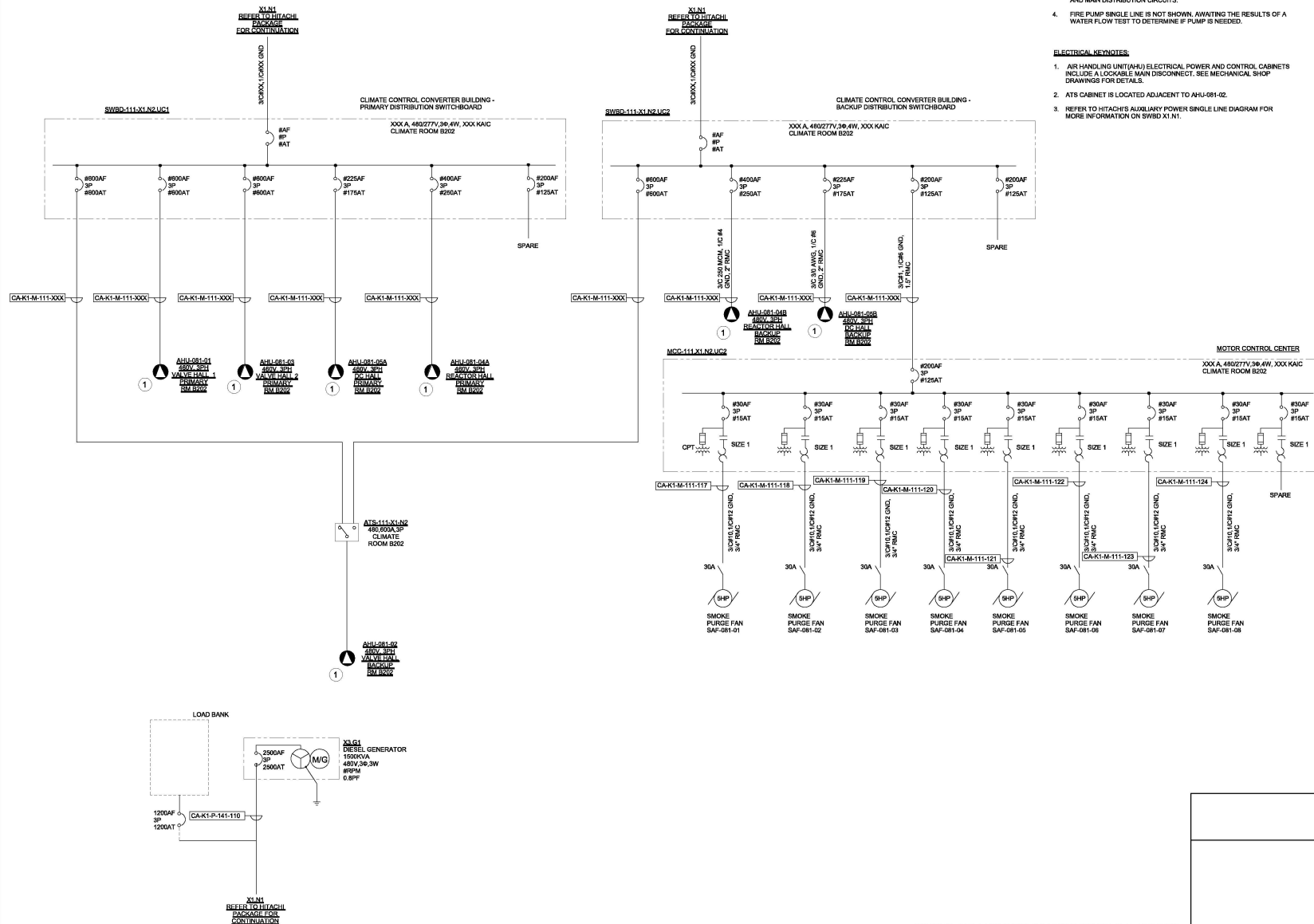


DATE	12/12/2022
PROJECT NO	105121
DRAWING BY	X.LIU
CHECKED BY	D.DUZAN
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K Engineering and
Land Surveying, P.C.

370 7th Avenue
SUITE 1804
New York, NY 10001

**SOWINSKI
SULLIVAN**

25 Mechanics Avenue
Sparks, NJ 07871

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Kiewit

470 Chestnut Ridge Rd # 2
Woodcliff Lake, NJ 07877

Hitachi Energy

901 Main Campus Drive
Raleigh, North Carolina 27606

PROJECT

CHPE
Champlain Hudson
Power Express

**Astoria HVDC
Converter Station**

31-45 20th Avenue, Astoria, Queens NY 11105
Block #650 - Lot #310 - BIN #4624437

**CONVERTER
BUILDING MECH.
VENT. & FIRE PUMP
SINGLE LINE**

STATE OF NEW YORK
Seal of the State of New York
Professional Engineer

DATE: 12/13/2022
INQUIRY NO: 169121
DRAWING BY: XLSU
CHECKED BY: D.DALAN
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E-301.00

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PANELBOARD: SWBD-111-X3.N2

VOLTAGE/PHASE/WIRE: 480Y/277V,3PH,4W
BUS AMPACITY: 600A
MAINS: 600A MCB
MCC RATING: 65MVA, FULLY RATED

LOCATION: AUXILIARY ROOM B102
FED FROM: SWBD-X1.N1
MOUNTING: SURFACE
ENCLOSURE: NEMA 1

PANELBOARD ACCESSORIES/OPTIONS:

CIRCUIT NO.	CIRCUIT DESCRIPTION	VAPPHASE			WIRE SIZE	GND SIZE	BKR SIZE	BKR SIZE	GND SIZE	WIRE SIZE	VAPPHASE			CIRCUIT DESCRIPTION	CIRCUIT NO.
		A	B	C							A	B	C		
SECTION 1															
1	PNL-111-X3.N2.1 - SERVICE BUILDING	50,043					200	3	2	40		6,452		TLC-141-X3.N2.1 - MVS ENCLOSURE	2
3			48,637									6,385			4
5		6,699		36,023								18,384			6
7	PNL-141-X3.N2.7 - RELAY ENCLOSURE		6,721				50	3	3	80		18,473		PNL-141-X3.N2.8 - STORAGE ENCLOSURE	8
9													10,735		10
11	TLC-111-X3.N2.3.1	8,816		2,106			70	2						CC-420-X3.N2.3- OUTDOOR LIGHTING	12
13	POSITIVE & NEGATIVE VALVE ROOM		7,254					3							14
15	TLC-081-X3.N2.4.1 - REACTOR HALL A103			9,526			40	2	2	40					16
17		9,694									5,965			TLC-EMG-X3.N2.11.1	18
19	TLC-081-X3.N2.5.1 - DC HALL A104		4,755				40	2				8,047			20
21				9,465											22
23	UPS-111-X3.N2.11 - SERVICE BUILDING	0	0									0	0		24
25		0	0									0	0		26
27								3	3						28
29	PNL-141-X3.N2.10								1			0	0		30
31			0						3	1		0	0		32
33			0						1			0	0		34
35									1			0	0		36
37		0	0						1	1		0	0		38
39									1	1					40
41									1	1			0		42
SUBTOTALS		75,251	65,376	57,121							30,802	30,905	10,735	SUBTOTALS	

CONNECTED TOTALS	
PHASE A	VA 105,052
AMPS	383
PHASE B	VA 96,280
AMPS	348
PHASE C	VA 67,658
AMPS	245
TOTAL	VA 270,189
AMPS	325

LOAD		CONN. VA		DF		LOAD		CONN. VA		DF	
HVAC - HEATING	0	1.00	REFRIGERATION	0	1.00						
HVAC - COOLING	0	0.00	KITCHEN EQUIP	0	1.00						
SUPP HEAT	0	1.00	SHOW WINDOW	0	1.25						
MOTORS	0	1.00	DISPLAY CASE/SIGN	0	1.25						
LARGEST MOTOR	0	1.25	LIGHTING	0	1.25						
RECEPTACLES	0	1.00/5	TRACK LIGHTING	0	1.00						
MISCELLANEOUS	270,189	1.00	EXISTING	0	1.00						

DEMAND TOTAL	
VA	270,189
AMPS	325

PANELBOARD NOTES:
HC - HANDLE CLAMP (ON POSITION)
LCK - PAD-LOCKABLE DEVICE (OFF)
SW - SWITCH RATED

GFCL - GROUND FAULT CIRCUIT INTERRUPTER OL - REFER TO ONE-LINE DIAGRAM
GFEP - GROUND FAULT EQUIPMENT PROTECTION# - ROUTE THROUGH CONTACTOR #
ST - SHUNT TRIP

PANELBOARD: PNL-111-X3.N2.1.1

VOLTAGE/PHASE/WIRE: 208Y/120V,3PH,4W
BUS AMPACITY: 125A
MAINS: 110A MCB
MCC RATING: 10MVA, FULLY RATED

LOCATION: AUXILIARY ROOM B102
FED FROM: PNL-111-X3.N2.1
MOUNTING: SURFACE
ENCLOSURE: NEMA 1

PANELBOARD ACCESSORIES/OPTIONS:

CIRCUIT NO.	CIRCUIT DESCRIPTION	VAPPHASE			WIRE SIZE	GND SIZE	BKR SIZE	BKR SIZE	GND SIZE	WIRE SIZE	VAPPHASE			CIRCUIT DESCRIPTION	CIRCUIT NO.	
		A	B	C							A	B	C			
SECTION 1																
1	REC - B101, B102, OUTDOOR	900.0					20	1	1	20	900.00			REC - B104,B105, B106, B107	2	
3	EF-111-04,06,07 - B102,B105,B112		149.40				20	1	1	20		900.00		REC - B107,B109	4	
5	REC - B115, B116			1,080.00			20	1	1	20		900.00		REC - B110,B111,B112	6	
7	REC - B111, B115, OUTDOOR	720.00					20	1	1	20	1,080.00			REC - B201, B205	8	
9	REC - B204, B203		1,080.00				20	1	1	20	1,000			COFFEE MAKER REC - B111	10	
11	MICROWAVE REC - B111			1,000			20	1	1	20	1,000			REFR. REC - B111	12	
13	REC - B104, B105, OUTDOOR	1,080					20	2	2	20	104			AD-111-05,06,09,10,11 - B102,B104,B107	14	
15	AD-111-01A,01B,02,03 - B115,B116		399				20	2	2		104			B109	16	
17			399				20	2	2			187		EF-111-05,06,09 - B110,B113,B116	18	
19	AD-111-04,07,08,15 - B111,B110	83					20	2	2		88			AD-111-12,13,14,16 - B201,B203,B204,B205	20	
21		83					20	2	2		88				22	
23	EF-111-03A,03B - B203			1,056			20	2	2		2,080		2,080	CU-111-01B - B203	24	
25	CU-111-01A - B203		2,080				30	3	30		2,080			REC - B114, OUTDOOR	26	
27			2,080				20	2	20		720			REC - B202	28	
29	REC - B108,B110,B113			1,080			20	1	20		720		720	REC - B203	30	
31	REC - B102,B103		720				20	1	20		720				32	
33			3,723				40	3	3	40		3,482		3,482	CU-111-03 - B202	34
35	CU-111-02 - B202			3,723			30	2	30		3,482				36	
37		3,723					30	2	30			600		2,579	DRAINING FOUNDATION - B115	38
39	CU-111-04 - B203		2,080		2,080						2,579			2,579	NITROGEN GENERATOR - B115	40
41		9,412														42
43	BWH-111-02 - B113		9,412				100	3	1	100		0		0		44
45				9,412			1	1	1		0		0			46
47		0					1	1	1		0		0			48
49		0					1	1	1		0		0			50
51		0		0			1	1	1		0		0			52
53		0		0			1	1	1		0		0			54
55		0					1	1	1		0		0			56
57		0					1	1	1		0		0			58
59		0					1	1	1		0		0			60
SUBTOTALS		18,717.61	19,006.37	19,829.77							11,034.07	8,794.87	10,946.87	SUBTOTALS		

CONNECTED TOTALS	
PHASE A	VA 26,752
AMPS	249
PHASE B	VA 25,801
AMPS	215
PHASE C	VA 35,779
AMPS	298
TOTAL	VA 88,332
AMPS	240

LOAD		CONN. VA		DF		LOAD		CONN. VA		DF	
HVAC - HEATING	21,325	1.00	REFRIGERATION	0	1.00						
HVAC - COOLING	14,120	0.00	KITCHEN EQUIP	2,000	1.00						
SUPP HEAT	28,235	1.00	SHOW WINDOW	0	1.25						
MOTORS	4,138	1.00	DISPLAY CASE/SIGN	0	1.25						
LARGEST MOTOR	298	1.25	LIGHTING	0	1.25						
RECEPTACLES	12,600	1.00/5	TRACK LIGHTING	0	1.00						
MISCELLANEOUS	2,913	1.00	EXISTING	0	1.00						

DEMAND TOTAL	
VA	70911
AMPS	187

PANELBOARD NOTES:
HC - HANDLE CLAMP (ON POSITION)
LCK - PAD-LOCKABLE DEVICE (OFF)
SW - SWITCH RATED

GFCL - GROUND FAULT CIRCUIT INTERRUPTER OL - REFER TO ONE-LINE DIAGRAM
GFEP - GROUND FAULT EQUIPMENT PROTECTION# - ROUTE THROUGH CONTACTOR #
ST - SHUNT TRIP

PANELBOARD: PNL-111-X3.N2.1

VOLTAGE/PHASE/WIRE: 480Y/277V,3PH,4W/LOCATION: AUXILIARY ROOM B102
BUS AMPACITY: 225A
MAINS: 200A MCB
MCC RATING: 14MVA, FULLY RATED

LOCATION: AUXILIARY ROOM B102
FED FROM: SWBD-111-X3.N2
MOUNTING: SURFACE
ENCLOSURE: NEMA 1

PANELBOARD ACCESSORIES/OPTIONS:

CIRCUIT NO.	CIRCUIT DESCRIPTION	VAPPHASE			WIRE SIZE	GND SIZE	BKR SIZE	BKR SIZE	GND SIZE	WIRE SIZE	VAPPHASE			CIRCUIT DESCRIPTION	CIRCUIT NO.
		A	B	C							A	B	C		
SECTION 1															
1	PNL-111-X3.N2.1.1	24,503					70	3	80		14,382			PNL-111-X3.N2.1.3	2
3			21,121								14,382			THRU XFMR-111-X3.N2.1	4
5				24,378					1	20				SPARE	6
7	PNL-111-X3.N2.1.2	3,288					25	3	20		2,217				8
9			3,263								2,217			EHU-111-01 - B113	10
11				3,775								2,217			12
13			610								610				14
15				610					20	3		610		EF-111-02A,02B - B205	16
17					610				1			610			18
19			2,217								2,217				20
21	EHU-111-02 - B115			2,217			20	3	20			2,217		EHU-111-03 - B108	22
23					2,217							2,217			24
25			0					1	1			0			26
27				0					1	1			0		28
29					0				1	1			0		30
31						0			1	1			0		32
33			0						1	1			0		34
35				0					1	1			0		36
37					0				1	1			0		38
39			0						1	1			0		40
41									1	1					42
SUBTOTALS		30,617	27,211	30,980							19,426	19,426	5,044	SUBTOTALS	

CONNECTED TOTALS		
PHASE A	VA	50,043
	AMPS	181
PHASE B	VA	46,637
	AMPS	168
PHASE C	VA	36,023
	AMPS	130
TOTAL	VA	132,703
	AMPS	160

PANELBOARD: PNL-111-X3.N2.1.3

VOLTAGE/PHASE/WIRE: 120/240V, 1PH/3W LOCATION: AUXILIARY ROOM B102
BUS AMPLACITY: 225A FED FROM: PNL-111-X3.N2.1
MINS: 175A MCB MOUNTING: SURFACE
AIC RATING: 10MCA, FULLY RATED ENCLOSURE: NEMA 1

CKT NO.	CIRCUIT DESCRIPTION	VAPHASE A B	WIRE SIZE	GND SIZE	BKR SIZE	BKR SIZE	GND SIZE	WIRE SIZE	VAPHASE A B	CIRCUIT DESCRIPTION	CKT NO.
SECTION 1											
1	240V REC - B115	250.0			20	2	20		250.00	240V REC - B204	2
3		250.00							250.00		4
5	WH-111-01 - B112	6,941.18			70	2	2		0.00		6
7		6,941.18							0.00		8
9	WH-111-03 - B111	6,941.18			70	2	1		0.00		10
11		6,941.18							0.00		12
13		0			1	1			0		14
15		0			1	1			0		16
17		0			1	1			0		18
19		0			1	1			0		20
21		0			1	1			0		22
23		0			1	1			0		24
SUBTOTALS		14132	14132					250	250		
CONNECTED TOTALS											
PHASE A		VA	14,382								
AMPS		120									
PHASE B		VA	14,382								
AMPS		120									
PHASE C		VA									
AMPS											
TOTAL		VA	28,765								
AMPS		68									
LOAD											
HVAC - HEATING		0	1.00						0	1.00	
HVAC - COOLING		0	0.00						0	1.00	
SUPP HEAT		27,765	1.00						0	1.25	
MOTORS		0	1.00						0	1.25	
LARGEST MOTOR		0	1.25						0	1.25	
RECEPTACLES		1,000	1.00/5						0	1.00	
MISCELLANEOUS		0	1.00						0	1.00	
DEMAND TOTAL											
TOTAL		VA	28,765								
AMPS		68									

PANELBOARD NOTES
HC - HANDLE CLAMP (ON POSITION)
LCK - PADLOCKABLE DEVICE (OFF)
SW - SWITCH RATED
GFCI - GROUND FAULT CIRCUIT INTERRUPTER OL - REFER TO ONELINE DIAGRAM
GFEF - GROUND FAULT EQUIPMENT PROTECTION C - ROUTE THROUGH CONTACTOR #
ST - SHUNT TRIP

PANELBOARD: TLC-081-X3.N2.4.1

VOLTAGE/PHASE/WIRE: 120/240V, 1PH/3W LOCATION: REACTOR HALL A103 ENTRANCE
BUS AMPLACITY: 150A FED FROM: SWBD-111-X3.N2
MINS: 150A MCB MOUNTING: SURFACE
AIC RATING: 10MCA, FULLY RATED ENCLOSURE: NEMA 4X

CKT NO.	CIRCUIT DESCRIPTION	VAPHASE A B	WIRE SIZE	GND SIZE	BKR SIZE	BKR SIZE	GND SIZE	WIRE SIZE	VAPHASE A B	CIRCUIT DESCRIPTION	CKT NO.
SECTION 1											
1	MODULAR COMBI - REACTOR HALL A103	500			20	2	20		500	MODULAR COMBI - REACTOR HALL A103	2
3		500							500		4
5	MODULAR COMBI - REACTOR HALL A103	500			20	2	20		500	MODULAR COMBI - REACTOR HALL A103	6
7		500							500		8
9	REACTOR HALL LIGHTS NORMAL	1,770			20	1	1		800	HOA SWITCH	10
11	LTG - ROADWAY	2,548			20	1	1		800	LTG - CONVERTER AND SERVICE	12
13	LTG - XFMR BAY	620			20	1	1		620	LTG - XFMR BAY	14
15	LTG - XFMR BAY	620			20	1	1		620	LTG - XFMR BAY	16
17	SPARE	0			20	1	1		620	LTG - XFMR BAY	18
19	RECEPTACLES - XFMR BAY	540			20	1	1		500	VESDA PANEL - A103	20
21	REACTOR HALL LIGHTS NORMAL	1,770			20	1	1		0		22
23	LTG - XFMR BAY	0			1	1			0		24
25		0			1	1			0		26
27		0			1	1			0		28
29		0			1	1			0		30
SUBTOTALS		5,180	5,328					3,040	3,016		
CONNECTED TOTALS											
PHASE A		VA	8,200								
AMPS		68									
PHASE B		VA	8,344								
AMPS		70									
PHASE C		VA									
AMPS											
TOTAL		VA	16,544								
AMPS		40									
LOAD											
HVAC - HEATING		0	1.00						0	1.00	
HVAC - COOLING		0	0.00						0	1.00	
SUPP HEAT		0	1.00						0	1.25	
MOTORS		0	1.00						0	1.25	
LARGEST MOTOR		0	1.25						0	1.25	
RECEPTACLES		4,540	1.00/5						0	1.00	
MISCELLANEOUS		1,300	1.00						0	1.00	
DEMAND TOTAL											
TOTAL		VA	19,220								
AMPS		48									

PANELBOARD NOTES
HC - HANDLE CLAMP (ON POSITION)
LCK - PADLOCKABLE DEVICE (OFF)
SW - SWITCH RATED
GFCI - GROUND FAULT CIRCUIT INTERRUPTER OL - REFER TO ONELINE DIAGRAM
GFEF - GROUND FAULT EQUIPMENT PROTECTION C - ROUTE THROUGH CONTACTOR #
ST - SHUNT TRIP

PANELBOARD: TLC-111-X3.N2.3.1

VOLTAGE/PHASE/WIRE: 120/240V, 1PH/3W LOCATION: SERVICE BLDG - VALVE RM B115
BUS AMPLACITY: 150A FED FROM: SWBD-111-X3.N2
MINS: 150A MCB MOUNTING: SURFACE
AIC RATING: 10MCA, FULLY RATED ENCLOSURE: NEMA 1

CKT NO.	CIRCUIT DESCRIPTION	VAPHASE A B	WIRE SIZE	GND SIZE	BKR SIZE	BKR SIZE	GND SIZE	WIRE SIZE	VAPHASE A B	CIRCUIT DESCRIPTION	CKT NO.
SECTION 1											
1	MODULAR COMBI	500			20	2	20		500	MODULAR COMBI	2
3	POSITIVE VALVE ROOM	500							500	POSITIVE VALVE ROOM	4
5	MODULAR COMBI	500			20	2	20		500	MODULAR COMBI	6
7	POSITIVE VALVE ROOM	500							500	POSITIVE VALVE ROOM	8
9	MODULAR COMBI	500			20	2	20		500	MODULAR COMBI	10
11	NEGATIVE VALVE ROOM	500			20	2	20		500	NEGATIVE VALVE ROOM	12
13	MODULAR COMBI	500							500	MODULAR COMBI	14
15	NEGATIVE VALVE ROOM	500			20	2	20		500	NEGATIVE VALVE ROOM	16
17	VALVE HALL LIGHTS NORMAL	1,770			20	1	1		500	VESDA PANEL - A101	18
19	VALVE HALL LIGHTS NORMAL	1,770	2,124		20	1	1		500	VESDA PANEL - A102	20
21	VALVE HALL LIGHTS NORMAL	1,770			20	1	1		0	SPARE	22
23	SPARE	0			20	1	1		0	SPARE	24
25	SPARE	0			1	1			0	SPARE	26
27	SPARE	0			1	1			0	SPARE	28
29	SPARE	0			1	1			0	SPARE	30
SUBTOTALS		5,540	4,124					2,600	2,500		
CONNECTED TOTALS											
PHASE A		VA	8,040								
AMPS		67									
PHASE B		VA	8,024								
AMPS		55									
PHASE C		VA									
AMPS											
TOTAL		VA	16,064								
AMPS		35									
LOAD											
HVAC - HEATING		0	1.00						0	1.00	
HVAC - COOLING		0	0.00						0	1.00	
SUPP HEAT		0	1.00						0	1.25	
MOTORS		0	1.00						0	1.25	
LARGEST MOTOR		0	1.25						5,664	1.25	
RECEPTACLES		8,000	1.00/5						0	1.00	
MISCELLANEOUS		1,000	1.00						0	1.00	
DEMAND TOTAL											
TOTAL		VA	16,064								
AMPS		35									

PANELBOARD NOTES
HC - HANDLE CLAMP (ON POSITION)
LCK - PADLOCKABLE DEVICE (OFF)
SW - SWITCH RATED
GFCI - GROUND FAULT CIRCUIT INTERRUPTER OL - REFER TO ONELINE DIAGRAM
GFEF - GROUND FAULT EQUIPMENT PROTECTION C - ROUTE THROUGH CONTACTOR #
ST - SHUNT TRIP

PANELBOARD: TLC-081-X3.N2.5.1

VOLTAGE/PHASE/WIRE: 120/240V, 1PH/3W LOCATION: DC HALL A104 ENTRANCE
BUS AMPLACITY: 100A FED FROM: SWBD-111-X3.N2
MINS: 80A MCB MOUNTING: SURFACE
AIC RATING: 10MCA, FULLY RATED ENCLOSURE: NEMA 4X

CKT NO.	CIRCUIT DESCRIPTION	VAPHASE A B	WIRE SIZE	GND SIZE	BKR SIZE	BKR SIZE	GND SIZE	WIRE SIZE	VAPHASE A B	CIRCUIT DESCRIPTION	CKT NO.
SECTION 1											
1	MODULAR COMBI - DC HALL A104	500			20	2	20		500	MODULAR COMBI - DC HALL A104	2
3		500							500		4
5	MODULAR COMBI - DC HALL A104	500			20	2	20		500	MODULAR COMBI - DC HALL A104	6
7		500							500		8
9	REC - A105	540			20	1	1		0	SPARE	10
11	DC HALL LIGHTS NORMAL	1,770			20	1	1		500	VESDA PANEL - A104	12
13	DC HALL LIGHTS NORMAL	1,770			20	1	1		0		14
15		0			1	1			0		16
17		0			1	1			0		18
19		0			1	1			0		20
21		0			1	1			0		22
23		0			1	1			0		24
SUBTOTALS		3,310	2,770					1,000	1,500		
CONNECTED TOTALS											
PHASE A		VA	4,310								
AMPS		36									
PHASE B		VA	4,270								
AMPS		36									
PHASE C		VA									

PANELBOARD: TLC-141-X3.N2.6.1

VOLTAGE/PHASE/WIRE: 120/240V, 1PH, 3W LOCATION: 141S ENCLOSURE
BUS AMPACITY: 150A FED FROM: SWBD-111-X3.N2
MAINS: 150A MCB MOUNTING: SURFACE
ENCLOSURE: NEMA 1

PANELBOARD ACCESSORIES/OPTIONS: 25 KVA MIN-POWER CENTER

CIRCUIT DESCRIPTION															
CKT NO.	CIRCUIT DESCRIPTION	VAPHASE		WIRE SIZE	GND SIZE	BKR SIZE	BKR P	BKR SIZE	GND WIRE SIZE	VAPHASE		CIRCUIT DESCRIPTION	CKT NO.		
		A	B							A	B				
SECTION 1															
1	TVSS	0		12	12	20	2	2	20	12	12	500	RCPT 240V • ME101, ME102	2	
3												500		4	
5	LTG • EXTERIOR ME101 & ME102	85		12	12	20	1	1	20	12	12	720	RECEPTACLES • ME101	6	
7	LTG • EXTERIOR ME101		186	12	12	20	1	1	20	10	10	2,080	CU-141-03A • ME101	8	
9	LTG • INTERIOR ME102	248		12	12	20	1	1				2,080		10	
11	HVAC PANEL • ME102		500	12	12	20	1	1	2	30	10	10	2,080	CU-141-03B (STANDBY) • ME101	12
13	HEAT TRACE	500		12	12	20	1	1				2,080		14	
15	RECEPTACLES • ME102		800	12	12	20	1	1	2	20	12	12		16	
17	CU-141-04A • ME102	2,080		10	10	30	2	2				52	AC-141-03A, 03B • ME101	18	
19			2,080						2	20	12	12	52	AC-141-04A, 04B • ME102	20
21	CU-141-04B (STANDBY) • ME102	2,080		10	10	30	2	2				52		22	
23			2,080									0		24	
25	ACS POWER SUPPLY 6	144		12	12	20	1	1				0		26	
27		0	0				1	1				0		28	
29		0	0				1	1				0		30	
31		0	0				1	1				0		32	
33		0	0				1	1				0		34	
35		0	0				1	1				0		36	
37		0	0				1	1				0		38	
39		0	0				1	1				0		40	
41		0	0				1	1				0		42	

SUBTOTALS		5,131	5,748			5,484	4,764	SUBTOTALS	
CONNECTED TOTALS									
PHASE A	VA	LOAD	CONN. VA	DF	LOAD	CONN. VA	DF		
	AMPS	89	HVAC • HEATING	5,424	1,000	REFRIGERATION	0	1,00	
PHASE B	VA	10,510							
	AMPS	89	HVAC • COOLING	5,424	0.00	KITCHEN EQUIP	0	1,00	
PHASE C	VA								
	AMPS	89	SUPP HEAT	0	1,00	SHOW WINDOW	0	1,25	
	AMPS	89	MOTORS	0	1,00	DISPLAY CASE/SIGN	0	1,25	
	AMPS	21,131	LARGEST MOTOR	0	1,25	LIGHTING	519	1,25	
TOTAL	AMPS	51	RECEPTACLES	2,632	1,000	TRACK LIGHTING	0	1,00	
	AMPS	51	MISCELLANEOUS	1,144	1,00	EXISTING	0	1,00	
								DEMAND TOTAL	
								TOTAL	AMPS 31
									12837

PANELBOARD NOTES
RC - HANDLE CLAMP (ON POSITION)
LCK - PAD-LOCKABLE DEVICE (OFF)
SW - SWITCH RATED

PANELBOARD: TLC-141-X3.N2.7.1

VOLTAGE/PHASE/WIRE: 120/240V, 1PH, 3W LOCATION: AC RELAY ENCLOSURE
BUS AMPACITY: 100A FED FROM: PNL-141-X3.N2.7
MAINS: 80A MCB MOUNTING: SURFACE
ENCLOSURE: NEMA 1

PANELBOARD ACCESSORIES/OPTIONS: 15 KVA MIN-POWER CENTER
480/120/240 VOLTS

CKT NO.		CIRCUIT DESCRIPTION		VAPHASE				CIRCUIT DESCRIPTION				CKT NO.	
		A	B	WIRE SIZE	GND SIZE	BKR P	BKR SIZE	GND WIRE SIZE	VAPHASE	A	B		
SECTION 1													
1	TVSS	0				1	11	20	12	12	360	RCPT • K101	2
3		0	0				1	11	20	12	540	RCPT • K101	4
5						2	2	20	12	12	500	240V RCPT • K101	6
7	XTG • WEST EXTERIOR LIGHTING	0	85	11	12	20	1	20	12	12	500		8
9	XTG • EAST EXTERIOR LIGHTING	65		12	12	20	1	20	12	12	116	AC-141-01A,02A • K101	10
11	XTG • EAST ROW • HOUSE LIGHTING		310	12	12	20	1				116		12
13	XTG • WEST ROW • HOUSE LIGHTING	310		12	12	20	1	20	12	12	116	AC-141-01B,02B • K101	14
15	CU-141-01 • K101	2,496		10	10	40	2						16
17		2,496					1	20	12	12	500	RSFACU • K101	18
19	CU-141-02 • K101	2,496	2,496	10	10	40	2				0		20
21		2,496									0		22
23	ROOF HEAT TRACE		500	12	12	20	1				0	0	24
25	ACS POWER SUPPLY 4	144		12	12	20	1				0		26
27		0	0				1				0	0	28
29		0	0				1				0	0	30
31		0	0				1				0	0	32
33		0	0				1				0	0	34
35		0	0				1				0	0	36
37		0	0				1				0	0	38
39		0	0				1				0	0	40
41		0	0				1				0	0	42
SUBTOTALS		5,511	5,867						1,593	1,273			SUBTOTALS

CONNECTED TOTALS								
PHASE A	VA	7,104	LOAD	CONN. VA	DF	LOAD	CONN. VA	DF
	AMPS	59	HVAC + HEATING	5,225	1,000	REFRIGERATION	0	1,00
PHASE B	VA	7,140	HVAC + COOLING <td>5,225</td> <td>0.00</td> <td>KITCHEN EQUIP</td> <td>0</td> <td>1,00</td>	5,225	0.00	KITCHEN EQUIP	0	1,00
	AMPS	59	SUPP HEAT	0	1,000	SHOW WINDOW	0	1,25
PHASE C	VA	MOTORS <td>0</td> <td>1,000</td> <td>DISPLAY CASE/SIGN</td> <td>0</td> <td>1,25</td>	0	1,000	DISPLAY CASE/SIGN	0	1,25	
	AMPS	59	LARGEST MOTOR	0	1,25	LIGHTING	750	1,25
TOTAL	VA	14,244	RECEPTACLES	1,900	1,000	TRACK LIGHTING	0	1,00
	AMPS	34	MISCELLANEOUS	1,144	1,00	EXISTING	0	1,00

PANELBOARD NOTES
RC - HANDLE CLAMP (ON POSITION)
LCK - PAD-LOCKABLE DEVICE (OFF)
SW - SWITCH RATED

PANELBOARD: PNL-141-X3.N2.7

VOLTAGE/PHASE/WIRE: 480/277V, 3PH, 4W LOCATION: RELAY ENCLOSURE
BUS AMPACITY: 100A FED FROM: SWBD-111-X3.N2
MAINS: 80A MCB MOUNTING: SURFACE
ENCLOSURE: NEMA 1

PANELBOARD ACCESSORIES/OPTIONS:

CIRCUIT WIRING DATA SHEET															
CKT NO.	CIRCUIT DESCRIPTION	VAPHASE			WIRE GND	BKR	BKR	GND	WIRE	VAPHASE			CIRCUIT DESCRIPTION	CKT NO.	
		A	B	C	SIZE	SIZE	P	SIZE	SIZE	A	B	C			
SECTION 1															
1	TLC-141-X3.N2.7.1	4,592			3	8	40	2		2,106			SWING GATE	2	
3	RELAY ENCLOSURE		4,615						3	20	20	2,106			4
5			0	0								2,106			6
7														8	
9		0	0					1	1			0	0	10	
11								1	1					12	
13			0	0				1	1			0	0	14	
15								1	1					16	
17		0	0	0				1	1			0	0	18	
19								1	1					20	
21		0	0					1	1			0	0	22	
23								1	1					24	
SUBTOTALS		4,592	4,615	0						2,106	2,106	2,106		SUBTOTALS	
CONNECTED TOTALS															
PHASE A VA 6,688		LOAD		CONN. VA		DF		LOAD		CONN. VA		DF			
PHASE A AMPS 24		HVAC-HEATING		0		1.00		REFRIGERATION		0		1.00			
PHASE B VA 6,721		HVAC-COOLING		0		0.00		KITCHEN EQUIP		0		1.00			
PHASE B AMPS 24		SUPP HEAT		0		1.00		SWING WINDOW		0		1.25			
PHASE C VA 2,106		MOTORS		0		1.00		DISPLAY CASE/LIGHT		0		1.25			
PHASE C AMPS 8		RECEPT MOTOR		0		1.25		LIGHTING		0		1.25			
TOTAL VA 15,525		ARCEFACTS		0		1.00		5 TRACK LIGHTING		0		1.00			
												DEMAND TOTAL			
												TOTAL VA 15525			

TOTAL		AMPS	19	MISCELLANEOUS	15,525	1.00	EXISTING	0	1.00	TOTAL	AMPS	19
PANELBOARD NOTES												
HC - HANDLE CLAMP (ON POSITION)				GFCI - GROUND FAULT CIRCUIT INTERRUPTER OL - REFER TO ONE-LINE DIAGRAM								
LCK - PADLOCKABLE DEVICE (OFF)				GFEP - GROUND FAULT EQUIPMENT PROTECTION# - ROUTE THROUGH CONTACTOR #								
SW - SWITCH RATED				ST - SHUNT TRIP								

PANELBOARD NOTES
RC - HANDLE CLAMP (ON POSITION)
LCK - PAD-LOCKABLE DEVICE (OFF)
SW - SWITCH RATED

PANELBOARD: PNL-130-X3.N2.8

VOLTAGE/PHASE/WIRE: 480/277V, 3PH, 4W LOCATION: STORAGE ENCLOSURE
BUS AMPACITY: 100A FED FROM: SWBD-111-X3.N2
MAINS: 80A MCB MOUNTING: SURFACE
ENCLOSURE: NEMA 1

PANELBOARD ACCESSORIES/OPTIONS:

CIRCUITS: TAB-6, FULLY RATED														ENCLOSURE: TAB-1							
CKT NO.	CIRCUIT DESCRIPTION	VAPHAASE			WIRE SIZE	GND SIZE	BKR SIZE	BKR P	GND WIRE SIZE	VAPHASE			CIRCUIT DESCRIPTION			CKT NO.					
		A	B	C						A	B	C									
SECTION 1																					
1		0								0						2					
3	TVSS		0			12	12	15	3	15		0				4					
5				0							0					6					
7	ELECTRIC UNIT HEATER	2,805				12	12	15	3	15	12	2,563			ELECTRIC UNIT HEATER	8					
9	ELUH-130-01 • ST101		2,805									2,563			ELUH-130-03 • ST101	10					
11				2,805									2,563			12					
13	ELECTRIC UNIT HEATER	2,805				12	12	15	3	15	12	2,563			ELECTRIC UNIT HEATER	14					
15	ELUH-130-02 • ST101		2,805									2,563			ELUH-130-04 • ST101	16					
17				2,805									2,563			18					
19	TLCL-130-03-NG,1	7,649					70	2				0			CC-020-03-NG,1	20					
21	STORAGE ROOM ST101		7,738					3				0			SITE LIGHTING CABINET	22					
23				0								0		0		24					
25		0						1	1			0				26					
27								1	1							28					
29								1	1							30					
31		0						1	1							32					
33								1	1							34					
35								1	1			0		0		36					
37		0						1	1			0		0		38					
39								1	1							40					
41								1	1				0	0		42					

SUBTOTALS		13,259	13,347	5,610			5,128	5,128	5,128	SUBTOTAL	
CONNECTED TOTALS											
PHASE A	VA	18,384	LOAD	CONN. VA	DF	LOAD	CONN. VA	DF			
	AMPS	60	HVAC • HEATING	28,548	0	0	0	1,00			
	VA	16,673	HVAC • COOLING	0	0.00	KITCHEN EQUIP	0	1,00			
	AMPS	67	SUPP HEAT	0	1.00	SHOW WINDOW	0	1,25			
PHASE B	VA	10,735	MOTORS	3,658	1,000	DISPLAY CASE/SIGN	0	1,25			
	AMPS	30	LARGEST MOTOR	0	1,25	LIGHTING	0	1,25			
	VA	47,592	RECEPTACLES	0	1,000	TRACK LIGHTING	0	1,00			
TOTAL	AMPS	57	MISCELLANEOUS	15,387	1,00	EXISTING	0	1,00			
								DEMAND TOTAL			
								TOTAL	VA	47592	

PANELBOARD NOTES
RC - HANDLE CLAMP (ON POSITION)
LCK - PAD-LOCKABLE DEVICE (OFF)
SW - SWITCH RATED

PANELBOARD NOTES
RC - HANDLE CLAMP (ON POSITION)
LCK - PAD-LOCKABLE DEVICE (OFF)
SW - SWITCH RATED

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PANELBOARD: TLC-EMG-111-X3.N2.11.1

VOLTAGE/PHASE/WIRE: 120/240V, 1PH, 3W
BUS AMPACITY: 100A
MAIN: 10A MCB
ENCLOSURE: NEMA 1

LOCATION: AUXILIARY ROOM B102
FED FROM: SWB0-111-X3.N2
MOUNTING SURFACE
ENCLOSURE: NEMA 1

PANELBOARD ACCESSORIES/OPTIONS: 15 KVA MIN+POWER CENTER
480/120/240 VOLTS

CKT NO.	CIRCUIT DESCRIPTION	V/PHASE		WIRE		GND		BKR		BKR		GND		WIRE		V/PHASE		CIRCUIT DESCRIPTION	CKT NO.
		A	B	SIZE	SIZE	SIZE	SIZE	SIZE	SIZE	SIZE	SIZE	A	B						
SECTION 1																			
1	SERVICE BUILDING 1ST FLOOR EMG LIGHTS	0.0				20	11	1	20			0.00						SERVICE BUILDING 2ND FLOOR EMG LIGHTS	2
3	DG HALL EMG LIGHTS		1,590.00					20	11	1	20			1,590				REACTOR HALL EMG LIGHTS	4
5	VALVE HALL EMG LIGHTS	1,416.00						20	11	1	20			2,400.00				VALVE HALL EMG LIGHTS	6
7	RSFACU - B109		500.00					20	11	1	20				500			VELA10 - B201	8
9	SPARE					20	11	1	20									SPARE	10
11	ASD - A105		500.00					20	11	1	20							VELA10 - B201	12
13	VALVE HALL EMG LIGHTS	1,416				20	11	1	20			18						INTRUSION DETECTION CABINET	14
15		0				11	1	1	20			268						ACS POWER SUPPLY 2 AND 3	16
17		0				11	1	1	20			144						ACS POWER SUPPLY 1	18
19						11	1	1				0							20
21						11	1	1				0							22
23						11	1	1											24
SUBTOTALS		2,832.00 2,590.00										2,562.00 2,876.00						SUBTOTALS	

CONNECTED TOTALS	
PHASE A	VA 5,394
AMPS	45
PHASE B	VA 5,488
AMPS	46
PHASE C	VA
AMPS	
TOTAL	VA 10,882
AMPS	26

LOAD	CONN. VA	DF	LOAD	CONN. VA	DF
HVAC - HEATING	0	1.00	REFRIGERATION	0	1.00
HVAC - COOLING	0	0.00	KITCHEN EQUIP	0	1.00
SUPP HEAT	0	1.00	SHOW WINDOW	0	1.25
MOTORS	0	1.00	DISPLAY CASE/SIGN	0	1.25
LARGEST MOTOR	0	1.25	LIGHTING	5,736	1.25
RECEPTACLES	0	1.00/5	TRACK LIGHTING	0	1.00
MISCELLANEOUS	4,850	1.00	EXISTING	0	1.00

DEMAND TOTAL	
TOTAL	VA 12913
AMPS	29

PANELBOARD NOTES

HC - HANDLE CLAMP (ON POSITION)
LOK - PAD-LOCKABLE DEVICE (OFF)
SW - SWITCH RATED

GFCL - GROUND FAULT CIRCUIT INTERRUPTER OL - REFER TO ONE-LINE DIAGRAM
GFEP - GROUND FAULT EQUIPMENT PROTECTION# - ROUTE THROUGH CONTACTOR #
ST - SHUNT TRIP

PANELBOARD: TLC-130-X3.N2.8.1

VOLTAGE/PHASE/WIRE: 120/240V, 1PH, 3W
BUS AMPACITY: 150A
MAIN: 150A MCB
ENCLOSURE: NEMA 1

PANELBOARD ACCESSORIES/OPTIONS: 25 KVA MIN+POWER CENTER
480/120/240 VOLTS

CKT NO.	CIRCUIT DESCRIPTION	V/PHASE		WIRE		GND		BKR		BKR		GND		WIRE		V/PHASE		CIRCUIT DESCRIPTION	CKT NO.
		A	B	SIZE	SIZE	SIZE	SIZE	SIZE	SIZE	SIZE	SIZE	SIZE	SIZE	A	B				
SECTION 1																			
1	HVAC CONTROL PANEL - ST101	500				12	12	20	11	1	20	12	12	90				LTG - EXTERIOR WEST	2
3	ISAF-130-01 - ST101		0	1,920								11	1	20	12	12	90	LTG - EXTERIOR EAST	4
5	SPARE	0	500			12	12	20	21	1	20	10	10	64				LTG - CHANDY	6
7	RCPT - 240V											11	1	20	12	12	800	LTG - INTERIOR STORAGE	8
9		500										11	1	20	12	12	800	HDA SWITCH	10
11	RCPT EXTERIOR - ST101		720			10	10	20	11	1	20	12	12		1,638			LTG - AC YARD	12
13	RCPT INTERIOR - ST101	540				12	12	20	11	1	20	12	12	2,184				LTG - ROADWAY	14
15	SPARE	0				12	12	20	11	1	20	12	12		910			LTG - FENCE	16
17	LTG - CONVERTER WALLPACK N	450				12	12	12	11	1	20	12	12	1,458				LTG - CONVERTER AREA N	18
19	FIRE ALARM PANEL - ST101		500			12	12	20	11	1				0					20
21	ACS POWER SUPPLY 5	144				12	12	20	11	1				0					22
23		0																	24
25		0																	26

CONNECTED TOTALS	
PHASE A	VA 5,728
AMPS	56
PHASE B	VA 6,806
AMPS	57
PHASE C	VA
AMPS	
TOTAL	VA 13,534
AMPS	33

LOAD	CONN. VA	DF	LOAD	CONN. VA	DF
HVAC - HEATING	0	1.00	REFRIGERATION	0	1.00
HVAC - COOLING	0	0.00	KITCHEN EQUIP	0	1.00
SUPP HEAT	0	1.00	SHOW WINDOW	0	1.25
MOTORS	1,920	1.00	DISPLAY CASE/SIGN	0	1.25
LARGEST MOTOR	0	1.25	LIGHTING	7,410	1.25
RECEPTACLES	2,280	1.00/5	TRACK LIGHTING	0	1.00
MISCELLANEOUS	1,944	1.00	EXISTING	0	1.00

DEMAND TOTAL	
TOTAL	VA 15387
AMPS	37

PANELBOARD NOTES

HC - HANDLE CLAMP (ON POSITION)
LOK - PAD-LOCKABLE DEVICE (OFF)
SW - SWITCH RATED

GFCL - GROUND FAULT CIRCUIT INTERRUPTER OL - REFER TO ONE-LINE DIAGRAM
GFEP - GROUND FAULT EQUIPMENT PROTECTION# - ROUTE THROUGH CONTACTOR #
ST - SHUNT TRIP

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B	100% SUBMISSION	AJW/HSE	DJL/DAN	12/13/2022
A	INTERIM SUBMISSION	NJW	DJL/DAN	08/13/2022
REV	DESCRIPTION	DATE	DATE	DATE

Kiewit
470 Chestnut Ridge Rd #2
Woodcliff Lake, NJ 07677

Hitachi Energy
391 Main Campus Drive
Raleigh, North Carolina 27606

PROJECT **CHPE**
Champlain Hudson
Power Express
**Astoria HVDC
Converter Station**
31-45 20th Avenue, Astoria, Queens NY 11105
Block #850 • Lot #310 • BIN #4624437

**PANELBOARD
SCHEDULES-4**

DATE	12/13/2022
PROJECT NO.	188121
DRAWING BY	XJLB
CHECKED BY	DJL/DAN
DRAWING NO.	E-313.00
CADD FILE NO.	CF 89

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LIGHT FIXTURE SCHEDULE									
TYPE	MANUFACTURER/SERIES	NO.	LAMP	VOLTAGE	INPUT WATTS	INPUT VA	DESCRIPTION	FIXTURE NOTES	
A1	ETHICON ZA14.4 DE SERIES EQUIVALENT H.E. WILLIAMS D1 LED SERIES CORLETT RAZZ1 LED SERIES COLUMBIA L1224 SERIES	1	LED 3000 LUMENS 4000K, 82 CM	120	38	40	2W x 41 x 8-1/2" RECESSED DIRECT/INDIRECT LED TROFFER, GRID MOUNTING, WHITE FINISH, PROVIDE WITH GRID MOUNTING, STATIC AIR FUNCTION, METAL DIFFUSER WITH ROUND HOLES, AND PROVIDE WITH 100-1% 0-10V DIMMING DRIVER.		
A4	ETHICON ZA14.4 DE SERIES EQUIVALENT H.E. WILLIAMS D1 LED SERIES CORLETT RAZZ1 LED SERIES COLUMBIA L1224 SERIES	2	LED 2000 LUMENS 4000K, 82 CM	120	22	24	2W x 41 x 8-1/2" RECESSED DIRECT/INDIRECT LED TROFFER, GRID MOUNTING, WHITE FINISH, PROVIDE WITH GRID MOUNTING, STATIC AIR FUNCTION, METAL DIFFUSER WITH ROUND HOLES, AND PROVIDE WITH 100-1% 0-10V DIMMING DRIVER.		
E1	EMERGLITE HS SERIES	2	LED 12V 6W MR16 565 LUMENS (INCLUDED)	120	38	40	1-1/2" x 1-1/4" x 8-1/2" RECESSED LED EMERGENCY LIGHTING UNIT, FULLY ADJUSTABLE HEADS, PROVIDE WITH WHITE FINISH, 12V/30W LEAD-CALCIUM BATTERY, TWO HEADS, 50° BEMF PLASTIC MIRR HEAD STYLE, AND ADVANCED DIAGNOSTICS (NON-AUDIBLE).		
	EMERGLITE HPRL SERIES	2	LED 12V 6W MR16 565 LUMENS (INCLUDED)	120	-	-	8-1/8" x 8-1/8" x 8-1/2" REMOTE EXTERIOR LED EMERGENCY LIGHT FIXTURE, ENCLOSURE RATED NEMA 4X, TWIN FULLY ADJUSTABLE HEADS, GRAY FINISH, PROVIDE LOW VOLTAGE CONNECTION TO EXIST SKIN OR EMERGENCY LIGHTING UNIT WITHIN INTERIOR OF BUILDING AS INDICATED ON THE DRAWINGS, MOUNT TO EXTERIOR WALL, WITH TOP OF FIXTURE EVEN WITH TOP OF ADJACENT DOOR FRAME, UNO, USING NEMA 4X JUNCTION BOX.	1,3	
E2	EMERGLITE 12HP SERIES	2	LED 12V 6W MR16 565 LUMENS (INCLUDED)	120	38	40	1-1/2" x 1-1/4" x 8-1/2" LED EMERGENCY LIGHTING UNIT, ENCLOSURE RATED NEMA 4X, TWIN FULLY ADJUSTABLE HEADS, ADVANCED OPERATING TEMPERATURE, PROVIDE WITH 12V/30W LEAD-CALCIUM BATTERY, TWO HEADS, ADVANCED DIAGNOSTICS (AUDIBLE), MOUNT AT 10'-0" AFF UNO.		4
E3	ETHICON FEX LED SERIES	1	LED 4000 LUMENS 4000K, 80 CM	120	28	31	4" LONG LED LINEAR STRIP, PROVIDE WITH FLAT POLY PROST, WITH WHITE SUPER FINISH, AND RMBR BRACKETS FOR WALL MOUNTING, ENCLOSURE RATED NEMA 4X, IP 65 AMBIENT TEMP, RATING ABOVE 100 DEGREES F, PROVIDE MVOLT, MEDIUM DISTRIBUTION AND MOUNT AT 10'-0" AFF UNO.		
L1	ETHICON FEX LED SERIES	1	LED 8000 LUMENS 4000K, 80 CM	120	54	60	4" LONG LED LINEAR STRIP, PROVIDE WITH FLAT POLY PROST, WITH WHITE SUPER FINISH, AND RMBR BRACKETS FOR SUSPENDED MOUNTING, ENCLOSURE RATED NEMA 4X, IP 65 AMBIENT TEMP, RATING ABOVE 100 DEGREES F, PROVIDE MVOLT, MEDIUM DISTRIBUTION AND MOUNT AT 10'-0" AFF UNO.		
L2	ETHICON FEX LED SERIES	1	LED 2200 LUMENS 4000K, 80 CM	120	77	86	4" LONG LED LINEAR STRIP, PROVIDE WITH FLAT POLY PROST, WITH WHITE SUPER FINISH, AND RMBR BRACKETS FOR SUSPENDED MOUNTING, ENCLOSURE RATED NEMA 4X, IP 65 AMBIENT TEMP, RATING ABOVE 100 DEGREES F, PROVIDE MVOLT, MEDIUM DISTRIBUTION AND MOUNT AT 25'-0" AFF UNO.		
L3	ETHICON ZL10 SERIES EQUIVALENT H.E. WILLIAMS 75R LED SERIES CORLETT HSL SERIES COLUMBIA MSL LED SERIES	1	LED 9000 LUMENS 5000K, 80 CM	120	41	46	4" LONG LED LINEAR STRIP, PROVIDE WITH ROUND DROP LENS, WHITE FINISH, AND 10' AIRCRAFT CABLES, MOUNT AT 8'-0" AFF UNO.		
G22	ETHICON ZL10 SERIES EQUIVALENT H.E. WILLIAMS 75R LED SERIES CORLETT HSL SERIES COLUMBIA MSL LED SERIES	1	LED 9000 LUMENS 5000K, 80 CM	120	37.2	41	4" LONG LED LINEAR STRIP, PROVIDE WITH ROUND DROP LENS, WHITE FINISH, AND T-GRID MOUNTING KIT, MOUNT AT CEILING HEIGHT.		
S16	38 EGO SERIES	1	LED 9000 LUMENS 5000K, 80 CM	120	48	53	4" WET LOCATION LED WALL MOUNTED LIGHT, WALL MOUNT AT 8'-0" AFF UNO.		
EG4	COLUMBIA HEM SERIES	1	LED 8000 LUMENS 5000K, 80 CM	120	59	66	4" LONG LED LINEAR STRIP, FIBERGLASS, ENCLOSED, AND GASKETED CEILING MOUNTED AT 12' AFF.		
HEM4	ETHICON JBL SERIES EQUIVALENT BRO EDS SERIES SHAW SHIELD 280HSO SERIES METALUX LHS SERIES	1	LED 12000 LUMENS 5000K, 80 CM	120	318.7	354	11-1/2" x 11-1/2" x 2-1/2" LED SUSPENDED HUB BAY, STANDARD EFFICIENCY WITH CLEAR ACRYLIC LENS, GENERAL DISTRIBUTION, PROVIDE WITH 10' AIRCRAFT CABLE WITH HOOK, MOUNT AT 12'.	2	
P1	ETHICON VMT SERIES EQUIVALENT H.E. WILLIAMS VMTZ LUMARK WAL-PAK SERIES HURELL LINC LED SERIES H.E. WILLIAMS VMP	1	LED 3000 LUMENS 4000K, 75 CM	120	25	28	17" x 8-1/2" x 10-3/16" DEEP TRAPEZOIDAL EXTERIOR WALL LED SCOWIE, PROVIDE WITH VISUAL COMFORT FORWARD THROW, PREMIUM SURFACE MOUNTED BACK BOX, AND BLACK FINISH, UNLESS NOTED OTHERWISE, MOUNT TO CONTIGUOUS AT 10'-0" ABOVE TOP OF PERSONNEL DOOR FRAME AND 2'-0" ABOVE TOP OF OVERHEAD DOOR SPOILING AS APPLICABLE.	3	
V2	ETHICON VMT SERIES EQUIVALENT H.E. WILLIAMS VMTZ LUMARK WAL-PAK SERIES HURELL LINC LED SERIES H.E. WILLIAMS VMP	1	LED 3000 LUMENS 4000K, 75 CM	120	25	28	17" x 8-1/2" x 10-3/16" DEEP TRAPEZOIDAL EXTERIOR WALL LED SCOWIE, PROVIDE WITH VISUAL COMFORT FORWARD THROW, PREMIUM SURFACE MOUNTED BACK BOX, AND BLACK FINISH, UNLESS NOTED OTHERWISE, MOUNT TO CONTIGUOUS AT 10'-0" ABOVE TOP OF PERSONNEL DOOR FRAME AND 2'-0" ABOVE TOP OF OVERHEAD DOOR SPOILING AS APPLICABLE.	3	

LIGHT FIXTURE SCHEDULE									
TYPE	MANUFACTURER/SERIES	NO.	LAMP	VOLTAGE	INPUT WATTS	INPUT VA	DESCRIPTION	FIXTURE NOTES	
X1	EMERGLITE PREM SERIES	1	LED (INCLUDED)	120	3	3	1-1/2" x 1-1/4" x 2-1/2" LED EXIST SKIN, SEALED AND MAINTENANCE FREE, NICKEL-CADMIUM BATTERY, CHARGER, TEST SWITCH, INDICATOR LIGHT, AND BAR HANGERS, PROVIDE WITH WHITE FINISH, SELF-POWERED ADVANCED DIAGNOSTICS, SINGLE FACE, AND RED LEGEND, PROVIDE ARROWS AS INDICATED ON THE DRAWINGS, WHERE SHOWN AS WALL MOUNTED, MOUNT AT 1'-0" ABOVE TOP OF DOOR FRAME, UNO.		
X2	EMERGLITE 80024N SERIES	1	LED (INCLUDED)	120	24	24	15-1/4" x 8-1/8" x 1-1/2" LED EXIST SKIN, ENCLOSURE RATED NEMA 4X, INTEGRAL LED LIGHT SOURCE, SEALED AND MAINTENANCE FREE, NICKEL-CADMIUM BATTERY, CHARGER, MAGNETIC TEST SWITCH, INDICATOR LIGHTS, UNIVERSAL MOUNTING, REMOTE LAMP CAPACITY, PROVIDE WITH GRAY/ALUMINUM FINISH, SINGLE FACE, RED LEGEND, ADVANCED DIAGNOSTICS (AUDIBLE) AND NO HEADS, MOUNT AT 1'-0" ABOVE TOP OF DOOR FRAME, UNO.	4	
SA8PT	MCGRANEDISE GAINL SERIES GAINLAS80-430A-14T4T	1	LED 33,066 LUMENS 5000K, 80 CM	120-277	321	367	22" W x 3-3/4" H x 31-1/2" D POLE MOUNTED T4FT OUTDOOR LIGHT FIXTURE, POLE MOUNT AT 40'-0" AFF UNO.		
SA8SL	MCGRANEDISE GAINL SERIES GAINLAS80-430A-14SL2	1	LED 33,066 LUMENS 5000K, 80 CM	120-277	321	367	22" W x 3-3/4" H x 31-1/2" D WALL MOUNTED SL2 OUTDOOR LIGHT FIXTURE, WALL MOUNT AT 40'-0" AFF UNO.		
L40XL	COLUMBIA LXEM SERIES LXEMA-SSML-DCA-EDU	1	LED 5,416 LUMENS 5000K, 80 CM	120-277	42	47	8-7/8" W x 5-5/8" H x 21-1/2" D LINEAR OUTDOOR LIGHT FIXTURE, WALL MOUNT AT 20'-0" AND 30'-0" AFF IN TRANSFORMER BAYS, UNO.		
GENERAL NOTES: A. PROVIDE LAMP AND DRIVER PRODUCT DATA SHEETS FOR EACH LIGHT FIXTURE AS PART OF THE SUBMITTAL REVIEW PROCESS. B. FIXTURE AMBIENT TEMPERATURE OPERATING RANGES MUST BE CLEARLY INDICATED ON DATA SHEETS PROVIDED AS PART OF THE SUBMITTAL REVIEW PROCESS. C. PACKAGING OF LIGHT FIXTURES WILL NOT BE CONSIDERED OR APPROVED. D. LIGHTING CONTROLS PROGRAMS, INCLUDING BUT NOT LIMITED TO THOSE REFERENCED IN 260523, SHALL BE COMPLETELY SEPARATE OF ANY LIGHT FIXTURE PROGRAM. E. VERIFY CEILING CONDITIONS AND COORDINATE LIGHT FIXTURE MOUNTING HARDWARE AND TRIMS NEEDED TO SUIT CEILING CONDITIONS PRIOR TO ORDERING. F. VERIFY QUANTITIES, MODELS, NUMBERS AND DESCRIPTIONS WITH MANUFACTURERS PRIOR TO PLACING ORDER. G. USE THIS TABLE IN CONJUNCTION WITH THE LIGHTING PLANS AND SPECIFICATIONS TO DETERMINE THE EXACT ORDERING NUMBERS FOR FIXTURES, LAMPS AND ACCESSORIES. H. REFER TO ARCHITECTURAL DRAWINGS AND DETAILS FOR EXACT LOCATIONS, MOUNTING HEIGHTS AND ADDITIONAL MOUNTING INFORMATION. CONTACT ARCHITECT AND ENGINEER OF RECORD IF THERE ARE DISCREPANCIES BETWEEN THE ARCHITECTURAL AND ELECTRICAL PLANS. I. PROVIDE ALL LIGHT FIXTURES UNLESS NOTED OTHERWISE. J. LISTED VOLTAGES ARE THOSE THAT THE FIXTURES ARE TO BE OPERATED AT, WHERE SINGLE VOLTAGES ARE LISTED, UNIVERSAL VOLTAGE AND MULTI-TAP BALLAST/DRIVERS ARE ACCEPTABLE IF CAPABLE OF SUPPLYING THE VOLTAGES LISTED IN THIS SCHEDULE. FIXTURE NOTES: N. DO NOT EXCEED MANUFACTURER/RECOMMENDED MAXIMUM DISTANCE BETWEEN BATTERY SUPPLY AND REMOTE FIXTURE.									

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Raleigh, North Carolina 27606

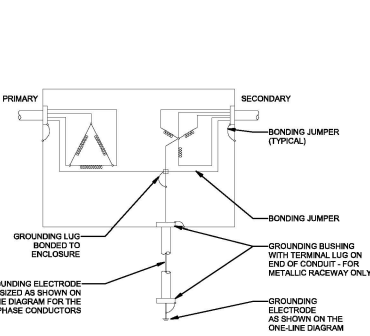
PROJECT
CHPE
Champlain Hudson
Power Express
**Astoria HVDC
Converter Station**
31-45 26th Avenue, Astoria, Queens NY 11105
Block #850 • Lot #310 • BIN #4824437

LIGHT FIXTURE
SCHEDULES

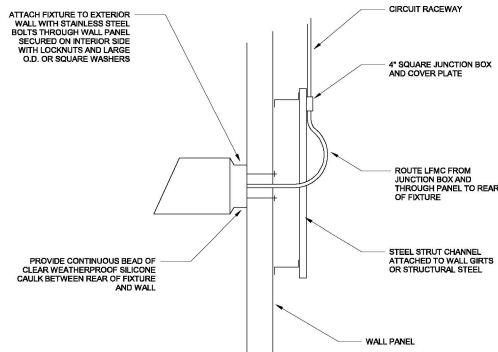


DATE 12/15/2022
PROJECT NO. 188121
DRAWING BY SUBMITTAL
CHECKED BY CLOUTIER
DRAWING NO.
E-330.00
CADED FILE NO. 48

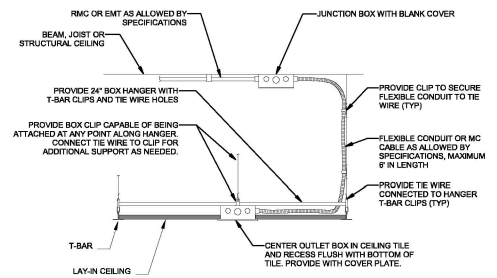
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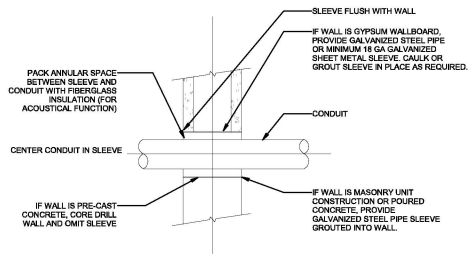
1 DRY TYPE TRANSFORMER GROUNDING
E-400.00 1" = 1'-0"



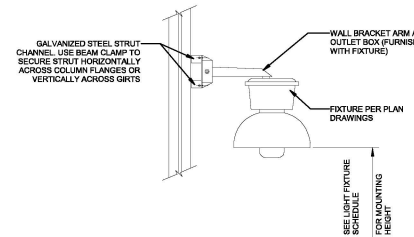
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E-400.00 1" = 1'-0"



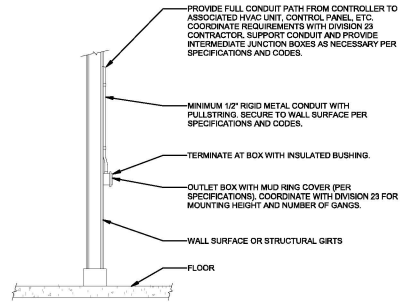
3 RECESSED DEVICE - LAY-IN CEILING
E-400.00 1" = 1'-0"



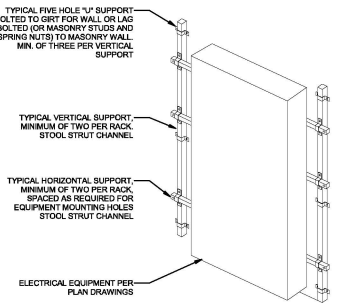
4 CONDUIT PENETRATION THRU NON-FIRE WALL
E-400.00 1" = 1'-0"



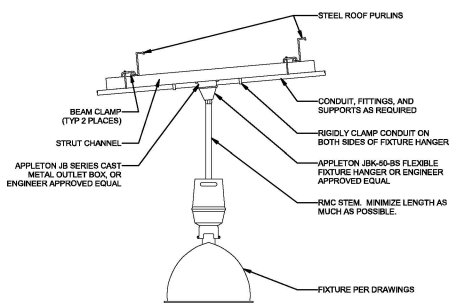
5 GIRT OR COLUMN MOUNTED FIXTURE
E-400.00 1" = 1'-0"



6 HVAC CONTROLS EXPOSED ROUGH-IN
E-400.00 1" = 1'-0"



7 ENCLOSURE MOUNTING DETAIL
E-400.00 1" = 1'-0"



8 ROOF STRUCTURE LIGHT FIXTURE MOUNTING
E-400.00 1" = 1'-0"

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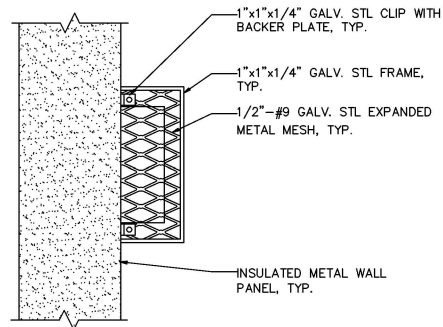
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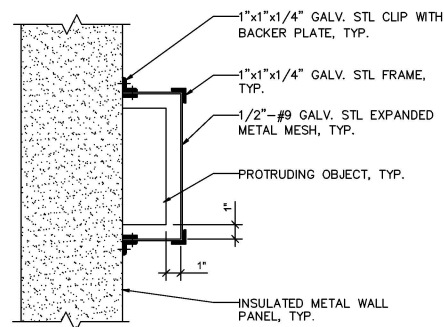
PROJECT CHPE Ghemalight Hydrant PowerExpress Astoria HVDC Converter Station 31-45 20th Avenue, Astoria, Queens NY 11105 Block #850 - Lot #310 - BIN #4624437

TYPICAL DETAILS

DATE: 12/13/2022
INQUIRY NO: 100121
DRAWING BY: N.W.J.
CHECKED BY: D.D.B.
DRAWING NO: E-400.00
CADD FILE NO: E-400.00.dwg
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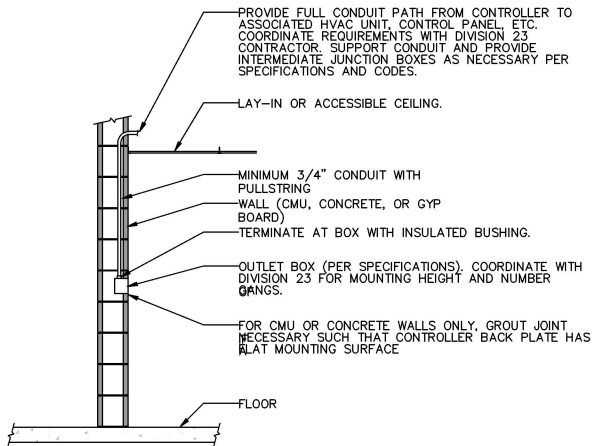
1 FARADAY CAGE ELEVATION DETAIL
E-401.00 N.T.S.



2 FARADAY CAGE SECTION DETAIL
E-401.00 N.T.S.

NOTES:

1. RUN AND CONNECT A GAUGE 6 COPPER INSULATED WIRE AT THE BOTTOM OF THE WIRE MESH TO SERVE AS A CONTINUOUS GROUNDING SYSTEM. CONNECT GROUND WIRE TO A 5/8" x 10' COPPER CLAD STEEL GROUND ROD EVERY 50' TO ATTAIN THE NEC REQUIRED OHMIC RESISTANCE VALUE OF 25 OHMS.
2. CONNECT GROUNDING ELECTRODE CONDUCTOR TO MOTOR GROUNDING TERMINAL.
3. THE UPPER END OF THE ELECTRODE SHALL BE FLUSH OR BELOW GROUND LEVEL UNLESS THE ELECTRODE IS PROTECTED AGAINST PHYSICAL DAMAGE.
4. THE SLIDE GATE OPERATOR MOTOR SHAFT ARE ALL MECHANICALLY LINK BY METAL CHAIN AND METAL SPROCKETS.



NOTE:
REFER TO HVAC PLANS FOR ALL CONTROLS LOCATIONS.

3 HVAC CONTROLS CONCEALED ROUGH-IN
E-401.00 N.T.S.

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Raleigh, North Carolina 27606

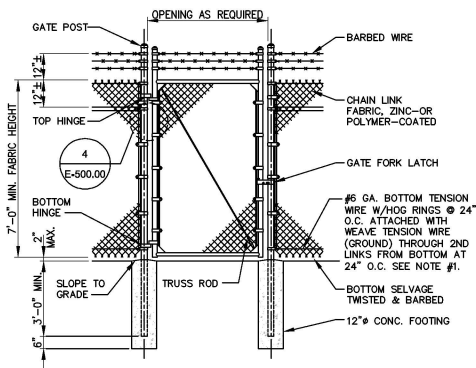
PROJECT

CHPE
Champlain Hudson
Power Express

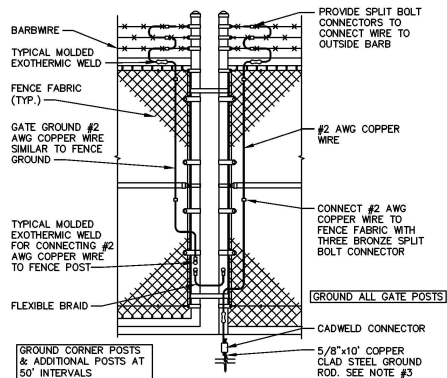
**Astoria HVDC
Converter Station**
31-45 26th Avenue, Astoria, Queens NY 11105
Block #850 • Lot #310 • BIN #4824437

TYPICAL DETAILS

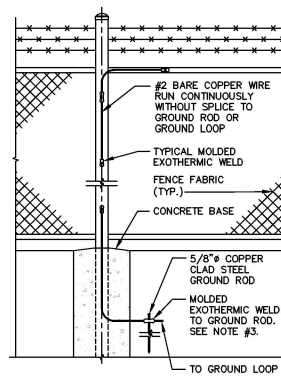
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PROJECT NO. 188121
DRAWING NO. M18121-001
CHECKED BY CLOJAN
DRAWING NO. E-401.00
CADD FILE NO. 01



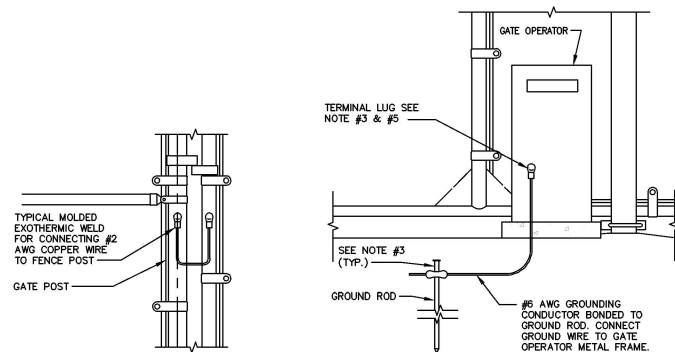
1 CHAIN LINK DOUBLE SWING GATE ELEVATION
E-502.00 N.T.S.



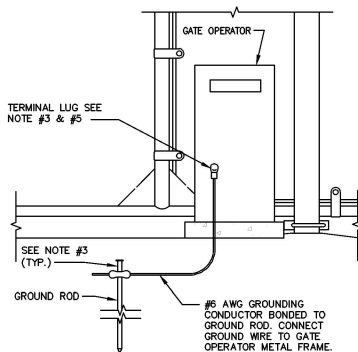
2 CHAIN FENCE/GATE GROUNDING DETAIL
E-502.00 N.T.S.



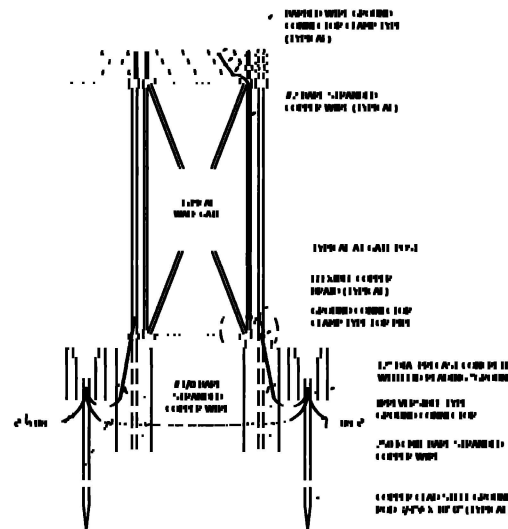
3 TYPICAL FENCE POST AND TOP RAIL
BONDING/GROUNDING DETAIL
E-502.00 N.T.S.



4 DETAIL - FLEXIBLE GATE JUMPER
E-502.00 N.T.S.



5 GATE OPERATOR GROUNDING DETAIL
E-502.00 N.T.S.



6 TYPICAL FENCE GROUNDING AT GATES
E-502.00 N.T.S.

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NOTES:

1. RUN AND CONNECT A GAUGE 6 COPPER INSULATED WIRE AT THE BOTTOM OF THE WIRE MECH TO SERVE AS A CONTINUOUS GROUNDING SYSTEM. CONNECT GROUND WIRE TO A 5/8"x10' COPPER CLAD STEEL GROUND ROD EVERY 50' TO ATTAIN THE NEC REQUIRED OHMIC RESISTANCE VALUE OF 25 OHMS.
2. CONNECT GROUNDING ELECTRODE CONDUCTOR TO MOTOR GROUNDING TERMINAL.
3. THE UPPER END OF THE ELECTRODE SHALL BE FLUSH OR BELOW GROUND LEVEL UNLESS THE ELECTRODE IS PROTECTED AGAINST PHYSICAL DAMAGE.
4. THE SLIDE GATE OPERATOR MOTOR SHAFT ARE ALL MECHANICALLY LINK BY METAL CHAIN AND METAL SPROCKETS.

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DATE	DATE	DATE

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Hitachi Energy
301 Main Campus Drive
Raleigh, North Carolina 27606

PROJECT

CHPE
Champlain Hudson
Power Express

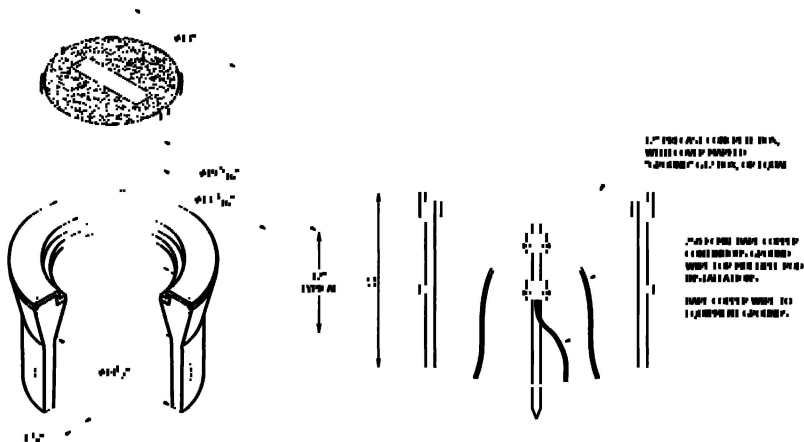
Astoria HVDC
Converter Station

31-45 26th Avenue, Astoria, Queens NY 11105
Block #850 • Lot #310 • BIN #4624437

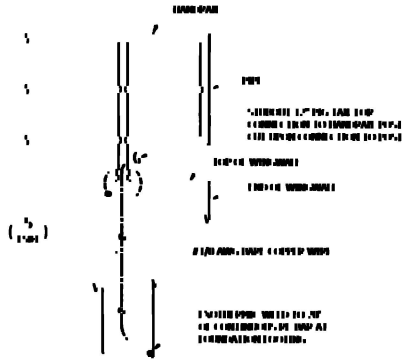
GROUNDING & BONDING
AT FENCE & GATES DETAILS



DATE 12/13/2022
PROJECT NO. 100121
DRAWING BY MURPHYSON
CHECKED BY CLOZZAN
DRAWING NO. E-502.00
CADD FILE NO. 02



1 CHAIN LINK DOUBLE SWING GATE ELEVATION
N.T.S.



2 HANDRAIL GROUNDING DETAIL
INSTALL @ 150' INTERVALS
N.T.S.



3 CONNECTOR
N.T.S.

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REV	DESCRIPTION	DATE

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Hitachi Energy 301 Main Campus Drive
Raleigh, North Carolina 27606

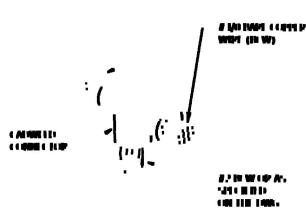
PROJECT

CHPE
Champlain Hudson
Power Express

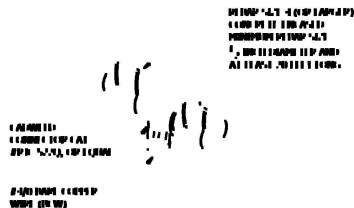
**Astoria HVDC
Converter Station**
31-45 26th Avenue, Astoria, Queens NY 11105
Block #850 • Lot #310 • BIN #4624437

GROUNDING DETAILS

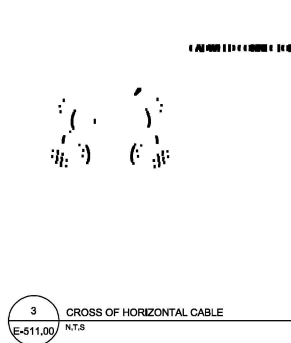
DATE 12/13/2022
PROJECT NO 100121
DRAWING BY XLB
CHECKED BY CLOZAN
DRAWING NO
E-510.00
CADD FILE NO
OF 01



1 CABLE TAP
E-511.00 N.T.S.



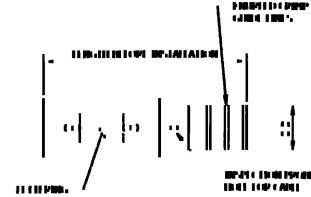
2 CABLE TO REBAR
E-511.00 N.T.S.



3 CROSS OF HORIZONTAL CABLE
E-511.00 N.T.S.

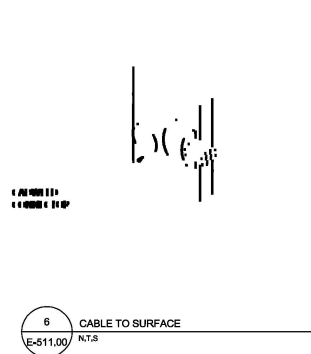


4 CABLE GROUND ROD SIDE
E-511.00 N.T.S.

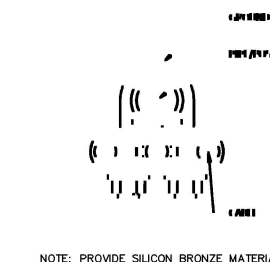


NOTE: PROVIDE SILICON BRONZE MATERIAL KIT WITH BARRELS PREFILLED WITH PENETROX AND SEALED.

5 CABLE TO LUG
E-511.00 N.T.S.

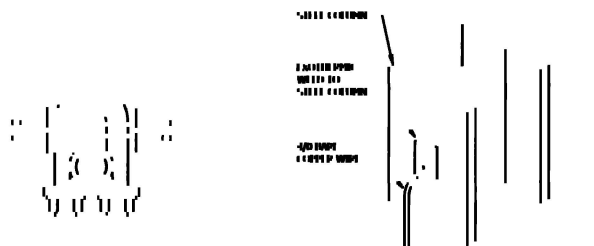


6 CABLE TO SURFACE
E-511.00 N.T.S.

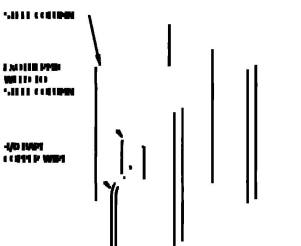


NOTE: PROVIDE SILICON BRONZE MATERIAL

7 CABLE TO SURFACE
E-511.00 N.T.S.



8 CROSS CONNECTING GROUND CABLE
E-511.00 N.T.S.



9 COLUMN GROUNDING
E-511.00 N.T.S.

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2	INTERIM SUBMISSION	12/13/2022

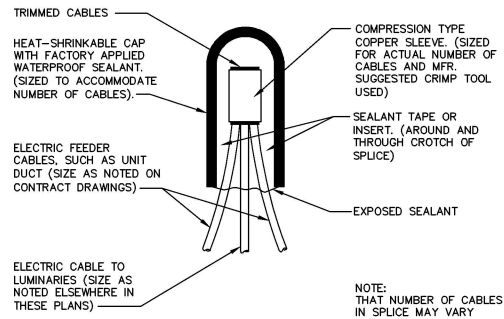
Kiewit 470 Chestnut Ridge Rd #2,
Woodcliff Lake, NJ 07077

Hitachi Energy 301 Main Campus Drive
Raleigh, North Carolina 27606

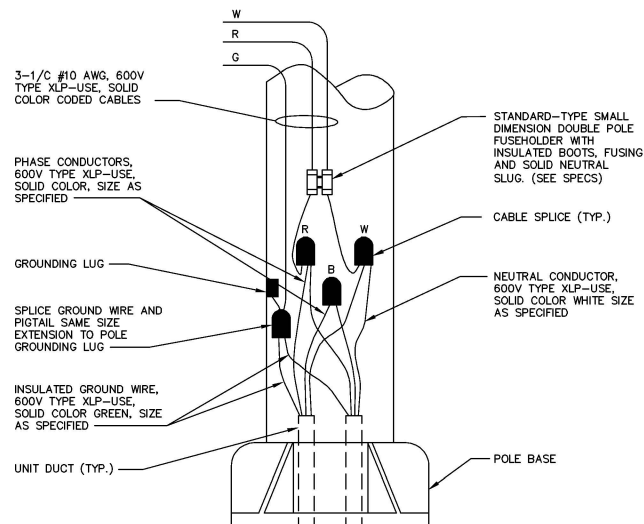
PROJECT
CHPE
Champlain Hudson
Power Express
**Astoria HVDC
Converter Station**
31-45 20th Avenue, Astoria, Queens NY 11105
Block #850 • Lot #310 • BIN #4624437

GROUNDING DETAILS

DATE 12/13/2022
PROJECT NO. 180121
DRAWING BY XLB/J
CHECKED BY CLO/LEW
DRAWING NO. **E-511.00**
CADD FILE NO. OF REV



1 TYPICAL SPLICE DETAIL
E-600.00 N.T.S.



2 POLE WIRING DETAIL
E-600.00 N.T.S.

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REV	DESCRIPTION	DATE
B	100% SUBMISSION	12/13/2022
A	INTERIM SUBMISSION	08/13/2022
REV	DESCRIPTION	DATE

Kiewit 470 Chestnut Ridge Rd #2,
Woodcliff Lake, NJ 07077

Hitachi Energy 301 Main Campus Drive
Raleigh, North Carolina 27606

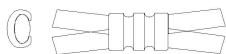
PROJECT

CHPE
Champlain Hudson
Power Express

**Astoria HVDC
Converter Station**
31-45 26th Avenue, Astoria, Queens NY 11105
Block #850 • Lot #310 • BIN #4624437

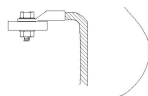
MISCELLANEOUS ELECTRICAL DETAILS

DATE 12/13/2022
PROJECT NO. 188121
DRAWING BY E. J. MATTHEWS
CHECKED BY C. J. JOHNSON
DRAWING NO. E-600.00
CADD FILE NO. 02 00



ALL JOINTS SHALL BE
MADE WITH C-CLAMPS

THE 2 AWG (35MM²) BARE COPPER CONDUCTOR SHALL BE CONNECTED TO THE GROUNDING BAR IN THE CABLE COMPARTMENT CUBICLE BY MEANS OF TINNED CRIMPED - ON CABLE LUGS AND BOLTS



CONTROL CUBICLE (SIDE VIEW)

WAI 1

INSTALLATION FLOOR

2 AWG (35mm²)

K3 CABLES

K2 CABLES

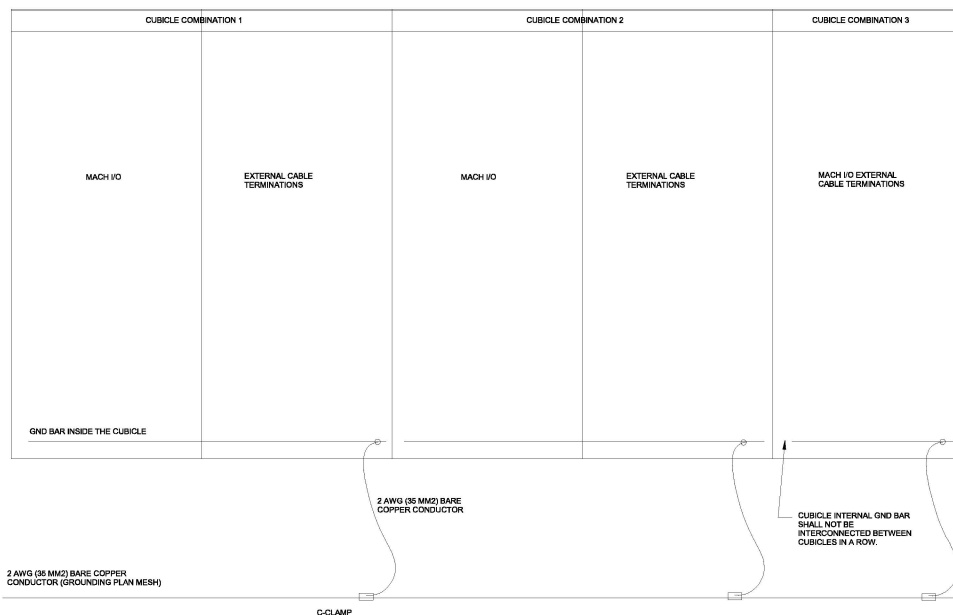
K1 CABLES

2 AWG

2 AWG

CONNECTED TO
GROUNDING
PLAN MESH

3	CONTROL ROOM CUBICLE GROUNDING PLAN ELEVATION DETAIL
E-610.00	N.T.S



FOR CONNECTION DETAILS SEE PAGE 4. CABLES FROM BELOW

2 AWG (35 MM²) BARE COPPER
CONDUCTOR (GROUNDING PLAN MESH)

4	CONTROL ROOM GROUNDING PLAN ELEVATION DETAIL
E-610.00	N.T.S

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REV	DESCRIPTION		DREWRY	CJAK RY	DATE


Kiewit

470 Chestnut Ridge Rd # 2,
Woodcliff Lake, NJ 07677



901 Main Campus Drive
Raleigh, North Carolina 27608

PROJECT



Astoria HVDC Converter Station

31-45 20th Avenue, Astoria, Queens NY 11105
Block #850 - Lot #310 - BIN #4624437

[illegible]

TYPICAL CONTROL ROOM GROUNDING DETAILS

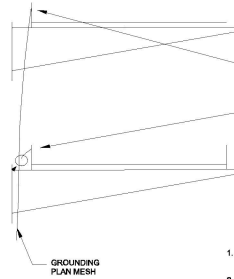
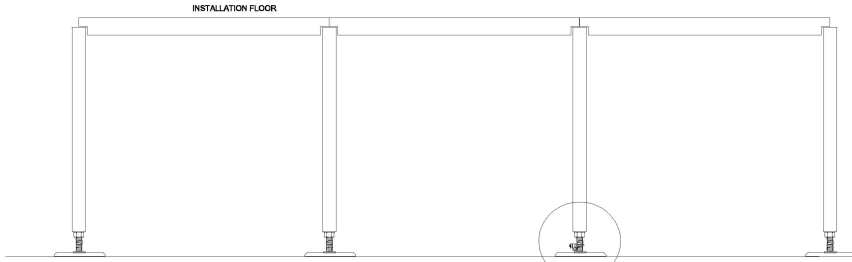


Digitally signed by
Hochman, E. Ronny
Date: 2022.12.22

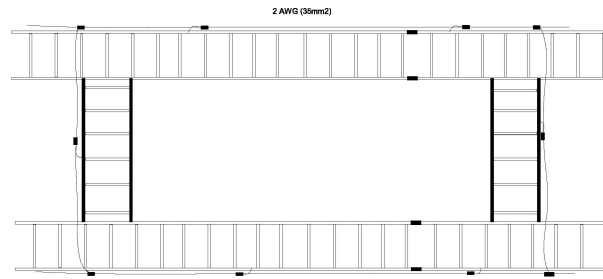
DATE	12/12/2022
PROJECT NO	105121
DRAWING BY	N.WU
CHECKED BY	D.DUZAN
DRAWING NO	

DRAWING NO
E-610.00

CADD FILE NO
Autodesk Docu.PC/HP



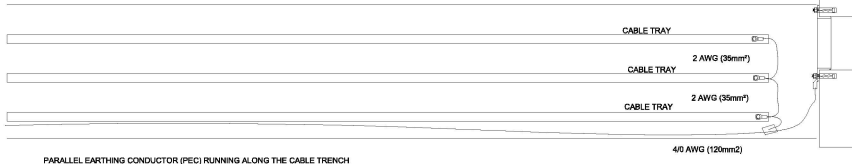
1. ONE BARE COPPER WIRE OF MINIMUM CROSS SECTION #2 AWG SHALL RUN ALONG THE CABLE LADDER AS PARALLEL EARTH CONDUCTOR (PEC).
2. EACH SECTION OF THE LADDER SHALL BE CONNECTED TO ONE BARE COPPER CONDUCTOR OF MINIMUM CROSS SECTION #2 AWG TO THE ROOM BONDING RING CONDUCTOR AND THIS CONDUCTOR SHALL BE TERMINATED WITH NEMA CONNECTORS.
3. AT PARALLEL RUNS OF LADDERS ONLY ONE MINIMUM 2 AWG COPPER CONDUCTOR IS REQUIRED ON ONE OF THE LADDERS BUT ALL LADDERS SHALL BE GROUNDED FROM THIS CONDUCTOR.
4. THE LADDERS RUNNING UNDER THE FALSE FLOOR MAY BE CONNECTED TO THE GROUNDING CONDUCTOR OF THE FALSE FLOOR/GROUNDING PLANE INSTEAD OF INSTALLING A SEPARATE PEC ON THE CABLE LADDERS. SEE PAGE 6.



2 CONTROL ROOM CABLE TRAY GROUNDING DETAIL
E-611.00 N.T.S

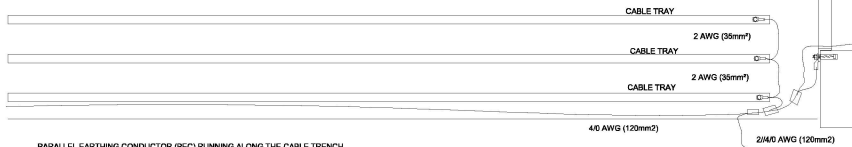
1 CONTROL ROOM GROUNDING PLAN DETAIL
E-611.00 N.T.S

CABLE TRENCH OUTSIDE THE CONTROL ROOM
SECONDARY ENTRY OF CABLES TO THE CONTROL ROOM



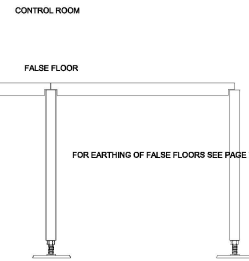
IF THE CONTROL ROOM HAS MORE THAN ONE CABLE ENTRY, ONLY THE PEC'S IN THE MAIN CABLE ENTRY SHALL ENTER INTO THE CONTROL ROOM AND CONNECT TO THE CONTROL ROOM BONDING RING CONDUCTOR (BRC).

CABLE TRENCH OUTSIDE THE CONTROL ROOM
MAIN ENTRY OF CABLES TO THE CONTROL ROOM



NOTE:
IF THE CABLE ENTRY TO CONTROL ROOM IS FROM AN OUTDOOR CABLE TRENCH AND NEEDS TO BE WATER TIGHT, THE BARE COPPER WIRES BE REPLACED BY BLACK INSULATED CABLES TYPE H6721-RFCQ WHEN PASSING THE MCT.

3 CONTROL ROOM CABLE PENETRATION GROUNDING DETAIL
E-611.00 N.T.S



FOR EARTHING OF FALSE FLOORS SEE PAGE 7.

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New York, NY 10001

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A	INTERIM SUBMISSION	N.W.J.	D. DALAN	09/13/2022
REV	DESCRIPTION	DRW BY	CHK BY	DATE

Kiewit 478 Chestnut Ridge Rd # 2,
Woodcliff Lake, NJ 07877

Hitachi Energy 901 Main Campus Drive
Raleigh, North Carolina 27608

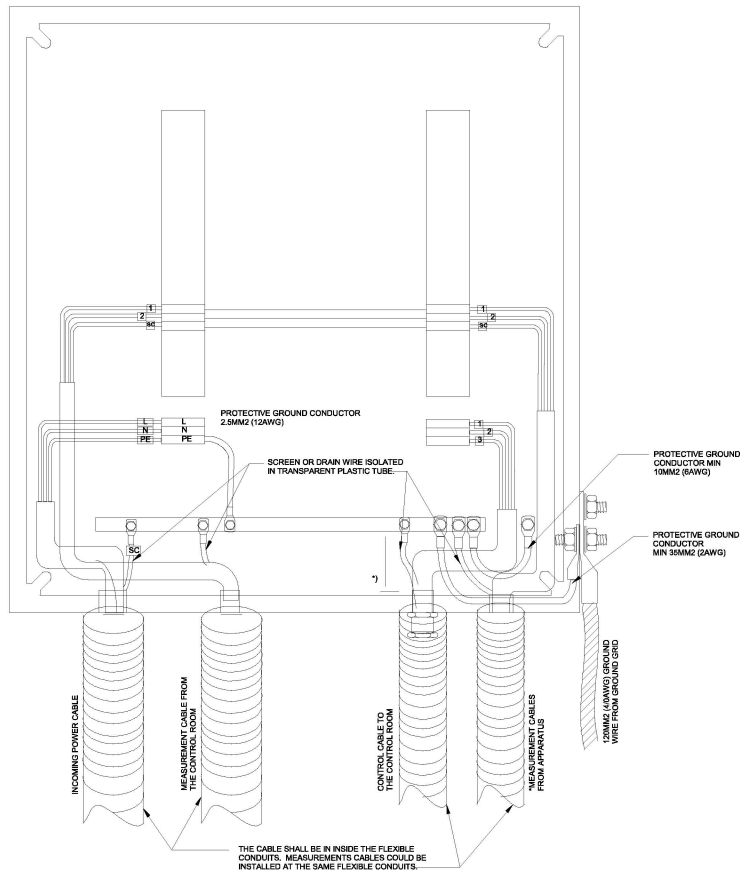
PROJECT

CHPE
Champion Hydration
PowerExpress

Astoria HVDC
Converter Station
31-45 20th Avenue, Astoria, Queens NY 11105
Block #850 - Lot #310 - BIN #4624437

TYPICAL CONTROL ROOM
GROUNDING DETAILS 2

DATE: 10/10/2022
INQUIRY NO: 100121
DRAWING BY: N.W.J.
CHECKED BY: D.D. (2/24)
DRAWING NO: E-611.00
CADD FILE NO: E-611.00
AUTOCAD VERSION: 2014



POWER CABLES:

THE CABLE SHALL BE STRIPPED DOWN TO THE OUTER SCREEN AND THE OUTER SCREEN SHALL BE CONNECTED TO THE GROUND BAR. THE PROTECTIVE GROUND CONDUCTOR OF THE CABLE SHALL BE CONNECTED TO THE GROUND BAR.

CABLES FOR CONTROL AND MEASUREMENTS:

THE CABLE SHALL BE STRIPPED DOWN TO THE OUTER SCREEN AND THE OUTER SCREEN SHALL BE CONNECTED TO THE GROUND BAR. ANY DRAIN WIRE MUST BE ISOLATED WITH TRANSPARENT PLASTIC TUBE AND CONNECTED TO THE GROUND BAR. THE PROTECTIVE CONDUCTOR OF THE CABLE SHALL BE CONNECTED TO THE GROUND BAR.

JUNCTION BOXES FOR CT AND CVT:

THE SCREENS OF THE CABLES FROM THE CONTROL EQUIPMENT AND THE CT, OR CVT, APPARATUS MUST BE CONNECTED TOGETHER ON A TERMINAL BLOCK.

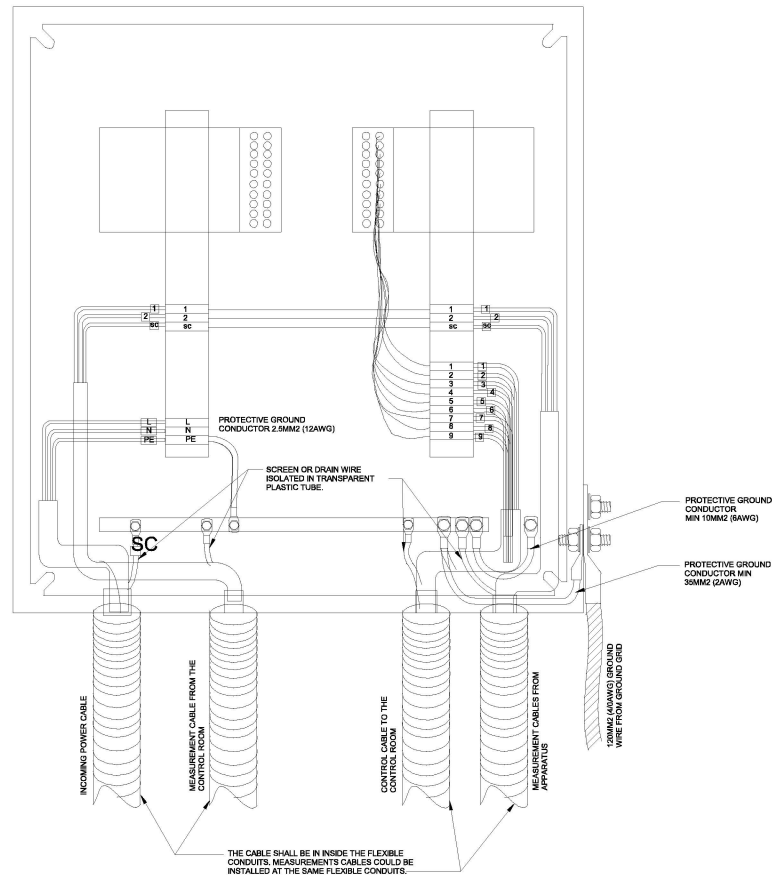
THE JUNCTION BOXES SHALL BE MADE OF METAL AND HAVE AT LEAST TWO HOLE NEMA BOLT CONNECTOR FOR GROUNDING IN THE BOTTOM OF THE BOX. THIS BOLT SHALL BE CONNECTED TO THE GROUND GRID OF THE STATION. THE CONNECTION SHALL BE PERFORMED BY A 12MM² (4AWG) COPPER WIRE AND A CABLE LUG.

A BAR FOR GROUNDING SHALL BE PLACED IN THE BOTTOM OF THE JUNCTION BOX. THE INTERNAL CONNECTION BETWEEN BOLT AND GROUND BAR SHALL BE OF 35MM² (2AWG) PROTECTIVE COPPER CONDUCTOR.

THE BOX METALLIC ENCLOSURE SHALL BE CONNECTED TO THE GROUND BAR WITH A MINIMUM 10MM² (6AWG) PROTECTIVE GROUND CONDUCTOR.

BOXES WITH ELECTRONIC EQUIPMENT SHALL COMPLY WITH EMC STANDARDS. DOOR GASKETS SHALL BE INSTALLED WITH EMC SEAL.

1 UNARMoured CABLE JUNCTION BOX GROUNDING DETAIL
E-612.00 N.T.S.



POWER CABLES:

THE CABLE SHALL BE STRIPPED DOWN TO THE OUTER SCREEN AND THE OUTER SCREEN SHALL BE CONNECTED TO THE GROUND BAR. THE PROTECTIVE GROUND CONDUCTOR OF THE CABLE SHALL BE CONNECTED TO THE GROUND BAR.

CABLES FOR CONTROL AND MEASUREMENTS:

THE CABLE SHALL BE STRIPPED DOWN TO THE OUTER SCREEN AND THE OUTER SCREEN SHALL BE CONNECTED TO THE GROUND BAR. ANY DRAIN WIRE MUST BE ISOLATED WITH TRANSPARENT PLASTIC TUBE AND CONNECTED TO THE GROUND BAR. THE PROTECTIVE CONDUCTOR OF THE CABLE SHALL BE CONNECTED TO THE GROUND BAR.

JUNCTION BOXES:

THE JUNCTION BOXES SHALL BE MADE OF METAL AND HAVE AT LEAST TWO HOLE NEMA BOLT CONNECTOR FOR GROUNDING IN THE BOTTOM OF THE BOX. THIS BOLT SHALL BE CONNECTED TO THE GROUND GRID OF THE STATION. THE CONNECTION SHALL BE PERFORMED BY A 12MM² (4AWG) COPPER WIRE AND A CABLE LUG.

A BAR FOR GROUNDING SHALL BE PLACED IN THE BOTTOM OF THE JUNCTION BOX. THE INTERNAL CONNECTION BETWEEN BOLT AND GROUND BAR SHALL BE OF 35MM² (2AWG) PROTECTIVE COPPER CONDUCTOR.

THE BOX SHALL BE CONNECTED TO THE GROUND BAR WITH A MINIMUM 10MM² (6AWG) PROTECTIVE GROUND CONDUCTOR. BOX METALLIC ENCLOSURES WITH ELECTRONIC EQUIPMENT SHALL COMPLY WITH EMC STANDARDS. DOOR GASKETS SHALL BE INSTALLED WITH EMC SEAL.

2 JUNCTION BOX WITH ELECTRONIC EQUIPMENT GROUNDING DETAIL
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A	INTERIM SUBMISSION	N.W.U.	D. DULAN	09/13/2022
REV	DESCRIPTION	DATE	CHK BY	DATE

Kiewit

478 Chestnut Ridge Rd # 2
Woodcliff Lake, NJ 07877

Hitachi Energy

801 Main Campus Drive
Raleigh, North Carolina 27606

PROJECT

CHPE
Champlain Hudson
Power Express

Astoria HVDC
Converter Station

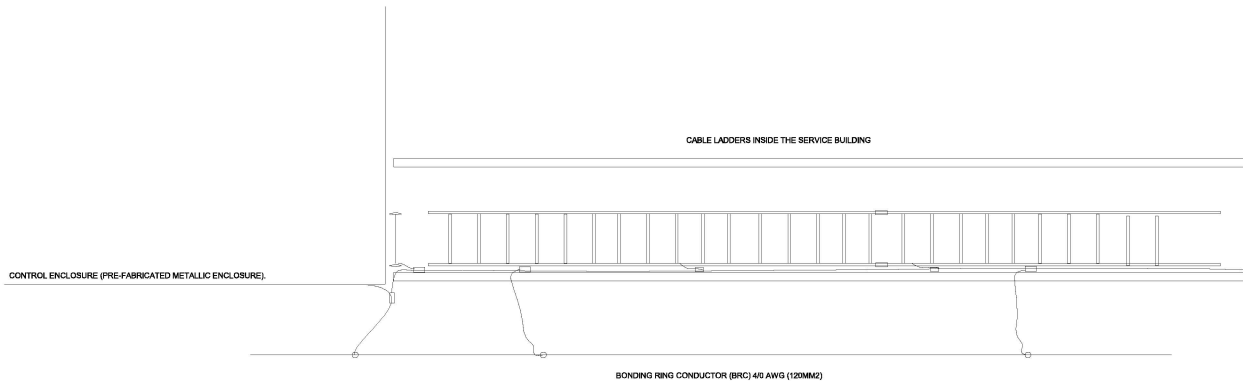
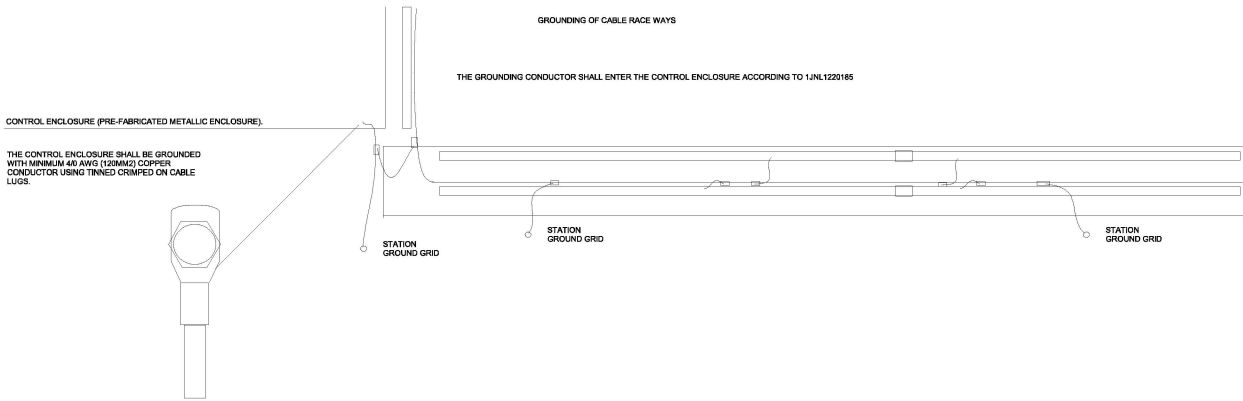
31-45 20th Avenue, Astoria, Queens NY 11105
Block #850 - Lot #310 - BIN #4624437

TYPICAL JUNCTION BOX
GROUNDING DETAILS

DATE: 12/13/2022
INQUIRY NO: 169121
DRAWING BY: N.W.U.
CHECKED BY: D. DULAN

E-612.00

CADD FILE NO:
AUTOCAD 2013 LAYOUT: E-612.00



ONE MINIMUM 4/0 AWG (120MM2) COPPER CONDUCTOR SHALL RUN ALONG THE CABLE TRENCH FROM THE SERVICE BUILDING OR CONTROL ENCLOSURE ALL THE WAY TO THE SWITCHYARD APPARATUS OR JUNCTION BOX.

THE MINIMUM 4/0 AWG (120MM2) COPPER CONDUCTOR RUNNING ALONG THE CABLE TRENCH SHALL BE CONNECTED TO THE STATION GROUND GRID AT EACH 10' - 40' (3 - 12 METERS). FOR STATIONS WITH GROUND GRID RODS, THAN 40' (12 METERS), CONNECTION SHALL BE MADE TO EACH CROSSING STATION GROUND GRID. C-CLAMPS SHALL BE USED FOR ALL JOINTS.

1 CABLE TRAY WITHIN BUILDING GROUND DETAIL
E-613.00 N.T.S.

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Kiewit
470 Chestnut Ridge Rd # 2,
Woodcliff Lake, NJ 07877

Hitachi Energy
901 Main Campus Drive
Raleigh, North Carolina 27608

PROJECT

CHPE
Champlain Hudson
Power Express

**Astoria HVDC
Converter Station**
31-45 20th Avenue, Astoria, Queens NY 11105
Block #850 - Lot #310 - BIN #4624437

TYPICAL INTERIOR CABLE
TRAY GROUNDING
DETAILS

DATE: 10/10/2022
INQUIRY NO: 100121
DRAWING BY: N.W.J.
CHECKED BY: D.DULAN
DRAWING NO: E-613.00
CADD FILE NO: E-613.00
AUTOCAD FILE NO: E-613.00