Propel NY - TO49 BS3

REVISION: 1

Propel NY - TO49 BS3 -DIRECT COST		
Substation Direct Costs		***Total Each Segment***
Direct Labor, Material & Equipment Costs	1 - New Rochelle 345kV Substation	$ 5,189,956
Direct Labor, Material & Equipment Costs	2 - Shore Road 345 kV GIS Substation	$ 96,036,478
Direct Labor, Material & Equipment Costs	3 - Ruland Road 345/138 kV Substation	$ 85,231,348
Direct Labor, Material & Equipment Costs	4 - Barrett 345 kV Substation	$ 92,919,686
Direct Labor, Material & Equipment Costs	5 - Existing 345 kV Tremont Substation_GIS_Interconnection	$ 21,413,864
Direct Labor, Material & Equipment Costs	6 - Existing Sprain Brook 345 kV_ Interconnection	$ 9,865,160
Direct Labor, Material & Equipment Costs	7 - Existing Ruland 138 kV_ Upgrade & Interconnection	$ 4,984,863
Direct Labor, Material & Equipment Costs	8 -Existing Shore Road 138 kV_ Interconnection	$ 6,394,174
Direct Labor, Material & Equipment Costs	9 -Existing Holbrook 138 Kv_ Upgrade	$ 1,013,645
Direct Labor, Material & Equipment Costs	10 -Existing Newbridge 138 Kv_ Upgrade	$ 2,462,790
Direct Labor, Material & Equipment Costs	11 - Existing EGC 138 kV_ Upgrade	$ 8,195,943
Direct Labor, Material & Equipment Costs	12 - Existing Rainey 345 kV_ Upgrade	$ 5,218,315
Direct Labor, Material & Equipment Costs	13 - Existing EGC 345 kV_ Upgrade	$ 65,328,492
	SUBTOTAL (Costs):	**$ 404,254,715**
	CONTRACTOR MARK-UP (OH&P)	**$ 69,078,298**
	SUBTOTAL (AFTER MU):	**$ 473,333,013**
	CONTINGENCY ON ENTIRE PROJECT	**$ 94,666,603**
	Substation TOTAL:	**$ 567,999,615**
Transmission Line Direct Costs		***Total Each Segment***
Direct Labor, Material & Equipment Costs	BS3.1 Barrett to East Garden City 345kV Onshore UG Cables -Double circuits	$ 169,375,960
Direct Labor, Material & Equipment Costs	BS3.2 East Garden City To Tremont 345kV Onshore UG Cables -single circuit	$ 307,723,518
Direct Labor, Material & Equipment Costs	BS3.3 Ruland to East Garden City 345kV Onshore UG Cables -single circuit	$ 7,664,587
Direct Labor, Material & Equipment Costs	BS3.4 East Garden City to Shore Road 345kV Onshore UG Cables -single circuit	$ 118,629,508
Direct Labor, Material & Equipment Costs	BS3.5 East Garden City to Shore Road 138kV Onshore UG Cables -single circuit	$ 108,055,566
Direct Labor, Material & Equipment Costs	BS3.6 Ruland Road to Shore Road 345kV Onshore UG Cables -single circuit	$ 202,597,296
Direct Labor, Material & Equipment Costs	BS3.7a. Shore Road to New Rochelle Offshore Submarine Cables - two circuits (two lines, single circuit each)	$ 148,375,821
Direct Labor, Material & Equipment Costs	BS3.7a. Shore Road to New Rochelle Onshore UG Cables - two circuits (two lines, single circuit each)	$ 32,237,380
Direct Labor, Material & Equipment Costs	BS3.7b New Rochelle to Sprainbrook 345kV Onshore UG Cables - single circuit	$ 108,543,450
	SUBTOTAL (Costs):	**$ 1,203,203,086**
	CONTRACTOR MARK-UP (OH&P)	**$ 216,576,556**
	SUBTOTAL (AFTER MU):	**$ 1,419,779,642**
	CONTINGENCY ON ENTIRE PROJECT	**$ 283,955,928**
	Transmission Line TOTAL:	**$ 1,703,735,570**
	Propel NY - TO49 BS3Total Direct Cost	**$ 2,271,735,186**

Propel NY - TO49 BS3 -INDIRECT COST		
Substation Indirect Costs		***Total Each Segment***
Indirect Costs	1 - New Rochelle 345kV Substation	$ 4,190,336
Indirect Costs	2 - Shore Road 345 kV GIS Substation	$ 28,048,296
Indirect Costs	3 - Ruland Road 345/138 kV Substation	$ 28,833,855
Indirect Costs	4 - Barrett 345 kV Substation	$ 41,387,522
Indirect Costs	5 - Existing 345 kV Tremont Substation_GIS_Interconnection	$ 3,217,283
Indirect Costs	6 - Existing Sprain Brook 345 kV_ Interconnection	$ 3,181,714
Indirect Costs	7 - Existing Ruland 138 kV_ Upgrade & Interconnection	$ 1,610,496
Indirect Costs	8 -Existing Shore Road 138 kV_ Interconnection	$ 2,026,220
Indirect Costs	9 -Existing Holbrook 138 Kv_ Upgrade	$ 333,220
Indirect Costs	10 -Existing Newbridge 138 Kv_ Upgrade	$ 816,867
Indirect Costs	11 - Existing EGC 138 kV_ Upgrade	$ 2,572,822
Indirect Costs	12 - Existing Rainey 345 kV_ Upgrade	$ 1,719,879
Indirect Costs	13 - Existing EGC 345 kV_ Upgrade	$ 49,771,542
	SUBTOTAL (Costs):	**$ 167,710,053**
	CONTRACTOR MARK-UP (OH&P)	**$ 30,187,810**
	SUBTOTAL (AFTER MU):	**$ 197,897,863**
	CONTINGENCY ON ENTIRE PROJECT	**$ 39,579,573**
	Substation TOTAL:	**$ 237,477,435**
Transmission Line Indirect Costs		***Total Each Segment***
Indirect Costs	BS3.1 Barrett to East Garden City 345kV Onshore UG Cables -Double circuits	$ 42,876,932
Indirect Costs	BS3.2 East Garden City To Tremont 345kV Onshore UG Cables -single circuit	$ 78,106,163
Indirect Costs	BS3.3 Ruland to East Garden City 345kV Onshore UG Cables -single circuit	$ 2,465,524
Indirect Costs	BS3.4 East Garden City to Shore Road 345kV Onshore UG Cables -single circuit	$ 30,726,945
Indirect Costs	BS3.5 East Garden City to Shore Road 138kV Onshore UG Cables -single circuit	$ 19,691,596
Indirect Costs	BS3.6 Ruland Road to Shore Road 345kV Onshore UG Cables -single circuit	$ 51,255,552
Indirect Costs	BS3.7a. Shore Road to New Rochelle Offshore Submarine Cables - two circuits (two lines, single circuit each)	$ 41,406,484
Indirect Costs	BS3.7a. Shore Road to New Rochelle Onshore UG Cables - two circuits (two lines, single circuit each)	$ 8,473,490
Indirect Costs	BS3.7b New Rochelle to Sprainbrook 345kV Onshore UG Cables - single circuit	$ 27,372,674
	SUBTOTAL (Costs):	**$ 302,375,360**
	CONTRACTOR MARK-UP (OH&P)	**$ 54,427,565**
	SUBTOTAL (AFTER MU):	**$ 356,802,925**
	CONTINGENCY ON ENTIRE PROJECT	**$ 71,360,585**
	Transmission Line TOTAL:	**$ 428,163,510**
	Propel NY - TO49 BS3 Total Indirect Cost	**$ 665,640,945**
	Propel NY - TO49 BS3 Total	**$ 2,937,376,131**

Propel NY - TO49 BS3

1 - New Rochelle 345kV Substation

Total: $ 13,282,494

Propel NY - TO49 BS3				
	Material Supply	*Labor Supply*	*Equip Supply*	*Total*
1 - New Rochelle 345kV Substation				
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ 1,186,234	$ 851,550	$ 609,171	$ 2,646,955
2. SUBSTATION FOUNDATIONS	$ 227,559	$ 260,067	$ 162,542	$ 650,169
3. SUBSTATION STRUCTURES	$ 280,966	$ 288,799	$ 189,353	$ 759,118
4. MAJOR EQUIPTMENT	$ 527,046	$ 163,391	$ 70,025	$ 760,461
5. LOW VOLTAGE & CONTROL CABLE	$ 9,536	$ 2,579	$ 516	$ 12,630
6. CONDUIT & CABLE TRENCH	$ 198,230	$ 43,314	$ 12,044	$ 253,588
7. GROUND GRID	$ 56,711	$ 40,853	$ 9,473	$ 107,037
8. CONTROL ENCLOSURE	$ -	$ -	$ -	$ -
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	$ 270,692	$ 1,145,032	$ 2,774,612	$ 4,190,336
SUBTOTAL (Costs):	$ 2,756,973	$ 2,795,584	$ 3,827,734	$ 9,380,292
CONTRACTOR MARK-UP (OH&P)	$ 496,255	$ 503,205	$ 688,992	$ 1,688,453
SUBTOTAL:	$ 3,253,229	$ 3,298,789	$ 4,516,727	$ 11,068,745
CONTINGENCY ON ENTIRE PROJECT	$ 650,646	$ 659,758	$ 903,345	$ 2,213,749
TOTAL:	$ 3,903,874	$ 3,958,547	$ 5,420,072	$ 13,282,494

Description of Work: New, greenfield substation to be called "New Rochelle Substation," which would be 345 kV and located near 60 Echo Avenue in the City of New Rochelle, Westchester County. The substation would allow for the transition of electric submarine transmission cables to electric underground transmission cables at a location outside of the shoreline of Long Island Sound.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
1 - New Rochelle 345kV Substation										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	1.9	ACRE	-	10,800.00	7,200.00	$ -	$ 19,980	$ 13,320	**$ 33,300**
1.2	Demolition	0	ACRE	-	-	-	$ -	$ -	$ -	**$ -**
1.3	New Access Road - 20'	3,698	SY	4.85	7.20	4.80	$ 17,933	$ 26,622	$ 17,748	**$ 62,304**
1.4	Strip and Dispose Top Soil	2,985	CY		24.50	10.50	$ -	$ 73,124	$ 31,339	**$ 104,463**
1.5	Site Grading- Excavation for Substation Pad	8,954	CY		9.00	6.00	$ -	$ 80,586	$ 53,724	**$ 134,310**
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	4,835	CY		21.00	9.00	$ -	$ 101,538.36	$ 43,516.44	**$ 145,054.80**
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	7,253	CY		2.40	1.60	$ -	$ 17,407	$ 11,604	**$ 29,011**
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	4,835	CY	25.00	2.40	1.60	$ 120,879	$ 11,604	$ 7,736	**$ 140,220**
1.9	Blasting		EA				$ -	$ -	$ -	$ -
1.10	Install substation 8" pad base	8,954	SY	11.00	6.00	4.00	$ 98,494	$ 53,724	$ 35,816	**$ 188,034**
1.11	Site Surfacing - Aggregate 6" Thick	8,954	SY	16.50	4.50	3.00	$ 147,741	$ 40,293	$ 26,862	**$ 214,896**
1.12	7' Station Fence w/ Barbed Wire & Grounding	1,285	LF	13.85	13.85	6.92	$ 17,795	$ 17,795	$ 8,897	**$ 44,487**
1.13	24' Slide Gate & Grounding	1	EA	8,100.00	3,245.00	1,305.00	$ 8,100	$ 3,245	$ 1,305	**$ 12,650**
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	$ -	$ -	$ -	**$ -**
1.15	Storm drain-4"&15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	328,812.00	38,400.00	25,368.00	$ 328,812	$ 38,400	$ 25,368	**$ 392,580**
1.16	Seeding	25,302	SF	1.50	1.50	1.00	$ 37,953	$ 37,953	$ 25,302	**$ 101,208**
1.17	Erosion Control-Silt fence install & remove	2,307	LF	2.41	3.16	0.72	$ 5,560	$ 7,290	$ 1,661	**$ 14,511**
1.18	Temporary fencing	1,538	LF	7.50	5.25	2.25	$ 11,535	$ 8,075	$ 3,461	**$ 23,070**
1.19	Substation entrance with asphalt	1,085	SY	19.50	26.00	19.50	$ 21,164	$ 28,219	$ 21,164	**$ 70,547**
1.20	Guardrail	532	LF	24.00	32.00	24.00	$ 12,768	$ 17,024	$ 12,768	**$ 42,560**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
1.21	Concrete curb	70	LF	26.00	27.30	11.70	$ 1,820	$ 1,911	$ 819	**$ 4,550**
1.22	Retaining Wall	1,140	LF	312.00	234.00	234.00	$ 355,680	$ 266,760	$ 266,760	**$ 889,200**
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							$ 1,186,234	$ 851,550	$ 609,171	$ 2,646,955
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	36	CY	703.89	804.44	502.78	$ 25,072	$ 28,654	$ 17,909	**$ 71,635**
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.4	345kV, Bus support-3 Ph, low	33	CY	703.89	804.44	502.78	$ 23,355	$ 26,691	$ 16,682	**$ 66,728**
2.5	345kV, Bus support-1 Ph	79	CY	703.89	804.44	502.78	$ 55,748	$ 63,712	$ 39,820	**$ 159,279**
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.10	345kV, Cable sealing end	32	CY	703.89	804.44	502.78	$ 22,595	$ 25,823	$ 16,139	**$ 64,556**
2.11	345kV, CCVT	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.12	345kV, Disconnect Switch - (Double Break)	95	CY	703.89	804.44	502.78	$ 66,897	$ 76,454	$ 47,784	**$ 191,135**
2.13	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.14	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.16	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.21	345kV, Surge arrester	48	CY	703.89	804.44	502.78	$ 33,892	$ 38,734	$ 24,209	**$ 96,834**
2.19	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.20	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.21	138kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.22	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.23	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.24	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.25	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.26	138kV, CCVT	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.27	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.28	Firewall Foundation	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.29	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	$ -	$ -	$ -	**$ -**
2.30	Precast Concrete Piles-12"X80'	-	EA							
2.31	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.32	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	$ -	$ -	$ -	**$ -**
TOTAL - 345KV FOUNDATION							$ 227,559	$ 260,067	$ 162,542	**$ 650,169**
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	2	EA	23,400.00	14,040.00	9,360.00	$ 46,800	$ 28,080	$ 18,720	**$ 93,600**
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	$ -	$ -	$ -	**$ -**
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	$ -	$ -	$ -	**$ -**
3.4	345kV, Bus support-3 Ph, low	3	EA	8,346.00	5,758.74	3,839.16	$ 25,038	$ 17,276	$ 11,517	**$ 53,832**
3.5	345kV, Bus support-1 Ph	10	EA	4,810.00	2,886.00	1,924.00	$ 48,100	$ 28,860	$ 19,240	**$ 96,200**
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	$ -	$ -	$ -	**$ -**
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	$ -	$ -	$ -	**$ -**
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	$ -	$ -	$ -	**$ -**
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	$ -	$ -	$ -	**$ -**
3.10	345kV, Cable sealing end	3	EA	8,346.00	5,758.74	3,839.16	$ 25,038	$ 17,276	$ 11,517	**$ 53,832**
3.11	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	$ -	$ -	$ -	**$ -**
3.12	345kV, Disconnect Switch - (Double Break)	3	EA	19,240.00	11,544.00	7,696.00	$ 57,720	$ 34,632	$ 23,088	**$ 115,440**
3.14	345kV, Surge arrester	9	EA	4,810.00	2,886.00	1,924.00	$ 43,290	$ 25,974	$ 17,316	**$ 86,580**
3.13	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	$ -	$ -	$ -	**$ -**
3.14	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	$ -	$ -	$ -	**$ -**
3.15	138kV, Disconnect Switch	0	EA				$ -	$ -	$ -	
3.16	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	$ -	$ -	$ -	**$ -**
3.17	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	$ -	$ -	$ -	**$ -**
3.18	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	$ -	$ -	$ -	**$ -**
3.19	AL. Bus Tubing, 5" SCH 80	636	LF	25.00	184.94	123.29	$ 15,900	$ 117,621	$ 78,414	**$ 211,934**
3.20	AL. Bus fittings	1	LS	19,080.00	19,080.00	9,540.00	$ 19,080	$ 19,080	$ 9,540	**$ 47,700**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							$ 280,966	$ 288,799	$ 189,353	$ 759,118
4. MAJOR EQUIPTMENT										
4.1	345kV, GIS air terminal	0	EA				$ -	$ -	$ -	**$ -**
4.2	345kV, GIS Cable sealing end	0	EA				$ -	$ -	$ -	**$ -**
4.3	345kV, Cable sealing end	9	EA	27,144.00	5,460.00	2,340.00	$ 244,296	$ 49,140	$ 21,060	**$ 314,496**
4.4	345kV, CCVT	0	EA		15,941.99	6,832.28	$ -	$ -	$ -	**$ -**
4.5	345kV, Disconnect Switch - (Double Break)	3	EA	68,900.00	21,703.50	9,301.50	$ 206,700	$ 65,111	$ 27,905	**$ 299,715**
4.6	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	$ -	$ -	$ -	**$ -**
4.7	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	$ -	$ -	$ -	**$ -**
4.8	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	$ -	$ -	$ -	**$ -**
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	$ -	$ -	$ -	**$ -**
4.10	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	$ -	$ -	$ -	**$ -**
4.11	345kV, Phase Angle Regulator with oil containment	0	EA				$ -	$ -	$ -	**$ -**
4.12	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	$ -	$ -	$ -	**$ -**
4.13	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				$ -	$ -	$ -	**$ -**
4.14	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				$ -	$ -	$ -	**$ -**
4.15	345kV, surge Arrester	9	EA	8,450.00	5,460.00	2,340.00	$ 76,050	$ 49,140	$ 21,060	**$ 146,250**
4.16	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	$ -	$ -	$ -	**$ -**
4.17	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	$ -	$ -	$ -	**$ -**
4.18	138kV, Circuit Breaker (PASS)	0	EA		13,559.00	5,811.00	$ -	$ -	$ -	**$ -**
4.19	138kV, Disconnect Switch	0	EA		11,875.50	5,089.50	$ -	$ -	$ -	**$ -**
4.20	138kV, Cable sealing end	0	EA		3,150.00	1,350.00	$ -	$ -	$ -	**$ -**
4.21	138kV, CCVT	0	EA		7,970.08	3,415.75	$ -	$ -	$ -	**$ -**
4.22	138kV, Surge arrester	0	EA		4,200.00	1,800.00	$ -	$ -	$ -	**$ -**
4.23	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	$ -	$ -	$ -	**$ -**
4.24	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	$ -	$ -	$ -	**$ -**
4.25	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	$ -	$ -	$ -	**$ -**
TOTAL - MAJOR EQUIPMENT							$ 527,046	$ 163,391	$ 70,025	$ 760,461
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control cables	1,800	LF	5.30	1.43	0.29	$ 9,536	$ 2,579	$ 516	**$ 12,630**
5.2			LF		-	-	$ -	$ -	$ -	**$ -**
TOTAL - LOW VOLTAGE & CONTROL CABLE							$ 9,536	$ 2,579	$ 516	**$ 12,630**
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	$ -	$ -	$ -	**$ -**
6.2	Conduit, PVC, 4", SCH 40	450	LF	11.15	10.80	5.40	$ 5,018	$ 4,860	$ 2,430	**$ 12,308**
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	$ -	$ -	$ -	**$ -**
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	$ -	$ -	$ -	**$ -**
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	$ -	$ -	$ -	**$ -**
6.6	Cable Trench	725	LF	266.50	53.04	13.26	$ 193,213	$ 38,454	$ 9,614	**$ 241,280**
6.7										
6.8	138kV UG	0	LF	-	-	-	$ -	$ -	$ -	**$ -**
6.9							$ -	$ -	$ -	**$ -**
TOTAL - CONDUIT & CABLE TRENCH							$ 198,230	$ 43,314	$ 12,044	**$ 253,588**
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	5,780	LF	2.09	3.42	1.46	$ 12,086	$ 19,740	$ 8,460	**$ 40,287**
7.2	Caweld, DSA, 4/0 , T, CROSS	160	EA	165.00	75.00		$ 26,400	$ 12,000	$ -	**$ 38,400**
7.3	Ground Rod, 3/4" x 15'	135	EA	135.00	67.50	7.50	$ 18,225	$ 9,113	$ 1,013	**$ 28,350**
TOTAL - GROUND GRID							$ 56,711	$ 40,853	$ 9,473	**$ 107,037**
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	275,715.78	193,001.04	82,714.73	$ -	$ -	$ -	**$ -**
8.2	Primary Line Relays (Pilot): SEL-411L	0	EA	41,575.50	33,260.40	8,315.10	$ -	$ -	$ -	**$ -**
8.3	Backup Line Relays (Pilot): GE L90	0	EA	41,575.50	33,260.40	8,315.10	$ -	$ -	$ -	**$ -**
8.4	Primary Bus Differential Relays: SEL-487B	0	EA	21,328.12	17,062.49	4,265.62	$ -	$ -	$ -	**$ -**
8.5	Backup Bus Differential Relays: GE B90	0	EA	21,328.12	17,062.49	4,265.62	$ -	$ -	$ -	**$ -**
8.6	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS	0	EA	12,500.00	10,000.00	2,500.00	$ -	$ -	$ -	**$ -**
8.7	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock	0	EA	12,500.00	10,000.00	2,500.00	$ -	$ -	$ -	**$ -**
8.8	HMI Panel	0	EA	12,500.00	10,000.00	2,500.00	$ -	$ -	$ -	**$ -**
8.9	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	$ -	$ -	$ -	**$ -**
8.10	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	$ -	$ -	$ -	**$ -**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.11	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	$ -	$ -	$ -	**$ -**
8.12	Generator	0	EA	130,000.00	72,800.00	31,200.00	$ -	$ -	$ -	**$ -**
TOTAL - CONTROL ENCLOSURE							$ -	$ -	$ -	$ -
1 - New Rochelle 345kV Substation							$ 2,486,281	$ 1,650,552	$ 1,053,122	$ 5,189,956
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		94,628.62	40,555.12	$ -	$ 94,629	$ 40,555	**$ 135,184**
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		51,899.56		$ -	$ 51,900	$ -	**$ 51,900**
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		207,598.24		$ -	$ 207,598	$ -	**$ 207,598**
9.4	Utility PM and Project Oversite	1.0	LS		51,899.56		$ -	$ 51,900	$ -	**$ 51,900**
9.5	Site Accommodation, Facilities, Storage	1.0	LS	51,899.56			$ 51,900	$ -	$ -	**$ 51,900**
	Engineering									
9.6	Design Engineering	1.00	LS		415,196.48		$ -	$ 415,196	$ -	**$ 415,196**
9.7	LiDAR /GPR	1.00	LS		-		$ -	$ -	$ -	**$ -**
9.8	Geotech	5.00	EA		2,730.00	1,820.00	$ -	$ 13,650	$ 9,100	**$ 22,750**
9.9	Surveying/Staking	1.00	Site		36,329.69		$ -	$ 36,330	$ -	**$ 36,330**
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		194,623.35		$ -	$ 194,623	$ -	**$ 194,623**
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		$ -	$ 6,547	$ -	**$ 6,547**
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		51,899.56		$ -	$ 51,900	$ -	**$ 51,900**
9.13	Environmental-special studies/investigation	-	LS		-		$ -	$ -	$ -	**$ -**
9.14	Warranties / LOC's	1.00	LS		15,569.87		$ -	$ 15,570	$ -	**$ 15,570**
9.15	Laydown Lease	-	LS		-		$ -	$ -	$ -	**$ -**
9.16	Real Estate (Acquisition)	1.00	LS			2,393,162.00	$ -	$ -	$ 2,393,162	**$ 2,393,162**
9.17	Legal Fees (Real estate)	1.00	LS		-	71,794.86	$ -	$ -	$ 71,795	**$ 71,795**
9.18	Insurance	-	LS		-	-	$ -	$ -	$ -	**$ -**
9.19	Bonds	1	LS		-	$ 260,000	$ -	$ -	**$ 260,000**	**$ 260,000**
9.20	Sales Tax on Materials	8.8%	LS	2,486,281.16			$ 218,793	$ -	$ -	**$ 218,793**
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		5,189.96		$ -	$ 5,190	$ -	**$ 5,190**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							$ 270,692	$ 1,145,032	$ 2,774,612	**$ 4,190,336**

Propel NY - TO49 BS3

2 - Shore Road 345 kV GIS Substation

Total: $ 173,385,312

Propel NY - TO49 BS3				
	Material Supply	*Labor Supply*	*Equip Supply*	*Total*
2 - Shore Road 345 kV GIS Substation				
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ 2,369,486	$ 11,006,431	$ 6,581,547	$ 19,957,464
2. SUBSTATION FOUNDATIONS	$ 4,214,207	$ 3,943,270	$ 2,685,696	$ 10,843,173
3. SUBSTATION STRUCTURES	$ 203,466	$ 118,092	$ 78,728	$ 400,286
4. MAJOR EQUIPTMENT	$ 46,865,700	$ 7,975,536	$ 4,565,107	$ 59,406,343
5. LOW VOLTAGE & CONTROL CABLE	$ 187,532	$ 50,711	$ 10,142	$ 248,384
6. CONDUIT & CABLE TRENCH	$ 1,055,915	$ 635,839	$ 322,911	$ 2,014,665
7. GROUND GRID	$ 149,160	$ 107,967	$ 25,272	$ 282,399
8. CONTROL ENCLOSURE	$ 1,382,382	$ 1,130,634	$ 370,748	$ 2,883,764
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	$ 5,764,992	$ 17,007,749	$ 5,275,555	$ 28,048,296
Turnkey cost (HVDC, GIS)	$ 8,051,143	$ 4,830,686	$ 3,220,457	$ 16,102,286
Non-Turnkey cost	$ 54,141,696	$ 37,145,542	$ 16,695,250	$ 107,982,489
SUBTOTAL (Costs):	$ 62,192,839	$ 41,976,228	$ 19,915,707	$ 124,084,775
CONTRACTOR MARK-UP (OH&P):	$ 10,228,574	$ 6,976,039	$ 3,198,372	$ 20,402,985
SUBTOTAL:	$ 72,421,413	$ 48,952,267	$ 23,114,080	$ 144,487,760
CONTINGENCY ON ENTIRE PROJECT	$ 14,484,283	$ 9,790,453	$ 4,622,816	$ 28,897,552
TOTAL:	$ 86,905,695	$ 58,742,720	$ 27,736,896	$ 173,385,312

Description of Work: New greenfield 345 kV Shore Road Substation, to be located at 375 Shore Road, in the Hamlet of Glenwood Landing, Town of Oyster Bay, Nassau County. The 345 kV Shore Road Substation will serve as the transition station and new connection for the existing LIPA) 138 kV Shore Road Substation. A new 345 kV underground terrestrial transmission line will be converted into two (2) marine transmission lines for crossing Long Island Sound. Also, a 345 kV/138 kV power transformer in series with a 138 kV PAR will connect to the existing LIPA 138 kV substation. Lastly, two (2) 345 kV shunt reactors will be installed for compensation.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2 - Shore Road 345 kV GIS Substation										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	4.0	ACRE	-	10,800.00	7,200.00	$ -	$ 43,200	$ 28,800	**72,000**
1.2	Demolition	0	ACRE	-	-	-	$ -	$ -	$ -	**-**
1.3	New Access Road - 20'	3,907	SY	4.85	7.20	4.80	$ 18,948	$ 28,130	$ 18,753	**65,831**
1.4	Strip and Dispose Top Soil	6,453	CY		24.50	10.50	$ -	$ 158,107	$ 67,760	**225,867**
1.5	Site Grading- Excavation for Substation Pad	193,600	CY		13.50	9.00	$ -	$ 2,613,600	$ 1,742,400	**4,356,000**
1.6	Site Grading- Excavation for Substation Pad- Rock	9,680	CY		243.00	162.00	$ -	$ 2,352,240	$ 1,568,160	**3,920,400**
1.7	Site Grading- Excavation for Substation Pad- Hauling and disposal	209,088	CY		21.00	9.00	$ -	$ 4,390,848.00	$ 1,881,792.00	**6,272,640**
1.8	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	52,272	CY		2.40	1.60	$ -	$ 125,453	$ 83,635	**209,088**
1.9	Site Grading -Fill for Substation Pad (import, compacted in place)		CY	25.00	2.40	1.60	$ -	$ -	$ -	**-**
1.10	Blasting		EA				$ -	$ -	$ -	**-**
1.11	Install substation 8" pad base	19,360	SY	11.00	6.00	4.00	$ 212,960	$ 116,160	$ 77,440	**406,560**
1.12	Site Surfacing - Aggregate 6" Thick	19,360	SY	16.50	4.50	3.00	$ 319,440	$ 87,120	$ 58,080	**464,640**
1.13	7' Station Fence w/ Barbed Wire & Grounding	1,701	LF	13.85	13.85	6.92	$ 23,555	$ 23,555	$ 11,778	**58,889**
1.14	25' Slide Gate & Grounding	1	EA	8,100.00	3,245.00	1,305.00	$ 8,100	$ 3,245	$ 1,305	**12,650**
1.15	4' Pedestrian gate	1	EA	2,500.00	1,000.00	350.00	$ 2,500	$ 1,000	$ 350	**3,850**
1.16	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	488,434.80	76,800.00	76,104.00	$ 488,435	$ 76,800	$ 76,104	**641,339**
1.17	Seeding	6,320	SF	1.50	1.50	1.00	$ 9,480	$ 9,480	$ 6,320	**25,280**
1.18	Erosion Control-Silt fence install & remove	2,625	LF	2.41	3.16	0.72	$ 6,326	$ 8,295	$ 1,890	**16,511**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
1.19	Temporary fencing	1,750	LF	7.50	5.25	2.25	$ 13,125	$ 9,188	$ 3,938	**26,250**
1.20	Substation entrance with asphalt	808	SY	19.50	26.00	19.50	$ 15,756	$ 21,008	$ 15,756	**52,520**
1.21	Concrete curb	110	LF	26.00	27.30	11.70	$ 2,860	$ 3,003	$ 1,287	**7,150**
1.22	Retaining Wall	800	LF	1,560.00	1,170.00	1,170.00	$ 1,248,000	$ 936,000	$ 936,000	**3,120,000**
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							$ 2,369,486	$ 11,006,431	$ 6,581,547	$ 19,957,464
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast foundation	142	CY	703.89	804.44	502.78	$ 100,290	$ 114,617	$ 71,635	**$ 286,542**
2.2	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.3	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.4	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.5	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.6	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.7	345kV, GIS support-3 Ph	158	CY	703.89	804.44	502.78	$ 111,495	$ 127,423	$ 79,640	**$ 318,558**
2.8	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.9	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.10	345kV, CCVT	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.11	345kV, SSVT	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.15	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.12	345/138KV, Power Transformer with oil containment	328	CY	703.89	804.44	502.78	$ 230,874	$ 263,856	$ 164,910	**$ 659,641**
2.13	345kV, Shunt Reactor with oil containment-150MVAR	635	CY	703.89	804.44	502.78	$ 446,967	$ 510,819	$ 319,262	**$ 1,277,049**
2.14	345kV, Shunt Reactor with oil containment-150MVAR	305	CY	703.89	804.44	502.78	$ 214,685	$ 245,354	$ 153,346	**$ 613,386**
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.16	345kV, Phase Angle Regulator with oil containment	353	CY	703.89	804.44	502.78	$ 248,471	$ 283,967	$ 177,480	**$ 709,918**
2.17	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.18	345kV, Circuit Breaker (GIS), outdoor rated	120	CY	703.89	804.44	502.78	$ 84,466	$ 96,533	$ 60,333	**$ 241,332**
2.19	345kV, Surge arrester	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.20	345/138 Kv, Control Enclosure-BLDG with generator pad	188	CY	703.89	804.44	502.78	$ 132,330	$ 151,235	$ 94,522	**$ 378,087**
2.21	138kV, Phase Angle Regulator with oil containment	154	CY	703.89	804.44	502.78	$ 108,398	$ 123,884	$ 77,427	**$ 309,709**
2.22	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.23	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.24	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.25	138kV, Cable sealing end	12	CY	703.89	804.44	502.78	$ 8,531	$ 9,750	$ 6,094	**$ 24,375**
2.26	138kV, Surge arrester	16	CY	-	-	-	$ -	$ -	$ -	**$ -**
2.27	Firewall Foundation	380	CY	703.89	804.44	502.78	$ 267,589	$ 305,816	$ 191,135	**$ 764,540**
2.28	Precast Firewall for transformer, PARs, reactors	5,670	SF	25.00	15.00	10.00	$ 141,750	$ 85,050	$ 56,700	**$ 283,500**
2.29	Precast Concrete Piles-12"X80'	198	EA	4,800.00	3,600.00	3,600.00	$ 950,400	$ 712,800	$ 712,800	**$ 2,376,000**
2.29	Local Control Cabinet foundation	4	CY	703.89	804.44	502.78	$ 3,128	$ 3,575	$ 2,235	**$ 8,938**
2.30	GIS Concrete Pad	815	CY	703.89	804.44	502.78	$ 573,666	$ 655,619	$ 409,762	**$ 1,639,047**
2.31	Steel grating and support beams-transformer moat	216,400	LB	2.73	1.17	0.50	$ 591,165	$ 252,972	$ 108,416	**$ 952,553**
TOTAL - 345KV FOUNDATION							$ 4,214,207	$ 3,943,270	$ 2,685,696	**$ 10,843,173**
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast foundation	8	EA	23,400.00	14,040.00	9,360.00	$ 187,200	$ 112,320	$ 74,880	**$ 374,400**
3.2	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	$ -	$ -	$ -	**$ -**
3.3	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	$ -	$ -	$ -	**$ -**
3.4	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	$ -	$ -	$ -	**$ -**
3.5	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	$ -	$ -	$ -	**$ -**
3.6	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	$ -	$ -	$ -	**$ -**
3.7	345kV, GIS support-3 Ph	12	EA	4,810.00	2,886.00	1,924.00				**$ -**
3.8	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	$ -	$ -	$ -	**$ -**
3.9	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	$ -	$ -	$ -	**$ -**
3.10	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	$ -	$ -	$ -	**$ -**
3.11	345kV, SSVT	0	EA	4,810.00	2,886.00	1,924.00	$ -	$ -	$ -	**$ -**
3.12	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	$ -	$ -	$ -	**$ -**
3.13	345kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	$ -	$ -	$ -	**$ -**
3.14	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	$ -	$ -	$ -	**$ -**
3.15	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	$ -	$ -	$ -	**$ -**
3.16	138kV, Disconnect Switch	0	EA							
3.17	138kV, Cable sealing end	1	EA	4,066.40	1,443.00	962.00	$ 4,066	$ 1,443	$ 962	**$ 6,471**
3.20	138kV, Surge arrester	3	EA	4,066.40	1,443.00	962.00	$ 12,199	$ 4,329	$ 2,886	**$ 19,414**
3.18	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	$ -	$ -	$ -	**$ -**
3.19	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	$ -	$ -	$ -	**$ -**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.20	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	$ -	$ -	$ -	**$ -**
3.21	AL. Bus fittings	0	LS	-	-	-	$ -	$ -	$ -	**$ -**
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							$ 203,466	$ 118,092	$ 78,728	$ 400,286
4. MAJOR EQUIPTMENT										
4.1	345kV, GIS air terminal	0	EA				$ -	$ -	$ -	**$ -**
4.2	345kV, GIS- Cable sealing end	0	EA				$ -	$ -	$ -	**$ -**
4.3	345kV, CCVT	0	EA		15,941.99	6,832.28	$ -	$ -	$ -	**$ -**
4.4	345kV, SSVT	0	EA				$ -	$ -	$ -	**$ -**
4.5	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	$ -	$ -	$ -	**$ -**
4.6	345/138KV, Power Transformer	1	EA	4,420,000.00	3,520.00	880.00	$ 4,420,000	$ 3,520	$ 880	**$ 4,424,400**
4.7	Transport & Testing- Transformer	1	EA		834,400.00	357,600.00	$ -	$ 834,400	$ 357,600	**$ 1,192,000**
4.8	345kV, Shunt Reactor with oil containment-150MVAR	1	EA	2,901,774.00	3,520.00	880.00	$ 2,901,774	$ 3,520	$ 880	**$ 2,906,174**
4.9	345kV, Shunt Reactor with oil containment-150MVAR	1	EA	2,901,774.00	3,520.00	880.00	$ 2,901,774	$ 3,520	$ 880	**$ 2,906,174**
4.10	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	$ -	$ -	$ -	**$ -**
4.11	Transport & Testing- Shunt Reactor	2	EA		384,650.00	164,850.00	$ -	$ 769,300	$ 329,700	**$ 1,099,000**
4.12	345kV, Phase Angle Regulator	1	EA	16,120,693.00	3,520.00	880.00	$ 16,120,693	$ 3,520	$ 880	**$ 16,125,093**
4.13	Transport & Testing- Phase Angle Regulating Transformer, 345kV	1	EA		715,400.00	306,600.00	$ -	$ 715,400	$ 306,600	**$ 1,022,000**
4.14	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	$ -	$ -	$ -	**$ -**
4.15	345kV, Circuit Breaker (GIS), outdoor rated	6	EA	1,341,857.17	805,114.30	536,742.87	$ 8,051,143	$ 4,830,686	$ 3,220,457	**$ 16,102,286**
4.17	345kV, surge Arrester	0	EA		5,460.00	2,340.00	$ -	$ -	$ -	**$ -**
4.16	345kV, GIS Cable sealing end	0	EA				$ -	$ -	$ -	**$ -**
4.17	138kV, Phase Angle Regulator	1	EA	11,902,178.00	3,520.00	880.00	$ 11,902,178	$ 3,520	$ 880	**$ 11,906,578**
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	1	EA		701,400.00	300,600.00	$ -	$ 701,400	$ 300,600	**$ 1,002,000**
4.19	138kV, Disconnect Switch	0	EA				$ -	$ -	$ -	**$ -**
4.20	138kV, Cable sealing end	3	EA	11,600.00	1,050.00	450.00	$ 34,800	$ 3,150	$ 1,350	**$ 39,300**
4.21	138kV, Surge arrester	3	EA	4,446.00	4,200.00	1,800.00	$ 13,338	$ 12,600	$ 5,400	**$ 31,338**
4.22	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	$ 520,000	$ 91,000	$ 39,000	**$ 650,000**
4.23	Substation Equipment connections-Bare Wire ACSR- Bittern 45/7-1275kcmil		LF				$ -	$ -	$ -	**$ -**
TOTAL - MAJOR EQUIPMENT							$ 46,865,700	$ 7,975,536	$ 4,565,107	$ 59,406,343
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	35,400	LF	5.30	1.43	0.29	$ 187,532	$ 50,711	$ 10,142	**$ 248,384**
5.2			LF	5.30	1.43	0.29	$ -	$ -	$ -	**$ -**
TOTAL - LOW VOLTAGE & CONTROL CABLE							$ 187,532	$ 50,711	$ 10,142	**$ 248,384**
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	$ -	$ -	$ -	**$ -**
6.2	Conduit, PVC, 4", SCH 40	6,000	LF	11.15	10.80	5.40	$ 66,900	$ 64,800	$ 32,400	**$ 164,100**
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	$ -	$ -	$ -	**$ -**
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	$ -	$ -	$ -	**$ -**
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	$ -	$ -	$ -	**$ -**
6.6	Cable Trench	1,150	LF	266.50	53.04	13.26	$ 306,475	$ 60,996	$ 15,249	**$ 382,720**
6.7										
6.10	138kV UG- Conduit	1,100	LF	81.00	107.00	57.00	$ 89,100	$ 117,700	$ 62,700	**$ 269,500**
6.11	138kV UG- Cable	3,300	LF	156.00	94.00	62.00	$ 514,800	$ 310,200	$ 204,600	**$ 1,029,600**
6.12	138kV UG- Termination	6	EA	9,360.00	11,700.00		$ 56,160	$ 70,200	$ -	**$ 126,360**
6.13	Fiber Optic Cable	1,100	LF	7.40	3.33	2.22	$ 8,137	$ 3,664	$ 2,442	**$ 14,243**
6.14	Ground Continuity Conductor	1,100	LF	13.04	7.53	5.02	$ 14,343	$ 8,280	$ 5,520	**$ 28,142**
TOTAL - CONDUIT & CABLE TRENCH							$ 1,055,915	$ 635,839	$ 322,911	**$ 2,014,665**
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	15,380	LF	2.09	3.42	1.46	$ 32,160	$ 52,527	$ 22,512	**$ 107,199**
7.2	Caweld, DSA, 4/0 , T, CROSS	408	EA	165.00	75.00		$ 67,320	$ 30,600	$ -	**$ 97,920**
7.3	Ground Rod, 3/4" x 15'	368	EA	135.00	67.50	7.50	$ 49,680	$ 24,840	$ 2,760	**$ 77,280**
TOTAL - GROUND GRID							$ 149,160	$ 107,967	$ 25,272	**$ 282,399**
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	1	EA	275,715.78	193,001.04	82,714.73	$ 275,716	$ 193,001	$ 82,715	**$ 551,432**
8.2	Primary Line Relays (Pilot): SEL-411L	4	EA	41,575.50	33,260.40	8,315.10	$ 166,302	$ 133,042	$ 33,260	**$ 332,604**
8.3	Backup Line Relays (Pilot): GE L90	4	EA	41,575.50	33,260.40	8,315.10	$ 166,302	$ 133,042	$ 33,260	**$ 332,604**
8.4	Primary Bay Control: SEL-451	4	EA	21,328.12	17,062.49	4,265.62	$ 85,312	$ 68,250	$ 17,062	**$ 170,625**
8.5	Backup Bay Control: SEL-451	4	EA	21,328.12	17,062.49	4,265.62	$ 85,312	$ 68,250	$ 17,062	**$ 170,625**
8.6	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	5	EA	21,328.12	17,062.49	4,265.62	$ 106,641	$ 85,312	$ 21,328	**$ 213,281**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.7	Backup Transformer/Reactor/PAR Differential Relays: GE T60	5	EA	21,328.12	17,062.49	4,265.62	$ 106,641	$ 85,312	$ 21,328	**$ 213,281**
8.8	Primary Bus Differential Relays: SEL-487B	1	EA	21,328.12	17,062.49	4,265.62	$ 21,328	$ 17,062	$ 4,266	**$ 42,656**
8.9	Backup Bus Differential Relays: GE B90	1	EA	21,328.12	17,062.49	4,265.62	$ 21,328	$ 17,062	$ 4,266	**$ 42,656**
8.10	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS	1	EA	12,500.00	10,000.00	2,500.00	$ 12,500	$ 10,000	$ 2,500	**$ 25,000**
8.11	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock	1	EA	12,500.00	10,000.00	2,500.00	$ 12,500	$ 10,000	$ 2,500	**$ 25,000**
8.12	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	$ 12,500	$ 10,000	$ 2,500	**$ 25,000**
8.13	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	$ 50,000	$ 45,500	$ 19,500	**$ 115,000**
8.14	Control house AC Panel	1	EA	65,000.00	91,000.00	39,000.00	$ 65,000	$ 91,000	$ 39,000	**$ 195,000**
8.15	Control House DC Panel	1	EA	65,000.00	91,000.00	39,000.00	$ 65,000	$ 91,000	$ 39,000	**$ 195,000**
8.16	Generator	1	EA	130,000.00	72,800.00	31,200.00	$ 130,000	$ 72,800	$ 31,200	**$ 234,000**
TOTAL - CONTROL ENCLOSURE							$ 1,382,382	$ 1,130,634	$ 370,748	$ 2,883,764
2 - Shore Road 345 kV GIS Substation							$ 56,427,847	$ 24,968,480	$ 14,640,152	$ 96,036,478
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		1,104,512.11	473,362.33	$ -	$ 1,104,512	$ 473,362	**$ 1,577,874**
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		799,341.92		$ -	$ 799,342	$ -	**$ 799,342**
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		3,197,367.70		$ -	$ 3,197,368	$ -	**$ 3,197,368**
9.4	Utility PM and Project Oversite	1.0	LS		799,341.92		$ -	$ 799,342	$ -	**$ 799,342**
9.5	Site Accommodation, Facilities, Storage	1.0	LS	799,341.92			$ 799,342	$ -	$ -	**$ 799,342**
	Engineering									
9.6	Design Engineering	1.00	LS		6,394,735.40		$ -	$ 6,394,735	$ -	**$ 6,394,735**
9.7	LiDAR /GPR	1.00	LS		-		$ -	$ -	$ -	**$ -**
9.8	Geotech	5.00	EA		2,730.00	1,820.00	$ -	$ 13,650	$ 9,100	**$ 22,750**
9.9	Surveying/Staking	1.00	Site		559,539.35		$ -	$ 559,539	$ -	**$ 559,539**
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		2,997,532.22		$ -	$ 2,997,532	$ -	**$ 2,997,532**
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		$ -	$ 6,547	$ -	**$ 6,547**
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		799,341.92		$ -	$ 799,342	$ -	**$ 799,342**
9.13	Environmental-special studies/investigation		LS		-		$ -	$ -	$ -	**$ -**
9.14	Warranties / LOC's	1.00	LS		239,802.58		$ -	$ 239,803	$ -	**$ 239,803**
9.15	Laydown Lease		LS		-		$ -	$ -	$ -	**$ -**
9.16	Real Estate (Acquisition)	1.00	LS			1,294,265.00	$ -	$ -	$ 1,294,265	**$ 1,294,265**
9.17	Legal Fees (Real estate)	1.00	LS		-	38,827.95	$ -	$ -	$ 38,828	**$ 38,828**
9.18	Insurance	-	LS		-	-	$ -	$ -	$ -	**$ -**
9.19	Bonds	1	LS		-	$ 3,460,000	$ -	$ -	**$ 3,460,000**	**$ 3,460,000**
9.20	Sales Tax on Materials	8.80%	LS	56,427,846.61			$ 4,965,651	$ -	$ -	**$ 4,965,651**
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		96,036.48		$ -	$ 96,036	$ -	**$ 96,036**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							$ 5,764,992	$ 17,007,749	$ 5,275,555	**$ 28,048,296**

Propel NY - TO49 BS3

3 - Ruland Road 345/138 kV Substation

Total: $ 161,516,327

Propel NY - TO49 BS3				
	Material Supply	*Labor Supply*	*Equip Supply*	*Total*
3 - Ruland Road 345/138 kV Substation				
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ 1,823,507	$ 1,594,158	$ 905,785	$ 4,323,450
2. SUBSTATION FOUNDATIONS	$ 7,565,814	$ 4,440,440	$ 2,885,996	$ 14,892,250
3. SUBSTATION STRUCTURES	$ 1,137,098	$ 1,218,067	$ 797,795	$ 3,152,960
4. MAJOR EQUIPTMENT	$ 47,598,376	$ 5,241,630	$ 2,242,642	$ 55,082,648
5. LOW VOLTAGE & CONTROL CABLE	$ 603,915	$ 163,305	$ 32,661	$ 799,881
6. CONDUIT & CABLE TRENCH	$ 1,746,270	$ 1,289,224	$ 635,642	$ 3,671,137
7. GROUND GRID	$ 287,507	$ 207,419	$ 48,351	$ 543,278
8. CONTROL ENCLOSURE	$ 1,323,372	$ 1,083,426	$ 358,946	$ 2,765,743
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	$ 6,315,869	$ 17,748,712	$ 4,769,275	$ 28,833,855
SUBTOTAL (Costs):	$ 68,401,729	$ 32,986,381	$ 12,677,093	$ 114,065,203
CONTRACTOR MARK-UP (OH&P)	$ 12,312,311	$ 5,937,549	$ 2,281,877	$ 20,531,737
SUBTOTAL:	$ 80,714,040	$ 38,923,930	$ 14,958,970	$ 134,596,939
CONTINGENCY ON ENTIRE PROJECT	$ 16,142,808	$ 7,784,786	$ 2,991,794	$ 26,919,388
TOTAL:	$ 96,856,848	$ 46,708,716	$ 17,950,764	$ 161,516,327

Description of Work: New greenfield 345 kV/138 kV Ruland Road Substation, to be located on Ruland Road in the Hamlet of Melville, Town of Huntington, Suffolk County. The New substation will consist of a 138 kV air insulated switchgear ("AIS") six (6) position ring bus substation and a 345 kV AIS six (6) position ring bus substation interconnected by three (3) 345 kV/138 kV power transformers.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3 - Ruland Road 345/138 kV Substation										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	6.3	ACRE	-	10,800.00	7,200.00	$ -	$ 68,040	$ 45,360	**$ 113,400**
1.2	Demolition	0	ACRE	-	-	-	$ -	$ -	$ -	**$ -**
1.3	New Access Road - 20'	4,535	SY	4.85	7.20	4.80	$ 21,995	$ 32,653	$ 21,769	**$ 76,417**
1.4	Strip and Dispose Top Soil	10,164	CY		24.50	10.50	$ -	$ 249,018	$ 106,722	**$ 355,740**
1.5	Site Grading- Excavation for Substation Pad	30,492	CY		9.00	6.00	$ -	$ 274,428	$ 182,952	**$ 457,380**
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	16,466	CY		21.00	9.00	$ -	$ 345,779.28	$ 148,191.12	**$ 493,970.40**
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	24,699	CY		2.40	1.60	$ -	$ 59,276	$ 39,518	**$ 98,794**
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	16,466	CY	25.00	2.40	1.60	$ 411,642	$ 39,518	$ 26,345	**$ 477,505**
1.9	Blasting		EA				$ -	$ -	$ -	**$ -**
1.10	Install substation 8" pad base	30,492	SY	11.00	6.00	4.00	$ 335,412	$ 182,952	$ 121,968	**$ 640,332**
1.11	Site Surfacing - Aggregate 6" Thick	30,492	SY	16.50	4.50	3.00	$ 503,118	$ 137,214	$ 91,476	**$ 731,808**
1.12	7' Station Fence w/ Barbed Wire & Grounding	2,005	LF	13.85	13.85	6.92	$ 27,765	$ 27,765	$ 13,883	**$ 69,413**
1.13	20' Slide Gate & Grounding	2	EA	8,100.00	3,245.00	1,305.00	$ 16,200	$ 6,490	$ 2,610	**$ 25,300**
1.14	4' Pedestrian gate	2	EA	2,500.00	1,000.00	350.00	$ 5,000	$ 2,000	$ 700	**$ 7,700**
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	1	LS	446,976.00	115,200.00	76,104.00	$ 446,976	$ 115,200	$ 76,104	**$ 638,280**
1.16	Seeding	17,200	SF	1.50	1.50	1.00	$ 25,800	$ 25,800	$ 17,200	**$ 68,800**
1.17	Erosion Control-Silt fence install & remove	3,393	LF	2.41	3.16	0.72	$ 8,177	$ 10,722	$ 2,443	**$ 21,342**
1.18	Temporary fencing	2,262	LF	7.50	5.25	2.25	$ 16,965	$ 11,876	$ 5,090	**$ 33,930**
1.19	Substation entrance with asphalt	135	SY	19.50	26.00	19.50	$ 2,637	$ 3,516	$ 2,637	**$ 8,789**
1.20	Concrete curb	70	LF	26.00	27.30	11.70	$ 1,820	$ 1,911	$ 819	**$ 4,550**
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	$ -	$ -	$ -	**$ -**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							$ 1,823,507	$ 1,594,158	$ 905,785	$ 4,323,450
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	89	CY	703.89	804.44	502.78	$ 62,681	$ 71,635	$ 44,772	**$ 179,088**
2.2	345kV, A Frame 70'	587	CY	703.89	804.44	502.78	$ 412,871	$ 471,852	$ 294,908	**$ 1,179,631**
2.3	345kV, Bus support-3 Ph	158	CY	703.89	804.44	502.78	$ 111,495	$ 127,423	$ 79,640	**$ 318,558**
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.5	345kV, Bus support-1 Ph	293	CY	703.89	804.44	502.78	$ 206,266	$ 235,733	$ 147,333	**$ 589,333**
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.7	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.8	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.9	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.10	345kV, Cable sealing end	21	CY	703.89	804.44	502.78	$ 15,063	$ 17,215	$ 10,759	**$ 43,038**
2.11	345kV, CCVT	96	CY	703.89	804.44	502.78	$ 67,784	$ 77,468	$ 48,417	**$ 193,669**
2.12	345kV, Disconnect Switch	63	CY	703.89	804.44	502.78	$ 44,598	$ 50,969	$ 31,856	**$ 127,423**
2.13	345/138KV, Power Transformer with oil containment	984	CY	703.89	804.44	502.78	$ 692,623	$ 791,569	$ 494,731	**$ 1,978,922**
2.14	345kV, Shunt Reactor with oil containment-150MVAR	610	CY	703.89	804.44	502.78	$ 429,370	$ 490,708	$ 306,693	**$ 1,226,771**
2.15	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.16	345kV, Phase Angle Regulator with oil containment	445	CY	703.89	804.44	502.78	$ 313,229	$ 357,976	$ 223,735	**$ 894,940**
2.17	345kV, Circuit Breaker (PASS)	160	CY	703.89	804.44	502.78	$ 112,622	$ 128,710	$ 80,444	**$ 321,776**
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.19	345/138 Kv, Control Enclosure-BLDG with generator pad	188	CY	703.89	804.44	502.78	$ 132,330	$ 151,235	$ 94,522	**$ 378,087**
2.20	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.21	138kV, Circuit Breaker (PASS)	27	CY	703.89	804.44	502.78	$ 18,770	$ 21,452	$ 13,407	**$ 53,629**
2.22	138kV, Bus support-3 Ph, low	43	CY	703.89	804.44	502.78	$ 30,126	$ 34,430	$ 21,519	**$ 86,075**
2.23	138kV, Bus support-1 Ph, low	110	CY	703.89	804.44	502.78	$ 77,160	$ 88,183	$ 55,114	**$ 220,457**
2.24	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.25	138kV, Cable sealing end	48	CY	703.89	804.44	502.78	$ 34,124	$ 38,999	$ 24,375	**$ 97,498**
2.26	138kV, CCVT	96	CY	703.89	804.44	502.78	$ 67,784	$ 77,468	$ 48,417	**$ 193,669**
2.27	138kV, A Frame 50'	218	CY	703.89	804.44	502.78	$ 153,644	$ 175,593	$ 109,746	**$ 438,983**
2.28	Firewall Foundation	40	CY	703.89	804.44	502.78	$ 27,874	$ 31,856	$ 19,910	**$ 79,640**
2.29	Precast Firewall for transformer, PARs, reactors	1,200	SF	25.00	15.00	10.00	$ 30,000	$ 18,000	$ 12,000	**$ 60,000**
2.30	Precast Concrete Piles-12"X80'	212	EA	18,000.00	3,200.00	2,800.00	$ 3,816,000	$ 678,400	$ 593,600	**$ 5,088,000**
2.31	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.32	Steel grating and support beams-transformer moat	259,680	LB	2.73	1.17	0.50	$ 709,398	$ 303,566	$ 130,100	**$ 1,143,064**
TOTAL - 345KV FOUNDATION							$ 7,565,814	$ 4,440,440	$ 2,885,996	**$ 14,892,250**
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	5	EA	23,400.00	14,040.00	9,360.00	$ 117,000	$ 70,200	$ 46,800	**$ 234,000**
3.2	345kV, A Frame 70'	4	EA	48,100.00	28,860.00	19,240.00	$ 192,400	$ 115,440	$ 76,960	**$ 384,800**
3.3	345kV, Bus support-3 Ph	10	EA	8,346.00	5,758.74	3,839.16	$ 83,460	$ 57,587	$ 38,392	**$ 179,439**
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	$ -	$ -	$ -	**$ -**
3.5	345kV, Bus support-1 Ph	37	EA	4,810.00	2,886.00	1,924.00	$ 177,970	$ 106,782	$ 71,188	**$ 355,940**
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	$ -	$ -	$ -	**$ -**
3.7	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	$ -	$ -	$ -	**$ -**
3.8	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	$ -	$ -	$ -	**$ -**
3.9	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	$ -	$ -	$ -	**$ -**
3.10	345kV, Cable sealing end	2	EA	8,346.00	5,758.74	3,839.16	$ 16,692	$ 11,517	$ 7,678	**$ 35,888**
3.11	345kV, CCVT	18	EA	4,810.00	2,886.00	1,924.00	$ 86,580	$ 51,948	$ 34,632	**$ 173,160**
3.12	345kV, Disconnect Switch	2	EA	19,240.00	11,544.00	7,696.00	$ 38,480	$ 23,088	$ 15,392	**$ 76,960**
3.13	138kV, Bus support-3 Ph, low	4	EA	4,173.00	2,879.76	1,919.84	$ 16,692	$ 11,519	$ 7,679	**$ 35,890**
3.14	138kV, Bus support-1 Ph, low	27	EA	2,782.00	1,919.84	1,279.89	$ 75,114	$ 51,836	$ 34,557	**$ 161,507**
3.15	138kV, Disconnect Switch	0	EA				$ -	$ -	$ -	
3.16	138kV, Cable sealing end	4	EA	4,810.00	2,886.00	1,924.00	$ 19,240	$ 11,544	$ 7,696	**$ 38,480**
3.17	138kV, CCVT	18	EA	3,206.67	1,924.00	1,282.67	$ 57,720	$ 34,632	$ 23,088	**$ 115,440**
3.18	138kV, A Frame 50'	3	EA	33,000.00	19,800.00	13,200.00	$ 99,000	$ 59,400	$ 39,600	**$ 198,000**
3.19	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	$ -	$ -	$ -	**$ -**
3.20	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	$ -	$ -	$ -	**$ -**
3.21	AL. Bus Tubing, 5" SCH 80	2,850	LF	25.00	184.94	123.29	$ 71,250	$ 527,073	$ 351,382	**$ 949,706**
3.22	AL. Bus fittings	1	LS	85,500.00	85,500.00	42,750.00	$ 85,500	$ 85,500	$ 42,750	**$ 213,750**
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							$ 1,137,098	$ 1,218,067	$ 797,795	$ 3,152,960

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4. MAJOR EQUIPTMENT										
4.1	345kV, GIS air terminal	0	EA				$ -	$ -	$ -	**$ -**
4.2	345kV, GIS Cable sealing end	0	EA				$ -	$ -	$ -	**$ -**
4.3	345kV, Cable sealing end	6	EA	27,144.00	5,460.00	2,340.00	$ 162,864	$ 32,760	$ 14,040	**$ 209,664**
4.4	345kV, CCVT	18	EA	16,900.00	15,941.99	6,832.28	$ 304,200	$ 286,956	$ 122,981	**$ 714,137**
4.5	345kV, Disconnect Switch	2	EA	68,900.00	21,703.50	9,301.50	$ 137,800	$ 43,407	$ 18,603	**$ 199,810**
4.6	345/138KV, Power Transformer with oil containment	3	EA	4,420,000.00	3,520.00	880.00	$ 13,260,000	$ 10,560	$ 2,640	**$ 13,273,200**
4.7	Transport & Testing- Transformer	3	EA		834,400.00	357,600.00	$ -	$ 2,503,200	$ 1,072,800	**$ 3,576,000**
4.8	345kV, Shunt Reactor with oil containment-150MVAR	2	EA	2,901,774.00	3,520.00	880.00	$ 5,803,548	$ 7,040	$ 1,760	**$ 5,812,348**
4.9	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	$ -	$ -	$ -	**$ -**
4.10	Transport & Testing- Shunt Reactor	2	EA		384,650.00	164,850.00	$ -	$ 769,300	$ 329,700	**$ 1,099,000**
4.11	345kV, Phase Angle Regulator with oil containment	1	EA	16,086,712.00	3,520.00	880.00	$ 16,086,712	$ 3,520	$ 880	**$ 16,091,112**
4.12	Transport & Testing- Phase Angle Regulating Transformer, 345kV	1	EA		715,400.00	306,600.00	$ -	$ 715,400	$ 306,600	**$ 1,022,000**
4.13	345kV, Circuit Breaker (PASS)	8	EA	980,000.00	57,239.00	24,531.00	$ 7,840,000	$ 457,912	$ 196,248	**$ 8,494,160**
4.14	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				$ -	$ -	$ -	**$ -**
4.15	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				$ -	$ -	$ -	**$ -**
4.16	345kV, surge Arrester	6	EA	8,450.00	5,460.00	2,340.00	$ 50,700	$ 32,760	$ 14,040	**$ 97,500**
4.17	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	$ -	$ -	$ -	**$ -**
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	$ -	$ -	$ -	**$ -**
4.19	138kV, Circuit Breaker (PASS)	6	EA	510,000.00	13,559.00	5,811.00	$ 3,060,000	$ 81,354	$ 34,866	**$ 3,176,220**
4.20	138kV, Disconnect Switch	0	EA		3,958.50	1,696.50	$ -	$ -	$ -	**$ -**
4.21	138kV, Cable sealing end	12	EA	11,600.00	1,050.00	450.00	$ 139,200	$ 12,600	$ 5,400	**$ 157,200**
4.22	138kV, CCVT	18	EA	10,000.00	7,970.08	3,415.75	$ 180,000	$ 143,462	$ 61,484	**$ 384,945**
4.23	138kV, Surge arrester	12	EA	4,446.00	4,200.00	1,800.00	$ 53,352	$ 50,400	$ 21,600	**$ 125,352**
4.24	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	$ 520,000	$ 91,000	$ 39,000	**$ 650,000**
TOTAL - MAJOR EQUIPMENT							$ 47,598,376	$ 5,241,630	$ 2,242,642	$ 55,082,648
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	114,000	LF	5.30	1.43	0.29	$ 603,915	$ 163,305	$ 32,661	**$ 799,881**
5.2							$ -	$ -	$ -	**$ -**
TOTAL - LOW VOLTAGE & CONTROL CABLE							$ 603,915	$ 163,305	$ 32,661	**$ 799,881**
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	$ -	$ -	$ -	**$ -**
6.2	Conduit, PVC, 4", SCH 40	22,500	LF	11.15	10.80	5.40	$ 250,875	$ 243,000	$ 121,500	**$ 615,375**
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	$ -	$ -	$ -	**$ -**
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	$ -	$ -	$ -	**$ -**
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	$ -	$ -	$ -	**$ -**
6.6	Cable Trench	601	LF	266.50	53.04	13.26	$ 160,167	$ 31,877	$ 7,969	**$ 200,013**
6.7										
6.8	138kV UG- Conduit	1,775	LF	81.00	107.00	57.00	$ 143,775	$ 189,925	$ 101,175	**$ 434,875**
6.9	138kV UG- Cable	6,325	LF	156.00	94.00	62.00	$ 986,700	$ 594,550	$ 392,150	**$ 1,973,400**
6.10	138kV UG- Termination	18	EA	9,360.00	11,700.00		$ 168,480	$ 210,600	$ -	**$ 379,080**
6.11	Fiber Optic Cable	1,775	LF	7.40	3.33	2.22	$ 13,130	$ 5,912	$ 3,941	**$ 22,983**
6.12	Ground Continuity Conductor	1,775	LF	13.04	7.53	5.02	$ 23,144	$ 13,360	$ 8,907	**$ 45,412**
TOTAL - CONDUIT & CABLE TRENCH							$ 1,746,270	$ 1,289,224	$ 635,642	**$ 3,671,137**
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	29,334	LF	2.09	3.42	1.46	$ 61,337	$ 100,184	$ 42,936	**$ 204,458**
7.2	Caweld, DSA, 4/0 , T, CROSS	780	EA	165.00	75.00		$ 128,700	$ 58,500	$ -	**$ 187,200**
7.3	Ground Rod, 3/4" x 15'	722	EA	135.00	67.50	7.50	$ 97,470	$ 48,735	$ 5,415	**$ 151,620**
TOTAL - GROUND GRID							$ 287,507	$ 207,419	$ 48,351	**$ 543,278**
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	1	EA	275,715.78	193,001.04	82,714.73	$ 275,716	$ 193,001	$ 82,715	**$ 551,432**
8.2	Primary Line Relays (87L): SEL-411L	4	EA	21,328.12	17,062.49	4,265.62	$ 85,312	$ 68,250	$ 17,062	**$ 170,625**
8.3	Backup Line Relays (87L): GE L90	4	EA	21,328.12	17,062.49	4,265.62	$ 85,312	$ 68,250	$ 17,062	**$ 170,625**
8.4	Primary Bay Control: SEL-451	6	EA	21,328.12	17,062.49	4,265.62	$ 127,969	$ 102,375	$ 25,594	**$ 255,937**
8.5	Backup Bay Control: SEL-451	6	EA	21,328.12	17,062.49	4,265.62	$ 127,969	$ 102,375	$ 25,594	**$ 255,937**
8.6	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	6	EA	21,328.12	17,062.49	4,265.62	$ 127,969	$ 102,375	$ 25,594	**$ 255,937**
8.7	Backup Transformer/Reactor/PAR Differential Relays: GE T60	6	EA	21,328.12	17,062.49	4,265.62	$ 127,969	$ 102,375	$ 25,594	**$ 255,937**
8.8	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS	1	EA	21,328.12	17,062.49	4,265.62	$ 21,328	$ 17,062	$ 4,266	**$ 42,656**
8.9	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock	1	EA	21,328.12	17,062.49	4,265.62	$ 21,328	$ 17,062	$ 4,266	**$ 42,656**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.10	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	$ 12,500	$ 10,000	$ 2,500	**$ 25,000**
8.13	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	$ 50,000	$ 45,500	$ 19,500	**$ 115,000**
8.14	Control house AC Panel	1	EA	65,000.00	91,000.00	39,000.00	$ 65,000	$ 91,000	$ 39,000	**$ 195,000**
8.15	Control House DC Panel	1	EA	65,000.00	91,000.00	39,000.00	$ 65,000	$ 91,000	$ 39,000	**$ 195,000**
8.16	Generator	1	EA	130,000.00	72,800.00	31,200.00	$ 130,000	$ 72,800	$ 31,200	**$ 234,000**
TOTAL - CONTROL ENCLOSURE							$ 1,323,372	$ 1,083,426	$ 358,946	$ 2,765,743
3 - Ruland Road 345/138 kV Substation							$ 62,085,860	$ 15,237,670	$ 7,907,818	$ 85,231,348
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		810,092.08	347,182.32	$ -	$ 810,092	$ 347,182	**$ 1,157,274**
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		852,313.48		$ -	$ 852,313	$ -	**$ 852,313**
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		3,409,253.90		$ -	$ 3,409,254	$ -	**$ 3,409,254**
9.4	Utility PM and Project Oversite	1.0	LS		852,313.48		$ -	$ 852,313	$ -	**$ 852,313**
9.5	Site Accommodation, Facilities, Storage	1.0	LS	852,313.48			$ 852,313	$ -	$ -	**$ 852,313**
	Engineering									
9.6	Design Engineering	1.00	LS		6,818,507.80		$ -	$ 6,818,508	$ -	**$ 6,818,508**
9.7	LiDAR /GPR	1.00	LS		-		$ -	$ -	$ -	**$ -**
9.8	Geotech	5.00	EA		2,730.00	1,820.00	$ -	$ 13,650	$ 9,100	**$ 22,750**
9.9	Surveying/Staking	1.00	Site		596,619.43		$ -	$ 596,619	$ -	**$ 596,619**
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		3,196,175.53		$ -	$ 3,196,176	$ -	**$ 3,196,176**
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		$ -	$ 6,547	$ -	**$ 6,547**
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		852,313.48		$ -	$ 852,313	$ -	**$ 852,313**
9.13	Environmental-special studies/investigation	-	LS		-		$ -	$ -	$ -	**$ -**
9.14	Warranties / LOC's	1.00	LS		255,694.04		$ -	$ 255,694	$ -	**$ 255,694**
9.15	Laydown Lease	-	LS		-		$ -	$ -	$ -	**$ -**
9.16	Real Estate (Acquisition)	1.00	LS			1,158,245.00	$ -	$ -	$ 1,158,245	**$ 1,158,245**
9.17	Legal Fees (Real estate)	1.00	LS		-	34,747.35	$ -	$ -	$ 34,747	**$ 34,747**
9.18	Insurance	-	LS		-	-	$ -	$ -	$ -	**$ -**
9.19	Bonds	1	LS		-	$ 3,220,000	$ -	$ -	**$ 3,220,000**	**$ 3,220,000**
9.20	Sales Tax on Materials	8.80%	LS	62,085,859.60			$ 5,463,556	$ -	$ -	**$ 5,463,556**
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		85,231.35		$ -	$ 85,231	$ -	**$ 85,231**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							$ 6,315,869	$ 17,748,712	$ 4,769,275	**$ 28,833,855**

Propel NY - TO49 BS3

4 - Barrett 345 kV Substation

Total: $ 190,179,007

Propel NY - TO49 BS3				
	Material Supply	*Labor Supply*	*Equip Supply*	*Total*
4 - Barrett 345 kV Substation				
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ 1,464,301	$ 1,575,393	$ 879,099	$ 3,918,792.73
2. SUBSTATION FOUNDATIONS	$ 7,327,301	$ 4,212,108	$ 2,824,236	$ 14,363,645.20
3. SUBSTATION STRUCTURES	$ 1,440,700	$ 971,270	$ 581,207	$ 2,993,176.36
4. MAJOR EQUIPTMENT	$ 58,313,885	$ 5,439,863	$ 3,389,976	$ 67,143,724.00
5. LOW VOLTAGE & CONTROL CABLE	$ 343,278	$ 92,826	$ 18,565	$ 454,669.20
6. CONDUIT & CABLE TRENCH	$ 276,975	$ 145,224	$ 64,656	$ 486,855.00
7. GROUND GRID	$ 211,917	$ 153,774	$ 36,139	$ 401,830.00
8. CONTROL ENCLOSURE	$ 1,518,997	$ 1,239,926	$ 398,071	$ 3,156,993.22
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	$ 7,168,164	$ 24,028,989	$ 10,190,369	$ 41,387,522.48
SUBTOTAL (Costs):	$ 78,065,517	$ 37,859,373	$ 18,382,318	$ 134,307,208
CONTRACTOR MARK-UP (OH&P)	$ 14,051,793	$ 6,814,687	$ 3,308,817	$ 24,175,297
SUBTOTAL:	$ 92,117,309	$ 44,674,061	$ 21,691,136	$ 158,482,506
CONTINGENCY ON ENTIRE PROJECT	$ 18,423,462	$ 8,934,812	$ 4,338,227	$ 31,696,501
TOTAL:	$ 110,540,771	$ 53,608,873	$ 26,029,363	$ 190,179,007

Description of Work: new greenfield 345 kV Barrett Substation, to be located near 4005 Daly Boulevard, in the Hamlet of Oceanside, Town of Hempstead, Nassau County. The New 345 kV Barrett Substation will serve as the main Point of Interconnection ("POI")between the generation and transmission operator. The New substation will step up the 138 kV POI voltage to 345 kV, and a new 345 kV underground line will be connected

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4 - Barrett 345 kV Substation										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	6.7	ACRE	-	10,800.00	7,200.00	$ -	$ 72,360	$ 48,240	**$ 120,600**
1.2	Demolition	0	ACRE	-	-	-	$ -	$ -	$ -	**$ -**
1.3	New Access Road - 20'	4,683	SY	4.85	7.20	4.80	$ 22,713	$ 33,718	$ 22,479	**$ 78,910**
1.4	Strip and Dispose Top Soil	10,809	CY		24.50	10.50	$ -	$ 264,829	$ 113,498	**$ 378,327**
1.5	Site Grading- Excavation for Substation Pad	32,428	CY		9.00	6.00	$ -	$ 291,852	$ 194,568	**$ 486,420**
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	17,511	CY		21.00	9.00	$ -	$ 367,733.52	$ 157,600.08	**$ 525,333.60**
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	26,267	CY		2.40	1.60	$ -	$ 63,040	$ 42,027	**$ 105,067**
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	17,511	CY	25.00	2.40	1.60	$ 437,778	$ 42,027	$ 28,018	**$ 507,822**
1.9	Blasting		EA				$ -	$ -	$ -	**$ -**
1.10	Install substation 8" pad base	32,428	SY	11.00	6.00	4.00	$ 356,708	$ 194,568	$ 129,712	**$ 680,988**
1.11	Site Surfacing - Aggregate 6" Thick	32,428	SY	16.50	4.50	3.00	$ 535,062	$ 145,926	$ 97,284	**$ 778,272**
1.12	7' Station Fence w/ Barbed Wire & Grounding	2,087	LF	13.85	13.85	6.92	$ 28,901	$ 28,901	$ 14,450	**$ 72,252**
1.13	20' Slide Gate & Grounding	2	EA	8,100.00	3,245.00	1,305.00	$ 16,200	$ 6,490	$ 2,610	**$ 25,300**
1.14	4' Pedestrian gate	2	EA	2,500.00	1,000.00	350.00	$ 5,000	$ 2,000	$ 700	**$ 7,700**
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH AND INLET	1	EA	20,235.06	19,200.00	6,342.00	$ 20,235	$ 19,200	$ 6,342	**$ 45,777**
1.16	Seeding	3,195	SF	1.50	1.50	1.00	$ 4,792	$ 4,792	$ 3,195	**$ 12,778**
1.17	Erosion Control-Silt fence install & remove	3,131	LF	2.41	3.16	0.72	$ 7,545	$ 9,892	$ 2,254	**$ 19,691**
1.18	Temporary fencing	2,087	LF	7.50	5.25	2.25	$ 15,653	$ 10,957	$ 4,696	**$ 31,305**
1.19	Substation entrance with asphalt	490	SY	19.50	26.00	19.50	$ 9,555	$ 12,740	$ 9,555	**$ 31,850**
1.20	Concrete curb	160	LF	26.00	27.30	11.70	$ 4,160	$ 4,368	$ 1,872	**$ 10,400**
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							$ 1,464,301	$ 1,575,393	$ 879,099	$ 3,918,793
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	71	CY	703.89	804.44	502.78	$ 50,145	$ 57,308	$ 35,818	**$ 143,271**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.2	345kV, A Frame 70'- ONE BAY	147	CY	703.89	804.44	502.78	$ 103,218	$ 117,963	$ 73,727	**$ 294,908**
2.3	345kV, A Frame 70'- TWO BAY	440	CY	703.89	804.44	502.78	$ 309,653	$ 353,889	$ 221,181	**$ 884,723**
2.4	345kV, Bus support-3 Ph	143	CY	703.89	804.44	502.78	$ 100,346	$ 114,681	$ 71,676	**$ 286,702**
2.5	345kV, Bus support-1 Ph	293	CY	703.89	804.44	502.78	$ 206,266	$ 235,733	$ 147,333	**$ 589,333**
2.6	345kV, Cable sealing end	36	CY	703.89	804.44	502.78	$ 25,593	$ 29,249	$ 18,281	**$ 73,124**
2.7	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.8	345kV, CCVT	80	CY	703.89	804.44	502.78	$ 56,487	$ 64,556	$ 40,348	**$ 161,391**
2.9	345kV, Disconnect Switch	63	CY	703.89	804.44	502.78	$ 44,598	$ 50,969	$ 31,856	**$ 127,423**
2.10	345/138KV, Power Transformer with oil containment	825	CY	703.89	804.44	502.78	$ 580,705	$ 663,663	$ 414,789	**$ 1,659,158**
2.11	345kV, Shunt Reactor with oil containment-300MVAR	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.12	345kV, Shunt Reactor with oil containment-100MVAR	252	CY	703.89	804.44	502.78	$ 177,379	$ 202,719	$ 126,699	**$ 506,797**
2.13	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.14	345kV, Circuit Breaker (PASS)	140	CY	703.89	804.44	502.78	$ 98,544	$ 112,622	$ 70,389	**$ 281,554**
2.15	345kV, Surge arrester	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.16	345/138 Kv, Control Enclosure-BLDG with generator pad	188	CY	703.89	804.44	502.78	$ 132,330	$ 151,235	$ 94,522	**$ 378,087**
2.17	138kV, Phase Angle Regulator	441	CY	703.89	804.44	502.78	$ 310,413	$ 354,758	$ 221,724	**$ 886,895**
2.18	138kV, Disconnect Switch	73	CY	703.89	804.44	502.78	$ 51,187	$ 58,499	$ 36,562	**$ 146,247**
2.19	138kV, Cable sealing end	36	CY	703.89	804.44	502.78	$ 25,593	$ 29,249	$ 18,281	**$ 73,124**
2.20	138kV, Surge arrester	48	CY	703.89	804.44	502.78	$ 33,892	$ 38,734	$ 24,209	**$ 96,834**
2.21	Firewall Foundation	816	CY	703.89	804.44	502.78	$ 574,201	$ 656,230	$ 410,144	**$ 1,640,575**
2.22	Precast Firewall for transformer	12,270	SF	25.00	15.00	10.00	$ 306,750	$ 184,050	$ 122,700	**$ 613,500**
2.23	Precast Concrete Piles-12"X80'	230	EA	18,000.00	3,200.00	2,800.00	$ 4,140,000	$ 736,000	$ 644,000	**$ 5,520,000**
TOTAL - 345KV FOUNDATION							$ 7,327,301	$ 4,212,108	$ 2,824,236	**$ 14,363,645**
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	4	EA	23,400.00	14,040.00	9,360.00	$ 93,600	$ 56,160	$ 37,440	**$ 187,200**
3.2	345kV, A Frame 70'- ONE BAY	1	EA	48,100.00	28,860.00	19,240.00	$ 48,100	$ 28,860	$ 19,240	**$ 96,200**
3.3	345kV, A Frame 70'- TWO BAY	2	EA	80,327.00	48,196.20	32,130.80	$ 160,654	$ 96,392	$ 64,262	**$ 321,308**
3.4	345kV, Bus support-3 Ph	9	EA	8,346.00	5,758.74	3,839.16	$ 75,114	$ 51,829	$ 34,552	**$ 161,495**
3.5	345kV, Bus support-1 Ph	37	EA	4,810.00	2,886.00	1,924.00	$ 177,970	$ 106,782	$ 71,188	**$ 355,940**
3.6	345kV, Cable sealing end	6	EA	4,066.40	1,443.00	962.00	$ 24,398	$ 8,658	$ 5,772	**$ 38,828**
3.7	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	$ -	$ -	$ -	**$ -**
3.8	345kV, CCVT	15	EA	4,810.00	2,886.00	1,924.00	$ 72,150	$ 43,290	$ 28,860	**$ 144,300**
3.9	345kV, Disconnect Switch	2	EA	19,240.00	11,544.00	7,696.00	$ 38,480	$ 23,088	$ 15,392	**$ 76,960**
3.10	345kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	$ -	$ -	$ -	**$ -**
3.11	138kV, Disconnect Switch	3	EA	12,251.20	3,928.86	2,619.24	$ 36,754	$ 11,787	$ 7,858	**$ 56,398**
3.12	138kV, Cable sealing end	3	EA	4,066.40	1,443.00	962.00	$ 12,199	$ 4,329	$ 2,886	**$ 19,414**
3.13	138kV, Surge arrester	9	EA	4,810.00	2,886.00	1,924.00	$ 43,290	$ 25,974	$ 17,316	**$ 86,580**
3.14	AL. Bus Tubing, 5" SCH 80	1,215	LF	25.00	184.94	123.29	$ 30,375	$ 224,700	$ 149,800	**$ 404,874**
3.15	AL. Bus fittings	1	LS	36,450.00	36,450.00	18,225.00	$ 36,450	$ 36,450	$ 18,225	**$ 91,125**
3.16	Steel grating and support beams-transformer moat	216,400	LB	2.73	1.17	0.50	$ 591,165	$ 252,972	$ 108,416	**$ 952,553**
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							$ 1,440,700	$ 971,270	$ 581,207	$ 2,993,176
4. MAJOR EQUIPTMENT										
4.1	345/138kV, Power Transformer	3	EA	4,420,000.00	3,520.00	880.00	$ 13,260,000	$ 10,560	$ 2,640	**$ 13,273,200**
4.2	Transport & Testing- Transformer	3	EA		717,400.00	474,600.00	$ -	$ 2,152,200	$ 1,423,800	**$ 3,576,000**
4.3	345kV, Shunt Reactor with oil containment-300MVAR	0	EA		3,520.00	880.00	$ -	$ -	$ -	**$ -**
	345kV, Shunt Reactor with oil containment-100MVAR	2	EA	$ 2,385,864	3,520.00	880.00	$ 4,771,727	$ 7,040	$ 1,760	**$ 4,780,527**
4.4	Transport & Testing- Shunt Reactor	2	EA		279,400.00	182,600.00	$ -	$ 558,800	$ 365,200	**$ 924,000**
4.5	345kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	$ -	$ -	$ -	**$ -**
4.6	Transport & Testing- PAR	0	EA		15,400.00	6,600.00	$ -	$ -	$ -	**$ -**
4.7	345kV Circuit Breakers, PASS	7	EA	980,000.00	57,239.00	24,531.00	$ 6,860,000	$ 400,673	$ 171,717	**$ 7,432,390**
4.9	345kV, Cable sealing end	6	EA	27,144.00	5,460.00	2,340.00	$ 162,864	$ 32,760	$ 14,040	**$ 209,664**
4.10	345kV, CCVT	15	EA	16,900.00	15,941.99	6,832.28	$ 253,500	$ 239,130	$ 102,484	**$ 595,114**
4.11	345kV, Disconnect Switch - 3Ph	2	EA	57,720.00	34,632.00	23,088.00	$ 115,440	$ 69,264	$ 46,176	**$ 230,880**
4.12	345kV, Surge arrester	0	EA		4,200.00	1,800.00	$ -	$ -	$ -	**$ -**
4.14	Phase Angle Regulating Transformer, 138kV	3	EA	10,713,172.00	3,520.00	880.00	$ 32,139,516	$ 10,560	$ 2,640	**$ 32,152,716**
4.15	Transport & Testing- Phase Angle Regulating Transformer, 138kV	3	EA		603,400.00	398,600.00	$ -	$ 1,810,200	$ 1,195,800	**$ 3,006,000**
4.16	138kV, Cable sealing end	9	EA	11,600.00	1,050.00	450.00	$ 104,400	$ 9,450	$ 4,050	**$ 117,900**
4.17	138kV, Disconnect Switch- 3 Phase	3	EA	37,700.00	11,875.50	5,089.50	$ 113,100	$ 35,627	$ 15,269	**$ 163,995**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.18	138kV, Surge arrester	3	EA	4,446.00	4,200.00	1,800.00	$ 13,338	$ 12,600	$ 5,400	**$ 31,338**
4.19	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	$ 520,000	$ 91,000	$ 39,000	**$ 650,000**
TOTAL - MAJOR EQUIPMENT							$ 58,313,885	$ 5,439,863	$ 3,389,976	$ 67,143,724
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	64,800	LF	5.30	1.43	0.29	$ 343,278	$ 92,826	$ 18,565	**$ 454,669**
5.2							$ -	$ -	$ -	**$ -**
TOTAL - LOW VOLTAGE & CONTROL CABLE							$ 343,278	$ 92,826	$ 18,565	**$ 454,669**
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	$ -	$ -	$ -	**$ -**
6.2	Conduit, PVC, 4", SCH 40	10,500	LF	11.15	10.80	5.40	$ 117,075	$ 113,400	$ 56,700	**$ 287,175**
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	$ -	$ -	$ -	**$ -**
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	$ -	$ -	$ -	**$ -**
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	$ -	$ -	$ -	**$ -**
6.6	Cable Trench	600	LF	266.50	53.04	13.26	$ 159,900	$ 31,824	$ 7,956	**$ 199,680**
6.7							$ -	$ -	$ -	**$ -**
TOTAL - CONDUIT & CABLE TRENCH							$ 276,975	$ 145,224	$ 64,656	**$ 486,855**
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	22,000	LF	2.09	3.42	1.46	$ 46,002	$ 75,137	$ 32,201	**$ 153,340**
7.2	Caweld, DSA, 4/0 , T, CROSS	576	EA	165.00	75.00		$ 95,040	$ 43,200	$ -	**$ 138,240**
7.3	Ground Rod, 3/4" x 15'	525	EA	135.00	67.50	7.50	$ 70,875	$ 35,438	$ 3,938	**$ 110,250**
TOTAL - GROUND GRID							$ 211,917	$ 153,774	$ 36,139	**$ 401,830**
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	1	EA	275,715.78	193,001.04	82,714.73	$ 275,716	$ 193,001	$ 82,715	**$ 551,432**
8.2	Primary Line Relays (87L): SEL-411L	5	EA	21,328.12	17,062.49	4,265.62	$ 106,641	$ 85,312	$ 21,328	**$ 213,281**
8.3	Backup Line Relays (87L): GE L90	5	EA	21,328.12	17,062.49	4,265.62	$ 106,641	$ 85,312	$ 21,328	**$ 213,281**
8.4	Primary Bay Control: SEL-451	7	EA	21,328.12	17,062.49	4,265.62	$ 149,297	$ 119,437	$ 29,859	**$ 298,594**
8.5	Backup Bay Control: SEL-451	7	EA	21,328.12	17,062.49	4,265.62	$ 149,297	$ 119,437	$ 29,859	**$ 298,594**
8.6	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	8	EA	21,328.12	17,062.49	4,265.62	$ 170,625	$ 136,500	$ 34,125	**$ 341,250**
8.7	Backup Transformer/Reactor/PAR Differential Relays: GE T60	8	EA	21,328.12	17,062.49	4,265.62	$ 170,625	$ 136,500	$ 34,125	**$ 341,250**
8.8	Primary Bus Differential Relays: SEL-487B	1	EA	21,328.12	17,062.49	4,265.62	$ 21,328	$ 17,062	$ 4,266	**$ 42,656**
8.9	Backup Bus Differential Relays: GE B90	1	EA	21,328.12	17,062.49	4,265.62	$ 21,328	$ 17,062	$ 4,266	**$ 42,656**
8.10	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS	1	EA	12,500.00	10,000.00	2,500.00	$ 12,500	$ 10,000	$ 2,500	**$ 25,000**
8.11	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock	1	EA	12,500.00	10,000.00	2,500.00	$ 12,500	$ 10,000	$ 2,500	**$ 25,000**
8.12	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	$ 12,500	$ 10,000	$ 2,500	**$ 25,000**
8.30	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	$ 50,000	$ 45,500	$ 19,500	**$ 115,000**
8.31	Control house AC Panel	1	EA	65,000.00	91,000.00	39,000.00	$ 65,000	$ 91,000	$ 39,000	**$ 195,000**
8.32	Control House DC Panel	1	EA	65,000.00	91,000.00	39,000.00	$ 65,000	$ 91,000	$ 39,000	**$ 195,000**
8.33	Generator	1	EA	130,000.00	72,800.00	31,200.00	$ 130,000	$ 72,800	$ 31,200	**$ 234,000**
TOTAL - CONTROL ENCLOSURE							$ 1,518,997	$ 1,239,926	$ 398,071	$ 3,156,993
4 - Barrett 345 kV Substation							$ 70,897,353	$ 13,830,384	$ 8,191,949	$ 92,919,686
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		770,781.66	330,335.00	$ -	$ 770,782	$ 330,335	**$ 1,101,117**
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		929,196.86		$ -	$ 929,197	$ -	**$ 929,197**
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		3,716,787.43		$ -	$ 3,716,787	$ -	**$ 3,716,787**
9.4	Utility PM and Project Oversite	1.0	LS		929,196.86		$ -	$ 929,197	$ -	**$ 929,197**
9.5	Site Accommodation, Facilities, Storage	1.0	LS	929,196.86			$ 929,197	$ -	$ -	**$ 929,197**
	Engineering									
9.6	Design Engineering	1.00	LS		7,433,574.86		$ -	$ 7,433,575	$ -	**$ 7,433,575**
9.7	LiDAR /GPR	1.00	LS		-		$ -	$ -	$ -	**$ -**
9.8	Geotech	5.00	EA		2,730.00	1,820.00	$ -	$ 13,650	$ 9,100	**$ 22,750**
9.9	Surveying/Staking	1.00	Site		650,437.80		$ -	$ 650,438	$ -	**$ 650,438**
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		3,484,488.21		$ -	$ 3,484,488	$ -	**$ 3,484,488**
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		200,000.00		$ -	$ 200,000	$ -	**$ 200,000**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		929,196.86		$ -	$ 929,197	$ -	**$ 929,197**
9.13	Environmental-special studies/investigation	1.00	LS		4,600,000.00		$ -	$ 4,600,000	$ -	**$ 4,600,000**
9.14	Warranties / LOC's	1.00	LS		278,759.06		$ -	$ 278,759	$ -	**$ 278,759**
9.15	Laydown Lease	1.00	LS		-		$ -	$ -	$ -	**$ -**
9.16	Real Estate (Acquisition)	1.00	LS			5,894,111.00	$ -	$ -	$ 5,894,111	**$ 5,894,111**
9.17	Legal Fees (Real estate)	1.00	LS		-	176,823.33	$ -	$ -	$ 176,823	**$ 176,823**
9.18	Insurance	-	LS		-	-	$ -	$ -	$ -	**$ -**
9.19	Bonds	1	LS		-	$ 3,780,000	$ -	$ -	**$ 3,780,000**	**$ 3,780,000**
9.20	Sales Tax on Materials	8.80%	LS	70,897,352.61			$ 6,238,967	$ -	$ -	**$ 6,238,967**
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		92,919.69		$ -	$ 92,920	$ -	**$ 92,920**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							$ 7,168,164	$ 24,028,989	$ 10,190,369	**$ 41,387,522**

Propel NY - TO49 BS3

5 - Existing 345 kV Tremont Substation_GIS_Interconnection

Total: $ 32,771,373

Propel NY - TO49 BS3				
	Material Supply	*Labor Supply*	*Equip Supply*	*Total*
5 - Existing 345 kV Tremont Substation_GIS_Interconnection				
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ 4,238	$ 304,182	$ 201,269	$ 509,689
2. SUBSTATION FOUNDATIONS	$ 2,073,430	$ 754,091	$ 545,707	$ 3,373,228
3. SUBSTATION STRUCTURES	$ -	$ -	$ -	$ -
4. MAJOR EQUIPTMENT	$ 7,833,652	$ 4,479,191	$ 2,964,461	$ 15,277,304
5. LOW VOLTAGE & CONTROL CABLE	$ 123,962	$ 33,521	$ 6,704	$ 164,186
6. CONDUIT & CABLE TRENCH	$ 140,078	$ 58,770	$ 24,413	$ 223,260
7. GROUND GRID	$ 14,781	$ 10,494	$ 2,365	$ 27,640
8. CONTROL ENCLOSURE	$ 859,778	$ 723,020	$ 255,759	$ 1,838,557
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	$ 1,040,258	$ 1,482,170	$ 694,854	$ 3,217,283
Turnkey cost (HVDC, GIS)	$ 7,313,652	$ 4,388,191	$ 2,925,461	$ 14,627,304
Non-Turnkey cost	$ 4,776,525	$ 3,457,247	$ 1,770,071	$ 10,003,843
SUBTOTAL (Costs):	$ 12,090,177	$ 7,845,439	$ 4,695,532	$ 24,631,147
CONTRACTOR MARK-UP (OH&P):	$ 1,298,594	$ 885,596	$ 494,140	$ 2,678,330
SUBTOTAL:	$ 13,388,771	$ 8,731,035	$ 5,189,672	$ 27,309,477
CONTINGENCY ON ENTIRE PROJECT	$ 2,677,754	$ 1,746,207	$ 1,037,934	$ 5,461,895
TOTAL:	$ 16,066,525	$ 10,477,241	$ 6,227,606	$ 32,771,373

Description of Work: The existing Consolidated Edison Company of New York, Inc. ("Con Edison") Tremont Substation, located in the Borough of the Bronx, New York City, Bronx County. Tremont Substation is an existing 345 kV AIS substation fed by a single underground 345 kV Line, X-28, which is a Con Edison transmission circuit. The X-28 circuit is connected to a common rigid bus that feeds two (2) 345 kV / 138 kV transformers in parallel. The Solution consists of the termination of a new 345 kV circuit, which requires installing a new 345 kV GIS six-position ring bus within the existing fence-line of the substation.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
5 - Existing 345 kV Tremont Substation_GIS_Interconnection										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	$ -	$ -	$ -	$ -
1.2	Demolition	1	LS	-	300,000.00	200,000.00	$ -	$ 300,000	$ 200,000	$ **500,000**
1.3	New Access Road - 20'	0	SY	4.85	7.20	4.80	$ -	$ -	$ -	$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	$ -	$ -	$ -	$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	$ -	$ -	$ -	$ -
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	0	CY		21.00	9.00	$ -	$ -	$ -	$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	$ -	$ -	$ -	$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	$ -	$ -	$ -	$ -
1.9	Blasting		EA				$ -	$ -	$ -	$ -
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00	$ -	$ -	$ -	$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	$ -	$ -	$ -	$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding	0	LF	13.85	13.85	6.92	$ -	$ -	$ -	$ -
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	$ -	$ -	$ -	$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	$ -	$ -	$ -	$ -
1.15	Storm drain-15" HDPE, INFILTRATION TRENCH, INLET and Hydrodynamic Separator	0	LS	446,976.00	-	-	$ -	$ -	$ -	$ -
1.16	Seeding	0	SF	1.50	1.50	1.00	$ -	$ -	$ -	$ -
1.17	Erosion Control-Silt fence install & remove	825	LF	2.41	3.16	0.72	$ 1,988	$ 2,607	$ 594	$ **5,189**
1.18	Temporary fencing	300	LF	7.50	5.25	2.25	$ 2,250	$ 1,575	$ 675	$ **4,500**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	$ -	$ -	$ -	**$ -**
1.20	Concrete curb	0	LF	26.00	27.30	11.70	$ -	$ -	$ -	**$ -**
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	$ -	$ -	$ -	**$ -**
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							$ 4,238	$ 304,182	$ 201,269	$ 509,689
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.7	345kV, GIS fast acting GND SW	49	CY	703.89	804.44	502.78	$ 34,293	$ 39,192	$ 24,495	**$ 97,981**
2.8	345kV, GIS to air bushing	109	CY	703.89	804.44	502.78	$ 76,780	$ 87,748	$ 54,843	**$ 219,371**
2.9	345kV, GIS support-1 Ph	45	CY	703.89	804.44	502.78	$ 31,436	$ 35,926	$ 22,454	**$ 89,816**
2.10	345kV, GIS support-3 Ph	79	CY	703.89	804.44	502.78	$ 55,748	$ 63,712	$ 39,820	**$ 159,279**
2.11	345kV, GIS Cable sealing end	36	CY	703.89	804.44	502.78	$ 25,593	$ 29,249	$ 18,281	**$ 73,124**
2.12	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.13	345kV, CCVT	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.15	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.19	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.20	345kV, Circuit Breaker (GIS), outdoor rated	120	CY	703.89	804.44	502.78	$ 84,466	$ 96,533	$ 60,333	**$ 241,332**
2.21	345/138 Kv, Control Enclosure-BLDG with generator pad	125	CY	703.89	804.44	502.78	$ 87,986	$ 100,555	$ 62,847	**$ 251,388**
2.22	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.23	138kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.29	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.30	Firewall Foundation	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.31	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	$ -	$ -	$ -	**$ -**
2.32	Precast Concrete Piles-12"X80'	93	EA	18,000.00	3,200.00	2,800.00	$ 1,674,000	$ 297,600	$ 260,400	**$ 2,232,000**
2.33	Local Control Cabinet foundation	4	CY	703.89	804.44	502.78	$ 3,128	$ 3,575	$ 2,235	**$ 8,938**
2.34	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	$ -	$ -	$ -	**$ -**
TOTAL - 345KV FOUNDATION							$ 2,073,430	$ 754,091	$ 545,707	**$ 3,373,228**
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				$ -	$ -	$ -	**$ -**
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	$ -	$ -	$ -	**$ -**
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	$ -	$ -	$ -	**$ -**
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	$ -	$ -	$ -	**$ -**
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	$ -	$ -	$ -	**$ -**
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	$ -	$ -	$ -	**$ -**
3.7	345kV, GIS fast acting GND SW	12	EA	8,346.00	5,758.74	3,839.16				**$ -**
3.8	345kV, GIS to air bushing	9	EA	4,810.00	2,886.00	1,924.00				**$ -**
3.9	345kV, GIS support-1 Ph	11	EA	4,810.00	2,886.00	1,924.00				**$ -**
3.10	345kV, GIS support-3 Ph	6	EA	8,346.00	5,758.74	3,839.16				**$ -**
3.11	345kV, GIS Cable sealing end	3	EA	8,346.00	5,758.74	3,839.16				**$ -**
3.12	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	$ -	$ -	$ -	**$ -**
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	$ -	$ -	$ -	**$ -**
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	$ -	$ -	$ -	**$ -**
3.15	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	$ -	$ -	$ -	**$ -**
3.16	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	$ -	$ -	$ -	**$ -**
3.17	138kV, Disconnect Switch	0	EA	-	-	-	$ -	$ -	$ -	**$ -**
3.18	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	$ -	$ -	$ -	**$ -**
3.19	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	$ -	$ -	$ -	**$ -**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.20	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	$ -	$ -	$ -	$ -
3.21	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	$ -	$ -	$ -	$ -
3.22	AL. Bus fittings	0	LS	-	-	-	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							$ -	$ -	$ -	$ -
4. MAJOR EQUIPTMENT										
4.1	345kV, GIS air terminal	0	EA				$ -	$ -	$ -	$ -
4.2	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	$ -	$ -	$ -	$ -
4.3	345kV, CCVT	0	EA		15,941.99	6,832.28	$ -	$ -	$ -	$ -
4.4	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	$ -	$ -	$ -	$ -
4.5	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	$ -	$ -	$ -	$ -
4.6	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	$ -	$ -	$ -	$ -
4.7	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	$ -	$ -	$ -	$ -
4.8	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	$ -	$ -	$ -	$ -
4.9	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	$ -	$ -	$ -	$ -
4.10	345kV, Phase Angle Regulator with oil containment	0	EA				$ -	$ -	$ -	$ -
4.11	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	$ -	$ -	$ -	$ -
4.12	345kV, Circuit Breaker (GIS), outdoor rated	6	EA	1,218,942.00	731,365.20	487,576.80	$ 7,313,652	$ 4,388,191	$ 2,925,461	**$ 14,627,304**
4.13	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				$ -	$ -	$ -	$ -
4.14	345kV, surge Arrester	0	EA		5,460.00	2,340.00	$ -	$ -	$ -	$ -
4.15	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	$ -	$ -	$ -	$ -
4.16	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	$ -	$ -	$ -	$ -
4.17	138kV, Circuit Breaker (PASS)	0	EA		13,559.00	5,811.00	$ -	$ -	$ -	$ -
4.18	138kV, Disconnect Switch	0	EA		3,958.50	1,696.50	$ -	$ -	$ -	$ -
4.19	138kV, Cable sealing end	0	EA		1,050.00	450.00	$ -	$ -	$ -	$ -
4.20	138kV, CCVT	0	EA		7,970.08	3,415.75	$ -	$ -	$ -	$ -
4.21	138kV, Surge arrester	0	EA		4,200.00	1,800.00	$ -	$ -	$ -	$ -
4.22	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	$ 520,000	$ 91,000	$ 39,000	**$ 650,000**
4.23	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	$ -	$ -	$ -	$ -
4.24	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	$ -	$ -	$ -	$ -
TOTAL - MAJOR EQUIPMENT							$ 7,833,652	$ 4,479,191	$ 2,964,461	$ 15,277,304
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cable	23,400	LF	5.30	1.43	0.29	$ 123,962	$ 33,521	$ 6,704	**$ 164,186**
5.2			LF				$ -	$ -	$ -	$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							$ 123,962	$ 33,521	$ 6,704	**$ 164,186**
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	$ -	$ -	$ -	$ -
6.2	Conduit, PVC, 4", SCH 40	3,600	LF	11.15	10.80	5.40	$ 40,140	$ 38,880	$ 19,440	**$ 98,460**
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	$ -	$ -	$ -	$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	$ -	$ -	$ -	$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	$ -	$ -	$ -	$ -
6.6	Cable Trench	375	LF	266.50	53.04	13.26	$ 99,938	$ 19,890	$ 4,973	**$ 124,800**
6.7										
6.8	138kV UG	0	LF	-	-	-	$ -	$ -	$ -	$ -
6.9							$ -	$ -	$ -	$ -
TOTAL - CONDUIT & CABLE TRENCH							$ 140,078	$ 58,770	$ 24,413	**$ 223,260**
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	1,452	LF	2.09	3.42	1.46	$ 3,036	$ 4,959	$ 2,125	**$ 10,120**
7.2	Caweld, DSA, 4/0 , T, CROSS	45	EA	165.00	75.00		$ 7,425	$ 3,375	$ -	**$ 10,800**
7.3	Ground Rod, 3/4" x 15'	32	EA	135.00	67.50	7.50	$ 4,320	$ 2,160	$ 240	**$ 6,720**
TOTAL - GROUND GRID							$ 14,781	$ 10,494	$ 2,365	**$ 27,640**
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	1	EA	171,028.62	119,720.03	51,308.59	$ 171,029	$ 119,720	$ 51,309	**$ 342,057**
8.2	Primary Line Relays (87L): SEL-411L	2	EA	21,328.12	17,062.49	4,265.62	$ 42,656	$ 34,125	$ 8,531	**$ 85,312**
8.3	Backup Line Relays (87L): GE L90	2	EA	21,328.12	17,062.49	4,265.62	$ 42,656	$ 34,125	$ 8,531	**$ 85,312**
8.4	Primary Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	$ 42,656	$ 34,125	$ 8,531	**$ 85,312**
8.5	Backup Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	$ 42,656	$ 34,125	$ 8,531	**$ 85,312**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.6	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	2	EA	21,328.12	17,062.49	4,265.62	$ 42,656	$ 34,125	$ 8,531	**$ 85,312**
8.7	Backup Transformer/Reactor/PAR Differential Relays: GE T60	2	EA	21,328.12	17,062.49	4,265.62	$ 42,656	$ 34,125	$ 8,531	**$ 85,312**
8.8	Primary Bus Differential Relays: SEL-487B	2	EA	21,328.12	17,062.49	4,265.62	$ 42,656	$ 34,125	$ 8,531	**$ 85,312**
8.9	Backup Bus Differential Relays: GE B90	2	EA	21,328.12	17,062.49	4,265.62	$ 42,656	$ 34,125	$ 8,531	**$ 85,312**
8.10	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Annunciator, JMUX	1	EA	12,500.00	10,000.00	2,500.00	$ 12,500	$ 10,000	$ 2,500	**$ 25,000**
8.11	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annnunciator	1	EA	12,500.00	10,000.00	2,500.00	$ 12,500	$ 10,000	$ 2,500	**$ 25,000**
8.12	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	$ 12,500	$ 10,000	$ 2,500	**$ 25,000**
8.13	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	$ 50,000	$ 45,500	$ 19,500	**$ 115,000**
8.14	Control house AC Panel	1	EA	65,000.00	91,000.00	39,000.00	$ 65,000	$ 91,000	$ 39,000	**$ 195,000**
8.15	Control House DC Panel	1	EA	65,000.00	91,000.00	39,000.00	$ 65,000	$ 91,000	$ 39,000	**$ 195,000**
8.16	Generator	1	EA	130,000.00	72,800.00	31,200.00	$ 130,000	$ 72,800	$ 31,200	**$ 234,000**
TOTAL - CONTROL ENCLOSURE							$ 859,778	$ 723,020	$ 255,759	$ 1,838,557
5 - Existing 345 kV Tremont Substation_GIS_Interconnection							$ 11,049,919	$ 6,363,269	$ 4,000,677	$ 21,413,864
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		106,760.29	45,754.41	$ -	$ 106,760	$ 45,754	**$ 152,515**
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		67,865.60		$ -	$ 67,866	$ -	**$ 67,866**
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		271,462.42		$ -	$ 271,462	$ -	**$ 271,462**
9.4	Utility PM and Project Oversite	1.0	LS		67,865.60		$ -	$ 67,866	$ -	**$ 67,866**
9.5	Site Accommodation, Facilities, Storage	1.0	LS	67,865.60			$ 67,866	$ -	$ -	**$ 67,866**
	Engineering									
9.6	Design Engineering	1.00	LS		542,924.84		$ -	$ 542,925	$ -	**$ 542,925**
9.7	LiDAR /GPR	1.00	LS		-		$ -	$ -	$ -	**$ -**
9.8	Geotech	5.00	EA		2,730.00	1,820.00	$ -	$ 13,650	$ 9,100	**$ 22,750**
9.9	Surveying/Staking	1.00	Site		47,505.92		$ -	$ 47,506	$ -	**$ 47,506**
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		254,496.02		$ -	$ 254,496	$ -	**$ 254,496**
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		-		$ -	$ -	$ -	**$ -**
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		67,865.60		$ -	$ 67,866	$ -	**$ 67,866**
9.13	Environmental-special studies/investigation		LS		-		$ -	$ -	$ -	**$ -**
9.14	Warranties / LOC's	1.00	LS		20,359.68		$ -	$ 20,360	$ -	**$ 20,360**
9.15	Laydown Lease		LS		-		$ -	$ -	$ -	**$ -**
9.16	Real Estate (Acquisition)	-	LS			83,963.00	$ -	$ -	$ -	**$ -**
9.17	Legal Fees (Real estate)	-	LS		-	2,518.89	$ -	$ -	$ -	**$ -**
9.18	Insurance	-	LS		-	-	$ -	$ -	$ -	**$ -**
9.19	Bonds	1	LS		-	$ 640,000	$ -	$ -	**$ 640,000**	**$ 640,000**
9.20	Sales Tax on Materials	8.80%	LS	11,049,918.55			$ 972,393	$ -	$ -	**$ 972,393**
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		21,413.86		$ -	$ 21,414	$ -	**$ 21,414**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							$ 1,040,258	$ 1,482,170	$ 694,854	**$ 3,217,283**

Propel NY - TO49 BS3

6 - Existing Sprain Brook 345 kV Interconnection

Total: $ 18,474,373

Propel NY - TO49 BS3	*Material Supply*	*Labor Supply*	*Equip Supply*	*Total*
6 - Existing Sprain Brook 345 kV_ Interconnection				
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ 220,337	$ 164,274	$ 94,817	$ 479,428
2. SUBSTATION FOUNDATIONS	$ 1,177,446	$ 706,038	$ 455,635	$ 2,339,119
3. SUBSTATION STRUCTURES	$ 238,253	$ 334,356	$ 217,809	$ 790,418
4. MAJOR EQUIPTMENT	$ 4,510,308	$ 702,685	$ 333,505	$ 5,546,498
5. LOW VOLTAGE & CONTROL CABLE	$ 82,641	$ 22,347	$ 4,469	$ 109,457
6. CONDUIT & CABLE TRENCH	$ 96,730	$ 42,420	$ 17,895	$ 157,045
7. GROUND GRID	$ 8,890	$ 6,320	$ 1,423	$ 16,634
8. CONTROL ENCLOSURE	$ 213,281	$ 170,625	$ 42,656	$ 426,562
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	$ 674,866	$ 2,087,989	$ 418,859	$ 3,181,714
SUBTOTAL (Costs):	$ 7,222,751	$ 4,237,053	$ 1,587,069	$ 13,046,874
CONTRACTOR MARK-UP (OH&P)	$ 1,300,095	$ 762,670	$ 285,672	$ 2,348,437
SUBTOTAL:	$ 8,522,846	$ 4,999,723	$ 1,872,742	$ 15,395,311
CONTINGENCY ON ENTIRE PROJECT	$ 1,704,569	$ 999,945	$ 374,548	$ 3,079,062
TOTAL:	$ 10,227,415	$ 5,999,667	$ 2,247,290	$ 18,474,373

Description of Work:Interconnection Facilities to the existing Con Edison Sprain Brook Substation, located in the City of Yonkers, Westchester County. Sprain Brook Substation is an existing 345 kV AIS substation with a BAAH configuration.The Solution includes installing a new underground 345 kV line with a shunt reactor in new bay positions.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
6 - Existing Sprain Brook 345 kV_ Interconnection										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.4	ACRE	-	10,800.00	7,200.00	$ -	$ 4,320	$ 2,880	**$ 7,200**
1.2	Demolition	1	LS	-	3,000.00	2,000.00	$ -	$ 3,000	$ 2,000	**$ 5,000**
1.3	New Access Road - 20'	481	SY	4.85	7.20	4.80	$ 2,333	$ 3,464	$ 2,309	**$ 8,107**
1.4	Strip and Dispose Top Soil	645	CY		24.50	10.50	$ -	$ 15,811	$ 6,776	**$ 22,587**
1.5	Site Grading- Excavation for Substation Pad	1,936	CY		9.00	6.00	$ -	$ 17,424	$ 11,616	**$ 29,040**
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	1,045	CY		21.00	9.00	$ -	$ 21,954.24	$ 9,408.96	**$ 31,363.20**
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	1,568	CY		2.40	1.60	$ -	$ 3,764	$ 2,509	**$ 6,273**
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	1,045	CY	25.00	2.40	1.60	$ 26,136	$ 2,509	$ 1,673	**$ 30,318**
1.9	Blasting		EA				$ -	$ -	$ -	**$ -**
1.10	Install substation 8" pad base	1,936	SY	11.00	6.00	4.00	$ 21,296	$ 11,616	$ 7,744	**$ 40,656**
1.11	Site Surfacing - Aggregate 6" Thick	1,936	SY	16.50	4.50	3.00	$ 31,944	$ 8,712	$ 5,808	**$ 46,464**
1.12	7' Station Fence w/ Barbed Wire & Grounding	450	LF	13.85	13.85	6.92	$ 6,232	$ 6,232	$ 3,116	**$ 15,579**
1.13	40' Slide Gate & Grounding	2	EA	8,100.00	3,245.00	1,305.00	$ 16,200	$ 6,490	$ 2,610	**$ 25,300**
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	$ -	$ -	$ -	**$ -**
1.15	Storm drain-15" HDPE, drainage structures, UD lines	1	LS	89,529.60	38,400.00	18,120.00	$ 89,530	$ 38,400	$ 18,120	**$ 146,050**
1.16	Seeding	0	SF	1.50	1.50	1.00	$ -	$ -	$ -	**$ -**
1.17	Erosion Control-Silt fence install & remove	525	LF	2.41	3.16	0.72	$ 1,265	$ 1,659	$ 378	**$ 3,302**
1.18	Temporary fencing	350	LF	7.50	5.25	2.25	$ 2,625	$ 1,838	$ 788	**$ 5,250**
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	$ -	$ -	$ -	**$ -**
1.20	Concrete curb	0	LF	26.00	27.30	11.70	$ -	$ -	$ -	**$ -**
1.21	Retaining Wall	146	LF	156.00	117.00	117.00	$ 22,776	$ 17,082	$ 17,082	**$ 56,940**
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							$ 220,337	$ 164,274	$ 94,817	$ 479,428

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.4	345kV, Bus support-3 Ph, low	66	CY	703.89	804.44	502.78	$ 46,710	$ 53,383	$ 33,364	**$ 133,457**
2.5	345kV, Bus support-1 Ph	16	CY	703.89	804.44	502.78	$ 11,150	$ 12,742	$ 7,964	**$ 31,856**
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.7	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.8	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.9	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.10	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.11	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.12	345kV, Cable sealing end	26	CY	703.89	804.44	502.78	$ 18,583	$ 21,237	$ 13,273	**$ 53,093**
2.13	345kV, CCVT	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.14	345kV, Disconnect Switch	127	CY	703.89	804.44	502.78	$ 89,196	$ 101,939	$ 63,712	**$ 254,847**
2.15	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.16	345kV, Shunt Reactor with oil containment-150MVAR	305	CY	703.89	804.44	502.78	$ 214,685	$ 245,354	$ 153,346	**$ 613,386**
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.19	345kV, Circuit Breaker (PASS)	20	CY	703.89	804.44	502.78	$ 14,078	$ 16,089	$ 10,056	**$ 40,222**
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.21	345kV, IPO circuit breaker	93	CY	703.89	804.44	502.78	$ 65,696	$ 75,081	$ 46,926	**$ 187,703**
2.22	345kV, Surge arrester	32	CY	703.89	804.44	502.78	$ 22,595	$ 25,823	$ 16,139	**$ 64,556**
2.23	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.24	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.25	138kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.26	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.27	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.28	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.29	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.30	138kV, CCVT	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.31	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.32	Firewall Foundation	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.33	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	$ -	$ -	$ -	**$ -**
2.34	Precast Concrete Piles-12"X80'	24	EA	18,000.00	3,200.00	2,800.00	$ 432,000	$ 76,800	$ 67,200	**$ 576,000**
2.35	Precast Concrete Piles-18"X40'	12	EA	12,000.00	2,200.00	1,800.00	$ 144,000	$ 26,400	$ 21,600	**$ 192,000**
2.36	Local Control Cabinet foundation	1	CY	703.89	804.44	502.78	$ 521	$ 596	$ 372	**$ 1,490**
2.37	Steel grating and support beams-transformer moat	43,280	LB	2.73	1.17	0.50	$ 118,233	$ 50,594	$ 21,683	**$ 190,511**
TOTAL - 345KV FOUNDATION							$ 1,177,446	$ 706,038	$ 455,635	**$ 2,339,119**
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				$ -	$ -	$ -	**$ -**
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	$ -	$ -	$ -	**$ -**
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	$ -	$ -	$ -	**$ -**
3.4	345kV, Bus support-3 Ph, low	6	EA	8,346.00	5,758.74	3,839.16	$ 50,076	$ 34,552	$ 23,035	**$ 107,663**
3.5	345kV, Bus support-1 Ph	2	EA	4,810.00	2,886.00	1,924.00	$ 9,620	$ 5,772	$ 3,848	**$ 19,240**
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	$ -	$ -	$ -	**$ -**
3.7	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16	$ -	$ -	$ -	**$ -**
3.8	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00	$ -	$ -	$ -	**$ -**
3.9	345kV, GIS support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	$ -	$ -	$ -	**$ -**
3.10	345kV, GIS support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	$ -	$ -	$ -	**$ -**
3.11	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	$ -	$ -	$ -	**$ -**
3.12	345kV, Cable sealing end	2	EA	8,346.00	5,758.74	3,839.16	$ 16,692	$ 11,517	$ 7,678	**$ 35,888**
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	$ -	$ -	$ -	**$ -**
3.14	345kV, Disconnect Switch	4	EA	19,240.00	11,544.00	7,696.00	$ 76,960	$ 46,176	$ 30,784	**$ 153,920**
3.15	345kV, Surge arrester	6	EA	4,810.00	2,886.00	1,924.00	$ 28,860	$ 17,316	$ 11,544	**$ 57,720**
3.16	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	$ -	$ -	$ -	**$ -**
3.17	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	$ -	$ -	$ -	**$ -**
3.18	138kV, Disconnect Switch	0	EA	-	-	-	$ -	$ -	$ -	**$ -**
3.19	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	$ -	$ -	$ -	**$ -**
3.20	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	$ -	$ -	$ -	**$ -**
3.21	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	$ -	$ -	$ -	**$ -**
3.24	AL. Bus Tubing, 5" SCH 80	1,019	LF	25.00	184.94	123.29	$ 25,475	$ 188,452	$ 125,635	**$ 339,561**
3.25	AL. Bus fittings	1	LS	30,570.00	30,570.00	15,285.00	$ 30,570	$ 30,570	$ 15,285	**$ 76,425**
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							$ 238,253	$ 334,356	$ 217,809	$ 790,418
4. MAJOR EQUIPTMENT										

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.1	345kV, GIS air terminal	0	EA				$ -	$ -	$ -	$ -
4.2	345kV, GIS fast acting GND SW	0	EA				$ -	$ -	$ -	$ -
4.3	345kV, GIS to air bushing	0	EA				$ -	$ -	$ -	$ -
4.4	345kV, GIS Cable sealing end	0	EA				$ -	$ -	$ -	$ -
4.5	345kV, Cable sealing end	6	EA	27,144.00	5,460.00	2,340.00	$ 162,864	$ 32,760	$ 14,040	$ **209,664**
4.6	345kV, CCVT	0	EA		15,941.99	6,832.28	$ -	$ -	$ -	$ -
4.7	345kV, Disconnect Switch	4	EA	57,720.00	34,632.00	23,088.00	$ 230,880	$ 138,528	$ 92,352	$ **461,760**
4.8	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	$ -	$ -	$ -	$ -
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	$ -	$ -	$ -	$ -
4.10	345kV, Shunt Reactor with oil containment-150MVAR	1	EA	2,385,863.50	3,520.00	880.00	$ 2,385,864	$ 3,520	$ 880	$ **2,390,264**
4.11	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	$ -	$ -	$ -	$ -
4.12	Transport & Testing- Shunt Reactor	1	EA		323,400.00	138,600.00	$ -	$ 323,400	$ 138,600	$ **462,000**
4.13	345kV, Phase Angle Regulator with oil containment	0	EA				$ -	$ -	$ -	$ -
4.14	345kV, Circuit Breaker (PASS)	1	EA	980,000.00	57,239.00	24,531.00	$ 980,000	$ 57,239	$ 24,531	$ **1,061,770**
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				$ -	$ -	$ -	$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				$ -	$ -	$ -	$ -
4.17	345kV, IPO circuit breaker	2	EA	350,000.00	57,239.00	24,531.00	$ 700,000	$ 114,478	$ 49,062	$ **863,540**
4.18	345kV, surge Arrester	6	EA	8,450.00	5,460.00	2,340.00	$ 50,700	$ 32,760	$ 14,040	$ **97,500**
4.19	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	$ -	$ -	$ -	$ -
4.20	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	$ -	$ -	$ -	$ -
4.21	138kV, Circuit Breaker (PASS)	0	EA		13,559.00	5,811.00	$ -	$ -	$ -	$ -
4.22	138kV, Disconnect Switch	0	EA		3,958.50	1,696.50	$ -	$ -	$ -	$ -
4.23	138kV, Cable sealing end	0	EA		1,050.00	450.00	$ -	$ -	$ -	$ -
4.24	138kV, CCVT	0	EA		7,970.08	3,415.75	$ -	$ -	$ -	$ -
4.25	138kV, Surge arrester	0	EA		4,200.00	1,800.00	$ -	$ -	$ -	$ -
4.26	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	$ -	$ -	$ -	$ -
4.27	Substation Equipment connections-Bare Wire ACSR- Bittern 45/7-1275kcmil	0	LF	5.30	1.61	0.40	$ -	$ -	$ -	$ -
4.28	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	$ -	$ -	$ -	$ -
4.29	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	$ -	$ -	$ -	$ -
TOTAL - MAJOR EQUIPMENT							$ 4,510,308	$ 702,685	$ 333,505	$ 5,546,498
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	15,600	LF	5.30	1.43	0.29	$ 82,641	$ 22,347	$ 4,469	$ **109,457**
5.2			LF				$ -	$ -	$ -	$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							$ 82,641	$ 22,347	$ 4,469	$ **109,457**
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	$ -	$ -	$ -	$ -
6.2	Conduit, PVC, 4", SCH 40	2,700	LF	11.15	10.80	5.40	$ 30,105	$ 29,160	$ 14,580	$ **73,845**
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	$ -	$ -	$ -	$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	$ -	$ -	$ -	$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	$ -	$ -	$ -	$ -
6.6	Cable Trench	250	LF	266.50	53.04	13.26	$ 66,625	$ 13,260	$ 3,315	$ **83,200**
6.7	345kV UG- Conduit		LF	311.59	286.92	147.80	$ -	$ -	$ -	$ -
6.8	345kV UG- Cable		LF	175.00	105.00	70.00	$ -	$ -	$ -	$ -
6.9	345kV UG- Termination		EA							
6.9							$ -	$ -	$ -	$ -
TOTAL - CONDUIT & CABLE TRENCH							$ 96,730	$ 42,420	$ 17,895	$ **157,045**
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	880	LF	2.09	3.42	1.46	$ 1,840	$ 3,005	$ 1,288	$ **6,134**
7.2	Caweld, DSA, 4/0 , T, CROSS	28	EA	165.00	75.00		$ 4,620	$ 2,100	$ -	$ **6,720**
7.3	Ground Rod, 3/4" x 15'	18	EA	135.00	67.50	7.50	$ 2,430	$ 1,215	$ 135	$ **3,780**
TOTAL - GROUND GRID							$ 8,890	$ 6,320	$ 1,423	$ **16,634**
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	171,028.62	119,720.03	51,308.59	$ -	$ -	$ -	$ -
8.2	Primary Line Relays (87L): SEL-411L	1	EA	21,328.12	17,062.49	4,265.62	$ 21,328	$ 17,062	$ 4,266	$ **42,656**
8.3	Backup Line Relays (87L): GE L90	1	EA	21,328.12	17,062.49	4,265.62	$ 21,328	$ 17,062	$ 4,266	$ **42,656**
8.4	Primary Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	$ 21,328	$ 17,062	$ 4,266	$ **42,656**
8.5	Backup Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	$ 21,328	$ 17,062	$ 4,266	$ **42,656**
8.6	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62	$ 21,328	$ 17,062	$ 4,266	$ **42,656**
8.7	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62	$ 21,328	$ 17,062	$ 4,266	$ **42,656**
8.8	Primary Bus Differential Relays: SEL-487B	2	EA	21,328.12	17,062.49	4,265.62	$ 42,656	$ 34,125	$ 8,531	$ **85,312**
8.9	Backup Bus Differential Relays: GE B90	2	EA	21,328.12	17,062.49	4,265.62	$ 42,656	$ 34,125	$ 8,531	$ **85,312**
8.10	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	$ -	$ -	$ -	$ -
8.11	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	$ -	$ -	$ -	$ -
8.12	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	$ -	$ -	$ -	$ -
8.13	Generator	0	EA	130,000.00	72,800.00	31,200.00	$ -	$ -	$ -	$ -
TOTAL - CONTROL ENCLOSURE							$ 213,281	$ 170,625	$ 42,656	$ 426,562

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
6 - Existing Sprain Brook 345 kV_ Interconnection							$ 6,547,886	$ 2,149,064	$ 1,168,210	$ 9,865,160
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		116,104.61	49,759.12	$ -	$ 116,105	$ 49,759	**$ 165,864**
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		98,651.60		$ -	$ 98,652	$ -	**$ 98,652**
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		394,606.40		$ -	$ 394,606	$ -	**$ 394,606**
9.4	Utility PM and Project Oversite	1.0	LS		98,651.60		$ -	$ 98,652	$ -	**$ 98,652**
9.5	Site Accommodation, Facilities, Storage	1.0	LS	98,651.60			$ 98,652	$ -	$ -	**$ 98,652**
	Engineering									
9.6	Design Engineering	1.00	LS		789,212.81		$ -	$ 789,213	$ -	**$ 789,213**
9.7	LiDAR /GPR	1.00	LS		-		$ -	$ -	$ -	**$ -**
9.8	Geotech	5.00	EA		2,730.00	1,820.00	$ -	$ 13,650	$ 9,100	**$ 22,750**
9.9	Surveying/Staking	1.00	Site		69,056.12		$ -	$ 69,056	$ -	**$ 69,056**
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		369,943.50		$ -	$ 369,944	$ -	**$ 369,944**
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		-		$ -	$ -	$ -	**$ -**
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		98,651.60		$ -	$ 98,652	$ -	**$ 98,652**
9.13	Environmental-special studies/investigation	-	LS		-		$ -	$ -	$ -	**$ -**
9.14	Warranties / LOC's	1.00	LS		29,595.48		$ -	$ 29,595	$ -	**$ 29,595**
9.15	Laydown Lease	-	LS		-		$ -	$ -	$ -	**$ -**
9.16	Real Estate (Acquisition)	-	LS			822,958.00	$ -	$ -	$ -	**$ -**
9.17	Legal Fees (Real estate)	-	LS		-	24,688.74	$ -	$ -	$ -	**$ -**
9.18	Insurance	-	LS		-	-	$ -	$ -	$ -	**$ -**
9.19	Bonds	1	LS		-	$ 360,000	$ -	$ -	**$ 360,000**	**$ 360,000**
9.20	Sales Tax on Materials	8.80%	LS	6,547,885.51			$ 576,214	$ -	$ -	**$ 576,214**
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		9,865.16		$ -	$ 9,865	$ -	**$ 9,865**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							$ 674,866	$ 2,087,989	$ 418,859	**$ 3,181,714**

Propel NY - TO49 BS3

7 - Existing Ruland 138 kV_ Upgrade & Interconnection

Total: $ 9,339,029

Propel NY - TO49 BS3				
	Material Supply	*Labor Supply*	*Equip Supply*	*Total*
7 - Existing Ruland 138 kV_ Upgrade & Interconnection				
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ 128,372	$ 144,027	$ 80,858	$ 353,257
2. SUBSTATION FOUNDATIONS	$ 552,928	$ 423,460	$ 274,263	$ 1,250,651
3. SUBSTATION STRUCTURES	$ 160,564	$ 121,039	$ 114,383	$ 395,986
4. MAJOR EQUIPTMENT	$ 1,478,428	$ 194,390	$ 81,596	$ 1,754,413
5. LOW VOLTAGE & CONTROL CABLE	$ 101,712	$ 27,504	$ 5,501	$ 134,717
6. CONDUIT & CABLE TRENCH	$ 322,346	$ 213,089	$ 100,110	$ 635,545
7. GROUND GRID	$ 62,882	$ 45,524	$ 10,639	$ 119,045
8. CONTROL ENCLOSURE	$ 170,625	$ 136,500	$ 34,125	$ 341,250
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	$ 311,900	$ 1,073,391	$ 225,205	$ 1,610,496
SUBTOTAL (Costs):	$ 3,289,756	$ 2,378,925	$ 926,678	$ 6,595,359
CONTRACTOR MARK-UP (OH&P)	$ 592,156	$ 428,207	$ 166,802	$ 1,187,165
SUBTOTAL:	$ 3,881,912	$ 2,807,132	$ 1,093,480	$ 7,782,524
CONTINGENCY ON ENTIRE PROJECT	$ 776,382	$ 561,426	$ 218,696	$ 1,556,505
TOTAL:	$ 4,658,294	$ 3,368,558	$ 1,312,176	$ 9,339,029

Description of Work: Upgrades and Potential Interconnection Facilities to the existing LIPA Ruland Road Substation, located in the Hamlet of Melville, Town of Huntington, Suffolk County. Ruland Road Substation is an existing 138 kV AIS substation configured with six (6) BAAH bays. The Solution includes installing two (2) air core reactors in series to the 138 kV Lines 138-561 and 138-562, respectively, which are proposed as Upgrades and two (2) 138 kV circuit breakers, which are proposed as Potential Interconnection Facilities

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
7 - Existing Ruland 138 kV_ Upgrade & Interconnection										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.6	ACRE	-	10,800.00	7,200.00	$ -	$ 6,480	$ 4,320	**$ 10,800**
1.2	Demolition	1	LS	-	4,800.00	3,200.00	$ -	$ 4,800	$ 3,200	**$ 8,000**
1.3	New Access Road - 20'	489	SY	4.85	7.20	4.80	$ 2,371	$ 3,520	$ 2,347	**$ 8,238**
1.4	Strip and Dispose Top Soil	968	CY		24.50	10.50	$ -	$ 23,716	$ 10,164	**$ 33,880**
1.5	Site Grading- Excavation for Substation Pad	2,904	CY		9.00	6.00	$ -	$ 26,136	$ 17,424	**$ 43,560**
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	1,568	CY		21.00	9.00	$ -	$ 32,931.36	$ 14,113.44	**$ 47,044.80**
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	2,352	CY		2.40	1.60	$ -	$ 5,645	$ 3,764	**$ 9,409**
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	1,568	CY	25.00	2.40	1.60	$ 39,204	$ 3,764	$ 2,509	**$ 45,477**
1.9	Blasting		EA				$ -	$ -	$ -	**$ -**
1.10	Install substation 8" pad base	2,904	SY	11.00	6.00	4.00	$ 31,944	$ 17,424	$ 11,616	**$ 60,984**
1.11	Site Surfacing - Aggregate 6" Thick	2,904	SY	16.50	4.50	3.00	$ 47,916	$ 13,068	$ 8,712	**$ 69,696**
1.12	7' Station Fence w/ Barbed Wire & Grounding	220	LF	13.85	13.85	6.92	$ 3,047	$ 3,047	$ 1,523	**$ 7,616**
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	$ -	$ -	$ -	**$ -**
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	$ -	$ -	$ -	**$ -**
1.15	Storm drain-15" HDPE,	0	LS	-	-	-	$ -	$ -	$ -	**$ -**
1.16	Seeding	0	SF	1.50	1.50	1.00	$ -	$ -	$ -	**$ -**
1.17	Erosion Control-Silt fence install & remove	525	LF	2.41	3.16	0.72	$ 1,265	$ 1,659	$ 378	**$ 3,302**
1.18	Temporary fencing	350	LF	7.50	5.25	2.25	$ 2,625	$ 1,838	$ 788	**$ 5,250**
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	$ -	$ -	$ -	**$ -**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
1.20	Concrete curb	0	LF	26.00	27.30	11.70	$ -	$ -	$ -	$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	$ -	$ -	$ -	$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							$ 128,372	$ 144,027	$ 80,858	$ 353,257
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	$ -
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	$ -
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	$ -
2.7	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	$ -
2.8	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	$ -
2.9	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	$ -
2.10	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	$ -
2.11	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	$ -
2.12	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	$ -
2.13	345kV, CCVT	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	$ -
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	$ -
2.15	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	$ -
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	$ -
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	$ -
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	$ -
2.19	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	$ -
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	$ -
2.21	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	$ -
2.22	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	$ -
2.23	138kV, Circuit Breaker (PASS)	9	CY	703.89	804.44	502.78	$ 6,257	$ 7,151	$ 4,469	**$ 17,876**
2.24	138kV, Bus support-3 Ph, low	21	CY	703.89	804.44	502.78	$ 15,063	$ 17,215	$ 10,759	**$ 43,038**
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	$ -
2.26	138kV, Disconnect Switch	48	CY	703.89	804.44	502.78	$ 34,124	$ 38,999	$ 24,375	**$ 97,498**
2.27	138kV, Cable sealing end	24	CY	703.89	804.44	502.78	$ 17,062	$ 19,500	$ 12,187	**$ 48,749**
2.28	138kV, CCVT	32	CY	703.89	804.44	502.78	$ 22,595	$ 25,823	$ 16,139	**$ 64,556**
2.29	138kV, Air core reactors (3 Ph)	166	CY	703.89	804.44	502.78	$ 116,803	$ 133,489	$ 83,430	**$ 333,722**
2.30	138kV, Surge arrester	32	CY	703.89	804.44	502.78	$ 22,595	$ 25,823	$ 16,139	**$ 64,556**
2.31	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	$ -
2.32	138kV, H Frame	146	CY	703.89	804.44	502.78	$ 102,429	$ 117,062	$ 73,164	**$ 292,655**
2.33	Firewall Foundation	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	$ -
2.34	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	$ -	$ -	$ -	$ -
2.35	Precast Concrete Piles-12"X80'	12	EA	18,000.00	3,200.00	2,800.00	$ 216,000	$ 38,400	$ 33,600	**$ 288,000**
2.36	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	$ -
2.37	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	$ -	$ -	$ -	$ -
TOTAL - 345KV FOUNDATION							$ 552,928	$ 423,460	$ 274,263	**$ 1,250,651**
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				$ -	$ -	$ -	$ -
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	$ -	$ -	$ -	$ -
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	$ -	$ -	$ -	$ -
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	$ -	$ -	$ -	$ -
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	$ -	$ -	$ -	$ -
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	$ -	$ -	$ -	$ -
3.7	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16	$ -	$ -	$ -	$ -
3.8	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00	$ -	$ -	$ -	$ -
3.9	345kV, GIS support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	$ -	$ -	$ -	$ -
3.10	345kV, GIS support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	$ -	$ -	$ -	$ -
3.11	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	$ -	$ -	$ -	$ -
3.12	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	$ -	$ -	$ -	$ -
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	$ -	$ -	$ -	$ -
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	$ -	$ -	$ -	$ -
3.15	138kV, Bus support-3 Ph, low	2	EA	4,173.00	2,879.76	1,919.84	$ 8,346	$ 5,760	$ 3,840	**$ 17,945**
3.16	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	$ -	$ -	$ -	$ -
3.17	138kV, Disconnect Switch	2	EA	5,694.00	3,928.86	2,619.24	$ 11,388	$ 7,858	$ 5,238	**$ 24,484**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.18	138kV, Cable sealing end	2	EA	4,810.00	2,886.00	1,924.00	$ 9,620	$ 5,772	$ 3,848	**$ 19,240**
3.19	138kV, CCVT	6	EA	3,206.67	1,924.00	1,282.67	$ 19,240	$ 11,544	$ 7,696	**$ 38,480**
3.20	138kV, Surge arrester	6	EA	3,206.67	1,924.00	1,282.67	$ 19,240	$ 11,544	$ 7,696	**$ 38,480**
3.21	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	$ -	$ -	$ -	**$ -**
3.22	138kV, H Frame	4	EA	21,450.00	12,870.00	17,160.00	$ 85,800	$ 51,480	$ 68,640	**$ 205,920**
3.23	AL. Bus Tubing, 5" SCH 80	126	LF	25.00	184.94	123.29	$ 3,150	$ 23,302	$ 15,535	**$ 41,987**
3.24	AL. Bus fittings	1	LS	3,780.00	3,780.00	1,890.00	$ 3,780	$ 3,780	$ 1,890	**$ 9,450**
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							$ 160,564	$ 121,039	$ 114,383	$ 395,986
4. MAJOR EQUIPTMENT										
4.1	345kV, GIS air terminal	0	EA				$ -	$ -	$ -	**$ -**
4.2	345kV, GIS fast acting GND SW	0	EA				$ -	$ -	$ -	**$ -**
4.3	345kV, GIS to air bushing	0	EA				$ -	$ -	$ -	**$ -**
4.4	345kV, GIS Cable sealing end	0	EA				$ -	$ -	$ -	**$ -**
4.5	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	$ -	$ -	$ -	**$ -**
4.6	345kV, CCVT	0	EA		15,941.99	6,832.28	$ -	$ -	$ -	**$ -**
4.7	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	$ -	$ -	$ -	**$ -**
4.8	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	$ -	$ -	$ -	**$ -**
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	$ -	$ -	$ -	**$ -**
4.10	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	$ -	$ -	$ -	**$ -**
4.11	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	$ -	$ -	$ -	**$ -**
4.12	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	$ -	$ -	$ -	**$ -**
4.13	345kV, Phase Angle Regulator with oil containment	0	EA				$ -	$ -	$ -	**$ -**
4.14	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	$ -	$ -	$ -	**$ -**
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				$ -	$ -	$ -	**$ -**
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				$ -	$ -	$ -	**$ -**
4.17	345kV, surge Arrester	0	EA		5,460.00	2,340.00	$ -	$ -	$ -	**$ -**
4.18	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	$ -	$ -	$ -	**$ -**
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	$ -	$ -	$ -	**$ -**
4.20	138kV, Circuit Breaker (PASS)	2	EA	510,000.00	13,559.00	5,811.00	$ 1,020,000	$ 27,118	$ 11,622	**$ 1,058,740**
4.21	138kV, Disconnect Switch	2	EA	37,700.00	11,875.50	5,089.50	$ 75,400	$ 23,751	$ 10,179	**$ 109,330**
4.22	138kV, Cable sealing end	6	EA	4,446.00	1,050.00	450.00	$ 26,676	$ 6,300	$ 2,700	**$ 35,676**
4.23	138kV, CCVT	6	EA	10,000.00	7,970.08	3,415.75	$ 60,000	$ 47,821	$ 20,495	**$ 128,315**
4.24	138kV, Air core reactors (3 Ph)	6	EA	40,500.00	6,500.00	2,500.00	$ 243,000	$ 39,000	$ 15,000	**$ 297,000**
4.25	138kV, Surge arrester	12	EA	4,446.00	4,200.00	1,800.00	$ 53,352	$ 50,400	$ 21,600	**$ 125,352**
4.26	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	$ -	$ -	$ -	**$ -**
4.27	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	$ -	$ -	$ -	**$ -**
4.28	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	$ -	$ -	$ -	**$ -**
TOTAL - MAJOR EQUIPMENT							$ 1,478,428	$ 194,390	$ 81,596	$ 1,754,413
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	19,200	LF	5.30	1.43	0.29	$ 101,712	$ 27,504	$ 5,501	**$ 134,717**
5.2			LF	5.30	1.43	0.29	$ -	$ -	$ -	**$ -**
TOTAL - LOW VOLTAGE & CONTROL CABLE							$ 101,712	$ 27,504	$ 5,501	**$ 134,717**
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	$ -	$ -	$ -	**$ -**
6.2	Conduit, PVC, 4", SCH 40	3,900	LF	11.15	10.80	5.40	$ 43,485	$ 42,120	$ 21,060	**$ 106,665**
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	$ -	$ -	$ -	**$ -**
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	$ -	$ -	$ -	**$ -**
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	$ -	$ -	$ -	**$ -**
6.6	Cable Trench	300	LF	266.50	53.04	13.26	$ 79,950	$ 15,912	$ 3,978	**$ 99,840**
6.7	345kV UG	0	LF	230.08	133.40	55.96	$ -	$ -	$ -	**$ -**
6.8	138kV UG- Conduit	300	LF	81.00	107.00	57.00	$ 24,300	$ 32,100	$ 17,100	**$ 73,500**
6.9	138kV UG- Cable	900	LF	156.00	94.00	62.00	$ 140,400	$ 84,600	$ 55,800	**$ 280,800**
6.10	138kV UG- Termination	3	EA	9,360.00	11,700.00		$ 28,080	$ 35,100	$ -	**$ 63,180**
6.11	Fiber Optic Cable	300	LF	7.40	3.33	2.22	$ 2,219	$ 999	$ 666	**$ 3,884**
6.12	Ground Continuity Conductor	300	LF	13.04	7.53	5.02	$ 3,912	$ 2,258	$ 1,505	**$ 7,675**
TOTAL - CONDUIT & CABLE TRENCH							$ 322,346	$ 213,089	$ 100,110	**$ 635,545**
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	6,500	LF	2.09	3.42	1.46	$ 13,592	$ 22,199	$ 9,514	**$ 45,305**
7.2	Caweld, DSA, 4/0 , T, CROSS	176	EA	165.00	75.00		$ 29,040	$ 13,200	$ -	**$ 42,240**
7.3	Ground Rod, 3/4" x 15'	150	EA	135.00	67.50	7.50	$ 20,250	$ 10,125	$ 1,125	**$ 31,500**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - GROUND GRID							$ 62,882	$ 45,524	$ 10,639	**$ 119,045**
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	171,028.62	119,720.03	51,308.59	$ -	$ -	$ -	**$ -**
8.2	Primary Line Relays (87L): SEL-411L	2	EA	21,328.12	17,062.49	4,265.62	$ 42,656	$ 34,125	$ 8,531	**$ 85,312**
8.3	Backup Line Relays (87L): GE L90	2	EA	21,328.12	17,062.49	4,265.62	$ 42,656	$ 34,125	$ 8,531	**$ 85,312**
8.4	Primary Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	$ 42,656	$ 34,125	$ 8,531	**$ 85,312**
8.5	Backup Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	$ 42,656	$ 34,125	$ 8,531	**$ 85,312**
8.6	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	$ -	$ -	$ -	**$ -**
8.7	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	$ -	$ -	$ -	**$ -**
8.8	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	$ -	$ -	$ -	**$ -**
8.9	Generator	0	EA	130,000.00	72,800.00	31,200.00	$ -	$ -	$ -	**$ -**
TOTAL - CONTROL ENCLOSURE							$ 170,625	$ 136,500	$ 34,125	$ 341,250
7 - Existing Ruland 138 kV_ Upgrade & Interconnection							$ 2,977,856	$ 1,305,534	$ 701,473	$ 4,984,863
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		70,245.26	30,105.11	$ -	$ 70,245	$ 30,105	**$ 100,350**
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		49,848.63		$ -	$ 49,849	$ -	**$ 49,849**
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		199,394.54		$ -	$ 199,395	$ -	**$ 199,395**
9.4	Utility PM and Project Oversite	1.0	LS		49,848.63		$ -	$ 49,849	$ -	**$ 49,849**
9.5	Site Accommodation, Facilities, Storage	1.0	LS	49,848.63			$ 49,849	$ -	$ -	**$ 49,849**
	Engineering									
9.6	Design Engineering	1.00	LS		398,789.08		$ -	$ 398,789	$ -	**$ 398,789**
9.7	LiDAR /GPR	1.00	LS		-		$ -	$ -	$ -	**$ -**
9.8	Geotech	4.00	EA		2,730.00	1,820.00	$ -	$ 13,650	$ 9,100	**$ 22,750**
9.9	Surveying/Staking	1.00	Site		34,894.04		$ -	$ 34,894	$ -	**$ 34,894**
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		186,932.38		$ -	$ 186,932	$ -	**$ 186,932**
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		-		$ -	$ -	$ -	**$ -**
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		49,848.63		$ -	$ 49,849	$ -	**$ 49,849**
9.13	Environmental-special studies/investigation	-	LS		-		$ -	$ -	$ -	**$ -**
9.14	Warranties / LOC's	1.00	LS		14,954.59		$ -	$ 14,955	$ -	**$ 14,955**
9.15	Laydown Lease	-	LS		-		$ -	$ -	$ -	**$ -**
9.16	Real Estate (Acquisition)	-	LS		-	51,052.00	$ -	$ -	$ -	**$ -**
9.17	Legal Fees (Real estate)	-	LS		-	1,531.56	$ -	$ -	$ -	**$ -**
9.18	Insurance	-	LS		-	-	$ -	$ -	$ -	**$ -**
9.19	Bonds	1	LS		-	$ 186,000	$ -	$ -	**$ 186,000**	**$ 186,000**
9.20	Sales Tax on Materials	8.80%	LS	2,977,855.99			$ 262,051	$ -	$ -	**$ 262,051**
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		4,984.86		$ -	$ 4,985	$ -	**$ 4,985**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							$ 311,900	$ 1,073,391	$ 225,205	**$ 1,610,496**

Propel NY - TO49 BS3

8 -Existing Shore Road 138 kV_ Interconnection

Total: $ 11,923,278

Propel NY - TO49 BS3				
	Material Supply	*Labor Supply*	*Equip Supply*	*Total*
8 -Existing Shore Road 138 kV_ Interconnection				
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ -	$ -	$ -	$ -
2. SUBSTATION FOUNDATIONS	$ 581,223	$ 386,312	$ 254,245	$ 1,221,780
3. SUBSTATION STRUCTURES	$ 239,991	$ 328,920	$ 214,495	$ 783,407
4. MAJOR EQUIPTMENT	$ 2,326,452	$ 217,004	$ 93,002	$ 2,636,457
5. LOW VOLTAGE & CONTROL CABLE	$ 168,461	$ 45,554	$ 9,111	$ 223,125
6. CONDUIT & CABLE TRENCH	$ 348,046	$ 218,596	$ 97,101	$ 663,742
7. GROUND GRID	$ 27,450	$ 18,156	$ 3,495	$ 49,101
8. CONTROL ENCLOSURE	$ 343,281	$ 352,625	$ 120,656	$ 816,562
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	$ 419,013	$ 1,351,818	$ 255,389	$ 2,026,220
SUBTOTAL (Costs):	$ 4,453,917	$ 2,918,984	$ 1,047,493	$ 8,420,394
CONTRACTOR MARK-UP (OH&P)	$ 801,705	$ 525,417	$ 188,549	$ 1,515,671
SUBTOTAL:	$ 5,255,622	$ 3,444,401	$ 1,236,042	$ 9,936,065
CONTINGENCY ON ENTIRE PROJECT	$ 1,051,124	$ 688,880	$ 247,208	$ 1,987,213
TOTAL:	$ 6,306,746	$ 4,133,281	$ 1,483,251	$ 11,923,278

Description of Work: Interconnection Facilities to the existing LIPA Shore Road Substation, located in the Hamlet of Glenwood Landing, Town of Oyster Bay, Nassau County. Shore Road Substation is an existing 138 kV AIS substation with a main-tie main configuration. The Solution includes installing two (2) additional circuit breakers to create a six (6) position ring bus configuration.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8 -Existing Shore Road 138 kV_ Interconnection										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	$ -	$ -	$ -	$ -
1.2	Demolition	0	LS	-	4,800.00	3,200.00	$ -	$ -	$ -	$ -
1.3	New Access Road - 20'	0	SY	4.85	7.20	4.80	$ -	$ -	$ -	$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	$ -	$ -	$ -	$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	$ -	$ -	$ -	$ -
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	0	CY		21.00	9.00	$ -	$ -	$ -	$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	$ -	$ -	$ -	$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	$ -	$ -	$ -	$ -
1.9	Blasting		EA				$ -	$ -	$ -	$ -
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00	$ -	$ -	$ -	$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	$ -	$ -	$ -	$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding	0	LF	13.85	13.85	6.92	$ -	$ -	$ -	$ -
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	$ -	$ -	$ -	$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	$ -	$ -	$ -	$ -
1.15	Storm drain-15" HDPE,	0	LS	-	-	-	$ -	$ -	$ -	$ -
1.16	Seeding	0	SF	1.50	1.50	1.00	$ -	$ -	$ -	$ -
1.17	Erosion Control-Silt fence install & remove	0	LF	2.41	3.16	0.72	$ -	$ -	$ -	$ -
1.18	Temporary fencing	0	LF	7.50	5.25	2.25	$ -	$ -	$ -	$ -
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	$ -	$ -	$ -	$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	$ -	$ -	$ -	$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	$ -	$ -	$ -	$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							$ -	$ -	$ -	$ -
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	$ -
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	$ -
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	$ -
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.7	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.8	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.9	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.10	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.11	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.12	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.13	345kV, CCVT	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.15	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.19	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.21	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.22	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.23	138kV, Circuit Breaker (PASS)	18	CY	703.89	804.44	502.78	$ 12,514	$ 14,301	$ 8,938	**$ 35,753**
2.24	138kV, Bus support-3 Ph, low	128	CY	703.89	804.44	502.78	$ 90,379	$ 103,290	$ 64,556	**$ 258,225**
2.25	138kV, Bus support-1 Ph, low	77	CY	703.89	804.44	502.78	$ 54,298	$ 62,055	$ 38,784	**$ 155,136**
2.26	138kV, Disconnect Switch	73	CY	703.89	804.44	502.78	$ 51,187	$ 58,499	$ 36,562	**$ 146,247**
2.27	138kV, Cable sealing end	24	CY	703.89	804.44	502.78	$ 17,062	$ 19,500	$ 12,187	**$ 48,749**
2.28	138kV, CCVT	64	CY	703.89	804.44	502.78	$ 45,189	$ 51,645	$ 32,278	**$ 129,113**
2.29	138kV, Air core reactors (3 Ph)	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.30	138kV, Surge arrester	32	CY	703.89	804.44	502.78	$ 22,595	$ 25,823	$ 16,139	**$ 64,556**
2.31	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.32	138kV, H Frame	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.33	Firewall Foundation	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.34	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	$ -	$ -	$ -	**$ -**
2.35	Precast Concrete Piles-12"X80'	16	EA	18,000.00	3,200.00	2,800.00	$ 288,000	$ 51,200	$ 44,800	**$ 384,000**
2.36	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
TOTAL - 345KV FOUNDATION							$ 581,223	$ 386,312	$ 254,245	**$ 1,221,780**
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				$ -	$ -	$ -	**$ -**
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	$ -	$ -	$ -	**$ -**
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	$ -	$ -	$ -	**$ -**
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	$ -	$ -	$ -	**$ -**
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	$ -	$ -	$ -	**$ -**
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	$ -	$ -	$ -	**$ -**
3.7	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16	$ -	$ -	$ -	**$ -**
3.8	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00	$ -	$ -	$ -	**$ -**
3.9	345kV, GIS support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	$ -	$ -	$ -	**$ -**
3.10	345kV, GIS support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	$ -	$ -	$ -	**$ -**
3.11	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	$ -	$ -	$ -	**$ -**
3.12	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	$ -	$ -	$ -	**$ -**
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	$ -	$ -	$ -	**$ -**
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	$ -	$ -	$ -	**$ -**
3.15	138kV, Bus support-3 Ph, low	12	EA	4,173.00	2,879.76	1,919.84	$ 50,076	$ 34,557	$ 23,038	**$ 107,671**
3.16	138kV, Bus support-1 Ph, low	19	EA	2,782.00	1,919.84	1,279.89	$ 52,858	$ 36,477	$ 24,318	**$ 113,653**
3.17	138kV, Disconnect Switch	3	EA	5,694.00	3,928.86	2,619.24	$ 17,082	$ 11,787	$ 7,858	**$ 36,726**
3.18	138kV, Cable sealing end	2	EA	4,810.00	2,886.00	1,924.00	$ 9,620	$ 5,772	$ 3,848	**$ 19,240**
3.19	138kV, CCVT	12	EA	3,206.67	1,924.00	1,282.67	$ 38,480	$ 23,088	$ 15,392	**$ 76,960**
3.20	138kV, Surge arrester	6	EA	3,206.67	1,924.00	1,282.67	$ 19,240	$ 11,544	$ 7,696	**$ 38,480**
3.21	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	$ -	$ -	$ -	**$ -**
3.22	138kV, H Frame	0	EA	-	-	-	$ -	$ -	$ -	**$ -**
3.23	AL. Bus Tubing, 5" SCH 80	957	LF	25.00	184.94	123.29	$ 23,925	$ 176,986	$ 117,990	**$ 318,901**
3.24	AL. Bus fittings	1	LS	28,710.00	28,710.00	14,355.00	$ 28,710	$ 28,710	$ 14,355	**$ 71,775**
3.25	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	$ -	$ -	$ -	**$ -**
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							$ 239,991	$ 328,920	$ 214,495	$ 783,407
4. MAJOR EQUIPTMENT										
4.1	345kV, GIS air terminal	0	EA				$ -	$ -	$ -	**$ -**
4.2	345kV, GIS fast acting GND SW	0	EA				$ -	$ -	$ -	**$ -**
4.3	345kV, GIS to air bushing	0	EA				$ -	$ -	$ -	**$ -**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4.4	345kV, GIS Cable sealing end	0	EA				$ -	$ -	$ -	$ -
4.5	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	$ -	$ -	$ -	$ -
4.6	345kV, CCVT	0	EA		15,941.99	6,832.28	$ -	$ -	$ -	$ -
4.7	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	$ -	$ -	$ -	$ -
4.8	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	$ -	$ -	$ -	$ -
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	$ -	$ -	$ -	$ -
4.10	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	$ -	$ -	$ -	$ -
4.11	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	$ -	$ -	$ -	$ -
4.12	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	$ -	$ -	$ -	$ -
4.13	345kV, Phase Angle Regulator with oil containment	0	EA				$ -	$ -	$ -	$ -
4.14	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	$ -	$ -	$ -	$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				$ -	$ -	$ -	$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				$ -	$ -	$ -	$ -
4.17	345kV, surge Arrester	0	EA		5,460.00	2,340.00	$ -	$ -	$ -	$ -
4.18	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	$ -	$ -	$ -	$ -
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	$ -	$ -	$ -	$ -
4.20	138kV, Circuit Breaker (PASS)	4	EA	510,000.00	13,559.00	5,811.00	$ 2,040,000	$ 54,236	$ 23,244	**$ 2,117,480**
4.21	138kV, Disconnect Switch	3	EA	37,700.00	11,875.50	5,089.50	$ 113,100	$ 35,627	$ 15,269	**$ 163,995**
4.22	138kV, Cable sealing end	6	EA	4,446.00	1,050.00	450.00	$ 26,676	$ 6,300	$ 2,700	**$ 35,676**
4.23	138kV, CCVT	12	EA	10,000.00	7,970.08	3,415.75	$ 120,000	$ 95,641	$ 40,989	**$ 256,630**
4.24	138kV, Air core reactors (3 Ph)	0	EA				$ -	$ -	$ -	$ -
4.25	138kV, Surge arrester	6	EA	4,446.00	4,200.00	1,800.00	$ 26,676	$ 25,200	$ 10,800	**$ 62,676**
4.26	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	$ -	$ -	$ -	$ -
4.27	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	$ -	$ -	$ -	$ -
4.28	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	$ -	$ -	$ -	$ -
TOTAL - MAJOR EQUIPMENT							$ 2,326,452	$ 217,004	$ 93,002	$ 2,636,457
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	31,800	LF	5.30	1.43	0.29	$ 168,461	$ 45,554	$ 9,111	**$ 223,125**
5.2			LF	5.30	1.43	0.29	$ -	$ -	$ -	$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							$ 168,461	$ 45,554	$ 9,111	**$ 223,125**
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	$ -	$ -	$ -	$ -
6.2	Conduit, PVC, 4", SCH 40	6,450	LF	11.15	10.80	5.40	$ 71,918	$ 69,660	$ 34,830	**$ 176,408**
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	$ -	$ -	$ -	$ -
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	$ -	$ -	$ -	$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	$ -	$ -	$ -	$ -
6.6	Cable Trench	450	LF	266.50	53.04	13.26	$ 119,925	$ 23,868	$ 5,967	**$ 149,760**
6.7	345kV UG	0	LF	230.08	133.40	55.96	$ -	$ -	$ -	$ -
6.8	138kV UG- Conduit	225	LF	81.00	107.00	57.00	$ 18,225	$ 24,075	$ 12,825	**$ 55,125**
6.9	138kV UG- Cable	675	LF	156.00	94.00	62.00	$ 105,300	$ 63,450	$ 41,850	**$ 210,600**
6.10	138kV UG- Termination	3	EA	9,360.00	11,700.00		$ 28,080	$ 35,100	$ -	**$ 63,180**
6.11	Fiber Optic Cable	225	LF	7.40	3.33	2.22	$ 1,664	$ 749	$ 500	**$ 2,913**
6.12	Ground Continuity Conductor	225	LF	13.04	7.53	5.02	$ 2,934	$ 1,694	$ 1,129	**$ 5,756**
TOTAL - CONDUIT & CABLE TRENCH							$ 348,046	$ 218,596	$ 97,101	**$ 663,742**
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	2,224	LF	2.09	3.42	1.46	$ 4,650	$ 7,596	$ 3,255	**$ 15,501**
7.2	Caweld, DSA, 4/0 , T, CROSS	112	EA	165.00	75.00		$ 18,480	$ 8,400	$ -	**$ 26,880**
7.3	Ground Rod, 3/4" x 15'	32	EA	135.00	67.50	7.50	$ 4,320	$ 2,160	$ 240	**$ 6,720**
TOTAL - GROUND GRID		-					$ 27,450	$ 18,156	$ 3,495	**$ 49,101**
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	171,028.62	119,720.03	51,308.59	$ -	$ -	$ -	$ -
8.2	Primary Line Relays (Pilot): SEL-411L	3	EA	21,328.12	17,062.49	4,265.62	$ 63,984	$ 51,187	$ 12,797	**$ 127,969**
8.3	Backup Line Relays (Pilot): GE L90	3	EA	21,328.12	17,062.49	4,265.62	$ 63,984	$ 51,187	$ 12,797	**$ 127,969**
8.4	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	2	EA	21,328.12	17,062.49	4,265.62	$ 42,656	$ 34,125	$ 8,531	**$ 85,312**
8.5	Backup Transformer/Reactor/PAR Differential Relays: GE T60	2	EA	21,328.12	17,062.49	4,265.62	$ 42,656	$ 34,125	$ 8,531	**$ 85,312**
8.6	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	$ -	$ -	$ -	$ -
8.7	Control house AC Panel	1	EA	65,000.00	91,000.00	39,000.00	$ 65,000	$ 91,000	$ 39,000	**$ 195,000**
8.8	Control House DC Panel	1	EA	65,000.00	91,000.00	39,000.00	$ 65,000	$ 91,000	$ 39,000	**$ 195,000**
8.9	Generator	0	EA	130,000.00	72,800.00	31,200.00	$ -	$ -	$ -	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - CONTROL ENCLOSURE							$ 343,281	$ 352,625	$ 120,656	$ 816,562
8 -Existing Shore Road 138 kV_ Interconnection							$ 4,034,903	$ 1,567,166	$ 792,104	$ 6,394,174
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		82,574.45	35,389.05	$ -	$ 82,574	$ 35,389	**$ 117,964**
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		63,941.74		$ -	$ 63,942	$ -	**$ 63,942**
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		255,766.94		$ -	$ 255,767	$ -	**$ 255,767**
9.4	Utility PM and Project Oversite	1.0	LS		63,941.74		$ -	$ 63,942	$ -	**$ 63,942**
9.5	Site Accommodation, Facilities, Storage	1.0	LS	63,941.74			$ 63,942	$ -	$ -	**$ 63,942**
	Engineering									
9.6	Design Engineering	1.00	LS		511,533.89		$ -	$ 511,534	$ -	**$ 511,534**
9.7	LiDAR /GPR	1.00	LS		-		$ -	$ -	$ -	**$ -**
9.8	Geotech	4.00	EA		-		$ -	$ -	$ -	**$ -**
9.9	Surveying/Staking	1.00	Site		44,759.22		$ -	$ 44,759	$ -	**$ 44,759**
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		239,781.51		$ -	$ 239,782	$ -	**$ 239,782**
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		-		$ -	$ -	$ -	**$ -**
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		63,941.74		$ -	$ 63,942	$ -	**$ 63,942**
9.13	Environmental-special studies/investigation	-	LS		-		$ -	$ -	$ -	**$ -**
9.14	Warranties / LOC's	1.00	LS		19,182.52		$ -	$ 19,183	$ -	**$ 19,183**
9.15	Laydown Lease	-	LS		-		$ -	$ -	$ -	**$ -**
9.16	Real Estate (Acquisition)	-	LS			242,657.00	$ -	$ -	$ -	**$ -**
9.17	Legal Fees (Real estate)	-	LS		-	7,279.71	$ -	$ -	$ -	**$ -**
9.18	Insurance	-	LS		-	-	$ -	$ -	$ -	**$ -**
9.19	Bonds	1	LS		-	$ 220,000	$ -	$ -	**$ 220,000**	**$ 220,000**
9.20	Sales Tax on Materials	8.80%	LS	4,034,903.48			$ 355,072	$ -	$ -	**$ 355,072**
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		6,394.17		$ -	$ 6,394	$ -	**$ 6,394**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							$ 419,013	$ 1,351,818	$ 255,389	**$ 2,026,220**

Propel NY - TO49 BS3

9 -Existing Holbrook 138 Kv_ Upgrade

Total: $ 1,907,161

Propel NY - TO49 BS3				
	Material Supply	*Labor Supply*	*Equip Supply*	*Total*
9 -Existing Holbrook 138 Kv_ Upgrade				
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ -	$ 3,000	$ 2,000	$ 5,000
2. SUBSTATION FOUNDATIONS	$ 3,128	$ 3,575	$ 2,235	$ 8,938
3. SUBSTATION STRUCTURES	$ -	$ -	$ -	$ -
4. MAJOR EQUIPTMENT	$ 510,000	$ 13,559	$ 5,811	$ 529,370
5. LOW VOLTAGE & CONTROL CABLE	$ 20,660	$ 5,587	$ 1,117	$ 27,364
6. CONDUIT & CABLE TRENCH	$ 6,690	$ 6,480	$ 3,240	$ 16,410
7. GROUND GRID	$ -	$ -	$ -	$ -
8. CONTROL ENCLOSURE	$ 213,281	$ 170,625	$ 42,656	$ 426,562
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	$ 76,467	$ 213,034	$ 43,718	$ 333,220
SUBTOTAL (Costs):	$ 830,227	$ 415,860	$ 100,777	$ 1,346,865
CONTRACTOR MARK-UP (OH&P)	$ 149,441	$ 74,855	$ 18,140	$ 242,436
SUBTOTAL:	$ 979,668	$ 490,715	$ 118,917	$ 1,589,301
CONTINGENCY ON ENTIRE PROJECT	$ 195,934	$ 98,143	$ 23,783	$ 317,860
TOTAL:	$ 1,175,602	$ 588,858	$ 142,701	$ 1,907,161

Description of Work:The Applicants propose Upgrades to the Holbrook Substation, which is an existing LIPA 138 kV AIS substation, configured as an eight (8) position ring bus. The Holbrook Substation is located in the Hamlet of Holbrook in the Town of Brookhaven in Suffolk County.The 138 kV, 138-882 Line currently feeds two (2) 138 kV/69 kV transformers via an AIS disconnect before connecting into its bus section within the ring bus. The Solution involves replacing the existing switch #1322 with a new hybrid PASS GIS 138 kV breaker system with integrated disconnect and ground switches.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
9 -Existing Holbrook 138 Kv_ Upgrade										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	$ -	$ -	$ -	$ -
1.2	Demolition	1	LS	-	3,000.00	2,000.00	$ -	$ 3,000	$ 2,000	**$ 5,000**
1.3	New Access Road - 20'	0	SY	4.85	7.20	4.80	$ -	$ -	$ -	$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	$ -	$ -	$ -	$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	$ -	$ -	$ -	$ -
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	0	CY		21.00	9.00	$ -	$ -	$ -	$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	$ -	$ -	$ -	$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	$ -	$ -	$ -	$ -
1.9	Blasting		EA				$ -	$ -	$ -	$ -
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00	$ -	$ -	$ -	$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	$ -	$ -	$ -	$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding	0	LF	13.85	13.85	6.92	$ -	$ -	$ -	$ -
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	$ -	$ -	$ -	$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	$ -	$ -	$ -	$ -
1.15	Storm drain-15" HDPE,	0	LS	-	-	-	$ -	$ -	$ -	$ -
1.16	Seeding	0	SF	1.50	1.50	1.00	$ -	$ -	$ -	$ -
1.17	Erosion Control-Silt fence install & remove	0	LF	2.41	3.16	0.72	$ -	$ -	$ -	$ -
1.18	Temporary fencing	0	LF	7.50	5.25	2.25	$ -	$ -	$ -	$ -
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	$ -	$ -	$ -	$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	$ -	$ -	$ -	$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	$ -	$ -	$ -	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							$ -	$ 3,000	$ 2,000	$ 5,000
2. SUBSTATION FOUNDATIONS										
2.1	345/138kV, Lightning mast	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.7	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.8	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.9	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.10	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.11	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.12	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.13	345kV, CCVT	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.15	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.19	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.21	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.22	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.23	138kV, Circuit Breaker (PASS)	4	CY	703.89	804.44	502.78	$ 3,128	$ 3,575	$ 2,235	**$ 8,938**
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.29	138kV, Air core reactors (3 Ph)	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.30	138kV, Surge arrester	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.31	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.32	138kV, H Frame	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.33	Firewall Foundation	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.34	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	$ -	$ -	$ -	**$ -**
2.35	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	$ -	$ -	$ -	**$ -**
2.36	Local Control Cabinet foundation		CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.37	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	$ -	$ -	$ -	**$ -**
TOTAL - 345KV FOUNDATION							$ 3,128	$ 3,575	$ 2,235	**$ 8,938**
3. SUBSTATION STRUCTURES										
3.1	345/138kV, Lightning mast	0	EA				$ -	$ -	$ -	**$ -**
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	$ -	$ -	$ -	**$ -**
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	$ -	$ -	$ -	**$ -**
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	$ -	$ -	$ -	**$ -**
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	$ -	$ -	$ -	**$ -**
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	$ -	$ -	$ -	**$ -**
3.7	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16	$ -	$ -	$ -	**$ -**
3.8	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00	$ -	$ -	$ -	**$ -**
3.9	345kV, GIS support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	$ -	$ -	$ -	**$ -**
3.10	345kV, GIS support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	$ -	$ -	$ -	**$ -**
3.11	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	$ -	$ -	$ -	**$ -**
3.12	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	$ -	$ -	$ -	**$ -**
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	$ -	$ -	$ -	**$ -**
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	$ -	$ -	$ -	**$ -**
3.15	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	$ -	$ -	$ -	**$ -**
3.16	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	$ -	$ -	$ -	**$ -**
3.17	138kV, Disconnect Switch	0	EA	5,694.00	3,928.86	2,619.24	$ -	$ -	$ -	**$ -**
3.18	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	$ -	$ -	$ -	**$ -**
3.19	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	$ -	$ -	$ -	**$ -**
3.20	138kV, Surge arrester	0	EA	3,206.67	1,924.00	1,282.67	$ -	$ -	$ -	**$ -**
3.21	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	$ -	$ -	$ -	**$ -**
3.22	138kV, H Frame	0	EA	-	-	-	$ -	$ -	$ -	**$ -**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.23	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	$ -	$ -	$ -	$ -
3.24	AL. Bus fittings	0	LS	-	-	-	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							$ -	$ -	$ -	$ -
4. MAJOR EQUIPTMENT										
4.1	345kV, GIS air terminal	0	EA				$ -	$ -	$ -	$ -
4.2	345kV, GIS fast acting GND SW	0	EA				$ -	$ -	$ -	$ -
4.3	345kV, GIS to air bushing	0	EA				$ -	$ -	$ -	$ -
4.4	345kV, GIS Cable sealing end	0	EA				$ -	$ -	$ -	$ -
4.5	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	$ -	$ -	$ -	$ -
4.6	345kV, CCVT	0	EA		15,941.99	6,832.28	$ -	$ -	$ -	$ -
4.7	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	$ -	$ -	$ -	$ -
4.8	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	$ -	$ -	$ -	$ -
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	$ -	$ -	$ -	$ -
4.10	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	$ -	$ -	$ -	$ -
4.11	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	$ -	$ -	$ -	$ -
4.12	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	$ -	$ -	$ -	$ -
4.13	345kV, Phase Angle Regulator with oil containment	0	EA				$ -	$ -	$ -	$ -
4.14	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	$ -	$ -	$ -	$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				$ -	$ -	$ -	$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				$ -	$ -	$ -	$ -
4.17	345kV, surge Arrester	0	EA		5,460.00	2,340.00	$ -	$ -	$ -	$ -
4.18	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	$ -	$ -	$ -	$ -
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	$ -	$ -	$ -	$ -
4.20	138kV, Circuit Breaker (PASS)	1	EA	510,000.00	13,559.00	5,811.00	$ 510,000	$ 13,559	$ 5,811	**$ 529,370**
4.21	138kV, Disconnect Switch	0	EA		3,958.50	1,696.50	$ -	$ -	$ -	$ -
4.22	138kV, Cable sealing end	0	EA		1,050.00	450.00	$ -	$ -	$ -	$ -
4.23	138kV, CCVT	0	EA		7,970.08	3,415.75	$ -	$ -	$ -	$ -
4.24	138kV, Air core reactors (3 Ph)	0	EA				$ -	$ -	$ -	$ -
4.25	138kV, Surge arrester	0	EA		4,200.00	1,800.00	$ -	$ -	$ -	$ -
4.26	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	$ -	$ -	$ -	$ -
4.27	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	$ -	$ -	$ -	$ -
4.28	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	$ -	$ -	$ -	$ -
TOTAL - MAJOR EQUIPMENT							$ 510,000	$ 13,559	$ 5,811	$ 529,370
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control cables	3,900	LF	5.30	1.43	0.29	$ 20,660	$ 5,587	$ 1,117	**$ 27,364**
5.2			LF		-	-	$ -	$ -	$ -	$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							$ 20,660	$ 5,587	$ 1,117	**$ 27,364**
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	$ -	$ -	$ -	$ -
6.2	Conduit, PVC, 4", SCH 40	600	LF	11.15	10.80	5.40	$ 6,690	$ 6,480	$ 3,240	**$ 16,410**
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	$ -	$ -	$ -	$ -
6.4	Conduit, PVC, 2", SCH 40	0	LF	3.95	10.80	5.40	$ -	$ -	$ -	$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	$ -	$ -	$ -	$ -
6.6	Cable Trench	0	LF	266.50	53.04	13.26	$ -	$ -	$ -	$ -
6.7	345kV UG	0	LF	230.08	133.40	55.96	$ -	$ -	$ -	$ -
6.8	138kV UG	0	LF	-	-	-	$ -	$ -	$ -	$ -
6.9							$ -	$ -	$ -	$ -
TOTAL - CONDUIT & CABLE TRENCH							$ 6,690	$ 6,480	$ 3,240	**$ 16,410**
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	0	LF	2.09	3.42	1.46	$ -	$ -	$ -	$ -
7.2	Caweld, DSA, 4/0 , T, CROSS	0	EA	165.00	75.00		$ -	$ -	$ -	$ -
7.3	Ground Rod, 3/4" x 15'	0	EA	135.00	67.50	7.50	$ -	$ -	$ -	$ -
TOTAL - GROUND GRID		-					$ -	$ -	$ -	$ -
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	171,028.62	119,720.03	51,308.59	$ -	$ -	$ -	$ -
8.2	Primary Line Relays (Pilot): SEL-411L	1	EA	21,328.12	17,062.49	4,265.62	$ 21,328	$ 17,062	$ 4,266	**$ 42,656**
8.3	Backup Line Relays (Pilot): GE L90	1	EA	21,328.12	17,062.49	4,265.62	$ 21,328	$ 17,062	$ 4,266	**$ 42,656**
8.4	Primary Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	$ 21,328	$ 17,062	$ 4,266	**$ 42,656**
8.5	Backup Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	$ 21,328	$ 17,062	$ 4,266	**$ 42,656**
8.6	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	2	EA	21,328.12	17,062.49	4,265.62	$ 42,656	$ 34,125	$ 8,531	**$ 85,312**
8.7	Backup Transformer/Reactor/PAR Differential Relays: GE T60	2	EA	21,328.12	17,062.49	4,265.62	$ 42,656	$ 34,125	$ 8,531	**$ 85,312**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.8	Primary Bus Differential Relays: SEL-487B	1	EA	21,328.12	17,062.49	4,265.62	$ 21,328	$ 17,062	$ 4,266	**$ 42,656**
8.9	Backup Bus Differential Relays: GE B90	1	EA	21,328.12	17,062.49	4,265.62	$ 21,328	$ 17,062	$ 4,266	**$ 42,656**
8.10	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	$ -	$ -	$ -	**$ -**
8.11	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	$ -	$ -	$ -	**$ -**
8.12	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	$ -	$ -	$ -	**$ -**
8.13	Generator	0	EA	130,000.00	72,800.00	31,200.00	$ -	$ -	$ -	**$ -**
TOTAL - CONTROL ENCLOSURE							$ 213,281	$ 170,625	$ 42,656	$ 426,562
9 -Existing Holbrook 138 Kv_ Upgrade							$ 753,760	$ 202,826	$ 57,059	$ 1,013,645
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		9,095.98	3,898.28	$ -	$ 9,096	$ 3,898	**$ 12,994**
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		10,136.45		$ -	$ 10,136	$ -	**$ 10,136**
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		40,545.79		$ -	$ 40,546	$ -	**$ 40,546**
9.4	Utility PM and Project Oversite	1.0	LS		10,136.45		$ -	$ 10,136	$ -	**$ 10,136**
9.5	Site Accommodation, Facilities, Storage	1.0	LS	10,136.45			$ 10,136	$ -	$ -	**$ 10,136**
	Engineering									
9.6	Design Engineering	1.00	LS		81,091.59		$ -	$ 81,092	$ -	**$ 81,092**
9.7	LiDAR /GPR	1.00	LS		-		$ -	$ -	$ -	**$ -**
9.8	Geotech	1.00	EA		2,730.00	1,820.00	$ -	$ 2,730	$ 1,820	**$ 4,550**
9.9	Surveying/Staking	1.00	Site		7,095.51		$ -	$ 7,096	$ -	**$ 7,096**
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		38,011.68		$ -	$ 38,012	$ -	**$ 38,012**
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		-		$ -	$ -	$ -	**$ -**
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		10,136.45		$ -	$ 10,136	$ -	**$ 10,136**
9.13	Environmental-special studies/investigation	-	LS		-		$ -	$ -	$ -	**$ -**
9.14	Warranties / LOC's	1.00	LS		3,040.93		$ -	$ 3,041	$ -	**$ 3,041**
9.15	Laydown Lease	-	LS		-		$ -	$ -	$ -	**$ -**
9.16	Real Estate (Acquisition)	-	LS		-		$ -	$ -	$ -	**$ -**
9.17	Legal Fees (Real estate)	-	LS		-	-	$ -	$ -	$ -	**$ -**
9.18	Insurance	-	LS		-	-	$ -	$ -	$ -	**$ -**
9.19	Bonds	1	LS		-	$ 38,000	$ -	$ -	**$ 38,000**	**$ 38,000**
9.20	Sales Tax on Materials	8.80%	LS	753,759.78			$ 66,331	$ -	$ -	**$ 66,331**
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		1,013.64		$ -	$ 1,014	$ -	**$ 1,014**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							$ 76,467	$ 213,034	$ 43,718	**$ 333,220**

Propel NY - TO49 BS3

10 -Existing Newbridge 138 Kv_ Upgrade

Total: $ 4,643,995

Propel NY - TO49 BS3				
	Material Supply	*Labor Supply*	*Equip Supply*	*Total*
10 -Existing Newbridge 138 Kv_ Upgrade				
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ -	$ 12,000	$ 8,000	$ 20,000
2. SUBSTATION FOUNDATIONS	$ 222,257	$ 45,551	$ 38,069	$ 305,876
3. SUBSTATION STRUCTURES	$ -	$ -	$ -	$ -
4. MAJOR EQUIPTMENT	$ 1,840,000	$ 27,118	$ 11,622	$ 1,878,740
5. LOW VOLTAGE & CONTROL CABLE	$ 41,321	$ 11,174	$ 2,235	$ 54,729
6. CONDUIT & CABLE TRENCH	$ 13,380	$ 12,960	$ 6,480	$ 32,820
7. GROUND GRID	$ -	$ -	$ -	$ -
8. CONTROL ENCLOSURE	$ 85,312	$ 68,250	$ 17,062	$ 170,625
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	$ 218,428	$ 500,712	$ 97,728	$ 816,867
SUBTOTAL (Costs):	$ 2,420,697	$ 677,764	$ 181,196	$ 3,279,658
CONTRACTOR MARK-UP (OH&P)	$ 435,726	$ 121,998	$ 32,615	$ 590,338
SUBTOTAL:	$ 2,856,423	$ 799,762	$ 213,811	$ 3,869,996
CONTINGENCY ON ENTIRE PROJECT	$ 571,285	$ 159,952	$ 42,762	$ 773,999
TOTAL:	$ 3,427,707	$ 959,714	$ 256,574	$ 4,643,995

Description of Work: Upgrades to the existing LIPA 138 kV Newbridge Substation, located in the Town of Hempstead, Nassau County. Newbridge Substation is an existing 138 kV AIS substation with a six (6) bay BAAH configuration and 138 kV/69 kV transformers connected to each main bus. The Solution includes the addition of a new breaker in series with the existing 138 kV CB -1460, providing an additional contingency to the 138 kV Lines 138-465 and 138-461

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
10 -Existing Newbridge 138 Kv_ Upgrade										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	$ -	$ -	$ -	$ -
1.2	Demolition	1	LS	-	12,000.00	8,000.00	$ -	$ 12,000	$ 8,000	**$ 20,000**
1.3	New Access Road - 20'	0	SY	4.85	7.20	4.80	$ -	$ -	$ -	$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	$ -	$ -	$ -	$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	$ -	$ -	$ -	$ -
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	0	CY		21.00	9.00	$ -	$ -	$ -	$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	$ -	$ -	$ -	$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	$ -	$ -	$ -	$ -
1.9	Blasting		EA				$ -	$ -	$ -	$ -
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00	$ -	$ -	$ -	$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	$ -	$ -	$ -	$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding	0	LF	13.85	13.85	6.92	$ -	$ -	$ -	$ -
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	$ -	$ -	$ -	$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	$ -	$ -	$ -	$ -
1.15	Storm drain-15" HDPE,	0	LS	-	-	-	$ -	$ -	$ -	$ -
1.16	Seeding	0	SF	1.50	1.50	1.00	$ -	$ -	$ -	$ -
1.17	Erosion Control-Silt fence install & remove	0	LF	2.41	3.16	0.72	$ -	$ -	$ -	$ -
1.18	Temporary fencing	0	LF	7.50	5.25	2.25	$ -	$ -	$ -	$ -
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	$ -	$ -	$ -	$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	$ -	$ -	$ -	$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	$ -	$ -	$ -	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							$ -	$ 12,000	$ 8,000	$ 20,000
2. SUBSTATION FOUNDATIONS										
2.1	345/138kV, Lightning mast	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.7	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.8	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.9	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.10	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.11	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.12	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.13	345kV, CCVT	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.15	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.19	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.21	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.22	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.23	138kV, Circuit Breaker (PASS)	9	CY	703.89	804.44	502.78	$ 6,257	$ 7,151	$ 4,469	**$ 17,876**
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.29	138kV, Air core reactors (3 Ph)	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.30	138kV, Surge arrester	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.31	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.32	138kV, H Frame	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.33	Firewall Foundation	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.34	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	$ -	$ -	$ -	**$ -**
2.35	Precast Concrete Piles-12"X80'	12	EA	18,000.00	3,200.00	2,800.00	$ 216,000	$ 38,400	$ 33,600	**$ 288,000**
2.36	Local Control Cabinet foundation		CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.37	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	$ -	$ -	$ -	**$ -**
TOTAL - 345KV FOUNDATION							$ 222,257	$ 45,551	$ 38,069	**$ 305,876**
3. SUBSTATION STRUCTURES										
3.1	345/138kV, Lightning mast	0	EA				$ -	$ -	$ -	**$ -**
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	$ -	$ -	$ -	**$ -**
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	$ -	$ -	$ -	**$ -**
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	$ -	$ -	$ -	**$ -**
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	$ -	$ -	$ -	**$ -**
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	$ -	$ -	$ -	**$ -**
3.7	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16	$ -	$ -	$ -	**$ -**
3.8	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00	$ -	$ -	$ -	**$ -**
3.9	345kV, GIS support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	$ -	$ -	$ -	**$ -**
3.10	345kV, GIS support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	$ -	$ -	$ -	**$ -**
3.11	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	$ -	$ -	$ -	**$ -**
3.12	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	$ -	$ -	$ -	**$ -**
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	$ -	$ -	$ -	**$ -**
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	$ -	$ -	$ -	**$ -**
3.15	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	$ -	$ -	$ -	**$ -**
3.16	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	$ -	$ -	$ -	**$ -**
3.17	138kV, Disconnect Switch	0	EA	5,694.00	3,928.86	2,619.24	$ -	$ -	$ -	**$ -**
3.18	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	$ -	$ -	$ -	**$ -**
3.19	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	$ -	$ -	$ -	**$ -**
3.20	138kV, Surge arrester	0	EA	3,206.67	1,924.00	1,282.67	$ -	$ -	$ -	**$ -**
3.21	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	$ -	$ -	$ -	**$ -**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
3.22	138kV, H Frame	0	EA	-	-	-	$ -	$ -	$ -	$ -
3.23	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	$ -	$ -	$ -	$ -
3.24	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	$ -	$ -	$ -	$ -
3.25	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	$ -	$ -	$ -	$ -
3.26	AL. Bus fittings	0	LS	-	-	-	$ -	$ -	$ -	$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							$ -	$ -	$ -	$ -
4. MAJOR EQUIPTMENT										
4.1	345kV, GIS air terminal	0	EA				$ -	$ -	$ -	$ -
4.2	345kV, GIS fast acting GND SW	0	EA				$ -	$ -	$ -	$ -
4.3	345kV, GIS to air bushing	0	EA				$ -	$ -	$ -	$ -
4.4	345kV, GIS Cable sealing end	0	EA				$ -	$ -	$ -	$ -
4.5	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	$ -	$ -	$ -	$ -
4.6	345kV, CCVT	0	EA		15,941.99	6,832.28	$ -	$ -	$ -	$ -
4.7	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	$ -	$ -	$ -	$ -
4.8	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	$ -	$ -	$ -	$ -
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	$ -	$ -	$ -	$ -
4.10	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	$ -	$ -	$ -	$ -
4.11	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	$ -	$ -	$ -	$ -
4.12	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	$ -	$ -	$ -	$ -
4.13	345kV, Phase Angle Regulator with oil containment	0	EA				$ -	$ -	$ -	$ -
4.14	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	$ -	$ -	$ -	$ -
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				$ -	$ -	$ -	$ -
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				$ -	$ -	$ -	$ -
4.17	345kV, surge Arrester	0	EA		5,460.00	2,340.00	$ -	$ -	$ -	$ -
4.18	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	$ -	$ -	$ -	$ -
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	$ -	$ -	$ -	$ -
4.20	138kV, Circuit Breaker (PASS)	2	EA	920,000.00	13,559.00	5,811.00	$ 1,840,000	$ 27,118	$ 11,622	$ **1,878,740**
4.21	138kV, Disconnect Switch	0	EA		3,958.50	1,696.50	$ -	$ -	$ -	$ -
4.22	138kV, Cable sealing end	0	EA		1,050.00	450.00	$ -	$ -	$ -	$ -
4.23	138kV, CCVT	0	EA		7,970.08	3,415.75	$ -	$ -	$ -	$ -
4.24	138kV, Air core reactors (3 Ph)	0	EA				$ -	$ -	$ -	$ -
4.25	138kV, Surge arrester	0	EA		4,200.00	1,800.00	$ -	$ -	$ -	$ -
4.26	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	$ -	$ -	$ -	$ -
TOTAL - MAJOR EQUIPMENT							$ 1,840,000	$ 27,118	$ 11,622	$ 1,878,740
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control cables	7,800	LF	5.30	1.43	0.29	$ 41,321	$ 11,174	$ 2,235	$ **54,729**
5.2			LF		-	-	$ -	$ -	$ -	$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							$ 41,321	$ 11,174	$ 2,235	$ **54,729**
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	$ -	$ -	$ -	$ -
6.2	Conduit, PVC, 4", SCH 40	1,200	LF	11.15	10.80	5.40	$ 13,380	$ 12,960	$ 6,480	$ **32,820**
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	$ -	$ -	$ -	$ -
6.4	Conduit, PVC, 2", SCH 40	0	LF	3.95	10.80	5.40	$ -	$ -	$ -	$ -
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	$ -	$ -	$ -	$ -
6.6	Cable Trench	0	LF	266.50	53.04	13.26	$ -	$ -	$ -	$ -
6.7	345kV UG	0	LF	230.08	133.40	55.96	$ -	$ -	$ -	$ -
6.8	138kV UG	0	LF	-	-	-	$ -	$ -	$ -	$ -
6.9							$ -	$ -	$ -	$ -
TOTAL - CONDUIT & CABLE TRENCH							$ 13,380	$ 12,960	$ 6,480	$ **32,820**
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	0	LF	2.09	3.42	1.46	$ -	$ -	$ -	$ -
7.2	Caweld, DSA, 4/0 , T, CROSS	0	EA	165.00	75.00		$ -	$ -	$ -	$ -
7.3	Ground Rod, 3/4" x 15'	0	EA	135.00	67.50	7.50	$ -	$ -	$ -	$ -
TOTAL - GROUND GRID		-					$ -	$ -	$ -	$ -
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	171,028.62	119,720.03	51,308.59	$ -	$ -	$ -	$ -
8.2	Primary Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	$ 21,328	$ 17,062	$ 4,266	$ **42,656**
8.3	Backup Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62	$ 21,328	$ 17,062	$ 4,266	$ **42,656**
8.4	Primary Bus Differential Relays: SEL-487B	1	EA	21,328.12	17,062.49	4,265.62	$ 21,328	$ 17,062	$ 4,266	$ **42,656**
8.5	Backup Bus Differential Relays: GE B90	1	EA	21,328.12	17,062.49	4,265.62	$ 21,328	$ 17,062	$ 4,266	$ **42,656**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.6	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	$ -	$ -	$ -	**$ -**
8.7	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	$ -	$ -	$ -	**$ -**
8.8	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	$ -	$ -	$ -	**$ -**
8.9	Generator	0	EA	130,000.00	72,800.00	31,200.00	$ -	$ -	$ -	**$ -**
TOTAL - CONTROL ENCLOSURE							$ 85,312	$ 68,250	$ 17,062	$ 170,625
10 -Existing Newbridge 138 Kv_ Upgrade							$ 2,202,270	$ 177,052	$ 83,468	$ 2,462,790
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		9,118.21	3,907.81	$ -	$ 9,118	$ 3,908	**$ 13,026**
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		24,627.90		$ -	$ 24,628	$ -	**$ 24,628**
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		98,511.60		$ -	$ 98,512	$ -	**$ 98,512**
9.4	Utility PM and Project Oversite	1.0	LS		24,627.90		$ -	$ 24,628	$ -	**$ 24,628**
9.5	Site Accommodation, Facilities, Storage	1.0	LS	24,627.90			$ 24,628	$ -	$ -	**$ 24,628**
	Engineering									
9.6	Design Engineering	1.00	LS		197,023.21		$ -	$ 197,023	$ -	**$ 197,023**
9.7	LiDAR /GPR	1.00	LS		-		$ -	$ -	$ -	**$ -**
9.8	Geotech	1.00	EA		2,730.00	1,820.00	$ -	$ 2,730	$ 1,820	**$ 4,550**
9.9	Surveying/Staking	1.00	Site		17,239.53		$ -	$ 17,240	$ -	**$ 17,240**
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		92,354.63		$ -	$ 92,355	$ -	**$ 92,355**
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		-		$ -	$ -	$ -	**$ -**
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		24,627.90		$ -	$ 24,628	$ -	**$ 24,628**
9.13	Environmental-special studies/investigation	-	LS		-		$ -	$ -	$ -	**$ -**
9.14	Warranties / LOC's	1.00	LS		7,388.37		$ -	$ 7,388	$ -	**$ 7,388**
9.15	Laydown Lease	-	LS		-		$ -	$ -	$ -	**$ -**
9.16	Real Estate (Acquisition)	-	LS		-		$ -	$ -	$ -	**$ -**
9.17	Legal Fees (Real estate)	-	LS		-	-	$ -	$ -	$ -	**$ -**
9.18	Insurance	-	LS		-	-	$ -	$ -	$ -	**$ -**
9.19	Bonds	1	LS		-	$ 92,000	$ -	$ -	**$ 92,000**	**$ 92,000**
9.20	Sales Tax on Materials	8.80%	LS	2,202,269.72			$ 193,800	$ -	$ -	**$ 193,800**
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		2,462.79		$ -	$ 2,463	$ -	**$ 2,463**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							$ 218,428	$ 500,712	$ 97,728	**$ 816,867**

Propel NY - TO49 BS3

11 - Existing EGC 138 kV_ Upgrade

Total: $ 15,248,572

Propel NY - TO49 BS3				
	Material Supply	*Labor Supply*	*Equip Supply*	*Total*
11 - Existing EGC 138 kV_ Upgrade				
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ 200,855	$ 251,944	$ 161,457	$ 614,256
2. SUBSTATION FOUNDATIONS	$ 328,144	$ 375,022	$ 234,389	$ 937,555
3. SUBSTATION STRUCTURES	$ 223,280	$ 224,937	$ 181,778	$ 629,995
4. MAJOR EQUIPTMENT	$ 640,578	$ 179,553	$ 75,237	$ 895,368
5. LOW VOLTAGE & CONTROL CABLE	$ 41,321	$ 11,174	$ 2,235	$ 54,729
6. CONDUIT & CABLE TRENCH	$ 2,348,736	$ 1,714,967	$ 935,346	$ 4,999,048
7. GROUND GRID	$ 34,744	$ 24,669	$ 5,580	$ 64,992
8. CONTROL ENCLOSURE	$ -	$ -	$ -	$ -
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	$ 417,913	$ 1,785,595	$ 369,314	$ 2,572,822
SUBTOTAL (Costs):	$ 4,235,571	$ 4,567,860	$ 1,965,335	$ 10,768,765
CONTRACTOR MARK-UP (OH&P)	$ 762,403	$ 822,215	$ 353,760	$ 1,938,378
SUBTOTAL:	$ 4,997,973	$ 5,390,075	$ 2,319,095	$ 12,707,143
CONTINGENCY ON ENTIRE PROJECT	$ 999,595	$ 1,078,015	$ 463,819	$ 2,541,429
TOTAL:	$ 5,997,568	$ 6,468,089	$ 2,782,914	$ 15,248,572

Description of Work: Upgrades to the existing LIPA East Garden City Substation, Hamlet of Uniondale, Town of Hempstead, Nassau County. The LIPA East Garden City Substation is an existing 138 kV AIS substation with a ten (10) position ring bus configuration.The Solution includes the installation of three (3) air core reactors with by-pass circuit, in series, to the 138 kV lines 138-462,138-465, and 138-463, respectively. Due to current site constraints, the new series reactors will be installed in the property adjacent to the existing station

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
11 - Existing EGC 138 kV_ Upgrade										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	$ -	$ -	$ -	**$ -**
1.2	Demolition	1	LS	-	6,000.00	4,000.00	$ -	$ 6,000	$ 4,000	**$ 10,000**
1.3	New Access Road - 20'	2,051	SY	4.85	7.20	4.80	$ 9,945	$ 14,764	$ 9,843	**$ 34,552**
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	$ -	$ -	$ -	**$ -**
1.5	Site Grading- Excavation for Substation Pad	6,423	CY		9.00	6.00	$ -	$ 57,811	$ 38,540	**$ 96,351**
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	867	CY		21.00	9.00	$ -	$ 18,210	$ 7,804	**$ 26,015**
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	7,804	CY		2.40	1.60	$ -	$ 18,731	$ 12,487	**$ 31,218**
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	867	CY	25.00	2.40	1.60	$ 21,679	$ 2,081	$ 1,387	**$ 25,148**
1.9	Blasting		EA				$ -	$ -	$ -	**$ -**
1.10	Install substation 8" pad base	0	SY	-	6.00	4.00	$ -	$ -	$ -	**$ -**
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	8.25	4.50	3.00	$ -	$ -	$ -	**$ -**
1.12	7' Station Fence w/ Barbed Wire & Grounding	1,217	LF	13.85	13.85	6.92	$ 16,853	$ 16,853	$ 8,427	**$ 42,133**
1.13	30' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	$ -	$ -	$ -	**$ -**
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	$ -	$ -	$ -	**$ -**
1.15	Storm drain-4"&15" HDPE,Seperators, inlets	1	LS	75,203.20	57,600.00	27,180.00	$ 75,203	$ 57,600	$ 27,180	**$ 159,983**
1.16	Seeding	0	SF	1.50	1.50	1.00	$ -	$ -	$ -	**$ -**
1.17	Erosion Control-Silt fence install & remove	1,826	LF	2.41	3.16	0.72	$ 4,399	$ 5,769	$ 1,314	**$ 11,482**
1.18	Temporary fencing	1,217	LF	7.50	5.25	2.25	$ 9,128	$ 6,389	$ 2,738	**$ 18,255**
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	$ -	$ -	$ -	**$ -**
1.20	Concrete curb	0	LF	26.00	27.30	11.70	$ -	$ -	$ -	**$ -**
1.21	Retaining Wall	408	LF	156.00	117.00	117.00	$ 63,648	$ 47,736	$ 47,736	**$ 159,120**
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							$ 200,855	$ 251,944	$ 161,457	$ 614,256
2. SUBSTATION FOUNDATIONS										

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.1	345kV, Lightning mast	18	CY	703.89	804.44	502.78	$ 12,536	$ 14,327	$ 8,954	**$ 35,818**
2.2	345kV, A Frame 70'-one bay	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.3	345kV, A Frame 70'-two bay	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.4	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.5	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.6	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.7	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.8	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.9	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.10	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.11	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.12	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.13	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.14	345kV, CCVT	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.15	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.16	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.17	345kV, Shunt Reactor with oil containment-300MVAR	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.18	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.19	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.20	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.21	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.22	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.23	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.24	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.25	138kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.26	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.27	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.28	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.29	138kV, Cable sealing end	73	CY	703.89	804.44	502.78	$ 51,187	$ 58,499	$ 36,562	**$ 146,247**
2.30	138kV, CCVT	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.29	138kV, Air core reactors (3 Ph)	166	CY	703.89	804.44	502.78	$ 116,803	$ 133,489	$ 83,430	**$ 333,722**
2.30	138kV, Surge arrester	64	CY	703.89	804.44	502.78	$ 45,189	$ 51,645	$ 32,278	**$ 129,113**
2.31	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.32	138kV, H Frame	146	CY	703.89	804.44	502.78	$ 102,429	$ 117,062	$ 73,164	**$ 292,655**
2.33	Firewall Foundation	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.34	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	$ -	$ -	$ -	**$ -**
2.35	Precast Concrete Piles-12"X80'	-	EA	18,000.00	3,200.00	2,800.00	$ -	$ -	$ -	**$ -**
2.36	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.37	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	$ -	$ -	$ -	**$ -**
TOTAL - 345KV FOUNDATION							$ 328,144	$ 375,022	$ 234,389	**$ 937,555**
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	1	EA	23,400.00	14,040.00	9,360.00	$ 23,400	$ 14,040	$ 9,360	**$ 46,800**
3.2	345kV, A Frame 70'-one bay	0	EA	48,100.00	28,860.00	19,240.00	$ -	$ -	$ -	**$ -**
3.3	345kV, A Frame 70'-two bay	0	EA	86,580.00	51,948.00	34,632.00	$ -	$ -	$ -	**$ -**
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	$ -	$ -	$ -	**$ -**
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	$ -	$ -	$ -	**$ -**
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	$ -	$ -	$ -	**$ -**
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	$ -	$ -	$ -	**$ -**
3.7	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16	$ -	$ -	$ -	**$ -**
3.8	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00	$ -	$ -	$ -	**$ -**
3.9	345kV, GIS support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	$ -	$ -	$ -	**$ -**
3.10	345kV, GIS support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	$ -	$ -	$ -	**$ -**
3.11	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	$ -	$ -	$ -	**$ -**
3.12	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	$ -	$ -	$ -	**$ -**
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	$ -	$ -	$ -	**$ -**
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	$ -	$ -	$ -	**$ -**
3.15	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	$ -	$ -	$ -	**$ -**
3.16	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	$ -	$ -	$ -	**$ -**
3.17	138kV, Disconnect Switch	0	EA	-	-	-	$ -	$ -	$ -	**$ -**
3.18	138kV, Cable sealing end	6	EA	4,810.00	2,886.00	1,924.00	$ 28,860	$ 17,316	$ 11,544	**$ 57,720**
3.19	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	$ -	$ -	$ -	**$ -**
3.20	138kV, Surge arrester	12	EA	4,810.00	2,886.00	1,924.00	$ 57,720	$ 34,632	$ 23,088	**$ 115,440**
3.21	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	$ -	$ -	$ -	**$ -**
3.22	138kV, H Frame	4	EA	21,450.00	12,870.00	17,160.00	$ 85,800	$ 51,480	$ 68,640	**$ 205,920**
3.23	AL. Bus Tubing, 5" SCH 80	500	LF	25.00	184.94	123.29	$ 12,500	$ 92,469	$ 61,646	**$ 166,615**
3.24	AL. Bus fittings	1	LS	15,000.00	15,000.00	7,500.00	$ 15,000	$ 15,000	$ 7,500	**$ 37,500**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							$ 223,280	$ 224,937	$ 181,778	$ 629,995
4. MAJOR EQUIPTMENT										
4.1	345kV, GIS air terminal	0	EA				$ -	$ -	$ -	**$ -**
4.2	345kV, GIS fast acting GND SW	0	EA				$ -	$ -	$ -	**$ -**
4.3	345kV, GIS to air bushing	0	EA				$ -	$ -	$ -	**$ -**
4.4	345kV, GIS Cable sealing end	0	EA				$ -	$ -	$ -	**$ -**
4.5	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	$ -	$ -	$ -	**$ -**
4.6	345kV, CCVT	0	EA		15,941.99	6,832.28	$ -	$ -	$ -	**$ -**
4.7	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	$ -	$ -	$ -	**$ -**
4.8	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	$ -	$ -	$ -	**$ -**
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	$ -	$ -	$ -	**$ -**
4.10	345kV, Shunt Reactor with oil containment-300MVAR	0	EA		3,520.00	880.00	$ -	$ -	$ -	**$ -**
4.11	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	$ -	$ -	$ -	**$ -**
4.12	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	$ -	$ -	$ -	**$ -**
4.13	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	$ -	$ -	$ -	**$ -**
4.14	345kV, Phase Angle Regulator with oil containment	0	EA				$ -	$ -	$ -	**$ -**
4.15	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	$ -	$ -	$ -	**$ -**
4.16	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				$ -	$ -	$ -	**$ -**
4.17	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				$ -	$ -	$ -	**$ -**
4.18	345kV, surge Arrester	0	EA		5,460.00	2,340.00	$ -	$ -	$ -	**$ -**
4.19	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	$ -	$ -	$ -	**$ -**
4.20	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	$ -	$ -	$ -	**$ -**
4.21	138kV, Circuit Breaker (PASS)	0	EA		13,559.00	5,811.00	$ -	$ -	$ -	**$ -**
4.22	138kV, Disconnect Switch	6	EA	37,700.00	11,875.50	5,089.50	$ 226,200	$ 71,253	$ 30,537	**$ 327,990**
4.23	138kV, Cable sealing end	18	EA	4,446.00	1,050.00	450.00	$ 80,028	$ 18,900	$ 8,100	**$ 107,028**
4.24	138kV, CCVT	0	EA	10,000.00	7,970.08	3,415.75	$ -	$ -	$ -	**$ -**
4.25	138kV, Air core reactors (3 Ph)	6	EA	46,833.00	6,500.00	2,500.00	$ 280,998	$ 39,000	$ 15,000	**$ 334,998**
4.26	138kV, Surge arrester	12	EA	4,446.00	4,200.00	1,800.00	$ 53,352	$ 50,400	$ 21,600	**$ 125,352**
4.27	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	$ -	$ -	$ -	**$ -**
4.28	345kV Gas-Insulated Bus Conductor		LF	550.00	275.00	82.50	$ -	$ -	$ -	**$ -**
4.29	345kV Gas-Insulated Bus Conductor-elbow		EA	2,500.00	1,250.00	375.00	$ -	$ -	$ -	**$ -**
TOTAL - MAJOR EQUIPMENT							$ 640,578	$ 179,553	$ 75,237	$ 895,368
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control cables	7,800	LF	5.30	1.43	0.29	$ 41,321	$ 11,174	$ 2,235	**$ 54,729**
5.2			LF		-	-	$ -	$ -	$ -	**$ -**
TOTAL - LOW VOLTAGE & CONTROL CABLE							$ 41,321	$ 11,174	$ 2,235	**$ 54,729**
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	$ -	$ -	$ -	**$ -**
6.2	Conduit, PVC, 4", SCH 40	1,200	LF	11.15	10.80	5.40	$ 13,380	$ 12,960	$ 6,480	**$ 32,820**
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	$ -	$ -	$ -	**$ -**
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	$ -	$ -	$ -	**$ -**
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	$ -	$ -	$ -	**$ -**
6.6	Cable Trench	225	LF	266.50	53.04	13.26	$ 59,963	$ 11,934	$ 2,984	**$ 74,880**
6.7	345kV UG- Conduit		LF	230.08	133.40	55.96	$ -	$ -	$ -	**$ -**
6.8	345kV UG- Cable		LF	175.00	105.00	70.00	$ -	$ -	$ -	**$ -**
6.9	345kV UG- Termination		EA				$ -	$ -	$ -	**$ -**
6.10	138kV UG- Conduit	3,700	LF	81.00	107.00	57.00	$ 299,700	$ 395,900	$ 210,900	**$ 906,500**
6.11	138kV UG- Cable	11,100	LF	156.00	94.00	62.00	$ 1,731,600	$ 1,043,400	$ 688,200	**$ 3,463,200**
6.12	138kV UG- Termination	18	EA	9,360.00	11,700.00		$ 168,480	$ 210,600	$ -	**$ 379,080**
6.13	Fiber Optic Cable	3,700	LF	7.40	3.33	2.22	$ 27,369	$ 12,323	$ 8,215	**$ 47,908**
6.14	Ground Continuity Conductor	3,700	LF	13.04	7.53	5.02	$ 48,244	$ 27,850	$ 18,567	**$ 94,661**
TOTAL - CONDUIT & CABLE TRENCH							$ 2,348,736	$ 1,714,967	$ 935,346	**$ 4,999,048**
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	3,402	LF	2.09	3.42	1.46	$ 7,114	$ 11,619	$ 4,980	**$ 23,712**
7.2	Caweld, DSA, 4/0 , T, CROSS	102	EA	165.00	75.00		$ 16,830	$ 7,650	$ -	**$ 24,480**
7.3	Ground Rod, 3/4" x 15'	80	EA	135.00	67.50	7.50	$ 10,800	$ 5,400	$ 600	**$ 16,800**
TOTAL - GROUND GRID							$ 34,744	$ 24,669	$ 5,580	**$ 64,992**
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	356,309.62	249,416.73	106,892.89	$ -	$ -	$ -	**$ -**
8.2	Primary Bay Control: SEL-451		EA	21,328.12	17,062.49	4,265.62	$ -	$ -	$ -	**$ -**
8.3	Backup Bay Control: SEL-451		EA	21,328.12	17,062.49	4,265.62	$ -	$ -	$ -	**$ -**
8.4	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E		EA	21,328.12	17,062.49	4,265.62	$ -	$ -	$ -	**$ -**
8.5	Backup Transformer/Reactor/PAR Differential Relays: GE T60		EA	21,328.12	17,062.49	4,265.62	$ -	$ -	$ -	**$ -**
8.13	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	$ -	$ -	$ -	**$ -**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.14	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	$ -	$ -	$ -	**$ -**
8.15	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	$ -	$ -	$ -	**$ -**
8.16	Generator	0	EA	130,000.00	72,800.00	31,200.00	$ -	$ -	$ -	**$ -**
TOTAL - CONTROL ENCLOSURE							$ -	$ -	$ -	$ -
11 - Existing EGC 138 kV_ Upgrade							$ 3,817,657	$ 2,782,265	$ 1,596,021	$ 8,195,943
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		153,240.00	65,674.29	$ -	$ 153,240	$ 65,674	**$ 218,914**
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		81,959.43		$ -	$ 81,959	$ -	**$ 81,959**
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		327,837.72		$ -	$ 327,838	$ -	**$ 327,838**
9.4	Utility PM and Project Oversite	1.0	LS		81,959.43		$ -	$ 81,959	$ -	**$ 81,959**
9.5	Site Accommodation, Facilities, Storage	1.0	LS	81,959.43			$ 81,959	$ -	$ -	**$ 81,959**
	Engineering									
9.6	Design Engineering	1.00	LS		655,675.44		$ -	$ 655,675	$ -	**$ 655,675**
9.7	LiDAR /GPR	1.00	LS		-		$ -	$ -	$ -	**$ -**
9.8	Geotech	2.00	EA		2,730.00	1,820.00	$ -	$ 5,460	$ 3,640	**$ 9,100**
9.9	Surveying/Staking	1.00	Site		57,371.60		$ -	$ 57,372	$ -	**$ 57,372**
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		307,347.86		$ -	$ 307,348	$ -	**$ 307,348**
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		6,546.96		$ -	$ -	$ -	**$ -**
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		81,959.43		$ -	$ 81,959	$ -	**$ 81,959**
9.13	Environmental-special studies/investigation	1.00	LS		-		$ -	$ -	$ -	**$ -**
9.14	Warranties / LOC's	1.00	LS		24,587.83		$ -	$ 24,588	$ -	**$ 24,588**
9.15	Laydown Lease	1.00	LS		-		$ -	$ -	$ -	**$ -**
9.16	Real Estate (Acquisition)	1.00	LS		-		$ -	$ -	$ -	**$ -**
9.17	Legal Fees (Real estate)	1.00	LS		-	-	$ -	$ -	$ -	**$ -**
9.18	Insurance	-	LS		-	-	$ -	$ -	$ -	**$ -**
9.19	Bonds	1	LS		-	$ 300,000	$ -	$ -	**$ 300,000**	**$ 300,000**
9.20	Sales Tax on Materials	8.80%	LS	3,817,657.30			$ 335,954	$ -	$ -	**$ 335,954**
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		8,195.94		$ -	$ 8,196	$ -	**$ 8,196**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							$ 417,913	$ 1,785,595	$ 369,314	**$ 2,572,822**

Propel NY - TO49 BS3

12 - Existing Rainey 345 kV_ Upgrade

Total: $ 9,824,483

Propel NY - TO49 BS3				
	Material Supply	*Labor Supply*	*Equip Supply*	*Total*
12 - Existing Rainey 345 kV_ Upgrade				
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ -	$ 90,000	$ 60,000	$ 150,000
2. SUBSTATION FOUNDATIONS	$ 164,311	$ 83,555	$ 57,022	$ 304,888
3. SUBSTATION STRUCTURES	$ -	$ -	$ -	$ -
4. MAJOR EQUIPTMENT	$ 3,920,000	$ 228,956	$ 98,124	$ 4,247,080
5. LOW VOLTAGE & CONTROL CABLE	$ 82,641	$ 22,347	$ 4,469	$ 109,457
6. CONDUIT & CABLE TRENCH	$ 26,760	$ 25,920	$ 12,960	$ 65,640
7. GROUND GRID	$ -	$ -	$ -	$ -
8. CONTROL ENCLOSURE	$ 170,625	$ 136,500	$ 34,125	$ 341,250
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	$ 436,245	$ 1,071,185	$ 212,450	$ 1,719,879
SUBTOTAL (Costs):	$ 4,800,582	$ 1,658,463	$ 479,150	$ 6,938,195
CONTRACTOR MARK-UP (OH&P)	$ 864,105	$ 298,523	$ 86,247	$ 1,248,875
SUBTOTAL:	$ 5,664,686	$ 1,956,986	$ 565,397	$ 8,187,070
CONTINGENCY ON ENTIRE PROJECT	$ 1,132,937	$ 391,397	$ 113,079	$ 1,637,414
TOTAL:	$ 6,797,623	$ 2,348,384	$ 678,476	$ 9,824,483

Description of Work: Upgrades to the existing Con Edison Rainey Substation, located in the Borough of Queens, City of New York, Queens County. The Rainey Substation is an existing 345 kV AIS substation configured with a six (6) line position ring bus tied with an eight (8) line position ring bus in the same yard. The Solution includes the addition of two new breakers in series with the existing 345 kV CB -1E and CB-6E respectively, providing an additional contingency level.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
12 - Existing Rainey 345 kV_ Upgrade										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.0	ACRE	-	10,800.00	7,200.00	$ -	$ -	$ -	$ -
1.2	Demolition	1	LS	-	90,000.00	60,000.00	$ -	$ 90,000	$ 60,000	$ **150,000**
1.3	New Access Road - 20'	0	SY	4.85	7.20	4.80	$ -	$ -	$ -	$ -
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	$ -	$ -	$ -	$ -
1.5	Site Grading- Excavation for Substation Pad	0	CY		9.00	6.00	$ -	$ -	$ -	$ -
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	0	CY		21.00	9.00	$ -	$ -	$ -	$ -
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	0	CY		2.40	1.60	$ -	$ -	$ -	$ -
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	0	CY	25.00	2.40	1.60	$ -	$ -	$ -	$ -
1.9	Blasting		EA				$ -	$ -	$ -	$ -
1.10	Install substation 8" pad base	0	SY	11.00	6.00	4.00	$ -	$ -	$ -	$ -
1.11	Site Surfacing - Aggregate 6" Thick	0	SY	16.50	4.50	3.00	$ -	$ -	$ -	$ -
1.12	7' Station Fence w/ Barbed Wire & Grounding	0	LF	13.85	13.85	6.92	$ -	$ -	$ -	$ -
1.13	20' Slide Gate & Grounding	0	EA	8,100.00	3,245.00	1,305.00	$ -	$ -	$ -	$ -
1.14	4' Pedestrian gate	0	EA	2,500.00	1,000.00	350.00	$ -	$ -	$ -	$ -
1.15	Storm drain-15" HDPE,	0	LS	40,089.60	-	-	$ -	$ -	$ -	$ -
1.16	Seeding	0	SF	1.50	1.50	1.00	$ -	$ -	$ -	$ -
1.17	Erosion Control-Silt fence install & remove	0	LF	2.41	3.16	0.72	$ -	$ -	$ -	$ -
1.18	Temporary fencing	0	LF	7.50	5.25	2.25	$ -	$ -	$ -	$ -
1.19	Substation entrance with asphalt	0	SY	19.50	26.00	19.50	$ -	$ -	$ -	$ -
1.20	Concrete curb	0	LF	26.00	27.30	11.70	$ -	$ -	$ -	$ -
1.21	Retaining Wall	0	LF	156.00	117.00	117.00	$ -	$ -	$ -	$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							$ -	$ 90,000	$ 60,000	$ 150,000

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.2	345kV, A Frame 70'	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.3	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.4	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.5	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.7	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.8	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.9	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.10	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.11	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.12	345kV, Cable sealing end	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.13	345kV, CCVT	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.14	345kV, Disconnect Switch	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.15	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.16	345kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.17	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.18	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.19	345kV, Circuit Breaker (PASS)	80	CY	703.89	804.44	502.78	$ 56,311	$ 64,355	$ 40,222	**$ 160,888**
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.21	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.22	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.23	138kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.24	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.25	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.26	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.27	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.28	138kV, CCVT	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.29	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.30	Firewall Foundation	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.31	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	$ -	$ -	$ -	**$ -**
2.32	Precast Concrete Piles-12"X80'	6	EA	18,000.00	3,200.00	2,800.00	$ 108,000	$ 19,200	$ 16,800	**$ 144,000**
2.33	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.34	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	$ -	$ -	$ -	**$ -**
TOTAL - 345KV FOUNDATION							$ 164,311	$ 83,555	$ 57,022	**$ 304,888**
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				$ -	$ -	$ -	**$ -**
3.2	345kV, A Frame 70'	0	EA	48,100.00	28,860.00	19,240.00	$ -	$ -	$ -	**$ -**
3.3	345kV, Bus support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	$ -	$ -	$ -	**$ -**
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	$ -	$ -	$ -	**$ -**
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	$ -	$ -	$ -	**$ -**
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	$ -	$ -	$ -	**$ -**
3.7	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16	$ -	$ -	$ -	**$ -**
3.8	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00	$ -	$ -	$ -	**$ -**
3.9	345kV, GIS support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	$ -	$ -	$ -	**$ -**
3.10	345kV, GIS support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	$ -	$ -	$ -	**$ -**
3.11	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	$ -	$ -	$ -	**$ -**
3.12	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	$ -	$ -	$ -	**$ -**
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	$ -	$ -	$ -	**$ -**
3.14	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	$ -	$ -	$ -	**$ -**
3.15	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	$ -	$ -	$ -	**$ -**
3.16	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	$ -	$ -	$ -	**$ -**
3.17	138kV, Disconnect Switch	0	EA	-	-	-	$ -	$ -	$ -	**$ -**
3.18	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	$ -	$ -	$ -	**$ -**
3.19	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	$ -	$ -	$ -	**$ -**
3.20	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	$ -	$ -	$ -	**$ -**
3.21	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	$ -	$ -	$ -	**$ -**
3.22	AL. Bus fittings	0	LS	-	-	-	$ -	$ -	$ -	**$ -**
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							$ -	$ -	$ -	$ -

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
4. MAJOR EQUIPTMENT										
4.1	345kV, GIS air terminal	0	EA				$ -	$ -	$ -	**$ -**
4.2	345kV, GIS fast acting GND SW	0	EA				$ -	$ -	$ -	**$ -**
4.3	345kV, GIS to air bushing	0	EA				$ -	$ -	$ -	**$ -**
4.4	345kV, GIS Cable sealing end	0	EA				$ -	$ -	$ -	**$ -**
4.5	345kV, Cable sealing end	0	EA		5,460.00	2,340.00	$ -	$ -	$ -	**$ -**
4.6	345kV, CCVT	0	EA		15,941.99	6,832.28	$ -	$ -	$ -	**$ -**
4.7	345kV, Disconnect Switch	0	EA		7,234.50	3,100.50	$ -	$ -	$ -	**$ -**
4.8	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	$ -	$ -	$ -	**$ -**
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	$ -	$ -	$ -	**$ -**
4.10	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	$ -	$ -	$ -	**$ -**
4.11	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	$ -	$ -	$ -	**$ -**
4.12	Transport & Testing- Shunt Reactor	0	EA		15,400.00	6,600.00	$ -	$ -	$ -	**$ -**
4.13	345kV, Phase Angle Regulator with oil containment	0	EA				$ -	$ -	$ -	**$ -**
4.14	345kV, Circuit Breaker (PASS)	4	EA	980,000.00	57,239.00	24,531.00	$ 3,920,000	$ 228,956	$ 98,124	**$ 4,247,080**
4.15	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				$ -	$ -	$ -	**$ -**
4.16	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				$ -	$ -	$ -	**$ -**
4.17	345kV, surge Arrester	0	EA		5,460.00	2,340.00	$ -	$ -	$ -	**$ -**
4.18	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	$ -	$ -	$ -	**$ -**
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	$ -	$ -	$ -	**$ -**
4.20	138kV, Circuit Breaker (PASS)	0	EA		13,559.00	5,811.00	$ -	$ -	$ -	**$ -**
4.21	138kV, Disconnect Switch	0	EA		3,958.50	1,696.50	$ -	$ -	$ -	**$ -**
4.22	138kV, Cable sealing end	0	EA		1,050.00	450.00	$ -	$ -	$ -	**$ -**
4.23	138kV, CCVT	0	EA		7,970.08	3,415.75	$ -	$ -	$ -	**$ -**
4.24	138kV, Surge arrester	0	EA		4,200.00	1,800.00	$ -	$ -	$ -	**$ -**
4.25	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	$ -	$ -	$ -	**$ -**
4.26	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	$ -	$ -	$ -	**$ -**
4.27	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	$ -	$ -	$ -	**$ -**
TOTAL - MAJOR EQUIPMENT							$ 3,920,000	$ 228,956	$ 98,124	$ 4,247,080
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	15,600	LF	5.30	1.43	0.29	$ 82,641	$ 22,347	$ 4,469	**$ 109,457**
5.2			LF	5.30	1.43	0.29	$ -	$ -	$ -	**$ -**
TOTAL - LOW VOLTAGE & CONTROL CABLE							$ 82,641	$ 22,347	$ 4,469	**$ 109,457**
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	$ -	$ -	$ -	**$ -**
6.2	Conduit, PVC, 4", SCH 40	2,400	LF	11.15	10.80	5.40	$ 26,760	$ 25,920	$ 12,960	**$ 65,640**
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	$ -	$ -	$ -	**$ -**
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	$ -	$ -	$ -	**$ -**
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	$ -	$ -	$ -	**$ -**
6.6	Cable Trench		LF	266.50	53.04	13.26	$ -	$ -	$ -	**$ -**
6.7	345kV UG	0	LF	230.08	133.40	55.96	$ -	$ -	$ -	**$ -**
6.8	138kV UG	0	LF	-	-	-	$ -	$ -	$ -	**$ -**
6.9							$ -	$ -	$ -	**$ -**
TOTAL - CONDUIT & CABLE TRENCH							$ 26,760	$ 25,920	$ 12,960	**$ 65,640**
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	0	LF	2.09	3.42	1.46	$ -	$ -	$ -	**$ -**
7.2	Caweld, DSA, 4/0 , T, CROSS	0	EA	165.00	75.00		$ -	$ -	$ -	**$ -**
7.3	Ground Rod, 3/4" x 15'	0	EA	135.00	67.50	7.50	$ -	$ -	$ -	**$ -**
TOTAL - GROUND GRID							$ -	$ -	$ -	**$ -**
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	171,028.62	119,720.03	51,308.59	$ -	$ -	$ -	**$ -**
8.2	Primary Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	$ 42,656	$ 34,125	$ 8,531	**$ 85,312**
8.3	Backup Bay Control: SEL-451	2	EA	21,328.12	17,062.49	4,265.62	$ 42,656	$ 34,125	$ 8,531	**$ 85,312**
8.4	Primary Bus Differential Relays: SEL-487B	2	EA	21,328.12	17,062.49	4,265.62	$ 42,656	$ 34,125	$ 8,531	**$ 85,312**
8.5	Backup Bus Differential Relays: GE B90	2	EA	21,328.12	17,062.49	4,265.62	$ 42,656	$ 34,125	$ 8,531	**$ 85,312**
8.5	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	$ -	$ -	$ -	**$ -**
8.6	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	$ -	$ -	$ -	**$ -**
8.7	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	$ -	$ -	$ -	**$ -**
8.8	Generator	0	EA	130,000.00	72,800.00	31,200.00	$ -	$ -	$ -	**$ -**
TOTAL - CONTROL ENCLOSURE							$ 170,625	$ 136,500	$ 34,125	$ 341,250
12 - Existing Rainey 345 kV_ Upgrade							$ 4,364,337	$ 587,278	$ 266,700	$ 5,218,315

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		29,889.25	12,809.68	$ -	$ 29,889	$ 12,810	**$ 42,699**
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		52,183.15		$ -	$ 52,183	$ -	**$ 52,183**
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		208,732.61		$ -	$ 208,733	$ -	**$ 208,733**
9.4	Utility PM and Project Oversite	1.0	LS		52,183.15		$ -	$ 52,183	$ -	**$ 52,183**
9.5	Site Accommodation, Facilities, Storage	1.0	LS	52,183.15			$ 52,183	$ -	$ -	**$ 52,183**
	Engineering									
9.6	Design Engineering	1.00	LS		417,465.22		$ -	$ 417,465	$ -	**$ 417,465**
9.7	LiDAR /GPR	1.00	LS		-		$ -	$ -	$ -	**$ -**
9.8	Geotech	2.00	EA		2,730.00	1,820.00	$ -	$ 5,460	$ 3,640	**$ 9,100**
9.9	Surveying/Staking	1.00	Site		36,528.21		$ -	$ 36,528	$ -	**$ 36,528**
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		195,686.82		$ -	$ 195,687	$ -	**$ 195,687**
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		-		$ -	$ -	$ -	**$ -**
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		52,183.15		$ -	$ 52,183	$ -	**$ 52,183**
9.13	Environmental-special studies/investigation	-	LS		-		$ -	$ -	$ -	**$ -**
9.14	Warranties / LOC's	1.00	LS		15,654.95		$ -	$ 15,655	$ -	**$ 15,655**
9.15	Laydown Lease	-	LS		-		$ -	$ -	$ -	**$ -**
9.16	Real Estate (Acquisition)	-	LS		-		$ -	$ -	$ -	**$ -**
9.17	Legal Fees (Real estate)	-	LS		-	-	$ -	$ -	$ -	**$ -**
9.18	Insurance	-	LS		-	-	$ -	$ -	$ -	**$ -**
9.19	Bonds	1	LS		-	$ 196,000	$ -	$ -	**$ 196,000**	**$ 196,000**
9.20	Sales Tax on Materials	8.80%	LS	4,364,336.72			$ 384,062	$ -	$ -	**$ 384,062**
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		5,218.32		$ -	$ 5,218	$ -	**$ 5,218**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							$ 436,245	$ 1,071,185	$ 212,450	**$ 1,719,879**

Propel NY - TO49 BS3

13 - Existing EGC 345 kV_ Upgrade

Total: $ 162,981,648

Propel NY - TO49 BS3				
	Material Supply	*Labor Supply*	*Equip Supply*	*Total*
13 - Existing EGC 345 kV_ Upgrade				
1. SITE PREP/ GRADING/ FENCING / CIVIL	$ 691,550	$ 928,374	$ 609,480	$ 2,229,404
2. SUBSTATION FOUNDATIONS	$ 3,103,975	$ 3,293,813	$ 2,028,819	$ 8,426,607
3. SUBSTATION STRUCTURES	$ 1,371,903	$ 1,294,951	$ 851,016	$ 3,517,870
4. MAJOR EQUIPTMENT	$ 37,653,933	$ 3,297,803	$ 1,460,933	$ 42,412,668
5. LOW VOLTAGE & CONTROL CABLE	$ 472,007	$ 127,636	$ 25,527	$ 625,170
6. CONDUIT & CABLE TRENCH	$ 2,518,369	$ 1,346,620	$ 788,274	$ 4,653,263
7. GROUND GRID	$ 212,150	$ 153,307	$ 35,810	$ 401,267
8. CONTROL ENCLOSURE	$ 1,471,622	$ 1,193,966	$ 396,655	$ 3,062,244
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	$ 4,832,890	$ 13,612,057	$ 31,326,595	$ 49,771,542
SUBTOTAL (Costs):	$ 52,328,399	$ 25,248,527	$ 37,523,108	$ 115,100,034
CONTRACTOR MARK-UP (OH&P)	$ 9,419,112	$ 4,544,735	$ 6,754,159	$ 20,718,006
SUBTOTAL:	$ 61,747,511	$ 29,793,262	$ 44,277,267	$ 135,818,040
CONTINGENCY ON ENTIRE PROJECT	$ 12,349,502	$ 5,958,652	$ 8,855,453	$ 27,163,608
TOTAL:	$ 74,097,013	$ 35,751,915	$ 53,132,721	$ 162,981,648

Description of Work: Upgrade to the 345 kV East Garden City Substation, to be located at 555 Stewart Avenue, Hamlet of Uniondale, Town of Hempstead, Nassau County. The New 345 kV East Garden City Substation will be connected by four (4) new 345 kV underground transmission lines and the existing Y-49 Line. Also, it will serve the two (2) existing 345 kV/138 kV transformers located in the existing LIPA 138 kV East Garden City Substation

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
13 - Existing EGC 345 kV_ Upgrade										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	0.8	ACRE	-	10,800.00	7,200.00	$ -	$ 8,640	$ 5,760	**$ 14,400**
1.2	Demolition	1	LS	-	12,000.00	8,000.00	$ -	$ 12,000	$ 8,000	**$ 20,000**
1.3	New Access Road - 20'	9,087	SY	4.85	7.20	4.80	$ 44,071	$ 65,425	$ 43,617	**$ 153,112**
1.4	Strip and Dispose Top Soil	1,291	CY		24.50	10.50	$ -	$ 31,621	$ 13,552	**$ 45,173**
1.5	Site Grading- Excavation for Substation Pad	17,446	CY		9.00	6.00	$ -	$ 157,018	$ 104,679	**$ 261,697**
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	2,355	CY		21.00	9.00	$ -	$ 49,460.67	$ 21,197.43	**$ 70,658.10**
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	21,197	CY		2.40	1.60	$ -	$ 50,874	$ 33,916	**$ 84,790**
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	2,355	CY	25.00	2.40	1.60	$ 58,882	$ 5,653	$ 3,768	**$ 68,303**
1.9	Blasting		EA				$ -	$ -	$ -	**$ -**
1.10	Install substation 8" pad base	26,170	SY	-	6.00	4.00	$ -	$ 157,019	$ 104,679	**$ 261,698**
1.11	Site Surfacing - Aggregate 6" Thick	26,170	SY	8.25	4.50	3.00	$ 215,901	$ 117,764	$ 78,509	**$ 412,174**
1.12	7' Station Fence w/ Barbed Wire & Grounding	1,298	LF	13.85	13.85	6.92	$ 17,975	$ 17,975	$ 8,987	**$ 44,937**
1.13	30' Slide Gate & Grounding	2	EA	8,100.00	3,245.00	1,305.00	$ 16,200	$ 6,490	$ 2,610	**$ 25,300**
1.14	4' Pedestrian gate	2	EA	2,500.00	1,000.00	350.00	$ 5,000	$ 2,000	$ 700	**$ 7,700**
1.15	Storm drain-4"&15" HDPE,Seperators, inlets	1	LS	149,169.60	96,000.00	45,300.00	$ 149,170	$ 96,000	$ 45,300	**$ 290,470**
1.16	Seeding	0	SF	1.50	1.50	1.00	$ -	$ -	$ -	**$ -**
1.17	Erosion Control-Silt fence install & remove	2,025	LF	2.41	3.16	0.72	$ 4,880	$ 6,399	$ 1,458	**$ 12,737**
1.18	Temporary fencing	1,350	LF	7.50	5.25	2.25	$ 10,125	$ 7,088	$ 3,038	**$ 20,250**
1.19	Substation entrance with asphalt	778	SY	19.50	26.00	19.50	$ 15,167	$ 20,222	$ 15,167	**$ 50,556**
1.20	Concrete curb	140	LF	26.00	27.30	11.70	$ 3,640	$ 3,822	$ 1,638	**$ 9,100**
1.21	Retaining Wall	965	LF	156.00	117.00	117.00	$ 150,540	$ 112,905	$ 112,905	**$ 376,350**
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							$ 691,550	$ 928,374	$ 609,480	$ 2,229,404
2. SUBSTATION FOUNDATIONS										

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
2.1	345kV, Lightning mast	18	CY	703.89	804.44	502.78	$ 12,536	$ 14,327	$ 8,954	**$ 35,818**
2.2	345kV, A Frame 70'-one bay	293	CY	703.89	804.44	502.78	$ 206,435	$ 235,926	$ 147,454	**$ 589,815**
2.3	345kV, A Frame 70'-two bay	660	CY	703.89	804.44	502.78	$ 464,480	$ 530,834	$ 331,771	**$ 1,327,085**
2.4	345kV, Bus support-3 Ph	380	CY	703.89	804.44	502.78	$ 267,589	$ 305,816	$ 191,135	**$ 764,540**
2.5	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.6	345kV, Bus support-1 Ph	523	CY	703.89	804.44	502.78	$ 367,935	$ 420,497	$ 262,811	**$ 1,051,242**
2.7	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.8	345kV, GIS fast acting GND SW	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.9	345kV, GIS to air bushing	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.10	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.11	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.12	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.13	345kV, Cable sealing end	119	CY	703.89	804.44	502.78	$ 83,622	$ 95,567	$ 59,730	**$ 238,919**
2.14	345kV, CCVT	144	CY	703.89	804.44	502.78	$ 101,676	$ 116,201	$ 72,626	**$ 290,503**
2.15	345kV, Disconnect Switch	222	CY	703.89	804.44	502.78	$ 156,094	$ 178,393	$ 111,495	**$ 445,982**
2.16	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.17	345kV, Shunt Reactor with oil containment-300MVAR	305	CY	703.89	804.44	502.78	$ 214,685	$ 245,354	$ 153,346	**$ 613,386**
2.18	345kV, Shunt Reactor with oil containment-150MVAR	305	CY	703.89	804.44	502.78	$ 214,685	$ 245,354	$ 153,346	**$ 613,386**
2.19	345kV, Shunt Reactor with oil containment-100MVAR	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.20	345kV, Phase Angle Regulator with oil containment	445	CY	703.89	804.44	502.78	$ 313,229	$ 357,976	$ 223,735	**$ 894,940**
2.21	345kV, Circuit Breaker (PASS)	260	CY	703.89	804.44	502.78	$ 183,010	$ 209,154	$ 130,722	**$ 522,886**
2.22	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.23	345/138 Kv, Control Enclosure-BLDG with generator pad	232	CY	703.89	804.44	502.78	$ 163,301	$ 186,630	$ 116,644	**$ 466,575**
2.24	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.25	138kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.26	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.27	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.28	138kV, Disconnect Switch	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.29	138kV, Cable sealing end	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.30	138kV, CCVT	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.29	138kV, Air core reactors (3 Ph)	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.30	138kV, Surge arrester	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.31	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.32	138kV, H Frame	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.33	Firewall Foundation	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.34	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	$ -	$ -	$ -	**$ -**
2.35	Precast Concrete Piles-12"X80'		EA							
2.36	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	$ -	$ -	$ -	**$ -**
2.37	Steel grating and support beams-transformer moat	129,840	LB	2.73	1.17	0.50	$ 354,699	$ 151,783	$ 65,050	**$ 571,532**
TOTAL - 345KV FOUNDATION							$ 3,103,975	$ 3,293,813	$ 2,028,819	**$ 8,426,607**
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	1	EA	23,400.00	14,040.00	9,360.00	$ 23,400	$ 14,040	$ 9,360	**$ 46,800**
3.2	345kV, A Frame 70'-one bay	2	EA	48,100.00	28,860.00	19,240.00	$ 96,200	$ 57,720	$ 38,480	**$ 192,400**
3.3	345kV, A Frame 70'-two bay	3	EA	86,580.00	51,948.00	34,632.00	$ 259,740	$ 155,844	$ 103,896	**$ 519,480**
3.3	345kV, Bus support-3 Ph	24	EA	8,346.00	5,758.74	3,839.16	$ 200,304	$ 138,210	$ 92,140	**$ 430,654**
3.4	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	$ -	$ -	$ -	**$ -**
3.5	345kV, Bus support-1 Ph	66	EA	4,810.00	2,886.00	1,924.00	$ 317,460	$ 190,476	$ 126,984	**$ 634,920**
3.6	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	$ -	$ -	$ -	**$ -**
3.7	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16	$ -	$ -	$ -	**$ -**
3.8	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00	$ -	$ -	$ -	**$ -**
3.9	345kV, GIS support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	$ -	$ -	$ -	**$ -**
3.10	345kV, GIS support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	$ -	$ -	$ -	**$ -**
3.11	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	$ -	$ -	$ -	**$ -**
3.12	345kV, Cable sealing end	9	EA	8,346.00	5,758.74	3,839.16	$ 75,114	$ 51,829	$ 34,552	**$ 161,495**
3.13	345kV, CCVT	27	EA	4,810.00	2,886.00	1,924.00	$ 129,870	$ 77,922	$ 51,948	**$ 259,740**
3.14	345kV, Disconnect Switch	7	EA	19,240.00	11,544.00	7,696.00	$ 134,680	$ 80,808	$ 53,872	**$ 269,360**
3.15	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	$ -	$ -	$ -	**$ -**
3.16	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	$ -	$ -	$ -	**$ -**
3.17	138kV, Disconnect Switch	0	EA	-	-	-	$ -	$ -	$ -	**$ -**
3.18	138kV, Cable sealing end	0	EA	4,810.00	2,886.00	1,924.00	$ -	$ -	$ -	**$ -**
3.19	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	$ -	$ -	$ -	**$ -**
3.20	138kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	$ -	$ -	$ -	**$ -**
3.21	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	$ -	$ -	$ -	**$ -**
3.22	138kV, H Frame	0	EA	-	-	-	$ -	$ -	$ -	**$ -**
3.23	AL. Bus Tubing, 5" SCH 80	2,457	LF	25.00	184.94	123.29	$ 61,425	$ 454,393	$ 302,928	**$ 818,746**
3.24	AL. Bus fittings	1	LS	73,710.00	73,710.00	36,855.00	$ 73,710	$ 73,710	$ 36,855	**$ 184,275**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							$ 1,371,903	$ 1,294,951	$ 851,016	$ 3,517,870
4. MAJOR EQUIPTMENT										
4.1	345kV, GIS air terminal	0	EA				$ -	$ -	$ -	**$ -**
4.2	345kV, GIS fast acting GND SW	0	EA				$ -	$ -	$ -	**$ -**
4.3	345kV, GIS to air bushing	0	EA				$ -	$ -	$ -	**$ -**
4.4	345kV, GIS Cable sealing end	0	EA				$ -	$ -	$ -	**$ -**
4.5	345kV, Cable sealing end	27	EA	27,144.00	5,460.00	2,340.00	$ 732,888	$ 147,420	$ 63,180	**$ 943,488**
4.6	345kV, CCVT	27	EA	16,900.00	15,941.99	6,832.28	$ 456,300	$ 430,434	$ 184,472	**$ 1,071,205**
4.7	345kV, Disconnect Switch	6	EA	57,720.00	34,632.00	23,088.00	$ 346,320	$ 207,792	$ 138,528	**$ 692,640**
4.8	345/138KV, Power Transformer with oil containment	0	EA		3,520.00	880.00	$ -	$ -	$ -	**$ -**
4.9	Transport & Testing- Transformer	0	EA		15,400.00	6,600.00	$ -	$ -	$ -	**$ -**
4.10	345kV, Shunt Reactor with oil containment-300MVAR	1	EA	3,633,158.00	3,520.00	880.00	$ 3,633,158	$ 3,520	$ 880	**$ 3,637,558**
4.11	345kV, Shunt Reactor with oil containment-150MVAR	1	EA	2,901,774.00	3,520.00	880.00	$ 2,901,774	$ 3,520	$ 880	**$ 2,906,174**
4.12	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	$ -	$ -	$ -	**$ -**
4.13	Transport & Testing- Shunt Reactor	2	EA		410,025.00	175,725.00	$ -	$ 820,050	$ 351,450	**$ 1,171,500**
4.14	345kV, Phase Angle Regulator with oil containment	1	EA	16,120,693.00	3,520.00	880.00	$ 16,120,693	$ 3,520	$ 880	**$ 16,125,093**
4.13	Transport & Testing- PAR	1	EA		715,400.00	306,600.00	$ -	$ 715,400	$ 306,600	**$ 1,022,000**
4.15	345kV, Circuit Breaker (PASS)	13	EA	980,000.00	57,239.00	24,531.00	$ 12,740,000	$ 744,107	$ 318,903	**$ 13,803,010**
4.16	345kV, Circuit Breaker (GIS), outdoor rated	0	EA				$ -	$ -	$ -	**$ -**
4.17	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				$ -	$ -	$ -	**$ -**
4.18	345kV, surge Arrester	24	EA	8,450.00	5,460.00	2,340.00	$ 202,800	$ 131,040	$ 56,160	**$ 390,000**
4.19	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	$ -	$ -	$ -	**$ -**
4.20	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	$ -	$ -	$ -	**$ -**
4.21	138kV, Circuit Breaker (PASS)	0	EA		13,559.00	5,811.00	$ -	$ -	$ -	**$ -**
4.22	138kV, Disconnect Switch	0	EA		3,958.50	1,696.50	$ -	$ -	$ -	**$ -**
4.23	138kV, Cable sealing end	0	EA		1,050.00	450.00	$ -	$ -	$ -	**$ -**
4.24	138kV, CCVT	0	EA		7,970.08	3,415.75	$ -	$ -	$ -	**$ -**
4.25	138kV, Surge arrester	0	EA		4,200.00	1,800.00	$ -	$ -	$ -	**$ -**
4.26	Station service transformers- 120/208v-250VA	2	EA	260,000.00	45,500.00	19,500.00	$ 520,000	$ 91,000	$ 39,000	**$ 650,000**
4.27	345kV Gas-Insulated Bus Conductor		LF	550.00	275.00	82.50	$ -	$ -	$ -	**$ -**
4.28	345kV Gas-Insulated Bus Conductor-elbow		EA	2,500.00	1,250.00	375.00	$ -	$ -	$ -	**$ -**
TOTAL - MAJOR EQUIPMENT							$ 37,653,933	$ 3,297,803	$ 1,460,933	$ 42,412,668
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	89,100	LF	5.30	1.43	0.29	$ 472,007	$ 127,636	$ 25,527	**$ 625,170**
5.2	300V Copper 12/c TC XHHW/CPE 10AWG		LF				$ -	$ -	$ -	**$ -**
TOTAL - LOW VOLTAGE & CONTROL CABLE							$ 472,007	$ 127,636	$ 25,527	**$ 625,170**
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	$ -	$ -	$ -	**$ -**
6.2	Conduit, PVC, 4", SCH 40	17,100	LF	11.15	10.80	5.40	$ 190,665	$ 184,680	$ 92,340	**$ 467,685**
6.3	Conduit, PVC, 3", SCH 40		LF	8.10	10.80	5.40	$ -	$ -	$ -	**$ -**
6.4	Conduit, PVC, 2", SCH 40		LF	3.95	10.80	5.40	$ -	$ -	$ -	**$ -**
6.5	Conduit, PVC, 1", SCH 40		LF	1.90	10.80	5.40	$ -	$ -	$ -	**$ -**
6.6	Cable Trench	875	LF	266.50	53.04	13.26	$ 233,188	$ 46,410	$ 11,603	**$ 291,200**
6.7	345kV UG- Conduit	1,800	LF	230.08	133.40	55.96	$ 414,140	$ 240,122	$ 100,726	**$ 754,988**
6.8	345kV UG- Cable	6,600	LF	175.00	105.00	70.00	$ 1,155,000	$ 693,000	$ 462,000	**$ 2,310,000**
6.9	345kV UG- Termination	18	EA	27,144.00	9,048.00	6,032.00	$ 488,592	$ 162,864	$ 108,576	**$ 760,032**
6.10	Fiber Optic Cable	1,800	LF	7.40	3.33	2.22	$ 13,315	$ 5,995	$ 3,997	**$ 23,306**
6.11	Ground Continuity Conductor	1,800	LF	13.04	7.53	5.02	$ 23,470	$ 13,549	$ 9,032	**$ 46,051**
6.12	138kV UG- Conduit	0	LF				$ -	$ -	$ -	**$ -**
6.13	138kV UG- Cable	0	LF				$ -	$ -	$ -	**$ -**
6.14	138kV UG- Termination	0	EA							
TOTAL - CONDUIT & CABLE TRENCH							$ 2,518,369	$ 1,346,620	$ 788,274	**$ 4,653,263**
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	21,760	LF	2.09	3.42	1.46	$ 45,500	$ 74,317	$ 31,850	**$ 151,667**
7.2	Caweld, DSA, 4/0 , T, CROSS	578	EA	165.00	75.00		$ 95,370	$ 43,350	$ -	**$ 138,720**
7.3	Ground Rod, 3/4" x 15'	528	EA	135.00	67.50	7.50	$ 71,280	$ 35,640	$ 3,960	**$ 110,880**
TOTAL - GROUND GRID							$ 212,150	$ 153,307	$ 35,810	**$ 401,267**
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	1	EA	356,309.62	249,416.73	106,892.89	$ 356,310	$ 249,417	$ 106,893	**$ 712,619**
8.2	Primary Line Relays (87L): SEL-411L	5	EA	21,328.12	17,062.49	4,265.62	$ 106,641	$ 85,312	$ 21,328	**$ 213,281**
8.3	Backup Line Relays (87L): GE L90	5	EA	21,328.12	17,062.49	4,265.62	$ 106,641	$ 85,312	$ 21,328	**$ 213,281**
8.4	Primary Bay Control: SEL-451	6	EA	21,328.12	17,062.49	4,265.62	$ 127,969	$ 102,375	$ 25,594	**$ 255,937**
8.5	Backup Bay Control: SEL-451	6	EA	21,328.12	17,062.49	4,265.62	$ 127,969	$ 102,375	$ 25,594	**$ 255,937**
8.6	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	4	EA	21,328.12	17,062.49	4,265.62	$ 85,312	$ 68,250	$ 17,062	**$ 170,625**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL COST
8.7	Backup Transformer/Reactor/PAR Differential Relays: GE T60	4	EA	21,328.12	17,062.49	4,265.62	$ 85,312	$ 68,250	$ 17,062	**$ 170,625**
8.8	Primary Bus Differential Relays: SEL-487B	3	EA	21,328.12	17,062.49	4,265.62	$ 63,984	$ 51,187	$ 12,797	**$ 127,969**
8.9	Backup Bus Differential Relays: GE B90	3	EA	21,328.12	17,062.49	4,265.62	$ 63,984	$ 51,187	$ 12,797	**$ 127,969**
8.10	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS, Modem, SEL-2523 Annunciator,	1	EA	12,500.00	10,000.00	2,500.00	$ 12,500	$ 10,000	$ 2,500	**$ 25,000**
8.11	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock, SEL-2523 Annnunciator	1	EA	12,500.00	10,000.00	2,500.00	$ 12,500	$ 10,000	$ 2,500	**$ 25,000**
8.12	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	$ 12,500	$ 10,000	$ 2,500	**$ 25,000**
8.13	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	$ 50,000	$ 45,500	$ 19,500	**$ 115,000**
8.14	Control house AC Panel	1	EA	65,000.00	91,000.00	39,000.00	$ 65,000	$ 91,000	$ 39,000	**$ 195,000**
8.15	Control House DC Panel	1	EA	65,000.00	91,000.00	39,000.00	$ 65,000	$ 91,000	$ 39,000	**$ 195,000**
8.16	Generator	1	EA	130,000.00	72,800.00	31,200.00	$ 130,000	$ 72,800	$ 31,200	**$ 234,000**
TOTAL - CONTROL ENCLOSURE							$ 1,471,622	$ 1,193,966	$ 396,655	$ 3,062,244
13 - Existing EGC 345 kV_ Upgrade							$ 47,495,509	$ 11,636,470	$ 6,196,513	$ 65,328,492
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		624,154.42	267,494.75	$ -	$ 624,154	$ 267,495	**$ 891,649**
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		653,284.92		$ -	$ 653,285	$ -	**$ 653,285**
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		2,613,139.70		$ -	$ 2,613,140	$ -	**$ 2,613,140**
9.4	Utility PM and Project Oversite	1.0	LS		653,284.92		$ -	$ 653,285	$ -	**$ 653,285**
9.5	Site Accommodation, Facilities, Storage	1.0	LS	653,284.92			$ 653,285	$ -	$ -	**$ 653,285**
	Engineering									
9.6	Design Engineering	1.00	LS		5,226,279.40		$ -	$ 5,226,279	$ -	**$ 5,226,279**
9.7	LiDAR /GPR	1.00	LS		-		$ -	$ -	$ -	**$ -**
9.8	Geotech	5.00	EA		2,730.00	1,820.00	$ -	$ 13,650	$ 9,100	**$ 22,750**
9.9	Surveying/Staking	1.00	Site		457,299.45		$ -	$ 457,299	$ -	**$ 457,299**
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		2,449,818.47		$ -	$ 2,449,818	$ -	**$ 2,449,818**
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		6,546.96		$ -	$ 6,547	$ -	**$ 6,547**
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		653,284.92		$ -	$ 653,285	$ -	**$ 653,285**
9.13	Environmental-special studies/investigation	-	LS		-		$ -	$ -	$ -	**$ -**
9.14	Warranties / LOC's	1.00	LS		195,985.48		$ -	$ 195,985	$ -	**$ 195,985**
9.15	Laydown Lease	-	LS		-		$ -	$ -	$ -	**$ -**
9.16	Real Estate (Acquisition)	1.00	LS			27,000,000	$ -	$ -	$ 27,000,000	**$ 27,000,000**
9.17	Legal Fees (Real estate)	1.00	LS		-	810,000.00	$ -	$ -	$ 810,000	**$ 810,000**
9.18	Insurance	-	LS		-	-	$ -	$ -	$ -	**$ -**
9.19	Bonds	1	LS		-	$ 3,240,000	$ -	$ -	**$ 3,240,000**	**$ 3,240,000**
9.20	Sales Tax on Materials	8.80%	LS	47,495,509.06			$ 4,179,605	$ -	$ -	**$ 4,179,605**
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		65,328.49		$ -	$ 65,328	$ -	**$ 65,328**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							$ 4,832,890	$ 13,612,057	$ 31,326,595	**$ 49,771,542**

Propel NY - TO49 BS3

BS3.1 Barrett to East Garden City 345kV Onshore UG Cables -Double circuits

Total: $ 300,550,095

Propel NY - TO49 BS3	*Material Supply*	*Labor Supply*	*Equip Supply*	*Total*
BS3.1 Barrett to East Garden City 345kV Onshore UG Cables -Double circuits				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	$ 2,009,184	$ 9,281,350	$ 3,907,834	$ 15,198,368
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	$ 20,983,664	$ 18,881,946	$ 12,931,534	$ 52,797,144
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	$ 51,016,413	$ 30,754,077	$ 19,609,958	$ 101,380,448
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	$ 8,265,782	$ 26,249,323	$ 8,361,827	$ 42,876,932
SUBTOTAL (Costs):	$ 82,275,043	$ 85,166,696	$ 44,811,153	$ 212,252,892
CONTRACTOR MARK-UP (OH&P)	$ 14,809,508	$ 15,330,005	$ 8,066,008	$ 38,205,521
SUBTOTAL:	$ 97,084,551	$ 100,496,701	$ 52,877,161	$ 250,458,413
CONTINGENCY ON ENTIRE PROJECT	$ 19,416,910	$ 20,099,340	$ 10,575,432	$ 50,091,683
TOTAL:	$ 116,501,461	$ 120,596,042	$ 63,452,593	$ 300,550,095

Description of Work: The proposed 345 kV electric underground transmission line extending from the Barrett Substation in the Hamlet of Oceanside in the Town of Hempstead in Nassau County to the Tremont Substation in the Bronx, New York City, Bronx County with a connection point at the East Garden City Substation in the Hamlet of Uniondale in the Town of Hempstead, Nassau County. The proposed route will be approximately 32.3 miles, utilizing 4000 kcmil cross-linked polyethylene ("XLPE")cable for the onshore portions of the route and 5000 kcmil cable in a marine crossing by Horizontal Directional Drill ("HDD") or equivalent trenchless technique.
Barrett to EGC section is 8.76 miles

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
BS3.1 Barrett to East Garden City 345kV Onshore UG Cables -Double circuits										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**
1.2	Existing Utility Conflict and Relocation	8.76	Mile		$ 700,000	$ 300,000	$ -	$ 6,132,000	$ 2,628,000	**$ 8,760,000**
1.3	Flaggers	60	DAY	$ 1,600	$ 4,800	$ 1,600	$ 96,000	$ 288,000	$ 96,000	**$ 480,000**
1.4	K Rail / Lane Control / Metal Plates	46,253	LF	$ 30	$ 18	$ 12	$ 1,387,584	$ 832,550	$ 555,034	**$ 2,775,168**
1.5	Police Support	3,600.0	HR		$ 120	$ 27	$ -	$ 432,000	$ 97,200	**$ 529,200**
1.6	Additional Traffic Management		LS				$ -	$ -	$ -	**$ -**
1.7	Access / Clearing Costs		LS				$ -	$ -	$ -	**$ -**
1.8	Snow Removal	20.0	DAY		$ 1,000	$ 300	$ -	$ 20,000	$ 6,000	**$ 26,000**
1.9	Existing Utility Protection	8.76	Mile	$ 60,000	$ 180,000	$ 60,000	$ 525,600	$ 1,576,800	$ 525,600	**$ 2,628,000**
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							**$ 2,009,184**	**$ 9,281,350**	**$ 3,907,834**	**$ 15,198,368**
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
LINE Y51 & Y54 -Double CIRCUITS										
2.1	Trench Box Shoring & Trench Box Install Crew	8.76	Miles		$ 139,800	$ 93,200	$ -	$ 1,224,648	$ 816,432	**$ 2,041,080**
2.2	Formwork in Trench	367,326	SF	$ 2	$ 1.5	$ 0.5	$ 734,653	$ 550,990	$ 183,663	**$ 1,469,306**
2.3	Trench Excavation	45,304	CY		$ 17.5	$ 7.5	$ -	$ 792,813	$ 339,777	**$ 1,132,590**
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	2,831	CY	$ 50	$ 25	$ 14	$ 141,574	$ 69,371	$ 39,641	**$ 250,585**
2.5	Supply & Install Thermal Backfill -conduit level	24,981	CY	$ 350	$ 245	$ 105	$ 8,743,261	$ 6,120,283	$ 2,622,978	**$ 17,486,522**
2.6	Supply & Install Concrete Cap (6")	0	CY	$ 200	$ 125	$ 50	$ -	$ -	$ -	**$ -**
2.7	Supply & Install Native Backfill -direct bury conduits sys	0	CY	$ 350	$ 245.0	$ 105.0	$ -	$ -	$ -	**$ -**
2.8	Supply & Install Ductbank Concrete	8,732	CY	$ 200	$ 125.0	$ 50.0	$ 1,746,331	$ 1,091,457	$ 436,583	**$ 3,274,370**
2.8	Conduit 8" HDPE	277,517	LF	$ 20.5	$ 5.7	$ 2.4	$ 5,700,195	$ 1,573,520	$ 674,366	**$ 7,948,081**
2.9	Conduit 4" HDPE	92,506	LF	$ 5.4	$ 4.20	$ 1.8	$ 496,755	$ 388,524	$ 166,510	**$ 1,051,789**
2.10	Conduit 2" HDPE	92,506	LF	$ 1.9	$ 3.15	$ 1.4	$ 176,686	$ 291,393	$ 124,883	**$ 592,961**
2.11	Warning Tape	46,253	LF	$ 0.15	$ 0.25	$ 0.10	$ 6,938	$ 11,563	$ 4,625	**$ 23,126**
2.12	Trench Box Shoring (Vault)	62	EA	$ -	$ 18,079	$ 27,119	$ -	$ 1,120,904	$ 1,681,356	**$ 2,802,260**
2.13	Splice Vault Excavation	20,150	CY		$ 17.5	$ 7.5	$ -	$ 352,625	$ 151,125	**$ 503,750**
2.14	Splice Vault Supply & Installation	62	EA	$ 35,000	$ 16,500	$ 38,500	$ 2,170,000	$ 1,023,000	$ 2,387,000	**$ 5,580,000**
2.15	Splice Vault Backfill	6,045	CY		$ 14.0	$ 6.0	$ -	$ 84,630	$ 36,270	**$ 120,900**
2.16	Jack and Bore along Route	104	LF	$ 1,600	$ 3,200	$ 3,200	$ 166,400	$ 332,800	$ 332,800	**$ 832,000**
2.17	HDD along Route	233	LF	$ 1,600	$ 3,200	$ 3,200	$ 372,800	$ 745,600	$ 745,600	**$ 1,864,000**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.18	Air Test Ducts	462,528	LF			$ 0.25	$ -	$ -	$ 115,632	**$ 115,632**
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	26,121	SY	$ 14.00	$ 14.00	$ 7.00	$ 365,688	$ 365,688	$ 182,844	**$ 914,221**
2.21	PVMT, AGGREGATE, 10", BASE COURSE	7,256	CY	$ 22.38	$ 23.50	$ 10.07	$ 162,383	$ 170,502	$ 73,072	**$ 405,958**
2.20	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	87	EA		$ 400	$ 1,200	$ -	$ 34,927	$ 104,780	**$ 139,706**
2.21	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	87	EA		$ 10	$ 15	$ -	$ 873	$ 1,310	**$ 2,183**
2.22	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	250	EA		$ 400	$ 1,200	$ -	$ 99,923	$ 299,769	**$ 399,692**
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		$ 478,296	$ 318,864	$ -	$ 478,296	$ 318,864	**$ 797,160**
2.24	Excess Materials Disposal to Certified Backfill	77,231	CY		$ 24.5	$ 10.5	$ -	$ 1,892,164	$ 810,927	**$ 2,703,091**
2.25	Rock Excavation and Removal	1	LS				$ -	$ -	$ -	**$ -**
2.26	Dewatering	62	EA			$ 4,000	$ -	$ -	$ 248,000	**$ 248,000**
2.27	Contaminated Water Treatment and Disposal	1	LS				$ -	$ -	$ -	**$ -**
2.28	Contaminated Spoils Disposal	1	LS				$ -	$ -	$ -	**$ -**
2.29	Excavated material - stockpile management	65,454	CF		$ 1.0	$ 0.5	$ -	$ 65,454	$ 32,727	**$ 98,180**
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							**$ 20,983,664**	**$ 18,881,946**	**$ 12,931,534**	**$ 52,797,144**
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.7	Y51 Circuit #1- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable	145,696	FT	$ 154	$ 92	$ 62	$ 22,437,233	$ 13,462,340	$ 8,974,893	**$ 44,874,467**
3.8	Y51 Circuit #1- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable	93	EA	$ 11,722	$ 8,205	$ 2,344	$ 1,090,146	$ 763,102	$ 218,029	**$ 2,071,277**
3.9	Y51 Circuit #1- Cable Termination- 345kV 4000kcmil Cu XLPE Cable	6	EA	$ 27,805	$ 8,205	$ 2,344	$ 166,830	$ 49,232	$ 14,066	**$ 230,129**
3.4	Y51 Circuit #2- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	$ 154	$ 92	$ 62	$ -	$ -	$ -	**$ -**
3.5	Y51 Circuit #2- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	$ 11,722	$ 8,205	$ 2,344	$ -	$ -	$ -	**$ -**
3.6	Y51 Circuit #2- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	$ 27,805	$ 8,205	$ 2,344	$ -	$ -	$ -	**$ -**
3.1	Y54 Circuit #1- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable	145,696	FT	$ 154	$ 92	$ 62	$ 22,437,233	$ 13,462,340	$ 8,974,893	**$ 44,874,467**
3.2	Y54 Circuit #1- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable	93	EA	$ 11,722	$ 8,205	$ 2,344	$ 1,090,146	$ 763,102	$ 218,029	**$ 2,071,277**
3.3	Y54 Circuit #1- Cable Termination- 345kV 4000kcmil Cu XLPE Cable	6	EA	$ 27,805	$ 8,205	$ 2,344	$ 166,830	$ 49,232	$ 14,066	**$ 230,129**
3.4	Y54 Circuit #2- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	$ 154	$ 92	$ 62	$ -	$ -	$ -	**$ -**
3.5	Y54 Circuit #2- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	$ 11,722	$ 8,205	$ 2,344	$ -	$ -	$ -	**$ -**
3.6	Y54 Circuit #2- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	$ 27,805	$ 8,205	$ 2,344	$ -	$ -	$ -	**$ -**
3.10	Link Box & MH racking	62	EA	$ 26,500	$ 18,550	$ 7,950	$ 1,643,028	$ 1,150,120	$ 492,908	**$ 3,286,056**
3.11	Fiber Optic Cable	97,131	FT	$ 7	$ 3	$ 2	$ 718,477	$ 323,504	$ 215,669	**$ 1,257,651**
3.12	Ground Continuity Conductor	97,131	FT	$ 13	$ 8	$ 5	$ 1,266,490	$ 731,104	$ 487,403	**$ 2,484,996**
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							**$ 51,016,413**	**$ 30,754,077**	**$ 19,609,958**	**$ 101,380,448**
BS3.1 Barrett to East Garden City 345kV Onshore UG Cables -Double circuits							**$ 74,009,261**	**$ 58,917,374**	**$ 36,449,326**	**$ 169,375,960**
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		$ 2,861,001	$ 1,907,334	$ -	$ 2,861,001	$ 1,907,334	**$ 4,768,335**
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		1,693,759.60		$ -	$ 1,693,760	$ -	**$ 1,693,760**
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		6,775,038.41		$ -	$ 6,775,038	$ -	**$ 6,775,038**
4.4	Utility PM and Project Oversite	1.0	LS		1,693,759.60		$ -	$ 1,693,760	$ -	**$ 1,693,760**
4.5	Site Accommodation, Facilities, Storage	1.0	LS	1,693,759.60			$ 1,693,760	$ -	$ -	**$ 1,693,760**
	Engineering									
4.6	Design Engineering	1.0	LS		$ 8,468,798	$ -	$ -	$ 8,468,798	$ -	**$ 8,468,798**
4.7	LiDAR /GPR	1.0	LS		$ 304,877	$ 203,251	$ -	$ 304,877	$ 203,251	**$ 508,128**
4.8	Geotech	9.0	Location		2,730.00	1,820.00	$ -	$ 24,570	$ 16,380	**$ 40,950**
4.9	Surveying/Staking	1	LS		$ 1,185,632		$ -	$ 1,185,632	$ -	**$ 1,185,632**
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		$ 40,000		$ -	$ 40,000	$ -	**$ 40,000**
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		$ 1,693,760		$ -	$ 1,693,760	$ -	**$ 1,693,760**
4.12	Environmental-special studies/investigation		LS		$ -		$ -	$ -	$ -	**$ -**
4.13	Warranties / LOC's	1	LS		$ 508,128		$ -	$ 508,128	$ -	**$ 508,128**
4.14	Laydown Lease & temporary easement	1	LS		$ 1,000,000		$ -	$ 1,000,000	$ -	**$ 1,000,000**
4.15	Real Estate (Acquisition)	1	LS		$ -	$ 63,579	$ -	$ -	$ 63,579	**$ 63,579**
4.16	Legal Fees (Real estate)	1.00	LS		-	1,907.37	$ -	$ -	$ 1,907	**$ 1,907**
4.17	Insurance	-	LS		-	-	$ -	$ -	$ -	**$ -**
4.18	Insurance (specialty, e.g. railroad)	-	Crossing			$ 1,000	$ -	$ -	$ -	**$ -**
4.19	Bonds	1	LS			**$ 6,000,000**	$ -	$ -	$ 6,000,000	**$ 6,000,000**
4.20	Sales Tax on Materials	8.88%	% of material cost	$ 74,009,260.95			$ 6,572,022	$ -	$ -	**$ 6,572,022**
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			$ 169,376	$ -	$ -	$ 169,376	**$ 169,376**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							**$ 8,265,782**	**$ 26,249,323**	**$ 8,361,827**	**$ 42,876,932**

Propel NY - TO49 BS3

BS3.2 East Garden City To Tremont 345kV Onshore UG Cables -single circuit

Total: $ 546,334,828

Propel NY - TO49 BS3				
	Material Supply	*Labor Supply*	*Equip Supply*	*Total*
BS3.2 East Garden City To Tremont 345kV Onshore UG Cables -single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	$ 5,806,464	$ 28,498,838	$ 11,428,426	$ 45,733,728
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	$ 41,342,612	$ 48,430,743	$ 37,211,934	$ 126,985,289
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	$ 67,846,853	$ 40,967,970	$ 26,189,678	$ 135,004,501
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	$ 13,288,874	$ 48,238,681	$ 16,578,608	$ 78,106,163
SUBTOTAL (Costs):	**$ 128,284,803**	**$ 166,136,233**	**$ 91,408,645**	**$ 385,829,681**
CONTRACTOR MARK-UP (OH&P)	**$ 23,091,265**	**$ 29,904,522**	**$ 16,453,556**	**$ 69,449,343**
SUBTOTAL:	**$ 151,376,067**	**$ 196,040,755**	**$ 107,862,202**	**$ 455,279,024**
CONTINGENCY ON ENTIRE PROJECT	**$ 30,275,213**	**$ 39,208,151**	**$ 21,572,440**	**$ 91,055,805**
TOTAL:	**$ 181,651,281**	**$ 235,248,906**	**$ 129,434,642**	**$ 546,334,828**

Description of Work: The proposed 345 kV electric underground transmission line extending from the Barrett Substation in the Hamlet of Oceanside in the Town of Hempstead in Nassau County to the Tremont Substation in the Bronx, New York City, Bronx County with a connection point at the East Garden City Substation in the Hamlet of Uniondale in the Town of Hempstead, Nassau County. The proposed route will be approximately 32.3 miles, utilizing 4000 kcmil cross-linked polyethylene ("XLPE")cable for the onshore portions of the route and 5000 kcmil cable in a marine crossing by Horizontal Directional Drill ("HDD") or equivalent trenchless technique.
Barrett to EGC section is 23.46 miles

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
BS3.2 East Garden City To Tremont 345kV Onshore UG Cables -single circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**
1.2	Existing Utility Conflict and Relocation	23.46	Mile		$ 700,000	$ 300,000	$ -	$ 16,422,000	$ 7,038,000	**$ 23,460,000**
1.3	Flaggers	720	DAY	$ 1,600	$ 4,800	$ 1,600	$ 1,152,000	$ 3,456,000	$ 1,152,000	**$ 5,760,000**
1.4	K Rail / Lane Control / Metal Plates	123,869	LF	$ 30	$ 18	$ 12	$ 3,716,064	$ 2,229,638	$ 1,486,426	**$ 7,432,128**
1.5	Police Support	28,800.0	HR		$ 120	$ 27	$ -	$ 3,456,000	$ 777,600	**$ 4,233,600**
1.6	Additional Traffic Management		LS				$ -	$ -	$ -	**$ -**
1.7	Access / Clearing Costs		LS				$ -	$ -	$ -	**$ -**
1.8	Snow Removal	120.0	DAY		$ 1,000	$ 300	$ -	$ 120,000	$ 36,000	**$ 156,000**
1.9	Existing Utility Protection	23.46	Mile	$ 40,000	$ 120,000	$ 40,000	$ 938,400	$ 2,815,200	$ 938,400	**$ 4,692,000**
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							**$ 5,806,464**	**$ 28,498,838**	**$ 11,428,426**	**$ 45,733,728**
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	23.46	Miles		$ 139,800	$ 93,200	$ -	$ 3,279,708	$ 2,186,472	**$ 5,466,180**
2.2	Formwork in Trench	878,054	SF	$ 2	$ 1.5	$ 0.5	$ 1,756,109	$ 1,317,082	$ 439,027	**$ 3,512,218**
2.3	Trench Excavation	75,773	CY		$ 17.5	$ 7.5	$ -	$ 1,326,025	$ 568,296	**$ 1,894,321**
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	4,736	SF	$ 50	$ 25	$ 14	$ 236,790	$ 116,027	$ 66,301	**$ 419,119**
2.5	Supply & Install Thermal Backfill	41,830	CY	$ 350	$ 245	$ 105	$ 14,640,338	$ 10,248,236	$ 4,392,101	**$ 29,280,675**
2.6	Supply & Install Concrete Cap (6")	0	CY	$ 200	$ 125	$ 50	$ -	$ -	$ -	**$ -**
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		$ 14.0	$ 6.0	$ -	$ -	$ -	**$ -**
2.8	Supply & Install Ductbank Concrete	16,903	CY	$ 200	$ 125	$ 50	$ 3,380,509	$ 2,112,818	$ 845,127	**$ 6,338,455**
2.9	Conduit 8" HDPE	371,606	LF	$ 20.5	$ 5.7	$ 2.4	$ 7,632,795	$ 2,107,008	$ 903,004	**$ 10,642,807**
2.10	Conduit 4" HDPE	123,869	LF	$ 5.4	$ 4.20	$ 1.8	$ 665,175	$ 520,249	$ 222,964	**$ 1,408,388**
2.11	Conduit 2" HDPE	123,869	LF	$ 1.9	$ 3.15	$ 1.4	$ 236,589	$ 390,187	$ 167,223	**$ 793,999**
2.12	Warning Tape	123,869	LF	$ 0.15	$ 0.25	$ 0.10	$ 18,580	$ 30,967	$ 12,387	**$ 61,934**
2.13	Trench Box Shoring (Vault)	80	EA	$ -	$ 18,079	$ 27,119	$ -	$ 1,446,328	$ 2,169,492	**$ 3,615,819**
2.14	Splice Vault Excavation	26,000	CY		$ 17.5	$ 7.5	$ -	$ 455,000	$ 195,000	**$ 650,000**
2.15	Splice Vault Supply & Installation	80	EA	$ 35,000	$ 16,500	$ 38,500	$ 2,800,000	$ 1,320,000	$ 3,080,000	**$ 7,200,000**
2.16	Splice Vault Backfill	7,800	CY		$ 14.0	$ 6.0	$ -	$ 109,200	$ 46,800	**$ 156,000**
2.17	Jack and Bore along Route	240	LF	$ 800	$ 1,600	$ 1,600	$ 192,000	$ 384,000	$ 384,000	**$ 960,000**
2.18	HDD along Route	11,072	LF	$ 800	$ 1,600	$ 1,600	$ 8,857,600	$ 17,715,200	$ 17,715,200	**$ 44,288,000**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.19	Air Test Ducts	619,344	LF			$ 0.25	$ -	$ -	$ 154,836	**$ 154,836**
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	45,810	SY	$ 14.00	$ 14.00	$ 7.00	$ 641,340	$ 641,340	$ 320,670	**$ 1,603,351**
2.21	PVMT, AGGREGATE, 10", BASE COURSE	12,725	CY	$ 22.38	$ 23.50	$ 10.07	$ 284,786	$ 299,025	$ 128,154	**$ 711,964**
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	169	EA		$ 400	$ 1,200	$ -	$ 67,610	$ 202,831	**$ 270,441**
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	169	EA		$ 10	$ 15	$ -	$ 1,690	$ 2,535	**$ 4,226**
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	418	EA		$ 400	$ 1,200	$ -	$ 167,318	$ 501,954	**$ 669,273**
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		$ 1,280,916	$ 853,944	$ -	$ 1,280,916	$ 853,944	**$ 2,134,860**
2.26	Excess Materials Disposal to Certified Backfill	122,165	CY		$ 24.5	$ 10.5	$ -	$ 2,993,035	$ 1,282,729	**$ 4,275,764**
2.27	Rock Excavation and Removal	1	LS				$ -	$ -	$ -	**$ -**
2.28	Dewatering	80	EA			$ 4,000	$ -	$ -	$ 320,000	**$ 320,000**
2.29	Contaminated Water Treatment and Disposal	1	LS				$ -	$ -	$ -	**$ -**
2.30	Contaminated Spoils Disposal	1	LS				$ -	$ -	$ -	**$ -**
2.31	Excavated material - stockpile management	101,773	CF		$ 1.0	$ 0.5	$ -	$ 101,773	$ 50,886	**$ 152,659**
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							**$ 41,342,612**	**$ 48,430,743**	**$ 37,211,934**	**$ 126,985,289**
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable	390,187	FT	$ 154	$ 92	$ 62	$ 60,088,755	$ 36,053,253	$ 24,035,502	**$ 120,177,510**
3.2	Circuit #1- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable	240	EA	$ 11,722	$ 8,205	$ 2,344	$ 2,813,280	$ 1,969,296	$ 562,656	**$ 5,345,232**
3.3	Circuit #1- Cable Termination- 345kV 4000kcmil Cu XLPE Cable	6	EA	$ 27,805	$ 8,205	$ 2,344	$ 166,830	$ 49,232	$ 14,066	**$ 230,129**
3.4	Circuit #2- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	$ 154	$ 92	$ 62	$ -	$ -	$ -	**$ -**
3.5	Circuit #2- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	$ 11,722	$ 8,205	$ 2,344	$ -	$ -	$ -	**$ -**
3.6	Circuit #2- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	$ 27,805	$ 8,205	$ 2,344	$ -	$ -	$ -	**$ -**
3.7	Circuit #3- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	$ 154	$ 92	$ 62	$ -	$ -	$ -	**$ -**
3.8	Circuit #3- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	$ 11,722	$ 8,205	$ 2,344	$ -	$ -	$ -	**$ -**
3.9	Circuit #3- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	$ 27,805	$ 8,205	$ 2,344	$ -	$ -	$ -	**$ -**
3.10	Link Box & MH racking	80	EA	$ 26,500	$ 18,550	$ 7,950	$ 2,120,036	$ 1,484,025	$ 636,011	**$ 4,240,072**
3.11	Fiber Optic Cable	130,062	FT	$ 7	$ 3	$ 2	$ 962,070	$ 433,185	$ 288,790	**$ 1,684,046**
3.12	Ground Continuity Conductor	130,062	FT	$ 13	$ 8	$ 5	$ 1,695,882	$ 978,978	$ 652,652	**$ 3,327,512**
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							$ 67,846,853	$ 40,967,970	$ 26,189,678	**$ 135,004,501**
BS3.2 East Garden City To Tremont 345kV Onshore UG Cables -single circuit							$ 114,995,929	$ 117,897,551	$ 74,830,037	**$ 307,723,518**
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		$ 5,781,828	$ 3,854,552	$ -	$ 5,781,828	$ 3,854,552	**$ 9,636,379**
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		3,077,235.18		$ -	$ 3,077,235	$ -	**$ 3,077,235**
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		12,308,940.71		$ -	$ 12,308,941	$ -	**$ 12,308,941**
4.4	Utility PM and Project Oversite	1.0	LS		3,077,235.18		$ -	$ 3,077,235	$ -	**$ 3,077,235**
4.5	Site Accommodation, Facilities, Storage	1.0	LS	3,077,235.18			$ 3,077,235	$ -	$ -	**$ 3,077,235**
	Engineering									
4.6	Design Engineering	1.0	LS		$ 15,386,176	$ -	$ -	$ 15,386,176	$ -	**$ 15,386,176**
4.7	LiDAR /GPR	1.0	LS		$ 553,902	$ 369,268	$ -	$ 553,902	$ 369,268	**$ 923,171**
4.8	Geotech	24.0	Location		2,730.00	1,820.00	$ -	$ 65,520	$ 43,680	**$ 109,200**
4.9	Surveying/Staking	1	LS		$ 1,292,439		$ -	$ 1,292,439	$ -	**$ 1,292,439**
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		$ 20,000		$ -	$ 20,000	$ -	**$ 20,000**
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		$ 3,077,235		$ -	$ 3,077,235	$ -	**$ 3,077,235**
4.12	Environmental-special studies/investigation	1	LS		$ 175,000		$ -	$ 175,000	$ -	**$ 175,000**
4.13	Warranties / LOC's	1	LS		$ 923,171		$ -	$ 923,171	$ -	**$ 923,171**
4.14	Laydown Lease & temporary easement	1	LS		$ 2,500,000		$ -	$ 2,500,000	$ -	**$ 2,500,000**
4.15	Real Estate (Acquisition)	1	LS		$ -	$ 1,050,859	$ -	$ -	$ 1,050,859	**$ 1,050,859**
4.16	Legal Fees (Real estate)	1.00	LS		-	31,525.77	$ -	$ -	$ 31,526	**$ 31,526**
4.17	Insurance	-	LS		-	-	$ -	$ -	$ -	**$ -**
4.18	Insurance (specialty, e.g. railroad)	1	Crossing			$ 1,000	$ -	$ -	$ 1,000	**$ 1,000**
4.19	Bonds	1	LS			$ 10,920,000	$ -	$ -	$ 10,920,000	**$ 10,920,000**
4.20	Sales Tax on Materials	8.88%	% of material cost	$ 114,995,929.25			$ 10,211,639	$ -	$ -	**$ 10,211,639**
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			$ 307,724	$ -	$ -	$ 307,724	**$ 307,724**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							**$ 13,288,874**	**$ 48,238,681**	**$ 16,578,608**	**$ 78,106,163**

Propel NY - TO49 BS3

BS3.3 Ruland to East Garden City 345kV Onshore UG Cables -single circuit

Total: $ 14,344,237

Propel NY - TO49 BS3	*Material Supply*	*Labor Supply*	*Equip Supply*	*Total*
BS3.3 Ruland to East Garden City 345kV Onshore UG Cables -single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	$ 156,992	$ 788,475	$ 313,717	$ 1,259,184
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	$ 950,137	$ 904,197	$ 599,636	$ 2,453,970
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	$ 2,036,843	$ 1,184,836	$ 729,753	$ 3,951,432
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	$ 355,831	$ 1,668,541	$ 441,153	$ 2,465,524
SUBTOTAL (Costs):	$ 3,499,803	$ 4,546,049	$ 2,084,259	$ 10,130,111
CONTRACTOR MARK-UP (OH&P)	$ 629,965	$ 818,289	$ 375,167	$ 1,823,420
SUBTOTAL:	$ 4,129,768	$ 5,364,338	$ 2,459,425	$ 11,953,531
CONTINGENCY ON ENTIRE PROJECT	$ 825,954	$ 1,072,868	$ 491,885	$ 2,390,706
TOTAL:	$ 4,955,721	$ 6,437,206	$ 2,951,310	$ 14,344,237

Description of Work: reconductoring/conversion of an existing LIPA 138 kV circuit between the East Garden City Substation in the Hamlet of Uniondale in the Town of Hempstead in Nassau County, to the Ruland Road Substation in the Hamlet of Melville in the Town of Huntington in Suffolk County, via the Newbridge Road Substation in the Hamlet of East Meadow in the Town of Hempstead in Nassau County. A new 0.6 mile 345 kV line will be spliced to the existing line, creating a continuous 345 kV feed between the substations. The routing would be the existing underground routing using the LIPA-owned transmission corridors.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
BS3.3 Ruland to East Garden City 345kV Onshore UG Cables -single circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**
1.2	Existing Utility Conflict and Relocation	0.63	Mile		$ 700,000	$ 300,000	$ -	$ 441,000	$ 189,000	**$ 630,000**
1.3	Flaggers	20	DAY	$ 1,600	$ 4,800	$ 1,600	$ 32,000	$ 96,000	$ 32,000	**$ 160,000**
1.4	K Rail / Lane Control / Metal Plates	3,326	LF	$ 30	$ 18	$ 12	$ 99,792	$ 59,875	$ 39,917	**$ 199,584**
1.5	Police Support	800.0	HR		$ 120	$ 27	$ -	$ 96,000	$ 21,600	**$ 117,600**
1.6	Additional Traffic Management		LS				$ -	$ -	$ -	**$ -**
1.7	Access / Clearing Costs		LS				$ -	$ -	$ -	**$ -**
1.8	Snow Removal	20.0	DAY		$ 1,000	$ 300	$ -	$ 20,000	$ 6,000	**$ 26,000**
1.9	Existing Utility Protection	0.63	Mile	$ 40,000	$ 120,000	$ 40,000	$ 25,200	$ 75,600	$ 25,200	**$ 126,000**
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							**$ 156,992**	**$ 788,475**	**$ 313,717**	**$ 1,259,184**
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	0.63	Miles		$ 139,800	$ 93,200	$ -	$ 88,074	$ 58,716	**$ 146,790**
2.2	Formwork in Trench	25,771	SF	$ 2	$ 1.5	$ 0.5	$ 51,542	$ 38,657	$ 12,886	**$ 103,085**
2.3	Trench Excavation	2,224	CY		$ 17.5	$ 7.5	$ -	$ 38,919	$ 16,680	**$ 55,599**
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	139	SF	$ 50	$ 25	$ 14	$ 6,950	$ 3,405	$ 1,946	**$ 12,301**
2.5	Supply & Install Thermal Backfill	1,228	CY	$ 350	$ 245	$ 105	$ 429,699	$ 300,789	$ 128,910	**$ 859,398**
2.6	Supply & Install Concrete Cap (6")	0	CY	$ 200	$ 125	$ 50	$ -	$ -	$ -	**$ -**
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		$ 14.0	$ 6.0	$ -	$ -	$ -	**$ -**
2.8	Supply & Install Ductbank Concrete	496	CY	$ 200	$ 125.0	$ 50.0	$ 99,219	$ 62,012	$ 24,805	**$ 186,036**
2.9	Conduit 8" HDPE	9,979	LF	$ 20.5	$ 5.7	$ 2.4	$ 204,973	$ 56,582	$ 24,249	**$ 285,804**
2.10	Conduit 4" HDPE	3,326	LF	$ 5.4	$ 4.20	$ 1.8	$ 17,863	$ 13,971	$ 5,988	**$ 37,821**
2.11	Conduit 2" HDPE	3,326	LF	$ 1.9	$ 3.15	$ 1.4	$ 6,353	$ 10,478	$ 4,491	**$ 21,322**
2.12	Warning Tape	3,326	LF	$ 0.15	$ 0.25	$ 0.10	$ 499	$ 832	$ 333	**$ 1,663**
2.13	Trench Box Shoring (Vault)	3	EA	$ -	$ 18,079	$ 27,119	$ -	$ 54,237	$ 81,356	**$ 135,593**
2.14	Splice Vault Excavation	975	CY		$ 17.5	$ 7.5	$ -	$ 17,063	$ 7,313	**$ 24,375**
2.15	Splice Vault Supply & Installation	3	EA	$ 35,000	$ 16,500	$ 38,500	$ 105,000	$ 49,500	$ 115,500	**$ 270,000**
2.16	Splice Vault Backfill	293	CY		$ 14.0	$ 6.0	$ -	$ 4,095	$ 1,755	**$ 5,850**
2.17	Jack and Bore along Route	0	LF	$ 800	$ 1,600	$ 1,600	$ -	$ -	$ -	**$ -**
2.18	HDD along Route	0	LF	$ 800	$ 1,600	$ 1,600	$ -	$ -	$ -	**$ -**
2.19	Air Test Ducts	16,632	LF			$ 0.25	$ -	$ -	$ 4,158	**$ 4,158**
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	1,387	SY	$ 14.00	$ 14.00	$ 7.00	$ 19,417	$ 19,417	$ 9,708	**$ 48,542**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.21	PVMT, AGGREGATE, 10", BASE COURSE	385	CY	$ 22.38	$ 23.50	$ 10.07	$ 8,622	$ 9,053	$ 3,880	**$ 21,555**
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	5	EA		$ 400	$ 1,200	$ -	$ 1,984	$ 5,953	**$ 7,938**
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	5	EA		$ 10	$ 15	$ -	$ 50	$ 74	**$ 124**
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	12	EA		$ 400	$ 1,200	$ -	$ 4,911	$ 14,733	**$ 19,643**
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		$ 34,398	$ 22,932	$ -	$ 34,398	$ 22,932	**$ 57,330**
2.26	Excess Materials Disposal to Certified Backfill	3,778	CY		$ 24.5	$ 10.5	$ -	$ 92,571	$ 39,673	**$ 132,244**
2.27	Rock Excavation and Removal	1	LS				$ -	$ -	$ -	**$ -**
2.28	Dewatering	3	EA			$ 4,000	$ -	$ -	$ 12,000	**$ 12,000**
2.29	Contaminated Water Treatment and Disposal	1	LS				$ -	$ -	$ -	**$ -**
2.30	Contaminated Spoils Disposal	1	LS				$ -	$ -	$ -	**$ -**
2.31	Excavated material - stockpile management	3,199	CF		$ 1.0	$ 0.5	$ -	$ 3,199	$ 1,599	**$ 4,798**
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							**$ 950,137**	**$ 904,197**	**$ 599,636**	**$ 2,453,970**
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable	10,478	FT	$ 154	$ 92	$ 62	$ 1,613,637	$ 968,182	$ 645,455	**$ 3,227,273**
3.2	Circuit #1- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable	9	EA	$ 11,722	$ 8,205	$ 2,344	$ 105,498	$ 73,849	$ 21,100	**$ 200,446**
3.3	Circuit #1- Cable Termination- 345kV 4000kcmil Cu XLPE Cable	6	EA	$ 27,805	$ 8,205	$ 2,344	$ 166,830	$ 49,232	$ 14,066	**$ 230,129**
3.4	Circuit #2- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	$ 154	$ 92	$ 62	$ -	$ -	$ -	**$ -**
3.5	Circuit #2- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	$ 11,722	$ 8,205	$ 2,344	$ -	$ -	$ -	**$ -**
3.6	Circuit #2- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	$ 27,805	$ 8,205	$ 2,344	$ -	$ -	$ -	**$ -**
3.7	Circuit #3- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	$ 154	$ 92	$ 62	$ -	$ -	$ -	**$ -**
3.8	Circuit #3- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	$ 11,722	$ 8,205	$ 2,344	$ -	$ -	$ -	**$ -**
3.9	Circuit #3- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	$ 27,805	$ 8,205	$ 2,344	$ -	$ -	$ -	**$ -**
3.10	Link Box & MH racking	3	EA	$ 26,500	$ 18,550	$ 7,950	$ 79,501	$ 55,651	$ 23,850	**$ 159,003**
3.11	Fiber Optic Cable	3,493	FT	$ 7	$ 3	$ 2	$ 25,836	$ 11,633	$ 7,755	**$ 45,224**
3.12	Ground Continuity Conductor	3,493	FT	$ 13	$ 8	$ 5	$ 45,542	$ 26,290	$ 17,526	**$ 89,358**
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							**$ 2,036,843**	**$ 1,184,836**	**$ 729,753**	**$ 3,951,432**
BS3.3 Ruland to East Garden City 345kV Onshore UG Cables -single circuit							**$ 3,143,972**	**$ 2,877,508**	**$ 1,643,106**	**$ 7,664,587**
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		$ 135,618	$ 90,412	$ -	$ 135,618	$ 90,412	**$ 226,031**
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		76,645.87		$ -	$ 76,646	$ -	**$ 76,646**
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		306,583.47		$ -	$ 306,583	$ -	**$ 306,583**
4.4	Utility PM and Project Oversite	1.0	LS		76,645.87		$ -	$ 76,646	$ -	**$ 76,646**
4.5	Site Accommodation, Facilities, Storage	1.0	LS	76,645.87			$ 76,646	$ -	$ -	**$ 76,646**
	Engineering									
4.6	Design Engineering	1.0	LS		$ 383,229	$ -	$ -	$ 383,229	$ -	**$ 383,229**
4.7	LiDAR /GPR	1.0	LS		$ 13,796	$ 9,198	$ -	$ 13,796	$ 9,198	**$ 22,994**
4.8	Geotech	1.0	Location		2,730.00	1,820.00	$ -	$ 2,730	$ 1,820	**$ 4,550**
4.9	Surveying/Staking	1	LS		$ 53,652		$ -	$ 53,652	$ -	**$ 53,652**
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		$ 20,000		$ -	$ 20,000	$ -	**$ 20,000**
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		$ 76,646		$ -	$ 76,646	$ -	**$ 76,646**
4.12	Environmental-special studies/investigation	1	LS		$ -		$ -	$ -	$ -	**$ -**
4.13	Warranties / LOC's	1	LS		$ 22,994		$ -	$ 22,994	$ -	**$ 22,994**
4.14	Laydown Lease & temporary easement	1	LS		$ 500,000		$ -	$ 500,000	$ -	**$ 500,000**
4.15	Real Estate (Acquisition)	1	LS		$ -	$ 50,542	$ -	$ -	$ 50,542	**$ 50,542**
4.16	Legal Fees (Real estate)	1.00	LS		-	1,516.26	$ -	$ -	$ 1,516	**$ 1,516**
4.17	Insurance	-	LS		-	-	$ -	$ -	$ -	**$ -**
4.18	Insurance (specialty, e.g. railroad)	-	Crossing			$ 1,000	$ -	$ -	$ -	**$ -**
4.19	Bonds	100.00%	LS			$ 280,000	$ -	$ -	$ 280,000	**$ 280,000**
4.20	Sales Tax on Materials	0	% of material cost	$ 3,143,972			$ 279,185	$ -	$ -	**$ 279,185**
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			$ 7,665	$ -	$ -	$ 7,665	**$ 7,665**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							**$ 355,831**	**$ 1,668,541**	**$ 441,153**	**$ 2,465,524**

Propel NY - TO49 BS3

BS3.4 East Garden City to Shore Road 345kV Onshore UG Cables -single circuit

Total: $ 211,488,737

Propel NY - TO49 BS3				
	Material Supply	*Labor Supply*	*Equip Supply*	*Total*
BS3.4 East Garden City to Shore Road 345kV Onshore UG Cables -single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	$ 2,545,600	$ 12,531,160	$ 5,016,040	$ 20,092,800
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	$ 15,311,834	$ 14,711,755	$ 9,392,576	$ 39,416,166
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	$ 29,740,064	$ 17,929,222	$ 11,451,257	$ 59,120,543
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	$ 5,412,953	$ 19,316,359	$ 5,997,632	$ 30,726,945
SUBTOTAL (Costs):	$ 53,010,451	$ 64,488,496	$ 31,857,505	$ 149,356,453
CONTRACTOR MARK-UP (OH&P)	$ 9,541,881	$ 11,607,929	$ 5,734,351	$ 26,884,162
SUBTOTAL:	$ 62,552,333	$ 76,096,426	$ 37,591,856	$ 176,240,614
CONTINGENCY ON ENTIRE PROJECT	$ 12,510,467	$ 15,219,285	$ 7,518,371	$ 35,248,123
TOTAL:	$ 75,062,799	$ 91,315,711	$ 45,110,228	$ 211,488,737

Description of Work: The proposed 345 kV and 138 kV electric underground transmission lines extending from the East Garden City Substation in the Hamlet of Uniondale in the Town of Hempstead in Nassau County to the Shore Road Substation in the Glenwood Landing Hamlet in Nassau County. The proposed route will be approximately 10.3 miles, utilizing 4000 kcmil XLPE cable for the route.

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
BS3.4 East Garden City to Shore Road 345kV Onshore UG Cables -single circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**
1.2	Existing Utility Conflict and Relocation	10.25	Mile		$ 700,000	$ 300,000	$ -	$ 7,175,000	$ 3,075,000	**$ 10,250,000**
1.3	Flaggers	320	DAY	$ 1,600	$ 4,800	$ 1,600	$ 512,000	$ 1,536,000	$ 512,000	**$ 2,560,000**
1.4	K Rail / Lane Control / Metal Plates	54,120	LF	$ 30	$ 18	$ 12	$ 1,623,600	$ 974,160	$ 649,440	**$ 3,247,200**
1.5	Police Support	12,800.0	HR		$ 120	$ 27	$ -	$ 1,536,000	$ 345,600	**$ 1,881,600**
1.6	Additional Traffic Management		LS				$ -	$ -	$ -	**$ -**
1.7	Access / Clearing Costs		LS				$ -	$ -	$ -	**$ -**
1.8	Snow Removal	80.0	DAY		$ 1,000	$ 300	$ -	$ 80,000	$ 24,000	**$ 104,000**
1.9	Existing Utility Protection	10.25	Mile	$ 40,000	$ 120,000	$ 40,000	$ 410,000	$ 1,230,000	$ 410,000	**$ 2,050,000**
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							**$ 2,545,600**	**$ 12,531,160**	**$ 5,016,040**	**$ 20,092,800**
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	10.25	Miles		$ 139,800	$ 93,200	$ -	$ 1,432,950	$ 955,300	**$ 2,388,250**
2.2	Formwork in Trench	419,712	SF	$ 2	$ 1.5	$ 0.5	$ 839,424	$ 629,568	$ 209,856	**$ 1,678,848**
2.3	Trench Excavation	36,220	CY		$ 17.5	$ 7.5	$ -	$ 633,843	$ 271,647	**$ 905,490**
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	2,264	SF	$ 50	$ 25	$ 14	$ 113,186	$ 55,461	$ 31,692	**$ 200,340**
2.5	Supply & Install Thermal Backfill	19,995	CY	$ 350	$ 245	$ 105	$ 6,998,115	$ 4,898,680	$ 2,099,434	**$ 13,996,229**
2.6	Supply & Install Concrete Cap (6")	0	CY	$ 200	$ 125	$ 50	$ -	$ -	$ -	**$ -**
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		$ 14.0	$ 6.0	$ -	$ -	$ -	**$ -**
2.8	Supply & Install Ductbank Concrete	8,079	CY	$ 200	$ 125.0	$ 50.0	$ 1,615,891	$ 1,009,932	$ 403,973	**$ 3,029,796**
2.9	Conduit 8" HDPE	162,360	LF	$ 20.5	$ 5.7	$ 2.4	$ 3,334,874	$ 920,581	$ 394,535	**$ 4,649,990**
2.10	Conduit 4" HDPE	54,120	LF	$ 5.4	$ 4.20	$ 1.8	$ 290,624	$ 227,304	$ 97,416	**$ 615,344**
2.11	Conduit 2" HDPE	54,120	LF	$ 1.9	$ 3.15	$ 1.4	$ 103,369	$ 170,478	$ 73,062	**$ 346,909**
2.12	Warning Tape	54,120	LF	$ 0.15	$ 0.25	$ 0.10	$ 8,118	$ 13,530	$ 5,412	**$ 27,060**
2.13	Trench Box Shoring (Vault)	35	EA	$ -	$ 18,079	$ 27,119	$ -	$ 632,768	$ 949,153	**$ 1,581,921**
2.14	Splice Vault Excavation	11,375	CY		$ 17.5	$ 7.5	$ -	$ 199,063	$ 85,313	**$ 284,375**
2.15	Splice Vault Supply & Installation	35	EA	$ 35,000	$ 16,500	$ 38,500	$ 1,225,000	$ 577,500	$ 1,347,500	**$ 3,150,000**
2.16	Splice Vault Backfill	3,413	CY		$ 14.0	$ 6.0	$ -	$ 47,775	$ 20,475	**$ 68,250**
2.17	Jack and Bore along Route	113	LF	$ 800	$ 1,600	$ 1,600	$ 90,400	$ 180,800	$ 180,800	**$ 452,000**
2.18	HDD along Route	318	LF	$ 800	$ 1,600	$ 1,600	$ 254,400	$ 508,800	$ 508,800	**$ 1,272,000**
2.19	Air Test Ducts	270,600	LF			$ 0.25	$ -	$ -	$ 67,650	**$ 67,650**
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	21,687	SY	$ 14.00	$ 14.00	$ 7.00	$ 303,614	$ 303,614	$ 151,807	**$ 759,034**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.21	PVMT, AGGREGATE, 10", BASE COURSE	6,024	CY	$ 22.38	$ 23.50	$ 10.07	$ 134,819	$ 141,560	$ 60,668	**$ 337,047**
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	81	EA		$ 400	$ 1,200	$ -	$ 32,318	$ 96,953	**$ 129,271**
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	81	EA		$ 10	$ 15	$ -	$ 808	$ 1,212	**$ 2,020**
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	200	EA		$ 400	$ 1,200	$ -	$ 79,978	$ 239,935	**$ 319,914**
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		$ 559,650	$ 373,100	$ -	$ 559,650	$ 373,100	**$ 932,750**
2.26	Excess Materials Disposal to Certified Backfill	57,437	CY		$ 24.5	$ 10.5	$ -	$ 1,407,200	$ 603,086	**$ 2,010,285**
2.27	Rock Excavation and Removal	1	LS				$ -	$ -	$ -	**$ -**
2.28	Dewatering	35	EA			$ 4,000	$ -	$ -	$ 140,000	**$ 140,000**
2.29	Contaminated Water Treatment and Disposal	1	LS				$ -	$ -	$ -	**$ -**
2.30	Contaminated Spoils Disposal	1	LS				$ -	$ -	$ -	**$ -**
2.31	Excavated material - stockpile management	47,595	CF		$ 1.0	$ 0.5	$ -	$ 47,595	$ 23,797	**$ 71,392**
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							**$ 15,311,834**	**$ 14,711,755**	**$ 9,392,576**	**$ 39,416,166**
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable	170,478	FT	$ 154	$ 92	$ 62	$ 26,253,612	$ 15,752,167	$ 10,501,445	**$ 52,507,224**
3.2	Circuit #1- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable	105	EA	$ 11,722	$ 8,205	$ 2,344	$ 1,230,810	$ 861,567	$ 246,162	**$ 2,338,539**
3.3	Circuit #1- Cable Termination- 345kV 4000kcmil Cu XLPE Cable	6	EA	$ 27,805	$ 8,205	$ 2,344	$ 166,830	$ 49,232	$ 14,066	**$ 230,129**
3.4	Circuit #2- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	$ 154	$ 92	$ 62	$ -	$ -	$ -	**$ -**
3.5	Circuit #2- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	$ 11,722	$ 8,205	$ 2,344	$ -	$ -	$ -	**$ -**
3.6	Circuit #2- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	$ 27,805	$ 8,205	$ 2,344	$ -	$ -	$ -	**$ -**
3.7	Circuit #3- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	$ 154	$ 92	$ 62	$ -	$ -	$ -	**$ -**
3.8	Circuit #3- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	$ 11,722	$ 8,205	$ 2,344	$ -	$ -	$ -	**$ -**
3.9	Circuit #3- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	$ 27,805	$ 8,205	$ 2,344	$ -	$ -	$ -	**$ -**
3.10	Link Box & MH racking	35	EA	$ 26,500	$ 18,550	$ 7,950	$ 927,516	$ 649,261	$ 278,255	**$ 1,855,032**
3.11	Fiber Optic Cable	56,826	FT	$ 7	$ 3	$ 2	$ 420,342	$ 189,265	$ 126,176	**$ 735,783**
3.12	Ground Continuity Conductor	56,826	FT	$ 13	$ 8	$ 5	$ 740,954	$ 427,729	$ 285,153	**$ 1,453,836**
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							$ 29,740,064	$ 17,929,222	$ 11,451,257	**$ 59,120,543**
BS3.4 East Garden City to Shore Road 345kV Onshore UG Cables -single circuit							$ 47,597,498	$ 45,172,137	$ 25,859,873	**$ 118,629,508**
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		$ 2,130,960	$ 1,420,640	$ -	$ 2,130,960	$ 1,420,640	**$ 3,551,600**
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		1,186,295.08		$ -	$ 1,186,295	$ -	**$ 1,186,295**
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		4,745,180.33		$ -	$ 4,745,180	$ -	**$ 4,745,180**
4.4	Utility PM and Project Oversite	1.0	LS		1,186,295.08		$ -	$ 1,186,295	$ -	**$ 1,186,295**
4.5	Site Accommodation, Facilities, Storage	1.0	LS	1,186,295.08			$ 1,186,295	$ -	$ -	**$ 1,186,295**
	Engineering									
4.6	Design Engineering	1.0	LS		$ 5,931,475	$ -	$ -	$ 5,931,475	$ -	**$ 5,931,475**
4.7	LiDAR /GPR	1.0	LS		$ 213,533	$ 142,355	$ -	$ 213,533	$ 142,355	**$ 355,889**
4.8	Geotech	11.0	Location		2,730.00	1,820.00	$ -	$ 30,030	$ 20,020	**$ 50,050**
4.9	Surveying/Staking	1	LS		$ 830,407		$ -	$ 830,407	$ -	**$ 830,407**
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		$ 20,000		$ -	$ 20,000	$ -	**$ 20,000**
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		$ 1,186,295		$ -	$ 1,186,295	$ -	**$ 1,186,295**
4.12	Environmental-special studies/investigation	-	LS		$ -		$ -	$ -	$ -	**$ -**
4.13	Warranties / LOC's	1	LS		$ 355,889		$ -	$ 355,889	$ -	**$ 355,889**
4.14	Laydown Lease & temporary easement	1	LS		$ 1,500,000		$ -	$ 1,500,000	$ -	**$ 1,500,000**
4.15	Real Estate (Acquisition)	1	LS		$ -	$ 72,803	$ -	$ -	$ 72,803	**$ 72,803**
4.16	Legal Fees (Real estate)	1.00	LS		-	2,184.09	$ -	$ -	$ 2,184	**$ 2,184**
4.17	Insurance	-	LS		-	-	$ -	$ -	$ -	**$ -**
4.18	Insurance (specialty, e.g. railroad)	1	Crossing			$ 1,000	$ -	$ -	$ 1,000	**$ 1,000**
4.19	Bonds	100.00%	LS			$ 4,220,000	$ -	$ -	$ 4,220,000	**$ 4,220,000**
4.20	Sales Tax on Materials	0	% of material cost	$ 47,597,498			$ 4,226,658	$ -	$ -	**$ 4,226,658**
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			$ 118,630	$ -	$ -	$ 118,630	**$ 118,630**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							**$ 5,412,953**	**$ 19,316,359**	**$ 5,997,632**	**$ 30,726,945**

Propel NY - TO49 BS3

BS3.5 East Garden City to Shore Road 138kV Onshore UG Cables -single circuit

Total: $ 180,889,981

Propel NY - TO49 BS3	*Material Supply*	*Labor Supply*	*Equip Supply*	*Total*
BS3.5 East Garden City to Shore Road 138kV Onshore UG Cables -single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	**$ 2,545,600**	**$ 12,531,160**	**$ 5,016,040**	**$ 20,092,800**
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	**$ 13,130,226**	**$ 14,522,329**	**$ 10,894,543**	**$ 38,547,097**
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	**$ 24,398,341**	**$ 15,260,216**	**$ 9,757,112**	**$ 49,415,669**
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	**$ 4,639,142**	**$ 10,072,806**	**$ 4,979,648**	**$ 19,691,596**
SUBTOTAL (Costs):	**$ 44,713,308**	**$ 52,386,510**	**$ 30,647,343**	**$ 127,747,161**
CONTRACTOR MARK-UP (OH&P)	**$ 8,048,396**	**$ 9,429,572**	**$ 5,516,522**	**$ 22,994,489**
SUBTOTAL:	**$ 52,761,704**	**$ 61,816,082**	**$ 36,163,864**	**$ 150,741,650**
CONTINGENCY ON ENTIRE PROJECT	**$ 10,552,341**	**$ 12,363,216**	**$ 7,232,773**	**$ 30,148,330**
TOTAL:	**$ 63,314,045**	**$ 74,179,299**	**$ 43,396,637**	**$ 180,889,981**

Description of Work: upgrade the existing underground line ratings of the Oakwood to Syosset and Greenlawn to Syosset circuits to match that of the overhead transmission line ratings of Syosset Transition station to Syosset Substation as an Upgrade to the existing LIPA System

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
BS3.5 East Garden City to Shore Road 138kV Onshore UG Cables -single circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**
1.2	Existing Utility Conflict and Relocation	10.25	Mile		$ 700,000	$ 300,000	$ -	$ 7,175,000	$ 3,075,000	**$ 10,250,000**
1.3	Flaggers	320	DAY	$ 1,600	$ 4,800	$ 1,600	$ 512,000	$ 1,536,000	$ 512,000	**$ 2,560,000**
1.4	K Rail / Lane Control / Metal Plates	54,120	LF	$ 30	$ 18	$ 12	$ 1,623,600	$ 974,160	$ 649,440	**$ 3,247,200**
1.5	Police Support	12,800.0	HR		$ 120	$ 27	$ -	$ 1,536,000	$ 345,600	**$ 1,881,600**
1.6	Additional Traffic Management		LS				$ -	$ -	$ -	**$ -**
1.7	Access / Clearing Costs		LS				$ -	$ -	$ -	**$ -**
1.8	Snow Removal	80.0	DAY		$ 1,000	$ 300	$ -	$ 80,000	$ 24,000	**$ 104,000**
1.9	Existing Utility Protection	10.25	Mile	$ 40,000	$ 120,000	$ 40,000	$ 410,000	$ 1,230,000	$ 410,000	**$ 2,050,000**
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							**$ 2,545,600**	**$ 12,531,160**	**$ 5,016,040**	**$ 20,092,800**
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	10.25	Miles		$ 139,800	$ 93,200	$ -	$ 1,432,950	$ 955,300	**$ 2,388,250**
2.2	Formwork in Trench	422,576	SF	$ 2	$ 1.5	$ 0.5	$ 845,152	$ 633,864	$ 211,288	**$ 1,690,304**
2.3	Trench Excavation	32,554	CY		$ 17.5	$ 7.5	$ -	$ 569,695	$ 244,155	**$ 813,850**
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	2,035	SF	$ 50	$ 25	$ 14	$ 101,731	$ 49,848	$ 28,485	**$ 180,064**
2.5	Supply & Install Thermal Backfill	18,899	CY	$ 350	$ 245	$ 105	$ 6,614,488	$ 4,630,142	$ 1,984,346	**$ 13,228,976**
2.6	Supply & Install Concrete Cap (6")	0	CY	$ 200	$ 125	$ 50	$ -	$ -	$ -	**$ -**
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		$ 14.0	$ 6.0	$ -	$ -	$ -	**$ -**
2.8	Supply & Install Ductbank Concrete	7,436	CY	$ 200	$ 125.0	$ 50.0	$ 1,487,233	$ 929,520	$ 371,808	**$ 2,788,561**
2.9	Conduit 6" HDPE	162,360	LF	$ 10.6	$ 5.7	$ 2.4	$ 1,721,016	$ 920,581	$ 394,535	**$ 3,036,132**
2.10	Conduit 4" HDPE	54,120	LF	$ 5.4	$ 4.20	$ 1.8	$ 290,624	$ 227,304	$ 97,416	**$ 615,344**
2.11	Conduit 2" HDPE	54,120	LF	$ 1.9	$ 3.15	$ 1.4	$ 103,369	$ 170,478	$ 73,062	**$ 346,909**
2.12	Warning Tape	54,120	LF	$ 0.15	$ 0.25	$ 0.10	$ 8,118	$ 13,530	$ 5,412	**$ 27,060**
2.13	Trench Box Shoring (Vault)	35	EA	$ -	$ 18,079	$ 27,119	$ -	$ 632,768	$ 949,153	**$ 1,581,921**
2.14	Splice Vault Excavation	6,353	CY		$ 17.5	$ 7.5	$ -	$ 111,180	$ 47,649	**$ 158,829**
2.15	Splice Vault Supply & Installation	35	EA	$ 35,000	$ 16,500	$ 38,500	$ 1,225,000	$ 577,500	$ 1,347,500	**$ 3,150,000**
2.16	Splice Vault Backfill	1,906	CY		$ 14.0	$ 6.0	$ -	$ 26,683	$ 11,436	**$ 38,119**
2.17	Jack and Bore along Route	318	LF	$ 800	$ 1,600	$ 1,600	$ 254,400	$ 508,800	$ 508,800	**$ 1,272,000**
2.18	HDD along Route	105	LF	$ 800	$ 1,600	$ 1,600	$ 84,000	$ 168,000	$ 168,000	**$ 420,000**
2.19	Air Test Ducts	270,600	LF			$ 0.25	$ -	$ -	$ 67,650	**$ 67,650**
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	19,543	SY	$ 14.00	$ 14.00	$ 7.00	$ 273,602	$ 273,602	$ 136,801	**$ 684,004**
2.21	PVMT, AGGREGATE, 10", BASE COURSE	5,429	CY	$ 22.38	$ 23.50	$ 10.07	$ 121,492	$ 127,567	$ 54,671	**$ 303,730**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	1,624	EA		$ 400	$ 1,200	$ -	$ 649,440	$ 1,948,320	**$ 2,597,760**
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	1,624	EA		$ 10	$ 15	$ -	$ 16,236	$ 24,354	**$ 40,590**
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	189	EA		$ 400	$ 1,200	$ -	$ 75,594	$ 226,782	**$ 302,377**
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		$ 559,650	$ 373,100	$ -	$ 559,650	$ 373,100	**$ 932,750**
2.26	Excess Materials Disposal to Certified Backfill	48,102	CY		$ 24.5	$ 10.5	$ -	$ 1,178,488	$ 505,066	**$ 1,683,555**
2.27	Rock Excavation and Removal	1	LS				$ -	$ -	$ -	**$ -**
2.28	Dewatering	35	EA			$ 4,000	$ -	$ -	$ 140,000	**$ 140,000**
2.29	Contaminated Water Treatment and Disposal	1	LS				$ -	$ -	$ -	**$ -**
2.30	Contaminated Spoils Disposal	1	LS				$ -	$ -	$ -	**$ -**
2.31	Excavated material - stockpile management	38,907	CF		$ 1.0	$ 0.5	$ -	$ 38,907	$ 19,454	**$ 58,361**
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							**$ 13,130,226**	**$ 14,522,329**	**$ 10,894,543**	**$ 38,547,097**
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 138kV 4000kcmil Cu XLPE Cable	170,478	FT	$ 127	$ 76	$ 51	$ 21,650,706	$ 12,990,424	$ 8,660,282	**$ 43,301,412**
3.2	Circuit #1- Cable Splicing- 138kV 4000kcmil Cu XLPE Cable	105	EA	$ 5,898	$ 9,846	$ 2,813	$ 619,290	$ 1,033,880	$ 295,394	**$ 1,948,565**
3.3	Circuit #1- Cable Termination- 138kV 4000kcmil Cu XLPE Cable	6	EA	$ 5,664	$ 9,846	$ 2,813	$ 33,984	$ 59,079	$ 16,880	**$ 109,943**
3.4	Circuit #2- Procurement & Installation- 138kV 4000kcmil Cu XLPE Cable		FT				$ -	$ -	$ -	**$ -**
3.5	Circuit #2- Cable Splicing- 138kV 4000kcmil Cu XLPE Cable		EA				$ -	$ -	$ -	**$ -**
3.6	Circuit #2- Cable Termination- 138kV 4000kcmil Cu XLPE Cable		EA				$ -	$ -	$ -	**$ -**
3.7	Circuit #3- Procurement & Installation- 138kV 4000kcmil Cu XLPE Cable		FT				$ -	$ -	$ -	**$ -**
3.8	Circuit #3- Cable Splicing- 138kV 4000kcmil Cu XLPE Cable		EA				$ -	$ -	$ -	**$ -**
3.9	Circuit #3- Cable Termination- 138kV 4000kcmil Cu XLPE Cable		EA				$ -	$ -	$ -	**$ -**
3.10	Link Box & MH racking	35	EA	$ 26,659	$ 15,995	$ 10,664	$ 933,065	$ 559,839	$ 373,226	**$ 1,866,130**
3.11	Fiber Optic Cable	56,826	FT	$ 7	$ 3	$ 2	$ 420,342	$ 189,265	$ 126,176	**$ 735,783**
3.12	Ground Continuity Conductor	56,826	FT	$ 13	$ 8	$ 5	$ 740,954	$ 427,729	$ 285,153	**$ 1,453,836**
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							$ 24,398,341	$ 15,260,216	$ 9,757,112	**$ 49,415,669**
BS3.5 East Garden City to Shore Road 138kV Onshore UG Cables -single circuit							$ 40,074,167	$ 42,313,704	$ 25,667,695	**$ 108,055,566**
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		$ 2,039,442	$ 1,359,628	$ -	$ 2,039,442	$ 1,359,628	**$ 3,399,070**
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		1,080,555.66		$ -	$ 1,080,556	$ -	**$ 1,080,556**
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		4,322,222.63		$ -	$ 4,322,223	$ -	**$ 4,322,223**
4.4	Utility PM and Project Oversite	1.0	LS		1,080,555.66		$ -	$ 1,080,556	$ -	**$ 1,080,556**
4.5	Site Accommodation, Facilities, Storage	1.0	LS	1,080,555.66			$ 1,080,556	$ -	$ -	**$ 1,080,556**
	Engineering									
4.6	Design Engineering	1.0	LS		$ -	$ -	$ -	$ -	$ -	**$ -**
4.7	LiDAR /GPR	1.0	LS		$ -	$ -	$ -	$ -	$ -	**$ -**
4.8	Geotech	11.0	Location		2,730.00	1,820.00	$ -	$ 30,030	$ 20,020	**$ 50,050**
4.9	Surveying/Staking	1	LS		$ -		$ -	$ -	$ -	**$ -**
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		$ 20,000		$ -	$ 20,000	$ -	**$ 20,000**
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		$ -		$ -	$ -	$ -	**$ -**
4.12	Environmental-special studies/investigation		LS		$ -		$ -	$ -	$ -	**$ -**
4.13	Warranties / LOC's	1	LS		$ -		$ -	$ -	$ -	**$ -**
4.14	Laydown Lease & temporary easement	1	LS		$ 1,500,000		$ -	$ 1,500,000	$ -	**$ 1,500,000**
4.15	Real Estate (Acquisition)		LS		$ -		$ -	$ -	$ -	**$ -**
4.16	Legal Fees (Real estate)	-	LS		-	-	$ -	$ -	$ -	**$ -**
4.17	Insurance	-	LS		-	-	$ -	$ -	$ -	**$ -**
4.18	Insurance (specialty, e.g. railroad)	-	Crossing			$ 1,000	$ -	$ -	$ -	**$ -**
4.19	Bonds	1	LS			**$ 3,600,000**	$ -	$ -	$ 3,600,000	**$ 3,600,000**
4.20	Sales Tax on Materials	8.88%	% of material cost	$ 40,074,166.75			$ 3,558,586	$ -	$ -	**$ 3,558,586**
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			$ -	$ -	$ -	$ -	**$ -**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							**$ 4,639,142**	**$ 10,072,806**	**$ 4,979,648**	**$ 19,691,596**

Propel NY - TO49 BS3

BS3.6 Ruland Road to Shore Road 345kV Onshore UG Cables -single circuit

Total: $ 359,455,633

Propel NY - TO49 BS3				
	Material Supply	*Labor Supply*	*Equip Supply*	*Total*
BS3.6 Ruland Road to Shore Road 345kV Onshore UG Cables -single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	$ 4,209,472	$ 20,427,163	$ 8,341,509	$ 32,978,144
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	$ 26,340,158	$ 24,872,226	$ 15,602,203	$ 66,814,586
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	$ 51,678,717	$ 31,199,912	$ 19,925,937	$ 102,804,566
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	$ 9,327,850	$ 31,207,468	$ 10,720,234	$ 51,255,552
SUBTOTAL (Costs):	$ 91,556,197	$ 107,706,768	$ 54,589,882	$ 253,852,848
CONTRACTOR MARK-UP (OH&P)	$ 16,480,115	$ 19,387,218	$ 9,826,179	$ 45,693,513
SUBTOTAL:	$ 108,036,313	$ 127,093,987	$ 64,416,061	$ 299,546,360
CONTINGENCY ON ENTIRE PROJECT	$ 21,607,263	$ 25,418,797	$ 12,883,212	$ 59,909,272
TOTAL:	$ 129,643,575	$ 152,512,784	$ 77,299,273	$ 359,455,633

Description of Work: The proposed 345 kV electric underground transmission lines extending from the Ruland Road Substation in the Hamlet of Melville in the Town of Huntington in Suffolk County to the Sprain Brook Substation in the City of Yonkers, Westchester County. A marine segment is proposed from Shore Road Substation to a landing point in New Rochelle across the Long Island Sound. The proposed route will be approximately 36.1 miles, utilizing 4000 kcmil XLPE cable for the onshore portions of the route and two circuits of 3x1400 mm2 (2760 kcmil) Cu/XLPE/Pb/StSWA submarine cable for the offshore portions of the route.
Ruland Road to Shore Road segment is 17.82 miles

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
BS3.6 Ruland Road to Shore Road 345kV Onshore UG Cables -single circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**
1.2	Existing Utility Conflict and Relocation	17.83	Mile		$ 700,000	$ 300,000	$ -	$ 12,481,000	$ 5,349,000	**$ 17,830,000**
1.3	Flaggers	420	DAY	$ 1,600	$ 4,800	$ 1,600	$ 672,000	$ 2,016,000	$ 672,000	**$ 3,360,000**
1.4	K Rail / Lane Control / Metal Plates	94,142	LF	$ 30	$ 18	$ 12	$ 2,824,272	$ 1,694,563	$ 1,129,709	**$ 5,648,544**
1.5	Police Support	16,800.0	HR		$ 120	$ 27	$ -	$ 2,016,000	$ 453,600	**$ 2,469,600**
1.6	Additional Traffic Management		LS				$ -	$ -	$ -	**$ -**
1.7	Access / Clearing Costs		LS				$ -	$ -	$ -	**$ -**
1.8	Snow Removal	80.0	DAY		$ 1,000	$ 300	$ -	$ 80,000	$ 24,000	**$ 104,000**
1.9	Existing Utility Protection	17.83	Mile	$ 40,000	$ 120,000	$ 40,000	$ 713,200	$ 2,139,600	$ 713,200	**$ 3,566,000**
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							**$ 4,209,472**	**$ 20,427,163**	**$ 8,341,509**	**$ 32,978,144**
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	17.83	Miles		$ 139,800	$ 93,200	$ -	$ 2,492,634	$ 1,661,756	**$ 4,154,390**
2.2	Formwork in Trench	734,083	SF	$ 2	$ 1.5	$ 0.5	$ 1,468,166	$ 1,101,125	$ 367,042	**$ 2,936,333**
2.3	Trench Excavation	63,349	CY		$ 17.5	$ 7.5	$ -	$ 1,108,602	$ 475,115	**$ 1,583,717**
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	3,959	SF	$ 50	$ 25	$ 14	$ 197,965	$ 97,003	$ 55,430	**$ 350,397**
2.5	Supply & Install Thermal Backfill	34,971	CY	$ 350	$ 245	$ 105	$ 12,239,818	$ 8,567,872	$ 3,671,945	**$ 24,479,636**
2.6	Supply & Install Concrete Cap (6")	0	CY	$ 200	$ 125	$ 50	$ -	$ -	$ -	**$ -**
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		$ 14.0	$ 6.0	$ -	$ -	$ -	**$ -**
2.8	Supply & Install Ductbank Concrete	14,131	CY	$ 200	$ 125.0	$ 50.0	$ 2,826,220	$ 1,766,388	$ 706,555	**$ 5,299,163**
2.9	Conduit 8" HDPE	282,427	LF	$ 20.5	$ 5.7	$ 2.4	$ 5,801,055	$ 1,601,362	$ 686,298	**$ 8,088,715**
2.10	Conduit 4" HDPE	94,142	LF	$ 5.4	$ 4.20	$ 1.8	$ 505,545	$ 395,398	$ 169,456	**$ 1,070,399**
2.11	Conduit 2" HDPE	94,142	LF	$ 1.9	$ 3.15	$ 1.4	$ 179,812	$ 296,549	$ 127,092	**$ 603,453**
2.12	Warning Tape	94,142	LF	$ 0.15	$ 0.25	$ 0.10	$ 14,121	$ 23,536	$ 9,414	**$ 47,071**
2.13	Trench Box Shoring (Vault)	62	EA	$ -	$ 18,079	$ 27,119	$ -	$ 1,120,904	$ 1,681,356	**$ 2,802,260**
2.14	Splice Vault Excavation	20,150	CY		$ 17.5	$ 7.5	$ -	$ 352,625	$ 151,125	**$ 503,750**
2.15	Splice Vault Supply & Installation	62	EA	$ 35,000	$ 16,500	$ 38,500	$ 2,170,000	$ 1,023,000	$ 2,387,000	**$ 5,580,000**
2.16	Splice Vault Backfill	6,045	CY		$ 14.0	$ 6.0	$ -	$ 84,630	$ 36,270	**$ 120,900**
2.17	Jack and Bore along Route	212	LF	$ 800	$ 1,600	$ 1,600	$ 169,600	$ 339,200	$ 339,200	**$ 848,000**
2.18	HDD along Route	0	LF	$ 800	$ 1,600	$ 1,600	$ -	$ -	$ -	**$ -**
2.19	Air Test Ducts	470,712	LF			$ 0.25	$ -	$ -	$ 117,678	**$ 117,678**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	37,981	SY	$ 14.00	$ 14.00	$ 7.00	$ 531,739	$ 531,739	$ 265,869	**$ 1,329,347**
2.21	PVMT, AGGREGATE, 10", BASE COURSE	10,550	CY	$ 22.38	$ 23.50	$ 10.07	$ 236,117	$ 247,923	$ 106,253	**$ 590,293**
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	141	EA		$ 400	$ 1,200	$ -	$ 56,524	$ 169,573	**$ 226,098**
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	141	EA		$ 10	$ 15	$ -	$ 1,413	$ 2,120	**$ 3,533**
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	350	EA		$ 400	$ 1,200	$ -	$ 139,884	$ 419,651	**$ 559,535**
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		$ 973,518	$ 649,012	$ -	$ 973,518	$ 649,012	**$ 1,622,530**
2.26	Excess Materials Disposal to Certified Backfill	100,690	CY		$ 24.5	$ 10.5	$ -	$ 2,466,899	$ 1,057,242	**$ 3,524,142**
2.27	Rock Excavation and Removal	1	LS				$ -	$ -	$ -	**$ -**
2.28	Dewatering	62	EA			$ 4,000	$ -	$ -	$ 248,000	**$ 248,000**
2.29	Contaminated Water Treatment and Disposal	1	LS				$ -	$ -	$ -	**$ -**
2.30	Contaminated Spoils Disposal	1	LS				$ -	$ -	$ -	**$ -**
2.31	Excavated material - stockpile management	83,499	CF		$ 1.0	$ 0.5	$ -	$ 83,499	$ 41,749	**$ 125,248**
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							**$ 26,340,158**	**$ 24,872,226**	**$ 15,602,203**	**$ 66,814,586**
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable	296,549	FT	$ 154	$ 92	$ 62	$ 45,668,478	$ 27,401,087	$ 18,267,391	**$ 91,336,956**
3.2	Circuit #1- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable	186	EA	$ 11,722	$ 8,205	$ 2,344	$ 2,180,292	$ 1,526,204	$ 436,058	**$ 4,142,555**
3.3	Circuit #1- Cable Termination- 345kV 4000kcmil Cu XLPE Cable	6	EA	$ 27,805	$ 8,205	$ 2,344	$ 166,830	$ 49,232	$ 14,066	**$ 230,129**
3.4	Circuit #2- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	$ 154	$ 92	$ 62	$ -	$ -	$ -	**$ -**
3.5	Circuit #2- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	$ 11,722	$ 8,205	$ 2,344	$ -	$ -	$ -	**$ -**
3.6	Circuit #2- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	$ 27,805	$ 8,205	$ 2,344	$ -	$ -	$ -	**$ -**
3.7	Circuit #3- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	$ 154	$ 92	$ 62	$ -	$ -	$ -	**$ -**
3.8	Circuit #3- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	$ 11,722	$ 8,205	$ 2,344	$ -	$ -	$ -	**$ -**
3.9	Circuit #3- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	$ 27,805	$ 8,205	$ 2,344	$ -	$ -	$ -	**$ -**
3.10	Link Box & MH racking	62	EA	$ 26,500	$ 18,550	$ 7,950	$ 1,643,028	$ 1,150,120	$ 492,908	**$ 3,286,056**
3.11	Fiber Optic Cable	98,850	FT	$ 7	$ 3	$ 2	$ 731,190	$ 329,228	$ 219,485	**$ 1,279,904**
3.12	Ground Continuity Conductor	98,850	FT	$ 13	$ 8	$ 5	$ 1,288,899	$ 744,040	$ 496,027	**$ 2,528,966**
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							$ 51,678,717	$ 31,199,912	$ 19,925,937	**$ 102,804,566**
BS3.6 Ruland Road to Shore Road 345kV Onshore UG Cables -single circuit							$ 82,228,347	$ 76,499,301	$ 43,869,648	**$ 202,597,296**
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		$ 3,611,068	$ 2,407,379	$ -	$ 3,611,068	$ 2,407,379	**$ 6,018,447**
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		2,025,972.96		$ -	$ 2,025,973	$ -	**$ 2,025,973**
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		8,103,891.84		$ -	$ 8,103,892	$ -	**$ 8,103,892**
4.4	Utility PM and Project Oversite	1.0	LS		2,025,972.96		$ -	$ 2,025,973	$ -	**$ 2,025,973**
4.5	Site Accommodation, Facilities, Storage	1.0	LS	2,025,972.96			$ 2,025,973	$ -	$ -	**$ 2,025,973**
	Engineering									
4.6	Design Engineering	1.0	LS		$ 10,129,865	$ -	$ -	$ 10,129,865	$ -	**$ 10,129,865**
4.7	LiDAR /GPR	1.0	LS		$ 364,675	$ 243,117	$ -	$ 364,675	$ 243,117	**$ 607,792**
4.8	Geotech	18.0	Location		2,730.00	1,820.00	$ -	$ 49,140	$ 32,760	**$ 81,900**
4.9	Surveying/Staking	1	LS		$ 850,909		$ -	$ 850,909	$ -	**$ 850,909**
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		$ 20,000		$ -	$ 20,000	$ -	**$ 20,000**
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		$ 2,025,973		$ -	$ 2,025,973	$ -	**$ 2,025,973**
4.12	Environmental-special studies/investigation	-	LS				$ -	$ -	$ -	**$ -**
4.13	Warranties / LOC's	1	LS			$ 607,792	$ -	$ -	$ 607,792	**$ 607,792**
4.14	Laydown Lease & temporary easement	1	LS		$ 2,000,000		$ -	$ 2,000,000	$ -	**$ 2,000,000**
4.15	Real Estate (Acquisition)	1	LS			$ 45,232	$ -	$ -	$ 45,232	**$ 45,232**
4.16	Legal Fees (Real estate)	1.00	LS		-	1,356.96	$ -	$ -	$ 1,357	**$ 1,357**
4.17	Insurance	-	LS		-	-	$ -	$ -	$ -	**$ -**
4.18	Insurance (specialty, e.g. railroad)		Crossing		$ 1,000	$ 150,000	$ -	$ -	$ -	**$ -**
4.19	Bonds	100.00%	LS			$ 7,180,000	$ -	$ -	$ 7,180,000	**$ 7,180,000**
4.20	Sales Tax on Materials	0	% of material cost	$ 82,228,347			$ 7,301,877	$ -	$ -	**$ 7,301,877**
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			$ 202,597	$ -	$ -	$ 202,597	**$ 202,597**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							**$ 9,327,850**	**$ 31,207,468**	**$ 10,720,234**	**$ 51,255,552**

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BS3.7a. Shore Road to New Rochelle Offshore Submarine Cables - two circuits (two lines, single circuit each)

Total: $ 268,731,745

BS3.7a. Shore Road to New Rochelle Offshore Submarine Cables - two circuits (two lines, single circuit each)				
	Material Supply	*Labor Supply*	*Equip Supply*	*Total*
BS3.7a. Shore Road to New Rochelle Offshore Submarine Cables - two circuits (two lines, single circuit each)				
1. SUBMARINE CABLE	$ 45,158,272	$ 59,271,737	$ 42,238,005	$ 146,668,014
2. TRANSITION STATION	$ 555,750	$ 593,355	$ 558,702	$ 1,707,807
3. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	$ 5,506,592	$ 24,417,233	$ 11,482,660	$ 41,406,484
SUBTOTAL (Costs):	$ 51,220,615	$ 84,282,324	$ 54,279,367	$ 189,782,306
CONTRACTOR MARK-UP (OH&P)	$ 9,219,711	$ 15,170,818	$ 9,770,286	$ 34,160,815
SUBTOTAL:	$ 60,440,325	$ 99,453,142	$ 64,049,653	$ 223,943,121
CONTINGENCY ON ENTIRE PROJECT	$ 12,088,065	$ 19,890,628	$ 12,809,931	$ 44,788,624
TOTAL:	$ 72,528,390	$ 119,343,771	$ 76,859,584	$ 268,731,745

Description of Work: The proposed 345 kV electric underground transmission lines extending from the Ruland Road Substation in the Hamlet of Melville in the Town of Huntington in Suffolk County to the Sprain Brook Substation in the City of Yonkers, Westchester County. A marine segment is proposed from Shore Road Substation to a landing point in New Rochelle across the Long Island Sound. The proposed route will be approximately 36.1 miles, utilizing 4000 kcmil XLPE cable for the onshore portions of the route and two circuits of 3x1400 mm2 (2760 kcmil) Cu/XLPE/Pb/StSWA submarine cable for the offshore portions of the route.
Shore Road to New Rochelle segment is 10.22 miles, Submarine segment is 8.63 miles (included the HDD section).

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
BS3.7a. Shore Road to New Rochelle Offshore Submarine Cables - two circuits (two lines, single circuit each)										
1. SUBMARINE CABLE										
1.1	Submarine Cable - 3x1400 mm2 (2760 kcmil) Cu/XLPE/Pb/StSWA + Vessel Install	100,246	FT	$ 375	$ 400	$ 250	$ 37,592,280	$ 40,098,432	$ 25,061,520	**$ 102,752,232**
1.2	Submarine Cable- transportation from manufacture location to site	1	LS		$ 5,073,819	$ 3,382,546	$ -	$ 5,073,819	$ 3,382,546	**$ 8,456,364**
1.3	Submarine Cable Splicing if Required 3x1400 mm2 (2760 kcmil) Cu/XLPE/Pb/StSWA	-	EA				$ -	$ -	$ -	**$ -**
1.4	Cable Transition Splice	12	EA	$ 27,911	$ 37,214	$ 27,911	$ 334,929	$ 446,572	$ 334,929	**$ 1,116,430**
1.5	Outdoor Termination	12	EA	$ 27,911	$ 37,214	$ 27,911	$ 334,929	$ 446,572	$ 334,929	**$ 1,116,430**
1.6	Jack and Bore along Route	0	LF	$ 1,600	$ 3,200	$ 3,200	$ -	$ -	$ -	**$ -**
1.7	HDD along Route	4,062	LF	$ 1,600	$ 3,200	$ 3,200	$ 6,499,840	$ 12,999,680	$ 12,999,680	**$ 32,499,200**
1.8	Trench Box Shoring & Trench Box Install Crew	1	LS		$ 33,891	$ 22,594	$ -	$ 33,891	$ 22,594	**$ 56,485**
1.9	Formwork in Trench		SF	$ 2	$ 1.5	$ 0.5	$ -	$ -	$ -	**$ -**
1.10	Trench Excavation	1,612	CY		$ 17.5	$ 7.5	$ -	$ 28,207	$ 12,089	**$ 40,296**
1.11	Supply & Install 6" Sand Bedding for direct bury conduits	101	SF	$ 50	$ 25	$ 14	$ 5,037	$ 2,468	$ 1,410	**$ 8,916**
1.12	Supply & Install Thermal Backfill	0	CY	$ 350	$ 245	$ 105	$ -	$ -	$ -	**$ -**
1.13	Supply & Install Concrete Cap (6")	0	CY	$ 200	$ 125	$ 50	$ -	$ -	$ -	**$ -**
1.14	Native Backfill -direct bury conduits sys Trench	1,491	CY		$ 14.0	$ 6.0	$ -	$ 20,880	$ 8,949	**$ 29,828**
1.15	Conduit 15" HDPE	2,560	LF	$ 150.0	$ 45.0	$ 30.0	$ 384,000	$ 115,200	$ 76,800	**$ 576,000**
1.16	Conduit 4" HDPE	1,280	LF	$ 5.4	$ 4.20	$ 1.8	$ 6,874	$ 5,376	$ 2,304	**$ 14,554**
1.17	Conduit 2" HDPE	0	LF	$ 1.9	$ 3.15	$ 1.4	$ -	$ -	$ -	**$ -**
1.18	Warning Tape	2,560	LF	$ 0.15	$ 0.25	$ 0.10	$ 384	$ 640	$ 256	**$ 1,280**
TOTAL - MARINE CABLE :							$ 45,158,272	$ 59,271,737	$ 42,238,005	**$ 146,668,014**
2. TRANSITION STATION										
2.1	Site Clearing	2.0	ACRE	-	10,800.00	7,200.00	$ -	$ 21,094	$ 14,063	**$ 35,156**
2.2	Demolition	1	LS	-	60,000.00	40,000.00	$ -	$ 60,000	$ 40,000	**$ 100,000**
2.3	Temporary fencing	1,300	LF	7.50	5.25	2.25	$ 9,750	$ 6,825	$ 2,925	**$ 19,500**
2.4	Trench Box Shoring (Vault)	4	EA	$ -	$ 18,079	$ 27,119	$ -	$ 72,316	$ 108,475	**$ 180,791**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.5	Splice Vault Excavation	1,593	CY		$ 17.5	$ 7.5	$ -	$ 27,876	$ 11,947	**$ 39,822**
2.6	Splice Vault Supply & Installation	4	EA	$ 70,000	$ 22,500	$ 52,500	$ 280,000	$ 90,000	$ 210,000	**$ 580,000**
2.7	Splice Vault Backfill	478	CY		$ 14.0	$ 6.0	$ -	$ 6,690	$ 2,867	**$ 9,557**
2.8	Air Test Ducts	3,840	LF			$ 0.25	$ -	$ -	$ 960	**$ 960**
2.9	Restoration (incl. Paving)	19,000	SF	$ 14.00	$ 14.00	$ 7.00	$ 266,000	$ 266,000	$ 133,000	**$ 665,000**
2.10	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	0	EA		$ 400	$ 1,200	$ -	$ -	$ -	**$ -**
2.11	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	0	EA		$ 10	$ 15	$ -	$ -	$ -	**$ -**
2.12	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	0	EA		$ 400	$ 1,200	$ -	$ -	$ -	**$ -**
2.13	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		$ -	$ -	$ -	$ -	$ -	**$ -**
2.14	Excess Materials Disposal to Certified Backfill	1,606	CY		$ 24.5	$ 10.5	$ -	$ 39,349	$ 16,864	**$ 56,213**
2.15	Rock Excavation and Removal	1	LS				$ -	$ -	$ -	**$ -**
2.16	Dewatering	4	EA			$ 4,000	$ -	$ -	$ 16,000	**$ 16,000**
2.17	Contaminated Water Treatment and Disposal	1	LS				$ -	$ -	$ -	**$ -**
2.18	Contaminated Spoils Disposal	1	LS				$ -	$ -	$ -	**$ -**
2.19	Excavated material - stockpile management	3,205	CF		$ 1.0	$ 0.5	$ -	$ 3,205	$ 1,602	**$ 4,807**
2.20							$ -	$ -	$ -	**$ -**
TOTAL - Transition station :							$ 555,750	$ 593,355	$ 558,702	**$ 1,707,807**
BS3.7a. Shore Road to New Rochelle Offshore Submarine Cables - two circuits (two lines, single circuit each)							$ 45,714,022	$ 59,865,091	$ 42,796,707	**$ 148,375,821**
3. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:										
	Contractor Mobilization / Demobilization									
3.1	Mob / Demob	1	LS		$ 4,000,000	$ 6,000,000	$ -	$ 4,000,000	$ 6,000,000	**$ 10,000,000**
	Project Management, Material Handling & Amenities									
3.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		1,483,758.21		$ -	$ 1,483,758	$ -	**$ 1,483,758**
3.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		5,935,032.85		$ -	$ 5,935,033	$ -	**$ 5,935,033**
3.4	Utility PM and Project Oversite	1.0	LS		1,483,758.21		$ -	$ 1,483,758	$ -	**$ 1,483,758**
3.5	Site Accommodation, Facilities, Storage	1.0	LS	1,483,758.21			$ 1,483,758	$ -	$ -	**$ 1,483,758**
	Engineering									
3.6	Design Engineering	1	LS		$ 7,418,791		$ -	$ 7,418,791	$ -	**$ 7,418,791**
3.7	Surveying/Staking	1	LS		$ 1,038,631		$ -	$ 1,038,631	$ -	**$ 1,038,631**
	Testing & Commissioning / Inspection									
3.8	Testing & Commissioning / End to End Testing of Subsea Cable	1	EA		$ 40,000		$ -	$ 40,000	$ -	**$ 40,000**
3.9	Post Cable-Lay Inspection		EA				$ -	$ -	$ -	**$ -**
	Permitting and Additional Costs									
3.10	Environmental Licensing & Permitting Costs & related legal cost	1	LS		$ 1,483,758		$ -	$ 1,483,758	$ -	**$ 1,483,758**
3.11	Environmental-special studies/investigation	1	LS		$ 440,000		$ -	$ 440,000	$ -	**$ 440,000**
3.12	Warranties / LOC's	1	LS		$ 445,127		$ -	$ 445,127	$ -	**$ 445,127**
3.13	Laydown Lease & temporary easement	1	LS		$ 500,000		$ -	$ 500,000	$ -	**$ 500,000**
3.14	Real Estate (Acquisition)	1	LS			$ 119,087	$ -	$ -	$ 119,087	**$ 119,087**
3.15	Legal Fees (Real estate)	1.00	LS		-	3,572.61	$ -	$ -	$ 3,573	**$ 3,573**
3.16	Insurance	-	LS		-	-	$ -	$ -	$ -	**$ -**
3.17	Bonds	1	LS			$ 5,360,000	$ -	$ -	$ 5,360,000	**$ 5,360,000**
3.18	Sales Tax on Materials	8.8%	LS	$ 45,714,022			$ 4,022,834	$ -	$ -	**$ 4,022,834**
3.19	Contractor Permits	1	LS		$ 148,376		$ -	$ 148,376	$ -	**$ 148,376**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							$ 5,506,592	$ 24,417,233	$ 11,482,660	**$ 41,406,484**

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BS3.7a. Shore Road to New Rochelle Onshore UG Cables - two circuits (two lines, single circuit each)

Total: $ 57,646,592

Propel NY - TO49 BS3				
	Material Supply	*Labor Supply*	*Equip Supply*	*Total*
BS3.7a. Shore Road to New Rochelle Onshore UG Cables - two circuits (two lines, single circuit each)				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	$ 458,544	$ 2,358,566	$ 901,978	$ 3,719,088
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	$ 3,609,216	$ 3,766,387	$ 2,219,465	$ 9,595,067
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	$ 9,600,745	$ 5,671,607	$ 3,650,873	$ 18,923,225
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	$ 1,536,137	$ 5,351,413	$ 1,585,940	$ 8,473,490
SUBTOTAL (Costs):	$ 15,204,642	$ 17,147,973	$ 8,358,255	$ 40,710,870
CONTRACTOR MARK-UP (OH&P)	$ 2,736,836	$ 3,086,635	$ 1,504,486	$ 7,327,957
SUBTOTAL:	$ 17,941,478	$ 20,234,608	$ 9,862,741	$ 48,038,827
CONTINGENCY ON ENTIRE PROJECT	$ 3,588,296	$ 4,046,922	$ 1,972,548	$ 9,607,765
TOTAL:	$ 21,529,773	$ 24,281,530	$ 11,835,289	$ 57,646,592

Description of Work: The proposed 345 kV electric underground transmission lines extending from the Ruland Road Substation in the Hamlet of Melville in the Town of Huntington in Suffolk County to the Sprain Brook Substation in the City of Yonkers, Westchester County. A marine segment is proposed from Shore Road Substation to a landing point in New Rochelle across the Long Island Sound. The proposed route will be approximately 36.1 miles, utilizing 4000 kcmil XLPE cable for the onshore portions of the route and two circuits of 3x1400 mm2 (2760 kcmil) Cu/XLPE/Pb/StSWA submarine cable for the offshore portions of the route.
Shore Road to New Rochelle segment is 10.22 miles, Submarine segment is 8.63 miles (included the HDD section).

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
BS3.7a. Shore Road to New Rochelle Onshore UG Cables - two circuits (two lines, single circuit each)										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**
1.2	Existing Utility Conflict and Relocation	1.66	Mile		$ 700,000	$ 300,000	$ -	$ 1,162,000	$ 498,000	**$ 1,660,000**
1.3	Flaggers	60	DAY	$ 1,600	$ 4,800	$ 1,600	$ 96,000	$ 288,000	$ 96,000	**$ 480,000**
1.4	K Rail / Lane Control / Metal Plates	8,765	LF	$ 30	$ 18	$ 12	$ 262,944	$ 157,766	$ 105,178	**$ 525,888**
1.5	Police Support	3,600.0	HR		$ 120	$ 27	$ -	$ 432,000	$ 97,200	**$ 529,200**
1.6	Additional Traffic Management		LS				$ -	$ -	$ -	**$ -**
1.7	Access / Clearing Costs		LS				$ -	$ -	$ -	**$ -**
1.8	Snow Removal	20.0	DAY		$ 1,000	$ 300	$ -	$ 20,000	$ 6,000	**$ 26,000**
1.9	Existing Utility Protection	1.66	Mile	$ 60,000	$ 180,000	$ 60,000	$ 99,600	$ 298,800	$ 99,600	**$ 498,000**
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							**$ 458,544**	**$ 2,358,566**	**$ 901,978**	**$ 3,719,088**
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
LINE Y57 & Y58 -Double CIRCUITS										
2.1	Trench Box Shoring & Trench Box Install Crew	1.66	Miles		$ 139,800	$ 93,200	$ -	$ 232,068	$ 154,712	**$ 386,780**
2.2	Formwork in Trench	70,118	SF	$ 2	$ 1.5	$ 0.5	$ 140,237	$ 105,178	$ 35,059	**$ 280,474**
2.3	Trench Excavation	5,189	CY		$ 17.5	$ 7.5	$ -	$ 90,803	$ 38,916	**$ 129,719**
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	540	CY	$ 50	$ 25	$ 14	$ 27,025	$ 13,242	$ 7,567	**$ 47,834**
2.5	Supply & Install Thermal Backfill -conduit level	4,769	CY	$ 350	$ 245	$ 105	$ 1,668,988	$ 1,168,292	$ 500,697	**$ 3,337,977**
2.6	Supply & Install Concrete Cap (6")	0	CY	$ 200	$ 125	$ 50	$ -	$ -	$ -	**$ -**
2.7	Supply & Install Native Backfill -direct bury conduits sys	0	CY	$ 350	$ 245.0	$ 105.0	$ -	$ -	$ -	**$ -**
2.8	Supply & Install Ductbank Concrete	1,667	CY	$ 200	$ 125.0	$ 50.0	$ 333,355	$ 208,347	$ 83,339	**$ 625,040**
2.8	Conduit 8" HDPE	52,589	LF	$ 20.5	$ 5.7	$ 2.4	$ 1,080,174	$ 298,178	$ 127,791	**$ 1,506,143**
2.9	Conduit 4" HDPE	17,530	LF	$ 5.4	$ 4.20	$ 1.8	$ 94,134	$ 73,624	$ 31,553	**$ 199,312**
2.10	Conduit 2" HDPE	17,530	LF	$ 1.9	$ 3.15	$ 1.4	$ 33,482	$ 55,218	$ 23,665	**$ 112,365**
2.11	Warning Tape	8,765	LF	$ 0.15	$ 0.25	$ 0.10	$ 1,315	$ 2,191	$ 876	**$ 4,382**
2.12	Trench Box Shoring (Vault)	4	EA	$ -	$ 18,079	$ 27,119	$ -	$ 72,316	$ 108,475	**$ 180,791**
2.13	Splice Vault Excavation	780	CY		$ 17.5	$ 7.5	$ -	$ 13,650	$ 5,850	**$ 19,500**
2.14	Splice Vault Supply & Installation	4	EA	$ 35,000	$ 16,500	$ 38,500	$ 140,000	$ 66,000	$ 154,000	**$ 360,000**
2.15	Splice Vault Backfill	234	CY		$ 14.0	$ 6.0	$ -	$ 3,276	$ 1,404	**$ 4,680**
2.16	Jack and Bore along Route	0	LF	$ 800	$ 1,600	$ 1,600	$ -	$ -	$ -	**$ -**
2.17	HDD along Route	0	LF	$ 800	$ 1,600	$ 1,600	$ -	$ -	$ -	**$ -**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.18	Air Test Ducts	87,648	LF			$ 0.25	$ -	$ -	$ 21,912	**$ 21,912**
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	4,477	SY	$ 14.00	$ 14.00	$ 7.00	$ 62,676	$ 62,676	$ 31,338	**$ 156,689**
2.21	PVMT, AGGREGATE, 10", BASE COURSE	1,244	CY	$ 22.38	$ 23.50	$ 10.07	$ 27,831	$ 29,223	$ 12,524	**$ 69,578**
2.20	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	17	EA		$ 400	$ 1,200	$ -	$ 6,667	$ 20,001	**$ 26,668**
2.21	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	17	EA		$ 10	$ 15	$ -	$ 167	$ 250	**$ 417**
2.22	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	48	EA		$ 400	$ 1,200	$ -	$ 19,074	$ 57,222	**$ 76,297**
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		$ 90,636	$ 60,424	$ -	$ 90,636	$ 60,424	**$ 151,060**
2.24	Excess Materials Disposal to Certified Backfill	7,455	CY		$ 24.5	$ 10.5	$ -	$ 182,652	$ 78,279	**$ 260,932**
2.25	Rock Excavation and Removal	3,979	CY		$ 243	$ 162	$ -	$ 966,939	$ 644,626	**$ 1,611,566**
2.26	Dewatering	4	EA			$ 4,000	$ -	$ -	$ 16,000	**$ 16,000**
2.27	Contaminated Water Treatment and Disposal	1	LS				$ -	$ -	$ -	**$ -**
2.28	Contaminated Spoils Disposal	1	LS				$ -	$ -	$ -	**$ -**
2.29	Excavated material - stockpile management	5,969	CF		$ 1.0	$ 0.5	$ -	$ 5,969	$ 2,984	**$ 8,953**
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							**$ 3,609,216**	**$ 3,766,387**	**$ 2,219,465**	**$ 9,595,067**
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.7	Y57 Circuit #1- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable	27,609	FT	$ 154	$ 92	$ 62	$ 4,251,804	$ 2,551,083	$ 1,700,722	**$ 8,503,609**
3.8	Y57 Circuit #1- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable	12	EA	$ 11,722	$ 8,205	$ 2,344	$ 140,664	$ 98,465	$ 28,133	**$ 267,262**
3.9	Y57 Circuit #1- Cable Termination- 345kV 4000kcmil Cu XLPE Cable	6	EA	$ 27,805	$ 8,205	$ 2,344	$ 166,830	$ 49,232	$ 14,066	**$ 230,129**
3.4	Y57 Circuit #2- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	$ 154	$ 92	$ 62	$ -	$ -	$ -	**$ -**
3.5	Y57 Circuit #2- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	$ 11,722	$ 8,205	$ 2,344	$ -	$ -	$ -	**$ -**
3.6	Y57 Circuit #2- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	$ 27,805	$ 8,205	$ 2,344	$ -	$ -	$ -	**$ -**
3.1	Y58 Circuit #1- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable	27,609	FT	$ 154	$ 92	$ 62	$ 4,251,804	$ 2,551,083	$ 1,700,722	**$ 8,503,609**
3.2	Y58 Circuit #1- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable	12	EA	$ 11,722	$ 8,205	$ 2,344	$ 140,664	$ 98,465	$ 28,133	**$ 267,262**
3.3	Y58 Circuit #1- Cable Termination- 345kV 4000kcmil Cu XLPE Cable	6	EA	$ 27,805	$ 8,205	$ 2,344	$ 166,830	$ 49,232	$ 14,066	**$ 230,129**
3.4	Y58 Circuit #2- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	$ 154	$ 92	$ 62	$ -	$ -	$ -	**$ -**
3.5	Y58 Circuit #2- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	$ 11,722	$ 8,205	$ 2,344	$ -	$ -	$ -	**$ -**
3.6	Y58 Circuit #2- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	$ 27,805	$ 8,205	$ 2,344	$ -	$ -	$ -	**$ -**
3.10	Link Box & MH racking	4	EA	$ 26,500	$ 18,550	$ 7,950	$ 106,002	$ 74,201	$ 31,801	**$ 212,004**
3.11	Fiber Optic Cable	18,406	FT	$ 7	$ 3	$ 2	$ 136,150	$ 61,303	$ 40,869	**$ 238,322**
3.12	Ground Continuity Conductor	18,406	FT	$ 13	$ 8	$ 5	$ 239,997	$ 138,543	$ 92,362	**$ 470,901**
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							$ 9,600,745	$ 5,671,607	$ 3,650,873	**$ 18,923,225**
BS3.7a. Shore Road to New Rochelle Onshore UG Cables - two circuits (two lines, single circuit each)							$ 13,668,505	$ 11,796,560	$ 6,772,316	**$ 32,237,380**
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		$ 557,066	$ 371,378	$ -	$ 557,066	$ 371,378	**$ 928,444**
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		322,373.80		$ -	$ 322,374	$ -	**$ 322,374**
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		1,289,495.22		$ -	$ 1,289,495	$ -	**$ 1,289,495**
4.4	Utility PM and Project Oversite	1.0	LS		322,373.80		$ -	$ 322,374	$ -	**$ 322,374**
4.5	Site Accommodation, Facilities, Storage	1.0	LS	322,373.80			$ 322,374	$ -	$ -	**$ 322,374**
	Engineering									
4.6	Design Engineering	1.0	LS		$ 1,611,869	$ -	$ -	$ 1,611,869	$ -	**$ 1,611,869**
4.7	LiDAR /GPR	1.0	LS		$ 58,027	$ 38,685	$ -	$ 58,027	$ 38,685	**$ 96,712**
4.8	Geotech	2.0	Location		2,730.00	1,820.00	$ -	$ 5,460	$ 3,640	**$ 9,100**
4.9	Surveying/Staking	1	LS		$ 225,662		$ -	$ 225,662	$ -	**$ 225,662**
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		$ 40,000		$ -	$ 40,000	$ -	**$ 40,000**
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		$ 322,374		$ -	$ 322,374	$ -	**$ 322,374**
4.12	Environmental-special studies/investigation		LS		$ -		$ -	$ -	$ -	**$ -**
4.13	Warranties / LOC's	1	LS		$ 96,712		$ -	$ 96,712	$ -	**$ 96,712**
4.14	Laydown Lease & temporary easement	1	LS		$ 500,000		$ -	$ 500,000	$ -	**$ 500,000**
4.15	Real Estate (Acquisition)		LS		$ -		$ -	$ -	$ -	**$ -**
4.16	Legal Fees (Real estate)	-	LS		-	-	$ -	$ -	$ -	**$ -**
4.17	Insurance	-	LS		-	-	$ -	$ -	$ -	**$ -**
4.18	Insurance (specialty, e.g. railroad)	-	Crossing			$ 1,000	$ -	$ -	$ -	**$ -**
4.19	Bonds	1	LS			**$ 1,140,000**	$ -	$ -	$ 1,140,000	**$ 1,140,000**
4.20	Sales Tax on Materials	8.88%	% of material cost	$ 13,668,504.91			$ 1,213,763	$ -	$ -	**$ 1,213,763**
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			$ 32,237	$ -	$ -	$ 32,237	**$ 32,237**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							**$ 1,536,137**	**$ 5,351,413**	**$ 1,585,940**	**$ 8,473,490**

Propel NY - TO49 BS3

BS3.7b New Rochelle to Sprainbrook 345kV Onshore UG Cables - single circuit

Total: $ 192,457,231

Propel NY - TO49 BS3				
	Material Supply	*Labor Supply*	*Equip Supply*	*Total*
BS3.7b New Rochelle to Sprainbrook 345kV Onshore UG Cables - single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	$ 2,062,976	$ 10,216,426	$ 4,057,750	$ 16,337,152
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	$ 13,413,863	$ 17,463,031	$ 12,869,325	$ 43,746,219
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	$ 24,404,937	$ 14,775,402	$ 9,279,739	$ 48,460,079
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	$ 4,626,936	$ 17,106,525	$ 5,639,213	$ 27,372,674
SUBTOTAL (Costs):	$ 44,508,712	$ 59,561,384	$ 31,846,028	$ 135,916,124
CONTRACTOR MARK-UP (OH&P)	$ 8,011,568	$ 10,721,049	$ 5,732,285	$ 24,464,902
SUBTOTAL:	$ 52,520,280	$ 70,282,433	$ 37,578,313	$ 160,381,026
CONTINGENCY ON ENTIRE PROJECT	$ 10,504,056	$ 14,056,487	$ 7,515,663	$ 32,076,205
TOTAL:	$ 63,024,336	$ 84,338,920	$ 45,093,976	$ 192,457,231

Description of Work: The proposed 345 kV electric underground transmission lines extending from the Ruland Road Substation in the Hamlet of Melville in the Town of Huntington in Suffolk County to the Sprain Brook Substation in the City of Yonkers, Westchester County. A marine segment is proposed from Shore Road Substation to a landing point in New Rochelle across the Long Island Sound. The proposed route will be approximately 36.1 miles, utilizing 4000 kcmil XLPE cable for the onshore portions of the route and two circuits of 3x1400 mm2 (2760 kcmil) Cu/XLPE/Pb/StSWA submarine cable for the offshore portions of the route.
New Rochelle Station To Sprainbrook segment is 8.14 miles

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
BS3.7b New Rochelle to Sprainbrook 345kV Onshore UG Cables - single circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**
1.2	Existing Utility Conflict and Relocation	8.14	Mile		$ 700,000	$ 300,000	$ -	$ 5,698,000	$ 2,442,000	**$ 8,140,000**
1.3	Flaggers	280	DAY	$ 1,600	$ 4,800	$ 1,600	$ 448,000	$ 1,344,000	$ 448,000	**$ 2,240,000**
1.4	K Rail / Lane Control / Metal Plates	42,979	LF	$ 30	$ 18	$ 12	$ 1,289,376	$ 773,626	$ 515,750	**$ 2,578,752**
1.5	Police Support	11,200.0	HR		$ 120	$ 27	$ -	$ 1,344,000	$ 302,400	**$ 1,646,400**
1.6	Additional Traffic Management		LS				$ -	$ -	$ -	**$ -**
1.7	Access / Clearing Costs		LS				$ -	$ -	$ -	**$ -**
1.8	Snow Removal	80.0	DAY		$ 1,000	$ 300	$ -	$ 80,000	$ 24,000	**$ 104,000**
1.9	Existing Utility Protection	8.14	Mile	$ 40,000	$ 120,000	$ 40,000	$ 325,600	$ 976,800	$ 325,600	**$ 1,628,000**
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							**$ 2,062,976**	**$ 10,216,426**	**$ 4,057,750**	**$ 16,337,152**
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	8.14	Miles		$ 139,800	$ 93,200	$ -	$ 1,137,972	$ 758,648	**$ 1,896,620**
2.2	Formwork in Trench	318,202	SF	$ 2	$ 1.5	$ 0.5	$ 636,403	$ 477,302	$ 159,101	**$ 1,272,806**
2.3	Trench Excavation	16,476	CY		$ 17.5	$ 7.5	$ -	$ 288,326	$ 123,568	**$ 411,894**
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	1,716	SF	$ 50	$ 25	$ 14	$ 85,811	$ 42,048	$ 24,027	**$ 151,886**
2.5	Supply & Install Thermal Backfill	15,159	CY	$ 350	$ 245	$ 105	$ 5,305,570	$ 3,713,899	$ 1,591,671	**$ 10,611,139**
2.6	Supply & Install Concrete Cap (6")	0	CY	$ 200	$ 125	$ 50	$ -	$ -	$ -	**$ -**
2.7	Native Backfill -direct bury conduits sys Trench	0	CY		$ 14.0	$ 6.0	$ -	$ -	$ -	**$ -**
2.8	Supply & Install Ductbank Concrete	6,125	CY	$ 200	$ 125.0	$ 50.0	$ 1,225,076	$ 765,673	$ 306,269	**$ 2,297,018**
2.9	Conduit 8" HDPE	128,938	LF	$ 20.5	$ 5.7	$ 2.4	$ 2,648,378	$ 731,076	$ 313,318	**$ 3,692,773**
2.10	Conduit 4" HDPE	42,979	LF	$ 5.4	$ 4.20	$ 1.8	$ 230,798	$ 180,513	$ 77,363	**$ 488,674**
2.11	Conduit 2" HDPE	42,979	LF	$ 1.9	$ 3.15	$ 1.4	$ 82,090	$ 135,384	$ 58,022	**$ 275,497**
2.12	Warning Tape	42,979	LF	$ 0.15	$ 0.25	$ 0.10	$ 6,447	$ 10,745	$ 4,298	**$ 21,490**
2.13	Trench Box Shoring (Vault)	40	EA	$ -	$ 18,079	$ 27,119	$ -	$ 723,164	$ 1,084,746	**$ 1,807,910**
2.14	Splice Vault Excavation	7,800	CY		$ 17.5	$ 7.5	$ -	$ 136,500	$ 58,500	**$ 195,000**
2.15	Splice Vault Supply & Installation	40	EA	$ 35,000	$ 16,500	$ 38,500	$ 1,400,000	$ 660,000	$ 1,540,000	**$ 3,600,000**
2.16	Splice Vault Backfill	2,340	CY		$ 14.0	$ 6.0	$ -	$ 32,760	$ 14,040	**$ 46,800**
2.17	Jack and Bore along Route	310	LF	$ 800	$ 1,600	$ 1,600	$ 248,000	$ 496,000	$ 496,000	**$ 1,240,000**
2.18	HDD along Route	1,494	LF	$ 800	$ 1,600	$ 1,600	$ 1,195,200	$ 2,390,400	$ 2,390,400	**$ 5,976,000**

Item	Item Description	Estimated Quantity	Unit of Measure	Material Supply Rate	Labor Supply Rate	Const. Equipment Rate	Material Supply Cost	Labor Supply Cost	Const. Equipment Cost	TOTAL
2.19	Air Test Ducts	214,896	LF			$ 0.25	$ -	$ -	$ 53,724	**$ 53,724**
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	17,317	SY	$ 14.00	$ 14.00	$ 7.00	$ 242,436	$ 242,436	$ 121,218	**$ 606,089**
2.21	PVMT, AGGREGATE, 10", BASE COURSE	4,810	CY	$ 22.38	$ 23.50	$ 10.07	$ 107,653	$ 113,036	$ 48,444	**$ 269,132**
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	61	EA		$ 400	$ 1,200	$ -	$ 24,502	$ 73,505	**$ 98,006**
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	61	EA		$ 10	$ 15	$ -	$ 613	$ 919	**$ 1,531**
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	152	EA		$ 400	$ 1,200	$ -	$ 60,635	$ 181,905	**$ 242,540**
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		$ 444,444	$ 296,296	$ -	$ 444,444	$ 296,296	**$ 740,740**
2.26	Excess Materials Disposal to Certified Backfill	28,517	CY		$ 24.5	$ 10.5	$ -	$ 698,654	$ 299,423	**$ 998,078**
2.27	Rock Excavation and Removal	16,184	CY		$ 243	$ 162	$ -	$ 3,932,675	$ 2,621,783	**$ 6,554,458**
2.28	Dewatering	40	EA			$ 4,000	$ -	$ -	$ 160,000	**$ 160,000**
2.29	Contaminated Water Treatment and Disposal	1	LS				$ -	$ -	$ -	**$ -**
2.30	Contaminated Spoils Disposal	1	LS				$ -	$ -	$ -	**$ -**
2.31	Excavated material - stockpile management	24,276	CF		$ 1.0	$ 0.5	$ -	$ 24,276	$ 12,138	**$ 36,414**
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							**$ 13,413,863**	**$ 17,463,031**	**$ 12,869,325**	**$ 43,746,219**
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable	135,384	FT	$ 154	$ 92	$ 62	$ 20,849,210	$ 12,509,526	$ 8,339,684	**$ 41,698,420**
3.2	Circuit #1- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable	120	EA	$ 11,722	$ 8,205	$ 2,344	$ 1,406,640	$ 984,648	$ 281,328	**$ 2,672,616**
3.3	Circuit #1- Cable Termination- 345kV 4000kcmil Cu XLPE Cable	6	EA	$ 27,805	$ 8,205	$ 2,344	$ 166,830	$ 49,232	$ 14,066	**$ 230,129**
3.4	Circuit #2- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	$ 154	$ 92	$ 62	$ -	$ -	$ -	**$ -**
3.5	Circuit #2- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	$ 11,722	$ 8,205	$ 2,344	$ -	$ -	$ -	**$ -**
3.6	Circuit #2- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	$ 27,805	$ 8,205	$ 2,344	$ -	$ -	$ -	**$ -**
3.7	Circuit #3- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable		FT	$ 154	$ 92	$ 62	$ -	$ -	$ -	**$ -**
3.8	Circuit #3- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable		EA	$ 11,722	$ 8,205	$ 2,344	$ -	$ -	$ -	**$ -**
3.9	Circuit #3- Cable Termination- 345kV 4000kcmil Cu XLPE Cable		EA	$ 27,805	$ 8,205	$ 2,344	$ -	$ -	$ -	**$ -**
3.10	Link Box & MH racking	40	EA	$ 26,500	$ 18,550	$ 7,950	$ 1,060,018	$ 742,013	$ 318,005	**$ 2,120,036**
3.11	Fiber Optic Cable	45,128	FT	$ 7	$ 3	$ 2	$ 333,813	$ 150,304	$ 100,203	**$ 584,319**
3.12	Ground Continuity Conductor	45,128	FT	$ 13	$ 8	$ 5	$ 588,426	$ 339,680	$ 226,453	**$ 1,154,559**
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							**$ 24,404,937**	**$ 14,775,402**	**$ 9,279,739**	**$ 48,460,079**
BS3.7b New Rochelle to Sprainbrook 345kV Onshore UG Cables - single circuit							**$ 39,881,776**	**$ 42,454,859**	**$ 26,206,815**	**$ 108,543,450**
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		$ 2,059,850	$ 1,373,233	$ -	$ 2,059,850	$ 1,373,233	**$ 3,433,084**
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		1,085,434.50		$ -	$ 1,085,434	$ -	**$ 1,085,434**
4.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		4,341,737.99		$ -	$ 4,341,738	$ -	**$ 4,341,738**
4.4	Utility PM and Project Oversite	1.0	LS		1,085,434.50		$ -	$ 1,085,434	$ -	**$ 1,085,434**
4.5	Site Accommodation, Facilities, Storage	1.0	LS	1,085,434.50			$ 1,085,434	$ -	$ -	**$ 1,085,434**
	Engineering									
4.6	Design Engineering	1.0	LS		$ 5,427,172	$ -	$ -	$ 5,427,172	$ -	**$ 5,427,172**
4.7	LiDAR /GPR	1.0	LS		$ 195,378	$ 130,252	$ -	$ 195,378	$ 130,252	**$ 325,630**
4.8	Geotech	9.0	Location		$ 2,730	$ 1,820	$ -	$ 24,570	$ 16,380	**$ 40,950**
4.9	Surveying/Staking	1	LS		$ 455,882		$ -	$ 455,882	$ -	**$ 455,882**
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		$ 20,000		$ -	$ 20,000	$ -	**$ 20,000**
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		$ 1,085,434		$ -	$ 1,085,434	$ -	**$ 1,085,434**
4.12	Environmental-special studies/investigation	-	LS		$ -		$ -	$ -	$ -	**$ -**
4.13	Warranties / LOC's	1	LS		$ 325,630		$ -	$ 325,630	$ -	**$ 325,630**
4.14	Laydown Lease & temporary easement	1	LS		$ 1,000,000		$ -	$ 1,000,000	$ -	**$ 1,000,000**
4.15	Real Estate (Acquisition)	1	LS		$ -	$ 164,858	$ -	$ -	$ 164,858	**$ 164,858**
4.16	Legal Fees (Real estate)	1.00	LS		-	4,945.74	$ -	$ -	$ 4,946	**$ 4,946**
4.17	Insurance	-	LS		-	-	$ -	$ -	$ -	**$ -**
4.18	Insurance (specialty, e.g. railroad)	1	Crossing			$ 1,000	$ -	$ -	$ 1,000	**$ 1,000**
4.19	Bonds	1	LS			$ 3,840,000	$ -	$ -	$ 3,840,000	**$ 3,840,000**
4.20	Sales Tax on Materials	8.88%	% of material cost	$ 39,881,775.62			$ 3,541,502	$ -	$ -	**$ 3,541,502**
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			$ 108,543	$ -	$ -	$ 108,543	**$ 108,543**
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							**$ 4,626,936**	**$ 17,106,525**	**$ 5,639,213**	**$ 27,372,674**

	Propel NY - TO49 BS3
	ESTIMATE ASSUMPTIONS & CLARIFICATIONS
General assumptions/clarifications	
1	This TO49 estimating workbook includes the substation and transmission line components listed in the sheet.
2	Based on 2022 pricing
3	The estimate contains 20% contingency amount. To cover unknow risk allowance. Costs include contractor mark-up (6%-trunkey cost (i.e. HVDC, GIS), 18%-others) for OH and profit
4	Costs have been developed based on historical data from Projects of a similar nature (AACE Class 5 and 4 Estimating Practices). Major equipment pricing is based on budgetary quotes from equipment suppliers. However, we have not engaged any subcontractors or material venders for formal quotes for minor materials.
5	Cost for dust control is excluded, we assume that water trucks for construction are not required.
6	Excavation currently excludes rock. More detail required to quantify rock, as well as construction means and methods allowed. Rock adder is approximately $405/CY for standard rock excavation.
7	Work schedule assumes working 5 days per week, 10 hours per day. The construction durations for each segment are based on Attachment B.04.1_Addendum Construction Schedule Revision 0.
8	Pricing assumes union labor will be required.
9	In indirect section, we assume that these construction contracts will be let on an EPC type basis (perhaps progressive design-build or similar contracting model) and that the construction contractor would have significant input into the pre-con planning stage. The project management staffing make up is based on the project scope and duration, for the substation interconnection/upgrade project (expect East Garden City station) only assume one construction manager and one environmental coordinator to meet EMCP requirement.
10	Cost s will vary for handling and disposal of contaminated spoils, depending on type of contaminants and availability / location of the appropriate tippy facility. Since there is not enough information to provide a quantified estimate for this item, allowance is included in the contingency monies.
11	An allowance of 5% for transmission design and engineering is included in indirect section, cost of turnkey GIS and HVDC excluded
12	An allowance of 8% for substation design and engineering is included in indirect section, cost of turnkey GIS and HVDC excluded
13	An allowance of 0.3% for GPR of the transmission line is included in indirect section
14	An allowance of 0.7% for survey and staking of the tline and substation layout is included in indirect section, cost of turnkey GIS and HVDC excluded for substations.
15	An allowance of 3.75% for substation testing and commissioning is included in indirect section, cost of turnkey GIS and HVDC excluded
16	An allowance of $20,000 per circuit for transmission line testing and commissioning is included in indirect section
17	An allowance of 1% for environmental Licensing & Permitting Costs & related legal cost is included in indirect section; and cost for environmental-special studies/investigation is quantified and included for required segment. Cost of turnkey GIS and HVDC excluded for substations.
18	The estimate does not include cost for insurance, assume it will be provided by he owner (i.e. OCIP) . The estimate includes cost for bond (2% of the total contract value)
19	New York State sales tax of 8.8% is included for all material pricing
20	A mob of 3% and demob of 2% has been included per segment (percentage is based on construction labor and equipment costs), except submarine segment.
21	An allowance of 1% for Preconstruction Supervision (Engineering, Permitting, Procurement) is included in indirect section.
22	An allowance of 4% for Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff) is included in indirect section.
23	An allowance of 1% for Utility PM and Project Oversite is included in indirect section.
24	An allowance of 1% for Site Accommodation, Facilities, Storage is included in indirect section.
25	An allowance of 3% of the real estate acquisition cost is included for real estate legal fees.
Tline assumptions/clarifications	
26	Assumed all UG conduits are installed with concrete encasement and no splicing point included inside substations. The conduit trench details please refer to each tab.
27	Not enough detail to quantify existing utility relocation. A plug of $1M per mile has been included for relocation of existing utilities and $200K / mile for protection of existing utilities.
28	Traffic control allows for k-rail, metal sheet plates and lane control for underground sections. We have not included for construction of new roads or any permanent traffic measures.
29	The trench excavation width and depth assumed details are shown in each tab.
30	The MH counts are based on our field and desktop review
31	Assumes that 30% of native spoils from vault excavation will be used as backfill.
32	Off haul / disposal spoils quantity includes a 1.3X multiplier for truck load.
33	Assumed asphalt paving repair includes a 2" surfacing course pavement
34	Additional 5% of route length is added to UG cable length, 10% of route length added to submarine cable length
35	Shore Road to Sprainbrook 345kv UG line, assume Shore Road to New Rochelle is 2-circuit, New Rochelle to Sprainbrook is 1 -circuit.
36	BS3.5 EGC to Ruland 138KV, we assumed it would be a separate trench from 345kv (concrete encasement) at 8' deep.
37	The submarine cable quantity and cost are calculated based on # of passes and the total cable length. We assume i.e 1 circuits, 2 cable per circuit, so there are 2 passes.
38	For transmission lines that are routed on the west side of the LI Sound (Bronx and Westchester County) assume 40% rock excavation.
Substation assumptions/clarifications	
39	Site grading: Excavation quantity in substations is based on 3', fill quantity is based on 60% site borrow and 40% import.
40	Substation new access road access road quantity is based on interior access road only, no new exterior access roads are required based on the plot drawings provided.
41	Substation pad is based on 8" base and 6" surfacing rock.
42	The firewalls for transformers/PAR/Reactors are assumed 30' tall, if required
43	All of the enclosure buildings are based on dimensions shown on the site plot plan, cost includes pre-engineered building structure, HVAC, mechanical, fire protection.
44	Costs for precast concrete piles (12"x80') were included in several substations by developer, there are no drawings nor geo technical report to verify if it is required and the quantities. We assumed it is required and included the costs based on developer's quantities.
45	The control panels quantities and values are provided by Sub Station Engineers.