

**1** BULK FUEL TANK FARM PLAN VIEW  
SCALE: 1" = 10'

**GENERAL ELECTRICAL PROVISIONS**

PROJECT INCLUDES NEW DISPENSING STATION TANKS, TO ADD OVERFILL ALARM AND EMERGENCY SHUTOFF TO EXISTING DIESEL CONTROLS AND NEW GAS CONTROLS; ADDITION OF NEW BULK GASOLINE TRANSFER PUMP POWER AND CONTROLS AT THE TRUCK RACK; AND AS BID ADDITIVE ALTERNATE #1 ADDITION OF ELECTRONIC METERS AND CONTROL/REPORTING SYSTEM.

ALL WORK SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE, REQUIREMENTS OF THE ALASKA ENERGY AUTHORITY/DIVISION OF FIRE PROTECTION MEMORANDUM OF AGREEMENT, AND OTHER APPLICABLE CODES AND STANDARDS.

THE CONTRACTOR SHALL PROVIDE A COMPLETE OPERATIONAL PROJECT FREE OF DEFECTS AND IN FULL CONFORMANCE WITH THE CONTRACT DOCUMENTS.

THE ELECTRICAL CONTRACTOR SHALL COORDINATE HIS WORK WITH THE WORK OF TRADES, SUBCONTRACTORS, SUPPLIERS, AND THE OWNER.

SUBMIT TECHNICAL DATA AND REQUIRED INFORMATION ON ALL EQUIPMENT AND MATERIALS.

THE OWNER WILL REQUIRE A COMPLETE FINAL INSPECTION OF ALL ASPECTS OF THE WORK PRIOR TO PROJECT ACCEPTANCE AND CLOSEOUT.

**GENERAL ELECTRICAL NOTES:**

1. ALL MATERIALS SHALL BE NEW AND UL APPROVED.
2. ALL DEVICE BOXES AND CONDUITS SHALL BE INSTALLED FLUSH EXCEPT AS SPECIFICALLY SHOWN/NOTED OTHERWISE.
3. WIRE SIZE SHALL BE #12 AWG MINIMUM, UNLESS OTHERWISE NOTED. RUNS EXCEEDING 100 FEET SHALL BE #10 AWG MINIMUM, UNLESS NOTED OTHERWISE.
4. ALL WIRE (CONDUCTORS) SHALL BE COPPER, TYPE XHHW WITH 90 DEG C INSULATION.
5. WIRE (CONDUCTOR) COLORS SHALL BE AS PER APPLICABLE CODES.
6. ALL BRANCH CIRCUITS TO HAVE A GREEN EQUIPMENT GROUNDING CONDUCTOR, SIZED AS PER NEC 250-96, WHETHER OR NOT THE CONDUIT IS PVC.

7. ALL CONDUCTORS SHALL BE IDENTIFIED AND TAGGED AT EACH END OF WIRE.
8. ALL CONDUCTORS, CONTROL & COMM. CABLES SHALL BE RUN IN CONDUIT, UNLESS NOTED OTHERWISE.
9. ALL CONDUITS SHALL BE SEALED IN ACCORDANCE WITH NEC AS REQUIRED.
10. PVC (SCHEDULE 40) PERMITTED BELOW SLAB AND BELOW GRADE ONLY.
11. ALL EMPTY CONDUITS TO BE PROVIDED WITH NYLON PULL STRING.
12. ALL DEVICE BOXES AND CONDUITS SHALL BE INSTALLED FLUSH EXCEPT AS OTHERWISE SHOWN/NOTED ON THE DRAWINGS.
13. ALL BUILDING CONDUIT PENETRATIONS SHALL BE SEALED IN ACCORDANCE WITH NEC AND PATCHED TO MATCH EXISTING FINISH.
14. ALL BRANCH CIRCUITS SHALL BE PROPERLY PHASE BALANCED.
15. NEW TYPEWRITTEN PANEL DIRECTORIES SHALL BE FURNISHED AFTER JOB IS COMPLETED REFLECTING ALL AS BUILT CONDITIONS.
16. FUSES SHALL BE DUAL ELEMENT, TIME DELAY TYPE UNLESS OTHERWISE NOTED.
17. CONTRACTOR SHALL VERIFY LOCATION OF J-BOXES AND EMERGENCY STOPS FOR DISPENSING STATION AND TRUCK RACK GAS TRANSFER PUMP WITH THE OWNER.
18. CONTRACTOR TO COORDINATE ROUGH-IN TO ALL EQUIPMENT W/ EQUIPMENT SUPPLIER AND MECHANICAL CONTRACTOR PRIOR TO INSTALLING CONDUITS.
19. MAINTAIN 12-INCH MINIMUM CLEARANCE BETWEEN POWER CONDUITS AND P.O.S. CONTROL CONDUITS.
20. WIRE SHALL BE HANDLED CAREFULLY AT ALL TIMES TO AVOID DAMAGE, AND SHALL NOT BE DRAGGED ACROSS GROUND, EQUIPMENT, OR SHARP PROJECTIONS. CARE SHALL BE EXERCISED TO AVOID EXCESSIVE BENDING OF THE WIRE.
21. NOTIFY ENGINEER IMMEDIATELY IF CONFLICTS FOUND IN THE FIELD INSTALLATION OF ELECTRIC EQUIPMENT AS SHOWN ON PLAN.

**DISPENSING STATION NOTES:**

DISPENSING STATION SYSTEM SHALL BE UL LISTED DUAL PRODUCT (GASOLINE & DIESEL) FURNISHED AS A PACKAGED SYSTEM WITH EXPLOSION PROOF ENCLOSURES FOR ELECTRICAL EQUIPMENT WHERE REQUIRED. DISPENSING STATION SHALL INCLUDE AT A MINIMUM: COMMON EMERGENCY POWER DISCONNECT FOR INSTALLATION NEAR DISPENSING STATION; BREAKER FOR EACH DISPENSER AND PUMP; MOTOR STARTER FOR EACH PUMP; DIGITAL FUEL METER FOR BOTH GAS AND DIESEL; SOLENOID AND SWITCHING FOR EACH PUMP; LOW-LEVEL SHUT-OFF FROM TANK LEVEL CONTROLS TO PUMP CONTROLS; AND CAPABILITY OF FUTURE INTEGRATION OF AUTOMATED CARD READER SYSTEM.

DISPENSING STATION TANKS SHALL INCLUDE A LEVEL SENSOR(S) AND SENDING UNIT(S) TO: TURN OFF DISPENSING PUMPS FROM LOW LEVEL ALARM, TURN OFF FUEL TRANSFER PUMPS ON HIGH LEVEL ALARM.

**TRUCK RACK GAS NOTES:**

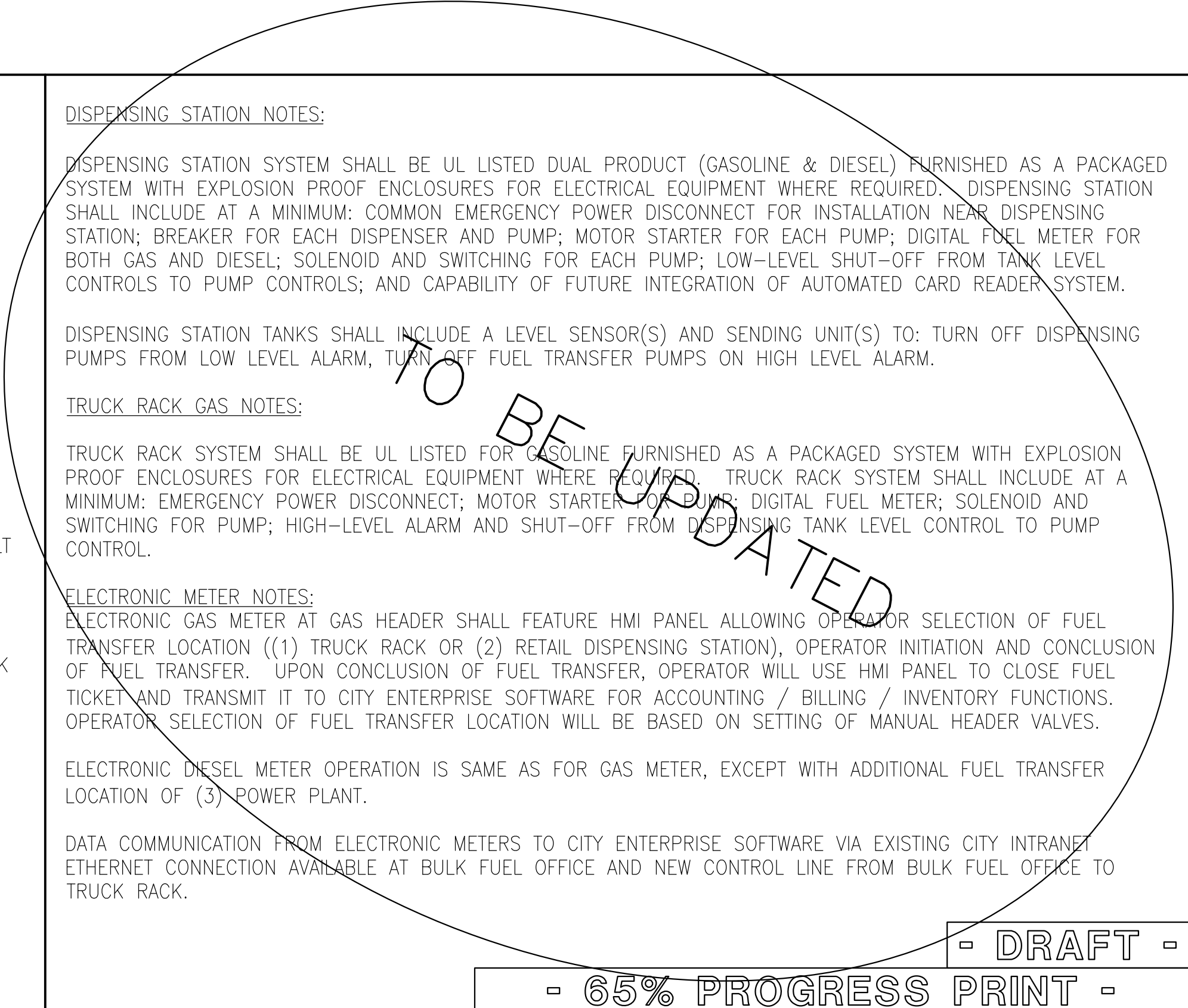
TRUCK RACK SYSTEM SHALL BE UL LISTED FOR GASOLINE FURNISHED AS A PACKAGED SYSTEM WITH EXPLOSION PROOF ENCLOSURES FOR ELECTRICAL EQUIPMENT WHERE REQUIRED. TRUCK RACK SYSTEM SHALL INCLUDE AT A MINIMUM: EMERGENCY POWER DISCONNECT; MOTOR STARTER FOR PUMPS; DIGITAL FUEL METER; SOLENOID AND SWITCHING FOR PUMP; HIGH-LEVEL ALARM AND SHUT-OFF FROM DISPENSING TANK LEVEL CONTROL TO PUMP CONTROL.

**ELECTRONIC METER NOTES:**

ELECTRONIC GAS METER AT GAS HEADER SHALL FEATURE HMI PANEL ALLOWING OPERATOR SELECTION OF FUEL TRANSFER LOCATION ((1) TRUCK RACK OR (2) RETAIL DISPENSING STATION), OPERATOR INITIATION AND CONCLUSION OF FUEL TRANSFER. UPON CONCLUSION OF FUEL TRANSFER, OPERATOR WILL USE HMI PANEL TO CLOSE FUEL TICKET AND TRANSMIT IT TO CITY ENTERPRISE SOFTWARE FOR ACCOUNTING / BILLING / INVENTORY FUNCTIONS. OPERATOR SELECTION OF FUEL TRANSFER LOCATION WILL BE BASED ON SETTING OF MANUAL HEADER VALVES.

ELECTRONIC DIESEL METER OPERATION IS SAME AS FOR GAS METER, EXCEPT WITH ADDITIONAL FUEL TRANSFER LOCATION OF (3) POWER PLANT.

DATA COMMUNICATION FROM ELECTRONIC METERS TO CITY ENTERPRISE SOFTWARE VIA EXISTING CITY INTRANET ETHERNET CONNECTION AVAILABLE AT BULK FUEL OFFICE AND NEW CONTROL LINE FROM BULK FUEL OFFICE TO TRUCK RACK.



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ENERGY SYSTEMS • ENVIRONMENTAL SERVICES • ENGINEERING DESIGN  
1503 WEST 33RD AVE, SUITE 310 ANCHORAGE, ALASKA 99503  
PHONE (907) 258-2420 FAX (907) 258-9419

NO.	DATE	REVISIONS

**ELECTRICAL SITE PLAN & NOTES**  
Project: CITY OF SAINT PAUL BULK FUEL FACILITY UPGRADE  
St Paul Island, AK

DATE: 10/4/23  
DESIGNED: SH  
DRAWN: MD  
CHECKED: SH  
SCALE: AsNoted  
FILE: CEIP\_GasSta2023

Sheet  
**E-1**  
OF

**- 65% PROGRESS PRINT -**

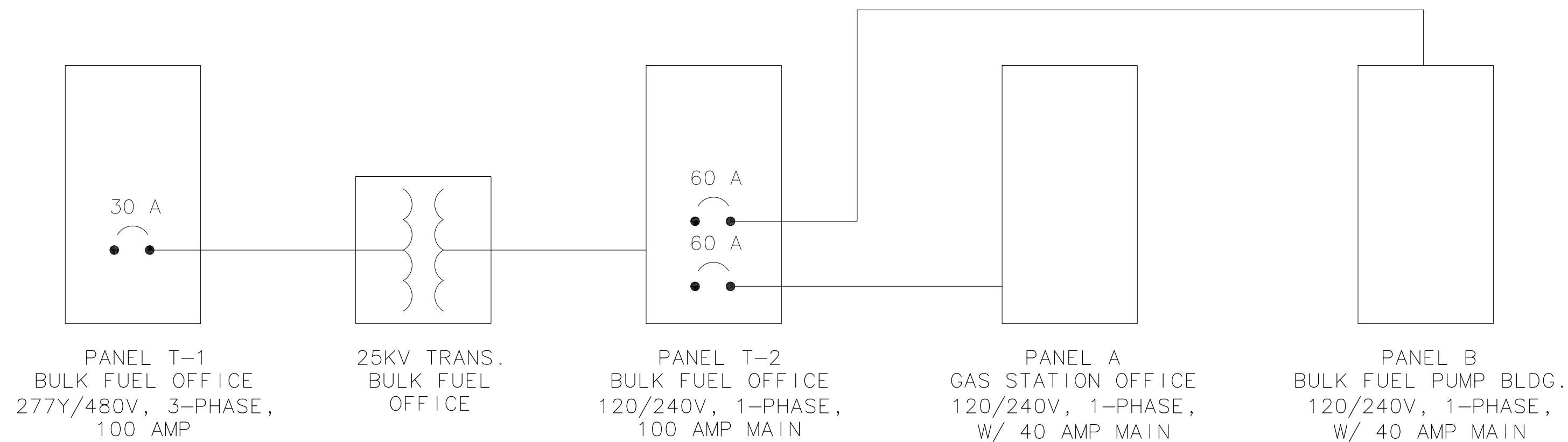
PANEL:"T1" (EXISTING)		LOCATION: TANK FARM OFFICE STORAGE RM					
INTERRUPTING CAPACITY:	22,000	SQ. 'D' NEHB-30435-1					
MOUNTING:	SURFACE	480/277V, 3PH, 4W					
		100 AMP					
Ckt	DESCRIPTION	BKR	VA	VA	BKR	DESCRIPTION	Ckt
1			A	B	C		2
3	P- 120 (20 HP)	40/3	7500	7500	7500	P- 120 (20 HP)	4
5			7500				6
7			1330			7500	8
9	P- 105A (5 HP)	15/3	1330			P- 105A (5 HP)	10
11							12
13	SPACE				9635		14
15	SPACE				9235	25 KVA TRANSFORMER	16
17	TANK FARM LIGHTING	20/1		1400	750	BUILDING LIGHTS	18
19	SPACE					SPACE	20
21	SPACE					SPACE	22
23	SPACE					SPACE	24
PHASE A kVA:		18.5	TOTAL CONNECTED kVA:		62.5		
PHASE B kVA:		25.6	DIVERSITY FACTOR:		1		
PHASE C kVA:		18.5	TOTAL kVA:		62.5		
			AMPS:		173.6		

PANEL:"T2" (EXISTING)		LOCATION: TANK FARM OFFICE						
INTERRUPTING CAPACITY:	22,000	SQ. 'D'#: NQOD20M 100CU						
MOUNTING:	SURFACE	VOLTA GE: 120/240V, 1PH, 3W						
		100 AMP						
Ckt	DESCRIPTION	BKR	VA	BUS	VA	BKR	DESCRIPTION	Ckt
1	OFFICE ELECTRIC HEATER	20/2	1,875	A	1,000	20/1	LIGHTS, OUTSIDE	2
3			1,875	B	1,000	20/1	UNK	4
5	CONTROLS	20/1	200	A	500	15/2	GAS STA. - GAS AND DIESEL DISPENSING PUMPS	6
7	VALVE V-1	20/1	720	B	500			8
9	RECEPTACLES	20/1	720	A	1,920			10
11	UNIT HEATERS	20/1	300	B	1,920	20/2	CATHODIC PROTECTION #1	12
13	PANEL 'B' - PUMP BLDG.	60/2	300	A	1,920	20/2	CATHODIC PROTECTION #2	14
15			200	B	1,920			16
17	Tank Fuel Level	15/1	100	A	600	60/2	PANEL 'A' - GAS STATION	18
19	Tank Fuel Level	15/1	100	B	200			20
21	MAIN	100/2		A	500	40/2	GAS TRANSFER PUMP	22
23				B	500			24
PHASE A kVA:		9.6	CONNECTED kVA:		18.9			
PHASE B kVA:		9.2	DIVERSITY:		1.0			
			TOTAL Kva:		18.9			
			AMPS:		78.6			

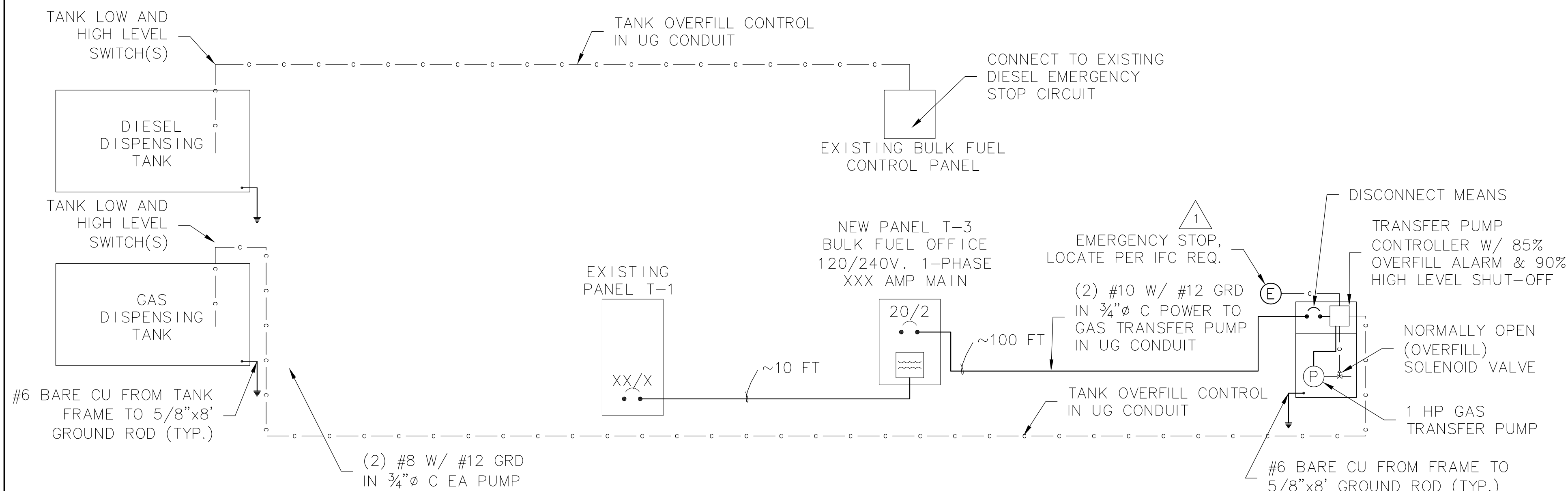
PANEL:"A" (EXISTING)		LOCATION: GAS STATION						
INTERRUPTING CAPACITY:	22,000	SQ 'D': NQ18L-QOB-2-MH26-NC26						
MOUNTING:	SURFACE	VOLTA GE: 120/240V, 1PH, 3W						
		40 AMP MAIN BKR						
Ckt	DESCRIPTION	BKR	VA	BUS	VA	BKR	DESCRIPTION	Ckt
1	LIGHTS, OUTSIDE	20/1	100	A	200	20/1	LIGHTS & RECP. MAIN RM	2
3	SPACE	20/1		B	100	20/1	RECEPTACLES, MAIN RM	4
5	RECEPTACLES, MAIN RM	20/1	100	A	200	20/1	UNIT HEATERS	6
7	SPACE			B	100	15/1	BATHROOM LIGHTS & RECEP.	8
PHASE A kVA:		0.6	CONNECTED kVA:		0.8			
PHASE B kVA:		0.2	DIVERSITY:		1.0			
			TOTAL Kva:		0.8			
			AMPS:		3.3			

PANEL:"B" (EXISTING)		LOCATION: PUMP BUILDING						
INTERRUPTING CAPACITY:	22,000	SQ 'D': NQ18L-QOB-2-MH26-NC26						
MOUNTING:	SURFACE	VOLTA GE: 120/240V, 1PH, 3W						
		40 AMP MAIN BKR						
Ckt	DESCRIPTION	BKR	VA	BUS	VA	BKR	DESCRIPTION	Ckt
1	LIGHTS & RECP. WEST	20/1	100	A	100	20/1	RECEPTACLES, EAST	2
3	LIGHTS, OUTSIDE	15/1	100	B	100	15/1	UNIT HEATERS	4
5	CIRCULATION PUMPS	20/1	100	A		20/1	SPACE	6
7	SPACE			B			SPACE	8
9	SPACE			A			SPACE	10
11	SPACE			B			SPACE	12
13	SPACE			A			SPACE	14
15	SPACE			B			SPACE	16
17	SPACE			A			SPACE	18
PHASE A kVA:		0.3	CONNECTED kVA:		0.5			
PHASE B kVA:		0.2	DIVERSITY:		1.0			
			TOTAL Kva:		0.5			
			AMPS:		2.1			

1 PANEL SCHEDULES  
SCALE: NTS



2 BULK FUEL FACILITY EXISTING ELECTRICAL POWER 1-LINE DIAGRAM (FOR REFERENCE ONLY)  
SCALE: NTS



3 DISPENSING STATION & GASOLINE TRANSFER 1-LINE DIAGRAM (DRAFT PROPOSED, PENDING UL MANUF SHOP DRAWING APPROVAL)  
SCALE: NTS

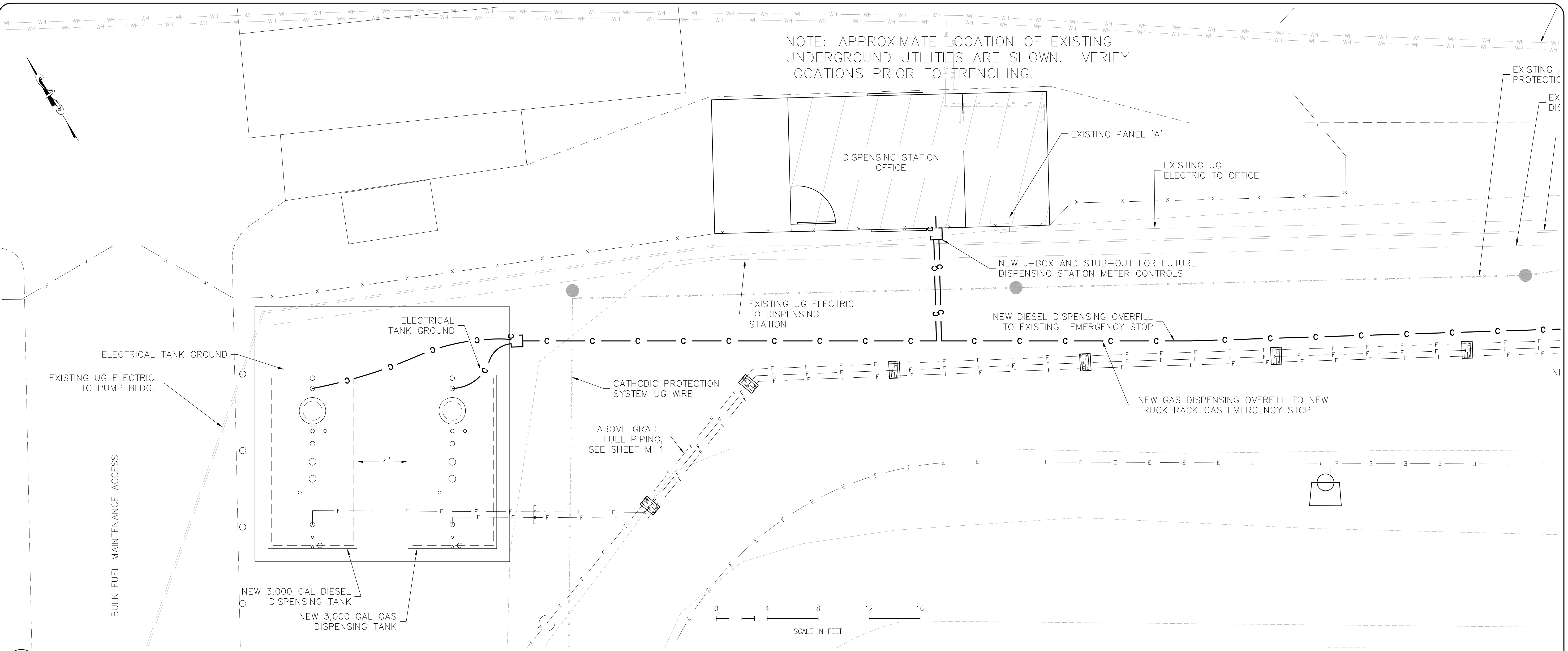
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Project: CITY OF SAINT PAUL BULK FUEL FACILITY UPGRADE  
St Paul Island, AK  
Drawing: ELECTRICAL PANEL SCHEDULES & 1-LINE

DATE: 10/6/23  
DESIGNED: SH  
DRAWN: JG  
CHECKED: SH  
SCALE: AsNoted  
FILE: CEIP\_GasSta2023

NOTE: APPROXIMATE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN. VERIFY LOCATIONS PRIOR TO TRENCHING.



1 DISPENSING STATION - ELECTRICAL PLAN  
SCALE: 1" = 4'

2 ---  
SCALE: 1" = ---

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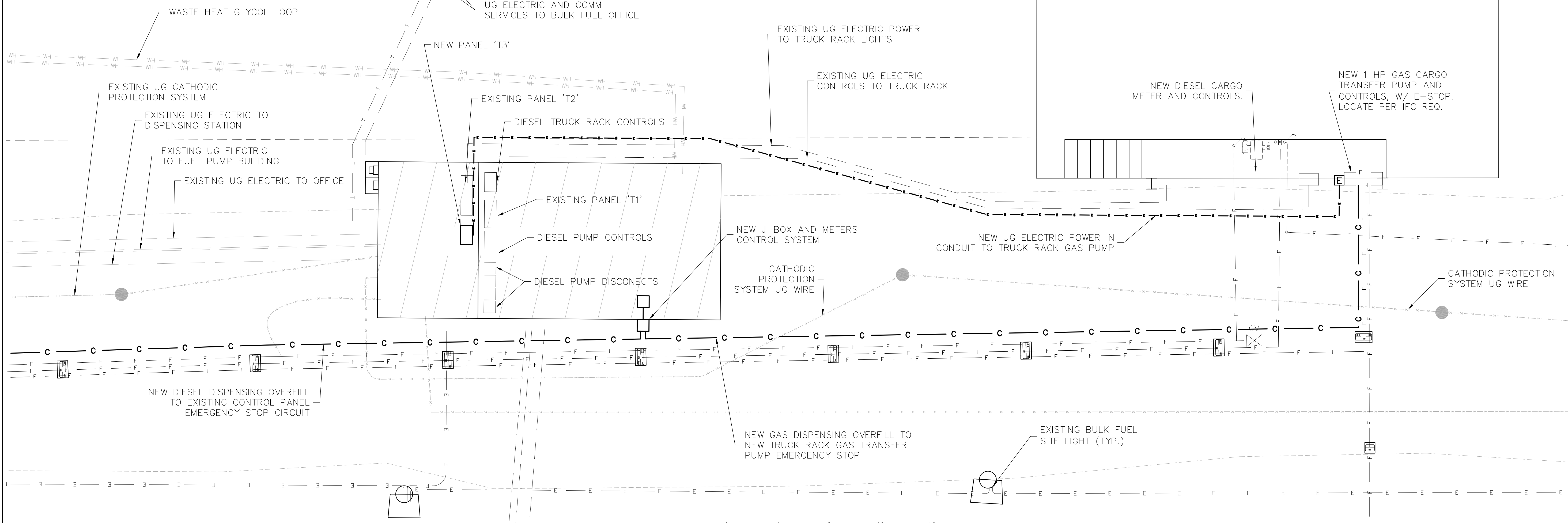
NO.	DATE	REVISIONS

Drawing  
**DISPENSING STATION ELECTRICAL PLAN**  
 Project  
**CITY OF SAINT PAUL BULK FUEL FACILITY UPGRADE**  
 St. Paul Island, AK

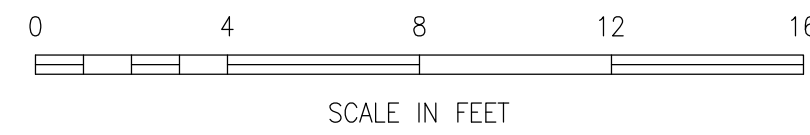
DATE: 10/6/2023  
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NOTE: APPROXIMATE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN. VERIFY LOCATIONS PRIOR TO TRENCHING.



1 TRUCK RACK - ELECTRICAL PLAN  
SCALE: 1" = 4'



2 ---  
SCALE: 1" = ---

◻ DRAFT ◻

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NO.	DATE	REVISIONS

Drawing: **TRUCK RACK ELECTRICAL PLAN**  
 Project: **CITY OF SAINT PAUL BULK FUEL FACILITY UPGRADE**  
 St. Paul Island, AK

DATE: 10/6/23  
 DESIGNED: SH  
 DRAWN: JG  
 CHECKED: SH  
 SCALE: AsNoted  
 FILE: CEIP\_GasSta2023

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