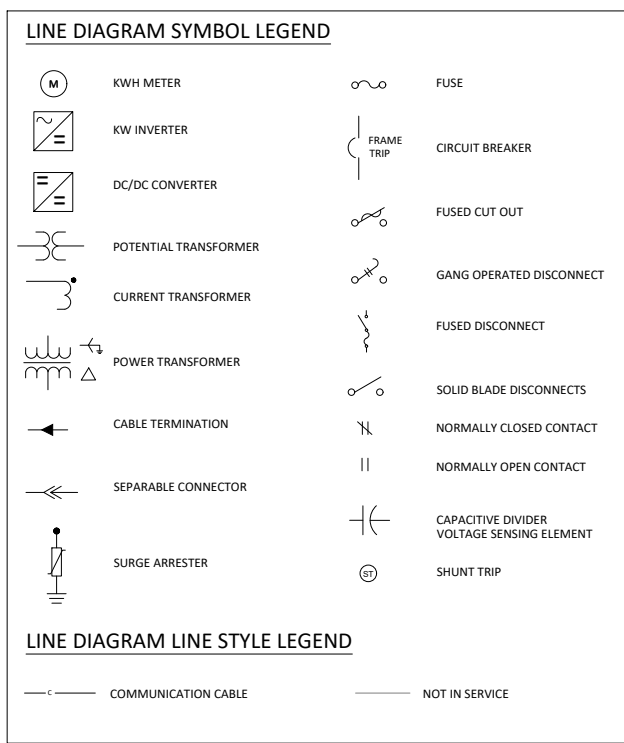


Cable Schedule							
Circuit	Voltage	Conductor Quantity, Size and Material	Wire Type	Quantity of Conductors	Size of Conductors	Conduit Type	Notes
A	22kV	(3) #4/0 AWG ALN (1) #4/0 AWG ALN	Covered ACSR	-	-	-	MS/Overhead
B	15kV	(3) 350 KCMIL AL, Jacketed Concentric Neutral	MS-105	1	5"	PVC	MS/Underground 18-10/133N
C	15kV	(1) #7/0 AWG Jacketed Concentric Neutral	MS-105	1	5"	PVC	MS/Underground 18-10/133N
D	15kV	8 Sets (3) 600 KCMIL AL	XHHW-2	8	5"	PVC	Shrinkbraid to Transformer
E	600V	(3) #12 AWG ALN (1) #8 AWG Cu GND	THWN-2	1	2"	PVC	ALN Transformer to SCAB
F	600V	(1) CAT5 OR (1) Fiber optic	-	-	-	1"	Communication
G	600V	(3) #6 AWG ALN (3) #10 AWG Cu GND	THWN-2	1	2"	PVC	ALN Panel to ATR
H	600V	(3) #12 AWG ALN (3) #12 AWG Cu GND	THWN-2	1	2"	PVC	ALN Panel to SCAB
I	600V	(3) #8 AWG ALN (3) #10 AWG Cu GND	THWN-2	1	2"	PVC	ALN Panel to DAS

Inverter Protection Settings					
Inverter Protective Function	Enabled	Pickup	Unit	Total Clearing Time Cyc. (Seconds)	Description
27-1	Y	50%	V (I-L)	66 (1.1)	Under Voltage
27-2	Y	88%	V (I-L)	180 (3)	
27-3	N	-	-	-	
59-1	Y	110%	V (I-L)	120 (2)	Over Voltage
59-2	Y	120%	V (I-L)	9.6 (0.16)	
59-1	Y	140%	V (I-L)	80 (1.33)	
81U-1	Y	56.5	Hz	9.6 (0.16)	Under Frequency
81U-2	Y	58.5	Hz	18000 (300)	
81O-1	Y	61.2	Hz	18000 (300)	
81O-2	Y	62	Hz	9.6 (0.16)	Over Frequency
Block Close	N	-	-	-	-
Block Close	N	-	-	-	-
Block Close	N	-	-	-	-
Block Close	N	-	-	-	-

Voltage setting values are I-L
 Settings are based on IEEE-1547, UL 1741 SB, and utility requirements

Relay Protection Settings							
Relay Protective Functions	Trip Output	Enabled (Relay Designation)	Voltage Settings (Sec) Pri (P.U.)	Frequency Setting (Hz)	Total Clearing Time (Sec.)	Current Setting Sec (Pri)	Relay Setting Time (Seconds)
27P1 - Fast Undervoltage	X	Y (Relay.01)	(60) 3983.7 (0.5)	-	66 (1.1)	-	63 (1.05)
27P2 - Undervoltage	X	Y (Relay.01)	(105.6) 7011.3 (0.88)	-	180 (3)	-	177 (2.95)
27P3 - Undervoltage	-	N	-	-	-	-	-
59P1 - Overvoltage	X	Y (Relay.01)	(132) 8764.2 (1.1)	-	120 (2)	-	117 (1.95)
59P2 - Fast Overvoltage	X	Y (Relay.01)	(144) 9560.9 (1.2)	-	9.6 (0.16)	-	6.6 (0.11)
59N - Neutral Voltage Displacement	X	Y (Relay.01)	(12) 796.7 (0.1)	-	80 (1.33)	-	117 (1.95)
81UP1 - Underfrequency	X	Y (Relay.01)	-	56.5	9.6 (0.16)	-	6.6 (0.11)
81UP2 - Underfrequency	X	Y (Relay.01)	-	58.5	18000 (300)	-	17997 (299.95)
81OP1 - Overfrequency	X	Y (Relay.01)	-	61.2	18000 (300)	-	17997 (299.95)
81OP2 - Overfrequency	X	Y (Relay.01)	-	62	9.6 (0.16)	-	6.6 (0.11)
51 - Overcurrent	X	Y (Relay.01)	-	-	CURVE: U4 TD: 2.0	0.43 (258.9A)	-
50 - Instantaneous Overcurrent	-	N	-	-	-	-	-
67 - Directional Overcurrent	-	N	-	-	-	-	-
50G - Instantaneous Ground Overcurrent	-	N	-	-	-	-	-
51G - Ground Overcurrent	X	Y (Relay.01)	-	-	CURVE: U4 TD: 1.0	0.14 (86.3A)	-
Block Close	-	Y (Relay.01)	(110) 7306.1 (0.917) ≤ V ≤ (126) 8365.8 (1.05)	59 ≤ s f ≤ 60.1	18000 (300)	-	-
32F - Directional Power	-	N	-	-	-	-	-
32R - Reverse Power	-	N	-	-	-	-	-
Relay Fail Alarm	X	Y (Relay.01)	-	-	3 (0.05)	-	-
Primary voltage setting values are 1 kV							
Time delay shown is total clear time, which includes mechanical operation time of 3 cycles (0.05 sec)							
Autoretoration is enabled following voltage and frequency trips only. The relay will lockout for any overcurrent trips							

[illegible]

P.E. sea/Consultant:

Project: 204633-RESEARCH DRIVE
STORAGE EAST
351 Research Drive,
Leominster, MA 01453
42.480833, -71.754316

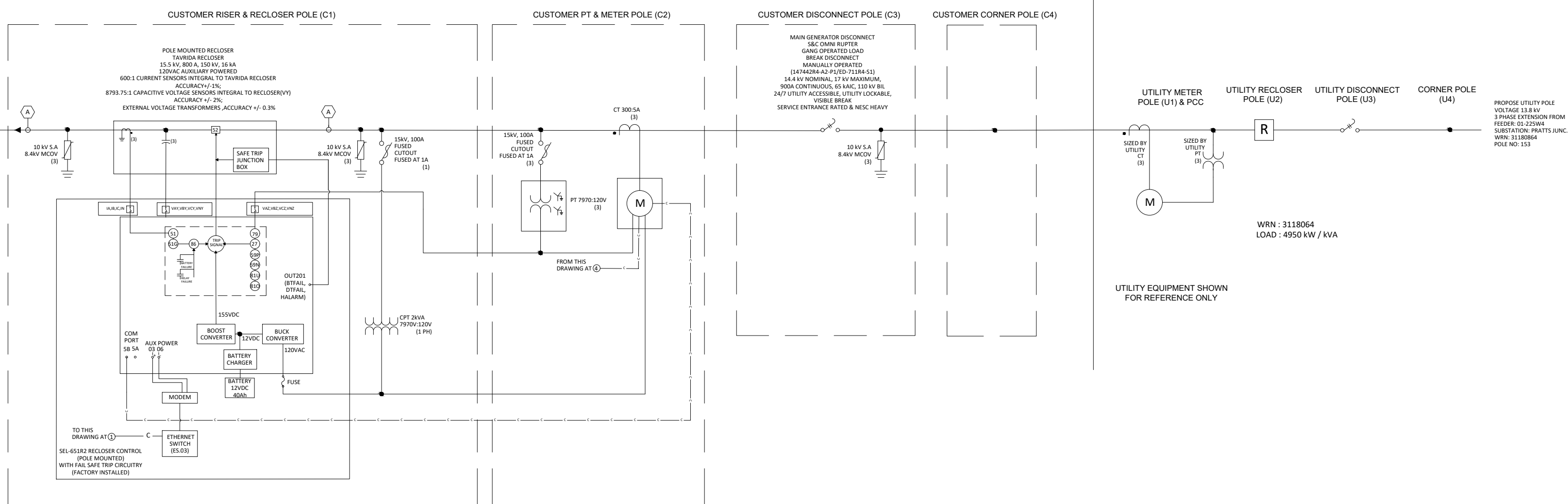
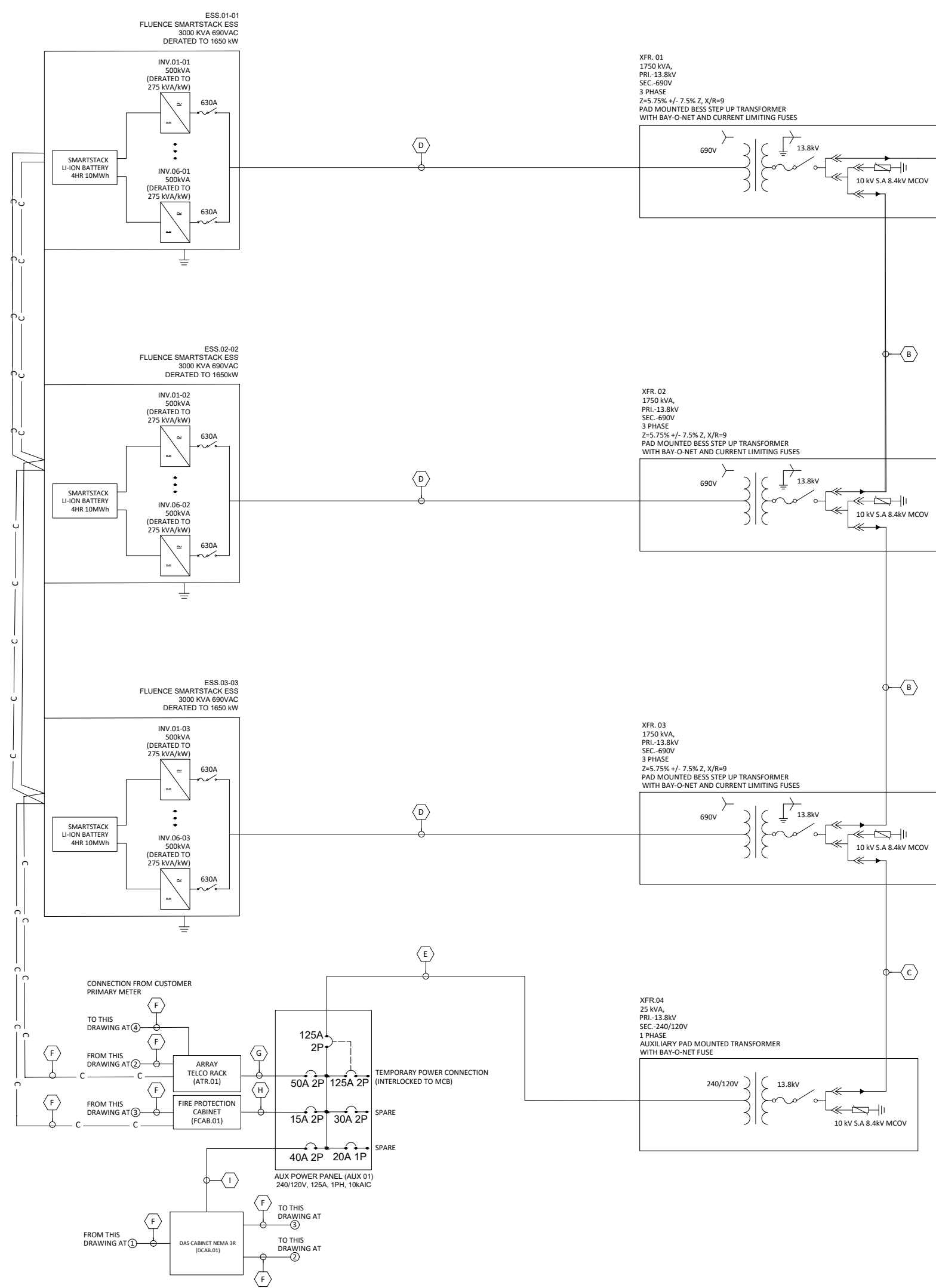
Drawing Title:

AC Single Line Diagram

Scale: N.T.S

Drawn by: Almiran

Dwg No:	Size: D	Sheet Rev:
E-601		C



NOTES:

GENERAL & LEGAL:

G1. INFORMATION CONTAINED IN THIS DRAWING IS PROPRIETARY AND CONFIDENTIAL BELONGING TO NEXAMP OF BOSTON, MA.

G2. USE OF THIS INFORMATION SHALL BE LIMITED TO THE SPECIFIC PROJECT IT WAS DEVELOPED FOR AND SHALL NOT BE REPRODUCED WITHOUT CONSENT FROM NEXAMP, INC.

G3. ALL WORK SHALL BE INSTALLED IN A NEAT MANNER AND IN ACCORDANCE WITH THE APPLICABLE VERSION OF THE NATIONAL ELECTRICAL CODE(NEC) AND ALL OTHER LAWS AND STANDARDS.

G4. CONTRACTOR SHALL ENSURE THAT PHASE CONDUCTORS HAVE ENOUGH SLACK TO BE RELOCATED TO ANY PHASE BUSHING AS NEEDED TO ACCOMMODATE UTILITY PHASE ROTATION.

UTILITY & TESTING:

U1. EQUIPMENT ON THE UTILITY-SIDE ARE ASSUMED. ACTUAL EQUIPMENT AND CONFIGURATION SHALL BE VERIFIED BY THE UTILITY. UTILITY'S STANDARDS FOR INTERCONNECTION WILL BE FOLLOWED.

U2. TO GAIN OPERATED DISCONNECT IS A VISIBLE BARRIER AND IS ACCESSIBLE TO THE UTILITY 24/7.

U3. THE INVERTERS ARE CAPABLE OF SHUTTING DOWN WITHIN 2 SECONDS IF DE-ENERGIZED.

U4. UTILITY-OWNED EQUIPMENT IS PROVIDED FOR REFERENCE ONLY AND MUST NOT BE USED FOR CONSTRUCTION PURPOSES. ALL SUCH EQUIPMENT REMAINS SUBJECT TO MODIFICATION AT THE DISCRETION OF THE UTILITY. THE UTILITY'S MANAGEMENT OF ANY CONSTRUCTION ACTIVITIES INVOLVING OR ADJACENT TO SAID EQUIPMENT SHALL BE THE UTILITY'S RESPONSIBILITY.

U5. ALL CONSTRUCTION WORK WILL ABIDE BY THE ESB 750 ESR 556. INSTALLATIONS WILL NOT INCLUDE ANY KIND OF TAPS, METR COLLARS OR ADAPTERS INSIDE METER SOCKETS, METER CABINETS OR ANYWHERE THERE ARE UN-METERED CONDUITS. ANY METERS AND DISCONNECTS WILL NEED TO BE GROUPED, POTENTIALLY LOCATED OUTSIDE AND 24/7 LOCABLE AND ACCESSIBLE, IN ACCORDANCE WITH ESB 7.1.1. ANY JUNCTION BOX OR THROUGH FOR LINE SIDE TAP WILL NEED TO BE 24/7 LOCABLE AND ACCESSIBLE. ALL EQUIPMENT & FINAL EQUIPMENT LOCATIONS WILL NEED TO BE APPROVED BY THE UTILITY AND GRID ENGINEER.

U6. DC POWER SUPPLY FOR INCLUDING (INCLUDING FAULT-SAFE CONTROLS) WITH INCLUDED UTILITY RESTORATION SETTINGS, WILL DEPICT THAT THE BATTERY IS RATED TO LAST FOR 8+HOURS*

PROJECT & EQUIPMENT DETAILS:
P1. (3) FLUENCE SMARTSTACK V2S, EACH RATED AT 1,650 kW / 10,000 kWh.
P2. THE OPERATING SIZE OF THE BESS IS 4,950 kW / 30,000 kWh (4-HOURS).

NOTE: NOT FOR CONSTRUCTION. FOR UTILITY INTERCONNECTION APPLICATION PURPOSES ONLY.