1,127,244	$ 84,543	$ 676,346	$ 225,449	**$ 1,803,590**
3.10									
3.11									
3.12	Remove Existing Foundation	688	EA	$ -	$ -	$ 3,250	$ 2,236,000	$ 3,250	**$ 2,236,000**
3.13	Remove Existing Structure and Accessories	172	EA	$ -	$ -	$ 12,500	$ 2,150,000	$ 12,500	**$ 2,150,000**
3.14	Install Grounding and Grounding Accessories	161	Pole	$ 506	$ 81,466	$ 5,539	$ 891,699	$ 6,045	**$ 973,165**
3.15									
TOTAL - STRUCTURES:					$ 8,858,578		$ 10,543,966		**$ 19,402,544**
4. CONDUCTOR, SHIELDWIRE, OPGW									
4.1	345kV - (1) 477kcmil 26/7 ACSS "Hawk"	1,112,681	LF	$ 1.75	$ 1,947,192	$ 5.00	$ 5,563,405	$ 6.75	**$ 7,510,597**
4.2	(1) OPGW 36 Fiber AC-33/38/571	123,631	LF	$ 1.35	$ 166,902	$ 5.00	$ 618,155	$ 6.35	**$ 785,057**
4.3	(1) 3/8" EHS7 Steel	121,414	LF	$ 0.47	$ 57,065	$ 5.00	$ 607,070	$ 5.47	**$ 664,135**
4.4	Remove Existing 115kV Cable From Existing Structures	43.8	Mile	$ -	$ -	$ 30,000	$ 1,314,000	$ 30,000.00	**$ 1,314,000**
4.5	Remove Existing OPGW Cable and Accessories	21.9	Mile	$ -	$ -	$ 12,000	$ 262,800	$ 12,000.00	**$ 262,800**
4.6	Remove Existing OHSW and Accessories	21.9	Mile	$ -	$ -	$ 12,000	$ 262,800	$ 12,000.00	**$ 262,800**
4.7	115kV - (1) 954kcmil 54/7 ACSS "Cardinal"	364,241	LF	$ 1.90	$ 692,058	$ 5.00	$ 1,821,205	$ 6.90	**$ 2,513,263**
4.8	Rider Poles (47 Locations)	24	Set	$ 1,750	$ 42,000	$ 3,500	$ 84,000	$ 5,250.00	**$ 126,000**
4.9	Rider Poles - Relocated	23	Set	$ -	$ -	$ 3,500	$ 80,500	$ 3,500.00	**$ 80,500**
4.10									
4.11									
4.12									
4.13									
4.14									
4.15									
4.16									
4.17									
TOTAL: CONDUCTOR, SHIELDWIRE, OPGW:					$ 2,905,216		$ 10,613,935		**$ 13,519,151**
5. INSULATOR, FITTINGS, HARDWARE									
5.1	345kV Tangent (1-Group of 18-Bells Each Assembly)	705	Assembly	$ 1,800	$ 1,269,000	$ 720	$ 507,600	$ 2,520	**$ 1,776,600**
5.2	115kV Tangent (1-Group of 9-Bells Each Assembly)	695	Assembly	$ 900	$ 625,500	$ 560	$ 389,200	$ 1,460	**$ 1,014,700**
5.3	345kV Dead-end & Angle Insulators (1-Group of 18-Bells Each Assembly)	300	Assembly	$ 1,800	$ 540,000	$ 720	$ 216,000	$ 2,520	**$ 756,000**
5.4	115kV Dead-end & Angle Insulators (1-Group of 9-Bells Each Assembly)	126	Assembly	$ 900	$ 113,400	$ 560	$ 70,560	$ 1,460	**$ 183,960**
5.5			Assembly	$ 900	$ -	$ 360	$ -	$ 1,260	**$ -**
5.6	OPGW Assembly - Tangent	141	Assembly	$ 200	$ 28,200	$ 150	$ 21,150	$ 350	**$ 49,350**
5.7	OPGW Assembly - Angle / DE	40	Assembly	$ 250	$ 10,000	$ 150	$ 6,000	$ 400	**$ 16,000**
5.8	OHSW Assembly - Tangent	139	Assembly	$ 200	$ 27,800	$ 150	$ 20,850	$ 350	**$ 48,650**
5.9	OHSW Assembly - Angle / DE	36	Assembly	$ 250	$ 9,000	$ 150	$ 5,400	$ 400	**$ 14,400**
5.10	OPGW Splice Boxes	8	Set	$ 1,746	$ 13,969	$ 2,274	$ 18,192	$ 4,020	**$ 32,161**
5.11	OPGW Splice & Test	8	EA	$ 2,520	$ 20,160	$ 2,520	$ 20,160	$ 5,040	**$ 40,320**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Sum	Labor & Equipment Supply Rate	Labor & Equipment Sum	Total Unit Rate	TOTAL
5.12	Spacer - Conductor	3,651	EA	$ 50	$ 182,550	$ 35	$ 127,785	$ 85	**$ 310,335**
5.13	Vibration Dampers - Conductor	1,971	EA	$ 35	$ 68,985	$ 35	$ 68,985	$ 70	**$ 137,970**
5.14	Shield wire / OPGW Dampers, Misc. Fittings	442	EA	$ 27	$ 11,934	$ 35	$ 15,470	$ 62	**$ 27,404**
5.15									
5.16	*Replace - Mono Pole Vertical Tangent - V-String*	-	Set	$ 1,800	$ -	$ 1,080	$ -	$ 2,880	**$ -**
5.17	*Replace - Dead-end & Angle Insulators*	-	Set	$ 2,540	$ -	$ 2,025	$ -	$ 4,565	**$ -**
5.18									
5.19	Guys, Anchors, and Accessories	-	EA	$ 720	$ -	$ 885	$ -	$ 1,605	**$ -**
5.20	Misc. materials (Signs and Markers)	21.9	Mile	$ 770	$ 16,863	$ 1,006	$ 22,031	$ 1,776	**$ 38,894**
5.21		-		$ -	$ -	$ -	$ -	$ -	**$ -**
5.22									
5.23									
TOTAL - INSULATORS, FITTINGS, HARDWARE:					$ 2,937,361		$ 1,509,383		**$ 4,446,745**
A. Transmission Line Knickerbocker to Churchtown					$ 15,928,975		$ 41,896,432		**$ 57,825,407**
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
6.1	Mob / Demob	1	LS	$ -	$ -	$ 578,254	$ 578,254	$ 578,254	**$ 578,254**
	Project Management, Material Handling & Amenities								
6.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 3,365,525	$ 3,365,525	$ 3,365,525	**$ 3,365,525**
6.3	Utility PM and Project Oversite	1	LS		$ -	$ 578,254	$ 578,254	$ 578,254	**$ 578,254**
6.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 578,254	$ 578,254	$ 578,254	**$ 578,254**
	Engineering								
6.5	Design Engineering	1	LS	$ -	$ -	$ 2,891,270	$ 2,891,270	$ 2,891,270	**$ 2,891,270**
6.6	LiDAR	1	LS	$ -	$ -	$ 173,476	$ 173,476	$ 173,476	**$ 173,476**
6.7	Geotech	22	Location	$ -	$ -	$ 3,500	$ 77,000	$ 3,500	**$ 77,000**
6.8	Surveying/Staking	1	LS	$ -	$ -	$ 404,778	$ 404,778	$ 404,778	**$ 404,778**
	Testing & Commissioning								
6.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 40,000	$ 40,000	$ 40,000	**$ 40,000**
	Permitting and Additional Costs								
6.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.12	Warranties / LOC's	1	LS	$ -	$ -	$ 173,476	$ 173,476	$ 173,476	**$ 173,476**
6.13	Real Estate Costs (New ROW)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.14	Real Estate Costs (Incumbent Utility ROW)	1	LS	$ -	$ -	$ 3,269,000	$ 3,269,000	$ 3,269,000	**$ 3,269,000**
6.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.18	Sales Tax on Materials	1	LS	$ 1,274,318	$ 1,274,318	$ -	$ -	$ 1,274,318	**$ 1,274,318**
6.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 57,825	$ 57,825	$ 57,825	**$ 57,825**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 1,274,318		$ 12,187,114		**$ 13,461,432**

NAT - NYPA - T030 - (Segment B Enhanced)

B. Transmission Line Churchtown to Pleasant Valley

Estimate Revision: 8

Total: $ 115,702,553

NAT - NYPA - T030 - (Segment B Enhanced)	*Supply*	*Installation*	*Total*
B. Transmission Line Churchtown to Pleasant Valley			
1. CLEARING & ACCESS	**$ 14,000**	**$ 19,683,466**	**$ 19,697,466**
2. FOUNDATIONS	**$ 830,338**	**$ 8,957,307**	**$ 9,787,645**
3. STRUCTURES	**$ 13,291,751**	**$ 22,537,866**	**$ 35,829,617**
4. CONDUCTOR, SHIELDWIRE, OPGW	**$ 4,293,840**	**$ 17,684,415**	**$ 21,978,255**
5. INSULATORS, FITTINGS, HARDWARE	**$ 4,595,434**	**$ 2,346,857**	**$ 6,942,291**
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	**$ 1,842,029**	**$ 19,625,250**	**$ 21,467,279**
CONTRACTOR MARK-UP (OH&P)	**$ -**	**$ -**	**$ -**
SUBTOTAL:	**$ 24,867,392**	**$ 90,835,161**	**$ 115,702,553**
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	**$ 24,867,392**	**$ 90,835,161**	**$ 115,702,553**

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
B. Transmission Line Churchtown to Pleasant Valley									
1. CLEARING & ACCESS									
1.1	Clearing the ROW - Heavy (mowing & clearing)	15.0	Acre	$ -	$ -	$ 15,000	$ 225,000	$ 15,000	**$ 225,000**
1.2	Clearing the ROW - Light (mowing)	102.0	Acre	$ -	$ -	$ 5,000	$ 510,000	$ 5,000	**$ 510,000**
1.3	Permanent Access Road	34,109	LF	$ -	$ -	$ 45	$ 1,534,896	$ 45	**$ 1,534,896**
1.4	Silt Fence	170,544.0	LF	$ -	$ -	$ 4	$ 682,176	$ 4	**$ 682,176**
1.5	Matting - Access and ROW	136,435	LF	$ -	$ -	$ 70	$ 9,550,464	$ 70	**$ 9,550,464**
1.6	Matting - To Work Area	18,300.0	LF	$ -	$ -	$ 70	$ 1,281,000	$ 70	**$ 1,281,000**
1.7	Snow Removal	32.3	Mile	$ -	$ -	$ 16,000	$ 516,800	$ 16,000	**$ 516,800**
1.8	ROW Restoration	32.3	Mile	$ -	$ -	$ 10,000	$ 323,000	$ 10,000	**$ 323,000**
1.9	Work Pads	1,220,000.0	SF	$ -	$ -	$ 4	$ 4,294,400	$ 4	**$ 4,294,400**
1.10	Restoration for Work Pad areas	244,000.0	SF	$ -	$ -	$ 0.2	$ 36,600	$ 0	**$ 36,600**
1.11	Temporary Access Bridge	14	EA	$ -	$ -	$ 20,035	$ 280,490	$ 20,035	**$ 280,490**
1.12	Air Bridge	-	EA	$ -	$ -	$ 14,445	$ -	$ 14,445	**$ -**
1.13	Stabilized Construction Entrance	12	EA	$ -	$ -	$ 4,580	$ 54,960	$ 4,580	**$ 54,960**
1.14	Maintenance and Protection of Traffic on Public Roads	86	EA	$ -	$ -	$ 4,130	$ 355,180	$ 4,130	**$ 355,180**
1.15	Gates	4	EA	$ 2,000	$ 8,000	$ 2,500	$ 10,000	$ 4,500	**$ 18,000**
1.16	Culverts / Misc. Access	8	EA	$ 750	$ 6,000	$ 1,250	$ 10,000	$ 2,000	**$ 16,000**
1.17	Concrete Washout Station	10	EA	$ -	$ -	$ 1,850	$ 18,500	$ 1,850	**$ 18,500**
TOTAL - CLEARING & ACCESS:					$ 14,000		$ 19,683,466		**$ 19,697,466**
2. FOUNDATIONS									
2.1	1-CKT 345KV VERTICAL SMALL ANGLE (1°-15°)	1	EA	$ 3,575	$ 3,575	$ 24,310	$ 24,310	$ 27,885	**$ 27,885**
2.2	1-CKT 345KV VERTICAL TANGENT (0°-1°)	1	EA	$ 2,063	$ 2,063	$ 14,025	$ 14,025	$ 16,088	**$ 16,088**
2.3	2-CKT 115KV/345KV DELTA SMALL ANGLE (1°-15°)	14	EA	$ 3,163	$ 44,275	$ 21,505	$ 301,070	$ 24,668	**$ 345,345**
2.4	2-CKT 115KV/345KV DELTA TANGENT (0°-1°)	187	EA	$ 1,925	$ 359,975	$ 13,090	$ 2,447,830	$ 15,015	**$ 2,807,805**
2.5	2-CKT 115KV/345KV DELTA TANGENT (0°-1°) HD	4	EA	$ 2,063	$ 8,250	$ 14,025	$ 56,100	$ 16,088	**$ 64,350**
2.6	2-CKT 115KV/345KV DELTA TANGENT DEADEND (0°-5°)	29	EA	$ 2,200	$ 63,800	$ 14,960	$ 433,840	$ 17,160	**$ 497,640**
2.7	1-CKT 345KV VERTICAL MEDIUM ANGLE DEADEND (15°-60°)	1	EA	$ 32,046	$ 32,046	$ 32,390	$ 32,390	$ 64,436	**$ 64,436**
2.8	2-CKT 115KV/345KV DELTA MEDIUM ANGLE DEADEND (15°-60°)	7	EA	$ 45,194	$ 316,355	$ 45,678	$ 319,743	$ 90,871	**$ 636,097**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.9	Rock Excavation Adder	2,664.0	CY	$ -	$ -	$ 2,000	$ 5,328,000	$ 2,000	**$ 5,328,000**
2.10									
2.11									
2.12									
TOTAL - FOUNDATIONS:					$ 830,338		$ 8,957,307		**$ 9,787,645**
3. STRUCTURES									
3.1	1-CKT 345KV VERTICAL SMALL ANGLE (1°-15°)	1	Structure	$ 115,897	$ 115,897	$ 69,538	$ 69,538	$ 185,435	**$ 185,435**
3.2	1-CKT 345KV VERTICAL TANGENT (0°-1°)	1	Structure	$ 82,122	$ 82,122	$ 49,273	$ 49,273	$ 131,394	**$ 131,394**
3.3	2-CKT 115KV/345KV DELTA SMALL ANGLE (1°-15°)	14	Structure	$ 88,655	$ 1,241,174	$ 53,193	$ 744,705	$ 141,848	**$ 1,985,879**
3.4	2-CKT 115KV/345KV DELTA TANGENT (0°-1°)	187	Structure	$ 44,674	$ 8,354,097	$ 26,805	$ 5,012,458	$ 71,479	**$ 13,366,555**
3.5	2-CKT 115KV/345KV DELTA TANGENT (0°-1°) HD	4	Structure	$ 57,554	$ 230,214	$ 34,532	$ 138,128	$ 92,086	**$ 368,342**
3.6	2-CKT 115KV/345KV DELTA TANGENT DEADEND (0°-5°)	29	Structure	$ 67,219	$ 1,949,354	$ 40,331	$ 1,169,613	$ 107,551	**$ 3,118,967**
3.7	1-CKT 345KV VERTICAL MEDIUM ANGLE DEADEND (15°-60°)	1	Structure	$ 143,312	$ 143,312	$ 85,987	$ 85,987	$ 229,299	**$ 229,299**
3.8	2-CKT 115KV/345KV DELTA MEDIUM ANGLE DEADEND (15°-60°)	7	Structure	$ 150,302	$ 1,052,117	$ 90,181	$ 631,270	$ 240,484	**$ 1,683,388**
3.9	Remove Existing Foundation	2,084	EA	$ -	$ -	$ 3,250	$ 6,773,000	$ 3,250	**$ 6,773,000**
3.10	Remove Existing Structure and Accessories	521	EA	$ -	$ -	$ 12,500	$ 6,512,500	$ 12,500	**$ 6,512,500**
3.11									
3.12	Install Grounding and Grounding Accessories	244	Pole	$ 506	$ 123,464	$ 5,539	$ 1,351,394	$ 6,045	**$ 1,474,858**
3.13									
3.14									
3.15									
3.16									
3.17									
TOTAL - STRUCTURES PRINCTOWN TO NEW SCOTLAND:					$ 13,291,751		$ 22,537,866		**$ 35,829,617**
4. CONDUCTOR, SHIELDWIRE, OPGW									
4.1	345kV - (1) 477kcmil 26/7 ACSS "Hawk"	1,631,599	LF	$ 1.75	$ 2,855,298	$ 5.00	$ 8,157,995	$ 6.75	**$ 11,013,293**
4.2	(1) OPGW 36 Fiber AC-33/38/571	181,289	LF	$ 1.35	$ 244,740	$ 5.00	$ 906,445	$ 6.35	**$ 1,151,185**
4.3	(1) 3/8" EHS7 Steel	181,289	LF	$ 0.47	$ 85,206	$ 5.00	$ 906,445	$ 5.47	**$ 991,651**
4.5	Remove Existing 115kV Cable From Existing Structures	130.4	Mile	$ -	$ -	$ 30,000	$ 3,912,000	$ 30,000.00	**$ 3,912,000**
4.6	Remove Existing OPGW Cable and Accessories	32.6	Mile	$ -	$ -	$ 12,000	$ 390,600	$ 12,000.00	**$ 390,600**
4.7	Remove Existing OHSW and Accessories	32.6	Mile	$ -	$ -	$ 12,000	$ 390,600	$ 12,000.00	**$ 390,600**
4.8	115kV - (1) 954kcmil 54/7 ACSS "Cardinal"	543,866	LF	$ 1.90	$ 1,033,345	$ 5.00	$ 2,719,330	$ 6.90	**$ 3,752,675**
4.9									
4.10	Rider Poles - Relocated	43	Set	$ -	$ -	$ 3,500	$ 150,500	$ 3,500.00	**$ 150,500**
4.11	Rider Poles (86 Total)	43	EA	$ 1,750	$ 75,250	$ 3,500	$ 150,500	$ 5,250.00	**$ 225,750**
TOTAL: CONDUCTOR, SHIELDWIRE, OPGW:					$ 4,293,840		$ 17,684,415		**$ 21,978,255**
5. INSULATOR, FITTINGS, HARDWARE									
5.1	345kV Tangent (1-Group of 18-Bells Each Assembly)	1,035	Assembly	$ 1,800	$ 1,863,000	$ 720	$ 745,200	$ 2,520	**$ 2,608,200**
5.2	115kV Tangent (1-Group of 9-Bells Each Assembly)	1,025	Assembly	$ 900	$ 922,500	$ 560	$ 574,000	$ 1,460	**$ 1,496,500**
5.3	345kV Dead-end & Angle Insulators (1-Group of 18-Bells Each Assembly)	555	Assembly	$ 1,800	$ 999,000	$ 720	$ 399,600	$ 2,520	**$ 1,398,600**
5.4	115kV Dead-end & Angle Insulators (1-Group of 9-Bells Each Assembly)	252	Assembly	$ 900	$ 226,800	$ 560	$ 141,120	$ 1,460	**$ 367,920**
5.5			Assembly		$ -	$ 360	$ -	$ 360	**$ -**
5.6	OPGW Assembly - Tangent	207	Assembly	$ 200	$ 41,400	$ 150	$ 31,050	$ 350	**$ 72,450**
5.7	OPGW Assembly - Angle / DE	74	Assembly	$ 250	$ 18,500	$ 150	$ 11,100	$ 400	**$ 29,600**
5.8	OHSW Assembly - Tangent	205	Assembly	$ 200	$ 41,000	$ 150	$ 30,750	$ 350	**$ 71,750**
5.9	OHSW Assembly - Angle / DE	72	Assembly	$ 250	$ 18,000	$ 150	$ 10,800	$ 400	**$ 28,800**
5.10	OPGW Splice Boxes	12	Set	$ 1,746	$ 20,954	$ 2,274	$ 27,288	$ 4,020	**$ 48,242**
5.11	OPGW Splice & Test	12	EA	$ 2,520	$ 30,240	$ 2,520	$ 30,240	$ 5,040	**$ 60,480**
5.12	Spacer - Conductor	5,414	EA	$ 50	$ 270,700	$ 35	$ 189,490	$ 85	**$ 460,190**
5.13	Vibration Dampers - Conductor	2,878	EA	$ 35	$ 100,730	$ 35	$ 100,730	$ 70	**$ 201,460**
5.14	Shieldwire / OPGW Dampers, Misc. Fittings	657	EA	$ 27	$ 17,739	$ 35	$ 22,995	$ 62	**$ 40,734**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
5.14	Guys, Anchors, and Accessories	-	EA	$ 720	$ -	$ 885	$ -	$ 1,605	**$ -**
5.15	Misc. materials (Signs and Markers)	32.3	Mile	$ 770	$ 24,871	$ 1,006	$ 32,494	$ 1,776	**$ 57,365**
TOTAL - INSULATORS, FITTINGS, HARDWARE:					$ 4,595,434		$ 2,346,857		**$ 6,942,291**
B. Transmission Line Churchtown to Pleasant Valley					$ 23,025,363		$ 71,209,911		**$ 94,235,274**
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS									
	Contractor Mobilization / Demobilization								
6.1	Mob / Demob	1	LS	$ -	$ -	$ 942,353	$ 942,353	$ 942,353	**$ 942,353**
	Project Management, Material Handling & Amenities								
6.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 5,484,634	$ 5,484,634	$ 5,484,634	**$ 5,484,634**
6.3	Utility PM and Project Oversite	1	LS		$ -	$ 942,353	$ 942,353	$ 942,353	**$ 942,353**
6.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 942,353	$ 942,353	$ 942,353	**$ 942,353**
	Engineering								
6.5	Design Engineering	1	LS	$ -	$ -	$ 4,711,764	$ 4,711,764	$ 4,711,764	**$ 4,711,764**
6.6	LiDAR	1	LS	$ -	$ -	$ 282,706	$ 282,706	$ 282,706	**$ 282,706**
6.7	Geotech	33	Location	$ -	$ -	$ 3,500	$ 115,500	$ 3,500	**$ 115,500**
6.8	Surveying/Staking	1	LS	$ -	$ -	$ 659,647	$ 659,647	$ 659,647	**$ 659,647**
	Testing & Commissioning								
6.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 40,000	$ 40,000	$ 40,000	**$ 40,000**
	Permitting and Additional Costs								
6.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.12	Warranties / LOC's	1	LS	$ -	$ -	$ 282,706	$ 282,706	$ 282,706	**$ 282,706**
6.13	Real Estate Costs (New ROW)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.14	Real Estate Costs (Incumbent Utility ROW)	1	LS	$ -	$ -	$ 5,127,000	$ 5,127,000	$ 5,127,000	**$ 5,127,000**
6.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.18	Sales Tax on Materials	1	LS	$ 1,842,029	$ 1,842,029	$ -	$ -	$ 1,842,029	**$ 1,842,029**
6.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 94,235	$ 94,235	$ 94,235	**$ 94,235**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 1,842,029		$ 19,625,250		**$ 21,467,279**

NAT - NYPA - T030 - (Segment B Enhanced)

C. Blue Stores Junction to Blue Stores Substation

Estimate Revision: 8

Total: $ 5,730,815

NAT - NYPA - T030 - (Segment B Enhanced)	*Supply*	*Installation*	*Total*
C. Blue Stores Junction to Blue Stores Substation			
1. CLEARING & ACCESS	$ -	$ 1,404,512	$ 1,404,512
2. FOUNDATIONS	$ 236,848	$ 925,954	$ 1,162,802
3. STRUCTURES	$ 596,484	$ 946,665	$ 1,543,149
4. CONDUCTOR, SHIELDWIRE, OPGW	$ 84,763	$ 387,095	$ 471,858
5. INSULATORS, FITTINGS, HARDWARE	$ 107,544	$ 56,496	$ 164,040
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 82,051	$ 902,403	$ 984,454
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 1,107,690	$ 4,623,125	$ 5,730,815
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 1,107,690	$ 4,623,125	$ 5,730,815

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
C. Blue Stores Junction to Blue Stores Substation									
1. CLEARING & ACCESS									
1.1	Clearing the ROW - Heavy (mowing & clearing)	-	Acre	$ -	$ -	$ 15,000	$ -	$ 15,000	**$ -**
1.2	Clearing the ROW - Light (mowing)	4.0	Acre	$ -	$ -	$ 5,000	$ 20,000	$ 5,000	**$ 20,000**
1.3	Permanent Access Road	2,218	LF	$ -	$ -	$ 45	$ 99,792	$ 45	**$ 99,792**
1.4	Silt Fence	11,088.0	LF	$ -	$ -	$ 4	$ 44,352	$ 4	**$ 44,352**
1.5	Matting - Access and ROW	8,870	LF	$ -	$ -	$ 70	$ 620,928	$ 70	**$ 620,928**
1.6	Matting - To Work Area	1,800.0	LF	$ -	$ -	$ 70	$ 126,000	$ 70	**$ 126,000**
1.7	Snow Removal	2.1	Mile	$ -	$ -	$ 16,000	$ 33,600	$ 16,000	**$ 33,600**
1.8	ROW Restoration	2.1	Mile	$ -	$ -	$ 10,000	$ 21,000	$ 10,000	**$ 21,000**
1.9	Work Pads	120,000.0	SF	$ -	$ -	$ 4	$ 422,400	$ 4	**$ 422,400**
1.10	Restoration for Work Pad areas	24,000.0	SF	$ -	$ -	$ 0.2	$ 3,600	$ 0	**$ 3,600**
1.11	Temporary Access Bridge	-	EA	$ -	$ -	$ 20,035	$ -	$ 20,035	**$ -**
1.12	Air Bridge	-	EA	$ -	$ -	$ 14,445	$ -	$ 14,445	**$ -**
1.13	Stabilized Construction Entrance	1	EA	$ -	$ -	$ 4,580	$ 4,580	$ 4,580	**$ 4,580**
1.14	Maintenance and Protection of Traffic on Public Roads	2	EA	$ -	$ -	$ 4,130	$ 8,260	$ 4,130	**$ 8,260**
1.15	Gates	-	EA	$ 2,000	$ -	$ 2,500	$ -	$ 4,500	**$ -**
1.16	Culverts / Misc. Access	-	EA	$ 750	$ -	$ 1,250	$ -	$ 2,000	**$ -**
1.17	Concrete Washout Station	-	EA	$ -	$ -	$ 1,850	$ -	$ 1,850	**$ -**
TOTAL - CLEARING & ACCESS:					$ -		$ 1,404,512		**$ 1,404,512**
2. FOUNDATIONS									
2.1	Drilled Pier - 115kV Single Circuit H- Pole Angle/ DE	6	EA	$ 31,225	$ 187,348	$ 31,559	$ 189,354	$ 62,784	**$ 376,702**
2.2	Direct Embed - 115kV Single Circuit H- Pole Tangent	18	EA	$ 2,750	$ 49,500	$ 18,700	$ 336,600	$ 21,450	**$ 386,100**
2.3	Rock Excavation Adder	200	CY	$ -	$ -	$ 2,000	$ 400,000	$ 2,000	**$ 400,000**
2.4									
2.5									
2.6									
2.7									
2.8									
2.9									
2.10									
2.11									
2.12									
2.13									
2.14									
2.15									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
TOTAL - FOUNDATIONS:					$ 236,848		$ 925,954		**$ 1,162,802**
3. STRUCTURES									
3.1	115kV Single Circuit H- Pole Angle/ DE	6	Structure	$ 39,822	$ 238,929	$ 23,893	$ 143,358	$ 63,714	**$ 382,287**
3.2	115kV Single Circuit H- Pole Tangent	18	Structure	$ 18,515	$ 333,266	$ 11,109	$ 199,960	$ 29,624	**$ 533,226**
3.3	Remove Existing Foundation	-	EA	$ -	$ -	$ 7,500	$ -	$ 7,500	**$ -**
3.4	Remove Existing Structure and Accessories	27	EA	$ -	$ -	$ 12,500	$ 337,500	$ 12,500	**$ 337,500**
3.5									
3.6	Install Grounding and Grounding Accessories	48	Pole	$ 506	$ 24,288	$ 5,539	$ 265,848	$ 6,045	**$ 290,136**
3.7									
3.8									
3.9									
3.10									
3.11									
3.12									
3.13									
3.14									
3.15									
TOTAL - STRUCTURES:					$ 596,484		$ 946,665		**$ 1,543,149**
4. CONDUCTOR, SHIELDWIRE, OPGW									
4.1	**345kV** - (1) 954kcmil 54/7 ACSS "Cardinal"	-	LF	$ -	$ -	$ 5.00	$ -	$ 5.00	**$ -**
4.2	(1) OPGW 36 Fiber AC-33/38/571	-	LF	$ -	$ -	$ 5.00	$ -	$ 5.00	**$ -**
4.3	(1) 3/8" EHS7 Steel	-	LF	$ -	$ -	$ 5.00	$ -	$ 5.00	**$ -**
4.4	**115kV** - (1) 795kcmil 26/7 ACSR "Drake"	34,927.0	LF	$ 1.72	$ 60,074	$ 5.00	$ 174,635	$ 6.72	**$ 234,709**
4.5	(1) OPGW 36 Fiber AC-33/38/571	11,642.0	LF	$ 1.35	$ 15,717	$ 5.00	$ 58,210	$ 6.35	**$ 73,927**
4.6	(1) 3/8" EHS7 Steel	11,642.0	LF	$ 0.47	$ 5,472	$ 5.00	$ 58,210	$ 5.47	**$ 63,682**
4.7	Remove Existing Cable	2.1	Mile	$ -	$ -	$ 30,000	$ 63,600	$ 30,000.00	**$ 63,600**
4.8	Remove Existing OPGW Cable and Accessories	-	Mile	$ -	$ -	$ 12,000	$ -	$ 12,000.00	**$ -**
4.9	Remove Existing OHSW and Accessories	2.1	Mile	$ -	$ -	$ 12,000	$ 25,440	$ 12,000.00	**$ 25,440**
4.10		-							
4.11		-							
4.12	Rider Poles (Locations)	2.0	EA	$ 1,750	$ 3,500	$ 3,500	$ 7,000	$ 5,250.00	**$ 10,500**
4.13									
TOTAL - CONDUCTOR, SHIELDWIRE, OPGW:					$ 84,763		$ 387,095		**$ 471,858**
5. INSULATOR, FITTINGS, HARDWARE									
5.1	345kV Tangent (1-Group of 18-Bells Each Assembly)	-	Assembly	$ 1,800	$ -	$ 720	$ -	$ 2,520	**$ -**
5.2	115kV Tangent (1-Group of 9-Bells Each Assembly)	54	Assembly	$ 900	$ 48,600	$ 360	$ 19,440	$ 1,260	**$ 68,040**
5.3	345kV Dead-end & Angle Insulators (1-Group of 18-Bells Each Assembly)	-	Assembly	$ 1,800	$ -	$ 720	$ -	$ 2,520	**$ -**
5.4	115kV Dead-end & Angle Insulators (1-Group of 9-Bells Each Assembly)	36	Assembly	$ 900	$ 32,400	$ 360	$ 12,960	$ 1,260	**$ 45,360**
5.5			Assembly		$ -		$ -	$ -	**$ -**
5.6	OPGW Assembly - Tangent	18	Assembly	$ 200	$ 3,600	$ 150	$ 2,700	$ 350	**$ 6,300**
5.7	OPGW Assembly - Angle / DE	12	Assembly	$ 250	$ 3,000	$ 150	$ 1,800	$ 400	**$ 4,800**
5.8	OHSW Assembly - Tangent	18	Assembly	$ 200	$ 3,600	$ 150	$ 2,700	$ 350	**$ 6,300**
5.9	OHSW Assembly - Angle / DE	12	Assembly	$ 250	$ 3,000	$ 150	$ 1,800	$ 400	**$ 4,800**
5.10	OPGW Splice Boxes	2	Set	$ 1,746	$ 3,492	$ 2,274	$ 4,548	$ 4,020	**$ 8,040**
5.11	OPGW Splice & Test	2	EA	$ 2,520	$ 5,040	$ 2,520	$ 5,040	$ 5,040	**$ 10,080**
5.12	Spacer - Conductor	-	EA	$ 50	$ -	$ 35	$ -	$ 85	**$ -**
5.13	Vibration Dampers - Conductor	72	EA	$ 35	$ 2,520	$ 35	$ 2,520	$ 70	**$ 5,040**
5.14	Shieldwire / OPGW Dampers, Misc. Fittings	25	EA	$ 27	$ 675	$ 35	$ 875	$ 62	**$ 1,550**
5.15	Guys, Anchors, and Accessories	-	EA	$ 720	$ -	$ 885	$ -	$ 1,605	**$ -**
5.16	Misc. materials (Signs and Markers)	2.1	Mile	$ 770	$ 1,617	$ 1,006	$ 2,113	$ 1,776	**$ 3,730**
5.17									
TOTAL - INSULATORS, FITTINGS, HARDWARE:					$ 107,544		$ 56,496		**$ 164,040**
C. Blue Stores Junction to Blue Stores Substation					$ 1,025,639		$ 3,720,722		**$ 4,746,361**
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
6.1	Mob / Demob	1	LS	$ -	$ -	$ 47,464	$ 47,464	$ 47,464	**$ 47,464**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
	Project Management, Material Handling & Amenities								
6.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 276,245	$ 276,245	$ 276,245	**$ 276,245**
6.3	Utility PM and Project Oversite	1	LS		$ -	$ 47,464	$ 47,464	$ 47,464	**$ 47,464**
6.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 47,464	$ 47,464	$ 47,464	**$ 47,464**
	Engineering								
6.5	Design Engineering	1	LS	$ -	$ -	$ 237,318	$ 237,318	$ 237,318	**$ 237,318**
6.6	LiDAR	1	LS	$ -	$ -	$ 14,239	$ 14,239	$ 14,239	**$ 14,239**
6.7	Geotech	2	Location	$ -	$ -	$ 3,500	$ 7,000	$ 3,500	**$ 7,000**
6.8	Surveying/Staking	1	LS	$ -	$ -	$ 33,225	$ 33,225	$ 33,225	**$ 33,225**
	Testing & Commissioning								
6.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 20,000	$ 20,000	$ 20,000	**$ 20,000**
	Permitting and Additional Costs								
6.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.12	Warranties / LOC's	1	LS	$ -	$ -	$ 14,239	$ 14,239	$ 14,239	**$ 14,239**
6.13	Real Estate Costs (New ROW)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.14	Real Estate Costs (Incumbent Utility ROW)	1	LS	$ -	$ -	$ 153,000	$ 153,000	$ 153,000	**$ 153,000**
6.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.18	Sales Tax on Materials	1	LS	$ 82,051	$ 82,051	$ -	$ -	$ 82,051	**$ 82,051**
6.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 4,746	$ 4,746	$ 4,746	**$ 4,746**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 82,051		$ 902,403		**$ 984,454**

NAT - NYPA - T030 - (Segment B Enhanced)

D. Knickerbocker 345kV Substation - Install

Estimate Revision: 8

Total: $ 18,891,529

NAT - NYPA - T030 - (Segment B Enhanced)	*Supply*	*Installation*	*Total*
D. Knickerbocker 345kV Substation - Install			
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ 277,200	$ 1,745,500	$ 2,022,700
2. SUBSTATION FOUNDATIONS	$ 1,467,421	$ 1,581,150	$ 3,048,571
3. SUBSTATION STRUCTURES	$ 710,400	$ 710,400	$ 1,420,800
4. MAJOR EQUIPTMENT	$ 600,000	$ 240,000	$ 840,000
5. SMALL EQUIPTMENT / MATERIALS	$ 1,191,500	$ 542,000	$ 1,733,500
6. CONTROL HOUSE / PANELS	$ 1,678,925	$ 1,232,275	$ 2,911,200
7. MISC ITEMS	$ 1,114,327	$ 1,890,902	$ 3,005,229
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 563,182	$ 3,346,347	$ 3,909,529
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 7,602,955	$ 11,288,574	$ 18,891,529
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 7,602,955	$ 11,288,574	$ 18,891,529

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
D. Knickerbocker 345kV Substation - Install									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	4.75	ACRES	$ -	$ -	$ 230,000	$ 1,092,500	$ 230,000	**$ 1,092,500**
1.2	Station stone within substation fence.	2,100	CY	$ 27	$ 56,700	$ 75	$ 157,500	$ 102	**$ 214,200**
1.3	Substation Fence	1,820	LF	$ 100	$ 182,000	$ 100	$ 182,000	$ 200	**$ 364,000**
1.4									
1.5									
1.6	Permanent Access Road - 20'-Wide	1,100	LF	$ 35	$ 38,500	$ 285	$ 313,500	$ 320	**$ 352,000**
1.7									
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ 277,200		$ 1,745,500		$ 2,022,700
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	3	EA	$ 14,940	$ 44,820	$ 16,000	$ 48,000	$ 30,940	**$ 92,820**
2.1b	Capacitor Bank Foundations	0	EA	$ 56,025	$ -	$ 60,000	$ -	$ 116,025	**$ -**
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	4	EA	$ 26,145	$ 104,580	$ 28,000	$ 112,000	$ 54,145	**$ 216,580**
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	6	EA	$ 26,145	$ 156,870	$ 28,000	$ 168,000	$ 54,145	**$ 324,870**
2.1e	Switch Stand Foundations	96	EA	$ 4,482	$ 430,272	$ 4,800	$ 460,800	$ 9,282	**$ 891,072**
2.1f	Station Service Transformer Stand Foundation	4	EA	$ 4,482	$ 17,928	$ 4,800	$ 19,200	$ 9,282	**$ 37,128**
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1h	Bus Support 1 Ph Foundations	63	EA	$ 4,482	$ 282,366	$ 4,800	$ 302,400	$ 9,282	**$ 584,766**
2.1j	Instrument Transformer Stand Foundations	27	EA	$ 4,482	$ 121,014	$ 4,800	$ 129,600	$ 9,282	**$ 250,614**
2.1k	Arrester Stand Foundations	9	EA	$ 4,482	$ 40,338	$ 4,800	$ 43,200	$ 9,282	**$ 83,538**
2.1m	Wave Trap Stand Foundations	3	EA	$ 4,482	$ 13,446	$ 4,800	$ 14,400	$ 9,282	**$ 27,846**
2.1n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.1p	Reactor Foundations	0	EA	$ 7,470	$ -	$ 8,000	$ -	$ 15,470	$ -
2.1q									
2.2	**230kV**								
2.2a	Circuit Breaker Foundations	0	EA	$ 11,952	$ -	$ 12,800	$ -	$ 24,752	$ -
2.2b	Capacitor Bank Foundations	0	EA	$ 44,820	$ -	$ 48,000	$ -	$ 92,820	$ -
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	$ -
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	$ -
2.2e	Switch Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2f	Station Service Transformer Stand Foundation	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2h	Bus Support 1 Ph Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2j	Instrument Transformer Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2k	Arrester Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2m	Wave Trap Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2p									
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	0	EA	$ 5,229	$ -	$ 5,600	$ -	$ 10,829	$ -
2.3b	Capacitor Bank Foundations	0	EA	$ 33,615	$ -	$ 36,000	$ -	$ 69,615	$ -
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	8	EA	$ 16,434	$ 131,472	$ 17,600	$ 140,800	$ 34,034	**$ 272,272**
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	$ -
2.3e	Switch Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3f	Fuse Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3g	Bus Support 3ph Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3h	Bus Support 1 Ph Foundations	6	EA	$ 2,988	$ 17,928	$ 3,200	$ 19,200	$ 6,188	**$ 37,128**
2.3j	Instrument Transformer Stand Foundations	6	EA	$ 2,988	$ 17,928	$ 3,200	$ 19,200	$ 6,188	**$ 37,128**
2.3k	Arrester Stand Foundations	6	EA	$ 2,988	$ 17,928	$ 3,200	$ 19,200	$ 6,188	**$ 37,128**
2.3m	Wave Trap Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment	0	EA	$ 97,110	$ -	$ 104,000	$ -	$ 201,110	$ -
2.4b	345-115kV Transformer Foundation w/ Oil Containment	0	EA	$ 74,700	$ -	$ 80,000	$ -	$ 154,700	$ -
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad	1	EA	$ 33,615	$ 33,615	$ 36,000	$ 36,000	$ 69,615	**$ 69,615**
2.5b	Generator Foundation	1	EA	$ 16,000	$ 16,000	$ 17,000	$ 17,000	$ 33,000	**$ 33,000**
2.5c	Station Service Distributuion Line - 3ph.	1	LS	$ -	$ -	$ 9,750	$ 9,750	$ 9,750	**$ 9,750**
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	4	EA	$ 5,229	$ 20,916	$ 5,600	$ 22,400	$ 10,829	**$ 43,316**
2.6b				$ -	$ -	$ -	$ -	$ -	$ -
2.6c				$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION FOUNDATIONS					$ 1,467,421		$ 1,581,150		$ 3,048,571
3. SUBSTATION STRUCTURES									
3.1	**345kV**								

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.1a	Substation A-Frame Structures - Stand alone	1	EA	$ 37,000	$ 37,000	$ 37,000	$ 37,000	$ 74,000	**$ 74,000**
3.1b	Substation A-Frame Structures - Shared Column	2	EA	$ 37,000	$ 74,000	$ 37,000	$ 74,000	$ 74,000	**$ 148,000**
3.1c	Switch Stands	16	EA	$ 14,800	$ 236,800	$ 14,800	$ 236,800	$ 29,600	**$ 473,600**
3.1d	Station Service Transformer Stand	1	EA	$ 14,800	$ 14,800	$ 14,800	$ 14,800	$ 29,600	**$ 29,600**
3.1e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.1f	Bus Support 1 Ph	63	EA	$ 3,700	$ 233,100	$ 3,700	$ 233,100	$ 7,400	**$ 466,200**
3.1g	Instrument Transformer Stand	27	EA	$ 1,850	$ 49,950	$ 1,850	$ 49,950	$ 3,700	**$ 99,900**
3.1h	Arrester Stand	9	EA	$ 1,850	$ 16,650	$ 1,850	$ 16,650	$ 3,700	**$ 33,300**
3.1j	Wave Trap Stand	3	EA	$ 7,400	$ 22,200	$ 7,400	$ 22,200	$ 14,800	**$ 44,400**
3.1k	Misc. Structures	4	EA	$ 6,475	$ 25,900	$ 6,475	$ 25,900	$ 12,950	**$ 51,800**
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	**$ -**
3.2b	Substation A-Frame Structures - Shared Column	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	**$ -**
3.2c	Switch Stands	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	**$ -**
3.2d	Station Service Transformer Stand	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	**$ -**
3.2e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.2f	Bus Support 1 Ph	0	EA	$ 2,775	$ -	$ 2,775	$ -	$ 5,550	**$ -**
3.2g	Instrument Transformer Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	**$ -**
3.2h	Arrester Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	**$ -**
3.2j	Wave Trap Stand	0	EA	$ 5,550	$ -	$ 5,550	$ -	$ 11,100	**$ -**
3.2k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	**$ -**
3.3	**115kV**								
3.3a	Substation A-Frame Structures - Stand alone	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	**$ -**
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	**$ -**
3.3c	Switch Stands	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	**$ -**
3.3d	Fuse Stand	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	**$ -**
3.3e	Bus Support 3ph	0	EA	$ 3,330	$ -	$ 3,330	$ -	$ 6,660	**$ -**
3.3f	Bus Support 1 Ph	0	EA	$ 1,850	$ -	$ 1,850	$ -	$ 3,700	**$ -**
3.3g	Instrument Transformer Stand	0	EA	$ 740	$ -	$ 740	$ -	$ 1,480	**$ -**
3.3h	Arrester Stand	0	EA	$ 740	$ -	$ 740	$ -	$ 1,480	**$ -**
3.3j	Wave Trap Stand	0	EA	$ 3,700	$ -	$ 3,700	$ -	$ 7,400	**$ -**
3.3k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	**$ -**
TOTAL - SUBSTATION STRUCTURES					$ 710,400		$ 710,400		$ 1,420,800
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	3	EA	$ 200,000	$ 600,000	$ 80,000	$ 240,000	$ 280,000	**$ 840,000**
4.1b	Capacitor Banks with Reactors	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	**$ -**
4.1c	345 kV - 230 kV Auto Transformer	0	EA	$ -	$ -	$ 750,000	$ -	$ 750,000	**$ -**
4.1d	345 kV - 115 kV Auto Transformer	0	EA			$ 750,000	$ -	$ 750,000	**$ -**
4.1e									
4.2	**230kV**								
4.2a	Circuit Breakers	0	EA	$ 115,000	$ -	$ 80,000	$ -	$ 195,000	**$ -**
4.2b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	**$ -**
4.3	**115kV**								
4.3a	Circuit Breakers	0	EA	$ 52,000	$ -	$ 60,000	$ -	$ 112,000	**$ -**
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ 60,000	$ -	$ 60,000	**$ -**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
TOTAL - MAJOR EQUIPTMENT					$ 600,000		$ 240,000		$ 840,000
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator	3	EA	$ 40,000	$ 120,000	$ 15,000	$ 45,000	$ 55,000	**$ 165,000**
5.1b	Disconnect Switches - 3ph w/ manual operator	9	EA	$ 35,000	$ 315,000	$ 17,500	$ 157,500	$ 52,500	**$ 472,500**
5.1c	VT'S	9	EA	$ 25,000	$ 225,000	$ 12,000	$ 108,000	$ 37,000	**$ 333,000**
5.1d	CT'S	9	EA	$ 13,000	$ 117,000	$ 8,000	$ 72,000	$ 21,000	**$ 189,000**
5.1e	CCVT'S	9	EA	$ 13,000	$ 117,000	$ 8,000	$ 72,000	$ 21,000	**$ 189,000**
5.1f	Arresters	9	EA	$ 6,500	$ 58,500	$ 1,500	$ 13,500	$ 8,000	**$ 72,000**
5.1g	Wave Traps	3	EA	$ 13,000	$ 39,000	$ 8,000	$ 24,000	$ 21,000	**$ 63,000**
5.1h	Station Service Transformers	1	EA	$ 200,000	$ 200,000	$ 50,000	$ 50,000	$ 250,000	**$ 250,000**
5.1j									
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator	0	EA	$ 35,000	$ -	$ 15,000	$ -	$ 50,000	**$ -**
5.2b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 30,000	$ -	$ 17,500	$ -	$ 47,500	**$ -**
5.2c	VT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	**$ -**
5.2d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	**$ -**
5.2e	CCVT'S	0	EA	$ 10,000	$ -	$ 6,000	$ -	$ 16,000	**$ -**
5.2f	Arresters	0	EA	$ 5,000	$ -	$ 6,000	$ -	$ 11,000	**$ -**
5.2g	Wave Traps	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	**$ -**
5.2h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.2j									
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	0	EA	$ 33,000	$ -	$ 15,000	$ -	$ 48,000	**$ -**
5.3b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 28,000	$ -	$ 17,500	$ -	$ 45,500	**$ -**
5.3c	VT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	**$ -**
5.3d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	**$ -**
5.3e	CCVT'S	0	EA	$ 8,000	$ -	$ 8,000	$ -	$ 16,000	**$ -**
5.3f	Arresters	0	EA	$ 3,420	$ -	$ 6,000	$ -	$ 9,420	**$ -**
5.3g	Wave Traps	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.3h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.3j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ 1,191,500		$ 542,000		$ 1,733,500
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE	1	EA	$ 286,650	$ 286,650	$ 85,000	$ 85,000	$ 371,650	**$ 371,650**
6.2	Protection and Telecom Equipment Panels	15	EA	$ 35,000	$ 525,000	$ 10,000	$ 150,000	$ 45,000	**$ 675,000**
6.3	125VDC Batteries	2	EA	$ 75,000	$ 150,000	$ 25,000	$ 50,000	$ 100,000	**$ 200,000**
6.4	Control Cables	1	LS	$ 352,275	$ 352,275	$ 352,275	$ 352,275	$ 704,550	**$ 704,550**
6.5	SCADA and Communications	1	EA	$ 50,000	$ 50,000	$ 100,000	$ 100,000	$ 150,000	**$ 150,000**
6.6	Low Voltage AC Distribution	2	EA	$ 50,000	$ 100,000	$ 100,000	$ 200,000	$ 150,000	**$ 300,000**
6.7	DC Distribution System	2	EA	$ 50,000	$ 100,000	$ 100,000	$ 200,000	$ 150,000	**$ 300,000**
6.8	Security	1	EA	$ 7,500	$ 7,500	$ 7,500	$ 7,500	$ 15,000	**$ 15,000**
6.9	Fire Alarm	1	EA	$ 7,500	$ 7,500	$ 7,500	$ 7,500	$ 15,000	**$ 15,000**
6.10	Generator	1	EA	$ 100,000	$ 100,000	$ 80,000	$ 80,000	$ 180,000	**$ 180,000**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ 1,678,925		$ 1,232,275		**$ 2,911,200**
7. MISC ITEMS									
7.1	Conduit & Cable Trench System	1,200.0	LF	$ 185.00	$ 222,000	$ 170.00	$ 204,000	$ 355	**$ 426,000**
7.2	Rigid Bus, Fittings & Insulators	3,000.0	LF	$ 125.07	$ 375,210	$ 237.10	$ 711,300	$ 362	**$ 1,086,510**
7.3	Strain Bus, Connectors & Insulators	0.0	LF	$ 39.30	$ -	$ 53.35	$ -	$ 93	**$ -**
7.4	Grounding System	16,900.0	LF	$ 6.93	$ 117,117	$ 32.58	$ 550,602	$ 40	**$ 667,719**
7.5	Strain Bus Insulators - 345kV	0	EA	$ 2,000	$ -	$ 1,050	$ -	$ 3,050	**$ -**
7.6	Strain Bus Insulators - 230kV	0	EA	$ 1,400	$ -	$ 750	$ -	$ 2,150	**$ -**
7.7	Strain Bus Insulators - 115kV	0	EA	$ 1,000	$ -	$ 550	$ -	$ 1,550	**$ -**
7.8	Low Voltage AC Station Service	1	LS	$ 50,000	$ 50,000	$ 75,000	$ 75,000	$ 125,000	**$ 125,000**
7.9	SSVT Service	1	LS	$ 45,000	$ 45,000	$ 45,000	$ 45,000	$ 90,000	**$ 90,000**
7.10	Control Conduits from Trench to Equipment	1	LS	$ 125,000	$ 125,000	$ 125,000	$ 125,000	$ 250,000	**$ 250,000**
7.11	Misc. Materials (Above and Below Ground)	1	LS	$ 180,000	$ 180,000	$ 180,000	$ 180,000	$ 360,000	**$ 360,000**
7.12									
7.13									
7.14									
7.15									
7.16									
7.17									
7.18									
7.19									
7.20									
7.21									
7.22									
7.23									
7.24									
7.25									
TOTAL - MISC ITEMS					$ 1,114,327		$ 1,890,902		$ 3,005,229
D. Knickerbocker 345kV Substation - Install					$ 7,039,773		$ 7,942,227		**$ 14,982,000**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1.0	LS	$ -	$ -	$ 149,820	$ 149,820	$ 149,820	**$ 149,820**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 871,975	$ 871,975	$ 871,975	**$ 871,975**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 149,820	$ 149,820	$ 149,820	**$ 149,820**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 149,820	$ 149,820	$ 149,820	**$ 149,820**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 1,198,560	$ 1,198,560	$ 1,198,560	**$ 1,198,560**
8.6	LiDAR	-	Mile	$ -	$ -	$ -	$ -	$ -	**$ -**
8.7	Geotech	2	EA	$ -	$ -	$ 3,500	$ 7,000	$ 3,500	**$ 7,000**
8.8	Surveying/Staking	1	Site	$ -	$ -	$ 104,874	$ 104,874	$ 104,874	**$ 104,874**
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 374,550	$ 374,550	$ 374,550	**$ 374,550**
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 44,946	$ 44,946	$ 44,946	**$ 44,946**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
8.13	Real Estate Costs (New)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.14	Real Estate Costs (Incumbent Utility)	1	LS	$ -	$ -	$ 280,000	$ 280,000	$ 280,000	**$ 280,000**
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.18	Sales Tax on Materials	1	LS	$ 563,182	$ 563,182	$ -	$ -	$ 563,182	**$ 563,182**
8.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 14,982	$ 14,982	$ 14,982	**$ 14,982**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 563,182		$ 3,346,347		**$ 3,909,529**

NAT - NYPA - T030 - (Segment B Enhanced)

E. Greenbush Substation - Removal

Estimate Revision: 8

Total: $ 71,678

NAT - NYPA - T030 - (Segment B Enhanced)	*Supply*	*Installation*	*Total*
E. Greenbush Substation - Removal			
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ -	$ -	$ -
2. SUBSTATION FOUNDATIONS	$ -	$ 12,000	$ 12,000
3. SUBSTATION STRUCTURES	$ -	$ -	$ -
4. MAJOR EQUIPTMENT	$ -	$ 7,000	$ 7,000
5. SMALL EQUIPTMENT / MATERIALS	$ -	$ 35,000	$ 35,000
6. CONTROL HOUSE / PANELS	$ -	$ 7,200	$ 7,200
7. MISC ITEMS	$ -	$ -	$ -
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ -	$ 10,478	$ 10,478
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ -	$ 71,678	$ 71,678
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ -	$ 71,678	$ 71,678

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
E. Greenbush Substation - Removal									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	0	ACRES	$ -	$ -	$ 203,000	$ -	$ 203,000	$ -
1.2	Station stone within substation fence.	0	CY	$ -	$ -	$ 75	$ -	$ 75	$ -
1.3	Substation Fence	0	LF	$ -	$ -	$ 150	$ -	$ 150	$ -
1.4									
1.5									
1.6									
1.7									
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ -		$ -		$ -
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	0	EA	$ -	$ -	$ 14,200	$ -	$ 14,200	$ -
2.1b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1e	Switch Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1f	Station Service Transformer Stand Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.1j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1k	Arrester Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1p									
2.2	**230kV**								
2.2a	Circuit Breaker Foundations	0	EA	$ -	$ -	$ 7,200	$ -	$ 7,200	$ -
2.2b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ 32,000	$ -	$ 32,000	$ -
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ 22,000	$ -	$ 22,000	$ -
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ 11,000	$ -	$ 11,000	$ -
2.2e	Switch Stand Foundations	0	EA	$ -	$ -	$ 5,200	$ -	$ 5,200	$ -
2.2f	Station Service Transformer Stand Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.2h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.2j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.2k	Arrester Stand Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.2m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2p									
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	1	EA	$ -	$ -	$ 7,200	$ 7,200	$ 7,200	**$ 7,200**
2.3b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3e	Switch Stand Foundations	0	EA	$ -	$ -	$ 5,200	$ -	$ 5,200	$ -
2.3f	Fuse Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3j	Instrument Transformer Stand Foundations	2	EA	$ -	$ -	$ 2,400	$ 4,800	$ 2,400	**$ 4,800**
2.3k	Arrester Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4b	345-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ 42,000	$ -	$ 42,000	$ -
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5b	Generator Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6b		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6c		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION FOUNDATIONS					$ -		$ 12,000		$ 12,000
3. SUBSTATION STRUCTURES									
3.1	**345kV**								
3.1a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1c	Switch Stands	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1d	Station Service Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1f	Bus Support 1 Ph	0	EA	$ -	$ -	$ 2,250	$ -	$ 2,250	$ -
3.1g	Instrument Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1h	Arrester Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1j	Wave Trap Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ 27,000	$ -	$ 27,000	$ -
3.2b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ 27,000	$ -	$ 27,000	$ -
3.2c	Switch Stands	0	EA	$ -	$ -	$ 9,750	$ -	$ 9,750	$ -
3.2d	Station Service Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2f	Bus Support 1 Ph	0	EA	$ -	$ -	$ 2,250	$ -	$ 2,250	$ -
3.2g	Instrument Transformer Stand	0	EA	$ -	$ -	$ 1,050	$ -	$ 1,050	$ -
3.2h	Arrester Stand	0	EA	$ -	$ -	$ 1,050	$ -	$ 1,050	$ -
3.2j	Wave Trap Stand	0	EA	$ -	$ -	$ 4,500	$ -	$ 4,500	$ -
3.2k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3	**115kV**								

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.3a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ 15,000	$ -	$ 15,000	$ -
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3c	Switch Stands	0	EA	$ -	$ -	$ 6,450	$ -	$ 6,450	$ -
3.3d	Fuse Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3f	Bus Support 1 Ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3g	Instrument Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3h	Arrester Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3j	Wave Trap Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION STRUCTURES					$ -		$ -		$ -
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.1b	Capacitor Banks	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.1c		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
4.1d									
4.2	**230kV**								
4.2a	Circuit Breakers	0	EA	$ -	$ -	$ 7,000	$ -	$ 7,000	$ -
4.2b	Capacitor Banks	0	EA	$ -	$ -	$ 42,000	$ -	$ 42,000	$ -
4.3	**115kV**								
4.3a	Circuit Breakers	1	EA	$ -	$ -	$ 7,000	$ 7,000	$ 7,000	**$ 7,000**
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - MAJOR EQUIPTMENT					$ -		$ 7,000		$ 7,000
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.1b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.1c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.1d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.1e	CCVT'S	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.1f	Arresters	0	EA	$ -	$ -	$ 1,500	$ -	$ 1,500	$ -
5.1g	Wave Traps	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.1h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.1j									
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.2b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.2c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2e	CCVT'S	0	EA	$ -	$ -	$ 1,500	$ -	$ 1,500	$ -
5.2f	Arresters	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.2g	Wave Traps	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.2h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2j									
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.3c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3e	CCVT'S	2	EA	$ -	$ -	$ 17,500	$ 35,000	$ 17,500	**$ 35,000**
5.3f	Arresters	0	EA	$ -	$ -	$ 1,500	$ -	$ 1,500	$ -
5.3g	Wave Traps	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ -		$ 35,000		$ 35,000
6. CONTROL HOUSE / PANELS / GENERATOR									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6.1	CONTROL HOUSE	0	EA	$ -	$ -	$ 150,000	$ -	$ 150,000	$ -
6.2	Protection and Telecom Equipment Panels	2	EA	$ -	$ -	$ 3,600	$ 7,200	$ 3,600	**$ 7,200**
6.3	125VDC Batteries	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.4	Control Cables	0	LS	$ -	$ -	$ -	$ -	$ -	$ -
6.5	SCADA and Communications	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.6	Low Voltage AC Distribution	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.7	DC Distribution System	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.8	Security	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.9	Fire Alarm	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.10	Generator	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ -		$ 7,200		**$ 7,200**
7. MISC ITEMS									
7.1	Conduit & Cable Trench System	0	EA	$ -	$ -	$ 42,000.00	$ -	$ 42,000	$ -
7.2	Rigid Bus, Fittings & Insulators	0	EA	$ -	$ -	$ 126.25	$ -	$ 126	$ -
7.3	Strain Bus, Connectors & Insulators	0	LS	$ -	$ -	$ 21,000.00	$ -	$ 21,000	$ -
7.4	Grounding System	0	EA	$ -	$ -	$ 42,000.00	$ -	$ 42,000	$ -
7.5									
7.6									
7.7									
7.8									
7.9									
7.10									
7.11									
7.12									
7.13									
7.14									
7.15									
TOTAL - MISC ITEMS					$ -		$ -		$ -
E. Greenbush Substation - Removal					$ -		$ 61,200		**$ 61,200**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1.0	LS	$ -	$ -	$ 612	$ 612	$ 612	**$ 612**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 3,562	$ 3,562	$ 3,562	**$ 3,562**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 612	$ 612	$ 612	**$ 612**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 612	$ 612	$ 612	**$ 612**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 4,896	$ 4,896	$ 4,896	**$ 4,896**
8.6	LiDAR	-	Mile	$ -	$ -	$ -	$ -	$ -	$ -
8.7	Geotech	-	Site	$ -	$ -	$ -	$ -	$ -	$ -
8.8	Surveying/Staking	-	Site	$ -	$ -	$ 428	$ -	$ 428	$ -
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	-	LS	$ -	$ -	$ 1,530	$ -	$ 1,530	$ -
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 184	$ 184	$ 184	**$ 184**
8.13	Real Estate Costs (New)	1	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.14	Real Estate Costs (Incumbent Utility)	1	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.18	Sales Tax on Materials	1	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.19	Fees for permits, including roadway, railroad, building or other local permits	-	LS		$ -	$ 61	$ -	$ 61	$ -
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ -		$ 10,478		**$ 10,478**

NAT - NYPA - T030 - (Segment B Enhanced)

F. Schodack Substation - Install

Estimate Revision: 8

Total: $ 2,597,782

NAT - NYPA - T030 - (Segment B Enhanced)	*Supply*	*Installation*	*Total*
F. Schodack Substation - Install			
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ 4,050	$ 11,250	$ 15,300
2. SUBSTATION FOUNDATIONS	$ 201,690	$ 216,000	$ 417,690
3. SUBSTATION STRUCTURES	$ 60,680	$ 60,680	$ 121,360
4. MAJOR EQUIPTMENT	$ 104,000	$ 120,000	$ 224,000
5. SMALL EQUIPTMENT / MATERIALS	$ 316,520	$ 226,000	$ 542,520
6. CONTROL HOUSE / PANELS	$ 192,815	$ 147,815	$ 340,630
7. MISC ITEMS	$ 168,552	$ 259,305	$ 427,857
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 83,865	$ 424,560	$ 508,425
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 1,132,172	$ 1,465,610	$ 2,597,782
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 1,132,172	$ 1,465,610	$ 2,597,782

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
F. Schodack Substation - Install									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	0	ACRES	$ -	$ -	$ 203,000	$ -	$ 203,000	$ -
1.2	Station stone within substation fence.	150	CY	$ 27	$ 4,050	$ 75	$ 11,250	$ 102	**$ 15,300**
1.3	Substation Fence	0	LF	$ 100	$ -	$ 100	$ -	$ 200	$ -
1.4	Permanent Access Road - 20'-Wide	0	LF	$ 35	$ -	$ 285	$ -	$ 320	$ -
1.5									
1.6									
1.7									
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ 4,050		$ 11,250		$ 15,300
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	0	EA	$ 14,940	$ -	$ 16,000	$ -	$ 30,940	$ -
2.1b	Capacitor Bank Foundations	0	EA	$ 56,025	$ -	$ 60,000	$ -	$ 116,025	$ -
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 26,145	$ -	$ 28,000	$ -	$ 54,145	$ -
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 26,145	$ -	$ 28,000	$ -	$ 54,145	$ -
2.1e	Switch Stand Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1f	Station Service Transformer Stand Foundation	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1h	Bus Support 1 Ph Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1j	Instrument Transformer Stand Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1k	Arrester Stand Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1m	Wave Trap Stand Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1p									
2.2	**230kV**								
2.2a	Circuit Breaker Foundations	0	EA	$ 11,952	$ -	$ 12,800	$ -	$ 24,752	$ -
2.2b	Capacitor Bank Foundations	0	EA	$ 44,820	$ -	$ 48,000	$ -	$ 92,820	$ -
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	$ -
2.2e	Switch Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2f	Station Service Transformer Stand Foundation	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2h	Bus Support 1 Ph Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2j	Instrument Transformer Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2k	Arrester Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2m	Wave Trap Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2p									
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	2	EA	$ 5,229	$ 10,458	$ 5,600	$ 11,200	$ 10,829	**$ 21,658**
2.3b	Capacitor Bank Foundations	0	EA	$ 33,615	$ -	$ 36,000	$ -	$ 69,615	$ -
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	8	EA	$ 16,434	$ 131,472	$ 17,600	$ 140,800	$ 34,034	**$ 272,272**
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	$ -
2.3e	Switch Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3f	Fuse Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3g	Bus Support 3ph Foundations	4	EA	$ 2,988	$ 11,952	$ 3,200	$ 12,800	$ 6,188	**$ 24,752**
2.3h	Bus Support 1 Ph Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3j	Instrument Transformer Stand Foundations	6	EA	$ 2,988	$ 17,928	$ 3,200	$ 19,200	$ 6,188	**$ 37,128**
2.3k	Arrester Stand Foundations	6	EA	$ 2,988	$ 17,928	$ 3,200	$ 19,200	$ 6,188	**$ 37,128**
2.3m	Wave Trap Stand Foundations	4	EA	$ 2,988	$ 11,952	$ 3,200	$ 12,800	$ 6,188	**$ 24,752**
2.3n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment	0	EA	$ 97,110	$ -	$ 104,000	$ -	$ 201,110	$ -
2.4b	345-115kV Transformer Foundation w/ Oil Containment	0	EA	$ 74,700	$ -	$ 80,000	$ -	$ 154,700	$ -
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad	0	EA	$ 76,194	$ -	$ 81,600	$ -	$ 157,794	$ -
2.5b	Generator Foundation	0	EA	$ 16,000	$ -	$ 17,000	$ -	$ 33,000	$ -
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	0	EA	$ 5,229	$ -	$ 5,600	$ -	$ 10,829	$ -
2.6b	60' Lightning Mast Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6c	50' Lightning Mast Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION FOUNDATIONS					$ 201,690		$ 216,000		$ 417,690
3. SUBSTATION STRUCTURES									
3.1	**345kV**								
3.1a	Substation A-Frame Structures - Stand alone	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	$ -
3.1b	Substation A-Frame Structures - Shared Column	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	$ -
3.1c	Switch Stands	0	EA	$ 14,800	$ -	$ 14,800	$ -	$ 29,600	$ -
3.1d	Station Service Transformer Stand	0	EA	$ 14,800	$ -	$ 14,800	$ -	$ 29,600	$ -
3.1e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1f	Bus Support 1 Ph	0	EA	$ 3,700	$ -	$ 3,700	$ -	$ 7,400	$ -
3.1g	Instrument Transformer Stand	0	EA	$ 1,850	$ -	$ 1,850	$ -	$ 3,700	$ -
3.1h	Arrester Stand	0	EA	$ 1,850	$ -	$ 1,850	$ -	$ 3,700	$ -
3.1j	Wave Trap Stand	0	EA	$ 7,400	$ -	$ 7,400	$ -	$ 14,800	$ -
3.1k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	$ -
3.2b	Substation A-Frame Structures - Shared Column	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	$ -
3.2c	Switch Stands	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	$ -
3.2d	Station Service Transformer Stand	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	$ -
3.2e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2f	Bus Support 1 Ph	0	EA	$ 2,775	$ -	$ 2,775	$ -	$ 5,550	$ -
3.2g	Instrument Transformer Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	$ -
3.2h	Arrester Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.2j	Wave Trap Stand	0	EA	$ 5,550	$ -	$ 5,550	$ -	$ 11,100	$ -
3.2k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
3.3	**115kV**								
3.3a	Substation A-Frame Structures - Stand alone	2	EA	$ 18,500	$ 37,000	$ 18,500	$ 37,000	$ 37,000	**$ 74,000**
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	$ -
3.3c	Switch Stands	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	$ -
3.3d	Fuse Stand	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	$ -
3.3e	Bus Support 3ph	0	EA	$ 3,330	$ -	$ 3,330	$ -	$ 6,660	$ -
3.3f	Bus Support 1 Ph	4	EA	$ 1,850	$ 7,400	$ 1,850	$ 7,400	$ 3,700	**$ 14,800**
3.3g	Instrument Transformer Stand	6	EA	$ 740	$ 4,440	$ 740	$ 4,440	$ 1,480	**$ 8,880**
3.3h	Arrester Stand	6	EA	$ 740	$ 4,440	$ 740	$ 4,440	$ 1,480	**$ 8,880**
3.3j	Wave Trap Stand	2	EA	$ 3,700	$ 7,400	$ 3,700	$ 7,400	$ 7,400	**$ 14,800**
3.3k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
TOTAL - SUBSTATION STRUCTURES					$ 60,680		$ 60,680		$ 121,360
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	0	EA	$ 200,000	$ -	$ 80,000	$ -	$ 280,000	$ -
4.1b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	$ -
4.1c	345 kV - 230 kV Auto Transformer	0	EA	$ -	$ -	$ 750,000	$ -	$ 750,000	$ -
4.1d	345 kV - 115 kV Auto Transformer	0	EA	$ -	$ -	$ 750,000	$ -	$ 750,000	$ -
4.2	**230kV**								
4.2a	Circuit Breakers	0	EA	$ 115,000	$ -	$ 80,000	$ -	$ 195,000	$ -
4.2b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	$ -
4.3	**115kV**								
4.3a	Circuit Breakers	2	EA	$ 52,000	$ 104,000	$ 60,000	$ 120,000	$ 112,000	**$ 224,000**
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ 60,000	$ -	$ 60,000	$ -
TOTAL - MAJOR EQUIPTMENT					$ 104,000		$ 120,000		$ 224,000
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator	0	EA	$ 40,000	$ -	$ 15,000	$ -	$ 55,000	$ -
5.1b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 35,000	$ -	$ 17,500	$ -	$ 52,500	$ -
5.1c	VT'S	0	EA	$ 25,000	$ -	$ 12,000	$ -	$ 37,000	$ -
5.1d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.1e	CCVT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.1f	Arresters	0	EA	$ 6,500	$ -	$ 1,500	$ -	$ 8,000	$ -
5.1g	Wave Traps	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.1h	Station Service Transformers	0	EA	$ 200,000	$ -	$ 50,000	$ -	$ 250,000	$ -
5.1j									
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator	0	EA	$ 35,000	$ -	$ 15,000	$ -	$ 50,000	$ -
5.2b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 30,000	$ -	$ 17,500	$ -	$ 47,500	$ -
5.2c	VT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2e	CCVT'S	0	EA	$ 10,000	$ -	$ 6,000	$ -	$ 16,000	$ -
5.2f	Arresters	0	EA	$ 5,000	$ -	$ 6,000	$ -	$ 11,000	$ -
5.2g	Wave Traps	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2j									
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	2	EA	$ 33,000	$ 66,000	$ 15,000	$ 30,000	$ 48,000	**$ 96,000**
5.3b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 28,000	$ -	$ 17,500	$ -	$ 45,500	$ -
5.3c	VT'S	6	EA	$ 13,000	$ 78,000	$ 8,000	$ 48,000	$ 21,000	**$ 126,000**
5.3d	CT'S	6	EA	$ 13,000	$ 78,000	$ 8,000	$ 48,000	$ 21,000	**$ 126,000**
5.3e	CCVT'S	6	EA	$ 8,000	$ 48,000	$ 8,000	$ 48,000	$ 16,000	**$ 96,000**
5.3f	Arresters	6	EA	$ 3,420	$ 20,520	$ 6,000	$ 36,000	$ 9,420	**$ 56,520**
5.3g	Wave Traps	2	EA	$ 13,000	$ 26,000	$ 8,000	$ 16,000	$ 21,000	**$ 42,000**
5.3h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ 316,520		$ 226,000		$ 542,520
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE	0	EA	$ 551,250	$ -	$ 85,000	$ -	$ 636,250	**$ -**
6.2	Protection and Telecom Equipment Panels	2	EA	$ 35,000	$ 70,000	$ 12,500	$ 25,000	$ 47,500	**$ 95,000**
6.3	125VDC Batteries	0	EA	$ 75,000	$ -	$ 25,000	$ -	$ 100,000	**$ -**
6.4	Control Cables	1	LS	$ 122,815	$ 122,815	$ 122,815	$ 122,815	$ 245,630	**$ 245,630**
6.5	SCADA and Communications	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.6	Low Voltage AC Distribution	0	EA	$ 50,000	$ -	$ 100,000	$ -	$ 150,000	**$ -**
6.7	DC Distribution System	0	EA	$ 50,000	$ -	$ 100,000	$ -	$ 150,000	**$ -**
6.8	Security	0	EA	$ 7,500	$ -	$ 7,500	$ -	$ 15,000	**$ -**
6.9	Fire Alarm	0	EA	$ 7,500	$ -	$ 7,500	$ -	$ 15,000	**$ -**
6.10	Generator	0	EA	$ 100,000	$ -	$ 80,000	$ -	$ 180,000	**$ -**
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ 192,815		$ 147,815		**$ 340,630**
7. MISC ITEMS									
7.1	Conduit & Cable Trench System	530.0	LF	$ 185.00	$ 98,050	$ 170.00	$ 90,100	$ 355	**$ 188,150**
7.2	Rigid Bus, Fittings & Insulators	0.0	LF	$ -	$ -	$ -	$ -	$ -	**$ -**
7.3	Strain Bus, Connectors & Insulators	300.0	LF	$ 39.30	$ 11,790	$ 53.35	$ 16,005	$ 93	**$ 27,795**
7.4	Grounding System	800.0	LF	$ -	$ -	$ -	$ -	$ -	**$ -**
7.5	Strain Bus Insulators - 345kV	0	EA	$ 2,000	$ -	$ 1,050	$ -	$ 3,050	**$ -**
7.6	Strain Bus Insulators - 230kV	0	EA	$ 1,400	$ -	$ 750	$ -	$ 2,150	**$ -**
7.7	Strain Bus Insulators - 115kV	24	EA	$ 1,000	$ 24,000	$ 550	$ 13,200	$ 1,550	**$ 37,200**
7.8	Low Voltage AC Station Service	0	LS	$ 50,000	$ -	$ 75,000	$ -	$ 125,000	**$ -**
7.9	SSVT Service	0	LS	$ 45,000	$ -	$ 45,000	$ -	$ 90,000	**$ -**
7.10	Control Conduits from Trench to Equipment	1	LS	$ 14,000	$ 14,000	$ 70,000	$ 70,000	$ 84,000	**$ 84,000**
7.11	Misc. Materials (Above and Below Ground)	1	LS	$ 20,712	$ 20,712	$ 70,000	$ 70,000	$ 90,712	**$ 90,712**
7.12									
7.13									
7.14									
7.15									
7.16									
7.17									
7.18									
7.19									
7.20									
7.21									
7.22									
7.23									
7.24									
7.25									
TOTAL - MISC ITEMS					$ 168,552		$ 259,305		$ 427,857
F. Schodack Substation - Install					$ 1,048,307		$ 1,041,050		**$ 2,089,357**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1.0	LS	$ -	$ -	$ 20,894	$ 20,894	$ 20,894	**$ 20,894**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 121,604	$ 121,604	$ 121,604	**$ 121,604**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 20,894	$ 20,894	$ 20,894	**$ 20,894**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 20,894	$ 20,894	$ 20,894	**$ 20,894**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 167,149	$ 167,149	$ 167,149	**$ 167,149**
8.6	LiDAR	-	Mile	$ -	$ -	$ -	$ -	$ -	**$ -**
8.7	Geotech	-	Site	$ -	$ -	$ -	$ -	$ -	**$ -**
8.8	Surveying/Staking	1	Site	$ -	$ -	$ 14,625	$ 14,625	$ 14,625	**$ 14,625**
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 52,234	$ 52,234	$ 52,234	**$ 52,234**
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 6,268	$ 6,268	$ 6,268	**$ 6,268**
8.13	Real Estate Costs (New)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.14	Real Estate Costs (Incumbent Utility)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.18	Sales Tax on Materials	1	LS	$ 83,865	$ 83,865	$ -	$ -	$ 83,865	**$ 83,865**
8.19	Fees for permits, including roadway, railroad, building or other local permits	-	LS		$ -	$ -	$ -	$ -	**$ -**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 83,865		$ 424,560		**$ 508,425**

NAT - NYPA - T030 - (Segment B Enhanced)

G. Schodack Substation - Removal

Estimate Revision: 8

Total: $ 159,518

NAT - NYPA - T030 - (Segment B Enhanced)	*Supply*	*Installation*	*Total*
G. Schodack Substation - Removal			
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ -	$ -	$ -
2. SUBSTATION FOUNDATIONS	$ -	$ 62,400	$ 62,400
3. SUBSTATION STRUCTURES	$ -	$ 73,800	$ 73,800
4. MAJOR EQUIPTMENT	$ -	$ -	$ -
5. SMALL EQUIPTMENT / MATERIALS	$ -	$ -	$ -
6. CONTROL HOUSE / PANELS	$ -	$ -	$ -
7. MISC ITEMS	$ -	$ -	$ -
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:			$ 23,318
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ -	$ 136,200	$ 159,518
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ -	$ 136,200	$ 159,518

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
G. Schodack Substation - Removal									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	0	ACRES	$ -	$ -	$ 203,000	$ -	$ 203,000	$ -
1.2	Station stone within substation fence.	0	CY	$ -	$ -	$ 75	$ -	$ 75	$ -
1.3	Substation Fence	0	LF	$ -	$ -	$ 150	$ -	$ 150	$ -
1.4									
1.5									
1.6									
1.7									
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ -		$ -		$ -
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	0	EA	$ -	$ -	$ 14,200	$ -	$ 14,200	$ -
2.1b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1e	Switch Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1f	Station Service Transformer Stand Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.1j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1k	Arrester Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1p									
2.2	**230kV**								
2.2a	Circuit Breaker Foundations	0	EA	$ -	$ -	$ 7,200	$ -	$ 7,200	$ -
2.2b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ 32,000	$ -	$ 32,000	$ -
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ 22,000	$ -	$ 22,000	$ -
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ 11,000	$ -	$ 11,000	$ -
2.2e	Switch Stand Foundations	0	EA	$ -	$ -	$ 5,200	$ -	$ 5,200	$ -
2.2f	Station Service Transformer Stand Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.2g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.2j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.2k	Arrester Stand Foundations	0	EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.2m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2p									
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3e	Switch Stand Foundations	0	EA	$ -	$ -	$ 5,200	$ -	$ 5,200	$ -
2.3f	Fuse Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3h	Bus Support 1 Ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3j	Instrument Transformer Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3k	Arrester Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3p	Steele Transmission Pole Dead Ends (1ph.) Foundations	6	EA	$ -	$ -	$ 10,400	$ 62,400	$ 10,400	**$ 62,400**
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4b	345-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ 42,000	$ -	$ 42,000	$ -
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad (40'x125')	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5b	Generator Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6b		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6c		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION FOUNDATIONS					$ -		$ 62,400		$ 62,400
3. SUBSTATION STRUCTURES									
3.1	**345kV**								
3.1a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1c	Switch Stands	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1d	Station Service Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1e	Bus Support 3ph	0	EA	$ -	$ -	$ 2,250	$ -	$ 2,250	$ -
3.1f	Bus Support 1 Ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1g	Instrument Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1h	Arrester Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1j	Wave Trap Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ 27,000	$ -	$ 27,000	$ -
3.2b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ 27,000	$ -	$ 27,000	$ -
3.2c	Switch Stands	0	EA	$ -	$ -	$ 9,750	$ -	$ 9,750	$ -
3.2d	Station Service Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2f	Bus Support 1 Ph	0	EA	$ -	$ -	$ 2,250	$ -	$ 2,250	$ -
3.2g	Instrument Transformer Stand	0	EA	$ -	$ -	$ 1,050	$ -	$ 1,050	$ -
3.2h	Arrester Stand	0	EA	$ -	$ -	$ 1,050	$ -	$ 1,050	$ -
3.2j	Wave Trap Stand	0	EA	$ -	$ -	$ 4,500	$ -	$ 4,500	$ -
3.2k	Misc. Structures	0	EA	$ -	$ -	$ -	$ -	$ -	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.3	**115kV**								
3.3a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ 15,000	$ -	$ 15,000	**$** -
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
3.3c	Switch Stands	0	EA	$ -	$ -	$ 6,450	$ -	$ 6,450	**$** -
3.3d	Fuse Stand	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
3.3e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
3.3f	Bus Support 1 Ph	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
3.3g	Instrument Transformer Stand	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
3.3h	Arrester Stand	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
3.3j	Wave Trap Stand	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
3.3k	Misc. Structures	6	EA	$ -	$ -	$ 12,300	$ 73,800	$ 12,300	**$ 73,800**
TOTAL - SUBSTATION STRUCTURES					$ -		$ 73,800		$ 73,800
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
4.1b	Capacitor Banks	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
4.1c		0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
4.1d									
4.2	**230kV**								
4.2a	Circuit Breakers	0	EA	$ -	$ -	$ 7,000	$ -	$ 7,000	**$** -
4.2b	Capacitor Banks	0	EA	$ -	$ -	$ 42,000	$ -	$ 42,000	**$** -
4.3	**115kV**								
4.3a	Circuit Breakers	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
TOTAL - MAJOR EQUIPTMENT					$ -		$ -		$ -
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	**$** -
5.1b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	**$** -
5.1c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
5.1d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
5.1e	CCVT'S	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	**$** -
5.1f	Arresters	0	EA	$ -	$ -	$ 1,500	$ -	$ 1,500	**$** -
5.1g	Wave Traps	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	**$** -
5.1h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
5.1j									
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	**$** -
5.2b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	**$** -
5.2c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
5.2d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
5.2e	CCVT'S	0	EA	$ -	$ -	$ 1,500	$ -	$ 1,500	**$** -
5.2f	Arresters	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	**$** -
5.2g	Wave Traps	0	EA	$ -	$ -	$ 2,500	$ -	$ 2,500	**$** -
5.2h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
5.2j									
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
5.3b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ -	$ -	$ 5,500	$ -	$ 5,500	**$** -
5.3c	VT'S	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
5.3d	CT'S	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
5.3e	CCVT'S	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
5.3f	Arresters	0	EA	$ -	$ -	$ 1,500	$ -	$ 1,500	**$** -
5.3g	Wave Traps	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
5.3h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
5.3j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ -		$ -		$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE	0	EA	$ -	$ -	$ 150,000	$ -	$ 150,000	$ -
6.2	Protection and Telecom Equipment Panels	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.3	125VDC Batteries	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.4	Control Cable	0	LS	$ -	$ -	$ -	$ -	$ -	$ -
6.5	SCADA and Communications	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.6	Low Voltage AC Distribution	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.7	DC Distribution System	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.8	Security	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.9	Fire Alarm	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
6.10	Generator	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ -		$ -		$ -
7. MISC ITEMS									
7.1	Conduit & Cable Trench System	0	EA	$ -	$ -	$ 42,000.00	$ -	$ 42,000	$ -
7.2	Rigid Bus, Fittings & Insulators	0	LS	$ -	$ -	$ 10,500.00	$ -	$ 10,500	$ -
7.3	Strain Bus, Connectors & Insulators	0	EA	$ -	$ -	$ 39.35	$ -	$ 39	$ -
7.4	Grounding System	0	EA	$ -	$ -	$ 42,000.00	$ -	$ 42,000	$ -
7.5									
7.6									
7.7									
7.8									
7.9									
7.10									
7.11									
7.12									
7.13									
7.14									
7.15									
TOTAL - MISC ITEMS					$ -		$ -		$ -
G. Schodack Substation - Removal					$ -		$ 136,200		**$ 136,200**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1.0	LS	$ -	$ -	$ 1,362	$ 1,362	$ 1,362	**$ 1,362**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 7,927	$ 7,927	$ 7,927	**$ 7,927**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 1,362	$ 1,362	$ 1,362	**$ 1,362**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 1,362	$ 1,362	$ 1,362	**$ 1,362**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 10,896	$ 10,896	$ 10,896	**$ 10,896**
8.6	LiDAR	-	Mile	$ -	$ -	$ -	$ -	$ -	$ -
8.7	Geotech	-	Site	$ -	$ -	$ -	$ -	$ -	$ -
8.8	Surveying/Staking	-	Site	$ -	$ -	$ 953	$ -	$ 953	$ -
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	-	LS	$ -	$ -	$ 3,405	$ -	$ 3,405	$ -
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 409	$ 409	$ 409	**$ 409**
8.13	Real Estate Costs (New)	1	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.14	Real Estate Costs (Incumbent Utility)	1	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.18	Sales Tax on Materials	1	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.19	Fees for permits, including roadway, railroad, building or other local permits	-	LS		$ -	$ 136	$ -	$ 136	$ -
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ -		$ 23,318		**$ 23,318**

NAT - NYPA - T030 - (Segment B Enhanced)

H. Churchtown Substation - Install

Estimate Revision: 8

Total: $ 18,759,615

NAT - NYPA - T030 - (Segment B Enhanced)	*Supply*	*Installation*	*Total*
H. Churchtown Substation - Install			
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ 133,850	$ 2,459,550	$ 2,593,400
2. SUBSTATION FOUNDATIONS	$ 964,690	$ 1,039,500	$ 2,004,190
3. SUBSTATION STRUCTURES	$ 416,000	$ 433,085	$ 866,170
4. MAJOR EQUIPTMENT	$ 416,000	$ 480,000	$ 896,000
5. SMALL EQUIPTMENT / MATERIALS	$ 1,384,800	$ 938,800	$ 2,323,600
6. CONTROL HOUSE / PANELS	$ 2,344,525	$ 1,517,025	$ 3,861,550
7. MISC ITEMS	$ 1,013,691	$ 1,488,020	$ 2,501,711
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 535,251	$ 3,177,743	$ 3,712,994
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 7,208,807	$ 11,533,723	$ 18,759,615
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 7,208,807	$ 11,533,723	$ 18,759,615

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
H. Churchtown Substation - Install									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	2.0	ACRES	$ -	$ -	$ 1,125,000	$ 2,250,000	$ 1,125,000	**$ 2,250,000**
1.2	Station stone within substation fence.	900	CY	$ 27	$ 24,300	$ 75	$ 67,500	$ 102	**$ 91,800**
1.3	Substation Fence	1,050	LF	$ 100	$ 105,000	$ 100	$ 105,000	$ 200	**$ 210,000**
1.4	Permanent Access Road - 20'-Wide	130	LF	$ 35	$ 4,550	$ 285	$ 37,050	$ 320	**$ 41,600**
1.5									
1.6									
1.7									
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ 133,850		$ 2,459,550		$ 2,593,400
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	0	EA	$ 14,940	$ -	$ 16,000	$ -	$ 30,940	$ -
2.1b	Capacitor Bank Foundations	0	EA	$ 56,025	$ -	$ 60,000	$ -	$ 116,025	$ -
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 26,145	$ -	$ 28,000	$ -	$ 54,145	$ -
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 26,145	$ -	$ 28,000	$ -	$ 54,145	$ -
2.1e	Switch Stand Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1f	Station Service Transformer Stand Foundation	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1h	Bus Support 1 Ph Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1j	Instrument Transformer Stand Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1k	Arrester Stand Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1m	Wave Trap Stand Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1p				$ -	$ -	$ -	$ -	$ -	$ -
2.2	**230kV**								
2.2a	Circuit Breaker Foundations	0	EA	$ 11,952	$ -	$ 12,800	$ -	$ 24,752	$ -
2.2b	Capacitor Bank Foundations	0	EA	$ 44,820	$ -	$ 48,000	$ -	$ 92,820	$ -
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	$ -
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	$ -
2.2e	Switch Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2f	Station Service Transformer Stand Foundation	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.2g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2h	Bus Support 1 Ph Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2j	Instrument Transformer Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2k	Arrester Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2m	Wave Trap Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2p									
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	8	EA	$ 5,229	$ 41,832	$ 5,600	$ 44,800	$ 10,829	**$ 86,632**
2.3b	Capacitor Bank Foundations	0	EA	$ 33,615	$ -	$ 36,000	$ -	$ 69,615	$ -
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	20	EA	$ 16,434	$ 328,680	$ 17,600	$ 352,000	$ 34,034	**$ 680,680**
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	$ -
2.3e	Switch Stand Foundations	32	EA	$ 2,988	$ 95,616	$ 3,200	$ 102,400	$ 6,188	**$ 198,016**
2.3f	Fuse Stand Foundations	2	EA	$ 2,988	$ 5,976	$ 3,200	$ 6,400	$ 6,188	**$ 12,376**
2.3g	Bus Support 3ph Foundations	40	EA	$ 2,988	$ 119,520	$ 3,200	$ 128,000	$ 6,188	**$ 247,520**
2.3h	Bus Support 1 Ph Foundations	24	EA	$ 2,988	$ 71,712	$ 3,200	$ 76,800	$ 6,188	**$ 148,512**
2.3j	Instrument Transformer Stand Foundations	51	EA	$ 2,988	$ 152,388	$ 3,200	$ 163,200	$ 6,188	**$ 315,588**
2.3k	Arrester Stand Foundations	15	EA	$ 2,988	$ 44,820	$ 3,200	$ 48,000	$ 6,188	**$ 92,820**
2.3m	Wave Trap Stand Foundations	10	EA	$ 2,988	$ 29,880	$ 3,200	$ 32,000	$ 6,188	**$ 61,880**
2.3n	Station Service Foundations	1	EA	$ 3,735	$ 3,735	$ 4,000	$ 4,000	$ 7,735	**$ 7,735**
2.3p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment	0	EA	$ 97,110	$ -	$ 104,000	$ -	$ 201,110	$ -
2.4b	345-115kV Transformer Foundation w/ Oil Containment	0	EA	$ 74,700	$ -	$ 80,000	$ -	$ 154,700	$ -
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad	1	EA	$ 33,615	$ 33,615	$ 36,000	$ 36,000	$ 69,615	**$ 69,615**
2.5b	Generator Foundation	1	EA	$ 16,000	$ 16,000	$ 17,000	$ 17,000	$ 33,000	**$ 33,000**
2.5c	Station Service Distributuion Line - 1ph.	1	LS	$ -	$ -	$ 6,500	$ 6,500	$ 6,500	**$ 6,500**
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	4	EA	$ 5,229	$ 20,916	$ 5,600	$ 22,400	$ 10,829	**$ 43,316**
2.6b		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6c		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION FOUNDATIONS					$ 964,690		$ 1,039,500		$ 2,004,190
3. SUBSTATION STRUCTURES									
3.1	**345kV**								
3.1a	Substation A-Frame Structures - Stand alone	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	$ -
3.1b	Substation A-Frame Structures - Shared Column	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	$ -
3.1c	Switch Stands	0	EA	$ 14,800	$ -	$ 14,800	$ -	$ 29,600	$ -
3.1d	Station Service Transformer Stand	0	EA	$ 14,800	$ -	$ 14,800	$ -	$ 29,600	$ -
3.1e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1f	Bus Support 1 Ph	0	EA	$ 3,700	$ -	$ 3,700	$ -	$ 7,400	$ -
3.1g	Instrument Transformer Stand	0	EA	$ 1,850	$ -	$ 1,850	$ -	$ 3,700	$ -
3.1h	Arrester Stand	0	EA	$ 1,850	$ -	$ 1,850	$ -	$ 3,700	$ -
3.1j	Wave Trap Stand	0	EA	$ 7,400	$ -	$ 7,400	$ -	$ 14,800	$ -
3.1k	Lightning Masts - 70'	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	$ -
3.2b	Substation A-Frame Structures - Shared Column	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	$ -
3.2c	Switch Stands	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	$ -
3.2d	Station Service Transformer Stand	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	$ -
3.2e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2f	Bus Support 1 Ph	0	EA	$ 2,775	$ -	$ 2,775	$ -	$ 5,550	$ -
3.2g	Instrument Transformer Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	$ -
3.2h	Arrester Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	$ -
3.2j	Wave Trap Stand	0	EA	$ 5,550	$ -	$ 5,550	$ -	$ 11,100	$ -
3.2k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.3	**115kV**								
3.3a	Substation A-Frame Structures - Stand alone	5	EA	$ 18,500	$ 92,500	$ 18,500	$ 92,500	$ 37,000	**$ 185,000**
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	**$ -**
3.3c	Switch Stands	16	EA	$ 7,955	$ 127,280	$ 7,955	$ 127,280	$ 15,910	**$ 254,560**
3.3d	Fuse Stand	1	EA	$ 7,955	$ 7,955	$ 7,955	$ 7,955	$ 15,910	**$ 15,910**
3.3e	Bus Support 3ph	20	EA	$ 3,330	$ 66,600	$ 3,330	$ 66,600	$ 6,660	**$ 133,200**
3.3f	Bus Support 1 Ph	24	EA	$ 1,850	$ 44,400	$ 1,850	$ 44,400	$ 3,700	**$ 88,800**
3.3g	Instrument Transformer Stand	51	EA	$ 740	$ 37,740	$ 740	$ 37,740	$ 1,480	**$ 75,480**
3.3h	Arrester Stand	15	EA	$ 740	$ 11,100	$ 740	$ 11,100	$ 1,480	**$ 22,200**
3.3j	Wave Trap Stand	5	EA	$ 3,700	$ 18,500	$ 3,700	$ 18,500	$ 7,400	**$ 37,000**
3.3k	Misc. Structures	4	EA	$ 6,475	$ 25,900	$ 6,475	$ 25,900	$ 12,950	**$ 51,800**
3.3l	Station Service Transformer Support Stand	1	EA	$ 1,110	$ 1,110	$ 1,110	$ 1,110	$ 2,220	**$ 2,220**
TOTAL - SUBSTATION STRUCTURES					$ 433,085		$ 433,085		$ 866,170
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	0	EA	$ 200,000	$ -	$ 80,000	$ -	$ 280,000	**$ -**
4.1b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	**$ -**
4.1c	345 kV - 230 kV Auto Transformer	0	EA	$ -	$ -	$ 750,000	$ -	$ 750,000	**$ -**
4.1d	345 kV - 115 kV Auto Transformer	0	EA	$ -	$ -	$ 750,000	$ -	$ 750,000	**$ -**
4.2	**230kV**								
4.2a	Circuit Breakers	0	EA	$ 115,000	$ -	$ 80,000	$ -	$ 195,000	**$ -**
4.2b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	**$ -**
4.3	**115kV**								
4.3a	Circuit Breakers	8	EA	$ 52,000	$ 416,000	$ 60,000	$ 480,000	$ 112,000	**$ 896,000**
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ 60,000	$ -	$ 60,000	**$ -**
TOTAL - MAJOR EQUIPTMENT					$ 416,000		$ 480,000		$ 896,000
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator	0	EA	$ 40,000	$ -	$ 15,000	$ -	$ 55,000	**$ -**
5.1b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 35,000	$ -	$ 17,500	$ -	$ 52,500	**$ -**
5.1c	VT'S	0	EA	$ 25,000	$ -	$ 12,000	$ -	$ 37,000	**$ -**
5.1d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	**$ -**
5.1e	CCVT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	**$ -**
5.1f	Arresters	0	EA	$ 6,500	$ -	$ 1,500	$ -	$ 8,000	**$ -**
5.1g	Wave Traps	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	**$ -**
5.1h	Station Service Transformers	0	EA	$ 200,000	$ -	$ 50,000	$ -	$ 250,000	**$ -**
5.1j									
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator	0	EA	$ 35,000	$ -	$ 15,000	$ -	$ 50,000	**$ -**
5.2b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 30,000	$ -	$ 17,500	$ -	$ 47,500	**$ -**
5.2c	VT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	**$ -**
5.2d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	**$ -**
5.2e	CCVT'S	0	EA	$ 10,000	$ -	$ 6,000	$ -	$ 16,000	**$ -**
5.2f	Arresters	0	EA	$ 5,000	$ -	$ 6,000	$ -	$ 11,000	**$ -**
5.2g	Wave Traps	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	**$ -**
5.2h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.2j									
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	5	EA	$ 33,000	$ 165,000	$ 15,000	$ 75,000	$ 48,000	**$ 240,000**
5.3b	Disconnect Switches - 3ph w/ manual operator	16	EA	$ 28,000	$ 448,000	$ 17,500	$ 280,000	$ 45,500	**$ 728,000**
5.3c	VT'S	15	EA	$ 13,000	$ 195,000	$ 8,000	$ 120,000	$ 21,000	**$ 315,000**
5.3d	CT'S	15	EA	$ 13,000	$ 195,000	$ 8,000	$ 120,000	$ 21,000	**$ 315,000**
5.3e	CCVT'S	21	EA	$ 8,000	$ 168,000	$ 8,000	$ 168,000	$ 16,000	**$ 336,000**
5.3f	Arresters	15	EA	$ 3,420	$ 51,300	$ 6,000	$ 90,000	$ 9,420	**$ 141,300**
5.3g	Wave Traps	5	EA	$ 13,000	$ 65,000	$ 8,000	$ 40,000	$ 21,000	**$ 105,000**
5.3h	Station Service Transformers	1	EA	$ 75,000	$ 75,000	$ 35,000	$ 35,000	$ 110,000	**$ 110,000**
5.3j	Fuses	3	EA	$ 7,500	$ 22,500	$ 3,600	$ 10,800	$ 11,100	**$ 33,300**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ 1,384,800		$ 938,800		$ 2,323,600
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE	1	EA	$ 292,500	$ 292,500	$ 85,000	$ 85,000	$ 377,500	**$ 377,500**
6.2	Protection and Telecom Equipment Panels	30	EA	$ 35,000	$ 1,050,000	$ 10,000	$ 300,000	$ 45,000	**$ 1,350,000**
6.3	125VDC Batteries	2	EA	$ 75,000	$ 150,000	$ 25,000	$ 50,000	$ 100,000	**$ 200,000**
6.4	Control Cables	1	LS	$ 487,025	$ 487,025	$ 487,025	$ 487,025	$ 974,050	**$ 974,050**
6.5	SCADA and Communications	1	EA	$ 50,000	$ 50,000	$ 100,000	$ 100,000	$ 150,000	**$ 150,000**
6.6	Low Voltage AC Distribution	2	EA	$ 50,000	$ 100,000	$ 100,000	$ 200,000	$ 150,000	**$ 300,000**
6.7	DC Distribution System	2	EA	$ 50,000	$ 100,000	$ 100,000	$ 200,000	$ 150,000	**$ 300,000**
6.8	Security	1	EA	$ 7,500	$ 7,500	$ 7,500	$ 7,500	$ 15,000	**$ 15,000**
6.9	Fire Alarm	1	EA	$ 7,500	$ 7,500	$ 7,500	$ 7,500	$ 15,000	**$ 15,000**
6.10	Generator	1	EA	$ 100,000	$ 100,000	$ 80,000	$ 80,000	$ 180,000	**$ 180,000**
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ 2,344,525		$ 1,517,025		**$ 3,861,550**
7. MISC ITEMS									
7.1	Conduit & Cable Trench System	1,300.0	LF	$ 185.00	$ 240,500	$ 170.00	$ 221,000	$ 355	**$ 461,500**
7.2	Rigid Bus, Fittings & Insulators	1,800.0	LF	$ 125.07	$ 225,126	$ 237.10	$ 426,780	$ 362	**$ 651,906**
7.3	Strain Bus, Connectors & Insulators	1,000.0	LF	$ 39.30	$ 39,300	$ 53.35	$ 53,350	$ 93	**$ 92,650**
7.4	Grounding System	10,500.0	LF	$ 6.93	$ 72,765	$ 32.58	$ 342,090	$ 40	**$ 414,855**
7.5	Strain Bus Insulators - 345kV	0	EA	$ 2,000	$ -	$ 1,050	$ -	$ 3,050	**$ -**
7.6	Strain Bus Insulators - 230kV	0	EA	$ 1,400	$ -	$ 750	$ -	$ 2,150	**$ -**
7.7	Strain Bus Insulators - 115kV	36	EA	$ 1,000	$ 36,000	$ 550	$ 19,800	$ 1,550	**$ 55,800**
7.8	Low Voltage AC Station Service	1	LS	$ 50,000	$ 50,000	$ 75,000	$ 75,000	$ 125,000	**$ 125,000**
7.9	SSVT Service	1	LS	$ 45,000	$ 45,000	$ 45,000	$ 45,000	$ 90,000	**$ 90,000**
7.10	Control Conduits from Trench to Equipment	1	LS	$ 125,000	$ 125,000	$ 125,000	$ 125,000	$ 250,000	**$ 250,000**
7.11	Misc. Materials (Above and Below Ground)	1	LS	$ 180,000	$ 180,000	$ 180,000	$ 180,000	$ 360,000	**$ 360,000**
7.12									
7.13									
7.14									
7.15									
7.16									
7.17									
7.18									
7.19									
7.20									
7.21									
7.22									
7.23									
7.24									
7.25									
TOTAL - MISC ITEMS					$ 1,013,691		$ 1,488,020		$ 2,501,711
H. Churchtown Substation - Install					$ 6,690,641		$ 8,355,980		**$ 15,046,621**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1.0	LS	$ -	$ -	$ 150,466	$ 150,466	$ 150,466	**$ 150,466**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 875,736	$ 875,736	$ 875,736	**$ 875,736**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 150,466	$ 150,466	$ 150,466	**$ 150,466**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 150,466	$ 150,466	$ 150,466	**$ 150,466**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 1,203,730	$ 1,203,730	$ 1,203,730	**$ 1,203,730**
8.6	LiDAR	-	Mile	$ -	$ -	$ -	$ -	$ -	**$ -**
8.7	Geotech	4	Site	$ -	$ -	$ 3,500	$ 14,000	$ 3,500	**$ 14,000**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
8.8	Surveying/Staking	1	Site	$ -	$ -	$ 105,326	$ 105,326	$ 105,326	**$ 105,326**
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 376,166	$ 376,166	$ 376,166	**$ 376,166**
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 45,140	$ 45,140	$ 45,140	**$ 45,140**
8.13	Real Estate Costs (New)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.14	Real Estate Costs (Incumbent Utility)	1	LS	$ -	$ -	$ 91,200	$ 91,200	$ 91,200	**$ 91,200**
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.18	Sales Tax on Materials	1	LS	$ 535,251	$ 535,251	$ -	$ -	$ 535,251	**$ 535,251**
8.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 15,047	$ 15,047	$ 15,047	**$ 15,047**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 535,251		$ 3,177,743		**$ 3,712,994**

NAT - NYPA - T030 - (Segment B Enhanced)

I. Churchtown Substation - Removal

Estimate Revision: 8

Total: $ 1,128,661

NAT - NYPA - T030 - (Segment B Enhanced)	*Supply*	*Installation*	*Total*
I. Churchtown Substation - Removal			
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ -	$ 111,000	$ 111,000
2. SUBSTATION FOUNDATIONS	$ -	$ 340,400	$ 340,400
3. SUBSTATION STRUCTURES	$ -	$ 252,600	$ 252,600
4. MAJOR EQUIPTMENT	$ -	$ 24,600	$ 24,600
5. SMALL EQUIPTMENT / MATERIALS	$ -	$ 60,000	$ 60,000
6. CONTROL HOUSE / PANELS	$ -	$ 150,000	$ 150,000
7. MISC ITEMS	$ -	$ 25,078	$ 25,078
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ -	$ 164,983	$ 164,983
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ -	$ 1,128,661	$ 1,128,661
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ -	$ 1,128,661	$ 1,128,661

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
I. Churchtown Substation - Removal									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.		ACRES	$ -	$ -	$ 250,000	$ -	$ 250,000	$ -
1.2	Station stone within substation fence.		CY	$ -	$ -	$ 75	$ -	$ 75	$ -
1.3	Substation Fence	740	LF	$ -	$ -	$ 150	$ 111,000	$ 150	**$ 111,000**
1.4									
1.5									
1.6									
1.7									
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ -		$ 111,000		$ 111,000
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations		EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1b	Capacitor Bank Foundations		EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)		EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)		EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1e	Switch Stand Foundations		EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1f	Station Service Transformer Stand Foundation		EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1g	Bus Support 3ph Foundations		EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1h	Bus Support 1 Ph Foundations		EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1j	Instrument Transformer Stand Foundations		EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1k	Arrester Stand Foundations		EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1m	Wave Trap Stand Foundations		EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1n	Reactor Foundations		EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1p									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.2	**230kV**								
2.2a	Circuit Breaker Foundations		EA	$ -	$ -	$ 7,200	$ -	$ 7,200	**$** -
2.2b	Capacitor Bank Foundations		EA	$ -	$ -	$ 32,000	$ -	$ 32,000	**$** -
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)		EA	$ -	$ -	$ 22,000	$ -	$ 22,000	**$** -
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)		EA	$ -	$ -	$ 11,000	$ -	$ 11,000	**$** -
2.2e	Switch Stand Foundations		EA	$ -	$ -	$ 5,200	$ -	$ 5,200	**$** -
2.2f	Station Service Transformer Stand Foundation		EA	$ -	$ -	$ -	$ -	$ -	**$** -
2.2g	Bus Support 3ph Foundations		EA	$ -	$ -	$ -	$ -	$ -	**$** -
2.2h	Bus Support 1 Ph Foundations		EA	$ -	$ -	$ 2,400	$ -	$ 2,400	**$** -
2.2j	Instrument Transformer Stand Foundations		EA	$ -	$ -	$ 2,400	$ -	$ 2,400	**$** -
2.2k	Arrester Stand Foundations		EA	$ -	$ -	$ 2,400	$ -	$ 2,400	**$** -
2.2m	Wave Trap Stand Foundations		EA	$ -	$ -	$ -	$ -	$ -	**$** -
2.2n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
2.2p									
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	2	EA	$ -	$ -	$ 15,000	$ 30,000	$ 15,000	**$ 30,000**
2.3b	Capacitor Bank Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
2.3e	Switch Stand Foundations	18	EA	$ -	$ -	$ 5,200	$ 93,600	$ 5,200	**$ 93,600**
2.3f	Fuse Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
2.3g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
2.3h	Bus Support 1 Ph Foundations	6	EA	$ -	$ -	$ 5,200	$ 31,200	$ 5,200	**$ 31,200**
2.3j	Instrument Transformer Stand Foundations	3	EA	$ -	$ -	$ 5,200	$ 15,600	$ 5,200	**$ 15,600**
2.3k	Arrester Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
2.3m	Wave Trap Stand Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
2.3n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$** -
2.3p	Steel Transmission Pole Deadend Fnds (1Ph)	9	EA	$ -	$ -	$ 15,000	$ 135,000	$ 15,000	**$ 135,000**
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment		EA	$ -	$ -	$ -	$ -	$ -	**$** -
2.4b	345-115kV Transformer Foundation w/ Oil Containment		EA	$ -	$ -	$ -	$ -	$ -	**$** -
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment		EA	$ -	$ -	$ 67,500	$ -	$ 67,500	**$** -
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment		EA	$ -	$ -	$ -	$ -	$ -	**$** -
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad	1	EA	$ -	$ -	$ 14,200	$ 14,200	$ 14,200	**$ 14,200**
2.5b	Generator Foundation		EA	$ -	$ -	$ -	$ -	$ -	**$** -
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	4	EA	$ -	$ -	$ 5,200	$ 20,800	$ 5,200	**$ 20,800**
2.6b				$ -	$ -	$ -	$ -	$ -	**$** -
2.6c				$ -	$ -	$ -	$ -	$ -	**$** -
TOTAL - SUBSTATION FOUNDATIONS					$ -		$ 340,400		$ 340,400
3. SUBSTATION STRUCTURES									
3.1	**345kV**								
3.1a	Substation A-Frame Structures - Stand alone		EA	$ -	$ -	$ -	$ -	$ -	**$** -
3.1b	Substation A-Frame Structures - Shared Column		EA	$ -	$ -	$ -	$ -	$ -	**$** -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.1c	Switch Stands		EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1d	Station Service Transformer Stand		EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1e	Bus Support 3ph		EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1f	Bus Support 1 Ph		EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1g	Instrument Transformer Stand		EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1h	Arrester Stand		EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1j	Wave Trap Stand		EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1k	Misc. Structures		EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone		EA	$ -	$ -	$ 27,000	$ -	$ 27,000	$ -
3.2b	Substation A-Frame Structures - Shared Column		EA	$ -	$ -	$ 27,000	$ -	$ 27,000	$ -
3.2c	Switch Stands		EA	$ -	$ -	$ 9,750	$ -	$ 9,750	$ -
3.2d	Station Service Transformer Stand		EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2e	Bus Support 3ph		EA	$ -	$ -	$ 2,250	$ -	$ 2,250	$ -
3.2f	Bus Support 1 Ph		EA	$ -	$ -	$ 2,250	$ -	$ 2,250	$ -
3.2g	Instrument Transformer Stand		EA	$ -	$ -	$ 1,050	$ -	$ 1,050	$ -
3.2h	Arrester Stand		EA	$ -	$ -	$ 1,050	$ -	$ 1,050	$ -
3.2j	Wave Trap Stand		EA	$ -	$ -	$ 4,500	$ -	$ 4,500	$ -
3.2k	Misc. Structures		EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3	**115kV**								
3.3a	Substation A-Frame Structures - Stand alone	0	EA	$ -	$ -	$ 15,000	$ -	$ 15,000	$ -
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3c	Switch Stands	9	EA	$ -	$ -	$ 6,450	$ 58,050	$ 6,450	**$ 58,050**
3.3d	Fuse Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3f	Bus Support 1 Ph	6	EA	$ -	$ -	$ 6,450	$ 38,700	$ 6,450	**$ 38,700**
3.3g	Instrument Transformer Stand	3	EA	$ -	$ -	$ 6,450	$ 19,350	$ 6,450	**$ 19,350**
3.3h	Arrester Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3j	Wave Trap Stand	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3k	Steel Transmission Pole Deadend (1Ph)	9	EA	$ -	$ -	$ 12,300	$ 110,700	$ 12,300	**$ 110,700**
3.4l	Lightning Mast	4	EA	$ -	$ -	$ 6,450	$ 25,800	$ 6,450	**$ 25,800**
TOTAL - SUBSTATION STRUCTURES					$ -		$ 252,600		$ 252,600
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers		EA	$ -	$ -	$ -	$ -	$ -	$ -
4.1b	Capacitor Banks		EA	$ -	$ -	$ -	$ -	$ -	$ -
4.1c			EA	$ -	$ -	$ -	$ -	$ -	$ -
4.1d									
4.2	**230kV**								
4.2a	Circuit Breakers		EA	$ -	$ -	$ 7,000	$ -	$ 7,000	$ -
4.2b	Capacitor Banks		EA	$ -	$ -	$ 42,000	$ -	$ 42,000	$ -
4.3	**115kV**								
4.3a	Circuit Breakers	2	EA	$ -	$ -	$ 12,300	$ 24,600	$ 12,300	**$ 24,600**
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - MAJOR EQUIPTMENT					$ -		$ 24,600		$ 24,600
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
5.1a	Line Switches - 3ph w/ motor operator		EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.1b	Disconnect Switches - 3ph w/ manual operator		EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.1c	VT'S		EA	$ -	$ -	$ -	$ -	$ -	$ -
5.1d	CT'S		EA	$ -	$ -	$ -	$ -	$ -	$ -
5.1e	CCVT'S		EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.1f	Arresters		EA	$ -	$ -	$ 1,500	$ -	$ 1,500	$ -
5.1g	Wave Traps		EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.1h	Station Service Transformers		EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator		EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.2b	Disconnect Switches - 3ph w/ manual operator		EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.2c	VT'S		EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2d	CT'S		EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2e	CCVT'S		EA	$ -	$ -	$ 1,500	$ -	$ 1,500	$ -
5.2f	Arresters		EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.2g	Wave Traps		EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.2h	Station Service Transformers		EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	3	EA	$ -	$ -	$ 5,500	$ 16,500	$ 5,500	**$ 16,500**
5.3b	Disconnect Switches - 3ph w/ manual operator	3	EA	$ -	$ -	$ 5,500	$ 16,500	$ 5,500	**$ 16,500**
5.3c	VT'S	3	EA	$ -	$ -	$ 1,500	$ 4,500	$ 1,500	**$ 4,500**
5.3d	CT'S	3	EA	$ -	$ -	$ 1,500	$ 4,500	$ 1,500	**$ 4,500**
5.3e	CCVT'S	3	EA	$ -	$ -	$ 1,500	$ 4,500	$ 1,500	**$ 4,500**
5.3f	Arresters	9	EA	$ -	$ -	$ 1,500	$ 13,500	$ 1,500	**$ 13,500**
5.3g	Wave Traps	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ -		$ 60,000		$ 60,000
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE	1	EA	$ -	$ -	$ 150,000	$ 150,000	$ 150,000	**$ 150,000**
6.2	Protection and Telecom Equipment Panels		EA	$ -	$ -	$ -	$ -	$ -	$ -
6.3	125VDC Batteries		EA	$ -	$ -	$ -	$ -	$ -	$ -
6.4	Control Cables		LS	$ -	$ -	$ -	$ -	$ -	$ -
6.5	SCADA and Communications		EA	$ -	$ -	$ -	$ -	$ -	$ -
6.6	Low Voltage AC Distribution		EA	$ -	$ -	$ -	$ -	$ -	$ -
6.7	DC Distribution System		EA	$ -	$ -	$ -	$ -	$ -	$ -
6.8	Security		EA	$ -	$ -	$ -	$ -	$ -	$ -
6.9	Fire Alarm		EA	$ -	$ -	$ -	$ -	$ -	$ -
6.10	Generator		EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ -		$ 150,000		**$ 150,000**
7. MISC ITEMS									
7.1	Conduit & Cable Trench System		LS	$ -	$ -	$ 42,000.00	$ -	$ 42,000	$ -
7.2	Rigid Bus, Fittings & Insulators	535.0	LF	$ -	$ -	$ 46.88	$ 25,078	$ 47	**$ 25,078**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
7.3	Strain Bus, Connectors & Insulators		LF	$ -	$ -	$ 39.35	$ -	$ 39	$ -
7.4	Grounding System		LS	$ -	$ -	$ 42,000.00	$ -	$ 42,000	$ -
7.5									
7.6									
7.7									
7.8									
7.9									
7.10									
7.11									
7.12									
7.13									
7.14									
7.15									
TOTAL - MISC ITEMS					$ -		$ 25,078		$ 25,078
I. Churchtown Substation - Removal					$ -		$ 963,678		**$ 963,678**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1.0	LS	$ -	$ -	$ 9,637	$ 9,637	$ 9,637	**$ 9,637**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 56,088	$ 56,088	$ 56,088	**$ 56,088**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 9,637	$ 9,637	$ 9,637	**$ 9,637**
8.4	Site Accommodation, Facilities, Storage	1.0	LS	$ -	$ -	$ 9,637	$ 9,637	$ 9,637	**$ 9,637**
	Engineering								
8.5	Design Engineering	1.0	LS	$ -	$ -	$ 77,094	$ 77,094	$ 77,094	**$ 77,094**
8.6	LiDAR	-	Mile	$ -	$ -	$ -	$ -	$ -	$ -
8.7	Geotech	-	Site	$ -	$ -	$ -	$ -	$ -	$ -
8.8	Surveying/Staking	-	Site	$ -	$ -	$ 6,746	$ -	$ 6,746	$ -
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	-	LS	$ -	$ -	$ 24,092	$ -	$ 24,092	$ -
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 2,891	$ 2,891	$ 2,891	**$ 2,891**
8.13	Real Estate Costs (New)	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.14	Real Estate Costs (Incumbent Utility)	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.18	Sales Tax on Materials	1.0	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.19	Fees for permits, including roadway, railroad, building or other local permits	-	LS		$ -	$ 964	$ -	$ 964	$ -
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ -		$ 164,983		**$ 164,983**

NAT - NYPA - T030 - (Segment B Enhanced) — **J. Pleasant Valley Substation - Install**

Estimate Revision: 8 — **Total: $ 3,490,140**

NAT - NYPA - T030 - (Segment B Enhanced)	*Supply*	*Installation*	*Total*
J. Pleasant Valley Substation - Install			
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ 11,025	$ 14,625	$ 25,650
2. SUBSTATION FOUNDATIONS	$ 151,466	$ 160,900	$ 312,366
3. SUBSTATION STRUCTURES	$ 44,400	$ 44,400	$ 88,800
4. MAJOR EQUIPTMENT	$ 200,000	$ 80,000	$ 280,000
5. SMALL EQUIPTMENT / MATERIALS	$ 260,500	$ 129,000	$ 389,500
6. CONTROL HOUSE / PANELS	$ 560,900	$ 253,400	$ 814,300
7. MISC ITEMS	$ 409,950	$ 457,275	$ 867,225
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 131,059	$ 581,239	$ 712,299
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 1,769,300	$ 1,720,839	$ 3,490,140
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 1,769,300	$ 1,720,839	$ 3,490,140

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
J. Pleasant Valley Substation - Install									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	0	ACRES	$ -	$ -	$ 203,000	$ -	$ 203,000	$ -
1.2	Station stone within substation fence.	75	CY	$ 27	$ 2,025	$ 75	$ 5,625	$ 102	**$ 7,650**
1.3	Substation Fence	90	LF	$ 100	$ 9,000	$ 100	$ 9,000	$ 200	**$ 18,000**
1.4	Permanent Access Road - 20'-Wide	0	LF	$ 35	$ -	$ 285	$ -	$ 320	$ -
1.5									
1.6									
1.7									
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ 11,025		$ 14,625		$ 25,650
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	1	EA	$ 14,940	$ 14,940	$ 16,000	$ 16,000	$ 30,940	**$ 30,940**
2.1b	Capacitor Bank Foundations	0	EA	$ 56,025	$ -	$ 60,000	$ -	$ 116,025	$ -
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 26,145	$ -	$ 28,000	$ -	$ 54,145	$ -
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 26,145	$ -	$ 28,000	$ -	$ 54,145	$ -
2.1e	Switch Stand Foundations	6	EA	$ 4,482	$ 26,892	$ 4,800	$ 28,800	$ 9,282	**$ 55,692**
2.1f	Station Service Transformer Stand Foundation	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1h	Bus Support 1 Ph Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	$ -
2.1j	Instrument Transformer Stand Foundations	9	EA	$ 4,482	$ 40,338	$ 4,800	$ 43,200	$ 9,282	**$ 83,538**
2.1k	Arrester Stand Foundations	3	EA	$ 4,482	$ 13,446	$ 4,800	$ 14,400	$ 9,282	**$ 27,846**
2.1m	Wave Trap Stand Foundations	1	EA	$ 4,482	$ 4,482	$ 4,800	$ 4,800	$ 9,282	**$ 9,282**
2.1n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1p									
2.2	**230kV**								
2.2a	Circuit Breaker Foundations	0	EA	$ 11,952	$ -	$ 12,800	$ -	$ 24,752	$ -
2.2b	Capacitor Bank Foundations	0	EA	$ 44,820	$ -	$ 48,000	$ -	$ 92,820	$ -
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	$ -
2.2e	Switch Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2f	Station Service Transformer Stand Foundation	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2h	Bus Support 1 Ph Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2j	Instrument Transformer Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2k	Arrester Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2m	Wave Trap Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2p									
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	0	EA	$ 5,229	$ -	$ 5,600	$ -	$ 10,829	$ -
2.3b	Capacitor Bank Foundations	0	EA	$ 33,615	$ -	$ 36,000	$ -	$ 69,615	$ -
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	$ -
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	$ -
2.3e	Switch Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3f	Fuse Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3g	Bus Support 3ph Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3h	Bus Support 1 Ph Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3j	Instrument Transformer Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3k	Arrester Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3m	Wave Trap Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment	0	EA	$ 97,110	$ -	$ 104,000	$ -	$ 201,110	$ -
2.4b	345-115kV Transformer Foundation w/ Oil Containment	0	EA	$ 74,700	$ -	$ 80,000	$ -	$ 154,700	$ -
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5	**Control House Foundations / Pad**								
2.5a	Control House Addition Foundation (25-ft x 50-ft)	1	EA	$ 51,368	$ 51,368	$ 53,700	$ 53,700	$ 105,068	**$ 105,068**
2.5b	Generator Foundation	0	EA	$ 16,000	$ -	$ 17,000	$ -	$ 33,000	$ -
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	0	EA	$ 5,229	$ -	$ 5,600	$ -	$ 10,829	$ -
2.6b		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6c		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION FOUNDATIONS					$ 151,466		$ 160,900		$ 312,366
3. SUBSTATION STRUCTURES									
3.1	**345kV**								
3.1a	Substation A-Frame Structures - Stand alone	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	$ -
3.1b	Substation A-Frame Structures - Shared Column	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	$ -
3.1c	Switch Stands	1	EA	$ 14,800	$ 14,800	$ 14,800	$ 14,800	$ 29,600	**$ 29,600**
3.1d	Station Service Transformer Stand	0	EA	$ 14,800	$ -	$ 14,800	$ -	$ 29,600	$ -
3.1e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1f	Bus Support 1 Ph	0	EA	$ 3,700	$ -	$ 3,700	$ -	$ 7,400	$ -
3.1g	Instrument Transformer Stand	9	EA	$ 1,850	$ 16,650	$ 1,850	$ 16,650	$ 3,700	**$ 33,300**
3.1h	Arrester Stand	3	EA	$ 1,850	$ 5,550	$ 1,850	$ 5,550	$ 3,700	**$ 11,100**
3.1j	Wave Trap Stand	1	EA	$ 7,400	$ 7,400	$ 7,400	$ 7,400	$ 14,800	**$ 14,800**
3.1k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	$ -
3.2b	Substation A-Frame Structures - Shared Column	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	$ -
3.2c	Switch Stands	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	$ -
3.2d	Station Service Transformer Stand	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	$ -
3.2e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2f	Bus Support 1 Ph	0	EA	$ 2,775	$ -	$ 2,775	$ -	$ 5,550	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.2g	Instrument Transformer Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	$ -
3.2h	Arrester Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	$ -
3.2j	Wave Trap Stand	0	EA	$ 5,550	$ -	$ 5,550	$ -	$ 11,100	$ -
3.2k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
3.3	**115kV**								
3.3a	Substation A-Frame Structures - Stand alone	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	$ -
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	$ -
3.3c	Switch Stands	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	$ -
3.3d	Fuse Stand	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	$ -
3.3e	Bus Support 3ph	0	EA	$ 3,330	$ -	$ 3,330	$ -	$ 6,660	$ -
3.3f	Bus Support 1 Ph	0	EA	$ 1,850	$ -	$ 1,850	$ -	$ 3,700	$ -
3.3g	Instrument Transformer Stand	0	EA	$ 740	$ -	$ 740	$ -	$ 1,480	$ -
3.3h	Arrester Stand	0	EA	$ 740	$ -	$ 740	$ -	$ 1,480	$ -
3.3j	Wave Trap Stand	0	EA	$ 3,700	$ -	$ 3,700	$ -	$ 7,400	$ -
3.3k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
TOTAL - SUBSTATION STRUCTURES					$ 44,400		$ 44,400		$ 88,800
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	1	EA	$ 200,000	$ 200,000	$ 80,000	$ 80,000	$ 280,000	**$ 280,000**
4.1b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	$ -
4.1c	345 kV - 230 kV Auto Transformer	0	EA	$ -	$ -	$ 750,000	$ -	$ 750,000	$ -
4.1d	345 kV - 115 kV Auto Transformer	0	EA	$ -	$ -	$ 750,000	$ -	$ 750,000	$ -
4.2	**230kV**								
4.2a	Circuit Breakers	0	EA	$ 115,000	$ -	$ 80,000	$ -	$ 195,000	$ -
4.2b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	$ -
4.3	**115kV**								
4.3a	Circuit Breakers	0	EA	$ 52,000	$ -	$ 60,000	$ -	$ 112,000	$ -
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ 60,000	$ -	$ 60,000	$ -
TOTAL - MAJOR EQUIPTMENT					$ 200,000		$ 80,000		$ 280,000
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator	1	EA	$ 40,000	$ 40,000	$ 15,000	$ 15,000	$ 55,000	**$ 55,000**
5.1b	Disconnect Switches - 3ph w/ manual operator	1	EA	$ 35,000	$ 35,000	$ 17,500	$ 17,500	$ 52,500	**$ 52,500**
5.1c	VT'S	3	EA	$ 25,000	$ 75,000	$ 12,000	$ 36,000	$ 37,000	**$ 111,000**
5.1d	CT'S	3	EA	$ 13,000	$ 39,000	$ 8,000	$ 24,000	$ 21,000	**$ 63,000**
5.1e	CCVT'S	3	EA	$ 13,000	$ 39,000	$ 8,000	$ 24,000	$ 21,000	**$ 63,000**
5.1f	Arresters	3	EA	$ 6,500	$ 19,500	$ 1,500	$ 4,500	$ 8,000	**$ 24,000**
5.1g	Wave Traps	1	EA	$ 13,000	$ 13,000	$ 8,000	$ 8,000	$ 21,000	**$ 21,000**
5.1h	Station Service Transformers	0	EA	$ 200,000	$ -	$ 50,000	$ -	$ 250,000	$ -
5.1j									
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator	0	EA	$ 35,000	$ -	$ 15,000	$ -	$ 50,000	$ -
5.2b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 30,000	$ -	$ 17,500	$ -	$ 47,500	$ -
5.2c	VT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2e	CCVT'S	0	EA	$ 10,000	$ -	$ 6,000	$ -	$ 16,000	$ -
5.2f	Arresters	0	EA	$ 5,000	$ -	$ 6,000	$ -	$ 11,000	$ -
5.2g	Wave Traps	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2j									
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	0	EA	$ 33,000	$ -	$ 15,000	$ -	$ 48,000	$ -
5.3b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 28,000	$ -	$ 17,500	$ -	$ 45,500	$ -
5.3c	VT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.3d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.3e	CCVT'S	0	EA	$ 8,000	$ -	$ 8,000	$ -	$ 16,000	$ -
5.3f	Arresters	0	EA	$ 3,420	$ -	$ 6,000	$ -	$ 9,420	$ -
5.3g	Wave Traps	0	EA	$ -	$ -	$ -	$ -	$ -	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
5.3h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ 260,500		$ 129,000		$ 389,500
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE Addition (25-ft x 50-ft)	1	EA	$ 325,000	$ 325,000	$ 85,000	$ 85,000	$ 410,000	**$ 410,000**
6.2	Protection and Telecom Equipment Panels	3	EA	$ 35,000	$ 105,000	$ 12,500	$ 37,500	$ 47,500	**$ 142,500**
6.3	125VDC Batteries	0	EA	$ 75,000	$ -	$ 25,000	$ -	$ 100,000	**$ -**
6.4	Control Cables	1	LS	$ 130,900	$ 130,900	$ 130,900	$ 130,900	$ 261,800	**$ 261,800**
6.5	SCADA and Communications	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.6	Low Voltage AC Distribution	0	EA	$ 50,000	$ -	$ 100,000	$ -	$ 150,000	**$ -**
6.7	DC Distribution System	0	EA	$ 50,000	$ -	$ 100,000	$ -	$ 150,000	**$ -**
6.8	Security	0	EA	$ 7,500	$ -	$ 7,500	$ -	$ 15,000	**$ -**
6.9	Fire Alarm	0	EA	$ 7,500	$ -	$ 7,500	$ -	$ 15,000	**$ -**
6.10	Generator	0	EA	$ 100,000	$ -	$ 80,000	$ -	$ 180,000	**$ -**
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ 560,900		$ 253,400		**$ 814,300**
7. MISC ITEMS									
7.1	Conduit & Cable Trench System	800	LF	$ 185.00	$ 148,000	$ 170.00	$ 136,000	$ 355	**$ 284,000**
7.2	Rigid Bus, Fittings & Insulators	0	LS	$ 15,008.40	$ -	$ 56,904.00	$ -	$ 71,912	**$ -**
7.3	Strain Bus, Connectors & Insulators	2,500	LF	$ 13.38	$ 33,450	$ 39.35	$ 98,375	$ 53	**$ 131,825**
7.4	Grounding System	0	LF	$ 6.93	$ -	$ 32.58	$ -	$ 40	**$ -**
7.5	Strain Bus Insulators - 345kV	38	EA	$ 2,000	$ 76,000	$ 1,050	$ 39,900	$ 3,050	**$ 115,900**
7.6	Strain Bus Insulators - 230kV	0	EA	$ 1,400	$ -	$ 750	$ -	$ 2,150	**$ -**
7.7	Strain Bus Insulators - 115kV	0	EA	$ 1,000	$ -	$ 550	$ -	$ 1,550	**$ -**
7.8	Low Voltage AC Station Service	0	LS	$ 50,000	$ -	$ 75,000	$ -	$ 125,000	**$ -**
7.9	SSVT Service	0	LS	$ 45,000	$ -	$ 45,000	$ -	$ 90,000	**$ -**
7.10	Control Conduits from Trench to Equipment	1	LS	$ 62,500	$ 62,500	$ 75,000	$ 75,000	$ 137,500	**$ 137,500**
7.11	Misc. Materials (Above and Below Ground)	1	LS	$ 90,000	$ 90,000	$ 108,000	$ 108,000	$ 198,000	**$ 198,000**
7.12									
7.13									
7.14									
7.15									
7.16									
7.17									
7.18									
7.19									
7.20									
7.21									
7.22									
7.23									
7.24									
7.25									
TOTAL - MISC ITEMS					$ 409,950		$ 457,275		$ 867,225
J. Pleasant Valley Substation - Install					$ 1,638,241		$ 1,139,600		**$ 2,777,841**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1.0	LS	$ -	$ -	$ 27,778	$ 27,778	$ 27,778	**$ 27,778**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 161,675	$ 161,675	$ 161,675	**$ 161,675**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 27,778	$ 27,778	$ 27,778	**$ 27,778**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 27,778	$ 27,778	$ 27,778	**$ 27,778**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 222,227	$ 222,227	$ 222,227	**$ 222,227**
8.6	LiDAR	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.7	Geotech	4	EA	$ -	$ -	$ 3,500	$ 14,000	$ 3,500	**$ 14,000**
8.8	Surveying/Staking	1	Site	$ -	$ -	$ 19,445	$ 19,445	$ 19,445	**$ 19,445**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 69,446	$ 69,446	$ 69,446	**$ 69,446**
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 8,334	$ 8,334	$ 8,334	**$ 8,334**
8.13	Real Estate Costs (New)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.14	Real Estate Costs (Incumbent Utility)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.18	Sales Tax on Materials	1	LS	$ 131,059	$ 131,059	$ -	$ -	$ 131,059	**$ 131,059**
8.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 2,778	$ 2,778	$ 2,778	**$ 2,778**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 131,059		$ 581,239		**$ 712,299**

NAT - NYPA - T030 - (Segment B Enhanced)

N. Interconnection Milan Station

Estimate Revision: 8

Total: $ 742,607

NAT - NYPA - T030 - (Segment B Enhanced)	*Supply*	*Installation*	*Total*
N. Interconnection Milan Station			
1. CLEARING & ACCESS	$ -	$ 121,100	$ 121,100
2. FOUNDATIONS	$ 84,375	$ 135,279	$ 219,654
3. STRUCTURES	$ 130,328	$ 88,667	$ 218,994
4. CONDUCTOR, SHIELDWIRE, OPGW	$ -	$ -	$ -
5. INSULATORS, FITTINGS, HARDWARE	$ 45,200	$ 18,480	$ 63,680
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 20,792	$ 98,387	$ 119,179
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 280,695	$ 461,912	$ 742,607
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 280,695	$ 461,912	$ 742,607

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
N. Interconnection Milan Station									
1. CLEARING & ACCESS									
1.1	Clearing the ROW - Heavy (mowing & clearing)	-	Acre	$ -	$ -	$ 15,000	$ -	$ 15,000	$ -
1.2	Clearing the ROW - Light (mowing)	1.0	Acre	$ -	$ -	$ 5,000	$ 5,000	$ 5,000	**$ 5,000**
1.3	Access Road	-	LF	$ -	$ -	$ 45	$ -	$ 45	$ -
1.4	Silt Fence	500.0	LF	$ -	$ -	$ 4	$ 2,000	$ 4	**$ 2,000**
1.5	Matting - Access and ROW	500.0	LF	$ -	$ -	$ 70	$ 35,000	$ 70	**$ 35,000**
1.6	Matting - To Work Area	525.0	LF	$ -	$ -	$ 70	$ 36,750	$ 70	**$ 36,750**
1.7	Snow Removal	-	LS	$ -	$ -	$ 516,800	$ -	$ 516,800	$ -
1.8	ROW Restoration	0.5	Mile	$ -	$ -	$ 10,000	$ 5,000	$ 10,000	**$ 5,000**
1.9	Work Pads	10,000.0	SF	$ -	$ -	$ 4	$ 35,200	$ 4	**$ 35,200**
1.10	Restoration for Work Pad areas	2,000.0	SF	$ -	$ -	$ 0.2	$ 300	$ 0	**$ 300**
1.11	Temporary Access Bridge	-	EA	$ -	$ -	$ 20,035	$ -	$ 20,035	$ -
1.12	Air Bridge	-	EA	$ -	$ -	$ 14,445	$ -	$ 14,445	$ -
1.13	Stabilized Construction Entrance	-	EA	$ -	$ -	$ 4,580	$ -	$ 4,580	$ -
1.14	Maintenance and Protection of Traffic on Public Roads	-	EA	$ -	$ -	$ 4,130	$ -	$ 4,130	$ -
1.15	Gates	-	EA	$ 2,000	$ -	$ 2,500	$ -	$ 4,500	$ -
1.16	Culverts / Misc. Access	-	EA	$ 750	$ -	$ 1,250	$ -	$ 2,000	$ -
1.17	Concrete Washout Station	1	EA	$ -	$ -	$ 1,850	$ 1,850	$ 1,850	**$ 1,850**
1.18					$ -		$ -		$ -
1.19					$ -		$ -		$ -
1.20	Crushed Rock	0	CY	$ 27	$ -	$ 75	$ -	$ 102	$ -
TOTAL - CLEARING & ACCESS					$ -		$ 121,100		$ 121,100
2. FOUNDATIONS									
2.1	Drilled Pier - 115kV Single Circuit Single Pole Angle/DE	2	EA	$ 42,187	$ 84,375	$ 42,639	$ 85,279	$ 84,827	**$ 169,654**
2.2									
2.3									
2.4									
2.5	Rock Excavation Adder	25	CY	$ -	$ -	$ 2,000	$ 50,000	$ 2,000	**$ 50,000**
2.6					$ -		$ -		$ -
2.7					$ -		$ -		$ -
2.8					$ -		$ -		$ -
2.9					$ -		$ -		$ -
2.10					$ -		$ -		$ -
2.11					$ -		$ -		$ -
2.12					$ -		$ -		$ -
2.13					$ -		$ -		$ -
2.14					$ -		$ -		$ -
2.15					$ -		$ -		$ -
TOTAL - FOUNDATIONS					$ 84,375		$ 135,279		$ 219,654

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3. STRUCTURES									
3.1	115kV Single Circuit Single Pole Angle/DE	2	Structure	$ 64,658	$ 129,316	$ 38,795	$ 77,590	$ 103,453	**$ 206,905**
3.2									
3.3									
3.4					$ -		$ -		**$ -**
3.5	Install Grounding and Grounding Accessories	2	Pole	$ 506	$ 1,012	$ 5,539	$ 11,077	$ 6,045	**$ 12,089**
3.6					$ -		$ -		**$ -**
3.7					$ -		$ -		**$ -**
3.8					$ -		$ -		**$ -**
3.9					$ -		$ -		**$ -**
3.10					$ -		$ -		**$ -**
3.11					$ -		$ -		**$ -**
3.12					$ -		$ -		**$ -**
3.13					$ -		$ -		**$ -**
3.14					$ -		$ -		**$ -**
3.15					$ -		$ -		**$ -**
TOTAL - STRUCTURES					$ 130,328		$ 88,667		$ 218,994
4. CONDUCTOR, SHIELDWIRE, OPGW									
4.1	345kV - (2) 954kcmil 54/7 ACSS "Cardinal"	-	LF	$ 1.90	$ -	$ 5.00	$ -	$ 6.90	**$ -**
4.2	(1) OPGW 36 Fiber AC-33/38/571	-	LF	$ 1.35	$ -	$ 5.00	$ -	$ 6.35	**$ -**
4.3	(1) 3/8" EHS7 Steel	-	LF	$ 0.47	$ -	$ 5.00	$ -	$ 5.47	**$ -**
4.5	Remove Existing 115kV Cable From Existing Structures	-	Mile	$ -	$ -	$ 30,000	$ -	$ 30,000.00	**$ -**
4.6	Remove Existing OPGW Cable	-	Mile	$ -	$ -	$ 12,000	$ -	$ 12,000.00	**$ -**
4.7	Remove Existing EH7	-	Mile	$ -	$ -	$ 12,000	$ -	$ 12,000.00	**$ -**
4.8	115kV - (1) 954kcmil 54/7 ACSS "Cardinal"	-	LF	$ 1.90	$ -	$ 5.00	$ -	$ 6.90	**$ -**
4.9		-							
4.10	Rider Poles - Relocated	-	Set	$ -	$ -	$ 3,500	$ -	$ 3,500.00	**$ -**
4.11	Rider Poles	-	EA	$ 1,750	$ -	$ 3,500	$ -	$ 5,250.00	**$ -**
TOTAL: CONDUCTOR, SHIELDWIRE, OPGW:					$ -		$ -		**$ -**
5. INSULATOR, FITTINGS, HARDWARE									
5.1	345kV Tangent (1-Group of 18-Bells Each Assembly)	-	Assembly	$ 1,800	$ -	$ 720	$ -	$ 2,520	**$ -**
5.2	115kV Tangent (1-Group of 9-Bells Each Assembly)	-	Assembly	$ 900	$ -	$ 560	$ -	$ 1,460	**$ -**
5.3	345kV Dead-end & Angle Insulators (1-Group of 18-Bells Each Assembly)	24	Assembly	$ 1,800	$ 43,200	$ 720	$ 17,280	$ 2,520	**$ 60,480**
5.4	115kV Dead-end & Angle Insulators (1-Group of 9-Bells Each Assembly)	-	Assembly	$ 900	$ -	$ 560	$ -	$ 1,460	**$ -**
5.5		-	Assembly		$ -		$ -	$ -	**$ -**
5.6	OPGW Assembly - Tangent	-	Assembly	$ 200	$ -	$ 150	$ -	$ 350	**$ -**
5.7	OPGW Assembly - Angle / DE	4	Assembly	$ 250	$ 1,000	$ 150	$ 600	$ 400	**$ 1,600**
5.8	OHSW Assembly - Tangent	-	Assembly	$ 200	$ -	$ 150	$ -	$ 350	**$ -**
5.9	OHSW Assembly - Angle / DE	4	Assembly	$ 250	$ 1,000	$ 150	$ 600	$ 400	**$ 1,600**
5.10	OPGW Splice Boxes	-	Set	$ 1,746	$ -	$ 2,274	$ -	$ 4,020	**$ -**
5.11	OPGW Splice & Test	-	EA	$ 2,520	$ -	$ 2,520	$ -	$ 5,040	**$ -**
5.12	Spacer - Conductor	-	EA	$ 50	$ -	$ 35	$ -	$ 85	**$ -**
5.13	Vibration Dampers - Conductor	-	EA	$ 35	$ -	$ 35	$ -	$ 70	**$ -**
5.14	Shieldwire / OPGW Dampers, Misc. Fittings	-	EA	$ 27	$ -	$ 35	$ -	$ 62	**$ -**
5.15	Guys, Anchors, and Accessories	-	EA	$ 720	$ -	$ 885	$ -	$ 1,605	**$ -**
5.16	Misc. materials (Signs and Markers)	-	Mile	$ 770	$ -	$ 1,006	$ -	$ 1,776	**$ -**
5.17									
5.18									
5.19									
5.20									
TOTAL - INSULATOR, FITTINGS, HARDWARE					$ 45,200		$ 18,480		$ 63,680
N. Interconnection Milan Station					$ 259,903		$ 363,525		$ 623,428
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
6.1	Mob / Demob	1	LS	$ -	$ -	$ 6,234	$ 6,234	$ 6,234	**$ 6,234**
	Project Management, Material Handling & Amenities								
6.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 36,284	$ 36,284	$ 36,284	**$ 36,284**
6.3	Utility PM and Project Oversite	1	LS		$ -	$ 6,234	$ 6,234	$ 6,234	**$ 6,234**
6.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 6,234	$ 6,234	$ 6,234	**$ 6,234**
	Engineering								
6.5	Design Engineering	1	LS	$ -	$ -	$ 31,171	$ 31,171	$ 31,171	**$ 31,171**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6.6	LiDAR	1	LS	$ -	$ -	$ 1,870	$ 1,870	$ 1,870	**$ 1,870**
6.7	Geotech	1	Location	$ -	$ -	$ 3,500	$ 3,500	$ 3,500	**$ 3,500**
6.8	Surveying/Staking	1	LS	$ -	$ -	$ 4,364	$ 4,364	$ 4,364	**$ 4,364**
	Testing & Commissioning								
6.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
	Permitting and Additional Costs								
6.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.12	Warranties / LOC's	1	LS	$ -	$ -	$ 1,870	$ 1,870	$ 1,870	**$ 1,870**
6.13	Real Estate Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.14	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.15	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.16		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.17	Sales Tax on Materials	1	LS	$ 20,792	$ 20,792	$ -	$ -	$ 20,792	**$ 20,792**
6.18	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 623	$ 623	$ 623	**$ 623**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 20,792		$ 98,387		**$ 119,179**

NAT - NYPA - T030 - (Segment B Enhanced)

L. Interconnection Knickerbocker Station

Estimate Revision: 8

Total: $ 1,487,366

NAT - NYPA - T030 - (Segment B Enhanced)	*Supply*	*Installation*	*Total*
L. Interconnection Knickerbocker Station			
1. CLEARING & ACCESS	$ -	$ 482,850	$ 482,850
2. FOUNDATIONS	$ 89,638	$ 195,674	$ 285,311
3. STRUCTURES	$ 249,838	$ 197,017	$ 446,855
4. CONDUCTOR, SHIELDWIRE, OPGW	$ -	$ -	$ -
5. INSULATORS, FITTINGS, HARDWARE	$ 29,466	$ 17,754	$ 47,220
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 29,515	$ 195,614	$ 225,130
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 398,458	$ 1,088,909	$ 1,487,366
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 398,458	$ 1,088,909	$ 1,487,366

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
L. Interconnection Knickerbocker Station									
1. CLEARING & ACCESS									
1.1	Clearing the ROW - Heavy (mowing & clearing)	-	Acre	$ -	$ -	$ 15,000	$ -	$ 15,000	**$ -**
1.2	Clearing the ROW - Light (mowing)	2.0	Acre	$ -	$ -	$ 5,000	$ 10,000	$ 5,000	**$ 10,000**
1.3	Access Road	-	LF	$ -	$ -	$ 45	$ -	$ 45	**$ -**
1.4	Silt Fence	3,500.0	LF	$ -	$ -	$ 4	$ 14,000	$ 4	**$ 14,000**
1.5	Matting - Access and ROW	3,500.0	LF	$ -	$ -	$ 70	$ 245,000	$ 70	**$ 245,000**
1.6	Matting - To Work Area	675.0	LF	$ -	$ -	$ 70	$ 47,250	$ 70	**$ 47,250**
1.7	Snow Removal	-	LS	$ -	$ -	$ 516,800	$ -	$ 516,800	**$ -**
1.8	ROW Restoration	0.5	Mile	$ -	$ -	$ 10,000	$ 5,000	$ 10,000	**$ 5,000**
1.9	Work Pads	45,000.0	SF	$ -	$ -	$ 4	$ 158,400	$ 4	**$ 158,400**
1.10	Restoration for Work Pad areas	9,000.0	SF	$ -	$ -	$ 0.2	$ 1,350	$ 0	**$ 1,350**
1.11	Temporary Access Bridge	-	EA	$ -	$ -	$ 20,035	$ -	$ 20,035	**$ -**
1.12	Air Bridge	-	EA	$ -	$ -	$ 14,445	$ -	$ 14,445	**$ -**
1.13	Stabilized Construction Entrance	-	EA	$ -	$ -	$ 4,580	$ -	$ 4,580	**$ -**
1.14	Maintenance and Protection of Traffic on Public Roads	-	EA	$ -	$ -	$ 4,130	$ -	$ 4,130	**$ -**
1.15	Gates	-	EA	$ 2,000	$ -	$ 2,500	$ -	$ 4,500	**$ -**
1.16	Culverts / Misc. Access	-	EA	$ 750	$ -	$ 1,250	$ -	$ 2,000	**$ -**
1.17	Concrete Washout Station	1	EA	$ -	$ -	$ 1,850	$ 1,850	$ 1,850	**$ 1,850**
1.18					$ -		$ -		**$ -**
1.19					$ -		$ -		**$ -**
1.20	Crushed Rock	0	CY	$ 27	$ -	$ 75	$ -	$ 102	**$ -**
TOTAL - CLEARING & ACCESS					$ -		$ 482,850		$ 482,850
2. FOUNDATIONS									
2.1	1-CKT 115KV 3-POLE TANGENT DEADEND (0°-5°)	6	EA	$ 3,025	$ 18,150	$ 20,570	$ 123,420	$ 23,595	**$ 141,570**
2.2	1-CKT 115KV 3-POLE LARGE ANGLE DEADEND (60°-90°)	3	EA	$ 23,829	$ 71,488	$ 24,085	$ 72,254	$ 47,914	**$ 143,741**
2.3									
2.4									
2.5	Rock Excavation Adder	-	CY	$ -	$ -	$ 2,000	$ -	$ 2,000	**$ -**
2.6					$ -		$ -		**$ -**
2.7					$ -		$ -		**$ -**
2.8					$ -		$ -		**$ -**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.9					$ -		$ -		$ -
2.10					$ -		$ -		$ -
2.11					$ -		$ -		$ -
2.12					$ -		$ -		$ -
2.13					$ -		$ -		$ -
2.14					$ -		$ -		$ -
2.15					$ -		$ -		$ -
TOTAL - FOUNDATIONS					$ 89,638		$ 195,674		$ 285,311
3. STRUCTURES									
3.1	1-CKT 115KV 3-POLE TANGENT DEADEND (0°-5°)	2	Structure	$ 76,177	$ 152,355	$ 45,706	$ 91,413	$ 121,884	**$ 243,768**
3.2	1-CKT 115KV 3-POLE LARGE ANGLE DEADEND (60°-90°)	1	Structure	$ 92,929	$ 92,929	$ 55,758	$ 55,758	$ 148,687	**$ 148,687**
3.3									
3.4					$ -		$ -		$ -
3.5	Install Grounding and Grounding Accessories	9	Pole	$ 506	$ 4,554	$ 5,539	$ 49,847	$ 6,045	**$ 54,401**
3.6					$ -		$ -		$ -
3.7					$ -		$ -		$ -
3.8					$ -		$ -		$ -
3.9					$ -		$ -		$ -
3.10					$ -		$ -		$ -
3.11					$ -		$ -		$ -
3.12					$ -		$ -		$ -
3.13					$ -		$ -		$ -
3.14					$ -		$ -		$ -
3.15					$ -		$ -		$ -
TOTAL - STRUCTURES					$ 249,838		$ 197,017		$ 446,855
4. CONDUCTOR, SHIELDWIRE, OPGW									
4.1	345kV - (1) 954kcmil 54/7 ACSS "Cardinal"	-	LF	$ 1.90	$ -	$ 5.00	$ -	$ 6.90	$ -
4.2	(1) OPGW 36 Fiber AC-33/38/571	-	LF	$ 1.35	$ -	$ 5.00	$ -	$ 6.35	$ -
4.3	(1) 3/8" EHS7 Steel	-	LF	$ 0.47	$ -	$ 5.00	$ -	$ 5.47	$ -
4.5	Remove Existing 115kV Cable From Existing Structures	-	Mile	$ -	$ -	$ 30,000	$ -	$ 30,000.00	$ -
4.6	Remove Existing OPGW Cable	-	Mile	$ -	$ -	$ 12,000	$ -	$ 12,000.00	$ -
4.7	Remove Existing EH7	-	Mile	$ -	$ -	$ 12,000	$ -	$ 12,000.00	$ -
4.8	115kV - (1) 954kcmil 54/7 ACSS "Cardinal"	-	LF	$ 1.90	$ -	$ 5.00	$ -	$ 6.90	$ -
4.9		-							
4.10	Rider Poles - Relocated	-	Set	$ -	$ -	$ 3,500	$ -	$ 3,500.00	$ -
4.11	Rider Poles	-	EA	$ 1,750	$ -	$ 3,500	$ -	$ 5,250.00	$ -
TOTAL: CONDUCTOR, SHIELDWIRE, OPGW:					$ -		$ -		$ -
5. INSULATOR, FITTINGS, HARDWARE									
5.1	345kV Tangent (1-Group of 18-Bells Each Assembly)	-	Assembly	$ 1,800	$ -	$ 720	$ -	$ 2,520	$ -
5.2	115kV Tangent (1-Group of 9-Bells Each Assembly)	12	Assembly	$ 900	$ 10,800	$ 560	$ 6,720	$ 1,460	**$ 17,520**
5.3	345kV Dead-end & Angle Insulators (1-Group of 18-Bells Each Assembly)	7	Assembly	$ 1,800	$ 12,600	$ 720	$ 5,040	$ 2,520	**$ 17,640**
5.4	115kV Dead-end & Angle Insulators (1-Group of 9-Bells Each Assembly)		Assembly		$ -		$ -	$ -	$ -
5.5			Assembly	$ 900	$ -	$ 360	$ -	$ 1,260	$ -
5.6	OPGW Assembly - Tangent	2	Assembly	$ 200	$ 400	$ 150	$ 300	$ 350	**$ 700**
5.7	OPGW Assembly - Angle / DE	2	Assembly	$ 250	$ 500	$ 150	$ 300	$ 400	**$ 800**
5.8	OHSW Assembly - Tangent	2	Assembly	$ 200	$ 400	$ 150	$ 300	$ 350	**$ 700**
5.9	OHSW Assembly - Angle / DE	2	Assembly	$ 250	$ 500	$ 150	$ 300	$ 400	**$ 800**
5.10	OPGW Splice Boxes	1	Set	$ 1,746	$ 1,746	$ 2,274	$ 2,274	$ 4,020	**$ 4,020**
5.11	OPGW Splice & Test	1	EA	$ 2,520	$ 2,520	$ 2,520	$ 2,520	$ 5,040	**$ 5,040**
5.12	Spacer - Conductor	-	EA	$ 50	$ -	$ 35	$ -	$ 85	$ -
5.13	Vibration Dampers - Conductor	-	EA	$ 35	$ -	$ 35	$ -	$ 70	$ -
5.14	Shieldwire / OPGW Dampers, Misc. Fittings	-	EA	$ 27	$ -	$ 35	$ -	$ 62	$ -
5.15	Guys, Anchors, and Accessories	-	EA	$ 720	$ -	$ 885	$ -	$ 1,605	$ -
5.16	Misc. materials (Signs and Markers)	-	Mile	$ 770	$ -	$ 1,006	$ -	$ 1,776	$ -
5.17									
5.18									
5.19									
5.20									
TOTAL - INSULATOR, FITTINGS, HARDWARE					$ 29,466		$ 17,754		$ 47,220
L. Interconnection Knickerbocker Station					$ 368,942		$ 893,294		$ 1,262,237
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6.1	Mob / Demob	1	LS	$ -	$ -	$ 12,622	$ 12,622	$ 12,622	**$ 12,622**
	Project Management, Material Handling & Amenities								
6.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 73,464	$ 73,464	$ 73,464	**$ 73,464**
6.3	Utility PM and Project Oversite	1	LS		$ -	$ 12,622	$ 12,622	$ 12,622	**$ 12,622**
6.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 12,622	$ 12,622	$ 12,622	**$ 12,622**
	Engineering								
6.5	Design Engineering	1	LS	$ -	$ -	$ 63,112	$ 63,112	$ 63,112	**$ 63,112**
6.6	LiDAR	1	LS	$ -	$ -	$ 3,787	$ 3,787	$ 3,787	**$ 3,787**
6.7	Geotech	1	Location	$ -	$ -	$ 3,500	$ 3,500	$ 3,500	**$ 3,500**
6.8	Surveying/Staking	1	LS	$ -	$ -	$ 8,836	$ 8,836	$ 8,836	**$ 8,836**
	Testing & Commissioning								
6.9	Testing & Commissioning of T-Line and Equipment	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
	Permitting and Additional Costs								
6.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.12	Warranties / LOC's	1	LS	$ -	$ -	$ 3,787	$ 3,787	$ 3,787	**$ 3,787**
6.13	Real Estate Costs (New)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.14	Real Estate Costs (Incumbent Utility)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.18	Sales Tax on Materials	1	LS	$ 29,515	$ 29,515	$ -	$ -	$ 29,515	**$ 29,515**
6.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 1,262	$ 1,262	$ 1,262	**$ 1,262**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 29,515		$ 195,614		**$ 225,130**

NAT - NYPA - T030 - (Segment B Enhanced)

M. Interconnection Churchtown Station

Estimate Revision: 8

Total: $ 2,540,063

NAT - NYPA - T030 - (Segment B Enhanced)	*Supply*	*Installation*	*Total*
M. Interconnection Churchtown Station			
1. CLEARING & ACCESS	$ -	$ 525,600	$ 525,600
2. FOUNDATIONS	$ 231,719	$ 334,201	$ 565,920
3. STRUCTURES	$ 563,647	$ 401,007	$ 964,654
4. CONDUCTOR, SHIELDWIRE, OPGW	$ -	$ -	$ -
5. INSULATORS, FITTINGS, HARDWARE	$ 58,666	$ 27,354	$ 86,020
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 68,323	$ 329,545	$ 397,868
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 922,355	$ 1,617,707	$ 2,540,063
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 922,355	$ 1,617,707	$ 2,540,063

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
M. Interconnection Churchtown Station									
1. CLEARING & ACCESS									
1.1	Clearing the ROW - Heavy (mowing & clearing)	-	Acre	$ -	$ -	$ 15,000	$ -	$ 15,000	$ -
1.2	Clearing the ROW - Light (mowing)	2.0	Acre	$ -	$ -	$ 5,000	$ 10,000	$ 5,000	**$ 10,000**
1.3	Access Road	-	LF	$ -	$ -	$ 45	$ -	$ 45	$ -
1.4	Silt Fence	3,500.0	LF	$ -	$ -	$ 4	$ 14,000	$ 4	**$ 14,000**
1.5	Matting - Access and ROW	3,500.0	LF	$ -	$ -	$ 70	$ 245,000	$ 70	**$ 245,000**
1.6	Matting - To Work Area	525.0	LF	$ -	$ -	$ 70	$ 36,750	$ 70	**$ 36,750**
1.7	Snow Removal	-	LS	$ -	$ -	$ 516,800	$ -	$ 516,800	$ -
1.8	ROW Restoration	0.5	Mile	$ -	$ -	$ 10,000	$ 5,000	$ 10,000	**$ 5,000**
1.9	Work Pads	60,000.0	SF	$ -	$ -	$ 4	$ 211,200	$ 4	**$ 211,200**
1.10	Restoration for Work Pad areas	12,000.0	SF	$ -	$ -	$ 0.2	$ 1,800	$ 0	**$ 1,800**
1.11	Temporary Access Bridge	-	EA	$ -	$ -	$ 20,035	$ -	$ 20,035	$ -
1.12	Air Bridge	-	EA	$ -	$ -	$ 14,445	$ -	$ 14,445	$ -
1.13	Stabilized Construction Entrance	-	EA	$ -	$ -	$ 4,580	$ -	$ 4,580	$ -
1.14	Maintenance and Protection of Traffic on Public Roads	-	EA	$ -	$ -	$ 4,130	$ -	$ 4,130	$ -
1.15	Gates	-	EA	$ 2,000	$ -	$ 2,500	$ -	$ 4,500	$ -
1.16	Culverts / Misc. Access	-	EA	$ 750	$ -	$ 1,250	$ -	$ 2,000	$ -
1.17	Concrete Washout Station	1	EA	$ -	$ -	$ 1,850	$ 1,850	$ 1,850	**$ 1,850**
1.18					$ -		$ -		$ -
1.19					$ -		$ -		$ -
1.20	Crushed Rock	0	CY	$ 27	$ -	$ 75	$ -	$ 102	$ -
TOTAL - CLEARING & ACCESS					$ -		$ 525,600		$ 525,600
2. FOUNDATIONS									
2.1	1-CKT 115KV 3-POLE LARGE ANGLE DEADEND (60°-90°)	6	EA	$ 18,077	$ 108,464	$ 18,271	$ 109,626	$ 36,348	**$ 218,090**
2.2	2x 1-CKT 115KV 3-POLE LARGE ANGLE DEADEND (60°-90°)	6	EA	$ 20,543	$ 123,255	$ 20,763	$ 124,575	$ 41,305	**$ 247,830**
2.3									
2.4									
2.5	Rock Excavation Adder	50	CY	$ -	$ -	$ 2,000	$ 100,000	$ 2,000	**$ 100,000**
2.6					$ -		$ -		$ -
2.7					$ -		$ -		$ -
2.8					$ -		$ -		$ -
2.9					$ -		$ -		$ -
2.10					$ -		$ -		$ -
2.11					$ -		$ -		$ -
2.12					$ -		$ -		$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.13					$ -		$ -		$ -
2.14					$ -		$ -		$ -
2.15					$ -		$ -		$ -
TOTAL - FOUNDATIONS					$ 231,719		$ 334,201		$ 565,920
3. STRUCTURES									
3.1	1-CKT 115KV 3-POLE LARGE ANGLE DEADEND (60°-90°)	2	Structure	$ 92,929	$ 185,858	$ 55,758	$ 111,515	$ 148,687	**$ 297,373**
3.2	2x 1-CKT 115KV 3-POLE LARGE ANGLE DEADEND (60°-90°)	2	Structure	$ 185,858	$ 371,717	$ 111,515	$ 223,030	$ 297,373	**$ 594,747**
3.3									
3.4					$ -		$ -		$ -
3.5	Install Grounding and Grounding Accessories	12	Pole	$ 506	$ 6,072	$ 5,539	$ 66,462	$ 6,045	**$ 72,534**
3.6					$ -		$ -		$ -
3.7					$ -		$ -		$ -
3.8					$ -		$ -		$ -
3.9					$ -		$ -		$ -
3.10					$ -		$ -		$ -
3.11					$ -		$ -		$ -
3.12					$ -		$ -		$ -
3.13					$ -		$ -		$ -
3.14					$ -		$ -		$ -
3.15					$ -		$ -		$ -
TOTAL - STRUCTURES					$ 563,647		$ 401,007		$ 964,654
4. CONDUCTOR, SHIELDWIRE, OPGW									
4.1	345kV - (1) 954kcmil 54/7 ACSS "Cardinal"	-	LF	$ 1.90	$ -	$ 5.00	$ -	$ 6.90	$ -
4.2	(1) OPGW 36 Fiber AC-33/38/571	-	LF	$ 1.35	$ -	$ 5.00	$ -	$ 6.35	$ -
4.3	(1) 3/8" EHS7 Steel	-	LF	$ 0.47	$ -	$ 5.00	$ -	$ 5.47	$ -
4.5	Remove Existing 115kV Cable From Existing Structures	-	Mile	$ -	$ -	$ 30,000	$ -	$ 30,000.00	$ -
4.6	Remove Existing OPGW Cable	-	Mile	$ -	$ -	$ 12,000	$ -	$ 12,000.00	$ -
4.7	Remove Existing EH7	-	Mile	$ -	$ -	$ 12,000	$ -	$ 12,000.00	$ -
4.8	115kV - (1) 954kcmil 54/7 ACSS "Cardinal"	-	LF	$ 1.90	$ -	$ 5.00	$ -	$ 6.90	$ -
4.9		-							
4.10	Rider Poles - Relocated	-	Set	$ -	$ -	$ 3,500	$ -	$ 3,500.00	$ -
4.11	Rider Poles	-	EA	$ 1,750	$ -	$ 3,500	$ -	$ 5,250.00	$ -
TOTAL: CONDUCTOR, SHIELDWIRE, OPGW:					$ -		$ -		$ -
5. INSULATOR, FITTINGS, HARDWARE									
5.1	345kV Tangent (1-Group of 18-Bells Each Assembly)	-	Assembly	$ 1,800	$ -	$ 720	$ -	$ 2,520	$ -
5.2	115kV Tangent (1-Group of 9-Bells Each Assembly)	-	Assembly	$ 900	$ -	$ 560	$ -	$ 1,460	$ -
5.3	345kV Dead-end & Angle Insulators (1-Group of 18-Bells Each Assembly)	28	Assembly	$ 1,800	$ 50,400	$ 720	$ 20,160	$ 2,520	**$ 70,560**
5.4	115kV Dead-end & Angle Insulators (1-Group of 9-Bells Each Assembly)	-	Assembly	$ 900	$ -	$ 560	$ -	$ 1,460	$ -
5.5			Assembly		$ -	$ 360	$ -	$ 360	$ -
5.6	OPGW Assembly - Tangent	-	Assembly	$ 200	$ -	$ 150	$ -	$ 350	$ -
5.7	OPGW Assembly - Angle / DE	8	Assembly	$ 250	$ 2,000	$ 150	$ 1,200	$ 400	**$ 3,200**
5.8	OHSW Assembly - Tangent	-	Assembly	$ 200	$ -	$ 150	$ -	$ 350	$ -
5.9	OHSW Assembly - Angle / DE	8	Assembly	$ 250	$ 2,000	$ 150	$ 1,200	$ 400	**$ 3,200**
5.10	OPGW Splice Boxes	1	Set	$ 1,746	$ 1,746	$ 2,274	$ 2,274	$ 4,020	**$ 4,020**
5.11	OPGW Splice & Test	1	EA	$ 2,520	$ 2,520	$ 2,520	$ 2,520	$ 5,040	**$ 5,040**
5.12	Spacer - Conductor	-	EA	$ 50	$ -	$ 35	$ -	$ 85	$ -
5.13	Vibration Dampers - Conductor	-	EA	$ 35	$ -	$ 35	$ -	$ 70	$ -
5.14	Shieldwire / OPGW Dampers, Misc. Fittings	-	EA	$ 27	$ -	$ 35	$ -	$ 62	$ -
5.15	Guys, Anchors, and Accessories	-	EA	$ 720	$ -	$ 885	$ -	$ 1,605	$ -
5.16	Misc. materials (Signs and Markers)	-	Mile	$ 770	$ -	$ 1,006	$ -	$ 1,776	$ -
5.17									
5.18									
5.19									
5.20									
TOTAL - INSULATOR, FITTINGS, HARDWARE					$ 58,666		$ 27,354		$ 86,020
M. Interconnection Churchtown Station					$ 854,033		$ 1,288,162		$ 2,142,195
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
6.1	Mob / Demob	1	LS	$ -	$ -	$ 21,422	$ 21,422	$ 21,422	**$ 21,422**
	Project Management, Material Handling & Amenities								

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 124,679	$ 124,679	$ 124,679	**$ 124,679**
6.3	Utility PM and Project Oversite	1	LS		$ -	$ 21,422	$ 21,422	$ 21,422	**$ 21,422**
6.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 21,422	$ 21,422	$ 21,422	**$ 21,422**
	Engineering								
6.5	Design Engineering	1	LS	$ -	$ -	$ 107,110	$ 107,110	$ 107,110	**$ 107,110**
6.6	LiDAR	1	LS	$ -	$ -	$ 6,427	$ 6,427	$ 6,427	**$ 6,427**
6.7	Geotech	1	Location	$ -	$ -	$ 3,500	$ 3,500	$ 3,500	**$ 3,500**
6.8	Surveying/Staking	1	LS	$ -	$ -	$ 14,995	$ 14,995	$ 14,995	**$ 14,995**
	Testing & Commissioning								
6.9	Testing & Commissioning of T-Line and Equipment	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
	Permitting and Additional Costs								
6.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.12	Warranties / LOC's	1	LS	$ -	$ -	$ 6,427	$ 6,427	$ 6,427	**$ 6,427**
6.13	Real Estate Costs (New)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.14	Real Estate Costs (Incumbent Utility)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.18	Sales Tax on Materials	1	LS	$ 68,323	$ 68,323	$ -	$ -	$ 68,323	**$ 68,323**
6.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 2,142	$ 2,142	$ 2,142	**$ 2,142**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 68,323		$ 329,545		**$ 397,868**

NAT - NYPA - T030 - (Segment B Enhanced)

N. Interconnection Pleasant Valley

Estimate Revision: 8

Total: $ 2,679,858

NAT - NYPA - T030 - (Segment B Enhanced)	*Supply*	*Installation*	*Total*
N. Interconnection Pleasant Valley			
1. CLEARING & ACCESS	$ -	$ 578,850	$ 578,850
2. FOUNDATIONS	$ 61,875	$ 790,750	$ 852,625
3. STRUCTURES	$ 388,477	$ 311,610	$ 700,087
4. CONDUCTOR, SHIELDWIRE, OPGW	$ -	$ -	$ -
5. INSULATORS, FITTINGS, HARDWARE	$ 105,566	$ 47,094	$ 152,660
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 44,473	$ 351,162	$ 395,636
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 600,392	$ 2,079,466	$ 2,679,858
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 600,392	$ 2,079,466	$ 2,679,858

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
N. Interconnection Pleasant Valley									
1. CLEARING & ACCESS									
1.1	Clearing the ROW - Heavy (mowing & clearing)	-	Acre	$ -	$ -	$ 15,000	$ -	$ 15,000	$ -
1.2	Clearing the ROW - Light (mowing)	2.0	Acre	$ -	$ -	$ 5,000	$ 10,000	$ 5,000	**$ 10,000**
1.3	Access Road	-	LF	$ -	$ -	$ 45	$ -	$ 45	$ -
1.4	Silt Fence	3,500.0	LF	$ -	$ -	$ 4	$ 14,000	$ 4	**$ 14,000**
1.5	Matting - Access and ROW	3,500.0	LF	$ -	$ -	$ 70	$ 245,000	$ 70	**$ 245,000**
1.6	Matting - To Work Area	525.0	LF	$ -	$ -	$ 70	$ 36,750	$ 70	**$ 36,750**
1.7	Snow Removal	-	LS	$ -	$ -	$ 516,800	$ -	$ 516,800	$ -
1.8	ROW Restoration	0.5	Mile	$ -	$ -	$ 10,000	$ 5,000	$ 10,000	**$ 5,000**
1.9	Work Pads	75,000.0	SF	$ -	$ -	$ 4	$ 264,000	$ 4	**$ 264,000**
1.10	Restoration for Work Pad areas	15,000.0	SF	$ -	$ -	$ 0.2	$ 2,250	$ 0	**$ 2,250**
1.11	Temporary Access Bridge	-	EA	$ -	$ -	$ 20,035	$ -	$ 20,035	$ -
1.12	Air Bridge	-	EA	$ -	$ -	$ 14,445	$ -	$ 14,445	$ -
1.13	Stabilized Construction Entrance	-	EA	$ -	$ -	$ 4,580	$ -	$ 4,580	$ -
1.14	Maintenance and Protection of Traffic on Public Roads	-	EA	$ -	$ -	$ 4,130	$ -	$ 4,130	$ -
1.15	Gates	-	EA	$ 2,000	$ -	$ 2,500	$ -	$ 4,500	$ -
1.16	Culverts / Misc. Access	-	EA	$ 750	$ -	$ 1,250	$ -	$ 2,000	$ -
1.17	Concrete Washout Station	1	EA	$ -	$ -	$ 1,850	$ 1,850	$ 1,850	**$ 1,850**
1.18					$ -		$ -		$ -
1.19					$ -		$ -		$ -
1.20	Crushed Rock	0	CY	$ 27	$ -	$ 75	$ -	$ 102	$ -
TOTAL - CLEARING & ACCESS					$ -		$ 578,850		$ 578,850
2. FOUNDATIONS									
2.1	1-CKT 115KV 3-POLE TANGENT DEADEND (0°-5°)	15	EA	$ 4,125	$ 61,875	$ 28,050	$ 420,750	$ 32,175	**$ 482,625**
2.2									
2.3									
2.4									
2.5	Rock Excavation Adder	185	CY	$ -	$ -	$ 2,000	$ 370,000	$ 2,000	**$ 370,000**
2.6					$ -		$ -		$ -
2.7					$ -		$ -		$ -
2.8					$ -		$ -		$ -
2.9					$ -		$ -		$ -
2.10					$ -		$ -		$ -
2.11					$ -		$ -		$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.12					$ -		$ -		$ -
2.13					$ -		$ -		$ -
2.14					$ -		$ -		$ -
2.15					$ -		$ -		$ -
TOTAL - FOUNDATIONS					$ 61,875		$ 790,750		$ 852,625
3. STRUCTURES									
3.1	115kV Single Circuit Single Pole Angle/DE	5	Structure	$ 76,177	$ 380,887	$ 45,706	$ 228,532	$ 121,884	**$ 609,420**
3.2									
3.3									
3.4					$ -		$ -		$ -
3.5	Install Grounding and Grounding Accessories	15	Pole	$ 506	$ 7,590	$ 5,539	$ 83,078	$ 6,045	**$ 90,668**
3.6					$ -		$ -		$ -
3.7					$ -		$ -		$ -
3.8					$ -		$ -		$ -
3.9					$ -		$ -		$ -
3.10					$ -		$ -		$ -
3.11					$ -		$ -		$ -
3.12					$ -		$ -		$ -
3.13					$ -		$ -		$ -
3.14					$ -		$ -		$ -
3.15					$ -		$ -		$ -
TOTAL - STRUCTURES					$ 388,477		$ 311,610		$ 700,087
4. CONDUCTOR, SHIELDWIRE, OPGW									
4.1	345kV - (1) 954kcmil 54/7 ACSS "Cardinal"	-	LF	$ 1.90	$ -	$ 5.00	$ -	$ 6.90	$ -
4.2	(1) OPGW 36 Fiber AC-33/38/571	-	LF	$ 1.35	$ -	$ 5.00	$ -	$ 6.35	$ -
4.3	(1) 3/8" EHS7 Steel	-	LF	$ 0.47	$ -	$ 5.00	$ -	$ 5.47	$ -
4.5	Remove Existing 115kV Cable From Existing Structures	-	Mile	$ -	$ -	$ 30,000	$ -	$ 30,000.00	$ -
4.6	Remove Existing OPGW Cable	-	Mile	$ -	$ -	$ 12,000	$ -	$ 12,000.00	$ -
4.7	Remove Existing EH7	-	Mile	$ -	$ -	$ 12,000	$ -	$ 12,000.00	$ -
4.8	115kV - (1) 954kcmil 54/7 ACSS "Cardinal"	-	LF	$ 1.90	$ -	$ 5.00	$ -	$ 6.90	$ -
4.9		-							
4.10	Rider Poles - Relocated	-	Set	$ -	$ -	$ 3,500	$ -	$ 3,500.00	$ -
4.11	Rider Poles	-	EA	$ 1,750	$ -	$ 3,500	$ -	$ 5,250.00	$ -
TOTAL: CONDUCTOR, SHIELDWIRE, OPGW:					$ -		$ -		$ -
5. INSULATOR, FITTINGS, HARDWARE									
5.1	345kV Tangent (1-Group of 18-Bells Each Assembly)	-	Assembly	$ 1,800	$ -	$ 720	$ -	$ 2,520	$ -
5.2	115kV Tangent (1-Group of 9-Bells Each Assembly)	-	Assembly	$ 1,800	$ -	$ 720	$ -	$ 2,520	$ -
5.3	345kV Dead-end & Angle Insulators (1-Group of 18-Bells Each Assembly)	-	Assembly	$ 1,800	$ -	$ 720	$ -	$ 2,520	$ -
5.4	115kV Dead-end & Angle Insulators (1-Group of 9-Bells Each Assembly)	105	Assembly	$ 900	$ 94,500	$ 360	$ 37,800	$ 1,260	**$ 132,300**
5.5			Assembly		$ -		$ -	$ -	$ -
5.6	OPGW Assembly - Tangent	14	Assembly	$ 200	$ 2,800	$ 150	$ 2,100	$ 350	**$ 4,900**
5.7	OPGW Assembly - Angle / DE	1	Assembly	$ 250	$ 250	$ 150	$ 150	$ 400	**$ 400**
5.8	OHSW Assembly - Tangent	-	Assembly	$ 200	$ -	$ 150	$ -	$ 350	$ -
5.9	OHSW Assembly - Angle / DE	15	Assembly	$ 250	$ 3,750	$ 150	$ 2,250	$ 400	**$ 6,000**
5.10	OPGW Splice Boxes	1	Set	$ 1,746	$ 1,746	$ 2,274	$ 2,274	$ 4,020	**$ 4,020**
5.11	OPGW Splice & Test	1	EA	$ 2,520	$ 2,520	$ 2,520	$ 2,520	$ 5,040	**$ 5,040**
5.12	Spacer - Conductor	-	EA	$ 50	$ -	$ 35	$ -	$ 85	$ -
5.13	Vibration Dampers - Conductor	-	EA	$ 35	$ -	$ 35	$ -	$ 70	$ -
5.14	Shieldwire / OPGW Dampers, Misc. Fittings	-	EA	$ 27	$ -	$ 35	$ -	$ 62	$ -
5.15	Guys, Anchors, and Accessories	-	EA	$ 720	$ -	$ 885	$ -	$ 1,605	$ -
5.16	Misc. materials (Signs and Markers)	-	Mile	$ 770	$ -	$ 1,006	$ -	$ 1,776	$ -
5.17									
5.18									
5.19									
5.20									
TOTAL - INSULATOR, FITTINGS, HARDWARE					$ 105,566		$ 47,094		$ 152,660
N. Interconnection Pleasant Valley					$ 555,918		$ 1,728,304		$ 2,284,222
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
6.1	Mob / Demob	1	LS	$ -	$ -	$ 22,842	$ 22,842	$ 22,842	**$ 22,842**
	Project Management, Material Handling & Amenities								

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 132,945	$ 132,945	$ 132,945	**$ 132,945**
6.3	Utility PM and Project Oversite	1	LS		$ -	$ 22,842	$ 22,842	$ 22,842	**$ 22,842**
6.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 22,842	$ 22,842	$ 22,842	**$ 22,842**
	Engineering								
6.5	Design Engineering	1	LS	$ -	$ -	$ 114,211	$ 114,211	$ 114,211	**$ 114,211**
6.6	LiDAR	1	LS	$ -	$ -	$ 6,853	$ 6,853	$ 6,853	**$ 6,853**
6.7	Geotech	1	Location	$ -	$ -	$ 3,500	$ 3,500	$ 3,500	**$ 3,500**
6.8	Surveying/Staking	1	LS	$ -	$ -	$ 15,990	$ 15,990	$ 15,990	**$ 15,990**
	Testing & Commissioning								
6.9	Testing & Commissioning of T-Line and Equipment	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
	Permitting and Additional Costs								
6.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.12	Warranties / LOC's	1	LS	$ -	$ -	$ 6,853	$ 6,853	$ 6,853	**$ 6,853**
6.13	Real Estate Costs (New)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.14	Real Estate Costs (Incumbent Utility)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.18	Sales Tax on Materials	1	LS	$ 44,473	$ 44,473	$ -	$ -	$ 44,473	**$ 44,473**
6.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 2,284	$ 2,284	$ 2,284	**$ 2,284**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 44,473		$ 351,162		**$ 395,636**

NAT & NYPA - T030 - (Segment B)

O. NUF to mitigate NY to NE interface transfer limit degradation

Estimate Revision: **8**

Total: $ 26,785,714

SYSTEM UPGRADE FACILITIES		Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Sum	Labor & Equipment Supply Rate	Labor & Equipment Sum	Total Unit Rate	TOTAL
SUF 1	**Transmission Line Upgrade Cricket Valley - Connecticut Border to Long Mountain**								
1.1	Line Upgrade	1.00	LS		$ -		$ -	$ 21,428,571	$ 21,428,571
	Subtotal SUF 1 Direct Cost				$ -		$ -		$ 21,428,571
1.2	**Engineering, T&C, PM, Indirects (25%)**				$ -				$ 5,357,143
	TOTAL:								**$ 26,785,714**

NAT - NYPA - T029 - (Segment B Enhanced)

P. NUF proposed as element of the Project (Middletown Line and Terminal)

Estimate Revision: 8 **Total:** #REF!

SYSTEM UPGRADE FACILITIES		Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Sum	Labor & Equipment Supply Rate	Labor & Equipment Sum	Total Unit Rate	TOTAL
SUF SS1	**Middletown Tap Transformer Replacement**	1	LS	$ -	$ -	$ -	$ -	$ 10,878,348	$ 10,879,000
SUF SS1	Removals	1	LS	$ -	$ -	$ -	$ -	$ 360,000	$ 360,000
SUF SS1	Engineering, T&C, PM, Indirects (25%)		LS %						$ 2,810,000
SUF SS1	**SUF SS1 - TOTAL:**				**$ -**		**$ -**		**$ 14,049,000**
SUF SS2	**Middletown Line Upgrade**	1	LS	$ -	$ -	$ -	$ -	$ -	$ -
SUF SS2	138kV - (1) 1113kcmil 45/7 ACSS "Bluejay" Conductor	29,272.32	LF	$ 4.00	$ 117,089	$ 5.00	$ 146,362	$ 9	$ 263,451
SUF SS2	Remove Existing 1033.5kmil ACSR "Ortalon" Conductor and Accessories	0.88	Mile	$ -	$ -	$ 30,000.00	$ 26,400	$ 30,000	$ 26,400
SUF SS2	Rider Poles	3.00	Sets	$ 1,750.00	$ 5,250	$ 3,500.00	$ 10,500	$ 5,250	$ 15,750
SUF SS2	138kV Vertical Tangent Insulator Assembly	18.00	Assembly	$ 900.00	$ 16,200	$ 560.00	$ 10,080	$ 1,460	$ 26,280
SUF SS2	138kV Deadend Insulator Assembly	30.00	Assembly	$ 900.00	$ 27,000	$ 560.00	$ 16,800	$ 1,460	$ 43,800
SUF SS2	Engineering, T&C, PM, Indirects (25%)		LS %						$ 94,000
SUF SS2	**SUFSS 2 - TOTAL:**				**$ 165,539**		**$ 210,142**		**$ 469,681**
	STATIONS SUF DIRECT TOTAL:								**$ 11,615,000**
	STATIONS SUF INDIRECT TOTAL:								**$ 2,904,000**
	STATIONS SUF TOTAL								**$ 14,519,000**

NAT - NYPA - T030 - (Segment B Enhanced)	
ESTIMATE ASSUMPTIONS & CLARIFICATIONS	
1	Cost Estimate is based on 2017 rates.
2	Construction schedule is in accordance with proposed schedule - we have assumed continuous working with no breaks in the schedule. Six months have been added to the construction schedule for start up and close out works and assisting in pre-construction activities (i.e. permitting activities, material procurement etc.).
3	We have assumed a typical work week of five-(5) days per week at ten-(10) hours per day (5 x 10 hour days).
4	All labor rates and benefits used for estimating purposes are taken from IBEW Local 1249 working agreement as updated 5-8-2017.
5	We have assumed that the Access Road included in Developer Estimate will be Type 1 Gravel Type. 20% of the total length of the line is assumed to use Type 1 Gravel road and 80% of the line length access to be used wood matting. In addition 75 feet of wood matting is included from the access matting to the work pad area matting. The estimate also include 5,000 square feet of wood matting for each structure work area within the ROW. For the ground restoration (seed, straw and woven mat), 20% of the work pad area included.
6	Costs will vary for handling and disposal of contaminated spoils, depending on type of contaminants and availability / location of the appropriate tipping facility. Since there is not enough information to provide a quantified estimate for this item, allowance is included in the contingency monies.
7	Costs have been developed based on historical data from Projects of a similar nature (AACE Class 5 and 4 Estimating Practices). We have not engaged any subcontractors for formal quotes.
8	Foundation rates include supply and installation of materials. Drilled Pier rates include supply and testing of concrete, rebar cage and the use of temp or permanent casing.
9	A Contractor Mark-Up (OH&P) of 15% has been included in the Total section.
10	We have assumed that all project details provided are accurate unless noted otherwise.
11	Any SUF pricing includes 35% to cover Contractor markup (15%) and contingency (20%)
12	A contractor allowance of 1% for mobilization and demobilization has been included in the total section.
13	A contractor allowance of 5.061% for project management and staffing has been included in the total section. This also includes agricultural inspector, engineering inspector, safety inspector, compliance inspector, environmental inspector, and SWPP inspector.
14	An allowance of 1% for Utility PM and Project Oversite staffing has been included in the total section.
15	A contractor allowance of 1% for site accommodation, facilities, and storage has been included in the total section.
16	An allowance of 5% for transmission design and engineering has been included in the total section.
17	An allowance of 8% for substation design and engineering has been included in the total section.
18	An allowance of 0.7% for survey and staking of the transmission line and substation layout has been included in the total section.
19	An allowance of 0.3% for LIDAR of the transmission line has been included in the total section.
20	An allowance of 3.75% for substation testing and commissioning has been included in the total section.
21	An allowance of $20,000.00 per circuit for transmission line testing and commissioning has been included in the total section.
22	New York state sales tax of 8% is included in all material pricing.
23	An allowance of 1.5% for insurance is included in the DPS sheet.
24	Knickerbocker to Churchtown substation; 0.4 miles of 345kV conductor from the junction have been added.
25	An additional Quantity of 5% have been added to conductors, OPGW, & OHSW for sag and jumpers.
26	Rock excavation depth in Foundation data provided in the proposal.
27	Middletown to Shoemaker Line upgrade: The length of the line segment is 0.88 miles -The re-conductor will remove the existing 2 bundle 1033.5 ACSR conductor and install new 2 bundle Bluejay 1113 ACSS conductor -The Insulators and associated conductor hardware will be replaced -The existing structures are assumed to have adequate strength to support the new conductors -The estimate is a rough order of magnitude estimate as no engineering was performed and SECo did not have access to record drawings.
28	Cricket Valley to Long Mountain line upgrade: Network Upgrade (NUF) costs to mitigate NY to NE interface transfer limit degradation were based on possible solutions identified during the June 2018 SIS process
29	The SUF estimates for the stations are rough order of magnitude estimates. No engineering was performed and SECo did not have access to record drawings.

ITC (T032)			
		Description	**Total Amount** (In thousand $)
Direct Cost	1	**Transmission Lines**	
	1.1	Clearing & Access	$35,253
	1.2	Foundations	$82,888
	1.3	Structures	$67,205
	1.4	Conductor, Shiedwire and Optical Ground Wire	$33,769
	1.5	Insulators, Fitting and Hardwares	$16,154
		Subtotal (1)	**$235,269**
	2	**Substations**	
	2.1	Knickerbocker Substation	$21,112
	2.2	East Greenbush Substation	$0
	2.3	Schodack Substation	$0
	2.4	Churchtown Substation	$1,977
	2.5	Pleasant Valley Substation	$3,101
	2.6	Substation Interconnections	$5,764
		Subtotal (2)	**$31,954**
		Total (1+2)	$267,224
		Contractors Mark-up (15% of Total 1+2)	$40,084
		Total Direct Cost (A)	**$307,307**
Indirect Cost	3	**Technical Services Costs**	
	3.1	Contractor Mobilization / Demobilization	$2,672
	3.2	Project Management, Material Handling & Amenities	$18,202
	3.3	Engineering	$16,986
	3.4	Testing & Commissioning	$755
	3.5	Permitting, Real Estate, Sales Tax and Additional Costs	$16,833
	3.6	Legal, Environmental Licensing & Permitting and Environmental Mitigation	$7,628
		Total Indirect Cost (3)	**$63,075**
		Subtotal Project Cost (B=A+3) 2017 $	**$370,382**
	4	**Network Upgrade Facilities (NUF)**	
	4.1	NUF proposed as element of the Project	$0
	4.2	NUF to mitigate NY to NE interface transfer limit degradation	$30,000
		Subtotal NUF Cost (C)	**$30,000**

Total Project Cost (B+C) 2017 $	**$400,382**

Total Project Cost 2018 $	**$412,394**

ITC T032 (Segment B)

Estimate Revision: 8

ITC T032 (Segment B) Direct Costs		*Total Each Segment*
Direct Labor, Material & Equipment Costs	A. Transmission Line Knickerbocker to Churchtown	$ 78,044,105
Direct Labor, Material & Equipment Costs	B. Transmission Line Churchtown to Pleasant Valley	$ 152,478,922
Direct Labor, Material & Equipment Costs	C. Blue Stores Junction to Blue Stores Substation	$ 4,746,361
Direct Labor, Material & Equipment Costs	D. Knickerbocker 345kV Substation - Install	$ 21,112,147
Direct Labor, Material & Equipment Costs	E. Greenbush Substation - Removal	$ -
Direct Labor, Material & Equipment Costs	F.	$ -
Direct Labor, Material & Equipment Costs	G.	$ -
Direct Labor, Material & Equipment Costs	H. Churchtown Substation - Install	$ 1,977,418
Direct Labor, Material & Equipment Costs	I. Churchtown Substation - Removal	$ -
Direct Labor, Material & Equipment Costs	J. Pleasant Valley Substation - Install	$ 3,101,141
Direct Labor, Material & Equipment Costs	K. Interconnection Knickerbocker Station	$ 3,068,229
Direct Labor, Material & Equipment Costs	L. Interconnection Churchtown Station	$ 2,061,784
Direct Labor, Material & Equipment Costs	M. Interconnection Milan Station	$ 633,514
Direct Labor, Material & Equipment Costs	N. NUF to mitigate NY to NE interface transfer limit degradation	$ 21,428,571
Direct Labor, Material & Equipment Costs	O. NUF proposed as element of the Project	$ -
	SUBTOTAL:	$ 288,652,192
	CONTRACTOR MARK-UP (OH&P)	$ 43,297,829
	CONTINGENCY ON ENTIRE PROJECT	$ -
	TOTAL DIRECT:	$ 331,950,021

ITC T032 (Segment B) Indirect Costs		*Total Each Segment*
Indirect Costs	A. Transmission Line Knickerbocker to Churchtown	$ 16,685,500
Indirect Costs	B. Transmission Line Churchtown to Pleasant Valley	$ 30,319,058
Indirect Costs	C. Blue Stores Junction to Blue Stores Substation	$ 936,585
Indirect Costs	D. Knickerbocker 345kV Substation - Install	$ 5,266,744
Indirect Costs	E. Greenbush Substation - Removal	$ -
Indirect Costs	F.	$ -
Indirect Costs	G.	$ -
Indirect Costs	H. Churchtown Substation - Install	$ 475,504
Indirect Costs	I. Churchtown Substation - Removal	$ -
Indirect Costs	J. Pleasant Valley Substation - Install	$ 754,800
Indirect Costs	K. Interconnection Knickerbocker Station	$ 554,805
Indirect Costs	L. Interconnection Churchtown Station	$ 342,513
Indirect Costs	M. Interconnection Milan Station	$ 111,797
Indirect Costs	N. NUF to mitigate NY to NE interface transfer limit degradation	$ 5,357,143
Indirect Costs	O. NUF proposed as element of the Project	$ -
Indirect Costs	Legal and Permitting (Includes Legal, Envir. Lisc. & Permit., and Envir. Mitigation)	$ 7,627,609
	TOTAL INDIRECT:	$ 68,432,059

TOTAL ESTIMATED COST:	$ 400,382,079

ITC T032 (Segment B)

A. Transmission Line Knickerbocker to Churchtown

Estimate Revision: 8

Total: $ 94,729,605

ITC T032 (Segment B)	*Supply*	*Installation*	*Total*
A. Transmission Line Knickerbocker to Churchtown			
1. CLEARING & ACCESS	$ 11,500	$ 13,507,953	$ 13,519,453
2. FOUNDATIONS	$ 12,695,824	$ 13,995,790	$ 26,691,613
3. STRUCTURES	$ 10,287,616	$ 11,532,261	$ 21,819,877
4. CONDUCTOR, SHIELDWIRE, OPGW	$ 2,339,147	$ 8,681,855	$ 11,021,002
5. INSULATORS, FITTINGS, HARDWARE	$ 3,305,711	$ 1,686,448	$ 4,992,160
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 2,291,184	$ 14,394,316	$ 16,685,500
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 30,930,982	$ 63,798,623	$ 94,729,605
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 30,930,982	$ 63,798,623	$ 94,729,605

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Sum	Labor & Equipment Supply Rate	Labor & Equipment Sum	Total Unit Rate	TOTAL
A. Transmission Line Knickerbocker to Churchtown									
1. CLEARING & ACCESS									
1.1	Clearing the ROW - Heavy (mowing & clearing)	19.0	Acre	$ -	$ -	$ 15,000	$ 285,000	$ 15,000	**$ 285,000**
1.2	Clearing the ROW - Light (mowing)	61.0	Acre		$ -	$ 5,000	$ 305,000	$ 5,000	**$ 305,000**
1.3	Permanent Access Road	23,126	LF	$ -	$ -	$ 45.00	$ 1,040,688	$ 45	**$ 1,040,688**
1.4	Silt Fence	115,632	LF	$ -	$ -	$ 4.00	$ 462,528	$ 4	**$ 462,528**
1.5	Matting - Access and ROW	92,506	LF	$ -	$ -	$ 70.00	$ 6,475,392	$ 70	**$ 6,475,392**
1.6	Matting - To Work Area	12,900	LF	$ -	$ -	$ 70.00	$ 903,000	$ 70	**$ 903,000**
1.7	Snow Removal	21.9	Mile	$ -	$ -	$ 16,000	$ 350,400	$ 16,000	**$ 350,400**
1.8	ROW Restoration	21.9	Mile	$ -	$ -	$ 10,000	$ 219,000	$ 10,000	**$ 219,000**
1.9	Work Pads	860,000	SF	$ -	$ -	$ 3.52	$ 3,027,200	$ 4	**$ 3,027,200**
1.10	Restoration for Work Pad areas	172,000	SF	$ -	$ -	$ 0.15	$ 25,800	$ 0.15	**$ 25,800**
1.11	Temporary Access Bridge	9	EA	$ -	$ -	$ 20,035	$ 180,315	$ 20,035	**$ 180,315**
1.12	Air Bridge	-	EA	$ -	$ -	$ 14,445	$ -	$ 14,445	**$ -**
1.13	Stabilized Construction Entrance	4	EA	$ -	$ -	$ 4,580	$ 18,320	$ 4,580	**$ 18,320**
1.14	Maintenance and Protection of Traffic on Public Roads	47	EA	$ -	$ -	$ 4,130	$ 194,110	$ 4,130	**$ 194,110**
1.15	Culverts / Misc. Access	10	EA	$ 750	$ 7,500	$ 1,250	$ 12,500	$ 2,000	**$ 20,000**
1.16	Gates	2	EA	$ 2,000	$ 4,000	$ 2,500	$ 5,000	$ 4,500	**$ 9,000**
1.17	Concrete Washout Station	2	EA	$ -	$ -	$ 1,850	$ 3,700	$ 1,850	**$ 3,700**
TOTAL - CLEARING & ACCESS:					$ 11,500		$ 13,507,953		**$ 13,519,453**
2. FOUNDATIONS									
2.1	Drilled Pier - 345/115kV D/C Single Pole Delta V-String Tangent Steel 80'	158	EA	$ 62,926	$ 9,942,274	$ 63,600	$ 10,048,751	$ 126,525	**$ 19,991,025**
2.2	Drilled Pier - 345/115kV D/C Two-Pole Dead End Delta Steel (Dead End) 80'	8	EA	$ 172,097	$ 1,376,775	$ 173,940	$ 1,391,519	$ 346,037	**$ 2,768,294**
2.3	Drilled Pier - 345/115kV D/C Two-Pole Dead End Delta Steel (Storm Dead End) 80'	8	EA	$ 172,097	$ 1,376,775	$ 173,940	$ 1,391,519	$ 346,037	**$ 2,768,294**
2.4	Rock Excavation Adder	582.0	CY	$ -	$ -	$ 2,000	$ 1,164,000	$ 2,000	**$ 1,164,000**
2.5									
2.6									
2.7									
2.8									
2.9									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Sum	Labor & Equipment Supply Rate	Labor & Equipment Sum	Total Unit Rate	TOTAL
2.10									
2.11									
2.12									
2.13									
2.14									
2.15									
2.16									
2.17									
2.18									
TOTAL - FOUNDATIONS:					$ 12,695,824		$ 13,995,790		**$ 26,691,613**
3. STRUCTURES									
3.1	345/115kV D/C Single Pole Delta V-String Tangent Steel 80'	158	Structure	$ 56,795	$ 8,973,610	$ 34,077	$ 5,384,166	$ 90,872	**$ 14,357,776**
3.2	345/115kV D/C Two-Pole Dead End Delta Steel (Dead End) 80'	8	Structure	$ 87,135	$ 697,080	$ 52,281	$ 418,248	$ 139,416	**$ 1,115,328**
3.3	345/115kV D/C Two-Pole Dead End Delta Steel (Storm Dead End) 80'	6	Structure	$ 87,135	$ 522,810	$ 52,281	$ 313,686	$ 139,416	**$ 836,496**
3.4	Remove Existing Foundation	688	EA	$ -	$ -	$ 3,250	$ 2,236,000	$ 3,250	**$ 2,236,000**
3.5	Remove Existing Structure and Accessories	172	EA	$ -	$ -	$ 12,500	$ 2,150,000	$ 12,500	**$ 2,150,000**
3.6	Install Grounding and Grounding Accessories	186	Pole	$ 506	$ 94,116	$ 5,539	$ 1,030,161	$ 6,045	**$ 1,124,277**
3.7									
3.8									
3.9									
3.10									
3.11									
3.12									
3.13									
3.14									
3.15									
TOTAL - STRUCTURES:					$ 10,287,616		$ 11,532,261		**$ 21,819,877**
4. CONDUCTOR, SHIELDWIRE, OPGW									
4.1	345kV - (1) 954kcmil 54/7 ACSS "Cardinal"	728,482	LF	$ 1.90	$ 1,384,116	$ 5.00	$ 3,642,410	$ 6.90	**$ 5,026,526**
4.2	(1) OPGW 36 Fiber AC-33/38/571	121,414	LF	$ 1.35	$ 163,909	$ 5.00	$ 607,070	$ 6.35	**$ 770,979**
4.3	(1) 3/8" EHS7 Steel	121,414	LF	$ 0.47	$ 57,065	$ 5.00	$ 607,070	$ 5.47	**$ 664,135**
4.4	Remove Existing Cable From Existing Structures	43.8	Mile	$ -	$ -	$ 30,000	$ 1,314,000	$ 30,000.00	**$ 1,314,000**
4.5	Remove Existing OPGW Cable and Accessories	21.9	Mile	$ -	$ -	$ 12,000	$ 262,800	$ 12,000.00	**$ 262,800**
4.6	Remove Existing OHSW and Accessories	21.9	Mile	$ -	$ -	$ 12,000	$ 262,800	$ 12,000.00	**$ 262,800**
4.7	115kV - (1) 954kcmil 54/7 ACSS "Cardinal"	364,241	LF	$ 1.90	$ 692,058	$ 5.00	$ 1,821,205	$ 6.90	**$ 2,513,263**
4.8	Rider Poles (47 Locations)	24	Set	$ 1,750	$ 42,000	$ 3,500	$ 84,000	$ 5,250.00	**$ 126,000**
4.9	Rider Poles - Relocated	23	Set	$ -	$ -	$ 3,500	$ 80,500	$ 3,500.00	**$ 80,500**
4.10									
4.11									
4.12									
4.13									
4.14									
4.15									
4.16									
4.17									
TOTAL: CONDUCTOR, SHIELDWIRE, OPGW:					$ 2,339,147		$ 8,681,855		**$ 11,021,002**
5. INSULATOR, FITTINGS, HARDWARE									
5.1	345kV Mono Pole Vertical Tangent - V-String (1-Group of 18-Bells Each Assembly)	948	Assembly	$ 1,800	$ 1,706,400	$ 720	$ 682,560	$ 2,520	**$ 2,388,960**
5.2	115kV Mono Pole Vertical Tangent - V-String (1-Group of 9-Bells Each Assembly)	948	Assembly	$ 900	$ 853,200	$ 560	$ 530,880	$ 1,460	**$ 1,384,080**
5.3	345kV Dead-end & Angle Insulators (1-Group of 18-Bells Each Assembly)	168	Assembly	$ 1,800	$ 302,400	$ 720	$ 120,960	$ 2,520	**$ 423,360**
5.4	115kV Dead-end & Angle Insulators (1-Group of 9-Bells Each Assembly)	84	Assembly	$ 900	$ 75,600	$ 560	$ 47,040	$ 1,460	**$ 122,640**
5.5					$ -		$ -	$ -	**$ -**
5.6			Assembly	$ 1,800	$ -	$ 720	$ -	$ 2,520	**$ -**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Sum	Labor & Equipment Supply Rate	Labor & Equipment Sum	Total Unit Rate	TOTAL
5.7			Assembly	$ 3,600	$ -	$ 1,440	$ -	$ 5,040	**$ -**
5.8	OPGW Assembly - Tangent	158	Assembly	$ 200	$ 31,600	$ 150	$ 23,700	$ 350	**$ 55,300**
5.9	OPGW Assembly - Angle / DE	28	Assembly	$ 250	$ 7,000	$ 150	$ 4,200	$ 400	**$ 11,200**
5.10	OHSW Assembly - Tangent	158	Assembly	$ 200	$ 31,600	$ 150	$ 23,700	$ 350	**$ 55,300**
5.11	OHSW Assembly - Angle / DE	28	Assembly	$ 250	$ 7,000	$ 150	$ 4,200	$ 400	**$ 11,200**
5.12	OPGW Splice Boxes	8	Set	$ 1,746	$ 13,969	$ 2,274	$ 18,192	$ 4,020	**$ 32,161**
5.13	OPGW Splice & Test	8	EA	$ 2,520	$ 20,160	$ 2,520	$ 20,160	$ 5,040	**$ 40,320**
5.14	Spacer - Conductor	3,642	EA	$ 50	$ 182,100	$ 35	$ 127,470	$ 85	**$ 309,570**
5.15	Vibration Dampers - Conductor	1,311	EA	$ 35	$ 45,885	$ 35	$ 45,885	$ 70	**$ 91,770**
5.16	Shield wire / OPGW Dampers, Misc. Fittings	442	EA	$ 27	$ 11,934	$ 35	$ 15,470	$ 62	**$ 27,404**
5.17									
5.18									
5.19									
5.20									
5.21	Guys, Anchors, and Accessories	-	EA	$ 720	$ -	$ 885	$ -	$ 1,605	**$ -**
5.22	Misc. materials (Signs and Markers)	21.9	Mile	$ 770	$ 16,863	$ 1,006	$ 22,031	$ 1,776	**$ 38,894**
5.23		-		$ -	$ -	$ -	$ -	$ -	**$ -**
TOTAL - INSULATORS, FITTINGS, HARDWARE:					$ 3,305,711		$ 1,686,448		**$ 4,992,160**
A. Transmission Line Knickerbocker to Churchtown					$ 28,639,798		$ 49,404,307		**$ 78,044,105**
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
6.1	Mob / Demob	1	LS	$ -	$ -	$ 780,441	$ 780,441	$ 780,441	**$ 780,441**
	Project Management, Material Handling & Amenities								
6.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 3,755,170	$ 3,755,170	$ 3,755,170	**$ 3,755,170**
6.3	Utility PM and Project Oversite	1	LS		$ -	$ 780,441	$ 780,441	$ 780,441	**$ 780,441**
6.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 780,441	$ 780,441	$ 780,441	**$ 780,441**
	Engineering								
6.5	Design Engineering	1	LS	$ -	$ -	$ 3,902,205	$ 3,902,205	$ 3,902,205	**$ 3,902,205**
6.6	LiDAR	1	LS	$ -	$ -	$ 234,132	$ 234,132	$ 234,132	**$ 234,132**
6.7	Geotech	22	Location	$ -	$ -	$ 3,500	$ 77,000	$ 3,500	**$ 77,000**
6.8	Surveying/Staking	1	LS	$ -	$ -	$ 546,309	$ 546,309	$ 546,309	**$ 546,309**
	Testing & Commissioning								
6.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 40,000	$ 40,000	$ 40,000	**$ 40,000**
	Permitting and Additional Costs								
6.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.12	Warranties / LOC's	1	LS	$ -	$ -	$ 234,132	$ 234,132	$ 234,132	**$ 234,132**
6.13	Real Estate Costs (New ROW)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.14	Real Estate Costs (Incumbent Utility ROW)	1	LS	$ -	$ -	$ 3,186,000	$ 3,186,000	$ 3,186,000	**$ 3,186,000**
6.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.18	Sales Tax on Materials	1	LS	$ 2,291,184	$ 2,291,184	$ -	$ -	$ 2,291,184	**$ 2,291,184**
6.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 78,044	$ 78,044	$ 78,044	**$ 78,044**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 2,291,184		$ 14,394,316		**$ 16,685,500**

ITC T032 (Segment B)

B. Transmission Line Churchtown to Pleasant Valley

Estimate Revision: 8

Total: $ 182,797,981

ITC T032 (Segment B)	*Supply*	*Installation*	*Total*
B. Transmission Line Churchtown to Pleasant Valley			
1. CLEARING & ACCESS	**$ 14,000**	**$ 20,315,402**	**$ 20,329,402**
2. FOUNDATIONS	**$ 21,569,255**	**$ 33,464,251**	**$ 55,033,507**
3. STRUCTURES	**$ 17,229,070**	**$ 26,612,906**	**$ 43,841,976**
4. CONDUCTOR, SHIELDWIRE, OPGW	**$ 4,553,240**	**$ 17,722,775**	**$ 22,276,015**
5. INSULATORS, FITTINGS, HARDWARE	**$ 7,182,734**	**$ 3,815,288**	**$ 10,998,023**
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	**$ 4,043,864**	**$ 26,275,194**	**$ 30,319,058**
CONTRACTOR MARK-UP (OH&P)	**$ -**	**$ -**	**$ -**
SUBTOTAL:	**$ 54,592,164**	**$ 128,205,817**	**$ 182,797,981**
CONTINGENCY ON ENTIRE PROJECT	**$ -**	**$ -**	**$ -**
TOTAL:	**$ 54,592,164**	**$ 128,205,817**	**$ 182,797,981**

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
B. Transmission Line Churchtown to Pleasant Valley									
1. CLEARING & ACCESS									
1.1	Clearing the ROW - Heavy (mowing & clearing)	-	Acre	$ -	$ -	$ 15,000	$ -	$ 15,000	**$ -**
1.2	Clearing the ROW - Light (mowing)	91.0	Acre	$ -	$ -	$ 5,000	$ 455,000	$ 5,000	**$ 455,000**
1.3	Permanent Access Road	33,897.6	LF	$ -	$ -	$ 45	$ 1,525,392	$ 45	**$ 1,525,392**
1.4	Silt Fence	169,488.0	LF	$ -	$ -	$ 4	$ 677,952	$ 4	**$ 677,952**
1.5	Matting - Access and ROW	135,590.4	LF	$ -	$ -	$ 70	$ 9,491,328	$ 70	**$ 9,491,328**
1.6	Matting - To Work Area	18,750.0	LF	$ -	$ -	$ 70	$ 1,312,500	$ 70	**$ 1,312,500**
1.7	Snow Removal	32.1	Mile	$ -	$ -	$ 16,000	$ 513,600	$ 16,000	**$ 513,600**
1.8	ROW Restoration	32.1	Mile	$ -	$ -	$ 10,000	$ 321,000	$ 10,000	**$ 321,000**
1.9	Work Pads	1,490,000.0	SF	$ -	$ -	$ 4	$ 5,244,800	$ 4	**$ 5,244,800**
1.10	Restoration for Work Pad areas	298,000.0	SF	$ -	$ -	$ 0.2	$ 44,700	$ 0	**$ 44,700**
1.11	Temporary Access Bridge	14	EA	$ -	$ -	$ 20,035	$ 280,490	$ 20,035	**$ 280,490**
1.12	Air Bridge	-	EA	$ -	$ -	$ 14,445	$ -	$ 14,445	**$ -**
1.13	Stabilized Construction Entrance	12	EA	$ -	$ -	$ 4,580	$ 54,960	$ 4,580	**$ 54,960**
1.14	Maintenance and Protection of Traffic on Public Roads	86	EA	$ -	$ -	$ 4,130	$ 355,180	$ 4,130	**$ 355,180**
1.15	Gates	4	EA	$ 2,000	$ 8,000	$ 2,500	$ 10,000	$ 4,500	**$ 18,000**
1.16	Culverts / Misc. Access	8	EA	$ 750	$ 6,000	$ 1,250	$ 10,000	$ 2,000	**$ 16,000**
1.17	Concrete Washout Station	10	EA	$ -	$ -	$ 1,850	$ 18,500	$ 1,850	**$ 18,500**
TOTAL - CLEARING & ACCESS:					$ 14,000		$ 20,315,402		**$ 20,329,402**
2. FOUNDATIONS									
2.1	Drilled Pier - 345/115kV Triple Circuit Two-Pole V-String Frame Tangent Steel 85'	279	EA	$ 59,729	$ 16,664,495	$ 60,369	$ 16,842,964	$ 120,098	**$ 33,507,459**
2.2	Drilled Pier - 345/115kV Triple Circuit Three-Pole Dead End Delta Steel (Dead End) 85'	12	EA	$ 258,145	$ 3,097,743	$ 260,910	$ 3,130,919	$ 519,055	**$ 6,228,662**
2.3	Drilled Pier - 345/115kV Triple Circuit Three-Pole Dead End Delta Steel (Storm Dead End) 85'	7	EA	$ 258,145	$ 1,807,017	$ 260,910	$ 1,826,369	$ 519,055	**$ 3,633,386**
2.4									
2.5	Rock Excavation Adder	5,832.0	CY	$ -	$ -	$ 2,000	$ 11,664,000	$ 2,000	**$ 11,664,000**
2.6									
2.7									
2.8									
2.9									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.10									
2.11									
2.12									
TOTAL - FOUNDATIONS:					$ 21,569,255		$ 33,464,251		**$ 55,033,507**
3. STRUCTURES									
3.1	345/115kV Triple Circuit Two-Pole V-String Frame Tangent Steel 85'	279	Structure	$ 53,280	$ 14,865,120	$ 31,968	$ 8,919,072	$ 85,248	**$ 23,784,192**
3.2	345/115kV Triple Circuit Three-Pole Dead End Delta Steel (Dead End) 85'	12	Structure	$ 108,040	$ 1,296,480	$ 64,824	$ 777,888	$ 172,864	**$ 2,074,368**
3.3	345/115kV Triple Circuit Three-Pole Dead End Delta Steel (Storm Dead End) 85'	7	Structure	$ 108,040	$ 756,280	$ 64,824	$ 453,768	$ 172,864	**$ 1,210,048**
3.4	Remove Existing Foundation	2,048	EA	$ -	$ -	$ 3,250	$ 6,656,000	$ 3,250	**$ 6,656,000**
3.5	Remove Existing Structure and Accessories	512	EA	$ -	$ -	$ 12,500	$ 6,400,000	$ 12,500	**$ 6,400,000**
3.6	Install Grounding and Grounding Accessories	615	Pole	$ 506	$ 311,190	$ 5,539	$ 3,406,178	$ 6,045	**$ 3,717,368**
3.7									
3.8									
3.9									
3.10									
3.11									
3.12									
3.13									
3.14									
3.15									
3.16									
3.17									
TOTAL - STRUCTURES PRINCTOWN TO NEW SCOTLAND:					$ 17,229,070		$ 26,612,906		**$ 43,841,976**
4. CONDUCTOR, SHIELDWIRE, OPGW									
4.1	345kV - (1) 954kcmil 54/7 ACSS "Cardinal"	1,094,386	LF	$ 1.90	$ 2,079,333	$ 5.00	$ 5,471,930	$ 6.90	**$ 7,551,263**
4.2	(1) OPGW 36 Fiber AC-33/38/571	182,398	LF	$ 1.35	$ 246,237	$ 5.00	$ 911,990	$ 6.35	**$ 1,158,227**
4.3	(1) 3/8" EHS7 Steel	182,398	LF	$ 0.47	$ 85,727	$ 5.00	$ 911,990	$ 5.47	**$ 997,717**
4.5	Remove Existing 115kV Cable From Existing Structures	130.4	Mile	$ -	$ -	$ 30,000	$ 3,912,000	$ 30,000.00	**$ 3,912,000**
4.6	Remove Existing OPGW Cable and Accessories	32.3	Mile	$ -	$ -	$ 12,000	$ 387,600	$ 12,000.00	**$ 387,600**
4.7	Remove Existing OHSW and Accessories	32.3	Mile	$ -	$ -	$ 12,000	$ 387,600	$ 12,000.00	**$ 387,600**
4.8	115kV - (1) 954kcmil 54/7 ACSS "Cardinal"	1,087,733	LF	$ 1.90	$ 2,066,693	$ 5.00	$ 5,438,665	$ 6.90	**$ 7,505,358**
4.9									
4.10	Rider Poles - Relocated	43	Set	$ -	$ -	$ 3,500	$ 150,500	$ 3,500.00	**$ 150,500**
4.11	Rider Poles (86 Total)	43	EA	$ 1,750	$ 75,250	$ 3,500	$ 150,500	$ 5,250.00	**$ 225,750**
TOTAL: CONDUCTOR, SHIELDWIRE, OPGW:					$ 4,553,240		$ 17,722,775		**$ 22,276,015**
5. INSULATOR, FITTINGS, HARDWARE									
5.1	345kV Mono Pole Vertical Tangent - V-String (1-Group of 18-Bells Each Assembly)	1,674	Assembly	$ 1,800	$ 3,013,200	$ 720	$ 1,205,280	$ 2,520	**$ 4,218,480**
5.2	115kV Mono Pole Vertical Tangent - V-String (1-Group of 9-Bells Each Assembly)	3,348	Assembly	$ 900	$ 3,013,200	$ 560	$ 1,874,880	$ 1,460	**$ 4,888,080**
5.3	345kV Dead-end & Angle Insulators (1-Group of 18-Bells Each Assembly)	228	Assembly	$ 1,800	$ 410,400	$ 720	$ 164,160	$ 2,520	**$ 574,560**
5.4	115kV Dead-end & Angle Insulators (1-Group of 9-Bells Each Assembly)	228	Assembly	$ 900	$ 205,200	$ 560	$ 127,680	$ 1,460	**$ 332,880**
5.5	OPGW Assembly - Tangent	279	Assembly	$ 200	$ 55,800	$ 150	$ 41,850	$ 350	**$ 97,650**
5.6	OPGW Assembly - Angle / DE	38	Assembly	$ 250	$ 9,500	$ 150	$ 5,700	$ 400	**$ 15,200**
5.7	OHSW Assembly - Tangent	279	Assembly	$ 200	$ 55,800	$ 150	$ 41,850	$ 350	**$ 97,650**
5.8	OHSW Assembly - Angle / DE	38	Assembly	$ 250	$ 9,500	$ 150	$ 5,700	$ 400	**$ 15,200**
5.9	OPGW Splice Boxes	12	Set	$ 1,746	$ 20,954	$ 2,274	$ 27,288	$ 4,020	**$ 48,242**
5.10	OPGW Splice & Test	12	EA	$ 2,520	$ 30,240	$ 2,520	$ 30,240	$ 5,040	**$ 60,480**
5.11	Spacer - Conductor	5,414	EA	$ 50	$ 270,700	$ 35	$ 189,490	$ 85	**$ 460,190**
5.12	Vibration Dampers - Conductor	1,299	EA	$ 35	$ 45,465	$ 35	$ 45,465	$ 70	**$ 90,930**
5.13	Shieldwire / OPGW Dampers, Misc. Fittings	656	EA	$ 27	$ 17,712	$ 35	$ 22,960	$ 62	**$ 40,672**
5.14	Guys, Anchors, and Accessories	-	EA	$ 720	$ -	$ 885	$ -	$ 1,605	**$ -**
5.15	Misc. materials (Signs and Markers)	32.6	Mile	$ 770	$ 25,064	$ 1,006	$ 32,745	$ 1,776	**$ 57,809**
TOTAL - INSULATORS, FITTINGS, HARDWARE:					$ 7,182,734		$ 3,815,288		**$ 10,998,023**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
B. Transmission Line Churchtown to Pleasant Valley					$ 50,548,300		$ 101,930,622		**$ 152,478,922**
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS									
	Contractor Mobilization / Demobilization								
6.1	Mob / Demob	1	LS	$ -	$ -	$ 1,524,789	$ 1,524,789	$ 1,524,789	**$ 1,524,789**
	Project Management, Material Handling & Amenities								
6.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 7,336,676	$ 7,336,676	$ 7,336,676	**$ 7,336,676**
6.3	Utility PM and Project Oversite	1	LS		$ -	$ 1,524,789	$ 1,524,789	$ 1,524,789	**$ 1,524,789**
6.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 1,524,789	$ 1,524,789	$ 1,524,789	**$ 1,524,789**
	Engineering								
6.5	Design Engineering	1	LS	$ -	$ -	$ 7,623,946	$ 7,623,946	$ 7,623,946	**$ 7,623,946**
6.6	LiDAR	1	LS	$ -	$ -	$ 457,437	$ 457,437	$ 457,437	**$ 457,437**
6.7	Geotech	33	Location	$ -	$ -	$ 3,500	$ 115,500	$ 3,500	**$ 115,500**
6.8	Surveying/Staking	1	LS	$ -	$ -	$ 1,067,352	$ 1,067,352	$ 1,067,352	**$ 1,067,352**
	Testing & Commissioning								
6.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 40,000	$ 40,000	$ 40,000	**$ 40,000**
	Permitting and Additional Costs								
6.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.12	Warranties / LOC's	1	LS	$ -	$ -	$ 457,437	$ 457,437	$ 457,437	**$ 457,437**
6.13	Real Estate Costs (New ROW)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.14	Real Estate Costs (Incumbent Utility ROW)	1	LS	$ -	$ -	$ 4,450,000	$ 4,450,000	$ 4,450,000	**$ 4,450,000**
6.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.18	Sales Tax on Materials	1	LS	$ 4,043,864	$ 4,043,864	$ -	$ -	$ 4,043,864	**$ 4,043,864**
6.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 152,479	$ 152,479	$ 152,479	**$ 152,479**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 4,043,864		$ 26,275,194		**$ 30,319,058**

ITC T032 (Segment B)

C. Blue Stores Junction to Blue Stores Substation

Estimate Revision: 8

Total: $ 5,682,945

ITC T032 (Segment B)	*Supply*	*Installation*	*Total*
C. Blue Stores Junction to Blue Stores Substation			
1. CLEARING & ACCESS	$ -	$ 1,404,512	$ 1,404,512
2. FOUNDATIONS	$ 236,848	$ 925,954	$ 1,162,802
3. STRUCTURES	$ 596,484	$ 946,665	$ 1,543,149
4. CONDUCTOR, SHIELDWIRE, OPGW	$ 84,763	$ 387,095	$ 471,858
5. INSULATORS, FITTINGS, HARDWARE	$ 107,544	$ 56,496	$ 164,040
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 82,051	$ 854,534	$ 936,585
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 1,107,690	$ 4,575,256	$ 5,682,945
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 1,107,690	$ 4,575,256	$ 5,682,945

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
C. Blue Stores Junction to Blue Stores Substation									
1. CLEARING & ACCESS									
1.1	Clearing the ROW - Heavy (mowing & clearing)	-	Acre	$ -	$ -	$ 15,000	$ -	$ 15,000	**$ -**
1.2	Clearing the ROW - Light (mowing)	4.0	Acre	$ -	$ -	$ 5,000	$ 20,000	$ 5,000	**$ 20,000**
1.3	Permanent Access Road	2,218	LF	$ -	$ -	$ 45	$ 99,792	$ 45	**$ 99,792**
1.4	Silt Fence	11,088.0	LF	$ -	$ -	$ 4	$ 44,352	$ 4	**$ 44,352**
1.5	Matting - Access and ROW	8,870	LF	$ -	$ -	$ 70	$ 620,928	$ 70	**$ 620,928**
1.6	Matting - To Work Area	1,800.0	LF	$ -	$ -	$ 70	$ 126,000	$ 70	**$ 126,000**
1.7	Snow Removal	2.1	Mile	$ -	$ -	$ 16,000	$ 33,600	$ 16,000	**$ 33,600**
1.8	ROW Restoration	2.1	Mile	$ -	$ -	$ 10,000	$ 21,000	$ 10,000	**$ 21,000**
1.9	Work Pads	120,000.0	SF	$ -	$ -	$ 4	$ 422,400	$ 4	**$ 422,400**
1.10	Restoration for Work Pad areas	24,000.0	SF	$ -	$ -	$ 0.2	$ 3,600	$ 0	**$ 3,600**
1.11	Temporary Access Bridge	-	EA	$ -	$ -	$ 20,035	$ -	$ 20,035	**$ -**
1.12	Air Bridge	-	EA	$ -	$ -	$ 14,445	$ -	$ 14,445	**$ -**
1.13	Stabilized Construction Entrance	1	EA	$ -	$ -	$ 4,580	$ 4,580	$ 4,580	**$ 4,580**
1.14	Maintenance and Protection of Traffic on Public Roads	2	EA	$ -	$ -	$ 4,130	$ 8,260	$ 4,130	**$ 8,260**
1.15	Gates	-	EA	$ 2,000	$ -	$ 2,500	$ -	$ 4,500	**$ -**
1.16	Culverts / Misc. Access	-	EA	$ 750	$ -	$ 1,250	$ -	$ 2,000	**$ -**
1.17	Concrete Washout Station	-	EA	$ -	$ -	$ 1,850	$ -	$ 1,850	**$ -**
TOTAL - CLEARING & ACCESS:					$ -		$ 1,404,512		**$ 1,404,512**
2. FOUNDATIONS									
2.1	Drilled Pier - 115kV Single Circuit H- Pole Angle/ DE	6	EA	$ 31,225	$ 187,348	$ 31,559	$ 189,354	$ 62,784	**$ 376,702**
2.2	Direct Embed - 115kV Single Circuit H- Pole Tangent	18	EA	$ 2,750	$ 49,500	$ 18,700	$ 336,600	$ 21,450	**$ 386,100**
2.3	Rock Excavation Adder	200.0	CY	$ -	$ -	$ 2,000	$ 400,000	$ 2,000	**$ 400,000**
2.4									
2.5									
2.6									
2.7									
2.8									
2.9									
2.10									
2.11									
2.12									
2.13									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.14									
2.15									
TOTAL - FOUNDATIONS:					$ 236,848		$ 925,954		**$ 1,162,802**
3. STRUCTURES									
3.1	115kV Single Circuit H- Pole Angle/ DE	6	Structure	$ 39,822	$ 238,929	$ 23,893	$ 143,358	$ 63,714	**$ 382,287**
3.2	115kV Single Circuit H- Pole Tangent	18	Structure	$ 18,515	$ 333,266	$ 11,109	$ 199,960	$ 29,624	**$ 533,226**
3.3	Remove Existing Foundation	-	EA	$ -	$ -	$ 7,500	$ -	$ 7,500	**$ -**
3.4	Remove Existing Structure and Accessories	27	EA	$ -	$ -	$ 12,500	$ 337,500	$ 12,500	**$ 337,500**
3.5									
3.6	Install Grounding and Grounding Accessories	48	Pole	$ 506	$ 24,288	$ 5,539	$ 265,848	$ 6,045	**$ 290,136**
3.7									
3.8									
3.9									
3.10									
3.11									
3.12									
3.13									
3.14									
3.15									
TOTAL - STRUCTURES:					$ 596,484		$ 946,665		**$ 1,543,149**
4. CONDUCTOR, SHIELDWIRE, OPGW									
4.1	**345kV** - (1) 954kcmil 54/7 ACSS "Cardinal"	-	LF	$ -	$ -	$ 5.00	$ -	$ 5.00	**$ -**
4.2	(1) OPGW 36 Fiber AC-33/38/571	-	LF	$ -	$ -	$ 5.00	$ -	$ 5.00	**$ -**
4.3	(1) 3/8" EHS7 Steel	-	LF	$ -	$ -	$ 5.00	$ -	$ 5.00	**$ -**
4.4	**115kV** - (1) 795kcmil 26/7 ACSR "Drake"	34,927.0	LF	$ 1.72	$ 60,074	$ 5.00	$ 174,635	$ 6.72	**$ 234,709**
4.5	(1) OPGW 36 Fiber AC-33/38/571	11,642.0	LF	$ 1.35	$ 15,717	$ 5.00	$ 58,210	$ 6.35	**$ 73,927**
4.6	(1) 3/8" EHS7 Steel	11,642.0	LF	$ 0.47	$ 5,472	$ 5.00	$ 58,210	$ 5.47	**$ 63,682**
4.7	Remove Existing Cable	2.1	Mile	$ -	$ -	$ 30,000	$ 63,600	$ 30,000.00	**$ 63,600**
4.8	Remove Existing OPGW Cable and Accessories	-	Mile	$ -	$ -	$ 12,000	$ -	$ 12,000.00	**$ -**
4.9	Remove Existing OHSW and Accessories	2.1	Mile	$ -	$ -	$ 12,000	$ 25,440	$ 12,000.00	**$ 25,440**
4.10		-							
4.11		-							
4.12	Rider Poles (Locations)	2.0	EA	$ 1,750	$ 3,500	$ 3,500	$ 7,000	$ 5,250.00	**$ 10,500**
4.13									
TOTAL - CONDUCTOR, SHIELDWIRE, OPGW:					$ 84,763		$ 387,095		**$ 471,858**
5. INSULATOR, FITTINGS, HARDWARE									
5.1	345kV Mono Pole Vertical Tangent - V-String (1-Group of 18-Bells Each Assembly)	-	Assembly	$ 1,800	$ -	$ 720	$ -	$ 2,520	**$ -**
5.2	115kV Mono Pole Vertical Tangent - V-String (1-Group of 9-Bells Each Assembly)	54	Assembly	$ 900	$ 48,600	$ 360	$ 19,440	$ 1,260	**$ 68,040**
5.3	345kV Dead-end & Angle Insulators (1-Group of 18-Bells Each Assembly)	-	Assembly	$ 1,800	$ -	$ 720	$ -	$ 2,520	**$ -**
5.4	115kV Dead-end & Angle Insulators (1-Group of 9-Bells Each Assembly)	36	Assembly	$ 900	$ 32,400	$ 360	$ 12,960	$ 1,260	**$ 45,360**
5.5			Assembly		$ -		$ -	$ -	**$ -**
5.6	OPGW Assembly - Tangent	18	Assembly	$ 200	$ 3,600	$ 150	$ 2,700	$ 350	**$ 6,300**
5.7	OPGW Assembly - Angle / DE	12	Assembly	$ 250	$ 3,000	$ 150	$ 1,800	$ 400	**$ 4,800**
5.8	OHSW Assembly - Tangent	18	Assembly	$ 200	$ 3,600	$ 150	$ 2,700	$ 350	**$ 6,300**
5.9	OHSW Assembly - Angle / DE	12	Assembly	$ 250	$ 3,000	$ 150	$ 1,800	$ 400	**$ 4,800**
5.10	OPGW Splice Boxes	2	Set	$ 1,746	$ 3,492	$ 2,274	$ 4,548	$ 4,020	**$ 8,040**
5.11	OPGW Splice & Test	2	EA	$ 2,520	$ 5,040	$ 2,520	$ 5,040	$ 5,040	**$ 10,080**
5.12	Spacer - Conductor	-	EA	$ 50	$ -	$ 35	$ -	$ 85	**$ -**
5.13	Vibration Dampers - Conductor	72	EA	$ 35	$ 2,520	$ 35	$ 2,520	$ 70	**$ 5,040**
5.14	Shieldwire / OPGW Dampers, Misc. Fittings	25	EA	$ 27	$ 675	$ 35	$ 875	$ 62	**$ 1,550**
5.15	Guys, Anchors, and Accessories	-	EA	$ 720	$ -	$ 885	$ -	$ 1,605	**$ -**
5.16	Misc. materials (Signs and Markers)	2.1	Mile	$ 770	$ 1,617	$ 1,006	$ 2,113	$ 1,776	**$ 3,730**
5.17									
TOTAL - INSULATORS, FITTINGS, HARDWARE:					$ 107,544		$ 56,496		**$ 164,040**
C. Blue Stores Junction to Blue Stores Substation					$ 1,025,639		$ 3,720,722		**$ 4,746,361**
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6.1	Mob / Demob	1	LS	$ -	$ -	$ 47,464	$ 47,464	$ 47,464	**$ 47,464**
	Project Management, Material Handling & Amenities								
6.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 228,376	$ 228,376	$ 228,376	**$ 228,376**
6.3	Utility PM and Project Oversite	1	LS		$ -	$ 47,464	$ 47,464	$ 47,464	**$ 47,464**
6.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 47,464	$ 47,464	$ 47,464	**$ 47,464**
	Engineering								
6.5	Design Engineering	1	LS	$ -	$ -	$ 237,318	$ 237,318	$ 237,318	**$ 237,318**
6.6	LiDAR	1	LS	$ -	$ -	$ 14,239	$ 14,239	$ 14,239	**$ 14,239**
6.7	Geotech	2	Location	$ -	$ -	$ 3,500	$ 7,000	$ 3,500	**$ 7,000**
6.8	Surveying/Staking	1	LS	$ -	$ -	$ 33,225	$ 33,225	$ 33,225	**$ 33,225**
	Testing & Commissioning								
6.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 20,000	$ 20,000	$ 20,000	**$ 20,000**
	Permitting and Additional Costs								
6.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.12	Warranties / LOC's	1	LS	$ -	$ -	$ 14,239	$ 14,239	$ 14,239	**$ 14,239**
6.13	Real Estate Costs (New ROW)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.14	Real Estate Costs (Incumbent Utility ROW)	1	LS	$ -	$ -	$ 153,000	$ 153,000	$ 153,000	**$ 153,000**
6.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.18	Sales Tax on Materials	1	LS	$ 82,051	$ 82,051	$ -	$ -	$ 82,051	**$ 82,051**
6.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 4,746	$ 4,746	$ 4,746	**$ 4,746**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 82,051		$ 854,534		**$ 936,585**

ITC T032 (Segment B) — **D. Knickerbocker 345kV Substation - Install**

Estimate Revision: 8 — **Total: $ 26,378,891**

ITC T032 (Segment B)	*Supply*	*Installation*	*Total*
D. Knickerbocker 345kV Substation - Install			
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ 307,450	$ 3,237,850	$ 3,545,300
2. SUBSTATION FOUNDATIONS	$ 1,648,569	$ 1,775,150	$ 3,423,719
3. SUBSTATION STRUCTURES	$ 846,190	$ 846,190	$ 1,692,380
4. MAJOR EQUIPTMENT	$ 756,000	$ 420,000	$ 1,176,000
5. SMALL EQUIPTMENT / MATERIALS	$ 1,802,280	$ 973,500	$ 2,775,780
6. CONTROL HOUSE / PANELS	$ 2,534,025	$ 1,641,025	$ 4,175,050
7. MISC ITEMS	$ 1,537,224	$ 2,786,694	$ 4,323,918
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 754,539	$ 4,512,205	$ 5,266,744
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 10,186,277	$ 16,192,614	$ 26,378,891
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 10,186,277	$ 16,192,614	$ 26,378,891

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
D. Knickerbocker 345kV Substation - Install									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	7.4	ACRES	$ -	$ -	$ 355,000	$ 2,627,000	$ 355,000	**$ 2,627,000**
1.2	Station stone within substation fence.	2,400	CY	$ 27	$ 64,800	$ 75	$ 180,000	$ 102	**$ 244,800**
1.3	Substation Fence	2,200	LF	$ 100	$ 220,000	$ 100	$ 220,000	$ 200	**$ 440,000**
1.4									
1.5									
1.6	Permanent Access Road - 20'-Wide	490	LF	$ 35	$ 17,150	$ 285	$ 139,650	$ 320	**$ 156,800**
1.7	Pavement	0	SY	$ -	$ -	$ 55	$ -	$ 55	**$ -**
1.8	Gates	2	EA	$ 2,000	$ 4,000	$ 2,500	$ 5,000	$ 4,500	**$ 9,000**
1.9	Culverts / Misc. Access	2	EA	$ 750	$ 1,500	$ 1,250	$ 2,500	$ 2,000	**$ 4,000**
1.10	Concrete Washout Station	2	EA	$ -	$ -	$ 1,850	$ 3,700	$ 1,850	**$ 3,700**
1.11	Remove Existing Concrete Foundation	3	EA	$ -	$ -	$ 7,500	$ 22,500	$ 7,500	**$ 22,500**
1.12	Remove Existing 3-Pole Structure	3	EA	$ -	$ -	$ 12,500	$ 37,500	$ 12,500	**$ 37,500**
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ 307,450		$ 3,237,850		$ 3,545,300
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	3	EA	$ 14,940	$ 44,820	$ 16,000	$ 48,000	$ 30,940	**$ 92,820**
2.1b	Capacitor Bank Foundations	0	EA	$ 56,025	$ -	$ 60,000	$ -	$ 116,025	**$ -**
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	12	EA	$ 26,145	$ 313,740	$ 28,000	$ 336,000	$ 54,145	**$ 649,740**
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 26,145	$ -	$ 28,000	$ -	$ 54,145	**$ -**
2.1e	Switch Stand Foundations	36	EA	$ 4,482	$ 161,352	$ 4,800	$ 172,800	$ 9,282	**$ 334,152**
2.1f	Station Service Transformer Stand Foundation	4	EA	$ 4,482	$ 17,928	$ 4,800	$ 19,200	$ 9,282	**$ 37,128**
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1h	Bus Support 1 Ph Foundations	66	EA	$ 4,482	$ 295,812	$ 4,800	$ 316,800	$ 9,282	**$ 612,612**
2.1j	Instrument Transformer Stand Foundations	27	EA	$ 4,482	$ 121,014	$ 4,800	$ 129,600	$ 9,282	**$ 250,614**
2.1k	Arrester Stand Foundations	9	EA	$ 4,482	$ 40,338	$ 4,800	$ 43,200	$ 9,282	**$ 83,538**
2.1m	Wave Trap Stand Foundations	3	EA	$ 4,482	$ 13,446	$ 4,800	$ 14,400	$ 9,282	**$ 27,846**
2.1n	Station Service Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1p	Reactor Foundations	0	EA	$ 7,470	$ -	$ 8,000	$ -	$ 15,470	**$ -**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.1q									
2.2	**230kV**								
2.2a	Circuit Breaker Foundations	0	EA	$ 11,952	$ -	$ 12,800	$ -	$ 24,752	**$ -**
2.2b	Capacitor Bank Foundations	0	EA	$ 44,820	$ -	$ 48,000	$ -	$ 92,820	**$ -**
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	**$ -**
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	**$ -**
2.2e	Switch Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	**$ -**
2.2f	Fuse Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	**$ -**
2.2g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.2h	Bus Support 1 Ph Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	**$ -**
2.2j	Instrument Transformer Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	**$ -**
2.2k	Arrester Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	**$ -**
2.2m	Wave Trap Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	**$ -**
2.2n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.2p									
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	3	EA	$ 5,229	$ 15,687	$ 5,600	$ 16,800	$ 10,829	**$ 32,487**
2.3b	Capacitor Bank Foundations	0	EA	$ 33,615	$ -	$ 36,000	$ -	$ 69,615	**$ -**
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	12	EA	$ 16,434	$ 197,208	$ 17,600	$ 211,200	$ 34,034	**$ 408,408**
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	**$ -**
2.3e	Switch Stand Foundations	14	EA	$ 2,988	$ 41,832	$ 3,200	$ 44,800	$ 6,188	**$ 86,632**
2.3f	Fuse Stand Foundations	2	EA	$ 2,988	$ 5,976	$ 3,200	$ 6,400	$ 6,188	**$ 12,376**
2.3g	Bus Support 3ph Foundations	30	EA	$ 2,988	$ 89,640	$ 3,200	$ 96,000	$ 6,188	**$ 185,640**
2.3h	Bus Support 1 Ph Foundations	15	EA	$ 2,988	$ 44,820	$ 3,200	$ 48,000	$ 6,188	**$ 92,820**
2.3j	Instrument Transformer Stand Foundations	27	EA	$ 2,988	$ 80,676	$ 3,200	$ 86,400	$ 6,188	**$ 167,076**
2.3k	Arrester Stand Foundations	9	EA	$ 2,988	$ 26,892	$ 3,200	$ 28,800	$ 6,188	**$ 55,692**
2.3m	Wave Trap Stand Foundations	3	EA	$ 2,988	$ 8,964	$ 3,200	$ 9,600	$ 6,188	**$ 18,564**
2.3n	Station Service Foundations	1	EA	$ 1,121	$ 1,121	$ 1,200	$ 1,200	$ 2,321	**$ 2,321**
2.3p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment	0	EA	$ 97,110	$ -	$ 104,000	$ -	$ 201,110	**$ -**
2.4b	345-115kV Transformer Foundation w/ Oil Containment	0	EA	$ 74,700	$ -	$ 80,000	$ -	$ 154,700	**$ -**
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad	1	EA	$ 48,555	$ 48,555	$ 52,000	$ 52,000	$ 100,555	**$ 100,555**
2.5b	Generator Foundation	1	EA	$ 16,000	$ 16,000	$ 17,000	$ 17,000	$ 33,000	**$ 33,000**
2.5c	Station Service Distribution Line - 3ph.	1	LS	$ -	$ -	$ 9,750	$ 9,750	$ 9,750	**$ 9,750**
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	12	EA	$ 5,229	$ 62,748	$ 5,600	$ 67,200	$ 10,829	**$ 129,948**
2.6b				$ -	$ -	$ -	$ -	$ -	**$ -**
2.6c				$ -	$ -	$ -	$ -	$ -	**$ -**
TOTAL - SUBSTATION FOUNDATIONS					$ 1,648,569		$ 1,775,150		$ 3,423,719
3. SUBSTATION STRUCTURES									
3.1	**345kV**								
3.1a	Substation A-Frame Structures - Stand alone	3	EA	$ 37,000	$ 111,000	$ 37,000	$ 111,000	$ 74,000	**$ 222,000**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.1b	Substation A-Frame Structures - Shared Column	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	**$ -**
3.1c	Switch Stands	6	EA	$ 14,800	$ 88,800	$ 14,800	$ 88,800	$ 29,600	**$ 177,600**
3.1d	Station Service Transformer Stand	0	EA	$ 14,800	$ -	$ 14,800	$ -	$ 29,600	**$ -**
3.1e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.1f	Bus Support 1 Ph	66	EA	$ 3,700	$ 244,200	$ 3,700	$ 244,200	$ 7,400	**$ 488,400**
3.1g	Instrument Transformer Stand	27	EA	$ 1,850	$ 49,950	$ 1,850	$ 49,950	$ 3,700	**$ 99,900**
3.1h	Arrester Stand	9	EA	$ 1,850	$ 16,650	$ 1,850	$ 16,650	$ 3,700	**$ 33,300**
3.1j	Wave Trap Stand	3	EA	$ 7,400	$ 22,200	$ 7,400	$ 22,200	$ 14,800	**$ 44,400**
3.1k	Lightning Mast - 70'	6	EA	$ 6,475	$ 38,850	$ 6,475	$ 38,850	$ 12,950	**$ 77,700**
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	**$ -**
3.2b	Substation A-Frame Structures - Shared Column	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	**$ -**
3.2c	Switch Stands	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	**$ -**
3.2d	Station Service Transformer Stand	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	**$ -**
3.2e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
3.2f	Bus Support 1 Ph	0	EA	$ 2,775	$ -	$ 2,775	$ -	$ 5,550	**$ -**
3.2g	Instrument Transformer Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	**$ -**
3.2h	Arrester Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	**$ -**
3.2j	Wave Trap Stand	0	EA	$ 5,550	$ -	$ 5,550	$ -	$ 11,100	**$ -**
3.2k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	**$ -**
3.3	**115kV**								
3.3a	Substation A-Frame Structures - Stand alone	3	EA	$ 18,500	$ 55,500	$ 18,500	$ 55,500	$ 37,000	**$ 111,000**
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	**$ -**
3.3c	Switch Stands	7	EA	$ 7,955	$ 55,685	$ 7,955	$ 55,685	$ 15,910	**$ 111,370**
3.3d	Fuse Stand	1	EA	$ 7,955	$ 7,955	$ 7,955	$ 7,955	$ 15,910	**$ 15,910**
3.3e	Bus Support 3ph	15	EA	$ 3,330	$ 49,950	$ 3,330	$ 49,950	$ 6,660	**$ 99,900**
3.3f	Bus Support 1 Ph	15	EA	$ 1,850	$ 27,750	$ 1,850	$ 27,750	$ 3,700	**$ 55,500**
3.3g	Instrument Transformer Stand	27	EA	$ 740	$ 19,980	$ 740	$ 19,980	$ 1,480	**$ 39,960**
3.3h	Arrester Stand	9	EA	$ 740	$ 6,660	$ 740	$ 6,660	$ 1,480	**$ 13,320**
3.3j	Wave Trap Stand	3	EA	$ 3,700	$ 11,100	$ 3,700	$ 11,100	$ 7,400	**$ 22,200**
3.3k	Lightning Mast - 70'	6	EA	$ 6,475	$ 38,850	$ 6,475	$ 38,850	$ 12,950	**$ 77,700**
3.3l	Station Service Transformer Support Stand	1	EA	$ 1,110	$ 1,110	$ 1,110	$ 1,110	$ 2,220	**$ 2,220**
TOTAL - SUBSTATION STRUCTURES					$ 846,190		$ 846,190		$ 1,692,380
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	3	EA	$ 200,000	$ 600,000	$ 80,000	$ 240,000	$ 280,000	**$ 840,000**
4.1b	Capacitor Banks with Reactors	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	**$ -**
4.1c									
4.1d									
4.1e									
4.2	**230kV**								
4.2a	Circuit Breakers	0	EA	$ 115,000	$ -	$ 80,000	$ -	$ 195,000	**$ -**
4.2b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	**$ -**
4.3	**115kV**								
4.3a	Circuit Breakers	3	EA	$ 52,000	$ 156,000	$ 60,000	$ 180,000	$ 112,000	**$ 336,000**
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ 60,000	$ -	$ 60,000	**$ -**
TOTAL - MAJOR EQUIPTMENT					$ 756,000		$ 420,000		$ 1,176,000

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator	3	EA	$ 40,000	$ 120,000	$ 15,000	$ 45,000	$ 55,000	**$ 165,000**
5.1b	Disconnect Switches - 3ph w/ manual operator	6	EA	$ 35,000	$ 210,000	$ 17,500	$ 105,000	$ 52,500	**$ 315,000**
5.1c	VT'S	9	EA	$ 25,000	$ 225,000	$ 12,000	$ 108,000	$ 37,000	**$ 333,000**
5.1d	CT'S	9	EA	$ 13,000	$ 117,000	$ 8,000	$ 72,000	$ 21,000	**$ 189,000**
5.1e	CCVT'S	9	EA	$ 13,000	$ 117,000	$ 8,000	$ 72,000	$ 21,000	**$ 189,000**
5.1f	Arresters	9	EA	$ 6,500	$ 58,500	$ 1,500	$ 13,500	$ 8,000	**$ 72,000**
5.1g	Wave Traps	3	EA	$ 13,000	$ 39,000	$ 8,000	$ 24,000	$ 21,000	**$ 63,000**
5.1h	Station Service Transformers	0	EA	$ 200,000	$ -	$ 50,000	$ -	$ 250,000	**$ -**
5.1j									
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator	0	EA	$ 35,000	$ -	$ 15,000	$ -	$ 50,000	**$ -**
5.2b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 30,000	$ -	$ 17,500	$ -	$ 47,500	**$ -**
5.2c	VT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	**$ -**
5.2d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	**$ -**
5.2e	CCVT'S	0	EA	$ 10,000	$ -	$ 6,000	$ -	$ 16,000	**$ -**
5.2f	Arresters	0	EA	$ 5,000	$ -	$ 6,000	$ -	$ 11,000	**$ -**
5.2g	Wave Traps	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	**$ -**
5.2h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
5.2j									
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	3	EA	$ 33,000	$ 99,000	$ 15,000	$ 45,000	$ 48,000	**$ 144,000**
5.3b	Disconnect Switches - 3ph w/ manual operator	7	EA	$ 28,000	$ 196,000	$ 17,500	$ 122,500	$ 45,500	**$ 318,500**
5.3c	VT'S	9	EA	$ 13,000	$ 117,000	$ 8,000	$ 72,000	$ 21,000	**$ 189,000**
5.3d	CT'S	9	EA	$ 13,000	$ 117,000	$ 8,000	$ 72,000	$ 21,000	**$ 189,000**
5.3e	CCVT'S	9	EA	$ 8,000	$ 72,000	$ 8,000	$ 72,000	$ 16,000	**$ 144,000**
5.3f	Arresters	9	EA	$ 3,420	$ 30,780	$ 6,000	$ 54,000	$ 9,420	**$ 84,780**
5.3g	Wave Traps	3	EA	$ 13,000	$ 39,000	$ 8,000	$ 24,000	$ 21,000	**$ 63,000**
5.3h	Station Service Transformers	1	EA	$ 200,000	$ 200,000	$ 50,000	$ 50,000	$ 250,000	**$ 250,000**
5.3j	Fuses	3	EA	$ 15,000	$ 45,000	$ 7,500	$ 22,500	$ 22,500	**$ 67,500**
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ 1,802,280		$ 973,500		$ 2,775,780
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE	1	EA	$ 468,000	$ 468,000	$ 95,000	$ 95,000	$ 563,000	**$ 563,000**
6.2	Protection and Telecom Equipment Panels	26	EA	$ 35,000	$ 910,000	$ 10,000	$ 260,000	$ 45,000	**$ 1,170,000**
6.3	125VDC Batteries	2	EA	$ 75,000	$ 150,000	$ 25,000	$ 50,000	$ 100,000	**$ 200,000**
6.4	Control Cables	1	LS	$ 641,025	$ 641,025	$ 641,025	$ 641,025	$ 1,282,050	**$ 1,282,050**
6.5	SCADA and Communications	1	EA	$ 50,000	$ 50,000	$ 100,000	$ 100,000	$ 150,000	**$ 150,000**
6.6	Low Voltage AC Distribution	2	EA	$ 50,000	$ 100,000	$ 100,000	$ 200,000	$ 150,000	**$ 300,000**
6.7	DC Distribution System	2	EA	$ 50,000	$ 100,000	$ 100,000	$ 200,000	$ 150,000	**$ 300,000**
6.8	Security	1	EA	$ 7,500	$ 7,500	$ 7,500	$ 7,500	$ 15,000	**$ 15,000**
6.9	Fire Alarm	1	EA	$ 7,500	$ 7,500	$ 7,500	$ 7,500	$ 15,000	**$ 15,000**
6.10	Generator	1	EA	$ 100,000	$ 100,000	$ 80,000	$ 80,000	$ 180,000	**$ 180,000**
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ 2,534,025		$ 1,641,025		**$ 4,175,050**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
7. MISC ITEMS									
7.1	Conduit & Cable Trench System	1,540.0	LF	$ 185.00	$ 284,900	$ 170.00	$ 261,800	$ 355	**$ 546,700**
7.2	Rigid Bus, Fittings & Insulators	5,000.0	LF	$ 125.07	$ 625,350	$ 237.10	$ 1,185,500	$ 362	**$ 1,810,850**
7.3	Strain Bus, Connectors & Insulators	0.0	LF	$ 39.30	$ -	$ 53.35	$ -	$ 93	**$ -**
7.4	Grounding System	26,800.0	LF	$ 6.93	$ 185,724	$ 32.58	$ 873,144	$ 40	**$ 1,058,868**
7.5	Strain Bus Insulators - 345kV	0	EA	$ 2,000	$ -	$ 1,050	$ -	$ 3,050	**$ -**
7.6	Strain Bus Insulators - 230kV	0	EA	$ 1,400	$ -	$ 750	$ -	$ 2,150	**$ -**
7.7	Strain Bus Insulators - 115kV	0	EA	$ 1,000	$ -	$ 550	$ -	$ 1,550	**$ -**
7.8	Low Voltage AC Station Service	1	LS	$ 50,000	$ 50,000	$ 75,000	$ 75,000	$ 125,000	**$ 125,000**
7.9	SSVT Service	1	LS	$ 45,000	$ 45,000	$ 45,000	$ 45,000	$ 90,000	**$ 90,000**
7.10	Control Conduits from Trench to Equipment	1	LS	$ 166,250	$ 166,250	$ 166,250	$ 166,250	$ 332,500	**$ 332,500**
7.11	Misc. Materials (Above and Below Ground)	1	LS	$ 180,000	$ 180,000	$ 180,000	$ 180,000	$ 360,000	**$ 360,000**
7.12									
7.13									
7.14									
7.15									
7.16									
7.17									
7.18									
7.19									
7.20									
7.21									
7.22									
7.23									
7.24									
7.25									
TOTAL - MISC ITEMS					$ 1,537,224		$ 2,786,694		$ 4,323,918
D. Knickerbocker 345kV Substation - Install					$ 9,431,738		$ 11,680,409		**$ 21,112,147**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1.0	LS	$ -	$ -	$ 211,121	$ 211,121	$ 211,121	**$ 211,121**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 1,015,832	$ 1,015,832	$ 1,015,832	**$ 1,015,832**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 211,121	$ 211,121	$ 211,121	**$ 211,121**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 211,121	$ 211,121	$ 211,121	**$ 211,121**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 1,688,972	$ 1,688,972	$ 1,688,972	**$ 1,688,972**
8.6	LiDAR	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.7	Geotech	4	EA	$ -	$ -	$ 3,500	$ 14,000	$ 3,500	**$ 14,000**
8.8	Surveying/Staking	1	Site	$ -	$ -	$ 147,785	$ 147,785	$ 147,785	**$ 147,785**
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 527,804	$ 527,804	$ 527,804	**$ 527,804**
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 63,336	$ 63,336	$ 63,336	**$ 63,336**
8.13	Real Estate Costs (New)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
8.14	Real Estate Costs (Incumbent Utility)	1	LS	$ -	$ -	$ 400,000	$ 400,000	$ 400,000	**$ 400,000**
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.18	Sales Tax on Materials	1	LS	$ 754,539	$ 754,539	$ -	$ -	$ 754,539	**$ 754,539**
8.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 21,112	$ 21,112	$ 21,112	**$ 21,112**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 754,539		$ 4,512,205		**$ 5,266,744**

ITC T032 (Segment B)

H. Churchtown Substation - Install

Estimate Revision: 8

Total: $ 2,452,922

ITC T032 (Segment B)	*Supply*	*Installation*	*Total*
H. Churchtown Substation - Install			
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ 30,835	$ 95,225	$ 126,060
2. SUBSTATION FOUNDATIONS	$ 150,147	$ 160,800	$ 310,947
3. SUBSTATION STRUCTURES	$ 52,000	$ 60,865	$ 121,730
4. MAJOR EQUIPTMENT	$ 52,000	$ 60,000	$ 112,000
5. SMALL EQUIPTMENT / MATERIALS	$ 186,260	$ 130,500	$ 316,760
6. CONTROL HOUSE / PANELS	$ 253,795	$ 178,795	$ 432,590
7. MISC ITEMS	$ 206,790	$ 350,542	$ 557,331
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 75,255	$ 400,249	$ 475,504
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 1,007,082	$ 1,436,975	$ 2,452,922
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 1,007,082	$ 1,436,975	$ 2,452,922

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
H. Churchtown Substation - Install									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	0.25	ACRES	$ -	$ -	$ 230,000	$ 57,500	$ 230,000	**$ 57,500**
1.2	Station stone within substation fence.	105	CY	$ 27	$ 2,835	$ 75	$ 7,875	$ 102	**$ 10,710**
1.3	Substation Fence	280	LF	$ 100	$ 28,000	$ 100	$ 28,000	$ 200	**$ 56,000**
1.4	Concrete Washout Station	1	EA	$ -	$ -	$ 1,850	$ 1,850	$ 1,850	**$ 1,850**
1.5									
1.6									
1.7									
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ 30,835		$ 95,225		$ 126,060
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	0	EA	$ 14,940	$ -	$ 16,000	$ -	$ 30,940	**$ -**
2.1b	Capacitor Bank Foundations	0	EA	$ 56,025	$ -	$ 60,000	$ -	$ 116,025	**$ -**
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 26,145	$ -	$ 28,000	$ -	$ 54,145	**$ -**
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 26,145	$ -	$ 28,000	$ -	$ 54,145	**$ -**
2.1e	Switch Stand Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	**$ -**
2.1f	Station Service Transformer Stand Foundation	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	**$ -**
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1h	Bus Support 1 Ph Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	**$ -**
2.1j	Instrument Transformer Stand Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	**$ -**
2.1k	Arrester Stand Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	**$ -**
2.1m	Wave Trap Stand Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	**$ -**
2.1n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1p									
2.2	**230kV**								
2.2a	Circuit Breaker Foundations	0	EA	$ 11,952	$ -	$ 12,800	$ -	$ 24,752	**$ -**
2.2b	Capacitor Bank Foundations	0	EA	$ 44,820	$ -	$ 48,000	$ -	$ 92,820	**$ -**
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	**$ -**
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	**$ -**
2.2e	Switch Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	**$ -**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.2f	Station Service Transformer Stand Foundation	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2h	Bus Support 1 Ph Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2j	Instrument Transformer Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2k	Arrester Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2m	Wave Trap Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2p									
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	1	EA	$ 5,229	$ 5,229	$ 5,600	$ 5,600	$ 10,829	**$ 10,829**
2.3b	Capacitor Bank Foundations	0	EA	$ 33,615	$ -	$ 36,000	$ -	$ 69,615	$ -
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	4	EA	$ 16,434	$ 65,736	$ 17,600	$ 70,400	$ 34,034	**$ 136,136**
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	$ -
2.3e	Switch Stand Foundations	2	EA	$ 2,988	$ 5,976	$ 3,200	$ 6,400	$ 6,188	**$ 12,376**
2.3f	Fuse Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3g	Bus Support 3ph Foundations	2	EA	$ 2,988	$ 5,976	$ 3,200	$ 6,400	$ 6,188	**$ 12,376**
2.3h	Bus Support 1 Ph Foundations	3	EA	$ 2,988	$ 8,964	$ 3,200	$ 9,600	$ 6,188	**$ 18,564**
2.3j	Instrument Transformer Stand Foundations	9	EA	$ 2,988	$ 26,892	$ 3,200	$ 28,800	$ 6,188	**$ 55,692**
2.3k	Arrester Stand Foundations	3	EA	$ 2,988	$ 8,964	$ 3,200	$ 9,600	$ 6,188	**$ 18,564**
2.3m	Wave Trap Stand Foundations	1	EA	$ 2,988	$ 2,988	$ 3,200	$ 3,200	$ 6,188	**$ 6,188**
2.3n	Station Service Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.3p	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment	0	EA	$ 97,110	$ -	$ 104,000	$ -	$ 201,110	$ -
2.4b	345-115kV Transformer Foundation w/ Oil Containment	0	EA	$ 74,700	$ -	$ 80,000	$ -	$ 154,700	$ -
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad	1	EA	$ 8,964	$ 8,964	$ 9,600	$ 9,600	$ 18,564	**$ 18,564**
2.5b	Generator Foundation	0	EA	$ 16,000	$ -	$ 17,000	$ -	$ 33,000	$ -
2.5c	Station Service Distribution Line - 1ph.	0	LS	$ -	$ -	$ 6,500	$ -	$ 6,500	$ -
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	2	EA	$ 5,229	$ 10,458	$ 5,600	$ 11,200	$ 10,829	**$ 21,658**
2.6b		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6c		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION FOUNDATIONS					$ 150,147		$ 160,800		$ 310,947
3. SUBSTATION STRUCTURES									
3.1	**345kV**								
3.1a	Substation A-Frame Structures - Stand alone	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	$ -
3.1b	Substation A-Frame Structures - Shared Column	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	$ -
3.1c	Switch Stands	0	EA	$ 14,800	$ -	$ 14,800	$ -	$ 29,600	$ -
3.1d	Station Service Transformer Stand	0	EA	$ 14,800	$ -	$ 14,800	$ -	$ 29,600	$ -
3.1e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1f	Bus Support 1 Ph	0	EA	$ 3,700	$ -	$ 3,700	$ -	$ 7,400	$ -
3.1g	Instrument Transformer Stand	0	EA	$ 1,850	$ -	$ 1,850	$ -	$ 3,700	$ -
3.1h	Arrester Stand	0	EA	$ 1,850	$ -	$ 1,850	$ -	$ 3,700	$ -
3.1j	Wave Trap Stand	0	EA	$ 7,400	$ -	$ 7,400	$ -	$ 14,800	$ -
3.1k	Lightning Masts - 70'	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	$ -
3.2b	Substation A-Frame Structures - Shared Column	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	$ -
3.2c	Switch Stands	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	$ -
3.2d	Station Service Transformer Stand	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	$ -
3.2e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2f	Bus Support 1 Ph	0	EA	$ 2,775	$ -	$ 2,775	$ -	$ 5,550	$ -
3.2g	Instrument Transformer Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	$ -
3.2h	Arrester Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	$ -
3.2j	Wave Trap Stand	0	EA	$ 5,550	$ -	$ 5,550	$ -	$ 11,100	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.2k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
3.3	**115kV**								
3.3a	Substation A-Frame Structures - Stand alone	1	EA	$ 18,500	$ 18,500	$ 18,500	$ 18,500	$ 37,000	**$ 37,000**
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	$ -
3.3c	Switch Stands	1	EA	$ 7,955	$ 7,955	$ 7,955	$ 7,955	$ 15,910	**$ 15,910**
3.3d	Fuse Stand	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	$ -
3.3e	Bus Support 3ph	1	EA	$ 3,330	$ 3,330	$ 3,330	$ 3,330	$ 6,660	**$ 6,660**
3.3f	Bus Support 1 Ph	3	EA	$ 1,850	$ 5,550	$ 1,850	$ 5,550	$ 3,700	**$ 11,100**
3.3g	Instrument Transformer Stand	9	EA	$ 740	$ 6,660	$ 740	$ 6,660	$ 1,480	**$ 13,320**
3.3h	Arrester Stand	3	EA	$ 740	$ 2,220	$ 740	$ 2,220	$ 1,480	**$ 4,440**
3.3j	Wave Trap Stand	1	EA	$ 3,700	$ 3,700	$ 3,700	$ 3,700	$ 7,400	**$ 7,400**
3.3k	Lightning Mast	2	EA	$ 6,475	$ 12,950	$ 6,475	$ 12,950	$ 12,950	**$ 25,900**
3.3l	Station Service Transformer Support Stand	0	EA	$ 1,110	$ -	$ 1,110	$ -	$ 2,220	$ -
TOTAL - SUBSTATION STRUCTURES					$ 60,865		$ 60,865		$ 121,730
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	0	EA	$ 200,000	$ -	$ 80,000	$ -	$ 280,000	$ -
4.1b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	$ -
4.1c	345 kV - 230 kV Auto Transformer	0	EA	$ -	$ -	$ 750,000	$ -	$ 750,000	$ -
4.1d	345 kV - 115 kV Auto Transformer	0	EA	$ -	$ -	$ 750,000	$ -	$ 750,000	$ -
4.2	**230kV**								
4.2a	Circuit Breakers	0	EA	$ 115,000	$ -	$ 80,000	$ -	$ 195,000	$ -
4.2b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	$ -
4.3	**115kV**								
4.3a	Circuit Breakers	1	EA	$ 52,000	$ 52,000	$ 60,000	$ 60,000	$ 112,000	**$ 112,000**
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ 60,000	$ -	$ 60,000	$ -
TOTAL - MAJOR EQUIPTMENT					$ 52,000		$ 60,000		$ 112,000
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator	0	EA	$ 40,000	$ -	$ 15,000	$ -	$ 55,000	$ -
5.1b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 35,000	$ -	$ 17,500	$ -	$ 52,500	$ -
5.1c	VT'S	0	EA	$ 25,000	$ -	$ 12,000	$ -	$ 37,000	$ -
5.1d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.1e	CCVT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.1f	Arresters	0	EA	$ 6,500	$ -	$ 1,500	$ -	$ 8,000	$ -
5.1g	Wave Traps	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.1h	Station Service Transformers	0	EA	$ 200,000	$ -	$ 50,000	$ -	$ 250,000	$ -
5.1j									
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator	0	EA	$ 35,000	$ -	$ 15,000	$ -	$ 50,000	$ -
5.2b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 30,000	$ -	$ 17,500	$ -	$ 47,500	$ -
5.2c	VT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2e	CCVT'S	0	EA	$ 10,000	$ -	$ 6,000	$ -	$ 16,000	$ -
5.2f	Arresters	0	EA	$ 5,000	$ -	$ 6,000	$ -	$ 11,000	$ -
5.2g	Wave Traps	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2j									
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	1	EA	$ 33,000	$ 33,000	$ 15,000	$ 15,000	$ 48,000	**$ 48,000**
5.3b	Disconnect Switches - 3ph w/ manual operator	1	EA	$ 28,000	$ 28,000	$ 17,500	$ 17,500	$ 45,500	**$ 45,500**
5.3c	VT'S	3	EA	$ 13,000	$ 39,000	$ 8,000	$ 24,000	$ 21,000	**$ 63,000**
5.3d	CT'S	3	EA	$ 13,000	$ 39,000	$ 8,000	$ 24,000	$ 21,000	**$ 63,000**
5.3e	CCVT'S	3	EA	$ 8,000	$ 24,000	$ 8,000	$ 24,000	$ 16,000	**$ 48,000**
5.3f	Arresters	3	EA	$ 3,420	$ 10,260	$ 6,000	$ 18,000	$ 9,420	**$ 28,260**
5.3g	Wave Traps	1	EA	$ 13,000	$ 13,000	$ 8,000	$ 8,000	$ 21,000	**$ 21,000**
5.3h	Station Service Transformers	0	EA	$ 75,000	$ -	$ 35,000	$ -	$ 110,000	$ -
5.3j	Fuses	0	EA	$ 7,500	$ -	$ 3,600	$ -	$ 11,100	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ 186,260		$ 130,500		$ 316,760
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE	1	EA	$ 76,800	$ 76,800	$ 76,800	$ 76,800	$ 153,600	**$ 153,600**
6.2	Protection and Telecom Equipment Panels	3	EA	$ 35,000	$ 105,000	$ 10,000	$ 30,000	$ 45,000	**$ 135,000**
6.3	125VDC Batteries	0	EA	$ 75,000	$ -	$ 25,000	$ -	$ 100,000	**$ -**
6.4	Control Cables	1	LS	$ 71,995	$ 71,995	$ 71,995	$ 71,995	$ 143,990	**$ 143,990**
6.5	SCADA and Communications	0	EA	$ 50,000	$ -	$ 100,000	$ -	$ 150,000	**$ -**
6.6	Low Voltage AC Distribution	0	EA	$ 50,000	$ -	$ 100,000	$ -	$ 150,000	**$ -**
6.7	DC Distribution System	0	EA	$ 50,000	$ -	$ 100,000	$ -	$ 150,000	**$ -**
6.8	Security	0	EA	$ 7,500	$ -	$ 7,500	$ -	$ 15,000	**$ -**
6.9	Fire Alarm	0	EA	$ 7,500	$ -	$ 7,500	$ -	$ 15,000	**$ -**
6.10	Generator	0	EA	$ 100,000	$ -	$ 80,000	$ -	$ 180,000	**$ -**
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ 253,795		$ 178,795		**$ 432,590**
7. MISC ITEMS									
7.1	Conduit & Cable Trench System	90.0	LF	$ 185.00	$ 16,650	$ 170.00	$ 15,300	$ 355	**$ 31,950**
7.2	Rigid Bus, Fittings & Insulators	240.0	LF	$ 125.07	$ 30,017	$ 237.10	$ 56,904	$ 362	**$ 86,921**
7.3	Strain Bus, Connectors & Insulators	0.0	LF	$ 39.30	$ -	$ 53.35	$ -	$ 93	**$ -**
7.4	Grounding System	1,100.0	LF	$ 6.93	$ 7,623	$ 32.58	$ 35,838	$ 40	**$ 43,461**
7.5	Strain Bus Insulators - 345kV	0	EA	$ 2,000	$ -	$ 1,050	$ -	$ 3,050	**$ -**
7.6	Strain Bus Insulators - 230kV	0	EA	$ 1,400	$ -	$ 750	$ -	$ 2,150	**$ -**
7.7	Strain Bus Insulators - 115kV	0	EA	$ 1,000	$ -	$ 550	$ -	$ 1,550	**$ -**
7.8	Low Voltage AC Station Service	0	LS	$ 50,000	$ -	$ 75,000	$ -	$ 125,000	**$ -**
7.9	SSVT Service	0	LS	$ 45,000	$ -	$ 45,000	$ -	$ 90,000	**$ -**
7.10	Control Conduits from Trench to Equipment	1	LS	$ 62,500	$ 62,500	$ 62,500	$ 62,500	$ 125,000	**$ 125,000**
7.11	Misc. Materials (Above and Below Ground)	1	LS	$ 90,000	$ 90,000	$ 180,000	$ 180,000	$ 270,000	**$ 270,000**
7.12									
7.13									
7.14									
7.15									
7.16									
7.17									
7.18									
7.19									
7.20									
7.21									
7.22									
7.23									
7.24									
7.25									
TOTAL - MISC ITEMS					$ 206,790		$ 350,542		$ 557,331
H. Churchtown Substation - Install					$ 940,692		$ 1,036,727		**$ 1,977,418**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1	LS	$ -	$ -	$ 19,774	$ 19,774	$ 19,774	**$ 19,774**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 95,145	$ 95,145	$ 95,145	**$ 95,145**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 19,774	$ 19,774	$ 19,774	**$ 19,774**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 19,774	$ 19,774	$ 19,774	**$ 19,774**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 158,193	$ 158,193	$ 158,193	**$ 158,193**
8.6	LiDAR	-	Mile	$ -	$ -	$ -	$ -	$ -	**$ -**
8.7	Geotech	4	Site	$ -	$ -	$ 3,500	$ 14,000	$ 3,500	**$ 14,000**
8.8	Surveying/Staking	1	Site	$ -	$ -	$ 13,842	$ 13,842	$ 13,842	**$ 13,842**
	Testing & Commissioning								

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
8.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 49,435	$ 49,435	$ 49,435	**$ 49,435**
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 5,932	$ 5,932	$ 5,932	**$ 5,932**
8.13	Real Estate Costs (New)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.14	Real Estate Costs (Incumbent Utility)	1	LS	$ -	$ -	$ 2,400	$ 2,400	$ 2,400	**$ 2,400**
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.18	Sales Tax on Materials	1	LS	$ 75,255	$ 75,255	$ -	$ -	$ 75,255	**$ 75,255**
8.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 1,977	$ 1,977	$ 1,977	**$ 1,977**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 75,255		$ 400,249		**$ 475,504**

Estimate Revision: 8 **Total:** $ -

ITC T032 (Segment B)	Supply	Installation	Total	
I. Churchtown Substation - Removal				
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ -	$ -	$ -	
2. SUBSTATION FOUNDATIONS	$ -	$ -	$ -	
3. SUBSTATION STRUCTURES	$ -	$ -	$ -	
4. MAJOR EQUIPTMENT	$ -	$ -	$ -	
5. SMALL EQUIPTMENT / MATERIALS	$ -	$ -	$ -	
6. CONTROL HOUSE / PANELS	$ -	$ -	$ -	
7. MISC ITEMS	$ -	$ -	$ -	
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ -	$ -	$ -	
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -	0.0%
SUBTOTAL:	$ -	$ -	$ -	
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -	0.0%
TOTAL:	$ -	$ -	$ -	

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
I. Churchtown Substation - Removal									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.		ACRES	$ -	$ -	$ 250,000	$ -	$ 250,000	$ -
1.2	Station stone within substation fence.		CY	$ -	$ -	$ 75	$ -	$ 75	$ -
1.3	Substation Fence		LF	$ -	$ -	$ 35	$ -	$ 35	$ -
1.4									
1.5									
1.6									
1.7									
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ -		$ -		$ -
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations		EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1b	Capacitor Bank Foundations		EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)		EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)		EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1e	Switch Stand Foundations		EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1f	Station Service Transformer Stand Foundation		EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1g	Bus Support 3ph Foundations		EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1h	Bus Support 1 Ph Foundations		EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1j	Instrument Transformer Stand Foundations		EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1k	Arrester Stand Foundations		EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1m	Wave Trap Stand Foundations		EA	$ -	$ -	$ -	$ -	$ -	$ -
2.1n	Misc. Structure Foundations		EA	$ -	$ -	$ -	$ -	$ -	$ -

2.1p									
2.2	**230kV**								
2.2a	Circuit Breaker Foundations		EA	$ -	$ -	$ 7,200	$ -	$ 7,200	$ -
2.2b	Capacitor Bank Foundations		EA	$ -	$ -	$ 32,000	$ -	$ 32,000	$ -
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)		EA	$ -	$ -	$ 22,000	$ -	$ 22,000	$ -
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)		EA	$ -	$ -	$ 11,000	$ -	$ 11,000	$ -
2.2e	Switch Stand Foundations		EA	$ -	$ -	$ 5,200	$ -	$ 5,200	$ -
2.2f	Station Service Transformer Stand Foundation		EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2g	Bus Support 3ph Foundations		EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2h	Bus Support 1 Ph Foundations		EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.2j	Instrument Transformer Stand Foundations		EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.2k	Arrester Stand Foundations		EA	$ -	$ -	$ 2,400	$ -	$ 2,400	$ -
2.2m	Wave Trap Stand Foundations		EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2n	Misc. Structure Foundations		EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2p									
2.3	**115kV**								
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment		EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4b	345-115kV Transformer Foundation w/ Oil Containment		EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment		EA	$ -	$ -	$ 67,500	$ -	$ 67,500	$ -
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment		EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5	**Control House Foundations / Pad**								
2.5a	Control House / Pad		EA	$ -	$ -	$ 14,200	$ -	$ 14,200	$ -
2.5b	Generator Foundation		EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation		EA	$ -	$ -	$ 5,200	$ -	$ 5,200	$ -
2.6b				$ -	$ -	$ -	$ -	$ -	$ -
2.6c				$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION FOUNDATIONS					$ -		$ -		$ -
3. SUBSTATION STRUCTURES									
3.1	**345kV**								
3.1a	Substation A-Frame Structures - Stand alone		EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1b	Substation A-Frame Structures - Shared Column		EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1c	Switch Stands		EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1d	Station Service Transformer Stand		EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1e	Bus Support 3ph		EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1f	Bus Support 1 Ph		EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1g	Instrument Transformer Stand		EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1h	Arrester Stand		EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1j	Wave Trap Stand		EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1k	Misc. Structures		EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone		EA	$ -	$ -	$ 27,000	$ -	$ 27,000	$ -
3.2b	Substation A-Frame Structures - Shared Column		EA	$ -	$ -	$ 27,000	$ -	$ 27,000	$ -
3.2c	Switch Stands		EA	$ -	$ -	$ 9,750	$ -	$ 9,750	$ -
3.2d	Station Service Transformer Stand		EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2e	Bus Support 3ph		EA	$ -	$ -	$ 2,250	$ -	$ 2,250	$ -
3.2f	Bus Support 1 Ph		EA	$ -	$ -	$ 2,250	$ -	$ 2,250	$ -

3.2g	Instrument Transformer Stand		EA	$ -	$ -	$ 1,050	$ -	$ 1,050	$ -
3.2h	Arrester Stand		EA	$ -	$ -	$ 1,050	$ -	$ 1,050	$ -
3.2j	Wave Trap Stand		EA	$ -	$ -	$ 4,500	$ -	$ 4,500	$ -
3.2k	Misc. Structures		EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3	**115kV**								
3.3a	Substation A-Frame Structures - Stand alone		EA	$ -	$ -	$ 15,000	$ -	$ 15,000	$ -
3.3b	Substation A-Frame Structures - Shared Column		EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3c	Switch Stands		EA	$ -	$ -	$ 6,450	$ -	$ 6,450	$ -
3.3d	Fuse Stand		EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3e	Bus Support 3ph		EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3f	Bus Support 1 Ph		EA	$ -	$ -	$ 6,450	$ -	$ 6,450	$ -
3.3g	Instrument Transformer Stand		EA	$ -	$ -	$ 6,450	$ -	$ 6,450	$ -
3.3h	Arrester Stand		EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3j	Wave Trap Stand		EA	$ -	$ -	$ -	$ -	$ -	$ -
3.3k	Steel Transmission Pole Deadend (1Ph)		EA	$ -	$ -	$ 12,300	$ -	$ 12,300	$ -
3.4l	Lightning Mast		EA	$ -	$ -	$ 6,450	$ -	$ 6,450	$ -
TOTAL - SUBSTATION STRUCTURES					$ -		$ -		$ -
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers		EA	$ -	$ -	$ -	$ -	$ -	$ -
4.1b	Capacitor Banks		EA	$ -	$ -	$ -	$ -	$ -	$ -
4.1c			EA	$ -	$ -	$ -	$ -	$ -	$ -
4.1d									
4.2	**230kV**								
4.2a	Circuit Breakers		EA	$ -	$ -	$ 7,000	$ -	$ 7,000	$ -
4.2b	Capacitor Banks		EA	$ -	$ -	$ 42,000	$ -	$ 42,000	$ -
4.3	**115kV**								
4.3a	Circuit Breakers		EA	$ -	$ -	$ 12,300	$ -	$ 12,300	$ -
4.3b	Capacitor Banks		EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - MAJOR EQUIPTMENT					$ -		$ -		$ -
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator		EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.1b	Disconnect Switches - 3ph w/ manual operator		EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.1c	VT'S		EA	$ -	$ -	$ -	$ -	$ -	$ -
5.1d	CT'S		EA	$ -	$ -	$ -	$ -	$ -	$ -
5.1e	CCVT'S		EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.1f	Arresters		EA	$ -	$ -	$ 1,500	$ -	$ 1,500	$ -
5.1g	Wave Traps		EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.1h	Station Service Transformers		EA	$ -	$ -	$ -	$ -	$ -	$ -
5.1j									
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator		EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.2b	Disconnect Switches - 3ph w/ manual operator		EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.2c	VT'S		EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2d	CT'S		EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2e	CCVT'S		EA	$ -	$ -	$ 1,500	$ -	$ 1,500	$ -
5.2f	Arresters		EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.2g	Wave Traps		EA	$ -	$ -	$ 2,500	$ -	$ 2,500	$ -
5.2h	Station Service Transformers		EA	$ -	$ -	$ -	$ -	$ -	$ -

5.2j									
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator		EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.3b	Disconnect Switches - 3ph w/ manual operator		EA	$ -	$ -	$ 5,500	$ -	$ 5,500	$ -
5.3c	VT'S		EA	$ -	$ -	$ 1,500	$ -	$ 1,500	$ -
5.3d	CT'S		EA	$ -	$ -	$ 1,500	$ -	$ 1,500	$ -
5.3e	CCVT'S		EA	$ -	$ -	$ 1,500	$ -	$ 1,500	$ -
5.3f	Arresters		EA	$ -	$ -	$ 1,500	$ -	$ 1,500	$ -
5.3g	Wave Traps		EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3h	Station Service Transformers		EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3j	Fuses		EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ -		$ -		$ -
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE		EA	$ -	$ -	$ 150,000	$ -	$ 150,000	$ -
6.2	Protection and Telecom Equipment Panels		EA	$ -	$ -	$ -	$ -	$ -	$ -
6.3	125VDC Batteries		EA	$ -	$ -	$ -	$ -	$ -	$ -
6.4	Control Cables		LS	$ -	$ -	$ -	$ -	$ -	$ -
6.5	SCADA and Communications		EA	$ -	$ -	$ -	$ -	$ -	$ -
6.6	Low Voltage AC Distribution		EA	$ -	$ -	$ -	$ -	$ -	$ -
6.7	DC Distribution System		EA	$ -	$ -	$ -	$ -	$ -	$ -
6.8	Security		EA	$ -	$ -	$ -	$ -	$ -	$ -
6.9	Fire Alarm		EA	$ -	$ -	$ -	$ -	$ -	$ -
6.10	Generator		EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ -		$ -		$ -
7. MISC ITEMS									
7.1	Conduit & Cable Trench System		LS	$ -	$ -	$ 42,000.00	$ -	$ 42,000	$ -
7.2	Rigid Bus, Fittings & Insulators		LF	$ -	$ -	$ 46.88	$ -	$ 47	$ -
7.3	Strain Bus, Connectors & Insulators		LF	$ -	$ -	$ 39.35	$ -	$ 39	$ -
7.4	Grounding System		LS	$ -	$ -	$ 42,000.00	$ -	$ 42,000	$ -
7.5									
7.6									
7.7									
7.8									
7.9									
7.10									
7.11									
7.12									
7.13									
7.14									
7.15									
TOTAL - MISC ITEMS					$ -		$ -		$ -
I. Churchtown Substation - Removal					$ -		$ -		$ -
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1	LS	$ -	$ -	$ -	$ -	$ -	$ -
	Project Management, Material Handling & Amenities								

8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ -	$ -	$ -	$ -
8.3	Utility PM and Project Oversite	1	LS		$ -	$ -	$ -	$ -	$ -
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ -	$ -	$ -	$ -
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.6	LiDAR	-	Mile	$ -	$ -	$ -	$ -	$ -	$ -
8.7	Geotech	-	Site	$ -	$ -	$ -	$ -	$ -	$ -
8.8	Surveying/Staking	-	Site	$ -	$ -	$ -	$ -	$ -	$ -
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.13	Real Estate Costs (New)	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.14	Real Estate Costs (Incumbent Utility)	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.18	Sales Tax on Materials	1	LS	$ -	$ -	$ -	$ -	$ -	$ -
8.19	Fees for permits, including roadway, railroad, building or other local permits	-	LS		$ -	$ -	$ -	$ -	$ -
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ -		$ -		$ -

ITC T032 (Segment B)

J. Pleasant Valley Substation - Install

Estimate Revision: 8

Total: $ 3,855,941

ITC T032 (Segment B)	*Supply*	*Installation*	*Total*
J. Pleasant Valley Substation - Install			
1. SITE PREP/ GRADING/ FENCING / CIVIL	**$ 11,025**	**$ 14,625**	**$ 25,650**
2. SUBSTATION FOUNDATIONS	**$ 151,466**	**$ 160,900**	**$ 312,366**
3. SUBSTATION STRUCTURES	**$ 44,400**	**$ 44,400**	**$ 88,800**
4. MAJOR EQUIPTMENT	**$ 200,000**	**$ 80,000**	**$ 280,000**
5. SMALL EQUIPTMENT / MATERIALS	**$ 260,500**	**$ 129,000**	**$ 389,500**
6. CONTROL HOUSE / PANELS	**$ 560,900**	**$ 253,400**	**$ 814,300**
7. MISC ITEMS	**$ 594,450**	**$ 596,075**	**$ 1,190,525**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	**$ 145,819**	**$ 608,981**	**$ 754,800**
CONTRACTOR MARK-UP (OH&P)	**$ -**	**$ -**	**$ -**
SUBTOTAL:	**$ 1,968,560**	**$ 1,887,381**	**$ 3,855,941**
CONTINGENCY ON ENTIRE PROJECT	**$ -**	**$ -**	**$ -**
TOTAL:	**$ 1,968,560**	**$ 1,887,381**	**$ 3,855,941**

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
J. Pleasant Valley Substation - Install									
1. SITE PREP/ GRADING/ FENCING / CIVIL									
1.1	Site Works including clearing, sediment controls, rough grading, and final grading.	0	ACRES	$ -	$ -	$ 230,000	$ -	$ 230,000	**$ -**
1.2	Station stone within substation fence.	75	CY	$ 27	$ 2,025	$ 75	$ 5,625	$ 102	**$ 7,650**
1.3	Substation Fence	90	LF	$ 100	$ 9,000	$ 100	$ 9,000	$ 200	**$ 18,000**
1.4	Permanent Access Road - 20'-Wide	0	LF	$ 35	$ -	$ 285	$ -	$ 320	**$ -**
1.5									
1.6									
1.7									
1.8									
1.9									
1.10									
1.11									
1.12									
1.13									
1.14									
1.15									
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL					$ 11,025		$ 14,625		$ 25,650
2. SUBSTATION FOUNDATIONS									
2.1	**345kV**								
2.1a	Circuit Breaker Foundations	1	EA	$ 14,940	$ 14,940	$ 16,000	$ 16,000	$ 30,940	**$ 30,940**
2.1b	Capacitor Bank Foundations	0	EA	$ 56,025	$ -	$ 60,000	$ -	$ 116,025	**$ -**
2.1c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 26,145	$ -	$ 28,000	$ -	$ 54,145	**$ -**
2.1d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 26,145	$ -	$ 28,000	$ -	$ 54,145	**$ -**
2.1e	Switch Stand Foundations	6	EA	$ 4,482	$ 26,892	$ 4,800	$ 28,800	$ 9,282	**$ 55,692**
2.1f	Station Service Transformer Stand Foundation	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	**$ -**
2.1g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1h	Bus Support 1 Ph Foundations	0	EA	$ 4,482	$ -	$ 4,800	$ -	$ 9,282	**$ -**
2.1j	Instrument Transformer Stand Foundations	9	EA	$ 4,482	$ 40,338	$ 4,800	$ 43,200	$ 9,282	**$ 83,538**
2.1k	Arrester Stand Foundations	3	EA	$ 4,482	$ 13,446	$ 4,800	$ 14,400	$ 9,282	**$ 27,846**
2.1m	Wave Trap Stand Foundations	1	EA	$ 4,482	$ 4,482	$ 4,800	$ 4,800	$ 9,282	**$ 9,282**
2.1n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
2.1p									
2.2	**230kV**								
2.2a	Circuit Breaker Foundations	0	EA	$ 11,952	$ -	$ 12,800	$ -	$ 24,752	**$ -**
2.2b	Capacitor Bank Foundations	0	EA	$ 44,820	$ -	$ 48,000	$ -	$ 92,820	**$ -**
2.2c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	**$ -**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.2d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 22,410	$ -	$ 24,000	$ -	$ 46,410	$ -
2.2e	Switch Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2f	Station Service Transformer Stand Foundation	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2g	Bus Support 3ph Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2h	Bus Support 1 Ph Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2j	Instrument Transformer Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2k	Arrester Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2m	Wave Trap Stand Foundations	0	EA	$ 3,735	$ -	$ 4,000	$ -	$ 7,735	$ -
2.2n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.2p									
2.3	**115kV**								
2.3a	Circuit Breaker Foundations	0	EA	$ 5,229	$ -	$ 5,600	$ -	$ 10,829	$ -
2.3b	Capacitor Bank Foundations	0	EA	$ 33,615	$ -	$ 36,000	$ -	$ 69,615	$ -
2.3c	Caisson DE Foundations (for DE A frame str. - stand alone)	0	EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	$ -
2.3d	Caisson DE Foundations (for DE A frame str. - shared column)	0	EA	$ 16,434	$ -	$ 17,600	$ -	$ 34,034	$ -
2.3e	Switch Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3f	Station Service Transformer Stand Foundation	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3g	Bus Support 3ph Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3h	Bus Support 1 Ph Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3j	Instrument Transformer Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3k	Arrester Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3m	Wave Trap Stand Foundations	0	EA	$ 2,988	$ -	$ 3,200	$ -	$ 6,188	$ -
2.3n	Misc. Structure Foundations	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.3p									
2.4	**Transformer Foundations**								
2.4a	345-230kV Transformer Foundation w/ Oil Containment	0	EA	$ 97,110	$ -	$ 104,000	$ -	$ 201,110	$ -
2.4b	345-115kV Transformer Foundation w/ Oil Containment	0	EA	$ 74,700	$ -	$ 80,000	$ -	$ 154,700	$ -
2.4c	230kV-115kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.4d	115kV-69kV Transformer Foundation w/ Oil Containment	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.5	**Control House Foundations / Pad**								
2.5a	Control House Addition Foundation (25-ft x 50-ft)	1	EA	$ 51,368	$ 51,368	$ 53,700	$ 53,700	$ 105,068	**$ 105,068**
2.5b	Generator Foundation	0	EA	$ 16,000	$ -	$ 17,000	$ -	$ 33,000	$ -
2.6	**Lightning Mast Foundations**								
2.6a	70' Lightning Mast Foundation	0	EA	$ 5,229	$ -	$ 5,600	$ -	$ 10,829	$ -
2.6b		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
2.6c		0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION FOUNDATIONS					$ 151,466		$ 160,900		$ 312,366
3. SUBSTATION STRUCTURES									
3.1	**345kV**								
3.1a	Substation A-Frame Structures - Stand alone	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	$ -
3.1b	Substation A-Frame Structures - Shared Column	0	EA	$ 37,000	$ -	$ 37,000	$ -	$ 74,000	$ -
3.1c	Switch Stands	1	EA	$ 14,800	$ 14,800	$ 14,800	$ 14,800	$ 29,600	**$ 29,600**
3.1d	Station Service Transformer Stand	0	EA	$ 14,800	$ -	$ 14,800	$ -	$ 29,600	$ -
3.1e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.1f	Bus Support 1 Ph	0	EA	$ 3,700	$ -	$ 3,700	$ -	$ 7,400	$ -
3.1g	Instrument Transformer Stand	9	EA	$ 1,850	$ 16,650	$ 1,850	$ 16,650	$ 3,700	**$ 33,300**
3.1h	Arrester Stand	3	EA	$ 1,850	$ 5,550	$ 1,850	$ 5,550	$ 3,700	**$ 11,100**
3.1j	Wave Trap Stand	1	EA	$ 7,400	$ 7,400	$ 7,400	$ 7,400	$ 14,800	**$ 14,800**
3.1k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
3.2	**230kV**								
3.2a	Substation A-Frame Structures - Stand alone	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	$ -
3.2b	Substation A-Frame Structures - Shared Column	0	EA	$ 33,300	$ -	$ 33,300	$ -	$ 66,600	$ -
3.2c	Switch Stands	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	$ -
3.2d	Station Service Transformer Stand	0	EA	$ 12,025	$ -	$ 12,025	$ -	$ 24,050	$ -
3.2e	Bus Support 3ph	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
3.2f	Bus Support 1 Ph	0	EA	$ 2,775	$ -	$ 2,775	$ -	$ 5,550	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
3.2g	Instrument Transformer Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	$ -
3.2h	Arrester Stand	0	EA	$ 1,295	$ -	$ 1,295	$ -	$ 2,590	$ -
3.2j	Wave Trap Stand	0	EA	$ 5,550	$ -	$ 5,550	$ -	$ 11,100	$ -
3.2k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
3.3	**115kV**								
3.3a	Substation A-Frame Structures - Stand alone	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	$ -
3.3b	Substation A-Frame Structures - Shared Column	0	EA	$ 18,500	$ -	$ 18,500	$ -	$ 37,000	$ -
3.3c	Switch Stands	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	$ -
3.3d	Fuse Stand	0	EA	$ 7,955	$ -	$ 7,955	$ -	$ 15,910	$ -
3.3e	Bus Support 3ph	0	EA	$ 3,330	$ -	$ 3,330	$ -	$ 6,660	$ -
3.3f	Bus Support 1 Ph	0	EA	$ 1,850	$ -	$ 1,850	$ -	$ 3,700	$ -
3.3g	Instrument Transformer Stand	0	EA	$ 740	$ -	$ 740	$ -	$ 1,480	$ -
3.3h	Arrester Stand	0	EA	$ 740	$ -	$ 740	$ -	$ 1,480	$ -
3.3j	Wave Trap Stand	0	EA	$ 3,700	$ -	$ 3,700	$ -	$ 7,400	$ -
3.3k	Misc. Structures	0	EA	$ 6,475	$ -	$ 6,475	$ -	$ 12,950	$ -
TOTAL - SUBSTATION STRUCTURES					$ 44,400		$ 44,400		$ 88,800
4. MAJOR EQUIPTMENT									
4.1	**345kV**								
4.1a	Circuit Breakers	1	EA	$ 200,000	$ 200,000	$ 80,000	$ 80,000	$ 280,000	**$ 280,000**
4.1b	Capacitor Banks - W/ Center Tap VT and Reactors	0	EA	$ 370,000	$ -	$ 80,000	$ -	$ 450,000	$ -
4.1c	Circuit Breakers - Cap Switching	0	EA	$ 220,000	$ -	$ 750,000	$ -	$ 970,000	$ -
4.1d	345 kV - 115 kV Auto Transformer	0	EA	$ -	$ -	$ 750,000	$ -	$ 750,000	$ -
4.2	**230kV**								
4.2a	Circuit Breakers	0	EA	$ 115,000	$ -	$ 80,000	$ -	$ 195,000	$ -
4.2b	Capacitor Banks	0	EA	$ -	$ -	$ 80,000	$ -	$ 80,000	$ -
4.3	**115kV**								
4.3a	Circuit Breakers	0	EA	$ 52,000	$ -	$ 60,000	$ -	$ 112,000	$ -
4.3b	Capacitor Banks	0	EA	$ -	$ -	$ 60,000	$ -	$ 60,000	$ -
TOTAL - MAJOR EQUIPTMENT					$ 200,000		$ 80,000		$ 280,000
5. SMALL EQUIPTMENT / MATERIALS									
5.1	**345kV**								
5.1a	Line Switches - 3ph w/ motor operator	1	EA	$ 40,000	$ 40,000	$ 15,000	$ 15,000	$ 55,000	**$ 55,000**
5.1b	Disconnect Switches - 3ph w/ manual operator	1	EA	$ 35,000	$ 35,000	$ 17,500	$ 17,500	$ 52,500	**$ 52,500**
5.1c	VT'S	3	EA	$ 25,000	$ 75,000	$ 12,000	$ 36,000	$ 37,000	**$ 111,000**
5.1d	CT'S	3	EA	$ 13,000	$ 39,000	$ 8,000	$ 24,000	$ 21,000	**$ 63,000**
5.1e	CCVT'S	3	EA	$ 13,000	$ 39,000	$ 8,000	$ 24,000	$ 21,000	**$ 63,000**
5.1f	Arresters	3	EA	$ 6,500	$ 19,500	$ 1,500	$ 4,500	$ 8,000	**$ 24,000**
5.1g	Wave Traps	1	EA	$ 13,000	$ 13,000	$ 8,000	$ 8,000	$ 21,000	**$ 21,000**
5.1h	Station Service Transformers	0	EA	$ 200,000	$ -	$ 50,000	$ -	$ 250,000	$ -
5.1j									
5.2	**230kV**								
5.2a	Line Switches - 3ph w/ motor operator	0	EA	$ 35,000	$ -	$ 15,000	$ -	$ 50,000	$ -
5.2b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 30,000	$ -	$ 17,500	$ -	$ 47,500	$ -
5.2c	VT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2e	CCVT'S	0	EA	$ 10,000	$ -	$ 6,000	$ -	$ 16,000	$ -
5.2f	Arresters	0	EA	$ 5,000	$ -	$ 6,000	$ -	$ 11,000	$ -
5.2g	Wave Traps	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.2h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.2j									
5.3	**115kV**								
5.3a	Line Switches - 3ph w/ motor operator	0	EA	$ 33,000	$ -	$ 15,000	$ -	$ 48,000	$ -
5.3b	Disconnect Switches - 3ph w/ manual operator	0	EA	$ 28,000	$ -	$ 17,500	$ -	$ 45,500	$ -
5.3c	VT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.3d	CT'S	0	EA	$ 13,000	$ -	$ 8,000	$ -	$ 21,000	$ -
5.3e	CCVT'S	0	EA	$ 8,000	$ -	$ 8,000	$ -	$ 16,000	$ -
5.3f	Arresters	0	EA	$ 3,420	$ -	$ 6,000	$ -	$ 9,420	$ -
5.3g	Wave Traps	0	EA	$ -	$ -	$ -	$ -	$ -	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
5.3h	Station Service Transformers	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
5.3j	Fuses	0	EA	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL - SMALL EQUIPTMENT / MATERIALS					$ 260,500		$ 129,000		$ 389,500
6. CONTROL HOUSE / PANELS / GENERATOR									
6.1	CONTROL HOUSE Addition (25-ft x 50-ft)	1	EA	$ 325,000	$ 325,000	$ 85,000	$ 85,000	$ 410,000	**$ 410,000**
6.2	Protection and Telecom Equipment Panels	3	EA	$ 35,000	$ 105,000	$ 12,500	$ 37,500	$ 47,500	**$ 142,500**
6.3	125VDC Batteries	0	EA	$ 75,000	$ -	$ 25,000	$ -	$ 100,000	**$ -**
6.4	Control Cables	1	LS	$ 130,900	$ 130,900	$ 130,900	$ 130,900	$ 261,800	**$ 261,800**
6.5	SCADA and Communications	0	EA	$ -	$ -	$ -	$ -	$ -	**$ -**
6.6	Low Voltage AC Distribution	0	EA	$ 50,000	$ -	$ 100,000	$ -	$ 150,000	**$ -**
6.7	DC Distribution System	0	EA	$ 50,000	$ -	$ 100,000	$ -	$ 150,000	**$ -**
6.8	Security	0	EA	$ 7,500	$ -	$ 7,500	$ -	$ 15,000	**$ -**
6.9	Fire Alarm	0	EA	$ 7,500	$ -	$ 7,500	$ -	$ 15,000	**$ -**
6.10	Generator	0	EA	$ 100,000	$ -	$ 80,000	$ -	$ 180,000	**$ -**
TOTAL - CONTROL HOUSE / PANELS / GENERATOR					$ 560,900		$ 253,400		**$ 814,300**
7. MISC ITEMS									
7.1	Conduit & Cable Trench System	800	LF	$ 185.00	$ 148,000	$ 170.00	$ 136,000	$ 355	**$ 284,000**
7.2	Rigid Bus, Fittings & Insulators	0	LF	$ 125.07	$ -	$ 237.10	$ -	$ 362	**$ -**
7.3	Strain Bus, Connectors & Insulators	2,500	LF	$ 13.38	$ 33,450	$ 39.35	$ 98,375	$ 53	**$ 131,825**
7.4	Grounding System	0	LF	$ 6.93	$ -	$ 32.58	$ -	$ 40	**$ -**
7.5	Strain Bus Insulators - 345kV	54	EA	$ 2,000	$ 108,000	$ 1,050	$ 56,700	$ 3,050	**$ 164,700**
7.6	Strain Bus Insulators - 230kV	0	EA	$ 1,400	$ -	$ 750	$ -	$ 2,150	**$ -**
7.7	Strain Bus Insulators - 115kV	0	EA	$ 1,000	$ -	$ 550	$ -	$ 1,550	**$ -**
7.8	Low Voltage AC Station Service	0	LS	$ 50,000	$ -	$ 75,000	$ -	$ 125,000	**$ -**
7.9	SSVT Service	0	LS	$ 45,000	$ -	$ 45,000	$ -	$ 90,000	**$ -**
7.10	Control Conduits from Trench to Equipment	1	LS	$ 125,000	$ 125,000	$ 125,000	$ 125,000	$ 250,000	**$ 250,000**
7.11	Misc. Materials (Above and Below Ground)	1	LS	$ 180,000	$ 180,000	$ 180,000	$ 180,000	$ 360,000	**$ 360,000**
7.12									
7.13									
7.14									
7.15									
7.16									
7.17									
7.18									
7.19									
7.20									
7.21									
7.22									
7.23									
7.24									
7.25									
TOTAL - MISC ITEMS					$ 594,450		$ 596,075		$ 1,190,525
J. Pleasant Valley Substation - Install					$ 1,822,741		$ 1,278,400		**$ 3,101,141**
8. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
8.1	Mob / Demob	1	LS	$ -	$ -	$ 31,011	$ 31,011	$ 31,011	**$ 31,011**
	Project Management, Material Handling & Amenities								
8.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 149,215	$ 149,215	$ 149,215	**$ 149,215**
8.3	Utility PM and Project Oversite	1	LS		$ -	$ 31,011	$ 31,011	$ 31,011	**$ 31,011**
8.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 31,011	$ 31,011	$ 31,011	**$ 31,011**
	Engineering								
8.5	Design Engineering	1	LS	$ -	$ -	$ 248,091	$ 248,091	$ 248,091	**$ 248,091**
8.6	LiDAR	-	Mile	$ -	$ -	$ -	$ -	$ -	**$ -**
8.7	Geotech	2	EA	$ -	$ -	$ 3,500	$ 7,000	$ 3,500	**$ 7,000**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
8.8	Surveying/Staking	1	Site	$ -	$ -	$ 21,708	$ 21,708	$ 21,708	**$ 21,708**
	Testing & Commissioning								
8.9	Testing & Commissioning of T-Line and Equipment	1	LS	$ -	$ -	$ 77,529	$ 77,529	$ 77,529	**$ 77,529**
	Permitting and Additional Costs								
8.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.12	Warranties / LOC's	1	LS	$ -	$ -	$ 9,303	$ 9,303	$ 9,303	**$ 9,303**
8.13	Real Estate Costs (New)	1	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.14	Real Estate Costs (Incumbent Utility)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.15	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.16	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.17		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
8.18	Sales Tax on Materials	1	LS	$ 145,819	$ 145,819	$ -	$ -	$ 145,819	**$ 145,819**
8.19	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 3,101	$ 3,101	$ 3,101	**$ 3,101**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 145,819		$ 608,981		**$ 754,800**

ITC T032 (Segment B) — **K. Interconnection Knickerbocker Station**

Estimate Revision: 8 — **Total: $ 3,623,034**

ITC T032 (Segment B)	*Supply*	*Installation*	*Total*
K. Interconnection Knickerbocker Station			
1. CLEARING & ACCESS	$ -	$ 436,850	$ 436,850
2. FOUNDATIONS	$ 756,457	$ 764,558	$ 1,521,015
3. STRUCTURES	$ 556,300	$ 370,424	$ 926,724
4. CONDUCTOR, SHIELDWIRE, OPGW	$ -	$ -	$ -
5. INSULATORS, FITTINGS, HARDWARE	$ 128,000	$ 55,640	$ 183,640
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 115,261	$ 439,544	$ 554,805
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 1,556,017	$ 2,067,017	$ 3,623,034
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 1,556,017	$ 2,067,017	$ 3,623,034

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
K. Interconnection Knickerbocker Station									
1. CLEARING & ACCESS									
1.1	Clearing the ROW - Heavy (mowing & clearing)	-	Acre	$ -	$ -	$ 15,000	$ -	$ 15,000	$ -
1.2	Clearing the ROW - Light (mowing)	2.0	Acre	$ -	$ -	$ 5,000	$ 10,000	$ 5,000	**$ 10,000**
1.3	Access Road	-	LF	$ -	$ -	$ 45	$ -	$ 45	$ -
1.4	Silt Fence	3,500.0	LF	$ -	$ -	$ 4	$ 14,000	$ 4	**$ 14,000**
1.5	Matting - Access and ROW	3,500.0	LF	$ -	$ -	$ 70	$ 245,000	$ 70	**$ 245,000**
1.6	Matting - To Work Area	525.0	LF	$ -	$ -	$ 70	$ 36,750	$ 70	**$ 36,750**
1.7	Snow Removal	-	LS	$ -	$ -	$ 516,800	$ -	$ 516,800	$ -
1.8	ROW Restoration	0.5	Mile	$ -	$ -	$ 10,000	$ 5,000	$ 10,000	**$ 5,000**
1.9	Work Pads	35,000.0	SF	$ -	$ -	$ 4	$ 123,200	$ 4	**$ 123,200**
1.10	Restoration for Work Pad areas	7,000.0	SF	$ -	$ -	$ 0.2	$ 1,050	$ 0	**$ 1,050**
1.11	Temporary Access Bridge	-	EA	$ -	$ -	$ 20,035	$ -	$ 20,035	$ -
1.12	Air Bridge	-	EA	$ -	$ -	$ 14,445	$ -	$ 14,445	$ -
1.13	Stabilized Construction Entrance	-	EA	$ -	$ -	$ 4,580	$ -	$ 4,580	$ -
1.14	Maintenance and Protection of Traffic on Public Roads	-	EA	$ -	$ -	$ 4,130	$ -	$ 4,130	$ -
1.15	Gates	-	EA	$ 2,000	$ -	$ 2,500	$ -	$ 4,500	$ -
1.16	Culverts / Misc. Access	-	EA	$ 750	$ -	$ 1,250	$ -	$ 2,000	$ -
1.17	Concrete Washout Station	1	EA	$ -	$ -	$ 1,850	$ 1,850	$ 1,850	**$ 1,850**
1.18					$ -		$ -		$ -
1.19					$ -		$ -		$ -
1.20	Crushed Rock	0	CY	$ 27	$ -	$ 75	$ -	$ 102	$ -
TOTAL - CLEARING & ACCESS					$ -		$ 436,850		$ 436,850
2. FOUNDATIONS									
2.1	Drilled Pier - 115kV Single Circuit H- Pole Tangent	2	EA	$ 64,635	$ 129,270	$ 65,327	$ 130,654	$ 129,962	**$ 259,924**
2.2	Drilled Pier - 115kV Single Circuit Single Pole Angle/DE	1	EA	$ 76,484	$ 76,484	$ 77,303	$ 77,303	$ 153,787	**$ 153,787**
2.3	Drilled Pier - 345kV Single Circuit H-Pole Angle /DE	4	EA	$ 137,676	$ 550,703	$ 139,150	$ 556,601	$ 276,826	**$ 1,107,304**
2.4									
2.5	Rock Excavation Adder	-	CY	$ -	$ -	$ 2,000	$ -	$ 2,000	$ -
2.6					$ -		$ -		$ -
2.7					$ -		$ -		$ -
2.8					$ -		$ -		$ -
2.9					$ -		$ -		$ -
2.10					$ -		$ -		$ -
2.11					$ -		$ -		$ -
2.12					$ -		$ -		$ -
2.13					$ -		$ -		$ -
2.14					$ -		$ -		$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.15					$ -		$ -		$ -
TOTAL - FOUNDATIONS					$ 756,457		$ 764,558		$ 1,521,015
3. STRUCTURES									
3.1	115kV Single Circuit Single Pole Angle/DE	1	Structure	$ 55,315	$ 55,315	$ 33,189	$ 33,189	$ 88,504	**$ 88,504**
3.2	115kV Single Circuit Single Pole Tangent	2	Structure	$ 39,261	$ 78,521	$ 23,556	$ 47,113	$ 62,817	**$ 125,634**
3.3	345kV Single Circuit Single Pole Angle /DE	4	Structure	$ 104,730	$ 418,921	$ 62,838	$ 251,353	$ 167,569	**$ 670,274**
3.4					$ -		$ -		**$** -
3.5	Install Grounding and Grounding Accessories	7	Structure	$ 506	$ 3,542	$ 5,539	$ 38,770	$ 6,045	**$ 42,312**
3.6					$ -		$ -		**$** -
3.7					$ -		$ -		**$** -
3.8					$ -		$ -		**$** -
3.9					$ -		$ -		**$** -
3.10					$ -		$ -		**$** -
3.11					$ -		$ -		**$** -
3.12					$ -		$ -		**$** -
3.13					$ -		$ -		**$** -
3.14					$ -		$ -		**$** -
3.15					$ -		$ -		**$** -
TOTAL - STRUCTURES					$ 556,300		$ 370,424		$ 926,724
4. CONDUCTOR, SHIELDWIRE, OPGW									
4.1	345kV - (2) 954kcmil 54/7 ACSS "Cardinal"	-	LF	$ 1.90	$ -	$ 5.00	$ -	$ 6.90	**$** -
4.2	(1) OPGW 36 Fiber AC-33/38/571	-	LF	$ 1.35	$ -	$ 5.00	$ -	$ 6.35	**$** -
4.3	(1) 3/8" EHS7 Steel	-	LF	$ 0.47	$ -	$ 5.00	$ -	$ 5.47	**$** -
4.5	Remove Existing 115kV Cable From Existing Structures	-	Mile	$ -	$ -	$ 30,000	$ -	$ 30,000.00	**$** -
4.6	Remove Existing OPGW Cable	-	Mile	$ -	$ -	$ 12,000	$ -	$ 12,000.00	**$** -
4.7	Remove Existing EH7	-	Mile	$ -	$ -	$ 12,000	$ -	$ 12,000.00	**$** -
4.8	115kV - (1) 954kcmil 54/7 ACSS "Cardinal"	-	LF	$ 1.90	$ -	$ 5.00	$ -	$ 6.90	**$** -
4.9		-							
4.10	Rider Poles - Relocated	-	Set	$ -	$ -	$ 3,500	$ -	$ 3,500.00	**$** -
4.11	Rider Poles	-	EA	$ 1,750	$ -	$ 3,500	$ -	$ 5,250.00	**$** -
TOTAL: CONDUCTOR, SHIELDWIRE, OPGW:					$ -		$ -		**$** -
5. INSULATOR, FITTINGS, HARDWARE									
5.1	345kV Tangent (1-Group of 18-Bells Each Assembly)	-	Assembly	$ 1,800	$ -	$ 720	$ -	$ 2,520	**$** -
5.2	115kV Tangent (1-Group of 9-Bells Each Assembly)	12	Assembly	$ 900	$ 10,800	$ 560	$ 6,720	$ 1,460	**$ 17,520**
5.3	345kV Dead-end & Angle Insulators (1-Group of 18-Bells Each Assembly)	60	Assembly	$ 1,800	$ 108,000	$ 720	$ 43,200	$ 2,520	**$ 151,200**
5.4	115kV Dead-end & Angle Insulators (1-Group of 9-Bells Each Assembly)	7	Assembly	$ 900	$ 6,300	$ 560	$ 3,920	$ 1,460	**$ 10,220**
5.5			Assembly		$ -		$ -	$ -	**$** -
5.6	OPGW Assembly - Tangent	2	Assembly	$ 200	$ 400	$ 150	$ 300	$ 350	**$ 700**
5.7	OPGW Assembly - Angle / DE	10	Assembly	$ 250	$ 2,500	$ 150	$ 1,500	$ 400	**$ 4,000**
5.8	OHSW Assembly - Tangent	-	Assembly	$ 200	$ -	$ 150	$ -	$ 350	**$** -
5.9	OHSW Assembly - Angle / DE	-	Assembly	$ 250	$ -	$ 150	$ -	$ 400	**$** -
5.10	OPGW Splice Boxes	-	Set	$ 1,750	$ -	$ 1,746	$ -	$ 3,496	**$** -
5.11	OPGW Splice & Test	-	EA	$ 1,400	$ -	$ 2,520	$ -	$ 3,920	**$** -
5.12	Spacer - Conductor	-	EA	$ 50	$ -	$ 35	$ -	$ 85	**$** -
5.13	Vibration Dampers - Conductor	-	EA	$ 35	$ -	$ 35	$ -	$ 70	**$** -
5.14	Shieldwire / OPGW Dampers, Misc. Fittings	-	EA	$ 27	$ -	$ 35	$ -	$ 62	**$** -
5.15	Guys, Anchors, and Accessories	-	EA	$ 720	$ -	$ 885	$ -	$ 1,605	**$** -
5.16	Misc. materials (Signs and Markers)	-	Mile	$ 770	$ -	$ 1,006	$ -	$ 1,776	**$** -
5.17									
5.18									
5.19									
5.20									
TOTAL - INSULATOR, FITTINGS, HARDWARE					$ 128,000		$ 55,640		$ 183,640
K. Interconnection Knickerbocker Station					$ 1,440,757		$ 1,627,472		$ 3,068,229
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
6.1	Mob / Demob	1	LS	$ -	$ -	$ 30,682	$ 30,682	$ 30,682	**$ 30,682**
	Project Management, Material Handling & Amenities								
6.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 147,631	$ 147,631	$ 147,631	**$ 147,631**
6.3	Utility PM and Project Oversite	1	LS		$ -	$ 30,682	$ 30,682	$ 30,682	**$ 30,682**
6.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 30,682	$ 30,682	$ 30,682	**$ 30,682**
	Engineering								

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6.5	Design Engineering	1	LS	$ -	$ -	$ 153,411	$ 153,411	$ 153,411	**$ 153,411**
6.6	LiDAR	1	LS	$ -	$ -	$ 9,205	$ 9,205	$ 9,205	**$ 9,205**
6.7	Geotech	1.0	Location	$ -	$ -	$ 3,500	$ 3,500	$ 3,500	**$ 3,500**
6.8	Surveying/Staking	1	LS	$ -	$ -	$ 21,478	$ 21,478	$ 21,478	**$ 21,478**
	Testing & Commissioning								
6.9	Testing & Commissioning of T-Line and Equipment	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
	Permitting and Additional Costs								
6.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.12	Warranties / LOC's	1	LS	$ -	$ -	$ 9,205	$ 9,205	$ 9,205	**$ 9,205**
6.13	Real Estate Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.14	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.15	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.16		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.17	Sales Tax on Materials	1	LS	$ 115,261	$ 115,261	$ -	$ -	$ 115,261	**$ 115,261**
6.18	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 3,068	$ 3,068	$ 3,068	**$ 3,068**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 115,261		$ 439,544		**$ 554,805**

ITC T032 (Segment B)

L. Interconnection Churchtown Station

Estimate Revision: 8

Total: $ 2,404,297

ITC T032 (Segment B)	*Supply*	*Installation*	*Total*
L. Interconnection Churchtown Station			
1. CLEARING & ACCESS	$ -	$ 436,850	$ 436,850
2. FOUNDATIONS	$ 212,820	$ 669,100	$ 881,920
3. STRUCTURES	$ 318,188	$ 353,416	$ 671,604
4. CONDUCTOR, SHIELDWIRE, OPGW	$ -	$ -	$ -
5. INSULATORS, FITTINGS, HARDWARE	$ 44,000	$ 27,410	$ 71,410
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 46,001	$ 296,512	$ 342,513
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 621,009	$ 1,783,288	$ 2,404,297
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 621,009	$ 1,783,288	$ 2,404,297

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
L. Interconnection Churchtown Station									
1. CLEARING & ACCESS									
1.1	Clearing the ROW - Heavy (mowing & clearing)	-	Acre	$ -	$ -	$ 15,000	$ -	$ 15,000	$ -
1.2	Clearing the ROW - Light (mowing)	2.0	Acre	$ -	$ -	$ 5,000	$ 10,000	$ 5,000	**$ 10,000**
1.3	Access Road	-	LF	$ -	$ -	$ 45	$ -	$ 45	$ -
1.4	Silt Fence	3,500.0	LF	$ -	$ -	$ 4	$ 14,000	$ 4	**$ 14,000**
1.5	Matting - Access and ROW	3,500.0	LF	$ -	$ -	$ 70	$ 245,000	$ 70	**$ 245,000**
1.6	Matting - To Work Area	525.0	LF	$ -	$ -	$ 70	$ 36,750	$ 70	**$ 36,750**
1.7	Snow Removal	-	LS	$ -	$ -	$ 516,800	$ -	$ 516,800	$ -
1.8	ROW Restoration	0.5	Mile	$ -	$ -	$ 10,000	$ 5,000	$ 10,000	**$ 5,000**
1.9	Work Pads	35,000.0	SF	$ -	$ -	$ 4	$ 123,200	$ 4	**$ 123,200**
1.10	Restoration for Work Pad areas	7,000.0	SF	$ -	$ -	$ 0.2	$ 1,050	$ 0	**$ 1,050**
1.11	Temporary Access Bridge	-	EA	$ -	$ -	$ 20,035	$ -	$ 20,035	$ -
1.12	Air Bridge	-	EA	$ -	$ -	$ 14,445	$ -	$ 14,445	$ -
1.13	Stabilized Construction Entrance	-	EA	$ -	$ -	$ 4,580	$ -	$ 4,580	$ -
1.14	Maintenance and Protection of Traffic on Public Roads	-	EA	$ -	$ -	$ 4,130	$ -	$ 4,130	$ -
1.15	Gates	-	EA	$ 2,000	$ -	$ 2,500	$ -	$ 4,500	$ -
1.16	Culverts / Misc. Access	-	EA	$ 750	$ -	$ 1,250	$ -	$ 2,000	$ -
1.17	Concrete Washout Station	1	EA	$ -	$ -	$ 1,850	$ 1,850	$ 1,850	**$ 1,850**
1.18					$ -		$ -		$ -
1.19					$ -		$ -		$ -
1.20	Crushed Rock	0	CY	$ 27	$ -	$ 75	$ -	$ 102	$ -
TOTAL - CLEARING & ACCESS					$ -		$ 436,850		$ 436,850
2. FOUNDATIONS									
2.1	Drilled Pier - 115kV Single Circuit H- Pole Angle/ DE	2	EA	$ 30,403	$ 60,806	$ 30,729	$ 61,457	$ 61,131	**$ 122,263**
2.2	Drilled Pier - 115kV Single Circuit H- Pole Tangent	3	EA	$ 30,403	$ 91,209	$ 30,729	$ 92,186	$ 61,131	**$ 183,394**
2.3	Drilled Pier - 115kV Single Circuit Single Pole Angle/ DE	2	EA	$ 30,403	$ 60,806	$ 30,729	$ 61,457	$ 61,131	**$ 122,263**
2.4									
2.5	Rock Excavation Adder	227	CY	$ -	$ -	$ 2,000	$ 454,000	$ 2,000	**$ 454,000**
2.6					$ -		$ -		$ -
2.7					$ -		$ -		$ -
2.8					$ -		$ -		$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.9					$ -		$ -		$ -
2.10					$ -		$ -		$ -
2.11					$ -		$ -		$ -
2.12					$ -		$ -		$ -
2.13					$ -		$ -		$ -
2.14					$ -		$ -		$ -
2.15					$ -		$ -		$ -
TOTAL - FOUNDATIONS					$ 212,820		$ 669,100		$ 881,920
3. STRUCTURES									
3.1	115kV Single Circuit Single Pole Angle/ DE	4	Structure	$ 49,216	$ 196,864	$ 49,216	$ 196,864	$ 98,432	**$ 393,728**
3.2	115kV Single Circuit Single Pole Tangent	3	Structure	$ 39,261	$ 117,782	$ 39,261	$ 117,782	$ 78,521	**$ 235,564**
3.3									
3.4					$ -		$ -		$ -
3.5	Install Grounding and Grounding Accessories	7	Structure	$ 506	$ 3,542	$ 5,539	$ 38,770	$ 6,045	**$ 42,312**
3.6					$ -		$ -		$ -
3.7					$ -		$ -		$ -
3.8					$ -		$ -		$ -
3.9					$ -		$ -		$ -
3.10					$ -		$ -		$ -
3.11					$ -		$ -		$ -
3.12					$ -		$ -		$ -
3.13					$ -		$ -		$ -
3.14					$ -		$ -		$ -
3.15					$ -		$ -		$ -
TOTAL - STRUCTURES					$ 318,188		$ 353,416		$ 671,604
4. CONDUCTOR, SHIELDWIRE, OPGW									
4.1	345kV - (1) 954kcmil 54/7 ACSS "Cardinal"	-	LF	$ 1.90	$ -	$ 5.00	$ -	$ 6.90	$ -
4.2	(1) OPGW 36 Fiber AC-33/38/571	-	LF	$ 1.35	$ -	$ 5.00	$ -	$ 6.35	$ -
4.3	(1) 3/8" EHS7 Steel	-	LF	$ 0.47	$ -	$ 5.00	$ -	$ 5.47	$ -
4.5	Remove Existing 115kV Cable From Existing Structures	-	Mile	$ -	$ -	$ 30,000	$ -	$ 30,000.00	$ -
4.6	Remove Existing OPGW Cable	-	Mile	$ -	$ -	$ 12,000	$ -	$ 12,000.00	$ -
4.7	Remove Existing EH7	-	Mile	$ -	$ -	$ 12,000	$ -	$ 12,000.00	$ -
4.8	115kV - (1) 954kcmil 54/7 ACSS "Cardinal"	-	LF	$ 1.90	$ -	$ 5.00	$ -	$ 6.90	$ -
4.9		-							
4.10	Rider Poles - Relocated	-	Set	$ -	$ -	$ 3,500	$ -	$ 3,500.00	$ -
4.11	Rider Poles	-	EA	$ 1,750	$ -	$ 3,500	$ -	$ 5,250.00	$ -
TOTAL: CONDUCTOR, SHIELDWIRE, OPGW:					$ -		$ -		$ -
5. INSULATOR, FITTINGS, HARDWARE									
5.1	345kV Tangent (1-Group of 18-Bells Each Assembly)	-	Assembly	$ 1,800	$ -	$ 720	$ -	$ 2,520	$ -
5.2	115kV Tangent (1-Group of 9-Bells Each Assembly)	18	Assembly	$ 900	$ 16,200	$ 560	$ 10,080	$ 1,460	**$ 26,280**
5.3	345kV Dead-end & Angle Insulators (1-Group of 18-Bells Each Assembly)	-	Assembly	$ 1,800	$ -	$ 720	$ -	$ 2,520	$ -
5.4	115kV Dead-end & Angle Insulators (1-Group of 9-Bells Each Assembly)	28	Assembly	$ 900	$ 25,200	$ 560	$ 15,680	$ 1,460	**$ 40,880**
5.5			Assembly		$ -		$ -	$ -	$ -
5.6	OPGW Assembly - Tangent	3	Assembly	$ 200	$ 600	$ 150	$ 450	$ 350	**$ 1,050**
5.7	OPGW Assembly - Angle / DE	8	Assembly	$ 250	$ 2,000	$ 150	$ 1,200	$ 400	**$ 3,200**
5.8	OHSW Assembly - Tangent	-	Assembly	$ 200	$ -	$ 150	$ -	$ 350	$ -
5.9	OHSW Assembly - Angle / DE	-	Assembly	$ 250	$ -	$ 150	$ -	$ 400	$ -
5.10	OPGW Splice Boxes	-	Set	$ 1,750	$ -	$ 1,746	$ -	$ 3,496	$ -
5.11	OPGW Splice & Test	-	EA	$ 1,400	$ -	$ 2,520	$ -	$ 3,920	$ -
5.12	Spacer - Conductor	-	EA	$ 50	$ -	$ 35	$ -	$ 85	$ -
5.13	Vibration Dampers - Conductor	-	EA	$ 35	$ -	$ 35	$ -	$ 70	$ -
5.14	Shieldwire / OPGW Dampers, Misc. Fittings	-	EA	$ 27	$ -	$ 35	$ -	$ 62	$ -
5.15	Guys, Anchors, and Accessories	-	EA	$ 720	$ -	$ 885	$ -	$ 1,605	$ -
5.16	Misc. materials (Signs and Markers)	-	Mile	$ 770	$ -	$ 1,006	$ -	$ 1,776	$ -
5.17									
5.18									
5.19									
5.20									
TOTAL - INSULATOR, FITTINGS, HARDWARE					$ 44,000		$ 27,410		$ 71,410
L. Interconnection Churchtown Station					$ 575,008		$ 1,486,775		$ 2,061,784
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
	Contractor Mobilization / Demobilization								
6.1	Mob / Demob	1	LS	$ -	$ -	$ 20,618	$ 20,618	$ 20,618	**$ 20,618**
	Project Management, Material Handling & Amenities								
6.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 99,205	$ 99,205	$ 99,205	**$ 99,205**
6.3	Utility PM and Project Oversite	1	LS		$ -	$ 20,618	$ 20,618	$ 20,618	**$ 20,618**
6.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 20,618	$ 20,618	$ 20,618	**$ 20,618**
	Engineering								
6.5	Design Engineering	1	LS	$ -	$ -	$ 103,089	$ 103,089	$ 103,089	**$ 103,089**
6.6	LiDAR	1	LS	$ -	$ -	$ 6,185	$ 6,185	$ 6,185	**$ 6,185**
6.7	Geotech	1	Location	$ -	$ -	$ 3,500	$ 3,500	$ 3,500	**$ 3,500**
6.8	Surveying/Staking	1	LS	$ -	$ -	$ 14,432	$ 14,432	$ 14,432	**$ 14,432**
	Testing & Commissioning								
6.9	Testing & Commissioning of T-Line and Equipment	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
	Permitting and Additional Costs								
6.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.12	Warranties / LOC's	1	LS	$ -	$ -	$ 6,185	$ 6,185	$ 6,185	**$ 6,185**
6.13	Real Estate Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.14	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.15	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.16		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.17	Sales Tax on Materials	1	LS	$ 46,001	$ 46,001	$ -	$ -	$ 46,001	**$ 46,001**
6.18	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 2,062	$ 2,062	$ 2,062	**$ 2,062**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 46,001		$ 296,512		**$ 342,513**

ITC T032 (Segment B)

M. Interconnection Milan Station

Estimate Revision: 8

Total: $ 745,311

ITC T032 (Segment B)	*Supply*	*Installation*	*Total*
M. Interconnection Milan Station			
1. CLEARING & ACCESS	$ -	$ 121,100	$ 121,100
2. FOUNDATIONS	$ 84,375	$ 135,279	$ 219,654
3. STRUCTURES	$ 130,328	$ 140,393	$ 270,721
4. CONDUCTOR, SHIELDWIRE, OPGW	$ -	$ -	$ -
5. INSULATORS, FITTINGS, HARDWARE	$ 13,600	$ 8,440	$ 22,040
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 18,264	$ 93,533	$ 111,797
CONTRACTOR MARK-UP (OH&P)	$ -	$ -	$ -
SUBTOTAL:	$ 246,567	$ 498,744	$ 745,311
CONTINGENCY ON ENTIRE PROJECT	$ -	$ -	$ -
TOTAL:	$ 246,567	$ 498,744	$ 745,311

Description of Work:

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
M. Interconnection Milan Station									
1. CLEARING & ACCESS									
1.1	Clearing the ROW - Heavy (mowing & clearing)	-	Acre	$ -	$ -	$ 15,000	$ -	$ 15,000	$ -
1.2	Clearing the ROW - Light (mowing)	1.0	Acre	$ -	$ -	$ 5,000	$ 5,000	$ 5,000	**$ 5,000**
1.3	Access Road	-	LF	$ -	$ -	$ 45	$ -	$ 45	$ -
1.4	Silt Fence	500.0	LF	$ -	$ -	$ 4	$ 2,000	$ 4	**$ 2,000**
1.5	Matting - Access and ROW	500.0	LF	$ -	$ -	$ 70	$ 35,000	$ 70	**$ 35,000**
1.6	Matting - To Work Area	525.0	LF	$ -	$ -	$ 70	$ 36,750	$ 70	**$ 36,750**
1.7	Snow Removal	-	LS	$ -	$ -	$ 516,800	$ -	$ 516,800	$ -
1.8	ROW Restoration	0.5	Mile	$ -	$ -	$ 10,000	$ 5,000	$ 10,000	**$ 5,000**
1.9	Work Pads	10,000.0	SF	$ -	$ -	$ 4	$ 35,200	$ 4	**$ 35,200**
1.10	Restoration for Work Pad areas	2,000.0	SF	$ -	$ -	$ 0.2	$ 300	$ 0	**$ 300**
1.11	Temporary Access Bridge	-	EA	$ -	$ -	$ 20,035	$ -	$ 20,035	$ -
1.12	Air Bridge	-	EA	$ -	$ -	$ 14,445	$ -	$ 14,445	$ -
1.13	Stabilized Construction Entrance	-	EA	$ -	$ -	$ 4,580	$ -	$ 4,580	$ -
1.14	Maintenance and Protection of Traffic on Public Roads	-	EA	$ -	$ -	$ 4,130	$ -	$ 4,130	$ -
1.15	Gates	-	EA	$ 2,000	$ -	$ 2,500	$ -	$ 4,500	$ -
1.16	Culverts / Misc. Access	-	EA	$ 750	$ -	$ 1,250	$ -	$ 2,000	$ -
1.17	Concrete Washout Station	1	EA	$ -	$ -	$ 1,850	$ 1,850	$ 1,850	**$ 1,850**
1.18					$ -		$ -		$ -
1.19					$ -		$ -		$ -
1.20	Crushed Rock	0	CY	$ 27	$ -	$ 75	$ -	$ 102	$ -
TOTAL - CLEARING & ACCESS					$ -		$ 121,100		$ 121,100
2. FOUNDATIONS									
2.1	Drilled Pier - 115kV Single Circuit Single Pole Angle/DE	2	EA	$ 42,187	$ 84,375	$ 42,639	$ 85,279	$ 84,827	**$ 169,654**
2.2									
2.3									
2.4									
2.5	Rock Excavation Adder	25	CY	$ -	$ -	$ 2,000	$ 50,000	$ 2,000	**$ 50,000**
2.6					$ -		$ -		$ -
2.7					$ -		$ -		$ -
2.8					$ -		$ -		$ -
2.9					$ -		$ -		$ -
2.10					$ -		$ -		$ -
2.11					$ -		$ -		$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
2.12					$ -		$ -		$ -
2.13					$ -		$ -		$ -
2.14					$ -		$ -		$ -
2.15					$ -		$ -		$ -
TOTAL - FOUNDATIONS					$ 84,375		$ 135,279		$ 219,654
3. STRUCTURES									
3.1	115kV Single Circuit Single Pole Angle/DE	2	Structure	$ 64,658	$ 129,316	$ 64,658	$ 129,316	$ 129,316	**$ 258,632**
3.2									
3.3									
3.4					$ -		$ -		$ -
3.5	Install Grounding and Grounding Accessories	2	Pole	$ 506	$ 1,012	$ 5,539	$ 11,077	$ 6,045	**$ 12,089**
3.6					$ -		$ -		$ -
3.7					$ -		$ -		$ -
3.8					$ -		$ -		$ -
3.9					$ -		$ -		$ -
3.10					$ -		$ -		$ -
3.11					$ -		$ -		$ -
3.12					$ -		$ -		$ -
3.13					$ -		$ -		$ -
3.14					$ -		$ -		$ -
3.15					$ -		$ -		$ -
TOTAL - STRUCTURES					$ 130,328		$ 140,393		$ 270,721
4. CONDUCTOR, SHIELDWIRE, OPGW									
4.1	345kV - (2) 954kcmil 54/7 ACSS "Cardinal"	-	LF	$ 1.90	$ -	$ 5.00	$ -	$ 6.90	$ -
4.2	(1) OPGW 36 Fiber AC-33/38/571	-	LF	$ 1.35	$ -	$ 5.00	$ -	$ 6.35	$ -
4.3	(1) 3/8" EHS7 Steel	-	LF	$ 0.47	$ -	$ 5.00	$ -	$ 5.47	$ -
4.5	Remove Existing 115kV Cable From Existing Structures	-	Mile	$ -	$ -	$ 30,000	$ -	$ 30,000.00	$ -
4.6	Remove Existing OPGW Cable	-	Mile	$ -	$ -	$ 12,000	$ -	$ 12,000.00	$ -
4.7	Remove Existing EH7	-	Mile	$ -	$ -	$ 12,000	$ -	$ 12,000.00	$ -
4.8	115kV - (1) 954kcmil 54/7 ACSS "Cardinal"	-	LF	$ 1.90	$ -	$ 5.00	$ -	$ 6.90	$ -
4.9		-							
4.10	Rider Poles - Relocated	-	Set	$ -	$ -	$ 3,500	$ -	$ 3,500.00	$ -
4.11	Rider Poles	-	EA	$ 1,750	$ -	$ 3,500	$ -	$ 5,250.00	$ -
TOTAL: CONDUCTOR, SHIELDWIRE, OPGW:					$ -		$ -		$ -
5. INSULATOR, FITTINGS, HARDWARE									
5.1	345kV Tangent (1-Group of 18-Bells Each Assembly)	-	Assembly	$ 1,800	$ -	$ 720	$ -	$ 2,520	$ -
5.2	115kV Tangent (1-Group of 9-Bells Each Assembly)	-	Assembly	$ 900	$ -	$ 560	$ -	$ 1,460	$ -
5.3	345kV Dead-end & Angle Insulators (1-Group of 18-Bells Each Assembly)		Assembly	$ 1,800	$ -	$ 720	$ -	$ 2,520	$ -
5.4	115kV Dead-end & Angle Insulators (1-Group of 9-Bells Each Assembly)	14	Assembly	$ 900	$ 12,600	$ 560	$ 7,840	$ 1,460	**$ 20,440**
5.5		-	Assembly		$ -		$ -	$ -	$ -
5.6	OPGW Assembly - Tangent	-	Assembly	$ 200	$ -	$ 150	$ -	$ 350	$ -
5.7	OPGW Assembly - Angle / DE	4	Assembly	$ 250	$ 1,000	$ 150	$ 600	$ 400	**$ 1,600**
5.8	OHSW Assembly - Tangent	-	Assembly	$ 200	$ -	$ 150	$ -	$ 350	$ -
5.9	OHSW Assembly - Angle / DE	-	Assembly	$ 250	$ -	$ 150	$ -	$ 400	$ -
5.10	OPGW Splice Boxes	-	Set	$ 1,750	$ -	$ 1,746	$ -	$ 3,496	$ -
5.11	OPGW Splice & Test	-	EA	$ 1,400	$ -	$ 2,520	$ -	$ 3,920	$ -
5.12	Spacer - Conductor	-	EA	$ 50	$ -	$ 35	$ -	$ 85	$ -
5.13	Vibration Dampers - Conductor	-	EA	$ 35	$ -	$ 35	$ -	$ 70	$ -
5.14	Shieldwire / OPGW Dampers, Misc. Fittings	-	EA	$ 27	$ -	$ 35	$ -	$ 62	$ -
5.15	Guys, Anchors, and Accessories	-	EA	$ 720	$ -	$ 885	$ -	$ 1,605	$ -
5.16	Misc. materials (Signs and Markers)	-	Mile	$ 770	$ -	$ 1,006	$ -	$ 1,776	$ -
5.17									
5.18									
5.19									
5.20									
TOTAL - INSULATOR, FITTINGS, HARDWARE					$ 13,600		$ 8,440		$ 22,040
M. Interconnection Milan Station					$ 228,303		$ 405,211		$ 633,514
6. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:									
	Contractor Mobilization / Demobilization								
6.1	Mob / Demob	1	LS	$ -	$ -	$ 6,335	$ 6,335	$ 6,335	**$ 6,335**
	Project Management, Material Handling & Amenities								

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Cost	Labor & Equipment Supply Rate	Labor & Equipment Cost	Total Unit Rate	TOTAL
6.2	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1	LS			$ 30,482	$ 30,482	$ 30,482	**$ 30,482**
6.3	Utility PM and Project Oversite	1	LS		$ -	$ 6,335	$ 6,335	$ 6,335	**$ 6,335**
6.4	Site Accommodation, Facilities, Storage	1	LS	$ -	$ -	$ 6,335	$ 6,335	$ 6,335	**$ 6,335**
	Engineering								
6.5	Design Engineering	1	LS	$ -	$ -	$ 31,676	$ 31,676	$ 31,676	**$ 31,676**
6.6	LiDAR	1	LS	$ -	$ -	$ 1,901	$ 1,901	$ 1,901	**$ 1,901**
6.7	Geotech	1	Location	$ -	$ -	$ 3,500	$ 3,500	$ 3,500	**$ 3,500**
6.8	Surveying/Staking	1	LS	$ -	$ -	$ 4,435	$ 4,435	$ 4,435	**$ 4,435**
	Testing & Commissioning								
6.9	Testing & Commissioning of T-Line and Equipment	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
	Permitting and Additional Costs								
6.10	Environmental Licensing & Permitting Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.11	Environmental Mitigation	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.12	Warranties / LOC's	1	LS	$ -	$ -	$ 1,901	$ 1,901	$ 1,901	**$ 1,901**
6.13	Real Estate Costs	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.14	Legal Fees	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.15	Allowance for Funds Used During Construction (AFUDC)	-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.16		-	LS	$ -	$ -	$ -	$ -	$ -	**$ -**
6.17	Sales Tax on Materials	1	LS	$ 18,264	$ 18,264	$ -	$ -	$ 18,264	**$ 18,264**
6.18	Fees for permits, including roadway, railroad, building or other local permits	1	LS		$ -	$ 634	$ 634	$ 634	**$ 634**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:					$ 18,264		$ 93,533		**$ 111,797**

NAT & NYPA - T032 - (Segment B)

N. NUF to mitigate NY to NE interface transfer limit degradation

Estimate Revision: **8**

Total: $ 26,785,714

SYSTEM UPGRADE FACILITIES		Estimated Quantity	Unit of Measure	Material Supply Rate	Material Supply Sum	Labor & Equipment Supply Rate	Labor & Equipment Sum	Total Unit Rate	TOTAL
SUF 1	**Transmission Line Upgrade Cricket Valley - Connecticut Border to Long Mountain**								
1.1	Line Upgrade	1.00	LS		$ -		$ -	$ 21,428,571	$ 21,428,571
	Subtotal SUG 1 Direct Cost				$ -		$ -		$ 21,428,571
2.0	**Indirect Cost (25% of Direct Cost)**				$ -		$ -		$ 5,357,143
	TOTAL:				**$ -**		**$ -**		**$ 26,785,714**

ITC T032 (Segment B)	
ESTIMATE ASSUMPTIONS & CLARIFICATIONS	
1	Cost Estimate is based on 2017 rates.
2	Construction schedule is in accordance with proposed schedule - we have assumed continuous working with no breaks in the schedule. Six months have been added to the construction schedule for start up and close out works and assisting in pre-construction activities (i.e. permitting activities, material procurement etc.).
3	We have assumed a typical work week of five-(5) days per week at ten-(10) hours per day (5 x 10 hour days).
4	All labor rates and benefits used for estimating purposes are taken from IBEW Local 1249 working agreement as updated 5-8-2017.
5	We have assumed that the Access Road included in Developer Estimate will be Type 1 Gravel Type. 20% of the total length of the line is assumed to use Type 1 Gravel road and 80% of the line length access to be used wood matting. In addition 75 feet of wood matting is included from the access matting to the work pad area matting. The estimate also include 5,000 square feet of wood matting for each structure work area within the ROW. For the ground restoration (seed, straw and woven mat), 20% of the work pad area included.
6	Costs will vary for handling and disposal of contaminated spoils, depending on type of contaminants and availability / location of the appropriate tipping facility. Since there is not enough information to provide a quantified estimate for this item, allowance is included in the contingency monies.
7	Costs have been developed based on historical data from Projects of a similar nature (AACE Class 5 and 4 Estimating Practices). We have not engaged any subcontractors for formal quotes.
8	Foundation rates include supply and installation of materials. Drilled Pier rates include supply and testing of concrete, rebar cage and the use of temp or permanent casing.
9	A Contractor Mark-Up (OH&P) of 15% has been included in the Total section.
10	We have assumed that all project details provided are accurate unless noted otherwise.
11	Any SUF pricing includes 35% to cover Contractor markup (15%) and contingency (20%)
12	A contractor allowance of 1% for mobilization and demobilization has been included in the total section.
13	A contractor allowance of 4.184% for project management and staffing has been included in the total section. This also includes agricultural inspector, engineering inspector, safety inspector, compliance inspector, environmental inspector, and SWPP inspector.
14	An allowance of 1% for Utility PM and Project Oversite staffing has been included in the total section.
15	A contractor allowance of 1% for site accommodation, facilities, and storage has been included in the total section.
16	An allowance of 5% for transmission design and engineering has been included in the total section.
17	An allowance of 8% for substation design and engineering has been included in the total section.
18	An allowance of 0.7% for survey and staking of the transmission line and substation layout has been included in the total section.
19	An allowance of 0.3% for LIDAR of the transmission line has been included in the total section.
20	An allowance of 3.75% for substation testing and commissioning has been included in the total section.
21	An allowance of $20,000.00 per circuit for transmission line testing and commissioning has been included in the total section.
22	New York state sales tax of 8% is included in all material pricing.
23	An allowance of 1.5% for insurance is included in the DPS sheet.
24	Rock excavation not provided in proposal foundation data, all structures are drilled shaft foundation, rock excavation assumed same quantity as in National Grid's proposal.
25	An additional Quantity of 5% have been added to conductors, OPGW, & OHSW for sag and jumpers.
26	Cricket Valley to Long Mountain line upgrade: Network Upgrade (NUF) costs to mitigate NY to NE interface transfer limit degradation were based on possible solutions identified during the June 2018 SIS process
27	The SUF estimates for the stations are rough order of magnitude estimates. No engineering was performed and SECo did not have access to record drawings.