

Propel NY - TO53 AS7		
REVISION: 1		
Propel NY - TO53 AS7 -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 Substation	\$ 23,199,414
Direct Labor, Material & Equipment Costs	3 - Ruland Road 345/138 kV Substation	\$ 73,584,516
Direct Labor, Material & Equipment Costs	4 - New 345/138 kV Eastern Queens Substation	\$ 146,275,876
Direct Labor, Material & Equipment Costs	5 - Barrett 345 kV Substation	\$ 94,323,411
Direct Labor, Material & Equipment Costs	6- Sprain Brook HVDC Converter Station	\$ 319,934,144
Direct Labor, Material & Equipment Costs	7 - New Northport HVDC Converter Station	\$ 307,222,530
Direct Labor, Material & Equipment Costs	8 - New Northport 345/138 kV Substation	\$ 102,988,613
Direct Labor, Material & Equipment Costs	9 - Existing EGC 345 kV_ Upgrade	\$ 7,358,978
Direct Labor, Material & Equipment Costs	10 - Existing 345 kV Tremont Substation_ GIS_ Interconnection	\$ 21,413,864
Direct Labor, Material & Equipment Costs	11 - Existing Sprain Brook 345 kV_ Interconnection	\$ 19,288,048
Direct Labor, Material & Equipment Costs	12 - Existing Ruland 138 kV_ Upgrade & Interconnection	\$ 7,291,825
Direct Labor, Material & Equipment Costs	13 -Existing Shore Road 138 kV_ Interconnection	\$ 9,362,353
Direct Labor, Material & Equipment Costs	14 -Existing Syosset 138 kV_ Interconnection	\$ 12,405,013
Direct Labor, Material & Equipment Costs	15 - Existing Dunwoodie 345 kV_ Interconnection	\$ 4,249,613
Direct Labor, Material & Equipment Costs	16 -Existing Holbrook 138 Kv_ Upgrade	\$ 1,013,645
Direct Labor, Material & Equipment Costs	17 -Existing Barrett 138 Kv_ Upgrade	\$ -
Direct Labor, Material & Equipment Costs	18 - Existing EGC 138 kV_ Upgrade	\$ 9,544,442
Direct Labor, Material & Equipment Costs	19 -Existing Lake Success 138 kV_ Upgrade	\$ 12,857,454
Direct Labor, Material & Equipment Costs	20 - Existing Rainey 345 kV_ Upgrade	\$ 2,756,158
Direct Labor, Material & Equipment Costs	21 -Other Substation Upgrades	\$ 341,250
SUBTOTAL (Costs):		\$ 1,180,601,102
CONTRACTOR MARK-UP (OH&P)		\$ 131,873,280
SUBTOTAL (AFTER MU):		\$ 1,312,474,382
CONTINGENCY ON ENTIRE PROJECT		\$ 262,494,876
Substation TOTAL:		\$ 1,574,969,258
Substation Direct Costs		Total Each Segment
Direct Labor, Material & Equipment Costs	AS7.1. Barrett to Tremont 345kV Onshore UG Cables -single circuit	\$ 317,449,703
Direct Labor, Material & Equipment Costs	AS7.2. Syosset to Shore Road 138kV Onshore UG Cables -single circuit	\$ 113,508,061
Direct Labor, Material & Equipment Costs	AS7.3 Ruland Road to Shore Road 345kV Onshore UG Cables -single circuit	\$ 202,597,296
Direct Labor, Material & Equipment Costs	AS 7.4a Shore Road to New Rochelle Offshore Submarine Cables - two circuits (two lines, single circuit each)	\$ 148,375,821
Direct Labor, Material & Equipment Costs	AS7.4a Shore Road to New Rochelle Onshore UG Cables - two circuits (two lines, single circuit each)	\$ 32,237,380
Direct Labor, Material & Equipment Costs	AS7.4b New Rochelle to Sprainbrook 345kV Onshore UG Cables - single circuit	\$ 108,543,450
Direct Labor, Material & Equipment Costs	AS7.5 Barrett to Eastern Queens Onshore UG Cables -Double circuit	\$ 264,010,910
Direct Labor, Material & Equipment Costs	AS7.6 Eastern Queens to Dunwoodie 345kV Onshore UG Cables -single circuit	\$ 272,316,291
Direct Labor, Material & Equipment Costs	AS 7.7a. Northport to Sprain Brook 320k HVDC Offshore Submarine Cables - Single circuit	\$ 306,964,932
Direct Labor, Material & Equipment Costs	AS7.7b Northport to Sprain Brook ±320 kV HVDC Onshore UG Cables - single circuit	\$ 152,176,793
Direct Labor, Material & Equipment Costs	AS7.8a 901 Intercept to Eastern Queens 138kV Onshore UG Cables- Double Circuit (Separate Conduit)	\$ 11,079,982
Direct Labor, Material & Equipment Costs	AS7.8b 903 Intercept to Eastern Queens 138kV Onshore UG Cables- Double Circuit (Separate Conduit)	\$ 40,430,416
Direct Labor, Material & Equipment Costs	AS7.9 901 Eastern Queens to Valley Stream 138kV Replacement Onshore UG Cables- Single Circuit	\$ 63,689,609
Direct Labor, Material & Equipment Costs	Other Misc. Upgrades	\$ 8,200,000
SUBTOTAL (Costs):		\$ 2,041,580,645
CONTRACTOR MARK-UP (OH&P)		\$ 367,484,516
SUBTOTAL (AFTER MU):		\$ 2,409,065,161
CONTINGENCY ON ENTIRE PROJECT		\$ 481,813,032
Transmission TOTAL:		\$ 2,890,878,193
Propel NY - TO53 AS7Total Direct Cost		\$ 4,465,847,452

Propel NY - TO53 AS7 -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 Substation	\$ 7,887,702
Indirect Costs	3 - Ruland Road 345/138 kV Substation	\$ 25,072,487
Indirect Costs	4 - New 345/138 kV Eastern Queens Substation	\$ 55,633,044
Indirect Costs	5 - Barrett 345 kV Substation	\$ 40,828,541
Indirect Costs	6- Sprain Brook HVDC Converter Station	\$ 36,115,670
Indirect Costs	7 - New Northport HVDC Converter Station	\$ 28,062,931
Indirect Costs	8 - New Northport 345/138 kV Substation	\$ 27,866,635
Indirect Costs	9 - Existing EGC 345 kV_ Upgrade	\$ 12,760,863
Indirect Costs	10 - Existing 345 kV Tremont Substation_GIS_ Interconnection	\$ 3,217,283
Indirect Costs	11 - Existing Sprain Brook 345 kV_ Interconnection	\$ 3,822,420
Indirect Costs	12 - Existing Ruland 138 kV_ Upgrade & Interconnection	\$ 2,322,912
Indirect Costs	13 -Existing Shore Road 138 kV_ Interconnection	\$ 3,015,951
Indirect Costs	14 -Existing Syosset 138 kV_ Interconnection	\$ 4,132,015
Indirect Costs	15 - Existing Dunwoodie 345 kV_ Interconnection	\$ 685,728
Indirect Costs	16 -Existing Holbrook 138 Kv_ Upgrade	\$ 333,220
Indirect Costs	17 -Existing Barrett 138 Kv_ Upgrade	\$ -
Indirect Costs	18 - Existing EGC 138 kV_ Upgrade	\$ 2,985,944
Indirect Costs	19 -Existing Lake Success 138 kV_ Upgrade	\$ 4,247,145
Indirect Costs	20 - Existing Rainey 345 kV_ Upgrade	\$ 903,991
Indirect Costs	21 -Other Substation Upgrades	\$ 116,339
SUBTOTAL (Costs):		\$ 264,201,157
CONTRACTOR MARK-UP (OH&P)		\$ 47,556,208
SUBTOTAL (AFTER MU):		\$ 311,757,365
CONTINGENCY ON ENTIRE PROJECT		\$ 62,351,473
Substation TOTAL:		\$ 374,108,838
Transmission Indirect Costs		Total Each Segment
Indirect Costs	AS7.1. Barrett to Tremont 345kV Onshore UG Cables -single circuit	\$ 80,417,599
Indirect Costs	AS7.2. Syosset to Shore Road 138kV Onshore UG Cables -single circuit	\$ 29,363,579
Indirect Costs	AS7.3 Ruland Road to Shore Road 345kV Onshore UG Cables -single circuit	\$ 51,255,552
Indirect Costs	AS 7.4a Shore Road to New Rochelle Offshore Submarine Cables - two circuits (two lines, single circuit each)	\$ 41,406,484
Indirect Costs	AS7.4a Shore Road to New Rochelle Onshore UG Cables - two circuits (two lines, single circuit each)	\$ 8,473,490
Indirect Costs	AS7.4b New Rochelle to Sprainbrook 345kV Onshore UG Cables - single circuit	\$ 27,372,674
Indirect Costs	AS7.5 Barrett to Eastern Queens Onshore UG Cables -Double circuit	\$ 65,796,610
Indirect Costs	AS7.6 Eastern Queens to Dunwoodie 345kV Onshore UG Cables -single circuit	\$ 69,675,926
Indirect Costs	AS 7.7a. Northport to Sprain Brook 320k HVDC Offshore Submarine Cables - Single circuit	\$ 71,215,375
Indirect Costs	AS7.7b Northport to Sprain Brook ±320 kV HVDC Onshore UG Cables - single circuit	\$ 37,863,972
Indirect Costs	AS7.8a 901 Intercept to Eastern Queens 138kV Onshore UG Cables- Double Circuit (Separate Conduit)	\$ 3,274,585
Indirect Costs	AS7.8b 903 Intercept to Eastern Queens 138kV Onshore UG Cables- Double Circuit (Separate Conduit)	\$ 10,503,551
Indirect Costs	AS7.9 901 Eastern Queens to Valley Stream 138kV Replacement Onshore UG Cables- Single Circuit	\$ 16,606,670
Indirect Costs	Other Misc. Upgrades	\$ 2,606,000
SUBTOTAL (Costs):		\$ 515,832,068
CONTRACTOR MARK-UP (OH&P)		\$ 92,849,772
SUBTOTAL (AFTER MU):		\$ 608,681,840
CONTINGENCY ON ENTIRE PROJECT		\$ 121,736,368
Transmission TOTAL:		\$ 730,418,208
CONTINGENCY ON ENTIRE PROJECTTotal Indirect Cost		\$ 1,104,527,046
Propel NY - TO53 AS7 Total		\$ 5,570,374,498

Propel NY - TO53 AS7

1 - New Rochelle 345kV Substation

Total: \$ 13,282,494

Propel NY - TO53 AS7				
	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
4.2	\$ 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
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

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							\$ 1,186,234	\$ 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 EQUIPMENT										
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	\$ -	\$ -	\$ -	\$ -
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	\$ -	\$ -	\$ -	\$ -

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							\$ -	\$ -	\$ -	\$ -
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 Oversight	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 - TO53 AS7

2 - Shore Road 345 kV Substation

Total: \$ 44,019,357

Propel NY - TO53 AS7				
	Material Supply	Labor Supply	Equip Supply	Total
2 - Shore Road 345 kV Substation				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 1,979,553	\$ 2,997,434	\$ 2,009,487	\$ 6,986,474
2. SUBSTATION FOUNDATIONS	\$ 1,967,614	\$ 1,826,216	\$ 1,292,210	\$ 5,086,040
3. SUBSTATION STRUCTURES	\$ 532,556	\$ 458,935	\$ 289,685	\$ 1,281,176
4. MAJOR EQUIPMENT	\$ 4,777,734	\$ 748,727	\$ 420,349	\$ 5,946,810
5. LOW VOLTAGE & CONTROL CABLE	\$ 76,284	\$ 20,628	\$ 4,126	\$ 101,038
6. CONDUIT & CABLE TRENCH	\$ 957,512	\$ 591,799	\$ 304,206	\$ 1,853,518
7. GROUND GRID	\$ 75,011	\$ 54,328	\$ 12,708	\$ 142,047
8. CONTROL ENCLOSURE	\$ 841,656	\$ 701,803	\$ 258,853	\$ 1,802,312
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 1,218,291	\$ 5,044,983	\$ 1,624,428	\$ 7,887,702
SUBTOTAL (Costs):	\$ 12,426,211	\$ 12,444,853	\$ 6,216,052	\$ 31,087,116
CONTRACTOR MARK-UP (OH&P)	\$ 2,236,718	\$ 2,240,073	\$ 1,118,889	\$ 5,595,681
SUBTOTAL:	\$ 14,662,929	\$ 14,684,926	\$ 7,334,942	\$ 36,682,797
CONTINGENCY ON ENTIRE PROJECT	\$ 2,932,586	\$ 2,936,985	\$ 1,466,988	\$ 7,336,559
TOTAL:	\$ 17,595,515	\$ 17,621,911	\$ 8,801,930	\$ 44,019,357

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. 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 shunt reactor 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 Substation										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	2.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ 21,600	\$ 14,400	\$ 36,000
1.2	Demolition	0	ACRE	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	2,028	SY	4.85	7.20	4.80	\$ 9,835	\$ 14,601	\$ 9,734	\$ 34,170
1.4	Strip and Dispose Top Soil	32,267	CY		24.50	10.50	\$ -	\$ 790,533	\$ 338,800	\$ 1,129,333
1.5	Site Grading- Excavation for Substation Pad	1,613	CY		243.00	162.00	\$ -	\$ 392,040	\$ 261,360	\$ 653,400
		32,267	CY		9.00	6.00	\$ -	\$ 290,400	\$ 193,600	\$ 484,000
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	17,424	CY		21.00	9.00	\$ -	\$ 365,904.00	\$ 156,816.00	\$ 522,720.00
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	26,136	CY		2.40	1.60	\$ -	\$ 62,726	\$ 41,818	\$ 104,544
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	17,424	CY	25.00	2.40	1.60	\$ 435,600	\$ 41,818	\$ 27,878	\$ 505,296
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	9,680	SY	11.00	6.00	4.00	\$ 106,480	\$ 58,080	\$ 38,720	\$ 203,280
1.11	Site Surfacing - Aggregate 6" Thick	9,680	SY	16.50	4.50	3.00	\$ 159,720	\$ 43,560	\$ 29,040	\$ 232,320
1.12	7' Station Fence w/ Barbed Wire & Grounding	972	LF	13.85	13.85	6.92	\$ 13,460	\$ 13,460	\$ 6,730	\$ 33,651
1.13	25' 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	92,595.69	30,720.00	38,052.00	\$ 92,596	\$ 30,720	\$ 38,052	\$ 161,368
1.16	Seeding	6,320	SF	1.50	1.50	1.00	\$ 9,480	\$ 9,480	\$ 6,320	\$ 25,280
1.17	Erosion Control-Silt fence install & remove	1,545	LF	2.41	3.16	0.72	\$ 3,723	\$ 4,882	\$ 1,112	\$ 9,718
1.18	Temporary fencing	1,030	LF	7.50	5.25	2.25	\$ 7,725	\$ 5,408	\$ 2,318	\$ 15,450
1.19	Substation entrance with asphalt	222	SY	19.50	26.00	19.50	\$ 4,333	\$ 5,778	\$ 4,333	\$ 14,444
1.20	Concrete curb	180	LF	26.00	27.30	11.70	\$ 4,680	\$ 4,914	\$ 2,106	\$ 11,700

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
1.21	Retaining Wall	712	LF	1,560.00	1,170.00	1,170.00	\$ 1,110,720	\$ 833,040	\$ 833,040	\$ 2,776,800
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 1,979,553	\$ 2,997,434	\$ 2,009,487	\$ 6,986,474
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast foundation	53	CY	703.89	804.44	502.78	\$ 37,609	\$ 42,981	\$ 26,863	\$ 107,453
2.2	345kV, Bus support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.3	345kV, Bus support-3 Ph, low	55	CY	703.89	804.44	502.78	\$ 38,925	\$ 44,486	\$ 27,803	\$ 111,214
2.4	345kV, Bus support-1 Ph	143	CY	703.89	804.44	502.78	\$ 100,346	\$ 114,681	\$ 71,676	\$ 286,702
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	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, Cable sealing end	32	CY	703.89	804.44	502.78	\$ 22,595	\$ 25,823	\$ 16,139	\$ 64,556
2.10	345kV, CCVT	16	CY	703.89	804.44	502.78	\$ 11,297	\$ 12,911	\$ 8,070	\$ 32,278
2.11	345kV, SSVT	16	CY	703.89	804.44	502.78	\$ 11,297	\$ 12,911	\$ 8,070	\$ 32,278
2.15	345kV, Disconnect Switch	95	CY	703.89	804.44	502.78	\$ 66,897	\$ 76,454	\$ 47,784	\$ 191,135
2.12	345/138KV, Power Transformer with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, Shunt Reactor with oil containment-200MVAR	834	CY	703.89	804.44	502.78	\$ 587,040	\$ 670,903	\$ 419,314	\$ 1,677,257
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)	20	CY	703.89	804.44	502.78	\$ 14,078	\$ 16,089	\$ 10,056	\$ 40,222
2.18	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Surge arrester	64	CY	703.89	804.44	502.78	\$ 45,189	\$ 51,645	\$ 32,278	\$ 129,113
2.20	345/138 Kv, Control Enclosure-BLDG with generator pad	165	CY	703.89	804.44	502.78	\$ 116,141	\$ 132,733	\$ 82,958	\$ 331,832
2.21	138kV, Phase Angle Regulator with oil containment	-	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	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	Precast Firewall for transformer, PARs, reactors	16,680	SF	25.00	15.00	10.00	\$ 417,000	\$ 250,200	\$ 166,800	\$ 834,000
2.28	Precast Concrete Piles-12"X80'	104	EA	4,800.00	3,600.00	3,600.00	\$ 499,200	\$ 374,400	\$ 374,400	\$ 1,248,000
2.29	Local Control Cabinet foundation	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 1,967,614	\$ 1,826,216	\$ 1,292,210	\$ 5,086,040
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast foundation	3	EA	23,400.00	14,040.00	9,360.00	\$ 70,200	\$ 42,120	\$ 28,080	\$ 140,400
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	5	EA	8,346.00	5,758.74	3,839.16	\$ 41,730	\$ 28,794	\$ 19,196	\$ 89,720
3.4	345kV, Bus support-1 Ph	18	EA	4,810.00	2,886.00	1,924.00	\$ 86,580	\$ 51,948	\$ 34,632	\$ 173,160
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	0	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	3	EA	8,346.00	5,758.74	3,839.16	\$ 25,038	\$ 17,276	\$ 11,517	\$ 53,832
3.10	345kV, CCVT	3	EA	4,810.00	2,886.00	1,924.00	\$ 14,430	\$ 8,658	\$ 5,772	\$ 28,860
3.11	345kV, SSVT	3	EA	4,810.00	2,886.00	1,924.00	\$ 14,430	\$ 8,658	\$ 5,772	\$ 28,860
3.12	345kV, Disconnect Switch	3	EA	19,240.00	11,544.00	7,696.00	\$ 57,720	\$ 34,632	\$ 23,088	\$ 115,440
3.13	345kV, Surge arrester	12	EA	4,810.00	2,886.00	1,924.00	\$ 57,720	\$ 34,632	\$ 23,088	\$ 115,440
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	0	EA	4,066.40	1,443.00	962.00	\$ -	\$ -	\$ -	\$ -
3.18	AL. Bus Tubing, 5" SCH 80	845	LF	25.00	184.94	123.29	\$ 21,125	\$ 156,273	\$ 104,182	\$ 281,579
3.19	AL. Bus fittings	1	LS	25,350.00	25,350.00	12,675.00	\$ 25,350	\$ 25,350	\$ 12,675	\$ 63,375
3.20	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 - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 532,556	\$ 458,935	\$ 289,685	\$ 1,281,176
4. MAJOR EQUIPMENT										

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- Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, CCVT	3	EA	16,900.00	15,941.99	6,832.28	\$ 50,700	\$ 47,826	\$ 20,497	\$ 119,023
4.4	345kV, SSVT	3	EA	16,900.00	15,941.99	6,832.28	\$ 50,700	\$ 47,826	\$ 20,497	\$ 119,023
4.5	345kV, Disconnect Switch	3	EA	57,720.00	34,632.00	23,088.00	\$ 173,160	\$ 103,896	\$ 69,264	\$ 346,320
4.6	345/138KV, Power Transformer	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-200MVAR	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	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	Transport & Testing- Shunt Reactor	1	EA		331,900.00	217,600.00	\$ -	\$ 331,900	\$ 217,600	\$ 549,500
4.12	345kV, Phase Angle Regulator	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.13	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
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		10,080.00	4,320.00	\$ -	\$ -	\$ -	\$ -
4.17	345kV, surge Arrester	12	EA	8,450.00	5,460.00	2,340.00	\$ 101,400	\$ 65,520	\$ 28,080	\$ 195,000
4.16	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.17	138kV, Phase Angle Regulator	0	EA				\$ -	\$ -	\$ -	\$ -
4.18	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.19	138kV, Disconnect Switch	0	EA				\$ -	\$ -	\$ -	\$ -
4.20	138kV, Cable sealing end	0	EA		1,050.00	450.00	\$ -	\$ -	\$ -	\$ -
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							\$ 4,777,734	\$ 748,727	\$ 420,349	\$ 5,946,810
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control cables	14,400	LF	5.30	1.43	0.29	\$ 76,284	\$ 20,628	\$ 4,126	\$ 101,038
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 76,284	\$ 20,628	\$ 4,126	\$ 101,038
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	3,150	LF	11.15	10.80	5.40	\$ 35,123	\$ 34,020	\$ 17,010	\$ 86,153
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	900	LF	266.50	53.04	13.26	\$ 239,850	\$ 47,736	\$ 11,934	\$ 299,520
6.7										
6.8	138kV UG- Conduit	1,100	LF	81.00	107.00	57.00	\$ 89,100	\$ 117,700	\$ 62,700	\$ 269,500
6.9	138kV UG- Cable	3,300	LF	156.00	94.00	62.00	\$ 514,800	\$ 310,200	\$ 204,600	\$ 1,029,600
6.10	138kV UG- Termination	6	EA	9,360.00	11,700.00		\$ 56,160	\$ 70,200	\$ -	\$ 126,360
6.11	Fiber Optic Cable	1,100	LF	7.40	3.33	2.22	\$ 8,137	\$ 3,664	\$ 2,442	\$ 14,243
6.12	Ground Continuity Conductor	1,100	LF	13.04	7.53	5.02	\$ 14,343	\$ 8,280	\$ 5,520	\$ 28,142
TOTAL - CONDUIT & CABLE TRENCH							\$ 957,512	\$ 591,799	\$ 304,206	\$ 1,853,518
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	7,760	LF	2.09	3.42	1.46	\$ 16,226	\$ 26,503	\$ 11,358	\$ 54,087
7.2	Caweld, DSA, 4/0 , T, CROSS	209	EA	165.00	75.00		\$ 34,485	\$ 15,675	\$ -	\$ 50,160
7.3	Ground Rod, 3/4" x 15'	180	EA	135.00	67.50	7.50	\$ 24,300	\$ 12,150	\$ 1,350	\$ 37,800
TOTAL - GROUND GRID							\$ 75,011	\$ 54,328	\$ 12,708	\$ 142,047
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	1	EA	238,218.43	166,752.90	71,465.53	\$ 238,218	\$ 166,753	\$ 71,466	\$ 476,437
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 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	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

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
8.12	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							\$ 841,656	\$ 701,803	\$ 258,853	\$ 1,802,312
2 - Shore Road 345 kV Substation							\$ 11,207,920	\$ 7,399,870	\$ 4,591,624	\$ 23,199,414
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		419,702.30	179,872.41	\$ -	\$ 419,702	\$ 179,872	\$ 599,575
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		231,994.14		\$ -	\$ 231,994	\$ -	\$ 231,994
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		927,976.58		\$ -	\$ 927,977	\$ -	\$ 927,977
9.4	Utility PM and Project Oversight	1.0	LS		231,994.14		\$ -	\$ 231,994	\$ -	\$ 231,994
9.5	Site Accommodation, Facilities, Storage	1.0	LS	231,994.14			\$ 231,994	\$ -	\$ -	\$ 231,994
	Engineering									
9.6	Design Engineering	1.00	LS		1,855,953.15		\$ -	\$ 1,855,953	\$ -	\$ 1,855,953
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		162,395.90		\$ -	\$ 162,396	\$ -	\$ 162,396
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		869,978.04		\$ -	\$ 869,978	\$ -	\$ 869,978
	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		231,994.14		\$ -	\$ 231,994	\$ -	\$ 231,994
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		69,598.24		\$ -	\$ 69,598	\$ -	\$ 69,598
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS			539,277.00	\$ -	\$ -	\$ 539,277	\$ 539,277
9.17	Legal Fees (Real estate)	1.00	LS		-	16,178.31	\$ -	\$ -	\$ 16,178	\$ 16,178
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 880,000	\$ -	\$ -	\$ 880,000	\$ 880,000
9.20	Sales Tax on Materials	8.80%	LS	11,207,920.27			\$ 986,297	\$ -	\$ -	\$ 986,297
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		23,199.41		\$ -	\$ 23,199	\$ -	\$ 23,199
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 1,218,291	\$ 5,044,983	\$ 1,624,428	\$ 7,887,702

Propel NY - TO53 AS7

3 - Ruland Road 345/138 kV Substation

Total: \$ 139,698,316

Propel NY - TO53 AS7				
	Material Supply	Labor Supply	Equip Supply	Total
3 - Ruland Road 345/138 kV Substation				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 1,542,746	\$ 1,290,254	\$ 735,698	\$ 3,568,698
2. SUBSTATION FOUNDATIONS	\$ 5,768,874	\$ 3,276,141	\$ 2,200,338	\$ 11,245,354
3. SUBSTATION STRUCTURES	\$ 1,770,980	\$ 1,373,450	\$ 844,497	\$ 3,988,927
4. MAJOR EQUIPMENT	\$ 38,613,141	\$ 6,875,511	\$ 2,460,010	\$ 47,948,662
5. LOW VOLTAGE & CONTROL CABLE	\$ 367,117	\$ 99,272	\$ 19,854	\$ 486,243
6. CONDUIT & CABLE TRENCH	\$ 1,987,196	\$ 1,276,679	\$ 613,471	\$ 3,877,347
7. GROUND GRID	\$ 287,968	\$ 209,061	\$ 49,194	\$ 546,222
8. CONTROL ENCLOSURE	\$ 902,031	\$ 773,925	\$ 247,106	\$ 1,923,062
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 5,244,970	\$ 15,510,257	\$ 4,317,259	\$ 25,072,487
SUBTOTAL (Costs):	\$ 56,485,023	\$ 30,684,551	\$ 11,487,429	\$ 98,657,003
CONTRACTOR MARK-UP (OH&P)	\$ 10,167,304	\$ 5,523,219	\$ 2,067,737	\$ 17,758,260
SUBTOTAL:	\$ 66,652,327	\$ 36,207,770	\$ 13,555,166	\$ 116,415,263
CONTINGENCY ON ENTIRE PROJECT	\$ 13,330,465	\$ 7,241,554	\$ 2,711,033	\$ 23,283,053
TOTAL:	\$ 79,982,792	\$ 43,449,324	\$ 16,266,199	\$ 139,698,316

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”) five (5) position ring bus substation and a 345 kV AIS four (4) 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	4.9	ACRE	-	10,800.00	7,200.00	\$ -	\$ 53,051	\$ 35,367	\$ 88,418
1.2	Demolition	0	ACRE	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	4,476	SY	4.85	7.20	4.80	\$ 21,709	\$ 32,227	\$ 21,485	\$ 75,421
1.4	Strip and Dispose Top Soil	7,925	CY		24.50	10.50	\$ -	\$ 194,160	\$ 83,212	\$ 277,372
1.5	Site Grading- Excavation for Substation Pad	23,775	CY		9.00	6.00	\$ -	\$ 213,972	\$ 142,648	\$ 356,621
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	12,838	CY		21.00	9.00	\$ -	\$ 269,605.33	\$ 115,545.14	\$ 385,150.47
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	19,258	CY		2.40	1.60	\$ -	\$ 46,218	\$ 30,812	\$ 77,030
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	12,838	CY	25.00	2.40	1.60	\$ 320,959	\$ 30,812	\$ 20,541	\$ 372,312
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	23,775	SY	11.00	6.00	4.00	\$ 261,522	\$ 142,648	\$ 95,099	\$ 499,269
1.11	Site Surfacing - Aggregate 6" Thick	23,775	SY	16.50	4.50	3.00	\$ 392,283	\$ 106,986	\$ 71,324	\$ 570,593
1.12	7' Station Fence w/ Barbed Wire & Grounding	1,896	LF	13.85	13.85	6.92	\$ 26,256	\$ 26,256	\$ 13,128	\$ 65,640
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	3' 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	2,913	LF	2.41	3.16	0.72	\$ 7,020	\$ 9,205	\$ 2,097	\$ 18,323
1.18	Temporary fencing	1,942	LF	7.50	5.25	2.25	\$ 14,565	\$ 10,196	\$ 4,370	\$ 29,130
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							\$ 1,542,746	\$ 1,290,254	\$ 735,698	\$ 3,568,698
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	107	CY	703.89	804.44	502.78	\$ 75,217	\$ 85,962	\$ 53,727	\$ 214,906
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-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, Bus support-1 Ph	238	CY	703.89	804.44	502.78	\$ 167,243	\$ 191,135	\$ 119,459	\$ 477,837
2.7	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, Cable sealing end	11	CY	703.89	804.44	502.78	\$ 7,532	\$ 8,608	\$ 5,380	\$ 21,519
2.12	345kV, CCVT	64	CY	703.89	804.44	502.78	\$ 45,189	\$ 51,645	\$ 32,278	\$ 129,113
2.13	345kV, Disconnect Switch	63	CY	703.89	804.44	502.78	\$ 44,598	\$ 50,969	\$ 31,856	\$ 127,423
2.14	345/138KV, Power Transformer with oil containment	984	CY	703.89	804.44	502.78	\$ 692,623	\$ 791,569	\$ 494,731	\$ 1,978,922
2.15	345kV, Shunt Reactor with oil containment-200MVAR			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	445	CY	703.89	804.44	502.78	\$ 313,229	\$ 357,976	\$ 223,735	\$ 894,940
2.19	345kV, Circuit Breaker (PASS)	100	CY	703.89	804.44	502.78	\$ 70,389	\$ 80,444	\$ 50,278	\$ 201,110
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345kV, Surge arrester	16	CY	703.89	804.44	502.78	\$ 11,297	\$ 12,911	\$ 8,070	\$ 32,278
2.22	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-3 Ph, low	107	CY	703.89	804.44	502.78	\$ 75,316	\$ 86,075	\$ 53,797	\$ 215,188
2.26	138kV, Bus support-1 Ph, low	73	CY	703.89	804.44	502.78	\$ 51,440	\$ 58,788	\$ 36,743	\$ 146,971
2.27	138kV, Disconnect Switch	73	CY	703.89	804.44	502.78	\$ 51,187	\$ 58,499	\$ 36,562	\$ 146,247
2.28	138kV, Cable sealing end	48	CY	703.89	804.44	502.78	\$ 34,124	\$ 38,999	\$ 24,375	\$ 97,498
2.29	138kV, CCVT	96	CY	703.89	804.44	502.78	\$ 67,784	\$ 77,468	\$ 48,417	\$ 193,669
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'-ONE BAY	73	CY	703.89	804.44	502.78	\$ 51,215	\$ 58,531	\$ 36,582	\$ 146,328
2.32	138kV, A Frame 50'-TWO BAY		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	1,200	SF	25.00	15.00	10.00	\$ 30,000	\$ 18,000	\$ 12,000	\$ 60,000
2.35	Precast Concrete Piles-12"X80'	190	EA	18,000.00	3,200.00	2,800.00	\$ 3,420,000	\$ 608,000	\$ 532,000	\$ 4,560,000
2.36	Local Control Cabinet foundation	3	CY	703.89	804.44	502.78	\$ 2,086	\$ 2,384	\$ 1,490	\$ 5,959
TOTAL - 345KV FOUNDATION							\$ 5,768,874	\$ 3,276,141	\$ 2,200,338	\$ 11,245,354
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	6	EA	23,400.00	14,040.00	9,360.00	\$ 140,400	\$ 84,240	\$ 56,160	\$ 280,800
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-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.6	345kV, Bus support-1 Ph	30	EA	4,810.00	2,886.00	1,924.00	\$ 144,300	\$ 86,580	\$ 57,720	\$ 288,600
3.7	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, Cable sealing end	1	EA	8,346.00	5,758.74	3,839.16	\$ 8,346	\$ 5,759	\$ 3,839	\$ 17,944
3.12	345kV, CCVT	12	EA	4,810.00	2,886.00	1,924.00	\$ 57,720	\$ 34,632	\$ 23,088	\$ 115,440
3.13	345kV, Disconnect Switch	2	EA	19,240.00	11,544.00	7,696.00	\$ 38,480	\$ 23,088	\$ 15,392	\$ 76,960
3.14	345kV, Surge arrester	3	EA	4,810.00	2,886.00	1,924.00	\$ 14,430	\$ 8,658	\$ 5,772	\$ 28,860
3.15	138kV, Bus support-3 Ph, low	10	EA	4,173.00	2,879.76	1,919.84	\$ 41,730	\$ 28,798	\$ 19,198	\$ 89,726
3.16	138kV, Bus support-1 Ph, low	18	EA	2,782.00	1,919.84	1,279.89	\$ 50,076	\$ 34,557	\$ 23,038	\$ 107,671
3.17	138kV, Disconnect Switch	3	EA	19,240.00	11,544.00	7,696.00	\$ 57,720	\$ 34,632	\$ 23,088	\$ 115,440
3.18	138kV, Cable sealing end	4	EA	4,810.00	2,886.00	1,924.00	\$ 19,240	\$ 11,544	\$ 7,696	\$ 38,480
3.19	138kV, CCVT	18	EA	3,206.67	1,924.00	1,282.67	\$ 57,720	\$ 34,632	\$ 23,088	\$ 115,440
3.20	138kV, Surge arrester	12	EA	4,810.00	2,886.00	1,924.00	\$ 57,720	\$ 34,632	\$ 23,088	\$ 115,440

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
3.21	138kV, A Frame 50'-ONE BAY	1	EA	33,000.00	19,800.00	13,200.00	\$ 33,000	\$ 19,800	\$ 13,200	\$ 66,000
3.22	138kV, A Frame 50'-TWO BAY	1	EA	55,110.00	33,066.00	22,044.00	\$ 55,110	\$ 33,066	\$ 22,044	\$ 110,220
3.25	AL. Bus Tubing, 5" SCH 80	2,181	LF	25.00	184.94	123.29	\$ 54,525	\$ 403,350	\$ 268,900	\$ 726,775
3.26	AL. Bus fittings	1	LS	65,430.00	65,430.00	32,715.00	\$ 65,430	\$ 65,430	\$ 32,715	\$ 163,575
3.27	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							\$ 1,770,980	\$ 1,373,450	\$ 844,497	\$ 3,988,927
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	3	EA	27,144.00	5,460.00	2,340.00	\$ 81,432	\$ 16,380	\$ 7,020	\$ 104,832
4.4	345kV, CCVT	12	EA	16,900.00	15,941.99	6,832.28	\$ 202,800	\$ 191,304	\$ 81,987	\$ 476,091
4.5	345kV, Disconnect Switch	2	EA	57,720.00	34,632.00	23,088.00	\$ 115,440	\$ 69,264	\$ 46,176	\$ 230,880
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		717,400.00	474,600.00	\$ -	\$ 2,152,200	\$ 1,423,800	\$ 3,576,000
4.8	345kV, Shunt Reactor with oil containment-200MVAR	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	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	Transport & Testing- Shunt Reactor	1	EA		3,177,700.00	217,600.00	\$ -	\$ 3,177,700	\$ 217,600	\$ 3,395,300
4.12	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- Transformer	1	EA		615,400.00	406,600.00	\$ -	\$ 615,400	\$ 406,600	\$ 1,022,000
4.14	345kV, Circuit Breaker (PASS)	5	EA	980,000.00	57,239.00	24,531.00	\$ 4,900,000	\$ 286,195	\$ 122,655	\$ 5,308,850
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	3	EA	8,450.00	5,460.00	2,340.00	\$ 25,350	\$ 16,380	\$ 7,020	\$ 48,750
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	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	12	EA	11,600.00	1,050.00	450.00	\$ 139,200	\$ 12,600	\$ 5,400	\$ 157,200
4.23	138kV, CCVT	18	EA	10,000.00	7,970.08	3,415.75	\$ 180,000	\$ 143,462	\$ 61,484	\$ 384,945
4.24	138kV, Surge arrester	12	EA	4,446.00	4,200.00	1,800.00	\$ 53,352	\$ 50,400	\$ 21,600	\$ 125,352
4.25	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
4.26	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							\$ 38,613,141	\$ 6,875,511	\$ 2,460,010	\$ 47,948,662

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. LOW VOLTAGE & CONTROL CABLE										
5.1	Control cables	69,300	LF	5.30	1.43	0.29	\$ 367,117	\$ 99,272	\$ 19,854	\$ 486,243
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 367,117	\$ 99,272	\$ 19,854	\$ 486,243
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	15,450	LF	11.15	10.80	5.40	\$ 172,268	\$ 166,860	\$ 83,430	\$ 422,558
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	1,800	LF	266.50	53.04	13.26	\$ 479,700	\$ 95,472	\$ 23,868	\$ 599,040
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							\$ 1,987,196	\$ 1,276,679	\$ 613,471	\$ 3,877,347
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	29,920	LF	2.09	3.42	1.46	\$ 62,563	\$ 102,186	\$ 43,794	\$ 208,542
7.2	Caweld, DSA, 4/0 , T, CROSS	777	EA	165.00	75.00		\$ 128,205	\$ 58,275	\$ -	\$ 186,480
7.3	Ground Rod, 3/4" x 15'	720	EA	135.00	67.50	7.50	\$ 97,200	\$ 48,600	\$ 5,400	\$ 151,200
TOTAL - GROUND GRID							\$ 287,968	\$ 209,061	\$ 49,194	\$ 546,222
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 (87L): 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 (87L): GE L90	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.4	Primary Bay Control: SEL-451	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
8.5	Backup Bay Control: SEL-451	5	EA	21,328.12	17,062.49	4,265.62	\$ 106,641	\$ 85,312	\$ 21,328	\$ 213,281
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
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	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
8.9	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
8.10	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							\$ 902,031	\$ 773,925	\$ 247,106	\$ 1,923,062
3 - Ruland Road 345/138 kV Substation							\$ 51,240,053	\$ 15,174,293	\$ 7,170,170	\$ 73,584,516
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		782,056.20	335,166.94	\$ -	\$ 782,056	\$ 335,167	\$ 1,117,223
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		735,845.16		\$ -	\$ 735,845	\$ -	\$ 735,845
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		2,943,380.64		\$ -	\$ 2,943,381	\$ -	\$ 2,943,381
9.4	Utility PM and Project Oversite	1.0	LS		735,845.16		\$ -	\$ 735,845	\$ -	\$ 735,845
9.5	Site Accommodation, Facilities, Storage	1.0	LS	735,845.16			\$ 735,845	\$ -	\$ -	\$ 735,845
	Engineering									
9.6	Design Engineering	1.00	LS		5,886,761.28		\$ -	\$ 5,886,761	\$ -	\$ 5,886,761
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		515,091.61		\$ -	\$ 515,092	\$ -	\$ 515,092
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		2,759,419.35		\$ -	\$ 2,759,419	\$ -	\$ 2,759,419
	Permitting and Additional Costs									
9.11	Physical Security	1.00	LS		108,024.84		\$ -	\$ 108,025	\$ -	\$ 108,025
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		735,845.16		\$ -	\$ 735,845	\$ -	\$ 735,845
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		220,753.55		\$ -	\$ 220,754	\$ -	\$ 220,754

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
9.15	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		-	\$ 2,780,000	\$ -	\$ -	\$ 2,780,000	\$ 2,780,000
9.20	Sales Tax on Materials	8.80%	LS	51,240,053.07			\$ 4,509,125	\$ -	\$ -	\$ 4,509,125
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		73,584.52		\$ -	\$ 73,585	\$ -	\$ 73,585
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 5,244,970	\$ 15,510,257	\$ 4,317,259	\$ 25,072,487

Propel NY - TO53 AS7

4 - New 345/138 kV Eastern Queens Substation

Total: \$ 283,129,770

Propel NY - TO53 AS7				
	Material Supply	Labor Supply	Equip Supply	Total
4 - New 345/138 kV Eastern Queens Substation				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 972,253	\$ 1,074,839	\$ 696,956	\$ 2,744,047
2. SUBSTATION FOUNDATIONS	\$ 21,139,918	\$ 10,332,456	\$ 7,223,891	\$ 38,696,265
3. SUBSTATION STRUCTURES	\$ 1,688,903	\$ 1,162,735	\$ 670,687	\$ 3,522,326
4. MAJOR EQUIPTMENT	\$ 76,901,876	\$ 10,614,637	\$ 6,896,901	\$ 94,413,414
5. LOW VOLTAGE & CONTROL CABLE	\$ 630,932	\$ 170,611	\$ 34,122	\$ 835,665
6. CONDUIT & CABLE TRENCH	\$ 605,660	\$ 314,898	\$ 139,880	\$ 1,060,438
7. GROUND GRID	\$ 174,143	\$ 125,755	\$ 29,338	\$ 329,235
8. CONTROL ENCLOSURE	\$ 2,277,743	\$ 1,822,236	\$ 574,507	\$ 4,674,486
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 10,456,617	\$ 26,381,281	\$ 18,795,146	\$ 55,633,044
Turnkey cost (HVDC, GIS)	\$ 9,629,379	\$ 5,777,627	\$ 3,851,751	\$ 19,258,757
Non-Turnkey cost	\$ 105,218,665	\$ 46,221,821	\$ 31,209,677	\$ 182,650,163
SUBTOTAL (Costs):	\$ 114,848,044	\$ 51,999,448	\$ 35,061,428	\$ 201,908,920
CONTRACTOR MARK-UP (OH&P):	\$ 19,517,122	\$ 8,666,585	\$ 5,848,847	\$ 34,032,555
SUBTOTAL:	\$ 134,365,166	\$ 60,666,034	\$ 40,910,275	\$ 235,941,475
CONTINGENCY ON ENTIRE PROJECT	\$ 26,873,033	\$ 12,133,207	\$ 8,182,055	\$ 47,188,295
TOTAL:	\$ 161,238,200	\$ 72,799,240	\$ 49,092,330	\$ 283,129,770

Description of Work: new 345/ 138 kV GIS substation in Eastern Queens at a vacant utility owned property in the area of 180th Street and Brinkerhoff Avenue. The configuration of the station would include an eight position 345 kV GIS ring bus which will allow for interconnection of the 3 underground circuits from Barrett Substation and the two circuits that connect to Tremont and Dunwoodie Substations. In addition, there will be 3 – 345/138kV autotransformers that connect to the 345 kV bus. Two of the autotransformers will feed a new 138 kV four breaker ring bus that will interconnect to the 901 and 903 circuits that will connect to Jamaica Substation. Each of the feeders that interconnect to Jamaica will be PAR controlled. The third autotransformer, with 138 kV PAR will feed a sperate new 138 kV four breaker ring bus that will interconnect with the 901 and 903 circuits that will connect to Valley Stream and Lake Success Substations. The existing PARs at Lake Success and Valley Stream will be removed. In addition, that ring bus will include a 138kV oil-filled shunt reactor.

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 - New 345/138 kV Eastern Queens Substation										
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'	2,958	SY	4.85	7.20	4.80	\$ 14,346	\$ 21,298	\$ 14,198	\$ 49,842
1.4	Strip and Dispose Top Soil	0	CY		24.50	10.50	\$ -	\$ -	\$ -	\$ -
1.5	Site Grading- Excavation for Substation Pad	16,682	CY		9.00	6.00	\$ -	\$ 150,139	\$ 100,092	\$ 250,231
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	2,252	CY		21.00	9.00	\$ -	\$ 47,293.68	\$ 20,268.72	\$ 67,562.40
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	20,269	CY		2.40	1.60	\$ -	\$ 48,645	\$ 32,430	\$ 81,075
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	2,252	CY	25.00	2.40	1.60	\$ 56,302	\$ 5,405	\$ 3,603	\$ 65,310
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	25,023	SY	-	6.00	4.00	\$ -	\$ 150,139	\$ 100,092	\$ 250,231
1.11	Site Surfacing - Aggregate 6" Thick	25,023	SY	8.25	4.50	3.00	\$ 206,441	\$ 112,604	\$ 75,069	\$ 394,114
1.12	7' Station Fence w/ Barbed Wire & Grounding	1,568	LF	13.85	13.85	6.92	\$ 21,714	\$ 21,714	\$ 10,857	\$ 54,284
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	519,366.15	96,000.00	45,300.00	\$ 519,366	\$ 96,000	\$ 45,300	\$ 660,666
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	3,185	LF	2.41	3.16	0.72	\$ 7,675	\$ 10,063	\$ 2,293	\$ 20,031
1.18	Temporary fencing	2,123	LF	7.50	5.25	2.25	\$ 15,923	\$ 11,146	\$ 4,777	\$ 31,845

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	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	580	LF	156.00	117.00	117.00	\$ 90,480	\$ 67,860	\$ 67,860	\$ 226,200
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 972,253	\$ 1,074,839	\$ 696,956	\$ 2,744,047
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	142	CY	703.89	804.44	502.78	\$ 100,290	\$ 114,617	\$ 71,635	\$ 286,542
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	11	CY	703.89	804.44	502.78	\$ 7,785	\$ 8,897	\$ 5,561	\$ 22,243
2.6	345kV, Bus support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS air terminal	40	CY	703.89	804.44	502.78	\$ 27,874	\$ 31,856	\$ 19,910	\$ 79,640
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	61	CY	703.89	804.44	502.78	\$ 42,867	\$ 48,990	\$ 30,619	\$ 122,476
2.11	345kV, GIS support-3 Ph	158	CY	703.89	804.44	502.78	\$ 111,495	\$ 127,423	\$ 79,640	\$ 318,558
2.12	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.13	345kV, Cable sealing end	13	CY	703.89	804.44	502.78	\$ 9,291	\$ 10,619	\$ 6,637	\$ 26,547
2.14	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Disconnect Switch	32	CY	703.89	804.44	502.78	\$ 22,299	\$ 25,485	\$ 15,928	\$ 63,712
2.16	345/138KV, Power Transformer with oil containment	984	CY	703.89	804.44	502.78	\$ 692,623	\$ 791,569	\$ 494,731	\$ 1,978,922
2.17	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	445	CY	703.89	804.44	502.78	\$ 313,229	\$ 357,976	\$ 223,735	\$ 894,940
2.21	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	345kV, Circuit Breaker (GIS), outdoor rated	160	CY	703.89	804.44	502.78	\$ 112,622	\$ 128,710	\$ 80,444	\$ 321,776
2.23	345kV, Surge arrester	16	CY	703.89	804.44	502.78	\$ 11,297	\$ 12,911	\$ 8,070	\$ 32,278
2.24	345/138 Kv, Control Enclosure-BLDG with generator pad	328	CY	703.89	804.44	502.78	\$ 230,874	\$ 263,856	\$ 164,910	\$ 659,641
2.25	138kV, Phase Angle Regulator with oil containment	462	CY	703.89	804.44	502.78	\$ 325,195	\$ 371,651	\$ 232,282	\$ 929,128
2.18	138kV, Shunt Reactor with oil containment-150MVAR	305	CY	703.89	804.44	502.78	\$ 214,685	\$ 245,354	\$ 153,346	\$ 613,386
2.26	138kV, Circuit Breaker (PASS)	36	CY	703.89	804.44	502.78	\$ 25,027	\$ 28,602	\$ 17,876	\$ 71,506
2.27	138kV, Bus support-3 Ph, low	182	CY	703.89	804.44	502.78	\$ 128,037	\$ 146,328	\$ 91,455	\$ 365,819
2.28	138kV, Bus support-1 Ph, low	154	CY	703.89	804.44	502.78	\$ 108,595	\$ 124,109	\$ 77,568	\$ 310,273
2.29	138kV, Disconnect Switch	194	CY	703.89	804.44	502.78	\$ 136,497	\$ 155,997	\$ 97,498	\$ 389,993
2.30	138kV, Cable sealing end	48	CY	703.89	804.44	502.78	\$ 34,124	\$ 38,999	\$ 24,375	\$ 97,498
2.31	138kV, CCVT	128	CY	703.89	804.44	502.78	\$ 90,379	\$ 103,290	\$ 64,556	\$ 258,225
2.32	138kV, Air core reactors (3 Ph)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	138kV, Surge arrester	64	CY	703.89	804.44	502.78	\$ 45,189	\$ 51,645	\$ 32,278	\$ 129,113
2.34	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, H Frame	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.36	138kV, H Frame -SHARED COLUMN (2 BAY)	176	CY	703.89	804.44	502.78	\$ 123,870	\$ 141,565	\$ 88,478	\$ 353,913
2.37	Firewall Foundation	887	CY	703.89	804.44	502.78	\$ 624,374	\$ 713,570	\$ 445,982	\$ 1,783,926
2.38	Precast Firewall for transformer, PARs, reactors	13,410	SF	25.00	15.00	10.00	\$ 335,250	\$ 201,150	\$ 134,100	\$ 670,500
2.39	Precast Concrete Piles-12"X80'	768	EA	18,000.00	3,200.00	2,800.00	\$ 13,824,000	\$ 2,457,600	\$ 2,150,400	\$ 18,432,000
2.40	Local Control Cabinet foundation	4	CY	703.89	804.44	502.78	\$ 2,607	\$ 2,979	\$ 1,862	\$ 7,449
2.41	Precast Arch. Wall foundation	3,564	CY	703.89	804.44	502.78	\$ 2,508,646	\$ 2,867,024	\$ 1,791,890	\$ 7,167,560
2.42	Precast Arch. Wall	1,800	LF	227.50	91.00	136.50	\$ 409,500.00	\$ 163,800.00	\$ 245,700.00	\$ 819,000.00
2.43	345KV GIS Sub Slab	741	CY	703.89	804.44	502.78	\$ 521,396.30	\$ 595,881.48	\$ 372,425.93	\$ 1,489,703.70
TOTAL - 345KV FOUNDATION							\$ 21,139,918	\$ 10,332,456	\$ 7,223,891	\$ 38,696,265
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	8	EA	23,400.00	14,040.00	9,360.00	\$ 187,200	\$ 112,320	\$ 74,880	\$ 374,400
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	1	EA	8,346.00	5,758.74	3,839.16	\$ 8,346	\$ 5,759	\$ 3,839	\$ 17,944
3.5	345kV, Bus support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS air terminal	6	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	15	EA	4,810.00	2,886.00	1,924.00				
3.10	345kV, GIS support-3 Ph	12	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	1	EA	8,346.00	5,758.74	3,839.16	\$ 8,346	\$ 5,759	\$ 3,839	\$ 17,944
3.13	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -

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
3.14	345kV, Disconnect Switch	1	EA	19,240.00	11,544.00	7,696.00	\$ 19,240	\$ 11,544	\$ 7,696	\$ 38,480
3.15	345kV, Surge arrester	3	EA	4,810.00	2,886.00	1,924.00	\$ 14,430	\$ 8,658	\$ 5,772	\$ 28,860
3.16	138kV, Bus support-3 Ph, low	17	EA	4,173.00	2,879.76	1,919.84	\$ 70,941	\$ 48,956	\$ 32,637	\$ 152,534
3.17	138kV, Bus support-1 Ph, low	38	EA	2,782.00	1,919.84	1,279.89	\$ 105,716	\$ 72,954	\$ 48,636	\$ 227,306
3.18	138kV, Disconnect Switch	8	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.19	138kV, Cable sealing end	4	EA	4,810.00	2,886.00	1,924.00	\$ 19,240	\$ 11,544	\$ 7,696	\$ 38,480
3.20	138kV, CCVT	24	EA	3,206.67	1,924.00	1,282.67	\$ 76,960	\$ 46,176	\$ 30,784	\$ 153,920
3.21	138kV, Surge arrester	12	EA	4,810.00	2,886.00	1,924.00	\$ 57,720	\$ 34,632	\$ 23,088	\$ 115,440
3.22	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.23	138kV, H Frame	0	EA	42,900.00	25,740.00	17,160.00	\$ -	\$ -	\$ -	\$ -
3.24	138kV, H Frame -SHARED COLUMN (2 BAY)	2	EA	42,900.00	25,740.00	17,160.00	\$ 85,800	\$ 51,480	\$ 34,320	\$ 171,600
3.25	AL. Bus Tubing, 5" SCH 80	1,620	LF	25.00	184.94	123.29	\$ 40,500	\$ 299,600	\$ 199,733	\$ 539,833
3.26	AL. Bus fittings	1	LS	48,600.00	48,600.00	24,300.00	\$ 48,600	\$ 48,600	\$ 24,300	\$ 121,500
3.27	Steel grating and support beams-transformer moat	346,240	LB	2.73	1.17	0.50	\$ 945,864	\$ 404,755	\$ 173,466	\$ 1,524,085
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 1,688,903	\$ 1,162,735	\$ 670,687	\$ 3,522,326
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	6	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	3	EA	27,144.00	5,460.00	2,340.00	\$ 81,432	\$ 16,380	\$ 7,020	\$ 104,832
4.6	345kV, CCVT	0	EA	16,900.00	15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Disconnect Switch	1	EA	57,720.00	34,632.00	23,088.00	\$ 57,720	\$ 34,632	\$ 23,088	\$ 115,440
4.8	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
4.9	Transport & Testing- Transformer	3	EA		717,400.00	474,600.00	\$ -	\$ 2,152,800	\$ 1,423,800	\$ 3,576,000
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	1	EA	16,120,693.00	3,520.00	880.00	\$ 16,120,693	\$ 3,520	\$ 880	\$ 16,125,093
4.15	Transport & Testing- PAR	1	EA		615,400.00	406,600.00	\$ -	\$ 615,400	\$ 406,600	\$ 1,022,000
4.16	345kV, Circuit Breaker (PASS)	0	EA		57,239.00	24,531.00	\$ -	\$ -	\$ -	\$ -
4.17	345kV, Circuit Breaker (GIS), outdoor rated	8	EA	1,203,672.31	722,203.39	481,468.93	\$ 9,629,379	\$ 5,777,627	\$ 3,851,751	\$ 19,258,757
4.18	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.19	345kV, surge Arrester	3	EA	8,450.00	5,460.00	2,340.00	\$ 25,350	\$ 16,380	\$ 7,020	\$ 48,750
4.20	138kV, Phase Angle Regulator with oil containment	3	EA	10,087,382.00	3,520.00	880.00	\$ 30,262,146	\$ 10,560	\$ 2,640	\$ 30,275,346
4.21	Transport & Testing- Phase Angle Regulating Transformer, 138kV	3	EA		381,400.00	250,600.00	\$ -	\$ 1,144,200	\$ 751,800	\$ 1,896,000
4.22	138kV, Shunt Reactor with oil containment-150MVAR	1	EA	2,131,004.00	3,520.00	880.00	\$ 2,131,004	\$ 3,520	\$ 880	\$ 2,135,404
4.23	Transport & Testing- Shunt reactor, 138kV	1	EA		280,900.00	183,600.00	\$ -	\$ 280,900	\$ 183,600	\$ 464,500
4.24	138kV, Circuit Breaker (PASS)	8	EA	510,000.00	13,559.00	5,811.00	\$ 4,080,000	\$ 108,472	\$ 46,488	\$ 4,234,960
4.25	138kV, Disconnect Switch	8	EA	37,700.00	11,875.50	5,089.50	\$ 301,600	\$ 95,004	\$ 40,716	\$ 437,320
4.26	138kV, Cable sealing end	12	EA	11,600.00	1,050.00	450.00	\$ 139,200	\$ 12,600	\$ 5,400	\$ 157,200
4.27	138kV, CCVT	24	EA	10,000.00	7,970.08	3,415.75	\$ 240,000	\$ 191,282	\$ 81,978	\$ 513,260
4.28	138kV, Surge arrester	12	EA	4,446.00	4,200.00	1,800.00	\$ 53,352	\$ 50,400	\$ 21,600	\$ 125,352
4.29	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
4.30	345kV Gas-Insulated Bus Conductor	1,564	LF	550.00	275.00	82.50				\$ -
4.31	345kV Gas-Insulated Bus Conductor-elbow	36	EA	2,500.00	1,250.00	375.00				\$ -
TOTAL - MAJOR EQUIPMENT							\$ 76,901,876	\$ 10,614,637	\$ 6,896,901	\$ 94,413,414
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control cables	119,100	LF	5.30	1.43	0.29	\$ 630,932	\$ 170,611	\$ 34,122	\$ 835,665
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 630,932	\$ 170,611	\$ 34,122	\$ 835,665
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	22,650	LF	11.15	10.80	5.40	\$ 252,548	\$ 244,620	\$ 122,310	\$ 619,478
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	1,325	LF	266.50	53.04	13.26	\$ 353,113	\$ 70,278	\$ 17,570	\$ 440,960
TOTAL - CONDUIT & CABLE TRENCH							\$ 605,660	\$ 314,898	\$ 139,880	\$ 1,060,438
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	17,830	LF	2.09	3.42	1.46	\$ 37,283	\$ 60,895	\$ 26,098	\$ 124,275
7.2	Caweld, DSA, 4/0 , T, CROSS	476	EA	165.00	75.00		\$ 78,540	\$ 35,700	\$ -	\$ 114,240
7.3	Ground Rod, 3/4" x 15'	432	EA	135.00	67.50	7.50	\$ 58,320	\$ 29,160	\$ 3,240	\$ 90,720

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							\$ 174,143	\$ 125,755	\$ 29,338	\$ 329,235
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	1	EA	522,587.44	365,811.21	156,776.23	\$ 522,587	\$ 365,811	\$ 156,776	\$ 1,045,175
8.2	Primary Line Relays (87L): SEL-411L	9	EA	21,328.12	17,062.49	4,265.62	\$ 191,953	\$ 153,562	\$ 38,391	\$ 383,906
8.3	Backup Line Relays (87L): GE L90	9	EA	21,328.12	17,062.49	4,265.62	\$ 191,953	\$ 153,562	\$ 38,391	\$ 383,906
8.4	Primary Bay Control: SEL-451	16	EA	21,328.12	17,062.49	4,265.62	\$ 341,250	\$ 273,000	\$ 68,250	\$ 682,500
8.5	Backup Bay Control: SEL-451	16	EA	21,328.12	17,062.49	4,265.62	\$ 341,250	\$ 273,000	\$ 68,250	\$ 682,500
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	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
8.9	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
8.10	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.11	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.12	Control house AC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.13	Control House DC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.14	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 2,277,743	\$ 1,822,236	\$ 574,507	\$ 4,674,486
4 - New 345/138 kV Eastern Queens Substation							\$ 104,391,427	\$ 25,618,167	\$ 16,266,282	\$ 146,275,876
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		1,128,927.46	483,826.05	\$ -	\$ 1,128,927	\$ 483,826	\$ 1,612,754
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		1,270,171.19		\$ -	\$ 1,270,171	\$ -	\$ 1,270,171
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		5,080,684.76		\$ -	\$ 5,080,685	\$ -	\$ 5,080,685
9.4	Utility PM and Project Oversight	1.0	LS		1,270,171.19		\$ -	\$ 1,270,171	\$ -	\$ 1,270,171
9.5	Site Accommodation, Facilities, Storage	1.0	LS	1,270,171.19			\$ 1,270,171	\$ -	\$ -	\$ 1,270,171
	Engineering									
9.6	Design Engineering	1.00	LS		10,161,369.51		\$ -	\$ 10,161,370	\$ -	\$ 10,161,370
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		889,119.83		\$ -	\$ 889,120	\$ -	\$ 889,120
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		4,763,141.96		\$ -	\$ 4,763,142	\$ -	\$ 4,763,142
	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		1,270,171.19		\$ -	\$ 1,270,171	\$ -	\$ 1,270,171
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		381,051.36		\$ -	\$ 381,051	\$ -	\$ 381,051
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS			12,274,000.00	\$ -	\$ -	\$ 12,274,000	\$ 12,274,000
9.17	Legal Fees (Real estate)	1.00	LS		-	368,220.00	\$ -	\$ -	\$ 368,220	\$ 368,220
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 5,660,000	\$ -	\$ -	\$ 5,660,000	\$ 5,660,000
9.20	Sales Tax on Materials	8.80%	LS	104,391,427.09			\$ 9,186,446	\$ -	\$ -	\$ 9,186,446
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		146,275.88		\$ -	\$ 146,276	\$ -	\$ 146,276
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 10,456,617	\$ 26,381,281	\$ 18,795,146	\$ 55,633,044

Propel NY - TO53 AS7

5 - Barrett 345 kV Substation

Total: \$ 191,375,164

Propel NY - TO53 AS7				
	Material Supply	Labor Supply	Equip Supply	Total
5 - Barrett 345 kV Substation				
1. SITE PREP/ GRADING/ FENCING / CIVIL	1,437,095.65	1,550,179.60	868,477.73	3,855,753
2. SUBSTATION FOUNDATIONS	20,727,234.63	6,296,482.44	4,736,239.02	31,759,956
3. SUBSTATION STRUCTURES	1,607,304.31	1,218,253.07	742,457.38	3,568,015
4. MAJOR EQUIPTMENT	42,278,948.00	4,408,870.22	2,652,244.38	49,340,063
5. LOW VOLTAGE & CONTROL CABLE	643,646.25	174,048.75	34,809.75	852,505
6. CONDUIT & CABLE TRENCH	713,905.00	332,580.00	143,085.00	1,189,570
7. GROUND GRID	371,994.00	139,687.50	3,562.50	515,244
8. CONTROL ENCLOSURE	1,561,652.84	1,274,050.69	406,602.15	3,242,306
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	7,045,310.81	23,915,021.07	9,868,209.55	40,828,541
SUBTOTAL (Costs):	\$ 76,387,091	\$ 39,309,173	\$ 19,455,687	135,151,952
CONTRACTOR MARK-UP (OH&P)	\$ 13,749,676	\$ 7,075,651	\$ 3,502,024	24,327,351
SUBTOTAL:	\$ 90,136,768	\$ 46,384,825	\$ 22,957,711	159,479,304
CONTINGENCY ON ENTIRE PROJECT	\$ 18,027,354	\$ 9,276,965	\$ 4,591,542	31,895,861
TOTAL:	\$ 108,164,122	\$ 55,661,789	\$ 27,549,253	191,375,164

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
5 - Barrett 345 kV Substation										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	6.5	ACRE	-	10,800.00	7,200.00	\$ -	\$ 70,200	\$ 46,800	\$ 117,000
1.2	Demolition	0	ACRE	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	4,899	SY	4.85	7.20	4.80	\$ 23,762	\$ 35,275	\$ 23,517	\$ 82,554
1.4	Strip and Dispose Top Soil	10,487	CY		24.50	10.50	\$ -	\$ 256,923	\$ 110,110	\$ 367,033
1.5	Site Grading- Excavation for Substation Pad	31,460	CY		9.00	6.00	\$ -	\$ 283,140	\$ 188,760	\$ 471,900
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	16,988	CY		21.00	9.00	\$ -	\$ 356,756.40	\$ 152,895.60	\$ 509,652.00
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	25,483	CY		2.40	1.60	\$ -	\$ 61,158	\$ 40,772	\$ 101,930
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	16,988	CY	25.00	2.40	1.60	\$ 424,710	\$ 40,772	\$ 27,181	\$ 492,664
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	31,460	SY	11.00	6.00	4.00	\$ 346,060	\$ 188,760	\$ 125,840	\$ 660,660
1.11	Site Surfacing - Aggregate 6" Thick	31,460	SY	16.50	4.50	3.00	\$ 519,090	\$ 141,570	\$ 94,380	\$ 755,040
1.12	7' Station Fence w/ Barbed Wire & Grounding	1,909	LF	13.85	13.85	6.92	\$ 26,436	\$ 26,436	\$ 13,218	\$ 66,090
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	25,131.00	28,800.00	13,590.00	\$ 25,131	\$ 28,800	\$ 13,590	\$ 67,521
1.16	Seeding	10,160	SF	1.50	1.50	1.00	\$ 15,240	\$ 15,240	\$ 10,160	\$ 40,640
1.17	Erosion Control-Silt fence install & remove	2,936	LF	2.41	3.16	0.72	\$ 7,075	\$ 9,276	\$ 2,114	\$ 18,464
1.18	Temporary fencing	1,957	LF	7.50	5.25	2.25	\$ 14,678	\$ 10,274	\$ 4,403	\$ 29,355
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							\$ 1,437,096	\$ 1,550,180	\$ 868,478	\$ 3,855,753
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	53	CY	703.89	804.44	502.78	\$ 37,609	\$ 42,981	\$ 26,863	\$ 107,453
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	111	CY	703.89	804.44	502.78	\$ 78,047	\$ 89,196	\$ 55,748	\$ 222,991
2.5	345kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.6	345kV, Bus support-1 Ph	333	CY	703.89	804.44	502.78	\$ 234,140	\$ 267,589	\$ 167,243	\$ 668,972
2.7	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.8	345kV, GIS support-1 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.9	345kV, GIS support-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.10	345kV, GIS Cable sealing end	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.11	345kV, Cable sealing end	43	CY	703.89	804.44	502.78	\$ 30,126	\$ 34,430	\$ 21,519	\$ 86,075
2.12	345kV, CCVT	112	CY	703.89	804.44	502.78	\$ 79,081	\$ 90,379	\$ 56,487	\$ 225,947
2.13	345kV, Disconnect Switch	158	CY	703.89	804.44	502.78	\$ 111,495	\$ 127,423	\$ 79,640	\$ 318,558
2.14	345/138KV, Power Transformer with oil containment	984	CY	703.89	804.44	502.78	\$ 692,623	\$ 791,569	\$ 494,731	\$ 1,978,922
2.15	345kV, Shunt Reactor with oil containment-250MVAR	328	CY	703.89	804.44	502.78	\$ 230,874	\$ 263,856	\$ 164,910	\$ 659,641
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	445	CY	703.89	804.44	502.78	\$ 313,229	\$ 357,976	\$ 223,735	\$ 894,940
2.19	345kV, Circuit Breaker (PASS)	160	CY	703.89	804.44	502.78	\$ 112,622	\$ 128,710	\$ 80,444	\$ 321,776
2.20	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345kV, Surge arrester	64	CY	703.89	804.44	502.78	\$ 45,189	\$ 51,645	\$ 32,278	\$ 129,113
2.22	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
2.23	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Bus support-3 Ph, low	11	CY	703.89	804.44	502.78	\$ 7,532	\$ 8,608	\$ 5,380	\$ 21,519
2.26	138kV, Bus support-1 Ph, low	32	CY	703.89	804.44	502.78	\$ 22,862	\$ 26,128	\$ 16,330	\$ 65,321
2.27	138kV, Disconnect Switch	24	CY	703.89	804.44	502.78	\$ 17,147	\$ 19,596	\$ 12,248	\$ 48,990
2.28	138kV, Cable sealing end	36	CY	703.89	804.44	502.78	\$ 25,593	\$ 29,249	\$ 18,281	\$ 73,124
2.29	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, Surge arrester	48	CY	703.89	804.44	502.78	\$ 33,892	\$ 38,734	\$ 24,209	\$ 96,834
2.31	138kV, A Frame 50'-ONE BAY	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	138kV, A Frame 50'-TWO BAY		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	Firewall Foundation	103	CY	703.89	804.44	502.78	\$ 72,472	\$ 82,825	\$ 51,766	\$ 207,063
2.34	Precast Firewall for transformer, PARs, reactors	1,500	SF	25.00	15.00	10.00	\$ 37,500	\$ 22,500	\$ 15,000	\$ 75,000
2.35	Precast Concrete Piles-12"X80'	1,000	EA	18,000.00	3,200.00	2,800.00	\$ 18,000,000	\$ 3,200,000	\$ 2,800,000	\$ 24,000,000
2.36	Local Control Cabinet foundation	6	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 20,727,235	\$ 6,296,482	\$ 4,736,239	\$ 31,759,956
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	3	EA	23,400.00	14,040.00	9,360.00	\$ 70,200	\$ 42,120	\$ 28,080	\$ 140,400
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	7	EA	8,346.00	5,758.74	3,839.16	\$ 58,422	\$ 40,311	\$ 26,874	\$ 125,607
3.5	345kV, Bus support-3 Ph, low	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.6	345kV, Bus support-1 Ph	42	EA	4,810.00	2,886.00	1,924.00	\$ 202,020	\$ 121,212	\$ 80,808	\$ 404,040
3.7	345kV, GIS air terminal	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.8	345kV, GIS support-1 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.9	345kV, GIS support-3 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.10	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.11	345kV, Cable sealing end	4	EA	8,346.00	5,758.74	3,839.16	\$ 33,384	\$ 23,035	\$ 15,357	\$ 71,776
3.12	345kV, CCVT	21	EA	4,810.00	2,886.00	1,924.00	\$ 101,010	\$ 60,606	\$ 40,404	\$ 202,020
3.13	345kV, Disconnect Switch	5	EA	19,240.00	11,544.00	7,696.00	\$ 96,200	\$ 57,720	\$ 38,480	\$ 192,400
3.14	345kV, Surge arrester	12	EA	4,810.00	2,886.00	1,924.00	\$ 57,720	\$ 34,632	\$ 23,088	\$ 115,440
3.15	138kV, Bus support-3 Ph, low	1	EA	4,173.00	2,879.76	1,919.84	\$ 4,173	\$ 2,880	\$ 1,920	\$ 8,973
3.16	138kV, Bus support-1 Ph, low	8	EA	2,782.00	1,919.84	1,279.89	\$ 22,256	\$ 15,359	\$ 10,239	\$ 47,854
3.17	138kV, Disconnect Switch	3	EA				\$ -	\$ -	\$ -	\$ -
3.18	138kV, Cable sealing end	3	EA	4,810.00	2,886.00	1,924.00	\$ 14,430	\$ 8,658	\$ 5,772	\$ 28,860
3.19	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.20	138kV, Surge arrester	9	EA	4,810.00	2,886.00	1,924.00	\$ 43,290	\$ 25,974	\$ 17,316	\$ 86,580
3.21	138kV, A Frame 50'-ONE BAY	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.22	138kV, A Frame 50'-TWO BAY	0	EA	55,110.00	33,066.00	22,044.00	\$ -	\$ -	\$ -	\$ -
3.23	AL. Bus Tubing, 5" SCH 80	1,896	LF	25.00	184.94	123.29	\$ 47,400	\$ 350,642	\$ 233,762	\$ 631,804

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
3.24	AL. Bus fittings	1	LS	56,880.00	56,880.00	28,440.00	\$ 56,880	\$ 56,880	\$ 28,440	\$ 142,200
3.25	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							\$ 1,607,304	\$ 1,218,253	\$ 742,457	\$ 3,568,015
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS Cable sealing end	0	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, Cable sealing end	12	EA	27,144.00	5,460.00	2,340.00	\$ 325,728	\$ 65,520	\$ 28,080	\$ 419,328
4.4	345kV, CCVT	21	EA	16,900.00	15,941.99	6,832.28	\$ 354,900	\$ 334,782	\$ 143,478	\$ 833,160
4.5	345kV, Disconnect Switch	5	EA	57,720.00	34,632.00	23,088.00	\$ 288,600	\$ 173,160	\$ 115,440	\$ 577,200
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		717,400.00	474,600.00	\$ -	\$ 2,152,200	\$ 1,423,800	\$ 3,576,000
4.8	345kV, Shunt Reactor with oil containment-250MVAR	1	EA	3,210,113.00	3,520.00	880.00	\$ 3,210,113	\$ 3,520	\$ 880	\$ 3,214,513
4.9	345kV, Shunt Reactor with oil containment-150MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.10	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.11	Transport & Testing- Shunt Reactor	1	EA		352,900.00	231,600.00	\$ -	\$ 352,900	\$ 231,600	\$ 584,500
4.12	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		615,400.00	406,600.00	\$ -	\$ 615,400	\$ 406,600	\$ 1,022,000
4.14	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
4.15	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	12	EA	8,450.00	5,460.00	2,340.00	\$ 101,400	\$ 65,520	\$ 28,080	\$ 195,000
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	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	9	EA	11,600.00	1,050.00	450.00	\$ 104,400	\$ 9,450	\$ 4,050	\$ 117,900
4.23	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Surge arrester	9	EA	4,446.00	4,200.00	1,800.00	\$ 40,014	\$ 37,800	\$ 16,200	\$ 94,014
4.25	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
4.26	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							\$ 42,278,948	\$ 4,408,870	\$ 2,652,244	\$ 49,340,063

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. LOW VOLTAGE & CONTROL CABLE										
5.1	Control cables	121,500	LF	5.30	1.43	0.29	\$ 643,646	\$ 174,049	\$ 34,810	\$ 852,505
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 643,646	\$ 174,049	\$ 34,810	\$ 852,505
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	22,200	LF	11.15	10.80	5.40	\$ 247,530	\$ 239,760	\$ 119,880	\$ 607,170
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	1,750	LF	266.50	53.04	13.26	\$ 466,375	\$ 92,820	\$ 23,205	\$ 582,400
6.7										
TOTAL - CONDUIT & CABLE TRENCH							\$ 713,905	\$ 332,580	\$ 143,085	\$ 1,189,570
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	34,000	LF	2.09	-	-	\$ 71,094	\$ -	\$ -	\$ 71,094
7.2	Caweld, DSA, 4/0 , T, CROSS	1,435	EA	165.00	75.00		\$ 236,775	\$ 107,625	\$ -	\$ 344,400
7.3	Ground Rod, 3/4" x 15'	475	EA	135.00	67.50	7.50	\$ 64,125	\$ 32,063	\$ 3,563	\$ 99,750
TOTAL - GROUND GRID							\$ 371,994	\$ 139,688	\$ 3,563	\$ 515,244
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	7	EA	21,328.12	17,062.49	4,265.62	\$ 149,297	\$ 119,437	\$ 29,859	\$ 298,594
8.3	Backup Line Relays (87L): GE L90	7	EA	21,328.12	17,062.49	4,265.62	\$ 149,297	\$ 119,437	\$ 29,859	\$ 298,594
8.4	Primary Bay Control: SEL-451	8	EA	21,328.12	17,062.49	4,265.62	\$ 170,625	\$ 136,500	\$ 34,125	\$ 341,250
8.5	Backup Bay Control: SEL-451	8	EA	21,328.12	17,062.49	4,265.62	\$ 170,625	\$ 136,500	\$ 34,125	\$ 341,250
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
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	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	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
8.15	125VDC Battery System	2	LS	25,000.00	22,750.00	9,750.00	\$ 50,000	\$ 45,500	\$ 19,500	\$ 115,000
8.16	Control house AC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.17	Control House DC Panel	1	EA	65,000.00	91,000.00	39,000.00	\$ 65,000	\$ 91,000	\$ 39,000	\$ 195,000
8.18	Generator	1	EA	130,000.00	72,800.00	31,200.00	\$ 130,000	\$ 72,800	\$ 31,200	\$ 234,000
TOTAL - CONTROL ENCLOSURE							\$ 1,561,653	\$ 1,274,051	\$ 406,602	\$ 3,242,306
Description of Work: new greenfield 345 kV Barrett Substation, to be located near 4005 Daly Boulevard, in the Hamlet of Oceanside, Town of H							\$ 69,341,781	\$ 15,394,152	\$ 9,587,478	\$ 94,323,411
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		874,357.06	374,724.45	\$ -	\$ 874,357	\$ 374,724	\$ 1,249,082
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		943,234.11		\$ -	\$ 943,234	\$ -	\$ 943,234
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		3,772,936.43		\$ -	\$ 3,772,936	\$ -	\$ 3,772,936
9.4	Utility PM and Project Oversight	1.0	LS		943,234.11		\$ -	\$ 943,234	\$ -	\$ 943,234
9.5	Site Accommodation, Facilities, Storage	1.0	LS	943,234.11			\$ 943,234	\$ -	\$ -	\$ 943,234
	Engineering									
9.6	Design Engineering	1.00	LS		7,545,872.87		\$ -	\$ 7,545,873	\$ -	\$ 7,545,873
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	4.00	EA		2,730.00	1,820.00	\$ -	\$ 10,920	\$ 7,280	\$ 18,200
9.9	Surveying/Staking	1.00	Site		660,263.88		\$ -	\$ 660,264	\$ -	\$ 660,264
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		3,537,127.91		\$ -	\$ 3,537,128	\$ -	\$ 3,537,128
	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		943,234.11		\$ -	\$ 943,234	\$ -	\$ 943,234
9.13	Environmental-special studies/investigation	1.00	LS		4,300,000		\$ -	\$ 4,300,000	\$ -	\$ 4,300,000
9.14	Warranties / LOC's	1.00	LS		282,970.23		\$ -	\$ 282,970	\$ -	\$ 282,970
9.15	Laydown Lease	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS			5,501,170.00	\$ -	\$ -	\$ 5,501,170	\$ 5,501,170
9.17	Legal Fees (Real estate)	1.00	LS		-	165,035.10	\$ -	\$ -	\$ 165,035	\$ 165,035

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
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 3,820,000	\$ -	\$ -	\$ 3,820,000	\$ 3,820,000
9.20	Sales Tax on Materials	8.80%	LS	69,341,780.68			\$ 6,102,077	\$ -	\$ -	\$ 6,102,077
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		94,323.41		\$ -	\$ 94,323	\$ -	\$ 94,323
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 7,045,311	\$ 23,915,021	\$ 9,868,210	\$ 40,828,541

Propel NY - TO53 AS7

6- Sprain Brook HVDC Converter Station

Total: \$ 460,966,537

Propel NY - TO53 AS7				
	Material Supply	Labor Supply	Equip Supply	Total
6- Sprain Brook HVDC Converter Station				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 2,957,183	\$ 7,337,579	\$ 8,887,882	\$ 19,182,644.14
2. SUBSTATION FOUNDATIONS	\$ -	\$ -	\$ -	\$ -
3. SUBSTATION STRUCTURES	\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPTMENT	\$ 180,000,000	\$ 60,000,000	\$ 60,000,000	\$ 300,000,000
5. LOW VOLTAGE & CONTROL CABLE	\$ -	\$ -	\$ -	\$ -
6. CONDUIT & CABLE TRENCH	\$ 152,438	\$ 30,339	\$ 7,585	\$ 190,361.60
7. GROUND GRID	\$ 211,739	\$ 153,219	\$ 35,869	\$ 400,826.00
8. CONTROL ENCLOSURE	\$ 80,156	\$ 64,125	\$ 16,031	\$ 160,312.46
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 16,338,675	\$ 4,853,037	\$ 14,923,959	\$ 36,115,670.06
Turnkey cost (HVDC, GIS)	\$ 180,000,000	\$ 60,000,000	\$ 60,000,000	\$ 300,000,000
Non-Turnkey cost	\$ 19,740,191	\$ 12,438,298	\$ 23,871,325	\$ 56,049,814
SUBTOTAL (Costs):	\$ 199,740,191	\$ 72,438,298	\$ 83,871,325	\$ 356,049,814
CONTRACTOR MARK-UP (OH&P):	\$ 14,353,234	\$ 5,838,894	\$ 7,896,839	\$ 28,088,967
SUBTOTAL:	\$ 214,093,426	\$ 78,277,191	\$ 91,768,164	\$ 384,138,781
CONTINGENCY ON ENTIRE PROJECT	\$ 42,818,685	\$ 15,655,438	\$ 18,353,633	\$ 76,827,756
TOTAL:	\$ 256,912,111	\$ 93,932,629	\$ 110,121,797	\$ 460,966,537

Description of Work: new +/- 320 kV 1250 MW HVDC voltage source converter station. The station will be location on property adjacent to the Northport Generating Station.The HVDC converter station output will interconnect into a new 345 kV four (4) breaker ring bus 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
6- Sprain Brook HVDC Converter Station										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	6.0	ACRE	-	21,000.00	14,000.00	\$ -	\$ 126,000	\$ 84,000	\$ 210,000
1.2	Demolition	0	ACRE	-	-	-	\$ -	\$ -	\$ -	\$ -
1.3	New Access Road - 20'	5,062	SY	4.85	7.20	4.80	\$ 24,553	\$ 36,450	\$ 24,300	\$ 85,302
1.4	Strip and Dispose Top Soil	9,680	CY		24.50	10.50	\$ -	\$ 237,160	\$ 101,640	\$ 338,800
1.5	Site Grading- Excavation for Substation Pad- Soil excavation	4,840	CY		9.00	6.00	\$ -	\$ 43,560	\$ 29,040	\$ 72,600
1.6	Site Grading- Excavation for Substation Pad-Rock excavaton	43,560	CY		120.00	180.00	\$ -	\$ 5,227,200.00	\$ 7,840,800.00	\$ 13,068,000
1.7	Site Grading- Excavation for Substation Pad- Hauling and disposal	52,272	CY		21.00	9.00	\$ -	\$ 1,097,712.00	\$ 470,448.00	\$ 1,568,160
1.8	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	1,307	CY		2.40	1.60	\$ -	\$ 3,136	\$ 2,091	\$ 5,227
1.9	Site Grading -Fill for Substation Pad (import, compacted in place)	52,272	CY	25.00	2.40	1.60	\$ 1,306,800	\$ 125,453	\$ 83,635	\$ 1,515,888
1.10	Install substation 8" pad base	14,520	SY	11.00	6.00	4.00	\$ 159,720	\$ 87,120	\$ 58,080	\$ 304,920
1.11	Site Surfacing - Aggregate 6" Thick	21,780	SY	16.50	4.50	3.00	\$ 359,370	\$ 98,010	\$ 65,340	\$ 522,720
1.12	7' Station Fence w/ Barbed Wire & Grounding	1,817	LF	13.85	13.85	6.92	\$ 25,162	\$ 25,162	\$ 12,581	\$ 62,905
1.13	25' 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	995,011.20	153,600.00	72,480.00	\$ 995,011	\$ 153,600	\$ 72,480	\$ 1,221,091
1.16	Seeding	16,480	SF	1.50	1.50	1.00	\$ 24,720	\$ 24,720	\$ 16,480	\$ 65,920
1.17	Erosion Control-Silt fence install & remove	2,998	LF	2.41	3.16	0.72	\$ 7,225	\$ 9,474	\$ 2,159	\$ 18,858
1.18	Temporary fencing	1,999	LF	7.50	5.25	2.25	\$ 14,990	\$ 10,493	\$ 4,497	\$ 29,981
1.19	Substation entrance with asphalt	812	SY	19.50	26.00	19.50	\$ 15,832	\$ 21,109	\$ 15,832	\$ 52,773
1.20	Concrete curb	100	LF	26.00	27.30	11.70	\$ 2,600	\$ 2,730	\$ 1,170	\$ 6,500
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 2,957,183	\$ 7,337,579	\$ 8,887,882	\$ 19,182,644

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'-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-3 Ph	-	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 - 3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Disconnect Switch - 3Ph	-	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	345kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	345kV Cap Bank-250MVR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	345kV Cap Bank-Reactor	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	138kV, Disconnect Switch-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	138kV, Cable sealing end-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, Air core reactors (3 Ph)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.36	138kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.37	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.38	138kV, H Frame	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.39	138kV, H Frame -SHARED COLUMN (2 BAY)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.40	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.41	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.42	Precast Concrete Piles-12"X80'		EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.43	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.44	Precast Arch. Wall foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.45	Precast Arch. Wall	-	LF	227.50	91.00	136.50	\$ -	\$ -	\$ -	\$ -
2.46	345KV GIS Sub Slab	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	HVDC VSC Converter Station -DC Converter Hall		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	HVDC VSC Converter Station -Control Building		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	HVDC VSC Converter Station -Cooler Bank		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	HVDC VSC Converter Station -Storage Building		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	HVDC VSC Converter Station-Network AC harmonic filters		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	HVDC VSC Converter Station -AC PLC filter area		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	HVDC VSC Converter Station-Transformer area		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	HVDC VSC Converter Station- AIS equipment		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ -	\$ -	\$ -	\$ -
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
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-3 Ph	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	\$ -	\$ -	\$ -	\$ -

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
3.8	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 - 3 Ph	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 - 3Ph	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	345kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
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-3 Ph	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.19	138kV, Cable sealing end-3 Ph	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, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.22	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.23	138kV, H Frame	0	EA	42,900.00	25,740.00	17,160.00	\$ -	\$ -	\$ -	\$ -
3.24	138kV, H Frame -SHARED COLUMN (2 BAY)	0	EA	42,900.00	25,740.00	17,160.00	\$ -	\$ -	\$ -	\$ -
3.25	AL. Bus Tubing, 5" SCH 80		LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.26	AL. Bus fittings		LS	14,850.00	14,850.00	7,425.00	\$ -	\$ -	\$ -	\$ -
3.27	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
3.28	HVDC VSC Converter Station -DC Equipment stands		EA				\$ -	\$ -	\$ -	\$ -
3.29	HVDC VSC Converter Station-AC Switch Yard Equipment stands		EA				\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal-3 Ph	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 - 3 Ph	0	EA	27,144.00	5,460.00	2,340.00	\$ -	\$ -	\$ -	\$ -
4.6	345kV, CCVT	0	EA	16,900.00	15,941.99	6,832.28	\$ -	\$ -	\$ -	\$ -
4.7	345kV, Disconnect Switch - 3Ph	0	EA	57,720.00	34,632.00	23,088.00	\$ -	\$ -	\$ -	\$ -
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	980,000.00	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	345kV Cap Bank-250MVR	0	EA				\$ -	\$ -	\$ -	\$ -
4.20	345kV Cap Bank-Reactor	0	EA				\$ -	\$ -	\$ -	\$ -
4.21	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.22	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Shunt Reactor with oil containment-150MVAR	0			3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.24	Transport & Testing- Shunt reactor, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Circuit Breaker (PASS)	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.26	138kV, Disconnect Switch-3 Ph	0	EA		3,958.50	1,696.50	\$ -	\$ -	\$ -	\$ -
4.27	138kV, Cable sealing end-3 Ph	0	EA		1,050.00	450.00	\$ -	\$ -	\$ -	\$ -
4.28	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.29	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.30	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.31	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.32	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
4.33	HVDC 1200MW Monopoles	1.0	EA	180,000,000.00	60,000,000.00	60,000,000.00	\$ 180,000,000.00	\$ 60,000,000.00	\$ 60,000,000.00	\$ 300,000,000
4.34	HVDC VSC Converter Station -DC transducer		EA				\$ -	\$ -	\$ -	\$ -
4.35	HVDC VSC Converter Station -Converter phase reactor		EA				\$ -	\$ -	\$ -	\$ -
4.36	HVDC VSC Converter Station -Cooling fans		EA				\$ -	\$ -	\$ -	\$ -
4.37	HVDC VSC Converter Station- Converter Transformer		EA				\$ -	\$ -	\$ -	\$ -
4.38	HVDC VSC Converter Station -Converter enclosure		EA				\$ -	\$ -	\$ -	\$ -
4.39	HVDC VSC Converter Station -Control enclosure		EA				\$ -	\$ -	\$ -	\$ -
4.40	HVDC VSC Converter Station -Storage building		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
TOTAL - MAJOR EQUIPMENT							\$ 180,000,000	\$ 60,000,000	\$ 60,000,000	\$ 300,000,000
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control cables	0	LF	5.30	1.43	0.29	\$ -	\$ -	\$ -	\$ -
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ -	\$ -	\$ -	\$ -
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		LF	11.15	10.80	5.40	\$ -	\$ -	\$ -	\$ -
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	572	LF	266.50	53.04	13.26	\$ 152,438	\$ 30,339	\$ 7,585	\$ 190,362
TOTAL - CONDUIT & CABLE TRENCH							\$ 152,438	\$ 30,339	\$ 7,585	\$ 190,362
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	21,800	LF	2.09	3.42	1.46	\$ 45,584	\$ 74,454	\$ 31,909	\$ 151,946
7.2	Caweld, DSA, 4/0 , T, CROSS	575	EA	165.00	75.00		\$ 94,875	\$ 43,125	\$ -	\$ 138,000
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							\$ 211,739	\$ 153,219	\$ 35,869	\$ 400,826
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 (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	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
8.5	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
8.6	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00	\$ 12,500	\$ 10,000	\$ 2,500	\$ 25,000
8.7	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.8	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.9	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.10	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 80,156	\$ 64,125	\$ 16,031	\$ 160,312
6- Sprain Brook HVDC Converter Station							\$ 183,401,516	\$ 67,585,261	\$ 68,947,367	\$ 319,934,144
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		578,641.98	247,989.42	\$ -	\$ 578,642	\$ 247,989	\$ 826,631
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		199,341.44		\$ -	\$ 199,341	\$ -	\$ 199,341
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		797,365.77		\$ -	\$ 797,366	\$ -	\$ 797,366
9.4	Utility PM and Project Oversight	1.0	LS		199,341.44		\$ -	\$ 199,341	\$ -	\$ 199,341
9.5	Site Accommodation, Facilities, Storage	1.0	LS	199,341.44			\$ 199,341	\$ -	\$ -	\$ 199,341
	Engineering									
9.6	Design Engineering	1.00	LS		1,594,731.54		\$ -	\$ 1,594,732	\$ -	\$ 1,594,732
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	4.00	EA		2,730.00	1,820.00	\$ -	\$ 10,920	\$ 7,280	\$ 18,200
9.9	Surveying/Staking	1.00	Site		139,539.01		\$ -	\$ 139,539	\$ -	\$ 139,539
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		747,530.41		\$ -	\$ 747,530	\$ -	\$ 747,530
	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		199,341.44		\$ -	\$ 199,341	\$ -	\$ 199,341
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		59,802.43		\$ -	\$ 59,802	\$ -	\$ 59,802
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS			5,309,407.00	\$ -	\$ -	\$ 5,309,407	\$ 5,309,407
9.17	Legal Fees (Real estate)	1.00	LS		-	159,282.21	\$ -	\$ -	\$ 159,282	\$ 159,282
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 9,200,000	\$ -	\$ -	\$ 9,200,000	\$ 9,200,000
9.20	Sales Tax on Materials	8.80%	LS	183,401,516.29			\$ 16,139,333	\$ -	\$ -	\$ 16,139,333
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		319,934.14		\$ -	\$ 319,934	\$ -	\$ 319,934
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 16,338,675	\$ 4,853,037	\$ 14,923,959	\$ 36,115,670

Propel NY - TO53 AS7

7 - New Northport HVDC Converter Station

Total: \$ 431,564,213

Propel NY - TO53 AS7				
	Material Supply	Labor Supply	Equip Supply	Total
7 - New Northport HVDC Converter Station				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 1,355,126	\$ 2,265,620	\$ 1,399,973	\$ 5,020,718
2. SUBSTATION FOUNDATIONS	\$ -	\$ -	\$ -	\$ -
3. SUBSTATION STRUCTURES	\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT	\$ 180,000,000	\$ 60,000,000	\$ 60,000,000	\$ 300,000,000
5. LOW VOLTAGE & CONTROL CABLE	\$ -	\$ -	\$ -	\$ -
6. CONDUIT & CABLE TRENCH	\$ 152,438	\$ 30,339	\$ 7,585	\$ 190,362
7. GROUND GRID	\$ 211,739	\$ 153,219	\$ 35,869	\$ 400,826
8. CONTROL ENCLOSURE	\$ 805,312	\$ 644,250	\$ 161,062	\$ 1,610,624
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 16,134,391	\$ 1,918,296	\$ 10,010,244	\$ 28,062,931
Turnkey cost (HVDC, GIS)	\$ 180,000,000	\$ 60,000,000	\$ 60,000,000	\$ 300,000,000
Non-Turnkey cost	\$ 18,659,006	\$ 5,011,723	\$ 11,614,732	\$ 35,285,461
SUBTOTAL (Costs):	\$ 198,659,006	\$ 65,011,723	\$ 71,614,732	\$ 335,285,461
CONTRACTOR MARK-UP (OH&P):	\$ 14,158,621	\$ 4,502,110	\$ 5,690,652	\$ 24,351,383
SUBTOTAL:	\$ 212,817,627	\$ 69,513,833	\$ 77,305,384	\$ 359,636,844
CONTINGENCY ON ENTIRE PROJECT	\$ 42,563,525	\$ 13,902,767	\$ 15,461,077	\$ 71,927,369
TOTAL:	\$ 255,381,152	\$ 83,416,600	\$ 92,766,461	\$ 431,564,213

Description of Work: new +/- 320 kV 1250 MW HVDC voltage source converter station. The station will be location on property adjacent to the Sprain Brook Substation.The HVDC converter station output will interconnect via a short overhead or underground line into the additional bay at Sprain Brook that was added as part of The Solution

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 - New Northport HVDC Converter Station										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	6.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ 64,800	\$ 43,200	\$ 108,000
1.2	Demolition	1	LS	-	1,200,000.00	800,000.00	\$ -	\$ 1,200,000	\$ 800,000	\$ 2,000,000
1.3	New Access Road - 20'	5,062	SY	4.85	7.20	4.80	\$ 24,553	\$ 36,450	\$ 24,300	\$ 85,302
1.4	Strip and Dispose Top Soil	9,680	CY		24.50	10.50	\$ -	\$ 237,160	\$ 101,640	\$ 338,800
1.5	Site Grading- Excavation for Substation Pad	16,682	CY		9.00	6.00	\$ -	\$ 150,139	\$ 100,092	\$ 250,231
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	2,252	CY		21.00	9.00	\$ -	\$ 47,293.68	\$ 20,268.72	\$ 67,562.40
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	20,269	CY		2.40	1.60	\$ -	\$ 48,645	\$ 32,430	\$ 81,075
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	2,252	CY	25.00	2.40	1.60	\$ 56,302	\$ 5,405	\$ 3,603	\$ 65,310
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	25,023	SY	-	6.00	4.00	\$ -	\$ 150,139	\$ 100,092	\$ 250,231
1.11	Site Surfacing - Aggregate 6" Thick	25,023	SY	8.25	4.50	3.00	\$ 206,441	\$ 112,604	\$ 75,069	\$ 394,114
1.12	7' Station Fence w/ Barbed Wire & Grounding	1,817	LF	13.85	13.85	6.92	\$ 25,162	\$ 25,162	\$ 12,581	\$ 62,905
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	995,011.20	153,600.00	72,480.00	\$ 995,011	\$ 153,600	\$ 72,480	\$ 1,221,091
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	2,804	LF	2.41	3.16	0.72	\$ 6,756	\$ 8,859	\$ 2,019	\$ 17,634
1.18	Temporary fencing	1,869	LF	7.50	5.25	2.25	\$ 14,018	\$ 9,812	\$ 4,205	\$ 28,035
1.19	Substation entrance with asphalt	198	SY	19.50	26.00	19.50	\$ 3,863	\$ 5,151	\$ 3,863	\$ 12,877
1.20	Concrete curb	70	LF	26.00	27.30	11.70	\$ 1,820	\$ 1,911	\$ 819	\$ 4,550
1.21	Retaining Wall		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							\$ 1,355,126	\$ 2,265,620	\$ 1,399,973	\$ 5,020,718
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
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-3 Ph	-	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 - 3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Disconnect Switch - 3Ph	-	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	345kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	345kV Cap Bank-250MVR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	345kV Cap Bank-Reactor	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	138kV, Disconnect Switch-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.33	138kV, Cable sealing end-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.34	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, Air core reactors (3 Ph)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.36	138kV, Surge arrester	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.37	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.38	138kV, H Frame	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.39	138kV, H Frame -SHARED COLUMN (2 BAY)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.40	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.41	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.42	Precast Concrete Piles-12"X80'		EA	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.43	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.44	Precast Arch. Wall foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.45	Precast Arch. Wall	-	LF	227.50	91.00	136.50	\$ -	\$ -	\$ -	\$ -
2.46	345KV GIS Sub Slab	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	HVDC VSC Converter Station -DC Converter Hall		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	HVDC VSC Converter Station -Control Building		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.26	HVDC VSC Converter Station -Cooler Bank		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.27	HVDC VSC Converter Station -Storage Building		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	HVDC VSC Converter Station-Network AC harmonic filters		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	HVDC VSC Converter Station -AC PLC filter area		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	HVDC VSC Converter Station-Transformer area		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	HVDC VSC Converter Station- AIS equipment		CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ -	\$ -	\$ -	\$ -
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
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-3 Ph	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	\$ -	\$ -	\$ -	\$ -

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
3.9	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 - 3 Ph	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 - 3Ph	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	345kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
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-3 Ph	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.19	138kV, Cable sealing end-3 Ph	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, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.22	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.23	138kV, H Frame	0	EA	42,900.00	25,740.00	17,160.00	\$ -	\$ -	\$ -	\$ -
3.24	138kV, H Frame -SHARED COLUMN (2 BAY)	0	EA	42,900.00	25,740.00	17,160.00	\$ -	\$ -	\$ -	\$ -
3.27	AL. Bus Tubing, 5" SCH 80		LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.28	AL. Bus fittings		LS	14,850.00	14,850.00	7,425.00	\$ -	\$ -	\$ -	\$ -
3.29	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
3.28	HVDC VSC Converter Station -DC Equipment stands		EA				\$ -	\$ -	\$ -	\$ -
3.29	HVDC VSC Converter Station-AC Switch Yard Equipment stands		EA				\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal-3 Ph	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 - 3 Ph	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 - 3Ph	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	345kV Cap Bank-250MVR	0	EA				\$ -	\$ -	\$ -	\$ -
4.20	345kV Cap Bank-Reactor	0	EA				\$ -	\$ -	\$ -	\$ -
4.21	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.22	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, Shunt Reactor with oil containment-150MVAR	0			3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.24	Transport & Testing- Shunt reactor, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Circuit Breaker (PASS)	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.26	138kV, Disconnect Switch-3 Ph	0	EA		3,958.50	1,696.50	\$ -	\$ -	\$ -	\$ -
4.27	138kV, Cable sealing end-3 Ph	0	EA		1,050.00	450.00	\$ -	\$ -	\$ -	\$ -
4.28	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.29	138kV, Surge arrester	0	EA		4,200.00	1,800.00	\$ -	\$ -	\$ -	\$ -
4.30	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.31	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.32	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
4.33	HVDC 1200MW Monopoles	1.0	EA	180,000,000.00	60,000,000.00	60,000,000.00	\$ 180,000,000	\$ 60,000,000	\$ 60,000,000	\$ 300,000,000
4.34	HVDC VSC Converter Station -DC transducer		EA				\$ -	\$ -	\$ -	\$ -
4.35	HVDC VSC Converter Station -Converter phase reactor		EA				\$ -	\$ -	\$ -	\$ -
4.36	HVDC VSC Converter Station -Cooling fans		EA				\$ -	\$ -	\$ -	\$ -
4.37	HVDC VSC Converter Station- Converter Transformer		EA				\$ -	\$ -	\$ -	\$ -
4.38	HVDC VSC Converter Station -Converter enclosure		EA				\$ -	\$ -	\$ -	\$ -
4.39	HVDC VSC Converter Station -Control enclosure		EA				\$ -	\$ -	\$ -	\$ -
4.40	HVDC VSC Converter Station -Storage building		EA				\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 180,000,000	\$ 60,000,000	\$ 60,000,000	\$ 300,000,000

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
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control cables	0	LF	5.30	1.43	0.29	\$ -	\$ -	\$ -	\$ -
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ -	\$ -	\$ -	\$ -
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		LF	11.15	10.80	5.40	\$ -	\$ -	\$ -	\$ -
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	572	LF	266.50	53.04	13.26	\$ 152,438	\$ 30,339	\$ 7,585	\$ 190,362
TOTAL - CONDUIT & CABLE TRENCH							\$ 152,438	\$ 30,339	\$ 7,585	\$ 190,362
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	21,800	LF	2.09	3.42	1.46	\$ 45,584	\$ 74,454	\$ 31,909	\$ 151,946
7.2	Caweld, DSA, 4/0 , T, CROSS	575	EA	165.00	75.00		\$ 94,875	\$ 43,125	\$ -	\$ 138,000
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							\$ 211,739	\$ 153,219	\$ 35,869	\$ 400,826
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	275,715.78	193,001.04	82,714.73	\$ -	\$ -	\$ -	\$ -
8.2	Primary Cap Bank Relays: SEL-487V	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.3	Backup Cap Bank Relays: GE C70	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.4	Primary Bay Control: SEL-451	9	EA	21,328.12	17,062.49	4,265.62	\$ 191,953	\$ 153,562	\$ 38,391	\$ 383,906
8.5	Backup Bay Control: SEL-451	9	EA	21,328.12	17,062.49	4,265.62	\$ 191,953	\$ 153,562	\$ 38,391	\$ 383,906
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
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	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	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	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
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							\$ 805,312	\$ 644,250	\$ 161,062	\$ 1,610,624
7 - New Northport HVDC Converter Station							\$ 182,524,615	\$ 63,093,427	\$ 61,604,489	\$ 307,222,530
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		164,427.04	70,468.73	\$ -	\$ 164,427	\$ 70,469	\$ 234,896
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		72,225.30		\$ -	\$ 72,225	\$ -	\$ 72,225
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		288,901.19		\$ -	\$ 288,901	\$ -	\$ 288,901
9.4	Utility PM and Project Oversight	1.0	LS		72,225.30		\$ -	\$ 72,225	\$ -	\$ 72,225
9.5	Site Accommodation, Facilities, Storage	1.0	LS	72,225.30			\$ 72,225	\$ -	\$ -	\$ 72,225
	Engineering									
9.6	Design Engineering	1.00	LS		577,802.39		\$ -	\$ 577,802	\$ -	\$ 577,802
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		50,557.71		\$ -	\$ 50,558	\$ -	\$ 50,558
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		270,844.87		\$ -	\$ 270,845	\$ -	\$ 270,845
	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		72,225.30		\$ -	\$ 72,225	\$ -	\$ 72,225
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		21,667.59		\$ -	\$ 21,668	\$ -	\$ 21,668
9.15	Laydown Lease	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS			1,272,500.00	\$ -	\$ -	\$ 1,272,500	\$ 1,272,500
9.17	Legal Fees (Real estate)	1.00	LS		-	38,175.00	\$ -	\$ -	\$ 38,175	\$ 38,175
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 8,620,000	\$ -	\$ -	\$ 8,620,000	\$ 8,620,000
9.20	Sales Tax on Materials	8.80%	LS	182,524,614.58			\$ 16,062,166	\$ -	\$ -	\$ 16,062,166
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		307,222.53		\$ -	\$ 307,223	\$ -	\$ 307,223
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 16,134,391	\$ 1,918,296	\$ 10,010,244	\$ 28,062,931

Propel NY - TO53 AS7

8 - New Northport 345/138 kV Substation

Total: \$ 182,061,111

Propel NY - TO53 AS7				
	Material Supply	Labor Supply	Equip Supply	Total
8 - New Northport 345/138 kV Substation				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 660,771	\$ 842,577	\$ 494,090	\$ 1,997,437
2. SUBSTATION FOUNDATIONS	\$ 21,627,603	\$ 6,697,390	\$ 5,015,731	\$ 33,340,724
3. SUBSTATION STRUCTURES	\$ 710,182	\$ 344,727	\$ 181,633	\$ 1,236,543
4. MAJOR EQUIPMENT	\$ 34,283,699	\$ 12,530,560	\$ 8,281,297	\$ 55,095,555
5. LOW VOLTAGE & CONTROL CABLE	\$ 262,226	\$ 70,909	\$ 14,182	\$ 347,317
6. CONDUIT & CABLE TRENCH	\$ 4,805,109	\$ 2,861,100	\$ 1,737,042	\$ 9,403,251
7. GROUND GRID	\$ 147,079	\$ 105,765	\$ 24,510	\$ 277,354
8. CONTROL ENCLOSURE	\$ 585,716	\$ 493,301	\$ 211,415	\$ 1,290,432
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 6,356,836	\$ 17,034,976	\$ 4,474,823	\$ 27,866,635
Turnkey cost (HVDC, GIS)	\$ 11,214,997	\$ 6,728,998	\$ 4,485,999	\$ 22,429,993
Non-Turnkey cost	\$ 58,224,225	\$ 34,252,306	\$ 15,948,723	\$ 108,425,254
SUBTOTAL (Costs):	\$ 69,439,222	\$ 40,981,304	\$ 20,434,721	\$ 130,855,247
CONTRACTOR MARK-UP (OH&P):	\$ 11,153,260	\$ 6,569,155	\$ 3,139,930	\$ 20,862,345
SUBTOTAL:	\$ 80,592,482	\$ 47,550,459	\$ 23,574,651	\$ 151,717,593
CONTINGENCY ON ENTIRE PROJECT	\$ 16,118,496	\$ 9,510,092	\$ 4,714,930	\$ 30,343,519
TOTAL:	\$ 96,710,979	\$ 57,060,551	\$ 28,289,582	\$ 182,061,111

Description of Work: New 345 kV four (4) breaker ring bus station. The station will have three (3) four (4) 345/ 138 kV autotransformers that will connect into the expanded Northport 138kV that will be required for the OSW developers to build in order to reliably interconnect into the LIPA 138 kV 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 COST
8 - New Northport 345/138 kV Substation										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	3.0	ACRE	-	10,800.00	7,200.00	\$ -	\$ 32,400	\$ 21,600	\$ 54,000
1.2	Demolition	1	LS	-	15,000.00	10,000.00	\$ -	\$ 15,000	\$ 10,000	\$ 25,000
1.3	New Access Road - 20'	2,828	SY	4.85	7.20	4.80	\$ 13,714	\$ 20,359	\$ 13,573	\$ 47,646
1.4	Strip and Dispose Top Soil	4,840	CY		24.50	10.50	\$ -	\$ 118,580	\$ 50,820	\$ 169,400
1.5	Site Grading- Excavation for Substation Pad	16,682	CY		9.00	6.00	\$ -	\$ 150,139	\$ 100,092	\$ 250,231
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	2,252	CY		21.00	9.00	\$ -	\$ 47,293.68	\$ 20,268.72	\$ 67,562.40
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	20,269	CY		2.40	1.60	\$ -	\$ 48,645	\$ 32,430	\$ 81,075
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	2,252	CY	25.00	2.40	1.60	\$ 56,302	\$ 5,405	\$ 3,603	\$ 65,310
1.9	Blasting		EA				\$ -	\$ -	\$ -	\$ -
1.10	Install substation 8" pad base	25,023	SY	-	6.00	4.00	\$ -	\$ 150,139	\$ 100,092	\$ 250,231
1.11	Site Surfacing - Aggregate 6" Thick	25,023	SY	8.25	4.50	3.00	\$ 206,441	\$ 112,604	\$ 75,069	\$ 394,114
1.12	7' Station Fence w/ Barbed Wire & Grounding	1,445	LF	13.85	13.85	6.92	\$ 20,010	\$ 20,010	\$ 10,005	\$ 50,026
1.13	30' 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	1	EA	2,500.00	1,000.00	350.00	\$ 2,500	\$ 1,000	\$ 350	\$ 3,850
1.15	Storm drain-4"&15" HDPE,Seperators, inlets	1	LS	331,670.40	96,000.00	45,300.00	\$ 331,670	\$ 96,000	\$ 45,300	\$ 472,970
1.16	Seeding	0	SF	1.50	1.50	1.00	\$ -	\$ -	\$ -	\$ -
1.17	Erosion Control-Silt fence install & remove	2,207	LF	2.41	3.16	0.72	\$ 5,318	\$ 6,973	\$ 1,589	\$ 13,879
1.18	Temporary fencing	1,471	LF	7.50	5.25	2.25	\$ 11,033	\$ 7,723	\$ 3,310	\$ 22,065

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	198	SY	19.50	26.00	19.50	\$ 3,863	\$ 5,151	\$ 3,863	\$ 12,877
1.20	Concrete curb	70	LF	26.00	27.30	11.70	\$ 1,820	\$ 1,911	\$ 819	\$ 4,550
1.21	Retaining Wall		LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 660,771	\$ 842,577	\$ 494,090	\$ 1,997,437
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'-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	251	CY	703.89	804.44	502.78	\$ 176,534	\$ 201,754	\$ 126,096	\$ 504,384
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	1,312	CY	703.89	804.44	502.78	\$ 923,497	\$ 1,055,425	\$ 659,641	\$ 2,638,563
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	180	CY	703.89	804.44	502.78	\$ 126,699	\$ 144,799	\$ 90,500	\$ 361,998
2.23	345kV, Surge arrester	48	CY	703.89	804.44	502.78	\$ 33,892	\$ 38,734	\$ 24,209	\$ 96,834
2.24	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
2.25	345kV Cap Bank-250MVR	400	CY	703.89	804.44	502.78	\$ 281,462	\$ 321,671	\$ 201,045	\$ 804,179
2.26	345kV Cap Bank-Reactor	83	CY	703.89	804.44	502.78	\$ 58,662	\$ 67,042	\$ 41,901	\$ 167,605
2.27	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.28	138kV, Shunt Reactor with oil containment-150MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, Bus support-3 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.31	138kV, Bus support-1 Ph, low	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	138kV, Disconnect Switch	97	CY	703.89	804.44	502.78	\$ 68,249	\$ 77,999	\$ 48,749	\$ 194,996
2.33	138kV, Cable sealing end	48	CY	703.89	804.44	502.78	\$ 34,124	\$ 38,999	\$ 24,375	\$ 97,498
2.34	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	138kV, Air core reactors (3 Ph)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.36	138kV, Surge arrester	64	CY	703.89	804.44	502.78	\$ 45,189	\$ 51,645	\$ 32,278	\$ 129,113
2.37	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.38	138kV, H Frame	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.39	138kV, H Frame -SHARED COLUMN (2 BAY)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.40	Firewall Foundation	776	CY	703.89	804.44	502.78	\$ 546,327	\$ 624,374	\$ 390,234	\$ 1,560,935
2.41	Precast Firewall for transformer, PARs, reactors	11,940	SF	25.00	15.00	10.00	\$ 298,500	\$ 179,100	\$ 119,400	\$ 597,000
2.42	Precast Concrete Piles-12"X80'	1,028	EA	18,000.00	3,200.00	2,800.00	\$ 18,504,000	\$ 3,289,600	\$ 2,878,400	\$ 24,672,000
2.43	Local Control Cabinet foundation	7	CY	703.89	804.44	502.78	\$ 4,693	\$ 5,363	\$ 3,352	\$ 13,407
2.44	Precast Arch. Wall foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.45	Precast Arch. Wall	-	LF	227.50	91.00	136.50	\$ -	\$ -	\$ -	\$ -
2.46	345KV GIS Sub Slab	470	CY	703.89	804.44	502.78	\$ 330,762.60	\$ 378,014.40	\$ 236,259.00	\$ 945,036.00
TOTAL - 345KV FOUNDATION							\$ 21,627,603	\$ 6,697,390	\$ 5,015,731	\$ 33,340,724
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'-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	\$ -	\$ -	\$ -	\$ -

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
3.8	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	19	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	345kV, Surge arrester	9	EA	4,810.00	2,886.00	1,924.00	\$ 43,290	\$ 25,974	\$ 17,316	\$ 86,580
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	4	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.19	138kV, Cable sealing end	4	EA	4,810.00	2,886.00	1,924.00	\$ 19,240	\$ 11,544	\$ 7,696	\$ 38,480
3.20	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.21	138kV, Surge arrester	12	EA	4,810.00	2,886.00	1,924.00	\$ 57,720	\$ 34,632	\$ 23,088	\$ 115,440
3.22	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.23	138kV, H Frame	0	EA	42,900.00	25,740.00	17,160.00	\$ -	\$ -	\$ -	\$ -
3.24	138kV, H Frame -SHARED COLUMN (2 BAY)	0	EA	42,900.00	25,740.00	17,160.00	\$ -	\$ -	\$ -	\$ -
3.25	AL. Bus Tubing, 5" SCH 80		LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.26	AL. Bus fittings		LS	-	-	-	\$ -	\$ -	\$ -	\$ -
3.27	Steel grating and support beams-transformer moat	173,120	LB	2.73	1.17	0.50	\$ 472,932	\$ 202,377	\$ 86,733	\$ 762,043
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 710,182	\$ 344,727	\$ 181,633	\$ 1,236,543
4. MAJOR EQUIPMENT										
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	4	EA	4,420,000.00	3,520.00	880.00	\$ 17,680,000	\$ 14,080	\$ 3,520	\$ 17,697,600
4.9	Transport & Testing- Transformer	4	EA		717,400.00	474,600.00	\$ -	\$ 2,869,600	\$ 1,898,400	\$ 4,768,000
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	9	EA	1,246,110.72	747,666.43	498,444.29	\$ 11,214,997	\$ 6,728,998	\$ 4,485,999	\$ 22,429,993
4.17	345kV, Circuit Breaker (GIS), outdoor rated-Line surge Arrester (3phase)	0	EA				\$ -	\$ -	\$ -	\$ -
4.18	345kV, surge Arrester	3	Banks	8,450.00	5,460.00	2,340.00	\$ 25,350	\$ 16,380	\$ 7,020	\$ 48,750
4.19	345kV Cap Bank & Reactor	3	EA	1500000	900000	600000	\$ 4,500,000	\$ 2,700,000	\$ 1,800,000	\$ 9,000,000
4.20	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.21	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Shunt Reactor with oil containment-150MVAR	0			3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.23	Transport & Testing- Shunt reactor, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Circuit Breaker (PASS)	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Disconnect Switch	4	EA	37,700.00	11,875.50	5,089.50	\$ 150,800	\$ 47,502	\$ 20,358	\$ 218,660
4.26	138kV, Cable sealing end	12	EA	11,600.00	1,050.00	450.00	\$ 139,200	\$ 12,600	\$ 5,400	\$ 157,200
4.27	138kV, CCVT	0	EA		7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.28	138kV, Surge arrester	12	EA	4,446.00	4,200.00	1,800.00	\$ 53,352	\$ 50,400	\$ 21,600	\$ 125,352
4.29	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
4.30	345kV Gas-Insulated Bus Conductor	2,205	LF	550.00	275.00	82.50				\$ -
4.31	345kV Gas-Insulated Bus Conductor-elbow	49	EA	2,500.00	1,250.00	375.00				\$ -
TOTAL - MAJOR EQUIPMENT							\$ 34,283,699	\$ 12,530,560	\$ 8,281,297	\$ 55,095,555
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control cables	49,500	LF	5.30	1.43	0.29	\$ 262,226	\$ 70,909	\$ 14,182	\$ 347,317
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 262,226	\$ 70,909	\$ 14,182	\$ 347,317
6. CONDUIT & CABLE TRENCH										
6.1	Conduit, PVC, 6", SCH 40		LF	20.70	13.28	6.64	\$ -	\$ -	\$ -	\$ -

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
6.2	Conduit, PVC, 4", SCH 40	8,400	LF	11.15	10.80	5.40	\$ 93,660	\$ 90,720	\$ 45,360	\$ 229,740
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	1,288	LF	266.50	53.04	13.26	\$ 343,119	\$ 68,289	\$ 17,072	\$ 428,480
6.7	345kV UG- Conduit	3,000	LF	266.73	202.15	100.00	\$ 800,193	\$ 606,439	\$ 300,015	\$ 1,706,647
6.8	345kV UG- Cable	20,000	LF	167.00	100.20	66.80	\$ 3,340,000	\$ 2,004,000	\$ 1,336,000	\$ 6,680,000
6.9	345kV UG- Termination	6	EA	27,805.00	9,846.48	2,813.28	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
6.11	Fiber Optic Cable	3,000	LF	7.40	3.33	2.22	\$ 22,191	\$ 9,992	\$ 6,661	\$ 38,844
6.12	Ground Continuity Conductor	3,000	LF	13.04	7.53	5.02	\$ 39,117	\$ 22,581	\$ 15,054	\$ 76,752
TOTAL - CONDUIT & CABLE TRENCH							\$ 4,805,109	\$ 2,861,100	\$ 1,737,042	\$ 9,403,251
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	14,880	LF	2.09	3.42	1.46	\$ 31,114	\$ 50,820	\$ 21,780	\$ 103,714
7.2	Caweld, DSA, 4/0 , T, CROSS	405	EA	165.00	75.00		\$ 66,825	\$ 30,375	\$ -	\$ 97,200
7.3	Ground Rod, 3/4" x 15'	364	EA	135.00	67.50	7.50	\$ 49,140	\$ 24,570	\$ 2,730	\$ 76,440
TOTAL - GROUND GRID							\$ 147,079	\$ 105,765	\$ 24,510	\$ 277,354
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 Cap Bank Relays: SEL-487V		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.3	Backup Cap Bank Relays: GE C70		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.4	Primary Bay Control: SEL-451		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.5	Backup Bay Control: SEL-451		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.6	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.7	Backup Transformer/Reactor/PAR Differential Relays: GE T60		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.8	Primary Bus Differential Relays: SEL-487B		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.9	Backup Bus Differential Relays: GE B90		EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.10	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS		EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
8.11	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock		EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
8.12	HMI Panel		EA	12,500.00	10,000.00	2,500.00	\$ -	\$ -	\$ -	\$ -
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							\$ 585,716	\$ 493,301	\$ 211,415	\$ 1,290,432
8 - New Northport 345/138 kV Substation							\$ 63,082,386	\$ 23,946,328	\$ 15,959,899	\$ 102,988,613

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		1,004,193.06	430,368.45	\$ -	\$ 1,004,193	\$ 430,368	\$ 1,434,562
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		805,586.20		\$ -	\$ 805,586	\$ -	\$ 805,586
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		3,222,344.78		\$ -	\$ 3,222,345	\$ -	\$ 3,222,345
9.4	Utility PM and Project Oversight	1.0	LS		805,586.20		\$ -	\$ 805,586	\$ -	\$ 805,586
9.5	Site Accommodation, Facilities, Storage	1.0	LS	805,586.20			\$ 805,586	\$ -	\$ -	\$ 805,586
	Engineering									
9.6	Design Engineering	1.00	LS		6,444,689.56		\$ -	\$ 6,444,690	\$ -	\$ 6,444,690
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	4.00	EA		2,730.00	1,820.00	\$ -	\$ 10,920	\$ 7,280	\$ 18,200
9.9	Surveying/Staking	1.00	Site		563,910.34		\$ -	\$ 563,910	\$ -	\$ 563,910
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		3,020,948.23		\$ -	\$ 3,020,948	\$ -	\$ 3,020,948
	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		805,586.20		\$ -	\$ 805,586	\$ -	\$ 805,586
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		241,675.86		\$ -	\$ 241,676	\$ -	\$ 241,676
9.15	Laydown Lease	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS			385,606.00	\$ -	\$ -	\$ 385,606	\$ 385,606
9.17	Legal Fees (Real estate)	1.00	LS		-	11,568.18	\$ -	\$ -	\$ 11,568	\$ 11,568
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 3,640,000	\$ -	\$ -	\$ 3,640,000	\$ 3,640,000
9.20	Sales Tax on Materials	8.80%	LS	63,082,385.68			\$ 5,551,250	\$ -	\$ -	\$ 5,551,250
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		102,988.61		\$ -	\$ 102,989	\$ -	\$ 102,989
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 6,356,836	\$ 17,034,976	\$ 4,474,823	\$ 27,866,635

Propel NY - TO53 AS7

9 - Existing EGC 345 kV Upgrade

Total: \$ 28,164,128

Propel NY - TO53 AS7										
		Material Supply	Labor Supply	Equip Supply	Total					
9 - Existing EGC 345 kV Upgrade										
1. SITE PREP/ GRADING/ FENCING / CIVIL		\$ -	\$ 12,000	\$ 8,000	\$ 20,000					
2. SUBSTATION FOUNDATIONS		\$ 404,484	\$ 462,267	\$ 288,917	\$ 1,155,667					
3. SUBSTATION STRUCTURES		\$ 193,347	\$ 102,423	\$ 56,236	\$ 352,006					
4. MAJOR EQUIPMENT		\$ 3,759,960	\$ 974,686	\$ 644,658	\$ 5,379,304					
5. LOW VOLTAGE & CONTROL CABLE		\$ 131,908	\$ 35,669	\$ 7,134	\$ 174,711					
6. CONDUIT & CABLE TRENCH		\$ 43,485	\$ 42,120	\$ 21,060	\$ 106,665					
7. GROUND GRID		\$ -	\$ -	\$ -	\$ -					
8. CONTROL ENCLOSURE		\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625					
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS		\$ 480,017	\$ 1,226,433	\$ 11,054,413	\$ 12,760,863					
Turnkey cost (HVDC, GIS)		\$ 1,130,444	\$ 678,266	\$ 452,178	\$ 2,260,888					
Non-Turnkey cost		\$ 3,968,070	\$ 2,245,583	\$ 11,645,302	\$ 17,858,954					
SUBTOTAL (Costs):		\$ 5,098,514	\$ 2,923,849	\$ 12,097,479	\$ 20,119,842					
CONTRACTOR MARK-UP (OH&P):		\$ 782,079	\$ 444,901	\$ 2,123,285	\$ 3,350,265					
SUBTOTAL:		\$ 5,880,593	\$ 3,368,750	\$ 14,220,764	\$ 23,470,107					
CONTINGENCY ON ENTIRE PROJECT		\$ 1,176,119	\$ 673,750	\$ 2,844,153	\$ 4,694,021					
TOTAL:		\$ 7,056,711	\$ 4,042,500	\$ 17,064,917	\$ 28,164,128					
Description of Work: Upgrades to the existing New York										
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 EGC 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	-	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	-	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	0	LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
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	0	LS	140,319.60	-	-	\$ -	\$ -	\$ -	\$ -
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	\$ -	\$ -	\$ -	\$ -

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	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
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	119	CY	703.89	804.44	502.78	\$ 83,622	\$ 95,567	\$ 59,730	\$ 238,919
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	26	CY	703.89	804.44	502.78	\$ 18,583	\$ 21,237	\$ 13,273	\$ 53,093
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	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	-	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	120	CY	703.89	804.44	502.78	\$ 84,466	\$ 96,533	\$ 60,333	\$ 241,332
2.23	345kV, Surge arrester	-	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	-	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	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.36	Local Control Cabinet foundation	4	CY	703.89	804.44	502.78	\$ 3,128	\$ 3,575	\$ 2,235	\$ 8,938
2.41	Precast Arch. Wall foundation	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.42	Precast Arch. Wall	-	LF	227.50	91.00	136.50	\$ -	\$ -	\$ -	\$ -
2.43	345KV GIS Sub Slab	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 404,484	\$ 462,267	\$ 288,917	\$ 1,155,667
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
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	9	EA	8,346.00	5,758.74	3,839.16	\$ 75,114	\$ 51,829	\$ 34,552	\$ 161,495
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	2	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	345kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
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	\$ -	\$ -	\$ -	\$ -

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
3.17	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	-	-	-	\$ -	\$ -	\$ -	\$ -
3.25	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.26	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
3.27	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 - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 193,347	\$ 102,423	\$ 56,236	\$ 352,006
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	9	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	1	EA	2,629,516.50	3,520.00	880.00	\$ 2,629,517	\$ 3,520	\$ 880	\$ 2,633,917
4.12	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.13	Transport & Testing- Shunt Reactor	1	EA		292,900.00	191,600.00	\$ -	\$ 292,900	\$ 191,600	\$ 484,500
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	1	EA	1,130,443.86	678,266.31	452,177.54	\$ 1,130,444	\$ 678,266	\$ 452,178	\$ 2,260,888
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	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	345kV Gas-Insulated Bus Conductor	120	LF	550.00	275.00	82.50				\$ -
4.28	345kV Gas-Insulated Bus Conductor-elbow	3	EA	2,500.00	1,250.00	375.00				\$ -
TOTAL - MAJOR EQUIPMENT							\$ 3,759,960	\$ 974,686	\$ 644,658	\$ 5,379,304
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control cables	24,900	LF	5.30	1.43	0.29	\$ 131,908	\$ 35,669	\$ 7,134	\$ 174,711
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 131,908	\$ 35,669	\$ 7,134	\$ 174,711
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	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	\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH		-					\$ 43,485	\$ 42,120	\$ 21,060	\$ 106,665
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor		LF	2.09	-	-	\$ -	\$ -	\$ -	\$ -
7.2	Caweld, DSA, 4/0 , T, CROSS		EA	165.00	75.00		\$ -	\$ -	\$ -	\$ -
7.3	Ground Rod, 3/4" x 15'		EA	135.00	67.50	7.50	\$ -	\$ -	\$ -	\$ -
TOTAL - GROUND GRID							\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA	427,571.55	299,300.08	128,271.46	\$ -	\$ -	\$ -	\$ -
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 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
8.5	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
8.13	125VDC Battery System		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		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.15	Control House DC Panel		EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.16	Generator		EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
9 - Existing EGC 345 kV_ Upgrade							\$ 4,618,496	\$ 1,697,415	\$ 1,043,066	\$ 7,358,978
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		56,351.33	24,150.57	\$ -	\$ 56,351	\$ 24,151	\$ 80,502
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		73,589.78		\$ -	\$ 73,590	\$ -	\$ 73,590
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		294,359.13		\$ -	\$ 294,359	\$ -	\$ 294,359
9.4	Utility PM and Project Oversight	1.0	LS		73,589.78		\$ -	\$ 73,590	\$ -	\$ 73,590
9.5	Site Accommodation, Facilities, Storage	1.0	LS	73,589.78			\$ 73,590	\$ -	\$ -	\$ 73,590
	Engineering									
9.6	Design Engineering	1.00	LS		407,847.24		\$ -	\$ 407,847	\$ -	\$ 407,847
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		35,686.63		\$ -	\$ 35,687	\$ -	\$ 35,687
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		191,178.39		\$ -	\$ 191,178	\$ -	\$ 191,178
	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		50,980.90		\$ -	\$ 50,981	\$ -	\$ 50,981
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		15,294.27		\$ -	\$ 15,294	\$ -	\$ 15,294
9.15	Laydown Lease	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS			10,156,468.00	\$ -	\$ -	\$ 10,156,468	\$ 10,156,468
9.17	Legal Fees (Real estate)	1.00	LS		-	304,694.04	\$ -	\$ -	\$ 304,694	\$ 304,694
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 560,000	\$ -	\$ -	\$ 560,000	\$ 560,000
9.20	Sales Tax on Materials	8.80%	LS	4,618,496.23			\$ 406,428	\$ -	\$ -	\$ 406,428
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		7,358.98		\$ -	\$ 7,359	\$ -	\$ 7,359
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 480,017	\$ 1,226,433	\$ 11,054,413	\$ 12,760,863

Propel NY - TO53 AS7

10 - Existing 345 kV Tremont Substation GIS Interconnection

Total: \$32,771,373

Propel NY - TO53 AS7				
	Material Supply	Labor Supply	Equip Supply	Total
10 - 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 EQUIPMENT	\$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
10 - 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
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							\$ 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	\$ -	\$ -	\$ -	\$ -
3.20	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
3.21	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 EQUIPMENT										
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
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

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
8.9	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
10 - 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 Oversight	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 - TO53 AS7

11 - Existing Sprain Brook 345 kV Interconnection

Total: \$ 31,348,450

Propel NY - TO53 AS7				
	Material Supply	Labor Supply	Equip Supply	Total
11 - Existing Sprain Brook 345 kV_ Interconnection				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 110,491	\$ 101,757	\$ 56,125	\$ 268,373
2. SUBSTATION FOUNDATIONS	\$ 570,093	\$ 651,534	\$ 407,209	\$ 1,628,836
3. SUBSTATION STRUCTURES	\$ 328,438	\$ 373,743	\$ 232,011	\$ 934,192
4. MAJOR EQUIPMENT	\$ 8,550,059	\$ 3,253,026	\$ 2,142,122	\$ 13,945,207
5. LOW VOLTAGE & CONTROL CABLE	\$ 103,301	\$ 27,934	\$ 5,587	\$ 136,822
6. CONDUIT & CABLE TRENCH	\$ 806,430	\$ 426,161	\$ 224,296	\$ 1,456,887
7. GROUND GRID	\$ 34,349	\$ 24,608	\$ 5,650	\$ 64,607
8. CONTROL ENCLOSURE	\$ 426,562	\$ 341,250	\$ 85,312	\$ 853,125
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 1,059,143	\$ 2,080,467	\$ 682,810	\$ 3,822,420
Turnkey cost (HVDC, GIS)	\$ 4,777,678	\$ 2,866,607	\$ 1,911,071	\$ 9,555,356
Non-Turnkey cost	\$ 7,211,188	\$ 4,413,873	\$ 1,930,050	\$ 13,555,111
SUBTOTAL (Costs):	\$ 11,988,866	\$ 7,280,480	\$ 3,841,121	\$ 23,110,467
CONTRACTOR MARK-UP (OH&P):	\$ 1,584,674	\$ 966,494	\$ 462,073	\$ 3,013,241
SUBTOTAL:	\$ 13,573,540	\$ 8,246,974	\$ 4,303,195	\$ 26,123,708
CONTINGENCY ON ENTIRE PROJECT	\$ 2,714,708	\$ 1,649,395	\$ 860,639	\$ 5,224,742
TOTAL:	\$ 16,288,248	\$ 9,896,369	\$ 5,163,834	\$ 31,348,450

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 breaker and a half (“BAAH”) configuration. The solution includes installing a new underground 345 kV line with a shunt reactor in new bay position and a second 345 kV underground interconnection with the adjacent HVDC converter 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 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	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
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	350	LF	13.85	13.85	6.92	\$ 4,847	\$ 4,847	\$ 2,423	\$ 12,117
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,	1	LS	20,044.80	3,840.00	1,812.00	\$ 20,045	\$ 3,840	\$ 1,812	\$ 25,697
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

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
1.18	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	0	LF	156.00	117.00	117.00	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ 110,491	\$ 101,757	\$ 56,125	\$ 268,373
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	144	CY	703.89	804.44	502.78	\$ 101,205	\$ 115,662	\$ 72,289	\$ 289,156
2.5	345kV, Bus support-1 Ph	48	CY	703.89	804.44	502.78	\$ 33,449	\$ 38,227	\$ 23,892	\$ 95,567
2.6	345kV, GIS air terminal	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.7	345kV, GIS fast acting GND SW	37	CY	703.89	804.44	502.78	\$ 25,720	\$ 29,394	\$ 18,371	\$ 73,486
2.8	345kV, GIS to air bushing	73	CY	703.89	804.44	502.78	\$ 51,187	\$ 58,499	\$ 36,562	\$ 146,247
2.9	345kV, GIS support-1 Ph	24	CY	703.89	804.44	502.78	\$ 17,147	\$ 19,596	\$ 12,248	\$ 48,990
2.10	345kV, GIS support-3 Ph	26	CY	703.89	804.44	502.78	\$ 18,583	\$ 21,237	\$ 13,273	\$ 53,093
2.11	345kV, GIS Cable sealing end	24	CY	703.89	804.44	502.78	\$ 17,062	\$ 19,500	\$ 12,187	\$ 48,749
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	-	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	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	80	CY	703.89	804.44	502.78	\$ 56,311	\$ 64,355	\$ 40,222	\$ 160,888
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'		EA							
2.33	Local Control Cabinet foundation	3	CY	703.89	804.44	502.78	\$ 2,086	\$ 2,384	\$ 1,490	\$ 5,959
TOTAL - 345KV FOUNDATION							\$ 570,093	\$ 651,534	\$ 407,209	\$ 1,628,836
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA	23,400.00	14,040.00	9,360.00	\$ -	\$ -	\$ -	\$ -
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	13	EA	8,346.00	5,758.74	3,839.16	\$ 108,498	\$ 74,864	\$ 49,909	\$ 233,271
3.5	345kV, Bus support-1 Ph	6	EA	4,810.00	2,886.00	1,924.00	\$ 28,860	\$ 17,316	\$ 11,544	\$ 57,720
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	9	EA	8,346.00	5,758.74	3,839.16				\$ -
3.8	345kV, GIS to air bushing	6	EA	4,810.00	2,886.00	1,924.00				\$ -
3.9	345kV, GIS support-1 Ph	6	EA	4,810.00	2,886.00	1,924.00				\$ -
3.10	345kV, GIS support-3 Ph	2	EA	8,346.00	5,758.74	3,839.16				\$ -
3.11	345kV, GIS Cable sealing end	2	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	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	1,021	LF	25.00	184.94	123.29	\$ 25,525	\$ 188,822	\$ 125,881	\$ 340,228
3.22	AL. Bus fittings	1	LS	30,630.00	30,630.00	15,315.00	\$ 30,630	\$ 30,630	\$ 15,315	\$ 76,575
3.23	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 - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 328,438	\$ 373,743	\$ 232,011	\$ 934,192
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	0	EA				\$ -	\$ -	\$ -	\$ -
4.2	345kV, GIS fast acting GND SW	9	EA				\$ -	\$ -	\$ -	\$ -
4.3	345kV, GIS to air bushing	6	EA				\$ -	\$ -	\$ -	\$ -
4.4	345kV, GIS Cable sealing end	6	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	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	1	EA	2,629,516.50	3,520.00	880.00	\$ 2,629,517	\$ 3,520	\$ 880	\$ 2,633,917
4.11	345kV, Shunt Reactor with oil containment-100MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.12	Transport & Testing- Shunt Reactor	1	EA		292,900.00	191,600.00	\$ -	\$ 292,900	\$ 191,600	\$ 484,500
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	4	EA	1,194,419.50	716,651.70	477,767.80	\$ 4,777,678	\$ 2,866,607	\$ 1,911,071	\$ 9,555,356
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	564	LF	550.00	275.00	82.50				\$ -
4.27	345kV Gas-Insulated Bus Conductor-elbow	10	EA	2,500.00	1,250.00	375.00				\$ -
TOTAL - MAJOR EQUIPMENT							\$ 8,550,059	\$ 3,253,026	\$ 2,142,122	\$ 13,945,207

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. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cable	19,500	LF	5.30	1.43	0.29	\$ 103,301	\$ 27,934	\$ 5,587	\$ 136,822
5.2			LF				\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 103,301	\$ 27,934	\$ 5,587	\$ 136,822
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	3,000	LF	11.15	10.80	5.40	\$ 33,450	\$ 32,400	\$ 16,200	\$ 82,050
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	500	LF	266.50	53.04	13.26	\$ 133,250	\$ 26,520	\$ 6,630	\$ 166,400
6.7	345kV UG- Conduit	600	LF	266.73	202.15	100.00	\$ 160,039	\$ 121,288	\$ 60,003	\$ 341,329
6.8	345kV UG- Cable	1,800	LF	167.00	100.20	66.80	\$ 300,600	\$ 180,360	\$ 120,240	\$ 601,200
6.9	345kV UG- Termination	6	EA	27,805.00	9,846.48	2,813.28	\$ 166,830	\$ 59,079	\$ 16,880	\$ 242,789
6.11	Fiber Optic Cable	600	LF	7.40	3.33	2.22	\$ 4,438	\$ 1,998	\$ 1,332	\$ 7,769
6.12	Ground Continuity Conductor	600	LF	13.04	7.53	5.02	\$ 7,823	\$ 4,516	\$ 3,011	\$ 15,350
6.9							\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 806,430	\$ 426,161	\$ 224,296	\$ 1,456,887
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	3,450	LF	2.09	3.42	1.46	\$ 7,214	\$ 11,783	\$ 5,050	\$ 24,047
7.2	Caweld, DSA, 4/0 , T, CROSS	99	EA	165.00	75.00		\$ 16,335	\$ 7,425	\$ -	\$ 23,760
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							\$ 34,349	\$ 24,608	\$ 5,650	\$ 64,607
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	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.5	Backup Bay Control: SEL-451	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
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	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.9	Backup Bus Differential Relays: GE B90	4	EA	21,328.12	17,062.49	4,265.62	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
8.12	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.13	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.14	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.15	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 426,562	\$ 341,250	\$ 85,312	\$ 853,125
11 - Existing Sprain Brook 345 kV_ Interconnection							\$ 10,929,723	\$ 5,200,013	\$ 3,158,312	\$ 19,288,048
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		125,322.63	53,709.70	\$ -	\$ 125,323	\$ 53,710	\$ 179,032
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		97,326.92		\$ -	\$ 97,327	\$ -	\$ 97,327
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		389,307.66		\$ -	\$ 389,308	\$ -	\$ 389,308
9.4	Utility PM and Project Oversight	1.0	LS		97,326.92		\$ -	\$ 97,327	\$ -	\$ 97,327
9.5	Site Accommodation, Facilities, Storage	1.0	LS	97,326.92			\$ 97,327	\$ -	\$ -	\$ 97,327
	Engineering									
9.6	Design Engineering	1.00	LS		778,615.33		\$ -	\$ 778,615	\$ -	\$ 778,615
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		68,128.84		\$ -	\$ 68,129	\$ -	\$ 68,129
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		364,975.93		\$ -	\$ 364,976	\$ -	\$ 364,976
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		97,326.92		\$ -	\$ 97,327	\$ -	\$ 97,327
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		29,198.07		\$ -	\$ 29,198	\$ -	\$ 29,198
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS			-	\$ -	\$ -	\$ -	\$ -

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
9.17	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 620,000	\$ -	\$ -	\$ 620,000	\$ 620,000
9.20	Sales Tax on Materials	8.80%	LS	10,929,723.06			\$ 961,816	\$ -	\$ -	\$ 961,816
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		19,288.05		\$ -	\$ 19,288	\$ -	\$ 19,288
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 1,059,143	\$ 2,080,467	\$ 682,810	\$ 3,822,420

Propel NY - TO53 AS7

12 - Existing Ruland 138 kV Upgrade & Interconnection

Total: \$13,614,467

Propel NY - TO53 AS7				
	Material Supply	Labor Supply	Equip Supply	Total
12 - Existing Ruland 138 kV_ Upgrade & Interconnection				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$251,469	\$278,373	\$156,657	\$686,499
2. SUBSTATION FOUNDATIONS	\$965,636	\$756,155	\$488,597	\$2,210,388
3. SUBSTATION STRUCTURES	\$272,182	\$191,597	\$178,582	\$642,361
4. MAJOR EQUIPTMENT	\$2,060,025	\$328,518	\$138,222	\$2,526,765
5. LOW VOLTAGE & CONTROL CABLE	\$131,908	\$35,669	\$7,134	\$174,711
6. CONDUIT & CABLE TRENCH	\$324,073	\$225,017	\$106,737	\$655,827
7. GROUND GRID	\$28,699	\$20,592	\$4,732	\$54,023
8. CONTROL ENCLOSURE	\$170,625	\$136,500	\$34,125	\$341,250
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$442,925	\$1,566,399	\$313,588	\$2,322,912
SUBTOTAL (Costs):	\$4,647,541	\$3,538,822	\$1,428,374	\$9,614,737
CONTRACTOR MARK-UP (OH&P)	\$836,557	\$636,988	\$257,107	\$1,730,653
SUBTOTAL:	\$5,484,099	\$4,175,810	\$1,685,481	\$11,345,389
CONTINGENCY ON ENTIRE PROJECT	\$1,096,820	\$835,162	\$337,096	\$2,269,078
TOTAL:	\$6,580,918	\$5,010,972	\$2,022,577	\$13,614,467

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 three (3) air core reactors in series to the 138 kV Lines 138-561,138-562, and 138-567, 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
12 - Existing Ruland 138 kV_ Upgrade & Interconnection										
1. SITE PREP/ GRADING/ FENCING / CIVIL										
1.1	Site Clearing	1.2	ACRE	-	10,800.00	7,200.00	\$-	\$12,960	\$8,640	\$21,600
1.2	Demolition	1	LS	-	4,800.00	3,200.00	\$-	\$4,800	\$3,200	\$8,000
1.3	New Access Road - 20'	978	SY	4.85	7.20	4.80	\$4,742	\$7,040	\$4,693	\$16,476
1.4	Strip and Dispose Top Soil	1,936	CY		24.50	10.50	\$-	\$47,432	\$20,328	\$67,760
1.5	Site Grading- Excavation for Substation Pad	5,808	CY		9.00	6.00	\$-	\$52,272	\$34,848	\$87,120
1.6	Site Grading- Excavation for Substation Pad- Hauling and disposal	3,136	CY		21.00	9.00	\$-	\$65,862.72	\$28,226.88	\$94,089.60
1.7	Site Grading- Fill for Substation Pad (site borrow, compacted in place)	4,704	CY		2.40	1.60	\$-	\$11,291	\$7,527	\$18,818
1.8	Site Grading -Fill for Substation Pad (import, compacted in place)	3,136	CY	25.00	2.40	1.60	\$78,408	\$7,527	\$5,018	\$90,953
1.9	Blasting		EA				\$-	\$-	\$-	\$-
1.10	Install substation 8" pad base	5,808	SY	11.00	6.00	4.00	\$63,888	\$34,848	\$23,232	\$121,968
1.11	Site Surfacing - Aggregate 6" Thick	5,808	SY	16.50	4.50	3.00	\$95,832	\$26,136	\$17,424	\$139,392
1.12	7' Station Fence w/ Barbed Wire & Grounding	340	LF	13.85	13.85	6.92	\$4,708	\$4,708	\$2,354	\$11,771
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	\$-	\$-	\$-	\$-
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							\$251,469	\$278,373	\$156,657	\$686,499
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	-	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	218	CY	703.89	804.44	502.78	\$ 153,560	\$ 175,497	\$ 109,685	\$ 438,742
2.27	138kV, Cable sealing end	48	CY	703.89	804.44	502.78	\$ 34,124	\$ 38,999	\$ 24,375	\$ 97,498
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)	249	CY	703.89	804.44	502.78	\$ 175,204	\$ 200,233	\$ 125,146	\$ 500,583
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	218	CY	703.89	804.44	502.78	\$ 153,644	\$ 175,593	\$ 109,746	\$ 438,983
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'	20	EA	18,000.00	3,200.00	2,800.00	\$ 360,000	\$ 64,000	\$ 56,000	\$ 480,000
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							\$ 965,636	\$ 756,155	\$ 488,597	\$ 2,210,388
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	9	EA	5,694.00	3,928.86	2,619.24	\$ 51,246	\$ 35,360	\$ 23,573	\$ 110,179
3.18	138kV, Cable sealing end	4	EA	4,810.00	2,886.00	1,924.00	\$ 19,240	\$ 11,544	\$ 7,696	\$ 38,480
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	12	EA	3,206.67	1,924.00	1,282.67	\$ 38,480	\$ 23,088	\$ 15,392	\$ 76,960
3.21	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.22	138kV, H Frame	6	EA	21,450.00	12,870.00	17,160.00	\$ 128,700	\$ 77,220	\$ 102,960	\$ 308,880
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	126	LF	25.00	184.94	123.29	\$ 3,150	\$ 23,302	\$ 15,535	\$ 41,987
3.26	AL. Bus fittings	1	LS	3,780.00	3,780.00	1,890.00	\$ 3,780	\$ 3,780	\$ 1,890	\$ 9,450

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							\$ 272,182	\$ 191,597	\$ 178,582	\$ 642,361
4. MAJOR EQUIPMENT										
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	9	EA	37,700.00	11,875.50	5,089.50	\$ 339,300	\$ 106,880	\$ 45,806	\$ 491,985
4.22	138kV, Cable sealing end	12	EA	11,600.00	1,050.00	450.00	\$ 139,200	\$ 12,600	\$ 5,400	\$ 157,200
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)	9	EA	46,833.00	6,500.00	2,500.00	\$ 421,497	\$ 58,500	\$ 22,500	\$ 502,497
4.25	138kV, Surge arrester	18	EA	4,446.00	4,200.00	1,800.00	\$ 80,028	\$ 75,600	\$ 32,400	\$ 188,028
4.26	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 2,060,025	\$ 328,518	\$ 138,222	\$ 2,526,765
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cables	24,900	LF	5.30	1.43	0.29	\$ 131,908	\$ 35,669	\$ 7,134	\$ 174,711
5.2			LF	5.30	1.43	0.29	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 131,908	\$ 35,669	\$ 7,134	\$ 174,711
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	5,250	LF	11.15	10.80	5.40	\$ 58,538	\$ 56,700	\$ 28,350	\$ 143,588
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	138kV UG- Conduit	300	LF	81.00	107.00	57.00	\$ 24,300	\$ 32,100	\$ 17,100	\$ 73,500
6.8	138kV UG- Cable	900	LF	156.00	94.00	62.00	\$ 140,400	\$ 84,600	\$ 55,800	\$ 280,800
6.9	138kV UG- Termination	3	EA	9,360.00	11,700.00		\$ 28,080	\$ 35,100	\$ -	\$ 63,180
6.10	Fiber Optic Cable	300	LF	7.40	3.33	2.22	\$ 2,219	\$ 999	\$ 666	\$ 3,884
6.11	Ground Continuity Conductor	300	LF	13.04	7.53	5.02	\$ 3,912	\$ 2,258	\$ 1,505	\$ 7,675
6.12		0	LF	-	-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 324,073	\$ 225,017	\$ 106,737	\$ 655,827
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	2,900	LF	2.09	3.42	1.46	\$ 6,064	\$ 9,904	\$ 4,245	\$ 20,213
7.2	Caweld, DSA, 4/0 , T, CROSS	84	EA	165.00	75.00		\$ 13,860	\$ 6,300	\$ -	\$ 20,160
7.3	Ground Rod, 3/4" x 15'	65	EA	135.00	67.50	7.50	\$ 8,775	\$ 4,388	\$ 488	\$ 13,650
TOTAL - GROUND GRID							\$ 28,699	\$ 20,592	\$ 4,732	\$ 54,023
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
12 - Existing Ruland 138 kV_ Upgrade & Interconnection							\$ 4,204,617	\$ 1,972,423	\$ 1,114,785	\$ 7,291,825

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		108,052.28	46,308.12	\$ -	\$ 108,052	\$ 46,308	\$ 154,360
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		72,918.25		\$ -	\$ 72,918	\$ -	\$ 72,918
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		291,672.99		\$ -	\$ 291,673	\$ -	\$ 291,673
9.4	Utility PM and Project Oversight	1.0	LS		72,918.25		\$ -	\$ 72,918	\$ -	\$ 72,918
9.5	Site Accommodation, Facilities, Storage	1.0	LS	72,918.25			\$ 72,918	\$ -	\$ -	\$ 72,918
	Engineering									
9.6	Design Engineering	1.00	LS		583,345.98		\$ -	\$ 583,346	\$ -	\$ 583,346
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	4.00	EA		2,730.00	1,820.00	\$ -	\$ 10,920	\$ 7,280	\$ 18,200
9.9	Surveying/Staking	1.00	Site		51,042.77		\$ -	\$ 51,043	\$ -	\$ 51,043
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		273,443.43		\$ -	\$ 273,443	\$ -	\$ 273,443
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		72,918.25		\$ -	\$ 72,918	\$ -	\$ 72,918
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		21,875.47		\$ -	\$ 21,875	\$ -	\$ 21,875
9.15	Laydown Lease	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS			63,815.00	\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	1,914.45	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 260,000	\$ -	\$ -	\$ 260,000	\$ 260,000
9.20	Sales Tax on Materials	8.80%	LS	4,204,616.61			\$ 370,006	\$ -	\$ -	\$ 370,006
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		7,291.82		\$ -	\$ 7,292	\$ -	\$ 7,292
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 442,925	\$ 1,566,399	\$ 313,588	\$ 2,322,912

Propel NY - TO53 AS7

13 -Existing Shore Road 138 kV Interconnection

Total: \$ 17,527,679

Propel NY - TO53 AS7				
	Material Supply	Labor Supply	Equip Supply	Total
13 -Existing Shore Road 138 kV_ Interconnection				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ -	\$ -	\$ -
2. SUBSTATION FOUNDATIONS	\$ 763,029	\$ 594,091	\$ 384,107	\$ 1,741,227
3. SUBSTATION STRUCTURES	\$ 438,491	\$ 427,288	\$ 268,027	\$ 1,133,806
4. MAJOR EQUIPMENT	\$ 3,977,637	\$ 403,988	\$ 221,795	\$ 4,603,420
5. LOW VOLTAGE & CONTROL CABLE	\$ 146,211	\$ 39,537	\$ 7,907	\$ 193,655
6. CONDUIT & CABLE TRENCH	\$ 259,121	\$ 213,377	\$ 104,232	\$ 576,730
7. GROUND GRID	\$ 66,810	\$ 48,271	\$ 11,248	\$ 126,329
8. CONTROL ENCLOSURE	\$ 428,594	\$ 420,875	\$ 137,719	\$ 987,187
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 628,654	\$ 1,990,780	\$ 396,517	\$ 3,015,951
SUBTOTAL (Costs):	\$ 6,708,547	\$ 4,138,207	\$ 1,531,551	\$ 12,378,305
CONTRACTOR MARK-UP (OH&P)	\$ 1,207,538	\$ 744,877	\$ 275,679	\$ 2,228,095
SUBTOTAL:	\$ 7,916,085	\$ 4,883,084	\$ 1,807,231	\$ 14,606,399
CONTINGENCY ON ENTIRE PROJECT	\$ 1,583,217	\$ 976,617	\$ 361,446	\$ 2,921,280
TOTAL:	\$ 9,499,302	\$ 5,859,700	\$ 2,168,677	\$ 17,527,679

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
13 -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	\$ -	\$ -	\$ -	\$ -

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
2.4	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, Shunt Reactor with oil containment-50MVAR	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.19	345kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.20	345kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.21	345kV, Circuit Breaker (GIS), outdoor rated	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.22	345/138 Kv, Control Enclosure-BLDG with generator pad	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.23	138kV, Shunt Reactor with oil containment-50MVAR	95	CY	703.89	804.44	502.78	\$ 66,869	\$ 76,422	\$ 47,764	\$ 191,055
2.24	138kV, Phase Angle Regulator with oil containment	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.25	138kV, Circuit Breaker (PASS)	18	CY	703.89	804.44	502.78	\$ 12,514	\$ 14,301	\$ 8,938	\$ 35,753
2.26	138kV, Bus support-3 Ph, low	118	CY	703.89	804.44	502.78	\$ 82,847	\$ 94,683	\$ 59,177	\$ 236,706
2.27	138kV, Bus support-1 Ph, low	85	CY	703.89	804.44	502.78	\$ 60,013	\$ 68,587	\$ 42,867	\$ 171,466
2.28	138kV, Disconnect Switch	48	CY	703.89	804.44	502.78	\$ 34,124	\$ 38,999	\$ 24,375	\$ 97,498
2.29	138kV, Cable sealing end	12	CY	703.89	804.44	502.78	\$ 8,531	\$ 9,750	\$ 6,094	\$ 24,375
2.30	138kV, CCVT	48	CY	703.89	804.44	502.78	\$ 33,892	\$ 38,734	\$ 24,209	\$ 96,834
2.31	138kV, Air core reactors (3 Ph)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	138kV, Surge arrester	32	CY	703.89	804.44	502.78	\$ 22,595	\$ 25,823	\$ 16,139	\$ 64,556
2.33	138kV, A Frame 50'	218	CY	703.89	804.44	502.78	\$ 153,644	\$ 175,593	\$ 109,746	\$ 438,983
2.34	138kV, H Frame	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.35	Firewall Foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.36	Precast Firewall for transformer, PARs, reactors		SF	25.00	15.00	10.00	\$ -	\$ -	\$ -	\$ -
2.37	Precast Concrete Piles-12"X80'	16	EA	18,000.00	3,200.00	2,800.00	\$ 288,000	\$ 51,200	\$ 44,800	\$ 384,000
2.38	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.39										
2.40										
TOTAL - 345KV FOUNDATION							\$ 763,029	\$ 594,091	\$ 384,107	\$ 1,741,227
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	11	EA	4,173.00	2,879.76	1,919.84	\$ 45,903	\$ 31,677	\$ 21,118	\$ 98,699
3.16	138kV, Bus support-1 Ph, low	21	EA	2,782.00	1,919.84	1,279.89	\$ 58,422	\$ 40,317	\$ 26,878	\$ 125,616
3.17	138kV, Disconnect Switch	2	EA	5,694.00	3,928.86	2,619.24	\$ 11,388	\$ 7,858	\$ 5,238	\$ 24,484
3.18	138kV, Cable sealing end	1	EA	4,810.00	2,886.00	1,924.00	\$ 4,810	\$ 2,886	\$ 1,924	\$ 9,620
3.19	138kV, CCVT	9	EA	3,206.67	1,924.00	1,282.67	\$ 28,860	\$ 17,316	\$ 11,544	\$ 57,720
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'	3	EA	33,000.00	19,800.00	13,200.00	\$ 99,000	\$ 59,400	\$ 39,600	\$ 198,000
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	43,280	LB	2.73	1.17	0.50	\$ 118,233	\$ 50,594	\$ 21,683	\$ 190,511
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 438,491	\$ 427,288	\$ 268,027	\$ 1,133,806
4. MAJOR EQUIPMENT										

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	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	345kV, Shunt Reactor with oil containment-50MVAR	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, Shunt Reactor with oil containment-50MVAR	1	EA	1,710,761.00	3,520.00	880.00	\$ 1,710,761	\$ 3,520	\$ 880	\$ 1,715,161
4.20	Transport & Testing- Shunt Reactor, 138kV	1	EA		222,400.00	144,600.00	\$ -	\$ 222,400	\$ 144,600	\$ 367,000
4.21	138kV, Phase Angle Regulator with oil containment	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
4.22	Transport & Testing- Phase Angle Regulating Transformer, 138kV	0	EA		15,400.00	6,600.00	\$ -	\$ -	\$ -	\$ -
4.23	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
4.24	138kV, Disconnect Switch	2	EA	37,700.00	11,875.50	5,089.50	\$ 75,400	\$ 23,751	\$ 10,179	\$ 109,330
4.25	138kV, Cable sealing end	3	EA	11,600.00	1,050.00	450.00	\$ 34,800	\$ 3,150	\$ 1,350	\$ 39,300
4.26	138kV, CCVT	9	EA	10,000.00	7,970.08	3,415.75	\$ 90,000	\$ 71,731	\$ 30,742	\$ 192,473
4.27	138kV, Air core reactors (3 Ph)	0	EA				\$ -	\$ -	\$ -	\$ -
4.28	138kV, Surge arrester	6	EA	4,446.00	4,200.00	1,800.00	\$ 26,676	\$ 25,200	\$ 10,800	\$ 62,676
4.29	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
4.30	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.31	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 3,977,637	\$ 403,988	\$ 221,795	\$ 4,603,420
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control Cable	27,600	LF	5.30	1.43	0.29	\$ 146,211	\$ 39,537	\$ 7,907	\$ 193,655
5.2			LF				\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 146,211	\$ 39,537	\$ 7,907	\$ 193,655
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	5,400	LF	11.15	10.80	5.40	\$ 60,210	\$ 58,320	\$ 29,160	\$ 147,690
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	0	LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
6.7	138kV UG- Conduit	300	LF	81.00	107.00	57.00	\$ 24,300	\$ 32,100	\$ 17,100	\$ 73,500
6.8	138kV UG- Cable	900	LF	156.00	94.00	62.00	\$ 140,400	\$ 84,600	\$ 55,800	\$ 280,800
6.9	138kV UG- Termination	3	EA	9,360.00	11,700.00		\$ 28,080	\$ 35,100	\$ -	\$ 63,180
6.10	Fiber Optic Cable	300	LF	7.40	3.33	2.22	\$ 2,219	\$ 999	\$ 666	\$ 3,884
6.11	Ground Continuity Conductor	300	LF	13.04	7.53	5.02	\$ 3,912	\$ 2,258	\$ 1,505	\$ 7,675
TOTAL - CONDUIT & CABLE TRENCH							\$ 259,121	\$ 213,377	\$ 104,232	\$ 576,730
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	6,865	LF	2.09	3.42	1.46	\$ 14,355	\$ 23,446	\$ 10,048	\$ 47,849
7.2	Caweld, DSA, 4/0 , T, CROSS	187	EA	165.00	75.00		\$ 30,855	\$ 14,025	\$ -	\$ 44,880
7.3	Ground Rod, 3/4" x 15'	160	EA	135.00	67.50	7.50	\$ 21,600	\$ 10,800	\$ 1,200	\$ 33,600
TOTAL - GROUND GRID		-					\$ 66,810	\$ 48,271	\$ 11,248	\$ 126,329
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 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	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	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 428,594	\$ 420,875	\$ 137,719	\$ 987,187
13 -Existing Shore Road 138 kV_ Interconnection							\$ 6,079,892	\$ 2,147,426	\$ 1,135,035	\$ 9,362,353
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										

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
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		114,886.13	49,236.91	\$ -	\$ 114,886	\$ 49,237	\$ 164,123
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		93,623.53		\$ -	\$ 93,624	\$ -	\$ 93,624
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		374,494.13		\$ -	\$ 374,494	\$ -	\$ 374,494
9.4	Utility PM and Project Oversight	1.0	LS		93,623.53		\$ -	\$ 93,624	\$ -	\$ 93,624
9.5	Site Accommodation, Facilities, Storage	1.0	LS	93,623.53			\$ 93,624	\$ -	\$ -	\$ 93,624
	Engineering									
9.6	Design Engineering	1.00	LS		748,988.27		\$ -	\$ 748,988	\$ -	\$ 748,988
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	4.00	EA		2,730.00	1,820.00	\$ -	\$ 10,920	\$ 7,280	\$ 18,200
9.9	Surveying/Staking	1.00	Site		65,536.47		\$ -	\$ 65,536	\$ -	\$ 65,536
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		351,088.25		\$ -	\$ 351,088	\$ -	\$ 351,088
	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		93,623.53		\$ -	\$ 93,624	\$ -	\$ 93,624
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		28,087.06		\$ -	\$ 28,087	\$ -	\$ 28,087
9.15	Laydown Lease	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS			215,711.00	\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	6,471.33	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 340,000	\$ -	\$ -	\$ 340,000	\$ 340,000
9.20	Sales Tax on Materials	8.80%	LS	6,079,892.49			\$ 535,031	\$ -	\$ -	\$ 535,031
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		9,362.35		\$ -	\$ 9,362	\$ -	\$ 9,362
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 628,654	\$ 1,990,780	\$ 396,517	\$ 3,015,951

Propel NY - TO53 AS7

14 -Existing Syosset 138 kV Interconnection

Total: \$ 23,416,431

Propel NY - TO53 AS7				
	Material Supply	Labor Supply	Equip Supply	Total
14 -Existing Syosset 138 kV_ Interconnection				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ -	\$ -	\$ -
2. SUBSTATION FOUNDATIONS	\$ 397,180	\$ 245,463	\$ 163,014	\$ 805,657
3. SUBSTATION STRUCTURES	\$ 162,299	\$ 93,172	\$ 49,663	\$ 305,134
4. MAJOR EQUIPMENT	\$ 10,219,458	\$ 430,331	\$ 266,656	\$ 10,916,446
5. LOW VOLTAGE & CONTROL CABLE	\$ 41,321	\$ 11,174	\$ 2,235	\$ 54,729
6. CONDUIT & CABLE TRENCH	\$ 20,070	\$ 19,440	\$ 9,720	\$ 49,230
7. GROUND GRID	\$ 10,041	\$ 6,590	\$ 1,249	\$ 17,880
8. CONTROL ENCLOSURE	\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 1,090,144	\$ 2,532,526	\$ 509,345	\$ 4,132,015
SUBTOTAL (Costs):	\$ 12,068,481	\$ 3,441,070	\$ 1,027,476	\$ 16,537,028
CONTRACTOR MARK-UP (OH&P)	\$ 2,172,327	\$ 619,393	\$ 184,946	\$ 2,976,665
SUBTOTAL:	\$ 14,240,808	\$ 4,060,463	\$ 1,212,422	\$ 19,513,693
CONTINGENCY ON ENTIRE PROJECT	\$ 2,848,162	\$ 812,093	\$ 242,484	\$ 3,902,739
TOTAL:	\$ 17,088,969	\$ 4,872,555	\$ 1,454,907	\$ 23,416,431

Description of Work: Interconnection Facilities to the existing LIPA Syosset Substation, located in the Hamlet of Syosset, Town of Oyster Bay, Nassau County. Syosset Substation is a 138 kV AIS substation with an eight (8) ring bus configuration. The Solution includes the installation of a new underground 138 kV line with a PAR in an existing spare line position.

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
14 -Existing Syosset 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										

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	-	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	154	CY	703.89	804.44	502.78	\$ 108,398	\$ 123,884	\$ 77,427	\$ 309,709
2.23	138kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.24	138kV, Bus support-3 Ph, low	11	CY	703.89	804.44	502.78	\$ 7,532	\$ 8,608	\$ 5,380	\$ 21,519
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	12	CY	703.89	804.44	502.78	\$ 8,531	\$ 9,750	\$ 6,094	\$ 24,375
2.28	138kV, CCVT	16	CY	703.89	804.44	502.78	\$ 11,297	\$ 12,911	\$ 8,070	\$ 32,278
2.29	138kV, Air core reactors (3 Ph)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.30	138kV, Surge arrester	16	CY	703.89	804.44	502.78	\$ 11,297	\$ 12,911	\$ 8,070	\$ 32,278
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	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 397,180	\$ 245,463	\$ 163,014	\$ 805,657
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	1	EA	4,173.00	2,879.76	1,919.84	\$ 4,173	\$ 2,880	\$ 1,920	\$ 8,973
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
3.18	138kV, Cable sealing end	1	EA	4,810.00	2,886.00	1,924.00	\$ 4,810	\$ 2,886	\$ 1,924	\$ 9,620
3.19	138kV, CCVT	3	EA	3,206.67	1,924.00	1,282.67	\$ 9,620	\$ 5,772	\$ 3,848	\$ 19,240
3.20	138kV, Surge arrester	3	EA	3,206.67	1,924.00	1,282.67	\$ 9,620	\$ 5,772	\$ 3,848	\$ 19,240
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	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -

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
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	81	LF	25.00	184.94	123.29	\$ 2,025	\$ 14,980	\$ 9,987	\$ 26,992
3.26	AL. Bus fittings	1	LS	2,430.00	2,430.00	1,215.00	\$ 2,430	\$ 2,430	\$ 1,215	\$ 6,075
3.27	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 - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 162,299	\$ 93,172	\$ 49,663	\$ 305,134
4. MAJOR EQUIPMENT										
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	1	EA	10,087,382.00	3,520.00	880.00	\$ 10,087,382	\$ 3,520	\$ 880	\$ 10,091,782
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	1	EA		363,400.00	238,600.00	\$ -	\$ 363,400	\$ 238,600	\$ 602,000
4.20	138kV, Circuit Breaker (PASS)	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
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	3	EA	4,446.00	1,050.00	450.00	\$ 13,338	\$ 3,150	\$ 1,350	\$ 17,838
4.23	138kV, CCVT	3	EA	10,000.00	7,970.08	3,415.75	\$ 30,000	\$ 23,910	\$ 10,247	\$ 64,158
4.24	138kV, Air core reactors (3 Ph)	0	EA				\$ -	\$ -	\$ -	\$ -
4.25	138kV, Surge arrester	3	EA	4,446.00	4,200.00	1,800.00	\$ 13,338	\$ 12,600	\$ 5,400	\$ 31,338
4.26	Station service transformers- 120/208v-250VA	0	EA		45,500.00	19,500.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 10,219,458	\$ 430,331	\$ 266,656	\$ 10,916,446

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. 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	1,800	LF	11.15	10.80	5.40	\$ 20,070	\$ 19,440	\$ 9,720	\$ 49,230
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	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							\$ 20,070	\$ 19,440	\$ 9,720	\$ 49,230
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	792	LF	2.09	3.42	1.46	\$ 1,656	\$ 2,705	\$ 1,159	\$ 5,520
7.2	Caweld, DSA, 4/0 , T, CROSS	41	EA	165.00	75.00		\$ 6,765	\$ 3,075	\$ -	\$ 9,840
7.3	Ground Rod, 3/4" x 15'	12	EA	135.00	67.50	7.50	\$ 1,620	\$ 810	\$ 90	\$ 2,520
TOTAL - GROUND GRID		-					\$ 10,041	\$ 6,590	\$ 1,249	\$ 17,880
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	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.3	Backup Line Relays (Pilot): GE L90	2	EA	21,328.12	17,062.49	4,265.62	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
8.4	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
8.5	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
8.6	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							\$ 127,969	\$ 102,375	\$ 25,594	\$ 255,937
14 -Existing Syosset 138 kV_ Interconnection							\$ 10,978,337	\$ 908,544	\$ 518,131	\$ 12,405,013
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		49,933.65	21,400.14	\$ -	\$ 49,934	\$ 21,400	\$ 71,334
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		124,050.13		\$ -	\$ 124,050	\$ -	\$ 124,050
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		496,200.52		\$ -	\$ 496,201	\$ -	\$ 496,201
9.4	Utility PM and Project Oversight	1.0	LS		124,050.13		\$ -	\$ 124,050	\$ -	\$ 124,050
9.5	Site Accommodation, Facilities, Storage	1.0	LS	124,050.13			\$ 124,050	\$ -	\$ -	\$ 124,050
	Engineering									
9.6	Design Engineering	1.00	LS		992,401.04		\$ -	\$ 992,401	\$ -	\$ 992,401
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		86,835.09		\$ -	\$ 86,835	\$ -	\$ 86,835
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		465,187.99		\$ -	\$ 465,188	\$ -	\$ 465,188
	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		124,050.13		\$ -	\$ 124,050	\$ -	\$ 124,050
9.13	Environmental-special studies/investigation	-	LS	-	-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		37,215.04		\$ -	\$ 37,215	\$ -	\$ 37,215
9.15	Laydown Lease	-	LS	-	-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	1.00	LS			18,296.00	\$ -	\$ -	\$ 18,296	\$ 18,296
9.17	Legal Fees (Real estate)	1.00	LS		-	548.88	\$ -	\$ -	\$ 549	\$ 549
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 460,000	\$ -	\$ -	\$ 460,000	\$ 460,000
9.20	Sales Tax on Materials	8.80%	LS	10,978,337.32			\$ 966,094	\$ -	\$ -	\$ 966,094
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		12,405.01		\$ -	\$ 12,405	\$ -	\$ 12,405
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 1,090,144	\$ 2,532,526	\$ 509,345	\$ 4,132,015

Propel NY - TO53 AS7

15 - Existing Dunwoodie 345 kV Interconnection

Total: \$ 6,437,592

Propel NY - TO53 AS7				
	Material Supply	Labor Supply	Equip Supply	Total
15 - Existing Dunwoodie 345 kV_ Interconnection				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ 6,000	\$ 4,000	\$ 10,000.00
2. SUBSTATION FOUNDATIONS	\$ 65,518	\$ 74,877	\$ 46,798	\$ 187,193.19
3. SUBSTATION STRUCTURES	\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT	\$ 1,912,679	\$ 1,147,607	\$ 765,072	\$ 3,825,358.00
5. LOW VOLTAGE & CONTROL CABLE	\$ 20,660	\$ 5,587	\$ 1,117	\$ 27,364.35
6. CONDUIT & CABLE TRENCH	\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410.00
7. GROUND GRID	\$ 7,144	\$ 4,651	\$ 868	\$ 12,662.59
8. CONTROL ENCLOSURE	\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,624.92
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 227,120	\$ 331,384	\$ 127,224	\$ 685,728.42
Turnkey cost (HVDC, GIS)	\$ 1,912,679	\$ 1,147,607	\$ 765,072	\$ 3,825,358
Non-Turnkey cost	\$ 412,445	\$ 497,229	\$ 200,310	\$ 1,109,983
SUBTOTAL (Costs):	\$ 2,325,124	\$ 1,644,836	\$ 965,382	\$ 4,935,341
CONTRACTOR MARK-UP (OH&P):	\$ 189,001	\$ 158,358	\$ 81,960	\$ 429,319
SUBTOTAL:	\$ 2,514,124	\$ 1,803,194	\$ 1,047,342	\$ 5,364,660
CONTINGENCY ON ENTIRE PROJECT	\$ 502,825	\$ 360,639	\$ 209,468	\$ 1,072,932
TOTAL:	\$ 3,016,949	\$ 2,163,832	\$ 1,256,810	\$ 6,437,592

Description of Work: interconnection facilities to the existing ConEd Dunwoodie Substation, located in the City of Yonkers, Westchester County. The Dunwoodie Substation includes an existing 345 kV GIS six (6) breaker ring. It is proposed that an additional braker be added to the ring to allow for interconnection of the new underground line from the Eastern Queens 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
15 - Existing Dunwoodie 345 kV_ 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	-	6,000.00	4,000.00	\$ -	\$ 6,000	\$ 4,000	\$ 10,000
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	-	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	0	LF	13.85	13.85	6.92	\$ -	\$ -	\$ -	\$ -
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	0	LS	140,319.60	-	-	\$ -	\$ -	\$ -	\$ -
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	\$ -	\$ -	\$ -	\$ -

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							\$ -	\$ 6,000	\$ 4,000	\$ 10,000
2. SUBSTATION FOUNDATIONS										
2.1	345kV, Lightning mast	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
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	73	CY	703.89	804.44	502.78	\$ 51,440	\$ 58,788	\$ 36,743	\$ 146,971
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 - 3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.14	345kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.15	345kV, Disconnect Switch - 3Ph	-	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	20	CY	703.89	804.44	502.78	\$ 14,078	\$ 16,089	\$ 10,056	\$ 40,222
2.23	345kV, Surge arrester	-	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-3 Ph	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, Cable sealing end-3 Ph	-	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	18,000.00	3,200.00	2,800.00	\$ -	\$ -	\$ -	\$ -
2.36	Local Control Cabinet foundation	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.41	Precast Arch. Wall foundation	-	CY	-	-	-	\$ -	\$ -	\$ -	\$ -
2.42	Precast Arch. Wall	-	LF	227.50	91.00	136.50	\$ -	\$ -	\$ -	\$ -
2.43	345KV GIS Sub Slab	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 65,518	\$ 74,877	\$ 46,798	\$ 187,193
3. SUBSTATION STRUCTURES										
3.1	345kV, Lightning mast	0	EA				\$ -	\$ -	\$ -	\$ -
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	18	EA	4,810.00	2,886.00	1,924.00				\$ -

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
3.10	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 - 3 Ph	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 - 3Ph	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.15	345kV, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
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-3 Ph	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.19	138kV, Cable sealing end-3 Ph	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, Surge arrester	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.22	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.23	138kV, H Frame	0	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.24	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.25	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
3.26	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT										
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 - 3 Ph	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 - 3Ph	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	\$ -	\$ -	\$ -	\$ -
	345kV, Shunt Reactor with oil containment-300MVAR	0	EA		3,520.00	880.00	\$ -	\$ -	\$ -	\$ -
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	1	EA	1,912,679.00	1,147,607.40	765,071.60	\$ 1,912,679	\$ 1,147,607	\$ 765,072	\$ 3,825,358
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-3 Ph	0	EA		3,958.50	1,696.50	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Cable sealing end-3 Ph	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		LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
4.27	345kV Gas-Insulated Bus Conductor-elbow		EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 1,912,679	\$ 1,147,607	\$ 765,072	\$ 3,825,358
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	5.30	1.43	0.29	\$ -	\$ -	\$ -	\$ -
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		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	\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 6,690	\$ 6,480	\$ 3,240	\$ 16,410

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. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	547	LF	2.09	3.42	1.46	\$ 1,144	\$ 1,868	\$ 801	\$ 3,813
7.2	Caweld, DSA, 4/0 , T, CROSS	29	EA	165.00	75.00		\$ 4,785	\$ 2,175	\$ -	\$ 6,960
7.3	Ground Rod, 3/4" x 15'	9	EA	135.00	67.50	7.50	\$ 1,215	\$ 608	\$ 68	\$ 1,890
TOTAL - GROUND GRID							\$ 7,144	\$ 4,651	\$ 868	\$ 12,663
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA				\$ -	\$ -	\$ -	\$ -
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
8.13	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
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							\$ 85,312	\$ 68,250	\$ 17,062	\$ 170,625
15 - Existing Dunwoodie 345 kV_ Interconnection							\$ 2,098,003	\$ 1,313,452	\$ 838,158	\$ 4,249,613
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		8,362.58	3,583.96	\$ -	\$ 8,363	\$ 3,584	\$ 11,947
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		42,496.13		\$ -	\$ 42,496	\$ -	\$ 42,496
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		169,984.52		\$ -	\$ 169,985	\$ -	\$ 169,985
9.4	Utility PM and Project Oversight	1.0	LS		42,496.13		\$ -	\$ 42,496	\$ -	\$ 42,496
9.5	Site Accommodation, Facilities, Storage	1.0	LS	42,496.13			\$ 42,496	\$ -	\$ -	\$ 42,496
	Engineering									
9.6	Design Engineering	1.00	LS		33,940.40		\$ -	\$ 33,940	\$ -	\$ 33,940
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		2,969.79		\$ -	\$ 2,970	\$ -	\$ 2,970
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		15,909.56		\$ -	\$ 15,910	\$ -	\$ 15,910
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		4,242.55		\$ -	\$ 4,243	\$ -	\$ 4,243
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		1,272.77		\$ -	\$ 1,273	\$ -	\$ 1,273
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		-	\$ 120,000	\$ -	\$ -	\$ 120,000	\$ 120,000
9.20	Sales Tax on Materials	8.80%	LS	2,098,003.10			\$ 184,624	\$ -	\$ -	\$ 184,624
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		4,249.61		\$ -	\$ 4,250	\$ -	\$ 4,250
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 227,120	\$ 331,384	\$ 127,224	\$ 685,728

Propel NY - TO53 AS7

16 -Existing Holbrook 138 Kv Upgrade

Total: \$ 1,907,161

Propel NY - TO53 AS7				
	Material Supply	Labor Supply	Equip Supply	Total
16 -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 EQUIPMENT	\$ 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
16 -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	\$ -	\$ -	\$ -	\$ -

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
3.21	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	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.24	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT										
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

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. 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
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
16 -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 Oversight	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		-	-	\$ -	\$ -	\$ -	\$ -

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
9.19	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 - TO53 AS7

17 -Existing Barrett 138 Kv_ Upgrade

Total: \$ -

Propel NY - TO53 AS7				
	Material Supply	Labor Supply	Equip Supply	Total
17 -Existing Barrett 138 Kv_ Upgrade				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ -	\$ -	\$ -
2. SUBSTATION FOUNDATIONS	\$ -	\$ -	\$ -	\$ -
3. SUBSTATION STRUCTURES	\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT	\$ -	\$ -	\$ -	\$ -
5. LOW VOLTAGE & CONTROL CABLE	\$ -	\$ -	\$ -	\$ -
6. CONDUIT & CABLE TRENCH	\$ -	\$ -	\$ -	\$ -
7. GROUND GRID	\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE	\$ -	\$ -	\$ -	\$ -
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ -	\$ -	\$ -	\$ -
CONTRACTOR MARK-UP (OH&P)	\$ -	\$ -	\$ -	\$ -
SUBTOTAL:	\$ -	\$ -	\$ -	\$ -
CONTINGENCY ON ENTIRE PROJECT	\$ -	\$ -	\$ -	\$ -
TOTAL:	\$ -	\$ -	\$ -	\$ -

Description of Work: Upgrades to the existing LIPA Barrett Substation, located in the Hamlet of Oceanside, Town of Hempstead, Nassau County. Barrett Substation is an existing 138 kV AIS substation with a main-tie-main configuration.The Solution includes the addition of a new breaker in series with the existing 138 kV CB-1330 currently feeding a 138 kV/69 kV transformer bank										
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
17 -Existing Barrett 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	-	15,000.00	10,000.00				\$ -
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										

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	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-3 Ph	-	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 - 3 Ph	-	CY	703.89	804.44	502.78				\$ -
2.13	345kV, CCVT	-	CY	703.89	804.44	502.78				\$ -
2.14	345kV, Disconnect Switch - 3Ph	-	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				\$ -
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-3 Ph	-	CY	703.89	804.44	502.78				\$ -
2.27	138kV, Cable sealing end-3 Ph	-	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				\$ -
TOTAL - 345KV FOUNDATION							\$ -	\$ -	\$ -	\$ -
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-3 Ph	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 - 3 Ph	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 - 3Ph	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-3 Ph	0	EA	5,694.00	3,928.86	2,619.24				\$ -
3.18	138kV, Cable sealing end-3 Ph	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	-	-	-				\$ -
3.23	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50				\$ -

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
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	-	-	-				\$ -
3.27	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50				\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal-3 Ph	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 - 3 Ph	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 - 3Ph	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		13,559.00	5,811.00				\$ -
4.21	138kV, Disconnect Switch-3 Ph	0	EA		3,958.50	1,696.50				\$ -
4.22	138kV, Cable sealing end-3 Ph	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	Substation Equipment connections-Bare Wire ACSR- Bittern 45/7-1275kcmil		LF							\$ -
4.28	Equip jumper connector compression Single 1272 kcmil		EA							\$ -
4.29	Substation Equipment connections-Bare Wire ACSR- Lapwing 45/7-1590kcmil		LF							\$ -
4.30	Equip jumper connector compression double 1590 kcmil		EA							\$ -
4.31	Wire Spacer-double		EA							\$ -
TOTAL - MAJOR EQUIPMENT							\$ -	\$ -	\$ -	\$ -
5. LOW VOLTAGE & CONTROL CABLE										
5.1	300V Copper 12/c TC XHHW/CPE 12AWG	0	LF		-	-	\$ -	\$ -	\$ -	\$ -
5.2	300V Copper 12/c TC XHHW/CPE 10AWG	0	LF		-	-	\$ -	\$ -	\$ -	\$ -
5.3	300V Copper 4/c TC XHHW/CPE 12AWG	0	LF		-	-	\$ -	\$ -	\$ -	\$ -
5.4	300V Copper 4/c TC XHHW/CPE 10AWG	0	LF		-	-	\$ -	\$ -	\$ -	\$ -
5.5	300V Copper 7/c TC XHHW/CPE 12AWG	0	LF		-	-	\$ -	\$ -	\$ -	\$ -
5.6	600V Copper 4/c TC XHHW/CPE 8AWG	0	LF		-	-	\$ -	\$ -	\$ -	\$ -
5.7	Fiber		LF	0.65	-	-	\$ -	\$ -	\$ -	\$ -
5.8							\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ -	\$ -	\$ -	\$ -
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	0	LF	11.15	10.80	5.40	\$ -	\$ -	\$ -	\$ -
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							\$ -	\$ -	\$ -	\$ -
7. GROUND GRID										

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
7.1	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 (87L): SEL-411L	2	EA	21,328.12	17,062.49	4,265.62				\$ -
8.3	Backup Line Relays (87L): GE L90	2	EA	21,328.12	17,062.49	4,265.62				\$ -
8.4	Primary Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62				\$ -
8.5	Backup Bay Control: SEL-451	1	EA	21,328.12	17,062.49	4,265.62				\$ -
8.6	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E	1	EA	21,328.12	17,062.49	4,265.62				\$ -
8.7	Backup Transformer/Reactor/PAR Differential Relays: GE T60	1	EA	21,328.12	17,062.49	4,265.62				\$ -
8.8	Primary Bus Differential Relays: SEL-487B	1	EA	21,328.12	17,062.49	4,265.62				\$ -
8.9	Backup Bus Differential Relays: GE B90	1	EA	21,328.12	17,062.49	4,265.62				\$ -
8.10	Primary Line Relays (Pilot): SEL-411L	5	EA	41,575.50	33,260.40	8,315.10				\$ -
8.11	Backup Line Relays (Pilot): GE L90	5	EA	41,575.50	33,260.40	8,315.10				\$ -
8.12	Primary Line Relays (87L): SEL-411L	4	EA	21,328.12	17,062.49	4,265.62				\$ -
8.13	Backup Line Relays (87L): GE L90	4	EA	21,328.12	17,062.49	4,265.62				\$ -
8.14	Primary Bay Control: SEL-451	5	EA	21,328.12	17,062.49	4,265.62				\$ -
8.15	Backup Bay Control: SEL-451	5	EA	21,328.12	17,062.49	4,265.62				\$ -
8.16	Primary Bus Differential Relays: SEL-487B	3	EA	21,328.12	17,062.49	4,265.62				\$ -
8.17	Backup Bus Differential Relays: GE B90	3	EA	21,328.12	17,062.49	4,265.62				\$ -
8.18	RTU Panel A: SEL-2240 Axion, SEL-2730M ENET SW., SEL-2407 GPS	1	EA	12,500.00	10,000.00	2,500.00				\$ -
8.19	RTU Panel B: SEL-2730M Ethernet Switch, SEL-2407 GPS Clock	1	EA	12,500.00	10,000.00	2,500.00				\$ -
8.20	HMI Panel	1	EA	12,500.00	10,000.00	2,500.00				\$ -
8.21	125VDC Battery System	0	LS	5,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.22	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.23	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.24	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ -	\$ -	\$ -	\$ -

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
17 -Existing Barrett 138 Kv_ Upgrade							\$ -	\$ -	\$ -	\$ -
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		-	-	\$ -	\$ -	\$ -	\$ -
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		-		\$ -	\$ -	\$ -	\$ -
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		-		\$ -	\$ -	\$ -	\$ -
9.4	Utility PM and Project Oversight	1.0	LS		-		\$ -	\$ -	\$ -	\$ -
9.5	Site Accommodation, Facilities, Storage	1.0	LS	-			\$ -	\$ -	\$ -	\$ -
	Engineering									
9.6	Design Engineering	1.00	LS		-					\$ -
9.7	LiDAR /GPR	1.00	LS		-					\$ -
9.8	Geotech	4.00	EA		-					\$ -
9.9	Surveying/Staking	1.00	Site		-					\$ -
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		-					\$ -
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		-					\$ -
9.12	Environmental Licensing & Permitting Costs	-	LS		-					\$ -
9.13	Environmental Mitigation	-	LS		-					\$ -
9.14	Warranties / LOC's	1.00	LS		-					\$ -
9.15	Real Estate Costs (New)	1.00	LS		-					\$ -
9.16	Real Estate Costs (Incumbent Utility)	1.00	LS		-					\$ -
9.17	Legal Fees	-	LS		-					\$ -
9.18	Insurance	1.00	LS		-					\$ -
9.19	Bonds	1	LS		-	\$ 60,000				\$ -
9.20	Sales Tax on Materials	8.80%	LS	-						\$ -
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		-					\$ -
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ -	\$ -	\$ -	\$ -

Propel NY - TO53 AS7

18 - Existing EGC 138 kV Upgrade

Total: \$ 17,743,027

Propel NY - TO53 AS7				
	Material Supply	Labor Supply	Equip Supply	Total
18 - Existing EGC 138 kV_ Upgrade				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ 200,855	\$ 251,944	\$ 161,457	\$ 614,256
2. SUBSTATION FOUNDATIONS	\$ 537,135	\$ 613,868	\$ 383,668	\$ 1,534,670
3. SUBSTATION STRUCTURES	\$ 315,720	\$ 322,886	\$ 264,237	\$ 902,843
4. MAJOR EQUIPMENT	\$ 734,667	\$ 198,077	\$ 82,319	\$ 1,015,062
5. LOW VOLTAGE & CONTROL CABLE	\$ 61,981	\$ 16,760	\$ 3,352	\$ 82,093
6. CONDUIT & CABLE TRENCH	\$ 2,521,988	\$ 1,754,597	\$ 946,873	\$ 5,223,458
7. GROUND GRID	\$ 90,966	\$ 65,751	\$ 15,343	\$ 172,060
8. CONTROL ENCLOSURE	\$ -	\$ -	\$ -	\$ -
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 488,216	\$ 2,077,871	\$ 419,857	\$ 2,985,944
SUBTOTAL (Costs):	\$ 4,951,528	\$ 5,301,753	\$ 2,277,106	\$ 12,530,386
CONTRACTOR MARK-UP (OH&P)	\$ 891,275	\$ 954,316	\$ 409,879	\$ 2,255,470
SUBTOTAL:	\$ 5,842,803	\$ 6,256,069	\$ 2,686,985	\$ 14,785,856
CONTINGENCY ON ENTIRE PROJECT	\$ 1,168,561	\$ 1,251,214	\$ 537,397	\$ 2,957,171
TOTAL:	\$ 7,011,363	\$ 7,507,282	\$ 3,224,381	\$ 17,743,027

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
18 - 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	\$ -	\$ -	\$ -	\$ -

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	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										
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	73	CY	703.89	804.44	502.78	\$ 51,187	\$ 58,499	\$ 36,562	\$ 146,247
2.29	138kV, Cable sealing end	109	CY	703.89	804.44	502.78	\$ 76,780	\$ 87,748	\$ 54,843	\$ 219,371
2.30	138kV, CCVT	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.29	138kV, Air core reactors (3 Ph)	249	CY	703.89	804.44	502.78	\$ 175,204	\$ 200,233	\$ 125,146	\$ 500,583
2.30	138kV, Surge arrester	96	CY	703.89	804.44	502.78	\$ 67,784	\$ 77,468	\$ 48,417	\$ 193,669
2.31	138kV, A Frame 50'	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
2.32	138kV, H Frame	218	CY	703.89	804.44	502.78	\$ 153,644	\$ 175,593	\$ 109,746	\$ 438,983
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	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 537,135	\$ 613,868	\$ 383,668	\$ 1,534,670
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	\$ -	\$ -	\$ -	\$ -
3.3	345kV, GIS fast acting GND SW	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.3	345kV, GIS to air bushing	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.4	345kV, GIS support-1 Ph	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.5	345kV, GIS support-3 Ph	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.6	345kV, GIS Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.3	345kV, Cable sealing end	0	EA	8,346.00	5,758.74	3,839.16	\$ -	\$ -	\$ -	\$ -
3.3	345kV, CCVT	0	EA	4,810.00	2,886.00	1,924.00	\$ -	\$ -	\$ -	\$ -
3.4	345kV, Disconnect Switch	0	EA	19,240.00	11,544.00	7,696.00	\$ -	\$ -	\$ -	\$ -
3.5	138kV, Bus support-3 Ph, low	0	EA	4,173.00	2,879.76	1,919.84	\$ -	\$ -	\$ -	\$ -

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
3.6	138kV, Bus support-1 Ph, low	0	EA	2,782.00	1,919.84	1,279.89	\$ -	\$ -	\$ -	\$ -
3.3	138kV, Disconnect Switch	3	EA	-	-	-	\$ -	\$ -	\$ -	\$ -
3.3	138kV, Cable sealing end	9	EA	4,810.00	2,886.00	1,924.00	\$ 43,290	\$ 25,974	\$ 17,316	\$ 86,580
3.4	138kV, CCVT	0	EA	3,206.67	1,924.00	1,282.67	\$ -	\$ -	\$ -	\$ -
3.5	138kV, Surge arrester	18	EA	4,810.00	2,886.00	1,924.00	\$ 86,580	\$ 51,948	\$ 34,632	\$ 173,160
3.6	138kV, A Frame 50'	0	EA	33,000.00	19,800.00	13,200.00	\$ -	\$ -	\$ -	\$ -
3.3	138kV, H Frame	6	EA	21,450.00	12,870.00	17,160.00	\$ 128,700	\$ 77,220	\$ 102,960	\$ 308,880
3.3	AL. Bus Tubing, 5" SCH 80	750	LF	25.00	184.94	123.29	\$ 18,750	\$ 138,704	\$ 92,469	\$ 249,923
3.4	AL. Bus fittings	1	LS	15,000.00	15,000.00	7,500.00	\$ 15,000	\$ 15,000	\$ 7,500	\$ 37,500
3.5	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 315,720	\$ 322,886	\$ 264,237	\$ 902,843
4. MAJOR EQUIPMENT										
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	3	EA	37,700.00	11,875.50	5,089.50	\$ 113,100	\$ 35,627	\$ 15,269	\$ 163,995
4.23	138kV, Cable sealing end	27	EA	4,446.00	1,050.00	450.00	\$ 120,042	\$ 28,350	\$ 12,150	\$ 160,542
4.24	138kV, CCVT	0	EA	10,000.00	7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.25	138kV, Air core reactors (3 Ph)	9	EA	46,833.00	6,500.00	2,500.00	\$ 421,497	\$ 58,500	\$ 22,500	\$ 502,497
4.26	138kV, Surge arrester	18	EA	4,446.00	4,200.00	1,800.00	\$ 80,028	\$ 75,600	\$ 32,400	\$ 188,028
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							\$ 734,667	\$ 198,077	\$ 82,319	\$ 1,015,062
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control cables	11,700	LF	5.30	1.43	0.29	\$ 61,981	\$ 16,760	\$ 3,352	\$ 82,093
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 61,981	\$ 16,760	\$ 3,352	\$ 82,093
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	1,800	LF	11.15	10.80	5.40	\$ 20,070	\$ 19,440	\$ 9,720	\$ 49,230
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	850	LF	266.50	53.04	13.26	\$ 226,525	\$ 45,084	\$ 11,271	\$ 282,880
6.7	138kV UG- Conduit	3,700	LF	81.00	107.00	57.00	\$ 299,700	\$ 395,900	\$ 210,900	\$ 906,500
6.8	138kV UG- Cable	11,100	LF	156.00	94.00	62.00	\$ 1,731,600	\$ 1,043,400	\$ 688,200	\$ 3,463,200
6.9	138kV UG- Termination	18	EA	9,360.00	11,700.00		\$ 168,480	\$ 210,600	\$ -	\$ 379,080
6.10	Fiber Optic Cable	3,700	LF	7.40	3.33	2.22	\$ 27,369	\$ 12,323	\$ 8,215	\$ 47,908
6.11	Ground Continuity Conductor	3,700	LF	13.04	7.53	5.02	\$ 48,244	\$ 27,850	\$ 18,567	\$ 94,661
TOTAL - CONDUIT & CABLE TRENCH							\$ 2,521,988	\$ 1,754,597	\$ 946,873	\$ 5,223,458
7. GROUND GRID										

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
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor	9,350	LF	2.09	3.42	1.46	\$ 19,551	\$ 31,933	\$ 13,686	\$ 65,170
7.2	Caweld, DSA, 4/0 , T, CROSS	252	EA	165.00	75.00		\$ 41,580	\$ 18,900	\$ -	\$ 60,480
7.3	Ground Rod, 3/4" x 15'	221	EA	135.00	67.50	7.50	\$ 29,835	\$ 14,918	\$ 1,658	\$ 46,410
TOTAL - GROUND GRID							\$ 90,966	\$ 65,751	\$ 15,343	\$ 172,060
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA				\$ -	\$ -	\$ -	\$ -
8.2	Primary Bay Control: SEL-451		EA				\$ -	\$ -	\$ -	\$ -
8.3	Backup Bay Control: SEL-451		EA				\$ -	\$ -	\$ -	\$ -
8.4	Primary Transformer/Reactor/PAR Differential Relays: SEL-487E		EA				\$ -	\$ -	\$ -	\$ -
8.5	Backup Transformer/Reactor/PAR Differential Relays: GE T60		EA				\$ -	\$ -	\$ -	\$ -
8.13	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
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							\$ -	\$ -	\$ -	\$ -
18 - Existing EGC 138 kV_ Upgrade							\$ 4,463,312	\$ 3,223,882	\$ 1,857,249	\$ 9,544,442
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		177,839.56	76,216.96	\$ -	\$ 177,840	\$ 76,217	\$ 254,057
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		95,444.42		\$ -	\$ 95,444	\$ -	\$ 95,444
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		381,777.69		\$ -	\$ 381,778	\$ -	\$ 381,778
9.4	Utility PM and Project Oversight	1.0	LS		95,444.42		\$ -	\$ 95,444	\$ -	\$ 95,444
9.5	Site Accommodation, Facilities, Storage	1.0	LS	95,444.42			\$ 95,444	\$ -	\$ -	\$ 95,444
	Engineering									
9.6	Design Engineering	1.00	LS		763,555.37		\$ -	\$ 763,555	\$ -	\$ 763,555
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		66,811.10		\$ -	\$ 66,811	\$ -	\$ 66,811
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		357,916.58		\$ -	\$ 357,917	\$ -	\$ 357,917
	Permitting and Additional Costs									
9.11	Physical Security		LS		6,546.96		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		95,444.42		\$ -	\$ 95,444	\$ -	\$ 95,444
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		28,633.33		\$ -	\$ 28,633	\$ -	\$ 28,633
9.15	Laydown Lease	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS				\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 340,000	\$ -	\$ -	\$ 340,000	\$ 340,000
9.20	Sales Tax on Materials	8.80%	LS	4,463,311.81			\$ 392,771	\$ -	\$ -	\$ 392,771
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		9,544.44		\$ -	\$ 9,544	\$ -	\$ 9,544
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 488,216	\$ 2,077,871	\$ 419,857	\$ 2,985,944

Propel NY - TO53 AS7

19 -Existing Lake Success 138 kV Upgrade

Total: \$ 24,220,111

Propel NY - TO53 AS7				
	Material Supply	Labor Supply	Equip Supply	Total
19 -Existing Lake Success 138 kV_ Upgrade				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ 30,000	\$ 20,000	\$ 50,000
2. SUBSTATION FOUNDATIONS	\$ 390,817	\$ 238,191	\$ 158,469	\$ 787,477
3. SUBSTATION STRUCTURES	\$ 200,032	\$ 217,657	\$ 129,933	\$ 547,623
4. MAJOR EQUIPMENT	\$ 10,717,905	\$ 378,796	\$ 244,570	\$ 11,341,270
5. LOW VOLTAGE & CONTROL CABLE	\$ 19,071	\$ 5,157	\$ 1,031	\$ 25,259
6. CONDUIT & CABLE TRENCH	\$ 8,363	\$ 8,100	\$ 4,050	\$ 20,513
7. GROUND GRID	\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE	\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 1,129,913	\$ 2,613,233	\$ 503,999	\$ 4,247,145
SUBTOTAL (Costs):	\$ 12,508,756	\$ 3,525,258	\$ 1,070,584	\$ 17,104,598
CONTRACTOR MARK-UP (OH&P)	\$ 2,251,576	\$ 634,546	\$ 192,705	\$ 3,078,828
SUBTOTAL:	\$ 14,760,333	\$ 4,159,805	\$ 1,263,289	\$ 20,183,426
CONTINGENCY ON ENTIRE PROJECT	\$ 2,952,067	\$ 831,961	\$ 252,658	\$ 4,036,685
TOTAL:	\$ 17,712,399	\$ 4,991,765	\$ 1,515,947	\$ 24,220,111

Description of Work:Upgrades to the existing LIPA Lake Success Substation, located in the Hamlet of North New Hyde Park, Town of North Hempstead, Nassau County. Lake Success Substation is an existing 138 kV AIS substation with a main-tie-main configuration.The Solution includes replacing removal of the existing Jamaica 903 Line 138 kV PAR and installation of a new, higher capacity PAR and installing a oil-filled shunt reactor

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
19 -Existing Lake Success 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	-	30,000.00	20,000.00	\$ -	\$ 30,000	\$ 20,000	\$ 50,000
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	\$ -	\$ -	\$ -	\$ -
TOTAL - SITE PREP/ GRADING/ FENCING / CIVIL							\$ -	\$ 30,000	\$ 20,000	\$ 50,000
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	\$ -	\$ -	\$ -	\$ -

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
2.3	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	154	CY	703.89	804.44	502.78	\$ 108,398	\$ 123,884	\$ 77,427	\$ 309,709
2.23	138kV, Circuit Breaker (PASS)	-	CY	703.89	804.44	502.78	\$ -	\$ -	\$ -	\$ -
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	49	CY	703.89	804.44	502.78	\$ 34,293	\$ 39,192	\$ 24,495	\$ 97,981
2.26	138kV, Disconnect Switch	24	CY	703.89	804.44	502.78	\$ 17,062	\$ 19,500	\$ 12,187	\$ 48,749
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	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ 390,817	\$ 238,191	\$ 158,469	\$ 787,477
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	12	EA	2,782.00	1,919.84	1,279.89	\$ 33,384	\$ 23,038	\$ 15,359	\$ 71,781
3.17	138kV, Disconnect Switch	1	EA	5,694.00	3,928.86	2,619.24	\$ 5,694	\$ 3,929	\$ 2,619	\$ 12,242
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	-	-	-	\$ -	\$ -	\$ -	\$ -
3.25	AL. Bus Tubing, 5" SCH 80	625	LF	25.00	184.94	123.29	\$ 15,625	\$ 115,586	\$ 77,058	\$ 208,269
3.26	AL. Bus fittings	1	LS	18,750.00	18,750.00	9,375.00	\$ 18,750	\$ 18,750	\$ 9,375	\$ 46,875
3.27	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 - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ 200,032	\$ 217,657	\$ 129,933	\$ 547,623
4. MAJOR EQUIPMENT										
4.1	345kV, GIS air terminal	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
4.2	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	1	EA	10,680,205.00	3,520.00	880.00	\$ 10,680,205	\$ 3,520	\$ 880	\$ 10,684,605
4.19	Transport & Testing- Phase Angle Regulating Transformer, 138kV	1	EA		363,400.00	238,600.00	\$ -	\$ 363,400	\$ 238,600	\$ 602,000
4.20	138kV, Circuit Breaker (PASS)	0	EA		13,559.00		\$ 5,811.00	\$ -	\$ -	\$ -
4.21	138kV, Disconnect Switch	1	EA	37,700.00	11,875.50	5,089.50	\$ 37,700	\$ 11,876	\$ 5,090	\$ 54,665
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							\$ 10,717,905	\$ 378,796	\$ 244,570	\$ 11,341,270
5. LOW VOLTAGE & CONTROL CABLE										
5.1	Control cables	3,600	LF	5.30	1.43	0.29	\$ 19,071	\$ 5,157	\$ 1,031	\$ 25,259
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ 19,071	\$ 5,157	\$ 1,031	\$ 25,259
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	750	LF	11.15	10.80	5.40	\$ 8,363	\$ 8,100	\$ 4,050	\$ 20,513
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	0	LF	266.50	53.04	13.26	\$ -	\$ -	\$ -	\$ -
TOTAL - CONDUIT & CABLE TRENCH							\$ 8,363	\$ 8,100	\$ 4,050	\$ 20,513
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor		LF	2.09	3.42	1.46	\$ -	\$ -	\$ -	\$ -
7.2	Caweld, DSA, 4/0 , T, CROSS		EA	165.00	75.00		\$ -	\$ -	\$ -	\$ -
7.3	Ground Rod, 3/4" x 15'		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 (87L): SEL-411L	0	EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.3	Backup Line Relays (87L): GE L90	0	EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.4	Primary Bay Control: SEL-451	0	EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
8.5	Backup Bay Control: SEL-451	0	EA	21,328.12	17,062.49	4,265.62	\$ -	\$ -	\$ -	\$ -
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	125VDC Battery System	0	LS	25,000.00	22,750.00	9,750.00	\$ -	\$ -	\$ -	\$ -
8.9	Control house AC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.10	Control House DC Panel	0	EA	65,000.00	91,000.00	39,000.00	\$ -	\$ -	\$ -	\$ -
8.11	Generator	0	EA	130,000.00	72,800.00	31,200.00	\$ -	\$ -	\$ -	\$ -
TOTAL - CONTROL ENCLOSURE							\$ 42,656	\$ 34,125	\$ 8,531	\$ 85,312
19 -Existing Lake Success 138 kV_ Upgrade							\$ 11,378,844	\$ 912,025	\$ 566,585	\$ 12,857,454
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		51,751.35	22,179.15	\$ -	\$ 51,751	\$ 22,179	\$ 73,930
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		128,574.54		\$ -	\$ 128,575	\$ -	\$ 128,575
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		514,298.15		\$ -	\$ 514,298	\$ -	\$ 514,298

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
9.4	Utility PM and Project Oversight	1.0	LS		128,574.54		\$ -	\$ 128,575	\$ -	\$ 128,575
9.5	Site Accommodation, Facilities, Storage	1.0	LS	128,574.54			\$ 128,575	\$ -	\$ -	\$ 128,575
	Engineering									
9.6	Design Engineering	1.00	LS		1,028,596.29		\$ -	\$ 1,028,596	\$ -	\$ 1,028,596
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		90,002.18		\$ -	\$ 90,002	\$ -	\$ 90,002
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		482,154.51		\$ -	\$ 482,155	\$ -	\$ 482,155
	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		128,574.54		\$ -	\$ 128,575	\$ -	\$ 128,575
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		38,572.36		\$ -	\$ 38,572	\$ -	\$ 38,572
9.15	Laydown Lease	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.16	Real Estate (Acquisition)	-	LS				\$ -	\$ -	\$ -	\$ -
9.17	Legal Fees (Real estate)	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
9.19	Bonds	1	LS		-	\$ 480,000	\$ -	\$ -	\$ 480,000	\$ 480,000
9.20	Sales Tax on Materials	8.80%	LS	11,378,843.67			\$ 1,001,338	\$ -	\$ -	\$ 1,001,338
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		12,857.45		\$ -	\$ 12,857	\$ -	\$ 12,857
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 1,129,913	\$ 2,613,233	\$ 503,999	\$ 4,247,145

Propel NY - TO53 AS7

20 - Existing Rainey 345 kV Upgrade

Total: \$ 5,182,771

Propel NY - TO53 AS7				
	Material Supply	Labor Supply	Equip Supply	Total
20 - Existing Rainey 345 kV_ Upgrade				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ 90,000	\$ 60,000	\$ 150,000
2. SUBSTATION FOUNDATIONS	\$ 136,155	\$ 51,378	\$ 36,911	\$ 224,444
3. SUBSTATION STRUCTURES	\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT	\$ 1,960,000	\$ 114,478	\$ 49,062	\$ 2,123,540
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	\$ 224,344	\$ 568,027	\$ 111,620	\$ 903,991
SUBTOTAL (Costs):	\$ 2,460,513	\$ 916,266	\$ 283,370	\$ 3,660,149
CONTRACTOR MARK-UP (OH&P)	\$ 442,892	\$ 164,928	\$ 51,007	\$ 658,827
SUBTOTAL:	\$ 2,903,405	\$ 1,081,194	\$ 334,377	\$ 4,318,976
CONTINGENCY ON ENTIRE PROJECT	\$ 580,681	\$ 216,239	\$ 66,875	\$ 863,795
TOTAL:	\$ 3,484,086	\$ 1,297,433	\$ 401,252	\$ 5,182,771

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 a new breaker in series with the existing 345 kV CB -1E, 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
20 - 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	\$ -	\$ -	\$ -	\$ -

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							\$ -	\$ 90,000	\$ 60,000	\$ 150,000
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)	40	CY	703.89	804.44	502.78	\$ 28,155	\$ 32,178	\$ 20,111	\$ 80,444
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							\$ 136,155	\$ 51,378	\$ 36,911	\$ 224,444
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	345kV Gas-Insulated Bus Conductor	0	LF	550.00	275.00	82.50	\$ -	\$ -	\$ -	\$ -
3.22	345kV Gas-Insulated Bus Conductor-elbow	0	EA	2,500.00	1,250.00	375.00	\$ -	\$ -	\$ -	\$ -
3.23	AL. Bus Tubing, 5" SCH 80	0	LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.24	AL. Bus fittings	0	LS	-	-	-	\$ -	\$ -	\$ -	\$ -

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							\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT										
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)	2	EA	980,000.00	57,239.00	24,531.00	\$ 1,960,000	\$ 114,478	\$ 49,062	\$ 2,123,540
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	\$ -	\$ -	\$ -	\$ -
TOTAL - MAJOR EQUIPMENT							\$ 1,960,000	\$ 114,478	\$ 49,062	\$ 2,123,540
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	5.30	1.43	0.29	\$ -	\$ -	\$ -	\$ -
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		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
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							\$ 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
20 - Existing Rainey 345 kV_ Upgrade							\$ 2,236,168	\$ 348,239	\$ 171,750	\$ 2,756,158
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		18,199.62	7,799.84	\$ -	\$ 18,200	\$ 7,800	\$ 25,999
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		27,561.58		\$ -	\$ 27,562	\$ -	\$ 27,562
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		110,246.30		\$ -	\$ 110,246	\$ -	\$ 110,246
9.4	Utility PM and Project Oversight	1.0	LS		27,561.58		\$ -	\$ 27,562	\$ -	\$ 27,562
9.5	Site Accommodation, Facilities, Storage	1.0	LS	27,561.58			\$ 27,562	\$ -	\$ -	\$ 27,562
	Engineering									
9.6	Design Engineering	1.00	LS		220,492.61		\$ -	\$ 220,493	\$ -	\$ 220,493
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		19,293.10		\$ -	\$ 19,293	\$ -	\$ 19,293
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	1.00	LS		103,355.91		\$ -	\$ 103,356	\$ -	\$ 103,356
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		27,561.58		\$ -	\$ 27,562	\$ -	\$ 27,562
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
0	Warranties / LOC's	1.00	LS		8,268.47		\$ -	\$ 8,268	\$ -	\$ 8,268
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		-	\$ 102,000	\$ -	\$ -	\$ 102,000	\$ 102,000
9.20	Sales Tax on Materials	8.80%	LS	2,236,168.36			\$ 196,783	\$ -	\$ -	\$ 196,783
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		2,756.16		\$ -	\$ 2,756	\$ -	\$ 2,756
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 224,344	\$ 568,027	\$ 111,620	\$ 903,991

Propel NY - TO53 AS7

21 -Other Substation Upgrades

Total: \$ 647,945

Propel NY - TO53 AS7				
	Material Supply	Labor Supply	Equip Supply	Total
21 -Other Substation Upgrades				
1. SITE PREP/ GRADING/ FENCING / CIVIL	\$ -	\$ -	\$ -	\$ -
2. SUBSTATION FOUNDATIONS	\$ -	\$ -	\$ -	\$ -
3. SUBSTATION STRUCTURES	\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPTMENT	\$ -	\$ -	\$ -	\$ -
5. LOW VOLTAGE & CONTROL CABLE	\$ -	\$ -	\$ -	\$ -
6. CONDUIT & CABLE TRENCH	\$ -	\$ -	\$ -	\$ -
7. GROUND GRID	\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE	\$ 170,625	\$ 136,500	\$ 34,125	\$ 341,250
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 18,427	\$ 82,412	\$ 15,499	\$ 116,339
SUBTOTAL (Costs):	\$ 189,052	\$ 218,912	\$ 49,624	\$ 457,589
CONTRACTOR MARK-UP (OH&P)	\$ 34,029	\$ 39,404	\$ 8,932	\$ 82,366
SUBTOTAL:	\$ 223,082	\$ 258,316	\$ 58,557	\$ 539,954
CONTINGENCY ON ENTIRE PROJECT	\$ 44,616	\$ 51,663	\$ 11,711	\$ 107,991
TOTAL:	\$ 267,698	\$ 309,979	\$ 70,268	\$ 647,945

Description of Work: Control protection replay panel upgrades at Valley Stream and Oakwood 138kV stations

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
21 -Other Substation Upgrades										
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	\$ -	\$ -	\$ -	\$ -

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							\$ -	\$ -	\$ -	\$ -
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)	-	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, 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	\$ -	\$ -	\$ -	\$ -
TOTAL - 345KV FOUNDATION							\$ -	\$ -	\$ -	\$ -
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	AL. Bus Tubing, 5" SCH 80		LF	25.00	184.94	123.29	\$ -	\$ -	\$ -	\$ -
3.24	AL. Bus fittings		LS	14,310.00	14,310.00	7,155.00	\$ -	\$ -	\$ -	\$ -
3.25	Steel grating and support beams-transformer moat	0	LB	2.73	1.17	0.50	\$ -	\$ -	\$ -	\$ -
TOTAL - SUBSTATION STRUCTURES & GAS-INSULATED CONDUCTOR							\$ -	\$ -	\$ -	\$ -
4. MAJOR EQUIPMENT										
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)	0	EA		13,559.00	5,811.00	\$ -	\$ -	\$ -	\$ -
4.21	138kV, Disconnect Switch	0	EA	37,700.00	11,875.50	5,089.50	\$ -	\$ -	\$ -	\$ -
4.22	138kV, Cable sealing end	0	EA	4,446.00	1,050.00	450.00	\$ -	\$ -	\$ -	\$ -
4.23	138kV, CCVT	0	EA	10,000.00	7,970.08	3,415.75	\$ -	\$ -	\$ -	\$ -
4.24	138kV, Air core reactors (3 Ph)	0	EA				\$ -	\$ -	\$ -	\$ -
4.25	138kV, Surge arrester	0	EA	4,446.00	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							\$ -	\$ -	\$ -	\$ -

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. LOW VOLTAGE & CONTROL CABLE										
5.1	Control cables	0	LF	5.30	1.43	0.29	\$ -	\$ -	\$ -	\$ -
5.2			LF		-	-	\$ -	\$ -	\$ -	\$ -
TOTAL - LOW VOLTAGE & CONTROL CABLE							\$ -	\$ -	\$ -	\$ -
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	0	LF	11.15	10.80	5.40	\$ -	\$ -	\$ -	\$ -
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							\$ -	\$ -	\$ -	\$ -
7. GROUND GRID										
7.1	Cable, 4/0 AWG Bare Copper, 7 Strand Ground Conductor		LF	2.09	3.42	1.46	\$ -	\$ -	\$ -	\$ -
7.2	Caweld, DSA, 4/0 , T, CROSS		EA	165.00	75.00		\$ -	\$ -	\$ -	\$ -
7.3	Ground Rod, 3/4" x 15'		EA	135.00	67.50	7.50	\$ -	\$ -	\$ -	\$ -
TOTAL - GROUND GRID		-					\$ -	\$ -	\$ -	\$ -
8. CONTROL ENCLOSURE										
8.1	345/138kV Control Bldg	0	EA				\$ -	\$ -	\$ -	\$ -
8.2	Primary Line Relays (87L): 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 (87L): GE L90	3	EA	21,328.12	17,062.49	4,265.62	\$ 63,984	\$ 51,187	\$ 12,797	\$ 127,969
8.4	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
8.5	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
8.6	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
21 -Other Substation Upgrades							\$ 170,625	\$ 136,500	\$ 34,125	\$ 341,250
9. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
9.1	Mob / Demob	1.0	LS		5,971.87	2,559.37	\$ -	\$ 5,972	\$ 2,559	\$ 8,531
	Project Management, Material Handling & Amenities									
9.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1.0	LS		3,412.50		\$ -	\$ 3,412	\$ -	\$ 3,412
9.3	Project Management & Staffing (includes PM, Field Engineers / Supervision, Scheduler and Cost Manager, SHEQ Staff, and Admin Staff)	1.0	LS		13,649.99		\$ -	\$ 13,650	\$ -	\$ 13,650
9.4	Utility PM and Project Oversight	1.0	LS		3,412.50		\$ -	\$ 3,412	\$ -	\$ 3,412
9.5	Site Accommodation, Facilities, Storage	1.0	LS	3,412.50			\$ 3,412	\$ -	\$ -	\$ 3,412
	Engineering									
9.6	Design Engineering	1.00	LS		54,599.97		\$ -	\$ 54,600	\$ -	\$ 54,600
9.7	LiDAR /GPR	1.00	LS		-		\$ -	\$ -	\$ -	\$ -
9.8	Geotech	-	EA		2,730.00	1,820.00	\$ -	\$ -	\$ -	\$ -
9.9	Surveying/Staking	-	Site		2,388.75		\$ -	\$ -	\$ -	\$ -
	Testing & Commissioning									
9.10	Testing & Commissioning of SS and Equipment	-	LS		12,796.87		\$ -	\$ -	\$ -	\$ -
	Permitting and Additional Costs									
9.11	Physical Security	-	LS		6,546.96		\$ -	\$ -	\$ -	\$ -
9.12	Environmental Licensing & Permitting Costs & related legal cost	-	LS		3,412.50		\$ -	\$ -	\$ -	\$ -
9.13	Environmental-special studies/investigation	-	LS		-		\$ -	\$ -	\$ -	\$ -
9.14	Warranties / LOC's	1.00	LS		1,023.75		\$ -	\$ 1,024	\$ -	\$ 1,024
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		-	\$ 12,940	\$ -	\$ -	\$ 12,940	\$ 12,940
9.20	Sales Tax on Materials	8.80%	LS	170,624.92			\$ 15,015	\$ -	\$ -	\$ 15,015
9.21	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS		341.25		\$ -	\$ 341	\$ -	\$ 341
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 18,427	\$ 82,412	\$ 15,499	\$ 116,339

Propel NY - TO53 AS7

AS7.1. Barrett to Tremont 345kV Onshore UG Cables -single circuit

Total: \$ 563,380,100

Propel NY - TO53 AS7				
	Material Supply	Labor Supply	Equip Supply	Total
AS7.1. Barrett to Tremont 345kV Onshore UG Cables -single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 6,350,848	\$ 31,142,829	\$ 12,500,819	\$ 49,994,496
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 43,763,287	\$ 49,728,024	\$ 36,901,086	\$ 130,392,396
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 68,716,802	\$ 41,446,477	\$ 26,899,532	\$ 137,062,812
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 13,726,684	\$ 50,000,555	\$ 16,690,360	\$ 80,417,599
SUBTOTAL (Costs):	\$ 132,557,621	\$ 172,317,884	\$ 92,991,797	\$ 397,867,302
CONTRACTOR MARK-UP (OH&P)	\$ 23,860,372	\$ 31,017,219	\$ 16,738,523	\$ 71,616,114
SUBTOTAL:	\$ 156,417,993	\$ 203,335,104	\$ 109,730,321	\$ 469,483,417
CONTINGENCY ON ENTIRE PROJECT	\$ 31,283,599	\$ 40,667,021	\$ 21,946,064	\$ 93,896,683
TOTAL:	\$ 187,701,591	\$ 244,002,124	\$ 131,676,385	\$ 563,380,100

Description of Work: 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. The proposed route will be approximately 25.7 miles, utilizing 4000kcmil XLPE cable for the onshore portions of the route and 5000kcmil cable in a marine crossing by Horizontal Directional Drill (“HDD”) or equivalent trenchless technique. Please see the Design Basis Manual, Attachment B.1.1, for more details. Three counties, one city, one town, and three villages will be traversed between the two substations. The proposed route starts in the Hamlet of Oceanside in the Town of Hempstead in Nassau County traveling north through the Villages of Rockville Centre and Lynbrook. The proposed route travels through into the Village of Valley Stream before entering the Borough of Queens, City of New York, Queens County. The proposed route passes a vacant property in the area of 180th Street and Brinkerhoff Avenue, which may allow for future expansion, such as the 6,000MW expansion. In this Solution the Y-51 circuit will be interconnected into the new Eastern Queens Substation. The proposed route will exit Queens County into the Borough of the Bronx, City of New York, Bronx County as it crosses the East River. Once in Bronx County, the proposed route will travel north and west to terminate at Tremont 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
AS7.1. Barrett 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	25.72	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 18,004,000	\$ 7,716,000	\$ 25,720,000
1.3	Flaggers	780	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 1,248,000	\$ 3,744,000	\$ 1,248,000	\$ 6,240,000
1.4	K Rail / Lane Control / Metal Plates	135,802	LF	\$ 30	\$ 18	\$ 12	\$ 4,074,048	\$ 2,444,429	\$ 1,629,619	\$ 8,148,096
1.5	Police Support	31,200.0	HR		\$ 120	\$ 27	\$ -	\$ 3,744,000	\$ 842,400	\$ 4,586,400
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	25.72	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 1,028,800	\$ 3,086,400	\$ 1,028,800	\$ 5,144,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 6,350,848	\$ 31,142,829	\$ 12,500,819	\$ 49,994,496
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	25.72	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 3,595,656	\$ 2,397,104	\$ 5,992,760
2.2	Formwork in Trench	981,845	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 1,963,690	\$ 1,472,767	\$ 490,922	\$ 3,927,379
2.3	Trench Excavation	84,730	CY		\$ 17.5	\$ 7.5	\$ -	\$ 1,482,767	\$ 635,472	\$ 2,118,239
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	5,296	SF	\$ 50	\$ 25	\$ 14	\$ 264,780	\$ 129,742	\$ 74,138	\$ 468,660
2.5	Supply & Install Thermal Backfill	46,774	CY	\$ 350	\$ 245	\$ 105	\$ 16,370,898	\$ 11,459,629	\$ 4,911,270	\$ 32,741,797
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	18,901	CY	\$ 200	\$ 125	\$ 50	\$ 3,780,102	\$ 2,362,564	\$ 945,026	\$ 7,087,692
2.9	Conduit 8" HDPE	407,405	LF	\$ 20.5	\$ 5.7	\$ 2.4	\$ 8,368,095	\$ 2,309,985	\$ 989,994	\$ 11,668,073
2.10	Conduit 4" HDPE	135,802	LF	\$ 5.4	\$ 4.20	\$ 1.8	\$ 729,255	\$ 570,367	\$ 244,443	\$ 1,544,064
2.11	Conduit 2" HDPE	135,802	LF	\$ 1.9	\$ 3.15	\$ 1.4	\$ 259,381	\$ 427,775	\$ 183,332	\$ 870,488
2.12	Warning Tape	135,802	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 20,370	\$ 33,950	\$ 13,580	\$ 67,901
2.13	Trench Box Shoring (Vault)	76	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 1,374,011	\$ 2,061,017	\$ 3,435,028
2.14	Splice Vault Excavation	24,700	CY		\$ 17.5	\$ 7.5	\$ -	\$ 432,250	\$ 185,250	\$ 617,500

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
2.15	Splice Vault Supply & Installation	76	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 2,660,000	\$ 1,254,000	\$ 2,926,000	\$ 6,840,000
2.16	Splice Vault Backfill	7,410	CY		\$ 14.0	\$ 6.0	\$ -	\$ 103,740	\$ 44,460	\$ 148,200
2.17	Jack and Bore along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.18	HDD along Route	10,411	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 8,328,800	\$ 16,657,600	\$ 16,657,600	\$ 41,644,000
2.19	Air Test Ducts	679,008	LF			\$ 0.25	\$ -	\$ -	\$ 169,752	\$ 169,752
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	50,350	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 704,905	\$ 704,905	\$ 352,452	\$ 1,762,261
2.21	PVMT, AGGREGATE, 10", BASE COURSE	13,986	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 313,011	\$ 328,662	\$ 140,855	\$ 782,528
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	189	EA		\$ 400	\$ 1,200	\$ -	\$ 75,602	\$ 226,806	\$ 302,408
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	189	EA		\$ 10	\$ 15	\$ -	\$ 1,890	\$ 2,835	\$ 4,725
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	468	EA		\$ 400	\$ 1,200	\$ -	\$ 187,096	\$ 561,288	\$ 748,384
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 1,404,312	\$ 936,208	\$ -	\$ 1,404,312	\$ 936,208	\$ 2,340,520
2.26	Excess Materials Disposal to Certified Backfill	132,625	CY		\$ 24.5	\$ 10.5	\$ -	\$ 3,249,323	\$ 1,392,567	\$ 4,641,890
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	76	EA			\$ 4,000	\$ -	\$ -	\$ 304,000	\$ 304,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	109,430	CF		\$ 1.0	\$ 0.5	\$ -	\$ 109,430	\$ 54,715	\$ 164,144
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 43,763,287	\$ 49,728,024	\$ 36,901,086	\$ 130,392,396
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable	427,775	FT	\$ 154	\$ 92	\$ 62	\$ 65,877,356	\$ 39,526,414	\$ 26,350,942	\$ 131,754,712
3.2	Circuit #1- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable	228	EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ 2,672,616	\$ 1,870,831	\$ 534,523	\$ 5,077,970
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	76	EA	\$ 26,500	\$ 18,550	\$ 7,950	\$ 2,014,034	\$ 1,409,824	\$ 604,210	\$ 4,028,068
3.11	Fiber Optic Cable	142,592	FT	\$ 7	\$ 3	\$ 2	\$ 1,054,751	\$ 474,916	\$ 316,611	\$ 1,846,277
3.12	Ground Continuity Conductor	142,592	FT	\$ 13	\$ 8	\$ 5	\$ 1,859,253	\$ 1,073,288	\$ 715,525	\$ 3,648,066
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 68,716,802	\$ 41,446,477	\$ 26,899,532	\$ 137,062,812
AS7.1. Barrett to Tremont 345kV Onshore UG Cables -single circuit							\$ 118,830,937	\$ 122,317,330	\$ 76,301,437	\$ 317,449,703
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 5,958,563	\$ 3,972,375	\$ -	\$ 5,958,563	\$ 3,972,375	\$ 9,930,938
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		3,174,497.03		\$ -	\$ 3,174,497	\$ -	\$ 3,174,497
4.3	Construction Project Management / Supervision	1	LS		12,697,988.14		\$ -	\$ 12,697,988	\$ -	\$ 12,697,988
4.4	Utility PM and Project Oversight	1	LS		3,174,497.03		\$ -	\$ 3,174,497	\$ -	\$ 3,174,497
4.5	Site Accommodation, Facilities, Storage	1	LS	3,174,497.03			\$ 3,174,497	\$ -	\$ -	\$ 3,174,497
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 15,872,485	\$ -	\$ -	\$ 15,872,485	\$ -	\$ 15,872,485
4.7	LiDAR /GPR	1.0	LS		\$ 571,409	\$ 380,940	\$ -	\$ 571,409	\$ 380,940	\$ 952,349
4.8	Geotech	26.0	Location		\$ 2,730	\$ 1,820	\$ -	\$ 70,980	\$ 47,320	\$ 118,300
4.9	Surveying/Staking	1	LS		\$ 1,333,289		\$ -	\$ 1,333,289	\$ -	\$ 1,333,289
	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		\$ 3,174,497		\$ -	\$ 3,174,497	\$ -	\$ 3,174,497
4.12	Environmental-special studies/investigation	-	LS		\$ 175,000		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 952,349		\$ -	\$ 952,349	\$ -	\$ 952,349
4.14	Laydown Lease & temporary easement	1	LS		\$ 3,000,000		\$ -	\$ 3,000,000	\$ -	\$ 3,000,000
4.15	Real Estate (Acquisition)	1	LS		\$ -	\$ 687,646	\$ -	\$ -	\$ 687,646	\$ 687,646
4.16	Legal Fees (Real estate)	1.00	LS		-	20,629.38	\$ -	\$ -	\$ 20,629	\$ 20,629
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)	4	Crossing			\$ 1,000	\$ -	\$ -	\$ 4,000	\$ 4,000
4.19	Bonds	1	LS			\$ 11,260,000	\$ -	\$ -	\$ 11,260,000	\$ 11,260,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 118,830,936.67			\$ 10,552,187	\$ -	\$ -	\$ 10,552,187
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 317,450	\$ -	\$ -	\$ 317,450	\$ 317,450
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 13,726,684	\$ 50,000,555	\$ 16,690,360	\$ 80,417,599

Propel NY - TO53 AS7

AS7.2. Syosset to Shore Road 138kV Onshore UG Cables -single circuit

Total: \$ 202,306,242

Propel NY - TO53 AS7				
	Material Supply	Labor Supply	Equip Supply	Total
AS7.2. Syosset to Shore Road 138kV Onshore UG Cables -single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 2,808,000	\$ 13,830,200	\$ 5,526,600	\$ 22,164,800
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 14,057,038	\$ 14,600,152	\$ 9,050,235	\$ 37,707,426
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 26,535,196	\$ 16,496,699	\$ 10,603,940	\$ 53,635,836
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 4,989,021	\$ 18,616,357	\$ 5,758,200	\$ 29,363,579
SUBTOTAL (Costs):	\$ 48,389,256	\$ 63,543,409	\$ 30,938,976	\$ 142,871,640
CONTRACTOR MARK-UP (OH&P)	\$ 8,710,066	\$ 11,437,814	\$ 5,569,016	\$ 25,716,895
SUBTOTAL:	\$ 57,099,322	\$ 74,981,222	\$ 36,507,991	\$ 168,588,535
CONTINGENCY ON ENTIRE PROJECT	\$ 11,419,864	\$ 14,996,244	\$ 7,301,598	\$ 33,717,707
TOTAL:	\$ 68,519,186	\$ 89,977,467	\$ 43,809,589	\$ 202,306,242

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
AS7.2. Syosset 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	11.25	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 7,875,000	\$ 3,375,000	\$ 11,250,000
1.3	Flaggers	360	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 576,000	\$ 1,728,000	\$ 576,000	\$ 2,880,000
1.4	K Rail / Lane Control / Metal Plates	59,400	LF	\$ 30	\$ 18	\$ 12	\$ 1,782,000	\$ 1,069,200	\$ 712,800	\$ 3,564,000
1.5	Police Support	14,400.0	HR		\$ 120	\$ 27	\$ -	\$ 1,728,000	\$ 388,800	\$ 2,116,800
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	11.25	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 450,000	\$ 1,350,000	\$ 450,000	\$ 2,250,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,808,000	\$ 13,830,200	\$ 5,526,600	\$ 22,164,800
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	11.25	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 1,572,750	\$ 1,048,500	\$ 2,621,250
2.2	Formwork in Trench	467,256	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 934,512	\$ 700,884	\$ 233,628	\$ 1,869,024
2.3	Trench Excavation	35,996	CY		\$ 17.5	\$ 7.5	\$ -	\$ 629,930	\$ 269,970	\$ 899,900
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	2,250	SF	\$ 50	\$ 25	\$ 14	\$ 112,488	\$ 55,119	\$ 31,497	\$ 199,103
2.5	Supply & Install Thermal Backfill	20,897	CY	\$ 350	\$ 245	\$ 105	\$ 7,313,854	\$ 5,119,698	\$ 2,194,156	\$ 14,627,709
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	8,222	CY	\$ 200	\$ 125.0	\$ 50.0	\$ 1,644,482	\$ 1,027,801	\$ 411,120	\$ 3,083,403
2.9	Conduit 6" HDPE	178,200	LF	\$ 10.6	\$ 5.7	\$ 2.4	\$ 1,888,920	\$ 1,010,394	\$ 433,026	\$ 3,332,340
2.10	Conduit 4" HDPE	59,400	LF	\$ 5.4	\$ 4.20	\$ 1.8	\$ 318,978	\$ 249,480	\$ 106,920	\$ 675,378
2.11	Conduit 2" HDPE	59,400	LF	\$ 1.9	\$ 3.15	\$ 1.4	\$ 113,454	\$ 187,110	\$ 80,190	\$ 380,754
2.12	Warning Tape	59,400	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 8,910	\$ 14,850	\$ 5,940	\$ 29,700
2.13	Trench Box Shoring (Vault)	33	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 596,610	\$ 894,915	\$ 1,491,525
2.14	Splice Vault Excavation	5,990	CY		\$ 17.5	\$ 7.5	\$ -	\$ 104,827	\$ 44,926	\$ 149,753
2.15	Splice Vault Supply & Installation	33	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 1,155,000	\$ 544,500	\$ 1,270,500	\$ 2,970,000
2.16	Splice Vault Backfill	1,797	CY		\$ 14.0	\$ 6.0	\$ -	\$ 25,158	\$ 10,782	\$ 35,941
2.17	Jack and Bore along Route	168	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 134,400	\$ 268,800	\$ 268,800	\$ 672,000
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	297,000	LF			\$ 0.25	\$ -	\$ -	\$ 74,250	\$ 74,250
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	21,371	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 299,187	\$ 299,187	\$ 149,594	\$ 747,968

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	5,936	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 132,853	\$ 139,496	\$ 59,784	\$ 332,133
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	82	EA		\$ 400	\$ 1,200	\$ -	\$ 32,890	\$ 98,669	\$ 131,559
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	82	EA		\$ 10	\$ 15	\$ -	\$ 822	\$ 1,233	\$ 2,056
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	209	EA		\$ 400	\$ 1,200	\$ -	\$ 83,587	\$ 250,761	\$ 334,348
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 614,250	\$ 409,500	\$ -	\$ 614,250	\$ 409,500	\$ 1,023,750
2.26	Excess Materials Disposal to Certified Backfill	52,246	CY		\$ 24.5	\$ 10.5	\$ -	\$ 1,280,023	\$ 548,581	\$ 1,828,604
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	33	EA			\$ 4,000	\$ -	\$ -	\$ 132,000	\$ 132,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	41,986	CF		\$ 1.0	\$ 0.5	\$ -	\$ 41,986	\$ 20,993	\$ 62,979
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 14,057,038	\$ 14,600,152	\$ 9,050,235	\$ 37,707,426
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 138kV 4000kcmil Cu XLPE Cable	187,110	FT	\$ 127	\$ 76	\$ 51	\$ 23,762,970	\$ 14,257,782	\$ 9,505,188	\$ 47,525,940
3.2	Circuit #1- Cable Splicing- 138kV 4000kcmil Cu XLPE Cable	99	EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ 583,902	\$ 974,802	\$ 278,515	\$ 1,837,218
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	33	EA	\$ 26,659	\$ 15,995	\$ 10,664	\$ 879,747	\$ 527,848	\$ 351,899	\$ 1,759,494
3.11	Fiber Optic Cable	62,370	FT	\$ 7	\$ 3	\$ 2	\$ 461,351	\$ 207,730	\$ 138,486	\$ 807,567
3.12	Ground Continuity Conductor	62,370	FT	\$ 13	\$ 8	\$ 5	\$ 813,242	\$ 469,459	\$ 312,973	\$ 1,595,674
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 26,535,196	\$ 16,496,699	\$ 10,603,940	\$ 53,635,836
AS7.2. Syosset to Shore Road 138kV Onshore UG Cables -single circuit							\$ 43,400,234	\$ 44,927,052	\$ 25,180,776	\$ 113,508,061
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 2,103,235	\$ 1,402,157	\$ -	\$ 2,103,235	\$ 1,402,157	\$ 3,505,391
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		1,135,080.61		\$ -	\$ 1,135,081	\$ -	\$ 1,135,081
4.3	Construction Project Management / Supervision	1	LS		4,540,322.45		\$ -	\$ 4,540,322	\$ -	\$ 4,540,322
4.4	Utility PM and Project Oversight	1	LS		1,135,080.61		\$ -	\$ 1,135,081	\$ -	\$ 1,135,081
4.5	Site Accommodation, Facilities, Storage	1	LS	1,135,080.61			\$ 1,135,081	\$ -	\$ -	\$ 1,135,081
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 5,675,403	\$ -	\$ -	\$ 5,675,403	\$ -	\$ 5,675,403
4.7	LiDAR /GPR	1.0	LS		\$ 204,315	\$ 136,210	\$ -	\$ 204,315	\$ 136,210	\$ 340,524
4.8	Geotech	12.0	Location		2,730.00	1,820.00	\$ -	\$ 32,760	\$ 21,840	\$ 54,600
4.9	Surveying/Staking	1	LS		\$ 794,556		\$ -	\$ 794,556	\$ -	\$ 794,556
	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		\$ 1,135,081		\$ -	\$ 1,135,081	\$ -	\$ 1,135,081
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 340,524		\$ -	\$ 340,524	\$ -	\$ 340,524
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,500,000		\$ -	\$ 1,500,000	\$ -	\$ 1,500,000
4.15	Real Estate (Acquisition)	1	LS		\$ -	\$ 43,190	\$ -	\$ -	\$ 43,190	\$ 43,190
4.16	Legal Fees (Real estate)	1.00	LS		-	1,295.70	\$ -	\$ -	\$ 1,296	\$ 1,296
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)	-	Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 4,040,000	\$ -	\$ -	\$ 4,040,000	\$ 4,040,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 43,400,234.15			\$ 3,853,941	\$ -	\$ -	\$ 3,853,941
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 113,508	\$ -	\$ -	\$ 113,508	\$ 113,508
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 4,989,021	\$ 18,616,357	\$ 5,758,200	\$ 29,363,579

Propel NY - TO53 AS7

AS7.3 Ruland Road to Shore Road 345kV Onshore UG Cables -single circuit

Total: \$ 359,455,633

Propel NY - TO53 AS7				
	Material Supply	Labor Supply	Equip Supply	Total
AS7.3 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
AS7.3 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
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

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	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
AS7.3 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	LS		2,025,972.96		\$ -	\$ 2,025,973	\$ -	\$ 2,025,973
4.3	Construction Project Management / Supervision	1	LS		8,103,891.84		\$ -	\$ 8,103,892	\$ -	\$ 8,103,892
4.4	Utility PM and Project Oversight	1	LS		2,025,972.96		\$ -	\$ 2,025,973	\$ -	\$ 2,025,973
4.5	Site Accommodation, Facilities, Storage	1	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	1	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

Propel NY - TO53 AS7

AS 7.4a Shore Road to New Rochelle Offshore Submarine Cables - two circuits (two lines, single circuit each)

Total: \$ 268,731,745

AS 7.4a Shore Road to New Rochelle Offshore Submarine Cables - two circuits (two lines, single circuit each)				
	Material Supply	Labor Supply	Equip Supply	Total
AS 7.4a 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
AS 7.4a 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
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	\$ -	\$ -	\$ -	\$ -

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
2.12	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
AS 7.4a 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	LS		1,483,758.21		\$ -	\$ 1,483,758	\$ -	\$ 1,483,758
3.3	Construction Project Management / Supervision	1	LS		5,935,032.85		\$ -	\$ 5,935,033	\$ -	\$ 5,935,033
3.4	Utility PM and Project Oversight	1	LS		1,483,758.21		\$ -	\$ 1,483,758	\$ -	\$ 1,483,758
3.5	Site Accommodation, Facilities, Storage	1	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

Propel NY - TO53 AS7

AS7.4a Shore Road to New Rochelle Onshore UG Cables - two circuits (two lines, single circuit each)

Total: \$ 57,646,592

Propel NY - TO53 AS7				
	Material Supply	Labor Supply	Equip Supply	Total
AS7.4a 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
AS7.4a 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
AS7.4a 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	LS		322,373.80		\$ -	\$ 322,374	\$ -	\$ 322,374
4.3	Construction Project Management / Supervision	1	LS		1,289,495.22		\$ -	\$ 1,289,495	\$ -	\$ 1,289,495
4.4	Utility PM and Project Oversight	1	LS		322,373.80		\$ -	\$ 322,374	\$ -	\$ 322,374
4.5	Site Accommodation, Facilities, Storage	1	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 - TO53 AS7

AS7.4b New Rochelle to Sprainbrook 345kV Onshore UG Cables - single circuit

Total: \$ 192,457,231

Propel NY - TO53 AS7				
	Material Supply	Labor Supply	Equip Supply	Total
AS7.4b 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
AS7.4b 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
2.19	Air Test Ducts	214,896	LF			\$ 0.25	\$ -	\$ -	\$ 53,724	\$ 53,724

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	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
AS7.4b 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	LS		1,085,434.50		\$ -	\$ 1,085,434	\$ -	\$ 1,085,434
4.3	Construction Project Management / Supervision	1	LS		4,341,737.99		\$ -	\$ 4,341,738	\$ -	\$ 4,341,738
4.4	Utility PM and Project Oversight	1	LS		1,085,434.50		\$ -	\$ 1,085,434	\$ -	\$ 1,085,434
4.5	Site Accommodation, Facilities, Storage	1	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 - TO53 AS7

AS7.5 Barrett to Eastern Queens Onshore UG Cables -Double circuit

Total: \$ 467,007,449

Propel NY - TO53 AS7				
	Material Supply	Labor Supply	Equip Supply	Total
AS7.5 Barrett to Eastern Queens Onshore UG Cables -Double circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 3,046,400	\$ 15,369,440	\$ 5,920,160	\$ 24,336,000
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 36,800,154	\$ 41,782,582	\$ 33,880,890	\$ 112,463,626
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 64,004,282	\$ 38,526,070	\$ 24,680,932	\$ 127,211,284
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 11,862,063	\$ 40,432,240	\$ 13,502,307	\$ 65,796,610
CONTRACTOR MARK-UP (OH&P)	\$ 20,828,322	\$ 24,499,860	\$ 14,037,172	\$ 59,365,354
SUBTOTAL:	\$ 136,541,222	\$ 160,610,191	\$ 92,021,461	\$ 389,172,875
CONTINGENCY ON ENTIRE PROJECT	\$ 27,308,244	\$ 32,122,038	\$ -	\$ 77,834,575
TOTAL:	\$ 163,849,466	\$ 192,732,230	\$ 92,021,461	\$ 467,007,449

Description of Work: T double circuit 345 kV electric underground transmission lines will extend from the Barrett Substation in the Hamlet of Oceanside in the Town of Hempstead in Nassau County to the Eastern Queens Substation in the Borough of Queens, New York City, Queens County. The proposed 345 kV electric underground transmission line will terminate at the Dunwoodie Substation in the City of Yonkers, Westchester County. The proposed route will be approximately 32 miles, utilizing 4000kcmil XLPE cable for the onshore portions and 5000kcmil cable for a marine crossing via Horizontal Directional Drill (HDD) or equivalent trenchless technique. Between the three substations, the proposed route crosses through three villages, one town, one city, and three counties.The segment from Barrett to Eastern Queens is 11 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
AS7.5 Barrett to Eastern Queens Onshore UG Cables -Double circuit										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	11.00	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 7,700,000	\$ 3,300,000	\$ 11,000,000
1.3	Flaggers	540	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 864,000	\$ 2,592,000	\$ 864,000	\$ 4,320,000
1.4	K Rail / Lane Control / Metal Plates	58,080	LF	\$ 30	\$ 18	\$ 12	\$ 1,742,400	\$ 1,045,440	\$ 696,960	\$ 3,484,800
1.5	Police Support	21,600.0	HR		\$ 120	\$ 27	\$ -	\$ 2,592,000	\$ 583,200	\$ 3,175,200
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	11.00	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 440,000	\$ 1,320,000	\$ 440,000	\$ 2,200,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 3,046,400	\$ 15,369,440	\$ 5,920,160	\$ 24,336,000
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	1	LS		\$ 1,537,800	\$ 1,025,200	\$ -	\$ 1,537,800	\$ 1,025,200	\$ 2,563,000
2.2	Formwork in Trench	425,216	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 850,432	\$ 637,824	\$ 212,608	\$ 1,700,864
2.3	Trench Excavation	52,443	CY		\$ 17.5	\$ 7.5	\$ -	\$ 917,758	\$ 393,325	\$ 1,311,083
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	3,278	SF	\$ 50	\$ 25	\$ 14	\$ 163,885	\$ 80,304	\$ 45,888	\$ 290,077
2.5	Supply & Install Thermal Backfill	28,918	CY	\$ 350	\$ 245	\$ 105	\$ 10,121,174	\$ 7,084,822	\$ 3,036,352	\$ 20,242,349
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Supply & Install Concrete duct back encasement	10,108	CY	\$ 200	\$ 125	\$ 50	\$ 2,021,548	\$ 1,263,467	\$ 505,387	\$ 3,790,402
2.8	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.9	Conduit 8" HDPE	348,480	LF	\$ 20.5	\$ 5.7	\$ 2.4	\$ 7,157,779	\$ 1,975,882	\$ 846,806	\$ 9,980,467
2.10	Conduit 4" HDPE	116,160	LF	\$ 5.4	\$ 4.20	\$ 1.8	\$ 623,779	\$ 487,872	\$ 209,088	\$ 1,320,739
2.11	Conduit 2" HDPE	116,160	LF	\$ 1.9	\$ 3.15	\$ 1.4	\$ 221,866	\$ 365,904	\$ 156,816	\$ 744,586
2.12	Warning Tape	58,080	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 8,712	\$ 14,520	\$ 5,808	\$ 29,040
2.13	Trench Box Shoring (Vault)	70	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 1,265,537	\$ 1,898,305	\$ 3,163,842
2.14	Splice Vault Excavation	22,750	CY		\$ 17.5	\$ 7.5	\$ -	\$ 398,125	\$ 170,625	\$ 568,750
2.15	Splice Vault Supply & Installation	70	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 2,450,000	\$ 1,155,000	\$ 2,695,000	\$ 6,300,000
2.16	Splice Vault Backfill	6,825	CY	\$ 14.0	\$ 14.0	\$ 6.0	\$ -	\$ 95,550	\$ 40,950	\$ 136,500
2.17	Jack and Bore along Route	0	LF	\$ 1,600	\$ 3,200	\$ 3,200	\$ -	\$ -	\$ -	\$ -
2.18	HDD along Route	4,184	LF	\$ 1,600	\$ 3,200	\$ 3,200	\$ 6,694,400	\$ 13,388,800	\$ 13,388,800	\$ 33,472,000
2.19	Microtunnel (MTBM)	744	LF	\$ 2,880	\$ 5,040	\$ 6,480	\$ 2,142,720	\$ 3,749,760	\$ 4,821,120	\$ 10,713,600
2.20	Air Test Ducts	580,800	LF			\$ 0.25	\$ -	\$ -	\$ 145,200	\$ 145,200

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, ASPHALT, 2" SURFACE COURSE	30,122	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 421,708	\$ 421,708	\$ 210,854	\$ 1,054,271
2.22	PVMT, AGGREGATE, 10", BASE COURSE	8,367	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 187,259	\$ 196,621	\$ 84,266	\$ 468,146
2.23	Restoration (incl. Paving)	266,778	SF	\$ 14.00	\$ 14.00	\$ 7.00	\$ 3,734,892	\$ 3,734,892	\$ 1,867,446	\$ 9,337,230
2.24	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	101	EA		\$ 400	\$ 1,200	\$ -	\$ 40,431	\$ 121,293	\$ 161,724
2.25	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	101	EA		\$ 10	\$ 15	\$ -	\$ 1,011	\$ 1,516	\$ 2,527
2.26	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	289	EA		\$ 400	\$ 1,200	\$ -	\$ 115,671	\$ 347,012	\$ 462,682
2.27	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 600,600	\$ 400,400	\$ -	\$ 600,600	\$ 400,400	\$ 1,001,000
2.28	Excess Materials Disposal to Certified Backfill	88,879	CY		\$ 24.5	\$ 10.5	\$ -	\$ 2,177,531	\$ 933,227	\$ 3,110,758
2.29	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Dewatering	70	EA			\$ 4,000	\$ -	\$ -	\$ 280,000	\$ 280,000
2.31	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.32	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.33	Excavated material - stockpile management	75,193	CF		\$ 1.0	\$ 0.5	\$ -	\$ 75,193	\$ 37,597	\$ 112,790
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 36,800,154	\$ 41,782,582	\$ 33,880,890	\$ 112,463,626
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable	182,952	FT	\$ 154	\$ 92	\$ 62	\$ 28,174,608	\$ 16,904,765	\$ 11,269,843	\$ 56,349,216
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	182,952	FT	\$ 154	\$ 92	\$ 62	\$ 28,174,608	\$ 16,904,765	\$ 11,269,843	\$ 56,349,216
3.5	Circuit #2- 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
3.6	Circuit #2- Cable Termination- 345kV 4000kcmil Cu XLPE Cable	6	EA	\$ 27,805	\$ 8,205	\$ 2,344	\$ 166,830	\$ 49,232	\$ 14,066	\$ 230,129
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	70	EA	\$ 26,500	\$ 18,550	\$ 7,950	\$ 1,855,032	\$ 1,298,522	\$ 556,509	\$ 3,710,063
3.11	Fiber Optic Cable	147,032	FT	\$ 7	\$ 3	\$ 2	\$ 1,087,599	\$ 489,706	\$ 326,471	\$ 1,903,776
3.12	Ground Continuity Conductor	147,032	FT	\$ 13	\$ 8	\$ 5	\$ 1,917,156	\$ 1,106,713	\$ 737,809	\$ 3,761,678
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 64,004,282	\$ 38,526,070	\$ 24,680,932	\$ 127,211,284
AS7.5 Barrett to Eastern Queens Onshore UG Cables -Double circuit							\$ 103,850,837	\$ 95,678,092	\$ 64,481,982	\$ 264,010,910
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 4,804,802	\$ 3,203,201	\$ -	\$ 4,804,802	\$ 3,203,201	\$ 8,008,004
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		2,640,109.10		\$ -	\$ 2,640,109	\$ -	\$ 2,640,109
4.3	Construction Project Management / Supervision	1	LS		10,560,436.42		\$ -	\$ 10,560,436	\$ -	\$ 10,560,436
4.4	Utility PM and Project Oversight	1	LS		2,640,109.10		\$ -	\$ 2,640,109	\$ -	\$ 2,640,109
4.5	Site Accommodation, Facilities, Storage	1	LS	2,640,109.10			\$ 2,640,109	\$ -	\$ -	\$ 2,640,109
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 13,200,546	\$ -	\$ -	\$ 13,200,546	\$ -	\$ 13,200,546
4.7	LiDAR /GPR	1.0	LS		\$ 475,220	\$ 316,813	\$ -	\$ 475,220	\$ 316,813	\$ 792,033
4.8	Geotech	11.0	Location		\$ 2,730	\$ 1,820	\$ -	\$ 30,030	\$ 20,020	\$ 50,050
4.9	Surveying/Staking	1	LS		\$ 1,108,846		\$ -	\$ 1,108,846	\$ -	\$ 1,108,846
	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		\$ 2,640,109		\$ -	\$ 2,640,109	\$ -	\$ 2,640,109
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 792,033		\$ -	\$ 792,033	\$ -	\$ 792,033
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,500,000		\$ -	\$ 1,500,000	\$ -	\$ 1,500,000
4.15	Real Estate (Acquisition)	1	LS		\$ -	\$ 347,827	\$ -	\$ -	\$ 347,827	\$ 347,827
4.16	Legal Fees (Real estate)	1.00	LS		-	10,434.81	\$ -	\$ -	\$ 10,435	\$ 10,435
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 9,340,000	\$ -	\$ -	\$ 9,340,000	\$ 9,340,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 103,850,836.52			\$ 9,221,954	\$ -	\$ -	\$ 9,221,954
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 264,011	\$ -	\$ -	\$ 264,011	\$ 264,011
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 11,862,063	\$ 40,432,240	\$ 13,502,307	\$ 65,796,610

Propel NY - TO53 AS7

AS7.6 Eastern Queens to Dunwoodie 345kV Onshore UG Cables -single circuit

Total: \$ 484,260,979

Propel NY - TO53 AS7				
	Material Supply	Labor Supply	Equip Supply	Total
AS7.6 Eastern Queens to Dunwoodie 345kV Onshore UG Cables -single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 5,254,400	\$ 25,863,840	\$ 10,328,960	\$ 41,447,200
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 34,941,450	\$ 43,339,460	\$ 31,669,453	\$ 109,950,363
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 60,773,943	\$ 36,694,040	\$ 23,450,745	\$ 120,918,728
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 11,689,281	\$ 42,793,063	\$ 15,193,582	\$ 69,675,926
SUBTOTAL (Costs):	\$ 112,659,074	\$ 148,690,403	\$ 80,642,740	\$ 341,992,217
CONTRACTOR MARK-UP (OH&P)	\$ 20,278,633	\$ 26,764,273	\$ 14,515,693	\$ 61,558,599
SUBTOTAL:	\$ 132,937,707	\$ 175,454,676	\$ 95,158,433	\$ 403,550,816
CONTINGENCY ON ENTIRE PROJECT	\$ 26,587,541	\$ 35,090,935	\$ 19,031,687	\$ 80,710,163
TOTAL:	\$ 159,525,248	\$ 210,545,611	\$ 114,190,120	\$ 484,260,979

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
AS7.6 Eastern Queens to Dunwoodie 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	21.00	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 14,700,000	\$ 6,300,000	\$ 21,000,000
1.3	Flaggers	680	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 1,088,000	\$ 3,264,000	\$ 1,088,000	\$ 5,440,000
1.4	K Rail / Lane Control / Metal Plates	110,880	LF	\$ 30	\$ 18	\$ 12	\$ 3,326,400	\$ 1,995,840	\$ 1,330,560	\$ 6,652,800
1.5	Police Support	27,200.0	HR		\$ 120	\$ 27	\$ -	\$ 3,264,000	\$ 734,400	\$ 3,998,400
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	21.00	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 840,000	\$ 2,520,000	\$ 840,000	\$ 4,200,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 5,254,400	\$ 25,863,840	\$ 10,328,960	\$ 41,447,200
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	21.00	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 2,935,800	\$ 1,957,200	\$ 4,893,000
2.2	Formwork in Trench	813,112	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 1,626,224	\$ 1,219,668	\$ 406,556	\$ 3,252,448
2.3	Trench Excavation	51,068	CY		\$ 17.5	\$ 7.5	\$ -	\$ 893,689	\$ 383,010	\$ 1,276,698
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	4,386	SF	\$ 50	\$ 25	\$ 14	\$ 219,277	\$ 107,446	\$ 61,397	\$ 388,120
2.5	Supply & Install Thermal Backfill	38,736	CY	\$ 350	\$ 245	\$ 105	\$ 13,557,513	\$ 9,490,259	\$ 4,067,254	\$ 27,115,027
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	15,652	CY	\$ 200	\$ 125.0	\$ 50.0	\$ 3,130,481	\$ 1,956,551	\$ 782,620	\$ 5,869,652
2.9	Conduit 8" HDPE	332,640	LF	\$ 20.5	\$ 5.7	\$ 2.4	\$ 6,832,426	\$ 1,886,069	\$ 808,315	\$ 9,526,810
2.10	Conduit 4" HDPE	110,880	LF	\$ 5.4	\$ 4.20	\$ 1.8	\$ 595,426	\$ 465,696	\$ 199,584	\$ 1,260,706
2.11	Conduit 2" HDPE	110,880	LF	\$ 1.9	\$ 3.15	\$ 1.4	\$ 211,781	\$ 349,272	\$ 149,688	\$ 710,741
2.12	Warning Tape	110,880	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 16,632	\$ 27,720	\$ 11,088	\$ 55,440
2.13	Trench Box Shoring (Vault)	72	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 1,301,695	\$ 1,952,542	\$ 3,254,237
2.14	Splice Vault Excavation	17,550	CY		\$ 17.5	\$ 7.5	\$ -	\$ 307,125	\$ 131,625	\$ 438,750
2.15	Splice Vault Supply & Installation	72	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 2,520,000	\$ 1,188,000	\$ 2,772,000	\$ 6,480,000
2.16	Splice Vault Backfill	5,265	CY		\$ 14.0	\$ 6.0	\$ -	\$ 73,710	\$ 31,590	\$ 105,300
2.17	Jack and Bore along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.18	HDD along Route	6,721	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 5,376,800	\$ 10,753,600	\$ 10,753,600	\$ 26,884,000
2.19	Air Test Ducts	554,400	LF			\$ 0.25	\$ -	\$ -	\$ 138,600	\$ 138,600

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
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	42,286	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 592,010	\$ 592,010	\$ 296,005	\$ 1,480,025
2.21	PVMT, AGGREGATE, 10", BASE COURSE	11,746	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 262,881	\$ 276,025	\$ 118,296	\$ 657,202
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	157	EA		\$ 400	\$ 1,200	\$ -	\$ 62,610	\$ 187,829	\$ 250,438
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	157	EA		\$ 10	\$ 15	\$ -	\$ 1,565	\$ 2,348	\$ 3,913
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	387	EA		\$ 400	\$ 1,200	\$ -	\$ 154,943	\$ 464,829	\$ 619,772
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 1,146,600	\$ 764,400	\$ -	\$ 1,146,600	\$ 764,400	\$ 1,911,000
2.26	Excess Materials Disposal to Certified Backfill	82,359	CY		\$ 24.5	\$ 10.5	\$ -	\$ 2,017,791	\$ 864,768	\$ 2,882,559
2.27	Rock Excavation and Removal	24,951	CY		\$ 243	\$ 162	\$ -	\$ 6,062,999	\$ 4,042,000	\$ 10,104,999
2.28	Dewatering	72	EA			\$ 4,000	\$ -	\$ -	\$ 288,000	\$ 288,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	68,618	CF		\$ 1.0	\$ 0.5	\$ -	\$ 68,618	\$ 34,309	\$ 102,927
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 34,941,450	\$ 43,339,460	\$ 31,669,453	\$ 109,950,363
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 345kV 4000kcmil Cu XLPE Cable	349,272	FT	\$ 154	\$ 92	\$ 62	\$ 53,787,888	\$ 32,272,733	\$ 21,515,155	\$ 107,575,776
3.2	Circuit #1- Cable Splicing- 345kV 4000kcmil Cu XLPE Cable	216	EA	\$ 11,722	\$ 8,205	\$ 2,344	\$ 2,531,952	\$ 1,772,366	\$ 506,390	\$ 4,810,709
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	72	EA	\$ 26,500	\$ 18,550	\$ 7,950	\$ 1,908,032	\$ 1,335,623	\$ 572,410	\$ 3,816,065
3.11	Fiber Optic Cable	116,424	FT	\$ 7	\$ 3	\$ 2	\$ 861,188	\$ 387,762	\$ 258,508	\$ 1,507,458
3.12	Ground Continuity Conductor	116,424	FT	\$ 13	\$ 8	\$ 5	\$ 1,518,053	\$ 876,323	\$ 584,216	\$ 2,978,592
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 60,773,943	\$ 36,694,040	\$ 23,450,745	\$ 120,918,728
AS7.6 Eastern Queens to Dunwoodie 345kV Onshore UG Cables -single circuit							\$ 100,969,793	\$ 105,897,340	\$ 65,449,158	\$ 272,316,291
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 5,140,395	\$ 3,426,930	\$ -	\$ 5,140,395	\$ 3,426,930	\$ 8,567,325
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		2,723,162.91		\$ -	\$ 2,723,163	\$ -	\$ 2,723,163
4.3	Construction Project Management / Supervision	1	LS		10,892,651.66		\$ -	\$ 10,892,652	\$ -	\$ 10,892,652
4.4	Utility PM and Project Oversight	1	LS		2,723,162.91		\$ -	\$ 2,723,163	\$ -	\$ 2,723,163
4.5	Site Accommodation, Facilities, Storage	1	LS	2,723,162.91			\$ 2,723,163	\$ -	\$ -	\$ 2,723,163
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 13,615,815	\$ -	\$ -	\$ 13,615,815	\$ -	\$ 13,615,815
4.7	LiDAR /GPR	1.0	LS		\$ 490,169	\$ 326,780	\$ -	\$ 490,169	\$ 326,780	\$ 816,949
4.8	Geotech	21.0	Location		2,730.00	1,820.00	\$ -	\$ 57,330	\$ 38,220	\$ 95,550
4.9	Surveying/Staking	1	LS		\$ 1,906,214		\$ -	\$ 1,906,214	\$ -	\$ 1,906,214
	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		\$ 2,723,163		\$ -	\$ 2,723,163	\$ -	\$ 2,723,163
4.12	Environmental-special studies/investigation	1	LS				\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS			\$ 816,949	\$ -	\$ -	\$ 816,949	\$ 816,949
4.14	Laydown Lease & temporary easement	1	LS		\$ 2,500,000		\$ -	\$ 2,500,000	\$ -	\$ 2,500,000
4.15	Real Estate (Acquisition)	1	LS			\$ 613,968	\$ -	\$ -	\$ 613,968	\$ 613,968
4.16	Legal Fees (Real estate)	1.00	LS		-	18,419.04	\$ -	\$ -	\$ 18,419	\$ 18,419
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			\$ 9,680,000	\$ -	\$ -	\$ 9,680,000	\$ 9,680,000
4.20	Sales Tax on Materials	0	% of material cost	\$ 100,969,793			\$ 8,966,118	\$ -	\$ -	\$ 8,966,118
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 272,316	\$ -	\$ -	\$ 272,316	\$ 272,316
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 11,689,281	\$ 42,793,063	\$ 15,193,582	\$ 69,675,926

Propel NY - TO53 AS7

AS 7.7a. Northport to Sprain Brook 320k HVDC Offshore Submarine Cables - Single circuit

Total: \$ 535,503,314

AS 7.7a. Northport to Sprain Brook 320k HVDC Offshore Submarine Cables - Single circuit				
	Material Supply	Labor Supply	Equip Supply	Total
AS 7.7a. Northport to Sprain Brook 320k HVDC Offshore Submarine Cables - Single circuit				
1. SUBMARINE CABLE	\$ 70,691,554	\$ 143,104,302	\$ 92,515,795	\$ 306,311,652
2. TRANSITION STATION	\$ 192,750	\$ 216,262	\$ 244,267	\$ 653,280
2. MOB/DEMOB, DESIGN, PERMITTING, T&C, PM & INDIRECTS	\$ 9,307,468	\$ 45,172,406	\$ 16,735,501	\$ 71,215,375
SUBTOTAL (Costs):	\$ 80,191,773	\$ 188,492,971	\$ 109,495,563	\$ 378,180,307
CONTRACTOR MARK-UP (OH&P)	\$ 14,434,519	\$ 33,928,735	\$ 19,709,201	\$ 68,072,455
SUBTOTAL:	\$ 94,626,292	\$ 222,421,706	\$ 129,204,765	\$ 446,252,762
CONTINGENCY ON ENTIRE PROJECT	\$ 18,925,258	\$ 44,484,341	\$ 25,840,953	\$ 89,250,552
TOTAL:	\$ 113,551,550	\$ 266,906,047	\$ 155,045,718	\$ 535,503,314

Description of Work: 320 kV HVDC line will initiate at an HVDC converter station located adjacent to the Northport Generation facility and interconnect with the Northport substation via a new 345kV ring bus substation and three 345/138 autotransformers. The HVDC line will extend from Northport in the Hamlet of For Salonga in Suffolk County to the Sprain Brook Substation in Westchester County. The proposed route will be approximately 34.1 miles, utilizing marine 5900kcmil Cu/XLPE/Pb/SWA cable and terrestrial 5900kcmil Cu/XLPE/Al Tape/PE cable. Please see the Design Basis Manual, Attachment B.1.1, for more details. The proposed route connects through two counties, two cities, and two villages.

Beginning at a point in the Hamlet of Fort Salonga in Suffolk County, the proposed route travels through the Long Island Sound to the City of New Rochelle in Westchester County. The route then travels north and west through the Village of Pelham and north to the Village of Tuckahoe in the City of Yonkers, Westchester County, ending at a location adjacent to the Sprain Brook Substation with an HVDC converter station that will connect to the Sprain Brook 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
AS 7.7a. Northport to Sprain Brook 320k HVDC Offshore Submarine Cables - Single circuit										
1. SUBMARINE CABLE										
1.1	Submarine Cable - 5900kcmil Cu/XLPE/Pb/SWA cable	302,713	FT	\$ 212	\$ 400	\$ 250	\$ 64,175,148	\$ 121,085,184	\$ 75,678,240	\$ 260,938,572
1.2	Submarine Cable- transportation from manufacture location to site	1	LS		\$ 15,321,404	\$ 10,214,269	\$ -	\$ 15,321,404	\$ 10,214,269	\$ 25,535,673
1.3	Submarine Cable Splicing if Required	-	EA				\$ -	\$ -	\$ -	\$ -
1.5	Cable Transition Splice	4	EA	\$ 27,911	\$ 37,214	\$ 27,911	\$ 111,643	\$ 148,857	\$ 111,643	\$ 372,143
1.6	Outdoor Termination	4	EA	\$ 27,911	\$ 37,214	\$ 27,911	\$ 111,643	\$ 148,857	\$ 111,643	\$ 372,143
1.7	"Shore End" (shallow) Diver Cable Install						\$ -	\$ -	\$ -	\$ -
1.8	Fiber Optic Cable	151,356	FT	\$ 7			\$ 1,119,584	\$ -	\$ -	\$ 1,119,584
1.9	Ground Continuity Conductor	151,356	FT	\$ 13			\$ 1,973,537	\$ -	\$ -	\$ 1,973,537
1.10							\$ -	\$ -	\$ -	\$ -
1.11	Jack and Bore along Route	0	LF	\$ 1,600	\$ 3,200	\$ 3,200	\$ -	\$ -	\$ -	\$ -
1.12	HDD along Route	2,000	LF	\$ 1,600	\$ 3,200	\$ 3,200	\$ 3,200,000	\$ 6,400,000	\$ 6,400,000	\$ 16,000,000
TOTAL - Submarine cable:							\$ 70,691,554	\$ 143,104,302	\$ 92,515,795	\$ 306,311,652
2. TRANSITION STATION										
2.1	Site Clearing	0.5	ACRE	-	10,800.00	7,200.00	\$ -	\$ 5,400	\$ 3,600	\$ 9,000
2.2	Demolition	1	LS	-	60,000.00	40,000.00	\$ -	\$ 60,000	\$ 40,000	\$ 100,000
2.3	Temporary fencing	500	LF	7.50	5.25	2.25	\$ 3,750	\$ 2,625	\$ 1,125	\$ 7,500
2.4	Trench Box Shoring (Vault)	2	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 36,158	\$ 54,237	\$ 90,395
2.5	Splice Vault Excavation	796	CY		\$ 17.5	\$ 7.5	\$ -	\$ 13,938	\$ 5,973	\$ 19,911
2.6	Splice Vault Supply & Installation	2	EA	\$ 70,000	\$ 22,500	\$ 52,500	\$ 140,000	\$ 45,000	\$ 105,000	\$ 290,000
2.7	Splice Vault Backfill	239	CY		\$ 14.0	\$ 6.0	\$ -	\$ 3,345	\$ 1,434	\$ 4,779
2.8	Air Test Ducts		LF			\$ 0.25	\$ -	\$ -	\$ -	\$ -
2.9	Restoration (incl. Paving)	3,500	SF	\$ 14.00	\$ 14.00	\$ 7.00	\$ 49,000	\$ 49,000	\$ 24,500	\$ 122,500
2.10	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)		EA		\$ 400	\$ 1,200	\$ -	\$ -	\$ -	\$ -
2.11	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)		EA		\$ 10	\$ 15	\$ -	\$ -	\$ -	\$ -
2.12	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)		EA		\$ 400	\$ 1,200	\$ -	\$ -	\$ -	\$ -
2.13	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)		LS		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2.14	Excess Materials Disposal to Certified Backfill		CY		\$ 24.5	\$ 10.5	\$ -	\$ -	\$ -	\$ -
2.15	Rock Excavation and Removal		LS				\$ -	\$ -	\$ -	\$ -
2.16	Dewatering	2	EA			\$ 4,000	\$ -	\$ -	\$ 8,000	\$ 8,000

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
2.17	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.18	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.19	Excavated material - stockpile management	796	CF		\$ 1.0	\$ 0.5	\$ -	\$ 796	\$ 398	\$ 1,195
2.20							\$ -	\$ -	\$ -	\$ -
2.21							\$ -	\$ -	\$ -	\$ -
TOTAL - MARINE CABLE :							\$ 192,750	\$ 216,262	\$ 244,267	\$ 653,280

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
AS 7.7a. Northport to Sprain Brook 320k HVDC Offshore Submarine Cables - Single circuit							\$ 70,884,304	\$ 143,320,565	\$ 92,760,062	\$ 306,964,932
3. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:										
	Contractor Mobilization / Demobilization									
2.1	Mob / Demob	1	LS		\$ 4,000,000	\$ 6,000,000	\$ -	\$ 4,000,000	\$ 6,000,000	\$ 10,000,000
	Project Management, Material Handling & Amenities									
2.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		3,069,649.32		\$ -	\$ 3,069,649	\$ -	\$ 3,069,649
2.3	Construction Project Management / Supervision	1	LS		12,278,597.27		\$ -	\$ 12,278,597	\$ -	\$ 12,278,597
2.4	Utility PM and Project Oversight	1	LS		3,069,649.32		\$ -	\$ 3,069,649	\$ -	\$ 3,069,649
2.5	Site Accommodation, Facilities, Storage	1	LS	3,069,649.32			\$ 3,069,649	\$ -	\$ -	\$ 3,069,649
	Engineering									
2.6	Design Engineering	1	LS		\$ 15,348,247		\$ -	\$ 15,348,247	\$ -	\$ 15,348,247
2.7	Surveying/Staking	1	LS		\$ 2,148,755		\$ -	\$ 2,148,755	\$ -	\$ 2,148,755
	Testing & Commissioning / Inspection									
2.8	Testing & Commissioning / End to End Testing of Subsea Cable	1	EA		\$ 20,000		\$ -	\$ 20,000	\$ -	\$ 20,000
2.9	Post Cable-Lay Inspection		EA				\$ -	\$ -	\$ -	\$ -
	Permitting and Additional Costs									
2.10	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 3,069,649		\$ -	\$ 3,069,649	\$ -	\$ 3,069,649
2.11	Environmental-special studies/investigation	1	LS		\$ 440,000		\$ -	\$ 440,000	\$ -	\$ 440,000
2.12	Warranties / LOC's	1	LS		\$ 920,895		\$ -	\$ 920,895	\$ -	\$ 920,895
2.13	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
2.14	Real Estate (Acquisition)	1	LS			\$ 34,467	\$ -	\$ -	\$ 34,467	\$ 34,467
2.15	Legal Fees (Real estate)	1.00	LS		-	1,034.01	\$ -	\$ -	\$ 1,034	\$ 1,034
2.16	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
2.17	Bonds	1	LS			\$ 10,700,000	\$ -	\$ -	\$ 10,700,000	\$ 10,700,000
2.18	Sales Tax on Materials	8.8%		\$ 70,884,304			\$ 6,237,819	\$ -	\$ -	\$ 6,237,819
2.19	Contractor Permits	1	LS		\$ 306,965		\$ -	\$ 306,965	\$ -	\$ 306,965
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 9,307,468	\$ 45,172,406	\$ 16,735,501	\$ 71,215,375

Propel NY - TO53 AS7

AS7.7b Northport to Sprain Brook ±320 kV HVDC Onshore UG Cables - single circuit

Total: \$ 269,097,723

Propel NY - TO53 AS7				
	Material Supply	Labor Supply	Equip Supply	Total
AS7.7b Northport to Sprain Brook ±320 kV HVDC Onshore UG Cables - single circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 2,157,696	\$ 10,524,458	\$ 4,261,238	\$ 16,943,392
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 16,394,321	\$ 24,273,941	\$ 19,177,460	\$ 59,845,721
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 38,098,278	\$ 22,571,696	\$ 14,717,706	\$ 75,387,680
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 6,552,314	\$ 23,084,641	\$ 8,227,017	\$ 37,863,972
SUBTOTAL (Costs):	\$ 63,202,608	\$ 80,454,735	\$ 46,383,421	\$ 190,040,765
CONTRACTOR MARK-UP (OH&P)	\$ 11,376,470	\$ 14,481,852	\$ 8,349,016	\$ 34,207,338
SUBTOTAL:	\$ 74,579,078	\$ 94,936,588	\$ 54,732,437	\$ 224,248,103
CONTINGENCY ON ENTIRE PROJECT	\$ 14,915,816	\$ 18,987,318	\$ 10,946,487	\$ 44,849,621
TOTAL:	\$ 89,494,893	\$ 113,923,905	\$ 65,678,925	\$ 269,097,723

Description of Work: 320 kV HVDC line will initiate at an HVDC converter station located adjacent to the Northport Generation facility and interconnect with the Northport substation via a new 345kV ring bus substation and three 345/138 autotransformers. The HVDC line will extend from Northport in the Hamlet of For Salonga in Suffolk County to the Sprain Brook Substation in Westchester County. The proposed route will be approximately 34.1 miles, utilizing marine 5900kcmil Cu/XLPE/Pb/SWA cable and terrestrial 5900kcmil Cu/XLPE/Al Tape/PE cable. Please see the Design Basis Manual, Attachment B.1.1, for more details. The proposed route connects through two counties, two cities, and two villages.

Beginning at a point in the Hamlet of Fort Salonga in Suffolk County, the proposed route travels through the Long Island Sound to the City of New Rochelle in Westchester County. The route then travels north and west through the Village of Pelham and north to the Village of Tuckahoe in the City of Yonkers, Westchester County, ending at a location adjacent to the Sprain Brook Substation with an HVDC converter station that will connect to the Sprain Brook 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
AS7.7b Northport to Sprain Brook ±320 kV HVDC 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	8.94	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 6,258,000	\$ 2,682,000	\$ 8,940,000
1.3	Flaggers	240	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 384,000	\$ 1,152,000	\$ 384,000	\$ 1,920,000
1.4	K Rail / Lane Control / Metal Plates	47,203	LF	\$ 30	\$ 18	\$ 12	\$ 1,416,096	\$ 849,658	\$ 566,438	\$ 2,832,192
1.5	Police Support	9,600.0	HR		\$ 120	\$ 27	\$ -	\$ 1,152,000	\$ 259,200	\$ 1,411,200
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	40.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 40,000	\$ 12,000	\$ 52,000
1.9	Existing Utility Protection	8.94	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 357,600	\$ 1,072,800	\$ 357,600	\$ 1,788,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 2,157,696	\$ 10,524,458	\$ 4,261,238	\$ 16,943,392
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	9	Miles		\$ 139,800	\$ 93,200	\$ -	\$ 1,249,812	\$ 833,208	\$ 2,083,020
2.2	Formwork in Trench	337,882	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 675,763	\$ 506,822	\$ 168,941	\$ 1,351,526
2.3	Trench Excavation	21,249	CY		\$ 17.5	\$ 7.5	\$ -	\$ 371,857	\$ 159,367	\$ 531,225
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	2,213	CY	\$ 50	\$ 25	\$ 14	\$ 110,672	\$ 54,229	\$ 30,988	\$ 195,889
2.5	Supply & Install Thermal Backfill	23,241	CY	\$ 350	\$ 245	\$ 105	\$ 8,134,382	\$ 5,694,068	\$ 2,440,315	\$ 16,268,764
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Supply & Install Ductbank Concrete	5,256	CY	\$ 200	\$ 125.0	\$ 50.0	\$ 1,051,187	\$ 656,992	\$ 262,797	\$ 1,970,976
2.8	Conduit 8" HDPE SDR21	94,406	LF	\$ 9.7	\$ 5.7	\$ 2.4	\$ 912,910	\$ 535,284	\$ 229,408	\$ 1,677,602
2.9	Conduit 4" HDPE SDR21	47,203	LF	\$ 2.6	\$ 4.20	\$ 1.8	\$ 124,616	\$ 198,253	\$ 84,966	\$ 407,836
2.10	Conduit 2" HDPE SDR21	47,203	LF	\$ 0.9	\$ 3.15	\$ 1.4	\$ 40,595	\$ 148,690	\$ 63,724	\$ 253,009
2.11	Warning Tape	94,406	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 14,161	\$ 23,602	\$ 9,441	\$ 47,203
2.12	Trench Box Shoring (Vault)	42	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 759,322	\$ 1,138,983	\$ 1,898,305
2.13	Splice Vault Excavation	8,190	CY		\$ 17.5	\$ 7.5	\$ -	\$ 143,325	\$ 61,425	\$ 204,750
2.14	Splice Vault Supply & Installation	42	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 1,470,000	\$ 693,000	\$ 1,617,000	\$ 3,780,000
2.15	Splice Vault Backfill	2,457	CY		\$ 14.0	\$ 6.0	\$ -	\$ 34,398	\$ 14,742	\$ 49,140
2.16	Jack and Bore along Route	2,100	LF	\$ 800	\$ 1,600	\$ 1,600	\$ 1,680,000	\$ 3,360,000	\$ 3,360,000	\$ 8,400,000
2.17	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.18	Microtunnel (MTBM)	1,398	LF	\$ 1,260	\$ 2,205	\$ 2,835	\$ 1,761,480	\$ 3,082,590	\$ 3,963,330	\$ 8,807,400

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	188,813	LF			\$ 0.25	\$ -	\$ -	\$ 47,203	\$ 47,203
2.20	PVMT, ASPHALT, 2" SURFACE COURSE	20,703	SY	\$ 14.00	\$ 14.00	\$ 7.00	\$ 289,848	\$ 289,848	\$ 144,924	\$ 724,620
2.21	PVMT, AGGREGATE, 10", BASE COURSE	5,751	CY	\$ 22.38	\$ 23.50	\$ 10.07	\$ 128,706	\$ 135,142	\$ 57,918	\$ 321,766
2.22	Concrete Ductbank Thermal Resistivity Testing (every 100CY of concrete poured)	0	EA		\$ 400	\$ 1,200	\$ -	\$ -	\$ -	\$ -
2.23	Concrete Ductbank Compressive Strength Testing (every 100CY of concrete poured)	0	EA		\$ 10	\$ 15	\$ -	\$ -	\$ -	\$ -
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	285	EA		\$ 400	\$ 1,200	\$ -	\$ 113,988	\$ 341,964	\$ 455,952
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 732,186	\$ 488,124	\$ -	\$ 732,186	\$ 488,124	\$ 1,220,310
2.26	Excess Materials Disposal to Certified Backfill	28,244	CY		\$ 24.5	\$ 10.5	\$ -	\$ 691,975	\$ 296,561	\$ 988,536
2.27	Rock Excavation and Removal	19,626	CY		\$ 243	\$ 162	\$ -	\$ 4,769,118	\$ 3,179,412	\$ 7,948,530
2.28	Dewatering	42	EA			\$ 4,000	\$ -	\$ -	\$ 168,000	\$ 168,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	29,439	CF		\$ 1.0	\$ 0.5	\$ -	\$ 29,439	\$ 14,719	\$ 44,158
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 16,394,321	\$ 24,273,941	\$ 19,177,460	\$ 59,845,721
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 320kV terrestrial 5900kcmil Cu/XLPE/Al Tape/PE cable	99,127	FT	\$ 347	\$ 208	\$ 139	\$ 34,396,972	\$ 20,638,183	\$ 13,758,789	\$ 68,793,944
3.2	Circuit #1- Cable Splicing- 320kV terrestrial 5900kcmil Cu/XLPE/Al Tape/PE cable	84	EA	\$ 19,349	\$ 9,846.5	\$ 2,813	\$ 1,625,316	\$ 827,104	\$ 236,316	\$ 2,688,736
3.3	Circuit #1- Cable Termination- 320kV terrestrial 5900kcmil Cu/XLPE/Al Tape/PE cable	4	EA	\$ 45,410	\$ 9,846	\$ 2,813	\$ 181,640	\$ 39,386	\$ 11,253	\$ 232,279
3.4	Circuit #2- Procurement & Installation- 320kV terrestrial 5900kcmil Cu/XLPE/Al Tape/PE cable		FT				\$ -	\$ -	\$ -	\$ -
3.5	Circuit #2- Cable Splicing- 320kV terrestrial 5900kcmil Cu/XLPE/Al Tape/PE cable		EA				\$ -	\$ -	\$ -	\$ -
3.6	Circuit #2- Cable Termination- 320kV terrestrial 5900kcmil Cu/XLPE/Al Tape/PE cable		EA				\$ -	\$ -	\$ -	\$ -
3.7	Circuit #3- Procurement & Installation- 320kV terrestrial 5900kcmil Cu/XLPE/Al Tape/PE cable		FT				\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 320kV terrestrial 5900kcmil Cu/XLPE/Al Tape/PE cable		EA				\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 320kV terrestrial 5900kcmil Cu/XLPE/Al Tape/PE cable		EA				\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	42	EA	\$ 20,987	\$ 12,592	\$ 8,395	\$ 881,473	\$ 528,884	\$ 352,589	\$ 1,762,946
3.11	Fiber Optic Cable	49,563	FT	\$ 7	\$ 3	\$ 2	\$ 366,620	\$ 165,076	\$ 110,050	\$ 641,746
3.12	Ground Continuity Conductor	49,563	FT	\$ 13	\$ 8	\$ 5	\$ 646,257	\$ 373,063	\$ 248,709	\$ 1,268,029
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 38,098,278	\$ 22,571,696	\$ 14,717,706	\$ 75,387,680
AS7.7b Northport to Sprain Brook ±320 kV HVDC Onshore UG Cables - single circuit							\$ 56,650,294	\$ 57,370,094	\$ 38,156,404	\$ 152,176,793
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 2,865,795	\$ 1,910,530	\$ -	\$ 2,865,795	\$ 1,910,530	\$ 4,776,325
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		1,521,767.93		\$ -	\$ 1,521,768	\$ -	\$ 1,521,768
4.3	Construction Project Management / Supervision	1	LS		6,087,071.71		\$ -	\$ 6,087,072	\$ -	\$ 6,087,072
4.4	Utility PM and Project Oversight	1	LS		1,521,767.93		\$ -	\$ 1,521,768	\$ -	\$ 1,521,768
4.5	Site Accommodation, Facilities, Storage	1	LS	1,521,767.93			\$ 1,521,768	\$ -	\$ -	\$ 1,521,768
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 7,608,840	\$ -	\$ -	\$ 7,608,840	\$ -	\$ 7,608,840
4.7	LiDAR /GPR	1.0	LS		\$ 273,918	\$ 182,612	\$ -	\$ 273,918	\$ 182,612	\$ 456,530
4.8	Geotech	9.0	Location		2,730.00	1,820.00	\$ -	\$ 24,570	\$ 16,380	\$ 40,950
4.9	Surveying/Staking	1	LS		\$ 639,143		\$ -	\$ 639,143	\$ -	\$ 639,143
	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		\$ 1,521,768		\$ -	\$ 1,521,768	\$ -	\$ 1,521,768
4.12	Environmental-special studies/investigation		LS				\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS			\$ 456,530	\$ -	\$ -	\$ 456,530	\$ 456,530
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,000,000		\$ -	\$ 1,000,000	\$ -	\$ 1,000,000
4.15	Real Estate (Acquisition)	1	LS			\$ 125,037	\$ -	\$ -	\$ 125,037	\$ 125,037
4.16	Legal Fees (Real estate)	1.00	LS		-	3,751.11	\$ -	\$ -	\$ 3,751	\$ 3,751
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)		Crossing		\$ 1,000	\$ 150,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 5,380,000	\$ -	\$ -	\$ 5,380,000	\$ 5,380,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 56,650,294			\$ 5,030,546	\$ -	\$ -	\$ 5,030,546
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 152,177	\$ -	\$ -	\$ 152,177	\$ 152,177
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 6,552,314	\$ 23,084,641	\$ 8,227,017	\$ 37,863,972

Propel NY - TO53 AS7

AS7.8a 901 Intercept to Eastern Queens 138kV Onshore UG Cables- Double Circuit (Separate Conduit)

Total: \$

20,326,067

Propel NY - TO53 AS7				
	Material Supply	Labor Supply	Equip Supply	Total
AS7.8a 901 Intercept to Eastern Queens 138kV Onshore UG Cables- Double Circuit (Separate Conduit)				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 278,400	\$ 1,065,040	\$ 393,360	\$ 1,736,800
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 1,441,209	\$ 1,516,850	\$ 1,073,140	\$ 4,031,200
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 2,559,647	\$ 1,718,920	\$ 1,033,415	\$ 5,311,982
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 490,798	\$ 2,207,093	\$ 576,694	\$ 3,274,585
SUBTOTAL (Costs):	\$ 4,770,054	\$ 6,507,903	\$ 3,076,610	\$ 14,354,567
CONTRACTOR MARK-UP (OH&P)	\$ 858,610	\$ 1,171,423	\$ 553,790	\$ 2,583,822
SUBTOTAL:	\$ 5,628,664	\$ 7,679,326	\$ 3,630,400	\$ 16,938,390
CONTINGENCY ON ENTIRE PROJECT	\$ 1,125,733	\$ 1,535,865	\$ 726,080	\$ 3,387,678
TOTAL:	\$ 6,754,397	\$ 9,215,191	\$ 4,356,480	\$ 20,326,067

Description of Work: The 901 circuit from the point of interception will require an approximate 0.5 double circuit 138 kV construction utilizing 4000kcmil XLPE cable. At the point of intercept for the portion of the 901 cable going to Jamaica an oil stop transition joint will be utilized. Due to the fact that the portion of the 901 cable towards Valley Stream will be limiting it is proposed that that 6 mile portion of the cable will be upgraded using 4000kcmil XLPE cable.

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
AS7.8a 901 Intercept to Eastern Queens 138kV Onshore UG Cables- Double Circuit (Separate Conduit)										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	0.50	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 350,000	\$ 150,000	\$ 500,000
1.3	Flaggers	50	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 80,000	\$ 240,000	\$ 80,000	\$ 400,000
1.4	K Rail / Lane Control / Metal Plates	5,280	LF	\$ 30	\$ 18	\$ 12	\$ 158,400	\$ 95,040	\$ 63,360	\$ 316,800
1.5	Police Support	2,000.0	HR		\$ 120	\$ 27	\$ -	\$ 240,000	\$ 54,000	\$ 294,000
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	1.00	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 40,000	\$ 120,000	\$ 40,000	\$ 200,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 278,400	\$ 1,065,040	\$ 393,360	\$ 1,736,800
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION										
2.1	Trench Box Shoring & Trench Box Install Crew	1	LS		\$ 139,800	\$ 93,200	\$ -	\$ 139,800	\$ 93,200	\$ 233,000
2.2	Formwork in Trench	42,240	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 84,480	\$ 63,360	\$ 21,120	\$ 168,960
2.3	Trench Excavation	3,162	CY		\$ 17.5	\$ 7.5	\$ -	\$ 55,328	\$ 23,712	\$ 79,040
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	198	CY	\$ 50	\$ 25	\$ 14	\$ 9,880	\$ 4,841	\$ 2,766	\$ 17,488
2.5	Supply & Install Thermal Backfill	1,748	CY	\$ 350	\$ 245	\$ 105	\$ 611,800	\$ 428,260	\$ 183,540	\$ 1,223,600
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Supply & Install Concrete duct back encasement	688	CY	\$ 200	\$ 125	\$ 50	\$ 137,560	\$ 85,975	\$ 34,390	\$ 257,925
2.8	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.9	Conduit 6" HDPE	15,840	LF	\$ 10.6	\$ 5.7	\$ 2.4	\$ 167,904	\$ 89,813	\$ 38,491	\$ 296,208
2.10	Conduit 4" HDPE	5,280	LF	\$ 5.4	\$ 4.20	\$ 1.8	\$ 28,354	\$ 22,176	\$ 9,504	\$ 60,034
2.11	Conduit 2" HDPE	5,280	LF	\$ 1.9	\$ 3.15	\$ 1.4	\$ 10,085	\$ 16,632	\$ 7,128	\$ 33,845
2.12	Warning Tape	5,280	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 792	\$ 1,320	\$ 528	\$ 2,640
2.13	Trench Box Shoring (Vault)	6	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 108,475	\$ 162,712	\$ 271,186
2.14	Splice Vault Excavation	1,089	CY		\$ 17.5	\$ 7.5	\$ -	\$ 19,059	\$ 8,168	\$ 27,228
2.15	Splice Vault Supply & Installation	6	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 210,000	\$ 99,000	\$ 231,000	\$ 540,000
2.16	Splice Vault Backfill	327	CY		\$ 14.0	\$ 6.0	\$ -	\$ 4,574	\$ 1,960	\$ 6,535
2.17	Jack and Bore along Route	0	LF	\$ 600	\$ 1,200	\$ 1,200	\$ -	\$ -	\$ -	\$ -

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	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Air Test Ducts	26,400	LF			\$ 0.25	\$ -	\$ -	\$ 6,600	\$ 6,600
2.20	Restoration (incl. Paving)	12,882	SF	\$ 14.00	\$ 14.00	\$ 7.00	\$ 180,355	\$ 180,355	\$ 90,177	\$ 450,887
2.21	Concrete Duct bank Thermal Resistivity Testing (every 100CY of concrete poured)	17	EA		\$ 400	\$ 1,200	\$ -	\$ 6,992	\$ 20,976	\$ 27,968
2.22	Concrete Duct bank Compressive Strength Testing (every 100CY of concrete poured)	7	EA		\$ 10	\$ 15	\$ -	\$ 69	\$ 103	\$ 172
2.23	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	17	EA		\$ 400	\$ 1,200	\$ -	\$ 6,992	\$ 20,976	\$ 27,968
2.24	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	2	LS		\$ 27,300	\$ 18,200	\$ -	\$ 54,600	\$ 36,400	\$ 91,000
2.25	Excess Materials Disposal to Certified Backfill	5,101	CY		\$ 24.5	\$ 10.5	\$ -	\$ 124,979	\$ 53,562	\$ 178,541
2.26	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.27	Dewatering	6	EA			\$ 4,000	\$ -	\$ -	\$ 24,000	\$ 24,000
2.28	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.29	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Excavated material - stockpile management	4,251	CF		\$ 1.0	\$ 0.5	\$ -	\$ 4,251	\$ 2,125	\$ 6,376
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 1,441,209	\$ 1,516,850	\$ 1,073,140	\$ 4,031,200
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 138kV 4000kcmil Cu XLPE Cable	8,316	FT	\$ 127	\$ 76	\$ 51	\$ 1,056,132	\$ 633,679	\$ 422,453	\$ 2,112,264
3.2	Circuit #1- Cable Splicing- 138kV 4000kcmil Cu XLPE Cable	9	EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ 53,082	\$ 88,618	\$ 25,320	\$ 167,020
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	8,316	FT	\$ 127	\$ 76	\$ 51	\$ 1,056,132	\$ 633,679	\$ 422,453	\$ 2,112,264
3.5	Circuit #2- Cable Splicing- 138kV 4000kcmil Cu XLPE Cable	9	EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ 53,082	\$ 88,618	\$ 25,320	\$ 167,020
3.6	Circuit #2- Cable Termination- 138kV 4000kcmil Cu XLPE Cable	6	EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ 33,984	\$ 59,079	\$ 16,880	\$ 109,943
3.7	Circuit #3- Procurement & Installation- 138kV 4000kcmil Cu XLPE Cable		FT	\$ 127	\$ 76	\$ 51	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 138kV 4000kcmil Cu XLPE Cable		EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 138kV 4000kcmil Cu XLPE Cable		EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	6	EA	\$ 26,659	\$ 15,995	\$ 10,664	\$ 159,954	\$ 95,972	\$ 63,982	\$ 319,908
3.11	Fiber Optic Cable	5,544	FT	\$ 7	\$ 3	\$ 2	\$ 41,009	\$ 18,465	\$ 12,310	\$ 71,784
3.12	Ground Continuity Conductor	5,544	FT	\$ 13	\$ 8	\$ 5	\$ 72,288	\$ 41,730	\$ 27,820	\$ 141,838
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 2,559,647	\$ 1,718,920	\$ 1,033,415	\$ 5,311,982
AS7.8a 901 Intercept to Eastern Queens 138kV Onshore UG Cables- Double Circuit (Separate Conduit)							\$ 4,279,256	\$ 4,300,810	\$ 2,499,916	\$ 11,079,982
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 204,022	\$ 136,015	\$ -	\$ 204,022	\$ 136,015	\$ 340,036
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		110,799.82		\$ -	\$ 110,800	\$ -	\$ 110,800
4.3	Construction Project Management / Supervision	1	LS		443,199.28		\$ -	\$ 443,199	\$ -	\$ 443,199
4.4	Utility PM and Project Oversight	1	LS		110,799.82		\$ -	\$ 110,800	\$ -	\$ 110,800
4.5	Site Accommodation, Facilities, Storage	1	LS	110,799.82			\$ 110,800	\$ -	\$ -	\$ 110,800
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 553,999	\$ -	\$ -	\$ 553,999	\$ -	\$ 553,999
4.7	LiDAR /GPR	1.0	LS		\$ 19,944	\$ 13,296	\$ -	\$ 19,944	\$ 13,296	\$ 33,240
4.8	Geotech	1.0	Location		\$ 2,730	\$ 1,820	\$ -	\$ 2,730	\$ 1,820	\$ 4,550
4.9	Surveying/Staking	1	LS		\$ 77,560		\$ -	\$ 77,560	\$ -	\$ 77,560
	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		\$ 110,800		\$ -	\$ 110,800	\$ -	\$ 110,800
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 33,240		\$ -	\$ 33,240	\$ -	\$ 33,240
4.14	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
4.15	Real Estate (Acquisition)	1	LS		\$ -	\$ 14,062	\$ -	\$ -	\$ 14,062	\$ 14,062
4.16	Legal Fees (Real estate)	1.00	LS		-	421.86	\$ -	\$ -	\$ 422	\$ 422
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)	-	Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 400,000	\$ -	\$ -	\$ 400,000	\$ 400,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 4,279,256.30			\$ 379,998	\$ -	\$ -	\$ 379,998
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 11,080	\$ -	\$ -	\$ 11,080	\$ 11,080
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 490,798	\$ 2,207,093	\$ 576,694	\$ 3,274,585

Propel NY - TO53 AS7

AS7.8b 903 Intercept to Eastern Queens 138kV Onshore UG Cables- Double Circuit (Separate Conduit)

Total: \$ 72,122,497

Propel NY - TO53 AS7				
	Material Supply	Labor Supply	Equip Supply	Total
AS7.8b 903 Intercept to Eastern Queens 138kV Onshore UG Cables- Double Circuit (Separate Conduit)				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 1,049,600	\$ 3,836,160	\$ 1,454,240	\$ 6,340,000
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 5,407,501	\$ 5,629,339	\$ 3,555,215	\$ 14,592,055
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 9,591,155	\$ 6,065,857	\$ 3,841,349	\$ 19,498,361
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 1,829,389	\$ 6,605,654	\$ 2,068,508	\$ 10,503,551
SUBTOTAL (Costs):	\$ 17,877,645	\$ 22,137,010	\$ 10,919,312	\$ 50,933,967
CONTRACTOR MARK-UP (OH&P)	\$ 3,217,976	\$ 3,984,662	\$ 1,965,476	\$ 9,168,114
SUBTOTAL:	\$ 21,095,621	\$ 26,121,672	\$ 12,884,788	\$ 60,102,081
CONTINGENCY ON ENTIRE PROJECT	\$ 4,219,124	\$ 5,224,334	\$ 2,576,958	\$ 12,020,416
TOTAL:	\$ 25,314,746	\$ 31,346,006	\$ 15,461,746	\$ 72,122,497

Description of Work: The 903 circuit from the point of interception will require an approximate 2.5 mile double circuit 138 kV construction utilizing 4000kcmil XLPE cable. At the point of interception oil stop transition joints are proposed to connect to the existing cables.										
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
AS7.8b 903 Intercept to Eastern Queens 138kV Onshore UG Cables- Double Circuit (Separate Conduit)										
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT										
1.1	Environmental BMPs / SWPPP Installation, Maintenance & Repairs	0	LF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
1.2	Existing Utility Conflict and Relocation	2.00	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 1,400,000	\$ 600,000	\$ 2,000,000
1.3	Flaggers	160	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 256,000	\$ 768,000	\$ 256,000	\$ 1,280,000
1.4	K Rail / Lane Control / Metal Plates	21,120	LF	\$ 30	\$ 18	\$ 12	\$ 633,600	\$ 380,160	\$ 253,440	\$ 1,267,200
1.5	Police Support	6,400.0	HR		\$ 120	\$ 27	\$ -	\$ 768,000	\$ 172,800	\$ 940,800
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	40.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 40,000	\$ 12,000	\$ 52,000
1.9	Existing Utility Protection	4.00	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 160,000	\$ 480,000	\$ 160,000	\$ 800,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 1,049,600	\$ 3,836,160	\$ 1,454,240	\$ 6,340,000
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION		Trench length less HDD, J&B, Conduit	20,770.00	(Two trenches)						
2.1	Trench Box Shoring & Trench Box Install Crew	4	LS		\$ 139,800	\$ 93,200	\$ -	\$ 559,200	\$ 372,800	\$ 932,000
2.2	Formwork in Trench	168,960	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 337,920	\$ 253,440	\$ 84,480	\$ 675,840
2.3	Trench Excavation	12,800	CY		\$ 17.5	\$ 7.5	\$ -	\$ 224,008	\$ 96,004	\$ 320,012
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	800	CY	\$ 50	\$ 25	\$ 14	\$ 40,001	\$ 19,601	\$ 11,200	\$ 70,803
2.5	Supply & Install Thermal Backfill	7,077	CY	\$ 350	\$ 245	\$ 105	\$ 2,477,015	\$ 1,733,910	\$ 743,104	\$ 4,954,030
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Supply & Install Concrete duct back encasement	2,785	CY	\$ 200	\$ 125	\$ 50	\$ 556,944	\$ 348,090	\$ 139,236	\$ 1,044,269
2.8	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.9	Conduit 6" HDPE	63,360	LF	\$ 10.6	\$ 5.7	\$ 2.4	\$ 671,616	\$ 359,251	\$ 153,965	\$ 1,184,832
2.10	Conduit 4" HDPE	21,120	LF	\$ 5.4	\$ 4.20	\$ 1.8	\$ 113,414	\$ 88,704	\$ 38,016	\$ 240,134
2.11	Conduit 2" HDPE	21,120	LF	\$ 1.9	\$ 3.15	\$ 1.4	\$ 40,339	\$ 66,528	\$ 28,512	\$ 135,379
2.12	Warning Tape	21,120	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 3,168	\$ 5,280	\$ 2,112	\$ 10,560
2.13	Trench Box Shoring (Vault)	14	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 253,107	\$ 379,661	\$ 632,768
2.14	Splice Vault Excavation	2,541	CY		\$ 17.5	\$ 7.5	\$ -	\$ 44,472	\$ 19,059	\$ 63,531
2.15	Splice Vault Supply & Installation	14	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 490,000	\$ 231,000	\$ 539,000	\$ 1,260,000
2.16	Splice Vault Backfill	762	CY		\$ 14.0	\$ 6.0	\$ -	\$ 10,673	\$ 4,574	\$ 15,248
2.17	Jack and Bore along Route	0	LF	\$ 600	\$ 1,200	\$ 1,200	\$ -	\$ -	\$ -	\$ -
2.18	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
2.19	Air Test Ducts	105,600	LF			\$ 0.25	\$ -	\$ -	\$ 26,400	\$ 26,400
2.20	Restoration (incl. Paving)	48,363	SF	\$ 14.00	\$ 14.00	\$ 7.00	\$ 677,084	\$ 677,084	\$ 338,542	\$ 1,692,709
2.21	Concrete Duct bank Thermal Resistivity Testing (every 100CY of concrete poured)	71	EA		\$ 400	\$ 1,200	\$ -	\$ 28,309	\$ 84,926	\$ 113,235
2.22	Concrete Duct bank Compressive Strength Testing (every 100CY of concrete poured)	28	EA		\$ 10	\$ 15	\$ -	\$ 278	\$ 418	\$ 696
2.23	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	71	EA		\$ 400	\$ 1,200	\$ -	\$ 28,309	\$ 84,926	\$ 113,235
2.24	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	2	LS		\$ 109,200	\$ 72,800	\$ -	\$ 218,400	\$ 145,600	\$ 364,000
2.25	Excess Materials Disposal to Certified Backfill	18,953	CY		\$ 24.5	\$ 10.5	\$ -	\$ 464,352	\$ 199,008	\$ 663,361
2.26	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.27	Dewatering	14	EA			\$ 4,000	\$ -	\$ -	\$ 56,000	\$ 56,000
2.28	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.29	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Excavated material - stockpile management	15,342	CF		\$ 1.0	\$ 0.5	\$ -	\$ 15,342	\$ 7,671	\$ 23,013
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 5,407,501	\$ 5,629,339	\$ 3,555,215	\$ 14,592,055
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 138kV 4000kcmil Cu XLPE Cable	33,264	FT	\$ 127	\$ 76	\$ 51	\$ 4,224,528	\$ 2,534,717	\$ 1,689,811	\$ 8,449,056
3.2	Circuit #1- Cable Splicing- 138kV 4000kcmil Cu XLPE Cable	21	EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ 123,858	\$ 206,776	\$ 59,079	\$ 389,713
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	33,264	FT	\$ 127	\$ 76	\$ 51	\$ 4,224,528	\$ 2,534,717	\$ 1,689,811	\$ 8,449,056
3.5	Circuit #2- Cable Splicing- 138kV 4000kcmil Cu XLPE Cable	21	EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ 123,858	\$ 206,776	\$ 59,079	\$ 389,713
3.6	Circuit #2- Cable Termination- 138kV 4000kcmil Cu XLPE Cable	6	EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ 33,984	\$ 59,079	\$ 16,880	\$ 109,943
3.7	Circuit #3- Procurement & Installation- 138kV 4000kcmil Cu XLPE Cable		FT	\$ 127	\$ 76	\$ 51	\$ -	\$ -	\$ -	\$ -
3.8	Circuit #3- Cable Splicing- 138kV 4000kcmil Cu XLPE Cable		EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.9	Circuit #3- Cable Termination- 138kV 4000kcmil Cu XLPE Cable		EA	\$ 5,664	\$ 9,846	\$ 2,813	\$ -	\$ -	\$ -	\$ -
3.10	Link Box & MH racking	14	EA	\$ 26,659	\$ 15,995	\$ 10,664	\$ 373,226	\$ 223,936	\$ 149,290	\$ 746,452
3.11	Fiber Optic Cable	22,176	FT	\$ 7	\$ 3	\$ 2	\$ 164,036	\$ 73,859	\$ 49,240	\$ 287,135
3.12	Ground Continuity Conductor	22,176	FT	\$ 13	\$ 8	\$ 5	\$ 289,153	\$ 166,919	\$ 111,279	\$ 567,351
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 9,591,155	\$ 6,065,857	\$ 3,841,349	\$ 19,498,361
AS7.8b 903 Intercept to Eastern Queens 138kV Onshore UG Cables- Double Circuit (Separate Conduit)							\$ 16,048,256	\$ 15,531,356	\$ 8,850,804	\$ 40,430,416
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 731,465	\$ 487,643	\$ -	\$ 731,465	\$ 487,643	\$ 1,219,108
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		404,304.16		\$ -	\$ 404,304	\$ -	\$ 404,304
4.3	Construction Project Management / Supervision	1	LS		1,617,216.63		\$ -	\$ 1,617,217	\$ -	\$ 1,617,217
4.4	Utility PM and Project Oversight	1	LS		404,304.16		\$ -	\$ 404,304	\$ -	\$ 404,304
4.5	Site Accommodation, Facilities, Storage	1	LS	404,304.16			\$ 404,304	\$ -	\$ -	\$ 404,304
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 2,021,521	\$ -	\$ -	\$ 2,021,521	\$ -	\$ 2,021,521
4.7	LiDAR /GPR	1.0	LS		\$ 72,775	\$ 48,516	\$ -	\$ 72,775	\$ 48,516	\$ 121,291
4.8	Geotech	2.0	Location		\$ 2,730	\$ 1,820	\$ -	\$ 5,460	\$ 3,640	\$ 9,100
4.9	Surveying/Staking	1	LS		\$ 283,013		\$ -	\$ 283,013	\$ -	\$ 283,013
	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		\$ 404,304		\$ -	\$ 404,304	\$ -	\$ 404,304
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 121,291		\$ -	\$ 121,291	\$ -	\$ 121,291
4.14	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
4.15	Real Estate (Acquisition)	1	LS		\$ -	\$ 46,872	\$ -	\$ -	\$ 46,872	\$ 46,872
4.16	Legal Fees (Real estate)	1.00	LS		-	1,406.16	\$ -	\$ -	\$ 1,406	\$ 1,406
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)	-	Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 1,440,000	\$ -	\$ -	\$ 1,440,000	\$ 1,440,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 16,048,256.02			\$ 1,425,085	\$ -	\$ -	\$ 1,425,085
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 40,430	\$ -	\$ -	\$ 40,430	\$ 40,430
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 1,829,389	\$ 6,605,654	\$ 2,068,508	\$ 10,503,551

Propel NY - TO53 AS7

AS7.9 901 Eastern Queens to Valley Stream 138kV Replacement Onshore UG Cables- Single Circuit

Total: \$ 113,699,531

Propel NY - TO53 AS7				
	Material Supply	Labor Supply	Equip Supply	Total
AS7.9 901 Eastern Queens to Valley Stream 138kV Replacement Onshore UG Cables- Single Circuit				
1. SITE PREP/ACCESS/TRAFFIC MANAGEMENT	\$ 1,510,400	\$ 7,470,240	\$ 2,974,160	\$ 11,954,800
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION	\$ 8,370,529	\$ 9,040,981	\$ 6,123,677	\$ 23,535,186
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION	\$ 14,026,459	\$ 8,578,169	\$ 5,594,995	\$ 28,199,623
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS	\$ 2,759,872	\$ 10,604,137	\$ 3,242,660	\$ 16,606,670
SUBTOTAL (Costs):	\$ 26,667,260	\$ 35,693,527	\$ 17,935,492	\$ 80,296,279
CONTRACTOR MARK-UP (OH&P)	\$ 4,800,107	\$ 6,424,835	\$ 3,228,389	\$ 14,453,330
SUBTOTAL:	\$ 31,467,367	\$ 42,118,362	\$ 21,163,880	\$ 94,749,609
CONTINGENCY ON ENTIRE PROJECT	\$ 6,293,473	\$ 8,423,672	\$ 4,232,776	\$ 18,949,922
TOTAL:	\$ 37,760,840	\$ 50,542,034	\$ 25,396,657	\$ 113,699,531

Description of Work: . It is currently anticipated that a similar route from the point of intercept to Valley Stream Substation would be utilized and would interconnect at the location of the existing 901 circuit. The portion of the existing 901 cable from the point of intercept to the Valley Stream Substation would likely be retired.										
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
AS7.9 901 Eastern Queens to Valley Stream 138kV Replacement 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	6.00	Mile		\$ 700,000	\$ 300,000	\$ -	\$ 4,200,000	\$ 1,800,000	\$ 6,000,000
1.3	Flaggers	200	DAY	\$ 1,600	\$ 4,800	\$ 1,600	\$ 320,000	\$ 960,000	\$ 320,000	\$ 1,600,000
1.4	K Rail / Lane Control / Metal Plates	31,680	LF	\$ 30	\$ 18	\$ 12	\$ 950,400	\$ 570,240	\$ 380,160	\$ 1,900,800
1.5	Police Support	8,000.0	HR		\$ 120	\$ 27	\$ -	\$ 960,000	\$ 216,000	\$ 1,176,000
1.6	Additional Traffic Management		LS				\$ -	\$ -	\$ -	\$ -
1.7	Access / Clearing Costs		LS				\$ -	\$ -	\$ -	\$ -
1.8	Snow Removal	60.0	DAY		\$ 1,000	\$ 300	\$ -	\$ 60,000	\$ 18,000	\$ 78,000
1.9	Existing Utility Protection	6.00	Mile	\$ 40,000	\$ 120,000	\$ 40,000	\$ 240,000	\$ 720,000	\$ 240,000	\$ 1,200,000
TOTAL - SITE PREP/ACCESS/TRAFFIC MANAGEMENT/ ACCESS:							\$ 1,510,400	\$ 7,470,240	\$ 2,974,160	\$ 11,954,800
2. ONSHORE CABLE CONDUITS & VAULTS INSTALLATION		Trench length less HDD, J&B, Conduit	30,858.00							
2.1	Trench Box Shoring & Trench Box Install Crew	1	LS		\$ 838,800	\$ 559,200	\$ -	\$ 838,800	\$ 559,200	\$ 1,398,000
2.2	Formwork in Trench	245,816	SF	\$ 2	\$ 1.5	\$ 0.5	\$ 491,632	\$ 368,724	\$ 122,908	\$ 983,264
2.3	Trench Excavation	18,937	CY		\$ 17.5	\$ 7.5	\$ -	\$ 331,396	\$ 142,027	\$ 473,423
2.4	Supply & Install 6" Sand Bedding for direct bury conduits	1,184	CY	\$ 50	\$ 25	\$ 14	\$ 59,178	\$ 28,997	\$ 16,570	\$ 104,745
2.5	Supply & Install Thermal Backfill	10,470	CY	\$ 350	\$ 245	\$ 105	\$ 3,664,479	\$ 2,565,135	\$ 1,099,344	\$ 7,328,959
2.6	Supply & Install Concrete Cap (6")	0	CY	\$ 200	\$ 125	\$ 50	\$ -	\$ -	\$ -	\$ -
2.7	Supply & Install Concrete duct back encasement	4,120	CY	\$ 200	\$ 125	\$ 50	\$ 823,939	\$ 514,962	\$ 205,985	\$ 1,544,885
2.8	Native Backfill -direct bury conduits sys Trench	0	CY		\$ 14.0	\$ 6.0	\$ -	\$ -	\$ -	\$ -
2.9	Conduit 6" HDPE	95,040	LF	\$ 10.6	\$ 5.7	\$ 2.4	\$ 1,007,424	\$ 538,877	\$ 230,947	\$ 1,777,248
2.10	Conduit 4" HDPE	31,680	LF	\$ 5.4	\$ 4.20	\$ 1.8	\$ 170,122	\$ 133,056	\$ 57,024	\$ 360,202
2.11	Conduit 2" HDPE	31,680	LF	\$ 1.9	\$ 3.15	\$ 1.4	\$ 60,509	\$ 99,792	\$ 42,768	\$ 203,069
2.12	Warning Tape	31,680	LF	\$ 0.15	\$ 0.25	\$ 0.10	\$ 4,752	\$ 7,920	\$ 3,168	\$ 15,840
2.13	Trench Box Shoring (Vault)	18	EA	\$ -	\$ 18,079	\$ 27,119	\$ -	\$ 325,424	\$ 488,136	\$ 813,559
2.14	Splice Vault Excavation	3,267	CY		\$ 17.5	\$ 7.5	\$ -	\$ 57,178	\$ 24,505	\$ 81,683
2.15	Splice Vault Supply & Installation	18	EA	\$ 35,000	\$ 16,500	\$ 38,500	\$ 630,000	\$ 297,000	\$ 693,000	\$ 1,620,000
2.16	Splice Vault Backfill	980	CY		\$ 14.0	\$ 6.0	\$ -	\$ 13,723	\$ 5,881	\$ 19,604
2.17	Jack and Bore along Route	0	LF	\$ 600	\$ 1,200	\$ 1,200	\$ -	\$ -	\$ -	\$ -
2.18	HDD along Route	0	LF	\$ 800	\$ 1,600	\$ 1,600	\$ -	\$ -	\$ -	\$ -
2.19	Microtunnel (MTBM)	372	LF	\$ 1,260	\$ 2,205	\$ 2,835	\$ 468,720	\$ 820,260	\$ 1,054,620	\$ 2,343,600
2.20	Air Test Ducts	158,400	LF			\$ 0.25	\$ -	\$ -	\$ 39,600	\$ 39,600
2.21	Restoration (incl. Paving)	70,698	SF	\$ 14.00	\$ 14.00	\$ 7.00	\$ 989,774	\$ 989,774	\$ 494,887	\$ 2,474,436
2.22	Concrete Duct bank Thermal Resistivity Testing (every 100CY of concrete poured)	105	EA		\$ 400	\$ 1,200	\$ -	\$ 41,880	\$ 125,639	\$ 167,519
2.23	Concrete Duct bank Compressive Strength Testing (every 100CY of concrete poured)	41	EA		\$ 10	\$ 15	\$ -	\$ 412	\$ 618	\$ 1,030

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
2.24	Backfill Thermal Resistivity Testing (every 100CY of backfill placed)	105	EA		\$ 400	\$ 1,200	\$ -	\$ 41,880	\$ 125,639	\$ 167,519
2.25	Additional misc. testing allowance (Native Backfill, Asphalt Density, Concrete Curb etc.)	1	LS		\$ 327,600	\$ 218,400	\$ -	\$ 327,600	\$ 218,400	\$ 546,000
2.26	Excess Materials Disposal to Certified Backfill	27,591	CY		\$ 24.5	\$ 10.5	\$ -	\$ 675,987	\$ 289,709	\$ 965,695
2.27	Rock Excavation and Removal	1	LS				\$ -	\$ -	\$ -	\$ -
2.28	Dewatering	18	EA			\$ 4,000	\$ -	\$ -	\$ 72,000	\$ 72,000
2.29	Contaminated Water Treatment and Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.30	Contaminated Spoils Disposal	1	LS				\$ -	\$ -	\$ -	\$ -
2.31	Excavated material - stockpile management	22,204	CF		\$ 1.0	\$ 0.5	\$ -	\$ 22,204	\$ 11,102	\$ 33,306
TOTAL - ONSHORE CABLE CONDUITS & VAULTS INSTALLATION:							\$ 8,370,529	\$ 9,040,981	\$ 6,123,677	\$ 23,535,186
3. ONSHORE CABLE PROCUREMENT AND INSTALLATION										
3.1	Circuit #1- Procurement & Installation- 138kV 4000kcmil Cu XLPE Cable	99,792	FT	\$ 127	\$ 76	\$ 51	\$ 12,673,584	\$ 7,604,150	\$ 5,069,434	\$ 25,347,168
3.2	Circuit #1- Cable Splicing- 138kV 4000kcmil Cu XLPE Cable	27	EA	\$ 5,898	\$ 9,846	\$ 2,813	\$ 159,246	\$ 265,855	\$ 75,959	\$ 501,060
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	18	EA	\$ 26,659	\$ 15,995	\$ 10,664	\$ 479,862	\$ 287,917	\$ 191,945	\$ 959,724
3.11	Fiber Optic Cable	33,264	FT	\$ 7	\$ 3	\$ 2	\$ 246,054	\$ 110,789	\$ 73,859	\$ 430,702
3.12	Ground Continuity Conductor	33,264	FT	\$ 13	\$ 8	\$ 5	\$ 433,729	\$ 250,378	\$ 166,919	\$ 851,026
TOTAL - ONSHORE CABLE PROCUREMENT AND INSTALLATION							\$ 14,026,459	\$ 8,578,169	\$ 5,594,995	\$ 28,199,623
AS7.9 901 Eastern Queens to Valley Stream 138kV Replacement Onshore UG Cables- Single Circuit							\$ 23,907,388	\$ 25,089,390	\$ 14,692,831	\$ 63,689,609
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS										
	Contractor Mobilization / Demobilization									
4.1	Mob / Demob	1	LS		\$ 1,193,467	\$ 795,644	\$ -	\$ 1,193,467	\$ 795,644	\$ 1,989,111
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		636,896.09		\$ -	\$ 636,896	\$ -	\$ 636,896
4.3	Construction Project Management / Supervision	1	LS		2,547,584.36		\$ -	\$ 2,547,584	\$ -	\$ 2,547,584
4.4	Utility PM and Project Oversight	1	LS		636,896.09		\$ -	\$ 636,896	\$ -	\$ 636,896
4.5	Site Accommodation, Facilities, Storage	1	LS	636,896.09			\$ 636,896	\$ -	\$ -	\$ 636,896
	Engineering									
4.6	Design Engineering	1.0	LS		\$ 3,184,480	\$ -	\$ -	\$ 3,184,480	\$ -	\$ 3,184,480
4.7	LiDAR /GPR	1.0	LS		\$ 114,641	\$ 76,428	\$ -	\$ 114,641	\$ 76,428	\$ 191,069
4.8	Geotech	6.0	Location		\$ 2,730	\$ 1,820	\$ -	\$ 16,380	\$ 10,920	\$ 27,300
4.9	Surveying/Staking	1	LS		\$ 445,827		\$ -	\$ 445,827	\$ -	\$ 445,827
	Testing & Commissioning									
4.10	Testing & Commissioning of T-Line and Equipment	1	EA		\$ -		\$ -	\$ -	\$ -	\$ -
	Permitting, Indirects and Additional Costs									
4.11	Environmental Licensing & Permitting Costs & related legal cost	1	LS		\$ 636,896		\$ -	\$ 636,896	\$ -	\$ 636,896
4.12	Environmental-special studies/investigation		LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.13	Warranties / LOC's	1	LS		\$ 191,069		\$ -	\$ 191,069	\$ -	\$ 191,069
4.14	Laydown Lease & temporary easement	1	LS		\$ 1,000,000		\$ -	\$ 1,000,000	\$ -	\$ 1,000,000
4.15	Real Estate (Acquisition)	1	LS		\$ -	\$ 34,931	\$ -	\$ -	\$ 34,931	\$ 34,931
4.16	Legal Fees (Real estate)	1.00	LS		-	1,047.93	\$ -	\$ -	\$ 1,048	\$ 1,048
4.17	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance (specialty, e.g. railroad)	-	Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.19	Bonds	1	LS			\$ 2,260,000	\$ -	\$ -	\$ 2,260,000	\$ 2,260,000
4.20	Sales Tax on Materials	8.88%	% of material cost	\$ 23,907,387.74			\$ 2,122,976	\$ -	\$ -	\$ 2,122,976
4.21	Fees for permits, including roadway, railroad, building or other local permits	1	LS			\$ 63,690	\$ -	\$ -	\$ 63,690	\$ 63,690
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 2,759,872	\$ 10,604,137	\$ 3,242,660	\$ 16,606,670

Other Misc. Upgrades

Total: \$ 15,301,296

Other Misc. Upgrades				
	Material Supply	Labor Supply	Equip Supply	Total
Other Misc. Upgrades				
1. Lake Success-Jamaica Cooling Upgrade	\$ 4,000,000	\$ 2,320,000	\$ 1,880,000	\$ 8,200,000
	\$ -	\$ -	\$ -	\$ -
	\$ -	\$ -	\$ -	\$ -
	\$ -	\$ -	\$ -	\$ -
	\$ -	\$ -	\$ -	\$ -
	\$ -	\$ -	\$ -	\$ -
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:	\$ 437,200	\$ 1,743,800	\$ 425,000	\$ 2,606,000
CONTRACTOR MARK-UP (OH&P)	\$ 798,696	\$ 731,484	\$ 414,900	\$ 1,945,080
SUBTOTAL:	\$ 5,235,896	\$ 4,795,284	\$ 2,719,900	\$ 12,751,080
CONTINGENCY ON ENTIRE PROJECT	\$ 1,047,179	\$ 959,057	\$ 543,980	\$ 2,550,216
TOTAL:	\$ 6,283,075	\$ 5,754,341	\$ 3,263,880	\$ 15,301,296

Description of Work: 5000KCMIL (Conductor size) (XLPE)armored cable buried below the Long Island Sound (buried 6' or protected by concrete mattresses or rock)										
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
Other Misc. Upgrades										
1. Lake Success-Jamaica Cooling Upgrade										
1.1	Cooling upgrade	1	LS	4,000,000.00	2,320,000.00	1,880,000.00	\$ 4,000,000	\$ 2,320,000	\$ 1,880,000	\$ 8,200,000
1.2							\$ -	\$ -	\$ -	\$ -
1.3							\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
							\$ 4,000,000	\$ 2,320,000	\$ 1,880,000	\$ 8,200,000
2.1	138kV Line Upgrade									
							\$ -	\$ -	\$ -	\$ -
TOTAL - :										
3.1	138kV Line Upgrade									
							\$ -	\$ -	\$ -	\$ -
TOTAL - :										
							\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
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							\$ -	\$ -	\$ -	\$ -
							\$ -	\$ -	\$ -	\$ -
Other Comp. 138kV Upgrades							\$ 4,000,000.00	\$ 2,320,000.00	\$ 1,880,000.00	\$ 8,200,000.00
4. MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:										
	Contractor Mobilization / Demobilization									

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
4.1	Mob / Demob	1.0	LS		\$ 126,000	\$ 84,000	\$ -	\$ 126,000	\$ 84,000	\$ 210,000
	Project Management, Material Handling & Amenities									
4.2	Preconstruction Supervision (Engineering, Permitting, Procurement)	1	LS		82,000.00		\$ -	\$ 82,000	\$ -	\$ 82,000
4.3	Construction Project Management / Supervision	1	LS		328,000.00		\$ -	\$ 328,000	\$ -	\$ 328,000
4.4	Utility PM and Project Oversight	1	LS		82,000.00		\$ -	\$ 82,000	\$ -	\$ 82,000
4.5	Site Accommodation, Facilities, Storage	1	LS	82,000.00			\$ 82,000	\$ -	\$ -	\$ 82,000
	Engineering									
4.6	Design Engineering	1.00	LS		\$ 410,000	\$ -	\$ -	\$ 410,000	\$ -	\$ 410,000
4.7	LiDAR	1.00	LS		\$ 14,760	\$ 9,840	\$ -	\$ 14,760	\$ 9,840	\$ 24,600
4.8	Geotech	-	EA		\$ 2,730	\$ 1,820	\$ -	\$ -	\$ -	\$ -
4.9	Surveying/Staking	1.00	Site		\$ 34,440	\$ 22,960	\$ -	\$ 34,440	\$ 22,960	\$ 57,400
	Testing & Commissioning									
4.10	Testing & Commissioning of SS and Equipment	1.00	LS		\$ 60,000		\$ -	\$ 60,000	\$ -	\$ 60,000
	Permitting and Additional Costs									
4.11	Physical Security	-	LS				\$ -	\$ -	\$ -	\$ -
4.12	Environmental Licensing & Permitting Costs & related legal cost	1.00	LS		\$ 82,000		\$ -	\$ 82,000	\$ -	\$ 82,000
4.13	Environmental-special studies/investigation	-	LS		\$ -		\$ -	\$ -	\$ -	\$ -
4.14	Warranties / LOC's	1.00	LS		\$ 24,600		\$ -	\$ 24,600	\$ -	\$ 24,600
4.15	Laydown Lease & temporary easement	1	LS		\$ 500,000		\$ -	\$ 500,000	\$ -	\$ 500,000
4.16	Real Estate (Acquisition)	1.00	LS				\$ -	\$ -	\$ -	\$ -
4.17	Legal Fees (Real estate)	1.00	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.18	Insurance	-	LS		-	-	\$ -	\$ -	\$ -	\$ -
4.19	Insurance (specialty, e.g. railroad)		Crossing			\$ 1,000	\$ -	\$ -	\$ -	\$ -
4.20	Bonds	1	LS			\$ 300,000	\$ -	\$ -	\$ 300,000	\$ 300,000
4.21	Sales Tax on Materials	8.88%	LS	\$ 4,000,000.00			\$ 355,200	\$ -	\$ -	\$ 355,200
4.22	Fees for permits, including roadway, railroad, building or other local permits	1.00	LS			\$ 8,200	\$ -	\$ -	\$ 8,200	\$ 8,200
TOTAL - MOB/DEMOB, ENGINEERING, PERMITTING, T&C, PM & INDIRECTS:							\$ 437,200	\$ 1,743,800	\$ 425,000	\$ 2,606,000

Propel NY - TO53 AS7	
ESTIMATE ASSUMPTIONS & CLARIFICATIONS	
General assumptions/clarifications	
1	This TO52 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 only assume one construction manager and one environmental coordinator to meet EMCP requirement.
10	Costs 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 Oversight 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	All Tline segments construction period is based on milestone schedule provided.
36	No schedule provided for 901 & 903 intercept, 901 EQ to VS 138kv UG, assume 2.5/10/13 months construction
37	901/903 intercept to Eastern Queens 138 kV lines, we assumed the transition splice vaults as regular vaults.
38	Shore Road to Sprainbrook 345kv UG line, Shore Road to New Rochelle is 2-circuit, New Rochelle to Sprainbrook is 1 -circuit.
39	The length from New Rochelle Landing to New Rochelle (0.86mi) was added to the developer length on AS 7.7b (NR landing - Sprainbrook 320kv DC). Assume the 320KV DC mh size same as 345kv.
40	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.
41	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	
42	Site grading: Excavation quantity in substations is based on 3', fill quantity is based on 60% site borrow and 40% import.
43	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.
44	Substation pad is based on 8" base and 6" surfacing rock.
45	The firewalls for transformers/PAR/Reactors are assumed 30' tall, if required
46	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.
47	Each substation construction period is based on milestone schedule provided
48	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.
49	The control panels quantities and values are provided by Sub Station Engineers.
50	Assumes that GIS Tech Rep pricing will be included with GIS equipment supply price.