

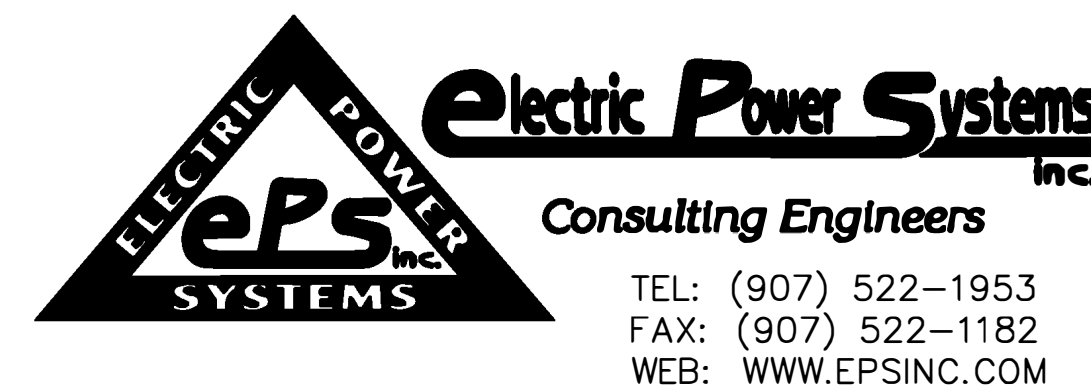
STATION SERVICE SWITCHGEAR REPLACEMENT
 PROJECT NO. 23-0124
 TYEE LAKE HYDROELECTRIC POWERHOUSE
 WRANGELL, ALASKA
 ISSUED FOR 100% DESIGN SUBMITTAL



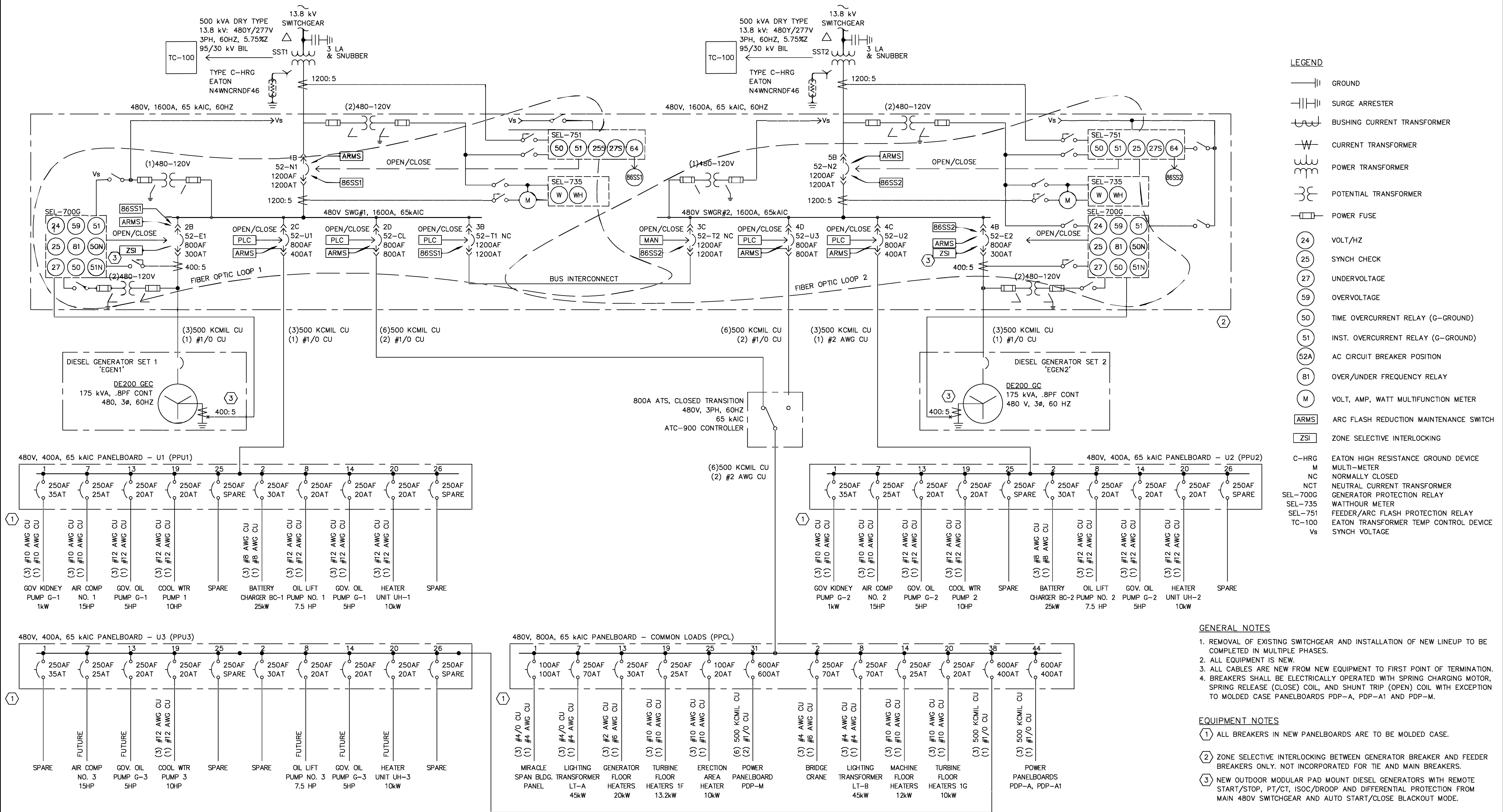
DRAWING INDEX				
TITLE	DRAWING NUMBER	SHEET	REVISION	NOTES
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1-LINE DIAGRAM	TYEE-EL-0010	1	C	
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1-LINE DIAGRAM (TEMP)	TYEE-EL-0010_TEMP	1	C	
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STATION SERVICE SWITCHGEAR COMMUNICATIONS DIAGRAM	TYEE-EL-0012	1	B	
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N1 MAIN BREAKER 1B DC SCHEMATIC	TYEE-EL-2000	1	C	
N1 MAIN BREAKER SEL-751 & METERING DC SCHEMATIC	TYEE-EL-2000	2	C	
EGEN-1 BREAKER 2B DC SCHEMATIC	TYEE-EL-2001	1	C	
EGEN-1 BREAKER SEL-700G DC SCHEMATIC	TYEE-EL-2001	2	C	
N2 MAIN BREAKER 5B DC SCHEMATIC	TYEE-EL-2002	1	C	
N2 MAIN BREAKER SEL-751 & METERING DC SCHEMATIC	TYEE-EL-2002	2	C	
EGEN-2 BREAKER 4B DC SCHEMATIC	TYEE-EL-2003	1	C	
EGEN-2 BREAKER 4B SEL-700G DC SCHEMATIC	TYEE-EL-2003	2	C	
PPU1 FEEDER BREAKER 2C DC SCHEMATIC	TYEE-EL-2004	1	C	
PPU2 FEEDER BREAKER 4C DC SCHEMATIC	TYEE-EL-2005	1	C	
ATS1 FEEDER BREAKER 2D DC SCHEMATIC	TYEE-EL-2006	1	C	
ATS2 FEEDER BREAKER 4D DC SCHEMATIC	TYEE-EL-2007	1	C	
TIE1 BREAKER 3B DC SCHEMATIC	TYEE-EL-2008	2	C	
TIE2 BREAKER 3C DC SCHEMATIC	TYEE-EL-2009	1	C	
BREAKER INTERLOCK DIAGRAM	TYEE-EL-2010	1	C	
SECTION 2A PLC/RSTI RACK 1 DC SCHEMATIC	TYEE-EL-2015	1	C	
SECTION 2A PLC/RSTI RACK 1 DC SCHEMATIC	TYEE-EL-2015	2	C	
SECTION 4A PLC/RSTI RACK 2 DC SCHEMATIC	TYEE-EL-2016	1	C	
SECTION 4A PLC/RSTI RACK 2 DC SCHEMATIC	TYEE-EL-2016	2	C	
SECTION 3A PLC/RSTI RACK 3 DC SCHEMATIC	TYEE-EL-2017	1	C	
STATION AND SWITCHYARD ANNUNCIATOR SCHEMATIC	TYEE-EL-2020	1	C	
SYSTEM BLOCK DIAGRAM	TYEE-EL-3000	1	B	
STATION SERVICE SWITCHGEAR INTERCONNECTION DIAGRAM	TYEE-EL-3001	1	A	
MAIN CONTROL SWITCHBOARD PANEL 1F CONNECTION DIAGRAM	TYEE-47-140	1		
MAIN CONTROL SWITCHBOARD PANEL 3R CONNECTION DIAGRAM	TYEE-47-145	1		
MAIN CONTROL SWITCHBOARD PANEL 4R CONNECTION DIAGRAM	TYEE-47-147	1		
UNIT 1 13.8KV SWITCHGEAR CONNECTION DIAGRAM	TYEE-47-152	1		
UNIT 2 13.8KV SWITCHGEAR CONNECTION DIAGRAM	TYEE-47-234	1		
POWER CABLE SCHEDULE	TYEE-EL-4000	1	B	
POWER CABLE SCHEDULE	TYEE-EL-4000	2	B	
CONTROL CABLE SCHEDULE	TYEE-EL-4000	3	B	
CONTROL CABLE SCHEDULE	TYEE-EL-4000	4	A	
CONDUIT SCHEDULE	TYEE-EL-4010	1	B	
CONDUIT SCHEDULE	TYEE-EL-4010	2	B	
STATION SERVICE WALL LAYOUT DRAWING	TYEE-EL-4100	1	C	
STATION SERVICE SWITCHGEAR FRONT ELEVATION VIEW	TYEE-EL-4110	1	A	
13.8KV SWITCHGEAR FRONT ELEVATION VIEW	TYEE-EL-4120	1	A	
13.8KV SWITCHGEAR SIDE VIEW - SECTIONS 1 & 2	TYEE-EL-4120	2	A	
13.8KV SWITCHGEAR SIDE VIEW - SECTION 3	TYEE-EL-4120	3	A	
13.8KV SWITCHGEAR FLOOR PLAN LAYOUT	TYEE-EL-4120	4	A	
13.8KV SWITCHGEAR OUTLINE DRAWING	H02-D-46-0010-R01	1	2	
GENERATOR BREAKER CUBICLE NO. 1 ASSEMBLY DRAWING	H02-D-46-0090-R01	1	2	
VE-14 1200A DRAW-OUT TYPE VACUUM CIRCUIT BREAKER	H02-D-46-010X-R01	1	2	
CONDUIT LAYOUT AT TURBINE FLOOR	TYEE-EL-4500	1	B	
CONDUIT LAYOUT AT MACHINE FLOOR	TYEE-EL-4500	2	B	
CONDUIT LAYOUT AT GENERATOR FLOOR	TYEE-EL-4500	3	B	
POWERPLANT SITE PLAN - STATION SERVICE UPGRADE DETAILS	TYEE-EL-4600	1	A	

PROJECT: TYEE LAKE STATION SERVICE DESIGN				
DESIGNER/PROJECT ENGINEER: MITCHELL HEDRICK/DAVID BUSS - EPS W.O. # 23-0124				
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	REVIEWED (MGR/SUPV)/DATE	APPROVED (DIRECTOR)/DATE
A	ISSUED FOR 100% REVIEW	DAH/11-03-2023		

ENG. STAMP



DRAWING NAME:		SEAPA TYEE LAKE STATION SERVICE SWITCHGEAR TITLE & DRAWING INDEX	
REF DWG(S):		TYEE-pr-0000_1.dwg	
DRAWING NO.:		TYEE-PR-0000	
		SHEET 1 OF 1	

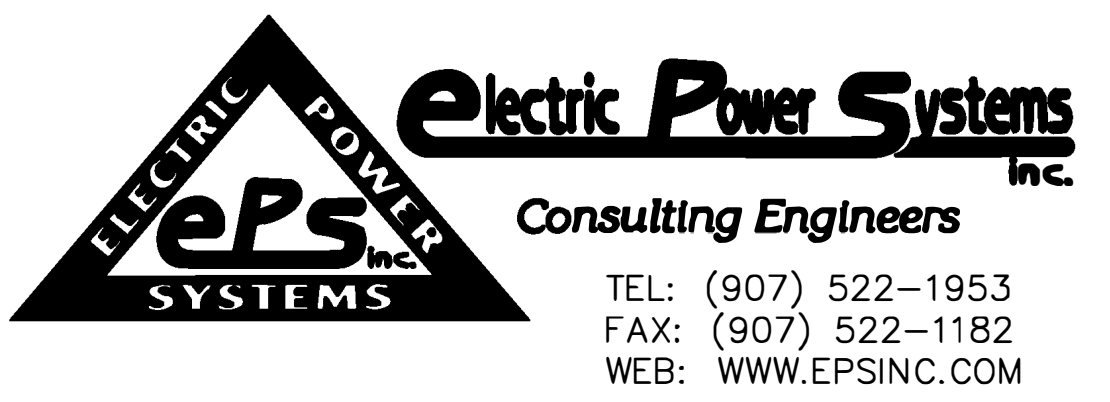


- LEGEND**
- ||— GROUND
 - ||—|| SURGE ARRESTER
 - ||—|| BUSHING CURRENT TRANSFORMER
 - ||—|| CURRENT TRANSFORMER
 - ||—|| POWER TRANSFORMER
 - ||—|| POTENTIAL TRANSFORMER
 - ||—|| POWER FUSE
 - 24 VOLT/Hz
 - 25 SYNCH CHECK
 - 27 UNDERVOLTAGE
 - 59 OVERVOLTAGE
 - 50 TIME OVERCURRENT RELAY (G-GROUND)
 - 51 INST. OVERCURRENT RELAY (G-GROUND)
 - 52A AC CIRCUIT BREAKER POSITION
 - 81 OVER/UNDER FREQUENCY RELAY
 - M VOLT, AMP, WATT MULTIFUNCTION METER
 - ARMS ARC FLASH REDUCTION MAINTENANCE SWITCH
 - ZSI ZONE SELECTIVE INTERLOCKING
 - C-HRG EATON HIGH RESISTANCE GROUND DEVICE
 - M MULTI-METER
 - NC NORMALLY CLOSED
 - NCT NEUTRAL CURRENT TRANSFORMER
 - SEL-700G NEUTRAL PROTECTION RELAY
 - SEL-735 WATTHOUR METER
 - SEL-751 FEEDER/ARC FLASH PROTECTION RELAY
 - TC-100 EATON TRANSFORMER TEMP CONTROL DEVICE
 - Vs SYNCH VOLTAGE

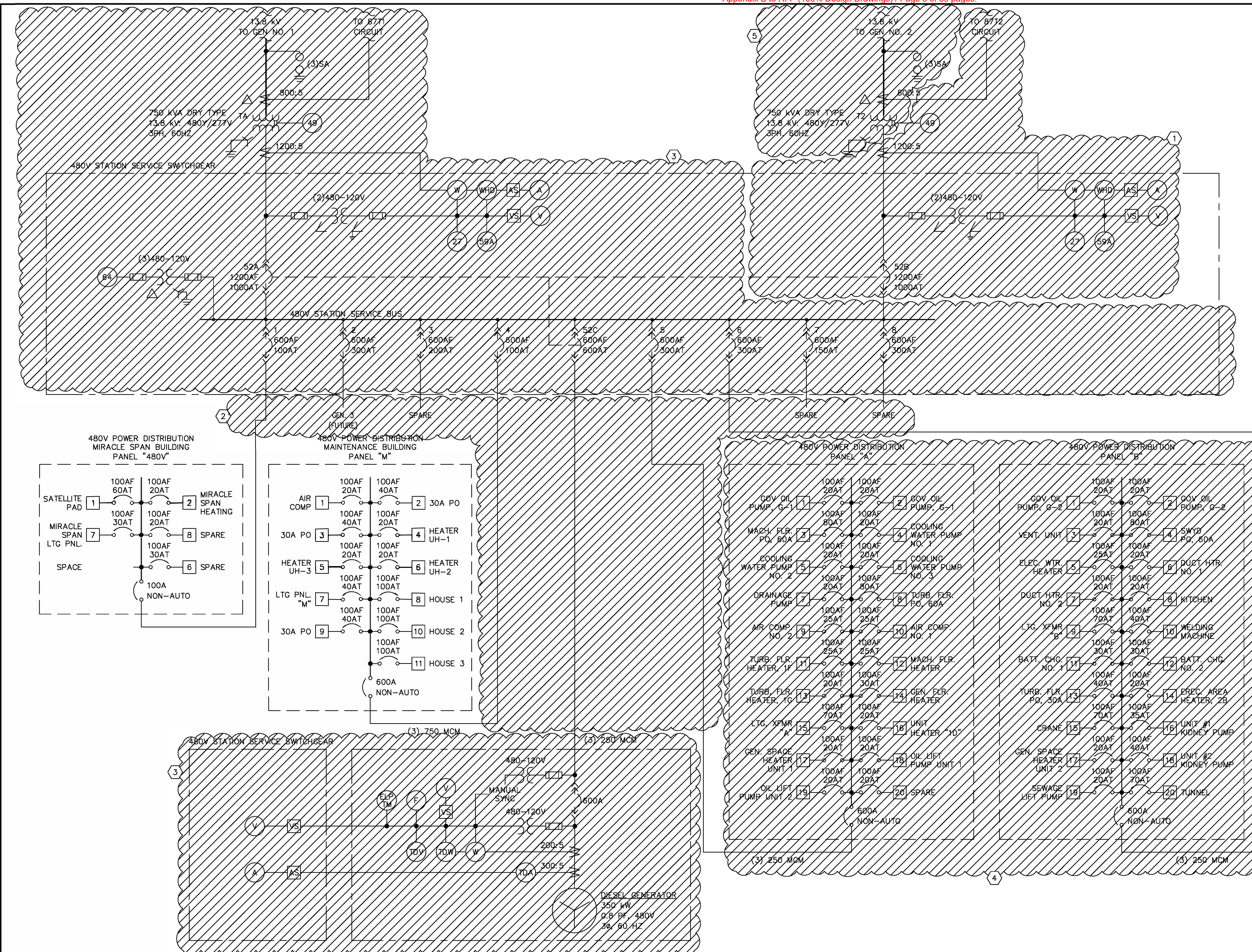
- GENERAL NOTES**
1. REMOVAL OF EXISTING SWITCHGEAR AND INSTALLATION OF NEW LINEUP TO BE COMPLETED IN MULTIPLE PHASES.
 2. ALL EQUIPMENT IS NEW.
 3. ALL CABLES ARE NEW FROM NEW EQUIPMENT TO FIRST POINT OF TERMINATION.
 4. BREAKERS SHALL BE ELECTRICALLY OPERATED WITH SPRING CHARGING MOTOR, SPRING RELEASE (CLOSE) COIL, AND SHUNT TRIP (OPEN) COIL WITH EXCEPTION TO MOLDED CASE PANELBOARDS PDP-A, PDP-A1 AND PDP-M.
- EQUIPMENT NOTES**
- ① ALL BREAKERS IN NEW PANELBOARDS ARE TO BE MOLDED CASE.
 - ② ZONE SELECTIVE INTERLOCKING BETWEEN GENERATOR BREAKER AND FEEDER BREAKERS ONLY. NOT INCORPORATED FOR TIE AND MAIN BREAKERS.
 - ③ NEW OUTDOOR MODULAR PAD MOUNT DIESEL GENERATORS WITH REMOTE START/STOP, PT/CT, ISOC/DROOP AND DIFFERENTIAL PROTECTION FROM MAIN 480V SWITCHGEAR AND AUTO START/CLOSE BLACKOUT MODE.

ONE-LINE DIAGRAM

PROJECT: TYEE LAKE STATION SERVICE DESIGN		ENG. STAMP	
DESIGNER/PROJECT ENGINEER: MITCHELL HEDRICK/DAVID BUSS - EPS		W.O. #: 23-0124	
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	REVIEWED (MGR/SUPV)/DATE
A	ISSUED FOR 30% DESIGN REVIEW	MLH/05-23-2023	
B	ISSUED FOR 90% DESIGN REVIEW	MLH/08-04-2023	
C	ISSUED FOR 100% DESIGN SUBMITTAL	MLH/11-03-2023	



DRAWING NAME:	SEAPA TYEE LAKE STATION SERVICE SWITCHGEAR 1-LINE DIAGRAM	
REF DWG(S):	SEAPA EL-101	tyee-el-0010_1.dwg
DRAWING NO.:	TYEE-EL-0010	SHEET 1 OF 1



- LEGEND**
- ||— GROUND
 - W— CURRENT TRANSFORMER
 - m— POWER TRANSFORMER
 - E— POTENTIAL TRANSFORMER
 - POWER FUSE
 - (27) UNDERVOLTAGE
 - (49) TRANSFORMER THERMAL RELAY
 - (59) OVERVOLTAGE
 - (64) GROUND DETECTOR RELAY
 - (A) AMMETER
 - (V) VOLTMETER
 - (W) WATTMETER
 - (WHD) WATTHOUR DEMAND METER

WORK SEQUENCE NOTES

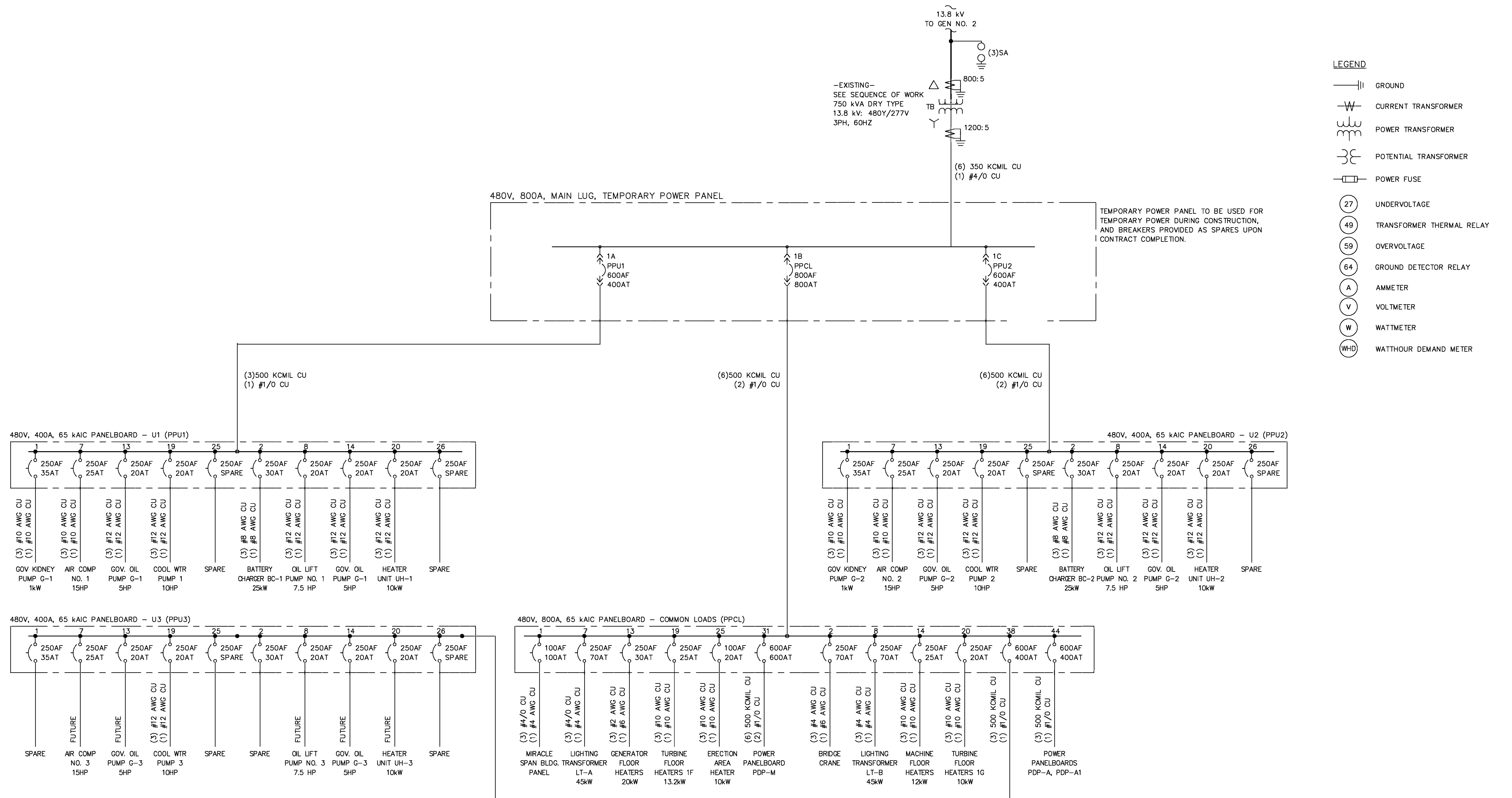
- GENERAL NOTE: REFER TO SPEC SECTION 01 12 16.00 28 FOR WORK SEQUENCE.
- 1 ISOLATE TRANSFORMER T2 AND DEMO CABLE CONNECTIONS TO TRANSFORMER T2. INSTALL TEMPORARY CABLE TO 480VAC TEMP PANEL AND LAND TEMPORARY FEEDERS FROM TEMP PANEL TO POWER PANELS (SEE DWG. TYEE-EL-0010/1 TEMP). INSTALL NEW PANELS PPU1, PPU2, PPU3 & PPCL.
 - 2 ISOLATE UNIT 1 FEEDERS AND ALL FEEDERS ON 480V SWITCHGEAR. DEMO CABLE CONNECTIONS BETWEEN UNIT 1, THE 480V SWITCHGEAR AND THE POWER PANELS.
 - 3 DEMO 480V SWITCHGEAR AND 750KVA TRANSFORMER T1, LEAVING TRANSFORMER T2 ENERGIZED AND IN EXISTING LOCATION. INSTALL NEW 500KVA TRANSFORMER T1, NEW 480V SWITCHGEAR AND UNIT 1 15KV SWITCHGEAR.
 - 4 INSTALL FEEDERS FROM NEW 480V SWITCHGEAR TO NEW PANELS PPU1, PPU2, PPU3 & PPCL, AND ENERGIZE THESE PANELS VIA UNIT 1 WITH THE SWITCHGEAR TIE BREAKERS CLOSED. CUT-OVER THE CIRCUITS FROM THE OLD PANELS TO THE NEW PANELS, THEN DEMO THE OLD PANELS.
 - 5 DEMO THE OLD 750KVA TRANSFORMER T2. INSTALL NEW 500KVA TRANSFORMER T2 AND REPLACE UNIT 2 15KV SWITCHGEAR. CONNECT THE NEW TRANSFORMER TO THE BUS.

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DESIGNER/PROJECT ENGINEER: MITCHELL HEDRICK/DAVID BUSS - EPS W.O. # 23-0124				
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B	ISSUED FOR 90% DESIGN REVIEW	MLH/08-04-2023		
C	ISSUED FOR 100% DESIGN SUBMITTAL	MLH/11-03-2023		

ENG. STAMP



DRAWING NAME:	SEAPA TYEE LAKE STATION SERVICE SWITCHGEAR 1-LINE DIAGRAM (DEMOLITION)		
REF DWG(S):	SEAPA TY-47-104		
DRAWING NO.:	TYEE-EL-0010_DEMO		
	SHEET 1 OF 1		



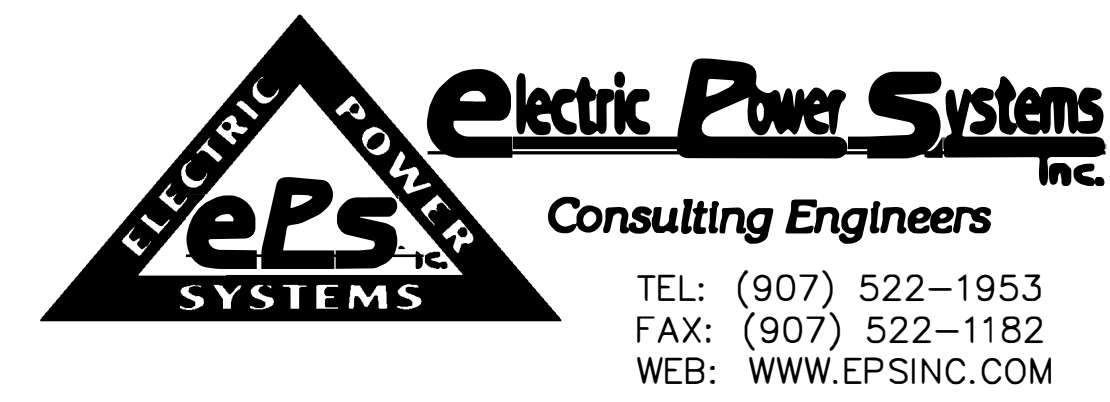
LEGEND

	GROUND
	CURRENT TRANSFORMER
	POWER TRANSFORMER
	POTENTIAL TRANSFORMER
	POWER FUSE
	UNDERVOLTAGE
	TRANSFORMER THERMAL RELAY
	OVERVOLTAGE
	GROUND DETECTOR RELAY
	AMMETER
	VOLTMETER
	WATTMETER
	WATTHOUR DEMAND METER

ONE-LINE DIAGRAM

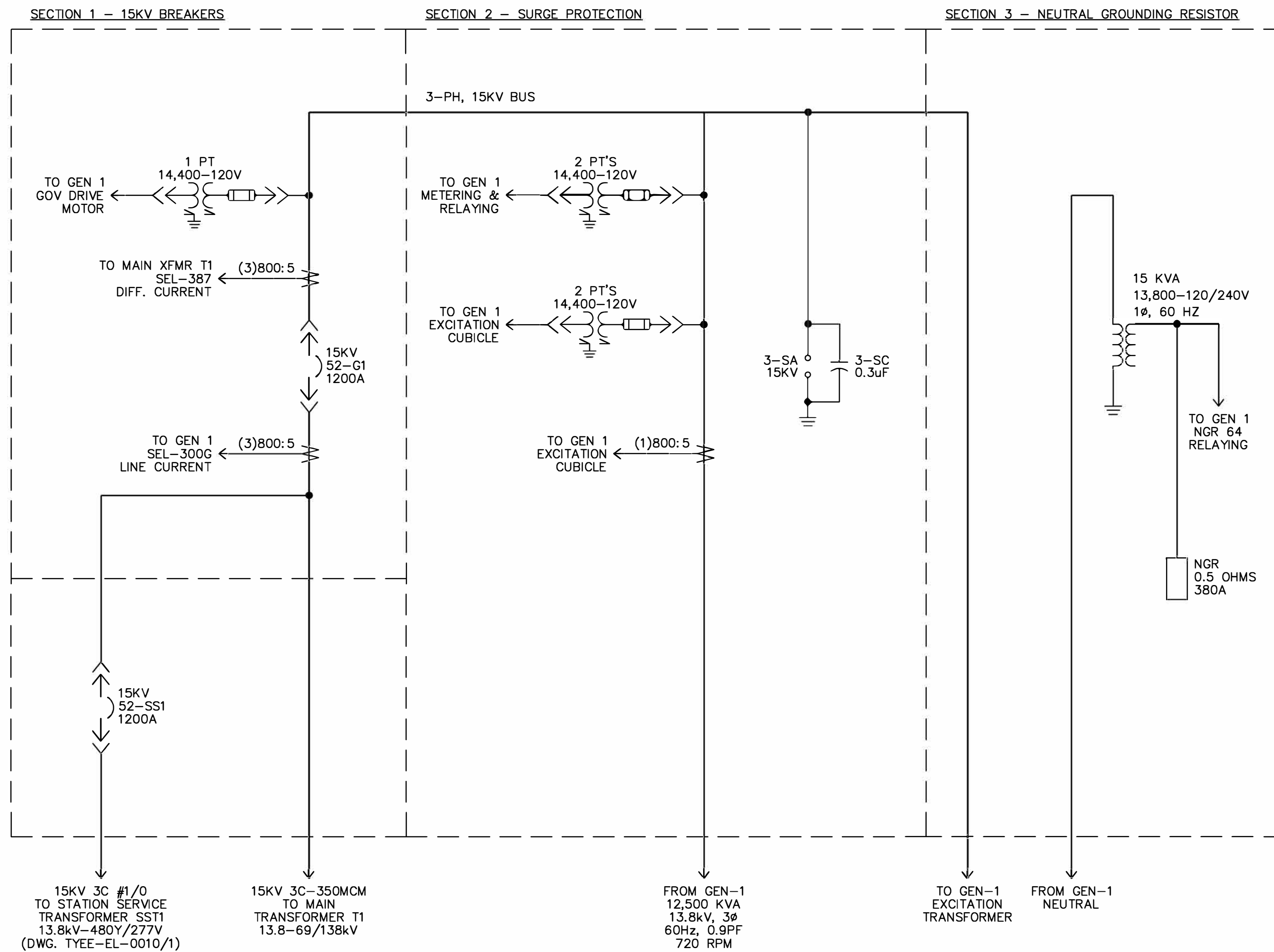
PROJECT: TYEE LAKE STATION SERVICE DESIGN				
DESIGNER/PROJECT ENGINEER: MITCHELL HEDRICK/DAVID BUSS - EPS				
				W.O. #: 23-0124
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	REVIEWED (MGR/SUPV)/DATE	APPROVED (DIRECTOR)/DATE
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ENG. STAMP

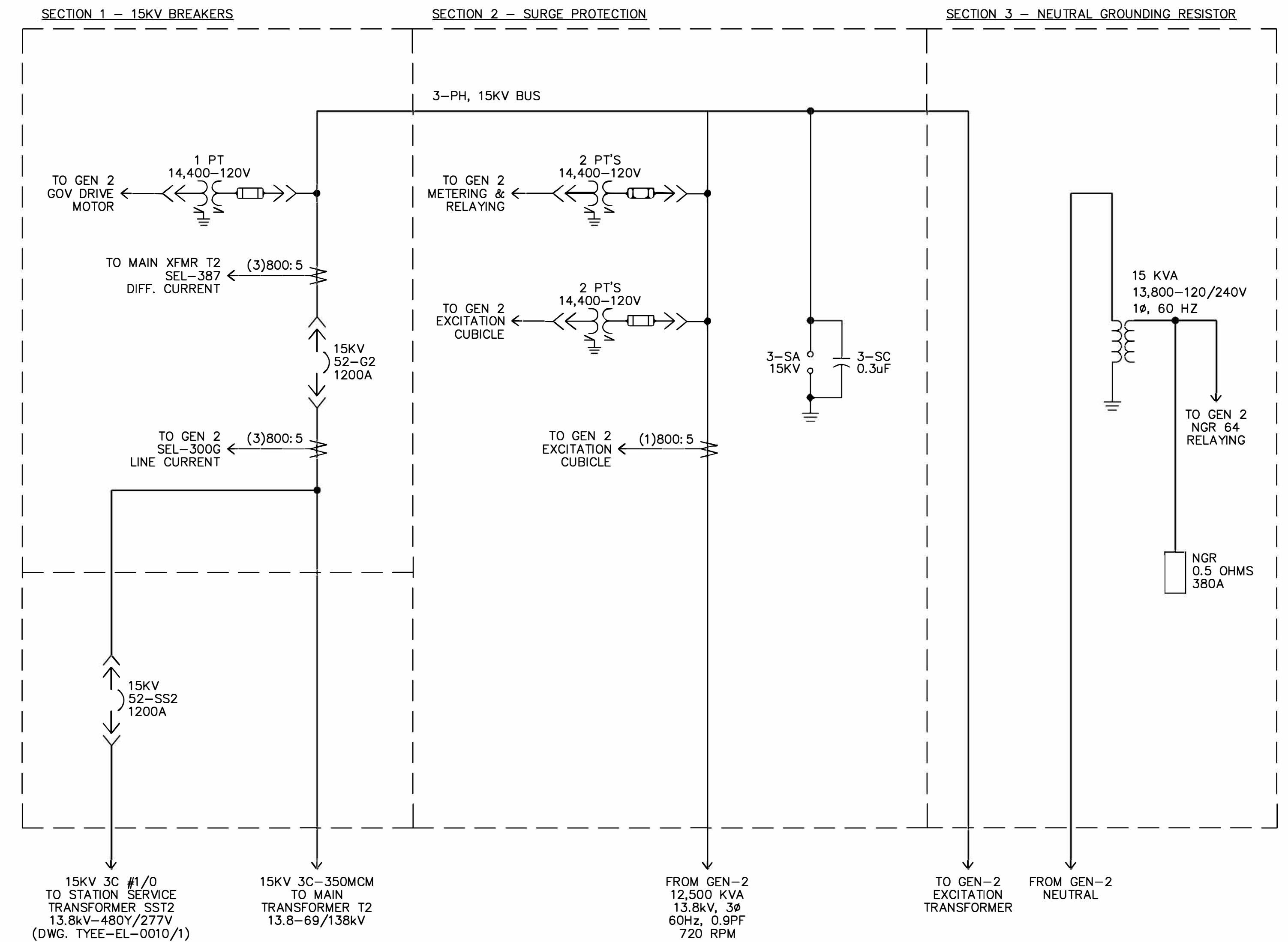


DRAWING NAME:		SEAPA TYEE LAKE STATION SERVICE SWITCHGEAR 1-LINE DIAGRAM (TEMP)
REF DWG(S):	SEAPA TY-47-104	
DRAWING NO.:	TYEE-EL-0010_TEMP	
		9/21/23 tvee-el-0010_1_temp.dwg
		SHEET 1 OF 1

GENERATOR 1 15KV SWITCHGEAR



GENERATOR 2 15KV SWITCHGEAR

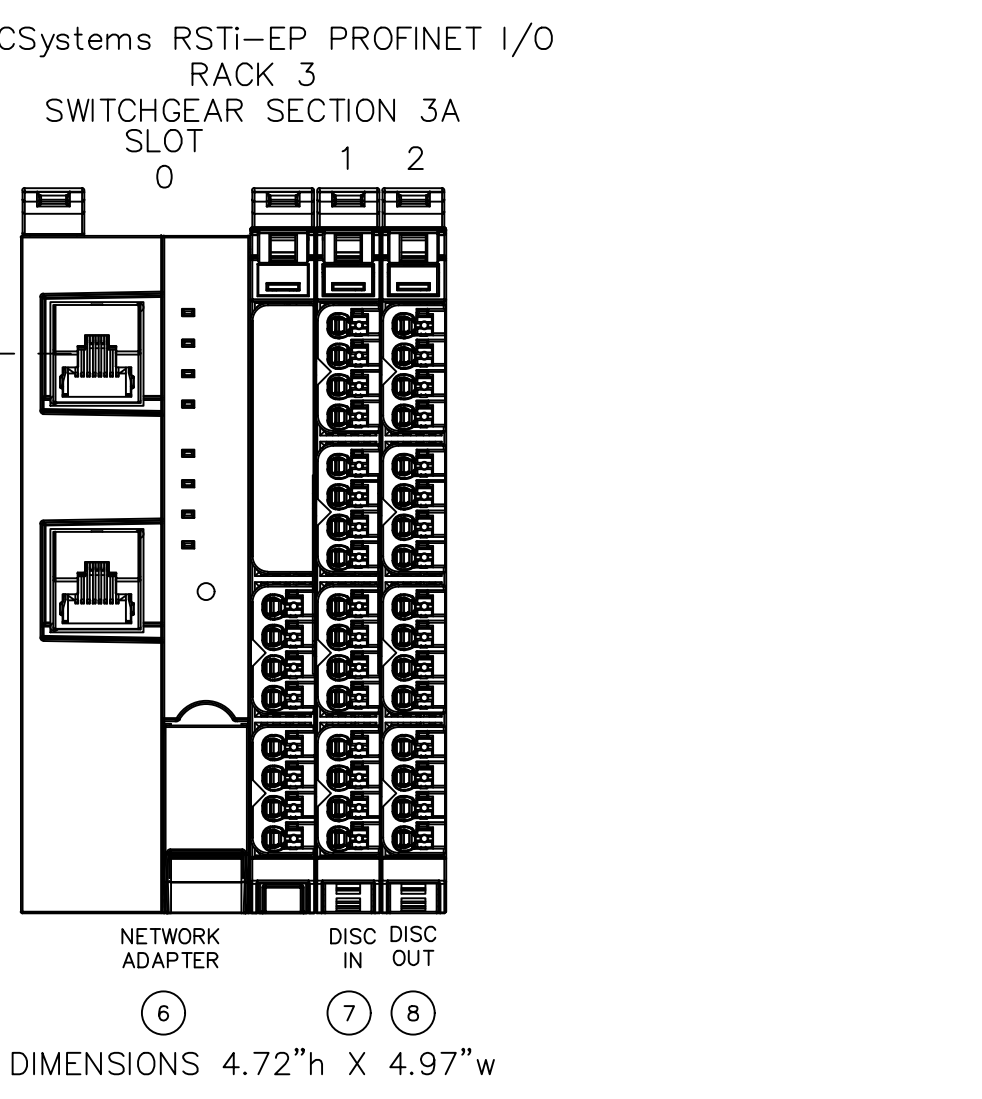
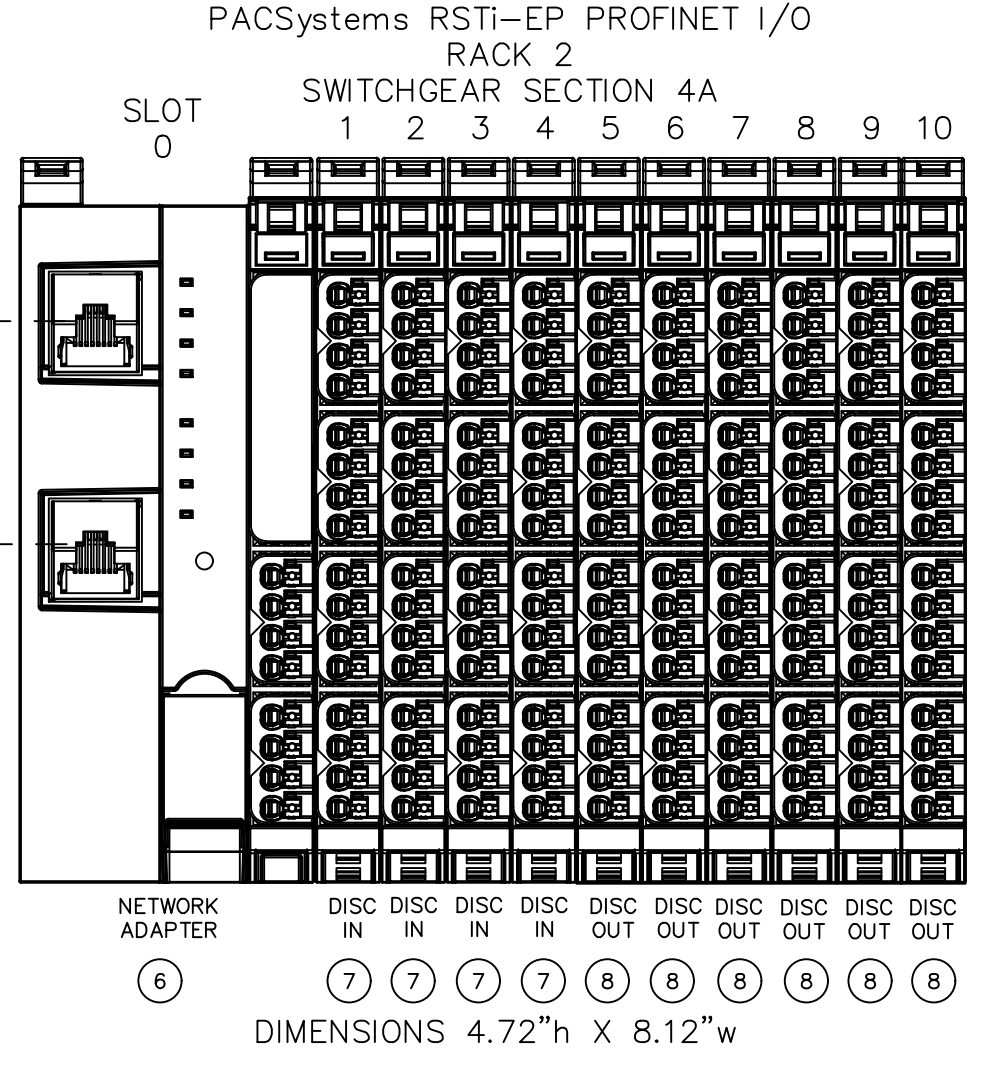
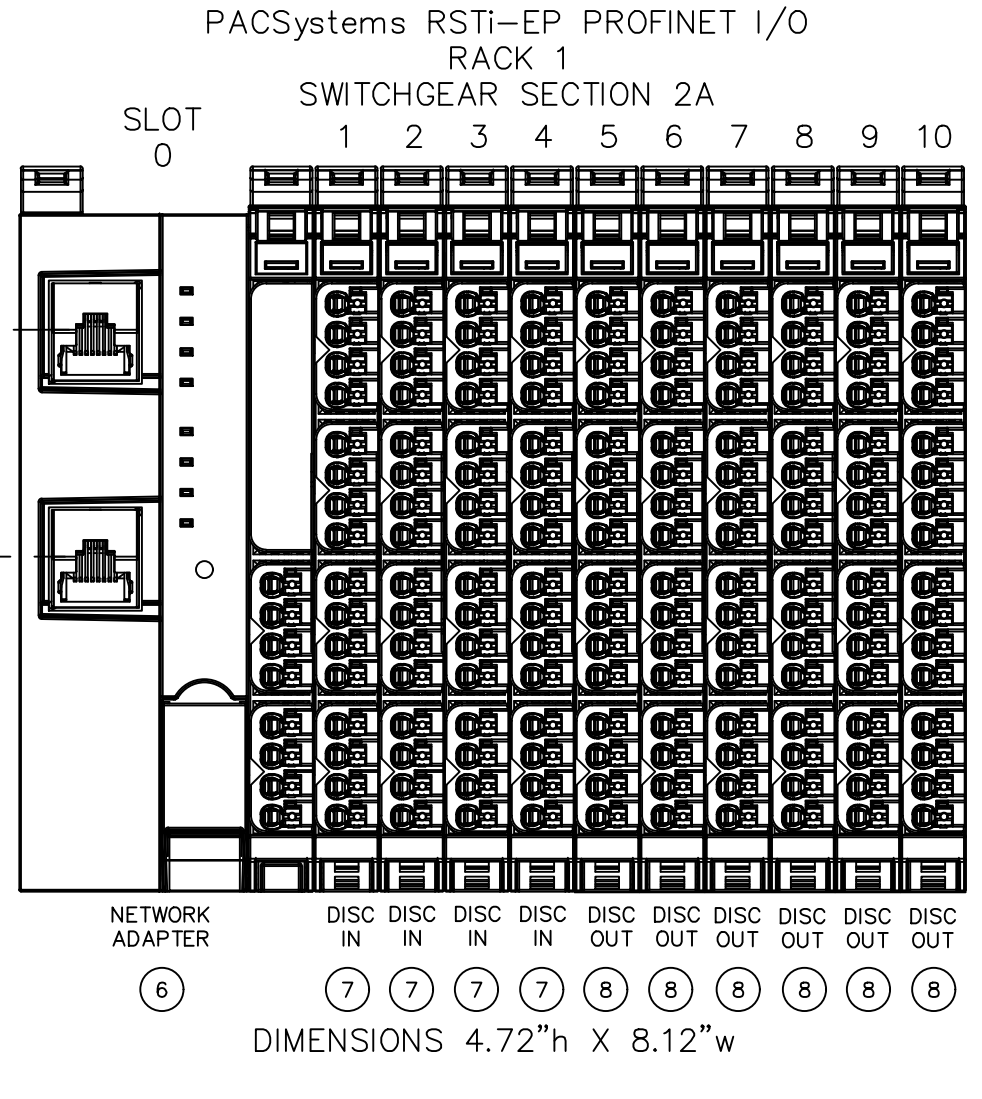
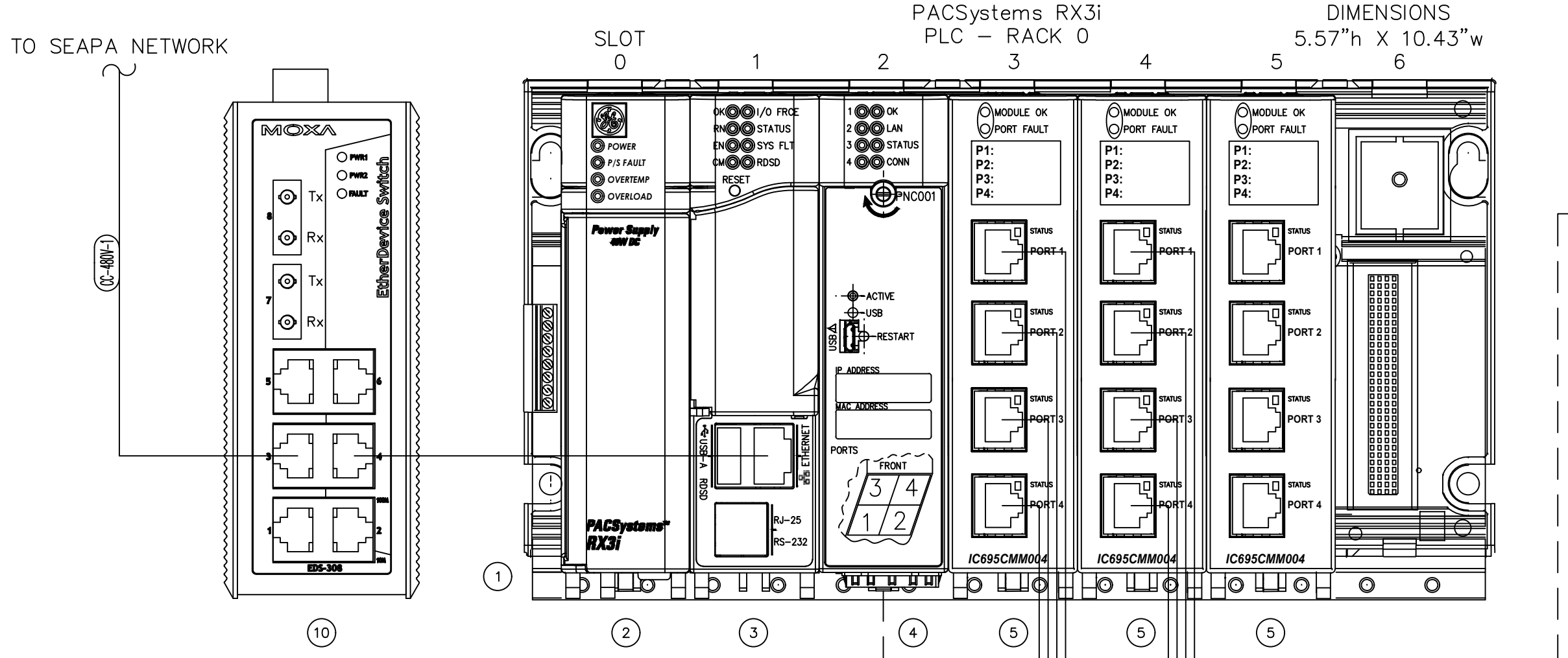


PROJECT: TYEE LAKE STATION SERVICE DESIGN				
DESIGNER/PROJECT ENGINEER: MITCHELL HEDRICK/DAVID BUSS - EPS W.O. #: 23-0124				
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C	ISSUED FOR 100% DESIGN SUBMITTAL	MLH/11-03-2023		

ENG. STAMP

DRAWING NAME: SEAPA TYEE LAKE GENERATOR 15KV SWITCHGEARS 1-LINE DIAGRAM	
REF DWG(S):	SEAPA H02-F-47-0003-R52
DRAWING NO.:	TYEE-EL-0011
SHEET 1 OF 1	

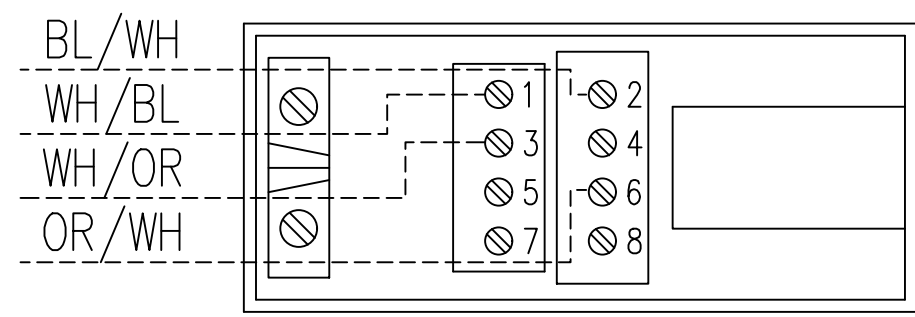
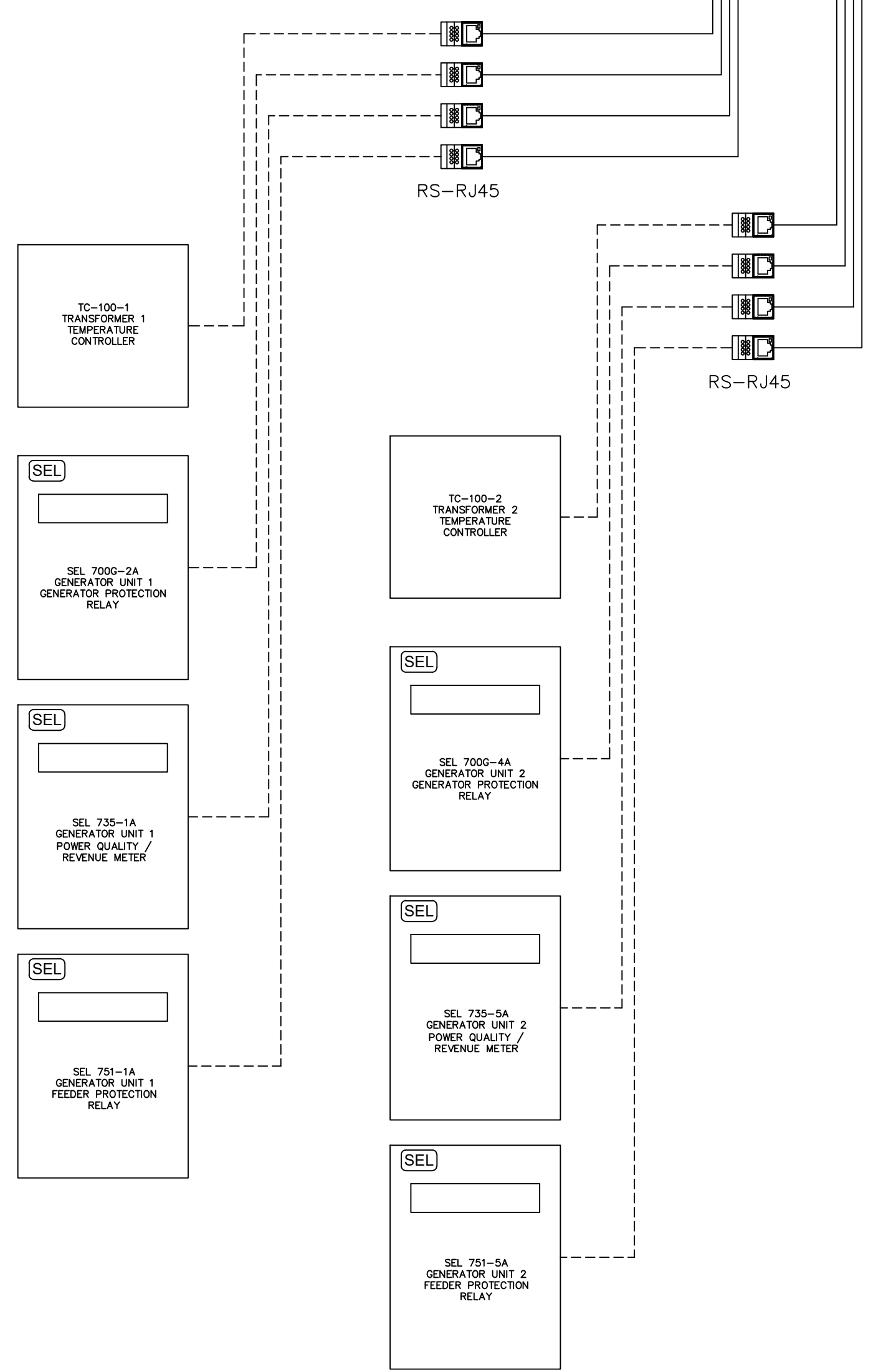
tyee-el-0011_1.dwg



BILL OF MATERIAL

REF. NO.	UNIT	ESTIMATED QUANTITY	DESCRIPTION	MANUFACTURER/CATALOG NUMBER	FURNISHED BY
①	EA	1	PACSystems RX3i PLC 7-SLOT BACKPLANE	EMERSON / IC695CHS007	C
②	EA	1	PACSystems RX3i PLC POWER SUPPLY, 24VDC	EMERSON / IC695PSD140	C
③	EA	1	PACSystems RX3i PLC PROCESSOR	EMERSON / IC695CPE305	C
④	EA	1	PACSystems RX3i PROFINET CONTROLLER	EMERSON / IC695PNC001	C
⑤	EA	3	PACSystems RX3i SERIAL COMMUNICATIONS MODULE	EMERSON / IC695CMM004	C
⑥	EA	3	PACSystems RSTi EP PROFINET NETWORK ADAPTER	EMERSON / EXPNS001	C
⑦	EA	9	PACSystems RSTi EP DISCRETE INPUT MODULE	EMERSON / EP-1218	C
⑧	EA	13	PACSystems RSTi EP DISCRETE OUTPUT MODULE	EMERSON / EP-2714	C
⑨	EA	8	RS-RJ45 CONNECTOR	WEIDMULLER / 8611320000	C
⑩	EA	1	8-PORT ETHERNET SWITCH, UNMANAGED	MOXA / EDS-308	C

C = CONTRACTOR. O = OWNER.



RS-RJ45 CONNECTOR

LEGEND:

- RS-485 SHLD, 4-WIRE
- Profinet CAT5
- ETHERNET

NOTES:
1. COORDINATE SEAPA NETWORK CONNECTION WITH SEAPA PERSONNEL.

(I/O RACK DIMENSIONS INCLUDE END BRACKETS)

PROJECT: TYEE LAKE STATION SERVICE DESIGN				
DESIGNER/PROJECT ENGINEER: MITCHELL HEDRICK/DAVID BUSS - EPS W.O. #: 23-0124				
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	OWN BY/DATE	REVIEWED (MGR/SUPV)/DATE	APPROVED (DIRECTOR)/DATE
A	ISSUED FOR 90% REVIEW	MLH/08-04-2023		
B	ISSUED FOR 100% DESIGN SUBMITTAL	MLH/11-03-2023		

ENG. STAMP

Electric Power Systems Inc.
Consulting Engineers

TEL: (907) 522-1953
FAX: (907) 522-1182
WEB: WWW.EPSINC.COM

DRAWING NAME: **SEAPA TYEE LAKE STATION SERVICE SWITCHGEAR COMMUNICATIONS DIAGRAM**

REF DWG(S):

DRAWING NO.: **TYEE-EL-0012**

SHEET **1** OF **1**

DESCRIPTION		BKR		KVA			CKT NO	BUS CONN A B C	CKT NO	KVA			BKR		DESCRIPTION
		POLE	AMP	A	B	C				A	B	C	POLE	AMP	
DUCT HEATER #2 ON MAIN DISCONNECT		3	175	X			1		2						
					X		3		4						
						X	5		6						
SWITCHYARD LIGHTING TRANSFORMER		3	100	X			7		8	X			3	80	SWITCHYARD POWER OUTLET, 60A
					X		9		10		X				
						X	11		12			X			
MACHINE FLOOR POWER OUTLET, 60A		3	80	X			13		14	X			3	80	TURBINE FLOOR POWER OUTLET, 60A
					X		15		16		X				
						X	17		18			X			
TUNNEL RECEPTACLE, 60A		3	70	X			19		20	X			3	40	TURBINE FLOOR POWER OUTLET, 30A
					X		21		22		X				
						X	23		24			X			
WELDING MACHINE		3	40	X			25		26	X			3	25	ELECTRIC WATER HEATER
					X		27		28		X				
						X	29		30			X			
ELECTRIC HEATER EH-1		3	20	X			31		32	X			3	20	ELECTRIC HEATER EH-2
					X		33		34		X				
						X	35		36			X			
DUCT HEATER #1		3	20	X			37		38	X			3	20	UNIT HEATER UH-1D, AUXILIARY ROOM
					X		39		40		X				
						X	41		42			X			
VENTILATION UNIT		3	20	X			43		44	X			3	20	DRAINAGE PUMP
					X		45		46		X				
						X	47		48			X			
SEWAGE LIFT PUMP		3	20	X			49		50	X			3		SPACE
					X		51		52		X				
						X	53		54			X			
TOTAL				X	X	X				X	X	X			TOTAL

MAIN LUG = 400A
 BUS. RATING = 400A
 SERVICE VOLTAGE = 480V AC
 TYPE = 3 PHASE, 3 WIRE
 ENCLOSURE = NEMA 1
 MOUNTING = SURFACE

PANEL NO. = PDP-A
 SERVICE = NORMAL/EMERGENCY POWER
 LOCATION = AUXILIARY ROOM
 PLAN DRAWING = TYEE-EL-4500_2

SOURCE = PPCL
 FEEDER SIZE = 250A
 65KAIC (SYMMETRICAL)

BUS A XXX KVA
 BUS B XXX KVA
 BUS C XXX KVA
 TOTAL XXX KVA

NOTE 1: ESTIMATED DIVERSIFIED LOAD IS XX KVA

DESCRIPTION		BKR		KVA			CKT NO	BUS CONN A B C	CKT NO	KVA			BKR		DESCRIPTION
		POLE	AMP	A	B	C				A	B	C	POLE	AMP	
HEATER #1		3	20	X			1		2	X			3	20	HEATER #3
							3		4		X				
							5		6			X			
HEATER #4		3	20	X			7		8	X			3	20	HEATER #5
							9		10		X				
							11		12			X			
HEATER #6		3	20	X			13		14	X			3	20	HEATER #7
							15		16		X				
							17		18			X			
HEATER #8		3	20	X			19		20	X			3	20	HEATER #9
							21		22		X				
							23		24			X			
HEATER #10		3	20	X			25		26	X			3	20	KITCHEN TRANSFORMER
							27		28		X				
							29		30			X			
TOTAL				X	X	X				X	X	X			TOTAL

MAIN BREAKER = 225A
 BUS. RATING = 400A
 SERVICE VOLTAGE = 480V AC
 TYPE = 3 PHASE, 3 WIRE
 ENCLOSURE = NEMA 1
 MOUNTING = SURFACE

PANEL NO. = PDP-A1
 SERVICE = NORMAL/EMERGENCY POWER
 LOCATION = AUXILIARY ROOM
 PLAN DRAWING = TYEE-EL-4500_2

SOURCE = PPCL
 FEEDER SIZE = 250A
 65KAIC (SYMMETRICAL)

BUS A XXX KVA
 BUS B XXX KVA
 BUS C XXX KVA
 TOTAL XXX KVA

NOTE 1: ESTIMATED DIVERSIFIED LOAD IS XX KVA

CONSTRUCTION NOTE

- CONTRACTOR TO FIELD VERIFY AND AS-BUILD CIRCUIT KVA LOADING.

PROJECT: TYEE LAKE STATION SERVICE DESIGN				ENG. STAMP	
DESIGNER/PROJECT ENGINEER: MITCHELL HEDRICK/DAVID BUSS - EPS				W.O. #: 23-0124	
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DRAWING NAME:		SEAPA TYEE LAKE STATION SERVICE UPGRADE NEW PDP-A & PDP-A1 PANEL SCHEDULES	
REF DWG(S):	SEAPA EL-101		
DRAWING NO.:	TYEE-EL-0015		
		SHEET 1 OF 1	

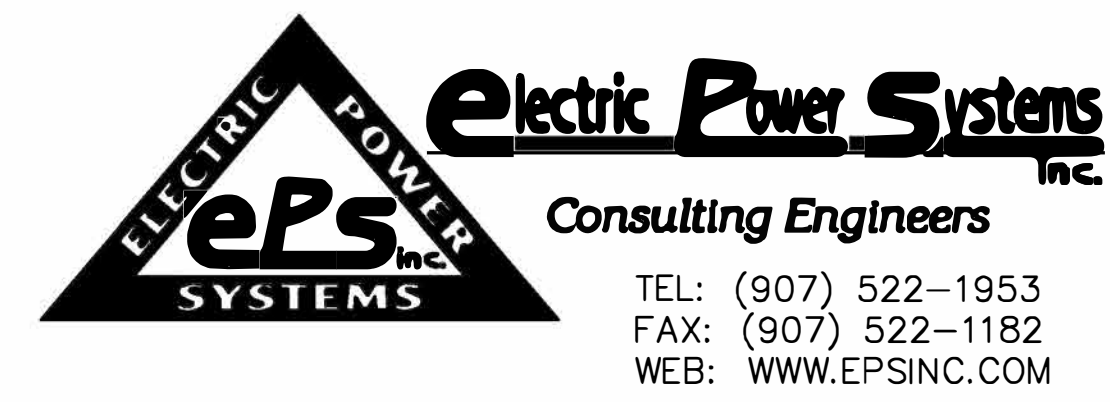
MAIN BREAKER = 100A BUS. RATING = 225A SERVICE VOLTAGE = 120/208V AC TYPE = 3 PHASE, 4 WIRE ENCLOSURE = NEMA 1 MOUNTING = SURFACE			PANEL NO. = LP-A SERVICE = NORMAL/EMERGENCY POWER LOCATION = MACHINE FLOOR PLAN DRAWING = TYEE-EL-4500_2			SOURCE = PPCL VIA XFMR FEEDER SIZE = 150A 65KAIC (SYMMETRICAL)								
DESCRIPTION	BKR		KVA			CKT NO	BUS CONN A B C	CKT NO	KVA			BKR		DESCRIPTION
	POLE	AMP	A	B	C				A	B	C	POLE	AMP	
AUXILIARY ROOM LIGHTING	1	20	X			1	+	2	X			1	20	TURBINE FLOOR LIGHTING
AUXILIARY ROOM LIGHTING	1	20		X		3	+	4		X		1	20	TURBINE FLOOR LIGHTING
EXC. CUBICLE RELAYS 64F	1	20			X	5	+	6			X	1	20	TURBINE FLOOR LIGHTING
MACHINE FLOOR LIGHTING	1	20	X			7	+	8	X			1	20	WORKSHOP/BATTERY ROOM LIGHTING
MACHINE FLOOR LIGHTING	1	20		X		9	+	10		X		1	20	STANDBY GENERATOR ROOM LIGHTING
MACHINE FLOOR LIGHTING	1	20			X	11	+	12			X	1	20	#2 GCC POWER SUPPLY
MACHINE FLOOR RECEPTACLES	1	20	X			13	+	14	X			2	20	FUEL OIL STORAGE ROOM HEATER
MACHINE FLOOR RECEPTACLES	1	20		X		15	+	16		X		/	/	
MACHINE FLOOR RECEPTACLES	1	20			X	17	+	18			X	1	20	RECEPTACLE S.S. DECK
#1 EXC. CONVENIENCE RECEPTACLE	1	20	X			19	+	20	X			1	20	TURBINE FLOOR RECEPTACLE
#1 GCC POWER SUPPLY	1	20		X		21	+	22		X		1	20	TURBINE FLOOR RECEPTACLE
NEW STANDBY GEN PAD SUBPANEL	5	100			X	23	+	24			X	1	20	MACHINE SHOP LIGHTING
	/	/	X			25	+	26	X			1	20	MACHINE SHOP RECEPTACLE
	/	/		X		27	+	28		X		1	20	STRAINER #1
RECEPTACLE STANDBY DOORWAY	1	20			X	29	+	30			X	1	20	STRAINER #2
#1 GCC CONVENIENCE	1	20	X			31	+	32	X			1	20	STRAINER #3
480V SWITCHGEAR HEATERS	1	20		X		33	+	34		X		1	20	RECEPTACLE BTM FLR EXT. STBY RM
480V SWITCHGEAR HEATERS	1	20			X	35	+	36			X	2	20	SPARE
#2 GCC CONVENIENCE	1	20	X			37	+	38	X			/	/	
RECEPTACLE BOTTOM FLOOR EAST COLUMN	2	50		X		39	+	40		X		1	20	#2 EXC. GND FLT 64F
RECEPTACLE BOTTOM FLOOR WEST COLUMN	/	/			X	41	+	42			X	1	20	#2 EXC. CONVENIENCE
TOTAL			X	X	X				X	X	X	TOTAL		
							BUS A XXX KVA							
							BUS B XXX KVA							
							BUS C XXX KVA							
							TOTAL XXX KVA							
NOTE 1: ESTIMATED DIVERSIFIED LOAD IS XX KVA														

CONSTRUCTION NOTE

1. CONTRACTOR TO FIELD VERIFY AND AS-BUILD CIRCUIT KVA LOADING.

PROJECT: TYEE LAKE STATION SERVICE DESIGN				
DESIGNER/PROJECT ENGINEER: MITCHELL HEDRICK/DAVID BUSS - EPS W.O. #: 23-0124				
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	REVIEWED (MGR/SUPV)/DATE	APPROVED (DIRECTOR)/DATE
A	ISSUED FOR 100% DESIGN REVIEW	MLH/11-03-2023		

ENG. STAMP



DRAWING NAME:		SEAPA TYEE LAKE STATION SERVICE UPGRADE EXISTING PANEL LP-A	
REF DWG(S):		TY-47-183	
DRAWING NO.:		TYEE-EL-0016	
		SHEET 1 OF 1	

MAIN BREAKER = 100A BUS. RATING = 225A SERVICE VOLTAGE = 120/208V AC TYPE = 3 PHASE, 4 WIRE ENCLOSURE = NEMA 1 MOUNTING = SURFACE			PANEL NO. = LP-A SERVICE = NORMAL/EMERGENCY POWER LOCATION = MACHINE FLOOR PLAN DRAWING = TYEE-EL-4500_2			SOURCE = PPCL VIA XFMR FEEDER SIZE = 150A 65KAIC (SYMMETRICAL)									
DESCRIPTION	BKR		KVA			CKT NO	BUS CONN A B C	CKT NO	KVA			BKR		DESCRIPTION	
	POLE	AMP	A	B	C				A	B	C	POLE	AMP		
AUXILIARY ROOM LIGHTING	1	20	X			1		2	X			1	20	TURBINE FLOOR LIGHTING	
AUXILIARY ROOM LIGHTING	1	20		X		3		4		X		1	20	TURBINE FLOOR LIGHTING	
EXC. CUBICLE RELAYS 64F	1	20			X	5		6			X	1	20	TURBINE FLOOR LIGHTING	
MACHINE FLOOR LIGHTING	1	20	X			7		8	X			1	20	WORKSHOP/BATTERY ROOM LIGHTING	
MACHINE FLOOR LIGHTING	1	20		X		9		10		X		1	20	STANDBY GENERATOR ROOM LIGHTING	
MACHINE FLOOR LIGHTING	1	20			X	11		12			X	1	20	#2 GCC POWER SUPPLY	
MACHINE FLOOR RECEPTACLES	1	20	X			13		14	X			2	20	FUEL OIL STORAGE ROOM HEATER	
MACHINE FLOOR RECEPTACLES	1	20		X		15		16		X					
MACHINE FLOOR RECEPTACLES	1	20			X	17		18			X	1	20	RECEPTACLE S.S. DECK	
#1 EXC. CONVENIENCE RECEPTACLE	1	20	X			19		20	X			1	20	TURBINE FLOOR RECEPTACLE	
#1 GCC POWER SUPPLY	1	20		X		21		22		X		1	20	TURBINE FLOOR RECEPTACLE	
STANDBY GENERATOR BATTERY CHARGER	1	20			X	23		24			X	1	20	MACHINE SHOP LIGHTING	
STANDBY GENERATOR DAY TANK	1	20	X			25		26	X			1	20	MACHINE SHOP RECEPTACLE	
STANDBY GENERATOR OIL PAN HEATER	1	20		X		27		28		X		1	20	STRAINER #1	
RECEPTACLE STANDBY DOORWAY	1	20			X	29		30			X	1	20	STRAINER #2	
#1 GCC CONVENIENCE	1	20	X			31		32	X			1	20	STRAINER #3	
480V SWITCHGEAR HEATERS	1	20		X		33		34		X		1	20	RECEPTACLE BTM FLR EXT. STBY RM	
480V SWITCHGEAR HEATERS	1	20			X	35		36			X	2	20	STANDBY GENERATOR BLOCK HEATER	
#2 GCC CONVENIENCE	1	20	X			37		38	X						
RECEPTACLE BOTTOM FLOOR EAST COLUMN	2	50			X	39		40		X		1	20	#2 EXC. GND FLT 64F	
RECEPTACLE BOTTOM FLOOR WEST COLUMN					X	41		42			X	1	20	#2 EXC. CONVENIENCE	
TOTAL			X	X	X				X	X	X	TOTAL			
							BUS A	XXX KVA							
							BUS B	XXX KVA							
							BUS C	XXX KVA							
							TOTAL	XXX KVA							
NOTE 1: ESTIMATED DIVERSIFIED LOAD IS XX KVA															

CONSTRUCTION NOTE

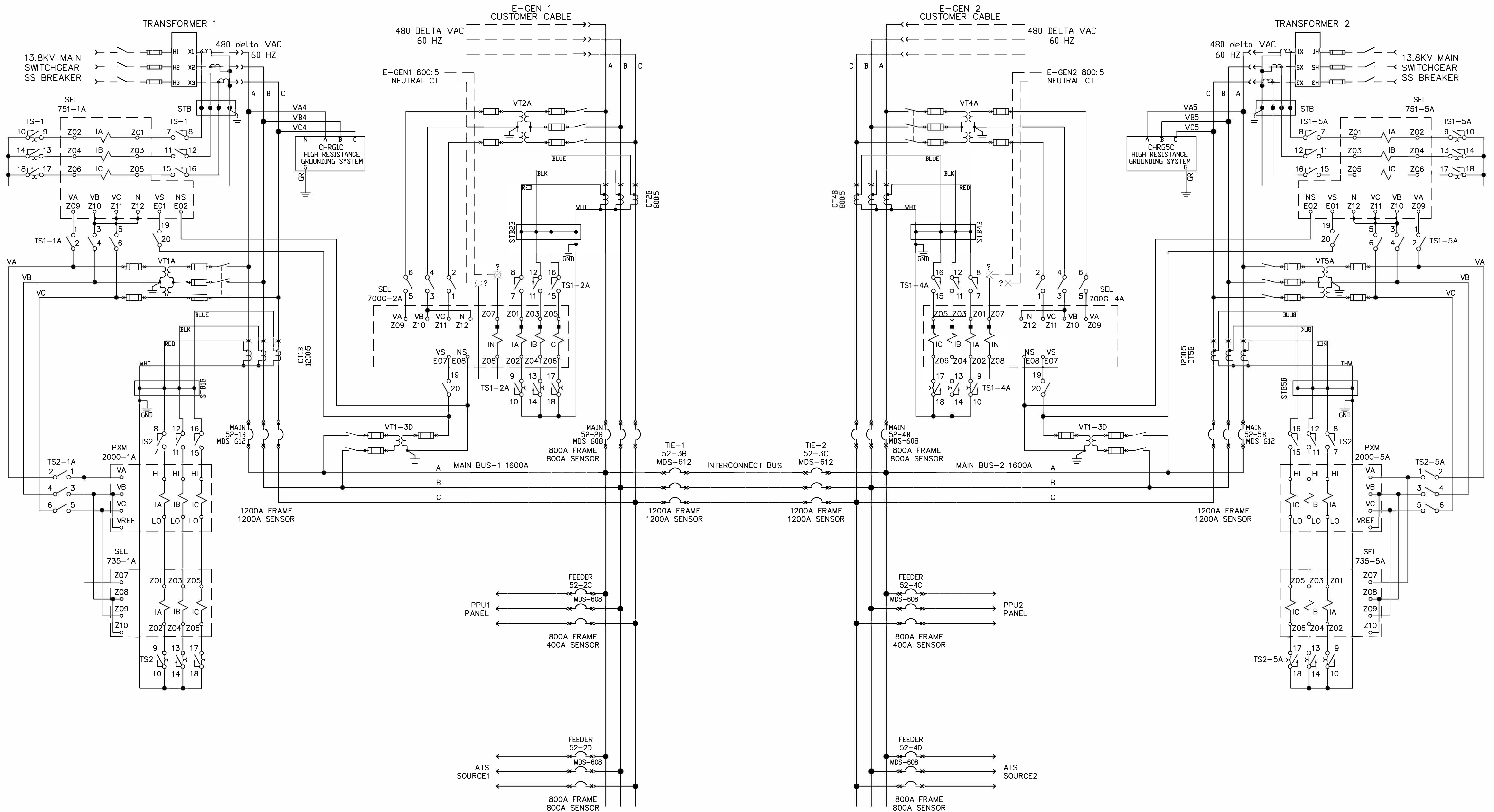
1. CONTRACTOR TO FIELD VERIFY AND AS-BUILD CIRCUIT KVA LOADING.

PROJECT: TYEE LAKE STATION SERVICE DESIGN				
DESIGNER/PROJECT ENGINEER: MITCHELL HEDRICK/DAVID BUSS - EPS W.O. #: 23-0124				
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	REVIEWED (MGR/SUPV)/DATE	APPROVED (DIRECTOR)/DATE
A	ISSUED FOR 100% DESIGN REVIEW	MLH/11-03-2023		

ENG. STAMP



DRAWING NAME:		SEAPA TYEE LAKE STATION SERVICE UPGRADE EXISTING PANEL LP-A (DEMOLITION)	
REF DWG(S):		TY-47-183	
DRAWING NO.:		TYEE-EL-0016_DEMO	
		SHEET 1 OF 1	



PROJECT: TYEE LAKE STATION SERVICE DESIGN				
DESIGNER/PROJECT ENGINEER: MITCHELL HEDRICK/DAVID BUSS - EPS W.O. # 23-0124				
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	REVIEWED (MGR/SJVP)/DATE	APPROVED (DIRECTOR)/DATE
A	ISSUED FOR 90% REVIEW	MLH/08-04-2023		
B	ISSUED FOR 100% DESIGN SUBMITTAL	MLH/11-03-2023		

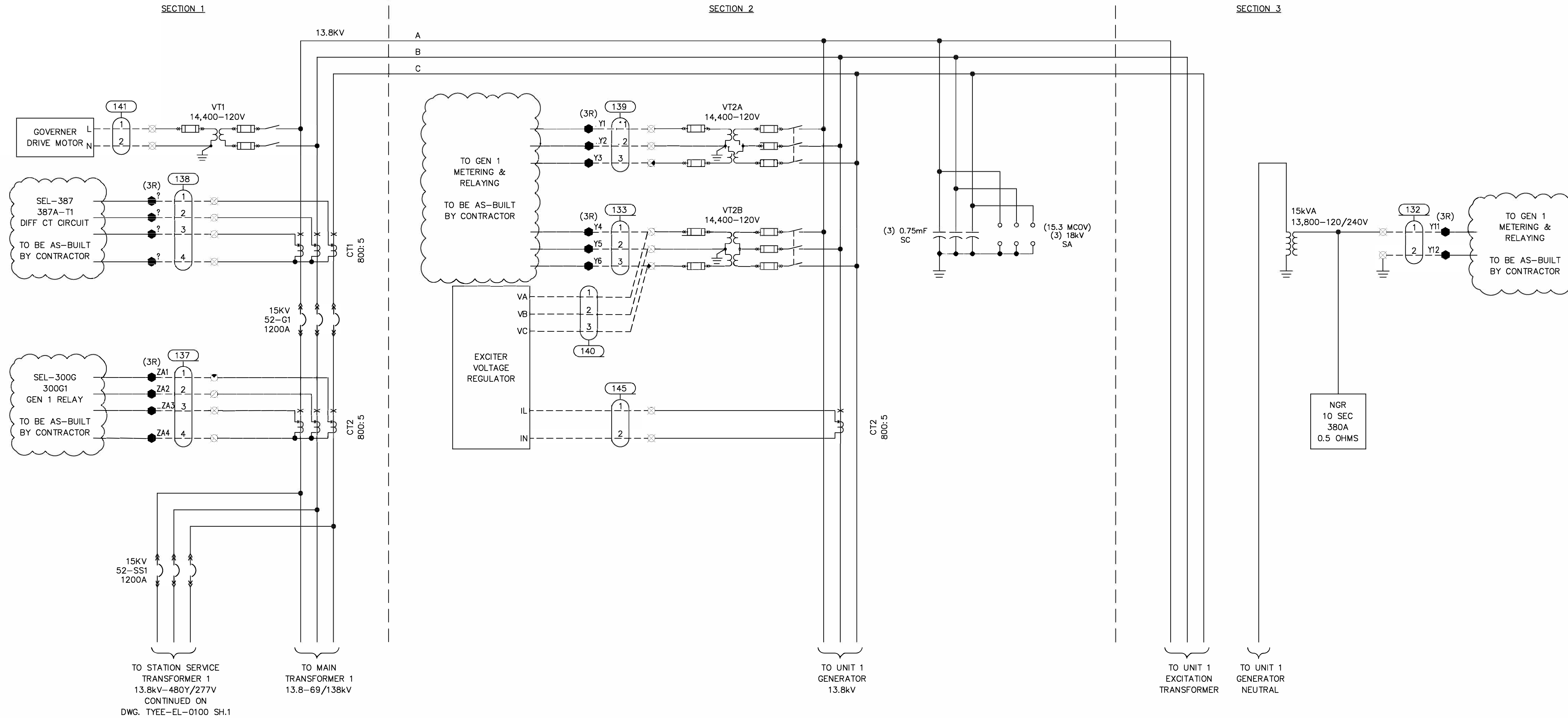
ENG. STAMP



TEL: (907) 522-1953
 FAX: (907) 522-1182
 WEB: WWW.EPSINC.COM

DRAWING NAME:	SEAPA TYEE LAKE STATION SERVICE SWITCHGEAR 3-LINE DIAGRAM
REF DWG(S):	tyee-el-0100_1.dwg
DRAWING NO.:	TYEE-EL-0100
	SHEET 1 OF 1

⊗ SWITCHGEAR TERMINAL FOR COSTUMER CONNECTION



CONSTRUCTION NOTE

1. CONTRACTOR TO FIELD VERIFY TERMINATION POINTS IN UNIT 1 SWITCHGEAR AND CONTROL SWITCHBOARD.

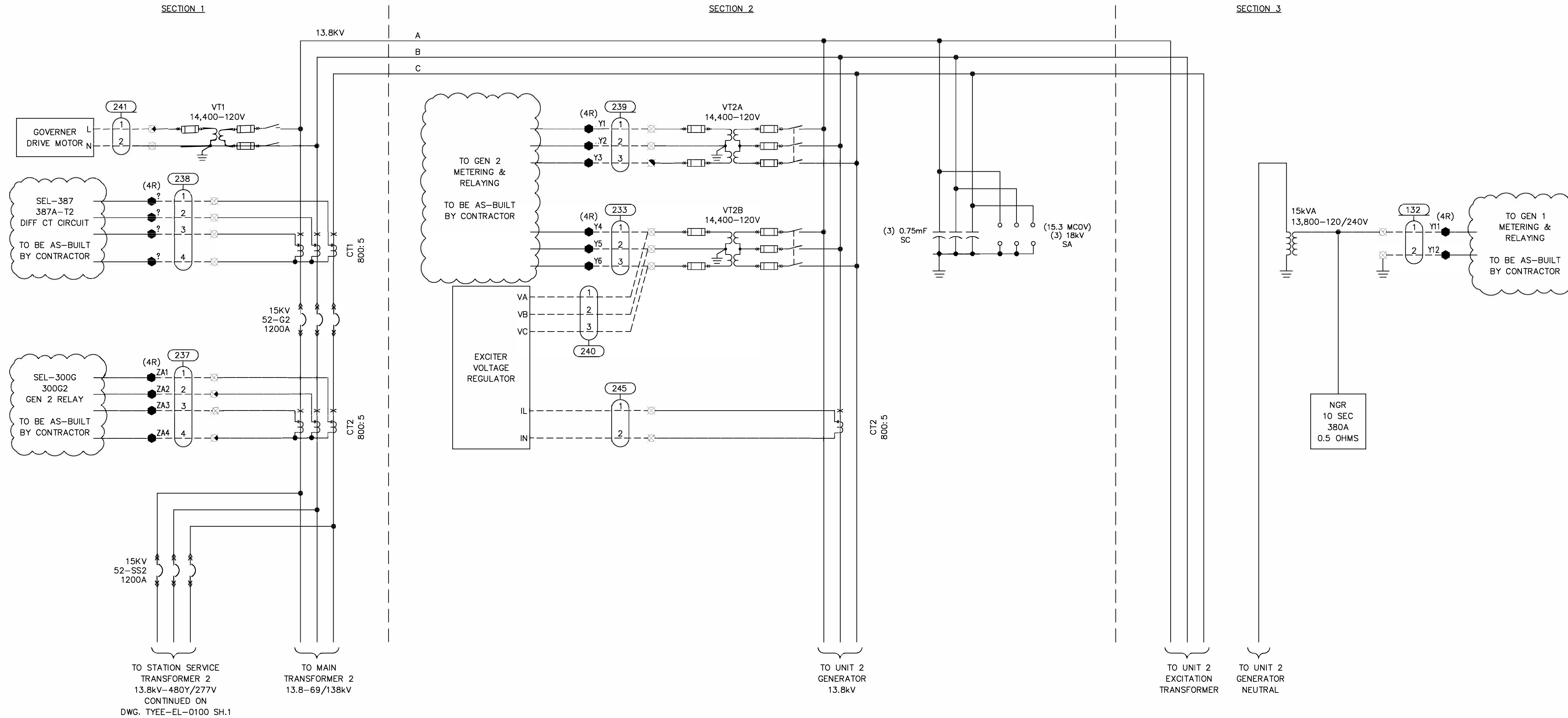
PROJECT: TYEE LAKE STATION SERVICE DESIGN				
DESIGNER/PROJECT ENGINEER: MITCHELL HEDRICK/DAVID BUSS - EPS W.O. #: 23-0124				
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	REVIEWED (MGR/SUPV)/DATE	APPROVED (DIRECTOR)/DATE
A	ISSUED FOR 100% DESIGN SUBMITTAL	MLH/11-03-2023		

ENG. STAMP



DRAWING NAME:		SEAPA TYEE LAKE UNIT 1 SWITCHGEAR 3-LINE DIAGRAM	
REF DWG(S):		tyee-el-0101_1.dwg	
DRAWING NO.:		TYEE-EL-0101	
		SHEET 1 OF 1	

⊗ SWITCHGEAR TERMINAL FOR COSTUMER CONNECTION



CONSTRUCTION NOTE

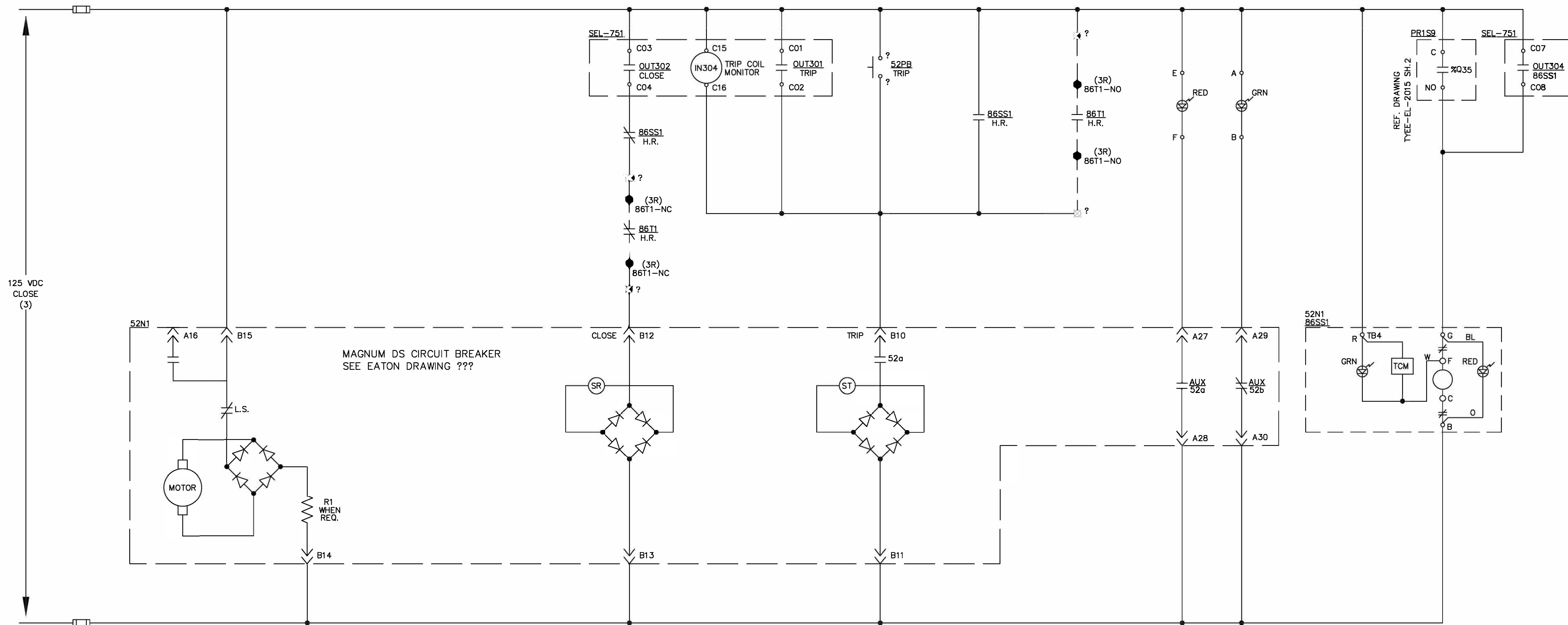
1. CONTRACTOR TO FIELD VERIFY TERMINATION POINTS IN UNIT 1 SWITCHGEAR AND CONTROL SWITCHBOARD.

PROJECT: TYEE LAKE STATION SERVICE DESIGN				
DESIGNER/PROJECT ENGINEER: MITCHELL HEDRICK/DAVID BUSS - EPS W.O. #: 23-0124				
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	REVIEWED (MGR/SUPV)/DATE	APPROVED (DIRECTOR)/DATE
A	ISSUED FOR 100% DESIGN SUBMITTAL	MLH/11-03-2023		

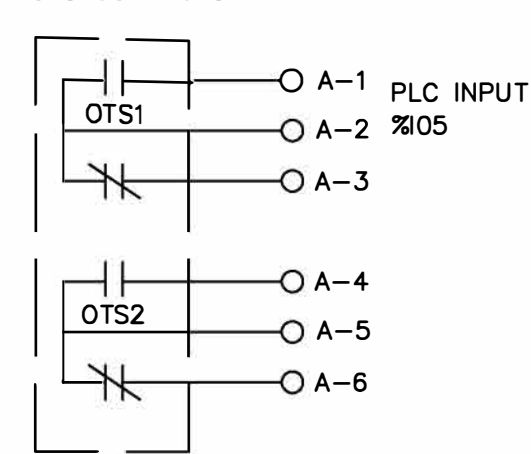
ENG. STAMP



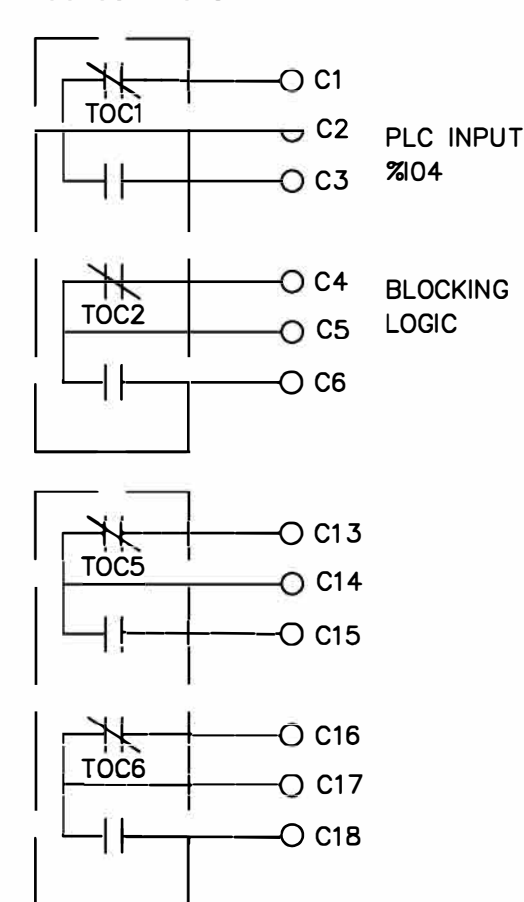
DRAWING NAME:		SEAPA TYEE LAKE UNIT 2 SWITCHGEAR 3-LINE DIAGRAM	
REF DWG(S):		tyee-el-0102_1.dwg	
DRAWING NO.:		TYEE-EL-0102	
		SHEET 1 OF 1	



OTS CONTACTS

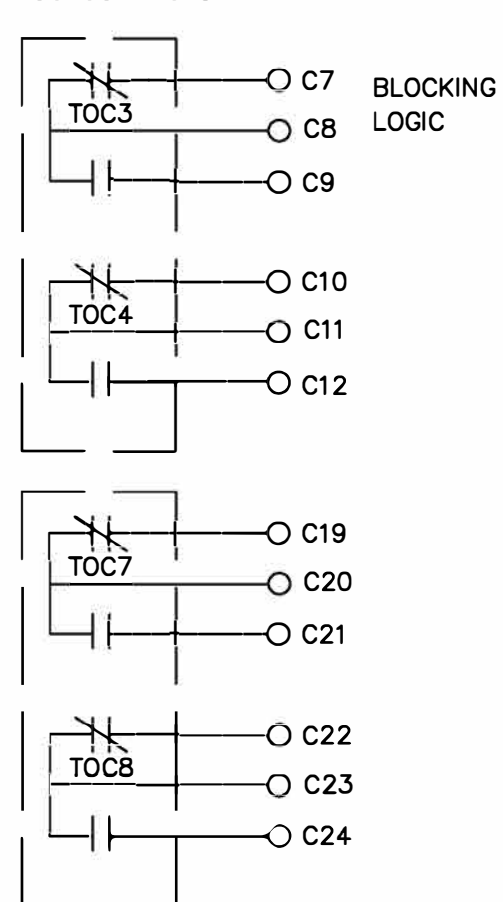


CELL SWITCH TOC CONTACTS

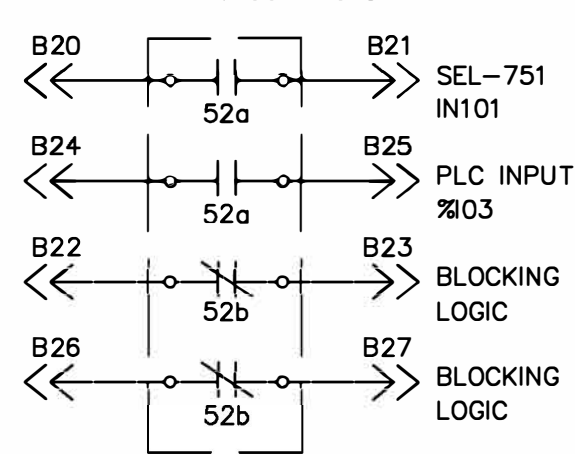


CONTACTS SHOWN WITH BREAKER IN WITHDRAWN POSITION

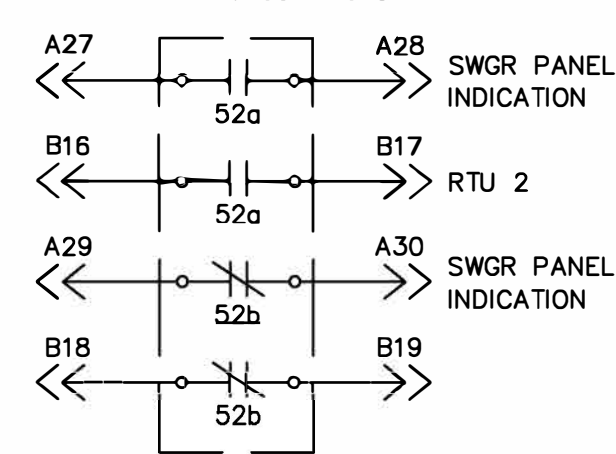
CELL SWITCH TOC CONTACTS



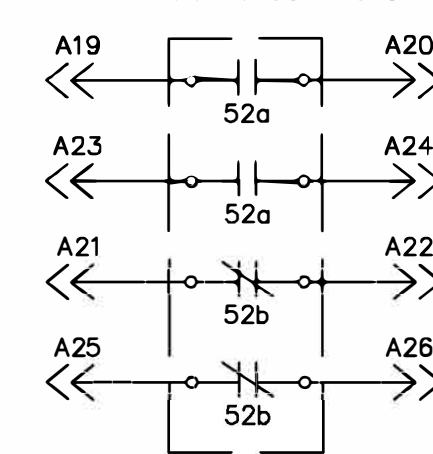
AUXILIARY CONTACTS



AUXILIARY CONTACTS



AUXILIARY CONTACTS



- CONTROL BENCHBOARD
- ⊗ SWITCHGEAR TERMINAL FOR CUSTOMER CONNECTION
- DEVICE TERMINAL

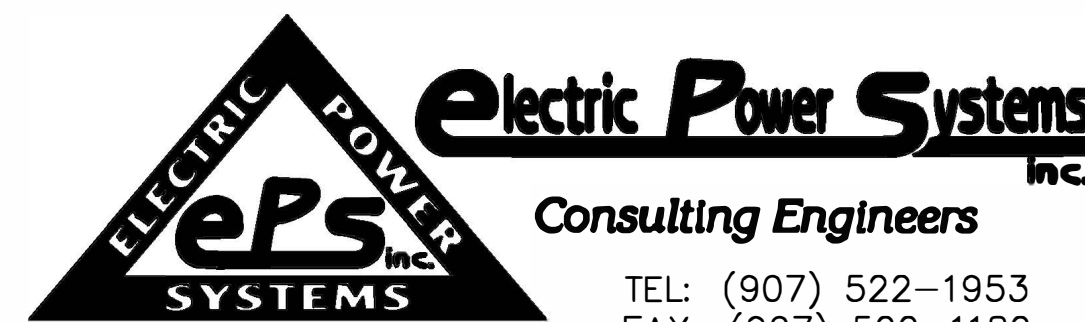
- 52a CLOSED WHEN BREAKER IS CLOSED
- 52b CLOSED WHEN BREAKER IS OPEN
- 52PB BREAKER CONTROL PUSHBUTTON
- GCPB GENERATOR CONTROL PUSHBUTTON
- LRCS LOCAL/REMOTE CONTROL SWITCH
- OTS BREAKER OVERCURRENT TRIP SWITCH
- PRnSn PROFINET RACK #, SLOT #
- TTC TRANSFORMER TEMPERATURE CONTROLLER

CONSTRUCTION NOTE

1. CONTRACTOR TO VERIFY TERMINATIONS IN 480V SS SWITCHGEAR.

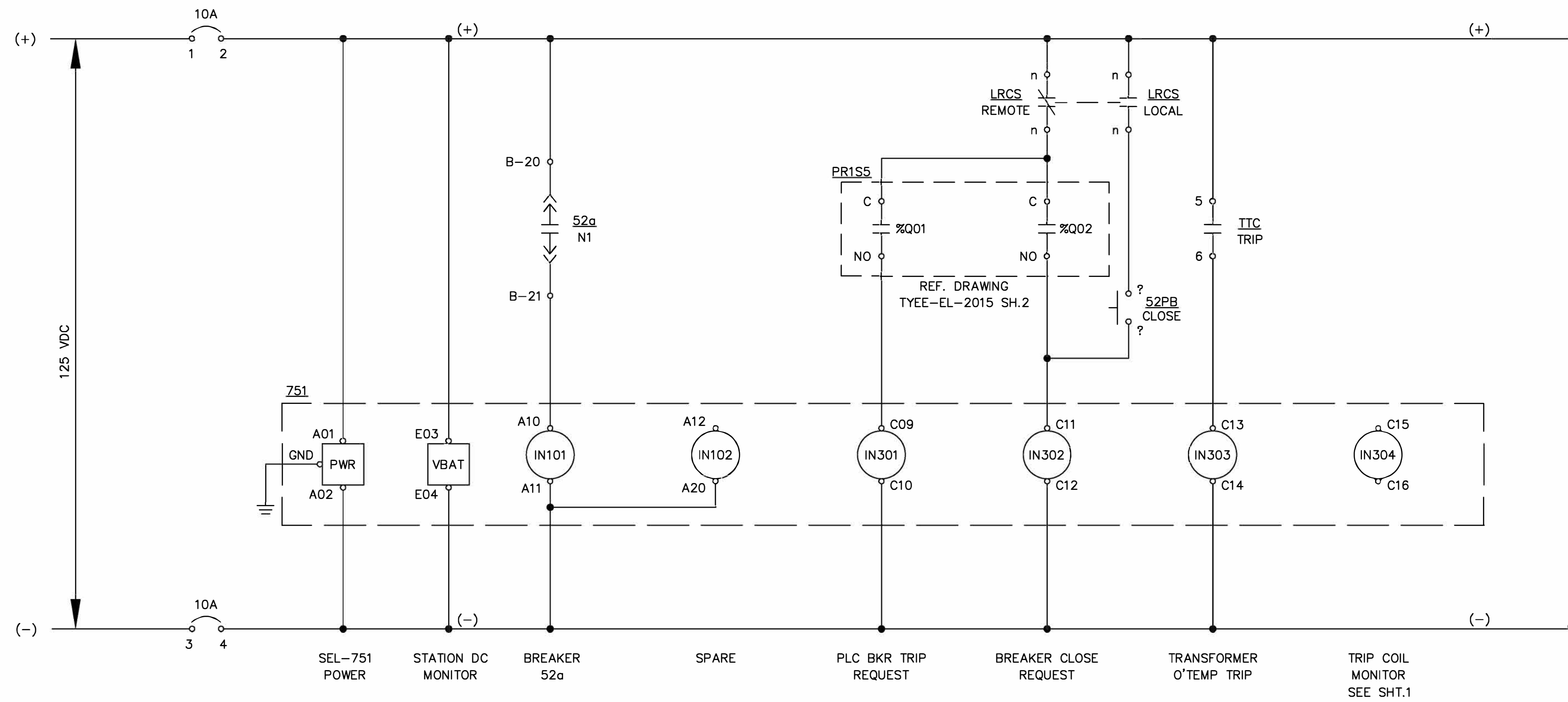
PROJECT: TYEE LAKE STATION SERVICE DESIGN				
DESIGNER/PROJECT ENGINEER: MITCHELL HEDRICK/DAVID BUSS - EPS				
W.O. #: 23-0124				
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	REVIEWED (MGR/SJVP)/DATE	APPROVED (DIRECTOR)/DATE
A	ISSUED FOR 30% DESIGN REVIEW	MLH/05-23-2023		
B	ISSUED FOR 90% DESIGN REVIEW	MLH/08-04-2023		
C	ISSUED FOR 100% DESIGN SUBMITTAL	MLH/11-03-2023		

ENG. STAMP



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 FAX: (907) 522-1182
 WEB: WWW.EPSINC.COM

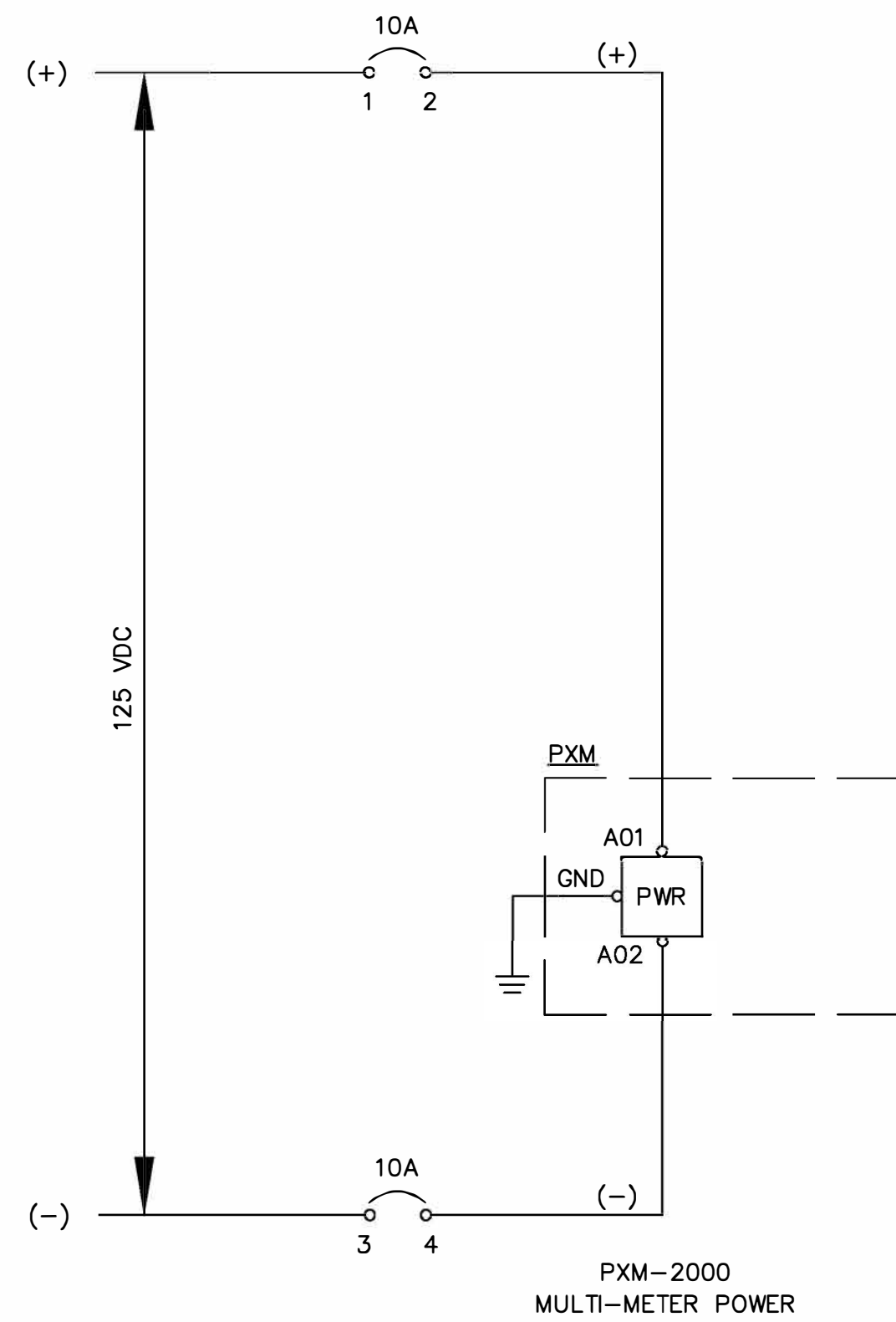
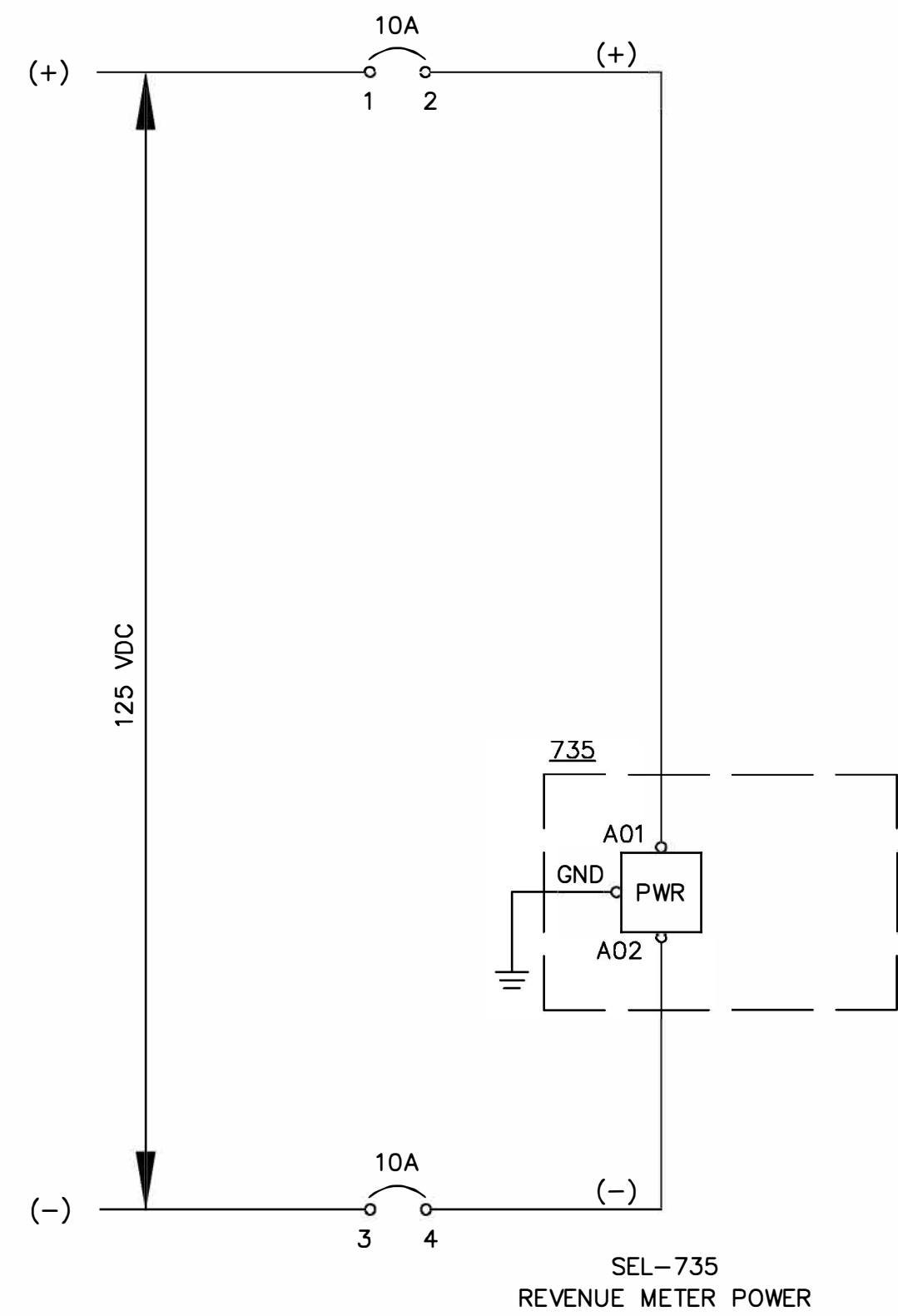
DRAWING NAME:		SEAPA TYEE LAKE STATION SERVICE SWITCHGEAR N1 MAIN BREAKER 1B DC SCHEMATIC	
REF DWG(S):		tyee-el-2000_1.dwg	
DRAWING NO.:		TYEE-EL-2000	
		SHEET 1 OF 2	



SEL-751	FUNCTIONS	REF. DWG.
OUT101 A03 — A04	ALARM INDICATION TO PLC	
OUT102 A05 — A06	SOURCE N1 UNDERVOLTAGE TO PLC	
OUT103 A07 — A08 OUT103 A09	BREAKER TRIP INDICATION TO PLC	
OUT301* C01 — C02	BREAKER TRIP	
OUT302* C03 — C04	BREAKER CLOSE	
OUT303* C05 — C06	SOURCE N1 OVERVOLTAGE TO PLC	
OUT304* C07 — C08	86SS1 ARC-FLASH BUS TRIP	

*OUTPUTS 301-304 SHALL BE HYBRID TYPE, HIGH-SPEED, HIGH-CURRENT INTERRUPTING OUTPUTS.

- 52a CLOSED WHEN BREAKER IS CLOSED
- 52b CLOSED WHEN BREAKER IS OPEN
- 52PB BREAKER CONTROL PUSHBUTTON
- GCPB GENERATOR CONTROL PUSHBUTTON
- LRCS LOCAL/REMOTE CONTROL SWITCH
- OTS BREAKER OVERCURRENT TRIP SWITCH
- PRnSn PROFINET RACK #, SLOT #
- TTC TRANSFORMER TEMPERATURE CONTROLLER

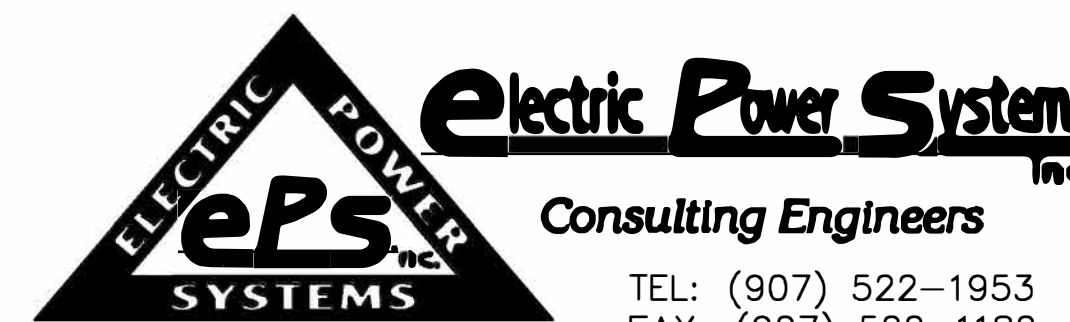


CONSTRUCTION NOTE

1. CONTRACTOR TO VERIFY TERMINATIONS IN 480V SS SWITCHGEAR.

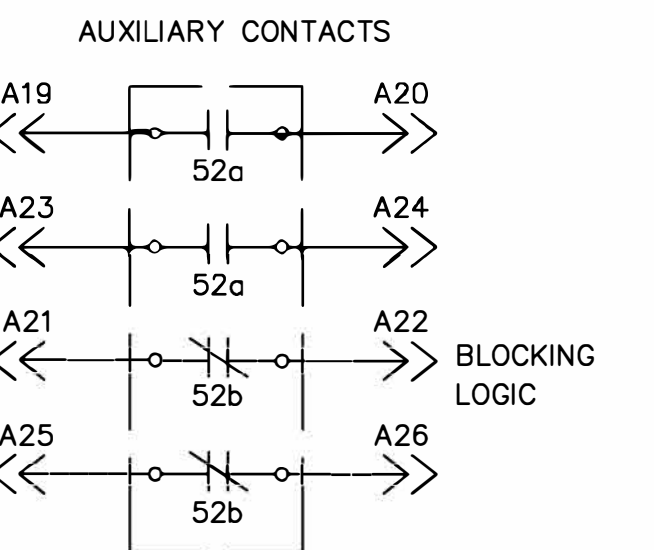
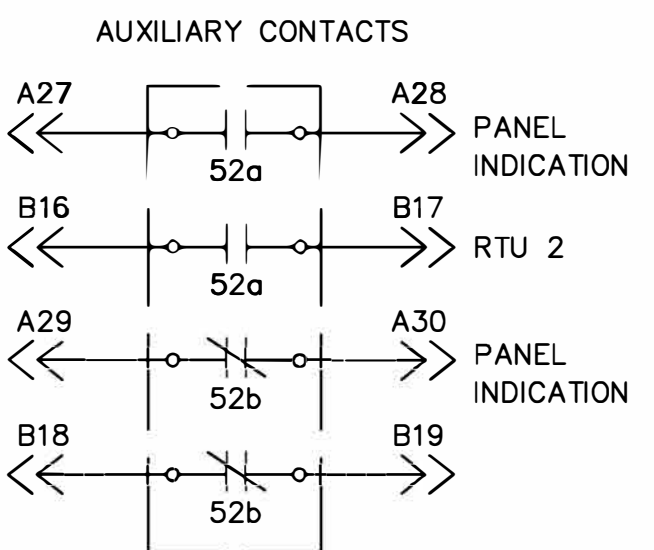
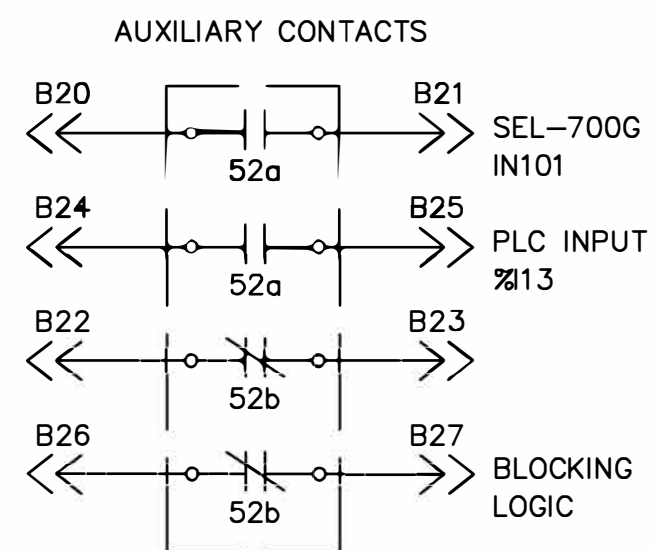
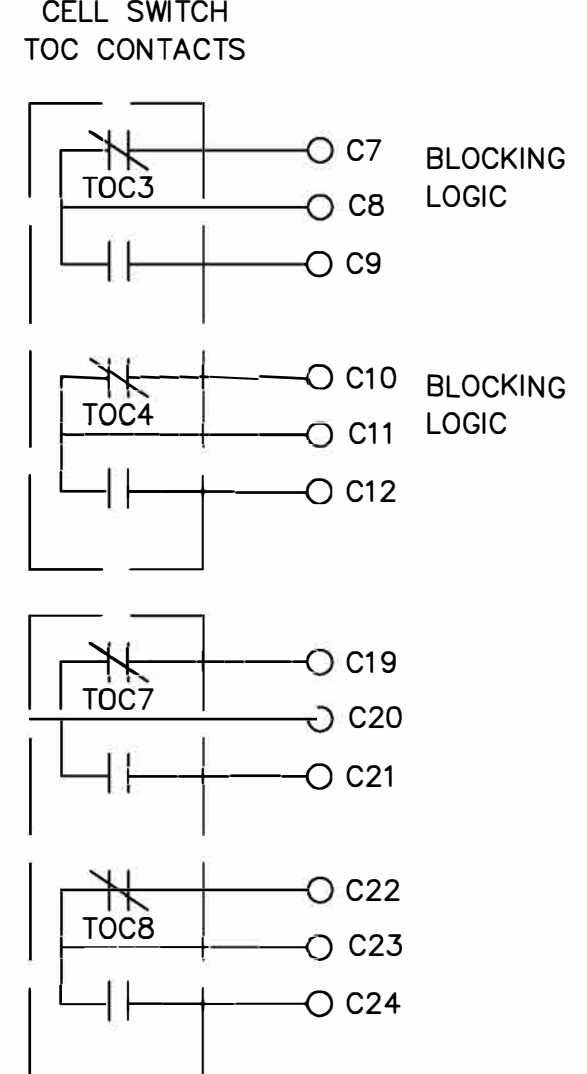
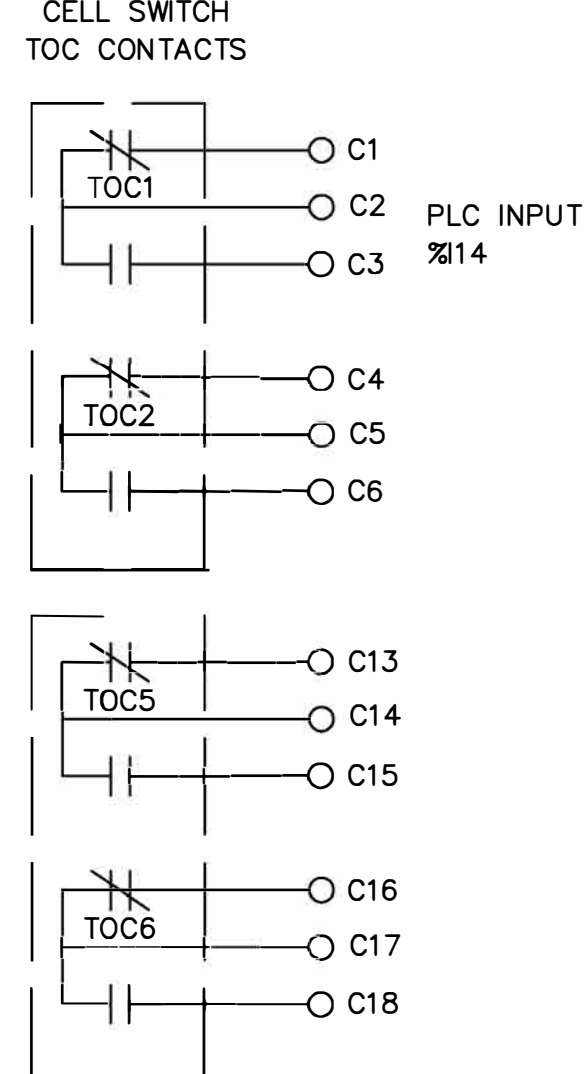
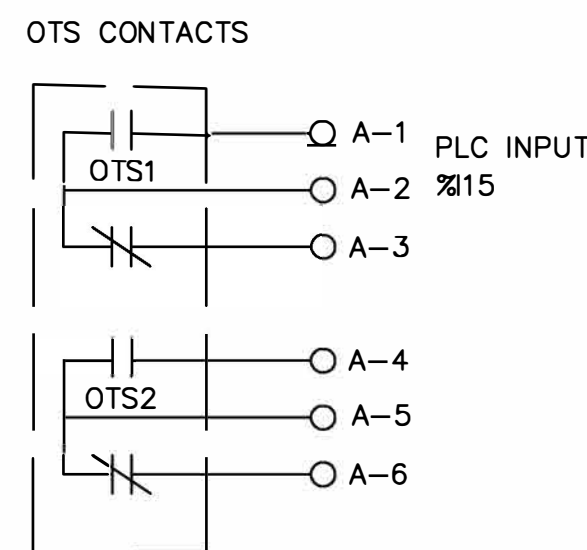
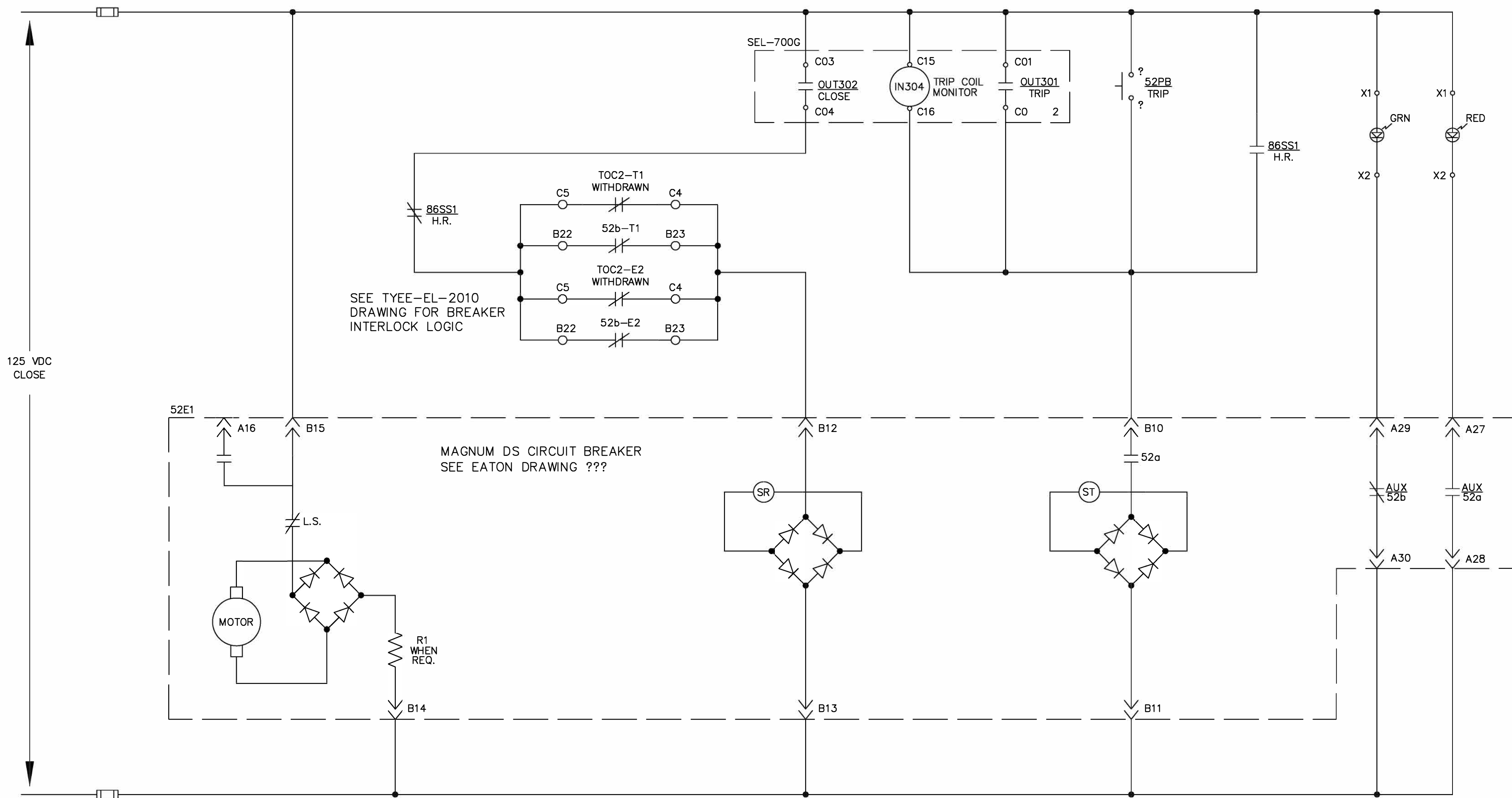
PROJECT: TYEE LAKE STATION SERVICE DESIGN				
DESIGNER/PROJECT ENGINEER: MITCHELL HEDRICK/DAVID BUSS - EPS W.O. #: 23-0124				
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	REVIEWED (MGR/SUPV)/DATE	APPROVED (DIRECTOR)/DATE
A	ISSUED FOR 30% DESIGN REVIEW	MLH/05-23-2023		
B	ISSUED FOR 90% DESIGN REVIEW	MLH/08-04-2023		
C	ISSUED FOR 100% DESIGN SUBMITTAL	MLH/11-03-2023		

ENG. STAMP



TEL: (907) 522-1953
FAX: (907) 522-1182
WEB: WWW.EPSINC.COM

DRAWING NAME:		SEAPA TYEE LAKE STATION SERVICE SWITCHGEAR N1 MAIN BREAKER SEL-751 & METERING DC SCHEMATIC	
REF DWG(S):		tyee-el-2000_2.dwg	
DRAWING NO.:		TYEE-EL-2000	
		SHEET 2 OF 2	



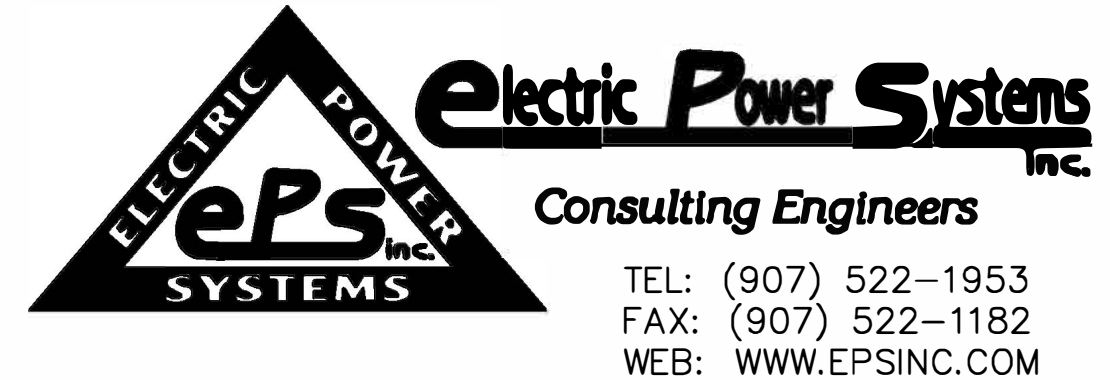
- CONTROL BENCHBOARD
 - ⊗ SWITCHGEAR TERMINAL FOR CUSTOMER CONNECTION
 - DEVICE TERMINAL
-
- 52a CLOSED WHEN BREAKER IS CLOSED
 - 52b CLOSED WHEN BREAKER IS OPEN
 - 52PB BREAKER CONTROL PUSHBUTTON
 - GCPB GENERATOR CONTROL PUSHBUTTON
 - L RCS LOCAL/REMOTE CONTROL SWITCH
 - OTS BREAKER OVERCURRENT TRIP SWITCH
 - PRnSn PROFINET RACK #, SLOT #
 - TTC TRANSFORMER TEMPERATURE CONTROLLER

CONTACTS SHOWN WITH BREAKER IN WITHDRAWN POSITION

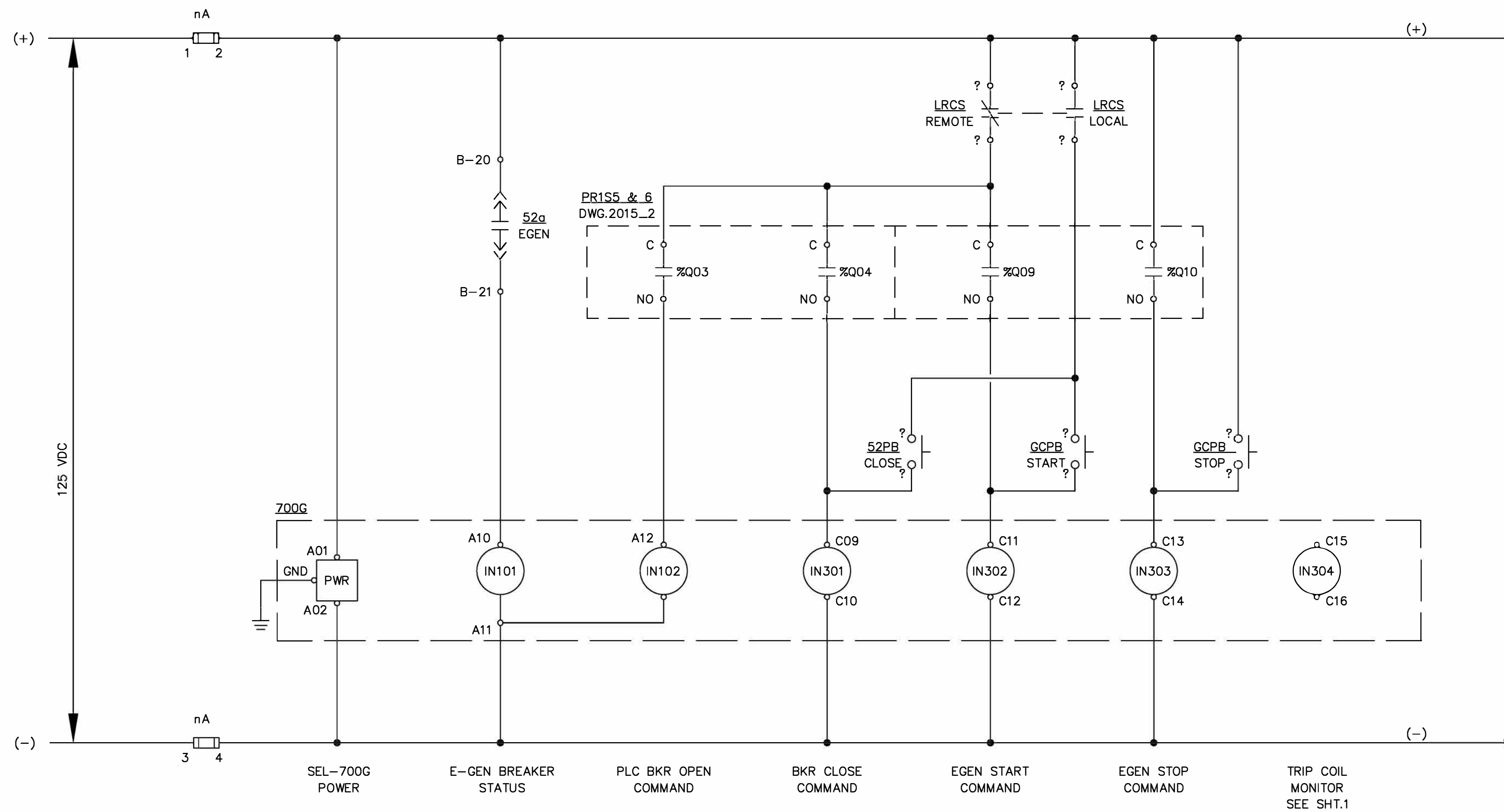
CONSTRUCTION NOTE
 1. CONTRACTOR TO VERIFY TERMINATIONS IN 480V SS SWITCHGEAR.

PROJECT: TYEE LAKE STATION SERVICE DESIGN				
DESIGNER/PROJECT ENGINEER: MITCHELL HEDRICK/DAVID BUSS - EPS				
W.O. # 23-0124				
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	REVIEWED (MGR/SUPV)/DATE	APPROVED (DIRECTOR)/DATE
A	ISSUED FOR 30% DESIGN REVIEW	MLH/05-23-2023		
B	ISSUED FOR 90% DESIGN REVIEW	MLH/08-04-2023		
C	ISSUED FOR 100% DESIGN SUBMITTAL	MLH/11-03-2023		

ENG. STAMP



DRAWING NAME:		SEAPA TYEE LAKE STATION SERVICE SWITCHGEAR EGEN-1 BREAKER 2B DC SCHEMATIC	
REF DWG(S):		tyee-el-2001_1.dwg	
DRAWING NO.:		TYEE-EL-2001	
		SHEET 1 OF 2	



700G, 'DC'	FUNCTIONS	REF. DWG.
OUT101 A03 — A04	ALARM INDICATION TO PLC	
OUT102 A05 — A06	EGEN START	
OUT103 A07 — A08 OUT103 A09	TRIP INDICATION TO PLC	
OUT301* C01 — C02	BREAKER TRIP	
OUT302* C03 — C04	BREAKER CLOSE	
OUT303* C05 — C06	EGEN RUNNING AT RATED TO PLC	
OUT304* C07 — C08		

*OUTPUTS 301-304 SHALL BE HYBRID TYPE, HIGH-SPEED, HIGH-CURRENT INTERRUPTING OUTPUTS.

- 52a CLOSED WHEN BREAKER IS CLOSED
- 52b CLOSED WHEN BREAKER IS OPEN
- 52PB BREAKER CONTROL PUSHBUTTON
- GCPB GENERATOR CONTROL PUSHBUTTON
- LRPCS LOCAL/REMOTE CONTROL SWITCH
- OTS BREAKER OVERCURRENT TRIP SWITCH
- PrnSn PROFINET RACK #, SLOT #

CONSTRUCTION NOTE

1. CONTRACTOR TO VERIFY TERMINATIONS IN 480V SS SWITCHGEAR.

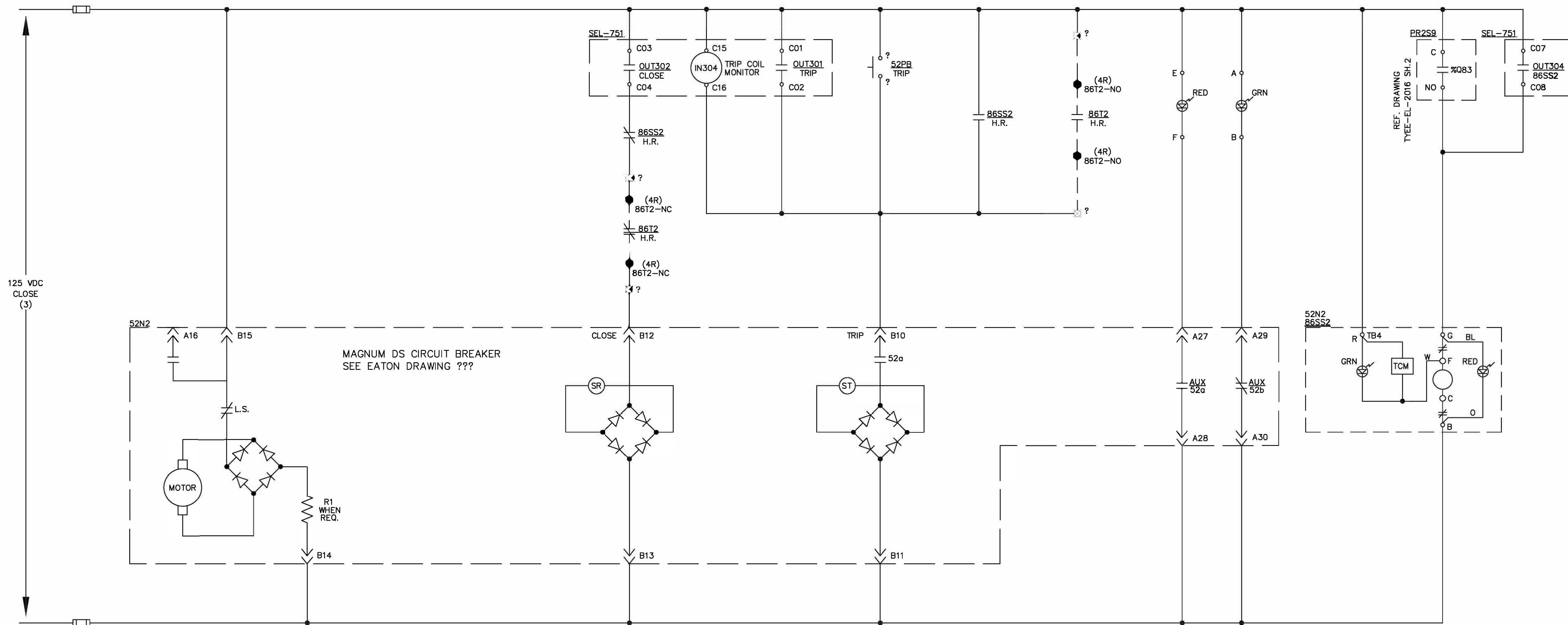
PROJECT: TYEE LAKE STATION SERVICE DESIGN				
DESIGNER/PROJECT ENGINEER: MITCHELL HEDRICK/DAVID BUSS - EPS W.O. # 23-0124				
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	REVIEWED (MGR/SUPV)/DATE	APPROVED (DIRECTOR)/DATE
A	ISSUED FOR 30% DESIGN REVIEW	MLH/05-23-2023		
B	ISSUED FOR 90% DESIGN REVIEW	MLH/08-04-2023		
C	ISSUED FOR 100% DESIGN SUBMITTAL	MLH/11-03-2023		

ENG. STAMP

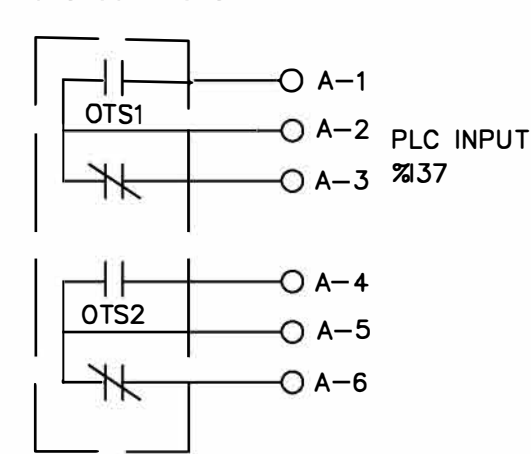


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FAX: (907) 522-1182
WEB: WWW.EPSINC.COM

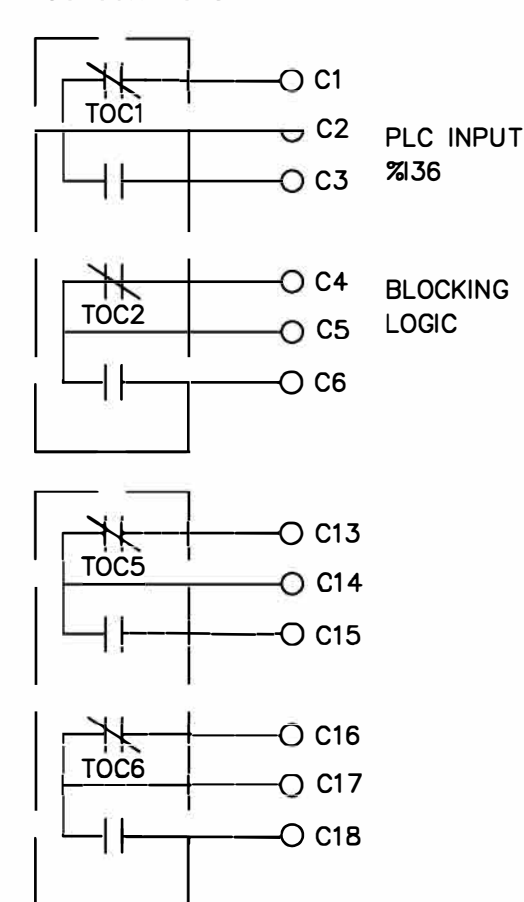
DRAWING NAME:		SEAPA TYEE LAKE STATION SERVICE SWITCHGEAR EGEN-1 BREAKER 2B SEL-700G DC SCHEMATIC	
REF DWG(S):		<small>tvee-el-2001_2.dwg</small>	
DRAWING NO.:		TYEE-EL-2001	
		SHEET 2 OF 2	



OTS CONTACTS

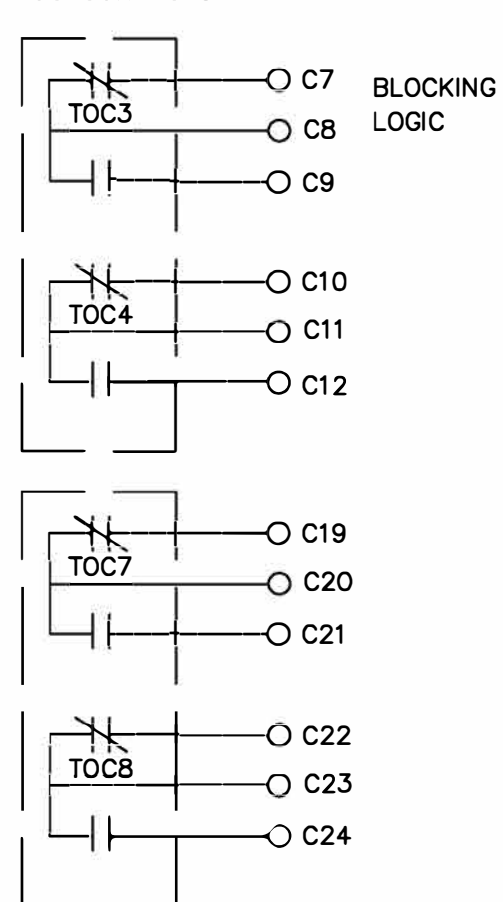


CELL SWITCH TOC CONTACTS

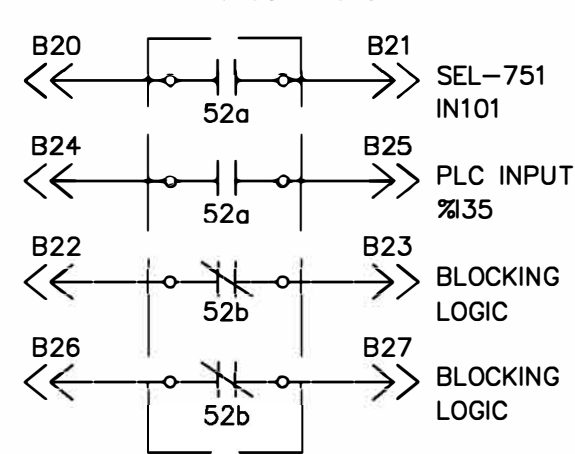


CONTACTS SHOWN WITH BREAKER IN WITHDRAWN POSITION

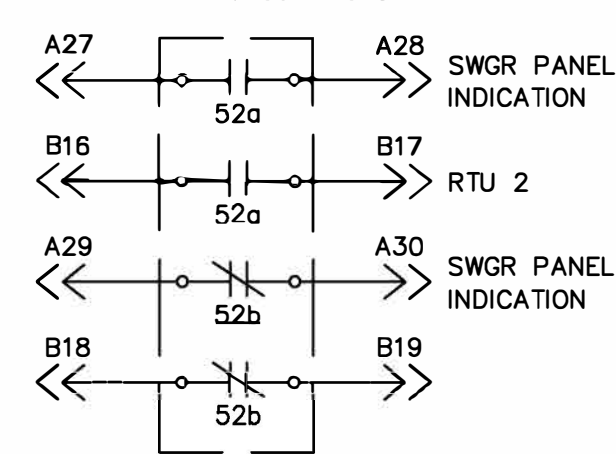
CELL SWITCH TOC CONTACTS



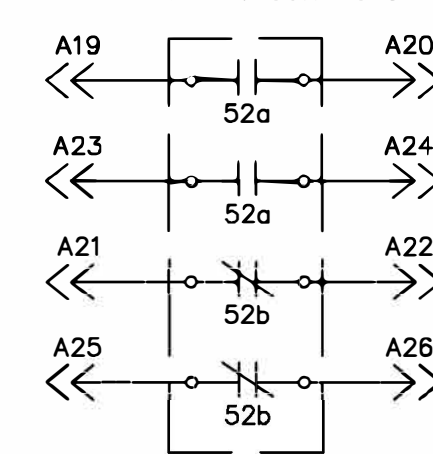
AUXILIARY CONTACTS



AUXILIARY CONTACTS



AUXILIARY CONTACTS



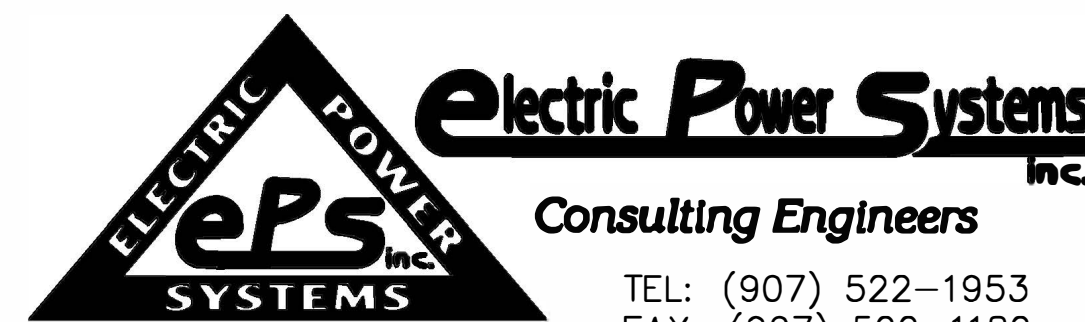
- CONTROL BENCHBOARD
- ⊗ SWITCHGEAR TERMINAL FOR CUSTOMER CONNECTION
- DEVICE TERMINAL
- 52a CLOSED WHEN BREAKER IS CLOSED
- 52b CLOSED WHEN BREAKER IS OPEN
- 52PB BREAKER CONTROL PUSHBUTTON
- GCPB GENERATOR CONTROL PUSHBUTTON
- LRCS LOCAL/REMOTE CONTROL SWITCH
- OTS BREAKER OVERCURRENT TRIP SWITCH
- PrnSn PROFINET RACK #, SLOT #
- TTC TRANSFORMER TEMPERATURE CONTROLLER

CONSTRUCTION NOTE

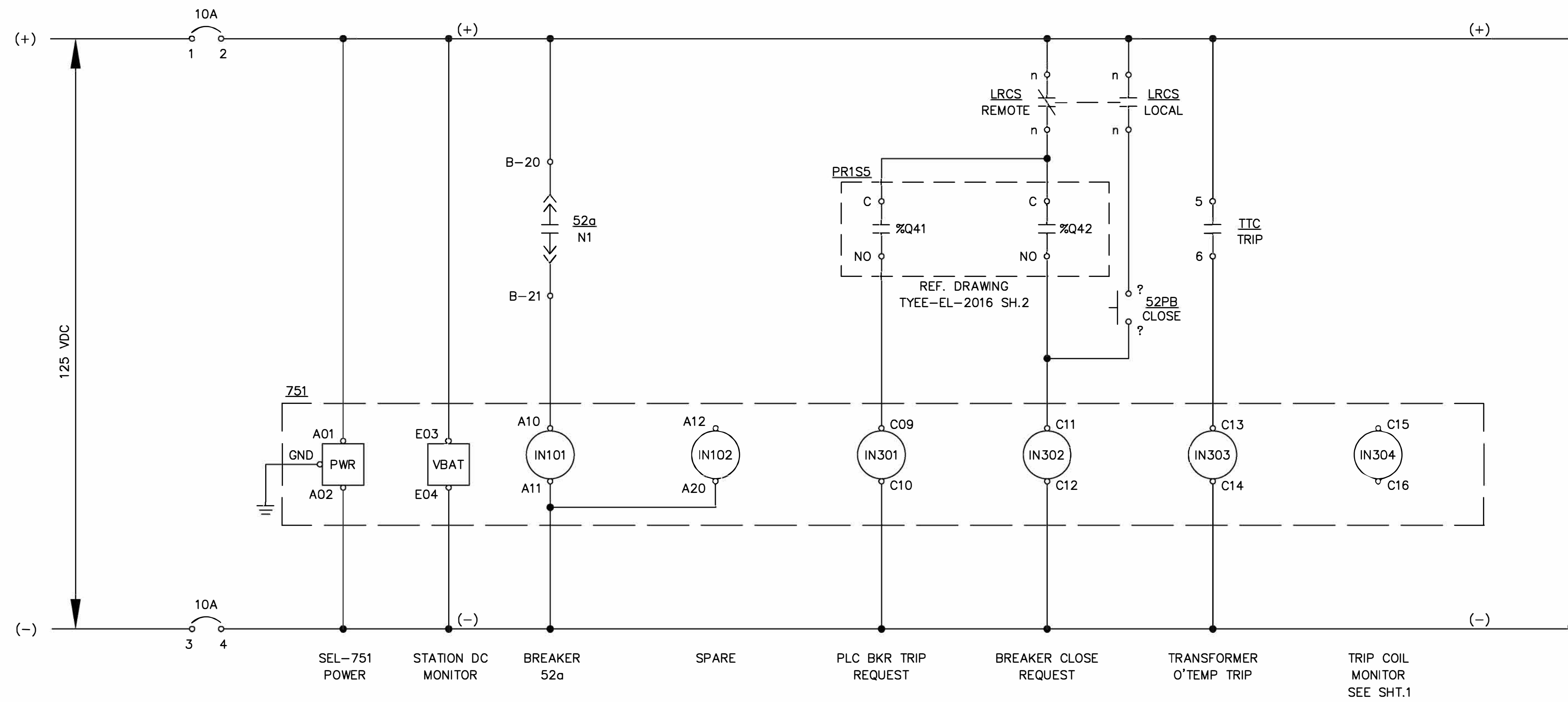
1. CONTRACTOR TO VERIFY TERMINATIONS IN 480V SS SWITCHGEAR.

PROJECT: TYEE LAKE STATION SERVICE DESIGN				
DESIGNER/PROJECT ENGINEER: MITCHELL HEDRICK/DAVID BUSS - EPS				
W.O. #: 23-0124				
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	REVIEWED (MGR/SUPV)/DATE	APPROVED (DIRECTOR)/DATE
A	ISSUED FOR 30% DESIGN REVIEW	MLH/05-23-2023		
B	ISSUED FOR 90% DESIGN REVIEW	MLH/08-04-2023		
C	ISSUED FOR 100% DESIGN SUBMITTAL	MLH/11-03-2023		

ENG. STAMP



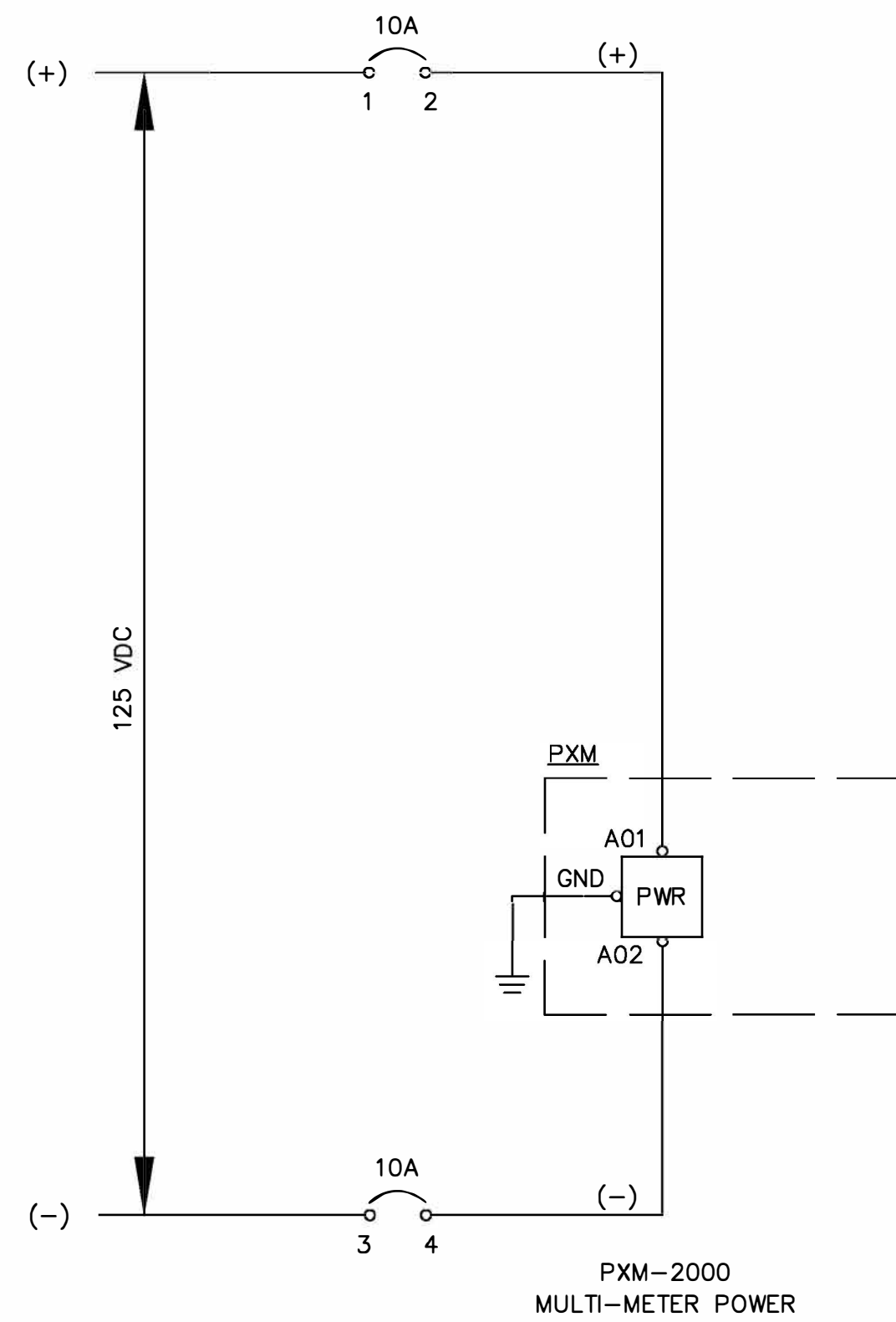
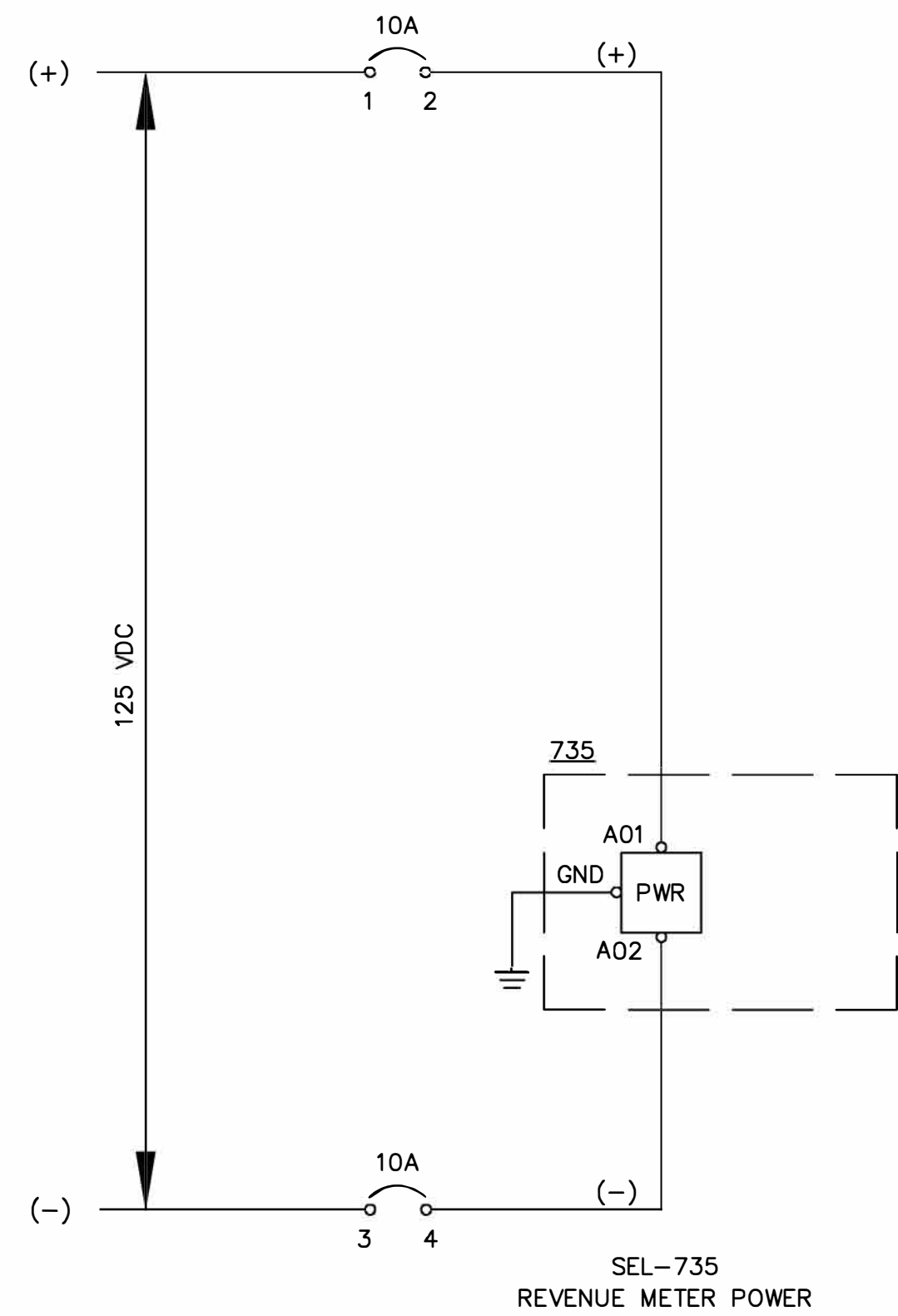
DRAWING NAME:		SEAPA TYEE LAKE STATION SERVICE SWITCHGEAR N2 MAIN BREAKER 5B DC SCHEMATIC	
REF DWG(S):			tyee-el-2002_1.dwg
DRAWING NO.:	TYEE-EL-2002		SHEET 1 OF 2



SEL-751	FUNCTIONS	REF. DWG.
OUT101 A03 — A04	ALARM INDICATION TO PLC	
OUT102 A05 — A06	SOURCE N2 UNDERVOLTAGE TO PLC	
OUT103 A07 — A08 OUT103 A09	BREAKER TRIP INDICATION TO PLC	
OUT301* C01 — C02	BREAKER TRIP	
OUT302* C03 — C04	BREAKER CLOSE	
OUT303* C05 — C06	SOURCE N2 OVERVOLTAGE TO PLC	
OUT304* C07 — C08	B6SS2 ARC-FLASH BUS TRIP	

*OUTPUTS 301-304 SHALL BE HYBRID TYPE, HIGH-SPEED, HIGH-CURRENT INTERRUPTING OUTPUTS.

- 52a CLOSED WHEN BREAKER IS CLOSED
- 52b CLOSED WHEN BREAKER IS OPEN
- 52PB BREAKER CONTROL PUSHBUTTON
- GCPB GENERATOR CONTROL PUSHBUTTON
- LRCS LOCAL/REMOTE CONTROL SWITCH
- OTS BREAKER OVERCURRENT TRIP SWITCH
- PRnSn PROFINET RACK #, SLOT #
- TTC TRANSFORMER TEMPERATURE CONTROLLER



CONSTRUCTION NOTE

1. CONTRACTOR TO VERIFY TERMINATIONS IN 480V SS SWITCHGEAR.

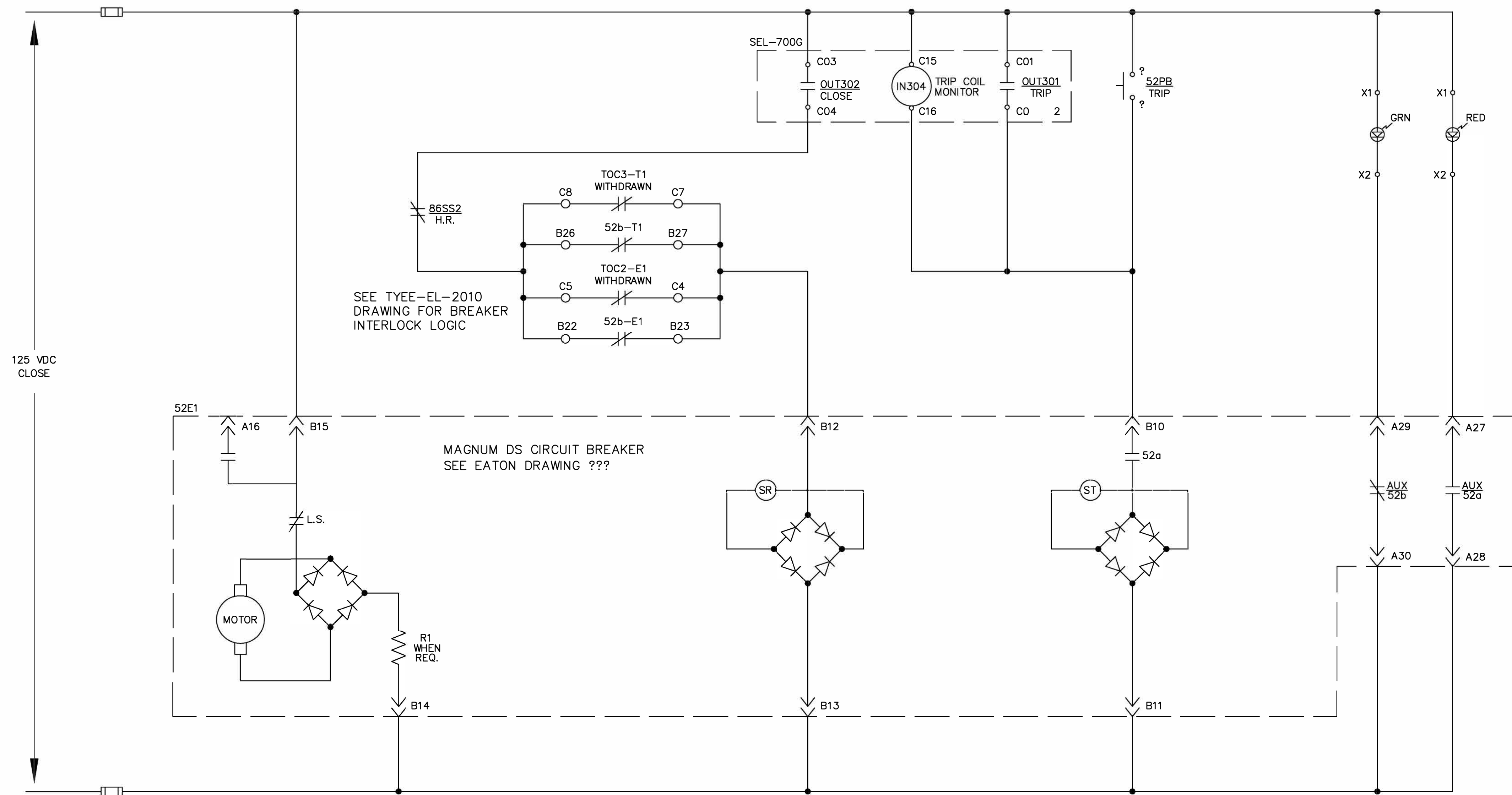
PROJECT: TYEE LAKE STATION SERVICE DESIGN				
DESIGNER/PROJECT ENGINEER: MITCHELL HEDRICK/DAVID BUSS - EPS W.O. # 23-0124				
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	REVIEWED (MGR/SUPV)/DATE	APPROVED (DIRECTOR)/DATE
A	ISSUED FOR 30% DESIGN REVIEW	MLH/05-23-2023		
B	ISSUED FOR 90% DESIGN REVIEW	MLH/08-04-2023		
C	ISSUED FOR 100% DESIGN SUBMITTAL	MLH/11-03-2023		

ENG. STAMP



TEL: (907) 522-1953
FAX: (907) 522-1182
WEB: WWW.EPSINC.COM

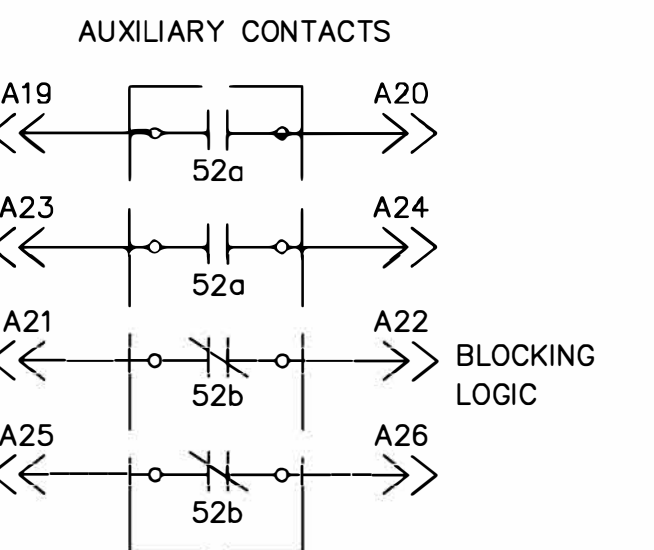
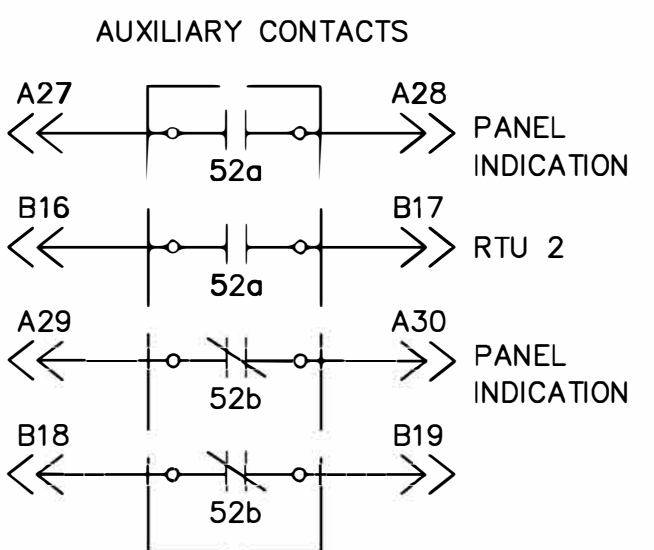
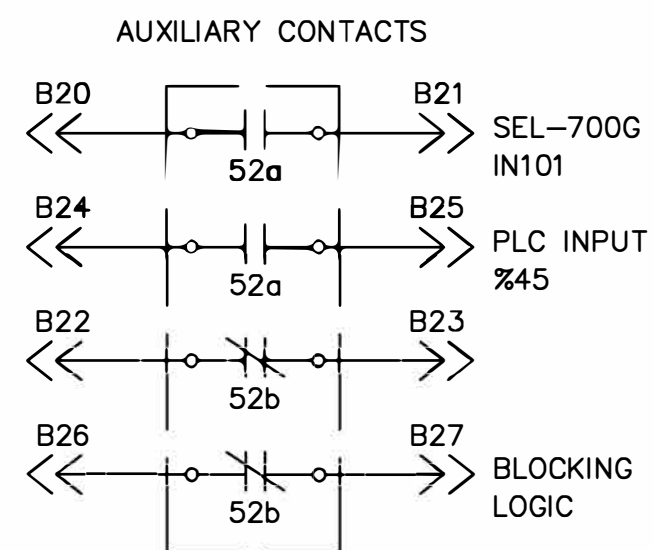
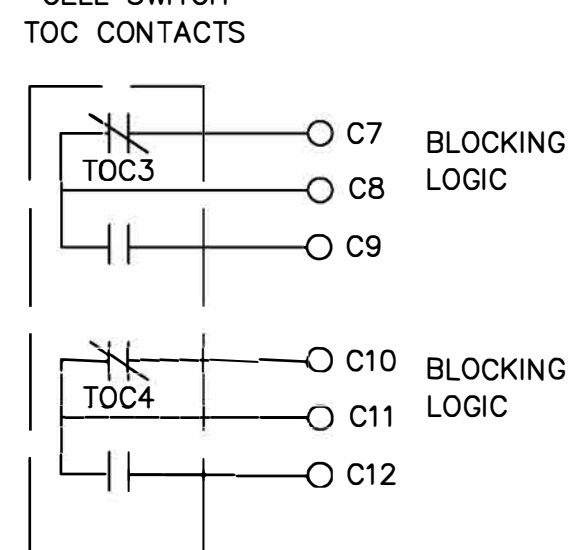
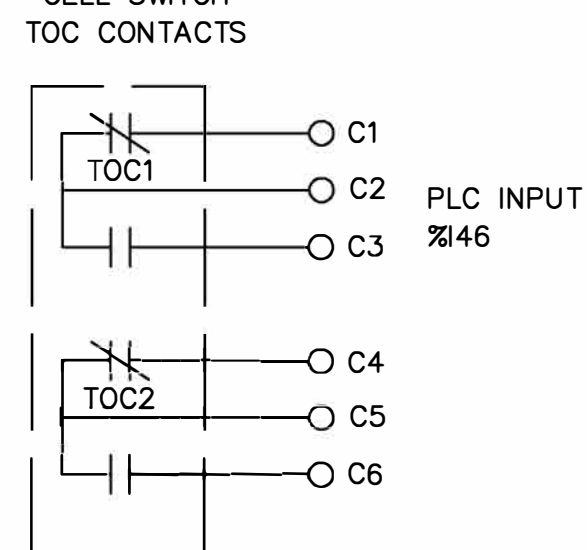
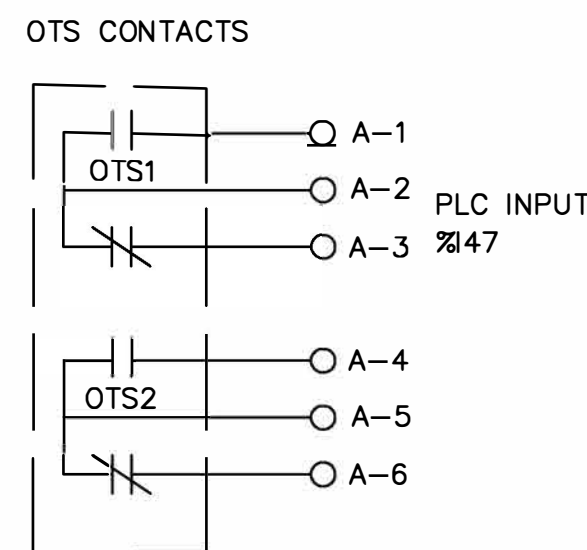
DRAWING NAME: SEAPA TYEE LAKE STATION SERVICE SWITCHGEAR N2 MAIN BREAKER SEL-751 & METERING DC SCHEMATIC	
REF DWG(S): tyee-el-2002_2.dwg	
DRAWING NO.: TYEE-EL-2002	SHEET 2 OF 2



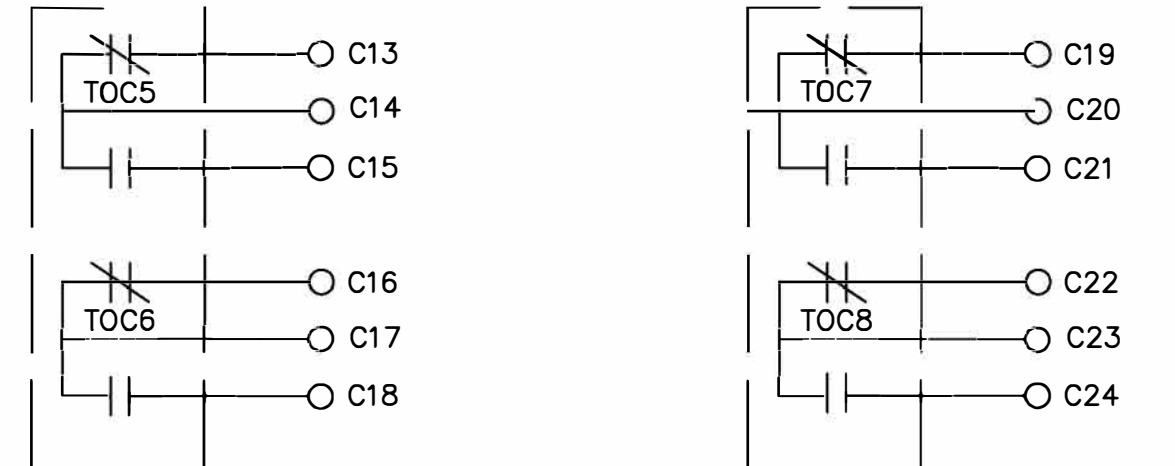
SEE TYEE-EL-2010 DRAWING FOR BREAKER INTERLOCK LOGIC

MAGNUM DS CIRCUIT BREAKER SEE EATON DRAWING ???

- CONTROL BENCHBOARD
- ⊗ SWITCHGEAR TERMINAL FOR COSTUMER CONNECTION
- DEVICE TERMINAL



- 52a CLOSED WHEN BREAKER IS CLOSED
- 52b CLOSED WHEN BREAKER IS OPEN
- 52PB BREAKER CONTROL PUSHBUTTON
- GCPB GENERATOR CONTROL PUSHBUTTON
- L RCS LOCAL/REMOTE CONTROL SWITCH
- OTS BREAKER OVERCURRENT TRIP SWITCH
- PRnSn PROFINET RACK #, SLOT #
- TTC TRANSFORMER TEMPERATURE CONTROLLER



CONTACTS SHOWN WITH BREAKER IN WITHDRAWN POSITION

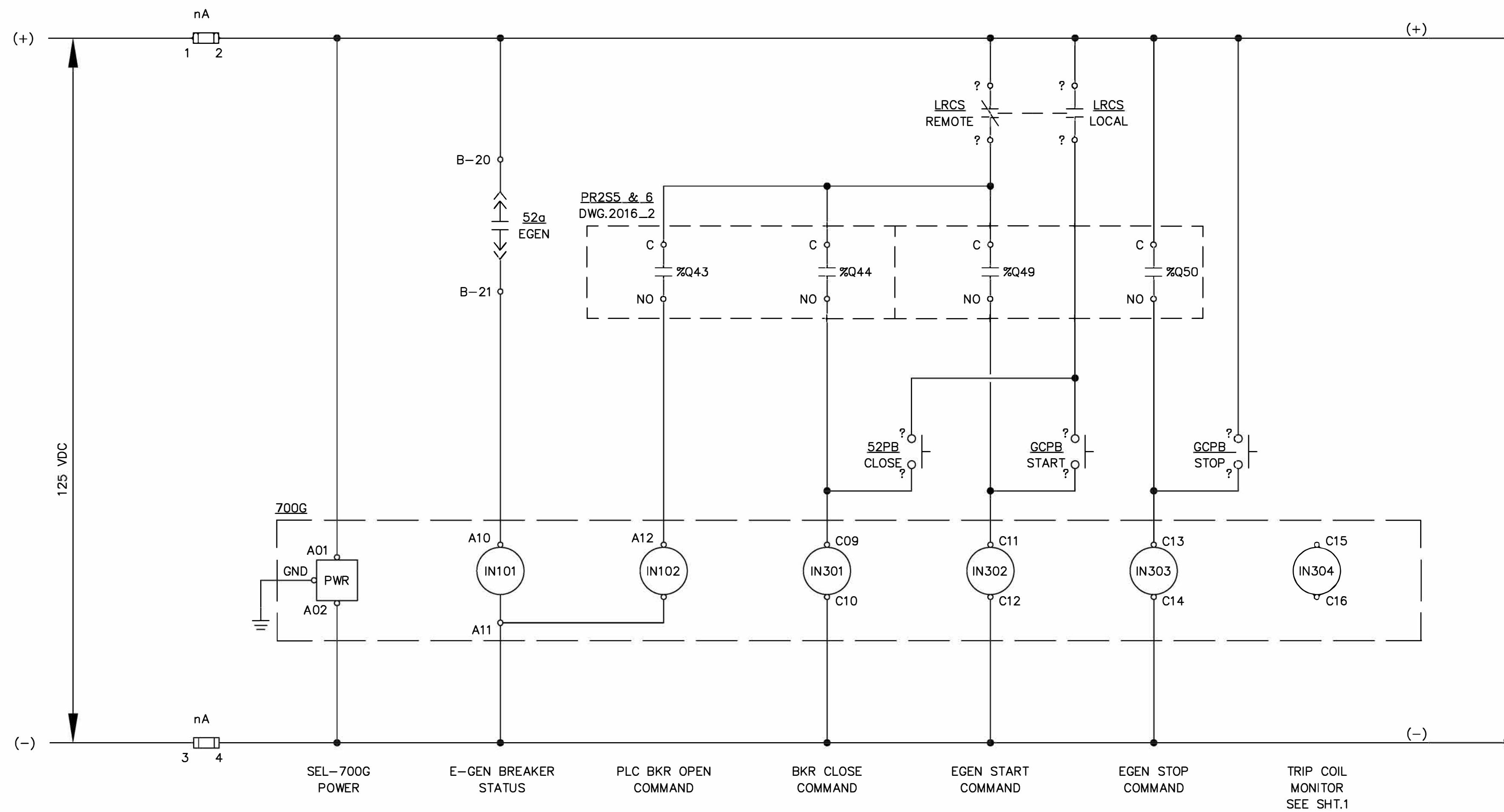
CONSTRUCTION NOTE
1. CONTRACTOR TO VERIFY TERMINATIONS IN 480V SS SWITCHGEAR.

PROJECT: TYEE LAKE STATION SERVICE DESIGN				
DESIGNER/PROJECT ENGINEER: MITCHELL HEDRICK/DAVID BUSS - EPS W.O. # 23-0124				
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	REVIEWED (MGR/SUPV)/DATE	APPROVED (DIRECTOR)/DATE
A	ISSUED FOR 30% DESIGN REVIEW	MLH/05-23-2023		
B	ISSUED FOR 90% DESIGN REVIEW	MLH/08-04-2023		
C	ISSUED FOR 100% DESIGN SUBMITTAL	MLH/11-03-2023		

ENG. STAMP

TEL: (907) 522-1953
FAX: (907) 522-1182
WEB: WWW.EPSINC.COM

DRAWING NAME: SEAPA TYEE LAKE STATION SERVICE SWITCHGEAR EGEN-2 BREAKER 4B DC SCHEMATIC	
REF DWG(S):	tyee-el-2003_1.dwg
DRAWING NO.:	TYEE-EL-2003



700G, 'DC'	FUNCTIONS	REF. DWG.
OUT101 A03 — A04	ALARM INDICATION TO PLC	
OUT102 A05 — A06	EGEN START	
OUT103 A07 — A08 OUT103 A09	TRIP INDICATION TO PLC	
OUT301* C01 — C02	BREAKER TRIP	
OUT302* C03 — C04	BREAKER CLOSE	
OUT303* C05 — C06	EGEN RUNNING AT RATED TO PLC	
OUT304* C07 — C08		

*OUTPUTS 301-304 SHALL BE HYBRID TYPE, HIGH-SPEED, HIGH-CURRENT INTERRUPTING OUTPUTS.

- 52a CLOSED WHEN BREAKER IS CLOSED
- 52b CLOSED WHEN BREAKER IS OPEN
- 52PB BREAKER CONTROL PUSHBUTTON
- GCPB GENERATOR CONTROL PUSHBUTTON
- LRCs LOCAL/REMOTE CONTROL SWITCH
- OTS BREAKER OVERCURRENT TRIP SWITCH
- PrnSn PROFINET RACK #, SLOT #

CONSTRUCTION NOTE

1. CONTRACTOR TO VERIFY TERMINATIONS IN 480V SS SWITCHGEAR.

PROJECT: TYEE LAKE STATION SERVICE DESIGN				
DESIGNER/PROJECT ENGINEER: MITCHELL HEDRICK/DAVID BUSS - EPS W.O. #: 23-0124				
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	REVIEWED (MGR/SUPV)/DATE	APPROVED (DIRECTOR)/DATE
A	ISSUED FOR 30% DESIGN REVIEW	MLH/05-23-2023		
B	ISSUED FOR 90% DESIGN REVIEW	MLH/08-04-2023		
C	ISSUED FOR 100% DESIGN SUBMITTAL	MLH/11-03-2023		

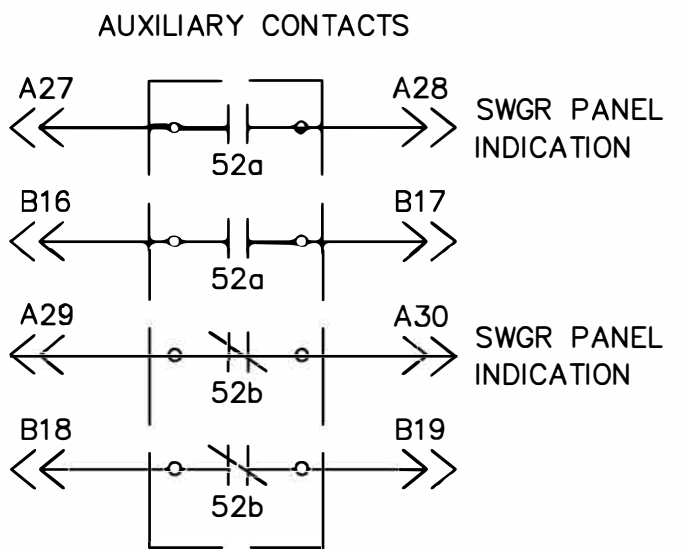
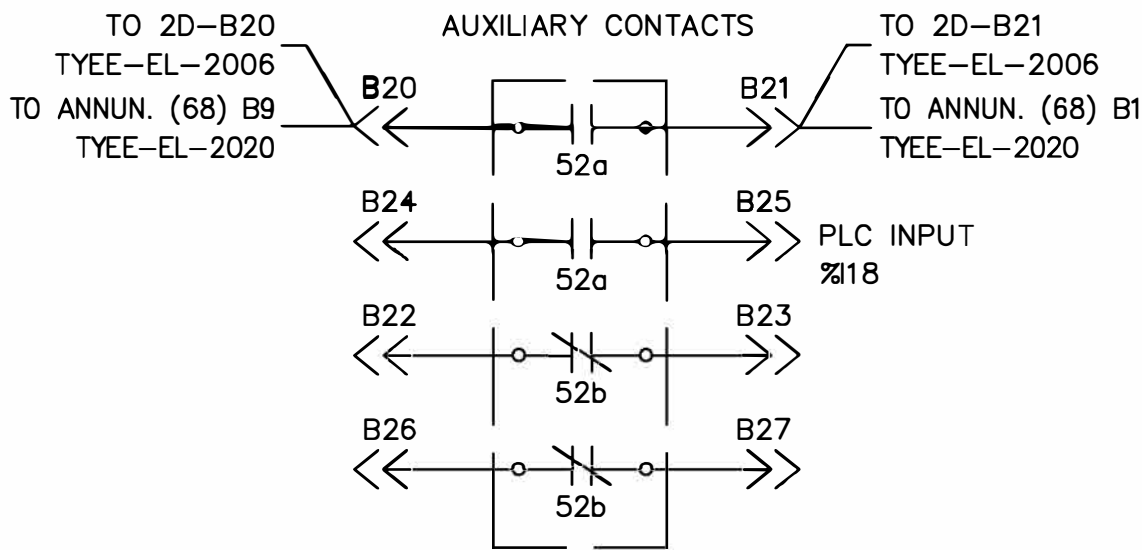
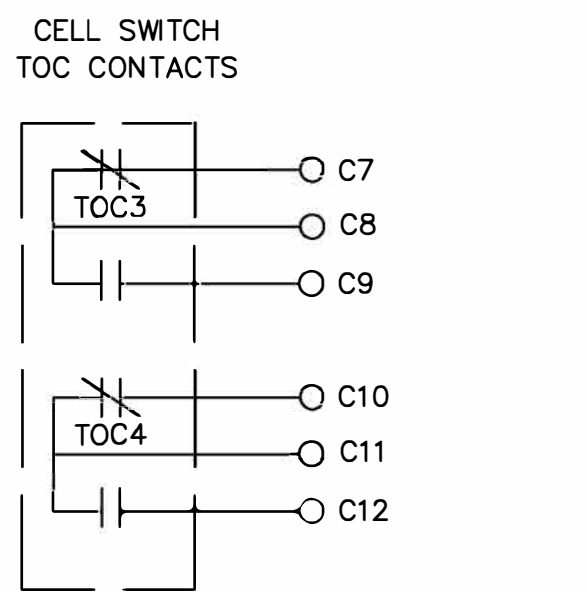
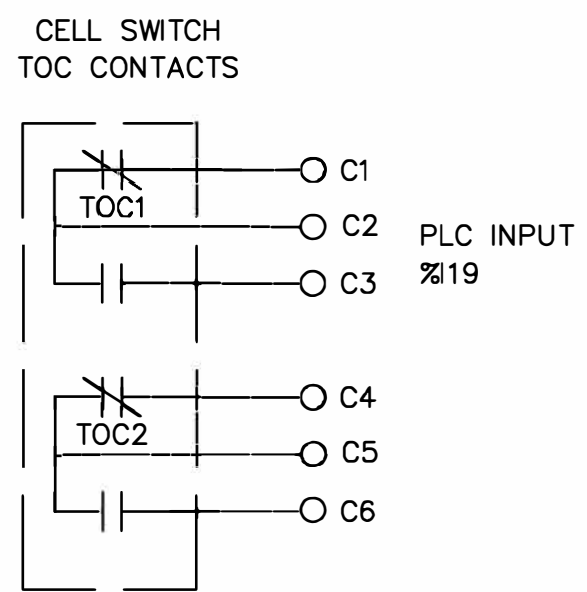
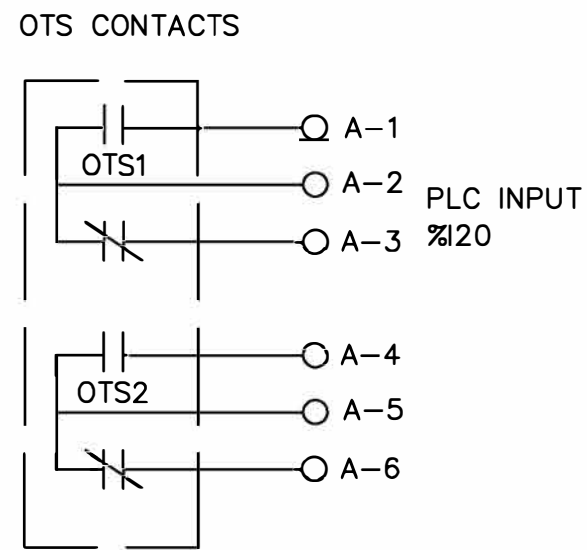
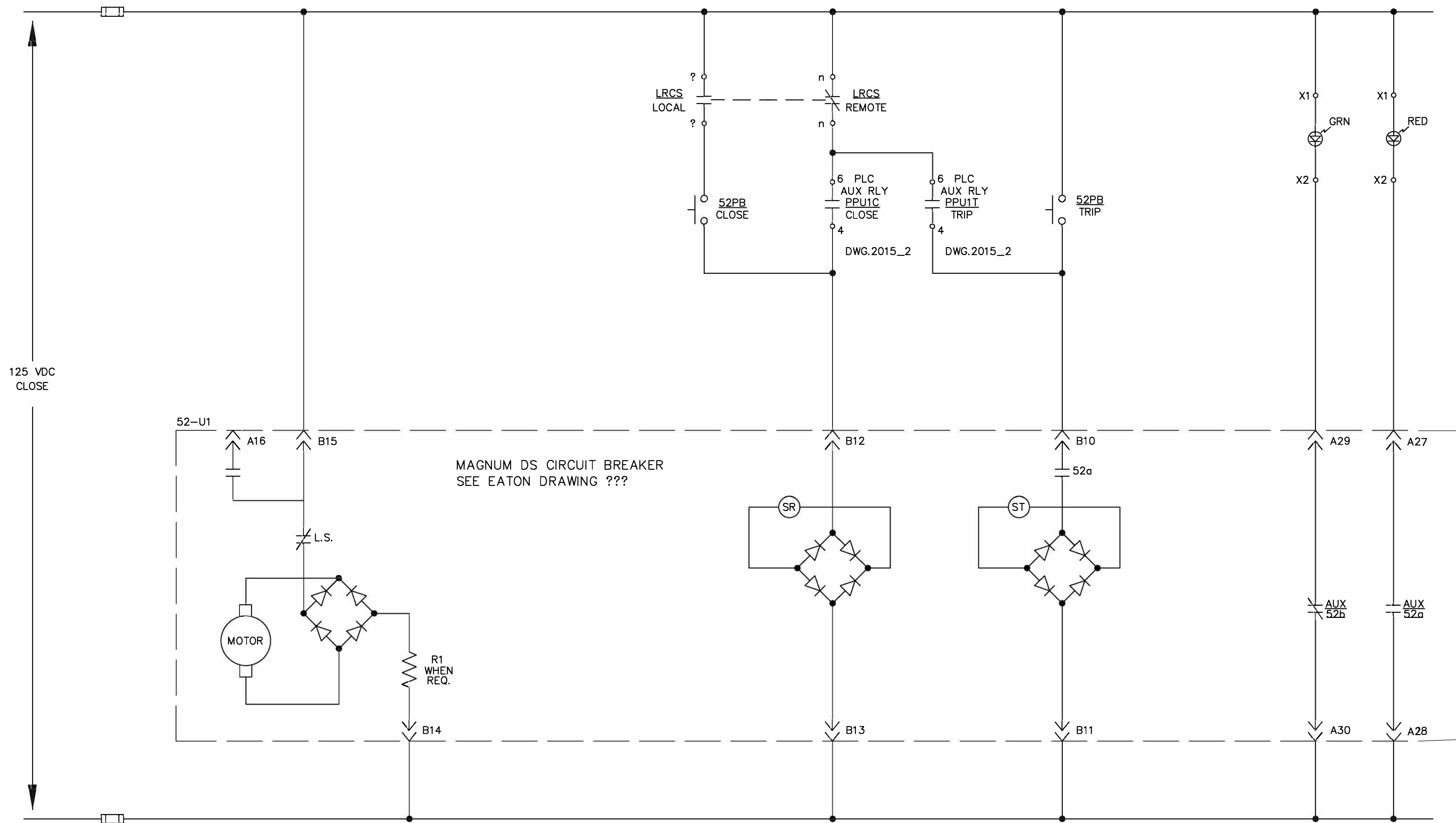
ENG. STAMP



TEL: (907) 522-1953
FAX: (907) 522-1182
WEB: WWW.EPSINC.COM

DRAWING NAME:		SEAPA TYEE LAKE STATION SERVICE SWITCHGEAR EGEN-2 BREAKER 4B SEL-700G DC SCHEMATIC	
REF DWG(S):			
DRAWING NO.:		TYEE-EL-2003	
		SHEET 2 OF 2	

tyee-el-2003_2.dwg



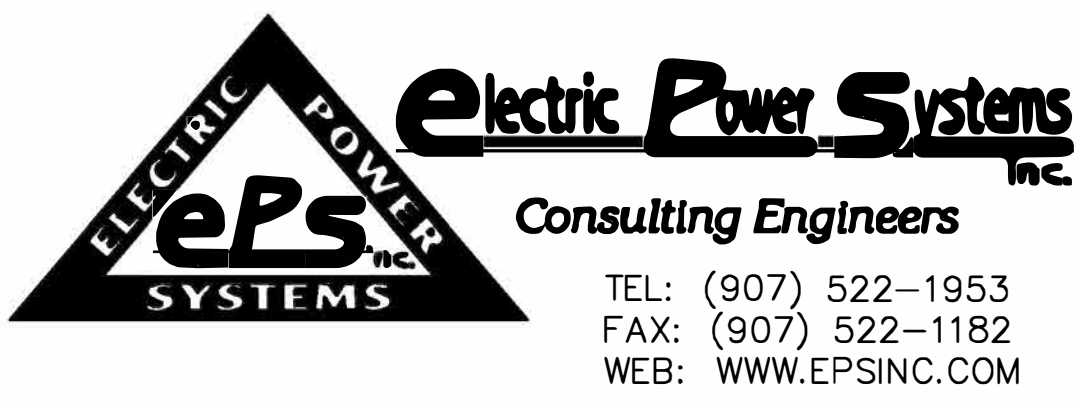
- CONTROL BENCHBOARD
 - ⊗ SWITCHGEAR TERMINAL FOR CUSTOMER CONNECTION
 - DEVICE TERMINAL
-
- 52a CLOSED WHEN BREAKER IS CLOSED
 - 52b CLOSED WHEN BREAKER IS OPEN
 - 52PB BREAKER CONTROL PUSHBUTTON
 - GCPB GENERATOR CONTROL PUSHBUTTON
 - L.RCS LOCAL/REMOTE CONTROL SWITCH
 - OTS BREAKER OVERCURRENT TRIP SWITCH
 - PRnSn PROFINET RACK #, SLOT #
 - TTC TRANSFORMER TEMPERATURE CONTROLLER

CONTACTS SHOWN WITH BREAKER IN WITHDRAWN POSITION

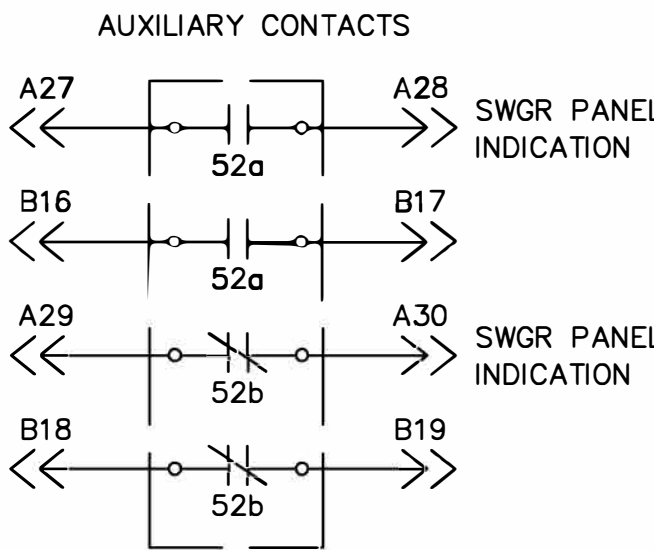
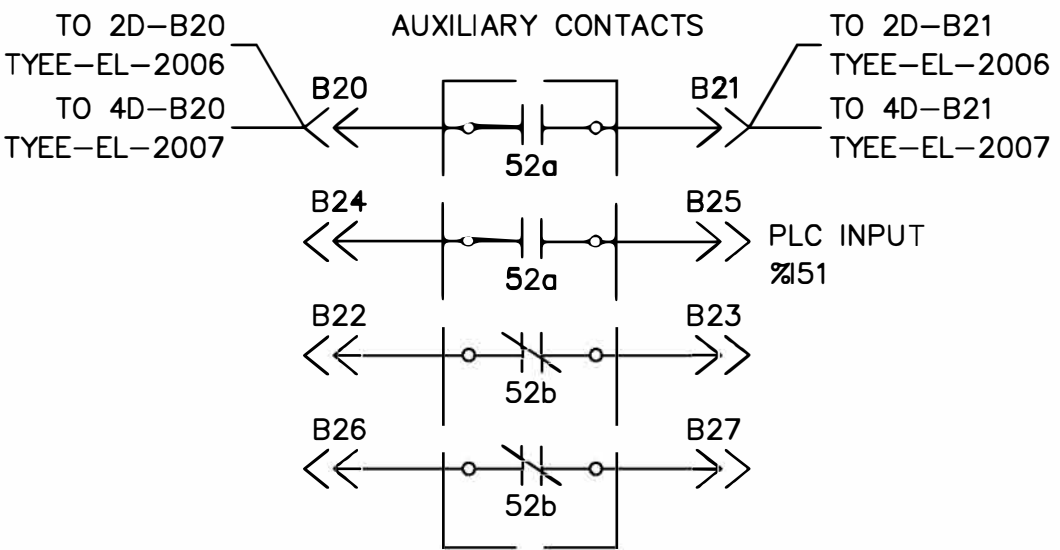
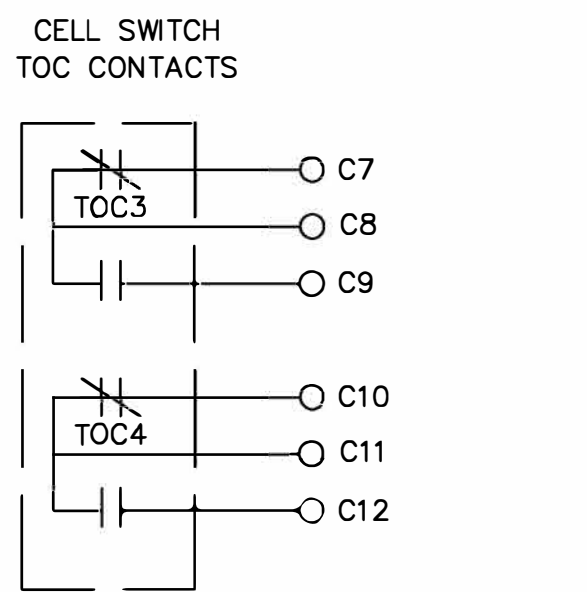
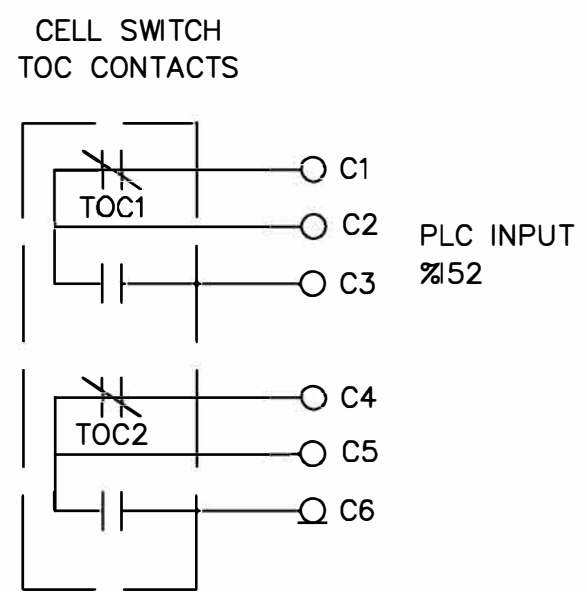
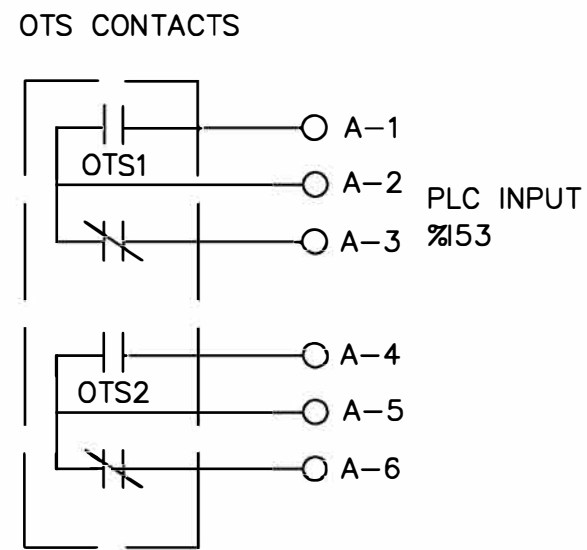
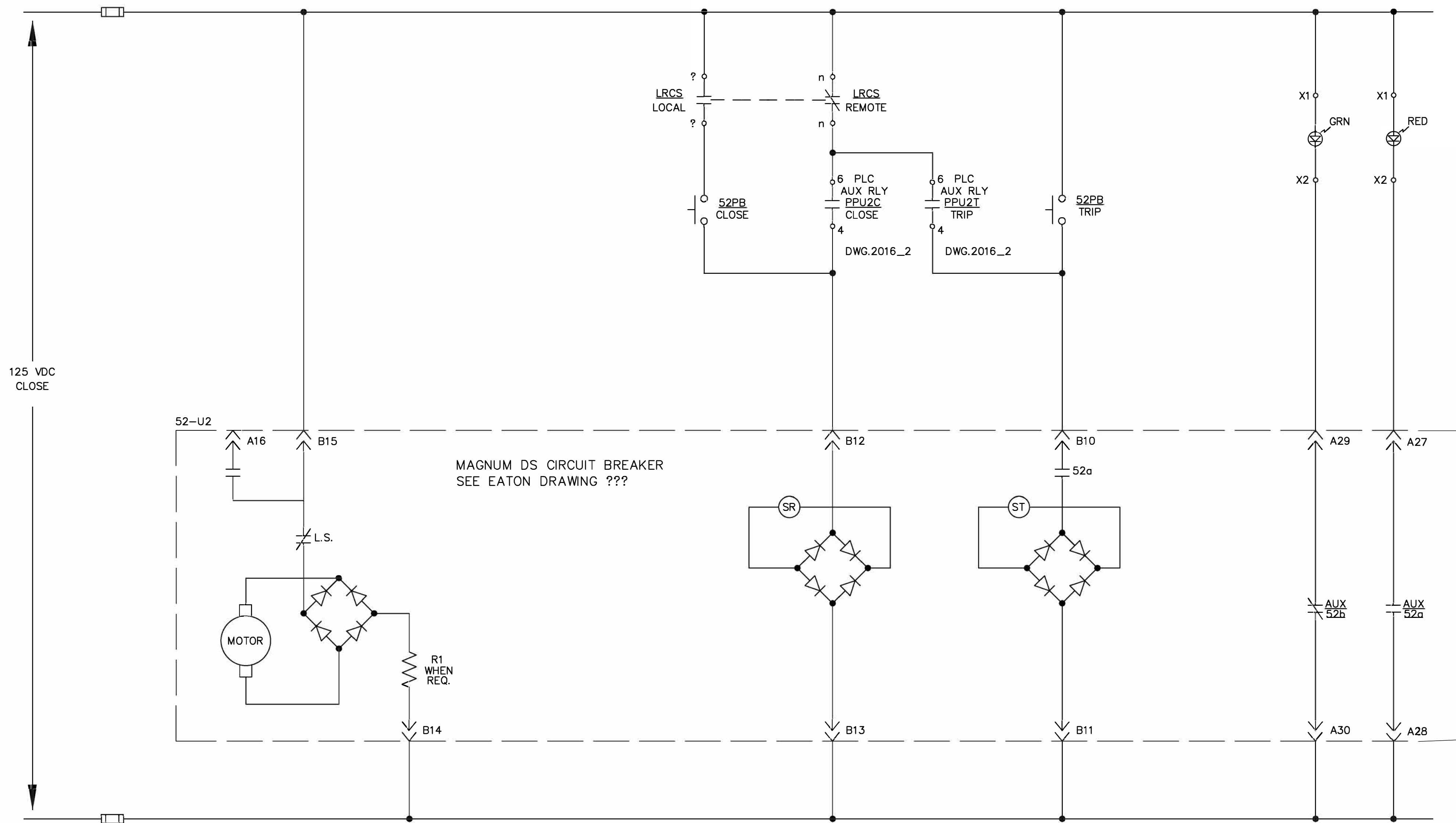
CONSTRUCTION NOTE
 1. CONTRACTOR TO VERIFY TERMINATIONS IN 480V SS SWITCHGEAR.

PROJECT: TYEE LAKE STATION SERVICE DESIGN				
DESIGNER/PROJECT ENGINEER: MITCHELL HEDRICK/DAVID BUSS - EPS W.O. #: 23-0124				
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	REVIEWED (MGR/SUPV)/DATE	APPROVED (DIRECTOR)/DATE
A	ISSUED FOR 30% DESIGN REVIEW	MLH/05-23-2023		
B	ISSUED FOR 90% DESIGN REVIEW	MLH/08-04-2023		
C	ISSUED FOR 100% DESIGN SUBMITTAL	MLH/11-03-2023		

ENG. STAMP



DRAWING NAME:	SEAPA TYEE LAKE STATION SERVICE SWITCHGEAR PPU1 FEEDER BREAKER 2C DC SCHEMATIC		
REF DWG(S):			
DRAWING NO.:	TYEE-EL-2004	SHEET 1 OF 1	

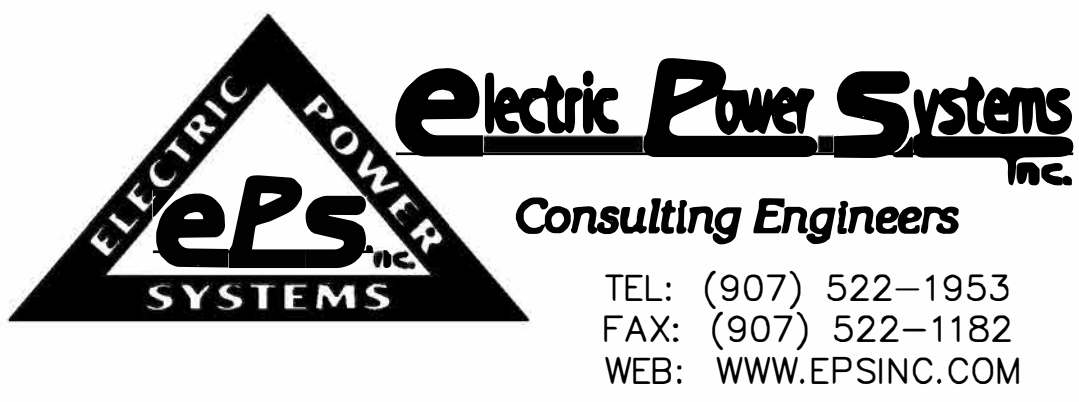


- CONTROL BENCHBOARD
 - ⊗ SWITCHGEAR TERMINAL FOR CUSTOMER CONNECTION
 - DEVICE TERMINAL
-
- 52a CLOSED WHEN BREAKER IS CLOSED
 - 52b CLOSED WHEN BREAKER IS OPEN
 - 52PB BREAKER CONTROL PUSHBUTTON
 - GCPB GENERATOR CONTROL PUSHBUTTON
 - L.RCS LOCAL/REMOTE CONTROL SWITCH
 - OTS BREAKER OVERCURRENT TRIP SWITCH
 - PRnSn PROFINET RACK #, SLOT #
 - TTC TRANSFORMER TEMPERATURE CONTROLLER

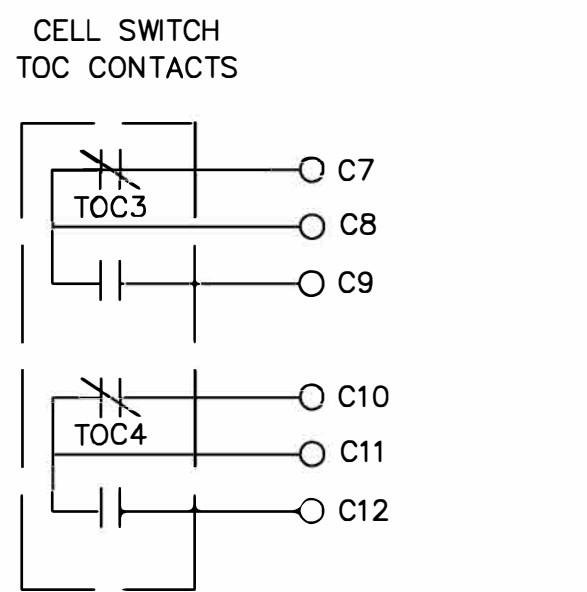
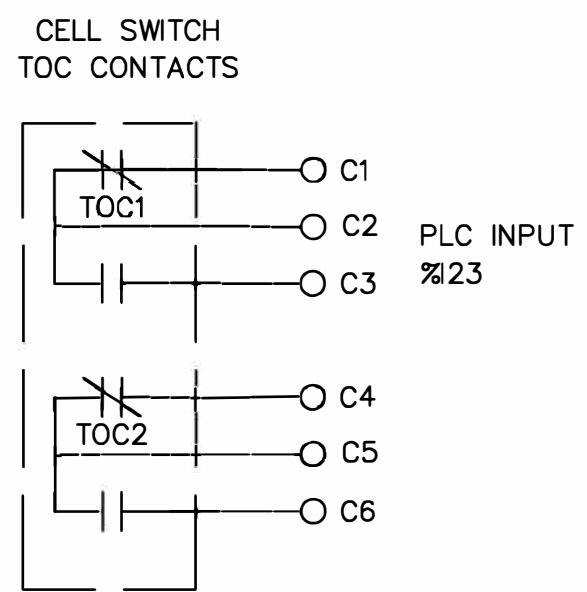
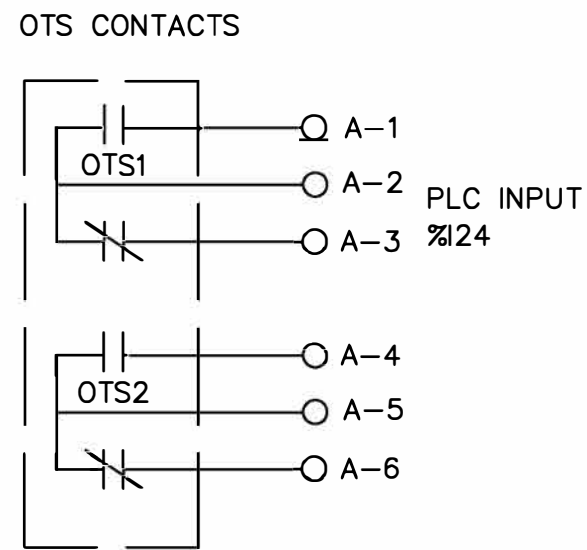
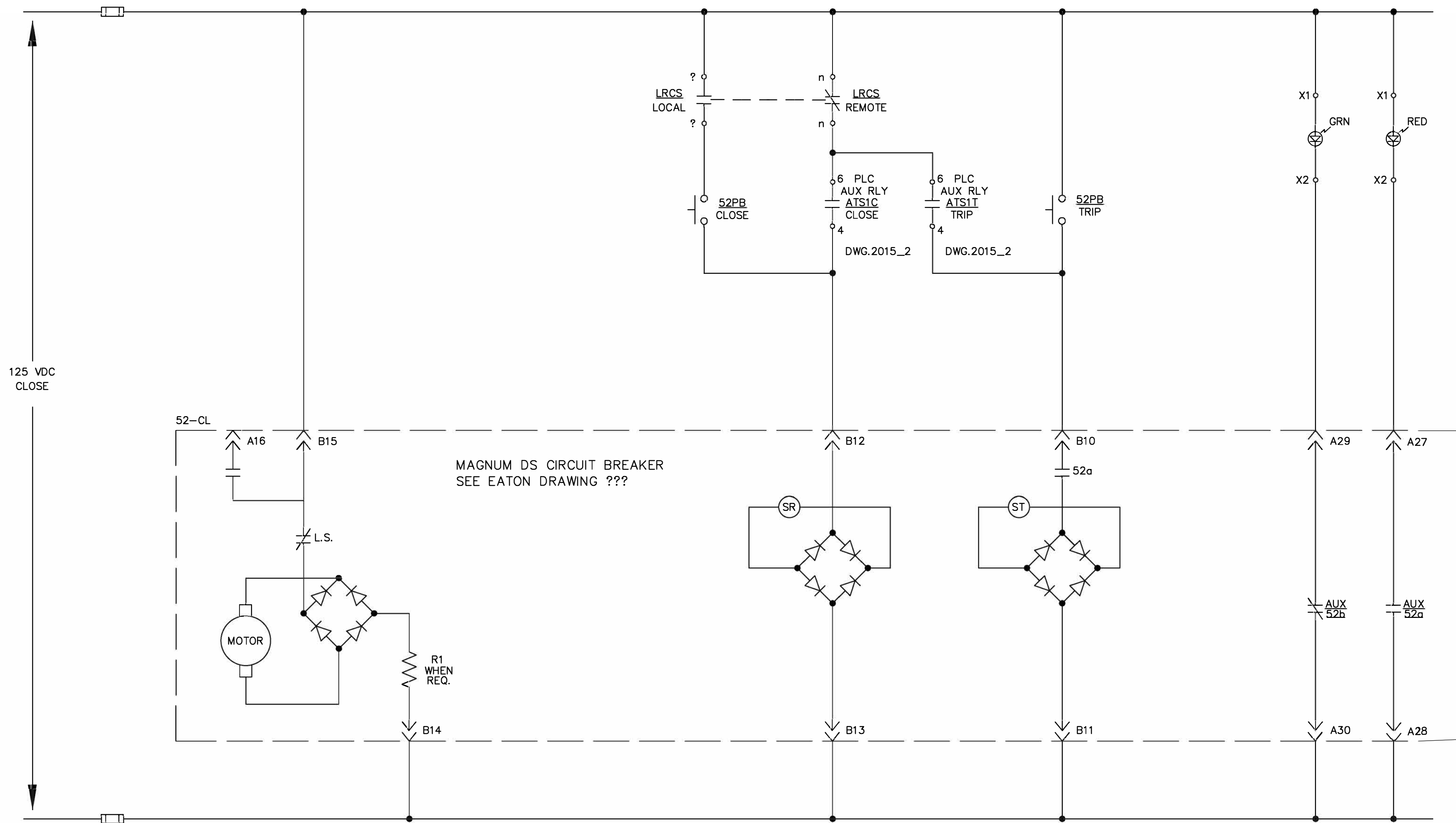
CONSTRUCTION NOTE
 1. CONTRACTOR TO VERIFY TERMINATIONS IN 480V SS SWITCHGEAR.

PROJECT: TYEE LAKE STATION SERVICE DESIGN				
DESIGNER/PROJECT ENGINEER: MITCHELL HEDRICK/DAVID BUSS - EPS W.O. #: 23-0124				
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	REVIEWED (MGR/SUPV)/DATE	APPROVED (DIRECTOR)/DATE
A	ISSUED FOR 30% DESIGN REVIEW	MLH/05-23-2023		
B	ISSUED FOR 90% DESIGN REVIEW	MLH/08-04-2023		
C	ISSUED FOR 100% DESIGN SUBMITTAL	MLH/11-03-2023		

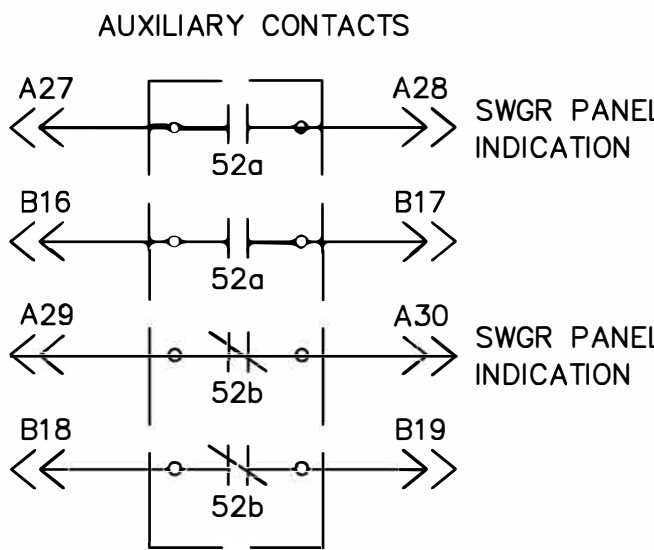
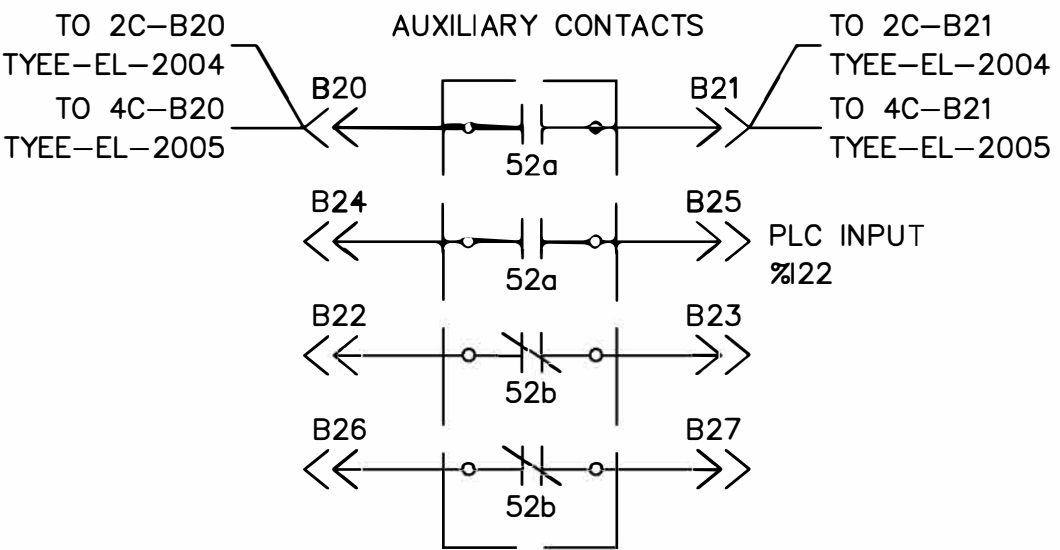
ENG. STAMP



DRAWING NAME:	SEAPA TYEE LAKE STATION SERVICE SWITCHGEAR PPU2 FEEDER BREAKER 4C DC SCHEMATIC	
REF DWG(S):		
DRAWING NO.:	TYEE-EL-2005	SHEET 1 OF 1



CONTACTS SHOWN WITH BREAKER IN WITHDRAWN POSITION



- CONTROL BENCHBOARD
 - ⊗ SWITCHGEAR TERMINAL FOR CUSTOMER CONNECTION
 - DEVICE TERMINAL
-
- 52a CLOSED WHEN BREAKER IS CLOSED
 - 52b CLOSED WHEN BREAKER IS OPEN
 - 52PB BREAKER CONTROL PUSHBUTTON
 - GCPB GENERATOR CONTROL PUSHBUTTON
 - L.RCS LOCAL/REMOTE CONTROL SWITCH
 - OTS BREAKER OVERCURRENT TRIP SWITCH
 - PRnSn PROFINET RACK #, SLOT #
 - TTC TRANSFORMER TEMPERATURE CONTROLLER

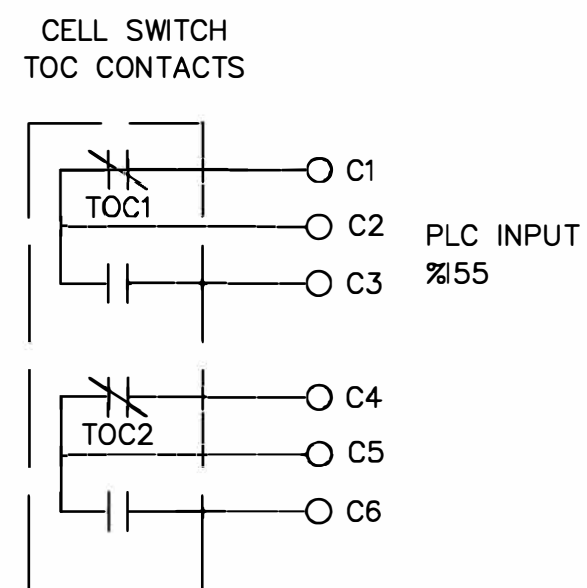
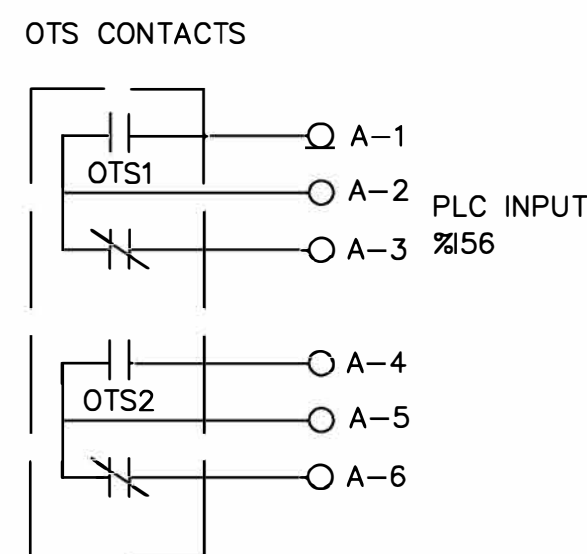
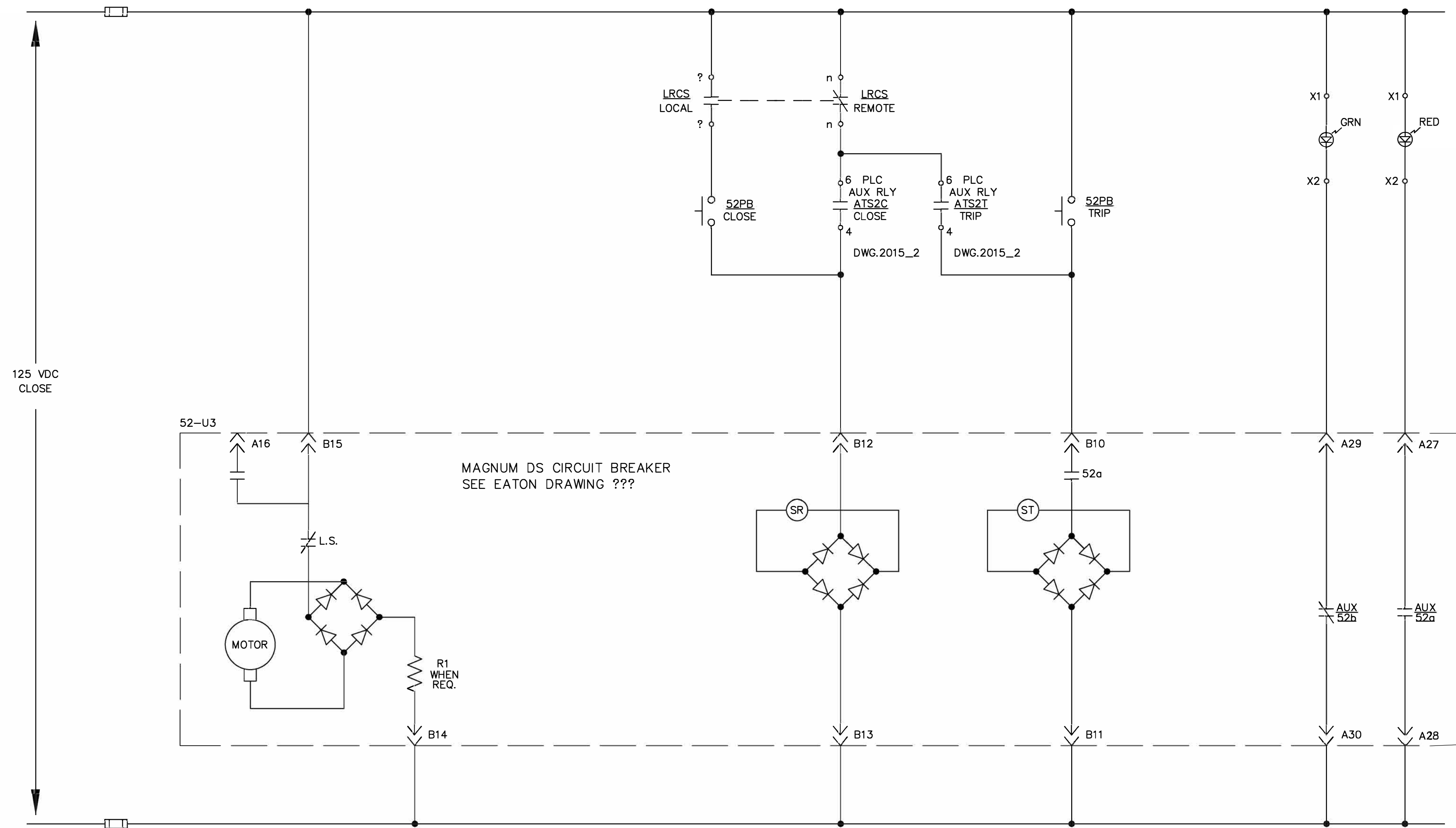
CONSTRUCTION NOTE
1. CONTRACTOR TO VERIFY TERMINATIONS IN 480V SS SWITCHGEAR.

PROJECT: TYEE LAKE STATION SERVICE DESIGN				
DESIGNER/PROJECT ENGINEER: MITCHELL HEDRICK/DAVID BUSS - EPS W.O. #: 23-0124				
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	REVIEWED (MGR/SUPV)/DATE	APPROVED (DIRECTOR)/DATE
A	ISSUED FOR 30% DESIGN REVIEW	MLH/05-23-2023		
B	ISSUED FOR 90% DESIGN REVIEW	MLH/08-04-2023		
C	ISSUED FOR 100% DESIGN SUBMITTAL	MLH/11-03-2023		

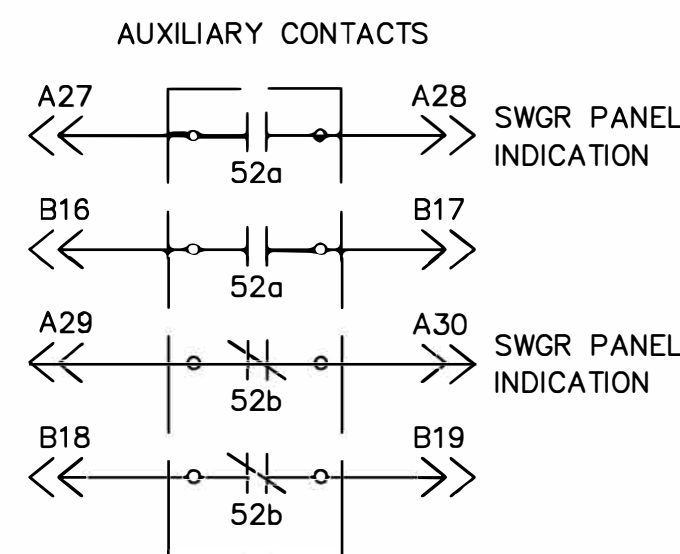
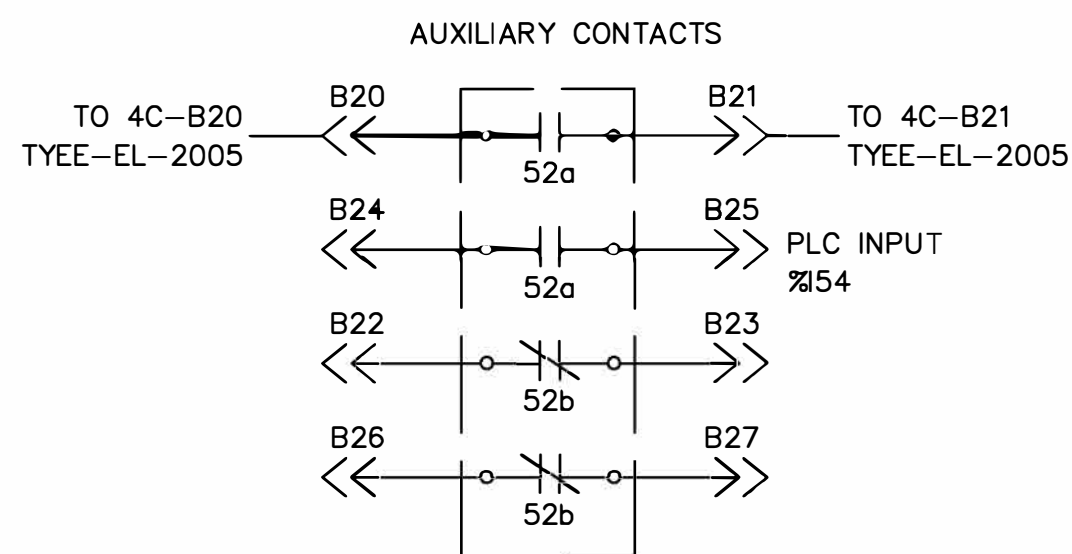
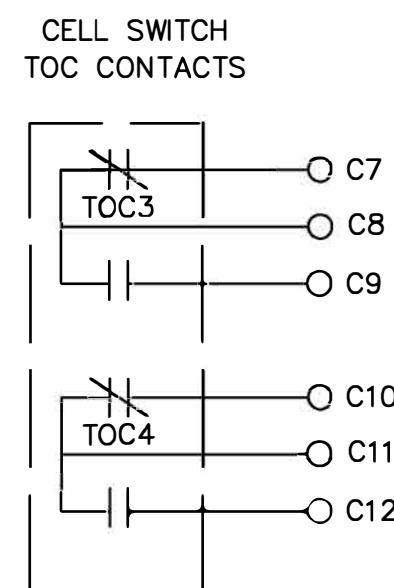
ENG. STAMP



DRAWING NAME:	SEAPA TYEE LAKE STATION SERVICE SWITCHGEAR ATS1 FEEDER BREAKER 2D DC SCHEMATIC	
REF DWG(S):		
DRAWING NO.:	TYEE-EL-2006	SHEET 1 OF 1



CONTACTS SHOWN WITH BREAKER IN WITHDRAWN POSITION



- CONTROL BENCHBOARD
- ⊗ SWITCHGEAR TERMINAL FOR CUSTOMER CONNECTION
- DEVICE TERMINAL

- 52a CLOSED WHEN BREAKER IS CLOSED
- 52b CLOSED WHEN BREAKER IS OPEN
- 52PB BREAKER CONTROL PUSHBUTTON
- GCPB GENERATOR CONTROL PUSHBUTTON
- L.RCS LOCAL/REMOTE CONTROL SWITCH
- OTS BREAKER OVERCURRENT TRIP SWITCH
- PRnSn PROFINET RACK #, SLOT #
- TTC TRANSFORMER TEMPERATURE CONTROLLER

CONSTRUCTION NOTE

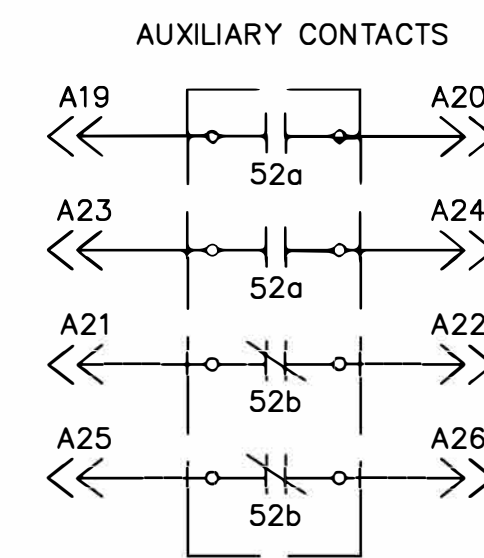
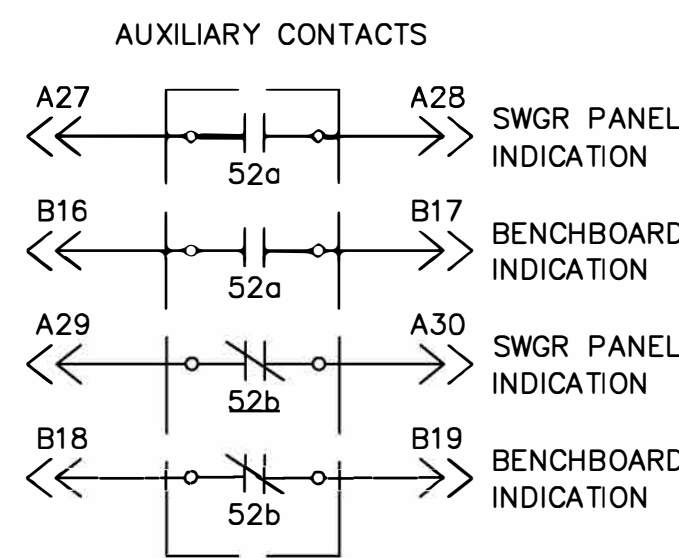
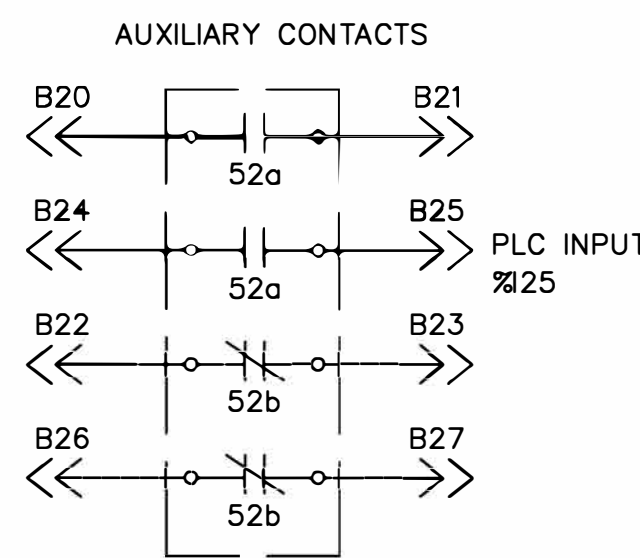
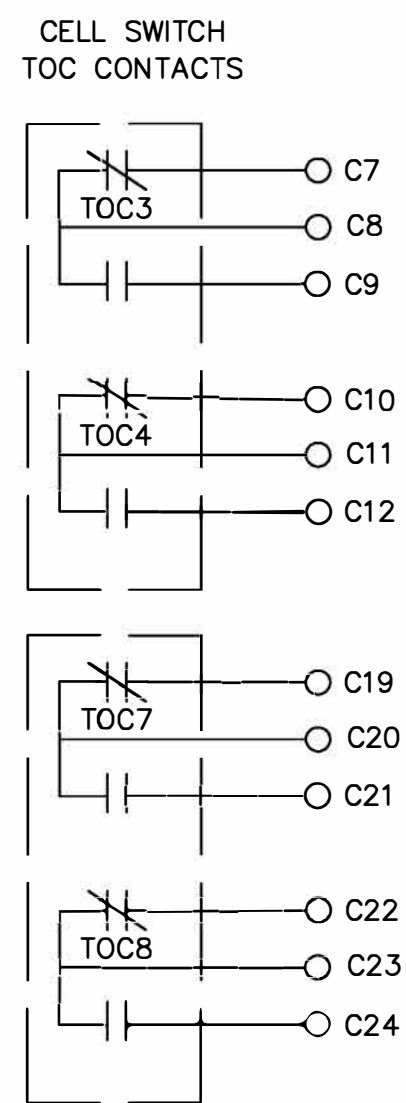
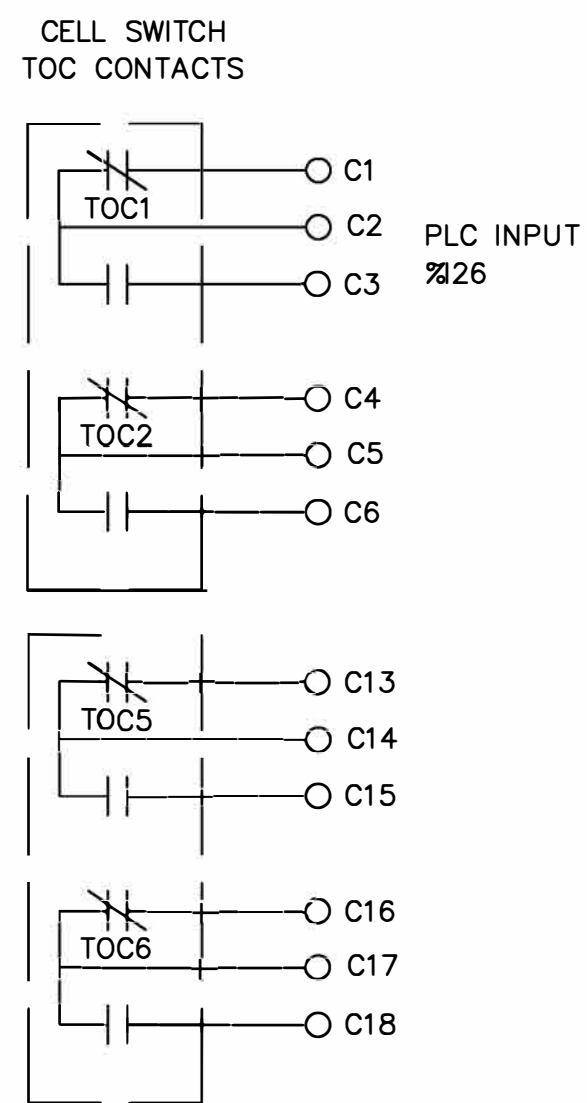
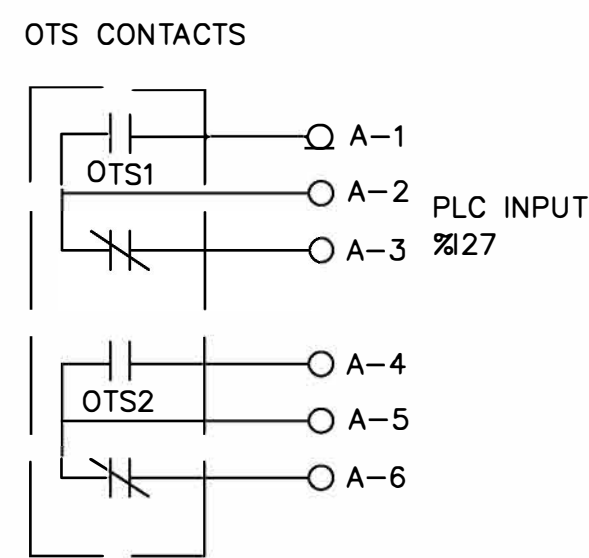
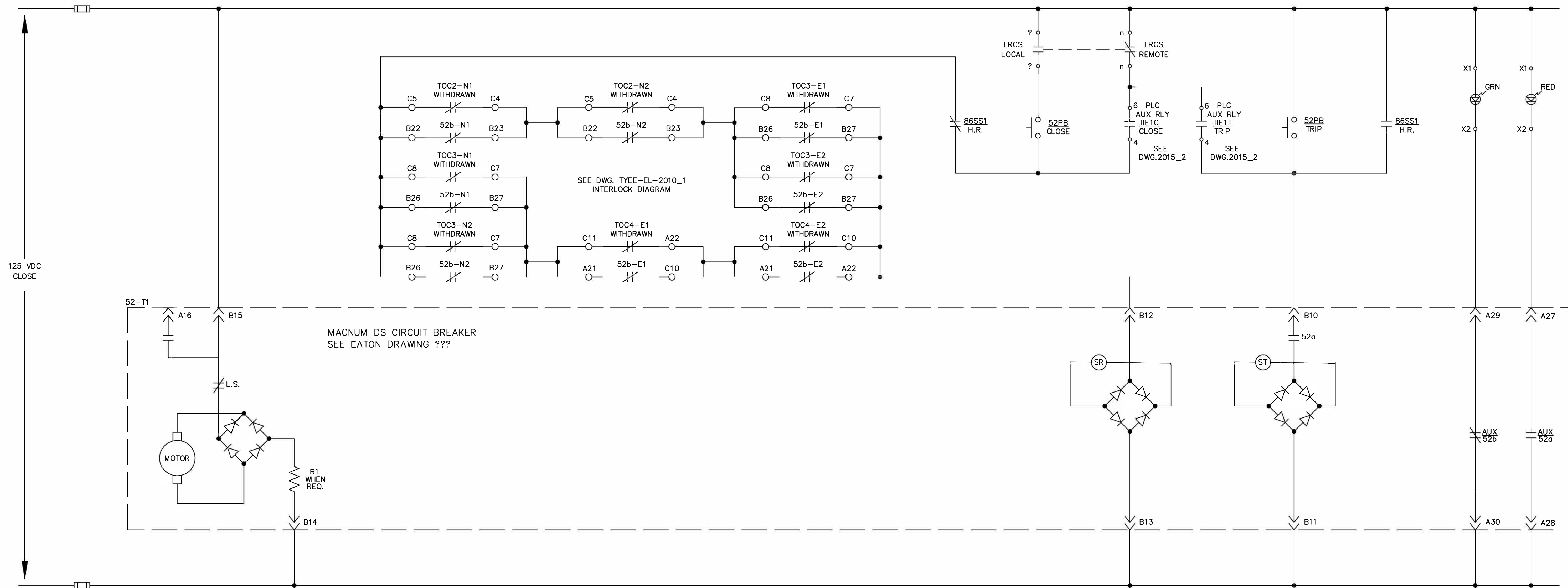
1. CONTRACTOR TO VERIFY TERMINATIONS IN 480V SS SWITCHGEAR.

PROJECT: TYEE LAKE STATION SERVICE DESIGN				
DESIGNER/PROJECT ENGINEER: MITCHELL HEDRICK/DAVID BUSS - EPS W.O. #: 23-0124				
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	REVIEWED (MGR/SUPV)/DATE	APPROVED (DIRECTOR)/DATE
A	ISSUED FOR 30% DESIGN REVIEW	MLH/05-23-2023		
B	ISSUED FOR 90% DESIGN REVIEW	MLH/08-04-2023		
C	ISSUED FOR 100% DESIGN SUBMITTAL	MLH/11-03-2023		

ENG. STAMP



DRAWING NAME:	SEAPA TYEE LAKE STATION SERVICE SWITCHGEAR ATS2 FEEDER BREAKER 4D DC SCHEMATIC		
REF DWG(S):	tyee-el-2007_1.dwg		
DRAWING NO.:	TYEE-EL-2007		
	SHEET 1 OF 1		



- CONTROL BENCHBOARD
- ⊗ SWITCHGEAR TERMINAL FOR CUSTOMER CONNECTION
- DEVICE TERMINAL

- 52a CLOSED WHEN BREAKER IS CLOSED
- 52b CLOSED WHEN BREAKER IS OPEN
- 52PB BREAKER CONTROL PUSHBUTTON
- GCPB GENERATOR CONTROL PUSHBUTTON
- LRCs LOCAL/REMOTE CONTROL SWITCH
- OTS BREAKER OVERCURRENT TRIP SWITCH
- PRnSn PROFINET RACK #, SLOT #
- TTC TRANSFORMER TEMPERATURE CONTROLLER

CONSTRUCTION NOTE

1. CONTRACTOR TO VERIFY TERMINATIONS IN 480V SS SWITCHGEAR.

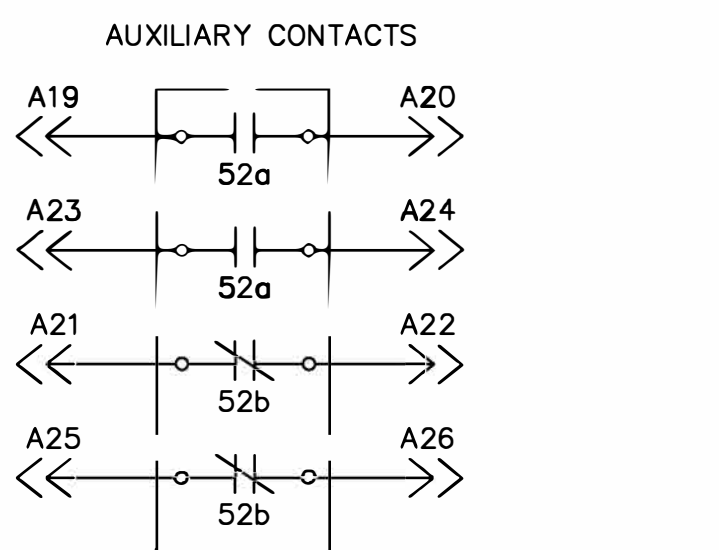
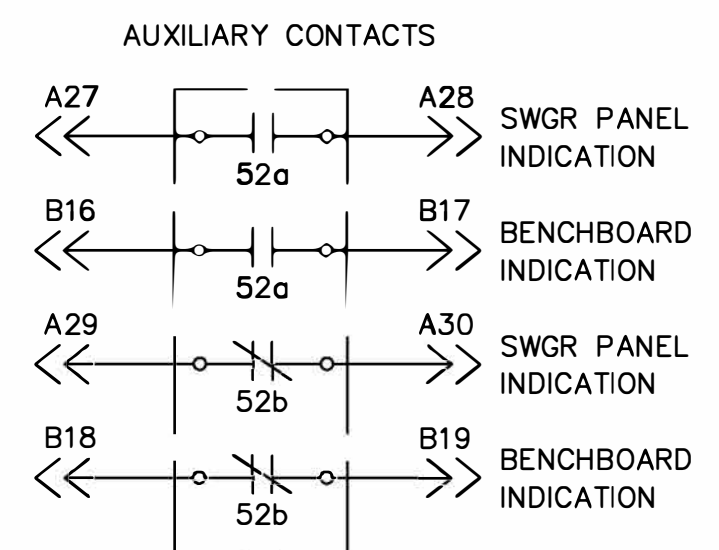
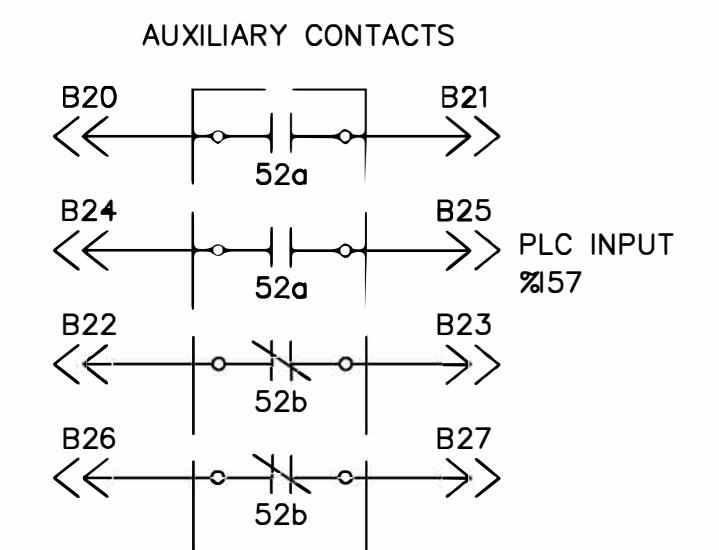
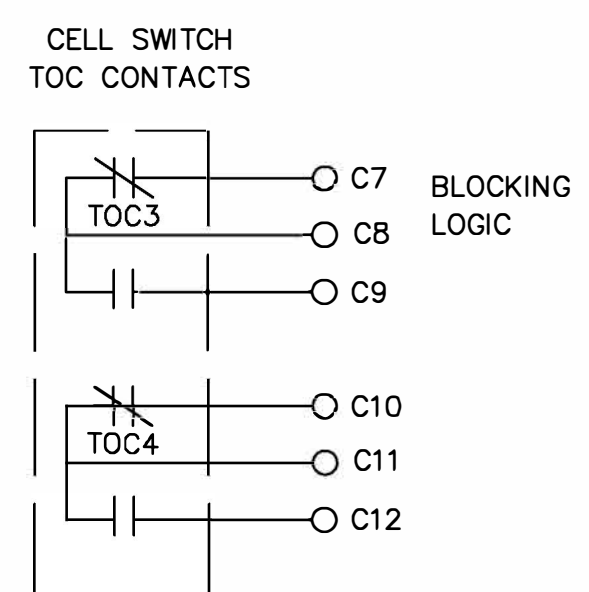
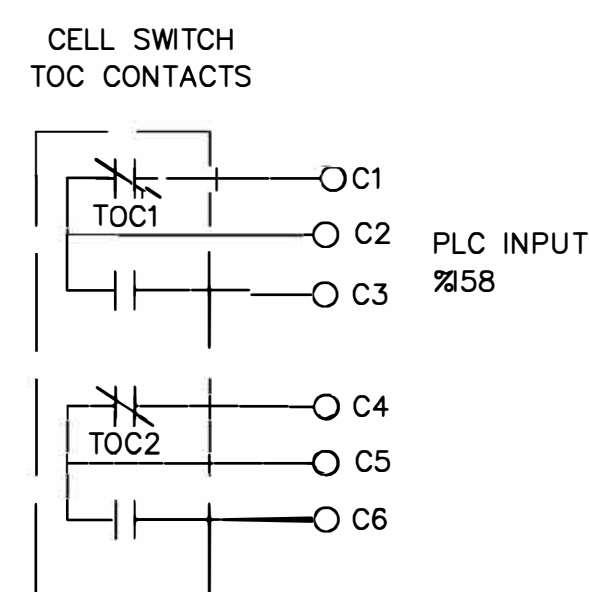
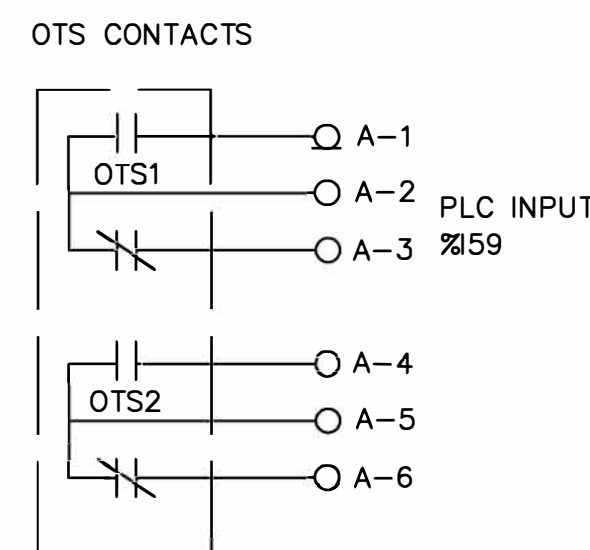
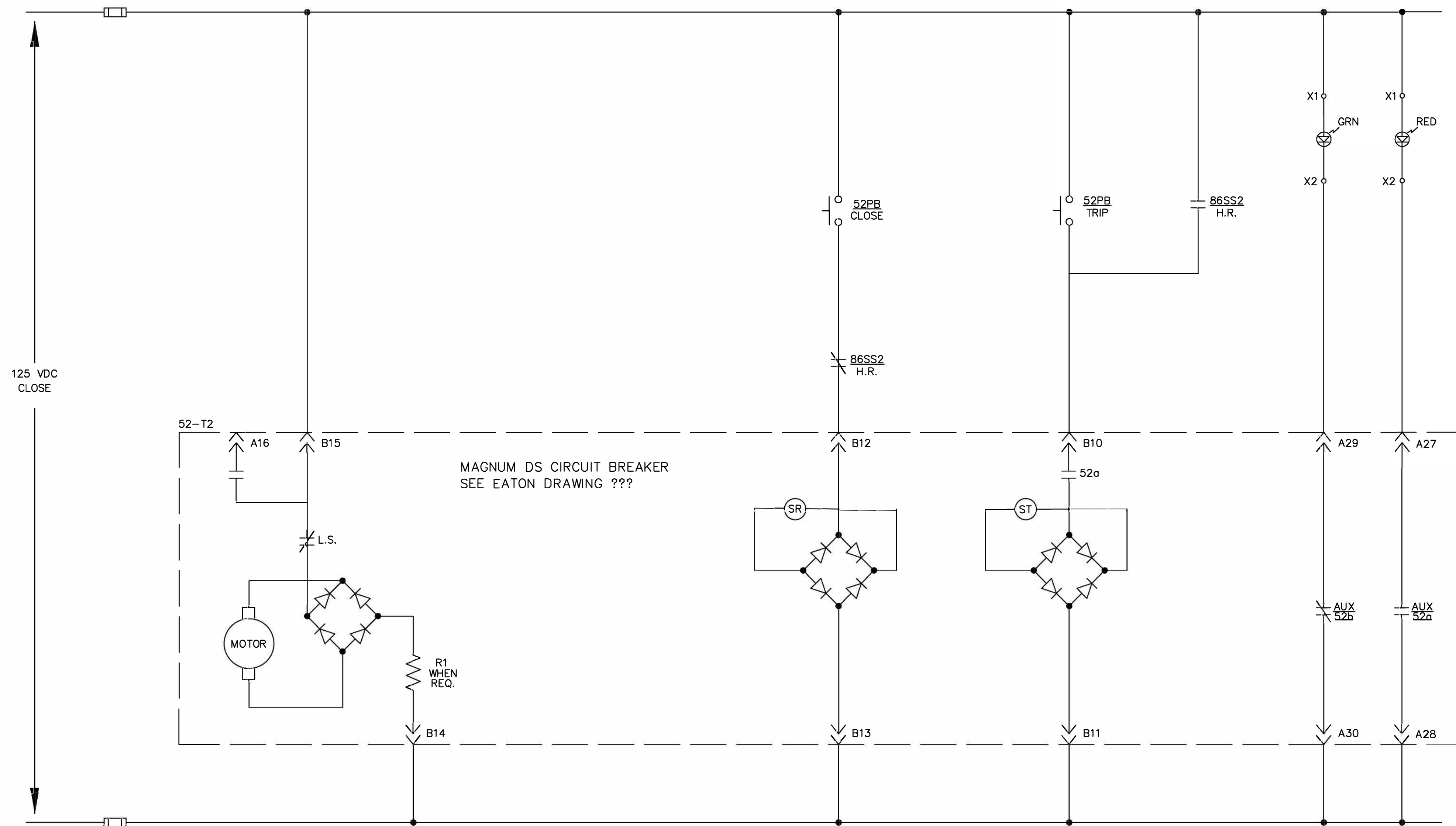
PROJECT: TYEE LAKE STATION SERVICE DESIGN				
DESIGNER/PROJECT ENGINEER: MITCHELL HEDRICK/DAVID BUSS - EPS W.O. #: 23-0124				
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	REVIEWED (MGR/SUPV)/DATE	APPROVED (DIRECTOR)/DATE
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B	ISSUED FOR 90% DESIGN REVIEW	MLH/08-04-2023		
C	ISSUED FOR 100% DESIGN SUBMITTAL	MLH/11-03-2023		

ENG. STAMP



TEL: (907) 522-1953
 FAX: (907) 522-1182
 WEB: WWW.EPSINC.COM

DRAWING NAME:	SEAPA TYEE LAKE STATION SERVICE SWITCHGEAR TIE1 BREAKER 3B DC SCHEMATIC		
REF DWG(S):	tyee-el-2008_1.dwg		
DRAWING NO.:	TYEE-EL-2008	SHEET	1 OF 1

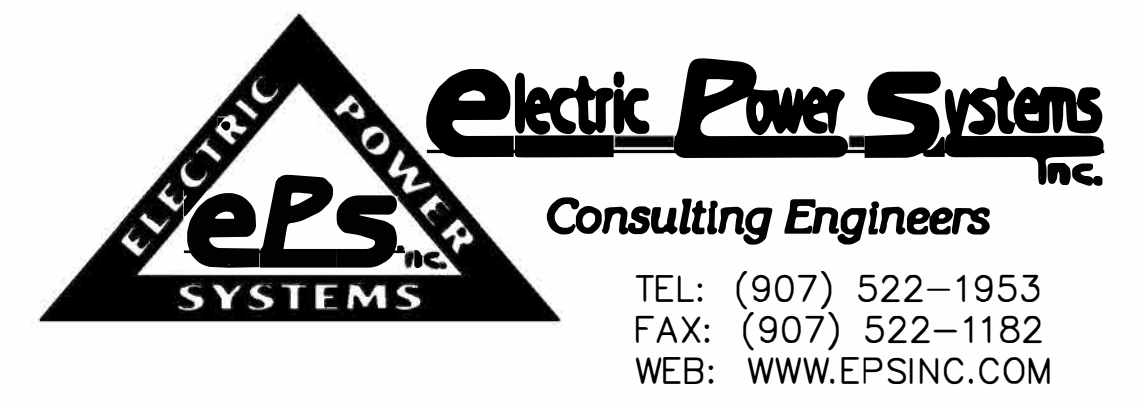


- CONTROL BENCHBOARD
 - ⊗ SWITCHGEAR TERMINAL FOR CUSTOMER CONNECTION
 - DEVICE TERMINAL
- 52a CLOSED WHEN BREAKER IS CLOSED
 52b CLOSED WHEN BREAKER IS OPEN
 52PB BREAKER CONTROL PUSHBUTTON
 GCPB GENERATOR CONTROL PUSHBUTTON
 LRCS LOCAL/REMOTE CONTROL SWITCH
 OTS BREAKER OVERCURRENT TRIP SWITCH
 PRnSn PROFINET RACK #, SLOT #
 TTC TRANSFORMER TEMPERATURE CONTROLLER

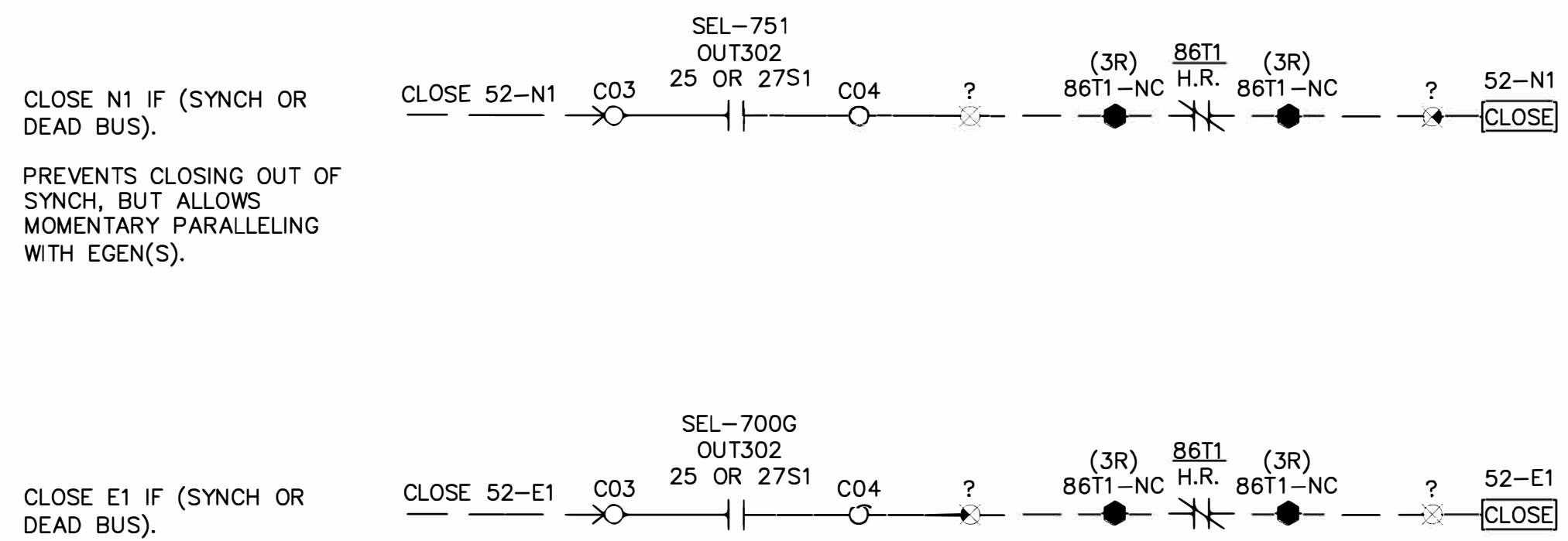
CONSTRUCTION NOTE
 1. CONTRACTOR TO VERIFY TERMINATIONS IN 480V SS SWITCHGEAR.

PROJECT: TYEE LAKE STATION SERVICE DESIGN				
DESIGNER/PROJECT ENGINEER: MITCHELL HEDRICK/DAVID BUSS - EPS W.O. #: 23-0124				
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	REVIEWED (MGR/SUPV)/DATE	APPROVED (DIRECTOR)/DATE
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B	ISSUED FOR 90% DESIGN REVIEW	MLH/08-04-2023		
C	ISSUED FOR 100% DESIGN SUBMITTAL	MLH/11-03-2023		

ENG. STAMP



DRAWING NAME:		SEAPA TYEE LAKE STATION SERVICE SWITCHGEAR TIE2 BREAKER 3C DC SCHEMATIC	
REF DWG(S):		tyee-el-2009_1.dwg	
DRAWING NO.:		TYEE-EL-2009	
		SHEET 1 OF 1	



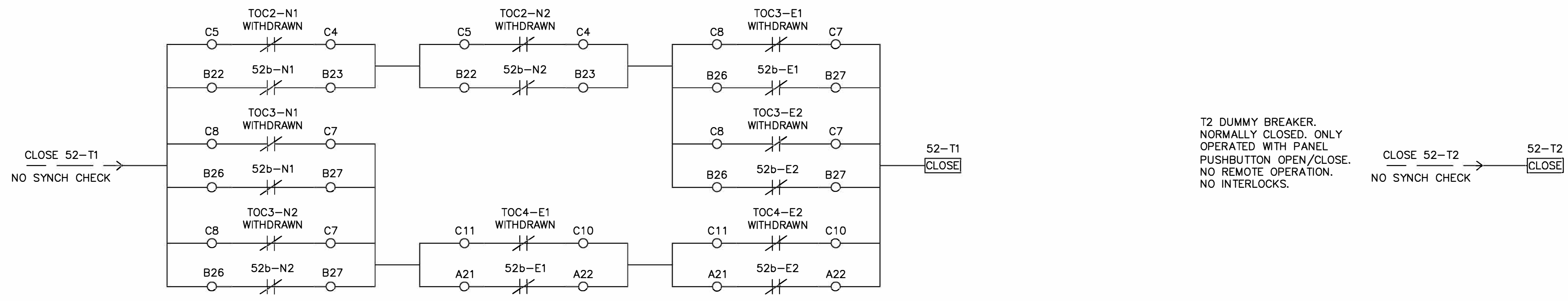
CLOSE N1 IF (SYNCH OR DEAD BUS).
PREVENTS CLOSING OUT OF SYNCH, BUT ALLOWS MOMENTARY PARALLELING WITH EGEN(S).

CLOSE N2 IF (SYNCH OR DEAD BUS).
PREVENTS CLOSING OUT OF SYNCH, BUT ALLOWS MOMENTARY PARALLELING WITH EGEN(S).

CLOSE E1 IF (SYNCH OR DEAD BUS).
PREVENTS CLOSING OUT OF SYNCH, BUT ALLOWS MOMENTARY PARALLELING WITH MAIN.

CLOSE E2 IF (SYNCH OR DEAD BUS).
PREVENTS CLOSING OUT OF SYNCH, BUT ALLOWS MOMENTARY PARALLELING WITH MAIN.

CLOSE T1 IF ((N1 AND N2 ARE OPEN) AND (E1 OR E2 ARE OPEN)) OR ((N1 OR N2 AND E1 AND E2 ARE OPEN)).
PREVENTS TIE CLOSING AND PARALLELING OF OUT-OF-SYNCH MAIN SOURCES AND/OR EGENS.



T2 DUMMY BREAKER. NORMALLY CLOSED. ONLY OPERATED WITH PANEL PUSHBUTTON OPEN/CLOSE. NO REMOTE OPERATION. NO INTERLOCKS.
CLOSE 52-T2 -> NO SYNCH CHECK -> 52-T2 [CLOSE]

- CONFIGURATIONS ALLOWED:**
- BOTH MAIN N1 & N2 BREAKERS CLOSED, WITH TIE BREAKER T1 OPEN. (NORMAL OPERATION).
 - BOTH MAIN N1 & N2 BREAKERS CLOSED, WITH TIE BREAKERS T1 AND T2 CLOSED (PARALLEL MAIN SOURCE OPERATION).
 - MAIN BREAKER N1 OR N2 CLOSED, WITH TIE BREAKERS T1 AND T2 CLOSED (SINGLE MAIN SOURCE OPERATION).
 - BOTH EMERGENCY GENERATORS E1 AND E2 CLOSED WITH TIE BREAKER T1 OPEN.
 - EMERGENCY GENERATOR E1 OR E2 CLOSED, WITH TIE BREAKERS T1 AND T2 CLOSED (SINGLE EMERGENCY GENERATOR OPERATION).
 - BOTH EMERGENCY GENERATORS E1 AND E2 CLOSED WITH TIE BREAKERS T1 AND T2 CLOSED (PARALLEL EMERGENCY GENERATOR OPERATION).

T1 BUS TIE CLOSE LOGIC:
NO SYNCH CHECK EXISTS ACROSS THE BUS TIE BREAKER.
SINGLE MAIN SOURCE OPERATION: AT LEAST ONE OF THE MAIN BREAKERS AND BOTH OF THE EMERGENCY GENERATOR BREAKERS MUST BE OPEN BEFORE CLOSING THE TIE BREAKER.

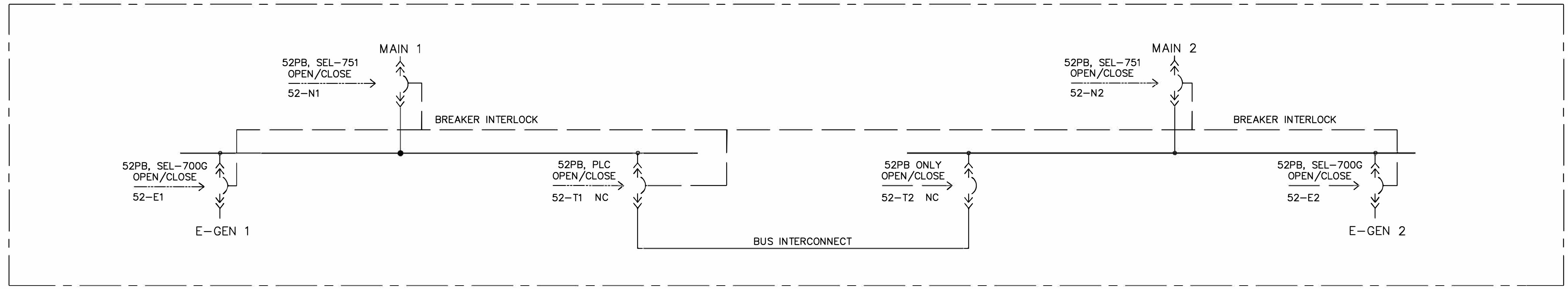
PARALLEL MAIN SOURCE OPERATION: TIE BREAKER T1 MUST ALREADY BE CLOSED INTO SINGLE MAIN SOURCE OPERATION. WHEN SINGLE MAIN SOURCE OPERATION IS CONFIRMED, SYNCHRONIZE AND CLOSE THE OTHER MAIN BREAKER.

SINGLE EMERGENCY GENERATOR OPERATION: TIE BREAKER CAN ONLY BE CLOSED IF BOTH MAINS ARE OPEN ALONG WITH AT LEAST ONE OF THE EMERGENCY GENERATOR BREAKERS BEING OPEN.

PARALLEL EMERGENCY GENERATOR OPERATION: TIE BREAKER T1 MUST ALREADY BE CLOSED INTO SINGLE EMERGENCY GENERATOR OPERATION. WHEN SINGLE EMERGENCY GENERATOR OPERATION IS CONFIRMED, SYNCHRONIZE AND CLOSE THE OTHER EMERGENCY GENERATOR BREAKER.

SEL-751 CLOSE LOGIC:
ALLOW CLOSE ON LIVE BUS (TRANSFORMER ENERGIZED) AND DEAD LINE (480V SWITCHGEAR DE-ENERGIZED) OR SYNCHRONIZED LIVE BUS/LIVE LINE.

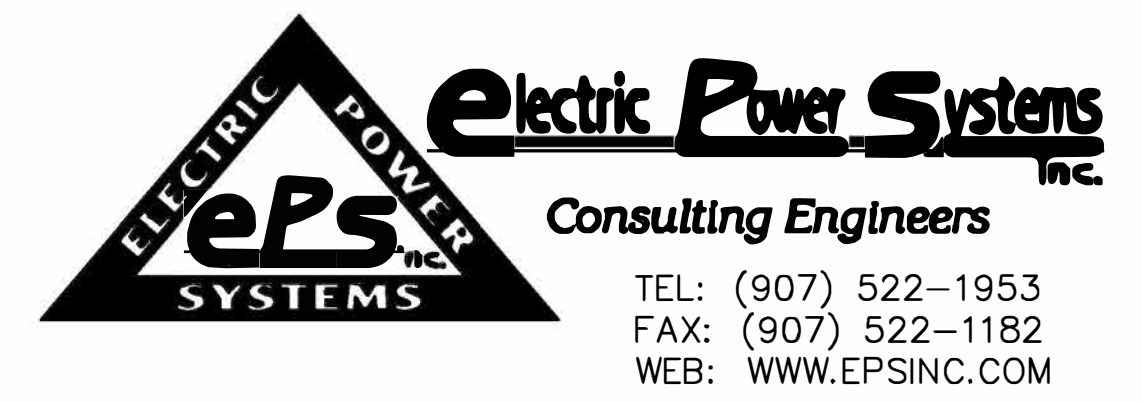
SEL-700G CLOSE LOGIC:
ALLOW CLOSE ON LIVE BUS (EGEN ENERGIZED) AND DEAD LINE (480V SWITCHGEAR DE-ENERGIZED) OR SYNCHRONIZED LIVE BUS/LIVE LINE.



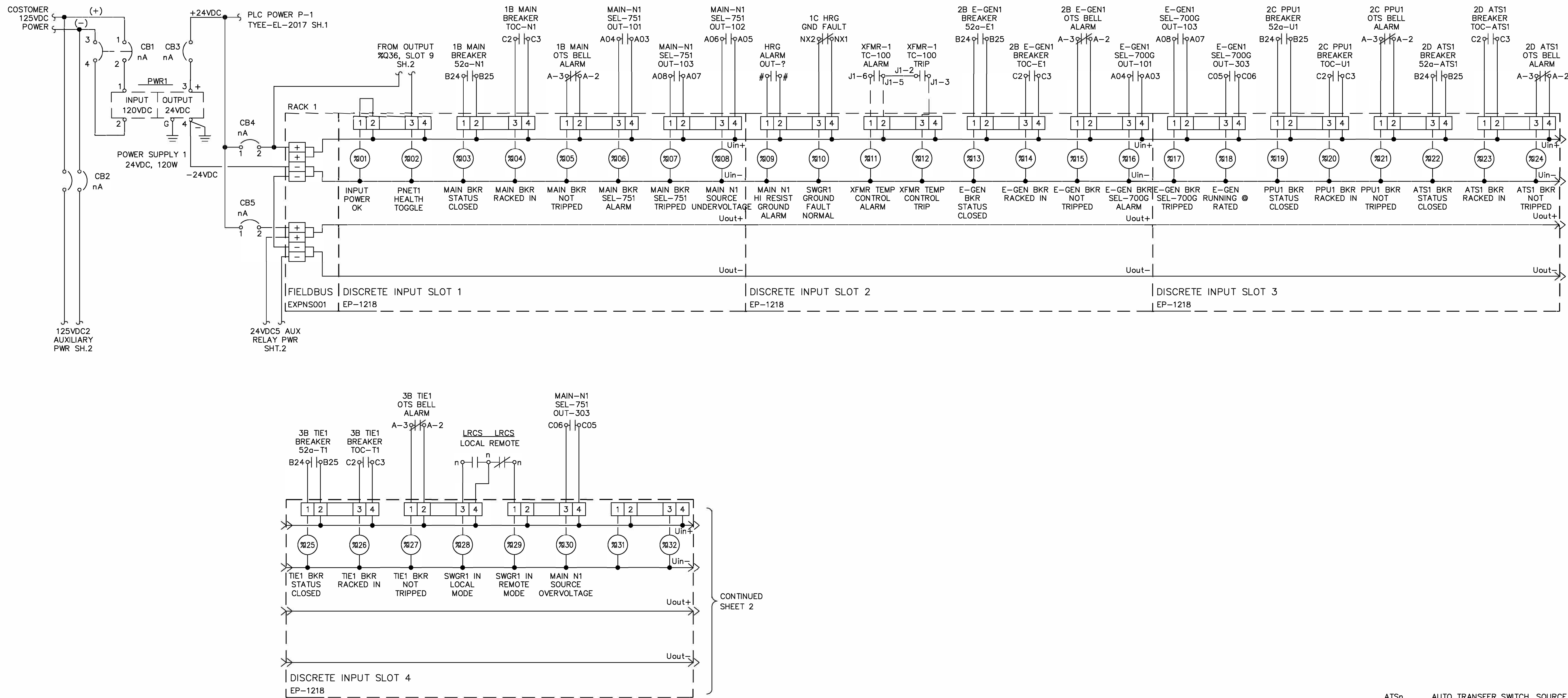
CONSTRUCTION NOTE
1. CONTRACTOR TO VERIFY TERMINATIONS IN 480V SS SWITCHGEAR.

PROJECT: TYEE LAKE STATION SERVICE DESIGN				
DESIGNER/PROJECT ENGINEER: MITCHELL HEDRICK/DAVID BUSS - EPS W.O. #: 23-0124				
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	REVIEWED (MGR/SUPV)/DATE	APPROVED (DIRECTOR)/DATE
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C	ISSUED FOR 100% DESIGN SUBMITTAL	MLH/11-03-2023		

ENG. STAMP



DRAWING NAME: SEAPA TYEE LAKE STATION SERVICE SWITCHGEAR BREAKER INTERLOCK DIAGRAM	
REF DWG(S):	tyee-el-2010_1.dwg
DRAWING NO.:	TYEE-EL-2010
SHEET 1 OF 1	



IDENTICAL COMPONENTS LOCATED IN CUB.2A AND CUB.4A

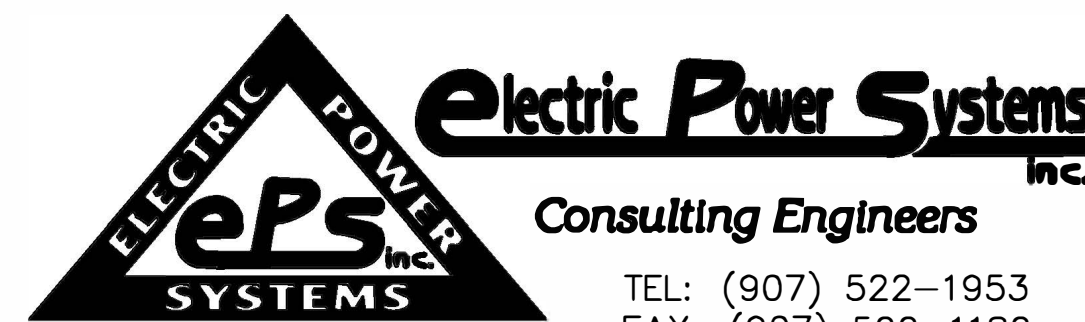
- ATSn AUTO TRANSFER SWITCH, SOURCE #
- GCS GENERATOR CONTROL SWITCH
- HRG HIGH-RESISTANCE GROUND
- LRCS LOCAL/REMOTE CONTROL SWITCH
- OTS OVERCURRENT TRIP SWITCH
- PRnSn PROFINET RACK #, SLOT #
- TOC TRUCK OPERATED CELL SWITCH

CONSTRUCTION NOTE

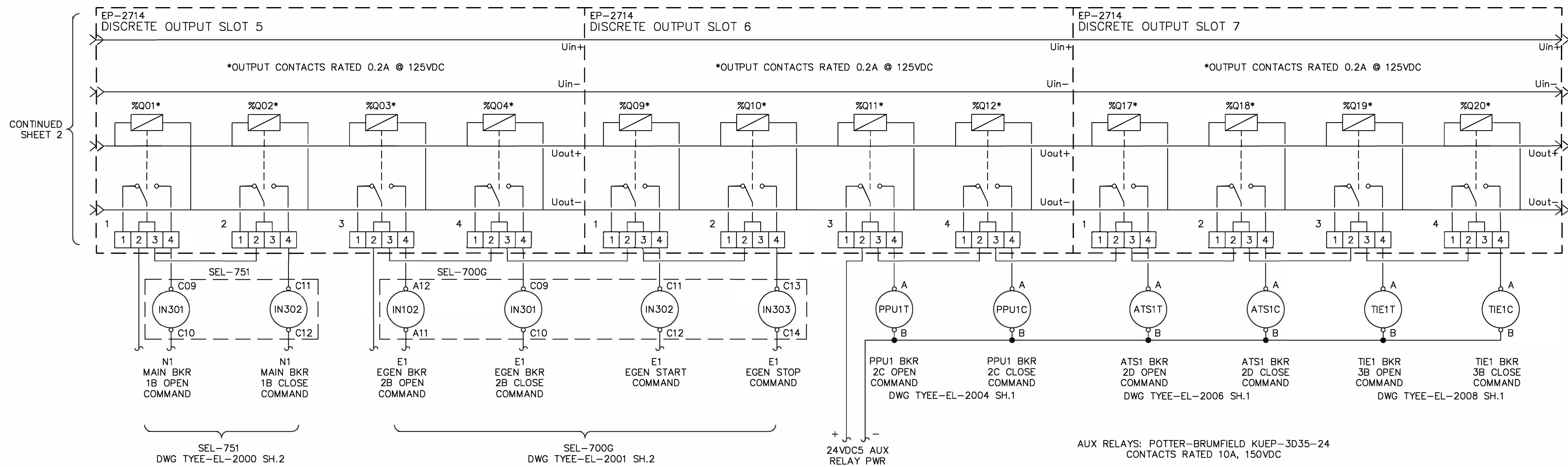
1. CONTRACTOR TO VERIFY TERMINATIONS IN 480V SS SWITCHGEAR.

PROJECT: TYEE LAKE STATION SERVICE DESIGN				
DESIGNER/PROJECT ENGINEER: MITCHELL HEDRICK/DAVID BUSS - EPS W.O. #: 23-0124				
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C	ISSUED FOR 100% DESIGN SUBMITTAL	MLH/11-03-2023		

ENG. STAMP

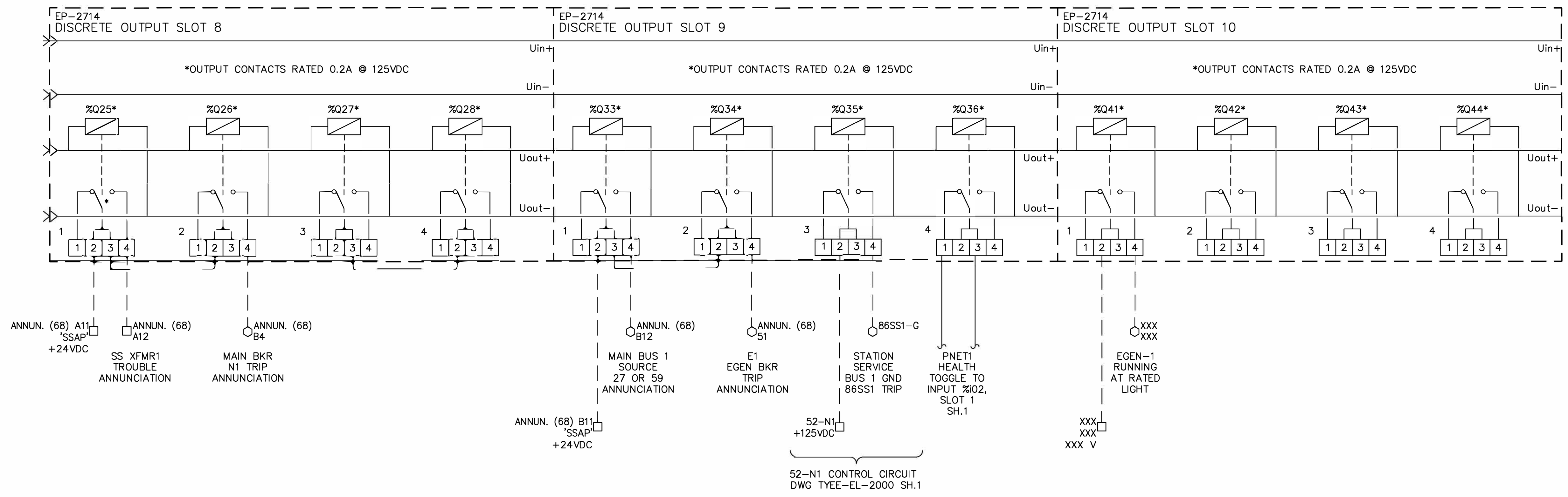


DRAWING NAME: SEAPA TYEE LAKE STATION SERVICE SWITCHGEAR SECTION 2A PLC/RSTi RACK 1 DC SCHEMATIC	
REF DWG(S):	tyee-el-2015_1.dwg
DRAWING NO.:	TYEE-EL-2015
SHEET 1 OF 2	



- RELAY CABINET
- CONTROL BENCHBOARD
- ⊗ SWITCHGEAR TERMINAL FOR CUSTOMER CONNECTION
- DEVICE TERMINAL

- ATS_n AUTO TRANSFER SWITCH, SOURCE #
- GCS GENERATOR CONTROL SWITCH
- HRG HIGH-RESISTANCE GROUND
- LRCS LOCAL/REMOTE CONTROL SWITCH
- PR_nSn PROFINET RACK #, SLOT #



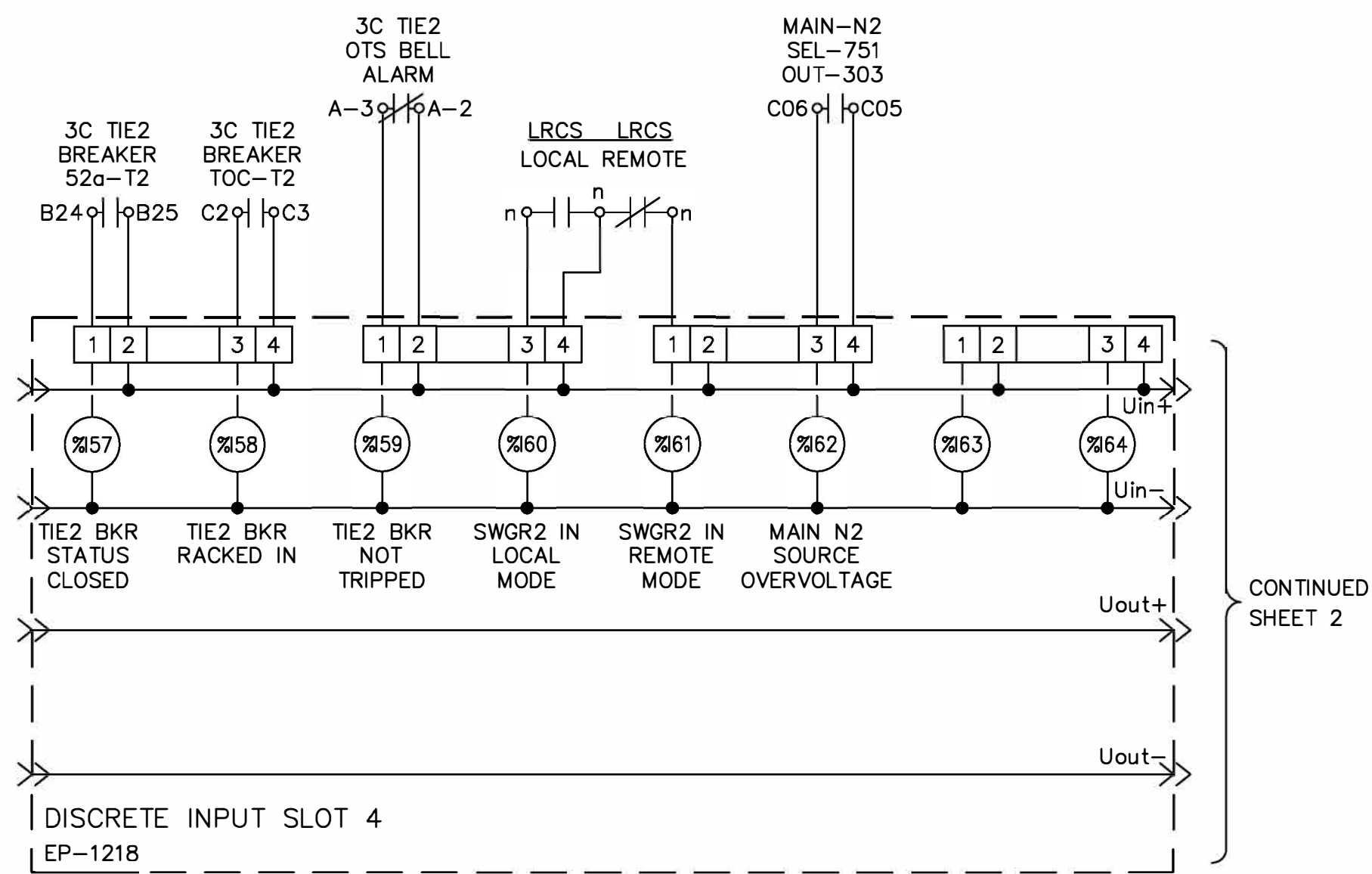
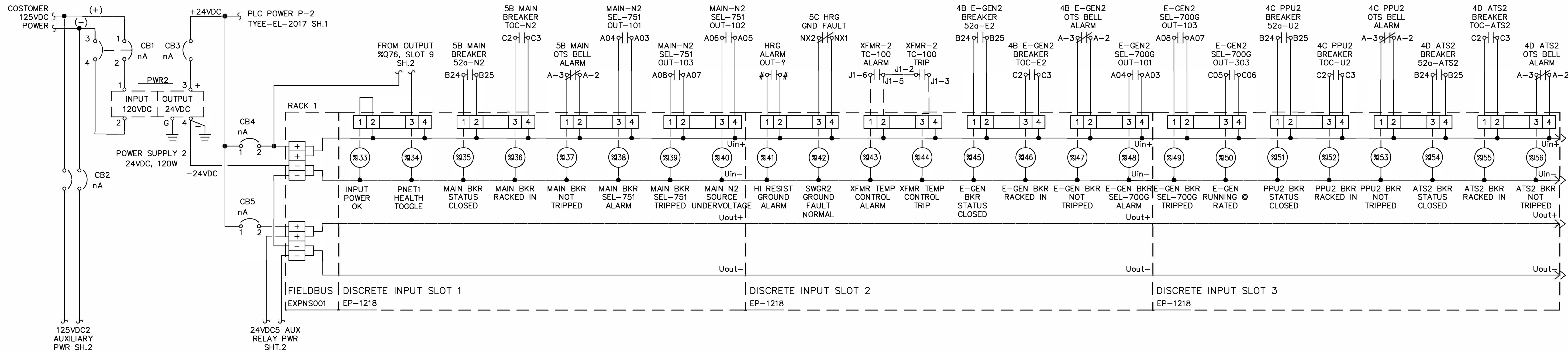
CONSTRUCTION NOTE
1. CONTRACTOR TO VERIFY TERMINATIONS IN 480V SS SWITCHGEAR.

PROJECT: TYEE LAKE STATION SERVICE DESIGN				
DESIGNER/PROJECT ENGINEER: MITCHELL HEDRICK/DAVID BUSS - EPS W.O. # 23-0124				
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	REVIEWED (MGR/SUPV)/DATE	APPROVED (DIRECTOR)/DATE
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B	ISSUED FOR 90% DESIGN REVIEW	MLH/08-04-2023		
C	ISSUED FOR 100% DESIGN SUBMITTAL	MLH/11-03-2023		

ENG. STAMP



DRAWING NAME: SEAPA TYEE LAKE STATION SERVICE SWITCHGEAR SECTION 2A PLC/RSTi RACK 1 DC SCHEMATIC	
REF DWG(S):	tyee-el-2015_2.dwg
DRAWING NO.:	TYEE-EL-2015
SHEET 2 OF 2	



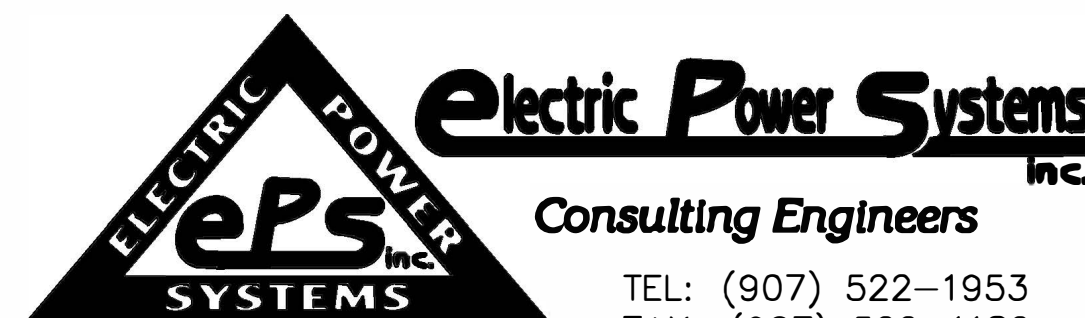
ATSn AUTO TRANSFER SWITCH, SOURCE #
 GCS GENERATOR CONTROL SWITCH
 HRG HIGH-RESISTANCE GROUND
 LRCS LOCAL/REMOTE CONTROL SWITCH
 OTS OVERCURRENT TRIP SWITCH
 PRnSn PROFINET RACK #, SLOT #
 TOC TRUCK OPERATED CELL SWITCH

CONSTRUCTION NOTE

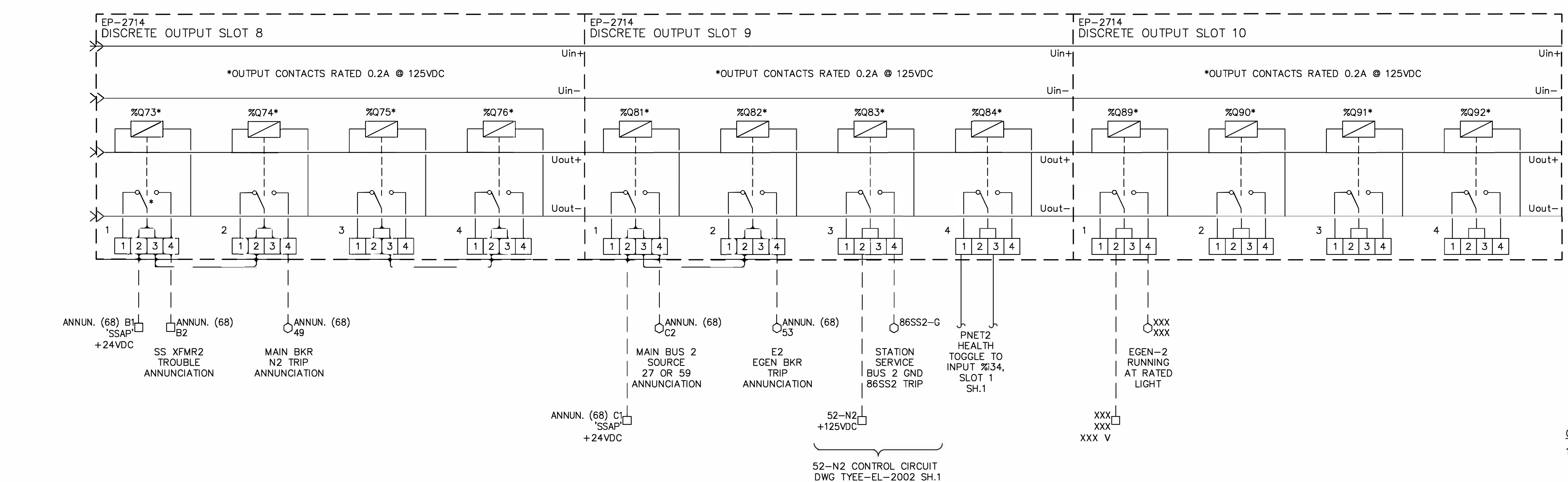
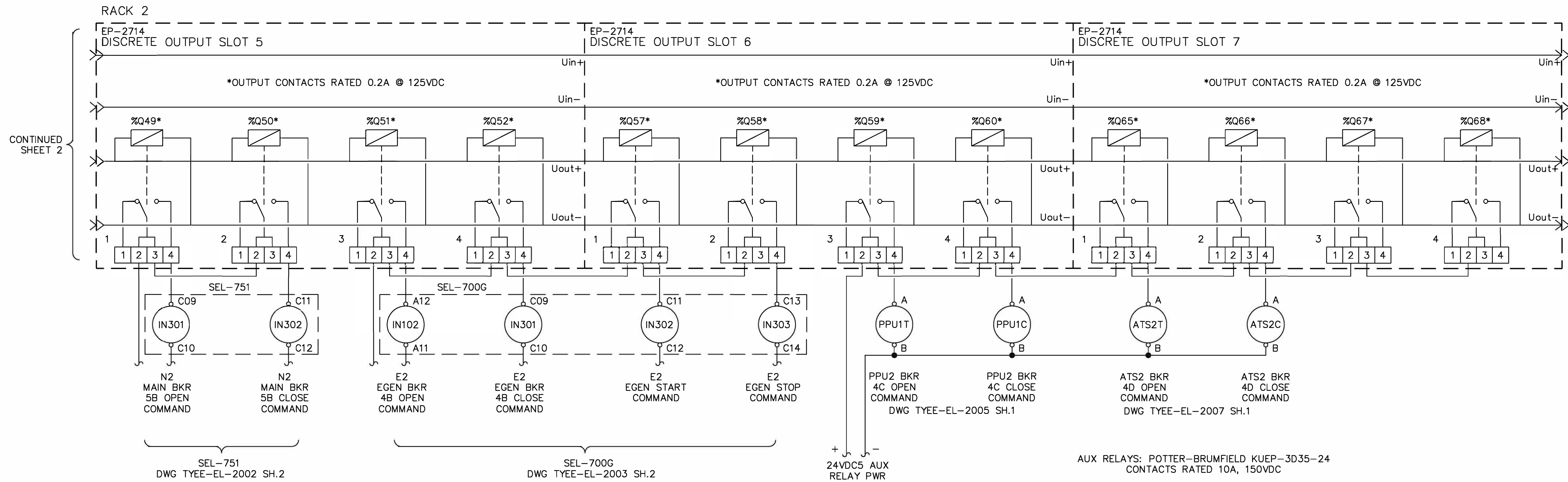
- CONTRACTOR TO VERIFY TERMINATIONS IN 480V SS SWITCHGEAR.

PROJECT: TYEE LAKE STATION SERVICE DESIGN				
DESIGNER/PROJECT ENGINEER: MITCHELL HEDRICK/DAVID BUSS - EPS W.O. # 23-0124				
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	REVIEWED (MGR/SUPV)/DATE	APPROVED (DIRECTOR)/DATE
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C	ISSUED FOR 100% DESIGN SUBMITTAL	MLH/11-03-2023		

ENG. STAMP



DRAWING NAME:	SEAPA TYEE LAKE STATION SERVICE SWITCHGEAR SECTION 4A PLC/RSTi RACK 2 DC SCHEMATIC	
REF DWG(S):		
DRAWING NO.:	TYEE-EL-2016	SHEET 1 OF 2



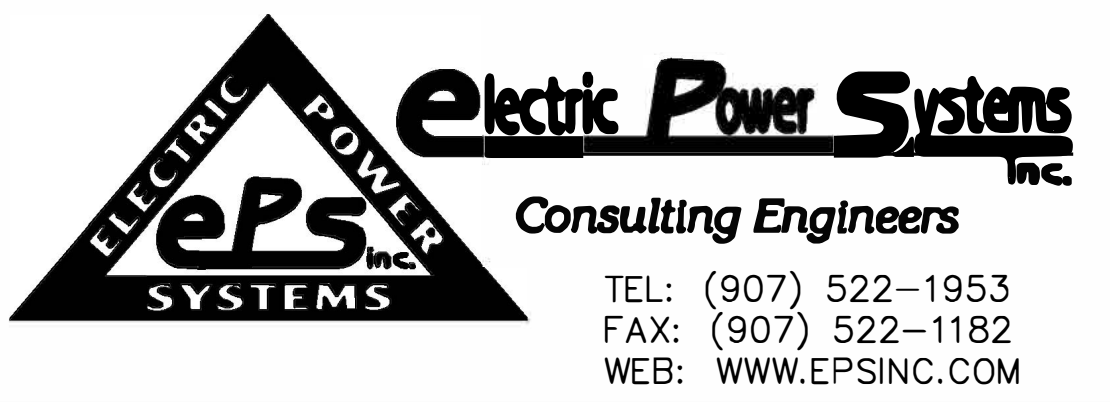
- RELAY CABINET
- CONTROL BENCHBOARD
- ⊗ SWITCHGEAR TERMINAL FOR CUSTOMER CONNECTION
- DEVICE TERMINAL

- ATS_n AUTO TRANSFER SWITCH, SOURCE #
- GCS GENERATOR CONTROL SWITCH
- HRG HIGH-RESISTANCE GROUND
- LRCS LOCAL/REMOTE CONTROL SWITCH
- PR_nS_n PROFINET RACK #, SLOT #

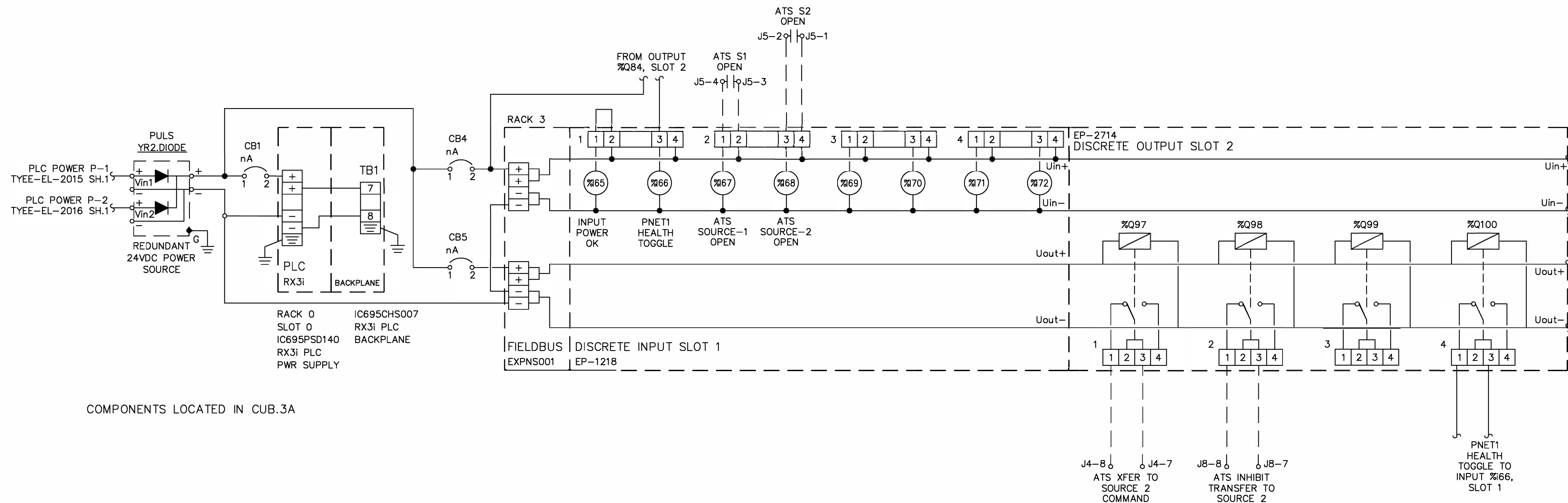
CONSTRUCTION NOTE
 1. CONTRACTOR TO VERIFY TERMINATIONS IN 480V SS SWITCHGEAR.

PROJECT: TYEE LAKE STATION SERVICE DESIGN				
DESIGNER/PROJECT ENGINEER: MITCHELL HEDRICK/DAVID BUSS - EPS				
W.O. # 23-0124				
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	REVIEWED (MGR/SUPV)/DATE	APPROVED (DIRECTOR)/DATE
A	ISSUED FOR 30% DESIGN REVIEW	MLH/05-23-2023		
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C	ISSUED FOR 100% DESIGN SUBMITTAL	MLH/11-03-2023		

ENG. STAMP



DRAWING NAME:		SEAPA TYEE LAKE STATION SERVICE SWITCHGEAR SECTION 4A PLC/RSTi RACK2 DC SCHEMATIC	
REF DWG(S):		tyee-el-2016_2.dwg	
DRAWING NO.:		TYEE-EL-2016	
		SHEET 2 OF 2	



COMPONENTS LOCATED IN CUB.3A

- RELAY CABINET
- CONTROL BENCHBOARD
- ⊗ SWITCHGEAR TERMINAL FOR COSTUMER CONNECTION
- DEVICE TERMINAL

- ATSn AUTO TRANSFER SWITCH, SOURCE #
- GCS GENERATOR CONTROL SWITCH
- HRG HIGH-RESISTANCE GROUND
- LRCs LOCAL/REMOTE CONTROL SWITCH
- PRnSn PROFINET RACK #, SLOT #

CONSTRUCTION NOTE

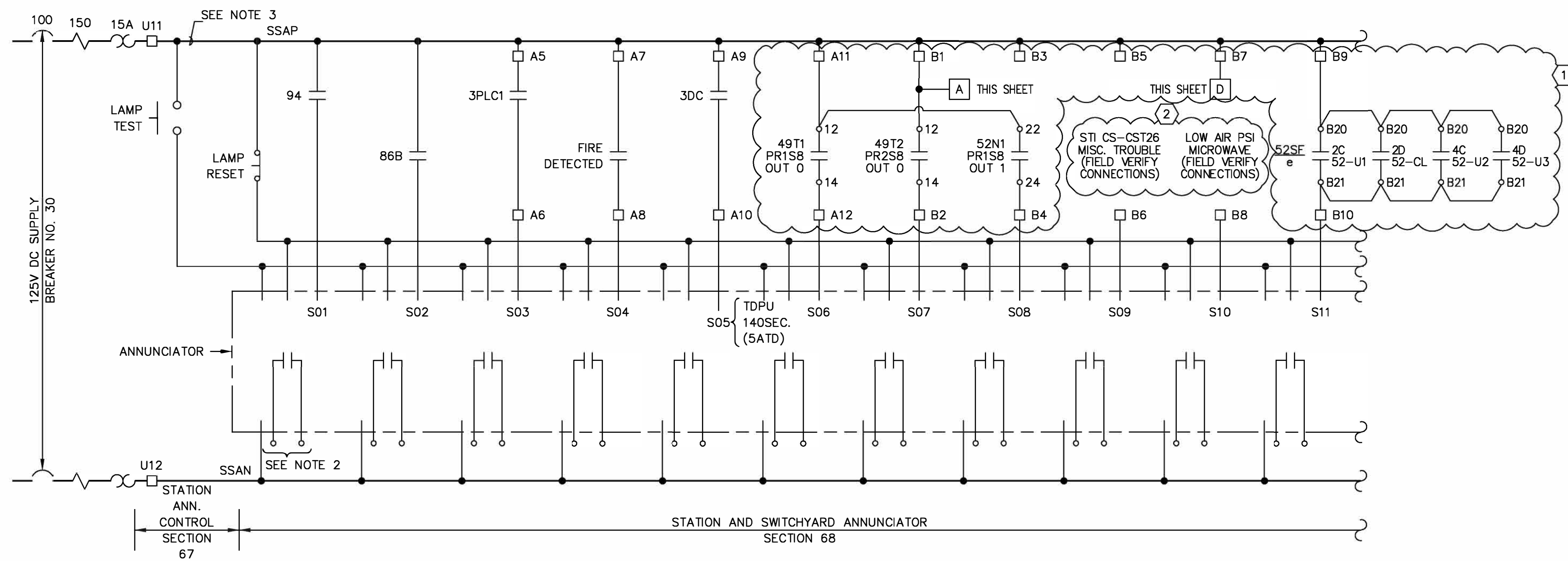
1. CONTRACTOR TO VERIFY TERMINATIONS IN 480V SS SWITCHGEAR.

PROJECT: TYEE LAKE STATION SERVICE DESIGN				
DESIGNER/PROJECT ENGINEER: MITCHELL HEDRICK/DAVID BUSS - EPS W.O. # 23-0124				
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C	ISSUED FOR 100% DESIGN SUBMITTAL	MLH/11-03-2023		

ENG. STAMP



DRAWING NAME: SEAPA TYEE LAKE STATION SERVICE SWITCHGEAR SECTION 3A PLC/RSTi RACK-3 DC SCHEMATIC	
REF DWG(S):	tyee-el-2017_1.dwg
DRAWING NO.:	TYEE-EL-2017
SHEET 1 OF 1	



LEGEND:

DEVICE	LOC	DESCRIPTION
3DC	CCB	48V DC BATTERY FAULT
3PLC1, 2	CCB	PLC #1 OR 2 FAULT
27/59-1, 2	SWGR PLC	STATION SERVICE BUS UNDERVOLTAGE OR OVERVOLTAGE
27B	B1A	STATION BATTERY UNDERVOLTAGE
27SBC	B1A	STATION BATTERY CHARGER UNDERVOLTAGE
49T1, 2	SWGR PLC	STATION SERVICE TRANSFORMER OVERTEMPERATURE
52N1, N2/e	SWGR PLC	MAIN BREAKER FAULT TRIP
52E1, E2/e	SWGR PLC	EMERGENCY GENERATOR BREAKER FAULT TRIP
52SF/e	SWGR	FEEDER BREAKER FAULT TRIP - 4 CONTACTS IN PARALLEL
86SS1, 2	SWGR PLC	STATION SERVICE BUS GROUND DETECTOR LOCKOUT RELAYS (BUS 1, 2)
64B	B1A	STATION BATTERY GROUND
71DWAL	E	DRAINAGE PUMP HIGH WATER SWITCH
71SWAL	E	STANDBY PUMP HIGH WATER SWITCH
86B	CCA	BUS DIFFERENTIAL LOCKOUT RELAY
DCBKR/e	B1A	DC FEEDER BREAKER TRIPPED - 33 CONTACTS IN PARALLEL
94	CCA	LINE FAULT AUX TRIP RELAY
S26AC	E	STATION AIR COMPRESSORS THERMAL SWITCH
S63AC	E	STATION AIR COMPRESSORS LOW PRESSURE SWITCH

NOTES:

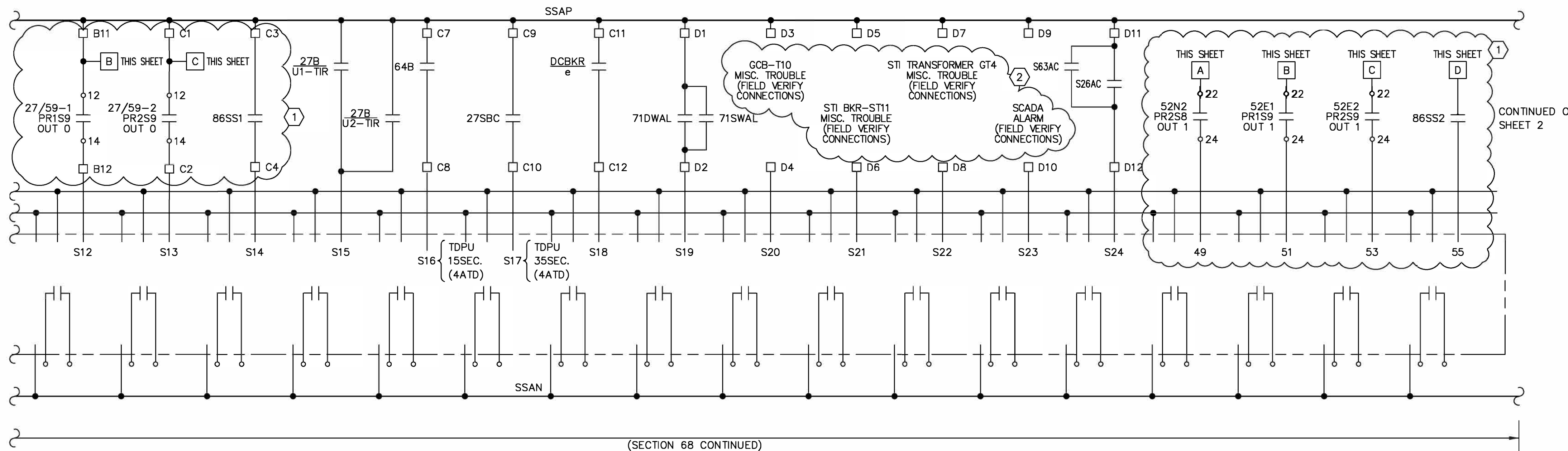
- DEVICES ARE LOCATED ACCORDING TO THE FOLLOWING:
 B1A DC DISTRIBUTION BOARD
 CCA MAIN CONTROL SWITCHBOARD
 CCB SUPERVISORY CONTROL BOARD
 E ASSOCIATED EQUIPMENT
 SWGR STATION SERVICE SWITCHGEAR
 SWGR PLC STATION SERVICE SWITCHGEAR PLC
- AUX. ANNUNCIATOR CONTACTS ARE WIRED OUT TO TERMINAL BLOCKS FOR USE AS RTU ALARM INPUTS, PANEL 1F.
- ACTUAL 125V DC POSITIVE DERIVED FROM ANNUN. POWER SUPPLIES, SEE PEDERSEN DRAWINGS.
- TERMINALS "□" IN CCA PANEL 1F UNLESS NOTED OTHERWISE.

REFERENCE DRAWINGS:

MAIN SINGLE LINE DIAGRAM	TY-47-103
RELAY DATA AND PROTECTION FUNCTIONAL DIAGRAM	TY-47-105
MAIN CONTROL SWITCHBOARD ARRANGEMENT	TY-47-106
SECTION REFERENCE LIST	TY-47-110
PEDERSEN	3-2810A-24 & 25

PROJECT NOTES:

- NEW ANNUNCIATOR POINTS TO BE FIELD WIRED AS INDICATED ON THIS DRAWING.
- EXISTING ANNUNCIATOR POINTS NOT REFLECTED IN EXISTING DRAWINGS. CONTRACTOR TO FIELD VERIFY AND AS-BUILT THE INDICATED ANNUNCIATOR POINTS.



PROJECT: TYEE LAKE STATION SERVICE DESIGN				
DESIGNER/PROJECT ENGINEER: MITCHELL HEDRICK/DAVID BUSS - EPS W.O. # 23-0124				
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	REVIEWED (MGR/SUPV)/DATE	APPROVED (DIRECTOR)/DATE
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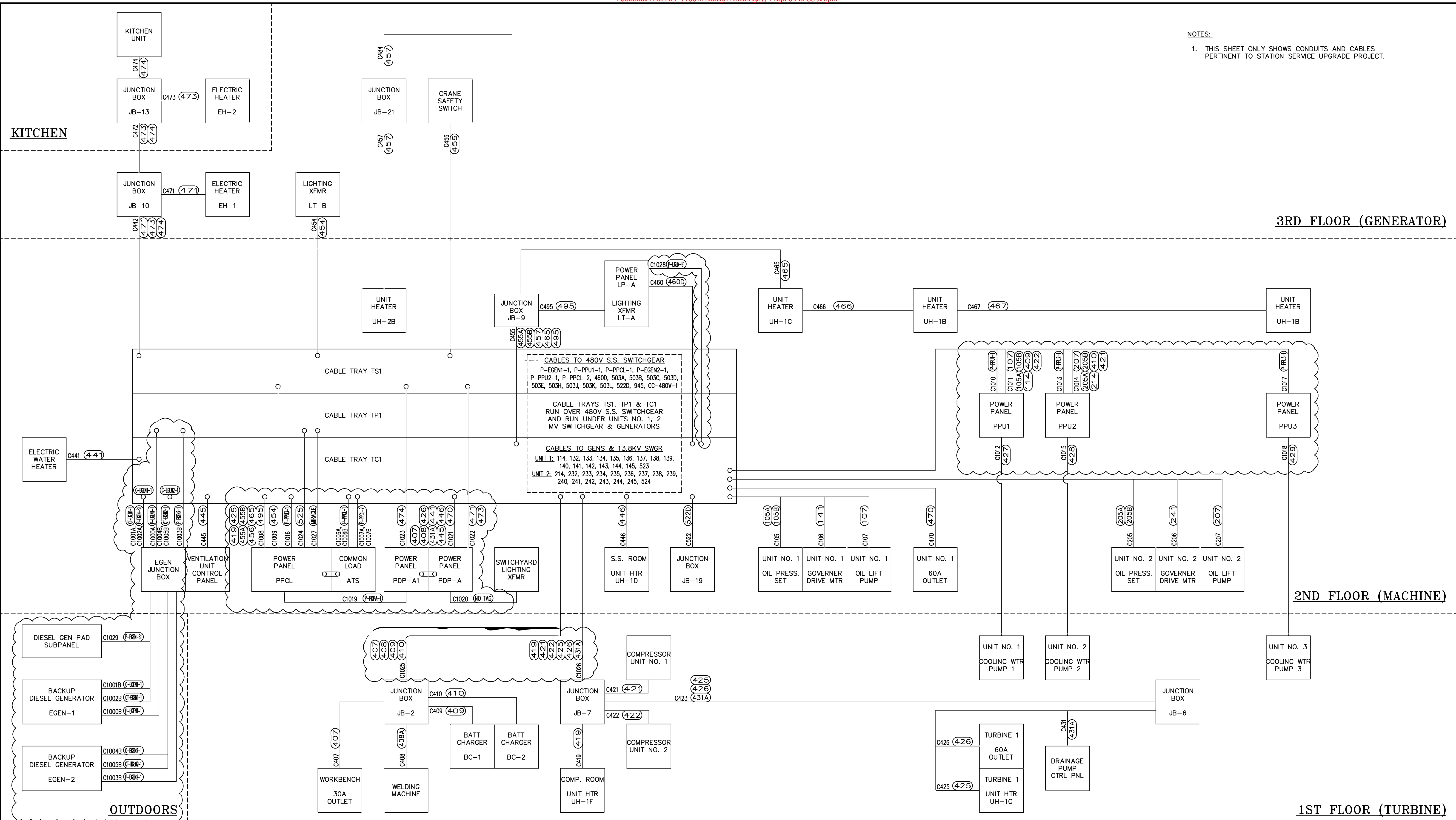
ENG. STAMP



DRAWING NAME:	SEAPA TYEE LAKE STATION SERVICE SWITCHGEAR STATION AND SWITCHYARD ANNUNCIATOR SCHEMATIC	
REF DWG(S):	STATION ANN SCHEMATIC TY-47-126	
DRAWING NO.:	TYEE-EL-2020	SHEET 1 OF 1

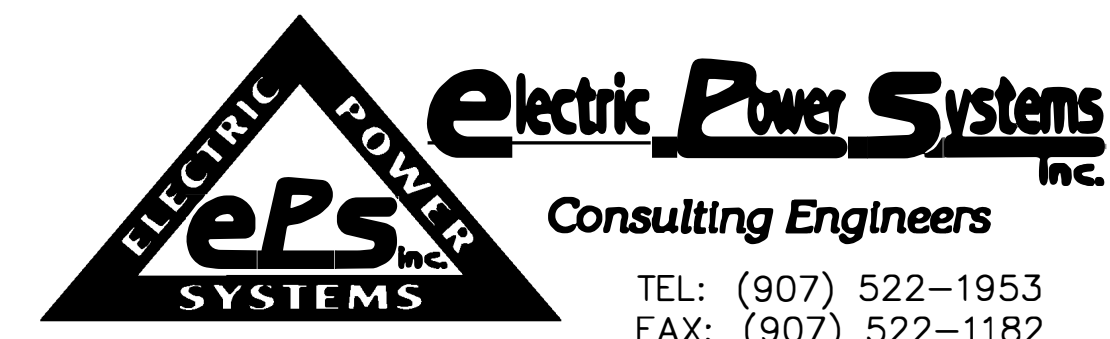
NOTES:

1. THIS SHEET ONLY SHOWS CONDUITS AND CABLES PERTINENT TO STATION SERVICE UPGRADE PROJECT.

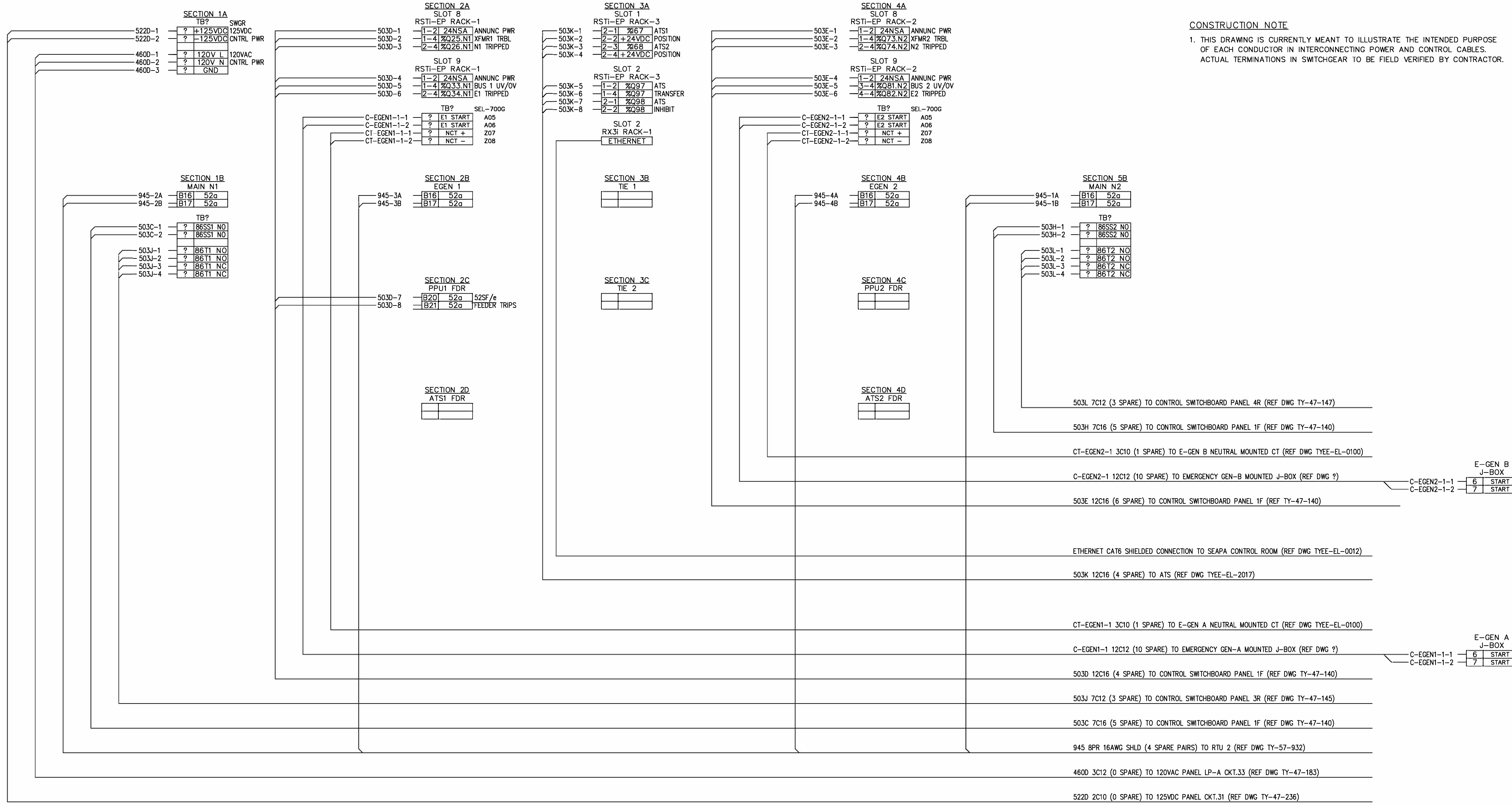


PROJECT: TYEE LAKE STATION SERVICE DESIGN				
DESIGNER/PROJECT ENGINEER: MITCHELL HEDRICK/JACOB POMERANZ - EPS W.O. #: 23-0124				
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	REVIEWED (MGR/SUPV)/DATE	APPROVED (DIRECTOR)/DATE
A	ISSUED FOR 90% REVIEW	MLH/08-04-23		
B	ISSUED FOR 100% DESIGN SUBMITTAL	MLH/11-03-23		

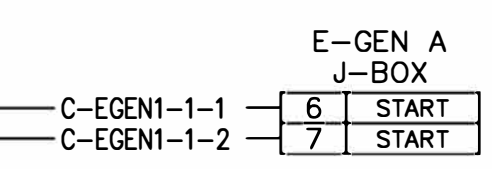
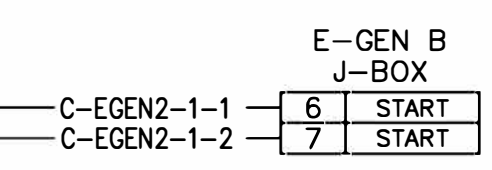
ENG. STAMP



DRAWING NAME:		SEAPA TYEE LAKE STATION SERVICE SWITCHGEAR SYSTEM BLOCK DIAGRAM	
REF DWG(S):		tyee-el-3000_1.dwg	
DRAWING NO.:	TYEE-EL-3000		
			SHEET 1 OF 1

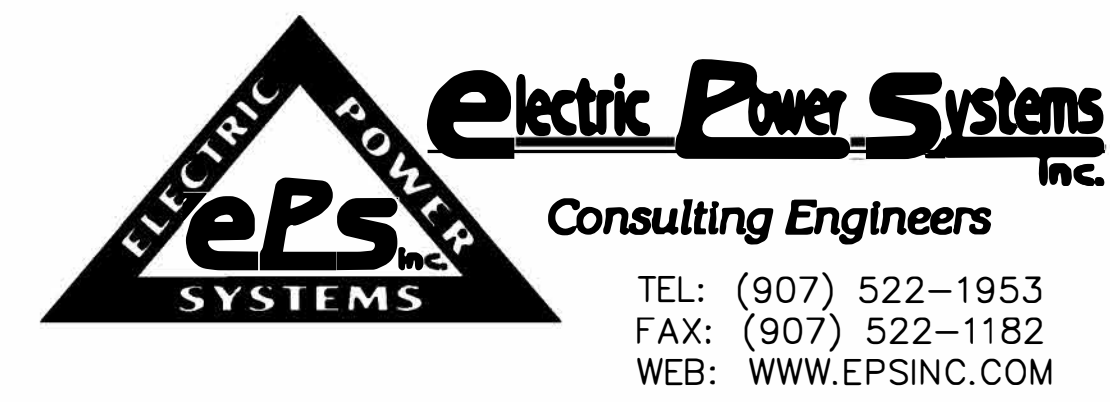


CONSTRUCTION NOTE
 1. THIS DRAWING IS CURRENTLY MEANT TO ILLUSTRATE THE INTENDED PURPOSE OF EACH CONDUCTOR IN INTERCONNECTING POWER AND CONTROL CABLES. ACTUAL TERMINATIONS IN SWITCHGEAR TO BE FIELD VERIFIED BY CONTRACTOR.



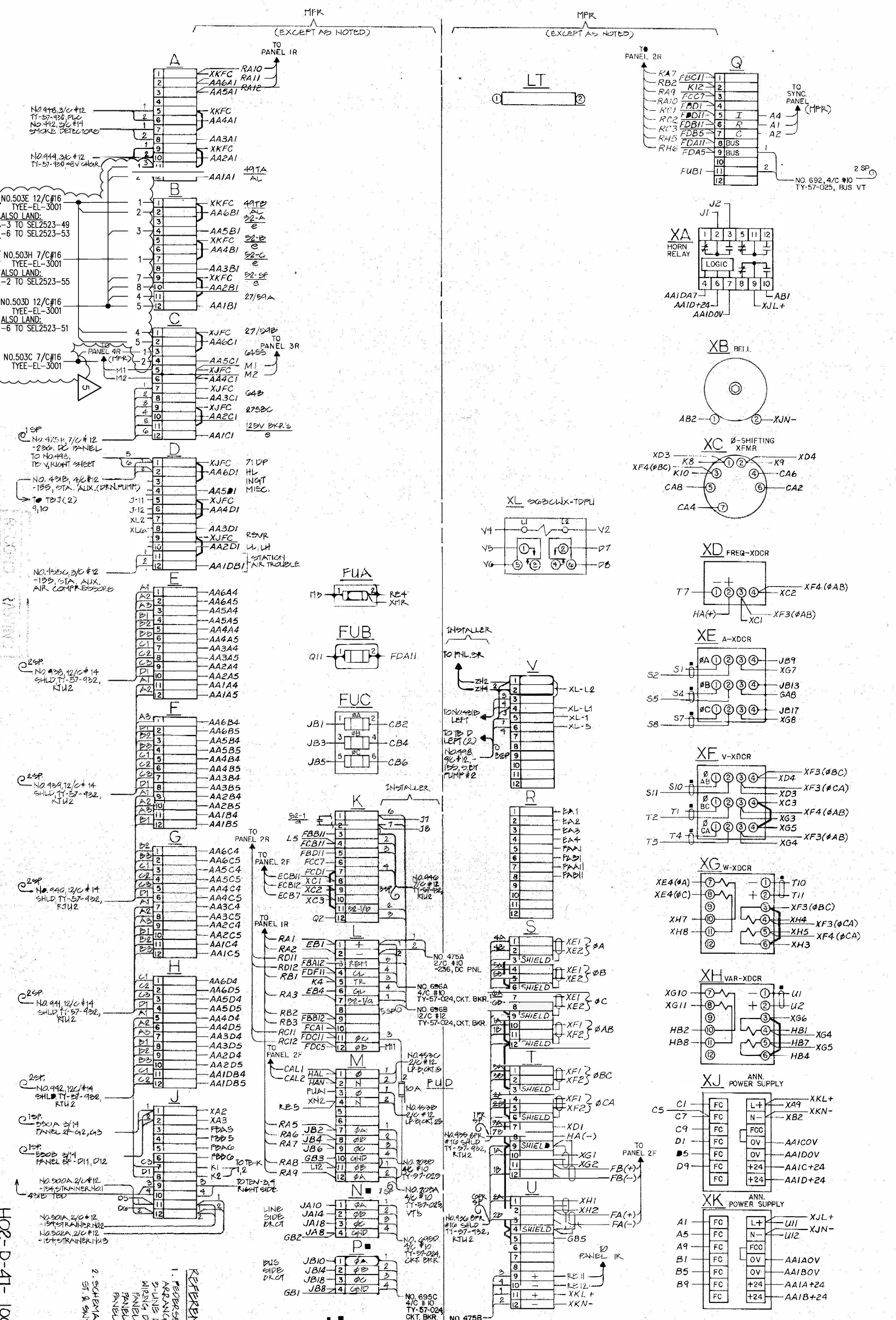
PROJECT: TYEE LAKE STATION SERVICE DESIGN			
DESIGNER/PROJECT ENGINEER: MITCHELL HEDRICK/DAVID BUSS - EPS W.O. #: 23-0124			
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	REVIEWED (MGR/SUPV)/DATE
A	ISSUED FOR 100% DESIGN SUBMITTAL	MLH/11-03-2023	

ENG. STAMP



DRAWING NAME: SEAPA TYEE LAKE STATION SERVICE SWITCHGEAR INTERCONNECTION DIAGRAM	
REF DWG(S):	tyee-el-3001_1.dwg
DRAWING NO.:	TYEE-EL-3001
SHEET 1 OF 1	

PANEL IF



NO.	DATE	REVISIONS	BY	CHK.	APPD.
1	7-1-83	ADD R/W WIRING CABLES ASO & C. SOO, SOIA, SOIA	LM	SSK	KK
2	6-28-83	CHANGED WIRE NOS. FOR TERM. BLOCKS E7, G7, H7	DMJ	DUJ	-
3	9-18-83	ADD R/W WIRING CABLES ASO & C. SOO, SOIA, SOIA	LM	SSK	KK
4	3-30-84	RECORD DRAWING	LM	SSK	KK
5	11-3-83	STATION SERVICE UPGRADE - ISSUED FOR 100% DESIGN	LM	SSK	KK

INTERNATIONAL ENGINEERING COMPANY, INC.
CONSULTING ENGINEERS
260 HOWARD STREET, SAN FRANCISCO, CALIFORNIA 94105
480 GOLD STREET, NEW YORK, NEW YORK 10014
DESIGNED BY [Signature] CHECKED BY [Signature] APPROVED BY [Signature]

ALASKA POWER AUTHORITY
ANCHORAGE, ALASKA

TYEE LAKE POWERPLANT
MAIN CONTROL SWITCHBOARD
PANEL IF CONNECTION DIAGRAM

HO2-D-41-1001-R41

TY-47-140

REVISIONS:
1. REORDER
2. ADD SUPPLIES
3. ADD SUPPLIES
4. ADD SUPPLIES
5. ADD SUPPLIES
6. ADD SUPPLIES
7. ADD SUPPLIES
8. ADD SUPPLIES
9. ADD SUPPLIES
10. ADD SUPPLIES

2. SCHEDULES
ST. & SHIELD ANNUITY
7-87-126 & 127

LEFT SIDE T.B. SHEET

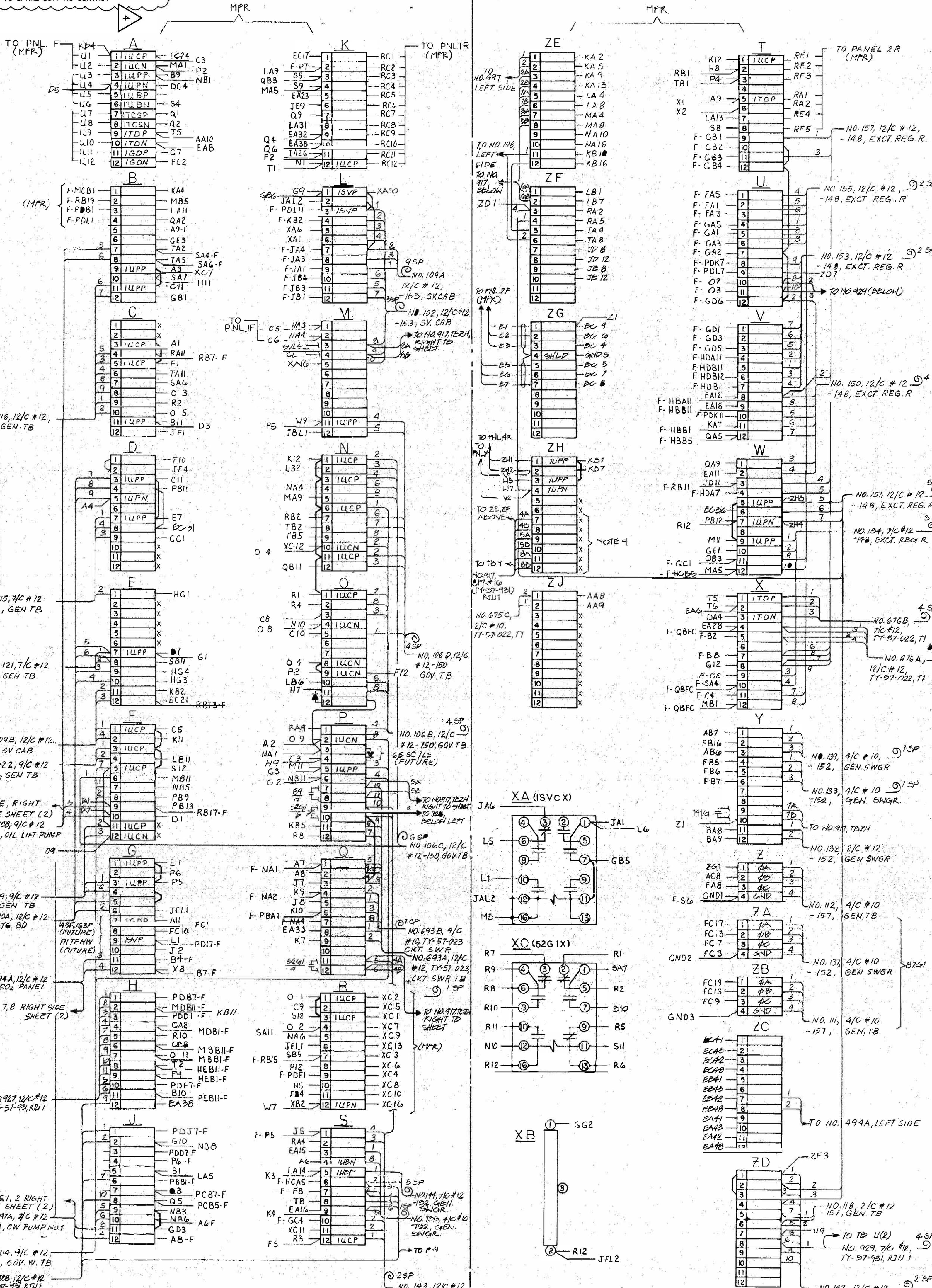
--- DENOTES SHORING BLOCK

--- DENOTES SHIELDED CABLE

RIGHT SIDE T.B. SHEET

PANEL 3R

NO. 503J 7/C #12
TYEE-EL-3001
LAND CONDUCTORS:
- 1 & 2 TO SPARE 86T1 NO CONTACT
- 3 & 4 TO SPARE 86T1 NC CONTACT



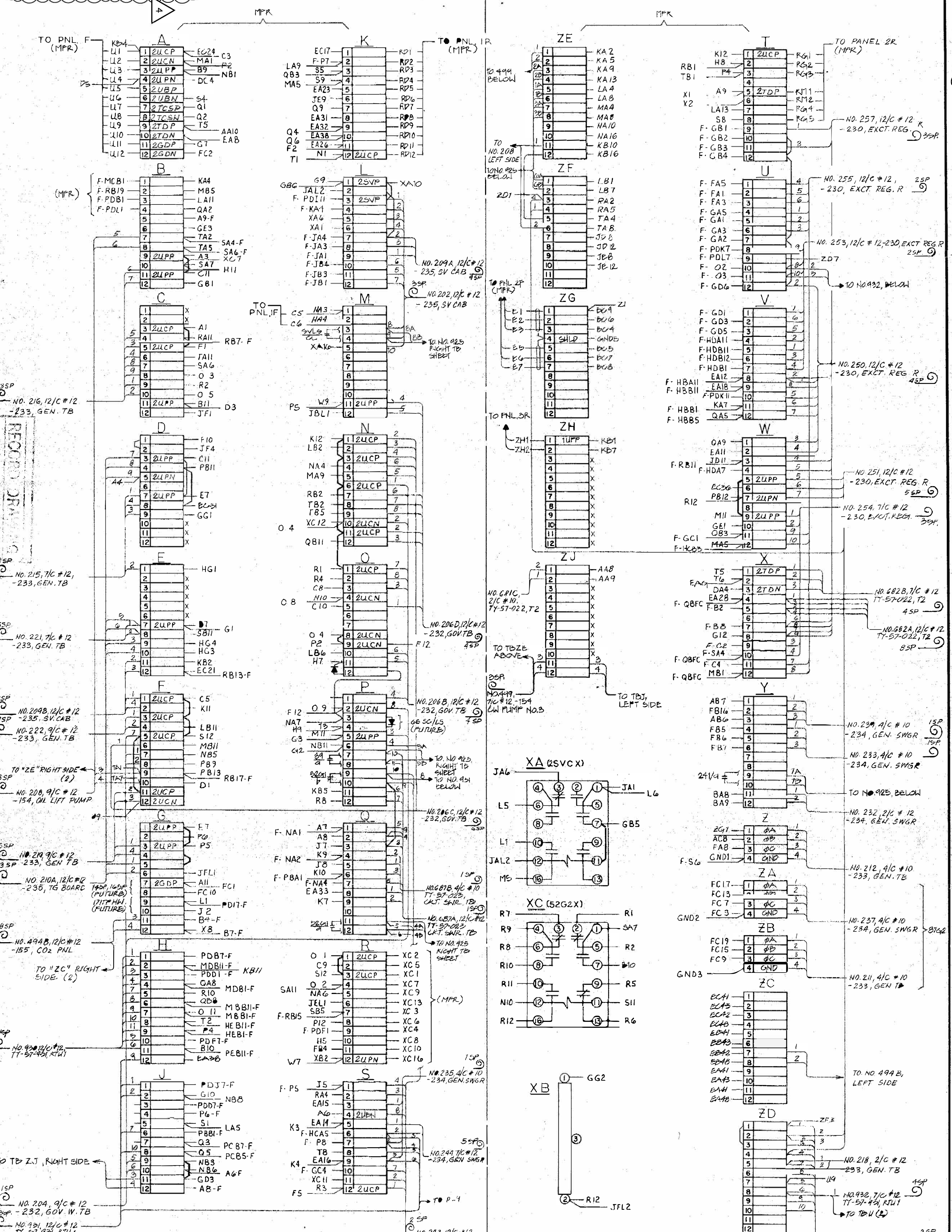
NOTES:
1. EXTERNAL JUMPERS ARE SHOWN AS HEAVY LINES.
2. WIRE WITH -F OR F- INDICATES THAT DESTINATION IS LOCATED IN THE FRONT OF THIS PANEL.
3. WIRE WITH -R INDICATES THAT DESTINATION IS LOCATED IN THE REAR OF THIS PANEL.
4. PAGES 4, 5 AND 8 OF CABLE #17 ARE JUMPERS HERE TO THIS O.P. AND M ON LEFT T.B. SHEET.

REFERENCE DRAWINGS:
1. FABRICATION AND ASSEMBLY DRAWINGS (WIRING DIAGRAMS, PANELS 12, 14)
2. SCHEMATIC DIAGRAMS (TY-47-110 TO 112)

REVISIONS table with columns for NO., DATE, BY, CHK, APPR, DESCR. and a list of design changes.
INTERNATIONAL ENGINEERING COMPANY, INC. logo and address: 700 HOWARD STREET, SAN FRANCISCO, CALIFORNIA 94105.
ALASKA POWER AUTHORITY ANCHORAGE, ALASKA
TYEE LAKE POWERPLANT MAIN CONTROL SWITCHBOARD PANEL 3R CONNECTION DIAGRAM
TY-47-145

PANEL 4R

NO. 503L 7/C#12
TYEE-EL-3001
LAND CONDUCTORS:
-1 & 2 TO SPARE 86T2 NO CONTACT
-3 & 4 TO SPARE 86T2 NC CONTACT



NOTES:
1 EXTERNAL DIMENSIONS ARE SHOWN
2 WIRE WITH 'F' OR 'F-' INDICATES THAT DESTINATION IS LOCATED IN THE FRONT OF THIS PANEL.
3 MANUFACTURER 'MFR' WILLING TO AS NOTED, ALL OTHER WIRING TO BE AS INSTALLED.

REFERENCE DRAWINGS:
TYEE-EL-3001
TYEE-EL-3002
TYEE-EL-3003
TYEE-EL-3004
TYEE-EL-3005
TYEE-EL-3006
TYEE-EL-3007
TYEE-EL-3008
TYEE-EL-3009
TYEE-EL-3010
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TYEE-EL-3098
TYEE-EL-3099
TYEE-EL-3100

NO. DATE
1 11-13-23 STATION SERVICE UPGRADE - ISSUED FOR WORK DESIGN
2 11-13-23 STATION SERVICE UPGRADE - ISSUED FOR WORK DESIGN
3 11-13-23 STATION SERVICE UPGRADE - ISSUED FOR WORK DESIGN
4 11-13-23 STATION SERVICE UPGRADE - ISSUED FOR WORK DESIGN

REVISIONS

DESIGNED BY: DRIVANN VAP
CHECKED BY: [Signature]
APPROVED BY: [Signature]

INTERNATIONAL ENGINEERING COMPANY, INC.
CONSULTING ENGINEERS
1000 AVENUE OF THE STARS, SUITE 1000
FARMINGTON, CONNECTICUT 06030
TEL: 860-635-1100 FAX: 860-635-1101
WWW.IECONG.COM

ALASKA POWER AUTHORITY
ANCHORAGE, ALASKA

TYEE LAKE HYDROELECTRIC PROJECT
TYEE LAKE POWERPLANT
MAIN CONTROL SWITCHBOARD
PANEL 4R CONNECTION DIAGRAM

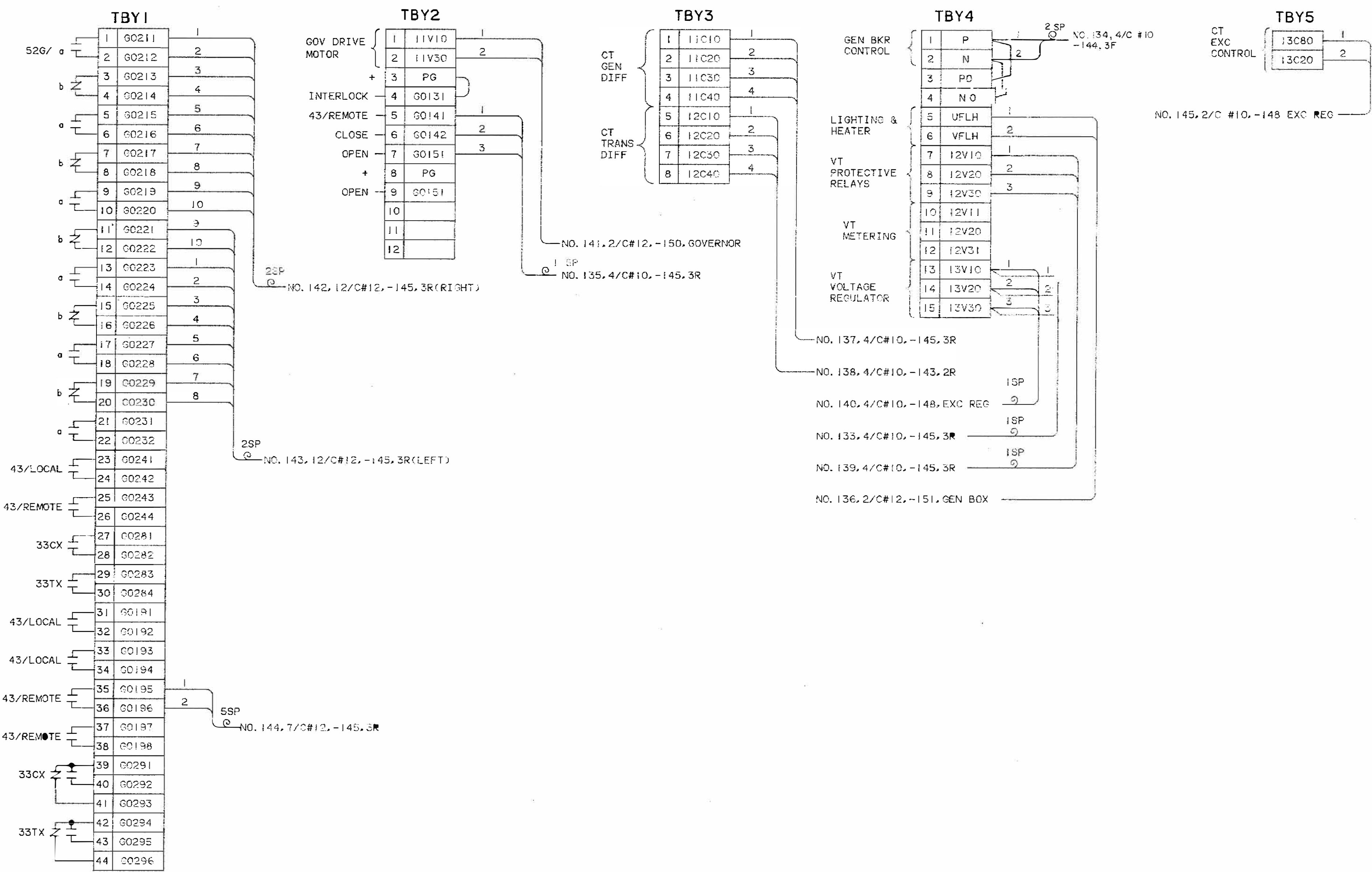
TY-47-147
SHEET OF 3
REV. 3
ECO NO.

1102-D-47-1008-R41

SURGE PROTECTION CUBICLE (12)

GENERATOR NEUTRAL GROUNDING CUBICLE (13)

D
C
B
A



CONSTRUCTION NOTE

1. THIS DRAWING IS CURRENTLY MEANT TO ILLUSTRATE THE INTENDED PURPOSE OF EACH CONDUCTOR IN INTERCONNECTING POWER AND CONTROL CABLES. ACTUAL TERMINATIONS IN SWITCHGEAR TO BE FIELD VERIFIED BY CONTRACTOR.

- NOTES:**
1. CABLE DESIGNATION SHOWS CABLE NUMBER, NUMBER OF CONDUCTORS, CONDUCTOR AWG SIZE, TERMINATION DRAWING NUMBER, AND CONTROL PANEL NUMBER, RESPECTIVELY.
 2. AN "X" BY THE TERMINAL SHOWS NO MANUFACTURER WIRING.

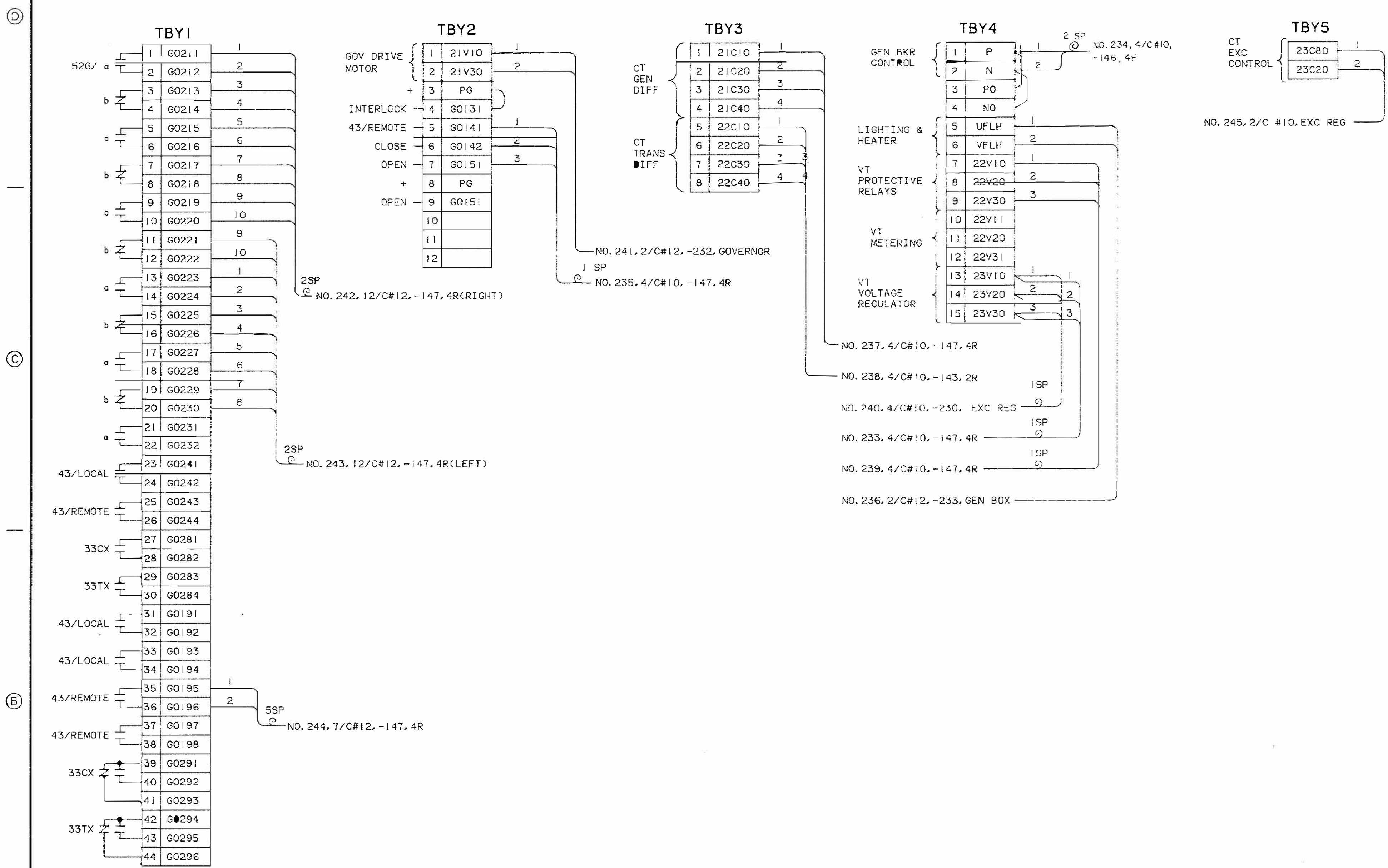
- REFERENCE DRAWINGS:**
- | | |
|--|------------------|
| 1. SCHEMATIC DIAGRAMS | TY-47-110-122 |
| 2. MELDENSHA ELECTRIC MFG CO
GENERATOR MULTI LINE DIAGRAM | MSEP170082, CH 1 |
| INTERCONNECTION DIAGRAM 13.8KV SWGR | MSEP371749 |
| SINGLE LINE AND SCHEMATIC DIAGRAM | MSEP371629 |

H02-D-47-2001-R49

<p>3 11-3-23 STATION SERVICE UPGRADE - ISSUED FOR 100% DESIGN MLH DMB</p>		<p>CONSULTING ENGINEERS INTERNATIONAL ENGINEERING COMPANY, INC. A MORRISON-KNUDSEN COMPANY 180 HOWARD STREET, SAN FRANCISCO, CALIFORNIA 94105</p>		<p>ALASKA POWER AUTHORITY ANCHORAGE, ALASKA</p>		<p>TYEE LAKE HYDROELECTRIC PROJECT TYEE LAKE POWERPLANT UNIT 1 13.8KV SWITCHGEAR CONNECTION DIAGRAM</p>		<p>TY-47-152 SHEET OF REV. 2 TECO NO.</p>	
<p>2 1330-84 RECORD DRAWING LM JLR</p>		<p>DESIGNED BY DRAWN EKF870 CHECKED BY RECOMMENDED BY APPROVED</p>		<p>ALASKA POWER AUTHORITY ANCHORAGE, ALASKA</p>		<p>TYEE LAKE HYDROELECTRIC PROJECT TYEE LAKE POWERPLANT UNIT 1 13.8KV SWITCHGEAR CONNECTION DIAGRAM</p>		<p>TY-47-152 SHEET OF REV. 2 TECO NO.</p>	
<p>1 7-1-83 MOVED CABLE 134 TO TBY4 RPD JLR</p>		<p>BY CKD, APP'D, INSPECTED</p>		<p>ALASKA POWER AUTHORITY ANCHORAGE, ALASKA</p>		<p>TYEE LAKE HYDROELECTRIC PROJECT TYEE LAKE POWERPLANT UNIT 1 13.8KV SWITCHGEAR CONNECTION DIAGRAM</p>		<p>TY-47-152 SHEET OF REV. 2 TECO NO.</p>	
<p>0 6-3-83 ISSUED FOR CONSTRUCTION 2PD JLR</p>		<p>NO. DATE REVISIONS</p>		<p>ALASKA POWER AUTHORITY ANCHORAGE, ALASKA</p>		<p>TYEE LAKE HYDROELECTRIC PROJECT TYEE LAKE POWERPLANT UNIT 1 13.8KV SWITCHGEAR CONNECTION DIAGRAM</p>		<p>TY-47-152 SHEET OF REV. 2 TECO NO.</p>	

SURGE PROTECTION CUBICLE (22)

GENERATOR NEUTRAL GROUNDING CUBICLE (23)



CONSTRUCTION NOTE

1. THIS DRAWING IS CURRENTLY MEANT TO ILLUSTRATE THE INTENDED PURPOSE OF EACH CONDUCTOR IN INTERCONNECTING POWER AND CONTROL CABLES. ACTUAL TERMINATIONS IN SWITCHGEAR TO BE FIELD VERIFIED BY CONTRACTOR.

- NOTES:**
- CABLE DESIGNATION SHOWS CABLE NUMBER, NUMBER OF CONDUCTORS, CONDUCTOR AWG SIZE, TERMINATION DRAWING NUMBER, AND CONTROL PANEL NUMBER, RESPECTIVELY.
 - AN "X" BY THE TERMINAL SHOWS NO MANUFACTURER WIRING.
- REFERENCE DRAWINGS:**
- SCHEMATIC DIAGRAMS TY-47-110-122
 - MEIDENSHA ELECTRIC MFG CO GENERATOR MULTI LINE DIAGRAM MG5P170082, SH 2
INTERCONNECTION DIAGRAM 13.8KV SWGR MG5P371749
SINGLE LINE AND SCHEMATIC DIAGRAM MG5P371629

H02-D-47-2004-R49

3	11-3-23	STATION SERVICE UP GRADE - ISSUED FOR 100% DESIGN	MLH DMB	-
2	3-30-84	RECORD DWG.	RPD	JK
1	7-1-83	MOVED CABLE 234 TO TBY4	RPD	JK
0	6-3-83	ISSUED FOR CONSTRUCTION	RPD	JK
NO.	DATE	REVISIONS	BY	CHKD. APP'D. INSPECTED

CONSULTING ENGINEERS
INTERNATIONAL ENGINEERING COMPANY, INC.
 A MORRISON-KNUDSEN COMPANY
 180 HOWARD STREET, SAN FRANCISCO, CALIFORNIA 94105

ALASKA POWER AUTHORITY
 ANCHORAGE, ALASKA

TYEE LAKE HYDROELECTRIC PROJECT
 TYEE LAKE POWERPLANT
 UNIT 2 13.8KV SWITCHGEAR
 CONNECTION DIAGRAM

TY-47-234
 SHEET OF REV. 2
 TECH. NO.

NEW BREAKER		OLD BREAKER		CABLE ROUTING SAME FOR NEW AS EXISTING					DESCRIPTION
BKR POSITION/ SWITCHGEAR SECTION	BREAKER RATING	BREAKER POSITION	BREAKER RATING	NO. CONDUCTORS 'n' CABLES 'c'	CABLE SIZE/GND	APPROXIMATE LENGTH (FEET)	CIRCUIT	ROUTING	
SS1	1200A	TA	1000A	3	1/0	80'	523	TRAY TP1	FROM 15KV SWITCHGEAR 1, BREAKER 'SS1', TO STATION SERVICE TRANSFORMER 1 'SST1'
SS2	1200A	TB	1000A	3	1/0	80'	524	TRAY TP1	FROM 15KV SWITCHGEAR 2, BREAKER 'SS2', TO STATION SERVICE TRANSFORMER 2 'SST2'
52-E1 2B	300A	SWGR-52C	600A	3	500MCM/ 1/0	375'	P-EGEN1-1 (NEW)	TRAY TP1, C1000A, C1000B	STANDBY DIESEL GENERATOR 1 FEEDER (ORIGINAL CKT: 439)
52-U1 2C	400A	NA	NA	3	500MCM/ 1/0	90'	P-PPU1-1 (NEW)	C1010, TRAY TC1	PPU1 FEEDER
52-C1 2D	800A	NA	NA	2 x 3	500MCM/ 2x1/0	20'	P-PPCL-1 (NEW)	C1006A, C1006B, TRAY TC1	ATS/PPCL FEEDER 1
52-E2 4B	300A	NA	NA	3	500MCM/ 1/0	375'	P-EGEN2-1 (NEW)	TRAY TP1, C1003A, C1003B	STANDBY DIESEL GENERATOR 2 FEEDER
52-U2 4C	400A	NA	NA	3	500MCM/ 1/0	100'	P-PPU2-1 (NEW)	C1013, TRAY TC1	PPU2 FEEDER
52-C2 4D	800A	NA	NA	2 x 3	500MCM/ 1/0	20'	P-PPCL-2 (NEW)	C1007A, C1007B, TRAY TC1	ATS/PPCL FEEDER 2
ATS LINE	800A	NA	NA	2 x 3	500MCM/ 1/0	8'	P-PPCL-3 (NEW)	ADJACENT; ROUTE THROUGH NIPPLE	ATS TO PPCL
PPCL-1	100A	SWGR-1	100A	3	4/0 / #4	185' TO SPLICE	(NOT LABELED)	C1027, EXISTING CONDUIT TO SPLICE BOX, EXISTING TRENCH	MIRACLE SPAN BUILDING PANEL VIA SPLICE BOX ON GEN 3 BAY WALL. REPLACE SPLICE BOX WITH NEW 24"X24"X6" HINGE COVER JB WITH INSULATED SPLICES.
PPCL-2	70A	PDP-B CKT#15	70A	3	#4 / #4	60'	456	C456, TRAY TC1, C1008	GENERATOR FLOOR CRANE
PPCL-7	70A	PDP-A CKT#15	70A	3	#4 / #4	75'	495	C495, JB-9, C455, TRAY TC1, C1008	LIGHTING TRANSFORMER LT-A
PPCL-8	70A	PDP-B CKT#9	70A	3	#4 / #4	40'	454	C454, TRAY TS1, C1009	LIGHTING TRANSFORMER LT-B
PPCL-13	30A	PDP-A CKT#14	30A	3	#10 / #10	75'	455B	JB-9, C455, TRAY TC1, C1008	GENERATOR FLOOR HEATERS
PPCL-14	25A	PDP-A CKT#12	25A	3	#10 / #10	85'	465	C465, JB-9, C455, TRAY TC1, C1008	MACHINE FLOOR HEATERS
PPCL-19	25A	PDP-A CKT#11	25A	3	#10 / #10	35'	419	C419, JB-7, C1026, TRAY TC1, C1008	TURBINE FLOOR HEATERS 1F
PPCL-20	20A	PDP-A CKT#13	20A	3	#10 / #10	55'	425	C425, JB-6, C423, JB-7, C1026, TRAY TC1, C1008	TURBINE FLOOR HEATERS 1G
PPCL-25	20A	PDP-B CKT#14	20A	3	#10 / #10	75'	455A	JB-9, C455, TRAY TC1, C1008	ERECTION AREA HEATERS
PPCL-31	600A	SWGR-4	600A	3	750MCM / 1/0	110' TO SPLICE IN MH-2	525	C1024, TRAY TP1, MH1, C603, MH2	MAINTENANCE BUILDING 480V DISTRIBUTION PANEL PDP-M VIA SPLICE BOX IN MH-2
PPCL-37	400A	NA	NA	3	500MCM / 1/0	135'	P-PPU3-1 (NEW)	C1016, TRAY TC1, C1017	PPU3 FEEDER
PPCL-43	400A	NA	NA	3	500MCM / 1/0	20'	P-PDPA-1 (NEW)	C1019	PDP-A, PDP-A1 FEEDERS
PPU1-1	35A	PDP-B CKT#16	35A	3	#10 / #10	95'	(NOT LABELED)	EXISTING ROUTING, NOT RECORDED IN DRAWINGS	GOVERNER KIDNEY LOOP PUMP G-1
PPU1-2	30A	PDP-B CKT#11	30A	3	#8 / #8	40'	409	C409, JB-2, C1025, TRAY TC1, C1011	BATTERY CHARGER BC-1
PPU1-7	25A	PDP-A CKT#10	25A	3	#10 / #10	45'	422	C422, JB-7, C1026, TRAY TC1, C1011	AIR COMPRESSOR 1
PPU1-8	20A	PDP-A CKT#18	20A	3	#12 / #12	55'	107	C107, TRAY TC1, C1011	OIL LIFT PUMP FOR UNIT 1
PPU1-13	20A	PDP-A CKT#1	20A	3	#12 / #12	45'	105A	C105, TRAY TC1, C1011	GOVERNER OIL PUMP G-1 POWER SUPPLY 1
PPU1-14	20A	PDP-A CKT#2	20A	3	#12 / #12	45'	105B	C105, TRAY TC1, C1011	GOVERNER OIL PUMP G-1 POWER SUPPLY 2
PPU1-19	20A	PDP-A CKT#4	20A	3	#12 / #12	24'	427	C1012	COOLING WATER PUMP 1
PPU1-20	20A	PDP-A CKT#17	20A	3	#12 / #12	80'	114	TRAY TC1, C1011	GENERATOR SPACE HEATER UH-1
PPU2-1	35A	PDP-B CKT#18	35A	3	#10 / #10	125'	(NOT LABELED)	EXISTING ROUTING, NOT RECORDED IN DRAWINGS	GOVERNER KIDNEY LOOP PUMP G-2
PPU2-2	30A	PDP-B CKT#12	30A	3	#8 / #8	40'	410	C410, JB-2, C1025, TRAY TC1, C1014	BATTERY CHARGER BC-2
PPU2-7	25A	PDP-A CKT#9	25A	3	#10 / #10	45'	421	C421, JB-7, C1026, TRAY TC1, C1014	AIR COMPRESSOR 2
PPU2-8	20A	PDP-A CKT#19	20A	3	#12 / #12	75'	207	C207, TRAY TC1, C1014	OIL LIFT PUMP FOR UNIT 2
PPU2-13	20A	PDP-B CKT#1	20A	3	#12 / #12	75'	205A	C205, TRAY TC1, C1014	GOVERNER OIL PUMP G-2 POWER SUPPLY 1
PPU2-14	20A	PDP-B CKT#2	20A	3	#12 / #12	75'	205B	C205, TRAY TC1, C1014	GOVERNER OIL PUMP G-2 POWER SUPPLY 2
PPU2-19	20A	PDP-A CKT#5	20A	3	#12 / #12	24'	428	C1015	COOLING WATER PUMP 2
PPU2-20	20A	PDP-B CKT#17	20A	3	#12 / #12	90'	214	TRAY TC1, C1014	GENERATOR SPACE HEATER UH-2
PPU3-19	20A	PDP-A CKT#6	20A	3	#12 / #12	26'	429	C1018	COOLING WATER PUMP 3

NOTES:

1. ALL CABLES ARE TO BE REPLACED FROM THE PANELBOARDS TO THE FIRST POINT OF TERMINATION. SEE NOTE 2 FOR EXCEPTIONS.
2. FEEDER CABLES FOR MIRACLE SPAN BUILDING AND MAINTENANCE BUILDING PANEL PDP-M TO BE REPLACED FROM THE PANELBOARDS TO THE SPLICE BOXES INDICATED ON THIS DRAWING.

PROJECT: TYEE LAKE STATION SERVICE DESIGN				ENG. STAMP	
DESIGNER/PROJECT ENGINEER: MITCHELL HEDRICK/DAVID BUSS - EPS				W.O. #: 23-0124	
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	REVIEWED (MGR/SUPV)/DATE	APPROVED (DIRECTOR)/DATE	
A	ISSUED FOR 90% REVIEW	MLH/08-04-2023			
B	ISSUED FOR 100% DESIGN REVIEW	MLH/11-03-2023			

Electric Power Systems Inc.
Consulting Engineers
TEL: (907) 522-1953
FAX: (907) 522-1182
WEB: WWW.EPSINC.COM

DRAWING NAME: **SEAPA TYEE LAKE STATION SERVICE SWITCHGEAR POWER CABLE SCHEDULE**

REF DWG(S):

DRAWING NO.: **TYEE-EL-4000**

SHEET **1** OF **4**

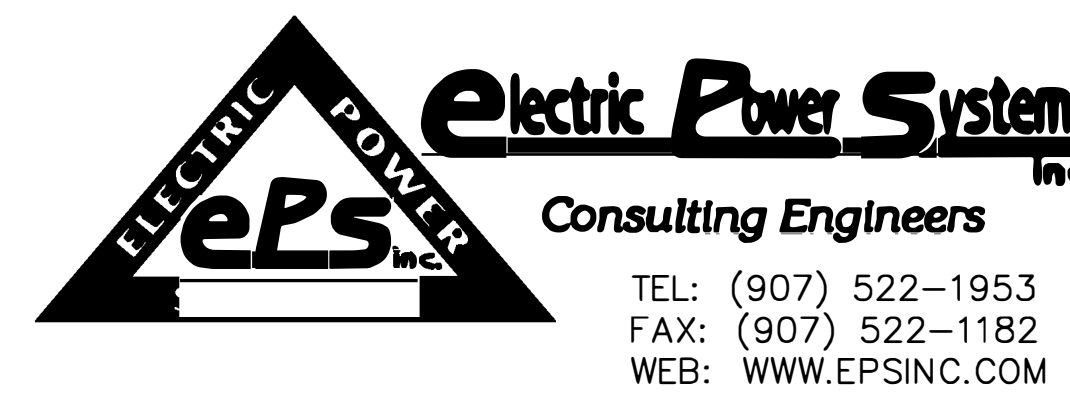
tvee-el-4000_1.dwg

NEW BREAKER		OLD BREAKER		CABLE ROUTING SAME FOR NEW AS EXISTING					DESCRIPTION
BKR POSITION/ SWITCHGEAR SECTION	BREAKER RATING	BREAKER POSITION	BREAKER RATING	NO. CONDUCTORS 'n' CABLES 'nC'	CABLE SIZE/GND	LENGTH	CIRCUIT	ROUTING	DESCRIPTION
PDPA-1	175A	HP-A CKT#11	175A	3	2/0 / #12	75'	(NOT LABELED)	EXISTING ROUTING, NOT RECORDED IN DRAWINGS	DUCT HEATER #2 ON MAIN DISCONNECT
PDPA-7	100A	SWGR-40230	100A	3	#2 / #2	10'	(NOT LABELED)	C1020	SWITCHYARD LIGHTING TRANSFORMER
PDPA-8	80A	PDP-B CKT#4	75A	3	#4 / #4	225'	689	EXISTING ROUTING, NOT RECORDED IN DRAWINGS	SWITCHYARD POWER OUTLET, 60A
PDPA-13	80A	PDP-A CKT#3	80A	3	#4 / #4	70'	470	C470, TRAY TC1, C1021	MACHINE FLOOR POWER OUTLET, 60A
PDPA-14	80A	PDP-A CKT#8	80A	3	#4 / #4	55'	426	C426, JB-6, C423, JB-7, C1026, TRAY TC1, C1021	TURBINE FLOOR POWER OUTLET, 60A
PDPA-19	70A	PDP-B CKT#20	70A	3	#4 / #4	225'	(NOT LABELED)	EXISTING ROUTING, NOT RECORDED IN DRAWINGS	TUNNEL RECEPTACLE, 60A
PDPA-20	40A	PDP-B CKT#13	40A	3	#8 / #8	50'	407	C407, JB-2, C1025, TRAY TC1, 1021	TURBINE FLOOR POWER OUTLET, 30A
PDPA-25	40A	PDP-B CKT#10	40A	3	#8 / #8	50'	408	C408, JB-2, C1025, TRAY TC1, 1021	WELDING MACHINE
PDPA-26	25A	PDP-B CKT#5	25A	3	#10 / #10	50'	441	C441, TRAY TC1, C1021	ELECTRIC WATER HEATER
PDPA-31	20A	PDP-B CKT#6	20A	3	#12 / #12	105'	471	C471, JB-10, C442, TRAY TS1, C1022	ELECTRIC HEATER EH-1
PDPA-32	20A	PDP-B CKT#7	20A	3	#12 / #12	95'	473	C473, JB-13, C472, JB-10, C442, TRAY TS1, C1022	ELECTRIC HEATER EH-2
PDPA-37	20A	HP-A CKT#8	20A	3	#12 / #12	30'	(NOT LABELED)	EXISTING ROUTING, NOT RECORDED IN DRAWINGS	DUCT HEATER #1
PDPA-38	20A	PDP-A CKT#16	20A	3	#12 / #12	35'	446	C446, TRAY TC1, C1021	AUXILIARY ROOM UNIT HEATER UH-1D
PDPA-43	20A	PDP-B CKT#3	20A	3	#12 / #12	55'	445	C445, TRAY TC1, C1021	AUXILIARY ROOM VENTILATION UNIT
PDPA-44	20A	PDP-A CKT#7	20A	3	#12 / #12	85'	431A	C431, JB-6, C423, JB-7, C1026, TRAY TC1, C1021	DRAINAGE PUMP
PDPA-49	20A	PDP-B CKT#19	20A	3	#12 / #12	200'	(NOT LABELED)	EXISTING ROUTING, NOT RECORDED IN DRAWINGS	SEWAGE LIFT PUMP
PDPA1-1	20A	HP-A CKT#2	20A	3	#12 / #12	65'	(NOT LABELED)	EXISTING ROUTING, NOT RECORDED IN DRAWINGS	HEATER #1
PDPA1-2	20A	HP-A CKT#4	20A	3	#12 / #12	95'	(NOT LABELED)	EXISTING ROUTING, NOT RECORDED IN DRAWINGS	HEATER #3
PDPA1-7	20A	HP-A CKT#10	20A	3	#12 / #12	20'	(NOT LABELED)	EXISTING ROUTING, NOT RECORDED IN DRAWINGS	HEATER #4
PDPA1-8	20A	HP-A CKT#1	20A	3	#12 / #12	60'	(NOT LABELED)	EXISTING ROUTING, NOT RECORDED IN DRAWINGS	HEATER #5
PDPA1-13	20A	HP-A CKT#3	20A	3	#12 / #12	115'	(NOT LABELED)	EXISTING ROUTING, NOT RECORDED IN DRAWINGS	HEATER #6
PDPA1-14	20A	HP-A CKT#6	20A	3	#12 / #12	45'	(NOT LABELED)	EXISTING ROUTING, NOT RECORDED IN DRAWINGS	HEATER #7
PDPA1-19	20A	HP-A CKT#5	20A	3	#12 / #12	35'	(NOT LABELED)	EXISTING ROUTING, NOT RECORDED IN DRAWINGS	HEATER #8
PDPA1-20	20A	HP-A CKT#7	20A	3	#12 / #12	50'	(NOT LABELED)	EXISTING ROUTING, NOT RECORDED IN DRAWINGS	HEATER #9
PDPA1-25	20A	HP-A CKT#9	20A	3	#12 / #12	65'	(NOT LABELED)	EXISTING ROUTING, NOT RECORDED IN DRAWINGS	HEATER #10
PDPA1-26	20A	PDP-B CKT#8	20A	3	#12 / #12	95'	474	C474, JB-13, C472, JB-10, C442, TRAY TS1, C1023	KITCHEN TRANSFORMER
LP-A CKT#23	100A			5	1/0 / #4	375'	P-EGEN-AUX	C1028, C1002A, C1029, NEW TRENCH	STANDBY EMERGENCY GENERATOR PAD SUBPANEL

NOTES:
1. ALL CABLES ARE TO BE REPLACED FROM THE PANELBOARDS TO THE FIRST POINT OF TERMINATION.

PROJECT: TYEE LAKE STATION SERVICE DESIGN			
DESIGNER/PROJECT ENGINEER: MITCHELL HEDRICK/DAVID BUSS - EPS W.O. #: 23-0124			
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	REVIEWED (MGR/SUPV)/DATE
A	ISSUED FOR 90% REVIEW	MLH/08-04-2023	
B	ISSUED FOR 100% DESIGN REVIEW	MLH/11-03-2023	

ENG. STAMP



DRAWING NAME:	SEAPA TYEE LAKE STATION SERVICE SWITCHGEAR POWER CABLE SCHEDULE	
REF DWG(S):		tvee-el-4000_2.dwg
DRAWING NO.:	TYEE-EL-4000	SHEET 2 OF 4

EQUIPMENT DESCRIPTION	NO. CONDUCTORS 'n' CABLES 'nC'	CABLE SIZE/GND	LENGTH	CIRCUIT	FROM	TO	ROUTING	DESCRIPTION
EGEN-1 CTRL CAB	19	12AWG	375'	C-EGEN1-1 (NEW)	480V S.S. SWITCHGEAR	EGEN-1 CONTROL CABINET	TRAY TC1, C1001A, C1001B	EGEN-1 CONTROL AND INDICATION (ORIGINAL CKT: 401A)
EGEN-1 CTRL CAB	3	#8 / #8	375'	CT-EGEN1-1 (NEW)	480V S.S. SWITCHGEAR	EGEN-1 CONTROL CABINET	TRAY TC1, C1002A, C1002B	EGEN-1 C.T. LEADS (ORIGINAL CKT: 401C)
EGEN-2 CTRL CAB	19	12AWG	375'	C-EGEN2-1 (NEW)	480V S.S. SWITCHGEAR	EGEN-2 CONTROL CABINET	TRAY TC1, C1004A, C1004B	EGEN-2 CONTROL AND INDICATION
EGEN-2 CTRL CAB	3	#8 / #8	375'	CT-EGEN2-1 (NEW)	480V S.S. SWITCHGEAR	EGEN-2 CONTROL CABINET	TRAY TC1, C1005A, C1005B	EGEN-2 C.T. LEADS
480V S.S. SWGR	3	#12 / #12	80'	460D	PANEL LP-A CKT #33, 35	480V S.S. SWITCHGEAR HEATERS	TRAY TC1, C460	480V S.S. SWITCHGEAR HEATERS
480V S.S. SWGR	2	12AWG	40'	522D	125VDC PANEL CKT #31	480V S.S. SWITCHGEAR	C522, TRAY TC1	DC CONTROL LEADS
480V S.S. SWGR	7	12AWG	10'	503A	S.S. TRANSFORMER T1	480V SWITCHGEAR SECTION 1	TRAY TC1	CONTROL AND ANNUNCIATION
480V S.S. SWGR	7	12AWG	10'	503B	S.S. TRANSFORMER T2	480V SWITCHGEAR SECTION 5	TRAY TC1	CONTROL AND ANNUNCIATION
480V S.S. SWGR	7	16AWG	15'	503C (NEW)	480V SWITCHGEAR SECTION 1	CONTROL SWITCHBOARD PANEL 1F	TRAY TC1	S.S. ANNUNCIATION
480V S.S. SWGR	12	16AWG	15'	503D (NEW)	480V SWITCHGEAR SECTION 2	CONTROL SWITCHBOARD PANEL 1F	TRAY TC1	S.S. ANNUNCIATION
480V S.S. SWGR	12	16AWG	15'	503E (NEW)	480V SWITCHGEAR SECTION 4	CONTROL SWITCHBOARD PANEL 1F	TRAY TC1	S.S. ANNUNCIATION
480V S.S. SWGR	7	16AWG	15'	503H (NEW)	480V SWITCHGEAR SECTION 5	CONTROL SWITCHBOARD PANEL 1F	TRAY TC1	S.S. ANNUNCIATION
480V S.S. SWGR	7	12AWG	15'	503J (NEW)	480V SWITCHGEAR SECTION 1	CONTROL SWITCHBOARD PANEL 3R	TRAY TC1	480V S.S. MAIN BREAKER 1 INTERLOCK
480V S.S. SWGR	12	16AWG	15'	503K (NEW)	480V SWITCHGEAR SECTION 3	PPCL ATS	TRAY TC1	PPCL ATS CONTROLS AND I/O
480V S.S. SWGR	7	12AWG	15'	503L (NEW)	480V SWITCHGEAR SECTION 5	CONTROL SWITCHBOARD PANEL 4R	TRAY TC1	480V S.S. MAIN BREAKER 2 INTERLOCK
480V S.S. SWGR	8 PR	16AWG SHLD	25'	945	480V S.S. SWITCHGEAR	RTU 2	EXISTING ROUTING, NOT RECORDED IN DRAWINGS	STATION STATUS
480V S.S. SWGR		CAT-6	50'	CC-480V-1 (NEW)	480V S.S. SWITCHGEAR	SEAPA SCADA NETWORK (SEE DESC.)	TRAY TC1, FIELD ROUTE	SEAPA SCADA CONNECTION, COORDINATE WITH PLANT PERSONNEL

PROJECT: TYEE LAKE STATION SERVICE DESIGN			
DESIGNER/PROJECT ENGINEER: MITCHELL HEDRICK/DAVID BUSS - EPS			
W.O. #: 23-0124			
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	REVIEWED (MGR/SUPV)/DATE
A	ISSUED FOR 90% REVIEW	MLH/08-04-2023	
B	ISSUED FOR 100% DESIGN SUBMITTAL	MLH/11-03-2023	

ENG. STAMP

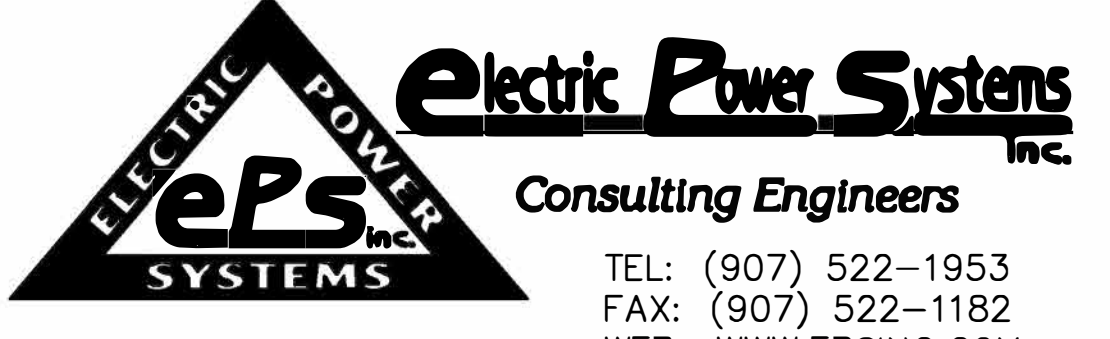
electric Power Systems Inc.
Consulting Engineers
 TEL: (907) 522-1953
 FAX: (907) 522-1182
 WEB: WWW.EPSINC.COM

DRAWING NAME:		SEAPA TYEE LAKE STATION SERVICE SWITCHGEAR CONTROL CABLE SCHEDULE	
tvee-el-4000_3.dwg			
REF DWG(S):			
DRAWING NO.:		TYEE-EL-4000	
			SHEET 3 OF 4

EQUIPMENT DESCRIPTION	NO. CONDUCTORS 'n' CABLES 'nc'	CABLE SIZE/GND	LENGTH	CIRCUIT	FROM	TO	ROUTING	DESCRIPTION
13.8KV SWGR #1	2	#12 / #12	50'	132	13.8KV SWITCHGEAR #1 SEC. 3	CONTROL SWITCHBOARD PANEL 3R	TRAY TC1	NEUTRAL GROUND TRANSFORMER POTENTIAL LEADS
13.8KV SWGR #1	3	#10 / #10	50'	133	13.8KV SWITCHGEAR #1 SEC. 2	CONTROL SWITCHBOARD PANEL 3R	TRAY TC1	POTENTIAL LEADS FOR METERING
13.8KV SWGR #1	4	10AWG	50'	134	13.8KV SWITCHGEAR #1 SEC. 1	CONTROL SWITCHBOARD PANEL 3F	TRAY TC1	52-G1 TRIP CIRCUIT
13.8KV SWGR #1	4	10AWG	50'	135	13.8KV SWITCHGEAR #1 SEC. 1	CONTROL SWITCHBOARD PANEL 3R	TRAY TC1	52-G1 CONTROL
13.8KV SWGR #1	2	#12 / #12	20'	136	13.8KV SWITCHGEAR #1 SEC. 1	GENERATOR 1 TERMINAL CABINET	TRAY TC1	LIGHTING AND RECEPTACLES
13.8KV SWGR #1	3	#10 / #10	50'	137	13.8KV SWITCHGEAR #1 SEC. 1	CONTROL SWITCHBOARD PANEL 3R	TRAY TC1	GEN 1 SEL-700G LINE CURRENT C.T. LEADS
13.8KV SWGR #1	3	#10 / #10	50'	138	13.8KV SWITCHGEAR #1 SEC. 1	CONTROL SWITCHBOARD PANEL 2R	TRAY TC1	TRANSFORMER T1 DIFFERENTIAL C.T. LEADS
13.8KV SWGR #1	3	#10 / #10	50'	139	13.8KV SWITCHGEAR #1 SEC. 2	CONTROL SWITCHBOARD PANEL 3R	TRAY TC1	POTENTIAL LEADS FOR RELAYING
13.8KV SWGR #1	3	#10 / #10	50'	140	13.8KV SWITCHGEAR #1 SEC. 2	EXCITATION CUBICLE REG. COMP. R	TRAY TC1	POTENTIAL LEADS FOR VOLTAGE REGULATOR
13.8KV SWGR #1	2	#12 / #12	60'	141	13.8KV SWITCHGEAR #1 SEC. 1	TERMINAL BOX OF GOV. UNIT 1	C106, TRAY TC1	GOVERNER DRIVE MOTOR LEADS
13.8KV SWGR #1	12	12AWG	50'	142	13.8KV SWITCHGEAR #1 SEC. 1	CONTROL SWITCHBOARD PANEL 3R	TRAY TC1	CONTROL AND INDICATIONS
13.8KV SWGR #1	12	12AWG	50'	143	13.8KV SWITCHGEAR #1 SEC. 1	CONTROL SWITCHBOARD PANEL 3R	TRAY TC1	CONTROL AND INDICATIONS
13.8KV SWGR #1	7	12AWG	50'	144	13.8KV SWITCHGEAR #1 SEC. 1	CONTROL SWITCHBOARD PANEL 3R	TRAY TC1	CONTROL AND INDICATIONS
13.8KV SWGR #1	2	#10 / #10	50'	145	13.8KV SWITCHGEAR #1 SEC. 2	EXCITATION CUBICLE REG. COMP. R	TRAY TC1	CURRENT LEADS FOR VOLTAGE REGULATOR
13.8KV SWGR #2	2	#12 / #12	80'	232	13.8KV SWITCHGEAR #2 SEC. 3	CONTROL SWITCHBOARD PANEL 4R	TRAY TC1	NEUTRAL GROUND TRANSFORMER POTENTIAL LEADS
13.8KV SWGR #2	3	#10 / #10	80'	233	13.8KV SWITCHGEAR #2 SEC. 2	CONTROL SWITCHBOARD PANEL 4R	TRAY TC1	POTENTIAL LEADS FOR METERING
13.8KV SWGR #2	4	10AWG	80'	234	13.8KV SWITCHGEAR #2 SEC. 1	CONTROL SWITCHBOARD PANEL 4F	TRAY TC1	52-G2 TRIP CIRCUIT
13.8KV SWGR #2	4	10AWG	80'	235	13.8KV SWITCHGEAR #2 SEC. 1	CONTROL SWITCHBOARD PANEL 4R	TRAY TC1	52-G2 CONTROL
13.8KV SWGR #2	2	#12 / #12	80'	236	13.8KV SWITCHGEAR #2 SEC. 1	GENERATOR 2 TERMINAL CABINET	TRAY TC1	LIGHTING AND RECEPTACLES
13.8KV SWGR #2	3	#10 / #10	80'	237	13.8KV SWITCHGEAR #2 SEC. 1	CONTROL SWITCHBOARD PANEL 4R	TRAY TC1	GEN 2 SEL-700G LINE CURRENT C.T. LEADS
13.8KV SWGR #2	3	#10 / #10	80'	238	13.8KV SWITCHGEAR #2 SEC. 1	CONTROL SWITCHBOARD PANEL 2R	TRAY TC1	TRANSFORMER T2 DIFFERENTIAL C.T. LEADS
13.8KV SWGR #2	3	#10 / #10	80'	239	13.8KV SWITCHGEAR #2 SEC. 2	CONTROL SWITCHBOARD PANEL 4R	TRAY TC1	POTENTIAL LEADS FOR RELAYING
13.8KV SWGR #2	3	#10 / #10	80'	240	13.8KV SWITCHGEAR #2 SEC. 2	EXCITATION CUBICLE REG. COMP. R	TRAY TC1	POTENTIAL LEADS FOR VOLTAGE REGULATOR
13.8KV SWGR #2	2	#12 / #12	90'	241	13.8KV SWITCHGEAR #2 SEC. 1	TERMINAL BOX OF GOV. UNIT 2	C206, TRAY TC1	GOVERNER DRIVE MOTOR LEADS
13.8KV SWGR #2	12	12AWG	80'	242	13.8KV SWITCHGEAR #2 SEC. 1	CONTROL SWITCHBOARD PANEL 4R	TRAY TC1	CONTROL AND INDICATIONS
13.8KV SWGR #2	12	12AWG	80'	243	13.8KV SWITCHGEAR #2 SEC. 1	CONTROL SWITCHBOARD PANEL 4R	TRAY TC1	CONTROL AND INDICATIONS
13.8KV SWGR #2	7	12AWG	80'	244	13.8KV SWITCHGEAR #2 SEC. 1	CONTROL SWITCHBOARD PANEL 4R	TRAY TC1	CONTROL AND INDICATIONS
13.8KV SWGR #2	2	#10 / #10	80'	245	13.8KV SWITCHGEAR #2 SEC. 2	EXCITATION CUBICLE REG. COMP. R	TRAY TC1	CURRENT LEADS FOR VOLTAGE REGULATOR

PROJECT: TYEE LAKE STATION SERVICE DESIGN				
DESIGNER/PROJECT ENGINEER: MITCHELL HEDRICK/DAVID BUSS - EPS W.O. #: 23-0124				
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	REVIEWED (MGR/SUPV)/DATE	APPROVED (DIRECTOR)/DATE
A	ISSUED FOR 100% DESIGN SUBMITTAL	MLH/11-03-2023		

ENG. STAMP



DRAWING NAME:	SEAPA TYEE LAKE STATION SERVICE SWITCHGEAR CONTROL CABLE SCHEDULE	<small>tyee-el-4000_4.dwg</small>
REF DWG(S):		
DRAWING NO.:	TYEE-EL-4000	SHEET 4 OF 4

CONDUIT NUMBER	TRADE SIZE	CONDUIT TYPE	APPROXIMATE LENGTH (FEET)	FROM	TO	CONTAINS CABLES:
C105	1-1/2"	RMC	14'	OIL PRESSURE SET UNIT #1	CABLE TRAY TC1	105A, 105B
C106	3"	RMC	17'	TERMINAL BOX OF GOV. UNIT #1	CABLE TRAY TC1	106A, B, C, D, E, 141
C107	1"	RMC	12'	TERMINAL BOX OF OIL LIFT PUMP UNIT #1	CABLE TRAY TC1	107
C205	1-1/2"	RMC	28'	OIL PRESSURE SET UNIT #2	CABLE TRAY TC1	205A, 205B
C206	3"	RMC	18'	TERMINAL BOX OF GOV. UNIT #2	CABLE TRAY TC1	206A, B, C, D, E, 241
C207	1"	RMC	12'	TERMINAL BOX OF OIL LIFT PUMP UNIT #2	CABLE TRAY TC1	207
C407	1"	RMC	35'	30A POWER OUTLET NEAR WORKBENCH	JUNCTION BOX 2	407
C408	1"	RMC	26'	WELDING MACHINE TERMINAL BOX	JUNCTION BOX 2	408A, 408B
C409	2"	RMC	13'	BATTERY CHARGER NO. 1	JUNCTION BOX 2	409
C410	2"	RMC	16'	BATTERY CHARGER NO. 2	JUNCTION BOX 2	410
C419	3/4"	RMC	10'	JUNCTION BOX 7	UNIT HEATER 1F IN COMPRESSOR ROOM	419
C421	1"	RMC	10'	JUNCTION BOX 7	COMPRESSOR UNIT NO. 1 IN COMPRESSOR ROOM	421A, 421B
C422	1"	RMC	10'	JUNCTION BOX 7	COMPRESSOR UNIT NO. 2 IN COMPRESSOR ROOM	422
C423	3"	RMC	30'	JUNCTION BOX 6	JUNCTION BOX 7	425, 426, 431A
C425	1"	RMC	12'	JUNCTION BOX 6	UNIT HEATER 1G NEAR TURBINE UNIT NO. 1	425, 435
C426	1-1/2"	RMC	15'	JUNCTION BOX 6	60A POWER RECEPTACLE TURBINE UNIT NO. 1	426
C431	1"	RMC	18'	JUNCTION BOX 6	DRAINAGE PUMP CONTROL PANEL	431A, 431B
C441	3/4"	RMC	5'	ELECTRIC WATER HEATER	CABLE TRAY TC1	441
C442	2"	RMC	5'	JUNCTION BOX 10	CABLE TRAY TS1	471, 473, 474, 442
C445	1"	RMC	20'	CABLE TRAY TC1	VENTILATION UNIT CONTROL PANEL	445
C446	3/4"	RMC	8'	CABLE TRAY TC1	UNIT HEATER 1D	446
C454	1"	RMC	11'	CABLE TRAY TS1	LIGHTING XFMR LT-B	454
C455	3"	RMC	30'	CABLE TRAY TC1	JUNCTION BOX 9	455A, B, C, 457, 465, 495
C456	2"	RMC	35'	CABLE TRAY TC1	CRANE SAFETY SWITCH ON GENERATOR FLOOR	456
C457	3/4"	RMC	28'	UNIT HEATER 2B	JUNCTION BOX 21	457
C460	3"	RMC	18'	LIGHTING PANEL LP-A	CABLE TRAY TC1	148, 149, 460A, B, D, 506A, 507A
C465	3/4"	RMC	25'	UNIT HEATER 1C	JUNCTION BOX 9	465
C466	3/4"	RMC	25'	UNIT HEATER 1B	UNIT HEATER 1C	466
C467	3/4"	RMC	25'	UNIT HEATER 1A	UNIT HEATER 1B	467
C470	1-1/2"	RMC	12'	60A POWER RECEPTACLE NEAR UNIT NO. 1	CABLE TRAY TC1	470
C471	3/4"	RMC	20'	ELECTRIC HEATER EH-1	JUNCTION BOX 10	471
C472	1"	RMC	22'	JUNCTION BOX 13	JUNCTION BOX 10	473, 474
C473	3/4"	RMC	6'	ELECTRIC HEATER EH-2	JUNCTION BOX 13	473
C474	3/4"	RMC	7'	KITCHEN UNIT	JUNCTION BOX 13	474
C484	1"	RMC	45'	JUNCTION BOX 21	JUNCTION BOX 9	457, 546
C495	2"	RMC	20'	JUNCTION BOX 9	LIGHTING XFMR LT-A	495
C522	2"	RMC	12'	JUNCTION BOX 19	CABLE TRAY TC1	522D, 522E

SHEET NOTES:

1. CONDUITS SHOWN ON THIS SHEET ARE EXISTING AND ARE TO BE RE-USED BY THE CONTRACTOR.

PROJECT: TYEE LAKE STATION SERVICE DESIGN				
DESIGNER/PROJECT ENGINEER: MITCHELL HEDRICK/DAVID BUSS - EPS W.O. #: 23-0124				
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	REVIEWED (MGR/SUPV)/DATE	APPROVED (DIRECTOR)/DATE
A	ISSUED FOR 90% REVIEW	MLH/08-04-2023		
B	ISSUED FOR 100% DESIGN SUBMITTAL	MLH/11-03-2023		

ENG. STAMP



DRAWING NAME:

**SEAPA
TYEE LAKE
STATION SERVICE SWITCHGEAR
CONDUIT SCHEDULE**

REF DWG(S):

DRAWING NO.:

TYEE-EL-4010


CONDUIT NUMBER	TRADE SIZE	CONDUIT TYPE	APPROXIMATE LENGTH (FEET)	FROM	TO	CONTAINS CABLES:
C1000A	3"	RMC	60'	CABLE TRAY TP1	EMERGENCY GENERATOR JUNCTION BOX	P-EGEN1-1
C1000B	3"	RMC/PVC	220'	EMERGENCY GENERATOR JUNCTION BOX	EMERGENCY GENERATOR 1 VIA NEW TRENCH	P-EGEN1-1
C1001A	2"	RMC	60'	CABLE TRAY TC1	EMERGENCY GENERATOR JUNCTION BOX	C-EGEN1-1
C1001B	2"	RMC/PVC	220'	EMERGENCY GENERATOR JUNCTION BOX	EMERGENCY GENERATOR 1 CONTROL PANEL VIA NEW TRENCH	C-EGEN1-1
C1002A	3"	RMC	60'	CABLE TRAY TC1	EMERGENCY GENERATOR JUNCTION BOX	CT-EGEN1-1, P-EGEN-AUX
C1002B	2"	RMC/PVC	220'	EMERGENCY GENERATOR JUNCTION BOX	EMERGENCY GENERATOR 1 VIA NEW TRENCH	CT-EGEN1-1
C1003A	3"	RMC	60'	CABLE TRAY TP1	EMERGENCY GENERATOR JUNCTION BOX	P-EGEN2-1
C1003B	3"	RMC/PVC	220'	EMERGENCY GENERATOR JUNCTION BOX	EMERGENCY GENERATOR 2 VIA NEW TRENCH	P-EGEN2-1
C1004A	2"	RMC	60'	CABLE TRAY TC1	EMERGENCY GENERATOR JUNCTION BOX	C-EGEN2-1, 2, 3
C1004B	2"	RMC/PVC	220'	EMERGENCY GENERATOR JUNCTION BOX	EMERGENCY GENERATOR 2 CONTROL PANEL VIA NEW TRENCH	C-EGEN2-1, 2, 3
C1005A	2"	RMC	60'	CABLE TRAY TC1	EMERGENCY GENERATOR JUNCTION BOX	CT-EGEN2-1
C1005B	2"	RMC/PVC	220'	EMERGENCY GENERATOR JUNCTION BOX	EMERGENCY GENERATOR 2 VIA NEW TRENCH	CT-EGEN2-1
C1006A	3"	RMC	14'	ATS/PPCL FEEDER 1 (1/2)	CABLE TRAY TC1	P-PPCL-1 (1/2)
C1006B	3"	RMC	14'	ATS/PPCL FEEDER 1 (2/2)	CABLE TRAY TC1	P-PPCL-1 (2/2)
C1007A	3"	RMC	14'	ATS/PPCL FEEDER 2 (1/2)	CABLE TRAY TC1	P-PPCL-2 (1/2)
C1007B	3"	RMC	14'	ATS/PPCL FEEDER 2 (2/2)	CABLE TRAY TC1	P-PPCL-2 (2/2)
C1008	3"	RMC	15'	PANEL PPCL	CABLE TRAY TC1	419, 425, 455A, 455B, 456, 465, 495
C1009	1-1/2"	RMC	18'	PANEL PPCL	CABLE TRAY TS1	454
C1010	3"	RMC	20'	PANEL PPU1	CABLE TRAY TC1	P-PPU1-1
C1011	2"	RMC	20'	PANEL PPU1	CABLE TRAY TC1	105A, 105B, 107, 114, 409, 422
C1012	3/4"	RMC	16'	PANEL PPU1	COOLING WATER PUMP 1	427
C1013	3"	RMC	20'	PANEL PPU2	CABLE TRAY TC1	P-PPU2-1
C1014	2"	RMC	20'	PANEL PPU2	CABLE TRAY TC1	205A, 205B, 207, 214, 410, 421
C1015	3/4"	RMC	16'	PANEL PPU2	COOLING WATER PUMP 2	428
C1016	3"	RMC	15'	PANEL PPCL	CABLE TRAY TC1	P-PPU3-1
C1017	3"	RMC	27'	PANEL PPU3	CABLE TRAY TC1	P-PPU3-1
C1018	3/4"	RMC	18'	PANEL PPU3	COOLING WATER PUMP 3	429
C1019	3"	RMC	14'	PANEL PPCL	PANEL PDP-A1	P-PDPA-1
C1020	2"	RMC	3'	PANEL PDP-A	SWITCHYARD LIGHTING XFMR	(EXISTING, NOT LABELED)
C1021	3"	RMC	9'	PANEL PDP-A	CABLE TRAY TC1	407, 408, 426, 431A, 441, 445, 446, 470
C1022	1"	RMC	9'	PANEL PDP-A	CABLE TRAY TS1	471, 473
C1023	3/4"	RMC	18'	PANEL PDP-A1	CABLE TRAY TS1	474
C1024	4"	RMC	16'	PANEL PPCL	CABLE TRAY TP1	525
C1025	3"	RMC	28'	JUNCTION BOX 2	CABLE TRAY TC1	407, 408, 409, 410
C1026	3"	RMC	25'	JUNCTION BOX 7	CABLE TRAY TC1	419, 421, 422, 425, 426, 431A
C1027	3"	RMC	16'	PANEL PPCL	CABLE TRAY TP1	MIRACLE SPAN FEEDER (NOT LABELED)
C1028	2"	RMC	18'	PANEL LP-A	CABLE TRAY TC1	P-EGEN-AUX
C1029	2"	RMC/PVC	220'	EMERGENCY GENERATOR JUNCTION BOX	EMERGENCY GENERATOR PAD SUBPANEL VIA NEW TRENCH	P-EGEN-AUX

SHEET NOTES:

- CONDUITS SHOWN ON THIS SHEET ARE NEW AND ARE TO BE INSTALLED BY THE CONTRACTOR.

PROJECT: TYEE LAKE STATION SERVICE DESIGN				DESIGNER/PROJECT ENGINEER: MITCHELL HEDRICK/DAVID BUSS - EPS		W.O. #: 23-0124	
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	REVIEWED (MGR/SUPV)/DATE	APPROVED (DIRECTOR)/DATE			
A	ISSUED FOR 90% REVIEW	MLH/08-04-2023					
B	ISSUED FOR 100% DESIGN SUBMITTAL	MLH/11-03-2023					

ENG. STAMP



Electric Power Systems Inc.
Consulting Engineers

TEL: (907) 522-1953
FAX: (907) 522-1182
WEB: WWW.EPSINC.COM

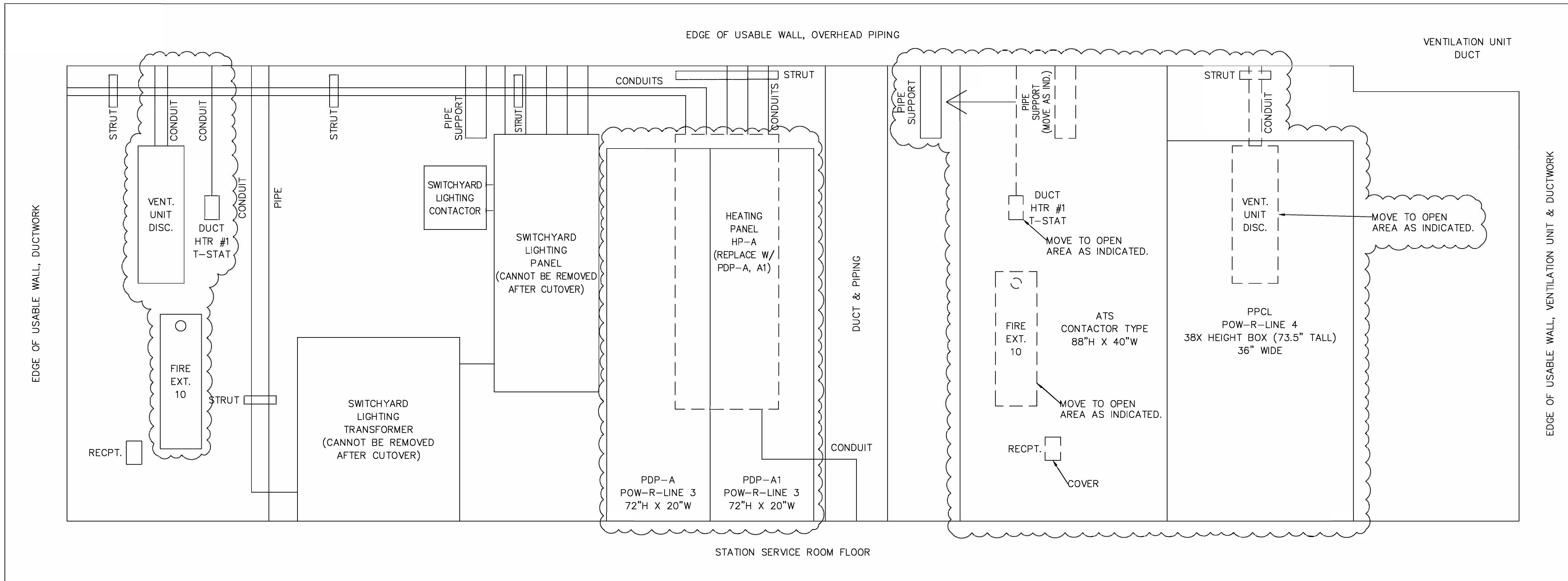
DRAWING NAME: SEAPA TYEE LAKE STATION SERVICE SWITCHGEAR CONDUIT SCHEDULE

REF DWG(S):

DRAWING NO.: TYEE-EL-4010

tyee-el-4010_2.dwg

SHEET 2 OF 2

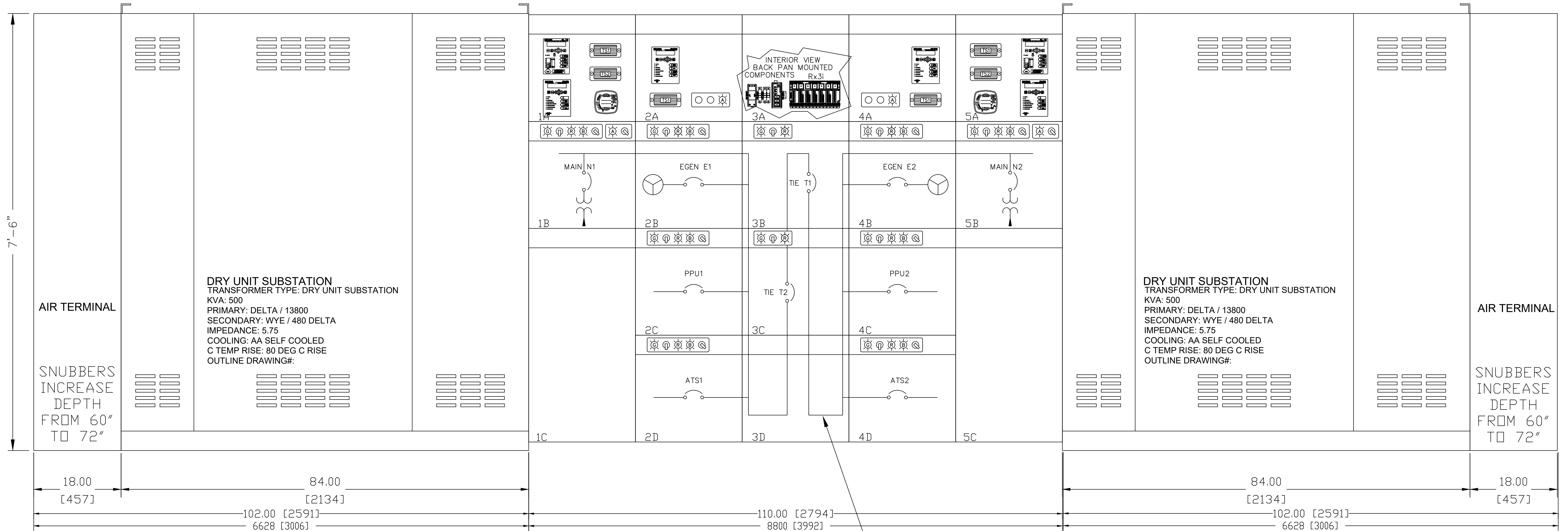


PROJECT: TYEE LAKE STATION SERVICE DESIGN				
DESIGNER/PROJECT ENGINEER: MITCHELL HEDRICK/DAVID BUSS - EPS W.O. #: 23-0124				
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	REVIEWED (MGR/SUPV)/DATE	APPROVED (DIRECTOR)/DATE
A	ISSUED FOR 30% DESIGN REVIEW	MLH/05-23-2023		
B	ISSUED FOR 90% DESIGN REVIEW	MLH/08-04-2023		
C	ISSUED FOR 100% DESIGN SUBMITTAL	MLH/11-03-2023		

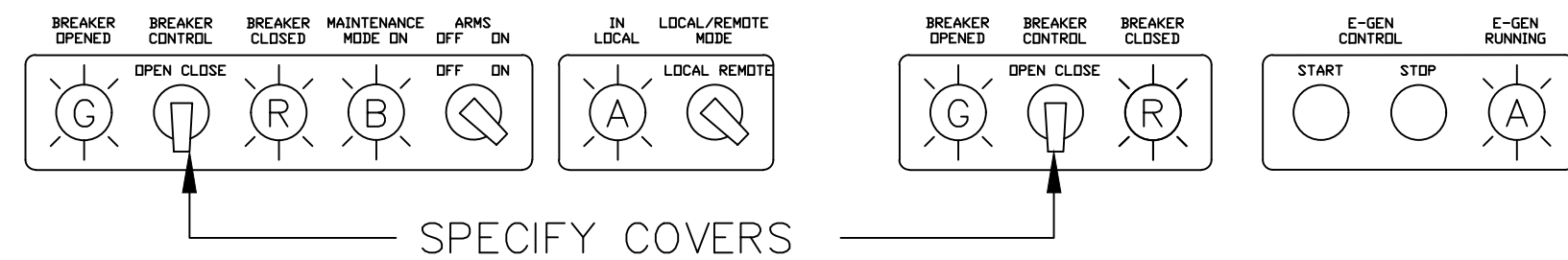
ENG. STAMP



DRAWING NAME:		SEAPA TYEE LAKE STATION SERVICE WALL LAYOUT DRAWING	
REF DWG(S):		tyee-el-4100_1.dwg	
DRAWING NO.:		TYEE-EL-4100	
		SHEET 1 OF 1	



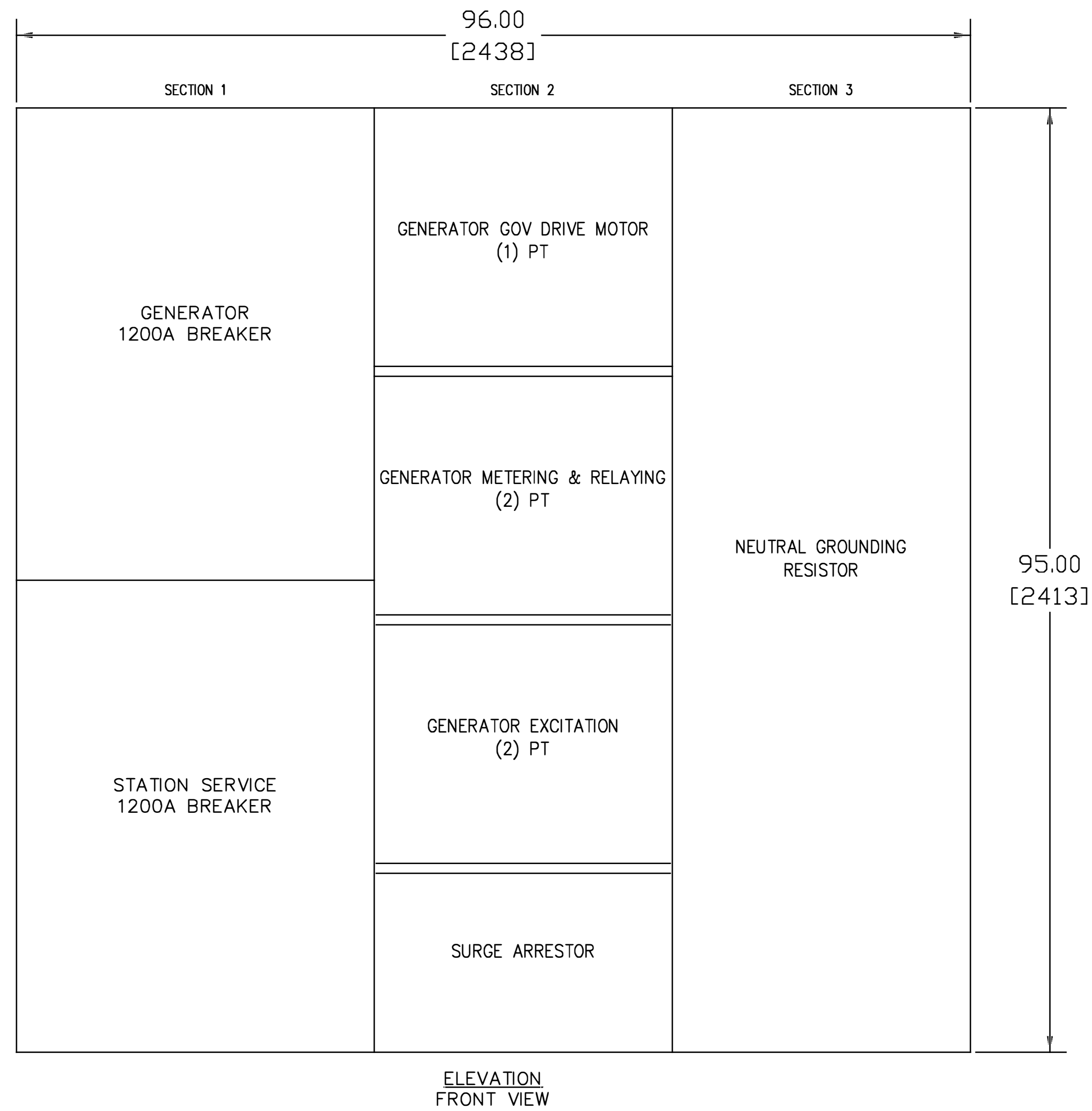
MIMIC BUS
 RED 1/8" X 3/8" (PLEXIGLASS)



PROJECT: TYEE LAKE STATION SERVICE DESIGN				ENG. STAMP	
DESIGNER/PROJECT ENGINEER: MITCHELL HEDRICK/DAVID BUSS - EPS				W.O. #: 23-0124	
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	REVIEWED (MGR/SUPV)/DATE	APPROVED (DIRECTOR)/DATE	
A	ISSUED FOR 100% DESIGN SUBMITTAL	MLH/11-03-2023			

Electric Power Systems Inc.
 Consulting Engineers
 TEL: (907) 522-1953
 FAX: (907) 522-1182
 WEB: WWW.EPSINC.COM

DRAWING NAME: SEAPA TYEE LAKE STATION SERVICE SWITCHGEAR FRONT ELEVATION VIEW	
REF DWG(S):	tyee-el-4110_1.dwg
DRAWING NO.:	TYEE-EL-4110
SHEET 1 OF 1	



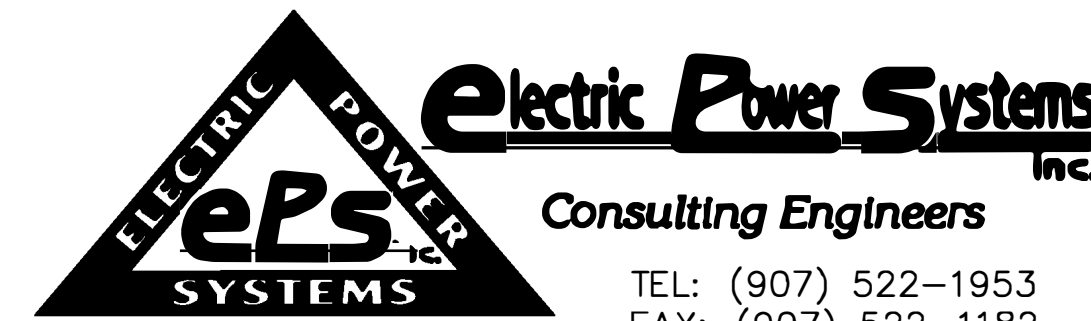
ELEVATION
FRONT VIEW

NOTES:

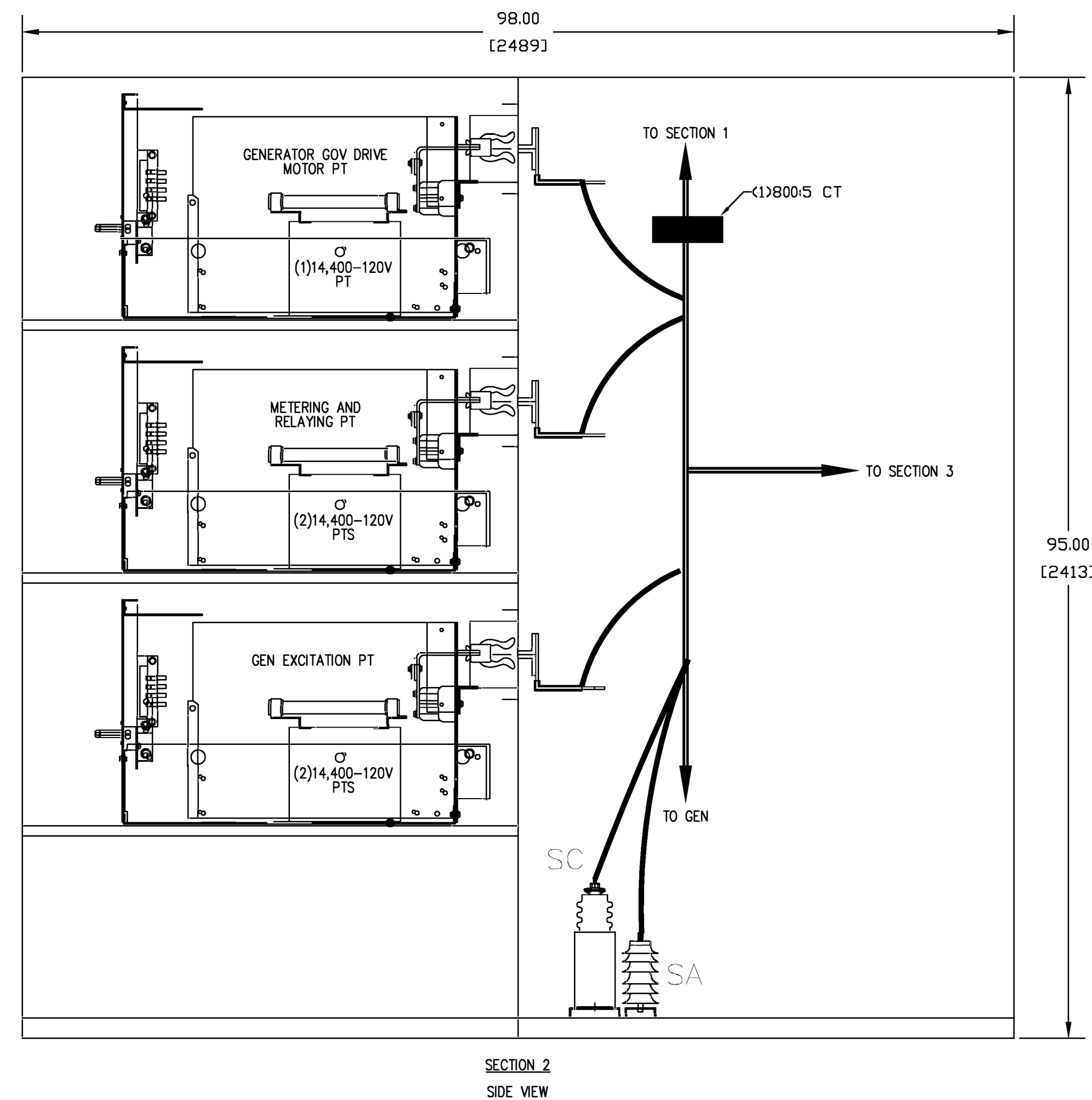
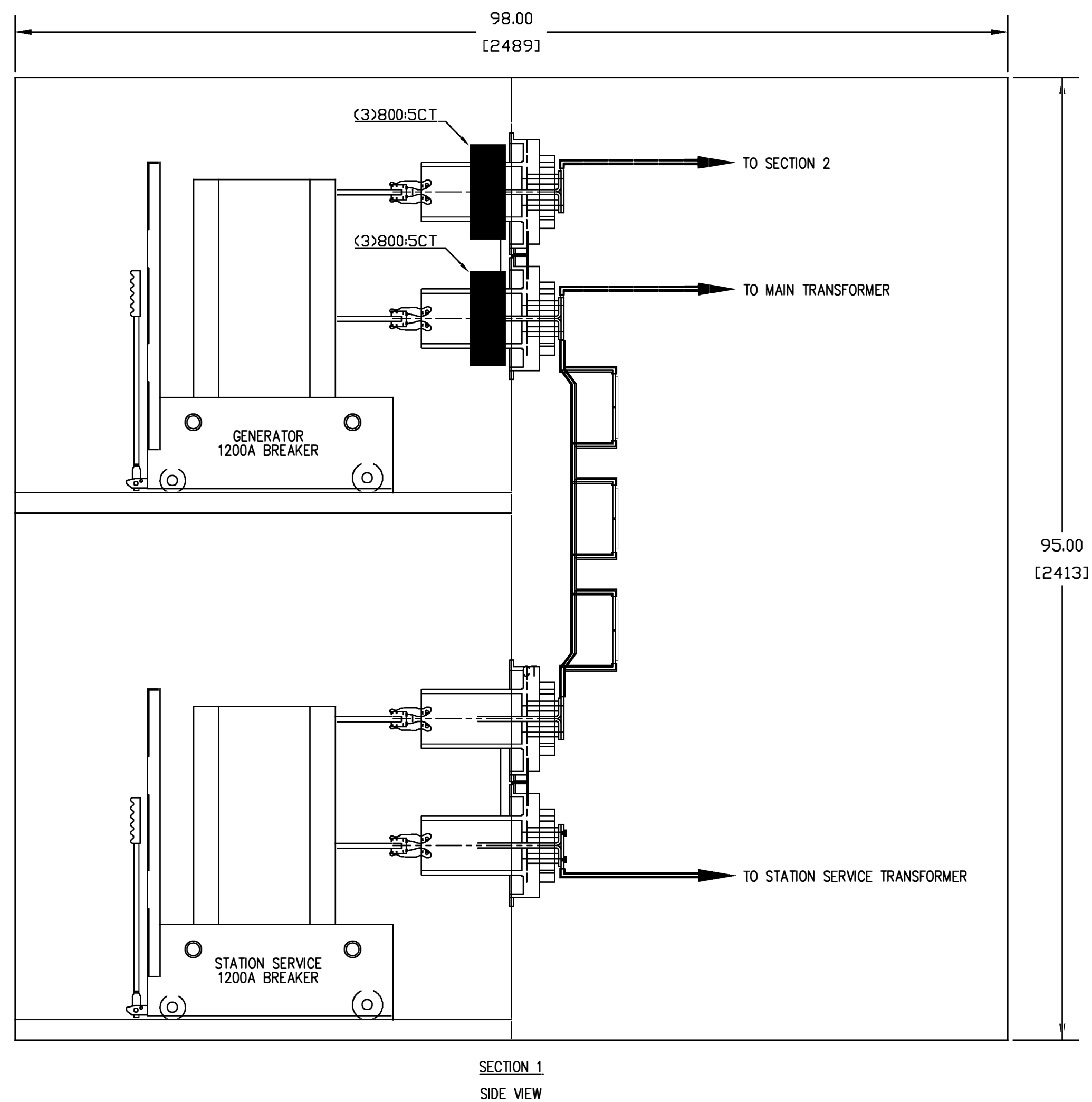
1. SEE DRAWING H02-D-46-0010-R01 FOR EXISTING SWITCHGEAR OUTLINE DRAWING
2. EXISTING CABLE ENTRANCES ARE TO REMAIN FOR REUSE
3. EXISTING FOUNDATION BOLTS ARE TO REMAIN FOR REUSE

PROJECT: TYEE LAKE STATION SERVICE DESIGN				
DESIGNER/PROJECT ENGINEER: MITCHELL HEDRICK/DAVID BUSS - EPS W.O. #: 23-0124				
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	REVIEWED (MGR/SUPV)/DATE	APPROVED (DIRECTOR)/DATE
A	ISSUED FOR 100% DESIGN REVIEW	MLH/11-03-2023		

ENG. STAMP

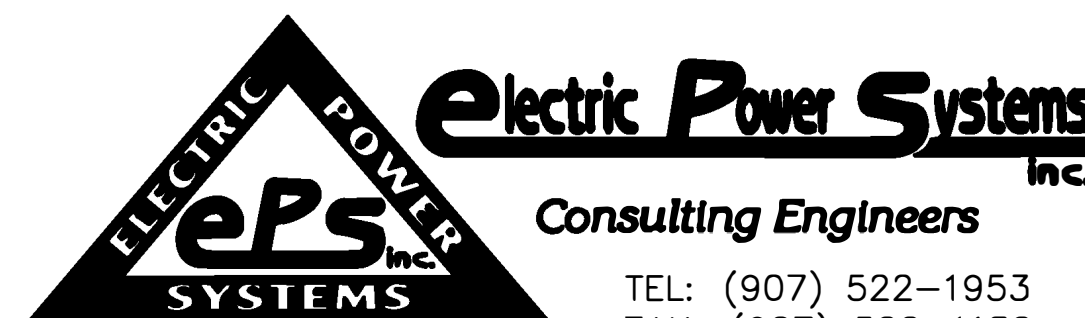


DRAWING NAME:		SEAPA TYEE LAKE 13.8KV SWITCHGEAR FRONT ELEVATION VIEW	
REF DWG(S):		<small>tyee-el-4120_1.dwg</small>	
DRAWING NO.:		TYEE-EL-4120	
		SHEET 1 OF 4	



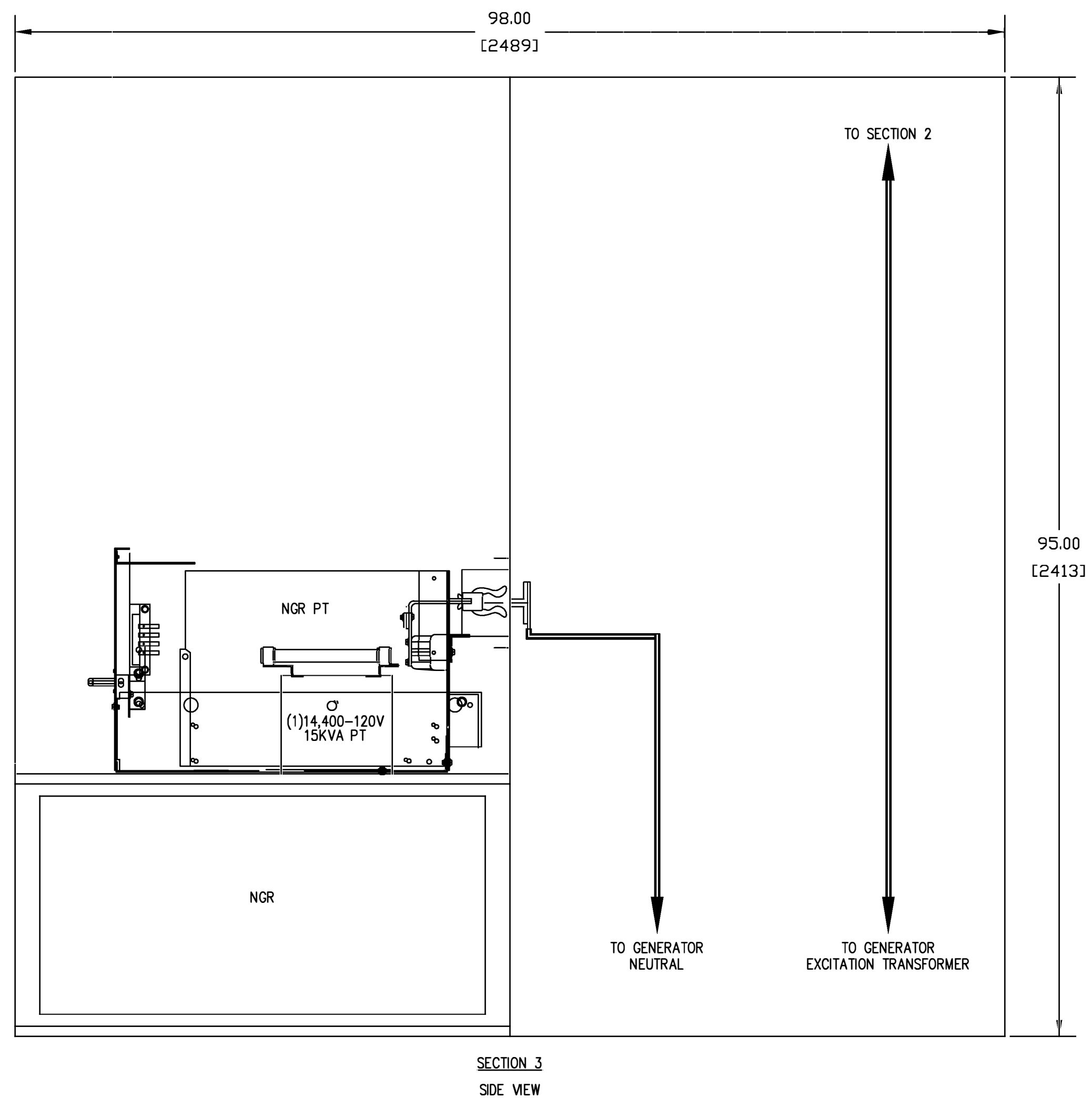
PROJECT: TYEE LAKE STATION SERVICE DESIGN				
DESIGNER/PROJECT ENGINEER: MITCHELL HEDRICK/DAVID BUSS - EPS W.O. # 23-0124				
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	REVIEWED (MGR/SUPV)/DATE	APPROVED (DIRECTOR)/DATE
A	ISSUED FOR 100% DESIGN REVIEW	MLH/11-03-2023		

ENG. STAMP



DRAWING NAME:		SEAPA TYEE LAKE 13.8KV SWITCHGEAR SIDE VIEW - SECTIONS 1 & 2	
REF DWG(S):			
DRAWING NO.:		TYEE-EL-4120	
		SHEET 2 OF 4	

tyee-el-4120_2.dwg

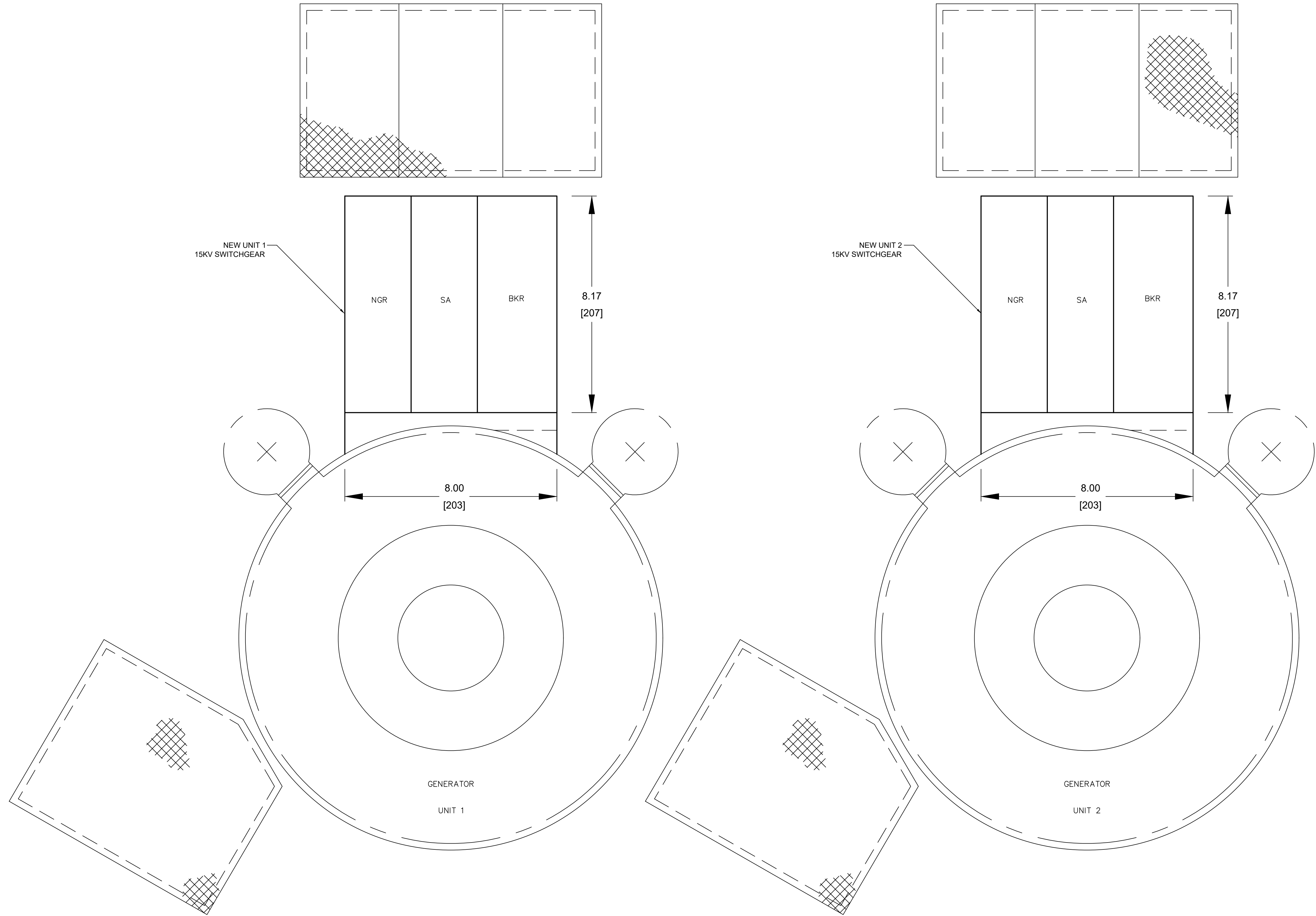


PROJECT: TYEE LAKE STATION SERVICE DESIGN				
DESIGNER/PROJECT ENGINEER: MITCHELL HEDRICK/DAVID BUSS - EPS W.O. #: 23-0124				
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	REVIEWED (MGR/SUPV)/DATE	APPROVED (DIRECTOR)/DATE
A	ISSUED FOR 100% DESIGN REVIEW	MLH/11-03-2023		

ENG. STAMP



DRAWING NAME:		SEAPA TYEE LAKE 13.8KV SWITCHGEAR SIDE VIEW - SECTION 3	
REF DWG(S):		<small>tyee-el-4120_3.dwg</small>	
DRAWING NO.:		TYEE-EL-4120	
		SHEET 3 OF 4	



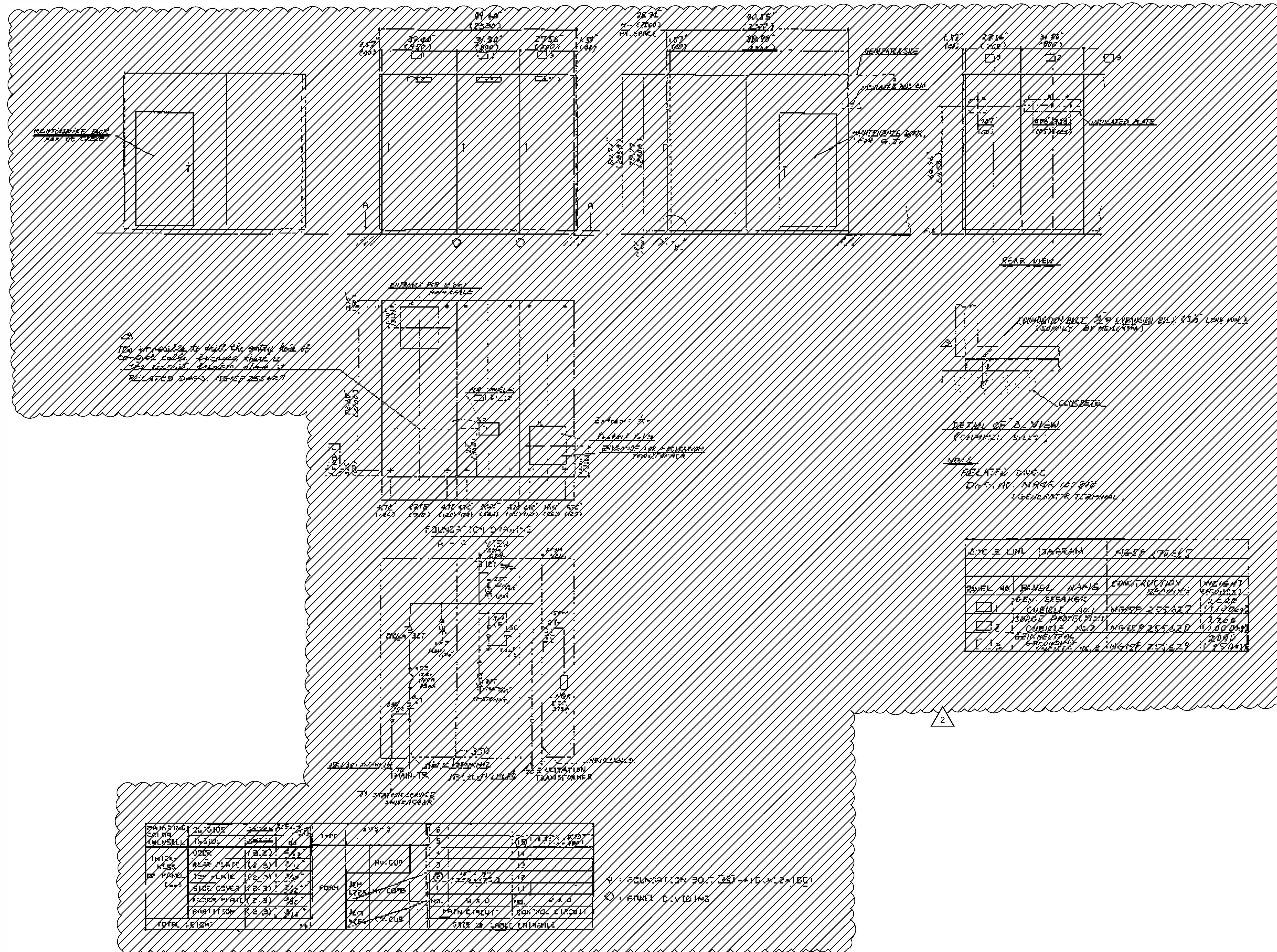
PROJECT: TYEE LAKE STATION SERVICE DESIGN				
DESIGNER/PROJECT ENGINEER: MITCHELL HEDRICK/DAVID BUSS - EPS				
W.O. #: 23-0124				
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	REVIEWED (MGR/SUPV)/DATE	APPROVED (DIRECTOR)/DATE
A	ISSUED FOR 100% DESIGN REVIEW	MLH/11-03-2023		

ENG. STAMP

Electric Power Systems Inc.
Consulting Engineers

TEL: (907) 522-1953
FAX: (907) 522-1182
WEB: WWW.EPSINC.COM

DRAWING NAME:		SEAPA TYEE LAKE 13.8KV SWITCHGEAR FLOOR PLAN LAYOUT	
REF DWG(S):		<small>tyee-el-4120_4.dwg</small>	
DRAWING NO.:		TYEE-EL-4120	
			SHEET 4 OF 4

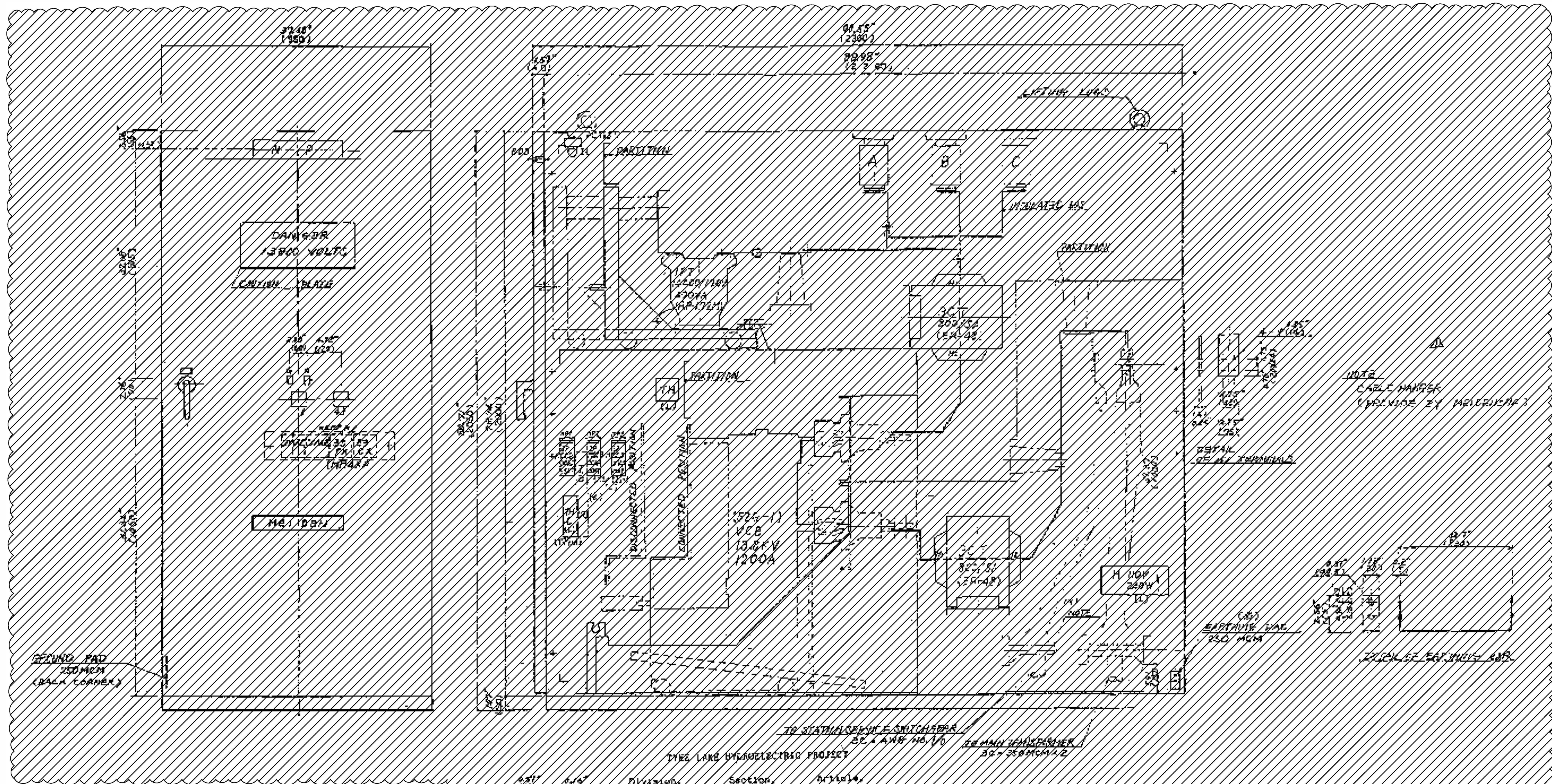


PROJECT: Southeast Alaska Power Agency Tyee Lake Switchgear			
DESIGNER/PROJECT ENGINEER: International Engineering Company, Inc.			
NO.	DESIGN/CONSTRUCTION/AS-BUILT REVISION	DATE	REVIEWED BY/DATE
1			
2			
3	STATION SERVICE UPGRADE - ISSUED FOR 100% DESIGN SUBMITTAL	MH 11/03/23	
4	DESIGNED BY: MCH	11/11/21	
5	CHK: KIRBY	11/16/23	DF (1/30)



NO.	DRAWING NO./SHEET	REFERENCE (DRAWING/DETAIL/PLAN/SECTION) DESCRIPTION

PROJECT NAME	
Tyee Lake Hydroelectric Project	
13.8kv Switchgear	
Outline Drawing	
DWG NO.	MGLSP255216
DWG REV.	H02-D-16-0010-RC1



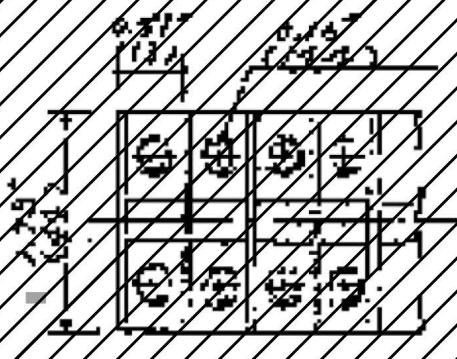
NOTE
CABLE HANDS
(REMOVE BY MECHANICAL)

DEFAULT
REAR TERMINALS

(30)
EARTHING PAD
250 MCM

TYPICAL OF EARTHING PAD

TO STATION SERVICE SWITCHGEAR
SEE DRAWING NO. 10
TYEE LAKE HYDROELECTRIC PROJECT
TO MAIN TRANSFORMER
SEE DRAWING NO. 12



DEFAULT OF ELECTRICAL SYMBOLS
(TYPE YOURS)

Division: Section: Article:
16 16356 Switchgear

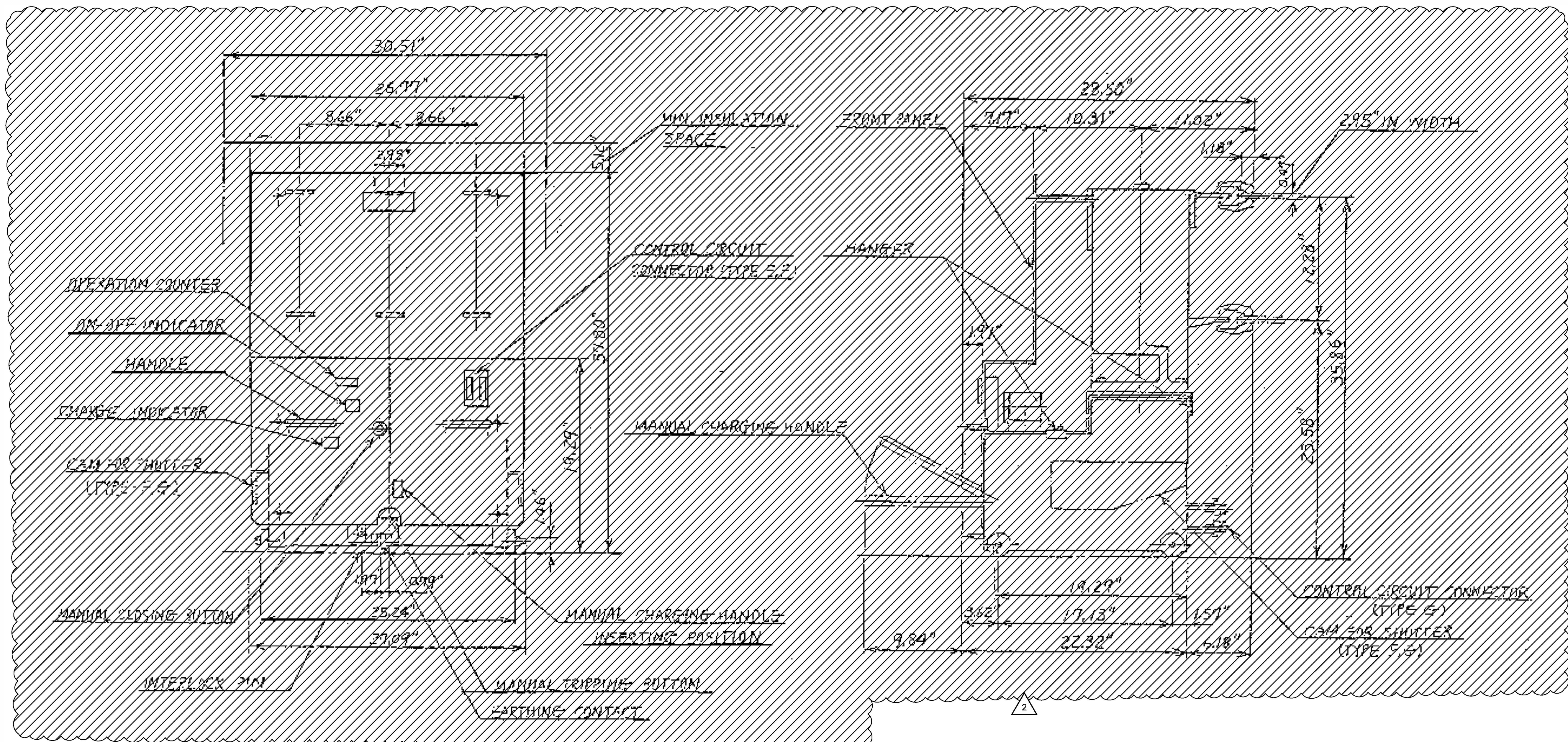
NO.	CHARACTER
1	CONTROL SCHEMATIC
2	VCB CIRCUIT SOURCE
3	ILLUMINATION

PROJECT: Southeast Alaska Power Agency - Tyee Lake - Generator		JOB #	
DESIGNER/PROJECT ENGINEER: International Engineering Consultants, Inc.		JOB #	
NO.	DESIGN/CONSTRUCTION/ASSEMBLY REVISION	DATE	REVIEWED BY/DATE
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			



NO.	DRAWING NO./SHEET	REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION

Tyee Lake Hydroelectric Project Generator Breaker Cubicle No. 1 Assembly Drawing	
DRAWING NO.	MG15P255627B
PROJECT NO.	HQ2-D-46-0090-R01



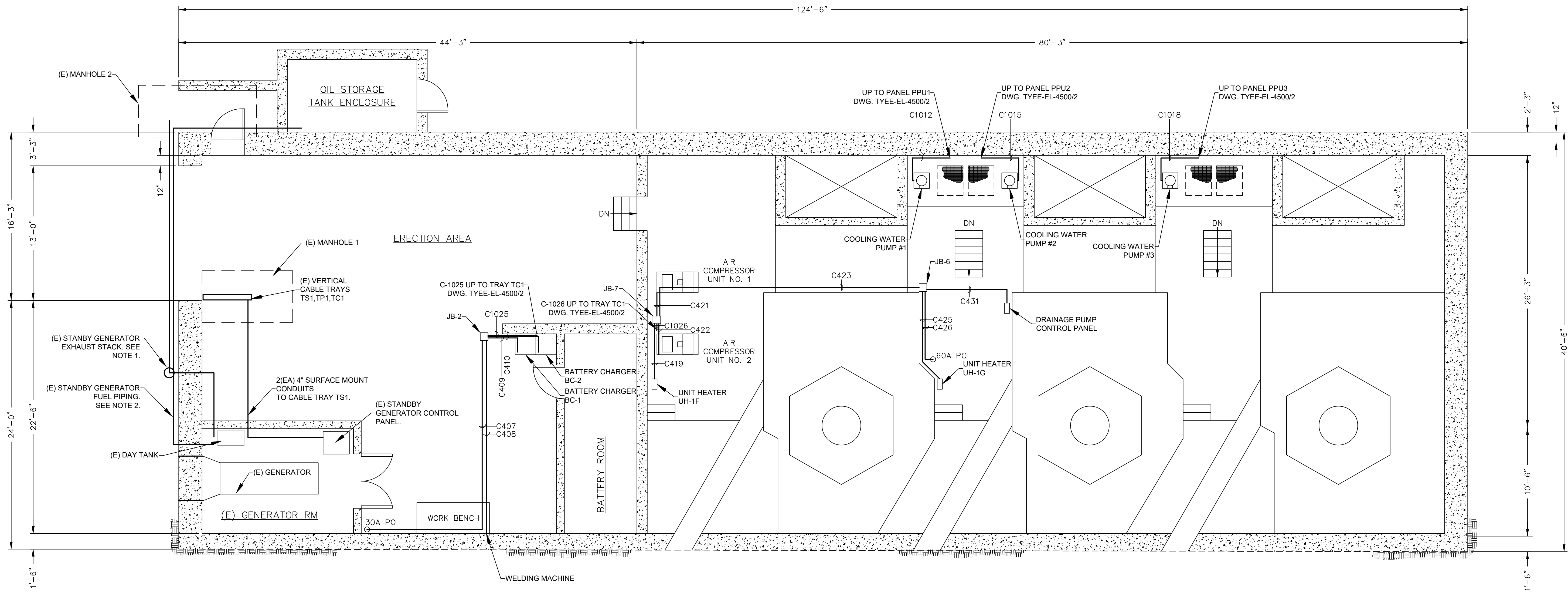
TYPE	VACUUM-105348-219-G
OPERATING SYSTEM	WATER SPRING MECHANISM
RATED NOMINAL VOLTAGE	13.8 kV
RAISED MAX. VOLTAGE	15 kV
RATED VOLTAGE RANGE FACTOR	K=1.3
IMPULSE WITHSTAND VOLTAGE	25 kV
RATED FREQUENCY	50 Hz
RATED R.M.S. CURRENT	1200 A
RATED SHORT CIRCUIT CURRENT	23 kA
RATED INTERRUPTING TIME	3 CYCLES
OPERATING UNIT	100-155-00, 000-153-02

PROJECT: Southeast Alaska Power Agency - Tyee Lake - Switchgear		JOB #	
DESIGNER/PROJECT ENGINEER: International Engineering Company, Inc.		REVIEWED BY/DATE	
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	OWN BY/DATE	REVIEWED BY/DATE
1			
2			
3			
4	STATION SERVICE UPGRADE - ISSUED FOR 100% DESIGN SUBMITTAL	MLH 11/03/23	
5	PROJECT: SEAPM 202207	MLH 4/15/21	
6	REP: 10/20/2023	MLH 11/03/23	



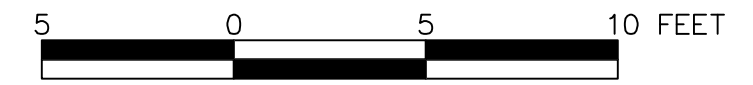
NO.	DRAWING NO./SHEET	REFERENCE DRAWING/DETAIL/PLAN/SECTION DESCRIPTION

DRAWING NAME	
Tyee Lake Hydroelectric Project	
13.8 Switchgear	
VE-14 1200A Draw-Out Type - Vacuum Circuit Breaker	
REP. NUMBER	MG16833426
DRAWING NO.	K02-D-46-0100-R01



PROJECT CONDUIT LAYOUT AT TURBINE FLOOR EL. 29.00

- NOTES
1. DEMOLISH EXISTING STANDBY GENERATOR AND AUXILIARY EQUIPMENT INCLUDING FEEDER CONDUCTORS, CONDUITS, DAY TANK, CONTROL PANEL, BATTERY CHARGER, AIR DUCTWORK, AND AUXILIARY CIRCUITS.
 2. EXISTING STANDBY GENERATOR EXHAUST PIPING SURFACE MOUNTED ON BUILDING EXTERIOR. DEMO PIPING AND SUPPORT BRACKETS.
 3. EXISTING STANDBY GENERATOR FUEL PIPING SURFACE MOUNTED ON BUILDING EXTERIOR. DEMO PIPING AND SUPPORT BRACKETS. CAP PIPING AT FUEL TANK.
 4. PATCH AND PAINT CONCRETE WHERE SUPPORTS ARE REMOVED.
 5. PATCH CONCRETE WALL AT AIR DUCT PENETRATION. INFILL WALL PENETRATION WITH CONCRETE. PROVIDE REBAR DOWLS INTO EXISTING STRUCTURE 4 PLACES EACH SIDE OF PENETRATION.



PROJECT: TYEE LAKE STATION SERVICE DESIGN				
DESIGNER/PROJECT ENGINEER: MITCHELL HEDRICK/DAVID BUSS - EPS W.O. #: 23-0124				
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	OWN BY/DATE	REVIEWED (MGR/SUPV)/DATE	APPROVED (DIRECTOR)/DATE
A	ISSUED FOR 90% REVIEW	MLH/08-04-2023		
B	ISSUED FOR 100% DESIGN SUBMITTAL	MLH/11-03-2023		

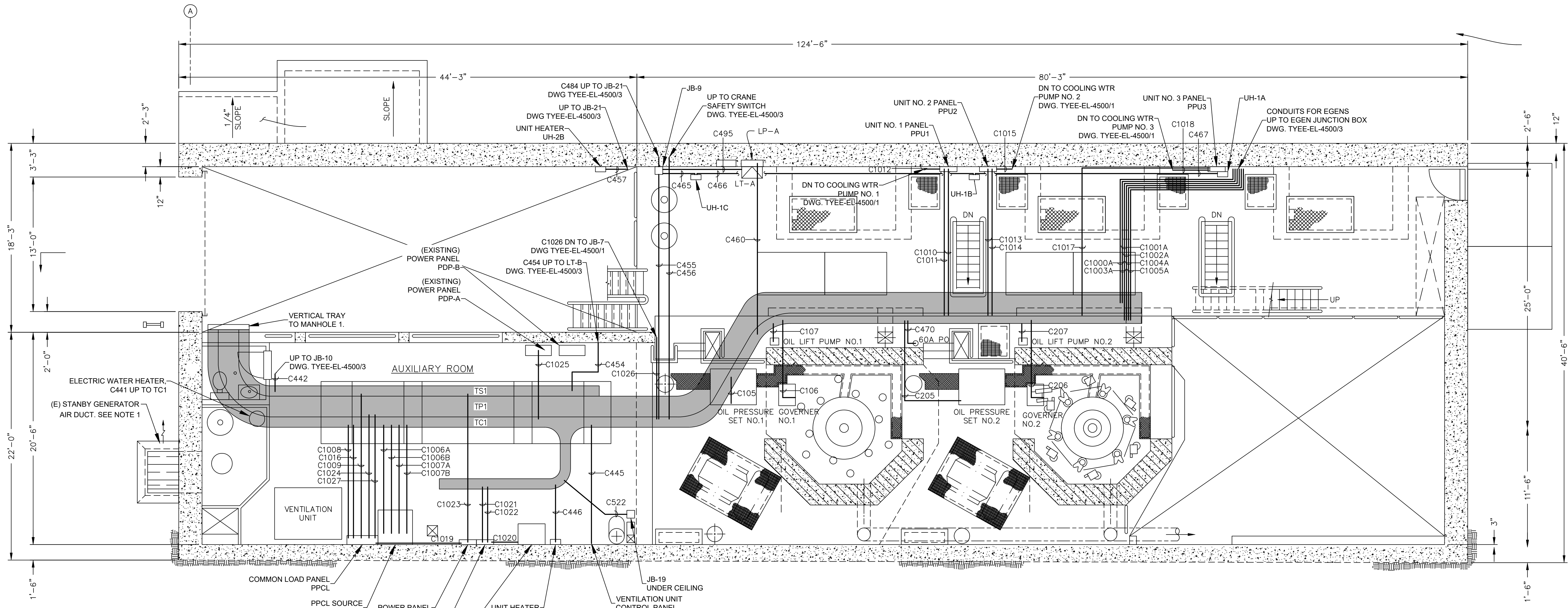
ENG. STAMP

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FAX: (907) 522-1182
WEB: WWW.EPSINC.COM

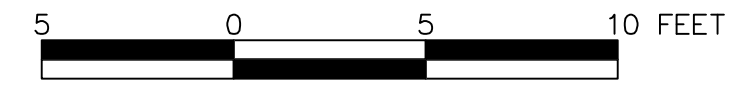
DRAWING NAME:		SEAPA TYEE LAKE STATION SERVICE UPGRADE CONDUIT LAYOUT AT TURBINE FLOOR	
REF DWG(S):	TY-47-192, H02-D-47-5009-R49		
DRAWING NO.:	TYEE-EL-4500		

tyee-el-4500_1.dwg



PROJECT CONDUIT LAYOUT AT MACHINE FLOOR EL. 33.00

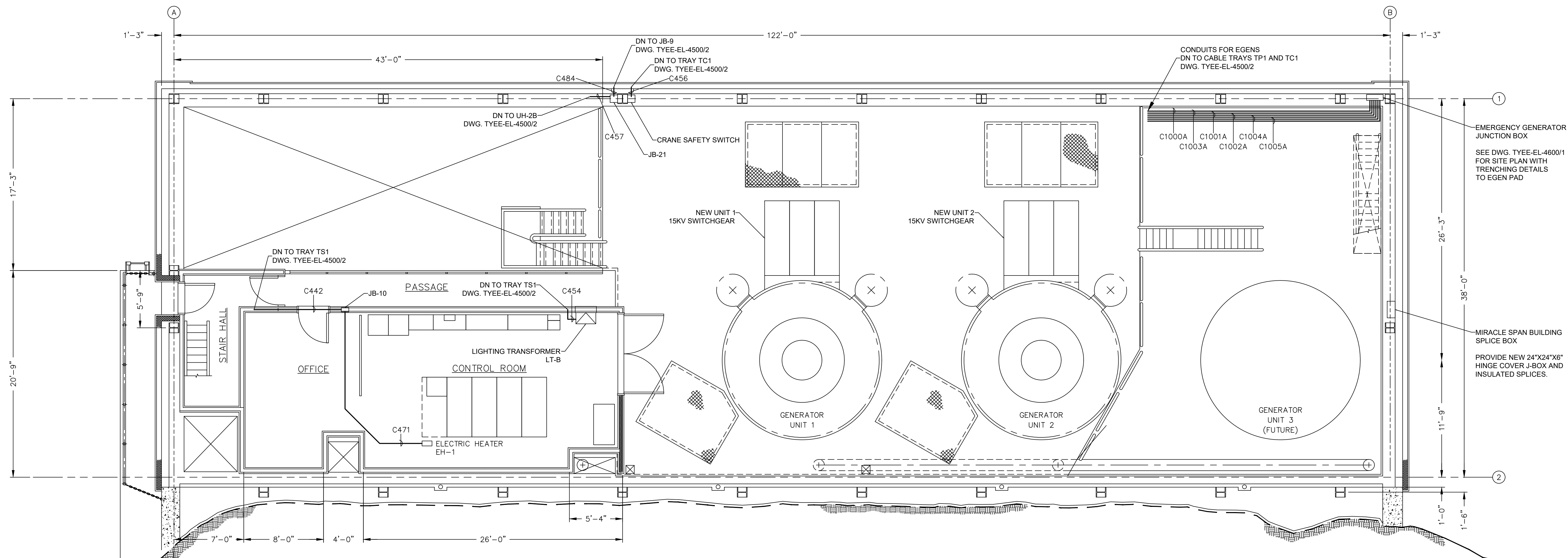
NOTES
 1. EXISTING STANDBY GENERATOR AIR DUCT. DEMOLISH DUCTWORK. PROVIDE 4" CONCRETE CAP ON EXISTING CONCRETE CHASE. PROVIDE REBAR CONNECTION TO CHASE 2 PLACES EACH SIDE. PAINT TO MATCH BUILDING.



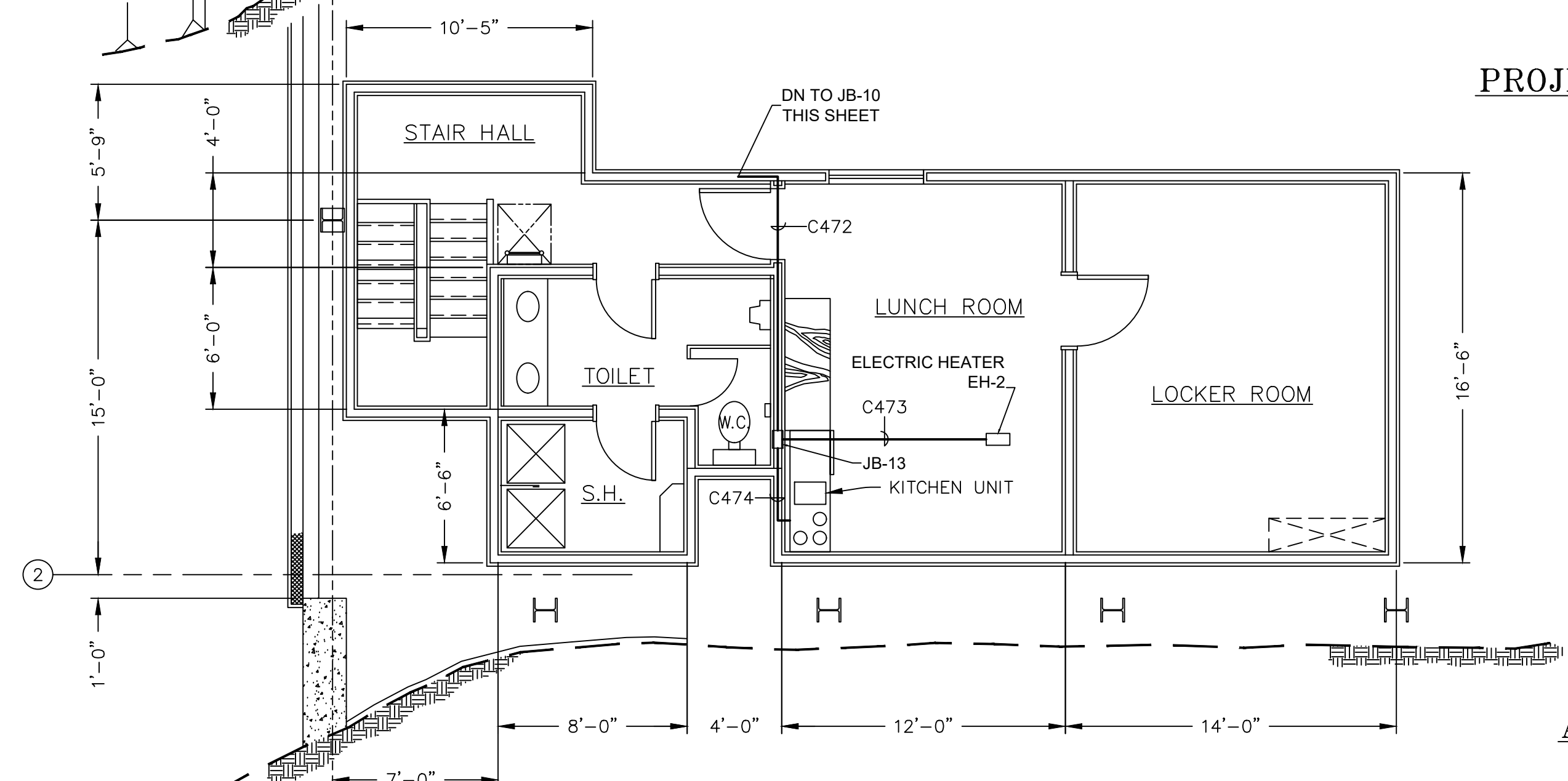
PROJECT: TYEE LAKE STATION SERVICE DESIGN				
DESIGNER/PROJECT ENGINEER: MITCHELL HEDRICK/DAVID BUSS - EPS W.O. #: 23-0124				
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	OWN BY/DATE	REVIEWED (MGR/SUPV)/DATE	APPROVED (DIRECTOR)/DATE
A	ISSUED FOR 90% REVIEW	MLH/08-04-2023		
B	ISSUED FOR 100% DESIGN SUBMITTAL	MLH/11-03-2023		

ENG. STAMP

DRAWING NAME: SEAPA TYEE LAKE STATION SERVICE UPGRADE CONDUIT LAYOUT AT MACHINE FLOOR	
REF DWG(S):	TY-47-191, H02-D-41-5008-R49
DRAWING NO.:	TYEE-EL-4500
SHEET 2 OF 3	



PROJECT CONDUIT LAYOUT AT GENERATOR FLOOR EL. 43.50



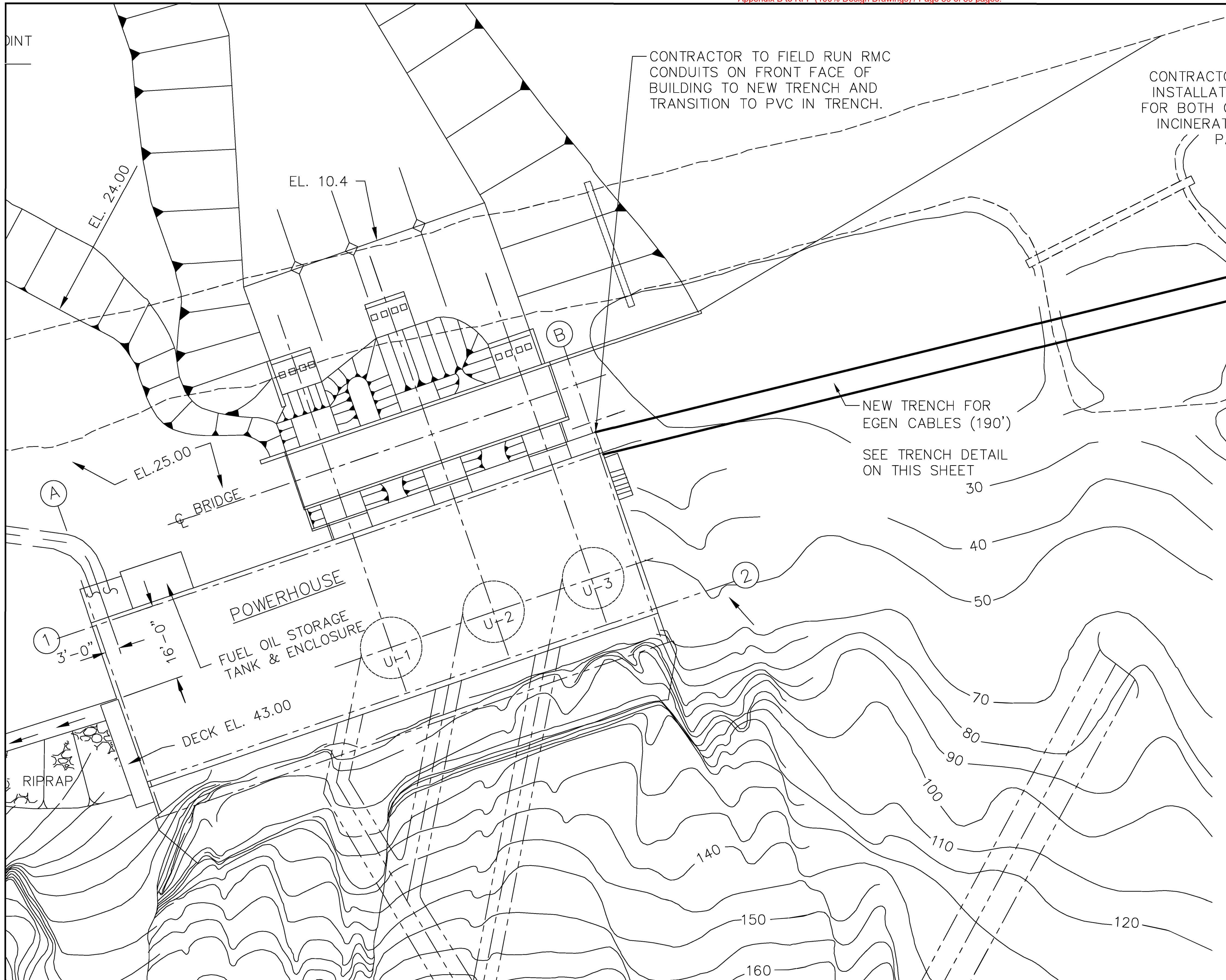
PROJECT CONDUIT LAYOUT AT ACCOMMODATION EL. 53.50

PROJECT: TYEE LAKE STATION SERVICE DESIGN				
DESIGNER/PROJECT ENGINEER: MITCHELL HEDRICK/DAVID BUSS - EPS				
W.O. #: 23-0124				
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	REVIEWED (MGR/SUPV)/DATE	APPROVED (DIRECTOR)/DATE
A	ISSUED FOR 90% REVIEW	MLH/08-04-2023		
B	ISSUED FOR 100% DESIGN SUBMITTAL	MLH/11-03-2023		

ENG. STAMP

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Consulting Engineers
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WEB: WWW.EPSINC.COM

DRAWING NAME:		SEAPA TYEE LAKE STATION SERVICE UPGRADE CONDUIT LAYOUT AT GENERATOR FLOOR	
REF DWG(S):		TY-47-190, H02-D-47-0007-R49	
DRAWING NO.:		TYEE-EL-4500	
		SHEET 3 OF 3	

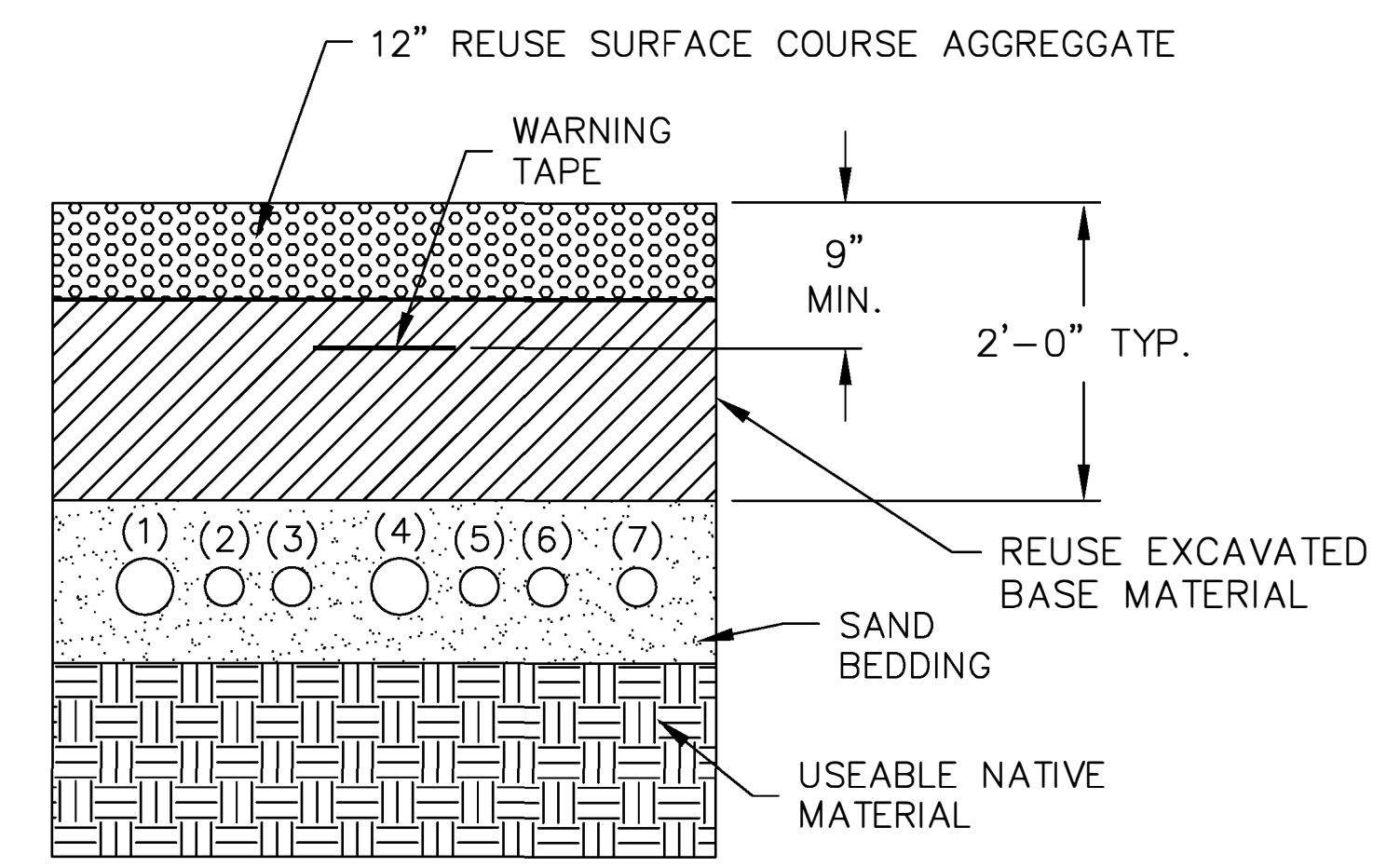


NEW STANDBY GENERATOR
CONCRETE PAD

CONTRACTOR TO PROVIDE DESIGN AND
INSTALLATION OF NEW CONCRETE PAD
FOR BOTH GENERATORS LOCATED NEAR
INCINERATOR BUILDING. FIELD LOCATE
PAD WITH PLANT PERSONNEL.

CONTRACTOR TO FIELD RUN RMC
CONDUITS ON FRONT FACE OF
BUILDING TO NEW TRENCH AND
TRANSITION TO PVC IN TRENCH.

NEW TRENCH FOR
EGEN CABLES (190')
SEE TRENCH DETAIL
ON THIS SHEET



**CROSS SECTION AND BACKFILL
FOR E-GEN CABLE TRENCH**

CONDUITS IN TRENCH DETAIL:

- (1) 3" - C1000B (P-EGEN1-1)
- (2) 2" - C1001B (C-EGEN1-1)
- (3) 2" - C1002B (CT-EGEN1-1)
- (4) 3" - C1003B (P-EGEN2-1)
- (5) 2" - C1004B (C-EGEN2-1)
- (6) 2" - C1005B (CT-EGEN2-1)
- (7) 2" - C1029 (P-EGEN-AUX)

PROJECT: TYEE LAKE STATION SERVICE DESIGN				ENG. STAMP
DESIGNER/PROJECT ENGINEER: MITCHELL HEDRICK/DAVID BUSS-EPS				
W.O. #: 23-0124				
NO.	DESIGN/CONSTRUCTION/ASBUILT REVISION	DWN BY/DATE	REVIEWED (MGR/SUPV)/DATE	APPROVED (DIRECTOR)/DATE
A	ISSUED FOR 100% DESIGN SUBMITTAL	MLH/11-03-2023		

Electric Power Systems Inc.
Consulting Engineers

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FAX: (907) 522-1182
WEB: WWW.EPSINC.COM

DRAWING NAME:	SEAPA TYEE LAKE POWERPLANT SITE PLAN STATION SERVICE UPGRADE DETAILS	
REF DWG(S):	H02-F-41-0001-R53	tyee-el-4600_1.dwg
DRAWING NO.:	TYEE-EL-4600	SHEET 1 OF 1