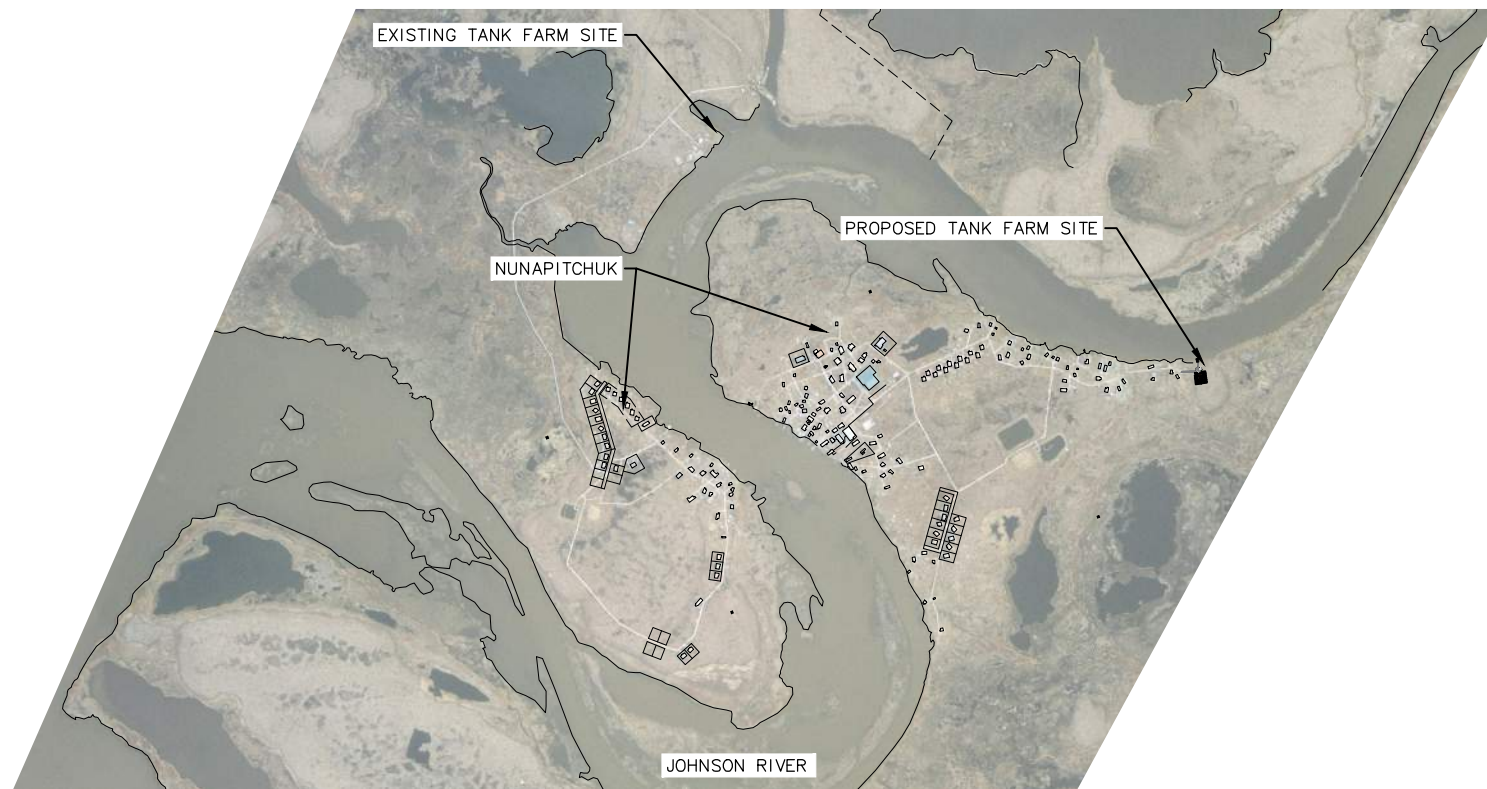
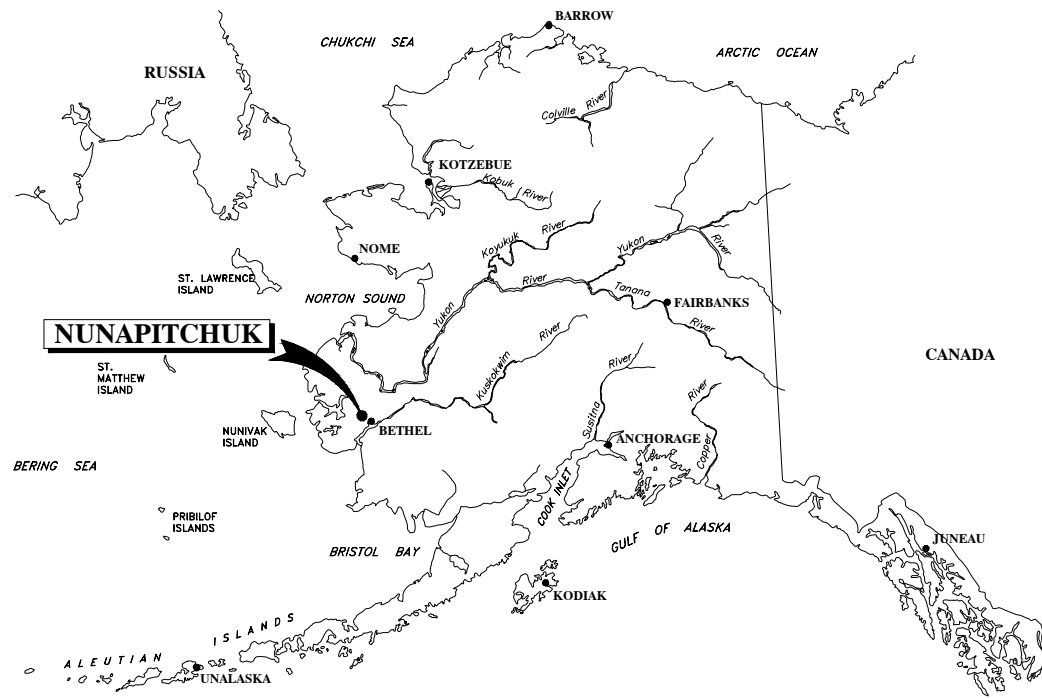


State of Alaska
 Department of Community and Economic Development
 Rural Energy Group
 813 West Northern Lights Blvd.
 Anchorage, Alaska 99503



NUNAPITCHUK, ALASKA

BULK FUEL UPGRADES ISSUED FOR BIDDING JULY 2021



PROJECT AREA MAP

SHEET NUM	SHEET INDEX	SHEET TITLE
GENERAL		
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CIVIL		
C1	VICINITY MAP	
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C9	30,000 GAL DOUBLE WALL TANK	
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S1	GENERAL STRUCTURAL NOTES	
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E2	ONE-LINE DIAGRAM AND PANEL SCHEDULE	
E3	CONDUIT DEVELOPMENT PLAN	
E4	CONDUIT SCHEDULE	
E5	ELECTRICAL SITE PLAN, GROUNDING, & LIGHTING PLAN	
E6	POWER & CONTROLS PLAN (1 OF 2)	
E7	POWER & CONTROLS PLAN (2 OF 2)	
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E13	GASOLINE STORAGE TANK FLOAT LADDER DIAGRAMS	
E14	TRANSFER PUMPS P-1 AND P-2 LADDER DIAGRAMS	
E15	TRANSFER PUMPS P-3 AND P-4 LADDER DIAGRAMS	
E16	GASOLINE DISPENSER PUMP LADDER DIAGRAM	
E17	DIESEL STORAGE TANK FLOAT LADDER DIAGRAMS	
E18	TRANSFER PUMPS P-5 AND P-6 LADDER DIAGRAMS	
E19	TRANSFER PUMPS P-7 AND P-8 LADDER DIAGRAMS	
E20	DIESEL DISPENSER PUMP LADDER DIAGRAM	

Project Number (Consultant) 30418.00 (AEA)

AEA Project Manager Bill Price

Construction Manager —

Final Design (Date) —

Fire Marshal Approval (Date) —

Construction Period (From) — (To) —

As-Builts (Date) —



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PROJECT SCOPE

THIS PROJECT PROVIDES FOR THE CONSTRUCTION OF A NEW BULK FUEL STORAGE AND HANDLING FACILITY IN NUNAPITCHUK, ALASKA. SPECIFIC ACTIVITIES WILL INCLUDE THE FOLLOWING:

- A NEW BULK FUEL TANK FARM WITH NINE HORIZONTAL, SKID MOUNTED ABOVEGROUND STORAGE TANKS MOUNTED TO PILE FOUNDATIONS.
- FUEL TANKS INCLUDE:
 - (4) NEW 30,000-GALLON DOUBLE WALL GASOLINE BULK STORAGE TANKS
 - (4) NEW 30,000-GALLON DOUBLE WALL DIESEL BULK STORAGE TANKS
 - (1) NEW 5,000-GALLON DUAL PRODUCT, PROTECTED, DISPENSING TANK
- NEW TWO PRODUCT BARGE FILL HEADER
- NEW ELEVATED BOARDWALKS INCLUDE:
 - EXTENSION FROM EXISTING BOARDWALK NORTH OF THE PROPOSED SITE
 - 40'x50' FUELING AND TURNAROUND AREA
 - CATWALK TO BULK FUEL TANK ACCESS LADDERS
 - WALKWAY TO RIVER FUELING AREA
- NEW DUAL PRODUCT HOSE REEL DISPENSERS WITH MECHANICAL METERS
- POWER SERVICE, LIGHTING, AND ELECTRICAL CONTROLS AS REQUIRED
- REQUIRED SPILL CONTINGENCY EQUIPMENT HOUSED IN AN 8'x20' PILE SUPPORTED CONNEX
- RETAIL ATTENDANT KIOSK HOUSED IN AN 8'x20' PILE SUPPORTED CONNEX
- CONTRACTOR PROVIDED PRE-ENGINEERED DOCK & GANGWAY.

GENERAL NOTES

- THE CONTRACTOR SHALL PROTECT ALL ITEMS NOT SCHEDULED FOR DEMOLITION DURING CONSTRUCTION. DISTURBED AREAS SHALL BE RESTORED TO PRE-CONSTRUCTION CONDITION.
- ALL EXISTING UTILITIES MAY NOT BE SHOWN ON THESE PLANS. THE CONTRACTOR SHALL CONSULT WITH THE APPROPRIATE UTILITY ORGANIZATIONS TO VERIFY AND LOCATE UTILITIES PRIOR TO CONSTRUCTION. SEE UTILITY CONTACT INFORMATION ON THIS SHEET.
- THE CONTRACTOR MUST COMPLY WITH APPLICABLE FEDERAL AND STATE OSHA REGULATIONS. THE CONTRACTOR SHALL MAINTAIN ALL SIGNS, BARRICADES, WARNING LIGHTS AND OTHER PROTECTIVE DEVICES NECESSARY FOR SAFETY AND TRAFFIC CONTROL.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING HIS WORK WITH EXISTING FACILITY OPERATORS, OTHER CONTRACTORS, SUBCONTRACTORS, THE CITY AND STATE AND FEDERAL AUTHORITIES.
- THE DRAWINGS ARE DIAGRAMMATIC AND DO NOT NECESSARILY SHOW ALL FEATURES OF THE REQUIRED WORK. PROVIDE ALL LABOR, EQUIPMENT AND MATERIALS REQUIRED FOR A COMPLETE, AND CODE COMPLIANT SYSTEM. VERIFY EXISTING FIELD CONDITIONS PRIOR TO STARTING CONSTRUCTION. IMMEDIATELY CONTACT THE ENGINEER FOR CLARIFICATION OF QUESTIONABLE ITEMS OR APPARENT CONFLICTS.
- THE CONTRACTOR SHALL PREPARE AND SUBMIT A SWPPP IF ONE IS REQUIRED.
- CONTRACTOR SHALL PROCURE AND ATTACH TANK NUMBERING LABELS.
- ALL ITEMS TO BE INSTALLED ARE NEW UNLESS SPECIFICALLY INDICATED AS EXISTING. INSTALL ALL MATERIALS AND EQUIPMENT IAW MANUFACTURERS RECOMMENDATIONS, INSTRUCTIONS, AND INSTALLATION DRAWINGS, UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
- THE SPECIFICATION OF A NAME BRAND PRODUCT FOLLOWED BY THE "OR EQUAL" PHRASE IS DONE MERELY TO ESTABLISH THE MINIMUM LEVEL OF QUALITY OF MATERIALS AND EQUIPMENT REQUIRED AND IS NOT A PRODUCT ENDORSEMENT. SUBMIT ANY PROPOSED SUBSTITUTIONS FOR REVIEW AND APPROVAL, UNLESS "NO SUBSTITUTIONS" IS SPECIFIED.
- FACILITY DESIGN IS IN ACCORDANCE WITH THE 2012 INTERNATIONAL FIRE CODE, STATE OF ALASKA FIRE AND SAFETY REGULATIONS ADMINISTRATIVE CODES 13 AAC 50, 13 AAC 55, AND THE MOST RECENT MEMORANDUM OF AGREEMENT BETWEEN THE AEA AND THE STATE OF ALASKA FIRE MARSHALL.
- CONTRACTOR TO PROVIDE SIGNAGE IAW THE SIGN SCHEDULE, AND AS IDENTIFIED ELSEWHERE IN THE DRAWINGS.
- PERFORM WORK WITH SKILLED CRAFTSMEN SPECIALIZED IN SAID WORK. INSTALL ALL MATERIALS IN A NEAT, ORDERLY, AND SECURE FASHION, AS REQUIRED BY THE DRAWINGS AND SPECIFICATIONS AND COMMONLY RECOGNIZED STANDARDS OF GOOD WORKMANSHIP.
- PIPE SUPPORTS SHALL BE SPACED A MAXIMUM OF 10' ON CENTER IAW THE UPC.
- CONTRACTOR SHALL MAINTAIN A "REDLINE" SET OF DRAWINGS TO REFLECT FIELD CHANGES THROUGHOUT CONSTRUCTION. RED LINE CONSTRUCTION DRAWINGS SHALL BE SUBMITTED TO ENGINEER AT COMPLETION OF THE PROJECT.
- ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH U.S. ENVIRONMENTAL PROTECTION AGENCY, ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION, AND STATE AND FEDERAL OCCUPATIONAL HEALTH AND SAFETY REGULATIONS.

ABBREVIATIONS

ADEC	ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION	LB	POUND
ADOT	ALASKA DEPARTMENT OF TRANSPORTATION	M	METERS
AEA	ALASKA ENERGY AUTHORITY	MAX	MAXIMUM
ALCAP	ALUMINUM SURVEY CAP	MIL	0.001 INCH
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE	MIN	MINIMUM
API	AMERICAN PETROLEUM INSTITUTE	MNPT	MALE NATIONAL PIPE THREAD
APPROX	APPROXIMATE	MV	MOTORIZED BALL VALVE
ASTM	AMERICAN SOCIETY FOR TESTING OF MATERIALS	N	NORTH
AST	ABOVEGROUND STORAGE TANK	NC	NORMALLY CLOSED
ASV	ANTI-SIPHON VALVE	NFS	NON-FROST SUSCEPTIBLE SOIL
AWS	AMERICAN WELDING SOCIETY	NL	NUNAPITCHUK LIMITED
		NO	NORMALLY OPEN
BLDG	BUILDING	NPT	NATIONAL PIPE TAPERED THREAD
BV	BALL VALVE	NTS	NOT TO SCALE
		NWR	NATIONAL WILDLIFE REFUGE
CMP	CORRUGATED METAL PIPE	OAE	OR APPROVED EQUAL
CP	CONTROL PANEL	OD	OUTSIDE DIAMETER
CV	CHECK VALVE	OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
		OZ	OUNCE
DEMO	DEMOLISH	PCC	PORTLAND CEMENT CONCRETE
DFT	DRY FILM THICKNESS	PL	PLATE
DIA	DIAMETER	PT	PRESSURIZED TEST TAP
DWG	DRAWING	PRV	PRESSURE RELIEF VALVE
		PSF	POUNDS PER SQUARE FOOT
E	EAST	PSI	POUNDS PER SQUARE INCH
EA	EACH	R	RADIUS
EL	ELEVATION	RF	RAISED FACE
ELEC	ELECTRIC	S	SEWER
EPA	U.S. ENVIRONMENTAL PROTECTION AGENCY	SCH	SCHEDULE
ENGINEER	CRW ENGINEERING GROUP, LLC	SHPO	STATE HISTORIC PRESERVATION OFFICE
E-VENT	EMERGENCY VENT	SIM	SIMILAR
		SPEC	SPECIFICATION
'F	FAHRENHEIT	SQ	SQUARE
FC	FLEX CONNECT	SS	STAINLESS STEEL
FF	FINISH FLOOR ELEV.	SSPC	STEEL STRUCTURES PAINTING COUNCIL
FG	FINISH GRADE	STA	STATION
FLV	FILL LIMITING VALVE	SY	SQUARE YARD
FOR	FUEL OIL RETURN	TBM	TEMPORARY BENCH MARK
FOS	FUEL OIL SUPPLY	TS	TUBE STEEL
FPT	FEMALE NATIONAL PIPE TAPERED THREAD	TYP	TYPICAL
FT	FOOT OR FEET	UG	UNDERGROUND
		UL	UNDERWRITERS LABORATORY
GA	GAUGE	UPC	UNIFORM PLUMBING CODE
GAL	GALLON	UST	UNDERGROUND STORAGE TANK
GALV	GALVANIZED	ULSD	ULTRA LOW SULFUR DIESEL
GPM	GALLONS PER MINUTE	w/	WITH
		W	WATER
HDPE	HIGH DENSITY POLYETHYLENE	LF	LINEAR FEET
HP	HORSE POWER		
HR	HOUR		
IAW	IN ACCORDANCE WITH		
IBC	INTERNATIONAL BUILDING CODE		
ID	INSIDE DIAMETER		
IFC	INTERNATIONAL FIRE CODE		
IPC	INTERNATIONAL PLUMBING CODE		

CIVIL LEGEND (GENERAL)

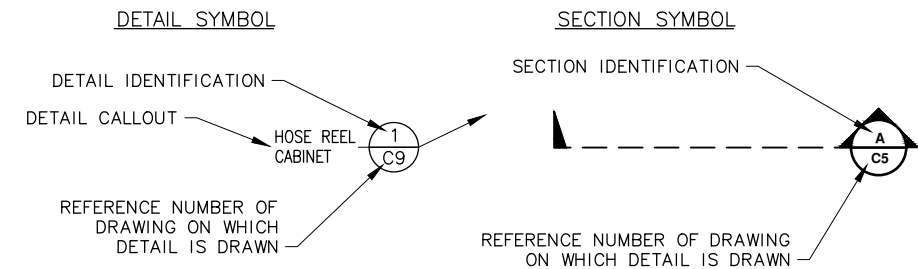
NOTE: SOME DETAILS UTILIZE SYMBOLS NOT IN THIS GENERAL LEGEND. WHERE THIS OCCURS, SYMBOLS ARE DEFINED ON THE SHEET IN WHICH THEY ARE USED.

	PROPERTY BOUNDARY		ANTI-SIPHON VALVE
	CENTERLINE		BALL VALVE
	CULVERT		MOTOR ACTUATED BALL VALVE
	EDGE OF WATER		CHECK VALVE
	DITCH LINE/DRAINAGE SWALE		GATE VALVE
	DRAINAGE DIRECTION & SLOPE		PRESSURE RELIEF VALVE w/ FLOW DIRECTION
	TRAVELED WAY		PRESSURE TEST TAP
	FILL SLOPE		METER
	CUT SLOPE		FILTER
	FENCE LINE		FLEXIBLE CONNECTOR
	FIRE EXTINGUISHER		WYE STRAINER (MESH SIZE)
	GROUND ELEVATION CONTOURS		FILL LIMITER
	BOLLARD		QUICK COUPLING
	POWER POLE		SUBMERSIBLE PUMP
	INFORMATION / WARNING SIGN		VERTICAL PIPE TRANSITION
	SHEET NOTE		REDUCER
	SURVEY MONUMENT		LEVEL FLOAT SWITCH
	TEST PIT		HOSE REEL
	FINISH GRADE ELEVATION		
	DIAMETER		

UTILITY LINE/PIPELINE DESIGNATIONS

DIESEL OR GASOLINE ——— XX ——— ABOVEGROUND PIPELINE: PROPOSED

DETAIL/SECTION REFERENCES



TESTING, STARTUP AND COMMISSIONING PROCEDURES

- CONTRACTOR SHALL PERFORM SYSTEM TESTING, STARTUP AND COMMISSIONING IN ACCORDANCE WITH THE PROCEDURES LISTED HERE AND IN ACCORDANCE WITH MANUFACTURER INSTRUCTIONS. LEAVE ALL WORK SITES IN AN ORDERLY CONDITION CONSISTENT WITH THAT FOUND UPON ARRIVAL.
- PRESSURE TEST ALL PIPING AND FILL OUT AEA-APPROVED PIPELINE PRESSURE TEST REPORTS, NOTIFY ENGINEER SEVEN DAYS PRIOR TO PLANNED PRESSURE TESTING. THE ENGINEER OR HIS APPROVED REPRESENTATIVE SHALL BE PRESENT DURING ALL PRESSURE TESTING UNLESS DIRECTED OTHERWISE IN WRITING. DELIVER ORIGINAL REPORTS TO AEA AND A COPY TO THE ENGINEER.
- TEST ALL PRESSURE RELIEF AND ANTI-SIPHON VALVES FOR PROPER OPERATION AT SPECIFIED PRESSURE.
- CONTRACTOR SHALL BE PRESENT DURING INITIAL FILLING OF TANKS. UPON FILLING OF TANKS VERIFY PRODUCT LEVEL WITH GAUGING STICK AND RECALIBRATE ALL TANK GAUGES. REMOVE AND CLEAN ALL STRAINERS AFTER INITIAL FILLING.
- CHECK ALL PUMPS FOR PROPER ROTATION. PRIOR TO OPERATING CENTRIFUGAL PUMPS PRIME THE PUMP CAVITY WITH FUEL. DURING COLD WEATHER (BELOW 40 °F), PRIOR TO INITIAL START UP, WARM PUMP BODY IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION.
- CHECK ALL CONTROL AND ALARM FUNCTIONS. MANIPULATE TANK FLOAT SWITCHES TO SIMULATE LOW AND HIGH LEVEL CONDITIONS. SET TIMING RELAYS FOR 30 SECONDS AND VERIFY TIME-OUT FUNCTION. RE-SET TIMERS TO SPECIFIED VALUES AFTER TESTING. VERIFY LATCHING AND RESET FUNCTIONS, EMERGENCY STOP FUNCTION, AND OPERATION OF ALL SIGNAL LAMPS AND HORNS. OBSERVE OPERATION OF MOTOR ACTUATED VALVES. VERIFY THAT ONSITE POWER GENERATION SYSTEM & AREA LIGHTING FUNCTION PROPERLY.
- TEST THE RETAIL DISPENSER, AND ALL RELATED COMPONENTS.
- VERIFY ALL SIGNS, PLACARDS, AND VALVE TAGS ARE PROPERLY LOCATED. VERIFY PROPER PRODUCT COLOR CODE AND LABELING FOR ALL TANKS AND PIPING.
- INSTALL PADLOCKS ON ALL VALVES AND FENCE GATES. KEY ALL LOCKS ALIKE. PROVIDE (2) SPARE LOCKS AND KEYS.
- INSTRUCT LOCAL OPERATORS IN THE OPERATION AND MAINTENANCE OF ALL SYSTEMS. PLACE SPARE PARTS, INCINERATOR, AND SPILL RESPONSE SUPPLIES IN DESIGNATED LOCATION.

CALL BEFORE YOU DIG

WATER/SEWER	CITY OF NUNAPITCHUK 907-527-5327
ELECTRIC	AVEC 907-561-1818



BULK FUEL UPGRADES
GENERAL NOTES, LEGEND, AND ABBREVIATIONS
NUNAPITCHUK, ALASKA

NO.	REVISION	DATE	BY
1	ISSUED FOR BIDDING	7/28/21	AH

Plot Date: 7/28/21
Designed: _____
Drawn: _____
Approved: _____

Sheet No. **G2**

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HORIZONTAL CONTROL STATEMENT

HORIZONTAL DATUM: KUSKOKWIM RIVER 2015.

KUSKOKWIM RIVER 2015 COORDINATE SYSTEM PARAMETERS:

LINEAR UNIT: US SURVEY FEET
 DATUM: NAD83
 ELLIPSOID: GRS 80
 PROJECTION: RECTIFIED HOTINE OBLIQUE MERCATOR, SINGLE POINT
 LATITUDE OF CENTER: 60°40'00" N
 LONGITUDE OF CENTER: 162°00'00" W
 AZIMUTH: 50°00'00"
 FALSE NORTHING: -15,500,000.0
 FALSE EASTING: -19,100,000.0
 GRID SCALE FACTOR: 1.000002 (EXACT)

THIS LDP (LOW DISTORTION PROJECTION) WAS DEVELOPED IN 2015 BY THE STATE OF ALASKA DOT&PF CENTRAL REGION SURVEY SECTION. THIS LDP COVERS COMMUNITIES ON AND AROUND THE LOWER KUSKOKWIM RIVER FROM THE RIVERS MOUTH TO THE COMMUNITY OF CHUATHBALUK. BERING SEA COASTAL COMMUNITIES FROM CHEFORNAK TO KONGIGANAK ARE ALSO INCLUDED.

BASIS OF COORDINATES

THE BASIS OF COORDINATES IS NUNAPITCHUKS SECONDARY AIRPORT CONTROL (SAC) 16A-C, PID #DR6568 (CRW CONTROL POINT 601, NGS NAD83 (2011) PUBLISHED COORDINATE:
 LATITUDE: 60°54'10.50262" N
 LONGITUDE: 162°26'38.07280" W
 ELLIP HT: 14.683 (M)
 ORTHO: 4.58 (M) / 15.0 (FT)

CONTROL POINTS WERE ESTABLISHED BY RAPID STATIC AND RTK GPS AND BY AN NGS PUBLISHED SOLUTION FOR CONTROL POINT 601. ALL OTHER CONTROL AND TOPO POINT POSITIONS WERE COMPUTED/REFERENCE VALUES FROM 601.

VERTICAL CONTROL STATEMENT

THE VERTICAL DATUM IS GEOID 12B FROM THE NGS DATA SHEET FOR SECONDARY AIRPORT CONTROL (SAC) 16A-C, CRW CONTROL POINT 601. REMAINDER OF THE CONTROL POINT ELEVATIONS WERE ESTABLISHED BY RTK GPS FROM 601. A DIFFERENTIAL LEVEL LOOP WAS RUN FROM A TEMPORARY CONTROL POSITION TO TBM 351, THE NUNAPITCHUK HIGH SCHOOL FINISH FLOOR ON ITS WEST ENTRANCE.

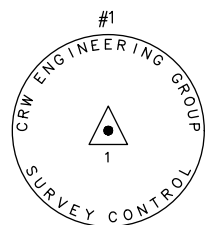
ARMY CORP OF ENGINEERS FLOOD INFORMATION FOR NUNAPITCHUK, STATES ITS BASIS OF FLOOD INFORMATION IS BASED ON THE FIRST FLOOR OF NUNAPITCHUK HIGH SCHOOL. THIS WAS BASED 1972 FLOOD THAT IS BELIEVED TO REPRESENT THE 100 YEAR/BASE FLOOD ELEVATION. AN ELEVATION OF 100.0' WAS THE ASSUMED ELEVATION ASSIGNED TO THE FIRST FLOOR OF THE HIGH SCHOOL. TO COMPUTE LOCAL FLOOD DATUM FROM ASSUMED ELEVATIONS TO GEOID12B ELEVATIONS, SUBTRACT (-) 84.5 FEET.

FIRST FLOOR OF HIGH SCHOOL: 100.0' = 15.80' GEOID12B
 RECOMMEND BUILDING HEIGHT: 92.8' = 8.6' GEOID12B

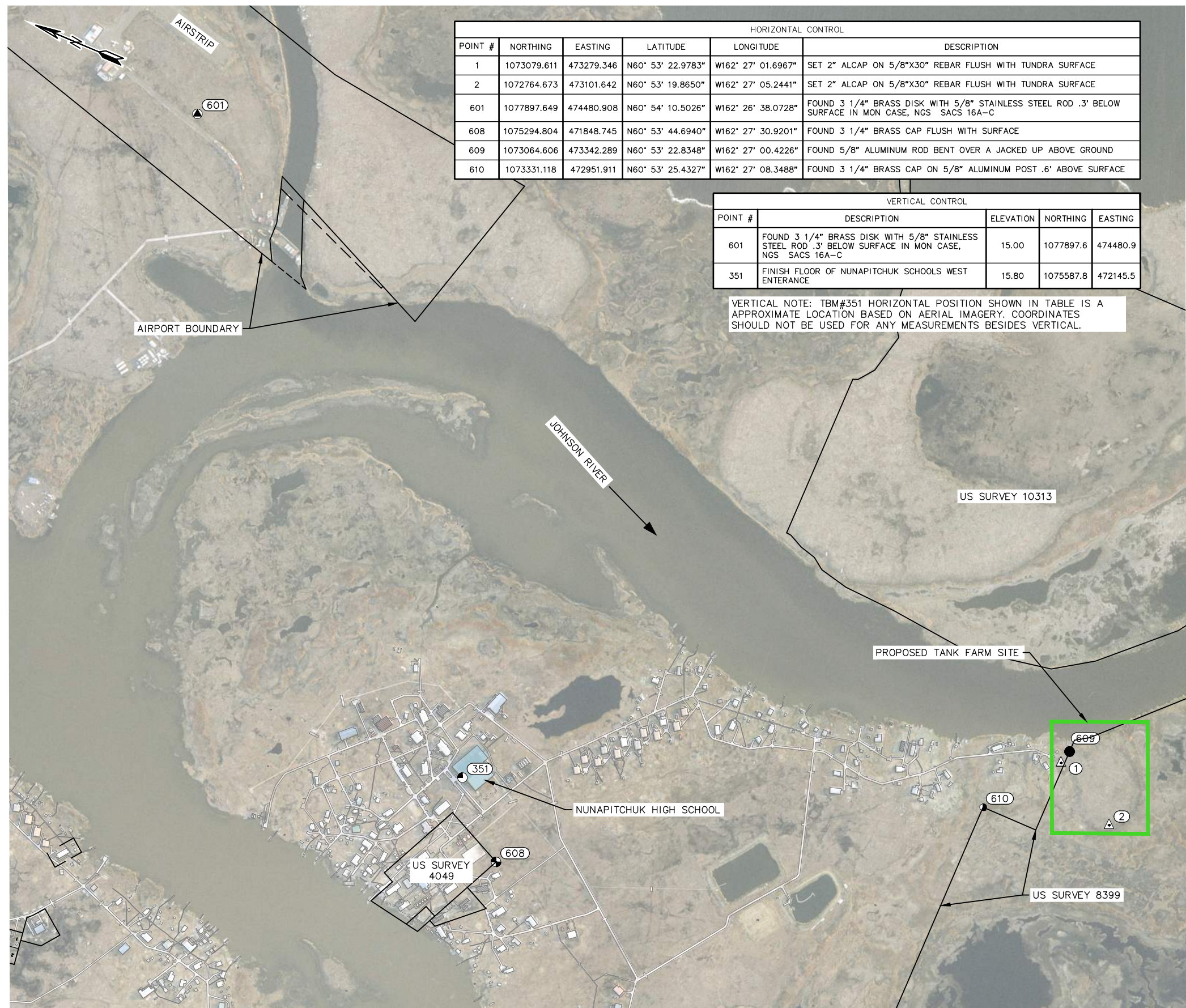
NOTES

1. ALL COORDINATES AND DIMENSIONS SHOWN ARE IN U.S. SURVEY FEET.
2. A FIELD SURVEY WAS CONDUCTED IN FEBRUARY 2021.
3. THE DEVELOPMENT OF THIS SURVEY CONTROL SHEET IS FOR THE NEW PROPOSED NUNAPITCHUK TANK FARM/FUEL DOCK SITE.
4. THE SITE CONTROL SHOWN WAS ESTABLISHED DURING A FEBRUARY SURVEY WITH METHODOLOGY DESCRIBED IN THE HORIZONTAL AND VERTICAL STATEMENT.
5. CONTROL POINTS ARE SUBJECT TO SEASONAL DISTURBANCE, VERIFY HORIZONTAL COORDINATES AND VERTICAL ELEVATIONS BEFORE USE IN CONSTRUCTION TO BASIS OF COORDINATES.

- LEGEND**
- 123 CONTROL POINT #
 - ▲ CRW ALUMINUM CAP
 - TEMPORARY BENCH MARK
 - NGS PACS & SACS MONUMENT
 - BRASS CAP MONUMENT
 - ALUMINUM ROD



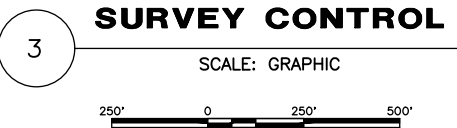
TYPICAL CRW CONTROL (SET 2" ALCAP ON 5/8"X30" REBAR)



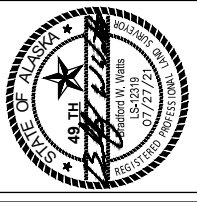
HORIZONTAL CONTROL					
POINT #	NORTHING	EASTING	LATITUDE	LONGITUDE	DESCRIPTION
1	1073079.611	473279.346	N60° 53' 22.9783"	W162° 27' 01.6967"	SET 2" ALCAP ON 5/8"X30" REBAR FLUSH WITH TUNDRA SURFACE
2	1072764.673	473101.642	N60° 53' 19.8650"	W162° 27' 05.2441"	SET 2" ALCAP ON 5/8"X30" REBAR FLUSH WITH TUNDRA SURFACE
601	1077897.649	474480.908	N60° 54' 10.5026"	W162° 26' 38.0728"	FOUND 3 1/4" BRASS DISK WITH 5/8" STAINLESS STEEL ROD .3' BELOW SURFACE IN MON CASE, NGS SACS 16A-C
608	1075294.804	471848.745	N60° 53' 44.6940"	W162° 27' 30.9201"	FOUND 3 1/4" BRASS CAP FLUSH WITH SURFACE
609	1073064.606	473342.289	N60° 53' 22.8348"	W162° 27' 00.4226"	FOUND 5/8" ALUMINUM ROD BENT OVER A JACKED UP ABOVE GROUND
610	1073331.118	472951.911	N60° 53' 25.4327"	W162° 27' 08.3488"	FOUND 3 1/4" BRASS CAP ON 5/8" ALUMINUM POST .6' ABOVE SURFACE

VERTICAL CONTROL				
POINT #	DESCRIPTION	ELEVATION	NORTHING	EASTING
601	FOUND 3 1/4" BRASS DISK WITH 5/8" STAINLESS STEEL ROD .3' BELOW SURFACE IN MON CASE, NGS SACS 16A-C	15.00	1077897.6	474480.9
351	FINISH FLOOR OF NUNAPITCHUK SCHOOLS WEST ENTRANCE	15.80	1075587.8	472145.5

VERTICAL NOTE: TBM#351 HORIZONTAL POSITION SHOWN IN TABLE IS A APPROXIMATE LOCATION BASED ON AERIAL IMAGERY. COORDINATES SHOULD NOT BE USED FOR ANY MEASUREMENTS BESIDES VERTICAL.



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BULK FUEL UPGRADES
 SURVEY CONTROL
 NUNAPITCHUK, ALASKA

NO.	REVISION	BY	DATE
1	ISSUED FOR BIDDING	AH	7/28/21

Plot Date: 7/28/21
 Designed: _____
 Drawn: _____
 Approved: _____

Sheet No. **G3**

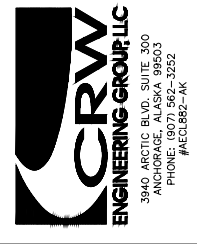
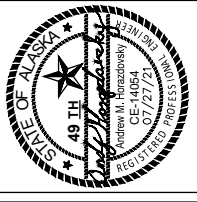
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TANK FARM VALVE SCHEDULE					
VALVE ID	SIZE	LOCATION	END CONNECTION	COMMENT	ID TAG REQ'D
BALL VALVES (BV)					
BV-1A TO BV8A	2"	TANK T1-T8 ISSUE	FLANGED	Tank Issue Isolation - N.C.	Y
BV-1B TO BV-8B	3"	TANK T1-T8 FILL	FLANGED	Tank Fill Isolation - N.C.	Y
BV-10	3"	BARGE HEADER	FLANGED	Barge Header Isolation - N.C.	Y
BV-11	3"	BARGE HEADER	FLANGED	Barge Header Isolation - N.C.	Y
BV-12 & BV-13	1 1/2"	BASE OF DISPENSER	FLANGED	Dispenser Isolation - N.O.	Y
MOTORIZED VALVES (MV)					
MV-1	2"	TANK 9A FILL	FLANGED	Locate MV on top of tank	Y
MV-2	2"	TANK 9A ISSUE	FLANGED	Locate MV on top of tank	Y
MV-3	2"	TANK 9B ISSUE	FLANGED	Locate MV on top of tank	Y
MV-4	2"	TANK 9B FILL	FLANGED	Locate MV on top of tank	Y
CHECK VALVES (CV)					
CV-1	3"	BARGE HEADER	FLANGED	-	N
CV-2	3"	BARGE HEADER	FLANGED	-	N
CV-1A TO CV-8A	2"	TANK T1-T8 ISSUE	FLANGED	Locate on top of tank	N
CV-1B TO CV-8B	3"	TANK T1-T8 FILL	FLANGED	Locate on top of tank	N
CV-9A & CV-9B	2"	TANK T9 FILL	FLANGED	Locate on top of tank	N
PRESSURE RELIEF VALVES (PRV)					
PRV-1	1"	TANK T1 - FILL	FLANGED	PRESSURE RELIEF SET AT 30 PSI	Y
PRV-2	1"	TANK T5 -FILL	FLANGED	PRESSURE RELIEF SET AT 30 PSI	Y
PRV-3	1"	TANK T9A	FLANGED	PRESSURE RELIEF SET AT 30 PSI	Y
PRV-4	1"	TANK T9A	FLANGED	PRESSURE RELIEF SET AT 30 PSI	Y
PRV-5	1"	TANK T9B	FLANGED	PRESSURE RELIEF SET AT 30 PSI	Y
PRV-6	1"	TANK T9B	FLANGED	PRESSURE RELIEF SET AT 30 PSI	Y
SHEAR VALVES (SV)					
SV-1	1 1/2"	BASE OF DISPENSER	THREADED		N
SV-2	1 1/2"	BASE OF DISPENSER	THREADED		N
ANTI SIPHON VALVES (ASV)					
ASV-1 TO ASV-8	2"	TANK T1-T8 PUMP DISCHARGE	-	Provide if not integral to pump	N
ASV-9A & ASV-9B	2"	TANK T9A & 9B PUMP DISCHARGE	-	Provide if not integral to pump	N
FLOW LIMITING VALVES (FLV)					
FV-1 TO FV-8	3"	TANK T1-T8	6" Threaded	Mechanical Flow Limiting Valve	Y
FV-9A & FV-9B	2"	TANK T9A & T9B	4" Threaded	Mechanical Flow Limiting Valve	Y

TANK FARM MISCELLANEOUS COMPONENTS					
COMPONENT ID	SIZE	LOCATION	END CONNECTION	COMMENT	ID TAG REQ'D
FLEX CONNECT (FC)					
FC-1 TO FC-8	2"	TANKS T1 TO T8 - PUMP ISO	FLANGED	12" LENGTH	N
FC-9A & FC-9B	2"	TANKS 9A & 9B - PUMP ISO	FLANGED	12" LENGTH	N
FC-10 & FC-11	1 1/2"	HOSE REEL ISO	MPT x FLOAT FLANGE	AS REQUIRED FOR FITUP	N
STRAINERS (S)					
S-1	3"	BARGE HEADER	FLANGED	-	N
S-2	3"	BARGE HEADER	FLANGED	-	N
QUICK COUPLER (QC)					
QC-1	3"	BARGE HEADER	-	-	N
QC-2	3"	BARGE HEADER	-	-	N
METER (M), FILTER (F), HOSE REEL (HR) - PREFABRICATED UNIT					
1		COMB. METER, FILTER, HOSE REEL	-	(see Design Documents)	N
2		COMB. METER, FILTER, HOSE REEL	-	(see Design Documents)	N
LEVEL SWITCH (LS)					
LS-1 TO LS-8	-	TANK T1-T8	Per tank penn.	Three Position Level Switch	N
LS-9A & 9B	-	TANK T9A & T9B	Per tank penn.	Four Position Level Switch	N

PUMP SCHEDULE					
PUMP ID	TYPE	PRODUCT	LOCATION	MOTOR (HP)	ELECTRICAL
P-1 TO P-4	SUBMERSIBLE	GASOLINE	TANK T1	3/4	208/230 VAC, 1-PH
P-5 TO P-8	SUBMERSIBLE	DIESEL	TANK T5	3/4	208/230 VAC, 1-PH
P-9A & P-9B	SUBMERSIBLE	DIESEL & GASOLINE	TANK 9A & 9B	3/4	208/230 VAC, 1-PH

TANK SCHEDULE				
TANK NUMBER	CAPACITY (GALLONS)	TANK TYPE	PRODUCT	NOTES
T1 TO T4	30,000	HORIZONTAL DOUBLE WALL	GASOLINE	Owner Provided
T5 TO T8	30,000	HORIZONTAL DOUBLE WALL	DIESEL	Owner Provided
T9A	2,500	HORIZONTAL PROTECTED, DISPENSING	GASOLINE	Owner Provided
T9B	2,500	HORIZONTAL PROTECTED, DISPENSING	DIESEL	Owner Provided



BULK FUEL UPGRADES
COMPONENTS SCHEDULE

NUNAPITCHUK, ALASKA

NO.	REVISION	BY	DATE
1	ISSUED FOR BIDDING	AH	7/28/21

Plot: 7/28/21
Date: 7/28/21
Designed: _____
Drawn: _____
Approved: _____

NOTES:

1. INSTALL PORTABLE FIRE EXTINGUISHERS AT LOCATIONS SHOWN. TWO SPARES ARE TO BE STORED IN STORAGE CONNEXES. EXTINGUISHERS MOUNTED OUTSIDE SHALL BE WITHIN APPROVED WEATHER PROOF ENCLOSURES.

SETBACK/SEPARATION REQUIREMENTS:

THE PROPOSED TANK FARMS WILL PERFORM TWO FUNCTIONS – BULK STORAGE FOR AVEC & COMMUNITY, AND FLEET DISPENSING FOR COMMUNITY. ALL TANKS ARE INSTALLED ABOVE GROUND. TO COMPLY WITH THE REQUIREMENTS OF THE 2012 INTERNATIONAL FIRE CODE, THE 2013 ALASKA ENERGY AUTHORITY/DIVISION OF FIRE PREVENTION MEMORANDUM OF AGREEMENT, AND STATE OF ALASKA REGULATIONS THE FOLLOWING MINIMUM CLEARANCES ARE REQUIRED:

- 10' FROM THE DISPENSER TO ALL BUILDINGS AND PROPERTY LINES.
- 15' FROM 751–12,000 GAL BULK STORAGE TANKS TO THE NEAREST PROPERTY LINE WHICH IS OR CAN BE BUILT UPON.
- 40' FROM 12,001–30,000 GAL BULK STORAGE TANKS TO THE NEAREST PROPERTY LINE WHICH IS OR CAN BE BUILT UPON.
- 25' FROM THE BULK TRANSFER HOSE STAND TO THE NEAREST TANK, THE NEAREST IMPORTANT BUILDING, THE NEAREST PROPERTY LINE WHICH IS OR CAN BE BUILT UPON, COMBUSTIBLE MATERIALS, AND FIXED SOURCES OF IGNITION.
- 50' FROM THE DISPENSER TO ALL UNPROTECTED TANKS. (INCLUDES STATIONARY TANK TRUCKS)

WARNING SIGNS & INFORMATION PLACARD SCHEDULE:

PROVIDE ALL SIGNS INDICATED IN THE SCHEDULE BELOW, QUANTITY & LOCATION AS INDICATED ON THE DRAWINGS. ALL SIGNS SHALL BE CONSTRUCTED FROM 0.08" ALUMINUM PLATE, AND SIZED IAW 2012 IFC. SIGN LETTERING IS SHOWN BELOW IN QUOTATIONS. PROVIDE 3/16" HOLES IN ALL FOUR CORNERS. PROVIDE NON-REFLECTIVE VINYL BACKGROUND, 3M 3650-10, WITH 3M SERIES 225 HIGH PERFORMANCE VINYL LETTERS, ONE SIDE ONLY, COLOR AS INDICATED. ATTACH TO FENCING WITH GALVANIZED HOG RINGS OR STAINLESS STEEL CABLE TIES. SIGNAGE PLACED DIRECTLY ON TANKS SHALL CONSIST OF HIGH QUALITY ADHESIVE BACK DECALS OR PAINTED STENCILS.

WARNING SIGNS – RED LETTERING ON WHITE BACKGROUND (3" HIGH X 1/2" STROKE LETTERS)

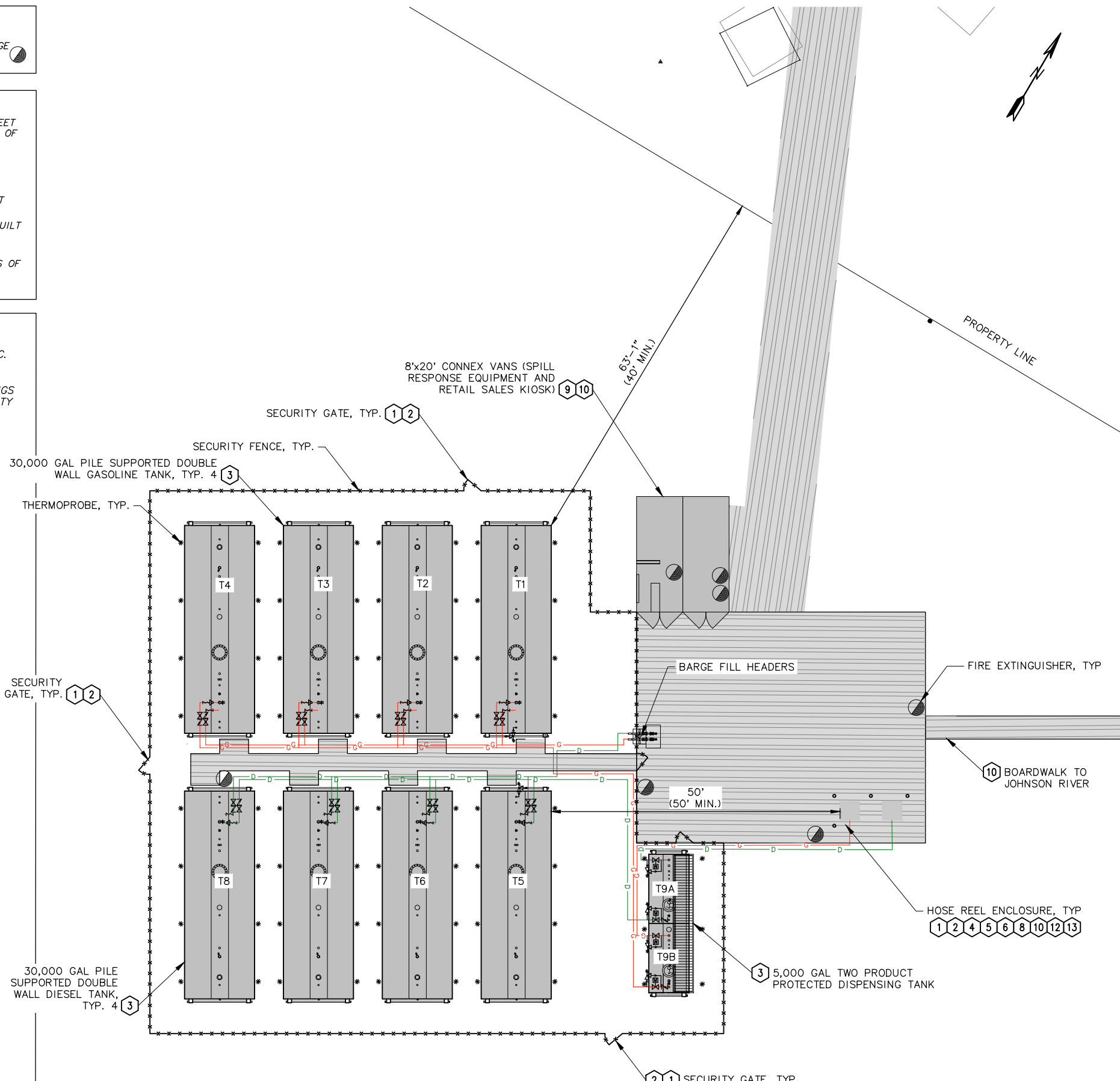
- 1 "DANGER FLAMMABLE LIQUIDS"
- 2 "NO SMOKING NO OPEN FLAMES"
- 3 "FLAMMABLE _____ GALLONS GASOLINE" OR "COMBUSTIBLE _____ GALLONS DIESEL", INSERT VOLUME IN GALLONS AS APPROPRIATE.

INFORMATIONAL PLACARDS – BLACK LETTERING ON WHITE BACKGROUND (2" HIGH 1/2" STROKE LETTERS)

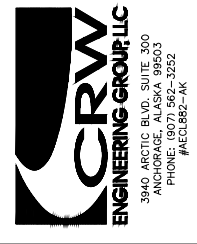
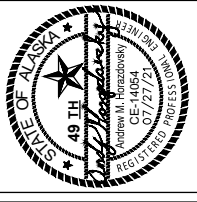
- 4 "IMPORTANT – PRIOR TO DISPENSING:
 1. SHUT OFF MOTOR
 2. DISCHARGE YOUR STATIC ELECTRICITY BEFORE FUELING BY TOUCHING A METAL SURFACE AWAY FROM THE NOZZLE
 3. TO PREVENT STATIC CHARGE, DO NOT RE-ENTER YOUR VEHICLE WHILE GASOLINE IS PUMPING
 4. IF A FIRE STARTS, DO NOT REMOVE NOZZLE – BACK AWAY IMMEDIATELY"
- 5 "IT IS UNLAWFUL AND DANGEROUS TO DISPENSE FUEL INTO UNAPPROVED CONTAINERS"
- 6 "NO FILLING OF PORTABLE CONTAINERS IN OR ON A MOTOR VEHICLE. PLACE CONTAINER ON GROUND BEFORE FILLING"
- 7 "IN CASE OF FIRE SPILL OR RELEASE:
 1. USE EMERGENCY SHUTOFF
 2. CONTACT NUNAPICHUK LTD. (907-527-5719)
 3. REPORT ACCIDENT TO ADEC"
- 8 PROVIDE ADEC SPILL SIGN: CONTRACTOR TO CONTACT ADEC FOR CURRENT SPILL REPORTING PLACARD (907-269-3063)
- 9 "SPILL CONTINGENCY EQUIPMENT"
- 10 "EMERGENCY SHUTOFF" – SEE ELECTRICAL FOR SIGN LOCATIONS
- 11 "PRESSURE NOT TO EXCEED 75 PSI" (NOTE THIS SIGN SHALL BE PERMANENTLY AFFIXED TO THE BARGE HEADER SUPPORT).

INSTRUCTION PLACARDS – BLUE LETTERING ON WHITE BACKGROUND (1/2" HIGH X 3/8" STROKE LETTERS)

- 12 DISPENSING INSTRUCTIONS:
 1. DISPENSING IS TO BE CONDUCTED BY ATTENDANT
 2. SHUT OFF VEHICLE
 3. RESET METER – SET DESIRED VOLUME
 4. UNWIND HOSE AS REQUIRED, PLACE NOZZLE IN FUEL RECEPTACLE
 5. PRESS PUMP START BUTTON
 6. DEPRESS NOZZLE LEVER TO BEGIN FLOW
 7. WHEN FUELING IS COMPLETE, PRESS PUMP STOP BUTTON
 8. HANG UP NOZZLE
 9. SEE ATTENDANT FOR PAYMENT AND RECEIPT
- 13 PROVIDE PLACARDS INDICATING PRODUCT TYPE AT HOSE REEL (TYP 2)



1 **TANK FARM SITE PLAN**



BULK FUEL UPGRADES
SETBACK AND SIGNAGE PLAN
NUNAPICHUK, ALASKA

NO.	REVISION	DATE
1	ISSUED FOR BIDDING	7/28/21

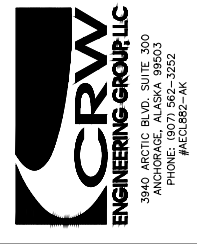
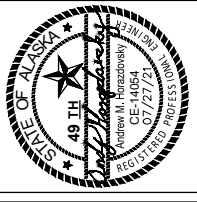
Plot Date: 7/28/21
Designed: _____
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Sheet No. **G5**

File: J:\JobsData\30418.00 Area - Nunapitchuk Btu\00 Cadd 2019\01 Working Set\01 Civil\30418.00 Signage And Setback.dwg Plot Date: 7/28/2021 2:59 PM



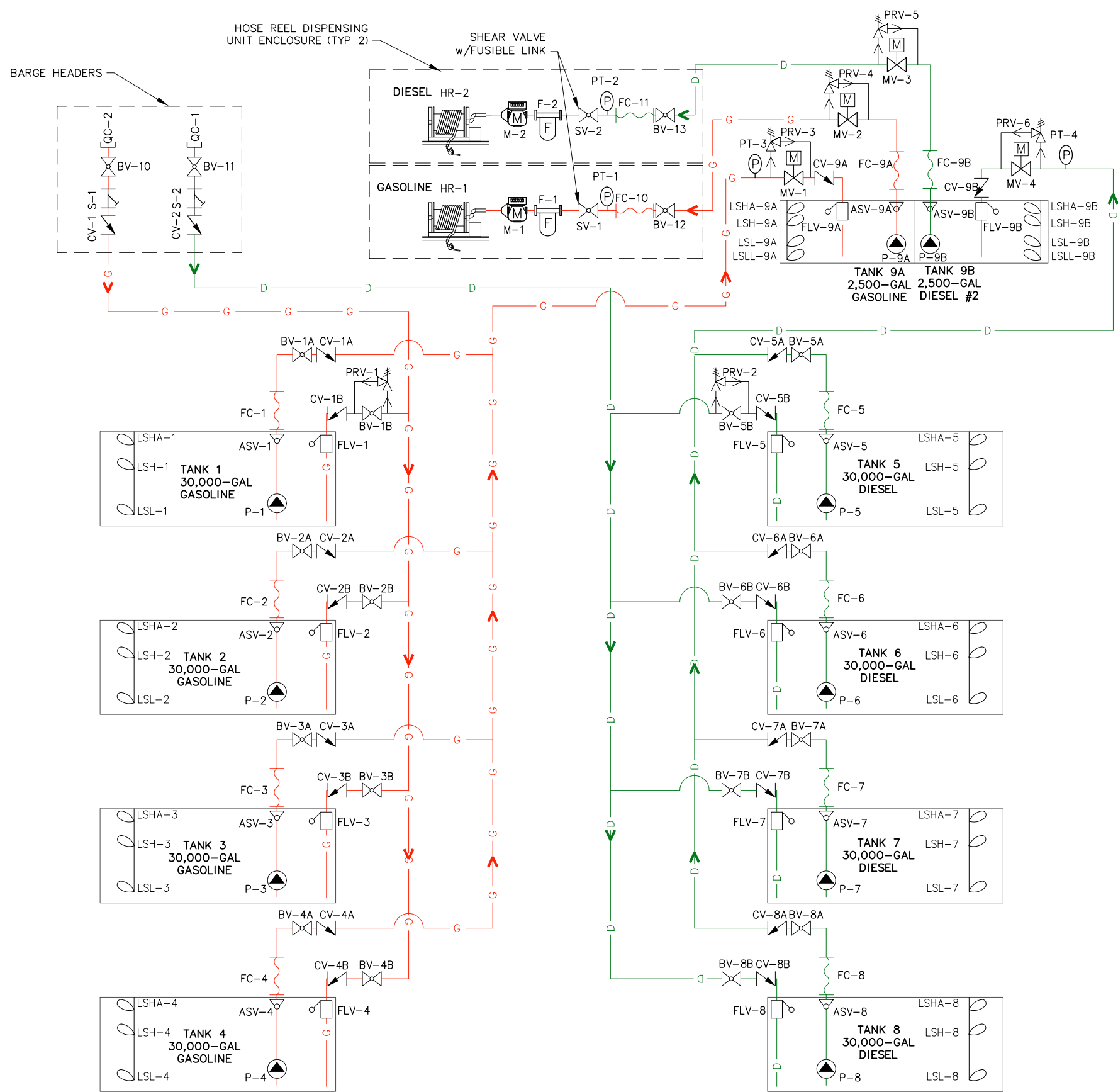
SHEET NOTES:
 1. THE COMMUNITY OF NUNAPITCHUK IS DIVIDED BY THE JOHNSON RIVER. NO BRIDGE EXISTS. PERSONNEL AND FREIGHT FROM THE AIRSTRIP ARE TRANSPORTED BY BOAT OR ACROSS THE RIVER ICE.



BULK FUEL UPGRADES
 VICINITY MAP
 NUNAPITCHUK, ALASKA

NO.	REVISION	BY	DATE
1	ISSUED FOR BIDDING	AH	7/28/21

Plot: 7/28/21
 Date: 7/28/21
 Designed: —
 Drawn: —
 Approved: —



TANK FARM OPERATING SCHEMATIC

GENERAL NOTES:

1. SYSTEM REPRESENTATIONS ON THIS SHEET ARE SCHEMATIC. SEE SITE PLAN, COMPONENT SCHEDULES, SPECIFICATIONS, AND TANK DETAILS FOR MORE SPECIFIC INFORMATION ON COMPONENT LOCATIONS.
2. NOT ALL PIPE FITTINGS (BENDS, REDUCERS, BUSHINGS, ETC.) ARE SHOWN. CONTRACTOR SHALL PROVIDE ALL NECESSARY FITTINGS FOR PROPER COMPONENT FIT-UP.
3. NOT ALL TANK APPURTENANCES (VENTS, ETC.) ARE SHOWN ON THIS SHEET. SEE TANK SHEETS FOR COMPONENT CALLOUTS AND INSTALLATION DETAILS.
4. SEE SHEET G2 FOR SYMBOL LEGEND.

TANK FARM OPERATIONAL NARRATIVE

FILLING TANK FARM FROM BARGE

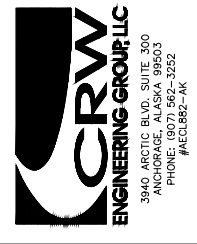
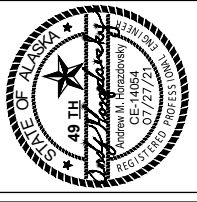
THE TANK FARM WILL BE FILLED VIA A TWO PRODUCT BARGE HEADER WITH TWO 3-INCH FILL PIPELINES. BEFORE BEGINNING THE FILL PROCESS THE OPERATOR SHALL CONFIRM THAT ALL TANK ISOLATION VALVES ARE CLOSED. BULK TANKS SHOULD BE FILLED ONE AT A TIME BY SEQUENTIALLY OPENING AND CLOSING INDIVIDUAL TANK ISOLATION BALL VALVES. LINE PRESSURE WILL BE SUPPLIED BY THE BARGE PUMPING SYSTEM. THE TANK FARM OPERATOR WILL MONITOR THE FILLING PROCESS VIA CLOCK GAUGES AND/OR GAUGING ROD AT EACH TANK. WHEN THE TANK LEVEL REACHES 90%, A LIGHT ON THE CONTROL PANEL WILL INDICATE THAT THE TANK IS FULL. IF FILLING CONTINUES TO THE 95% LEVEL, THE TANKS MECHANICAL FILL LIMITER WILL STOP FLOW. ADDITIONALLY, A FLOAT AT THE 95% LEVEL WILL ACTIVATE AN ALARM AND THE "TANK OVERFULL" LIGHT WILL ILLUMINATE. AT THE CONCLUSION OF FILLING, CLOSE BARGE HEADER & TANK ISOLATION VALVES AND DISCONNECT FILL HOSE.

FILLING THE DISPENSING TANK

THE DUAL PRODUCT DISPENSING TANK CONTAINS TWO COMPARTMENTS, ONE FOR GASOLINE AND ONE FOR DIESEL. THE COMPARTMENTS ARE FILLED FROM CORRESPONDING BULK TANKS T1-T8. THE DISPENSING TANK FILL OPERATION IS CONTROLLED MANUALLY FROM CP-1 LOCATED WITHIN THE SALES KIOSK. FLOAT SWITCHES MONITOR THE LEVEL OF FUEL IN T9A AND T9B. WHEN FUEL LEVEL(S) FALL BELOW THE 50%-FULL POINT, LOW LEVEL LIGHTS WILL ILLUMINATE ON CP-1. SELECT A BULK TANK TO TRANSFER FROM, ENSURE THAT THE SELECTED BULK TANK HAS SUFFICIENT FUEL FOR THE TRANSFER. PRESS THE PUMP START BUTTON ON CP-1. HIGH LEVEL FLOAT SWITCHES WITHIN THE DISPENSING TANK AUTOMATICALLY DE-ENERGIZE THE TRANSFER PUMP AND CLOSE THE MOTORIZED BALL VALVE WHEN THE FUEL LEVEL REACHES 90% FULL. IF THE MOTORIZED VALVE & PUMP FAIL TO SHUTOFF, A MECHANICAL FILL LIMITER WILL STOP FUEL FLOW AT 95% AND AN ALARM WILL SOUND. DO NOT LEAVE THE FACILITY WHEN TRANSFERS ARE UNDERWAY!

HOSE REEL DISPENSER OPERATION

PRIOR TO FILLING, TURN OFF ENGINE, CHOCK WHEELS AND CONNECT STATIC GROUNDING CABLE. OPEN ISOLATION VALVE, INPUT DESIRED FUEL VOLUME INTO PRE-SET METER, AND SET SPRING LOADED MECHANICAL VALVE. UNWIND HOSE, PLACE NOZZLE IN APPROVED FUEL CONTAINER, DEPRESS PUMP START BUTTON TO PRESSURIZE HOSE, AND DEPRESS TRIGGER TO INITIATE FLOW. PROVIDE CONTINUOUS MONITORING DURING FUELING PROCESS. FLOW WILL AUTOMATICALLY STOP AT PRE-SET VOLUME, BUT PUMP WILL CONTINUE TO RUN. WHEN FUELING IS COMPLETE, DEPRESS PUMP STOP BUTTON, WIND HOSE ONTO REEL, HANG UP NOZZLE, AND NOTE VOLUME OF FUEL DISPENSED.



BULK FUEL UPGRADES
OPERATING SCHEMATIC
NUNAPITUK, ALASKA

NO.	REVISION	DATE	BY
1	ISSUED FOR BIDDING	7/28/21	AH

Plot Date: 7/28/21
Designed: _____
Drawn: _____
Approved: _____

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GENERAL NOTES:
 1. COORDINATE RELOCATION OF SHED WITH OWNER. PLACE ON WOODEN BEAMS AND RE-LEVEL.
 2. SEE ELECTRICAL FOR LIGHTING AND GROUNDING PLAN.

RAMP TO EXISTING BOARDWALK
 (SEE STRUCTURAL)

SEE SHEET NOTE 1

BOARDWALK EXTENSION S2

8'x20' CONNEX VANS (SPILL
 RESPONSE EQUIPMENT AND
 RETAIL SALES KIOSK)

SECURITY FENCE, TYP.

SECURITY FENCE, TYP.

THERMOSIPHON, TYP. C13

30,000 GAL PILE SUPPORTED DOUBLE
 WALL GASOLINE TANK, TYP. 4 C9

TANK ACCESS CATWALK

3 FT GATE, TYP. A C6

30,000 GAL PILE SUPPORTED DOUBLE
 WALL DIESEL TANK, TYP. 4 C9

3 FT GATE, TYP. 1 C9

3 FT GATE, TYP.

5,000 GAL PILE SUPPORTED TWO
 PRODUCT PROTECTED DISPENSING TANK C10

ELEVATED FUELING AND TURN AROUND AREA

1 C14 BARGE FILL HEADERS

DISPENSER FRONT, TYP.

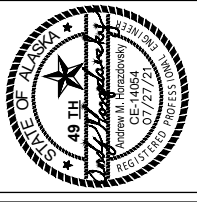
5 C14 BOLLARD, TYP.

C12 HOSE REEL DISPENSER, TYP 2

PROVIDE PRE-ENGINEERED
 DOCK AND ALUMINUM
 GANGWAY, SEE SHEET S2
 AND SHEET C6 FOR
 ADDITIONAL DETAILS

JOHNSON RIVER

SITE PLAN

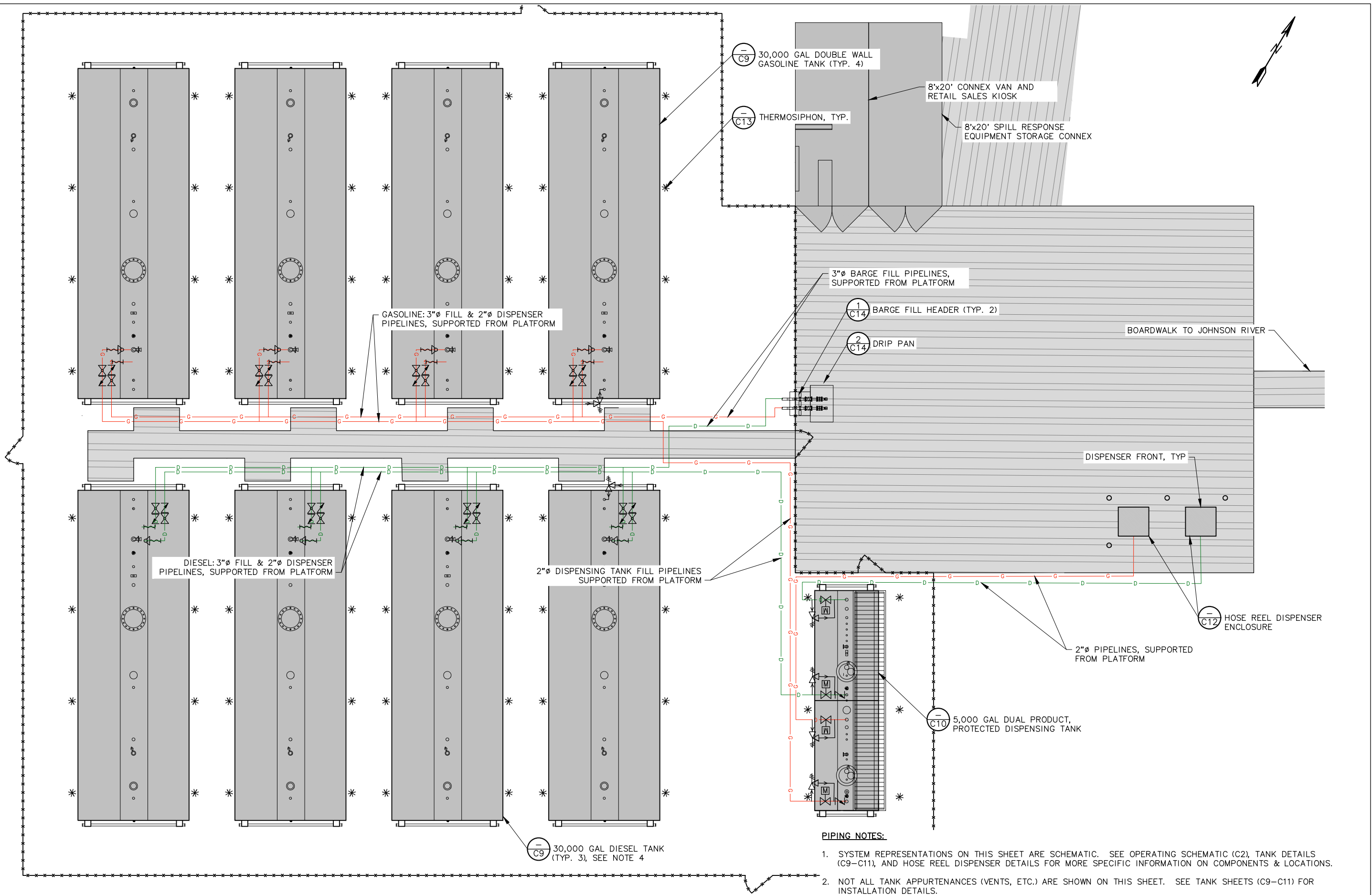


**BULK FUEL UPGRADES
 SITE PLAN**
 NUNAPITCHUK, ALASKA

NO.	REVISION	BY	DATE
1	ISSUED FOR BIDDING	AH	7/28/21

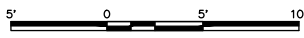
Plot Date: 7/28/21
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Sheet No. **C3**



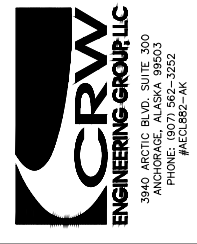
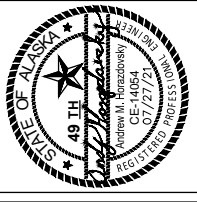
1

PIPING PLAN



PIPING NOTES:

1. SYSTEM REPRESENTATIONS ON THIS SHEET ARE SCHEMATIC. SEE OPERATING SCHEMATIC (C2), TANK DETAILS (C9-C11), AND HOSE REEL DISPENSER DETAILS FOR MORE SPECIFIC INFORMATION ON COMPONENTS & LOCATIONS.
2. NOT ALL TANK APPURTENANCES (VENTS, ETC.) ARE SHOWN ON THIS SHEET. SEE TANK SHEETS (C9-C11) FOR INSTALLATION DETAILS.
3. SEE SHEET G2 FOR SYMBOL LEGEND.
4. SEE TANK SHOP DRAWINGS FOR ADDITIONAL INFORMATION.
5. SUPPORT FUEL PIPELINES FROM STRUCTURAL STEEL BOARDWALK AND PLATFORM. ROUTING SHOWN IS SCHEMATIC, SUBMIT SHOP DRAWINGS OF PROPOSED SUPPORT METHODS AND ROUTING.



**BULK FUEL UPGRADES
PIPING PLAN**
NUNAPITCHUK, ALASKA

NO.	REVISION	BY	DATE
1	ISSUED FOR BIDDING	AH	7/28/21

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Sheet No. **C4**

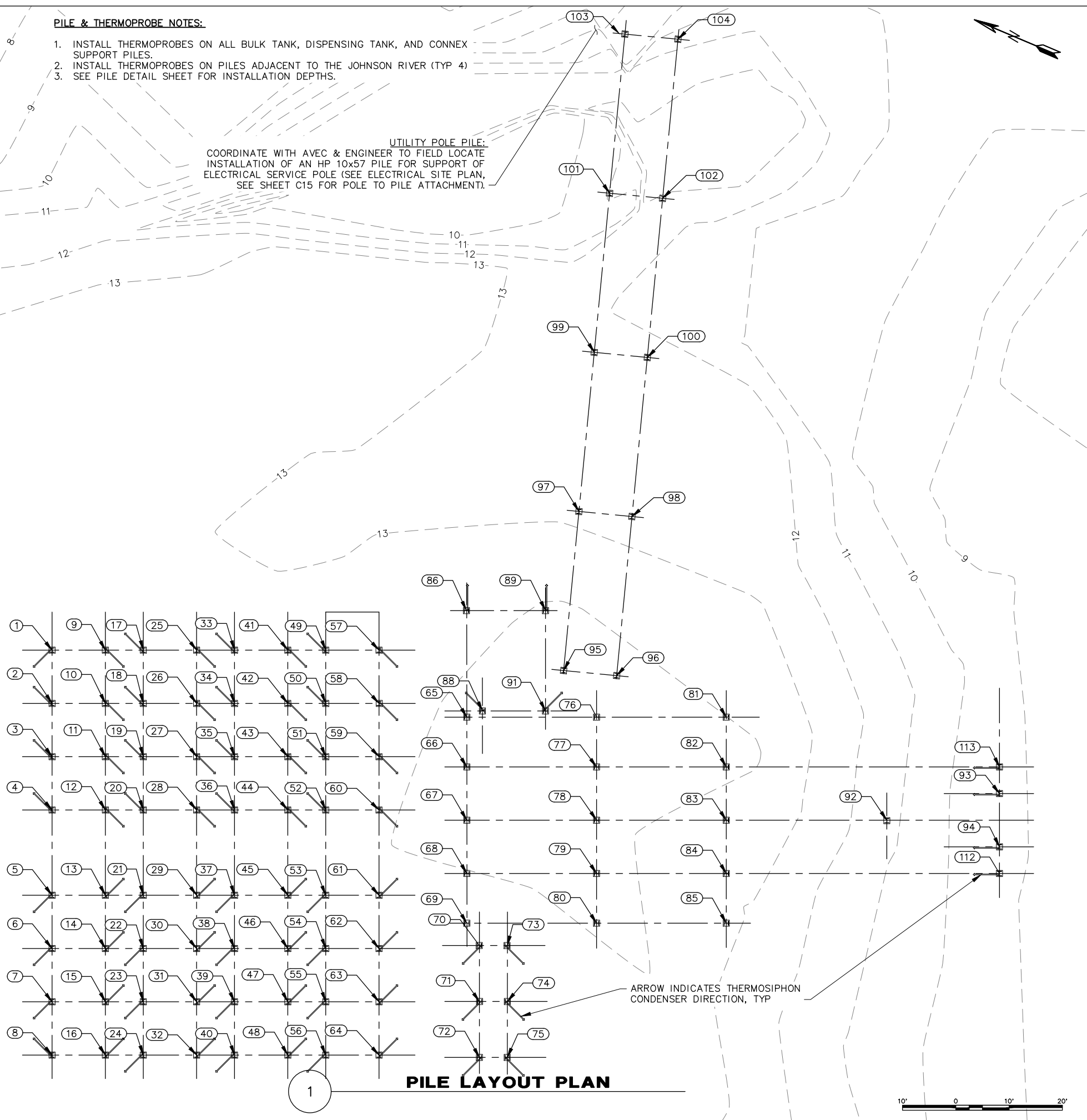
PILE TABLE			
PILE NO.	NORTHING	EASTING	PILE SIZE
1	1072966.59	473251.53	HP 12x74
2	1072957.97	473256.61	HP 12x74
3	1072949.36	473261.68	HP 12x74
4	1072940.74	473266.75	HP 12x74
5	1072926.95	473274.87	HP 12x74
6	1072918.34	473279.95	HP 12x74
7	1072909.72	473285.02	HP 12x74
8	1072901.10	473290.10	HP 12x74
9	1072917.67	473260.15	HP 12x74
10	1072963.05	473265.22	HP 12x74
11	1072954.43	473270.30	HP 12x74
12	1072945.82	473275.37	HP 12x74
13	1072932.03	473283.49	HP 12x74
14	1072923.41	473288.57	HP 12x74
15	1072914.80	473293.64	HP 12x74
16	1072906.18	473298.71	HP 12x74
17	1072975.28	473266.28	HP 12x74
18	1072966.66	473271.35	HP 12x74
19	1072958.04	473276.43	HP 12x74
20	1072949.43	473281.50	HP 12x74
21	1072935.64	473289.62	HP 12x74
22	1072927.02	473294.70	HP 12x74
23	1072918.41	473299.77	HP 12x74
24	1072909.79	473304.84	HP 12x74
25	1072980.35	473274.89	HP 12x74
26	1072971.73	473279.97	HP 12x74
27	1072963.12	473285.04	HP 12x74
28	1072954.50	473290.12	HP 12x74
29	1072940.71	473298.24	HP 12x74
30	1072932.10	473303.31	HP 12x74
31	1072923.48	473308.39	HP 12x74
32	1072914.86	473313.46	HP 12x74
33	1072983.96	473281.02	HP 12x74
34	1072975.34	473286.10	HP 12x74
35	1072966.73	473291.17	HP 12x74
36	1072958.11	473296.25	HP 12x74
37	1072944.32	473304.37	HP 12x74
38	1072935.71	473309.44	HP 12x74
39	1072927.09	473314.51	HP 12x74
40	1072918.47	473319.59	HP 12x74
41	1072989.04	473289.64	HP 12x74
42	1072980.42	473294.72	HP 12x74
43	1072971.80	473299.79	HP 12x74
44	1072963.18	473304.87	HP 12x74
45	1072949.40	473312.98	HP 12x74
46	1072940.78	473318.06	HP 12x74
47	1072932.17	473323.13	HP 12x74
48	1072923.55	473328.21	HP 12x74
49	1072992.65	473295.77	HP 12x74
50	1072984.03	473300.85	HP 12x74
51	1072975.41	473305.92	HP 12x74
52	1072966.80	473311.00	HP 12x74
53	1072953.01	473319.11	HP 12x74
54	1072944.39	473324.19	HP 12x74
55	1072935.78	473329.26	HP 12x74
56	1072927.16	473334.34	HP 12x74
57	1072997.72	473304.39	HP 12x74
58	1072989.10	473309.46	HP 12x74
59	1072980.49	473314.54	HP 12x74
60	1072971.87	473319.61	HP 12x74
61	1072958.08	473327.73	HP 12x74
62	1072949.47	473332.81	HP 12x74
63	1072940.85	473337.88	HP 12x74

PILE TABLE			
PILE NO.	NORTHING	EASTING	PILE SIZE
64	1072932.23	473342.96	HP 12x74
65	1072995.24	473324.97	HP 10x57
66	1072987.20	473329.71	HP 10x57
67	1072978.58	473334.78	HP 10x57
68	1072969.96	473339.86	HP 10x57
69	1072961.92	473344.59	HP 10x57
70	1072959.51	473348.75	HP 12x74
71	1072950.46	473354.08	HP 12x74
72	1072941.42	473359.41	HP 12x74
73	1072962.17	473353.27	HP 12x74
74	1072953.12	473358.60	HP 12x74
75	1072944.07	473363.92	HP 12x74
76	1073007.59	473345.95	HP 10x57
77	1072999.55	473350.68	HP 10x57
78	1072990.93	473355.76	HP 10x57
79	1072982.32	473360.83	HP 10x57
80	1072974.28	473365.57	HP 10x57
81	1073019.94	473366.92	HP 10x57
82	1073011.90	473371.66	HP 10x57
83	1073003.28	473376.73	HP 10x57
84	1072994.67	473381.81	HP 10x57
85	1072986.63	473386.54	HP 10x57
86	1073012.45	473314.75	HP 12x74
88	1072997.73	473326.90	HP 12x74
89	1073019.98	473327.53	HP 12x74
91	1073003.75	473337.09	HP 12x74
92	1073018.57	473402.68	HP 10x57
93	1073033.60	473418.36	HP 12x74
94	1073024.99	473423.44	HP 12x74
95	1073012.00	473336.18	HP 10x57
96	1073016.22	473345.24	HP 10x57
97	1073039.19	473323.50	HP 10x57
98	1073043.42	473332.57	HP 10x57
99	1073066.38	473310.83	HP 10x57
100	1073070.61	473319.90	HP 10x57
101	1073093.57	473298.15	HP 10x57
102	1073097.79	473307.21	HP 10x57
103	1073120.32	473284.45	HP 10x57
104	1073124.99	473294.54	HP 10x57
112	1073020.68	473425.98	HP 12x74
113	1073037.91	473415.83	HP 12x74

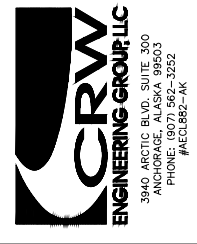
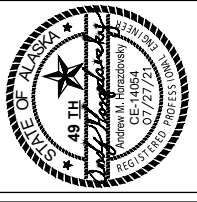
PILE & THERMOPROBE NOTES:

1. INSTALL THERMOPROBES ON ALL BULK TANK, DISPENSING TANK, AND CONNEX SUPPORT PILES.
2. INSTALL THERMOPROBES ON PILES ADJACENT TO THE JOHNSON RIVER (TYP 4)
3. SEE PILE DETAIL SHEET FOR INSTALLATION DEPTHS.

UTILITY POLE PILE:
COORDINATE WITH AVEC & ENGINEER TO FIELD LOCATE
INSTALLATION OF AN HP 10x57 PILE FOR SUPPORT OF
ELECTRICAL SERVICE POLE (SEE ELECTRICAL SITE PLAN,
SEE SHEET C15 FOR POLE TO PILE ATTACHMENT).



PILE LAYOUT PLAN

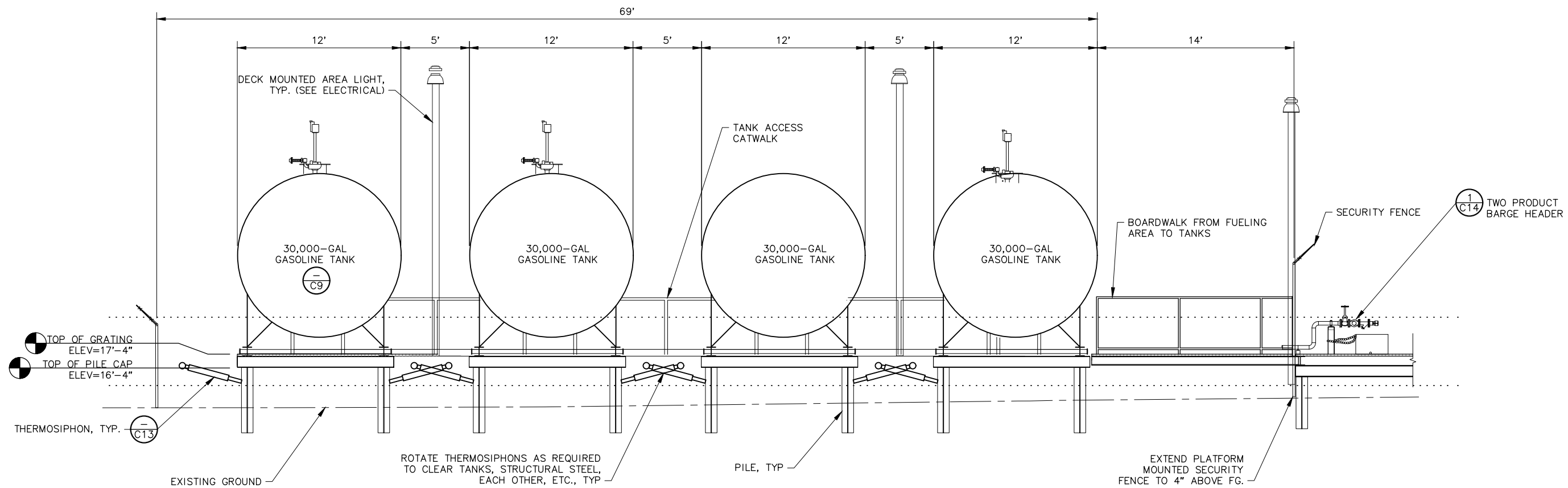


BULK FUEL UPGRADES
PILE LAYOUT PLAN
NUNAPITCHUK, ALASKA

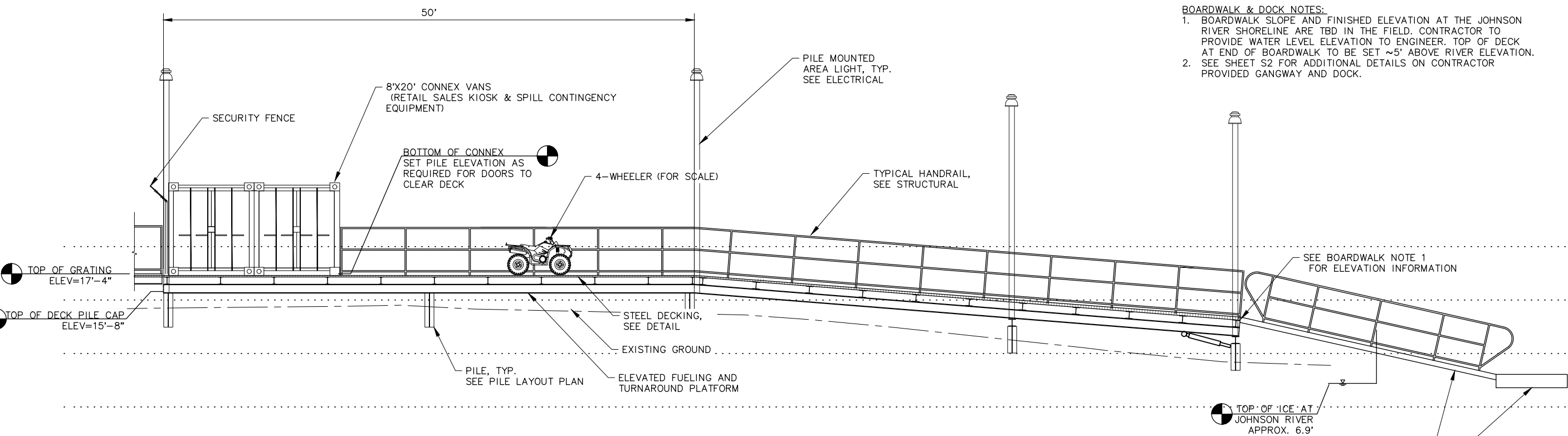
NO.	REVISION	BY	DATE
1	ISSUED FOR BIDDING	AH	7/28/21

Plot: 7/28/21
Date: 7/28/21
Designed: _____
Drawn: _____
Approved: _____

File: J:\JobsData\30418.00 Area - Nunapitchuk Btu\00 Cadd 2019\01 Working Set\01 Civil\30418.00 Typical Section.dwg Plot Date: 7/28/2021 3:03 PM



SECTION A

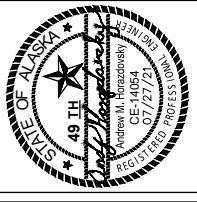


SECTION B



BOARDWALK & DOCK NOTES:

1. BOARDWALK SLOPE AND FINISHED ELEVATION AT THE JOHNSON RIVER SHORELINE ARE TBD IN THE FIELD. CONTRACTOR TO PROVIDE WATER LEVEL ELEVATION TO ENGINEER. TOP OF DECK AT END OF BOARDWALK TO BE SET ~5' ABOVE RIVER ELEVATION.
2. SEE SHEET S2 FOR ADDITIONAL DETAILS ON CONTRACTOR PROVIDED GANGWAY AND DOCK.

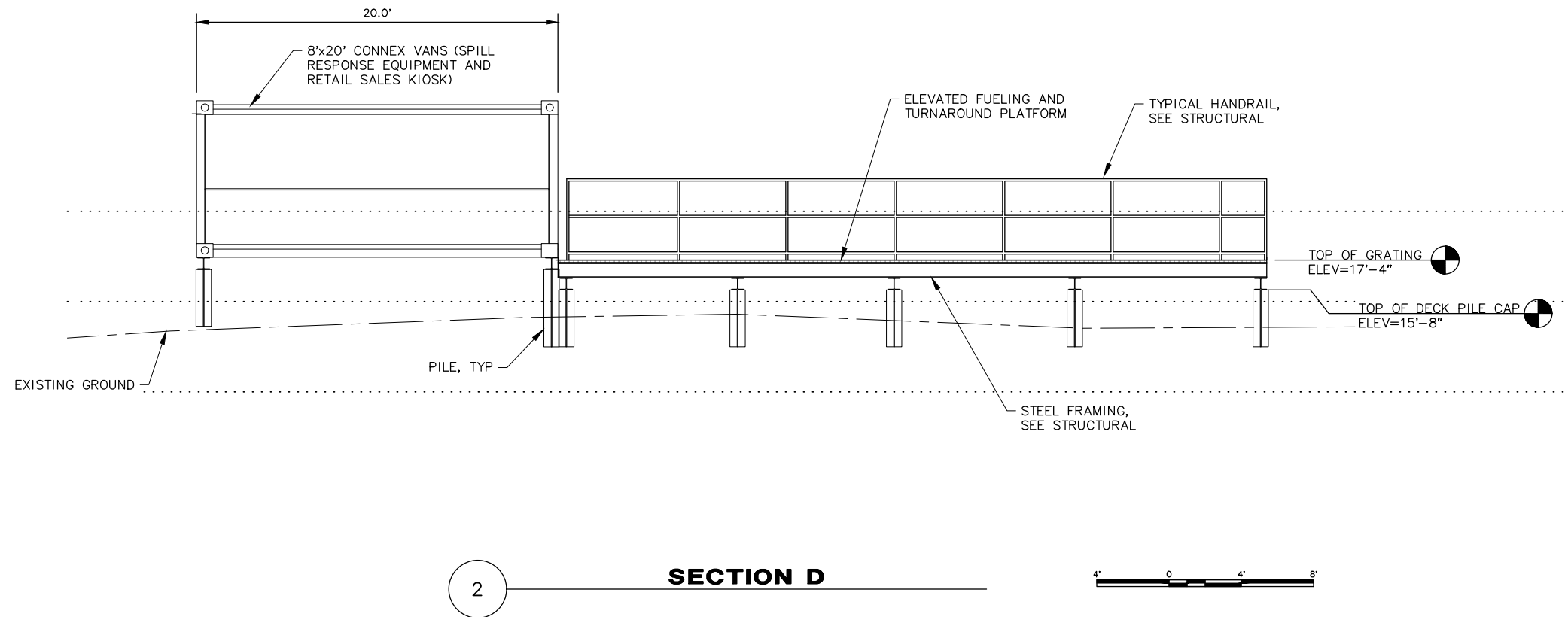
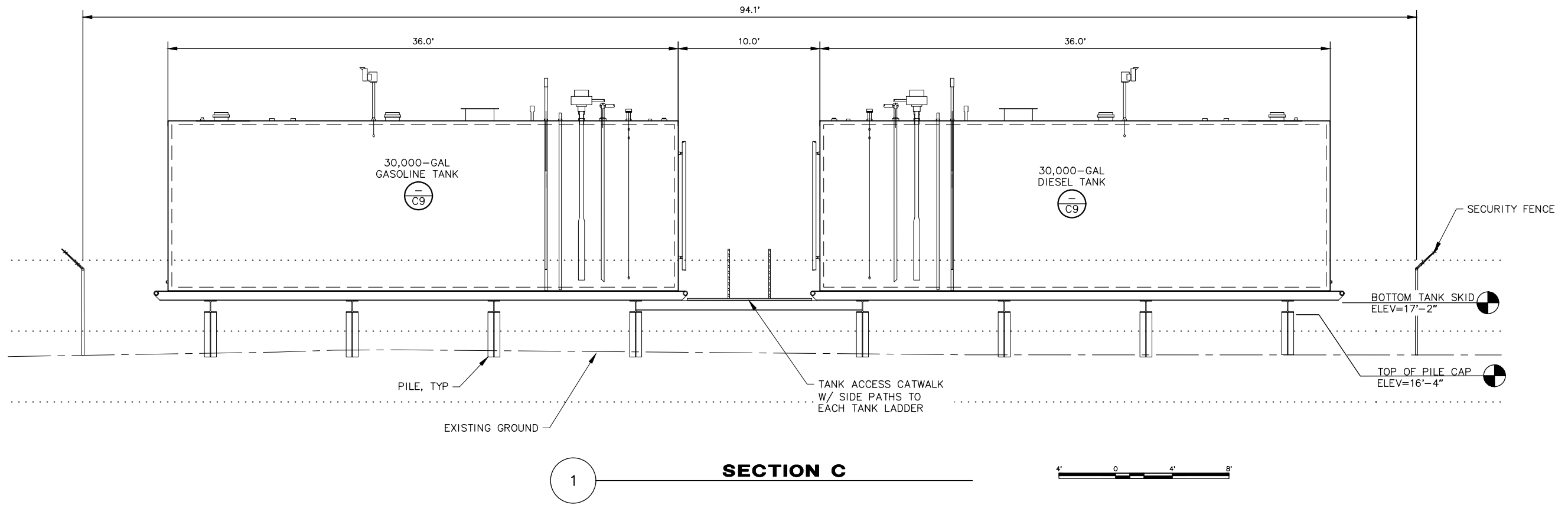


BULK FUEL UPGRADES
TYPICAL SECTION
NUNAPITCHUK, ALASKA

NO.	REVISION	BY	DATE
1	ISSUED FOR BIDDING	AH	7/28/21

Plot: 7/28/21	Designed: _____	Drawn: _____	Approved: _____
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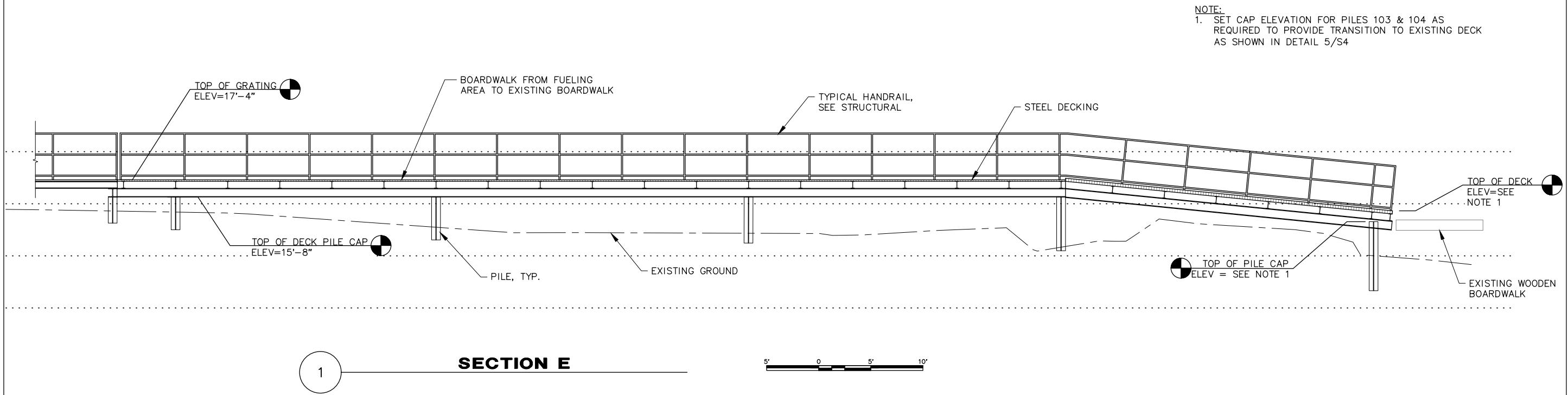


BULK FUEL UPGRADES
TYPICAL SECTION
NUNAPITCHUK, ALASKA

NO.	REVISION	BY	DATE
1	ISSUED FOR BIDDING	AH	7/28/21

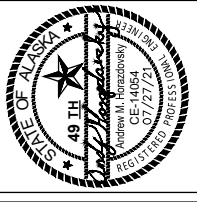
Plot Date: 7/28/21
Designed: _____
Drawn: _____
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Sheet No. **C7**



NOTE:
 1. SET CAP ELEVATION FOR PILES 103 & 104 AS REQUIRED TO PROVIDE TRANSITION TO EXISTING DECK AS SHOWN IN DETAIL 5/S4

1 **SECTION E** 5' 0 5' 10'



BULK FUEL UPGRADES
 TYPICAL SECTION
 NUNAPITCHUK, ALASKA

NO.	REVISION	BY	DATE
1	ISSUED FOR BIDDING	AH	7/28/21

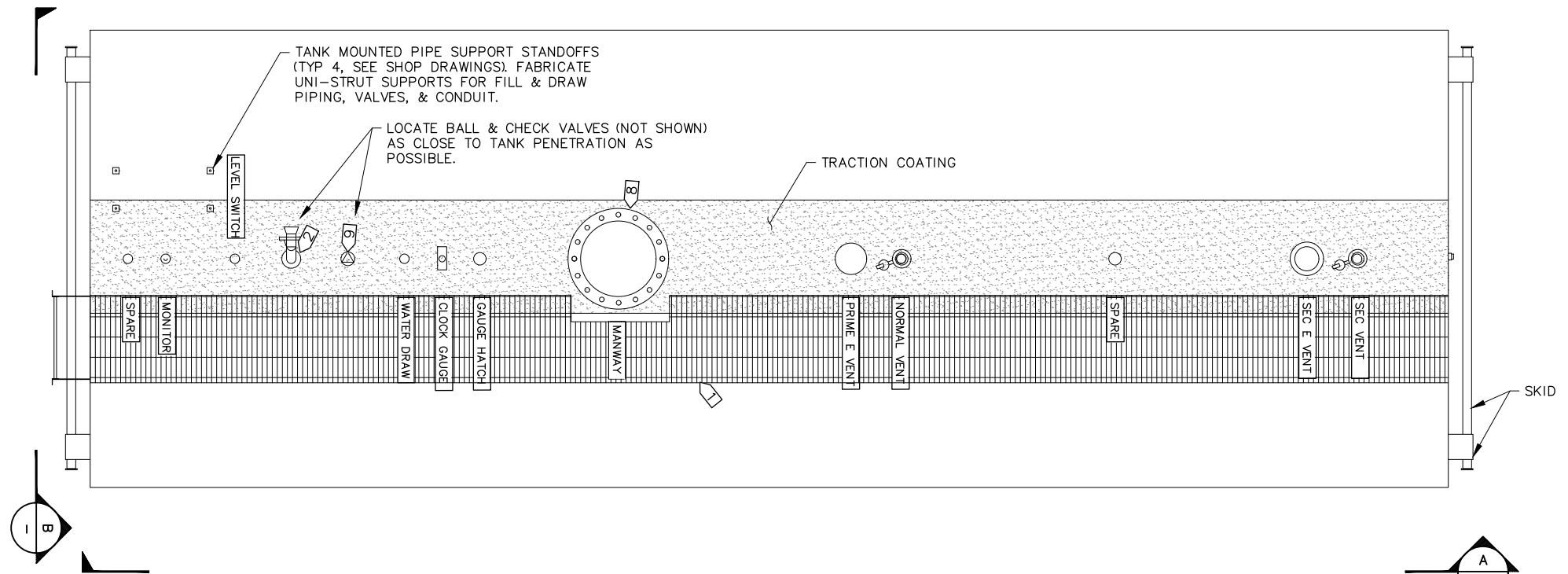
Plot Date: 7/28/21
 Designed: _____
 Drawn: _____
 Approved: _____

SPECIFIC NOTES

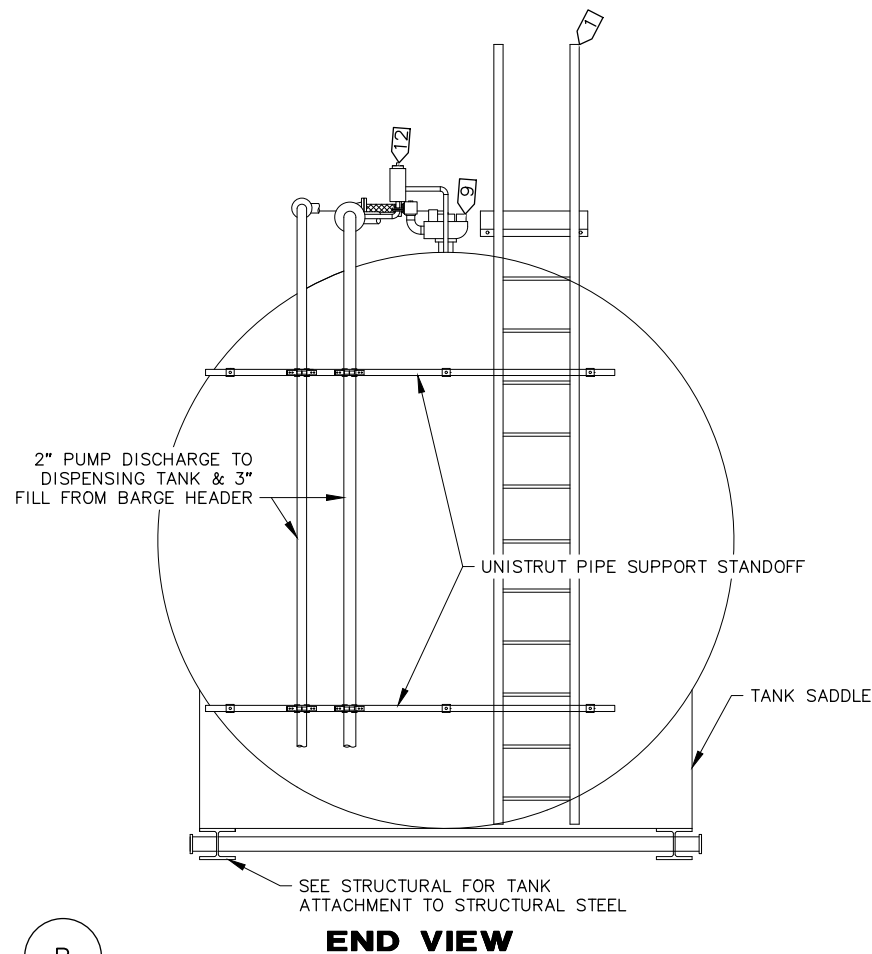
- 1 SHOP FABRICATED BOLT ON LADDER AND PLATFORM
- 2 3" MECHANICAL FILL LIMITER & DROP TUBE INSTALLED ON 6" FPT
- 3 4" THREADED PENETRATION (SPARE W/ PLUG)
- 4 2" THREADED PENETRATION (CLOCK GAUGE INSTALLED ON 2" X 18" NIPPLE) 2
C11
- 5 2" FPT (GAUGE HATCH INSTALLED ON 2" X 4" NIPPLE)
- 6 2" THREADED PENETRATION (WATER DRAW) 3
C11
- 7 3" FPT (3 POSITION LEVEL SWITCH)
- 8 24" MANHOLE
- 9 4" FPT (SUBMERSIBLE PUMP)
- 10 10" FLANGED PENETRATION (E-VENT, TYP 2)
- 11 3" FPT (3" PRESSURE VACUUM VENT WITH WHISTLE ALARM.) SET WHISTLE ALARM TO 90% FULL.
- 12 1" PRV (SELECT TANKS ONLY, SEE OP SCHEMATIC)

GENERAL NOTES

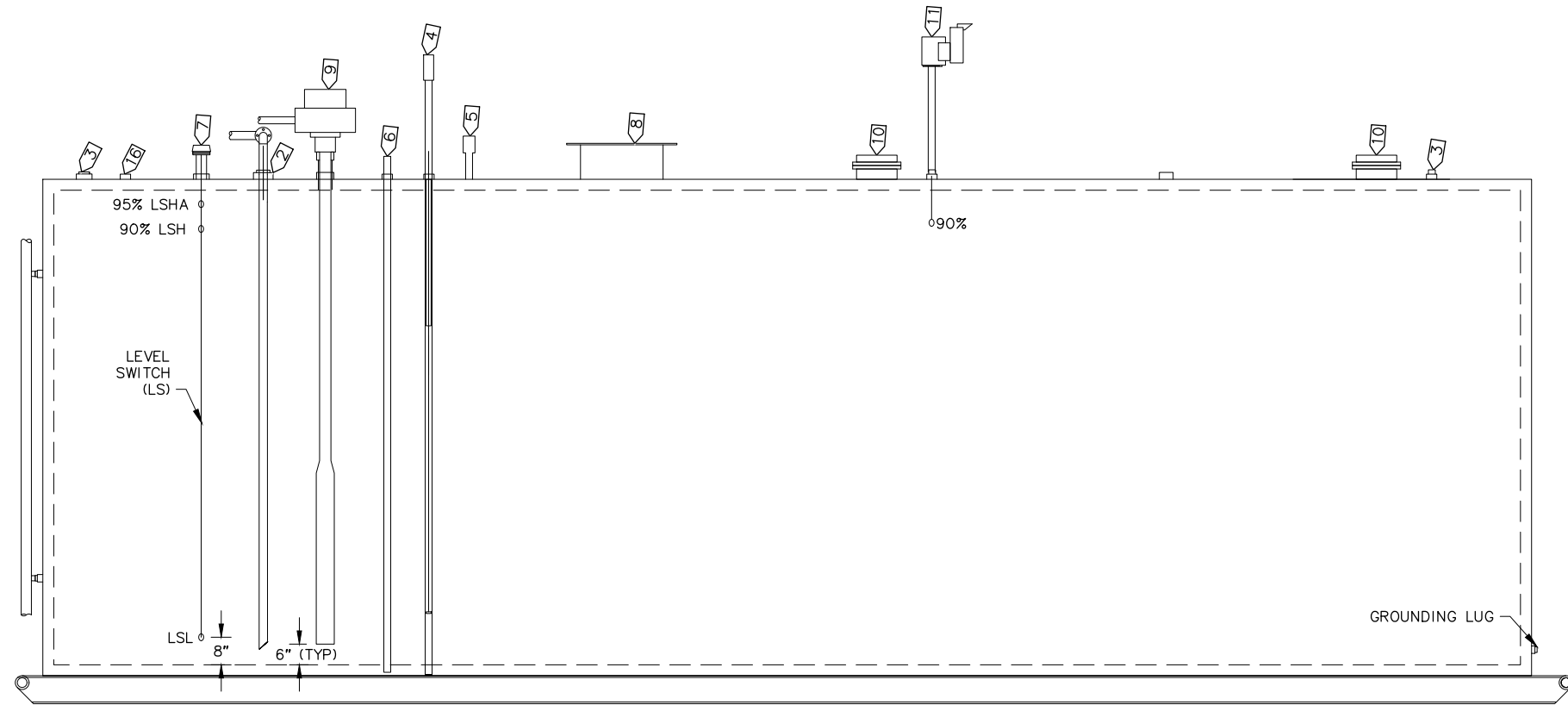
- 1. TANKS ARE NEW, OWNER PROVIDED, DOUBLE WALL, UL 142 LISTED AND LABELED ASTs. SEE APPROVED SHOP DRAWINGS FOR ADDITIONAL DETAILS.
- 2. SEE SPECIFICATIONS & OP SCHEMATIC (SHEET C2) FOR FURTHER COMPONENT REQUIREMENTS.



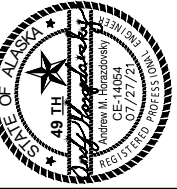
30,000 GALLON DOUBLE WALL TANK PLAN VIEW



END VIEW



SECTION VIEW



BULK FUEL UPGRADES
30,000 GAL DOUBLE WALL TANK

NUNAPITCHUK, ALASKA

NO.	REVISION	BY	DATE
1	ISSUED FOR BIDDING	AH	7/28/21

Plot: 7/28/21	Designed: -	Drawn: -	Approved: -
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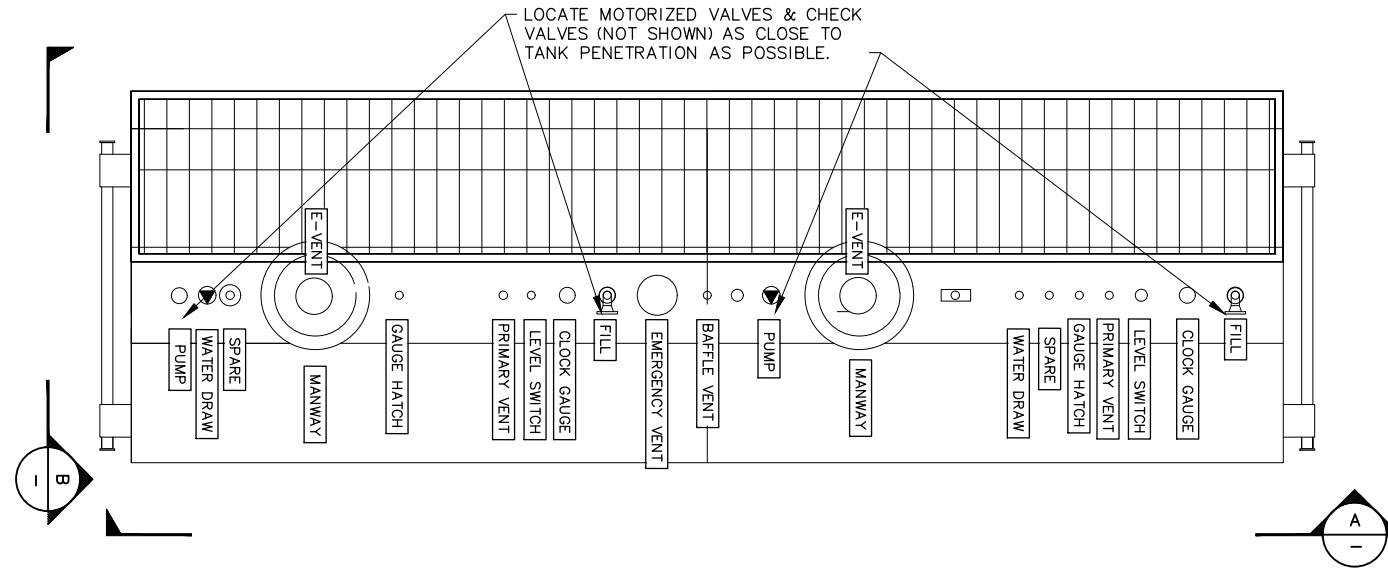
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SPECIFIC NOTES

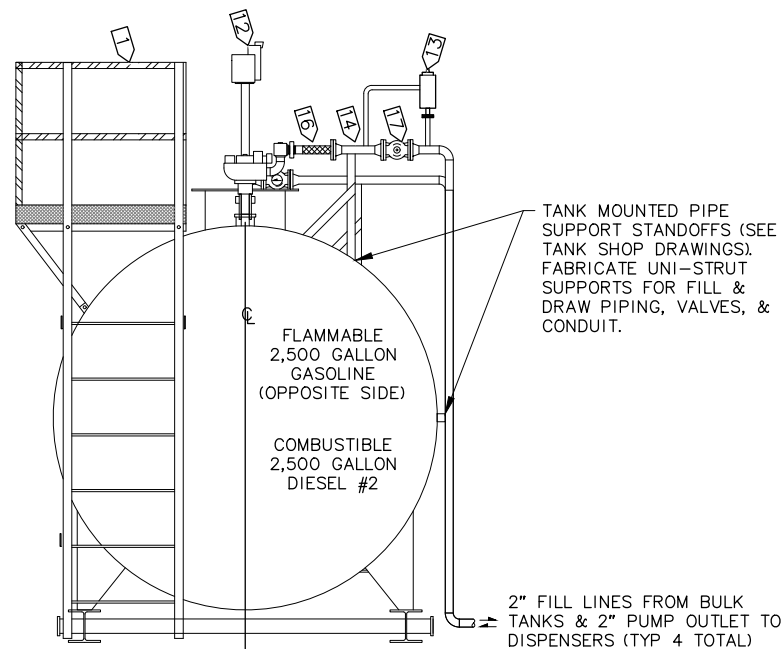
- 1 SHOP FABRICATED BOLT ON LADDER AND PLATFORM (OWNER PROVIDED, CONTRACTOR INSTALLED)
- 2 2" MECHANICAL FILL LIMITER w/ DROP TUBE INSTALLED IN 4" FPT
- 3 4" THREADED PENETRATION (SPARE W/ PLUG)
- 4 2" THREADED PENETRATION (CLOCK GAUGE INSTALLED ON 2" X 18" NIPPLE)
- 5 2" FPT (GAUGE HATCH INSTALLED ON 2"X4" NIPPLE)
- 6 2" THREADED PENETRATION (WATER DRAW)
- 7 3" FPT FOUR POSITION LEVEL SWITCHES
- 8 24" MANHOLE
- 9 4" FPT (SUBMERSIBLE PUMP)
- 10 6" FLANGED PENETRATION (E-VENT)
- 11 8" FLANGED PENETRATION (SECONDARY E-VENT)
- 12 3" THREADED PENETRATION (2" PRESSURE VACUUM VENT WITH WHISTLE ALARM.) INSTALL WITH 3"X2" REDUCING BUSHING & 2"X24" NIPPLE. SET WHISTLE ALARM TO 90% FULL.
- 13 1" PRV
- 14 2" CHECK VALVE
- 15 BALL VALVE
- 16 FLEXIBLE CONNECT
- 17 MOTOR ACTUATED BALL VALVE

GENERAL NOTES

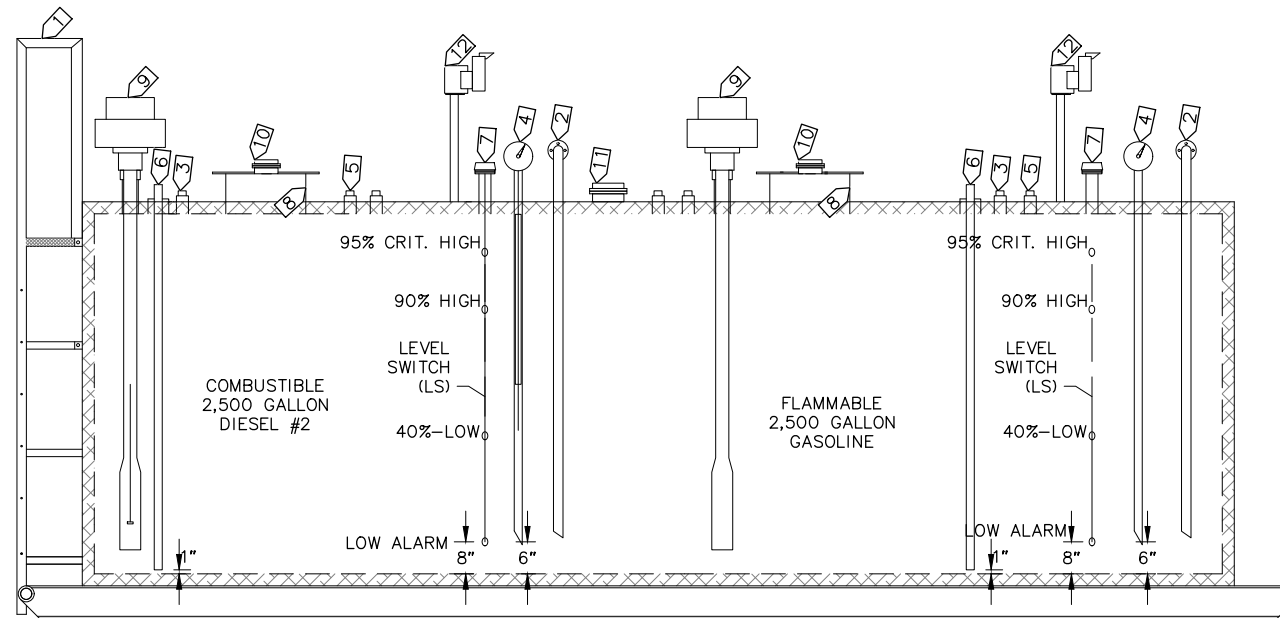
1. TANK IS NEW, OWNER PROVIDED, PROTECTED, UL 2085 LISTED AND LABELED AST. SEE APPROVED SHOP DRAWINGS FOR ADDITIONAL DETAILS.
2. SEE SPECIFICATIONS & OP SCHEMATIC (SHEET C2) FOR FURTHER COMPONENT REQUIREMENTS.



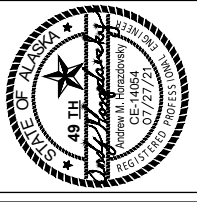
5,000 GALLON DUAL PRODUCT PROTECTED DISPENSING TANK -PLAN VIEW



END VIEW



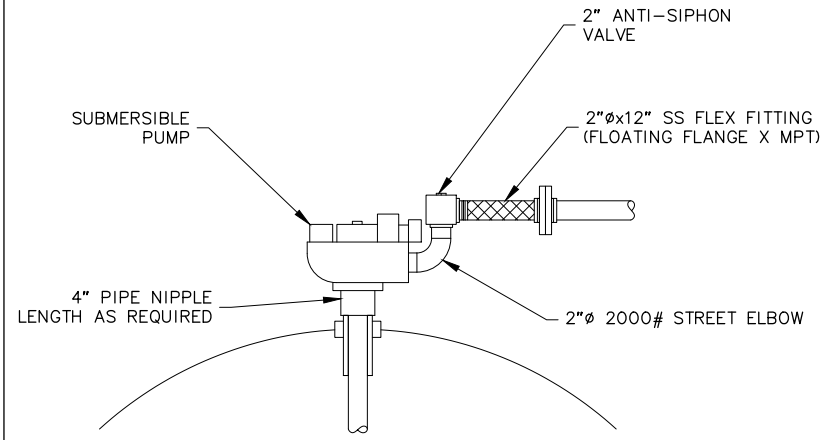
SECTION VIEW



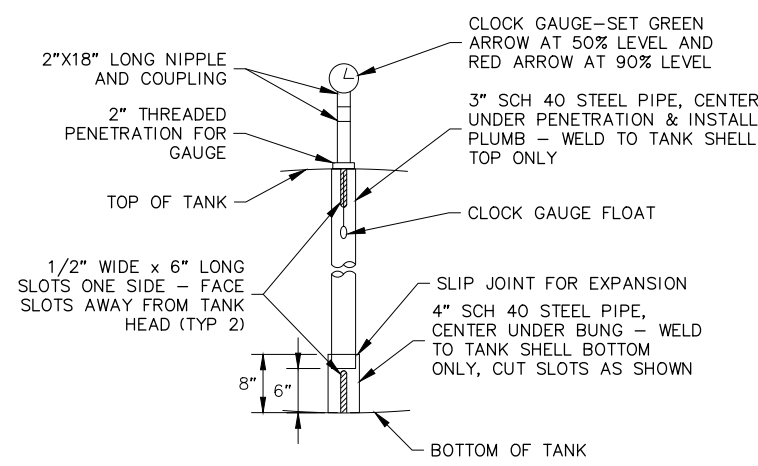
BULK FUEL UPGRADES
5,000 GAL DOUBLE WALL PROTECTED DISPENSING TANK
NUNAPITCHUK, ALASKA

NO.	REVISION	BY	DATE
1	ISSUED FOR BIDDING	AH	7/28/21

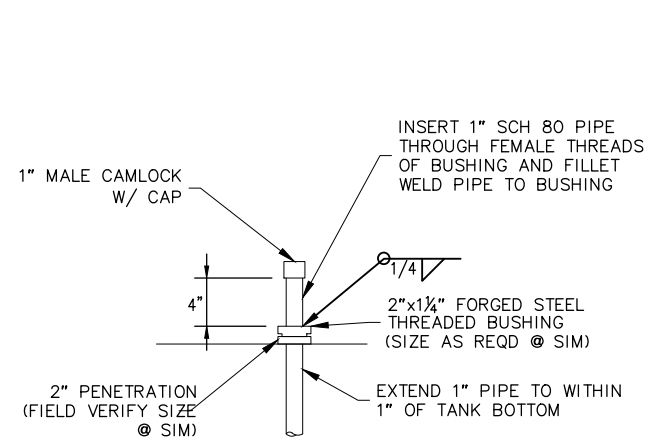
Plot: 7/28/21
Date: -
Designed: -
Drawn: -
Approved: -



1 **SUBMERSIBLE PUMP ASSEMBLY**



2 **GAUGE FLOAT STILLING WELL**



3 **TYP WATER DRAW**

GENERAL NOTES

1. SEE SPECIFICATIONS FOR DETAILED COMPONENT DESIGNATIONS.
2. PROVIDE UL APPROVED GROUNDING LUG ON TANK SKIDS (TYP 2, ON OPPOSITE CORNERS)



BULK FUEL UPGRADES
MISCELLANEOUS TANK DETAILS
NUNAPITCHUK, ALASKA

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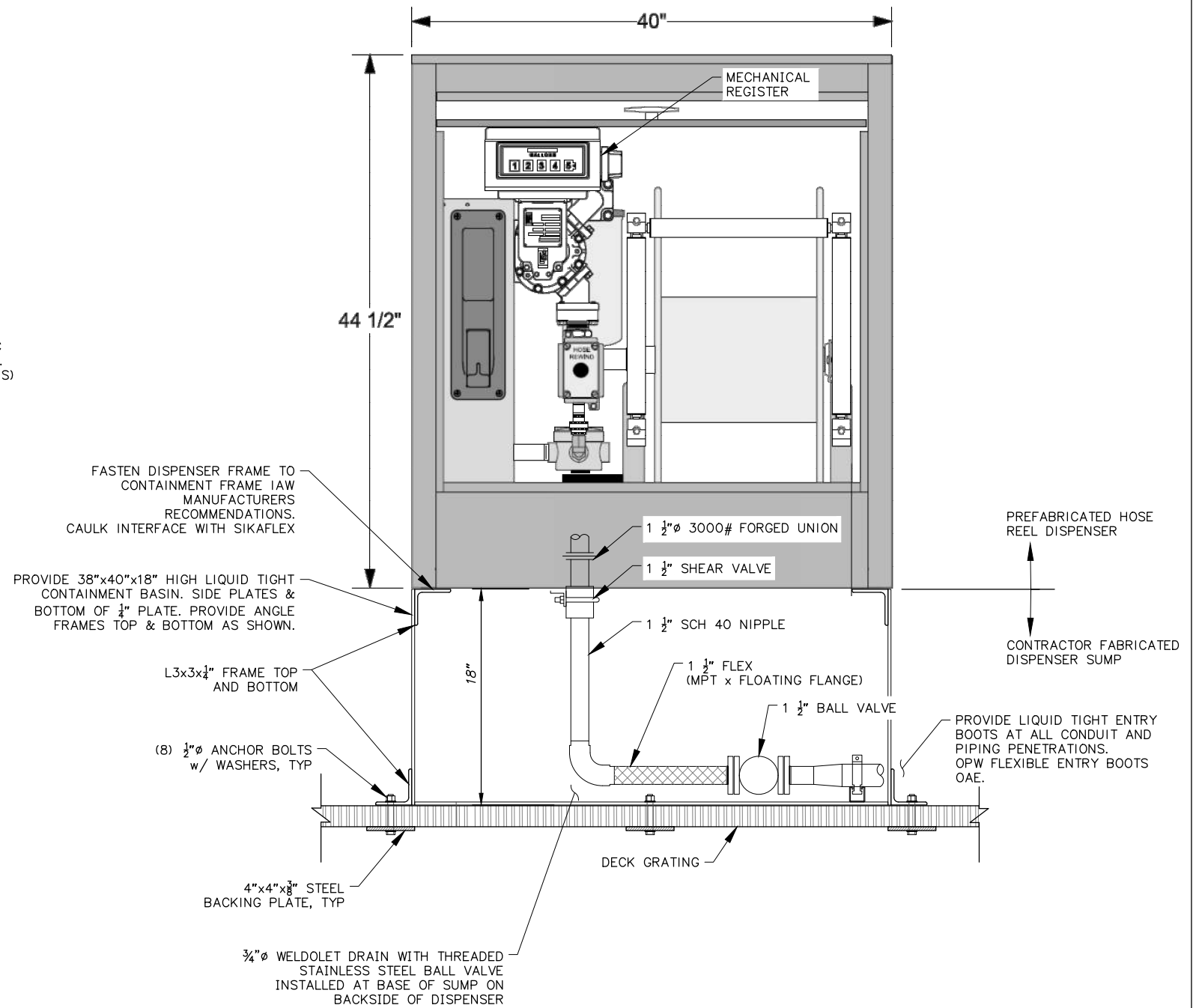
Plot Date: 7/28/21
Designed: _____
Drawn: _____
Approved: _____



EQUIP WITH ARCTIC HOSE, NOZZLE, ETC. (SEE SPECIFICATIONS)

DISPENSER NOTES

1. PROVIDE PREFABRICATED PMC CG CABINET FUEL DISPENSER MODEL CG-515-MA. SEE SPECIFICATIONS FOR ADDITIONAL DETAILS AND REQUIRED DISPENSING APPURTENANCES. SEE MANUFACTURERS CUT SHEETS FOR MOUNTING AND PIPING DIMENSIONS.
2. SUBMIT SHOP DRAWINGS FOR LIQUID TIGHT DISPENSER BASE.
3. SEE ELECTRICAL FOR CONTROLS.



1 HOSE REEL DISPENSER ELEVATION VIEW

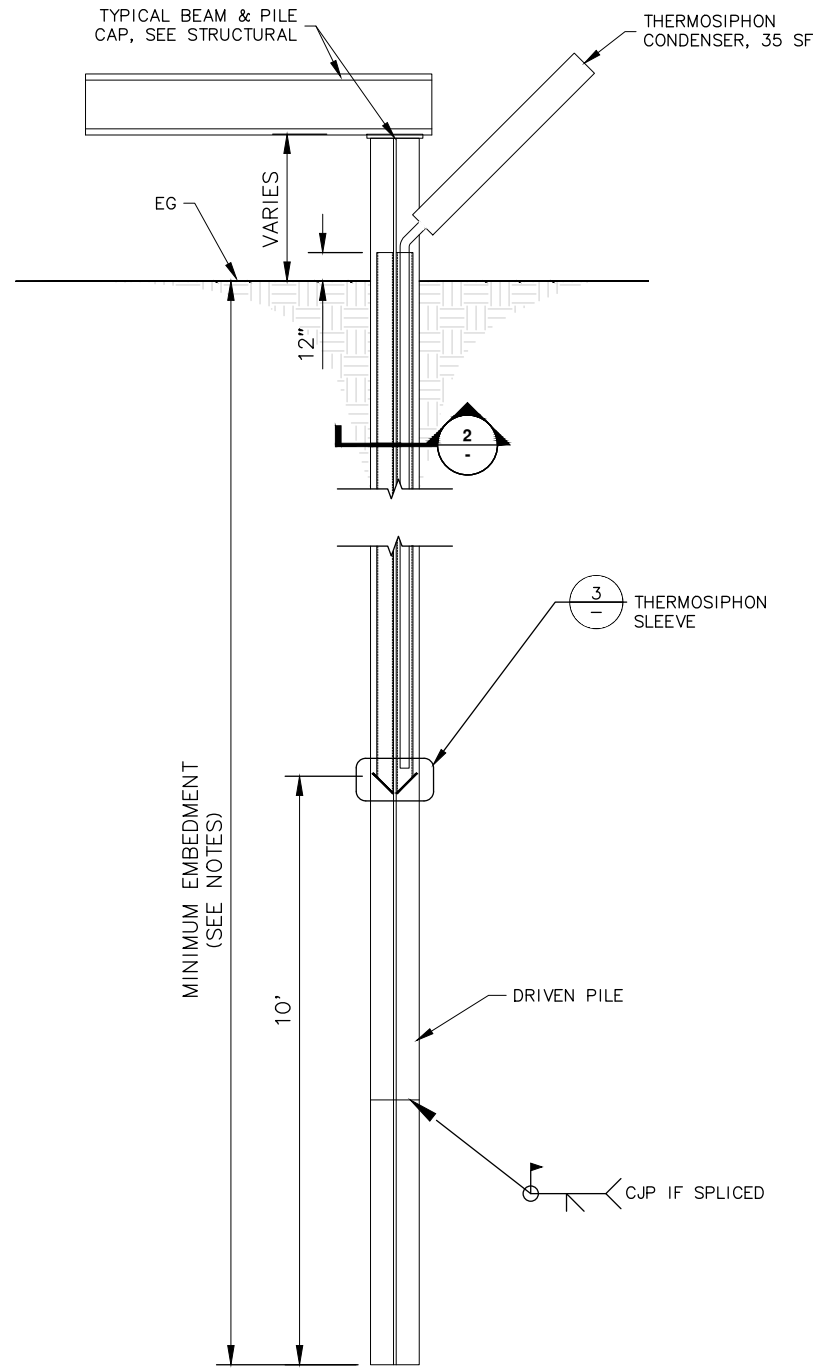
2 HOSE REEL DISPENSER FRONT VIEW & SUMP



BULK FUEL UPGRADES
HOSE REEL DISPENSER
NUNAPITCHUK, ALASKA

NO.	REVISION	DATE
1	ISSUED FOR BIDDING	7/28/21

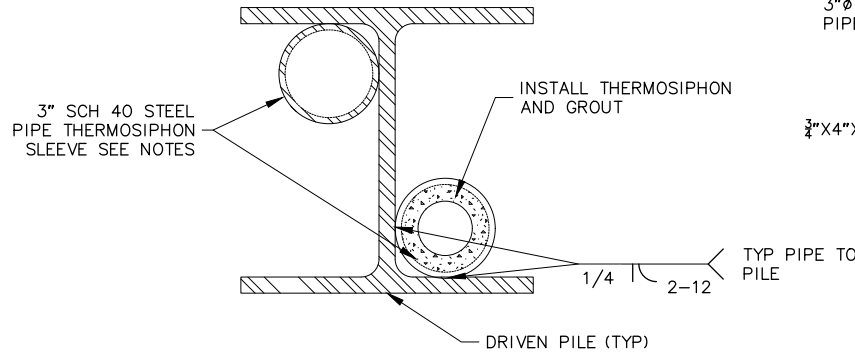
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Designed: _____
Drawn: _____
Approved: _____



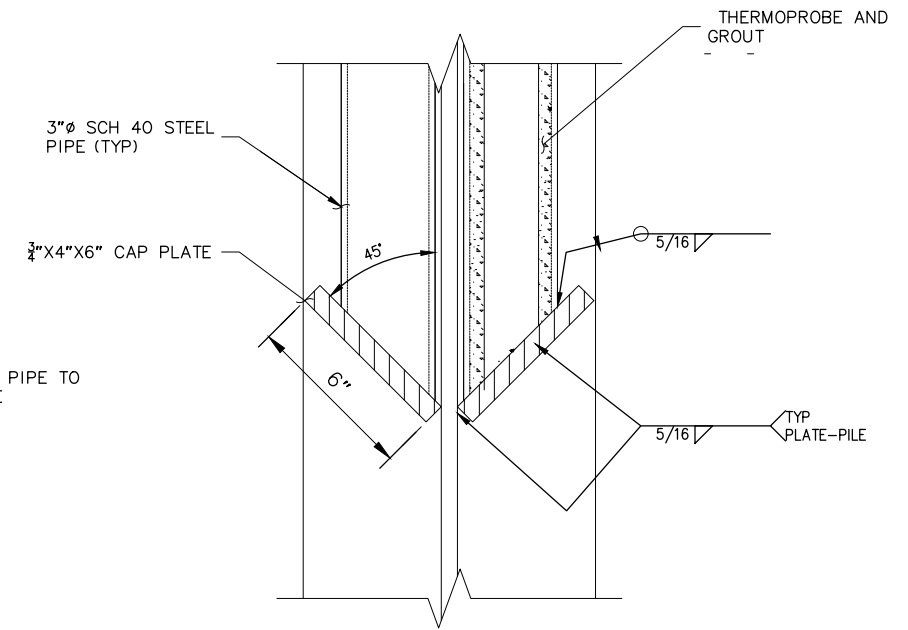
PILE EMBEDMENT NOTES:

1. ALL HP12 PILES SHALL BE EMBEDDED 45' MIN & ALL HP10 PILES SHALL BE EMBEDDED 37' MIN.

1 TYPICAL PILE INSTALLATION
SCALE: NTS



2 TYPICAL P1 PILE SECTION
SCALE: NTS



3 THERMOSIPHON SLEEVE END
SCALE: NTS

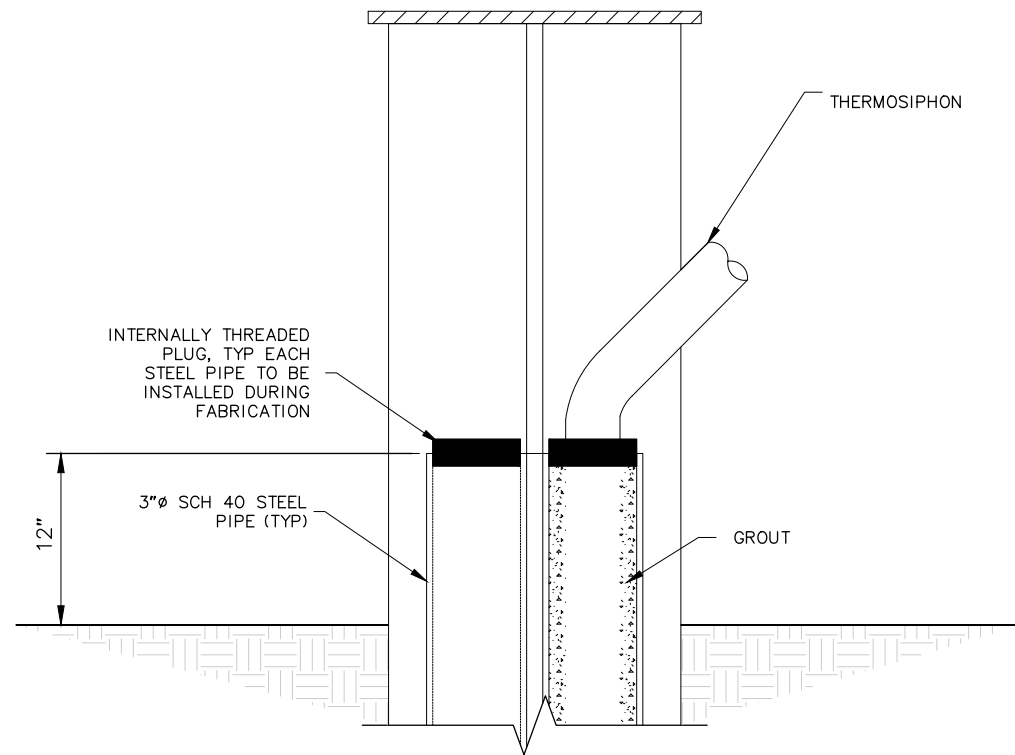
THERMOSIPHON NOTES:

1. SEE SPECIFICATIONS FOR OWNER FURNISHED MATERIALS. THERMOSIPHON SLEEVES ARE TO BE FABRICATED AND WELDED TO THE PILES BY THE CONTRACTOR.
2. INSTALL THERMOSIPHONS & PILE SLEEVES AT LOCATIONS SHOWN ON THE PILE LAYOUT PLAN.
3. INSTALL THERMOSIPHONS ON PILES ADJACENT TO THE JOHNSON RIVER (TYP 4)

PASSIVE COOLING- THERMOPROBES

THERMOPROBES TO BE DESIGNED BY ARCTIC FOUNDATION INC., TO THE FOLLOWING SPECIFICATIONS:

EVAPORATOR: 1.5" DIAMETER
CONDENSER AREA: 35 SQFT
MIN EMBEDMENT DEPTH: 35 FT



4 THERMOSIPHON SLEEVE END
SCALE: NTS



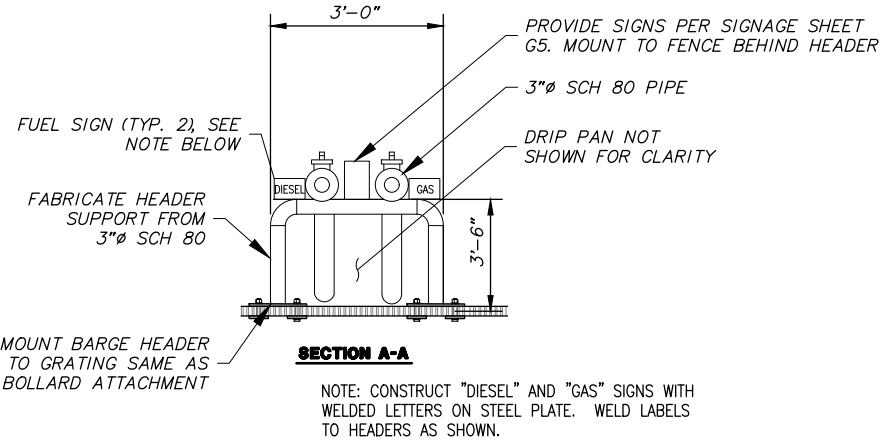
BULK FUEL UPGRADES
THERMOSIPHON AND PILE DETAILS

NUNAPITCHUK, ALASKA

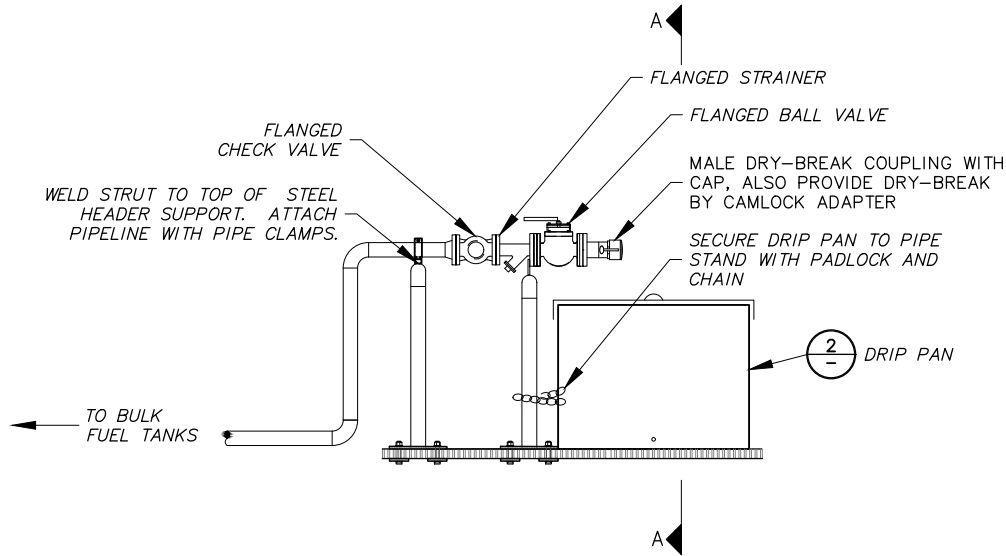
NO.	REVISION	BY	DATE
1	ISSUED FOR BIDDING	AH	7/28/21

Plot: 7/28/21	Designed: -	Drawn: -	Approved: -
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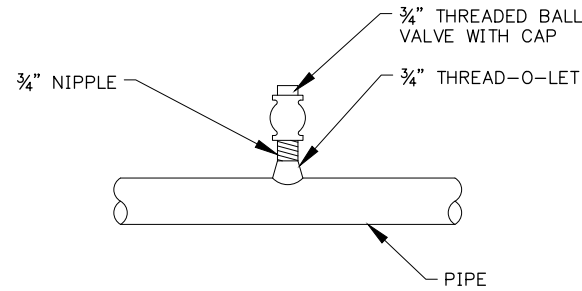
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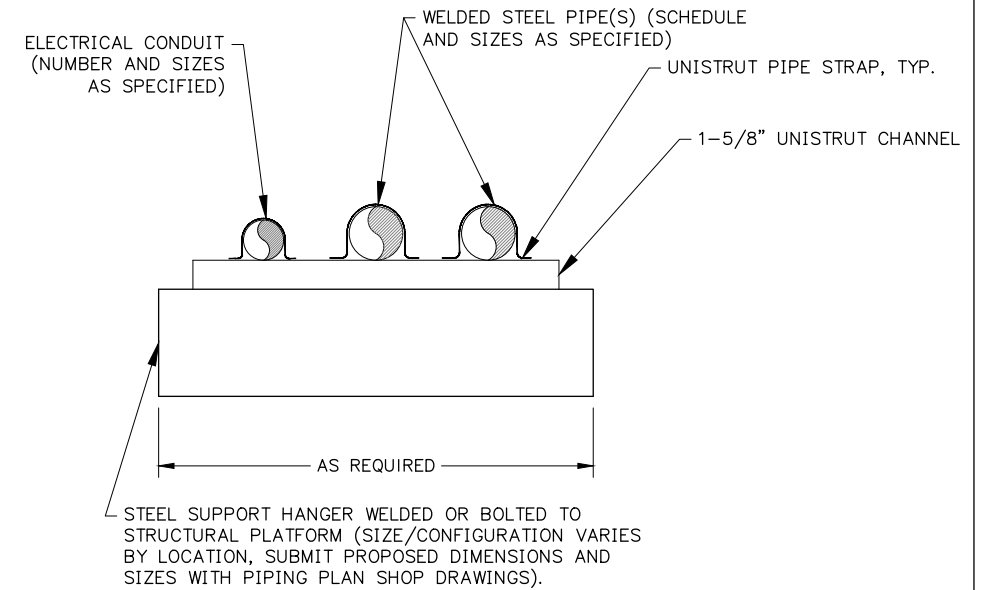
1 BARGE FILL HEADER DETAIL



2 DRIP PAN DETAIL

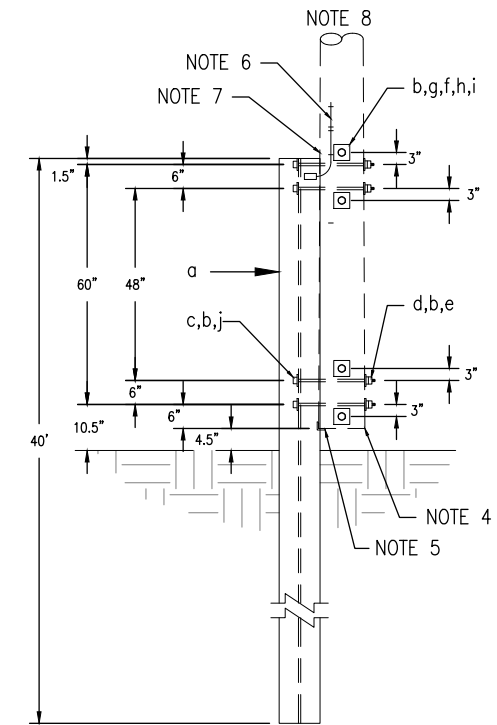


3 PRESSURE TEST CONNECTION



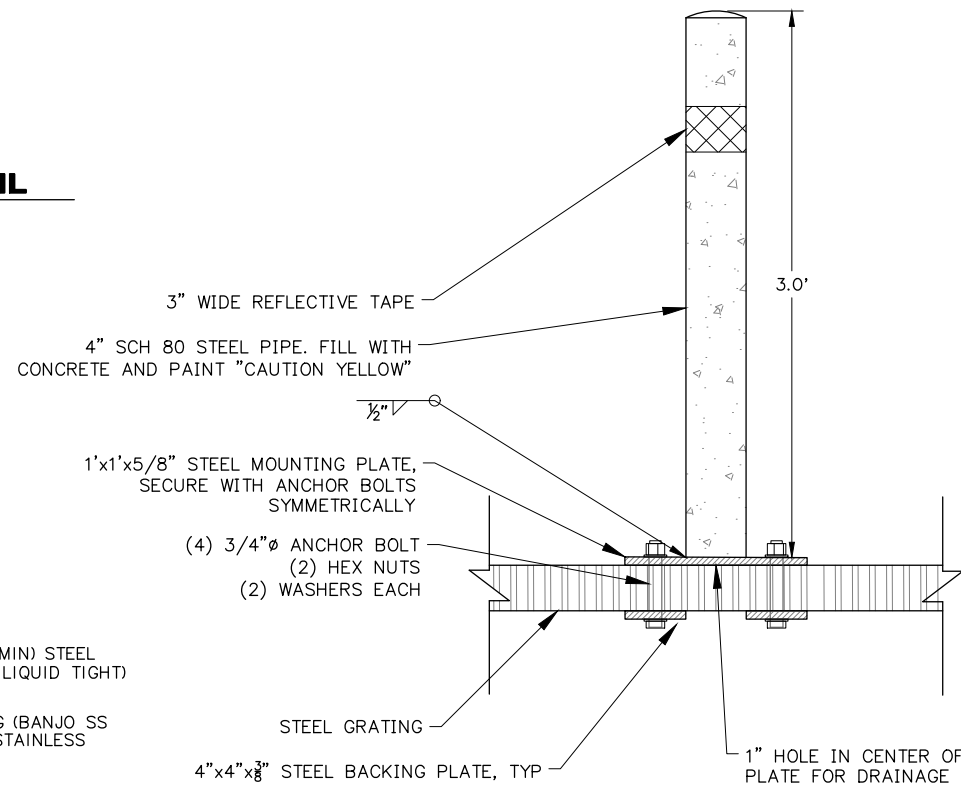
4 PIPE SUPPORT

- WOOD POLE TO PILE NOTES:**
1. BOLT HOLES ARE TO BE FIELD DRILLED AT 1/8" LARGER THAN BOLT.
 2. FIELD LOCATE PILE PER PILE PLAN AND ELECTRICAL.
 3. THE SPRING WASHER SHALL BE INSTALLED SO THAT THE SPRING WASHER LAYS HORIZONTAL.
 4. THE BUTT OF THE POLE SHALL BE APPROXIMATELY 6" OFF OF THE GROUND.
 5. SMALL PIECE OF 3"x3" ANGLE STEEL IS TO BE WELDED ONTO PILING TO SUPPORT POLE DURING INSTALLATION.
 6. POLE SHALL BE SNUG AGAINST PILING FOR ITS ENTIRE LENGTH. TIGHTEN BOLTS SEQUENTIALLY AND EVENLY. BOLTS SHALL BE TIGHTENED WITH THE SPRING WASHER COMPLETELY COMPRESSED AND THE SQUARE WASHER AND PILING FLANGE INDENTED INTO THE WOOD POLE 1/16".
 7. SEE ELECTRICAL FOR POLE REQUIREMENTS.



ITEM	QTY.	MATERIAL
a	1	10x57x HP STEEL PILING
b	8	SPRING CLIP WASHER, 3/4"
c	4	BOLT, WASHER, 3/4" x REQ'D LENGTH
d	4	WASHER, SQ. CURVED, 4"x4" W/ 13/16" HOLE
e	4	LOCKNUT, 3/4" MF TYPE
f	4	SPRING CLIP WASHER, 5/8"
g	4	BOLT, MACHINE, 5/8" x REQ'D LENGTH
h	8	WASHER, SQ. CURVED, 4"x4" W/ 11/16" HOLE
i	4	LOCKNUT, 5/8" MF TYPE
j	4	WASHER, SQ., 2-1/4"x2-1/4" W/ 13/16" HOLE

6 ELECTRICAL POLE TO PILE



5 BOLLARD DETAIL



BULK FUEL UPGRADES
 MISCELLANEOUS DETAILS
 NUNAPITCHUK, ALASKA

NO.	REVISION	DATE	BY	DATE
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 Designed: _____
 Drawn: _____
 Approved: _____

THE MODIFIED CONNEX FALLS UNDER THE FOLLOWING CATEGORIES WITHIN THE 2012 IBC:

OCCUPANCY TYPE (MIXED): MOTOR FUEL-DISPENSING FACILITY (M) / STORAGE (S-1)
 CONSTRUCTION TYPE: VB
 ALLOWABLE AREA (M): 9,000 SF
 MAXIMUM HEIGHT: 40 FT

EXITS REQUIRED: 1
 PANIC HARDWARE: NOT REQUIRED

EXIT SEPARATION: GREATER THAN 1/2 OF THE LONGEST DIAGONAL DISTANCE
 EXIT TRAVEL DISTANCE: 200 FT MAXIMUM WITHOUT SPRINKLER SYSTEM

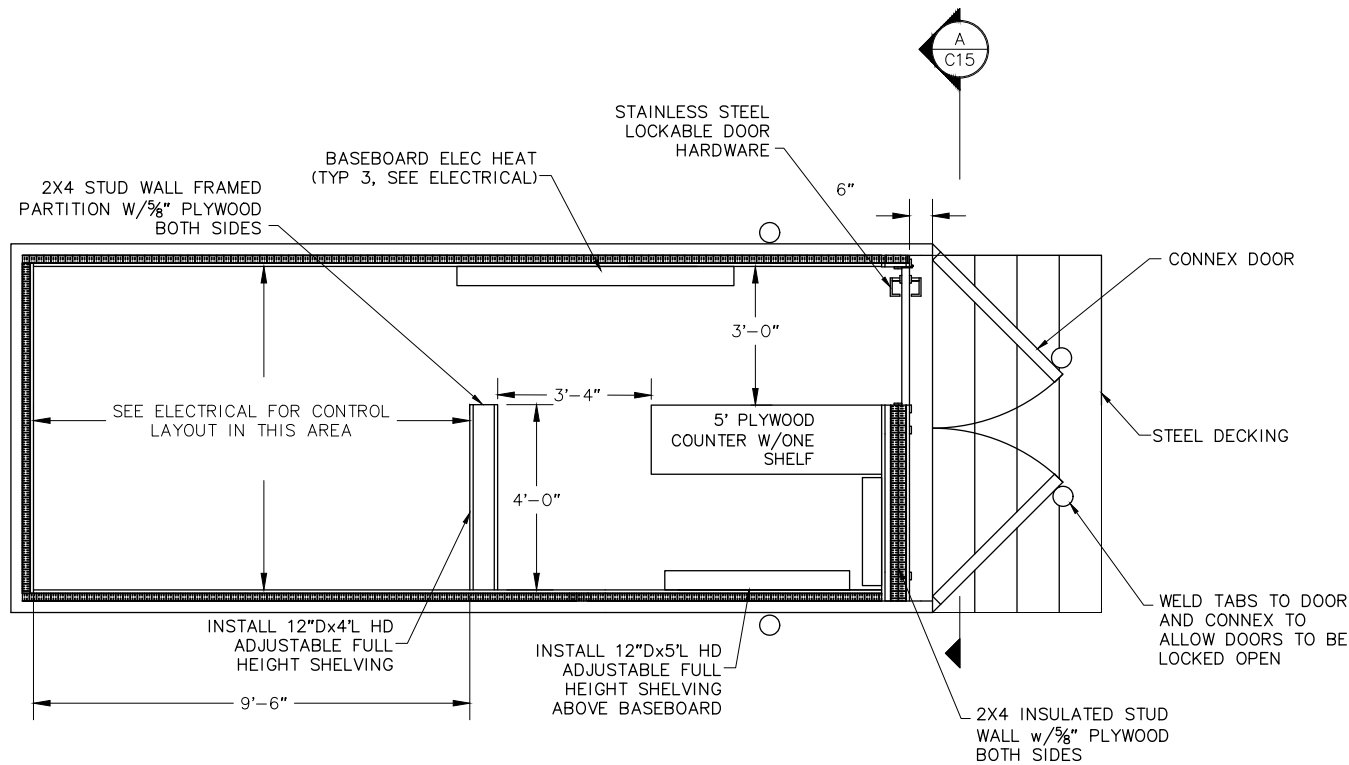
FIRE BLOCKING: NOT REQUIRED
 FIRE ALARM: NOT REQUIRED
 FIRE SUPPRESSION SYSTEM: NOT REQUIRED
 SMOKE ALARMS: NOT REQUIRED

CONNEX INSULATION AND INTERIOR SURFACE CONSTRUCTION SEQUENCE:

- ROOF & WALLS:
1. BOND DOW HI-40 RIGID INSULATION TO CONNEX ROOF (2 LAYERS @ 2" EA) AND WALLS (1 LAYER @ 2") WITH OSI QB-300 CONSTRUCTION ADHESIVE.
 2. TAPE ALL INSULATION JOINTS WITH TYVEK TAPE.
 3. BOND 5/8" T&G PLYWOOD TO INSULATION WITH OSI QB-300 CONSTRUCTION ADHESIVE.
 4. TEK SCREW OR BOLT PLYWOOD & INSULATION TO CONNEX AT 24" OC EA WAY.
 5. APPLY A FLEXIBLE ROOF SEALANT TO ALL ROOF AND WALL PENETRATIONS.
 6. PRIME AND PAINT PLYWOOD WHITE.
 - 7.
- UNDERSIDE OF CONNEX:
1. APPLY URETHANE SPRAY FOAM TO THE UNDERSIDE OF CONNEX (4" MIN.) TOP COAT WITH SWD URETHANE QUICK-SHIELD 951, OAE.

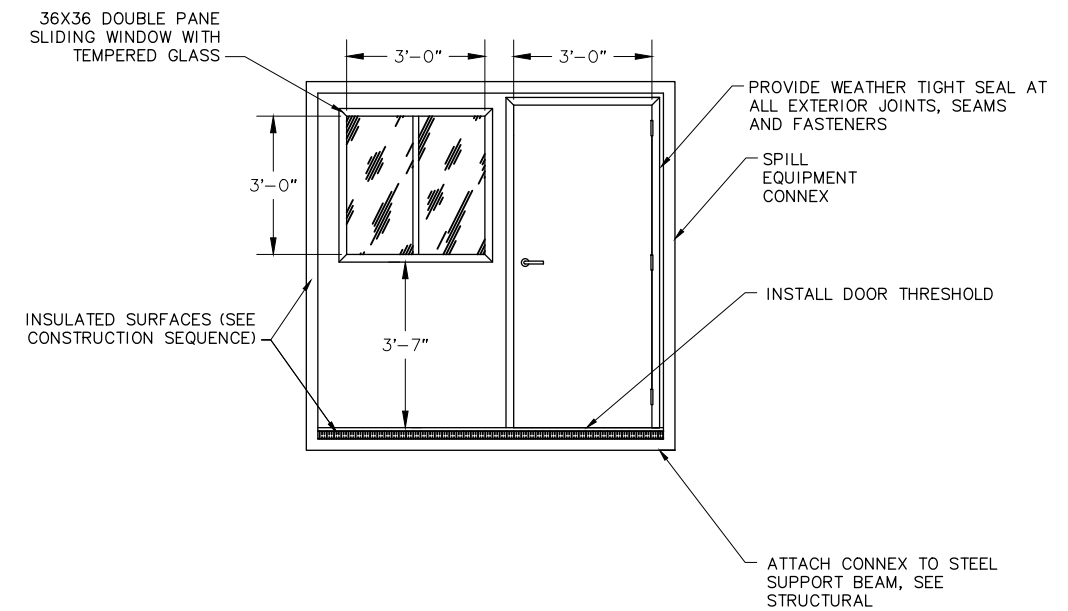


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- NOTES:
1. CONNEX DOORS TO REMAIN LOCKED OPEN DURING BUILDING USE.
 2. SEE ELECTRICAL FOR WIRING AND BASEBOARD HEAT.

CONNEX UPGRADES



PARTITION SECTION

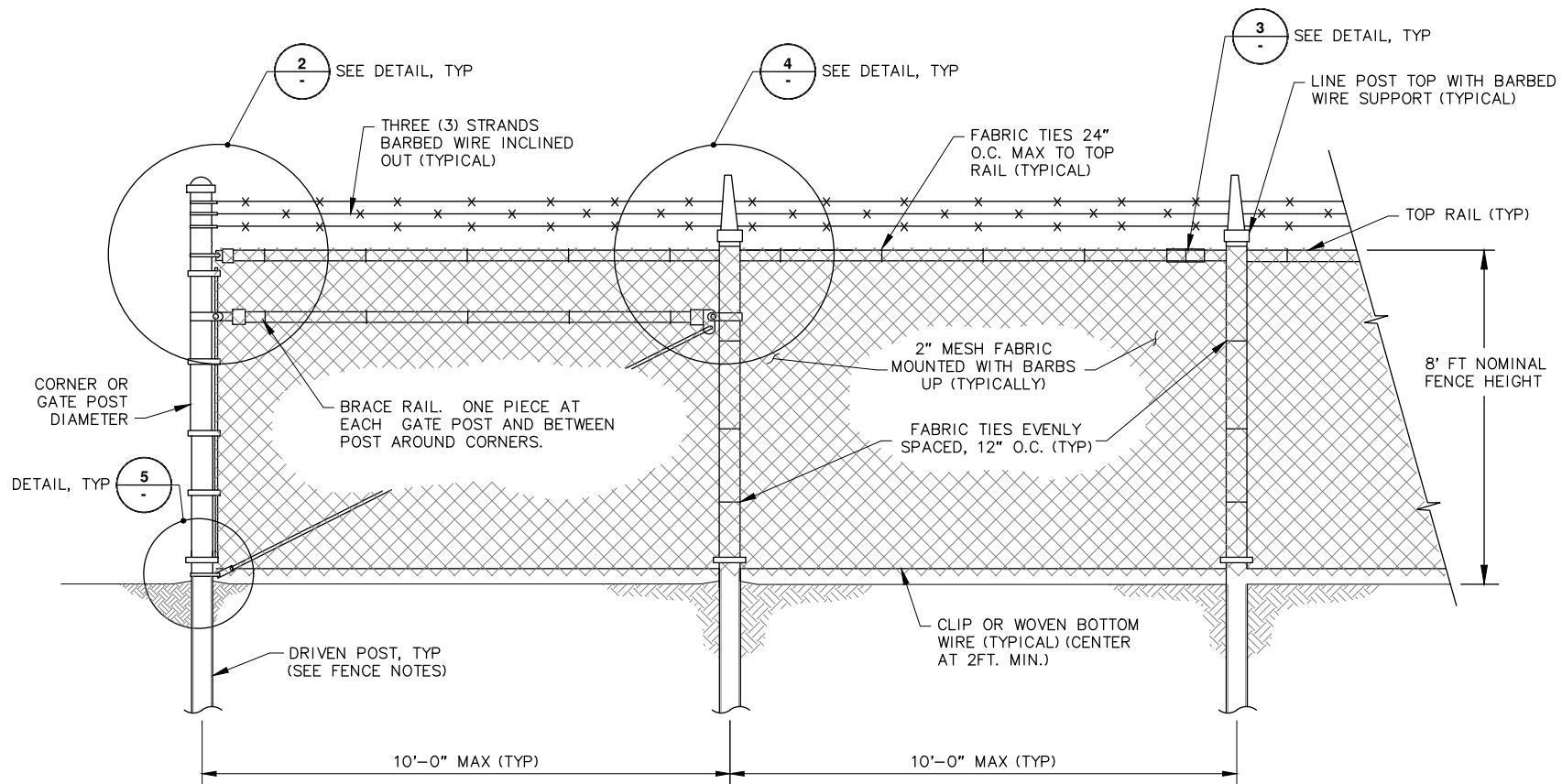
BULK FUEL UPGRADES
 CONNEX UPGRADES
 NUNAPITCHUK, ALASKA

NO.	REVISION	BY	DATE
1	ISSUED FOR BIDDING	AH	7/28/21

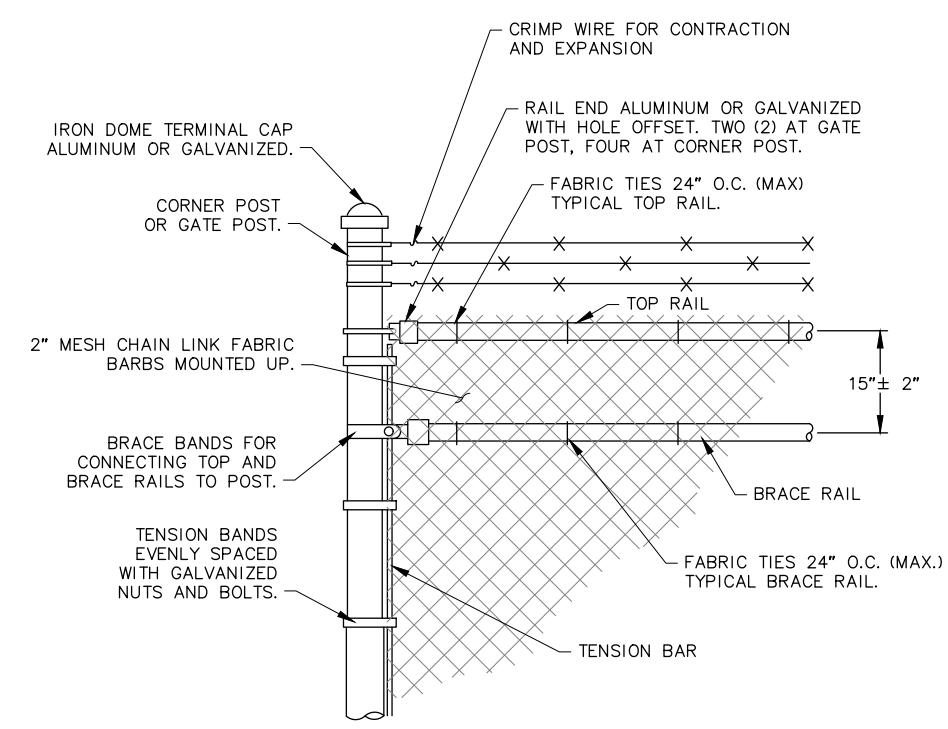
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 Approved: _____

Sheet No. **C15**

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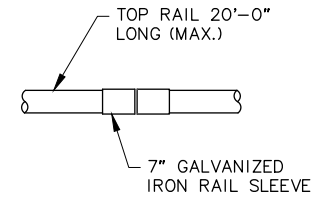


1 CORNER & LINE POST INSTL. (TYP)
NTS

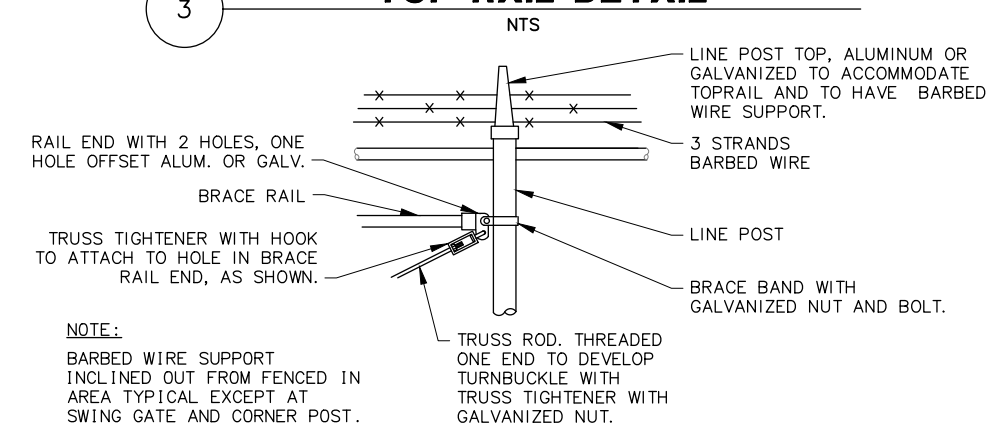


2 FENCE BRACING DETAIL
NTS

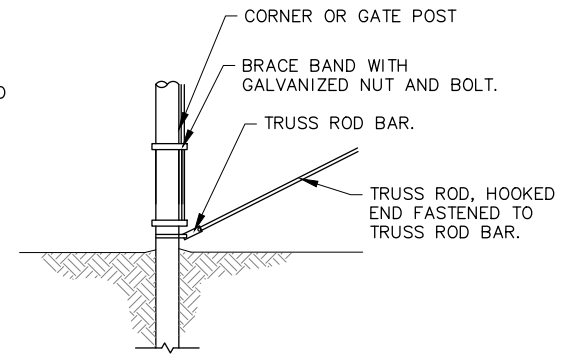
NOTE:
RAIL SLEEVE TO BE LOCATED WITHIN 15" OF LINE POST.



3 TOP RAIL DETAIL
NTS



4 FENCE BRACING DETAIL
NTS

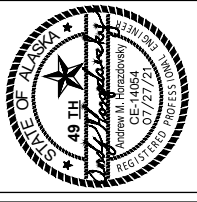


5 LOWER CORNER POST DETAIL
NTS

NOTE:
TENSION BARS SHALL BE INSTALLED CONTINUOUSLY FROM TOP RAIL TO BOTTOM OF FENCE.

FENCE NOTES:

1. FENCE POST HOLES ARE TO BE PRE-DRILLED AS REQUIRED WHERE FROZEN GROUND IS ENCOUNTERED.
2. DRIVE CORNER AND GATE POSTS TO A DEPTH OF 10- FEET & LINE POSTS TO A DEPTH OF 8- FEET BELOW FG.
3. ATTACH FENCE TO PLATFORM IN AREAS SHOWN (SEE STRUCTURAL DETAILS).
4. SEE SITE PLAN FOR FENCE LAYOUT.
5. SEE FENCE DETAIL SHEET FOR GATE DETAILS.
6. FENCE POSTS SHALL NOT BE INSTALLED UNTIL FENCE ROUTE & GATE LOCATIONS ARE STAKED OUT AND APPROVED BY ENGINEER.
7. SEE DETAIL THIS SHEET FOR TOP RAIL SLEEVE.
8. SEE ELECTRICAL FOR FENCE GROUNDING.



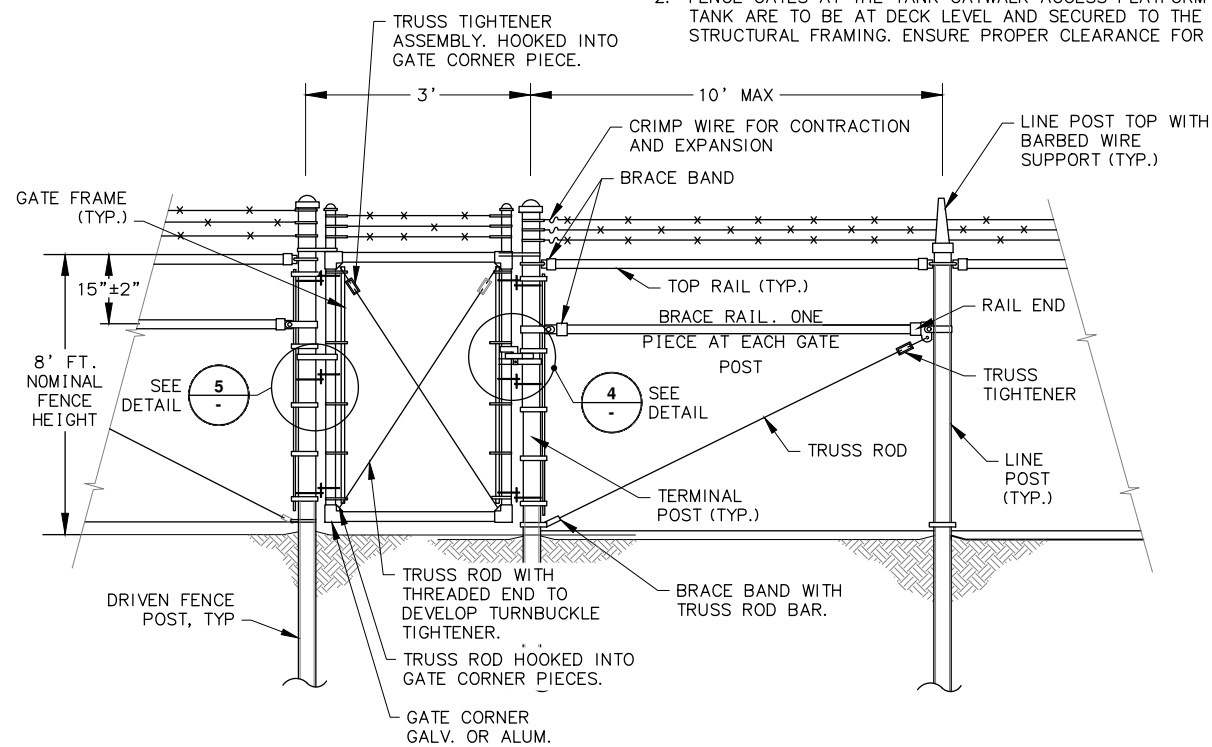
BULK FUEL UPGRADES
FENCE DETAILS
NUNAPITCHUK, ALASKA

NO.	REVISION	BY	DATE
1	ISSUED FOR BIDDING	AH	7/28/21

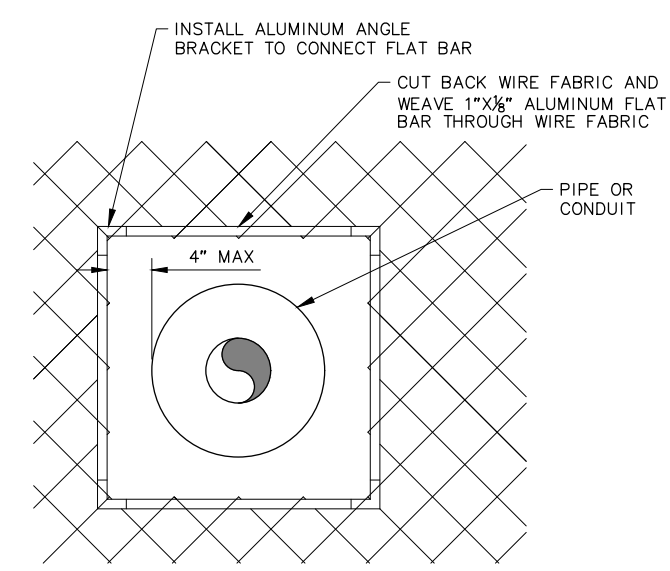
Plot: 7/28/21
Date: 7/28/21
Designed: _____
Drawn: _____
Approved: _____

NOTE:

1. ALL BARBED WIRE SUPPORTS INCLINED OUT FROM FENCED AREA EXCEPT AT FIRST LINE POST EACH SIDE OF GATE.
2. FENCE GATES AT THE TANK CATWALK ACCESS PLATFORM & DISPENSING TANK ARE TO BE AT DECK LEVEL AND SECURED TO THE PLATFORM STRUCTURAL FRAMING. ENSURE PROPER CLEARANCE FOR GATE OPERATION.



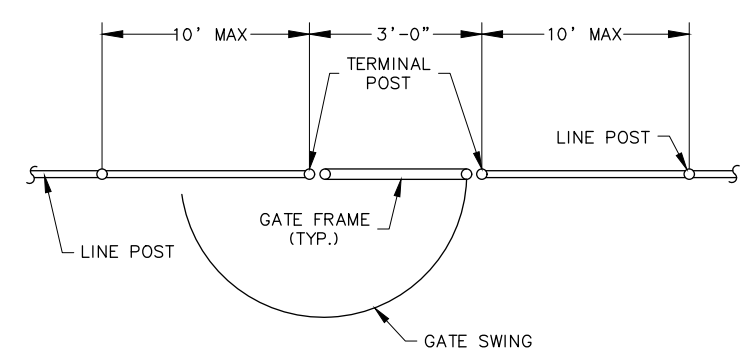
1 GATE INSTALLATION DETAIL
NTS



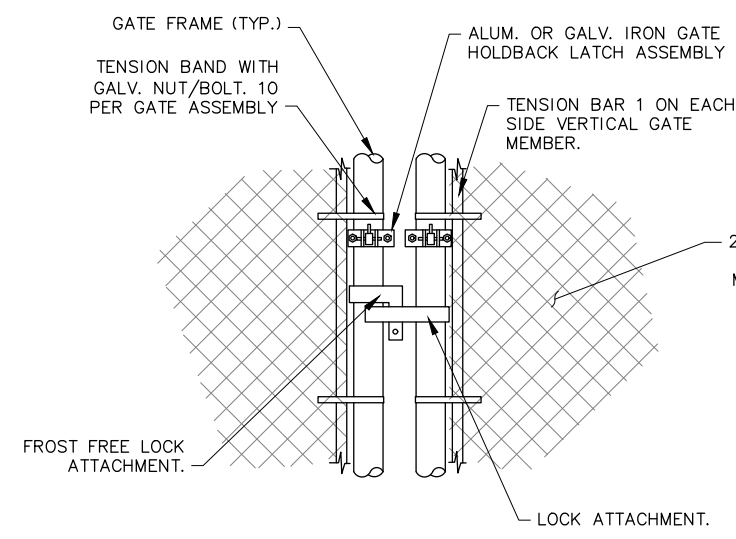
2 FENCE PENETRATION DETAIL
NTS

GATE NOTES:

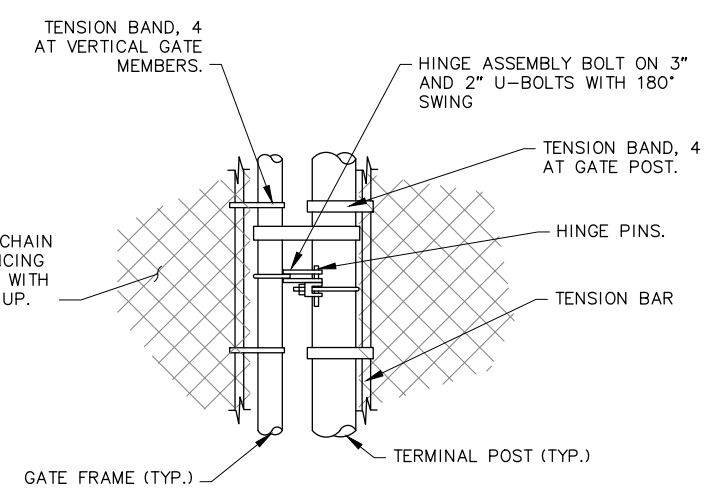
1. THREE (3) HINGES SHALL BE INSTALLED PER GATE. THE TOP TWO (2) SHALL BE INSTALLED WITH HINGE PINS SUPPORTING GATE. (GATE PORTION OF HINGE ON TOP.) THE LOWEST HINGE SHALL BE INSTALLED WITH GATE PORTION ON BOTTOM TO PREVENT MOVEMENT OF GATES.
2. COORDINATE GATES LOCATED ON THE STEEL PLATFORM WITH STRUCTURAL DRAWINGS TO ENSURE CLEARANCE TO DECK AND HANDRAIL.



3 POST LOCATIONS AT GATE
NTS

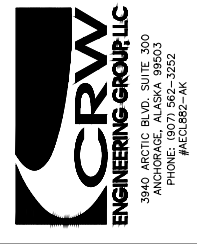
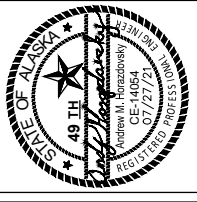


4 LATCH DETAIL
NTS



5 GATE HINGE DETAIL
NTS

File: J:\JobsData\30418.00 Area - Nunapitchuk Btu\00 Cadd 2019\01 Working Set\01 Civil\30418.00 Details-Fence.dwg Plot Date: 7/28/2021 3:06 PM



BULK FUEL UPGRADES
FENCE DETAILS
NUNAPITCHUK, ALASKA

NO.	REVISION	DATE	BY
1	ISSUED FOR BIDDING	7/28/21	AH

Plot Date: 7/28/21
Designed: _____
Drawn: _____
Approved: _____

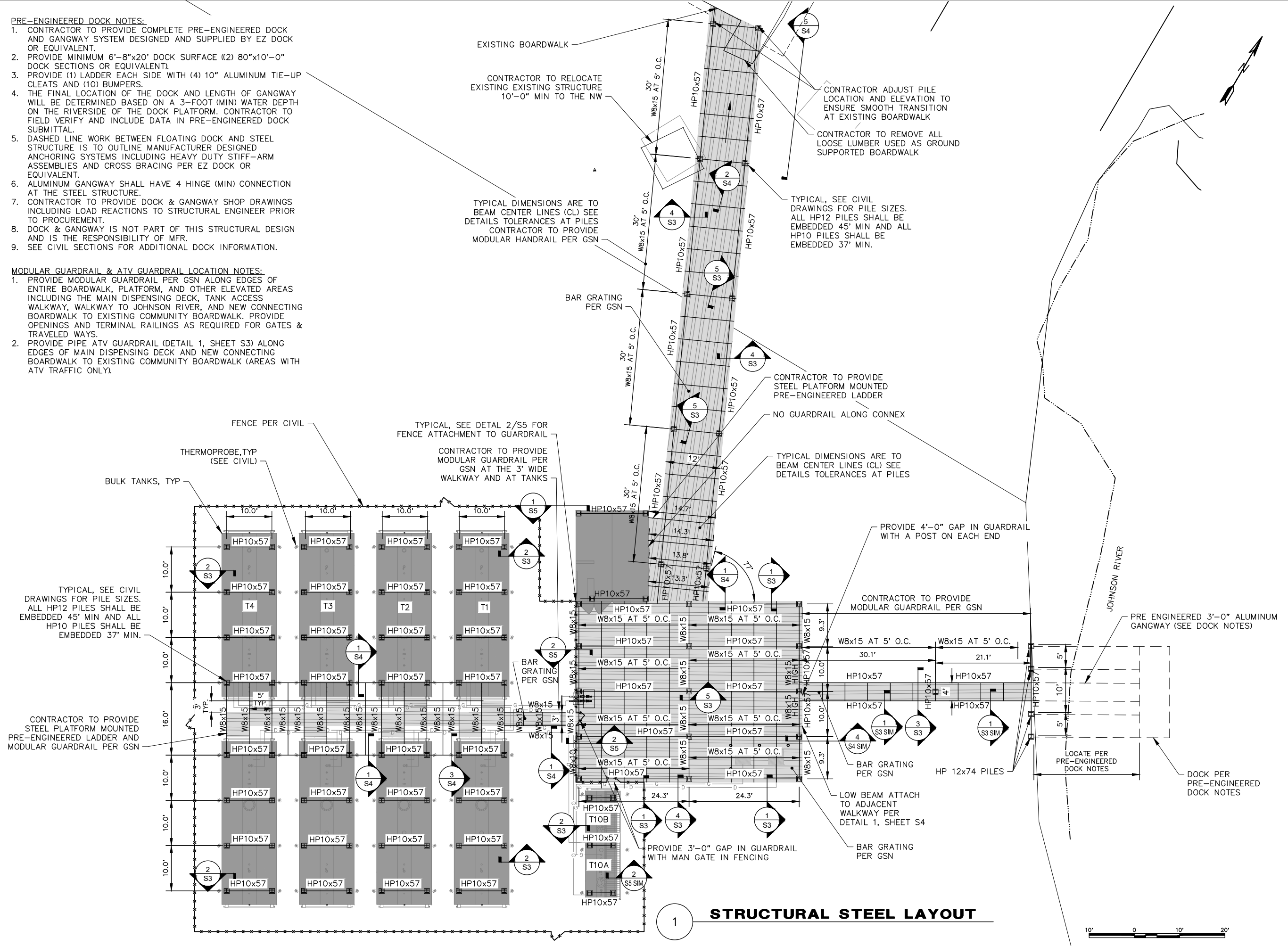
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PRE-ENGINEERED DOCK NOTES:

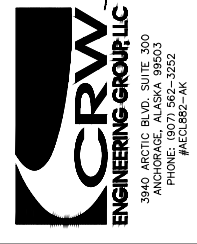
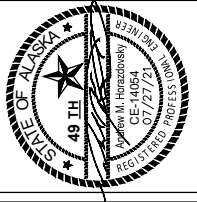
1. CONTRACTOR TO PROVIDE COMPLETE PRE-ENGINEERED DOCK AND GANGWAY SYSTEM DESIGNED AND SUPPLIED BY EZ DOCK OR EQUIVALENT.
2. PROVIDE MINIMUM 6'-8"x20' DOCK SURFACE ((2) 80"x10'-0" DOCK SECTIONS OR EQUIVALENT).
3. PROVIDE (1) LADDER EACH SIDE WITH (4) 10" ALUMINUM TIE-UP CLEATS AND (10) BUMPERS.
4. THE FINAL LOCATION OF THE DOCK AND LENGTH OF GANGWAY WILL BE DETERMINED BASED ON A 3-FOOT (MIN) WATER DEPTH ON THE RIVERSIDE OF THE DOCK PLATFORM. CONTRACTOR TO FIELD VERIFY AND INCLUDE DATA IN PRE-ENGINEERED DOCK SUBMITTAL.
5. DASHED LINE WORK BETWEEN FLOATING DOCK AND STEEL STRUCTURE IS TO OUTLINE MANUFACTURER DESIGNED ANCHORING SYSTEMS INCLUDING HEAVY DUTY STIFF-ARM ASSEMBLIES AND CROSS BRACING PER EZ DOCK OR EQUIVALENT.
6. ALUMINUM GANGWAY SHALL HAVE 4 HINGE (MIN) CONNECTION AT THE STEEL STRUCTURE.
7. CONTRACTOR TO PROVIDE DOCK & GANGWAY SHOP DRAWINGS INCLUDING LOAD REACTIONS TO STRUCTURAL ENGINEER PRIOR TO PROCUREMENT.
8. DOCK & GANGWAY IS NOT PART OF THIS STRUCTURAL DESIGN AND IS THE RESPONSIBILITY OF MFR.
9. SEE CIVIL SECTIONS FOR ADDITIONAL DOCK INFORMATION.

MODULAR GUARDRAIL & ATV GUARDRAIL LOCATION NOTES:

1. PROVIDE MODULAR GUARDRAIL PER GSN ALONG EDGES OF ENTIRE BOARDWALK, PLATFORM, AND OTHER ELEVATED AREAS INCLUDING THE MAIN DISPENSING DECK, TANK ACCESS WALKWAY, WALKWAY TO JOHNSON RIVER, AND NEW CONNECTING BOARDWALK TO EXISTING COMMUNITY BOARDWALK. PROVIDE OPENINGS AND TERMINAL RAILINGS AS REQUIRED FOR GATES & TRAVELED WAYS.
2. PROVIDE PIPE ATV GUARDRAIL (DETAIL 1, SHEET S3) ALONG EDGES OF MAIN DISPENSING DECK AND NEW CONNECTING BOARDWALK TO EXISTING COMMUNITY BOARDWALK (AREAS WITH ATV TRAFFIC ONLY).



STRUCTURAL STEEL LAYOUT

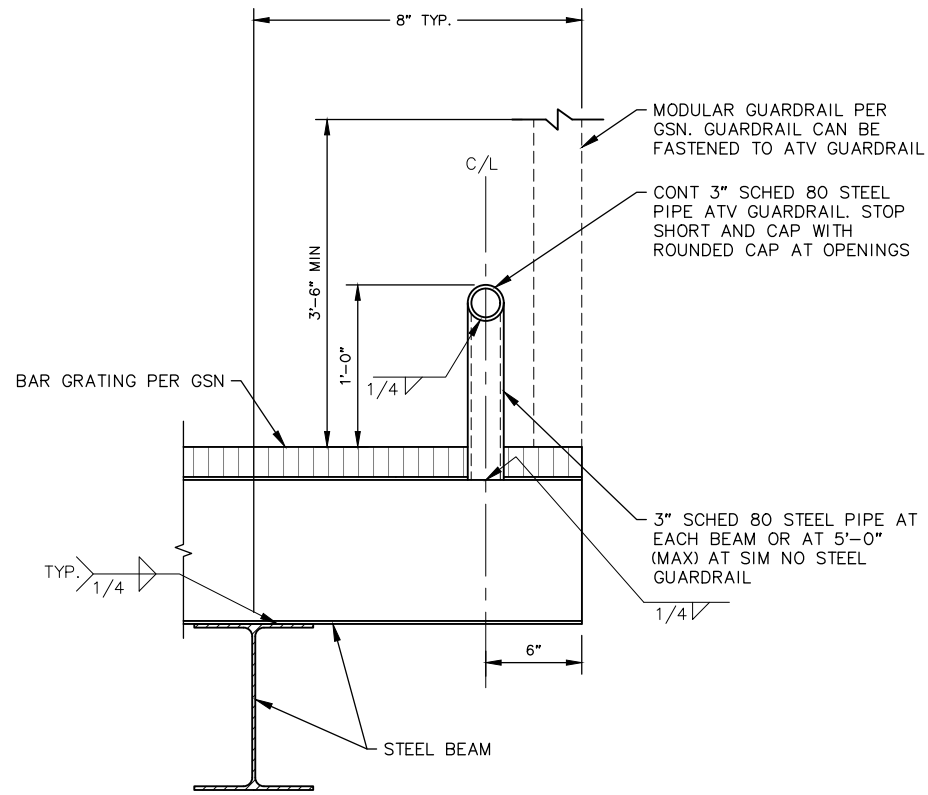


BULK FUEL UPGRADES
STRUCTURAL STEEL LAYOUT
 NUNAPITCHUK, ALASKA

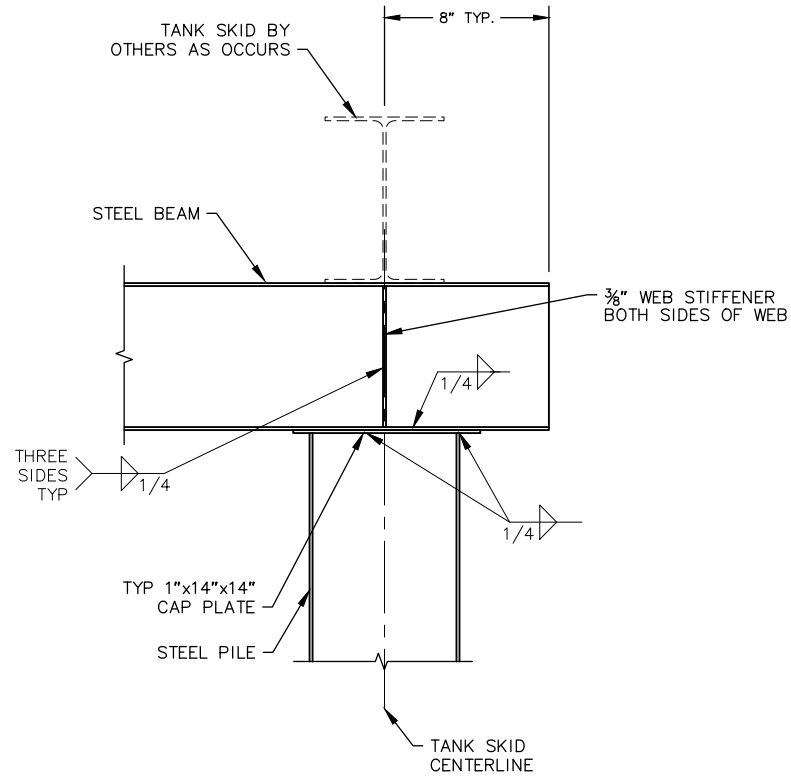
NO.	REVISION	DATE
1	ISSUED FOR BIDDING	7/28/21

Plot: 7/28/21
 Date: 7/28/21
 Designed: _____
 Drawn: _____
 Approved: _____

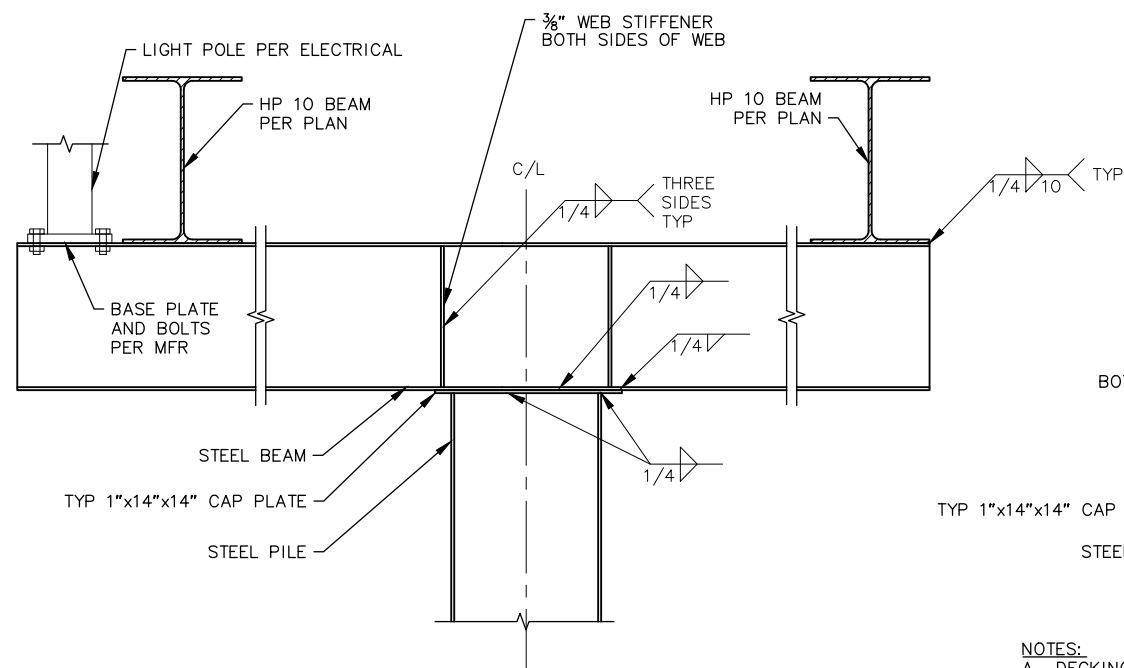
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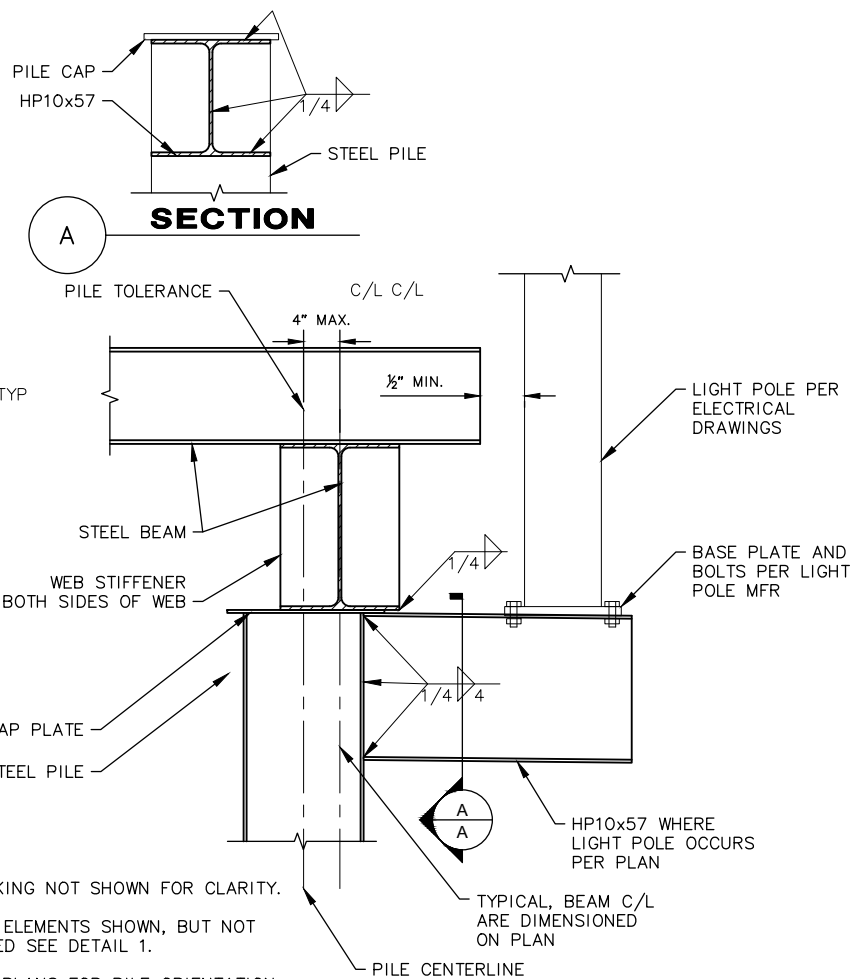
1 STEEL BEAM CONNECTION AT STEEL GUARDRAIL



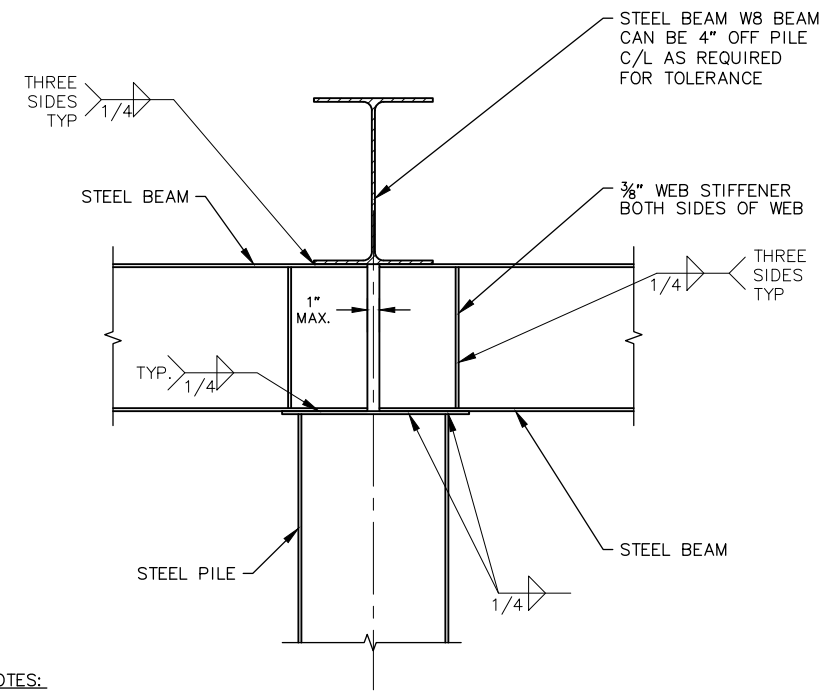
2 STEEL BEAM AT STEEL PILE



3 STEEL BEAM AT STEEL PILE (PILE CENTERED ON DECK)



4 STEEL BEAM CONNECTION AT STEEL PILE



5 STEEL BEAM AT STEEL PILE

NOTES:
A. DECKING NOT SHOWN FOR CLARITY.

B. FOR ELEMENTS SHOWN, BUT NOT NOTED SEE DETAIL 1.

C. SEE PLANS FOR PILE ORIENTATION.

NOTES:
A. DECKING NOT SHOWN FOR CLARITY.

B. FOR ELEMENTS SHOWN, BUT NOT NOTED SEE DETAIL 1.

C. SEE PLANS FOR PILE ORIENTATION.

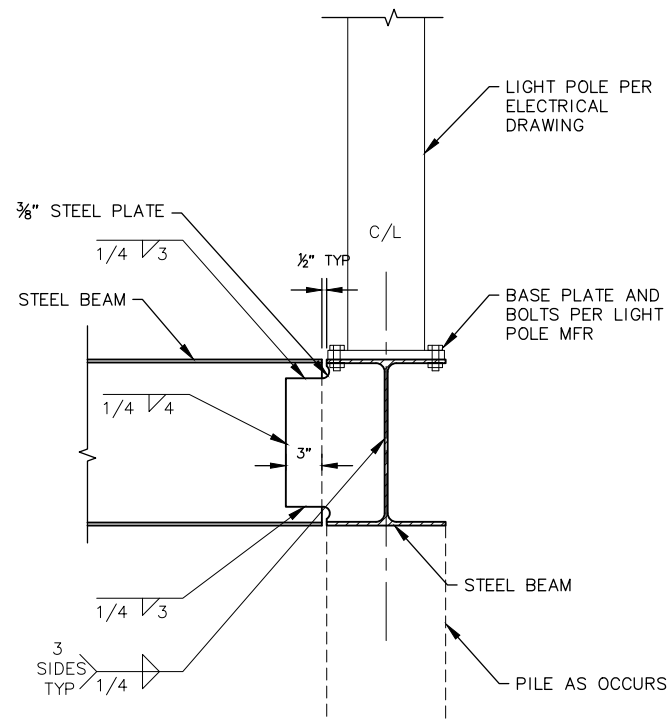


BULK FUEL UPGRADES
BEAM CONNECTION DETAILS
NUNAPITCHUK, ALASKA

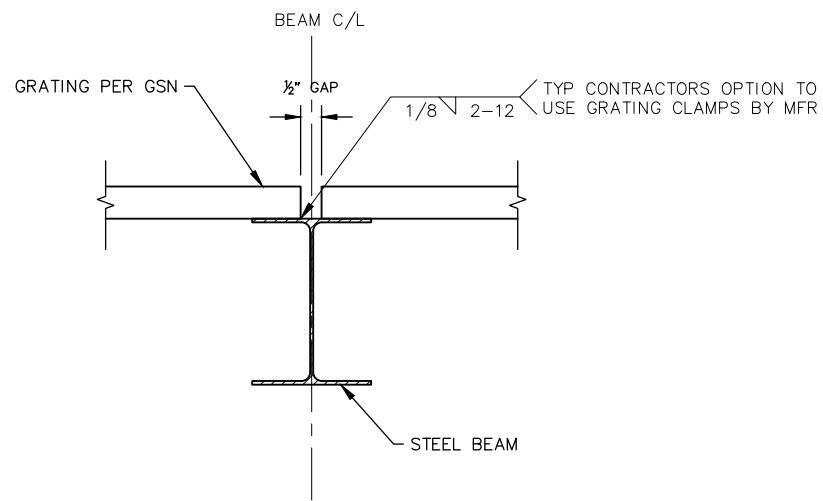
NO.	REVISION	BY	DATE
1	ISSUED FOR BIDDING	AH	7/28/21

Plot: 7/28/21
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Designed: _____
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Approved: _____

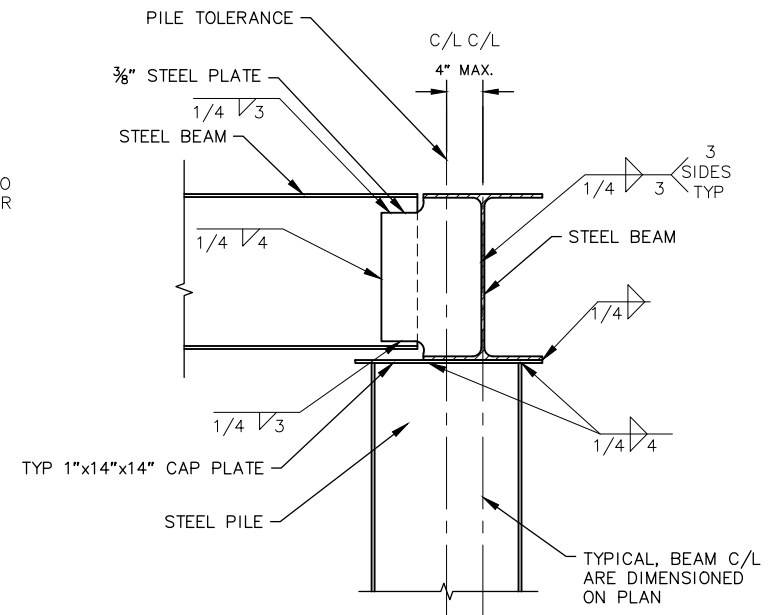
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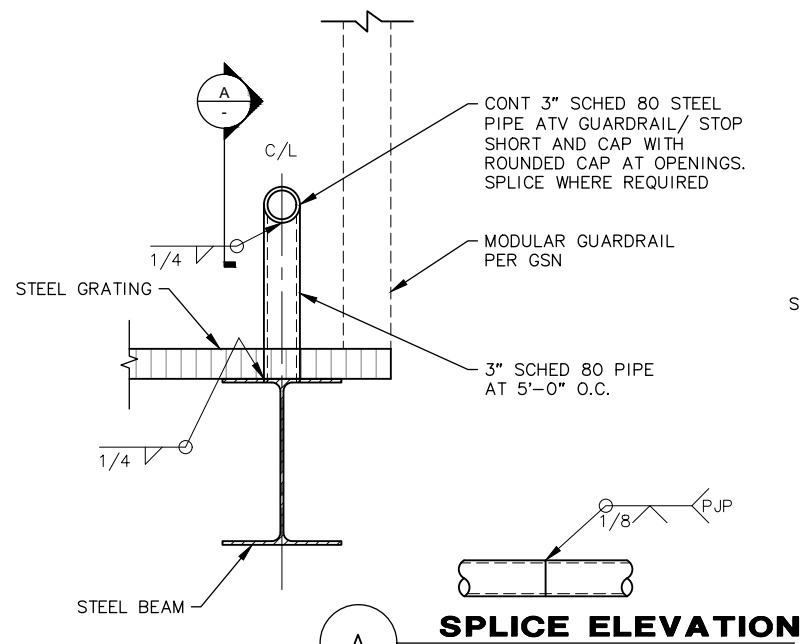
1 **STEEL BEAM AT STEEL BEAM**



2 **STEEL GRATING AT STEEL BEAM**

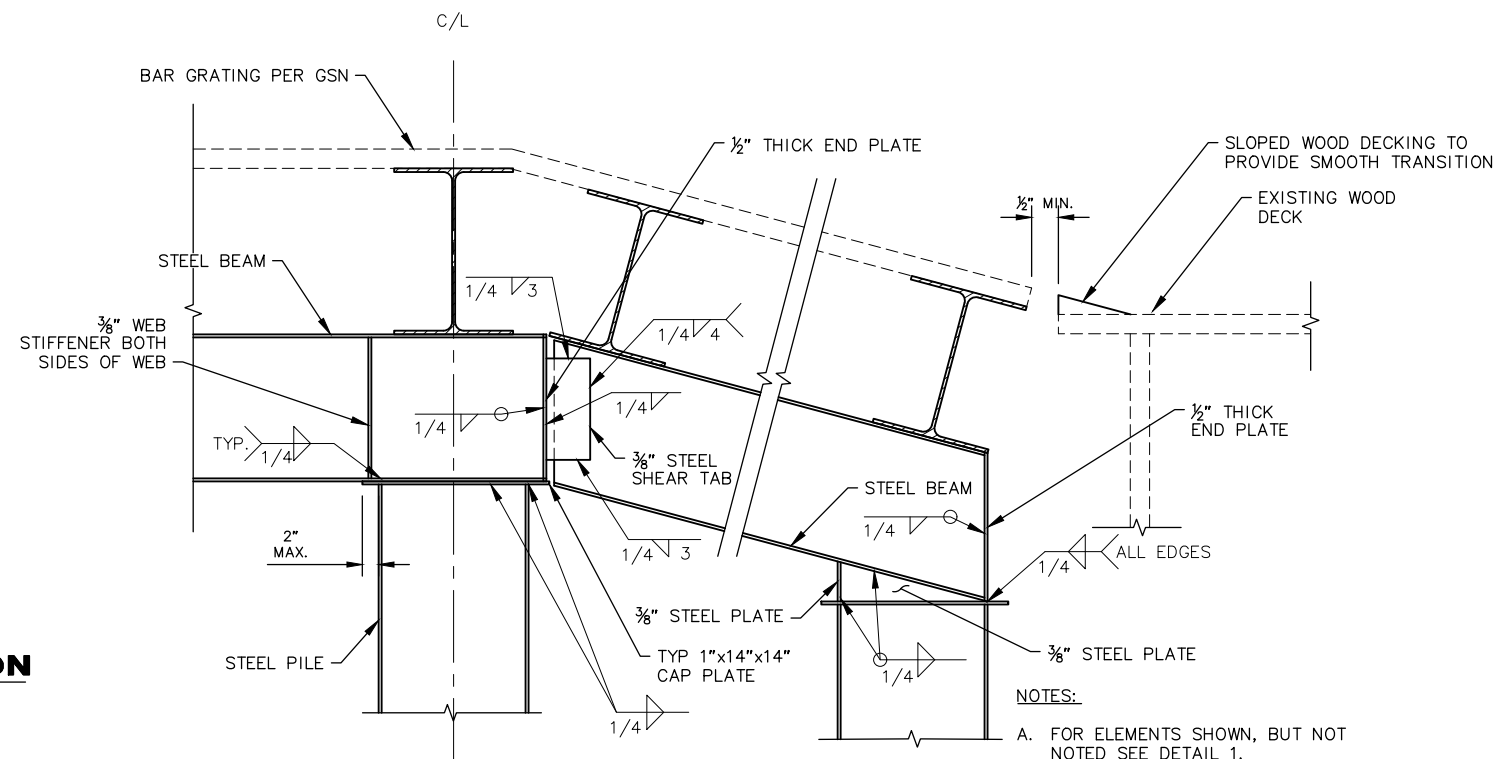


3 **STEEL BEAM CONNECTION AT STEEL PILE**



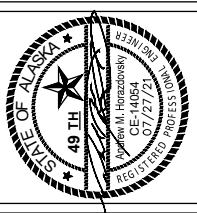
NOTES:
 A. SEE DETAIL 1 FOR MORE INFORMATION.
 B. AT SIM NO GUARDRAIL.

4 **STEEL VEHICLE RAIL AT STEEL BEAM**



NOTES:
 A. FOR ELEMENTS SHOWN, BUT NOT NOTED SEE DETAIL 1.

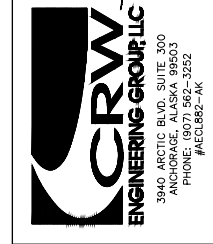
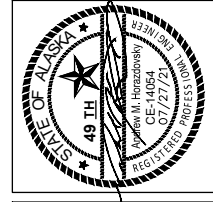
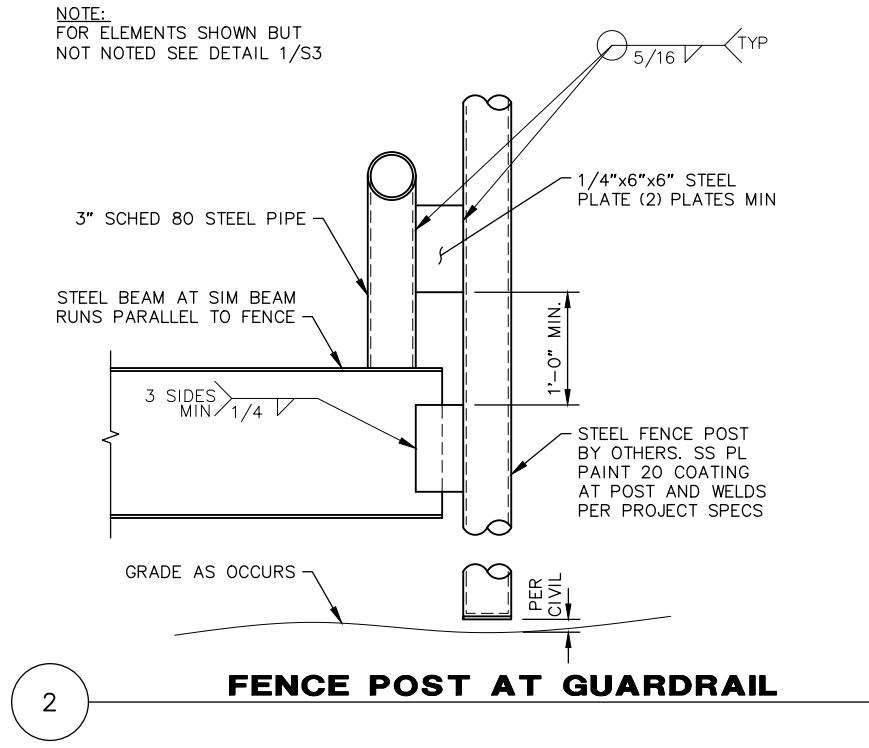
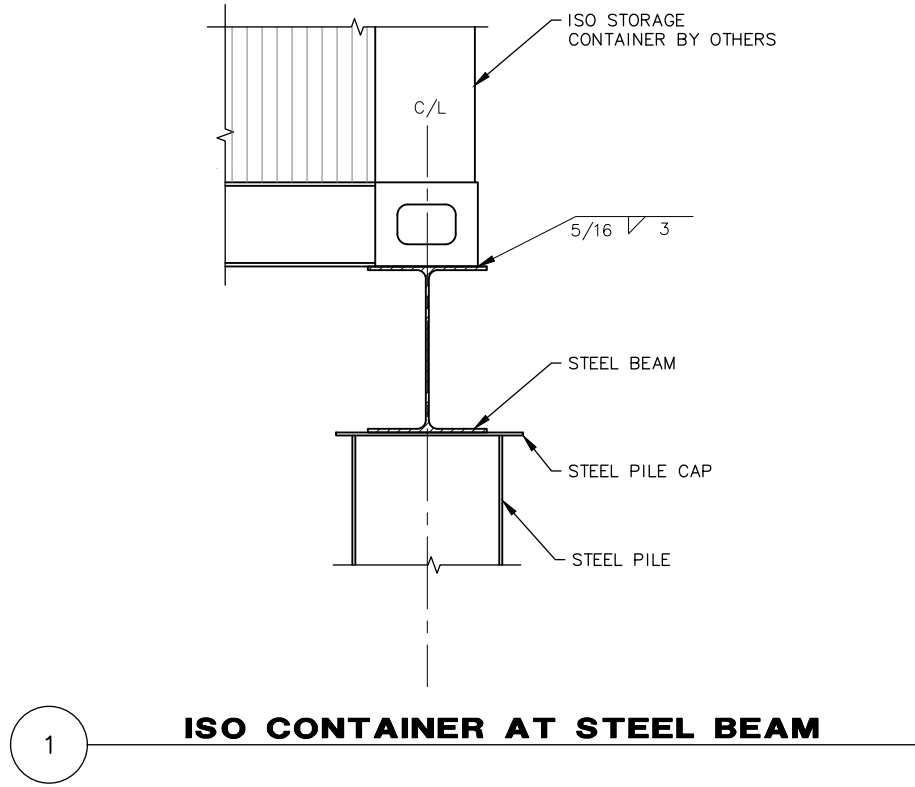
5 **STEEL BEAM AT STEEL BEAM**



BULK FUEL UPGRADES
 BEAM CONNECTION DETAILS
 NUNAPITCHUK, ALASKA

NO.	REVISION	BY	DATE
1	ISSUED FOR BIDDING	AH	7/28/21

Plot: 7/28/21
 Date: 7/28/21
 Designed: _____
 Drawn: _____
 Approved: _____



**BULK FUEL UPGRADES
BEAM CONNECTION DETAILS**

NUNAPITCHUK, ALASKA

NO.	REVISION	BY	DATE
1	ISSUED FOR BIDDING	AH	7/28/21

Plot Date: 7/28/21	Designed: -	Drawn: -	Approved: -
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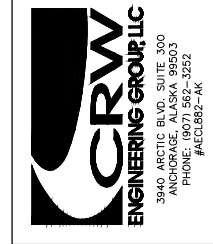
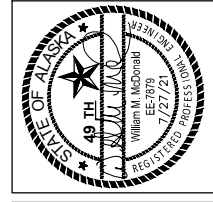
LEGEND

	BUS		MOTOR OVERLOAD
	EXPOSED CONDUIT		FIELD MOUNTED INSTRUMENT XX = FUNCTION; YY = TAG NO.
	CONDUIT/CABLE RUN UNDERGROUND OR IN CONCRETE		INSTRUMENT DEVICE LOCATION (SEE TAG)
	HOMERUN TO PANEL "X", CIRCUITS NO. Y AND Z CONDUIT RUNS NOT DEFINED ARE 1/2" C with 3#12.		NORMALLY OPEN CONTACT
	GROUND		NORMALLY CLOSED CONTACT
	CONDUIT RUN - CHANGE IN ELEVATION		PILOT LIGHT R=RED, B=BLUE, A=AMBER, G=GREEN
	GROUND ROD		RELAY COIL
	LIQUID-TIGHT FLEXIBLE CONDUIT		TIME DELAY RELAY CONTACTS NORMALLY CLOSED TIMED OPEN XXX= DESCRIPTION YYY=RELATED COIL & CONTACT # ZZZ=COIL RUNG
	MOTOR, HP AS SHOWN, SINGLE PHASE, "F" = FRACTIONAL		TIME DELAY RELAY CONTACTS NORMALLY OPEN TIMED CLOSED XXX= DESCRIPTION YYY=RELATED COIL & CONTACT # ZZZ=COIL RUNG
	SHEET NOTE "X"		TIME DELAY RELAY CONTACTS NORMALLY OPEN TIMED OPEN XXX= DESCRIPTION YYY=RELATED COIL & CONTACT # ZZZ=COIL RUNG
	ELECTRICAL EQUIPMENT TAG "X"		FLOAT OPERATED SWITCH, NORMALLY CLOSED
	PANELBOARD		FLOAT OPERATED SWITCH, NORMALLY OPEN
	DISCONNECT SWITCH		PUSHBUTTON NORMALLY CLOSED, MOMENTARY CONTACT
	TRANSFORMER		PUSHBUTTON NORMALLY OPEN, MOMENTARY CONTACT
	KILOWATT-HOUR METER		MOTORIZED VALVE
	125V DUPLEX GROUND FAULT INTERRUPT WEATHER PROOF RECEPTACLE, CONFIGURATION 5 - 20R		

	JUNCTION BOX OR FITTING
	CONDUIT TEE
	FUSE, X=SIZE IN AMPS
	MOLDED CASE CIRCUIT BREAKER, X = AMPERE RATING, Y = NO. OF POLES THERMAL/MAGNETIC UON
	CONTROL PANEL
	SINGLE POLE SWITCH 120/277V 20A
	SEAL-OFF FITTING
	PHOTO ELECTRIC CONTROL
	INSTRUMENT DEVICE LOCATION (SEE TAG)
	MUSHROOM HEAD, EMERGENCY PUSHBUTTON
	REMOTE OPERATOR FOR CONTROL PANEL
	PUSH TO TEST PILOT LIGHT X= LENS TINT
	TERMINAL - X = CONTRACTOR DERIVED NUMBERING
	STROBE ALARM
	HAND-OFF-AUTO SWITCH

ABBREVIATIONS

A	AMPERE
AFF	ABOVE FINISH FLOOR
AIC	AMPERES INTERRUPTING CAPACITY
AVEC	ALASKA VILLAGE ELECTRIC COOPERATIVE
bCU	BARE COPPER
C	CONDUCTOR
C	CONDUIT
C1D1	CLASS 1, DIVISION 1
C1D2	CLASS 1, DIVISION 2
CP	CONTROL PANEL
CT	CURRENT TRANSFORMER
DWG	DRAWING
EA	EACH
ESD	EMERGENCY SHUTDOWN
EXP	EXPLOSION PROOF
FVNR	FULL VOLTAGE NON-REVERSING, THERMAL MAGNETIC OCP
G	GROUND CONDUCTOR
GFI	GROUND FAULT INTERRUPTING
H	HOT CONDUCTOR
HOA	HAND OFF AUTO
HP	HORSEPOWER
KVA	KILO-VOLT-AMPERES
KW	KILOWATT
LFMC	LIQUID-TIGHT FLEXIBLE METAL CONDUIT
LTG	LIGHTING
MAX	MAXIMUM
MCM	THOUSAND CIRCULAR MILLS
MIN	MINIMUM
MV	MOTORIZED VALVE
MS	MOTOR STARTER
N	NEUTRAL CONDUCTOR
NTS	NOT TO SCALE
OCF	OVERCURRENT PROTECTION
P	POLE
RCP	RECEPTACLE
RMC	RIGID METAL CONDUIT, GALVANIZED
SIG	SIGNAL CONDUCTOR
SL	SWITCH LEG
SS	STAINLESS STEEL
TWSH	TWISTED/SHIELDED CONDUCTOR
TYP	TYPICAL
U/G	UNDERGROUND
UON	UNLESS OTHERWISE NOTED
V	VOLTS
VA	VOLT-AMPERES
WP	WEATHER PROOF
XFMR	TRANSFORMER



BULK FUEL UPGRADES
 NOTES, LEGEND, & ABBREVIATIONS
 NUNAPITCHUK, ALASKA

NO.	REVISION	DATE	BY
1	ISSUED FOR BIDDING	7/28/21	AH

Plot Date: 8/17/21	Designed: WM
Drawn: DJ	Approved: WM

Sheet No. **E1**

FIXTURE SCHEDULE

SYMBOL	LAMP SIZE	MOUNTING	DESCRIPTION	MANUFACTURER
	50W	LED	POLE: (LIGHT POLES PLUS) VS-SSEH-25-6437-11-AB-F P-WH-D2, OR EQUAL	RIVER BOARDWALK POLE MOUNTED LIGHT, 50W LED WITH 6' MOUNTING ARM, -40F RATED, AND PHOTOCCELL POWER SECURE HAWKLITE: #HL1-5-3M-740-STD-0-10-GY-6P WITH LITHONIA SMAWT2OUS6 ARM
			ALL OTHER LOCATIONS POLE MOUNTED LIGHT, 50W LED WITH 6' MOUNTING ARM, -40F RATED, AND PHOTOCCELL	POWER SECURE HAWKLITE: #HL1-5-3M-740-STD-0-10-GY-6P WITH LITHONIA SMAC ARM
	25W	LED	BRACKET MOUNTED	VAPORTITE L.E.D AREA LIGHT SURFACE MOUNT. CLASS 1, DIV. 2. LITHONIA LIGHTING: TDD LED AREA LIGHT
	50W	LED	POLE: (LIGHT POLES PLUS) VS-SSEH-25-6437-11-AB-F P-WH-D2, OR EQUAL	VAPORTITE L.E.D AREA LIGHT SURFACE MOUNT. CLASS 1, DIV. 2. LITHONIA LIGHTING: RSXF1-LED-P1-40K-WFL-MVOLT-AASP

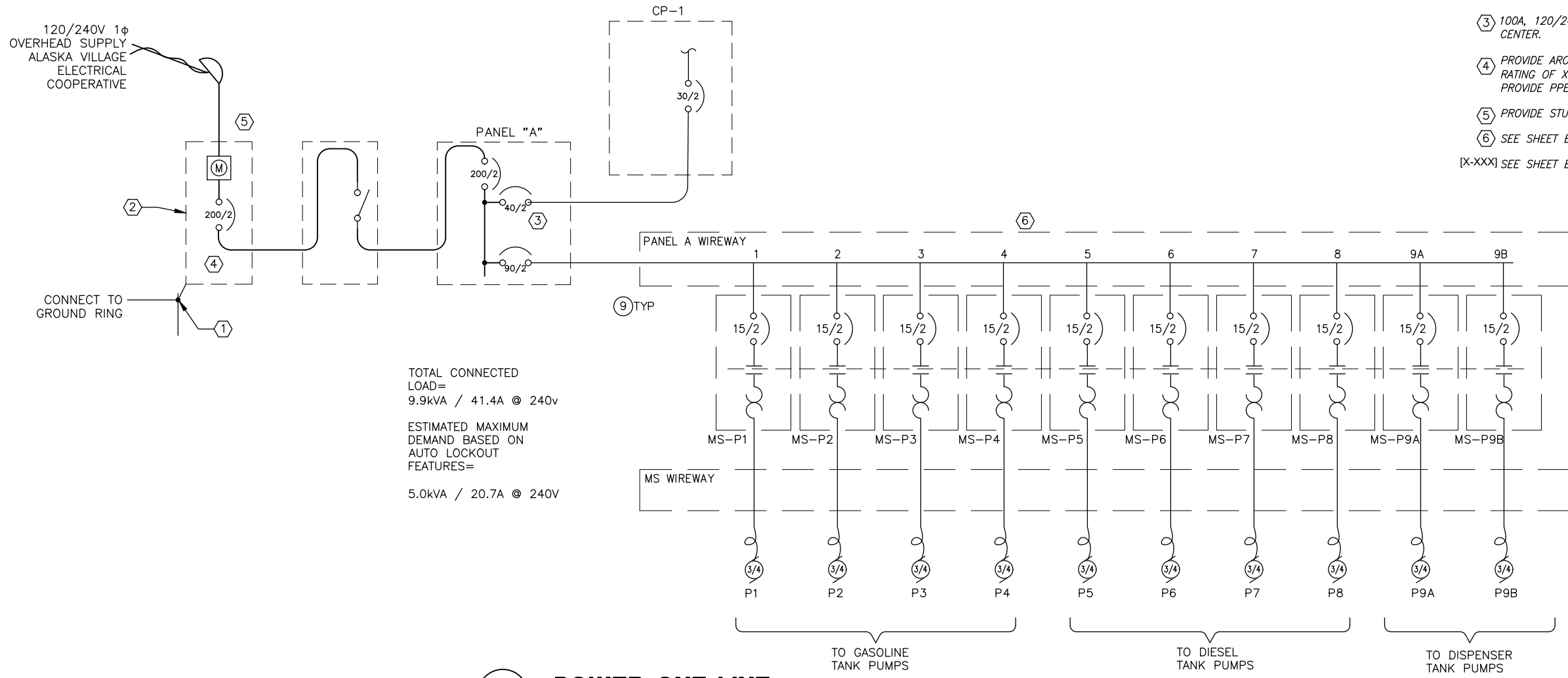
ELECTRICAL EQUIPMENT SCHEDULE

ITEM NO.	DESCRIPTION	MANUFACTURER
1	EMERGENCY SHUTOFF SWITCH. 4 DIE-CAST ALUMINUM ENCLOSURE, 2-1/4" DIA. RED MUSHROOM HEAD MAINTAINED CONTACT PUSH BUTTON WITH 1 EA. NC CONTACT, 10A RATED.	ALLEN BRADLEY 800T-FX6D4 WITH 800T-1TZ ENCLOSURE & 800T-N247R HEAD
2	WEATHER PROOF RECEPTACLE. COMPLETE WITH 20A, 125V DUPLEX GFCI RECEPTACLE. INSTALL IN CAST SINGLE GANG FD BOX WITH WEATHERPROOF COVER.	P&S 2095TRWRI RED DOT CCGV COVER RED DOT IH32LM BOX
3	LIGHT SWITCH AND RECEPTACLE. COMPLETE WITH 20A, 125V DUPLEX GFCI RECEPTACLE, 20A SINGLE POLE SWITCH. INSTALL IN CAST MULTI-GANG FD BOX WITH WEATHERPROOF COVER.	P&S 2095TRWRI RECEPTACLE P&S PS20AC1-1 SWITCH RED DOT 2CCTG COVER RED DOT 2IH4-2 BOX
4	LOCKABLE SWITCH. 4, 7, 9 EXPLOSION PROOF CONSTRUCTION WITH 3/4" FEED THRU HUB, 4PST, 250V, 20A.	KILLARK
5	FOUR POSITION FLOAT ACTIVATED LEVEL SWITCH, 316 SS STEM, 2" 316 SS FLOAT, 2" NPT BUSHING, 1/2" NPT CONDUIT ENTRY, EXPLOSION PROOF CONSTRUCTION, LISTED FOR CLASS 1, DIVISION 1, GROUP D, 120VAC, 100W MAX SWITCHING POWER. PROVIDE FLOAT ACTIVATED SWITCHES AT DIMENSIONS BASED ON APPROVED SHOP DRAWINGS. CONTRACTOR SHALL VERIFY ACTUAL TANK DIMENSIONS AND SUBMIT SWITCH DIMENSIONS TO CONSTRUCTION MANAGER FOR APPROVAL PRIOR TO ORDERING.	CUSTOM SWITCHES, INC. MODEL LS-1900 TYPE 8 OR APPROVED EQUAL. CONTRACTOR TO VERIFY CUSTOM PROBE LENGTHS PRIOR TO ORDERING. SEE DESCRIPTION.
6	THREE POSITION FLOAT ACTIVATED LEVEL SWITCH, 316 SS STEM, 2" 316 SS FLOAT, 2" NPT BUSHING, 1/2" NPT CONDUIT ENTRY, EXPLOSION PROOF CONSTRUCTION, LISTED FOR CLASS 1, DIVISION 1, GROUP D, 120VAC, 100W MAX SWITCHING POWER. PROVIDE FLOAT ACTIVATED SWITCHES AT DIMENSIONS BASED ON APPROVED SHOP DRAWINGS. CONTRACTOR SHALL VERIFY ACTUAL TANK DIMENSIONS AND SUBMIT SWITCH DIMENSIONS TO CONSTRUCTION MANAGER FOR APPROVAL PRIOR TO ORDERING.	CUSTOM SWITCHES, INC. MODEL LS-1900 TYPE 7 OR APPROVED EQUAL. CONTRACTOR TO VERIFY CUSTOM PROBE LENGTHS PRIOR TO ORDERING. SEE DESCRIPTION.
7	LIQUID LEVEL MONITOR SYSTEM FOR AVEC DIESEL TANKS	PANEL: FRANKLIN FUEL, SYSTEM EVO550, PROBE: FRANKLIN FMP-LL3-137-1, PROBE: INSTALL KIT TSP-C2A, FLOAT: TSP-IDF2 (2" FOR DIESEL), CABLE TO PROBE: BELDEN #89182

Plot Date: 8/17/2021 4:32 PM

File: J:\JobsData\30418.00 AEA - Nunapitchuk BFU\00 CADD 2019\01 Working Set\03 Electrical\30704.1B Legend.dwg

File: J:\JobsData\30418.00 Area - Nunapitchuk Btu\00 Cadd 2019\01 Working Set\03 Electrical\30418 P1L-PANEL SCHEDULE.dwg Plot Date: 7/28/2021 3:08 PM



TOTAL CONNECTED LOAD=
9.9kVA / 41.4A @ 240v

ESTIMATED MAXIMUM DEMAND BASED ON AUTO LOCKOUT FEATURES=
5.0kVA / 20.7A @ 240V


1 POWER ONE-LINE

NOTES

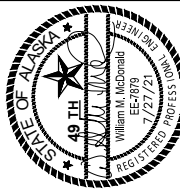
- ① 3/4"x10' COOPER CLAD STEEL GROUND RODS CONNECTED WITH #2 BCU.
 - ② MILBANK METER MAIN, 120/240V, 100A. SINGLE-PHASE, NEMA 4X, SUPPLY AND INSTALL IN COMPLIANCE WITH AVEC SPECIFICATIONS.
 - ③ 100A, 120/240V, 1φ, 3 WIRE, 12 SPACE, NEMA 4X LOAD CENTER.
 - ④ PROVIDE ARC FLASH WARNING PLACARD TO READ "AIC RATING OF X,XXX A CALCULATED ON X/X/2020." PROVIDE PPE LABEL FOR LEVEL 1 PER NFPA 70E.
 - ⑤ PROVIDE STUB POLE
 - ⑥ SEE SHEET E6 FOR CONDUIT DEVELOPMENT PLAN
- [X-XXX] SEE SHEET E4 FOR CONDUIT SCHEDULE

PANEL "A" SCHEDULE											
LOCATION: SPILL RESPONSE EQUIPMENT KIOSK				208Y/120V			3φ, 4 WIRE		10,000 AIC		
SERVED FROM: MAIN BREAKER				200A MLO					NEMA 3R		
POLE #	AMP TRIP	LOAD DESCRIPTION	POLE kVA	Aφ	Bφ	Cφ	POLE Kva	LOAD DESCRIPTION	AMP TRIP	POLE #	
1	40/2	CP-1	3.7	4.1			0.4	TANK FARM LIGHTING	20/1	2	
3			3.3		3.7		0.4	PLATFORM LIGHTING	20/1	4	
5	20/1	SALES CONNEX LIGHTING	0.2			0.4	0.2	CONNEX EXTERIOR LIGHTING	20/1	6	
7	20/1	HOSE REEL LIGHTING	0.2	0.7			0.5	CONNEX RECEPTACLES	20/1	8	
9	20/1	CONNEX HEATER	1.5		3.5		2.0	MOTOR STARTERS	90/2	10	
11	20/1	SPILL RESPONSE CONNEX LIGHTING	0.2			2.2	2.0		12		
13	20/1	HOSE REEL WINDING MOTOR	0.9	0.9			0.0	SPARE	20/1	14	
15		SPACE	0.0		0.0		0.0	SPACE		16	
17		SPACE	0.0			0.0	0.0	SPACE		18	
			4.8	7.2	2.6			Total kVA =	14.6 kVA		
									Total Amps @ 208V =	40.5 A	


* = GFCI Circuit Breaker



ALASKA ENERGY AUTHORITY



STATE OF ALASKA
49 TH
WILLIAM M. McDONALD
E-2789
ANCHORAGE, ALASKA 99503
REGISTERED PROFESSIONAL ENGINEER
#AECL82-AK



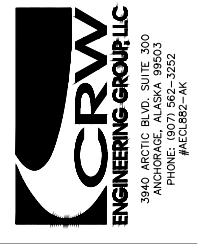
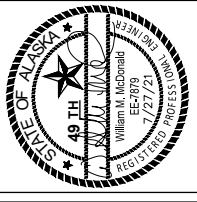
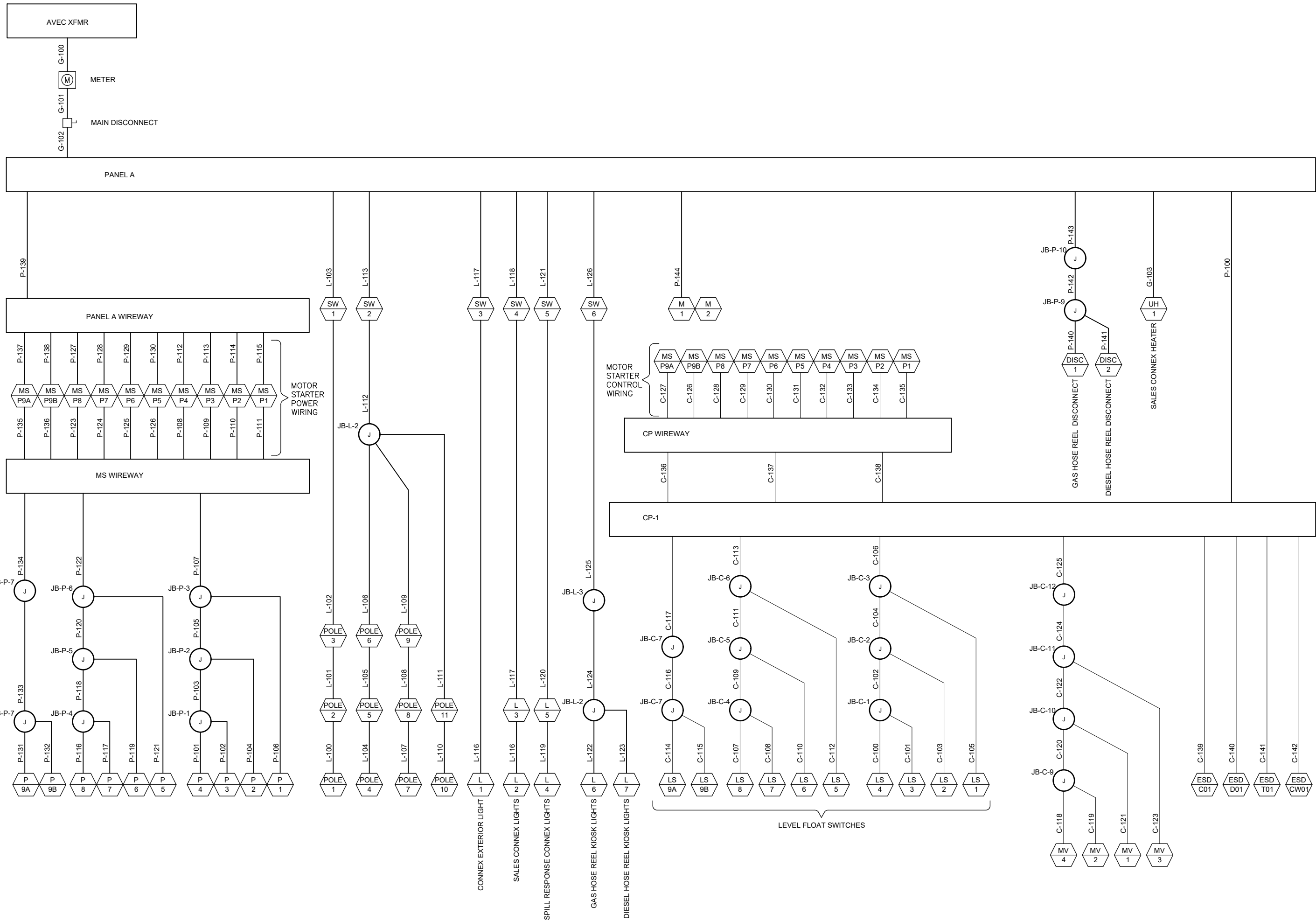
CRW
ENGINEERING GROUP LLC
3940 ARCTIC BLVD., SUITE 300
ANCHORAGE, ALASKA 99503
PHONE: (907) 562-3252
#AECL82-AK

BULK FUEL UPGRADES
ONE-LINE DIAGRAM AND PANEL SCHEDULE
NUNAPIITCHUK, ALASKA

NO.	REVISION	BY	DATE

Plot Date: 7/28/21
Designed: WM
Drawn: DJ
Approved: WM

Sheet No. **E2**



**BULK FUEL UPGRADES
CONDUIT DEVELOPMENT PLAN**

NUNAPIITCHUK, ALASKA

NO.	REVISION	BY	DATE

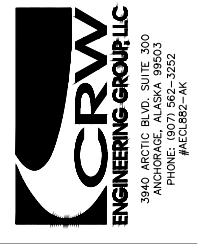
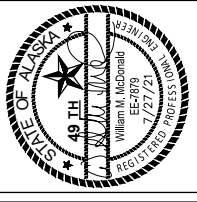
Plot: 7/28/21
 Date: 7/28/21
 Designed: WM
 Drawn: DJ
 Approved: WM

CONDUIT		CONDUCTORS		FROM	TO	REMARKS
NO.	SIZE	POWER	SPARES*			
P-100	1	3#8, 1#8GND		PANEL A	CP-1	
P-101	3/4	2#12, 1#12GND		P4	JB-P-1	
P-102	3/4	2#12, 1#12GND		P3	JB-P-1	
P-103	3/4	4#12, 1#12GND		JB-P-1	JB-P-2	
P-104	3/4	2#12, 1#12GND		P-2	JB-P-2	
P-105	3/4	6#12, 1#12GND		JB-P-2	JB-P-3	
P-106	3/4	2#12, 1#12GND		P1	JB-P-3	
P-107	3/4	8#12, 1#12GND		JB-P-3	MS WIREWAY	
P-108	3/4	2#12, 1#12GND		MS WIREWAY	MS-P4	P-4 TO MS-P4
P-109	3/4	2#12, 1#12GND		MS WIREWAY	MS-P3	P-3 TO MS-P3
P-110	3/4	2#12, 1#12GND		MS WIREWAY	MS-P2	P-2 TO MS-P2
P-111	3/4	2#12, 1#12GND		MS WIREWAY	MS-P	P-1 TO MS-P1
P-112	3/4	2#12, 1#12GND		MS-P4	PANEL A WIREWAY	
P-113	3/4	2#12, 1#12GND		MS-P3	PANEL A WIREWAY	
P-114	3/4	2#12, 1#12GND		MS-P2	PANEL A WIREWAY	
P-115	3/4	2#12, 1#12GND		MS-P1	PANEL A WIREWAY	
P-116	3/4	2#12, 1#12GND		P8	JB-P-4	
P-117	3/4	2#12, 1#12GND		P7	JB-P-4	
P-118	3/4	4#12, 1#12GND		JB-P-4	JB-P-5	
P-119	3/4	2#12, 1#12GND		P-6	JB-P-5	
P-120	3/4	6#12, 1#12GND		JB-P-5	JB-P-6	
P-121	3/4	2#12, 1#12GND		P5	JB-P-6	
P-122	3/4	8#12, 1#12GND		JB-P-6	MS WIREWAY	
P-123	3/4	2#12, 1#12GND		MS WIREWAY	MS-P8	P-8 TO MS-P8
P-124	3/4	2#12, 1#12GND		MS WIREWAY	MS-P7	P-7 TO MS-P7
P-125	3/4	2#12, 1#12GND		MS WIREWAY	MS-P6	P-6 TP MS-P6
P-126	3/4	2#12, 1#12GND		MS WIREWAY	MS-P5	P-5 TO MS-P5
P-127	3/4	2#12, 1#12GND		MS-P8	PANEL A WIREWAY	
P-128	3/4	2#12, 1#12GND		MS-P7	PANEL A WIREWAY	
P-129	3/4	2#12, 1#12GND		MS-P6	PANEL A WIREWAY	
P-130	3/4	2#12, 1#12GND		MS-P5	PANEL A WIREWAY	
P-131	3/4	2#12, 1#12GND		P-9A	JB-P-7	
P-132	3/4	2#12, 1#12GND		P-9B	JB-P-7	
P-133	3/4	4#12, 1#12GND		JB-P-7	MS WIREWAY	
P-134	3/4	4#12, 1#12GND		JB-P-8	MS WIREWAY	
P-135	3/4	2#12, 1#12GND		MS WIREWAY	MS-P9A	P-9A TO MS-P9A
P-136	3/4	2#12, 1#12GND		MS WIREWAY	MS-P9B	P-9B TO MS-P9B
P-137	3/4	2#12, 1#12GND		MS-P9A	PANEL A WIREWAY	
P-138	3/4	2#12, 1#12GND		MS-P9B	PANEL A WIREWAY	
P-139	3/4	2#12, 1#12GND		PANEL A WIREWAY	PANEL A	
P-140	3/4	2#12, 1#12GND		DISC-1	JB-P-9	GAS HOSE REEL
P-141	3/4	2#12, 1#12GND		DISC-2	JB-P-9	DIESEL HOSE REEL
P-142	3/4	2#12, 1#12GND		JB-P-9	JB-P-10	
P-143	3/4	2#12, 1#12GND		JB-P-10	PANEL A	
P-144	3/4	2#12, 1#12GND		M-1/M-2	PANEL A	HOSE REEL MOTORS

CONDUIT		CONDUCTORS		FROM	TO	REMARKS
NO.	SIZE	GENERAL	SPARES*			
G-100	1 1/2	2#2, 1#2GND		AVEC XFMR	METER	
G-101	1 1/2	2#2, 1#2GND		METER	MAIN DISCONNECT	
G-102	1 1/2	2#2, 1#2GND		MAIN DISCONNECT	PANEL A	
G-103	3/4	2#12, 1#12GND		CONNEX HEATER	PANEL A	
G-104	3/4	2#12, 1#12GND		RECEPTACLE 1	RECEPTACLE 2	
G-105	3/4	2#12, 1#12GND		RECEPTACLE 2	RECEPTACLE 3	
G-106	3/4	2#12, 1#12GND		RECEPTACLE 3	RECEPTACLE 3	
G-107	3/4	2#12, 1#12GND		RECEPTACLE 3	PANEL A	

CONDUIT		CONDUCTORS		FROM	TO	REMARKS
NO.	SIZE	CONTROL	SPARES*			
C-100	3/4	3#14, 1#14GND		LS-4	JB-C-1	FLOATS FOR TANK 4
C-101	3/4	3#14, 1#14GND		LS-3	JB-C-1	FLOATS FOR TANK 3
C-102	3/4	6#14, 1#14GND		JB-C-1	JB-C-2	
C-103	3/4	3#14, 1#14GND		LS-2	JB-C-2	FLOATS FOR TANK 2
C-104	3/4	9#14, 1#14GND		JB-C-2	JB-C-3	
C-105	3/4	3#14, 1#14GND		LS-1	JB-C-3	FLOATS FOR TANK 1
C-106	3/4	12#14, 1#14GND		JB-C-3	CP-1	
C-107	3/4	3#14, 1#14GND		LS-8	JB-C-4	FLOATS FOR TANK 8
C-108	3/4	3#14, 1#14GND		LS-7	JB-C-4	FLOATS FOR TANK 7
C-109	3/4	6#14, 1#14GND		JB-C-4	JB-C-5	
C-110	3/4	3#14, 1#14GND		LS-6	JB-C-5	FLOATS FOR TANK 6
C-111	3/4	9#14, 1#14GND		JB-C-5	JB-C-6	
C-112	3/4	3#14, 1#14GND		LS-5	JB-C-6	FLOATS FOR TANK 5
C-113	3/4	12#14, 1#14GND		JB-C-6	CP-1	
C-114	3/4	4#14, 1#14GND		LS-9A	JB-C-7	FLOATS FOR TANK 9A
C-115	3/4	4#14, 1#14GND		LS-9B	JB-C-7	FLOATS FOR TANK 9B
C-116	3/4	8#14, 1#14GND		JB-C-7	JB-C-8	
C-117	3/4	8#14, 1#14GND		JB-C-8	CP-1	
C-118	3/4	6#14, 1#14GND		MV-4	JB-C-9	
C-119	3/4	6#14, 1#14GND		MV-2	JB-C-9	
C-120	3/4	12#14, 1#14GND		JB-C-9	JB-C-10	
C-121	3/4	6#14, 1#14GND		MV-1	JB-C-10	
C-122	1	18#14, 1#14GND		JB-C-10	JB-C-11	
C-123	3/4	6#14, 1#14GND		MV-3	JB-C-11	
C-124	1 1/4	24#14, 1#14GND		JB-C-11	JB-C-12	
C-125	1 1/4	24#14, 1#14GND		JB-C-12	CP-1	
C-126	3/4	6#14, 1#14GND		MS-P9B	CP WIREWAY	
C-127	3/4	6#14, 1#14GND		MS-P9A	CP WIREWAY	
C-128	3/4	6#14, 1#14GND		MS-P8	CP WIREWAY	
C-129	3/4	6#14, 1#14GND		MS-P7	CP WIREWAY	
C-130	3/4	6#14, 1#14GND		MS-P6	CP WIREWAY	
C-131	3/4	6#14, 1#14GND		MS-P5	CP WIREWAY	
C-132	3/4	6#14, 1#14GND		MS-P4	CP WIREWAY	
C-133	3/4	6#14, 1#14GND		MS-P3	CP WIREWAY	
C-134	3/4	6#14, 1#14GND		MS-P2	CP WIREWAY	
C-135	3/4	6#14, 1#14GND		MS-P1	CP WIREWAY	
C-136	1	24#14, 1#14GND		CP WIREWAY	CP-1	MS-P8,7,6,5
C-137	1	24#14, 1#14GND		CP WIREWAY	CP-1	MS-P4,3,2,1
C-138	3/4	12#14, 1#14GND		CP WIREWAY	CP-1	MS-P9A,9B
C-139	3/4	1#12, 1#12GND		ESD-CO1	CP-1	CONNEX ESD
C-140	3/4	1#12, 1#12GND		ESD-DO1	CP-1	DISPENSER ESD
C-141	3/4	1#12, 1#12GND		ESD-TO1	CP-1	TANK FARM ESD
C-142	3/4	1#12, 1#12GND		ESD-CW01	CP-1	CATWALK ESD

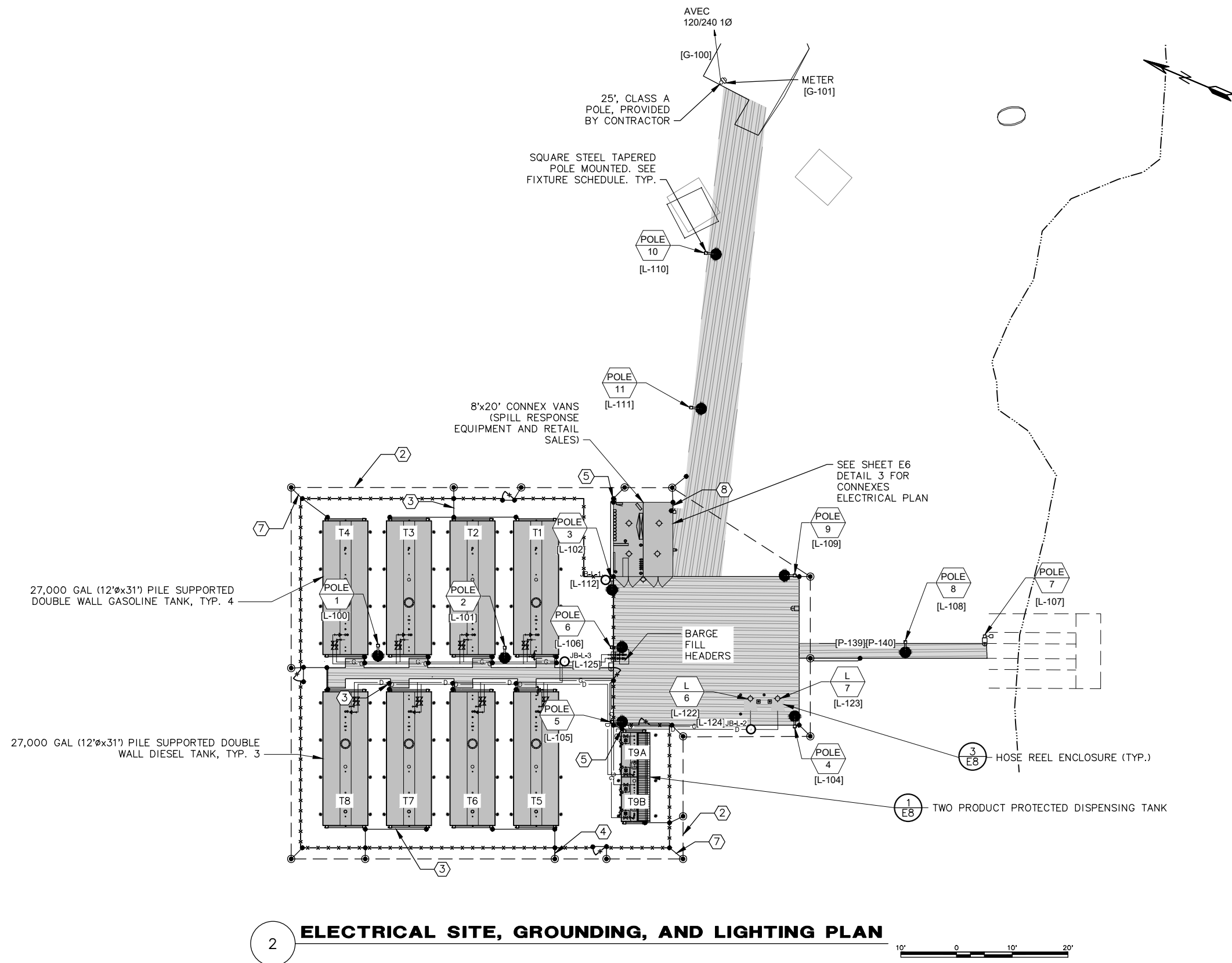
CONDUIT		CONDUCTORS		FROM	TO	REMARKS
NO.	SIZE	LIGHTING	SPARES*			
L-100	3/4	2#12, 1#12GND		POLE 1	POLE 2	
L-101	3/4	2#12, 1#12GND		POLE 2	POLE 3	
L-102	3/4	2#12, 1#12GND		POLE 3	SW-1	
L-103	3/4	2#12, 1#12GND		SW-1	PANEL A	
L-104	3/4	2#12, 1#12GND		POLE 4	POLE 5	
L-105	3/4	2#12, 1#12GND		POLE 5	POLE 6	
L-106	3/4	2#12, 1#12GND		POLE 6	JB-L-1	
L-107	3/4	2#12, 1#12GND		POLE 7	POLE 8	
L-108	3/4	2#12, 1#12GND		POLE 8	POLE 9	
L-109	3/4	2#12, 1#12GND		POLE 9	JB-L-1	
L-110	3/4	2#12, 1#12GND		POLE 10	POLE 11	
L-111	3/4	2#12, 1#12GND		POLE 11	JB-L-1	
L-112	3/4	2#12, 1#12GND		JB-L-1	SW-2	
L-113	3/4	2#12, 1#12GND		SW-2	PANEL A	
L-114	3/4	2#12, 1#12GND		L-1	SW-3	CONNEXES EXT. LIGHT
L-115	3/4	2#12, 1#12GND		SW-3	PANEL A	
L-116	3/4	2#12, 1#12GND		L-2	L-3	SALES CONNEX LTS
L-117	3/4	2#12, 1#12GND		L-3	SW-4	SALES CONNEX LTS
L-118	3/4	2#12, 1#12GND		SW-4	PANEL A	
L-119	3/4	2#12, 1#12GND		L-4	L5	SPILL RESP. CONNEX LTS
L-120	3/4	2#12, 1#12GND		L-5	SW-5	SPILL RESP. CONNEX LTS
L-121	3/4	2#12, 1#12GND		SW-5	PANEL A	
L-122	3/4	2#12, 1#12GND		L-6	JB-L-2	GAS KIOSK LIGHT
L-123	3/4	2#12, 1#12GND		L-7	JB-L-2	DIESEL KIOSK LIGHT
L-124	3/4	2#12, 1#12GND		JB-L-2	JB-L-3	
L-125	3/4	2#12, 1#12GND		JB-L-3	SW-5	
L-126	3/4	2#12, 1#12GND		SW-6	PANEL A	



BULK FUEL UPGRADES
CONDUIT SCHEDULE
NUNAPITCHUK, ALASKA


NO.	REVISION	DATE	BY
1	ISSUED FOR BIDDING	7/28/21	AH

Plot Date	7/28/21
Designed	WM
Drawn	DJ
Approved	WM

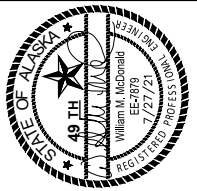


2 ELECTRICAL SITE, GROUNDING, AND LIGHTING PLAN


- ### NOTES
- ① 3/4"X10' COPPER CLAD GROUND ROD.
 - ② #2 bCU GROUND RING BURIED MIN 30" BELOW GRADE.
 - ③ #4 bCU GROUND TO TANKS.
 - ④ #6 bCU JUMPER TO FENCE.
 - ⑤ BELOW GRADE BOND: EXOTHERMIC WELDMENT ABOVE GRADE BOND: FENCEPOST/STAIRS, SPLIT BOLT ABOVE GRADE BOND: DISPENSER/PANELS, SPLIT BOLT TANK SKID: EXOTHERMIC WELDMENT, DO NOT WELD TO TANK, TOUCH UP AND PAINT/GALVANIZE AREA AFFECTED WHEN WELD IS COMPLETE. PIPELINE: APPROVED PIPE GROUNDING CLAMP
 - ⑥ #6 BRAID TO GATE AND MANDOORS.
 - ⑦ EXTEND #6 GROUND TO BARBED WIRE AND BOND AT ALL CORNERS AND WHERE SHOWN.
 - ⑧ PROVIDE GROUND BAR FOR GROUND TESTING.
 - ⑨ #4 bCU GROUND TO GROUND REEL.
- [XXX] SEE SHEET E4 FOR CONDUIT SCHEDULE
- SEE SPECIFICATION FOR CONDUIT ROUTING REQUIREMENTS.
- HAZARDOUS BOUNDARIES SHOWN ON E8. PROVIDE SEAL OFF FITTINGS PER CODE.



ALASKA ENERGY AUTHORITY



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E.E.-789
1/27/72
REGISTERED PROFESSIONAL ENGINEER
STATE OF ALASKA



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3940 ARCTIC BLVD., SUITE 300
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PHONE: (907) 562-3252
#AECLE82-AK

**BULK FUEL UPGRADES
ELECTRICAL SITE PLAN, GROUNDING, &
LIGHTING PLAN**

NUNAPITCHUK, ALASKA

NO.	REVISION	DATE	BY
1	ISSUED FOR BIDDING	7/28/21	AH

Plot: 7/28/21

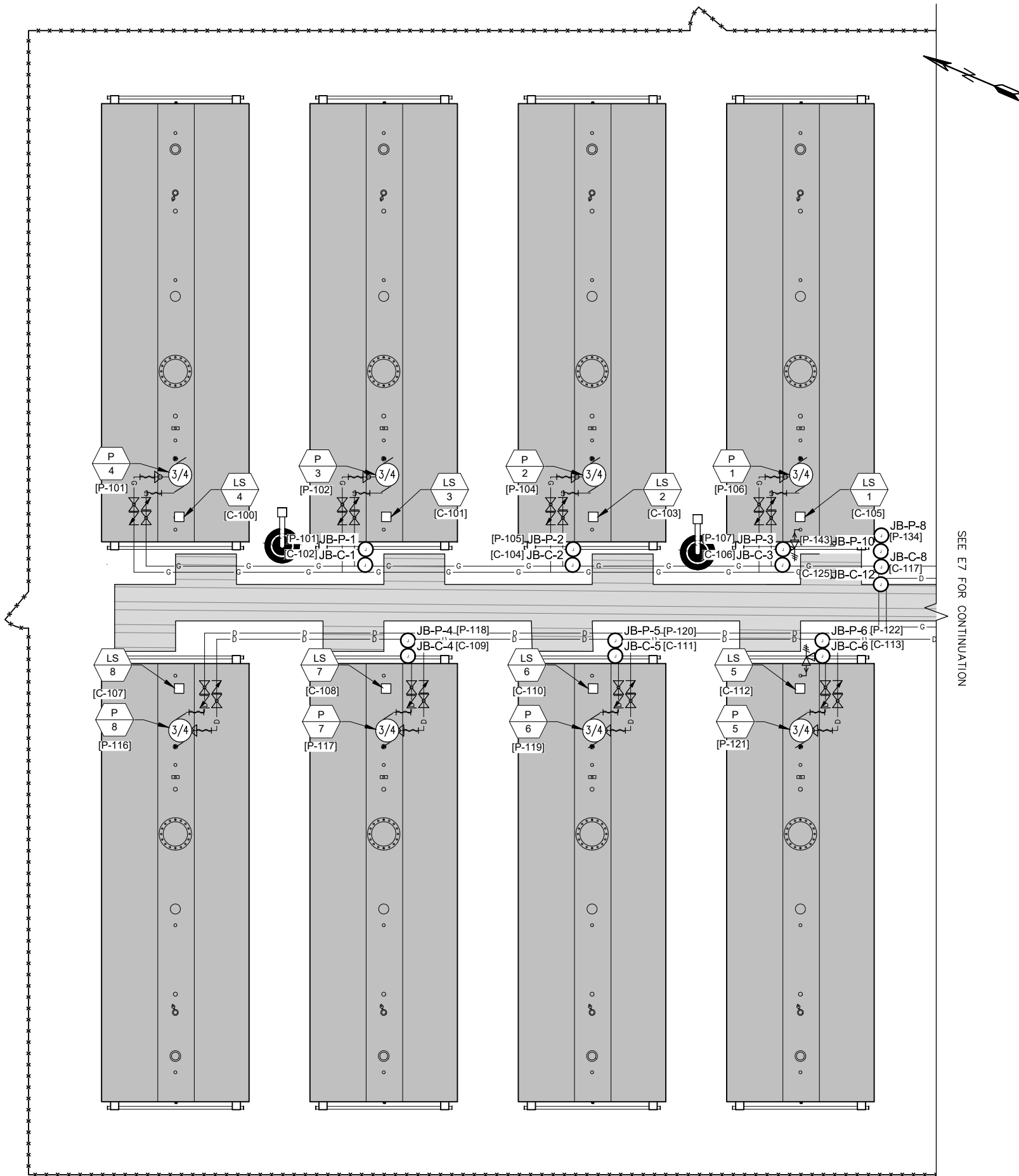
Date: 7/28/21

Designed: WM

Drawn: DJ

Approved: WM

Sheet No. **E5**



1 **TANK FARM ELECTRICAL PLAN**

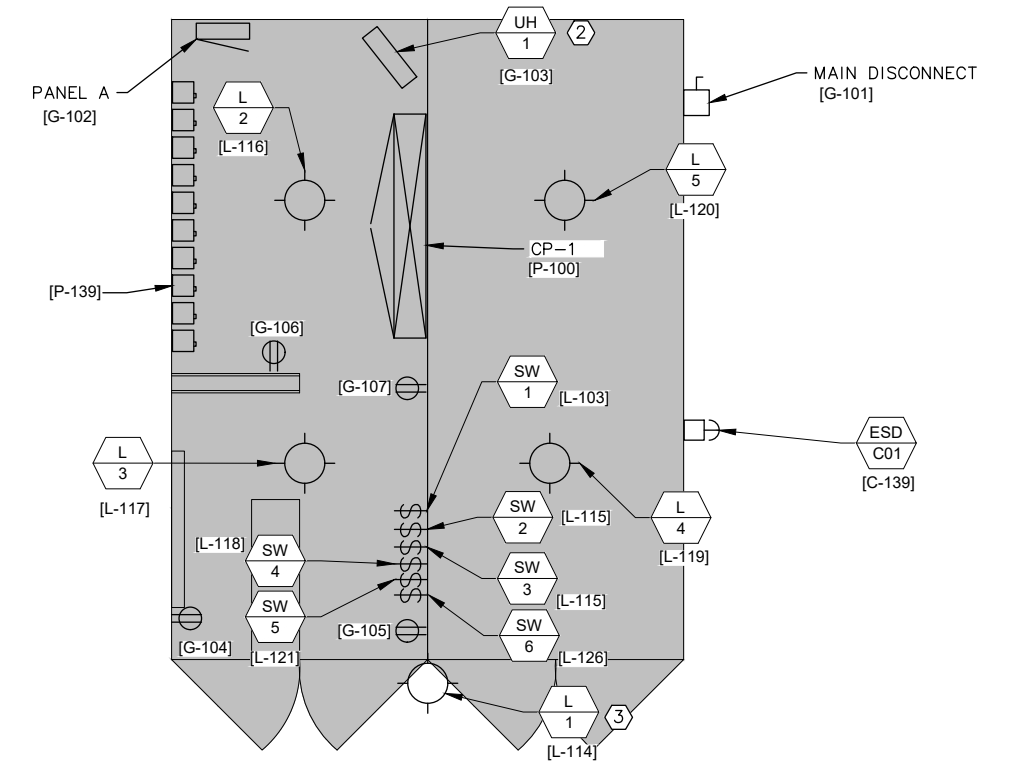


SEE E7 FOR CONTINUATION

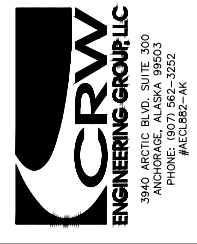
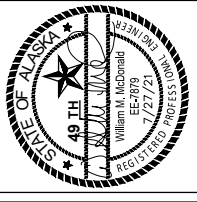
NOTES

- ① SEE SHEET E6 FOR CONDUIT DEVELOPMENT PLAN
 - ② CHROMOLOX AIR HEATER-HCH-501M 332435
 - ③ PLATE MOUNTED, ABOVE CONNEX DOORS
 - [XXX] SEE SHEET E4 FOR CONDUIT SCHEDULE.
- SEE SPECIFICATION FOR CONDUIT ROUTING REQUIREMENTS.
- HAZARDOUS BOUNDARIES SHOW ON E8. PROVIDE SEAL OFF FITTINGS PER CODE.

2 **BOARDWALK END ELECTRICAL PLAN**



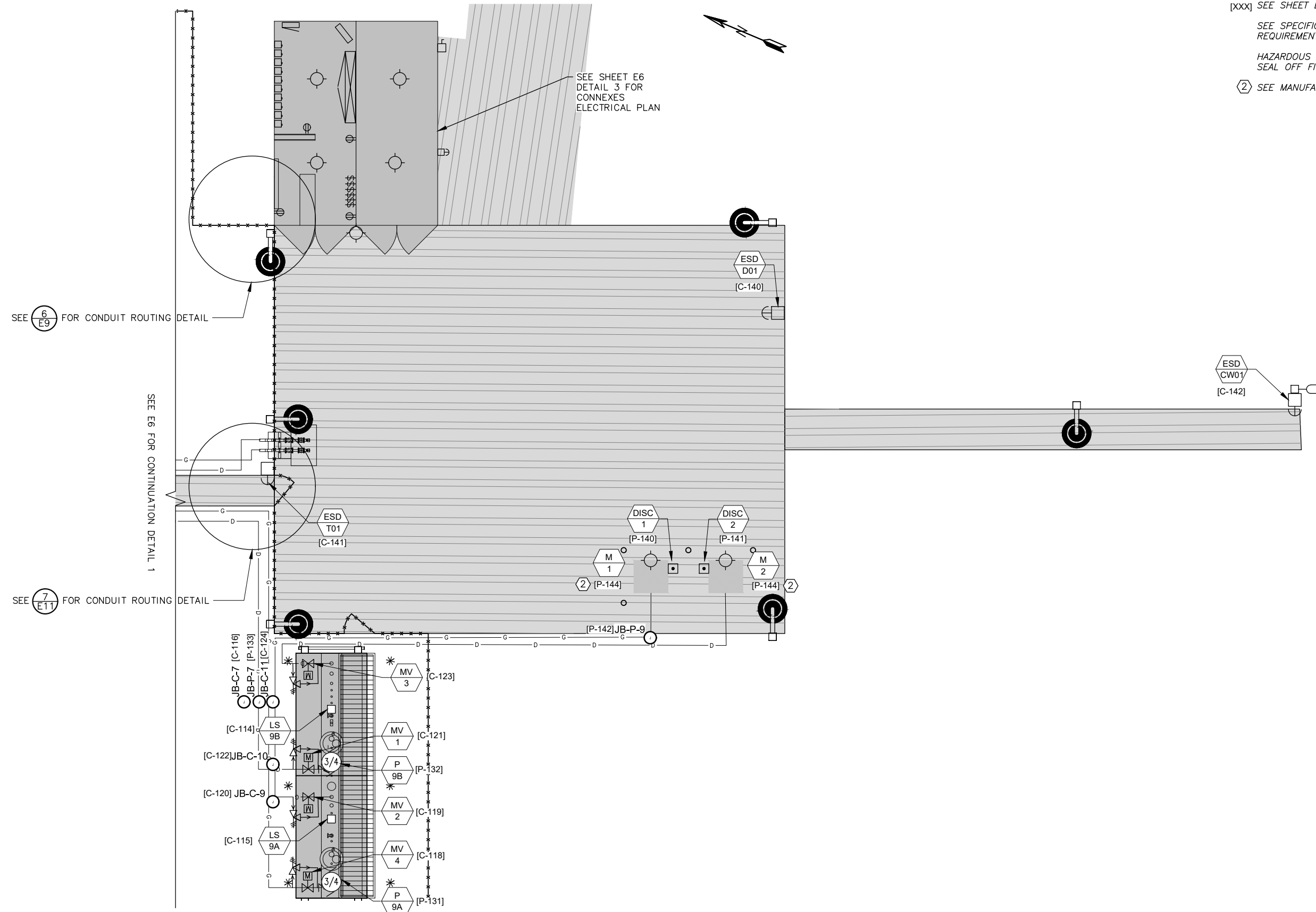
3 **SPILL RESPONSE/SALES CONNEX ELECTRICAL DETAIL**



BULK FUEL UPGRADES
POWER & CONTROLS PLAN (1 OF 2)
NUNAPITCHUK, ALASKA

NO.	REVISION	BY	DATE
1	ISSUED FOR BIDDING	AH	7/28/21

Plot Date: 7/28/21
Designed: WM
Drawn: DJ
Approved: WM



NOTES

- ① SEE SHEET E6 FOR CONDUIT DEVELOPMENT PLAN
- [XXX] SEE SHEET E4 FOR CONDUIT SCHEDULE
- SEE SPECIFICATION FOR CONDUIT ROUTING REQUIREMENTS.
- HAZARDOUS BOUNDARIES SHOWN ON E8. PROVIDE SEAL OFF FITTINGS PER CODE.
- ② SEE MANUFACTURER CUT-SHEETS FOR CONNECTIONS.

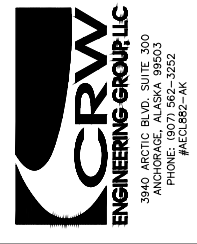
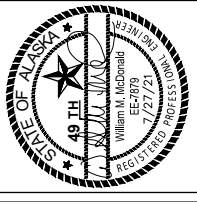
SEE ⑥ FOR CONDUIT ROUTING DETAIL

SEE ⑦ FOR CONDUIT ROUTING DETAIL

SEE E6 FOR CONTINUATION DETAIL 1

SEE SHEET E6
DETAIL 3 FOR
CONNEXES
ELECTRICAL PLAN

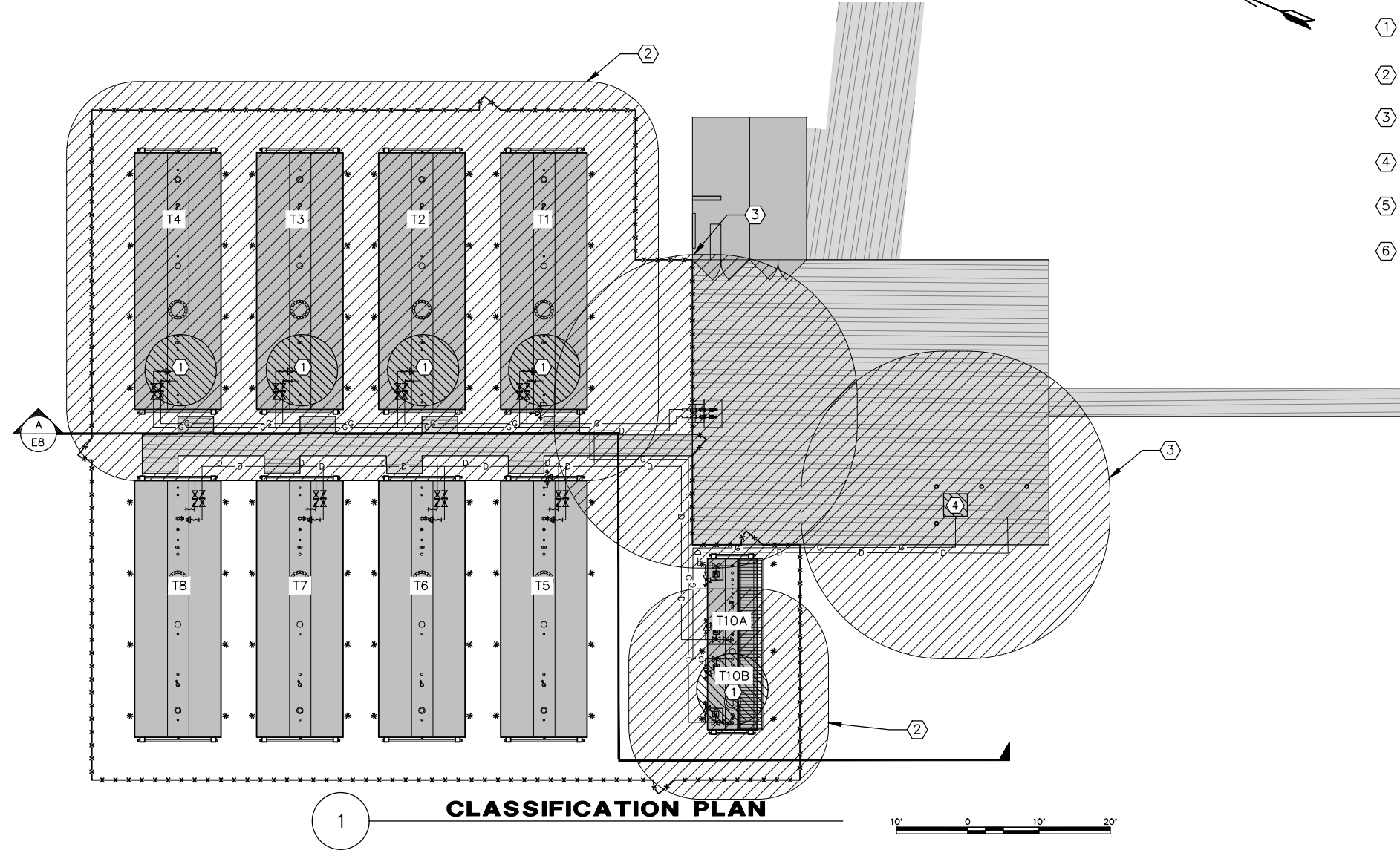
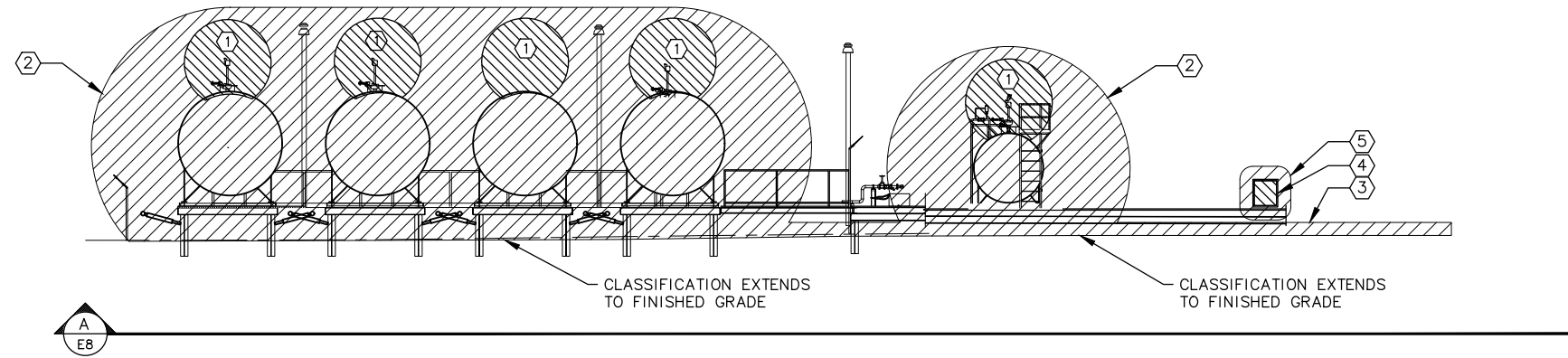
1 **PLATFORM ELECTRICAL PLAN**



BULK FUEL UPGRADES
POWER & CONTROLS PLAN (2 OF 2)
NUNAPITCHUK, ALASKA

NO.	REVISION	BY	DATE
1	ISSUED FOR BIDDING	AH	7/28/21

Plot Date: 7/28/21	Designed: WM
Drawn: DJ	Approved: WM



NOTES

- ① CLASS 1, DIVISION 1 RATING EXTENDS 5' IN ALL DIRECTIONS AROUND GASOLINE TANK VENTS.
- ② CLASS 1, DIVISION 2 RATING EXTENDS 10' IN ALL DIRECTIONS OF GASOLINE TANKS.
- ③ THE AREA 18" ABOVE GRADE WITHIN 20' OF DUAL DISPENSER IS CLASS 1, DIVISION 2 RATED.
- ④ THE AREA INSIDE THE DUAL PRODUCT DISPENSER AND INSIDE AND BELOW THE PAN BASIN IS CLASS 1, DIVISION 1 RATED.
- ⑤ THE AREA WITHIN 18" OF THE DUAL PRODUCT DISPENSER IS CLASS 1, DIVISION 2 RATED.
- ⑥ THE AREA WITHIN THE ENCLOSURE IS CLASS 1, DIVISION 1 RATED.

CLASSIFICATION LEGEND

- CLASS 1, DIVISION 1
- CLASS 1, DIVISION 2



BULK FUEL UPGRADES
CLASSIFICATION PLAN

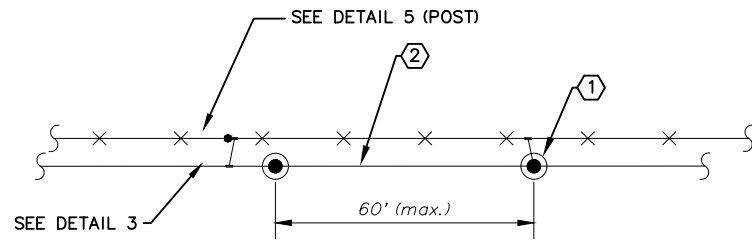
NUNAPITCHUK, ALASKA

NO.	REVISION	BY	DATE
1	ISSUED FOR BIDDING	AH	7/28/21

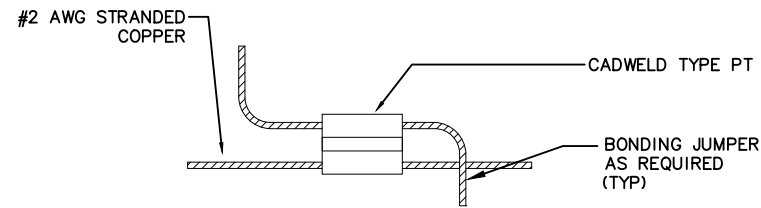
Plot Date: 7/28/21	Designed: WM
Drawn: DJ	Approved: WM

Sheet No. **E8**

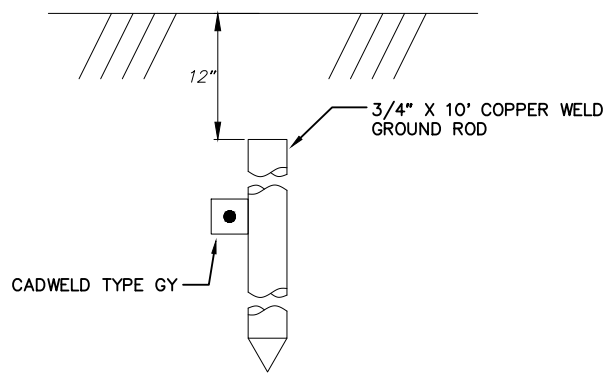
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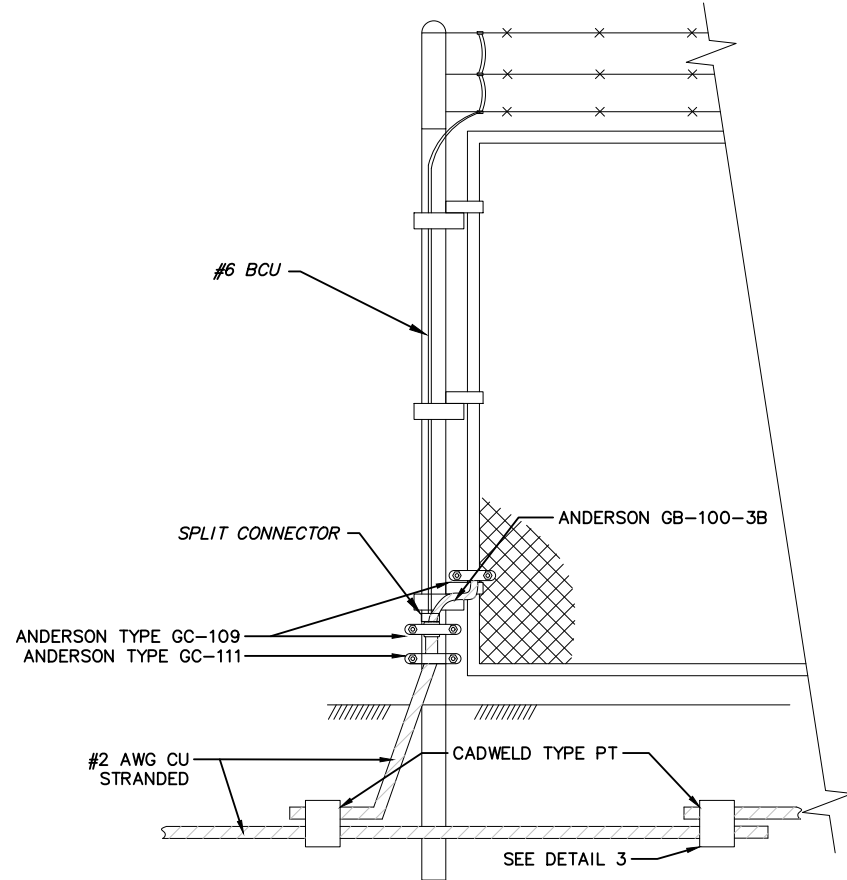
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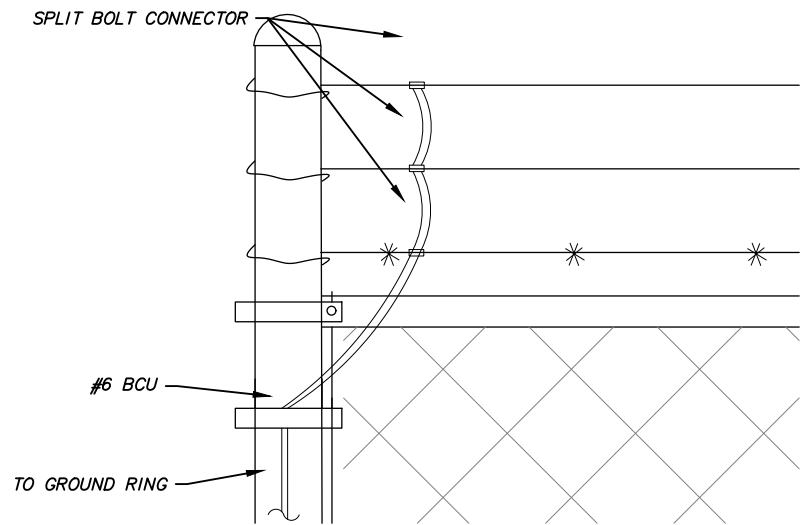
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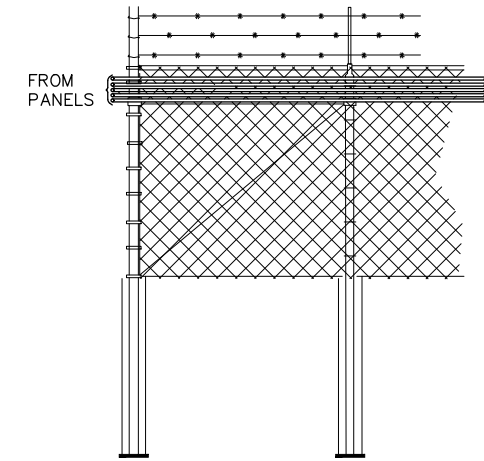
3 GROUND ROD CONNECTION
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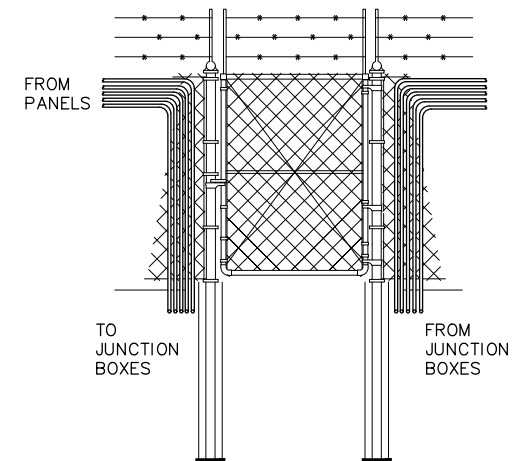
4 POST/GATE/DOOR GROUNDING (TYP.)
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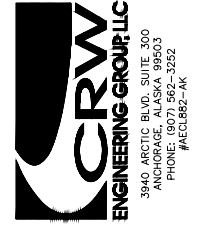
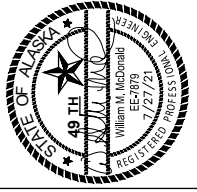
5 FENCE GROUNDING (TYP.)
SCALE: NTS



6 FENCE CONDUIT ROUTING DETAIL
SCALE: NTS



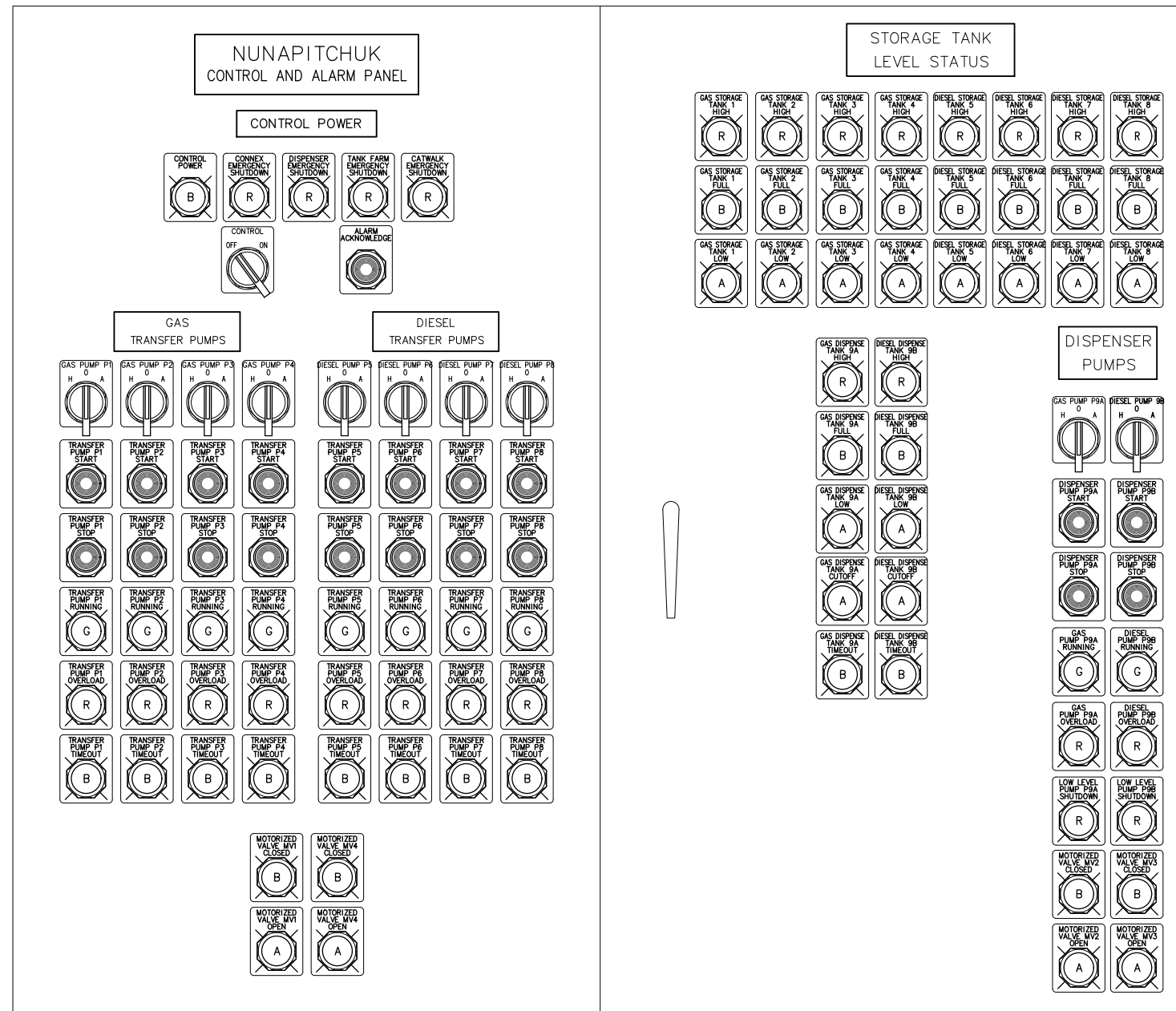
7 GATE CONDUIT ROUTING DETAIL
SCALE: NTS



BULK FUEL UPGRADES
GROUNDING AND ELECTRICAL DETAILS
NUNAPITCHUK, ALASKA

NO.	REVISION	BY	DATE
1	ISSUED FOR BIDDING	AH	7/28/21

Plot Date: 7/28/21
Designed: WM
Drawn: DJ
Approved: WM



1 **FUEL CONTROL PANEL CP-1 LAYOUT**
NOT TO SCALE

ALARM AND PUMP CONTROL NARRATIVE

The control panel monitors and activates the tank level alarms, and powers the submersible pumps in each tank. The panel also provides for acknowledgement of alarm conditions, monitors emergency shutdown switch status and powers site lighting.

ALARMS

Each fuel tank is equipped with a CRITICAL HIGH (LSHH - XX) Level Float switch that, when fuel reaches its level, opens a circuit (fails safe) and causes an alarm horn/strobe to signal a CRITICAL HIGH Level has been reached. The CRITICAL HIGH Level condition is indicated on the front of the panel as well, identifying the tank(s) with high level(s).

The operator can acknowledge the alarm by pressing the ALARM ACKNOWLEDGE button on the control panel. This extinguishes the strobe and silences the horn, but the front panel light will remain illuminated until sufficient fuel is drained from the tank to drop its fuel level below the CRITICAL HIGH float's sensing point. At that time the front panel light will extinguish.

The control logic for alarm is set up so that each new alarm condition will cause the audible and visual alarms to annunciate, regardless of any existing (acknowledged) alarm conditions.

The tanks are equipped with Low Level Floats (LSL). If tank fuel level drops below the float sensing level, the associated pump will stop until a transfer is completed to refill the tank to a level above the LSL. A pilot light on the front panel indicating TANK LOW will be illuminated.

EMERGENCY SHUTDOWN

The Emergency shutdown system, when engaged, will cause the alarm horn/strobe to be energized. There are two emergency shutdown stations; both by the front gates, north and south. The alarm is enabled by pushing the ESD button and is extinguished by pulling the Emergency Shutdown Switch (ESD) "out", clearing the signal. When an ESD button is pushed, all powered conductors to the dispensers are disconnected and all pumps are shut down. Lighting and alarms are NOT de-energized and will remain active.

FUEL TRANSFER

The above ground storage tanks are filled by barge via the barge fuel pumping system. See Sheet C2 for a visual schematic and written description of the system.

DISPENSING & TRANSFER PUMPS

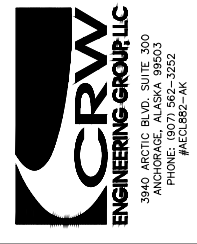
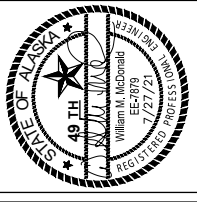
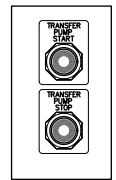
The hose reel STOP START remote operates the dispensing pump located in the dispensing tank.

When the dispensing pump is running a timer is activated and when the preset time has elapsed the pump is shut down. Should the timer shut the pump down before the required amount of fuel is provided, pushing the START button would cause the timer to reset allowing the pump to resume operation.

Manual operation

By placing (and holding) the HOA switch in the HAND position, the fuel pump will start and run. Its RUN light will turn on and the pump will continue running until the low float is exposed, the pump experiences an overload condition where either the panel mounted motor starter control is opened internally, or an internal temperature sensor in the motor detects an overheat condition, or the operator releases the HOA switch. If a panel-based overload causes the shutdown, a pilot light on the panel front will be energized (no other indication will be given, other than the pump stopping). A RESET pushbutton on the pump motor starter located inside the panel must be pressed to clear the overload relay in order to allow the pump to restart. The HOA switch is spring loaded so that upon release it will return to OFF from the HAND position. The HAND or manual mode is provided for maintenance and testing however it could be used to operate the Dispensing system in the event of control failure.

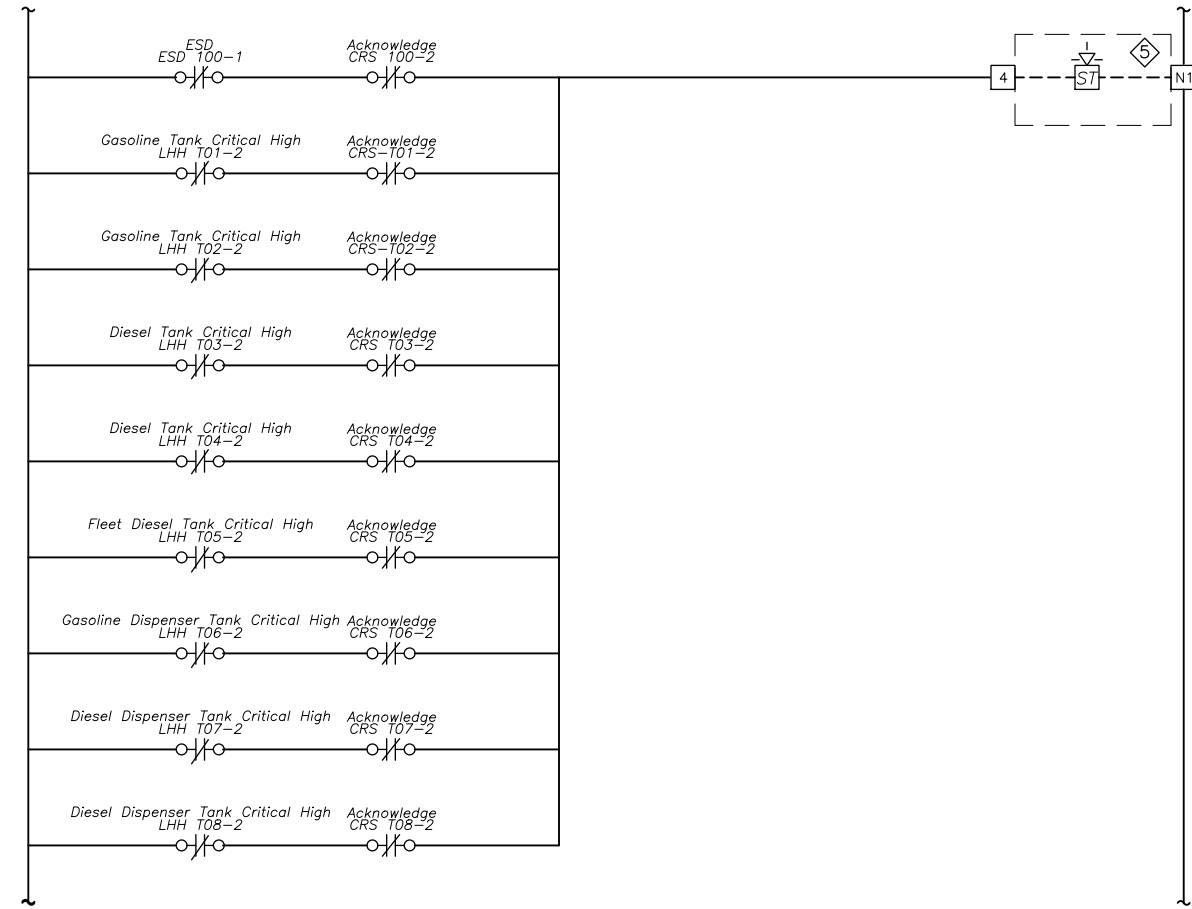
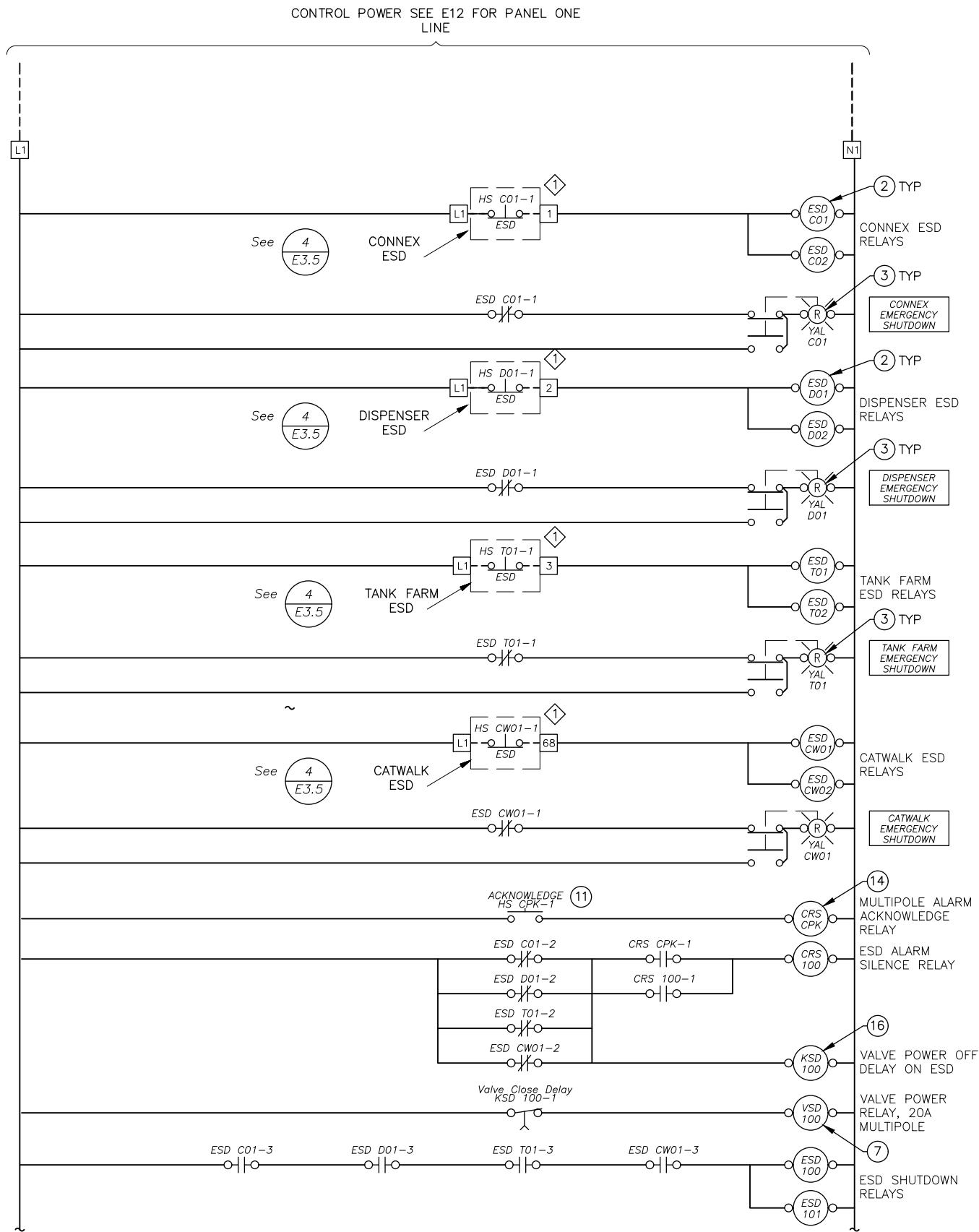
2 **HOSE REEL CONTROL LAYOUT (TYP)**
NOT TO SCALE



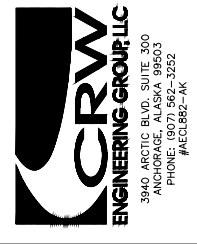
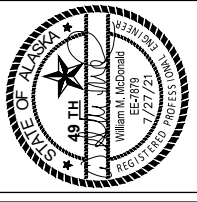
BULK FUEL UPGRADES
PANEL LAYOUT
NUNAPITCHUK, ALASKA

NO.	REVISION	BY	DATE
1	ISSUED FOR BIDDING	AH	7/28/21

Plot Date	Designed	Drawn	Approved
	WM	DJ	WM



CONTROL POWER LADDER DIAGRAM
NOT TO SCALE

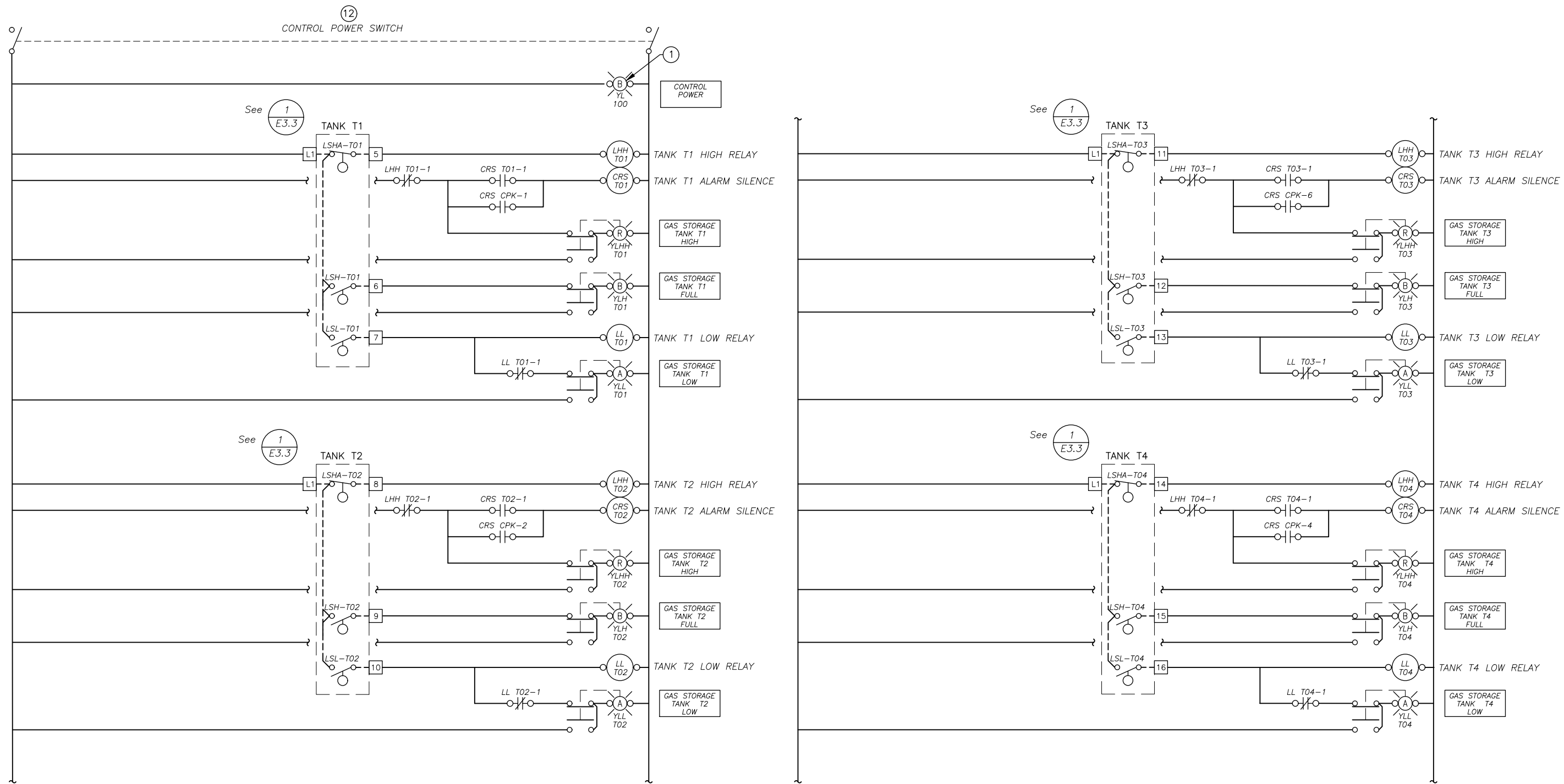


BULK FUEL UPGRADES
CONTROL POWER LADDER DIAGRAM
NUNAPITCHUK, ALASKA

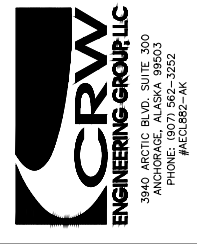
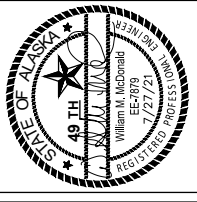
NO.	REVISION	BY	DATE
1	ISSUED FOR BIDDING	AH	7/28/21

Plot: 7/28/21	Designed: WM
Date: 7/28/21	Drawn: DJ
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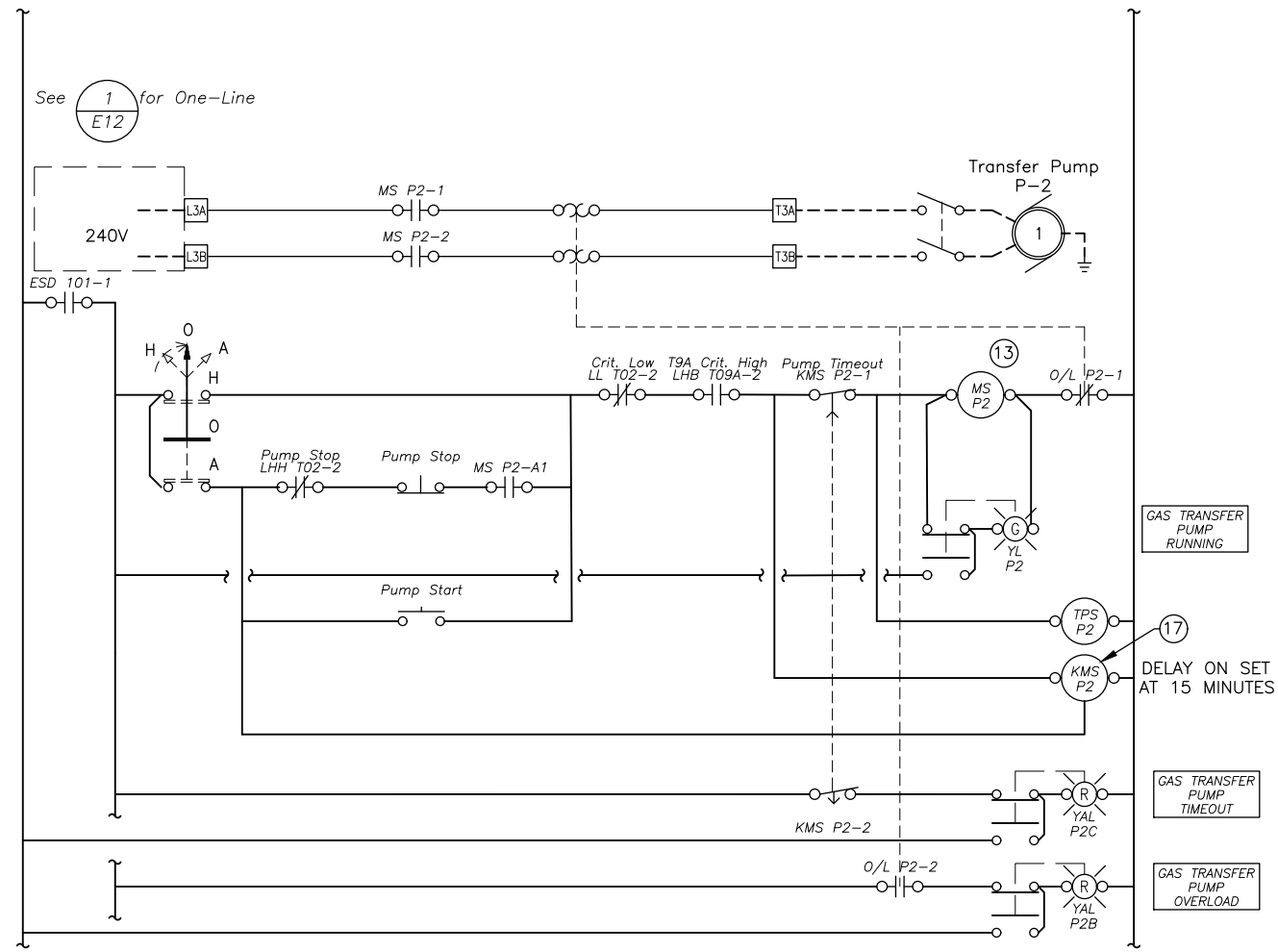
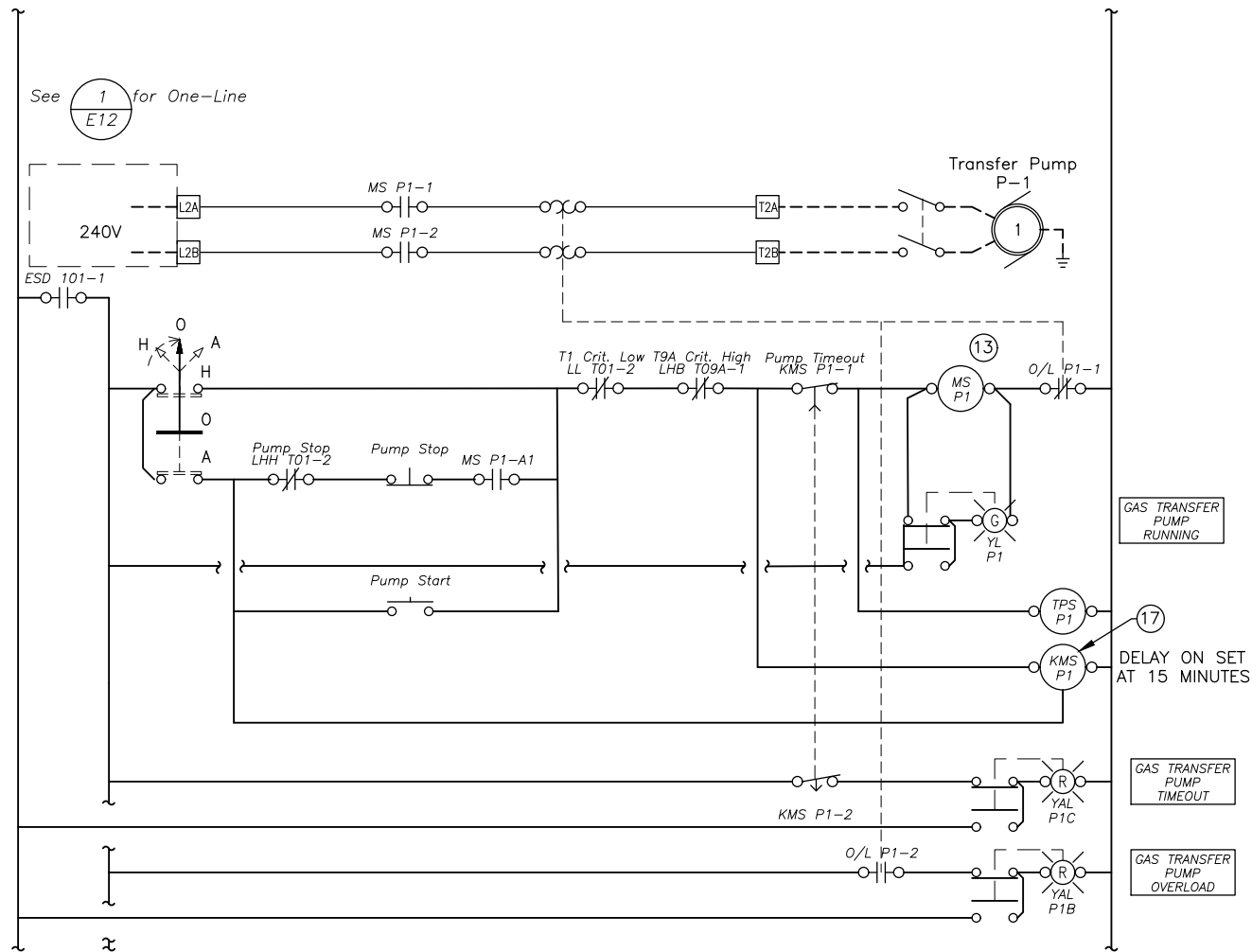
1 GASOLINE STORAGE TANK FLOAT LADDER DIAGRAMS
NOT TO SCALE



BULK FUEL UPGRADES
GASOLINE STORAGE TANK FLOAT LADDER DIAGRAMS
NUNAPITCHUK, ALASKA

NO.	REVISION	DATE	BY
1	ISSUED FOR BIDDING	7/28/21	AH

Plot Date: 7/28/21	Designed: WM
Drawn: DJ	Approved: WM



1 **TRANSFER PUMPS P-1 AND P-2 LADDER DIAGRAMS**
NOT TO SCALE

ALASKA ENERGY AUTHORITY

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BULK FUEL UPGRADES

TRANSFER PUMPS P-1 AND P-2 LADDER DIAGRAMS

NUNAPITCHUK, ALASKA

NO.	REVISION	DATE
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Plot: 7/28/21

Date: 7/28/21

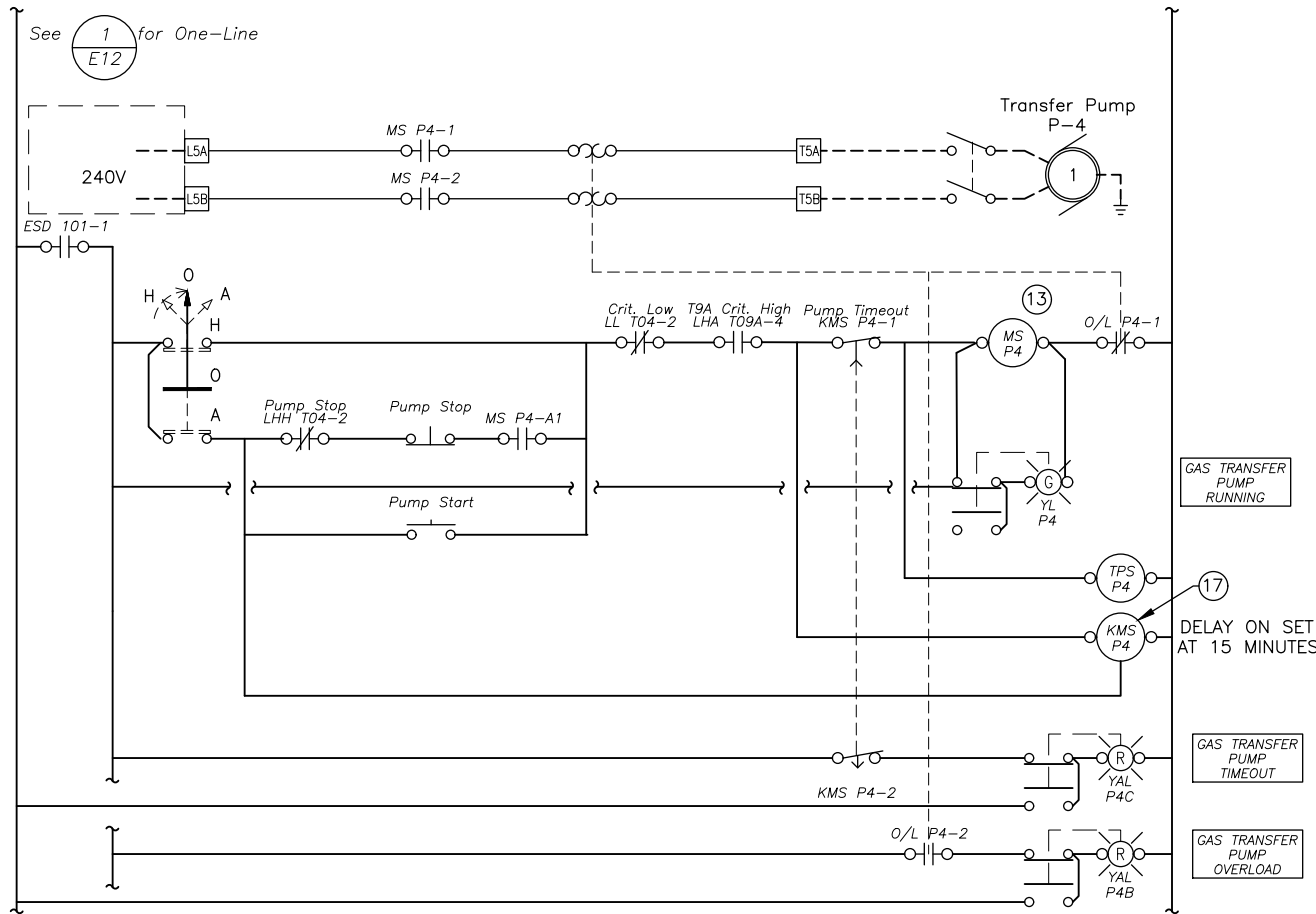
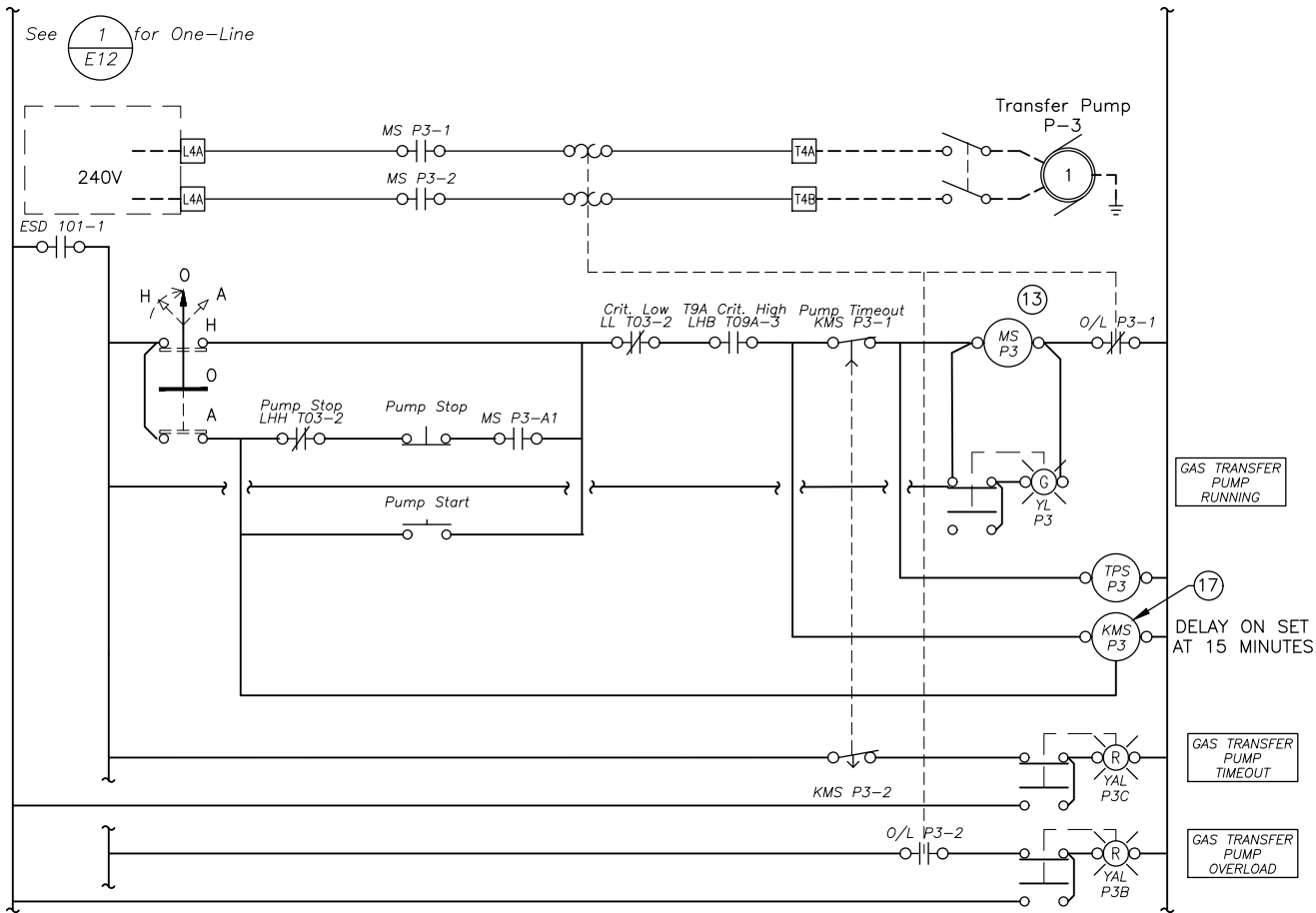
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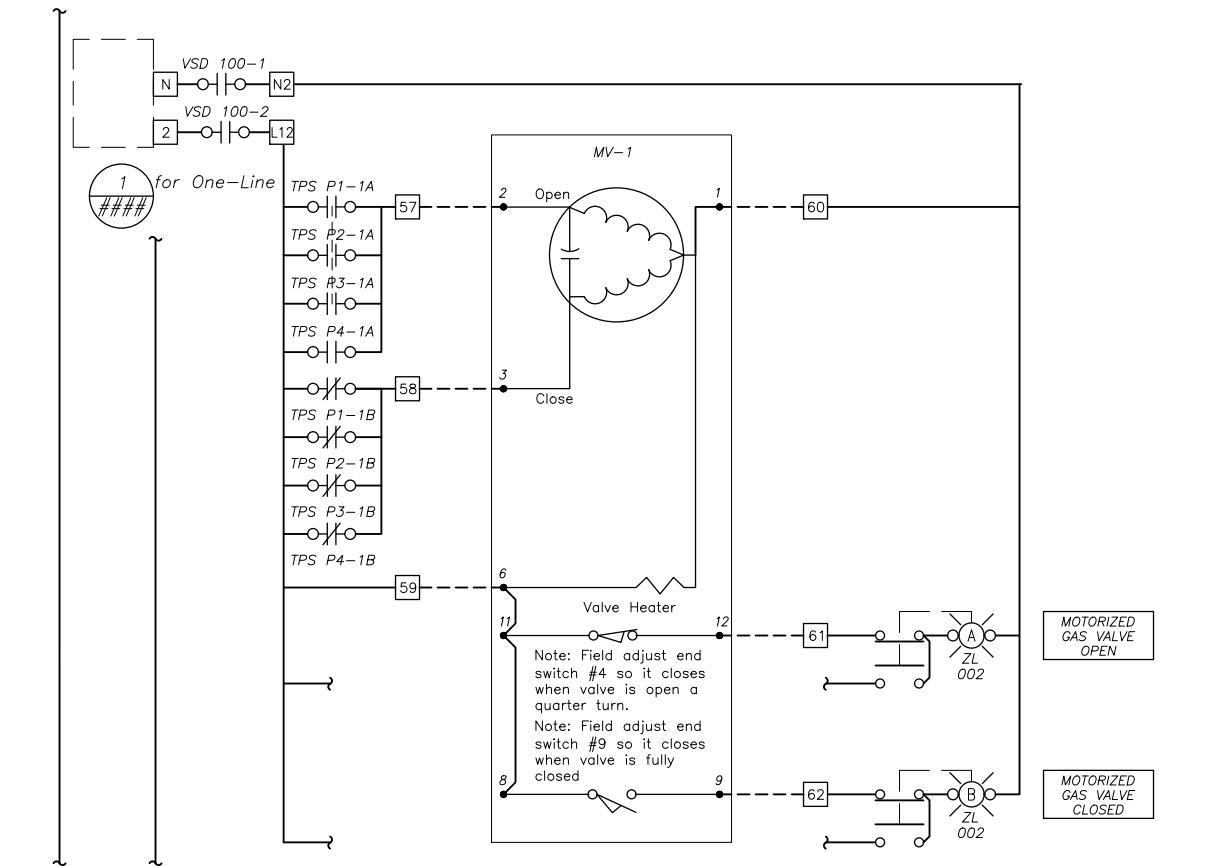
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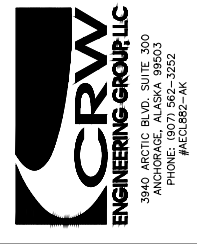
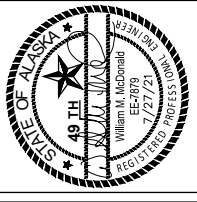
E14



1 TRANSFER PUMPS P-3 AND P-4 LADDER DIAGRAMS
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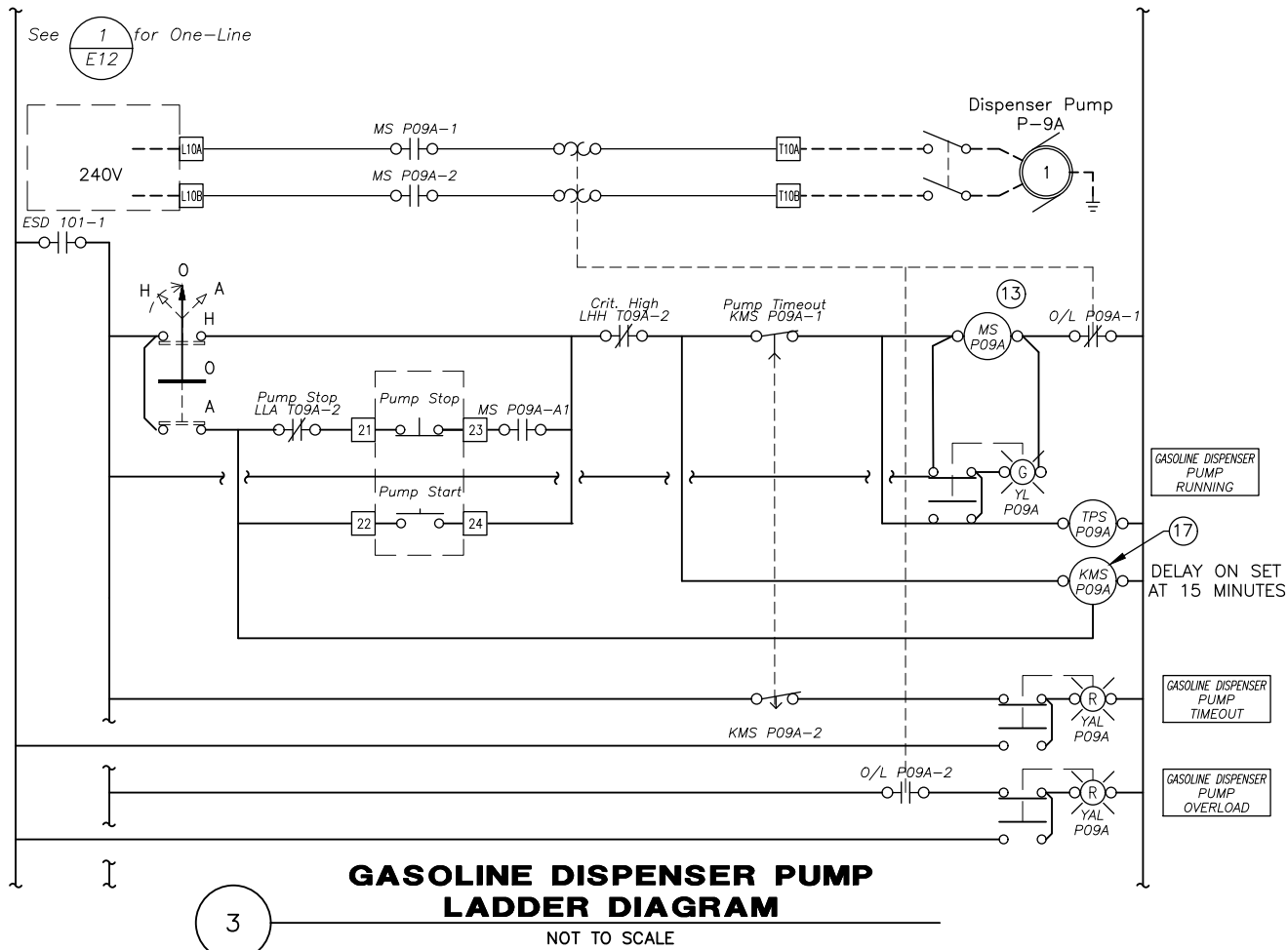
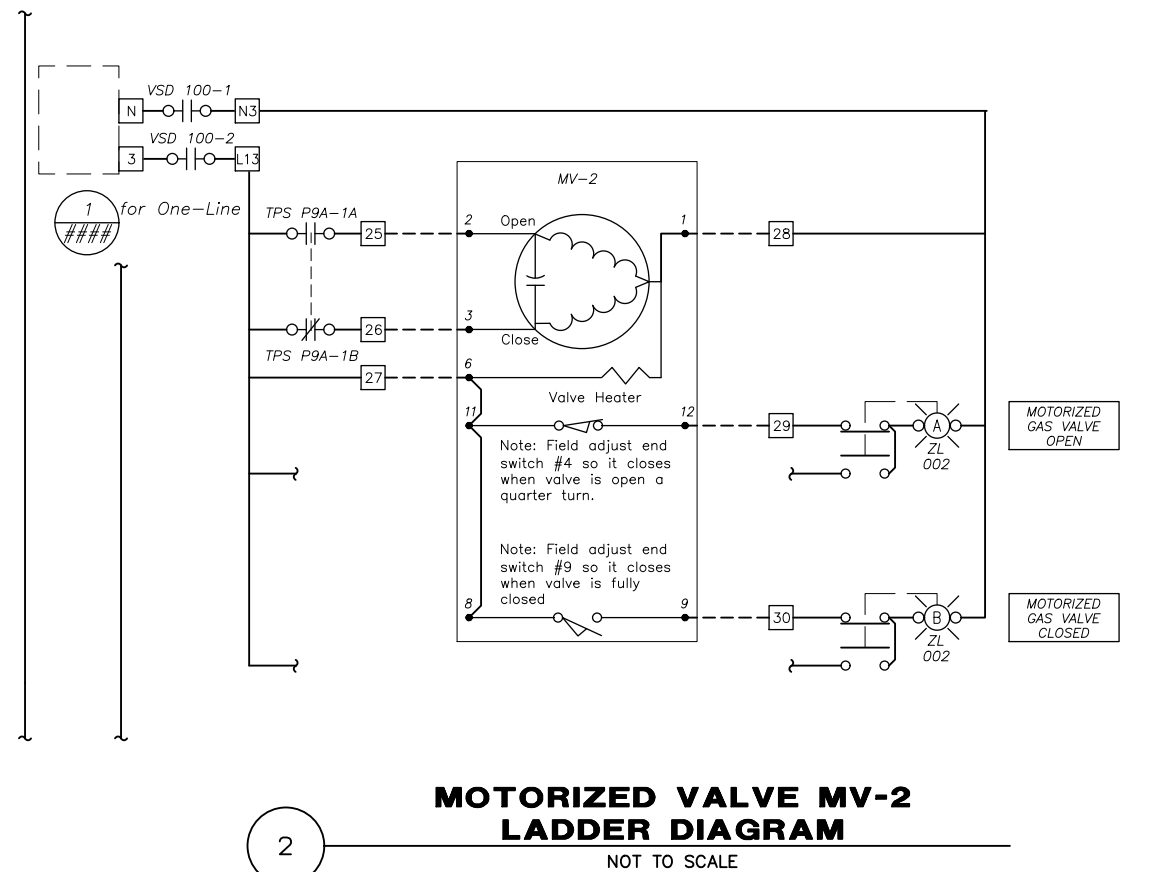
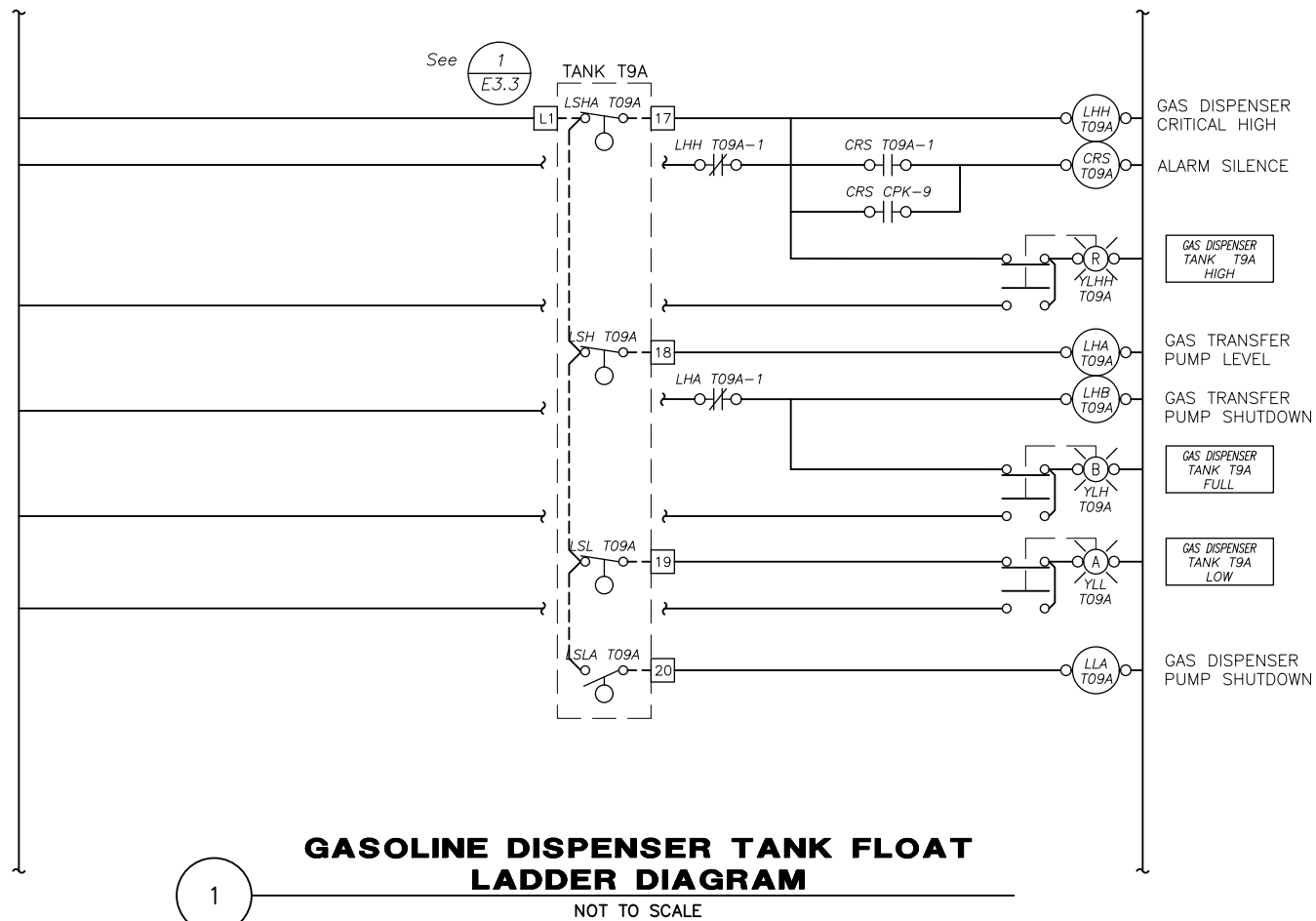
2 MOTORIZED VALVE MV-1 LADDER DIAGRAM
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BULK FUEL UPGRADES
TRANSFER PUMPS P-3 AND P-4
LADDER DIAGRAMS
NUNAPITCHUK, ALASKA

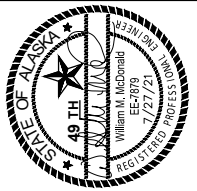
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1	ISSUED FOR BIDDING	AH	7/28/21

Plot Date: 7/28/21	Designed: WM
Drawn: DJ	Approved: WM






ALASKA ENERGY AUTHORITY



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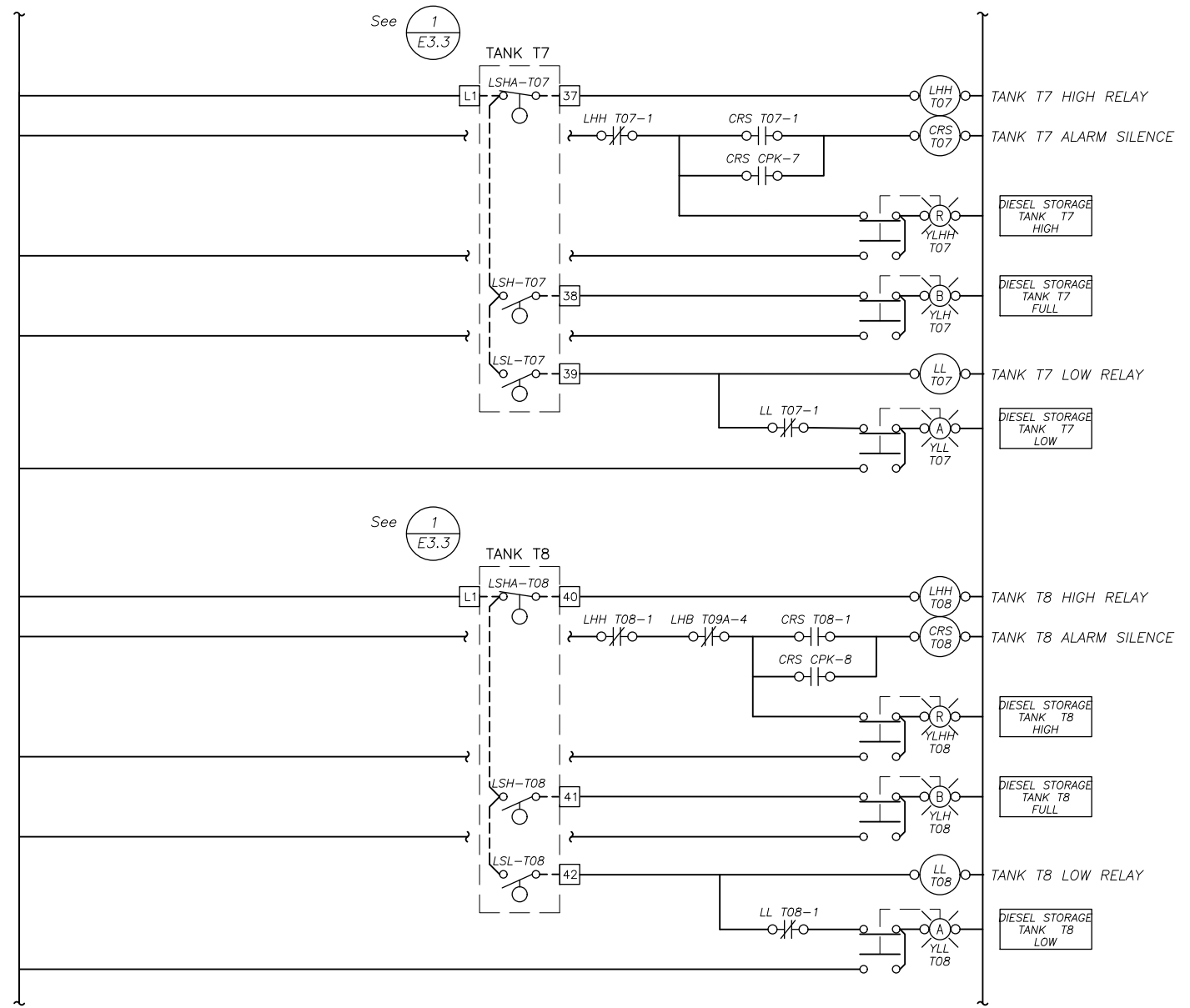
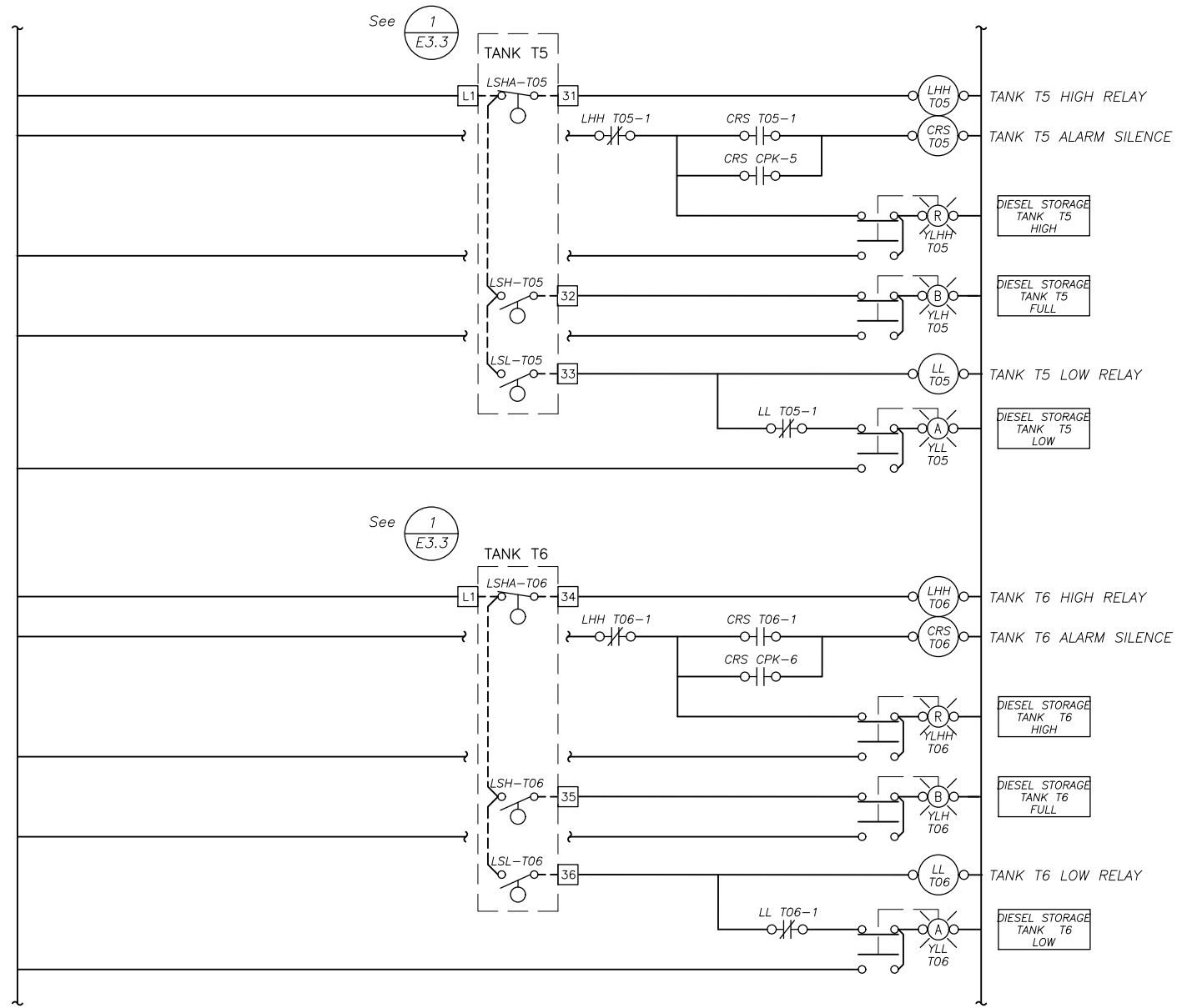
BULK FUEL UPGRADES
GASOLINE DISPENSER PUMP LADDER DIAGRAM

NUNAPITCHUK, ALASKA

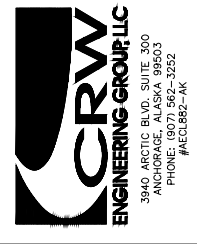
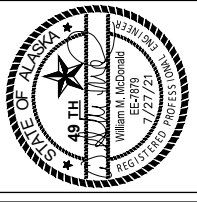
NO.	REVISION	DATE	BY
1	ISSUED FOR BIDDING	7/28/21	AH

Plot Date: 7/28/21
Designed: WM
Drawn: DJ
Approved: WM

Sheet No. **E16**



1 DIESEL STORAGE TANK FLOAT LADDER DIAGRAMS
NOT TO SCALE

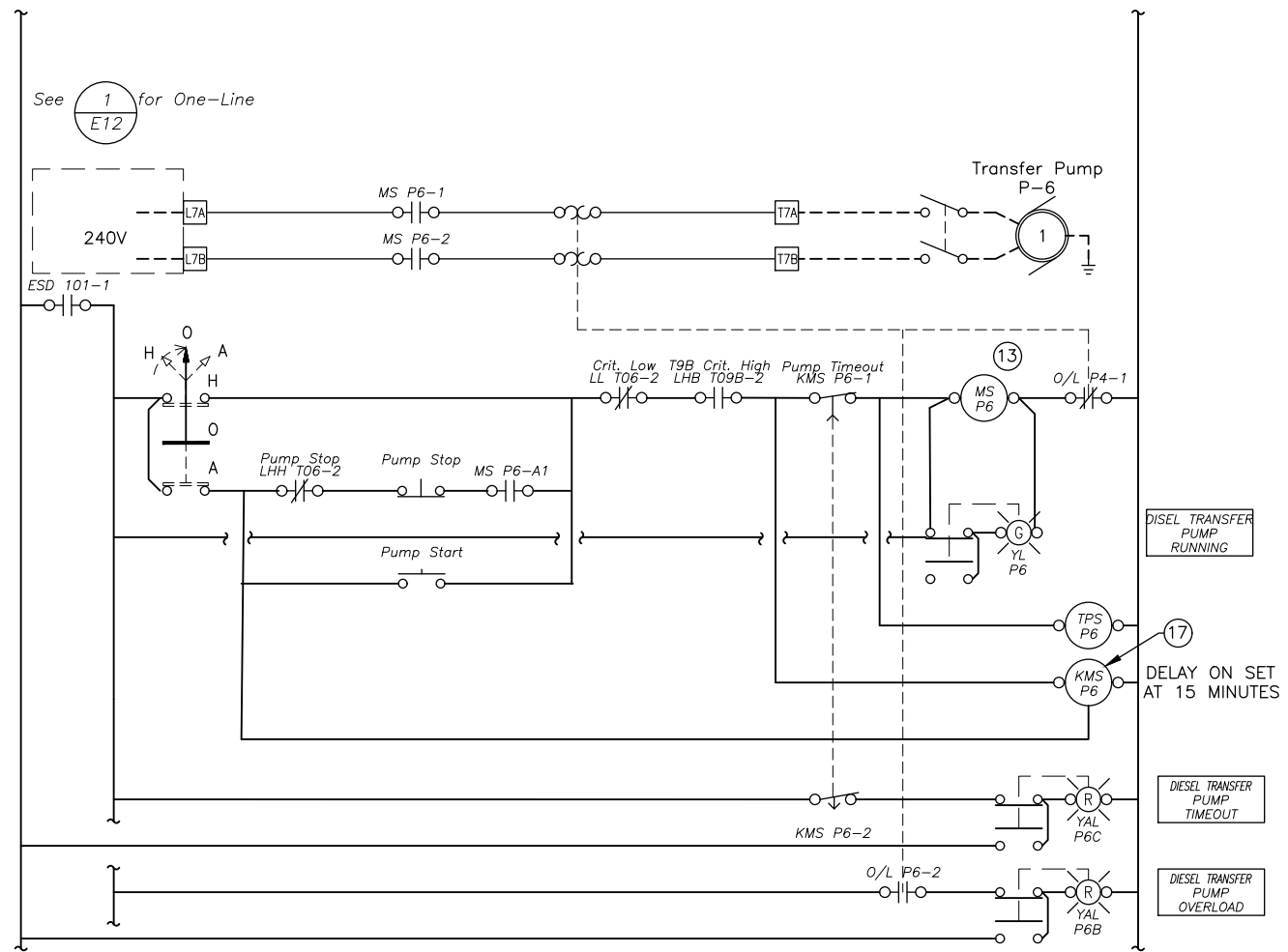
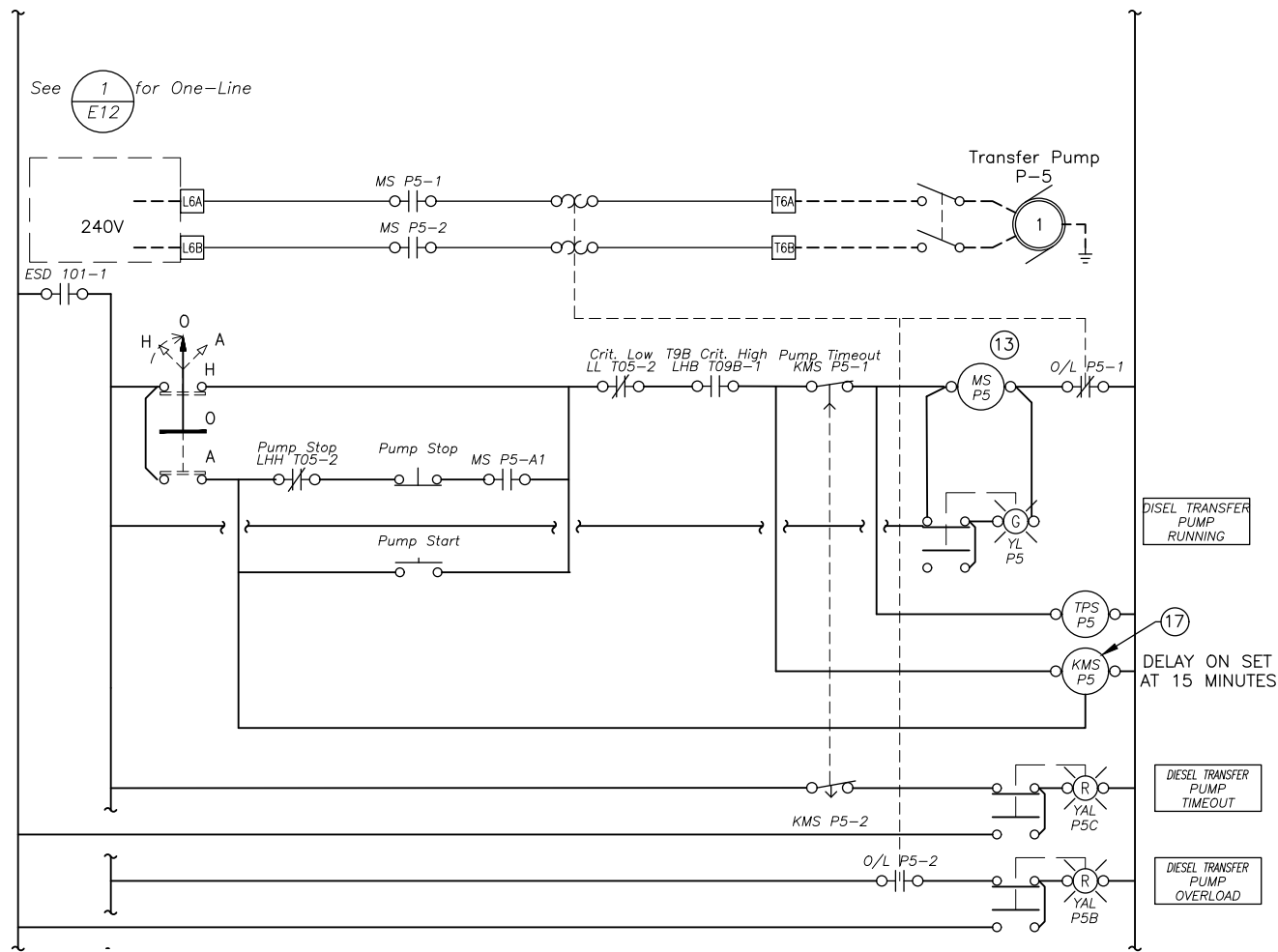


BULK FUEL UPGRADES
DIESEL STORAGE TANK FLOAT LADDER DIAGRAMS
NUNAPITCHUK, ALASKA

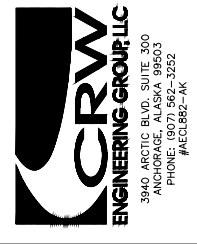
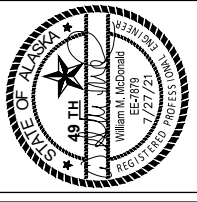
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1	ISSUED FOR BIDDING	7/28/21

Plot: 7/28/21	Designed: WM
Date: 7/28/21	Drawn: DJ
	Approved: WM

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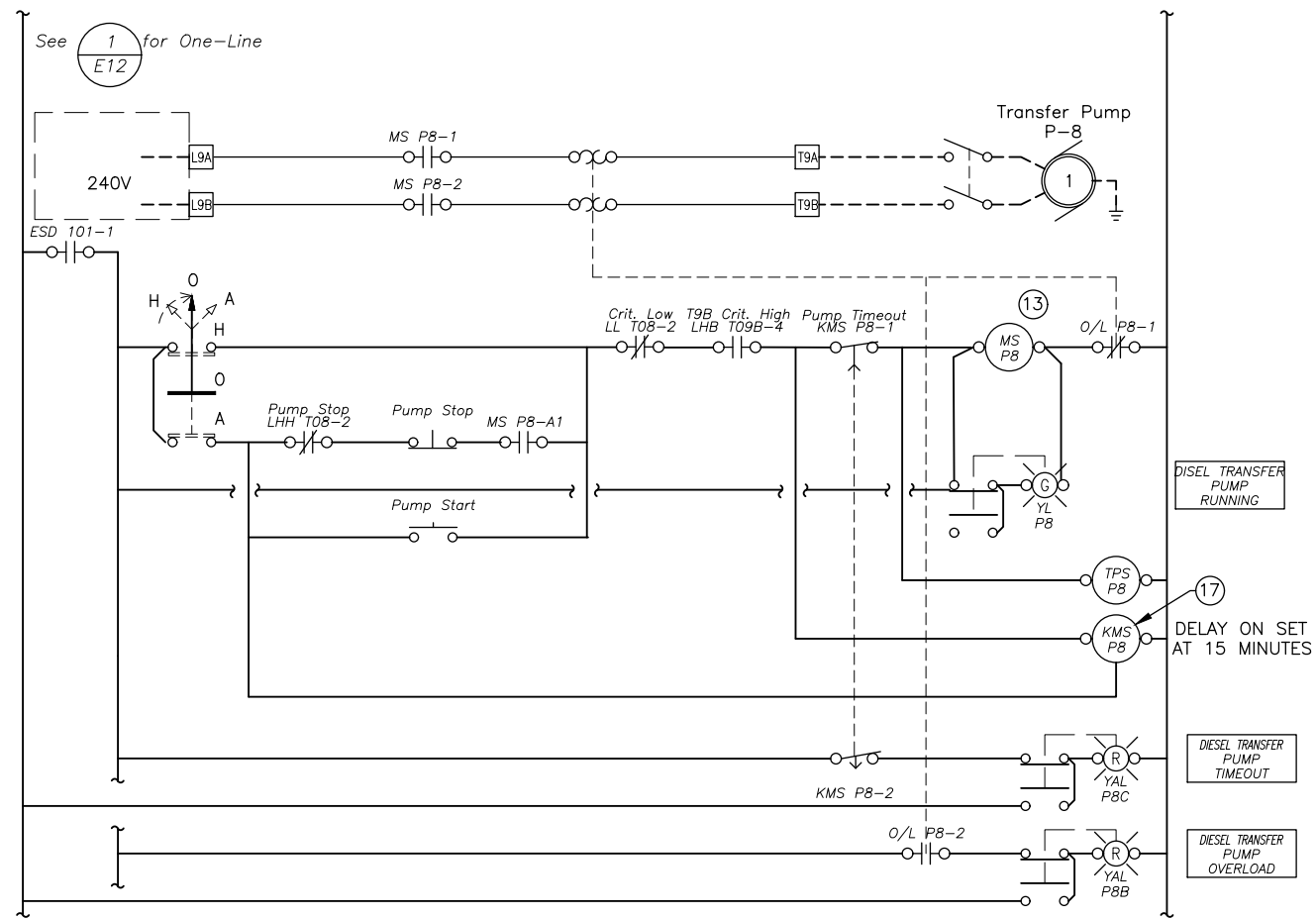
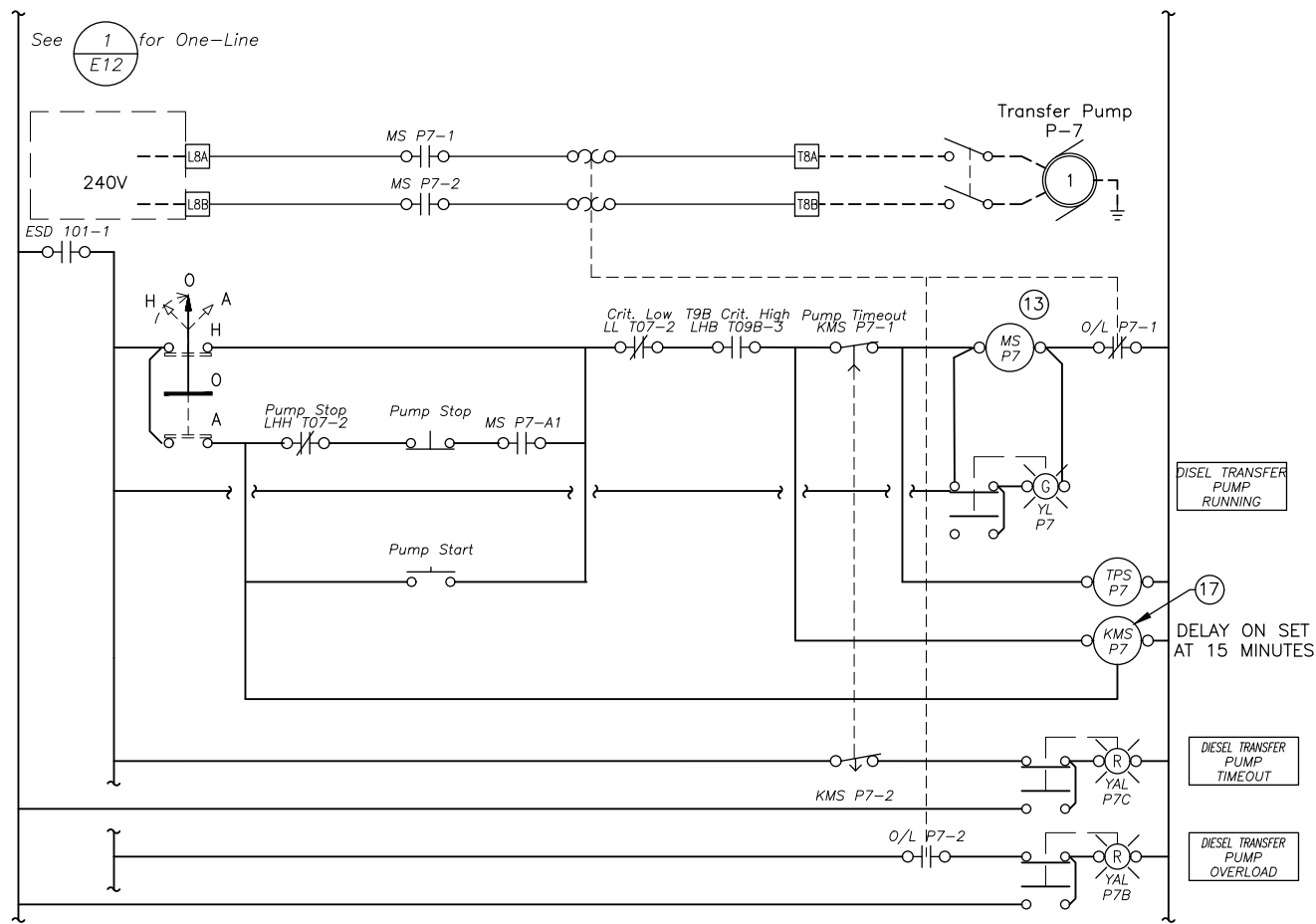
1 TRANSFER PUMPS P-5 AND P-6 LADDER DIAGRAMS
NOT TO SCALE



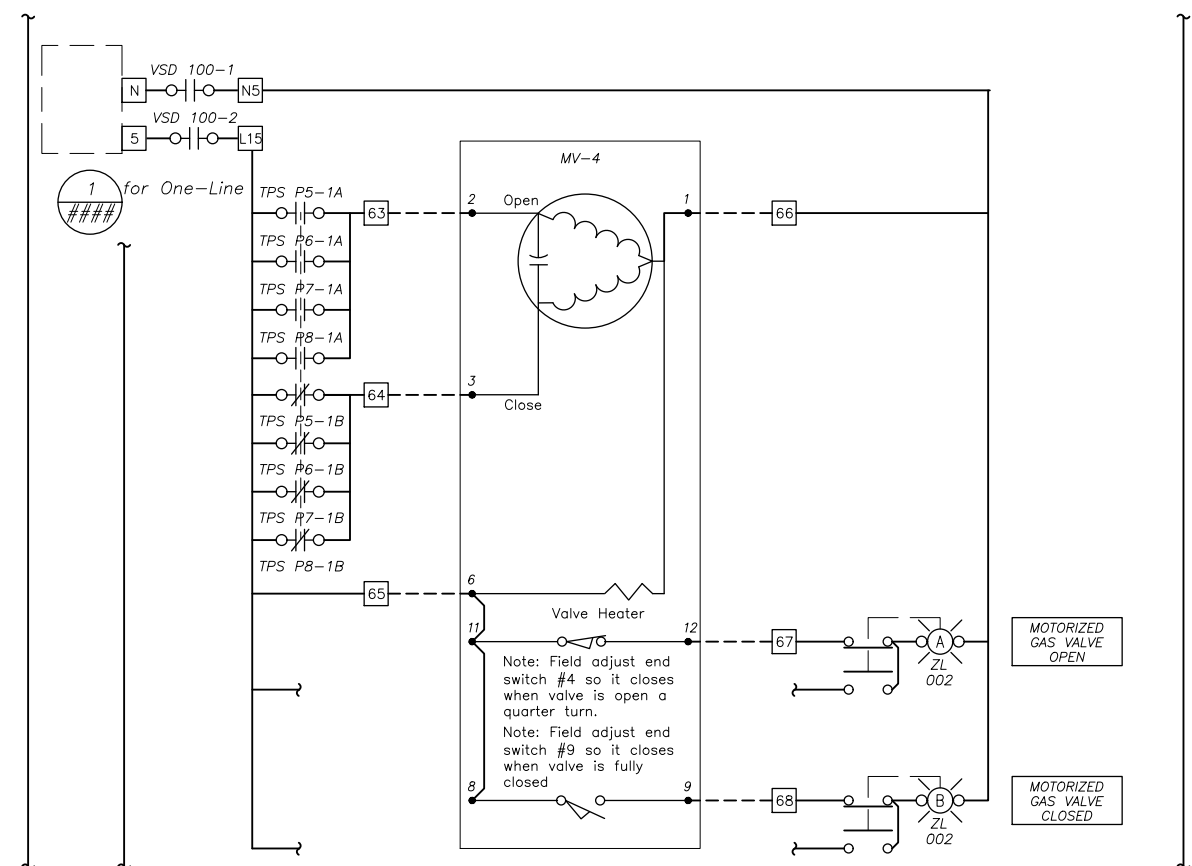
BULK FUEL UPGRADES
TRANSFER PUMPS P-5 AND P-6
LADDER DIAGRAMS
NUNAPITCHUK, ALASKA

NO.	REVISION	BY	DATE
1	ISSUED FOR BIDDING	AH	7/28/21

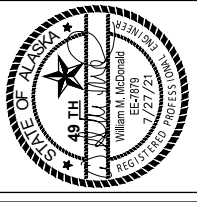
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Designed: WM
Drawn: DJ
Approved: WM



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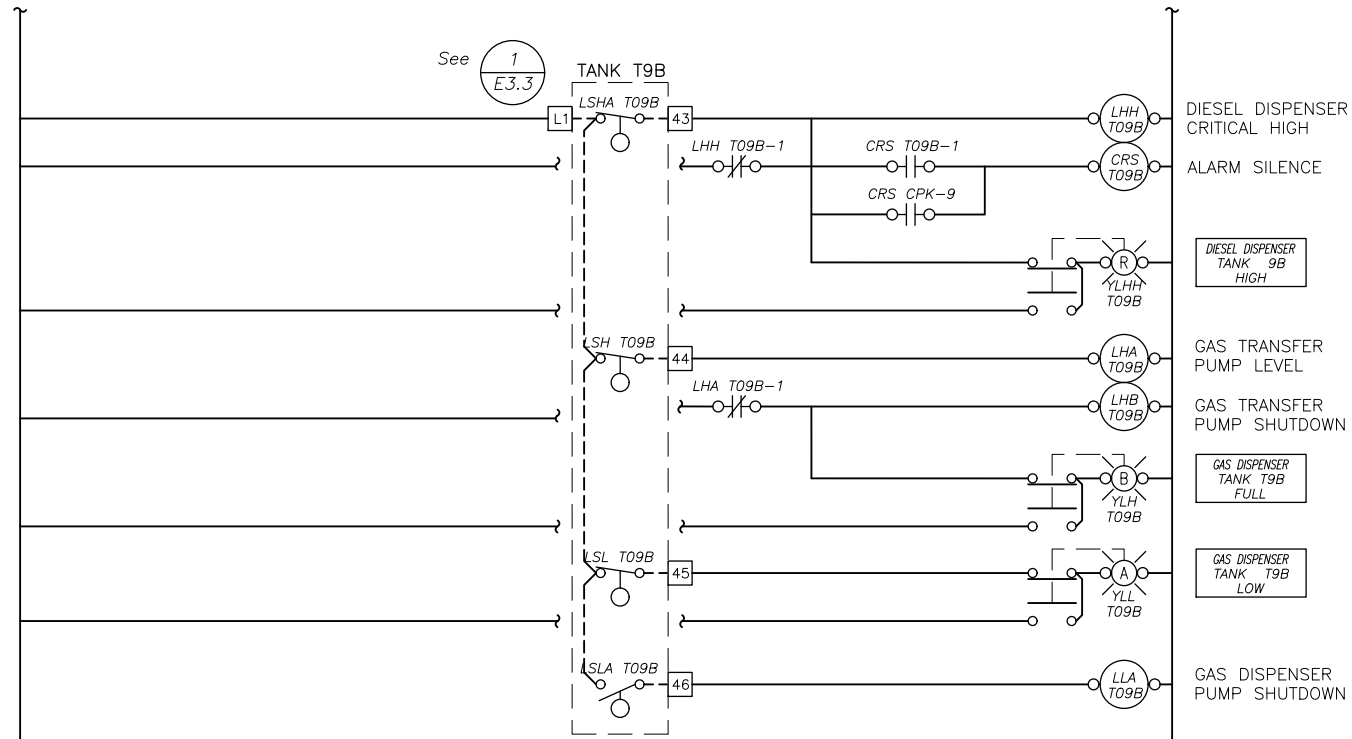
2 MOTORIZED VALVE MV-4 LADDER DIAGRAM
NOT TO SCALE



BULK FUEL UPGRADES
TRANSFER PUMPS P-7 AND P-8
LADDER DIAGRAMS
NUNAPITCHUK, ALASKA

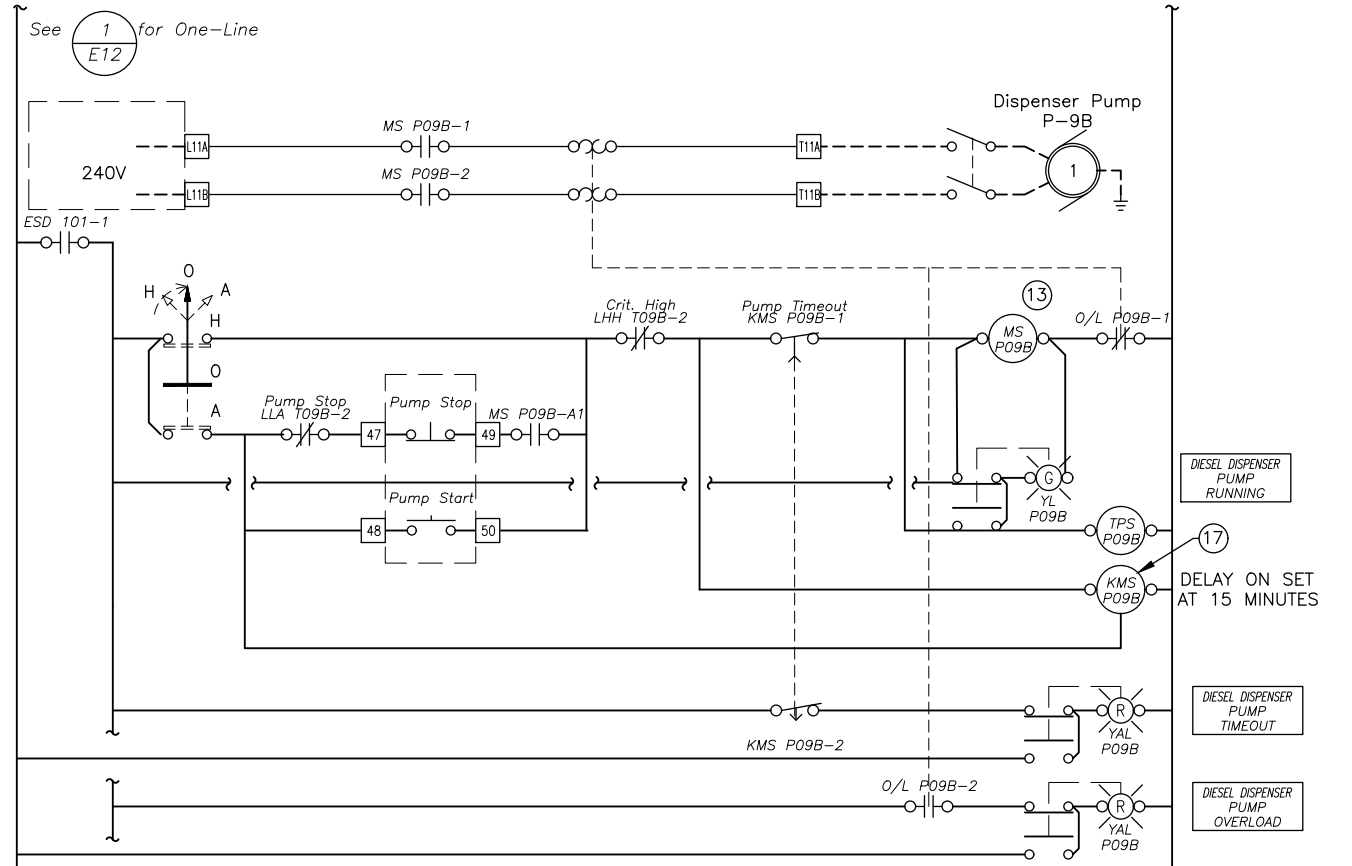
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1			AH	7/28/21

Plot Date: 7/28/21	Designed: WM
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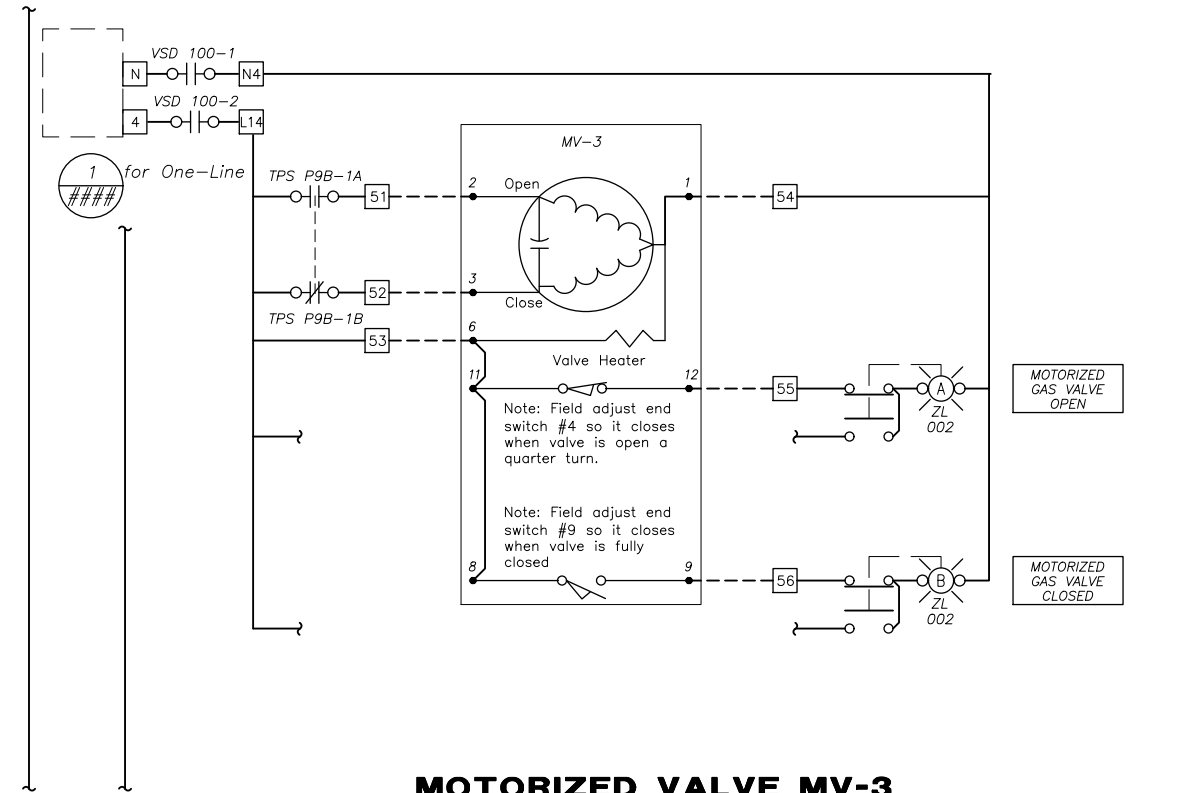
DIESEL DISPENSER TANK FLOAT LADDER DIAGRAM

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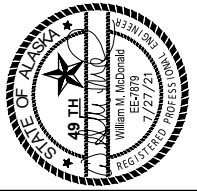
DIESEL DISPENSER PUMP LADDER DIAGRAM

NOT TO SCALE



MOTORIZED VALVE MV-3 LADDER DIAGRAM

NOT TO SCALE



BULK FUEL UPGRADES
DIESEL DISPENSER PUMP LADDER DIAGRAM

NUNAPITCHUK, ALASKA

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1	ISSUED FOR BIDDING	AH	7/28/21

Plot Date: 7/28/21	Designed: WM
Drawn: DJ	Approved: WM