

ALASKA ENERGY AUTHORITY

RE: ADDENDUM NO. 1 TO REQUEST
FOR PROPOSALS (RFP) PACKAGE

DATED: 11/2/2020

RFP 21012
Beaver and Chalkyitsik Bulk Fuel System
Upgrades Construction Manager/General
Contractor (CM/GC)

EMAIL TO: All RFP recipients on record.

The RFP Package is hereby clarified or changed as follows:

Item 1. Add 35% design drawings for Beaver and Chalkyitsik, narrative description of the 35% design is included in the RFP.

All other terms and conditions remain the same.

END OF ADDENDUM

Sincerely,



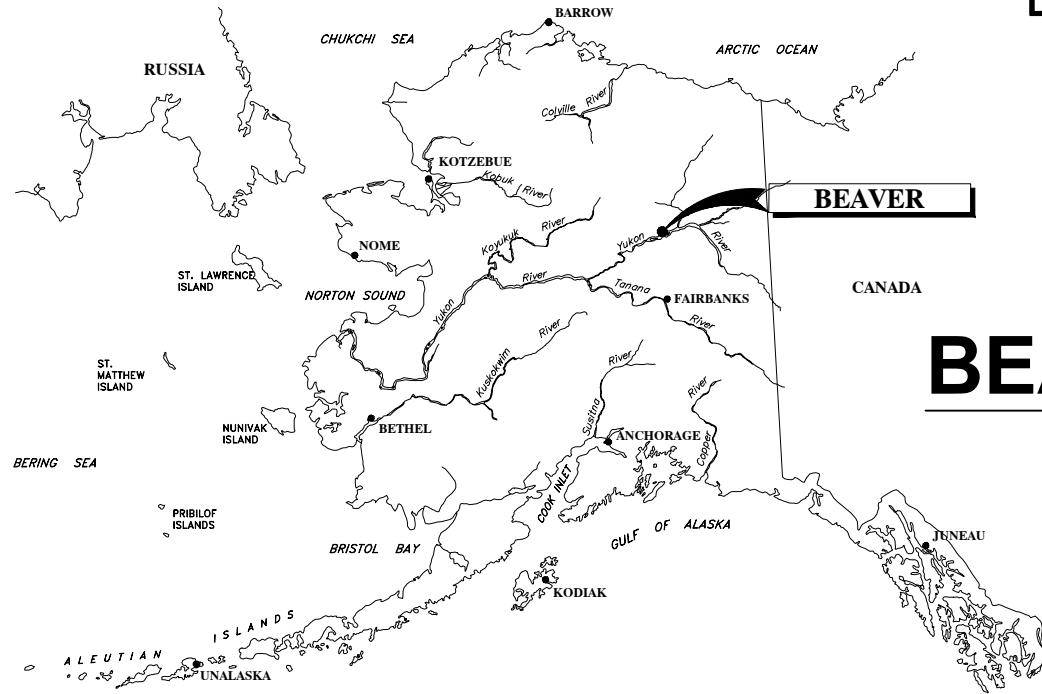
Lois Lemus,
Contracting Officer
907-771-3909
llemus@aidea.org

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



BEAVER BULK FUEL UPGRADES

CONCEPT DRAWINGS
 AUGUST 2020



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Project Number (Consultant) 30415.00 (AEA) 20044

AEA Project Manager Bill Price, P.E.

Construction Manager —

Final Design (Date) —

Fire Marshal Approval (Date) —

Construction Period (From) — (To) —

As-Builts (Date) —



3940 ARCTIC BLVD, SUITE 300
 ANCHORAGE, ALASKA 99503
 PHONE: (907) 562-3252
 #AECL882-AK



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PROJECT SCOPE

THIS PROJECT INCLUDES MISCELLANEOUS UPGRADES TO THE EXISTING BULK FUEL STORAGE, HANDLING, AND DISPENSING SYSTEMS IN BEAVER, ALASKA.

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.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE APPROPRIATE TEMPORARY CUT SLOPES AND SHORING FOR EXCAVATIONS AND TRENCHES FOR SITE SOILS, GROUNDWATER AND RUNOFF CONDITIONS AND SURFACE LOADING CONDITIONS. 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 COORDINATE WITH THE ENGINEER TO PROCURE AND ATTACH ALL CODE REQUIRED PLACARDS AND TANK 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 ALL REQUIRED SIGNAGE IAW THE IFC. COORDNATE WITH ENGINEER AS REQUIRED.
- 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.

CALL BEFORE YOU DIG	
WATER/SEWER	BVC 907-628-6126
ELECTRIC	BVC 907-628-6126

ABBREVIATIONS

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

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 AND SPILL RESPONSE SUPPLIES IN DESIGNATED LOCATION.

CIVIL LEGEND (GENERAL)

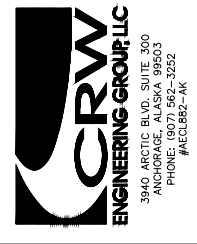
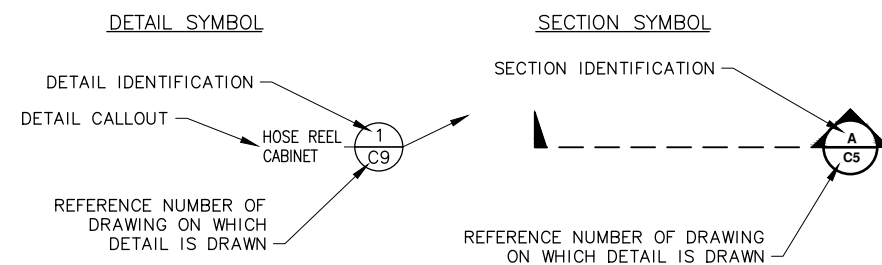
NOTE: SOME DETAILS UTILIZE SYMBOLS NOT IN THIS GENERAL LEGEND. WHERE THIS OCCURS, SYMBOLS ARE DEFINED ON THE SHEET IN WHICH THEY ARE USED.

	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

	ABOVEGROUND PIPELINE: PROPOSED
	UNDERGROUND PIPELINE: PROPOSED
	OVERHEAD ELECTRIC
	UNDERGROUND ELECTRIC

DETAIL/SECTION REFERENCES



BEAVER, ALASKA
BEAVER BULK FUEL UPGRADES
NOTES, ABBREVIATIONS, AND LEGEND

NO.	REVISION	BY	DATE
1	CONCEPTUAL DRAWINGS	NCP	8/19/20

Plotg/20/20	Designed: NCP
Date:	Drawn: NCP
	Approved: KRH

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EARTHWORK

GENERAL

CONTACT LOCAL UTILITIES AND REQUEST A LOCATE FOR ALL EXISTING UNDERGROUND UTILITIES IN THE VICINITY PRIOR TO EXCAVATION.

CAREFULLY LAY OUT WORK TO MINIMIZE DISRUPTION AND DAMAGE TO EXISTING SURFACES.

PERFORM ALL WORK IN ACCORDANCE WITH OSHA REQUIREMENTS. BARRICADE OPEN EXCAVATIONS TO PROHIBIT PUBLIC ENTRY. COORDINATE WORK WITH COMMUNITY'S MAINTENANCE/ENGINEERING STAFF AT EACH LOCATION.

NOTIFY ENGINEER OF ANY DISCREPANCIES BETWEEN CONTRACTUAL REQUIREMENTS AND SITE CONDITIONS PRIOR TO START OF WORK.

WORK IN INCLEMENT WEATHER IS AT CONTRACTOR'S RISK. ANY MATERIALS WHICH BECOME UNSTABLE DUE TO IMPROPER SELECTION OF TECHNIQUES, EQUIPMENT, OR OPERATIONS DURING INCLEMENT WET WEATHER SHALL BE REPLACED AT CONTRACTOR'S EXPENSE.

EXCAVATIONS AND EMBANKMENT SHALL BE ACCOMPLISHED IN SUCH A MANNER THAT DRAINAGE IS MAINTAINED AT ALL TIMES; ANY AREAS NOT SO DRAINED SHALL BE KEPT FREE OF STANDING WATER BY PUMPING IF NECESSARY.

THE CONTRACTOR SHALL PROVIDE FOR THE PROPER MAINTENANCE OF TRAFFIC FLOW AND ACCESSIBILITY AS MAY BE NECESSARY, AND SHALL ALSO MAKE ADEQUATE PROVISIONS FOR THE SAFETY OF PROPERTY AND PERSONS.

SUBMITTALS

CONTRACTOR SHALL MAKE THE FOLLOWING SUBMITTALS:

- A. CLASSIFIED FILL: SUBMIT ONE GRADATION ANALYSIS AND MOISTURE-DENSITY (COMPACTION CURVE) TEST REPORT FOR EACH MATERIAL SOURCE. ALL TEST REPORTS SHALL BE FROM A CERTIFIED SOILS TESTING LABORATORY.
- B. EQUIPMENT AND MATERIALS: SUBMIT MANUFACTURER CUT SHEETS ON ALL EQUIPMENT AND MATERIALS TO BE INCLUDED IN THE WORK. WORK COMPLETED AND ITEMS INSTALLED PRIOR TO RECEIVING ENGINEER APPROVED SUBMITTALS IS AT THE CONTRACTOR'S SOLE RISK.
- C. TANKS: SUBMIT MANUFACTURER SHOP DRAWINGS FOR ALL TANKS.

MATERIAL SOURCES/CLASSIFIED FILL

- A. FILL MATERIAL SHALL MEET THE REQUIREMENTS FOR CLASSIFIED FILL MATERIAL LISTED BELOW
- B. CLASSIFIED FILL:

- 1. CLASSIFIED FILL MATERIAL SHALL CONSIST OF MINERAL SOIL, FREE FROM DIRT, MUCK, FROZEN CHUNKS, CLAY BALLS, ROOTS, ORGANIC MATERIAL, DEBRIS, OR DELETERIOUS MATERIAL. IT SHALL HAVE A LIQUID LIMIT NO GREATER THAN 25 AND A PLASTICITY INDEX NO GREATER THAN 6 AS DETERMINED BY AASHTO T-89 AND T-90
- 2. TYPE I CLASSIFIED FILL MATERIAL SHALL BE CRUSHED GRAVEL CONSISTING OF SOUND, TOUGH, DURABLE ROCK FRAGMENTS OF UNIFORM QUALITY AND SHALL MEET THE FOLLOWING REQUIREMENTS

DEGRADATION VALUE (ATM T-13): 45 MIN
 PERCENT FRACTURE (ATM T-4): 50 MIN (SINGLE FACE)

TYPE I CLASSIFIED FILL MATERIAL SHALL CONFORM TO THE FOLLOWING GRADATION AS DETERMINED BY AASHTO T-27:

U.S. STANDARD SIEVE SIZE	PERCENT PASSING, BY WEIGHT
1 INCH	100
NO. 4	35-65
NO. 10	25-45
NO. 200	4-10

EMBANKMENT CONSTRUCTION

PLACEMENT:

THE SPECIFIED MATERIAL SHALL BE PLACED AT THE LOCATIONS AND TO THE LINES AND GRADES INDICATED ON THE CONTRACT DRAWINGS. THE MATERIAL SHALL BE PLACED AND SPREAD UNIFORMLY IN SUCCESSIVE LAYERS NOT EXCEEDING TWELVE (12) INCHES IN LOOSE THICKNESS. THE ENGINEER MAY APPROVE LIFTS OF GREATER THICKNESS PROVIDED THE EQUIPMENT AND METHOD USED WILL CONSISTENTLY ACHIEVE THE SPECIFIED DENSITY. THE LAYERS SHALL BE CARRIED UP FULL WIDTH FROM THE BOTTOM OF THE FILL. EACH LAYER SHALL BE COMPACTED IN ACCORDANCE WITH STHE SPECIFICATIONS.

BLADING, ROLLING, AND TAMPING SHALL CONTINUE UNTIL THE SURFACE IS SMOOTH, FREE FROM WAVES AND IRREGULARITIES, AND CONFORMS TO ELEVATIONS SHOWN ON THE CONTRACT DRAWINGS. IF AT ANY TIME THE MATERIAL IS EXCESSIVELY WET, IT SHALL BE AERATED BY MEANS OF BLADE GRADERS, HARROWS, OR OTHER SUITABLE EQUIPMENT UNTIL THE MOISTURE CONTENT IS SATISFACTORY. THE SURFACE SHALL THEN BE COMPACTED AND FINISHED AS SPECIFIED ABOVE.

OVERSIZED MATERIAL SHALL BE REMOVED. PORTIONS OF ANY LAYER IN WHICH THE EMBANKMENT MATERIAL BECOMES SEGREGATED SHALL BE REMOVED AND REPLACED WITH SATISFACTORY MATERIAL OR SHALL BE ADDED TO AND REMIXED TO SECURE PROPER GRADATION AS DIRECTED BY THE ENGINEER.

COMPACTION

- 1. EACH LIFT SHALL BE COMPACTED TO 95% OF THE MODIFIED PROCTOR MAX DRY DENSITY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING THE PROPER SIZE AND TYPE OF COMPACTION EQUIPMENT AND FOR SELECTING THE PROPER METHOD OF OPERATING SAID EQUIPMENT TO ATTAIN THE REQUIRED COMPACTION DENSITY.
- 2. PORTIONS OF ANY LIFT IN WHICH THE MATERIALS BECOME SEGREGATED TO THE EXTENT THAT THE REQUIRED COMPACTION CANNOT BE ATTAINED SHALL BE REMOVED BY THE CONTRACTOR AND REPLACED WITH SATISFACTORY MATERIALS, OR BLENDED WITH ADDITIONAL MATERIAL UNTIL SEGREGATION IS ELIMINATED.
- 3. IF, IN THE OPINION OF THE ENGINEER, BASED ON INSPECTION, SUBGRADE AND LAYERS OF EMBANKMENT THAT HAVE BEEN PLACED ARE BELOW SPECIFIED DENSITY, THE CONTRACTOR SHALL PERFORM ADDITIONAL COMPACTION AND TESTING AT ELEVATIONS DIRECTED BY THE ENGINEER UNTIL SPECIFIED DENSITY IS OBTAINED, AT NO ADDITIONAL COST TO THE OWNER.

MAINTENANCE

- 1. AS NECESSARY, CONTRACTOR SHALL WATER THE SITE WHILE GRADING IS IN PROGRESS TO CONTROL DUST.
- 2. CONTRACTOR SHALL PROTECT NEWLY GRADED AREAS FROM TRAFFIC AND EROSION AND KEEP FREE OF TRASH AND DEBRIS.
- 3. CONTRACTOR SHALL REPAIR AND RE-ESTABLISH GRADES IN SETTLED, ERODED AND RUTTED AREAS AS DIRECTED BY THE ENGINEER.
- 4. WHERE COMPLETED COMPACTED AREAS ARE DISTURBED BY SUBSEQUENT CONSTRUCTION OPERATIONS OR ADVERSE WEATHER, SCARIFY SURFACE, RESHAPE, AND COMPACT TO REQUIRED DENSITY PRIOR TO FURTHER CONSTRUCTION.
- 5. ALL OPEN EXCAVATIONS SHALL BE ADEQUATELY SIGNED AND BARRICADED TO PROTECT THE PUBLIC.

TRENCHING AND BACKFILL

PROTECTION

- 1. PROTECT EQUIPMENT AND VEHICULAR TRAFFIC FROM TRENCHES AND EXCAVATIONS BY PROVIDING ADEQUATE BARRICADES AND SIGNAGE.
- 2. PROTECT ADJACENT STRUCTURES BY PROVIDING ADEQUATE BACK-SLOPES, SHORING, BRACING OR OTHER METHODS REQUIRED TO PREVENT SLOPE FAILURE.
- 3. PROTECT ABOVE AND BELOWGROUND UTILITIES.
- 4. NOTIFY THE ENGINEER OF UNEXPECTED SUB-SURFACE CONDITIONS IMMEDIATELY.
- 5. GRADE TOP PERIMETER OF THE EXCAVATION TO PREVENT SURFACE WATER RUNOFF FROM ENTERING THE EXCAVATION.
- 6. PROVIDE FOR DEWATERING OF THE TRENCH WHERE GROUND WATER IS ENCOUNTERED.

TANKS

ALL TANK UPGRADES AND REPAIRS SHALL BE DESIGNED AND IMPLEMENTED IN ACCORDANCE WITH STI SP031-04 AND UL 142. CLEAN AND VAPOR FREE TANKS IN ACCORDANCE WITH API DTD 2015, STATE, AND FEDERAL REGULATIONS PRIOR TO PERFORMING ANY HOT WORK. AFTER REPAIRS AND PRIOR TO PAINTING, PRESSURE TESR TANKS IN ACCORDANCE WITH THE IFC AND UL 142.

ALL NEW ASTs SHALL BE UL142 OR 2085 LISTED AND LABELED HORIZONTAL TANKS.

TANK APPURTENANCES (COMPONENTS IN THIS SECTION ARE OWNER PROVIDED UNLESS OTHERWISE NOTED)

MANHOLES - 5/16" STEEL LID (SINGLE PUNCH), 1/4" MILD STEEL RING WITH 7" RISER HEIGHT. PROVIDE COMPLETE SET OF BOLTS AND BUNA-N GASKET FOR LID. 24" MANHOLE NOMINAL SIZE. CLAY & BAILEY MR820-0600 OR APPROVED EQUAL.

PRESSURE/VACUUM WHISTLE VENTS - ALUMINUM BODY AND HOOD, STAINLESS STEEL SCREENS AND FLOAT, BRASS INTERNALS, VITON SEALS. 3" FPT CONNECTION FOR 28,000 & 15,000 GALLON TANKS AND 2" FPT FOR 3,000 GALLON TANKS, 8 OZ/SQUARE INCH PRESSURE SETTING, 1 OZ/SQUARE INCH VACUUM SETTING. HIGH INTENSITY WHISTLE ALARM ON RISE OF FLOAT AT ADJUSTABLE LEVEL. MORRISON FIGURE 922 OR APPROVED EQUAL.

EMERGENCY VENTS - ALUMINUM BODY, CAST IRON COVER, 16 OZ/SQUARE INCH PRESSURE SETTING, FLANGED CONNECTION. SIZE AS INDICATED ON TANK DRAWINGS. MORRISON FIGURE 244-F OR APPROVED EQUAL.

VENT CAPS - ALUMINUM BODY, STAINLESS STEEL SCREEN, 2" FPT CONNECTION. MORRISON FIGURE 155 OR APPROVED EQUAL.

GAUGE HATCH - BRASS CAP AND CHAIN, BUNA-N GASKET, 2" FPT CONNECTION. MORRISON FIGURE 307 OR APPROVED EQUAL.

OVERFILL PREVENTION VALVE - 2-INCH NPT FLOAT-TYPE MECHANICAL SHUT-OFF VALVE. ANODIZED ALUMINUM BODY, CLOSED CELL BUNA-N FLOAT, BRASS PLUNGER, STAINLESS STEEL LINKAGE. PROVIDE ADAPTER FOR INSTALLATION ON A 4" NPT PIPE NOZZLE WITH 2" FPT INLET. PROVIDE WITH ALUMINUM DROP TUBE CUT TO LENGTH AT 45 DEGREES AS REQUIRED TO TERMINATE 6 INCHES ABOVE TANK BOTTOM. MORRISON FIGURE 9095-A OR APPROVED EQUAL.

SPILL CONTAINMENT MANHOLE - 7 GALLON CAPACITY 12 GAUGE STEEL SPILL CONTAINMENT MANHOLE WITH HINGED AND LOCKING COVER AND POWDER COATED FINISH. 1/4" STEEL BASE WITH 4" DOUBLE-TAPPED FNPT CONNECTION AND INTERNAL BRASS CONTAINMENT DRAIN VALVE. PROVIDE 2" HOSE COUPLING WITH CAP, FILL LIMITING VALVE AS SPECIFIED ABOVE AND 2" DROP TUBE. POMECO 311AST OR APPROVED EQUAL.

CLOCK-TYPE LIQUID LEVEL GAUGE - ALUMINUM BODY, 2" MPT CONNECTION, STAINLESS STEEL FLOAT SIZED TO PASS THROUGH 2" BUNG OPENING, CLOCK-STYLE GAUGE WITH READOUT IN FEET AND INCHES UP TO 12 FEET, ACCURATE WITHIN 1/4" OVER FULL SCALE. MORRISON FIGURE 818 OR APPROVED EQUAL.

FLOAT SWITCHES - CONTRACTOR PROVIDED 2 POSITION: FLOAT ACTIVATED MAGNETIC LEVEL SWITCH WITH ASME CLASS 150 RAISED FACE FLANGED TANK CONNECTION. ACTUATION SET POINTS SHALL BE AS INDICATED. UL LISTED FOR CLASS I, DIVISION 1 HAZARDOUS ENVIRONMENTS. KTECH MODEL F5301 ORE..

PAINTING

NEW TANKS

OWNER PROVIDED FACTORY COATING SYSTEM. CONTRACTOR RESPONSIBLE FOR FIELD TOUCH UP IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS ONLY.

MISCELLANEOUS STEEL STRUCTURES - AFTER FABRICATION SANDBLAST OR WIRE BRUSH ALL STEEL TO CLEAN BARE METAL AND PRIME WITH UNIVERSAL RED OXIDE PRIMER, DEVOE RUST GUARD 4140 OR APPROVED EQUAL, COLOR RED, TO 1.5 MILS DRY FILM THICKNESS. PAINT WITH TWO COATS OF ALKYD ENAMEL, DEVOE SPEED ENAMEL 4318 OR APPROVED EQUAL, COLOR HAZE GRAY EXCEPT AS NOTED, TO 4 MILS DRY FILM THICKNESS.

ABOVE GRADE PIPE COATING: PRIOR TO SHIPPING PIPING THAT WILL BE INSTALLED ABOVE GRADE, WHEEL ABRABE OR

SANDBLAST TO BARE METAL AND PRIME WITH OF UNIVERSAL RED OXIDE PRIMER (1.5 MILS MINIMUM DFT), DEVOE RUSTGUARD 4160 OR EQUAL. AFTER FABRICATION SANDBLAST OR WIRE BRUSH ALL FITTINGS AND JOINTS TO CLEAN BARE METAL AND PRIME EQUAL TO PIPE. TOP COAT PIPING WITH TWO COATS OF WHITE ALKYD ENAMEL TO MATCH TANKS, DEVOE SPEEDENAMEL 4318 OR EQUAL

ABOVE GRADE PIPE COLOR CODE: GASOLINE (RED), DIESEL (GREEN).

AFTER PAINTING, LABEL ABOVE GRADE PIPING WITH PERMANENT SELF ADHESIVE DECALS. DECALS SHALL INDICATE PRODUCT TYPE AND FLOW DIRECTION. DECALS SHALL HAVE BLACK LETTERING ON WHITE BACKGROUND.

PIPE AND FITTINGS (COMPONENTS IN THIS SECTION ARE OWNER PROVIDED UNLESS OTHERWISE NOTED)

DESIGN, CONSTRUCTION, INSPECTION AND TESTING OF ALL PRESSURE PIPING SHALL BE IN ACCORDANCE WITH ASME B31.4-2009 "LIQUID TRANSPORTATION SYSTEMS FOR HYDROCARBONS AND OTHER LIQUIDS".

STEEL PIPING SHALL BE SEAMLESS, ASTM A106, GRADE B PIPE, SCHEDULE 160 FOR 1" AND SMALLER, SCHEDULE 80 FOR 2", AND SCHEDULE 40 FOR 3".

STEEL PIPE FITTINGS: ASTM A234 GRADE WPB BUTT WELD FITTINGS, SCHEDULE TO MATCH THE PIPING IN WHICH THE FITTING IS INSTALLED. ELBOWS SHALL BE LONG RADIUS. FITTINGS SMALLER THAN 2" MAY BE ASTM A105 FORGED STEEL SOCKET WELD FITTINGS, 3000 POUND MINIMUM (THREADED WHERE INDICATED).

FLANGES: ASME CLASS 150 RAISED FACE FLANGES, ASTM A105 FORGED STEEL. BORE SHALL MATCH THE PIPE IN WHICH THE FLANGE IS INSTALLED. FLANGE NUTS AND STUDS SHALL BE A320 GRADE L7, PLATED, CASE HARDENED, CORROSION RESISTANT.

GASKETS SHALL BE 1/8" THICK SPIRAL WOUND, STAINLESS STEEL, FILLED FUEL RESISTANT GASKETS RATED FOR -50° F SERVICE WITH A CARBON STEEL CENTERING RING. PROVIDE 1/8" THICK FULL FACED NON-ASBESTOS FIBER COMPOSITE GASKETS AND FLAT FACED FLANGES WHERE REQUIRED FOR CONNECTION TO EQUIPMENT.

ALL PIPE AND FITTINGS SHALL BE WELDED. THREADED FITTINGS ARE NOT ALLOWED EXCEPT WHERE SHOWN ON THE DRAWINGS, OR WHERE REQUIRED FOR CONNECTION TO EQUIPMENT. PERFORM ALL WELDING IN ACCORDANCE WITH ASME SECTION IX AND API 1104 FOR WELDING PROCEDURE AND PERFORMANCE QUALIFICATION. VISUALLY INSPECT WELD JOINTS IN ACCORDANCE WITH API 1104. PROVIDE FLANGED CONNECTIONS AS REQUIRED TO ALLOW REMOVAL OF INDIVIDUAL COMPONENTS.

PRIOR TO PAINTING OR CONCEALING, CONTRACTOR SHALL PERFORM A ONE HOUR PNEUMATIC OR HYDROSTATIC TEST OF THE PIPING AT A MINIMUM OF 125 PSI. AIR TESTING IS HAZARDOUS IN NATURE AS AIR IS COMPRESSIBLE AND MAY BE RELEASED EXPLOSIVELY SHOULD THE PIPING SYSTEM RUPTURE. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING LIFE AND PROPERTY DURING TESTING. SHOULD WATER BE USED FOR TESTING, ALL WATER MUST BE REMOVED AFTER THE TEST. PROTECT AND ISOLATE ITEMS THAT MAY BE DAMAGED BY THE TEST PRESSURE (SUCH AS PRESSURE RELEASE VALVES AND FILTERS). PROVIDE BLIND FLANGES, THREADED CAPS OR PLUGS AT EACH END OF THE TEST SECTION. SOAK EACH JOINT WITH A LEAK DETECTION SOLUTION AND VISUALLY INSPECT FOR LEAKS. REPAIR ANY DEFECT AND RETEST. ALL WELDS THAT FAIL INSPECTION SHALL BE CUT OUT, REWELDED AND RETESTED. REASSEMBLE SYSTEM AFTER TESTING AND INSTALL NEW GASKETS ON ANY FLANGED JOINTS THAT WERE TAKEN APART. AFTER FINAL SYSTEM ASSEMBLY PERFORM AN ADDITIONAL LEAK TEST USING FUEL AT 50 PSI. REPAIR ALL DEFECTS.

MISCELLANEOUS STEEL STRUCTURES

THE DESIGN, FABRICATION AND ERECTION OF ALL MISCELLANEOUS STEEL STRUCTURES SHALL COMPLY WITH THE CURRENT CODE OF STANDARD PRACTICE FOR THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION.

ALL STRUCTURAL STEEL SHALL BE ASTM A36 FOR ROLLED SECTIONS AND A500 FOR STRUCTURAL TUBING.

PROVIDE ASTM A325 BOLTS FOR ALL NON-WELDED CONNECTIONS.

ALL WELDING SHALL BE DONE IN ACCORDANCE WITH THE CURRENT CODE OF THE AMERICAN WELDING SOCIETY. MINIMUM WELD SHALL BE 3/16". USE AWS 5.1 E70XX ELECTRODES.

TOLERANCES: STRUCTURAL COMPONENT TOLERANCES SHALL BE ±1/8 INCH AND AS REQUIRED TO ADEQUATELY SUPPORT LOADS.

SUPPORTS AND FASTENERS

SUPPORT PIPING AND EQUIPMENT AS SHOWN ON DRAWINGS USING SPECIFIED SUPPORTS AND FASTENERS. IF NOT DETAILED ON DRAWINGS, SUPPORT FROM STRUCTURAL MEMBERS WITH PIPE HANGERS, CLAMPS, OR PIPE STRAPS SPECIFICALLY INTENDED FOR THE APPLICATION. DO NOT SUPPORT PIPING FROM CONNECTIONS TO EQUIPMENT.

STRUT - COLD FORMED MILD STEEL CHANNEL STRUT, HOT DIPPED GALVANIZED FINISH AND SLOTTED BACK UNLESS SPECIFICALLY INDICATED OTHERWISE. STANDARD STRUT - 12 GA, 1-5/8" x 1-5/8", UNISTRUT P-100T (HG) OR EQUAL. DOUBLE STRUT - 12 GA, 1-5/8" x 3-1/4", UNISTRUT P-1001T (HG) OR EQUAL. SHALLOW STRUT - 14 GA, 1-5/8" x 13/16", UNISTRUT P-4100T (HG) OR EQUAL. WHERE STRUT IS WELDED TO TANKS OR STRUCTURES PROVIDE PLAIN (UN-FINISHED BLACK) SOLID BACK STRUT - 12 GAUGE, 1-5/8" x 1-5/8", UNISTRUT P-1000 (PL) OR APPROVED EQUAL. PAINT IN ACCORDANCE WITH SPECIFICATIONS.

FITTINGS AND ACCESSORIES - PROVIDE CARBON STEEL FITTINGS, BRACKETS, CHANNEL NUTS, AND ACCESSORIES DESIGNED SPECIFICALLY FOR USE WITH SPECIFIED CHANNEL STRUT. GALVANIZED OR ZINC-PLATED FINISH.

PIPE CLAMPS - GALVANIZED CARBON STEEL TWO-PIECE PIPE CLAMP DESIGNED TO SUPPORT PIPE TIGHT TO STRUT. UNISTRUT P-11## OR EQUAL.

PIPE STRAPS - CARBON STEEL TWO-HOLE PIPE STRAP. UNISTRUT P-2558 NO SUBSTITUTES.

FASTENERS - ALL BOLTS, NUTS, AND WASHERS GALVANIZED OR ZINC PLATED CARBON STEEL UNLESS SPECIFICALLY INDICATED AS STAINLESS STEEL. ALL LAGS HOT DIPPED GALVANIZED UNLESS SPECIFICALLY INDICATED AS STAINLESS STEEL. ALL STAINLESS STEEL FASTENERS TYPE 304. DO NOT USE STAINLESS STEEL IN CONTACT WITH GALVANIZED ITEMS.

SECURITY

WHERE NEW FENCE IS REQUIRED IT SHALL BE CHAIN LINK FENCE: 6 FOOT HIGH FENCING SYSTEM WITH 3-STRAND



BEAVER, ALASKA
BEAVER BULK FUEL UPGRADES
PROJECT SPECIFICATIONS

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Sheet No.

G1.2

File: J:\JobsData\30415.00 Aea Beaver And Chalkyitsik Btu\00 Cadd 20##\Beaver\01 Working Set\00 General\30415.00 Project Specifications.dwg Plot Date: 8/20/2020 5:55 AM

BARBWIRE, MAN GATES AS SHOWN. FENCE MATERIALS AND INSTALLATION SHALL CONFORM WITH THE CHAIN LINK FENCE MANUFACTURER'S INSTITUTE STANDARD SPECIFICATIONS EXCEPT AS MODIFIED HERE IN. 6" HIGH, 2" MESH, 9 GAUGE GALVANIZED CHAIN LINK FABRIC WITH 3/16" X 3/4" STRETCHER BARS. MINIMUM 18' LONG 1-5/8" Ø FULL-WEIGHT PIPE TOP RAILS WITH 6" LONG COUPLINGS AND 7 GAUGE COIL SPRING CLASS III BOTTOM TENSION WIRE. 2-3/8" Ø X 10' LONG FULL-WEIGHT PIPE LINE POSTS. 2-7/8" Ø X 12' LONG FULL-WEIGHT PIPE TERMINAL POSTS (GATE, CORNER, PULL, AND END). MAX SPACING OF PULL POSTS IS 100'. PROVIDE 1-5/8" Ø FULL-WEIGHT PIPE POST BRACES AND 3/8" TRUSS RODS WITH TIGHTENERS FOR EACH TERMINAL POST. 1-7/8" Ø COMMERCIAL QUALITY (CQ-20) GATE FRAMES COMPLETE WITH LOCKING FROST-FREE LATCHES, STOPS, KEEPERS, AND HEAVY PATTERN POST AND GATE FRAME HINGES. PROVIDE 3 STRANDS OF 12-1/2 GAGE, 4 POINT CLASS III BARB WIRE OVER TOP OF ENTIRE FENCE INCLUDING GATES. PROVIDE HEAVY-PRESSED STEEL OR MALLEABLE FITTINGS FOR ALL ATTACHMENTS. ALL STEEL AND IRON PARTS SHALL BE ZINC COATED AFTER FABRICATION.

VALVES AND MECHANICAL ACCESSORIES

SWING CHECK VALVES - (2" AND LARGER) CARBON STEEL BODY, ANSI 150# RAISED FACE FLANGED ENDS, STEEL DISC AND TRIM, 150 PSIG MINIMUM WORKING PRESSURE. CRANE CLASS 150 NO. 147 OR APPROVED EQUAL. (1") BONNEY FORGE BOLTED BONNET FULL/REDUCED THREADED SWING CHECK VALVE

FLANGED BALL VALVES - REDUCED PORT CARBON STEEL UNI-BODY, ANSI 150# RAISED FACE FLANGED ENDS, STAINLESS STEEL BALL AND TRIM, GLASS FILLED TEFLON SEAT, GRAPHITE SEALS, LOCKABLE HANDLE, 150 PSIG MINIMUM WORKING PRESSURE, NACE MR0175 CONFORMANCE, FIRE SAFE PER API 607. PBV C5410-31-2236-FTNL, NO SUBSTITUTES. PROVIDE ALL-WEATHER PADLOCK FOR EACH VALVE, ALL PADLOCKS TO BE KEYPED ALIKE.

THREADED BALL VALVES - CARBON STEEL BODY, THREADED ENDS, STAINLESS STEEL BALL AND TRIM, PTFE SEAT, GRAPHITE SEALS, LOCKABLE HANDLE, 150 PSIG MINIMUM WORKING PRESSURE, NACE MR0175 CONFORMANCE, FIRE SAFE PER API 607. PBV C5312-38-2236-FTNC, NO SUBSTITUTES. PROVIDE ALL-WEATHER PADLOCK FOR EACH VALVE, ALL PADLOCKS TO BE KEYPED ALIKE.

FLANGED PRESSURE RELIEF VALVES - STEEL BODY, ANSI 150# RAISED FACE FLANGE INLET AND OUTLET, 1/2" SOFT SEAT ORIFICE, CLOSED CAP, SIZE AND PRESSURE SETTING AS INDICATED. HYDROSEAL 1FLARV00 OR APPROVED EQUAL.

ANTI-SIPHON VALVES - BRONZE BODY ANTI-SIPHON VALVE SET TO OPEN AT 20-FT HEAD PRESSURE WITH SPECIAL EXPANSION RELIEF SET AT 25 PSI. MORRISON BROS. CO. MODEL 910ER-7215 AP WITH EXPANSION RELIEF, OAE.

STRAINER - FLANGED ENDS, CARBON STEEL BODY, BOTTOM CLEAN-OUT Y-STRAINER WITH BLOW OFF TAPPING PLUG. PROVIDE #10 SCREEN. MUELLER STEAM SPECIALTIES FIG. 781, OR APPROVED EQUAL.

BULK TRANSFER EQUIPMENT:

DISTRIBUTION PUMP: DUCTILE IRON, SELF-PRIMING, CENTRIFUGAL PUMP FOR PETROLEUM SERVICE. 2" NPT INLET & OUTLET, BRONZE IMPELLER AND SELF LUBRICATED BUNA-N MECHANICAL SEAL. CLOSE COUPLED TO 3,450 RPM, 2 HP EXPLOSION PROOF 230V/1PH/60HZ MOTOR. PUMP SHALL PRODUCE 80 GPM @ 70' TDH. GORMAN-RUPP 02K31-X2, NO SUBSTITUTES.

METER: POSITIVE DISPLACEMENT METER RATED FOR 100 GPM OF CONTINUOUS FLOW WITH A 150 PSI WORKING PRESSURE. ACCURACY SHALL BE +/- 0.22% OR BETTER FROM 6-60 GPM. PROVIDE 2 INCH INLET & OUTLET COMPANION FLANGES WITH O-RING SEALS, PRESET COUNTER WITH DIRECT MECHANICAL LINKAGE TO SHUT-OFF VALVE, RESETABLE REGISTER, NON-RESETABLE TOTALIZER, AIR ELIMINATOR AND STRAINER. ALL ELASTOMERIC SEALS SHALL BE LOW TEMPERATURE NITRILE RUBBER (BUNA-N). FACTORY CALIBRATE FOR NO. 1 DIESEL FUEL OR GASOLINE AS APPROPRIATE. LIQUID CONTROLS M-7-K-1, OR APPROVED EQUAL.

HOSE REEL: SPRING REWIND HOSE REEL CAPABLE OF HOLDING 40 FEET OF 1 1/2 INCH I.D. HOSE. REEL SHALL BE TOP REWIND. HANNAY 922-25-26A(TR) (TOP REWIND) WITH UTILITY HOSE ROLLERS AND BALL STOP FOR 1 1/2 ARCTIC HOSE, OR APPROVED EQUAL.

ARCTIC HOSE: 1 1/2 INCH DIAMETER WITH 1 1/2 INCH NPT CONNECTIONS AT EACH END. PROVIDE 30 FOOT LONG SECTION OF HOSE WITH EACH HOSE REEL ASSEMBLY. GOODYEAR ARCTIC ORTAC OR APPROVED EQUAL.

HOSE SWIVEL: UL LISTED HOSE SWIVEL. PT COUPLING MODEL FOB150MF OAE.

BREAKAWAY CONNECTION: UL LISTED 1 1/2-INCH BREAKAWAY FITTING. OPW MODEL NO. 66SP-5150 ALONG WITH HOSE SECTION OPW MODEL NO. 66H-1300 OR APPROVED EQUAL.

HOSE NOZZLE: UL LISTED AUTOMATIC SHUT OFF, HEAVY DUTY, HIGH FLOW FILL NOZZLE WITH HOLD OPEN LATCH. OPW 1290-0050 OR APPROVED EQUAL.

STATIC GROUNDING REEL: ENAMEL COATED STEEL FRAME AND REEL WITH PERMANENTLY SEALED SPRING RETURN. PROVIDE WITH 50 FEET OF 1/8 INCH GALVANIZED CARBON STEEL CABLE, MINIMUM 100 AMPERE GROUNDING CLIP, AND STOP BALL. HANNAY GR75 OAE.

CAM LOCK COUPLINGS: ALUMINUM BODY CAM AND GROOVE MALE FITTING WITH FNPT CONNECTION, 150 PSI MINIMUM WORKING PRESSURE. PROVIDE DUST CAP WITH BUNA-N SEAL FOR EACH FITTING PROVIDED. PT COUPLING OR EQUAL.

FILTER: SINGLE ELEMENT FILER HOUSING WITH DIFFERENTIAL PRESSURE GAUGE. CIM-TEK GENERAL 1 FILTER (#40165) OAR. PROVIDE SIX(6) 30 MICRON HYDROSORB II FILTER CARTRIDGES (#3003) AND TWO SPARE BUNA-N COVER GASKETS (#90137) FOR EACH FILTER.

FLEX FITTINGS: STAINLESS STEEL CORRUGATED INNER CORE WITH STAINLESS STEEL BRAIDED OUTER COVER, ASME CLASS 150 FIXED FLANGE BY FLOATING FLANGE ENDS WITH 18" LIVE LENGTH UNLESS A DIFFERENT LENGTH IS INDICATED. 150 PSI MINIMUM WORKING, FACTORY TESTED TO 225 PSI MINIMUM. PROVIDE FACTORY TEST CERTIFICATION FOR EACH FLEX. METRAFLEX METRA-MINI OR APPROVED EQUAL.

RETAIL DISPENSER AND EQUIPMENT

MECHANICAL DISPENSER: UL LISTED DISPENSER FOR USE WITH REMOTE SUBMERSIBLE PUMP. FIVE FIGURE MECHANICAL REGISTER WITH TENTHS OF A GALLON AS THE SMALLEST UNIT, NON-RESETABLE TOTALIZER, LIGHTED DISPLAY, 10:1 PULSER, 110VAC POWERED. PROVIDE INTERNAL 30 MICRON SPIN-ON FILTER AND 10 SPARE ELEMENTS. DISPENSER SHALL BE CERTIFIABLE FOR RETAIL SALES. PRIOR TO DELIVERY, REPLACE FACTORY APPLIED STANDARD GREASE IN MECHANICAL REGISTER WITH A SEVERE COLD ARCTIC-GRADE LUBRICANT. ONE-HOSE ONE-PRODUCT DISPENSER, GASBOY 9152QXCXFL, NO SUBSTITUTES.

-OR-
TWO-HOSE DUAL-PRODUCT DISPENSER, GASBOY 9152QXTW2CXFL.

DISPENSER SHEAR VALVE: UL LISTED 1-1/2" X 1-1/2" DISPENSER SHEAR VALVE WITH FUSIBLE LINK. MORRISON BROS., CO. MODEL 636F, OR APPROVED EQUAL.

DISPENSER HOSE: 18 FEET (MAXIMUM) OF 3/4" LOW TEMPERATURE FUEL RATED DISPENSING HOSE. GOODYEAR ARCTIC ORTAC, OR APPROVED EQUAL.

DISPENSER HOSE BREAKAWAY COUPLING: UL LISTED 3/4 INCH BREAKAWAY FITTING. OPW MODEL 66V-0250 WITH 66H-0075 HOSE SECTION, OR APPROVED EQUAL.

DISPENSER HOSE SWIVEL: UL LISTED DISPENSER HOSE SWIVEL. OPW MODEL NO. 45M-0492, OR APPROVED EQUAL.

DISPENSER NOZZLE: UL LISTED AUTOMATIC SHUT-OFF, AUTOMOTIVE FUELING NOZZLE WITH HOLD OPEN LATCH AND COLOR CODED HANDLE, RED FOR GASOLINE AND GREEN FOR DIESEL. OPW MODEL NO.11BP-0300 AND 11B-0100, OR APPROVED EQUAL.

EQUIPMENT NAME PLATES & VALVE TAGS:

MATERIAL: 3"x5" (OR LARGER IF REQUIRED)X0.08" ALUMINUM W/ 3/16" DIAMETER HOLES DRILLED IN EACH CORNER, BLACK GERBER THERMAL TRANSFER FILM PRINTED LETTERS ON GERBER 220 HIGH PERFORMANCE VINYL BACKGROUND, COLOR AS INDICATED, ONE SIDE ONLY, AS MANUFACTURED BY WARNING LIGHTS OF ALASKA OR APPROVED EQUAL.

COLOR:

1. NAMEPLATES: WHITE BACKGROUND WITH BLACK LETTERING
2. OPERATIONAL TAGS: DIESEL COMPONENTS: APPLE GREEN BACKGROUND WITH BLACK LETTERING. GASOLINE COMPONENTS: RED BACKGROUND WITH BLACK LETTERING.

INFORMATION:

1. NAMEPLATES: PROVIDE NAMEPLATES FOR ALL PUMPS, ELECTRICAL PANELS, AND OTHER COMPONENTS AS REQUIRED ON THE DRAWINGS. NAMEPLATES TO INCLUDE COMPONENT ID AS SHOWN ON THE DRAWINGS.
2. OPERATIONAL TAGS: PROVIDE OPERATIONAL TAGS FOR COMPONENTS AS SHOWN ON SHEET G2, G5, & G6 OF THE DRAWINGS.

OPERATIONAL TAGS TO INCLUDE COMPONENT ID (E.G. BV-1, MV-3, ETC), NORMAL OPERATING CONDITION (NORMALLY OPEN OR CLOSED), AND ANY ADDITIONAL INFORMATION REQUIRED FOR PROPER OPERATION.

CONCRETE

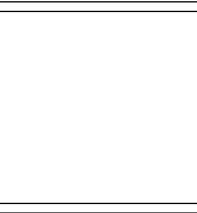
CONCRETE SHALL HAVE A 28 DAY STRENGTH (Fc) OF 3,000 PSI FOR TYPE I CEMENT. MINIMUM CEMENT CONTENT SHALL BE 6 SACKS PER CUBIC YARD. CONCRETE MIX DESIGN SHALL CONFORM TO ACI 318 FOR DURABILITY AND QUALITY.

REBAR REINFORCING SHALL BE ASTM A615 GRADE 60 INSTALLED IN ACCORDANCE WITH ACI 318.

CONCRETE ANCHOR ADHESIVE SHALL BE A TWO-COMPONENT HIGH-SOLIDS, EPOXY-BASED SYSTEM SUPPLIED IN MANUFACTURER'S STANDARD CARTRIDGE AND DISPENSED THROUGH A STATIC-MIXING NOZZLE SUPPLIED BY THE MANUFACTURER. THE ADHESIVE ANCHOR SHALL HAVE BEEN TESTED AND QUALIFIED FOR PERFORMANCE IN CRACKED AND UNCRACKED CONCRETE PER ICC-ES AC308. ADHESIVE SHALL BE SET-XP-> EPOXY-TIE-> ADHESIVE FROM SIMPSON STRONG-TIE, OR APPROVED EQUAL. ANCHORS SHALL BE INSTALLED PER MANUFACTURERS INSTRUCTIONS.

PORTABLE FIRE EXTINGUISHERS

ALL FIRE EXTINGUISHERS WILL BE PORTABLE WITH A RATING OF 3A-40BC. THE LOCATION, INSTALLATION, AND CONTAINMENT OF ALL EXTINGUISHERS SHALL BE IN ACCORDANCE WITH NFPA 10 REQUIREMENTS.



BEAVER, ALASKA
BEAVER BULK FUEL UPGRADES
PROJECT SPECIFICATIONS

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Plot Date: 8/20/20	Designed: NCP	Drawn: NCP	Approved: KRH
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Sheet No. **G1.3**

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1

EXISTING FACILITIES

SCALE: GRAPHIC



BEAVER, ALASKA
 BEAVER BULK FUEL UPGRADES
 EXISTING FACILITIES

NO.	REVISION	BY	DATE
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Sheet No. **C1.1**

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1

PROPOSED UPGRADES

SCALE: GRAPHIC



BEAVER, ALASKA
 BEAVER BULK FUEL UPGRADES
 PROPOSED UPGRADES

NO.	REVISION	BY	DATE
1	CONCEPTUAL DRAWINGS	NCP	8/20/20

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Sheet No. **C1.2**

File: J:\JobsData\30415.00 Aea Beaver And Chalkytsik Bfu\00 Cadd 20#\Beaver\01 Working Set\01 Civil\02 Design\30415.00 Beaver Bfu - Site Plan.dwg Plot Date: 8/20/2020 5:56 AM

TANK FARM 1 – DECOMMISSIONING CHART							
TANK NO.	DIA.	HEIGHT/LENGTH	VERTICAL/HORIZONTAL	TANK TYPE	PRODUCT	APPROX AGE (YEARS)	GROSS CAPACITY (GALLONS)
1	8.5'	14'	V	SW	D1	40+	6,000
2	9'	13.5'	V	SW	D1	40+	6,400
3	8'	13.5'	V	SW	D1	40+	5,000
4	9'	13.5'	V	SW	D1	40+	6,400
5	8.5'	13.5'	V	SW	D1	40+	5,700
6	8'	14'	V	SW	D1	40+	5,300
7	7.5'	14'	V	SW	-	40+	4,600
8	7.5'	14'	V	SW	-	40+	4,600
9	8'	14'	V	SW	-	40+	5,300
TOTAL GALLONS							49,300

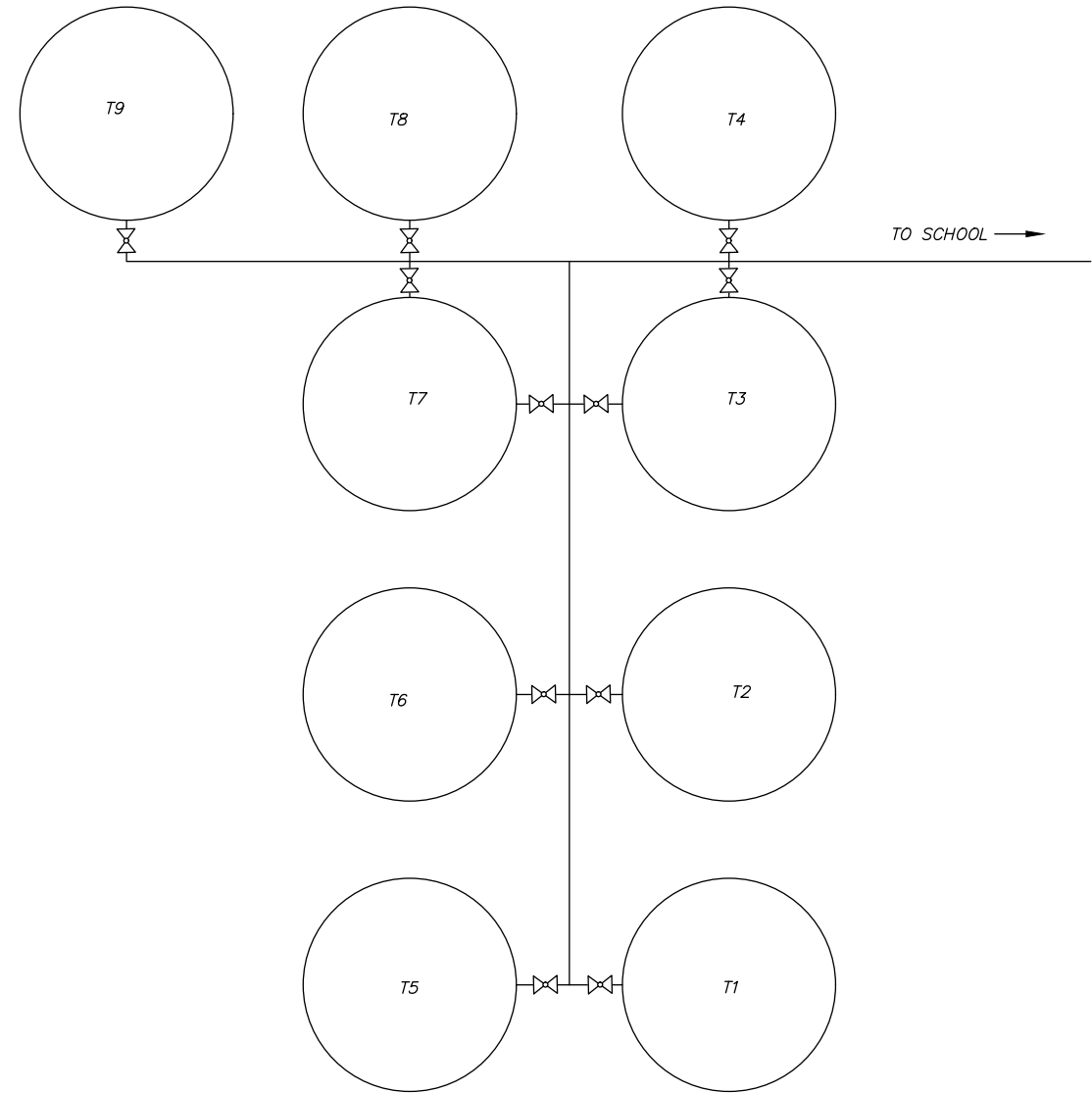
TANK DECOMMISSIONING AND DISPOSAL

1. THE CONTRACTOR SHALL VISUALLY INSPECT ALL ABOVEGROUND TANKS DESIGNATED ON THE CONTRACT DRAWINGS FOR DECOMMISSIONING. CONTRACTOR SHALL DETERMINE IF PRODUCT EXISTS WITHIN EACH TANK. IF PRODUCT EXISTS, CONTRACTOR SHALL PUMP, FILTER AND TRANSFER ALL USEABLE PRODUCT TO TEMPORARY STORAGE. AFTER ALL USEABLE PRODUCT AND ANY ACCUMULATED WATER HAVE BEEN REMOVED, CONTRACTOR SHALL MEASURE THE INSIDE DIAMETER OF THE TANK AND DEPTH OF SLUDGE, IF ANY. FROM THESE MEASUREMENTS, THE APPROXIMATE VOLUME OF SLUDGE IN EACH TANK WILL BE CALCULATED.
2. THE CONTRACTOR SHALL CLEAN THE INTERIOR OF EACH TANK IN ACCORDANCE TO API 2015 OR OTHER APPROVED METHOD. THE CONTRACTOR SHALL IMPLEMENT A CONFINED SPACE ENTRY PERMIT SYSTEM BEFORE ANY WORKER ENTERS EACH TANK. THE CONTRACTOR SHALL MONITOR THE TANK ATMOSPHERE FOR TOXICITY, OXYGEN LEVELS, AND EXPLOSIVE VAPORS.
3. IF SLUDGE IS REMOVED FROM THE TANK, THE CONTRACTOR SHALL PLACE IN AN APPROPRIATE CONTAINER AND ATTACH A LABEL THAT CONTAINS THE FOLLOWING INFORMATION:
 - CONTAINER IDENTIFICATION NUMBER
 - TANK ID#S
 - OWNER OF TANK
 - DATE REMOVAL

THE CONSOLIDATION OF SLUDGE FROM TANKS CONTAINING DIFFERENT PRODUCTS OR OWNED BY DIFFERENT ENTITIES WILL NOT BE ALLOWED WITHOUT PRIOR WRITTEN APPROVAL OF THE ENGINEER AND BOTH TANK OWNERS. SHOULD THIS OCCUR WITHOUT PRIOR APPROVAL, THE CONTRACTOR SHALL TAKE IMMEDIATE OWNERSHIP OF THE COMBINED WASTE AND BE FULLY RESPONSIBLE FOR ALL COST ASSOCIATED WITH THE MANIFESTING, TRANSPORT AND PROPER DISPOSAL OF IT.
4. APPROPRIATE PERSONAL PROTECTION EQUIPMENT WILL BE USED TO PROTECT WORKERS FROM WORK SITE HAZARDS.
5. ALL TANKS SHALL BE RENDERED UNUSABLE BY THE CONTRACTOR AT THE TIME OF DECOMMISSIONING BY CUTTING A HOLE AT BOTTOM OF TANK SIDE WALL OR OTHER MEANS ACCEPTABLE TO AEA.

PIPE DECOMMISSIONING AND DISPOSAL

1. ALL FUEL AND RESIDUAL LIQUID SHALL BE COMPLETELY REMOVED FROM EXISTING PIPING AS FOLLOWS, OR BY ALTERNATE MEANS AND METHOD SUBMITTED BY THE CONTRACTOR. IF ALTERNATE MEANS AND METHODS WILL BE USED BY THE CONTRACTOR THIS SHALL BE DESCRIBED IN THE WORK PLAN REQUIRED BY THIS SECTION.
 - PIPING 2-INCH NOMINAL DIAMETER AND SMALLER: REMOVE FUEL BY DISCONNECTION EACH END OF THE PIPING SYSTEM AND BLOWING FUEL OUT OF THE PIPE WITH A COMPRESSED GAS. THE VELOCITY OF THE COMPRESSED GAS IN THE PIPE SHALL BE SUFFICIENT TO REMOVE ESSENTIALLY ALL RESIDUAL LIQUID FROM THE PIPE.
 - PIPING LARGER THAN 2-INCH NOMINAL DIAMETER: REMOVE FUEL BY DISCONNECTING EACH END OF THE PIPING SYSTEM AND PROPELLING A FOAM PIG THROUGH THE PIPELINE AT A SUFFICIENT VELOCITY TO REMOVE ESSENTIALLY ALL REMAINING LIQUID. PIG SHALL BE PROPELLED BY A COMPRESSED GAS. AT LEAST THREE (3) PIGS SHALL BE PROPELLED THROUGH EACH PIPE SEGMENT.
 2. THE CONTRACTOR SHALL CONTAIN, FILTER, AND TRANSFER ALL USEABLE FUEL REMOVED FROM PIPING TO THE RESPECTIVE ENTITIES TANKS. ANY UNUSABLE FUEL OR SLUDGE SHALL BE ASSUMED TO BE HAZARDOUS WASTE AND DISPOSED OF BY THE CONTRACTOR IN ACCORDANCE WITH THIS SPECIFICATIONS.
 3. AFTER FUEL IS REMOVED FROM THE PIPING THE PIPE SHALL BE CUT INTO MAXIMUM 10 FOOT LENGTHS AND STACKED NEATLY AT AN APPROVED LOCATION.
- HAZARDOUS WASTES**
1. THE HAZARDOUS NATURE OF CONTAINERIZED SLUDGE WILL BE BASED UPON COMPOSITE TESTING PERFORMED BY THE CONTRACTOR IN ACCORDANCE WITH 40 CFR 261.
 2. ALL WASTE THAT IS DEEMED HAZARDOUS IN ACCORDANCE WITH 40 CFR 261 SHALL BE MANIFESTED IN ACCORDANCE WITH 40 CFR 262 AND SHIPPED IN ACCORDANCE WITH US DOT 49 CFR PARTS 100-199 REGULATIONS. THE CONTRACTOR SHALL USE EPA UNIFORM HAZARDOUS WASTE MANIFEST, OMB NO. 2050-0039, EPA FORM 8700-22.
 3. PAYMENT OF TRANSPORT AND DISPOSAL FEES SHALL BE BY CONTRACTOR.



YFSD (TANK FARM #1) SITE PLAN
SCALE: NTS

- NOTES:**
1. ALL EXISTING TANKS, PIPING VALVES, AND APPURTENANCE SHOWN ABOVE SHALL BE DECOMMISSIONED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.



BEAVER, ALASKA
BEAVER BULK FUEL UPGRADES
TANK FARM 1 SITE PLAN

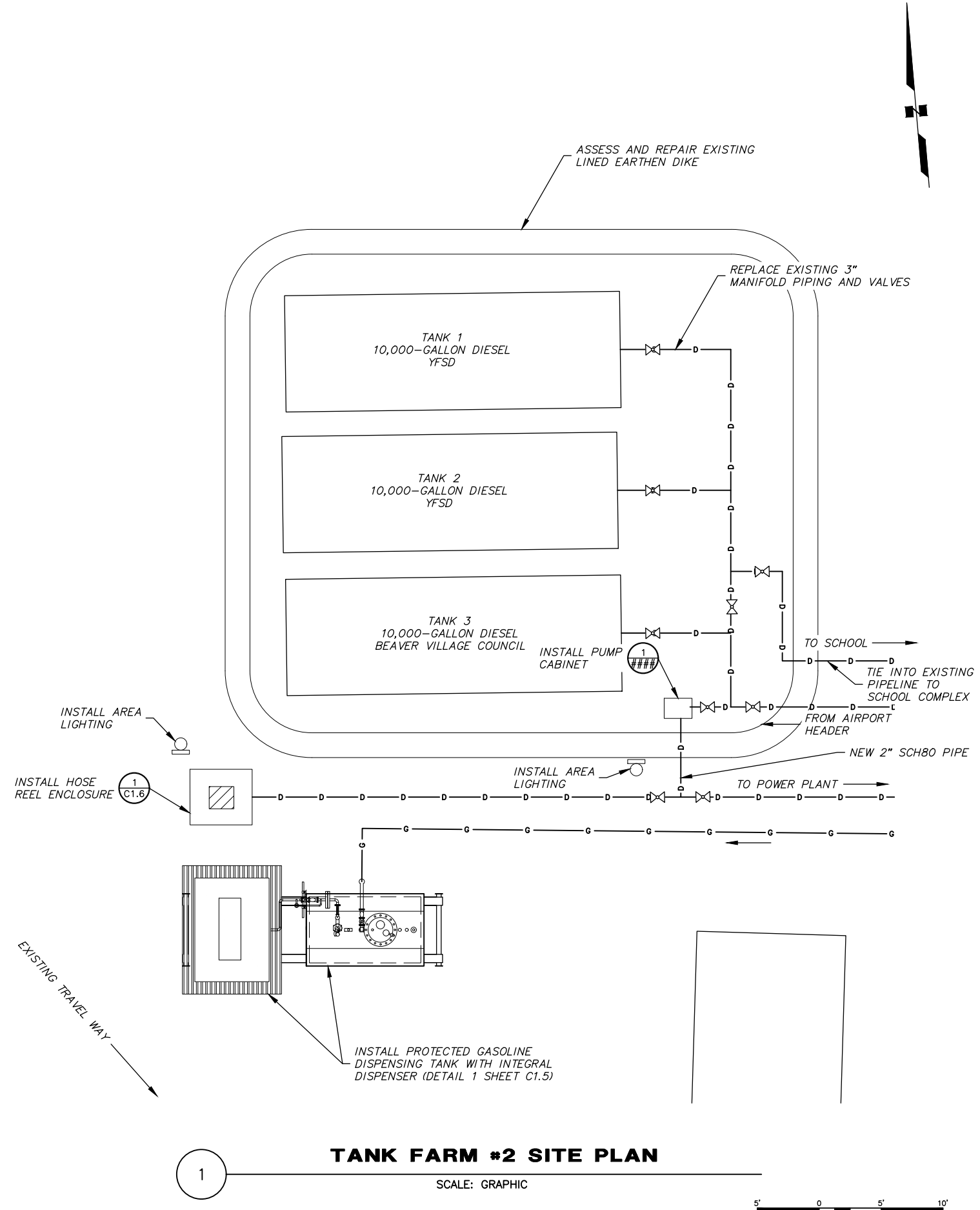
NO.	REVISION	DATE
1	CONCEPTUAL DRAWINGS	NCP 8/20/20

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TANK FARM #2 SCOPE OF WORK:

1. TRANSFER FUEL FROM EXISTING TANKS TO TEMPORARY STORAGE.
2. REMOVE VEGETATION AND DEBRIS FROM DIKED AREA; PERFORM VISUAL INSPECTION OF LINER AND REPAIR AS NECESSARY (LEAVE TANK IN PLACE).
3. REPLACE EXISTING THREADED TANK MANIFOLD PIPING WITH NEW, WELDED STEEL PIPING. LIMIT THREADED CONNECTIONS TO TANK CONNECTION ONLY.
4. INSTALL NEW BALL VALVES AS SHOWN FOR ISOLATION AND SEGREGATION OF FUEL BY OWNER. INSTALL PRESSURE RELIEF VALVES AS NECESSARY.
5. CONNECT YFSD TANK MANIFOLD PIPING TO EXISTING PIPELINE TO SCHOOL COMPLEX.
6. INSTALL NEW PUMP CABINET ADJACENT TO TANK FARM AND TIE INTO BVC TANK MANIFOLD (PUMP WILL SUPPLY POWER PLANT INTERMEDIATE TANK AND BVC HOSE REEL).
7. INSTALL HOSE REEL / METER ENCLOSURE ADJACENT TO TANK FARM DIKED AREA AND CONNECT TO PUMP CABINET VIA 2½ ABOVE GRADE PIPING.
8. INSTALL NEW 1,500-GALLON, UL 2085, PACKAGED DISPENSING TANK / RETAIL DISPENSER SYSTEM. CONNECT TO NEW GASOLINE FILL PIPELINE FROM AIRPORT.
9. INSTALL NEW LIGHT POLES AND AREA LIGHTING AS SHOWN.
10. ELECTRICAL SERVICE AND UPGRADES AS REQUIRED.
11. INSTALL PUMP CONTROL PANEL.



BEAVER, ALASKA
BEAVER BULK FUEL UPGRADES
TANK FARM 2 SITE PLAN

NO.	REVISION	BY	DATE
1	CONCEPTUAL DRAWINGS	NCP	8/20/20

Plot Date: 8/20/20	Designed: NCP	Drawn: NCP	Approved: KRH
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Sheet No. **C1.4**

File: J:\JobsData\30415.00_Aea Beaver And Chalkyitsik Bfu\00_Cadd 20#\Beaver\01_Working Set\01_Civil\02_Design\30415.00 Tank_Details.dwg Plot Date: 8/20/2020 5:56 AM

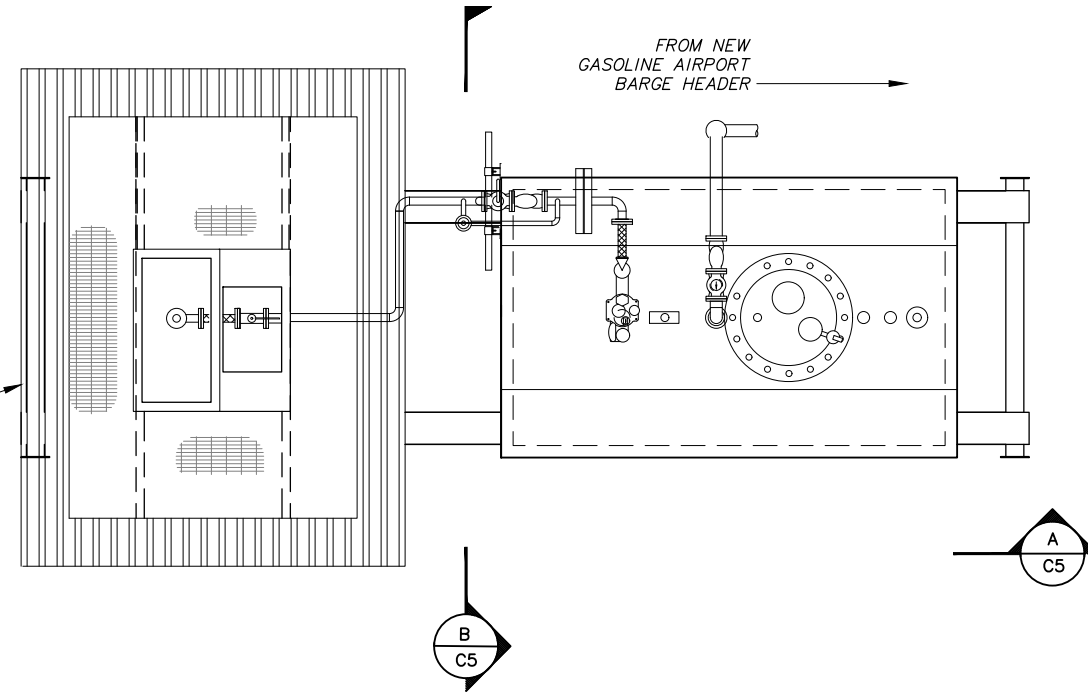
SPECIFIC NOTES

- 1 3" FLANGED (LEVEL SWITCH)
- 2 2" THREADED PENETRATION (WATER DRAW)
- 3 2" FPT (GAUGE HATCH INSTALLED ON 2"x4" NIPPLE)
- 4 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
- 5 6" FLANGED PENETRATION (PRIMARY E-VENT)
- 6 24" MANWAY
- 7 4" FPT FILL w/ 4X3 DOUBLE TAP BUSHING & 3" DROP TUBE (FILL)
- 8 2" FILL LIMITER
- 9 2" THREADED PENETRATION (CLOCK GAUGE INSTALLED ON 2" X 18" NIPPLE)
- 10 4" FPT (SUBMERSIBLE PUMP)
- 11 6" FLANGED (SECONDARY E-VENT)
- 12 ANTI SIPHON VALVE
- 13 FILL ISOLATION VALVE AND STRAINER
- 14 DISPENSER CONNECTIVE PIPING

NOTES:

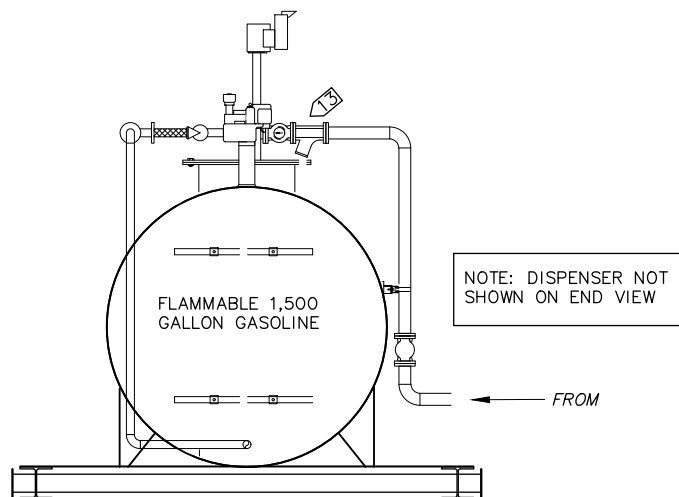
1. THIS SHEET SHOWS THE DESIRED FUNCTIONALITY AND GENERAL LAYOUT OF THE PROPOSED SYSTEMS. THE INTENT IS NOT TO SHOW EVERY REQUIRED COMPONENT BUT TO PROVIDE THE CONTRACTOR WITH SUFFICIENT INFORMATION TO FINALIZE THE DESIGN AND PREPARE SHOP DRAWINGS FOR FINAL REVIEW AND APPROVAL PRIOR TO FABRICATION. IT IS ASSUMED THAT THE CONTRACTOR HAS IN-HOUSE DESIGNS AND TECHNIQUES FOR FABRICATING INTEGRAL TANK / DISPENSING SYSTEMS AND IT IS THE CONTRACTOR'S RESPONSIBILITY TO SUPPLEMENT THE SCHEMATIC DRAWINGS AS NECESSARY TO PROVIDE A FULLY FUNCTIONAL, CODE COMPLIANT SYSTEM.
2. CONTRACTOR SHALL INTEGRATE REQUIRED SUPPORTS, STAND OFFS, ETC AS NECESSARY TO FACILITATE THE FIELD INSTALLATION OF ELECTRICAL CONDUIT, CONDUCTOR, AND DEVICES REQUIRED.

SKID MOUNTED RETAIL DISPENSER ENCLOSURE (DESIGN BY TANK MANUFACTURE)



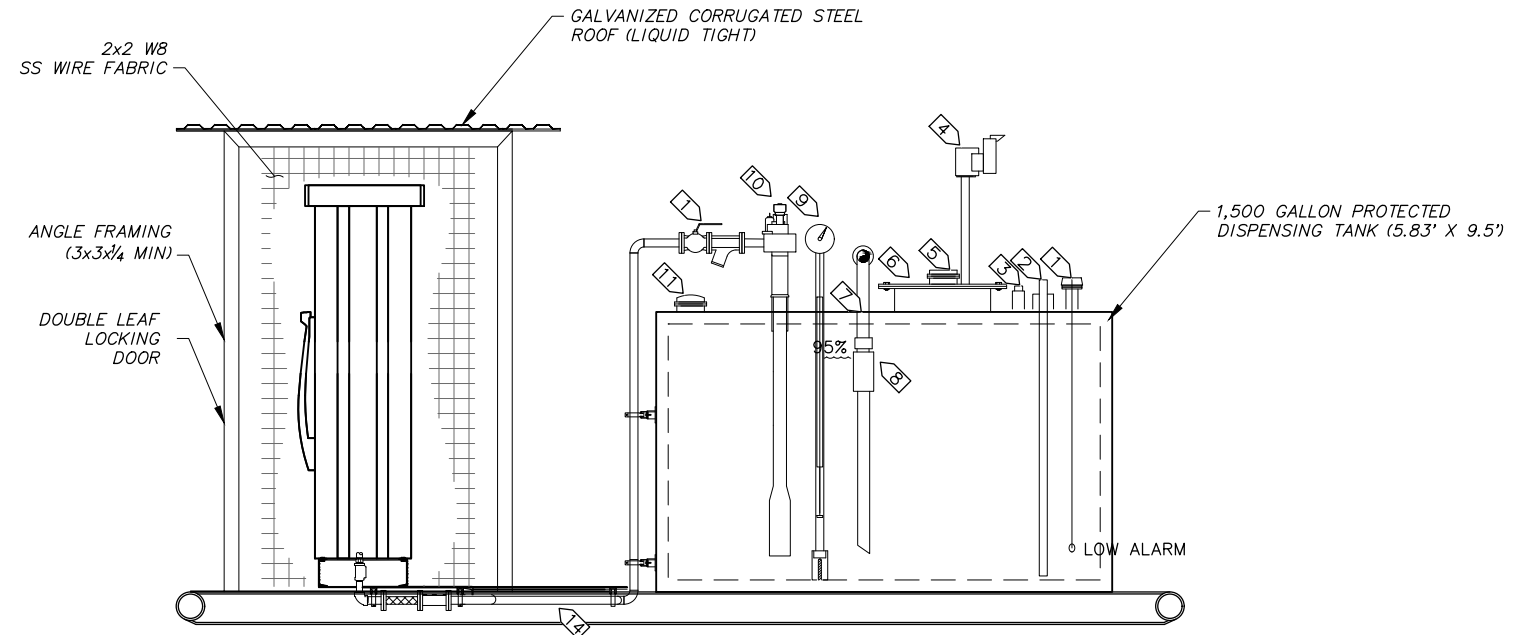
TANK 1 - 1,500 GALLON PROTECTED DISPENSING TANK

SCALE: GRAPHIC



END VIEW

SCALE: GRAPHIC



SECTION VIEW

SCALE: GRAPHIC

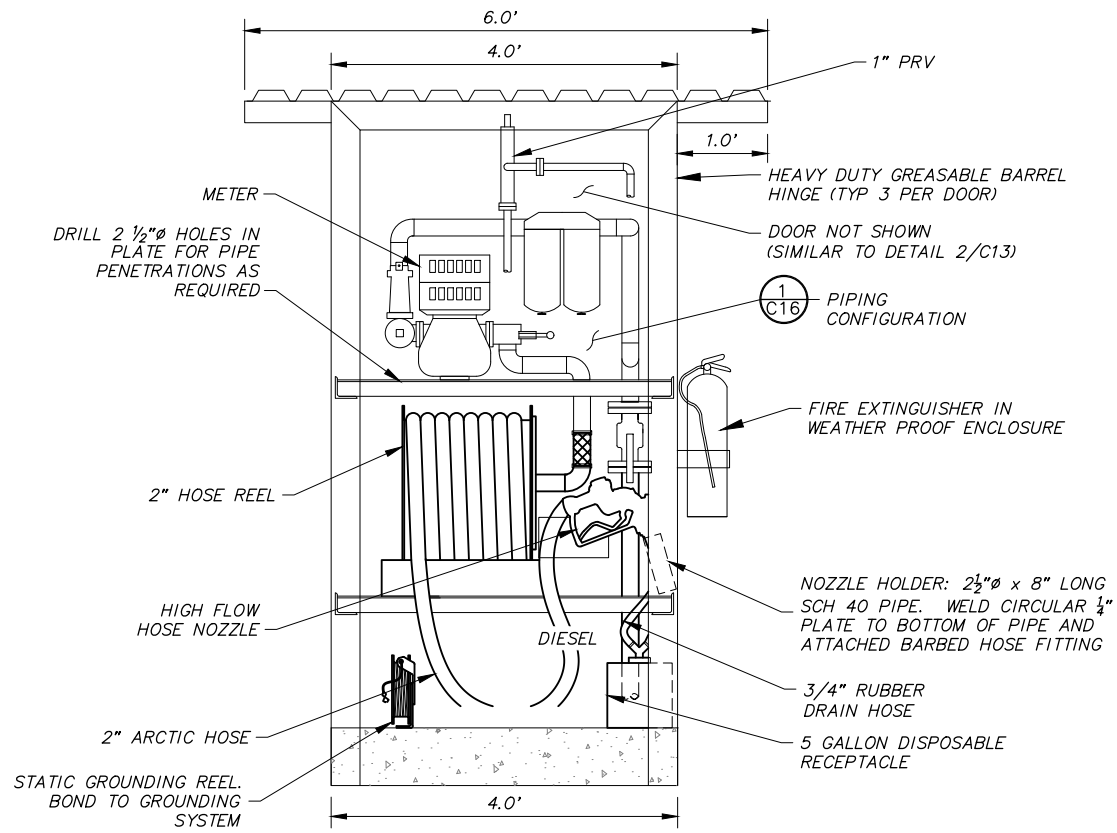


BEAVER, ALASKA
BEAVER BULK FUEL UPGRADES
PROPOSED UPGRADES

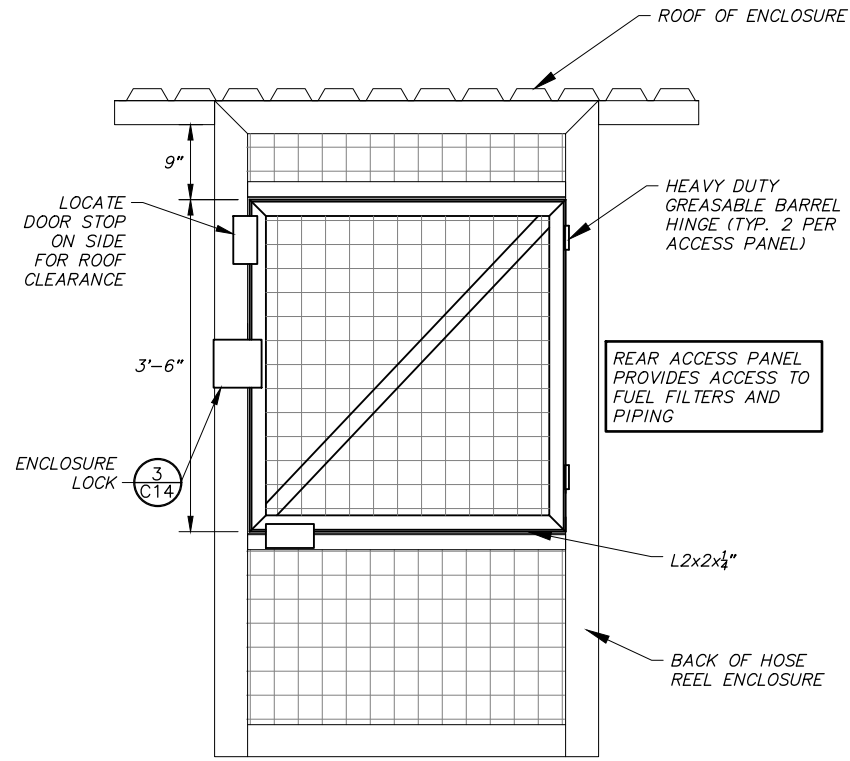
NO.	REVISION	BY	DATE
1	CONCEPTUAL DRAWINGS	NCP	8/20/20

Plot: 8/20/20
Date: 8/20/20
Designed: NCP
Drawn: NCP
Approved: KRH

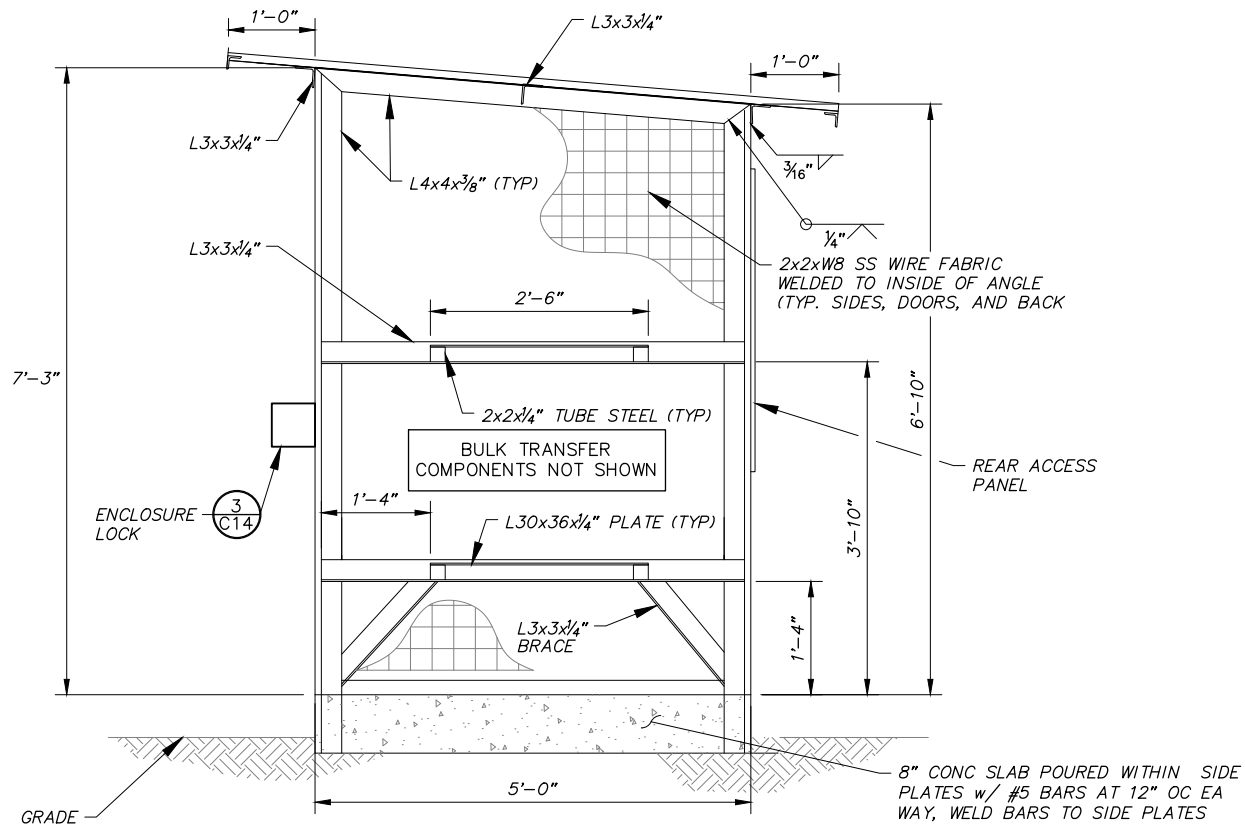
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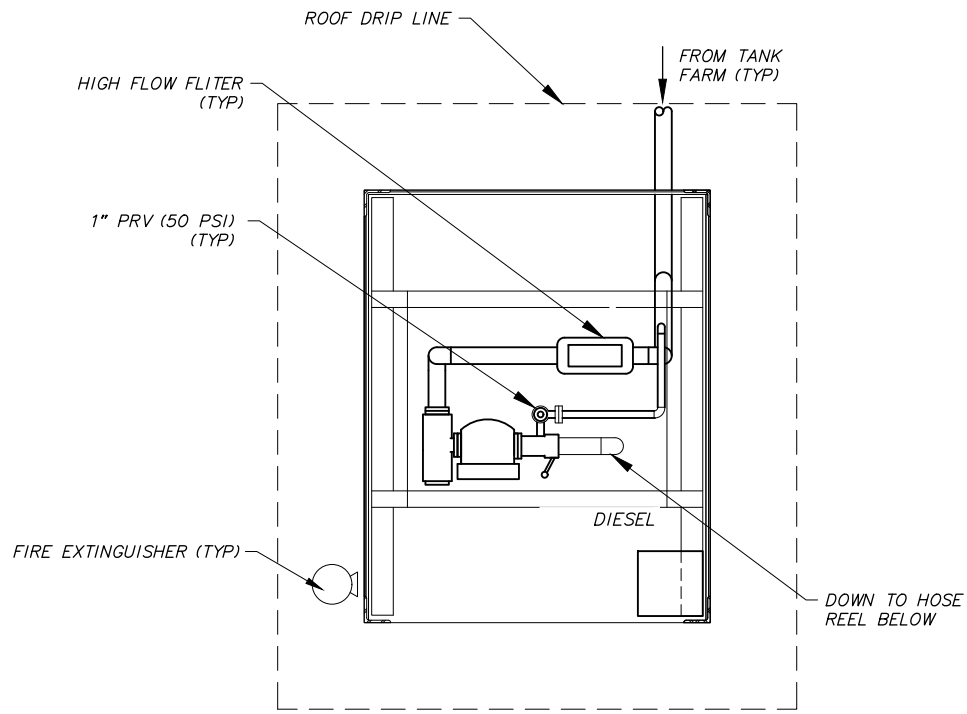
1 BULK TRANSFER HOSE REEL ELEVATION
NOT TO SCALE



3 REAR ACCESS PANEL
NOT TO SCALE



2 BULK TRANSFER HOSE REEL SECTION
NOT TO SCALE



4 BULK TRANSFER HOSE REEL ENCLOSURE
NOT TO SCALE

GENERAL NOTES:

1. THE DESIGN, FABRICATION, AND ERECTION OF ALL STRUCTURAL STEEL COMPONENTS SHALL COMPLY WITH THE CURRENT CODE OF STANDARD PRACTICE OF THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION. ALL WELDING TO BE DONE IAW THE CURRENT CODE OF AMERICAN WELDING SOCIETY.
2. MAKE ALL CONNECTIONS WITH CONTINUOUS FILLET OR BUTT WELDS. ROUND ALL CORNERS & SHARP EDGES AFTER FABRICATION.
3. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE ENGINEER PRIOR TO FABRICATION FOR REVIEW AND APPROVAL.
4. ALL STRUCTURAL STEEL COMPONENTS TO BE HOT DIP GALVANIZED. WELDED WIRE FABRIC TO BE STAINLESS STEEL.

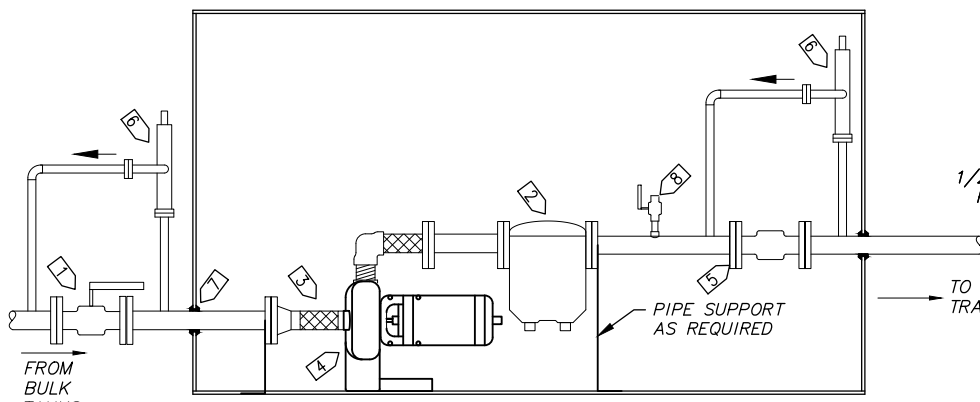
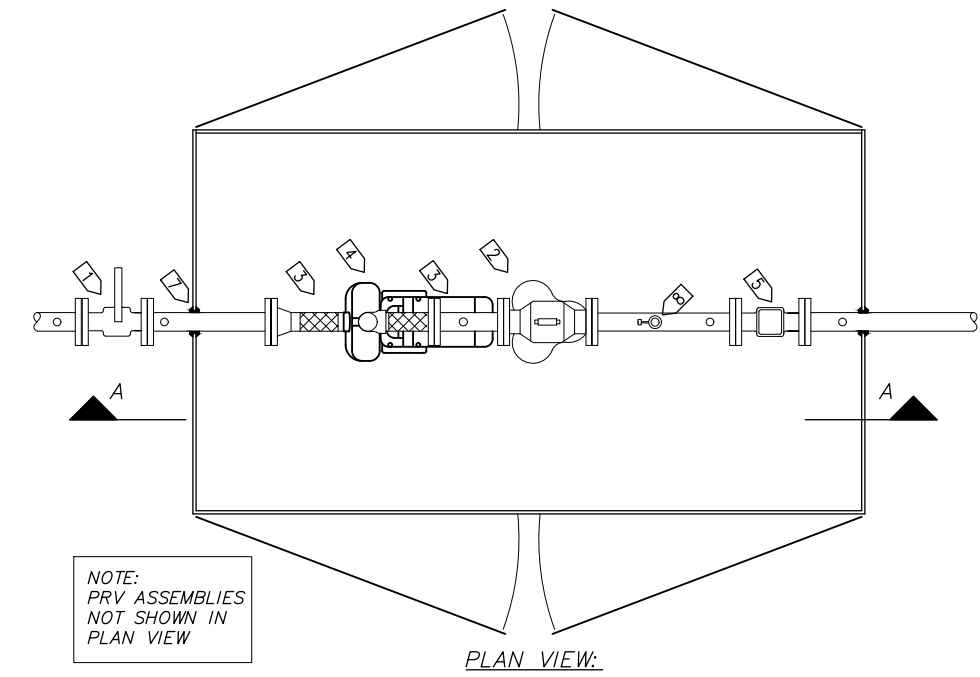


BEAVER, ALASKA
BEAVER BULK FUEL UPGRADES
PROPOSED UPGRADES

NO.	REVISION	BY	DATE
1	CONCEPTUAL DRAWINGS	NCP	8/20/20

Plot Date: 8/20/20	Designed: NCP	Drawn: NCP	Approved: KRH
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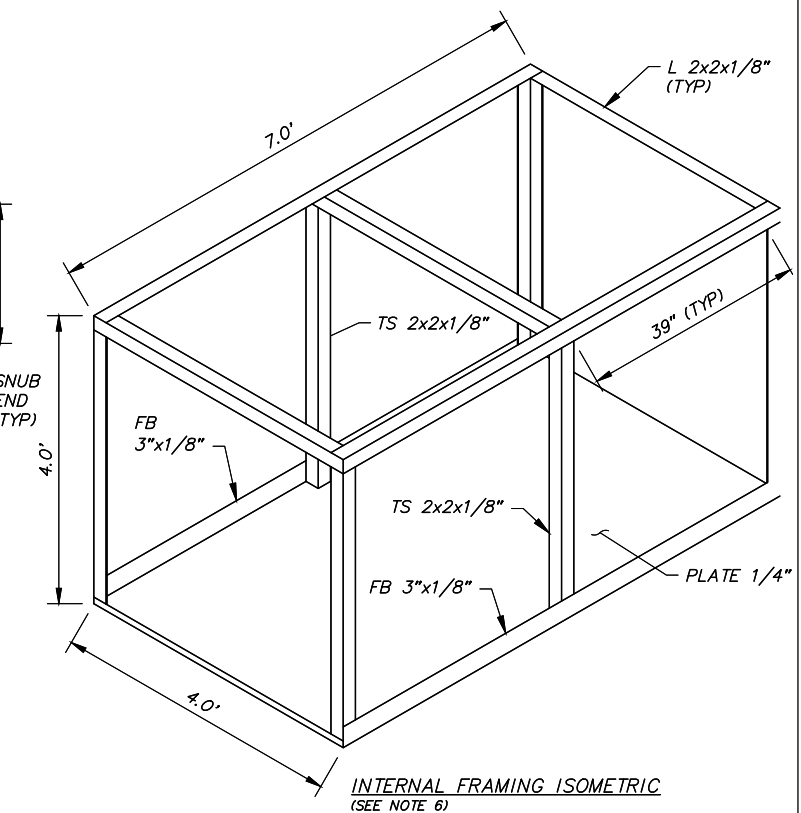
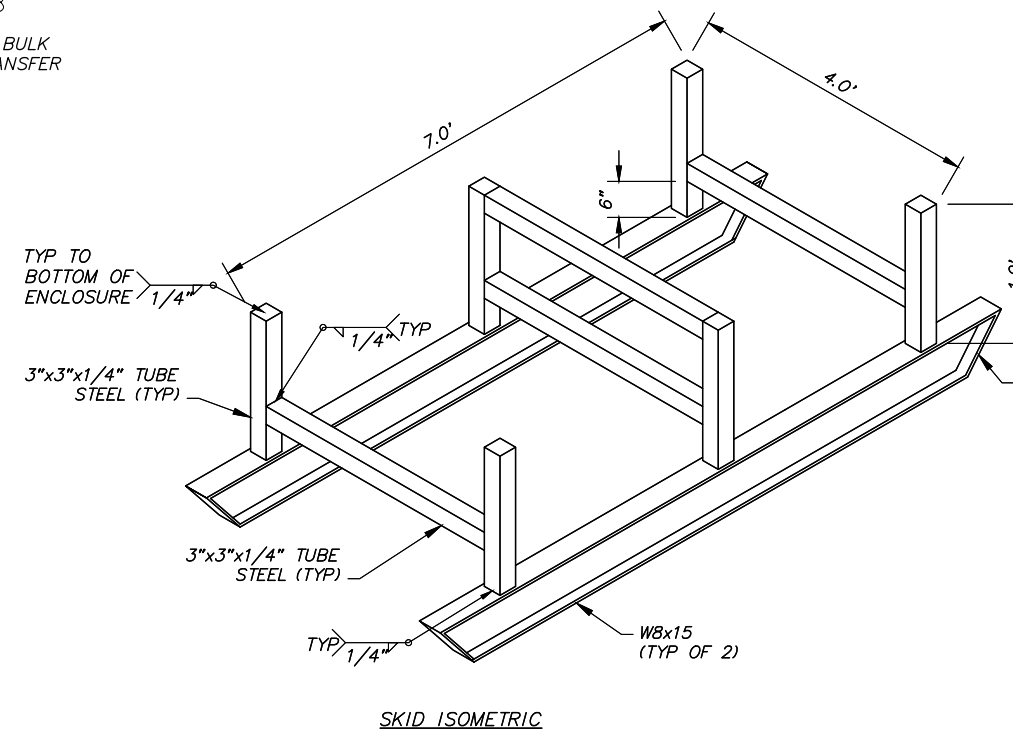
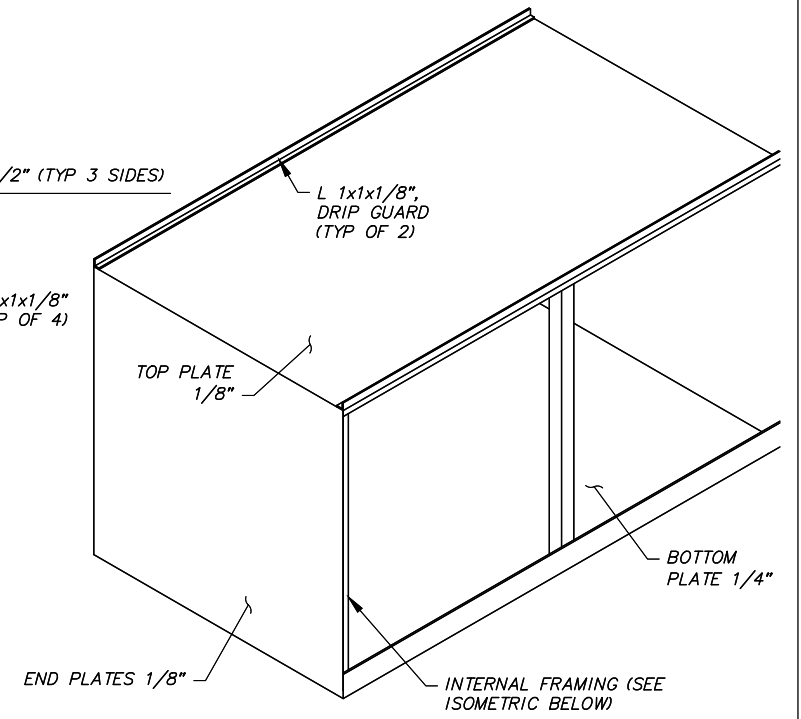
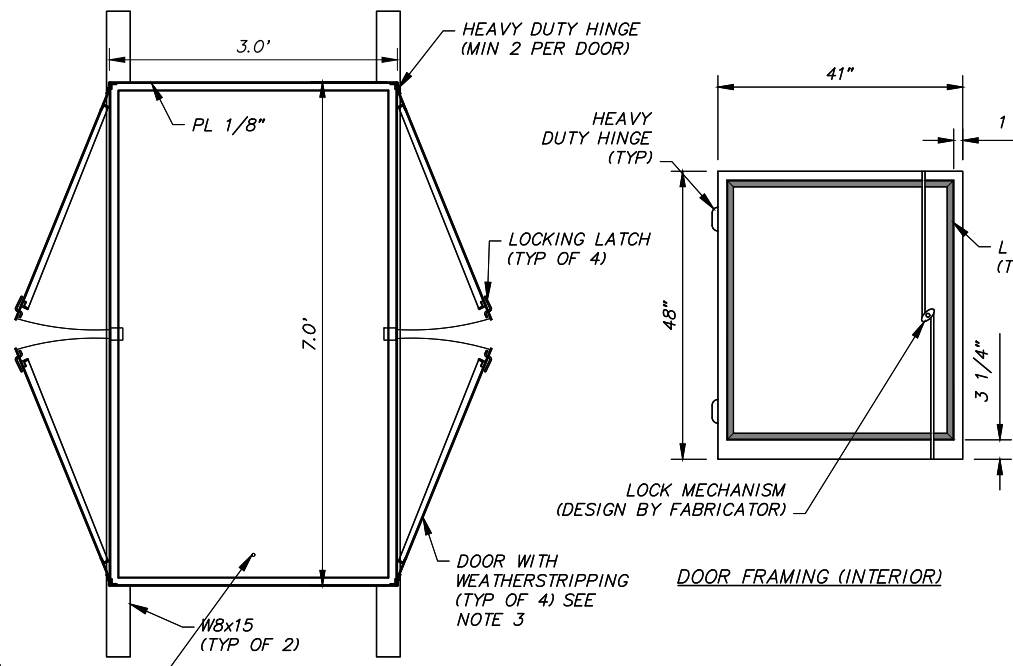
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- 1 2" BALL VALVE
- 2 FILTER
- 3 FLEX FITTING
- 4 TRANSFER PUMP
- 5 2" BALL VALVE
- 6 PRESSURE RELIEF VALVE
- 7 ENVIROFLEX PENETRATION BOOT (TYP)
- 8 PRESSURE TEST CONNECTION (SEE DETAIL 5, SHEET C509)

PUMP CABINET
SCALE: NTS

- NOTES:**
- THE DESIGN, FABRICATION, AND ERECTION OF ALL STRUCTURAL STEEL COMPONENTS SHALL COMPLY WITH THE CURRENT CODE OF STANDARD PRACTICE OF THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION. ALL WELDING TO BE DONE IN ACCORDANCE WITH THE CURRENT CODE OF AMERICAN WELDING SOCIETY.
 - MAKE ALL CONNECTIONS WITH CONTINUOUS FILLET OR BUTT WELDS. ROUND ALL CORNERS & SHARP EDGES AFTER FABRICATION.
 - ALL SEAMS SHALL BE CONTINUOUSLY WELDED, AND WATER-TIGHT, UNLESS OTHERWISE NOTED. ADHESIVE BACK WEATHERSTRIPPING (PEMCO PK33 OAE) SHALL BE INSTALLED AROUND EACH DOOR. SET DOOR HINGES TO ALLOW FOR THICKNESS OF COATING AND WEATHERSTRIPPING.
 - SEE SPECIFICATIONS FOR INTERIOR AND EXTERIOR CABINET COATING SYSTEM.
 - CABINET FABRICATOR SHALL SUBMIT SHOP DRAWINGS TO ENGINEER PRIOR TO FABRICATION FOR REVIEW AND APPROVAL.
 - CABINET MAY BE CONSTRUCTED WITH INTERNAL FRAMING AS SHOWN OR A COMBINATION OF FRAMING AND BENT SECTIONS. CABINET SHALL BE WEATHER TIGHT, HAVE A LIQUID TIGHT DRIP PAN AND HAVE ADEQUATE STRENGTH FOR A 100 PSF ROOF LOAD.



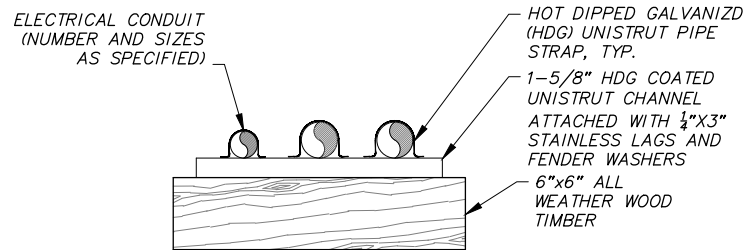
PUMP CABINET FABRICATION DETAILS
SCALE: NTS



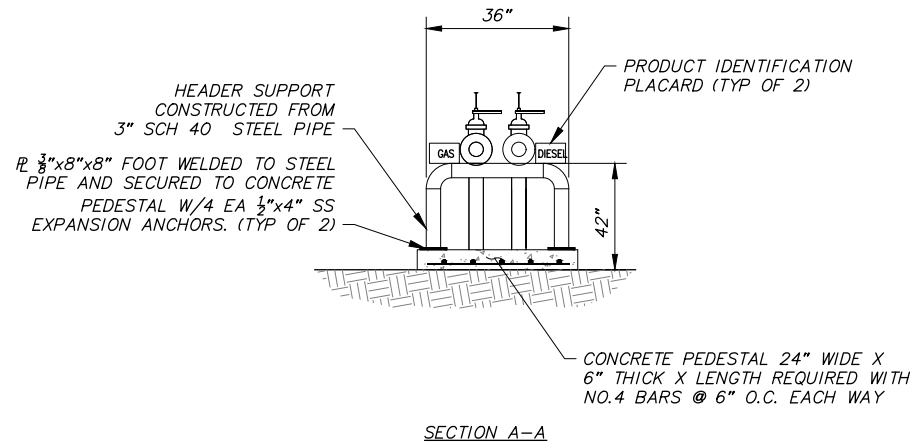
BEAVER, ALASKA
BEAVER BULK FUEL UPGRADES
PROPOSED UPGRADES

NO.	REVISION	DATE	BY	DATE
1	CONCEPTUAL DRAWINGS	8/19/20	NCP	

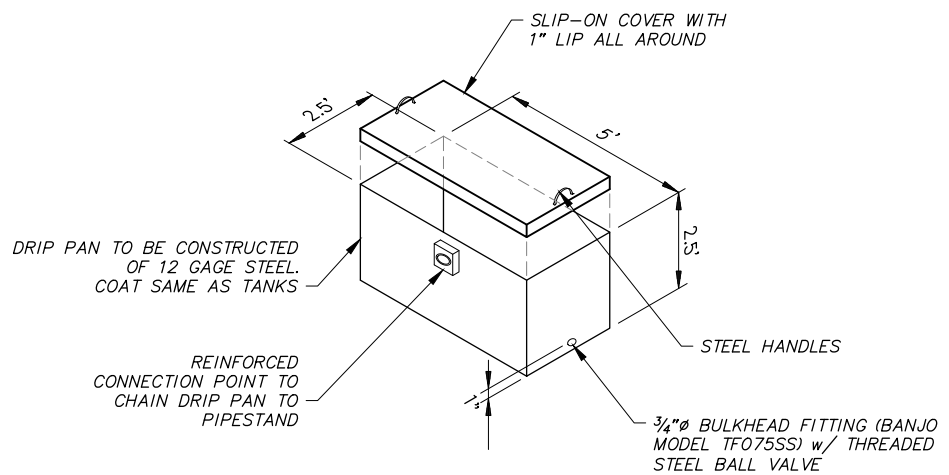
Plot Date	Designed: NCP	Drawn: NCP	Approved: KRH
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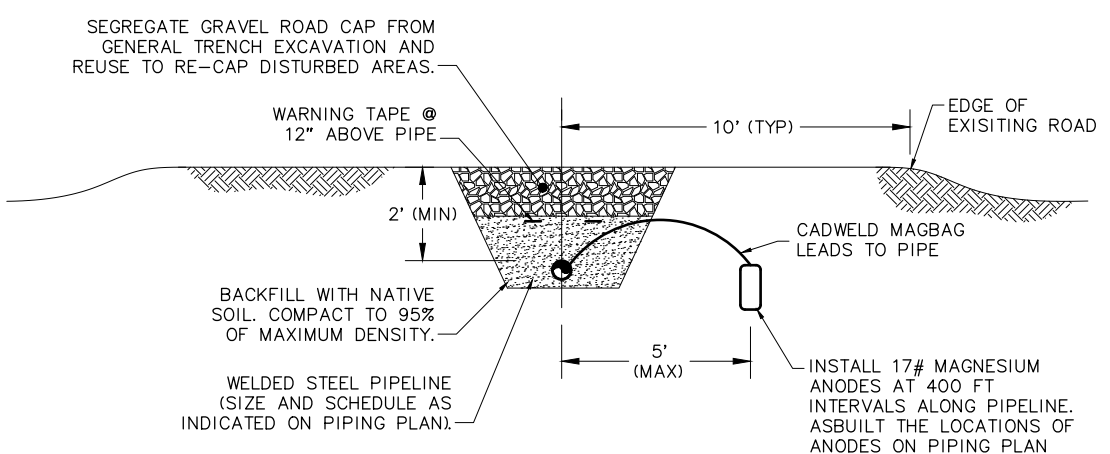
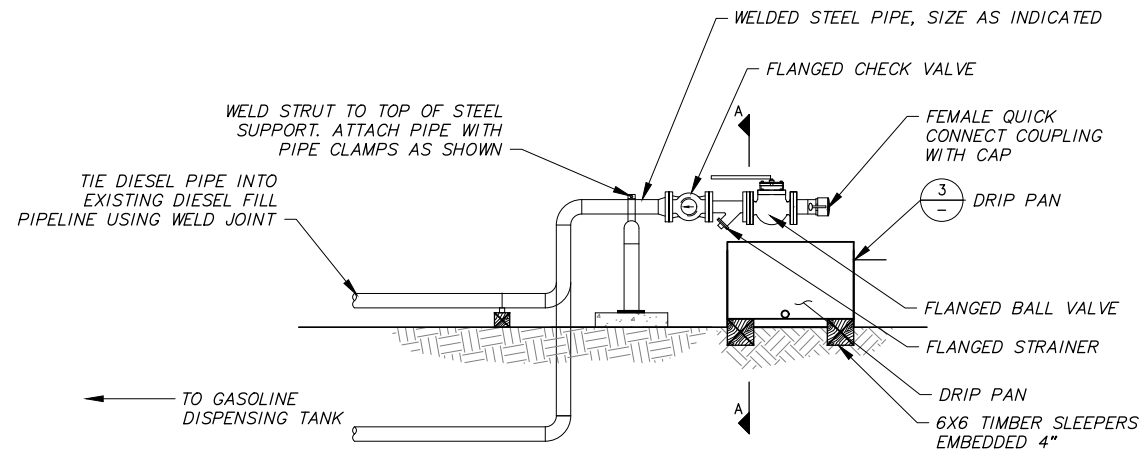
1 **TIMBER PIPE SUPPORT**
SCALE: NTS



4 **BARGE HEADER**
SCALE: NTS



2 **DRIP PAN**
SCALE: NTS



3 **TRENCH AND ROAD RESTORATION DETAIL**
SCALE: NTS

NOTES
1. INSTALL BALL VALVES, FLOW SWITCH AND PRESSURE RELEASE VALVE ON GASOLINE & DIESEL FUEL TRANSFER PIPING AS SHOWN.

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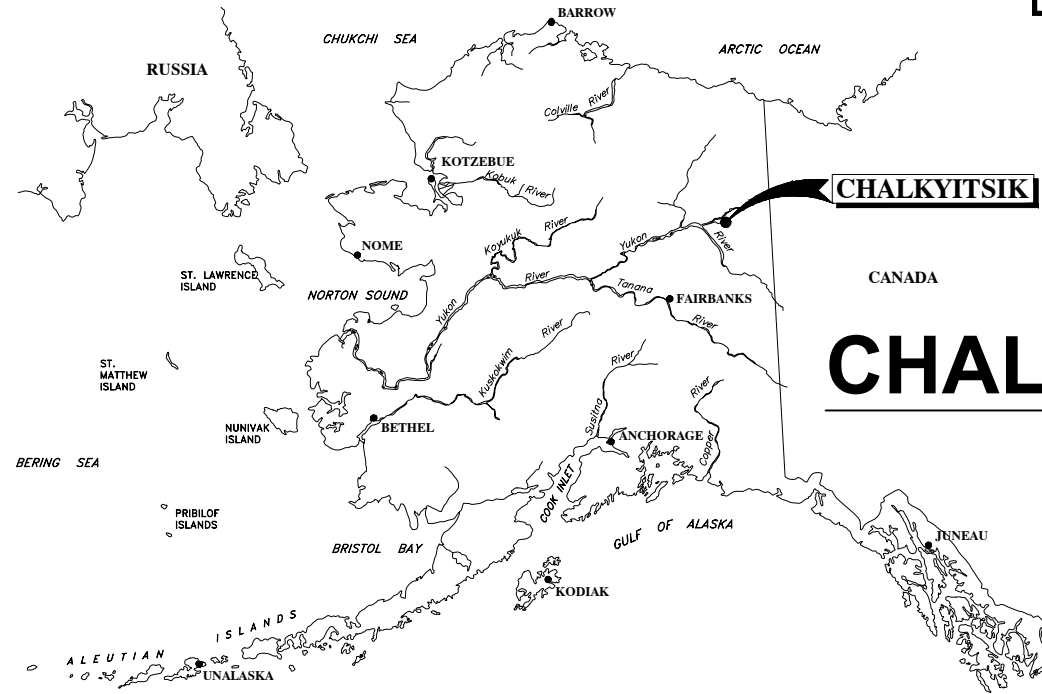
BEAVER, ALASKA
BEAVER BULK FUEL UPGRADES
PROPOSED UPGRADES

NO.	REVISION	BY	DATE
1	CONCEPTUAL DRAWINGS	NCP	8/19/20

Plot Date: _____
Designed: NCP
Drawn: NCP
Approved: KRH

Sheet No. **C1.8**

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



CHALKYITSIK BULK FUEL UPGRADES

BULK FUEL UPGRADE CONCEPT DRAWINGS SEPTEMBER 2020

SHEET INDEX	
SHEET NUMBER	SHEET TITLE
GO.0	COVER & SHEET INDEX
G1.1	NOTES, LEGEND AND ABBREVIATIONS
G1.2	PROJECT SPECIFICTIONS
G1.3	PROJECT SPECIFICATIONS
C1.1	EXISTING FACILITIES
C1.2	PROPOSED UPGRADES
C1.3	DECOMMISSIONING AND DEMOLITION REQUIREMENTS
C1.4	TANK FARM 1 AND 2 SITE PLANS
C1.5	TANK DETAILS
C1.6	FENCE DETAILS
C1.7	PUMP CABINET DETAILS
C1.8	MISCELLANEOUS DETAILS
C1.9	HOSE REEL DETAILS

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Project Number (Consultant) 30415.00 (AEA) 20044

AEA Project Manager Bill Price, P.E.

Construction Manager —

Final Design (Date) —

Fire Marshal Approval (Date) —

Construction Period (From) — (To) —

As-Builts (Date) —



PROJECT SCOPE

THIS PROJECT INCLUDES MISCELLANEOUS UPGRADES TO THE EXISTING BULK FUEL STORAGE, HANDLING, AND DISPENSING SYSTEMS IN CHALKYITSIK, ALASKA.

GENERAL NOTES

1. THE CONTRACTOR SHALL PROTECT ALL ITEMS NOT SCHEDULED FOR DEMOLITION DURING CONSTRUCTION. DISTURBED AREAS SHALL BE RESTORED TO PRE-CONSTRUCTION CONDITION.
2. 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.
3. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE APPROPRIATE TEMPORARY CUT SLOPES AND SHORING FOR EXCAVATIONS AND TRENCHES FOR SITE SOILS, GROUNDWATER AND RUNOFF CONDITIONS AND SURFACE LOADING CONDITIONS. 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.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING HIS WORK WITH EXISTING FACILITY OPERATORS, OTHER CONTRACTORS, SUBCONTRACTORS, THE CITY AND STATE AND FEDERAL AUTHORITIES.
5. 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.
5. THE CONTRACTOR SHALL PREPARE AND SUBMIT A SWPPP IF ONE IS REQUIRED.
6. CONTRACTOR SHALL COORDINATE WITH THE ENGINEER TO PROCURE AND ATTACH ALL CODE REQUIRED PLACARDS AND TANK LABELS.
7. 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.
8. 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.
9. 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.
10. CONTRACTOR TO PROVIDE ALL REQUIRED SIGNAGE IAW THE IFC. COORDNATE WITH ENGINEER AS REQUIRED.
11. 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.
12. PIPE SUPPORTS SHALL BE SPACED A MAXIMUM OF 10' ON CENTER IAW THE UPC.
13. 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.
14. 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.

CALL BEFORE YOU DIG	
WATER/SEWER	CVC 907-628-6126
ELECTRIC	CVC 907-628-6126

ABBREVIATIONS

ADEC	ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION	IPC	INTERNATIONAL PLUMBING CODE
ADOT	ALASKA DEPARTMENT OF TRANSPORTATION	LF	LINEAR FEET
AEA	ALASKA ENERGY AUTHORITY	LB	POUND
ALCAP	ALUMINUM SURVEY CAP	LPG	LIQUEFIED PETROLEUM GAS
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE	M	METERS
API	AMERICAN PETROLEUM INSTITUTE	MAX	MAXIMUM
APPROX	APPROXIMATE	MIL	0.001 INCH
ASTM	AMERICAN SOCIETY FOR TESTING OF MATERIALS	MIN	MINIMUM
AST	ABOVEGROUND STORAGE TANK	MNPT	MALE NATIONAL PIPE THREAD
ASV	ANTI-SIPHON VALVE	MV	MOTORIZED BALL VALVE
AWS	AMERICAN WELDING SOCIETY	N	NORTH
AP&T	ALASKA POWER AND TELEPHONE	NC	NORMALLY CLOSED
BLDG	BUILDING	NF5	NON-FROST SUSCEPTIBLE SOIL
BV	BALL VALVE	NO	NORMALLY OPEN
CVC	\CHALKYITSIK VILLAGE COUNCIL	NPT	NATIONAL PIPE TAPERED THREAD
		NTS	NOT TO SCALE
CMP	CORRUGATED METAL PIPE	NWR	NATIONAL WILDLIFE REFUGE
CP	CONTROL PANEL	NVC	NATIVE VILLAGE OF CHALKYITSIK
CV	CHECK VALVE	OAE	OR APPROVED EQUAL
CVC	CHALKYITSIK VILLAGE COUNCIL	OD	OUTSIDE DIAMETER
DEMO	DEMOLISH	OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
DFT	DRY FILM THICKNESS	OZ	OUNCE
DIA	DIAMETER	PCC	PORTLAND CEMENT CONCRETE
DWG	DRAWING	PL	PLATE
E	EAST	PT	PRESSURIZED TEST TAP
EA	EACH	PRV	PRESSURE RELIEF VALVE
EL	ELEVATION	PSF	POUNDS PER SQUARE FOOT
ELEC	ELECTRIC	PSI	POUNDS PER SQUARE INCH
EPA	U.S. ENVIRONMENTAL PROTECTION AGENCY	R	RADIUS
ENGINEER	CRW ENGINEERING GROUP, LLC	RF	RAISED FACE
E-VENT	EMERGENCY VENT	S	SEWER
*F	FAHRENHEIT	SCH	SCHEDULE
FC	FLEX CONNECT	SHPO	STATE HISTORIC PRESERVATION OFFICE
FF	FINISH FLOOR ELEV.	SIM	SIMILAR
FG	FINISH GRADE	SPEC	SPECIFICATION
FLV	FILL LIMITING VALVE	SQ	SQUARE
FOR	FUEL OIL RETURN	SS	STAINLESS STEEL
FOS	FUEL OIL SUPPLY	SSPC	STEEL STRUCTURES PAINTING COUNCIL
FPT	FEMALE NATIONAL PIPE TAPERED THREAD	STA	STATION
FT	FOOT OR FEET	SY	SQUARE YARD
GA	GAUGE	TBM	TEMPORARY BENCH MARK
GAL	GALLON	TS	TUBE STEEL
GALV	GALVANIZED	TYP	TYPICAL
GPM	GALLONS PER MINUTE	UG	UNDERGROUND
HDPE	HIGH DENSITY POLYETHYLENE	UL	UNDERWRITERS LABORATORY
HP	HORSE POWER	UPC	UNIFORM PLUMBING CODE
HR	HOUR	UST	UNDERGROUND STORAGE TANK
IAW	IN ACCORDANCE WITH	ULSD	ULTRA LOW SULFUR DIESEL
ID	INTERNATIONAL BUILDING CODE	YFSD	YUKON FLATS SCHOOL DISTRICT
IB	INSIDE DIAMETER		
IFC	INTERNATIONAL FIRE CODE		

TESTING, STARTUP AND COMMISSIONING PROCEDURES

1. 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.
2. 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.
3. TEST ALL PRESSURE RELIEF AND ANTI-SIPHON VALVES FOR PROPER OPERATION AT SPECIFIED PRESSURE.
4. 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.
5. 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.
6. 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.
7. TEST THE RETAIL DISPENSER, AND ALL RELATED COMPONENTS.
8. VERIFY ALL SIGNS, PLACARDS, AND VALVE TAGS ARE PROPERLY LOCATED. VERIFY PROPER PRODUCT COLOR CODE AND LABELING FOR ALL TANKS AND PIPING.
9. INSTALL PADLOCKS ON ALL VALVES AND FENCE GATES. KEY ALL LOCKS ALIKE. PROVIDE (2) SPARE LOCKS AND KEYS.
10. INSTRUCT LOCAL OPERATORS IN THE OPERATION AND MAINTENANCE OF ALL SYSTEMS. PLACE SPARE PARTS AND SPILL RESPONSE SUPPLIES IN DESIGNATED LOCATION.

CIVIL LEGEND (GENERAL)

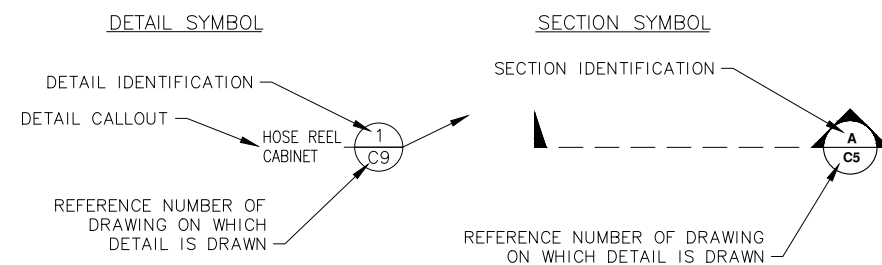
NOTE: SOME DETAILS UTILIZE SYMBOLS NOT IN THIS GENERAL LEGEND. WHERE THIS OCCURS, SYMBOLS ARE DEFINED ON THE SHEET IN WHICH THEY ARE USED.

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

UTILITY LINE/PIPELINE DESIGNATIONS

	ABOVEGROUND PIPELINE: PROPOSED
	UNDERGROUND PIPELINE: PROPOSED
	OVERHEAD ELECTRIC
	UNDERGROUND ELECTRIC

DETAIL/SECTION REFERENCES



3940 ARCTIC BLVD, SUITE 300
ANCHORAGE, ALASKA 99503
PHONE: (907) 562-3252
#AECLB2-AK

CHALKYITSIK, ALASKA
CHALKYITSIK BULK FUEL UPGRADES
NOTES, LEGEND AND ABBREVIATIONS

NO.	REVISION	DATE	BY
1	CONCEPTUAL DRAWINGS	9/3/20	NCP

Plot Date: 9/3/20	Designed: NCP
Drawn: NCP	Approved: KRH

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EARTHWORK

GENERAL

CONTACT LOCAL UTILITIES AND REQUEST A LOCATE FOR ALL EXISTING UNDERGROUND UTILITIES IN THE VICINITY PRIOR TO EXCAVATION.

CAREFULLY LAY OUT WORK TO MINIMIZE DISRUPTION AND DAMAGE TO EXISTING SURFACES.

PERFORM ALL WORK IN ACCORDANCE WITH OSHA REQUIREMENTS. BARRICADE OPEN EXCAVATIONS TO PROHIBIT PUBLIC ENTRY. COORDINATE WORK WITH COMMUNITY'S MAINTENANCE/ENGINEERING STAFF AT EACH LOCATION.

NOTIFY ENGINEER OF ANY DISCREPANCIES BETWEEN CONTRACTUAL REQUIREMENTS AND SITE CONDITIONS PRIOR TO START OF WORK.

WORK IN INCLEMENT WEATHER IS AT CONTRACTOR'S RISK. ANY MATERIALS WHICH BECOME UNSTABLE DUE TO IMPROPER SELECTION OF TECHNIQUES, EQUIPMENT, OR OPERATIONS DURING INCLEMENT WET WEATHER SHALL BE REPLACED AT CONTRACTOR'S EXPENSE.

EXCAVATIONS AND EMBANKMENT SHALL BE ACCOMPLISHED IN SUCH A MANNER THAT DRAINAGE IS MAINTAINED AT ALL TIMES; ANY AREAS NOT SO DRAINED SHALL BE KEPT FREE OF STANDING WATER BY PUMPING IF NECESSARY.

THE CONTRACTOR SHALL PROVIDE FOR THE PROPER MAINTENANCE OF TRAFFIC FLOW AND ACCESSIBILITY AS MAY BE NECESSARY, AND SHALL ALSO MAKE ADEQUATE PROVISIONS FOR THE SAFETY OF PROPERTY AND PERSONS.

SUBMITTALS

CONTRACTOR SHALL MAKE THE FOLLOWING SUBMITTALS:

- A. CLASSIFIED FILL: SUBMIT ONE GRADATION ANALYSIS AND MOISTURE-DENSITY (COMPACTION CURVE) TEST REPORT FOR EACH MATERIAL SOURCE. ALL TEST REPORTS SHALL BE FROM A CERTIFIED SOILS TESTING LABORATORY.
- B. EQUIPMENT AND MATERIALS: SUBMIT MANUFACTURER CUT SHEETS ON ALL EQUIPMENT AND MATERIALS TO BE INCLUDED IN THE WORK. WORK COMPLETED AND ITEMS INSTALLED PRIOR TO RECEIVING ENGINEER APPROVED SUBMITTALS IS AT THE CONTRACTOR'S SOLE RISK.
- C. TANKS: SUBMIT MANUFACTURER SHOP DRAWINGS FOR ALL TANKS.

MATERIAL SOURCES/CLASSIFIED FILL

- A. FILL MATERIAL SHALL MEET THE REQUIREMENTS FOR CLASSIFIED FILL MATERIAL LISTED BELOW
- B. CLASSIFIED FILL:

1. CLASSIFIED FILL MATERIAL SHALL CONSIST OF MINERAL SOIL, FREE FROM DIRT, MUCK, FROZEN CHUNKS, CLAY BALLS, ROOTS, ORGANIC MATERIAL, DEBRIS, OR DELETERIOUS MATERIAL. IT SHALL HAVE A LIQUID LIMIT NO GREATER THAN 25 AND A PLASTICITY INDEX NO GREATER THAN 6 AS DETERMINED BY AASHTO T-89 AND T-90

DEGRADATION VALUE (ATM T-13): 45 MIN
 PERCENT FRACTURE (ATM T-4): 50 MIN (SINGLE FACE)

2. TYPE I CLASSIFIED FILL MATERIAL SHALL BE CRUSHED GRAVEL CONSISTING OF SOUND, TOUGH, DURABLE ROCK FRAGMENTS OF UNIFORM QUALITY AND SHALL MEET THE FOLLOWING REQUIREMENTS

U.S. STANDARD	PERCENT PASSING,
<u>SIEVE SIZE</u>	<u>BY WEIGHT</u>
1 INCH	100
NO. 4	35-65
NO. 10	25-45
NO. 200	4-10

TYPE I CLASSIFIED FILL MATERIAL SHALL CONFORM TO THE FOLLOWING GRADATION AS DETERMINED BY AASHTO T-27:

EMBANKMENT CONSTRUCTION

PLACEMENT:

THE SPECIFIED MATERIAL SHALL BE PLACED AT THE LOCATIONS AND TO THE LINES AND GRADES INDICATED ON THE CONTRACT DRAWINGS. THE MATERIAL SHALL BE PLACED AND SPREAD UNIFORMLY IN SUCCESSIVE LAYERS NOT EXCEEDING TWELVE (12) INCHES IN LOOSE THICKNESS. THE ENGINEER MAY APPROVE LIFTS OF GREATER THICKNESS PROVIDED THE EQUIPMENT AND METHOD USED WILL CONSISTENTLY ACHIEVE THE SPECIFIED DENSITY. THE LAYERS SHALL BE CARRIED UP FULL WIDTH FROM THE BOTTOM OF THE FILL. EACH LAYER SHALL BE COMPACTED IN ACCORDANCE WITH STHE SPECIFICATIONS.

BLADING, ROLLING, AND TAMPING SHALL CONTINUE UNTIL THE SURFACE IS SMOOTH, FREE FROM WAVES AND IRREGULARITIES, AND CONFORMS TO ELEVATIONS SHOWN ON THE CONTRACT DRAWINGS. IF AT ANY TIME THE MATERIAL IS EXCESSIVELY WET, IT SHALL BE AERATED BY MEANS OF BLADE GRADERS, HARROWS, OR OTHER SUITABLE EQUIPMENT UNTIL THE MOISTURE CONTENT IS SATISFACTORY. THE SURFACE SHALL THEN BE COMPACTED AND FINISHED AS SPECIFIED ABOVE.

OVERSIZED MATERIAL SHALL BE REMOVED. PORTIONS OF ANY LAYER IN WHICH THE EMBANKMENT MATERIAL BECOMES SEGREGATED SHALL BE REMOVED AND REPLACED WITH SATISFACTORY MATERIAL OR SHALL BE ADDED TO AND REMIXED TO SECURE PROPER GRADATION AS DIRECTED BY THE ENGINEER.

COMPACTION

1. EACH LIFT SHALL BE COMPACTED TO 95% OF THE MODIFIED PROCTOR MAX DRY DENSITY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING THE PROPER SIZE AND TYPE OF COMPACTION EQUIPMENT AND FOR SELECTING THE PROPER METHOD OF OPERATING SAID EQUIPMENT TO ATTAIN THE REQUIRED COMPACTION DENSITY.
2. PORTIONS OF ANY LIFT IN WHICH THE MATERIALS BECOME SEGREGATED TO THE EXTENT THAT THE REQUIRED COMPACTION CANNOT BE ATTAINED SHALL BE REMOVED BY THE CONTRACTOR AND REPLACED WITH SATISFACTORY MATERIALS, OR BLENDED WITH ADDITIONAL MATERIAL UNTIL SEGREGATION IS ELIMINATED.
3. IF, IN THE OPINION OF THE ENGINEER, BASED ON INSPECTION, SUBGRADE AND LAYERS OF EMBANKMENT THAT HAVE BEEN PLACED ARE BELOW SPECIFIED DENSITY, THE CONTRACTOR SHALL PERFORM ADDITIONAL COMPACTION AND TESTING AT ELEVATIONS DIRECTED BY THE ENGINEER UNTIL SPECIFIED DENSITY IS OBTAINED, AT NO ADDITIONAL COST TO THE OWNER.

MAINTENANCE

1. AS NECESSARY, CONTRACTOR SHALL WATER THE SITE WHILE GRADING IS IN PROGRESS TO CONTROL DUST.
2. CONTRACTOR SHALL PROTECT NEWLY GRADED AREAS FROM TRAFFIC AND EROSION AND KEEP FREE OF TRASH AND DEBRIS.
3. CONTRACTOR SHALL REPAIR AND RE-ESTABLISH GRADES IN SETTLED, ERODED AND RUTTED AREAS AS DIRECTED BY THE ENGINEER.
4. WHERE COMPLETED COMPACTED AREAS ARE DISTURBED BY SUBSEQUENT CONSTRUCTION OPERATIONS OR ADVERSE WEATHER, SCARIFY SURFACE, RESHAPE, AND COMPACT TO REQUIRED DENSITY PRIOR TO FURTHER CONSTRUCTION.
5. ALL OPEN EXCAVATIONS SHALL BE ADEQUATELY SIGNED AND BARRICADED TO PROTECT THE PUBLIC.

TRENCHING AND BACKFILL

PROTECTION

1. PROTECT EQUIPMENT AND VEHICULAR TRAFFIC FROM TRENCHES AND EXCAVATIONS BY PROVIDING ADEQUATE BARRICADES AND SIGNAGE.
2. PROTECT ADJACENT STRUCTURES BY PROVIDING ADEQUATE BACK-SLOPES, SHORING, BRACING OR OTHER METHODS REQUIRED TO PREVENT SLOPE FAILURE.
3. PROTECT ABOVE AND BELOWGROUND UTILITIES.
4. NOTIFY THE ENGINEER OF UNEXPECTED SUB-SURFACE CONDITIONS IMMEDIATELY.
5. GRADE TOP PERIMETER OF THE EXCAVATION TO PREVENT SURFACE WATER RUNOFF FROM ENTERING THE EXCAVATION.
6. PROVIDE FOR DEWATERING OF THE TRENCH WHERE GROUND WATER IS ENCOUNTERED.

TANKS

ALL TANK UPGRADES AND REPAIRS SHALL BE DESIGNED AND IMPLEMENTED IN ACCORDANCE WITH STI SP031-04 AND UL 142. CLEAN AND VAPOR FREE TANKS IN ACCORDANCE WITH API DTD 2015, STATE, AND FEDERAL REGULATIONS PRIOR TO PERFORMING ANY HOT WORK. AFTER REPAIRS AND PRIOR TO PAINTING, PRESSURE TESR TANKS IN ACCORDANCE WITH THE IFC AND UL 142.

ALL NEW ASTs SHALL BE UL142 OR 2085 LISTED AND LABELED HORIZONTAL TANKS.

TANK APPURTENANCES (COMPONENTS IN THIS SECTION ARE OWNER PROVIDED UNLESS OTHERWISE NOTED)

MANHOLES - 5/16" STEEL LID (SINGLE PUNCH), 1/4" MILD STEEL RING WITH 7" RISER HEIGHT. PROVIDE COMPLETE SET OF BOLTS AND BUNA-N GASKET FOR LID. 24" MANHOLE NOMINAL SIZE. CLAY & BAILEY MR820-0600 OR APPROVED EQUAL.

PRESSURE/VACUUM WHISTLE VENTS - ALUMINUM BODY AND HOOD, STAINLESS STEEL SCREENS AND FLOAT, BRASS INTERNALS, VITON SEALS. 3" FPT CONNECTION FOR 28,000 & 15,000 GALLON TANKS AND 2" FPT FOR 3,000 GALLON TANKS, 8 OZ/SQUARE INCH PRESSURE SETTING, 1 OZ/SQUARE INCH VACUUM SETTING. HIGH INTENSITY WHISTLE ALARM ON RISE OF FLOAT AT ADJUSTABLE LEVEL. MORRISON FIGURE 922 OR APPROVED EQUAL.

EMERGENCY VENTS - ALUMINUM BODY, CAST IRON COVER, 16 OZ/SQUARE INCH PRESSURE SETTING, FLANGED CONNECTION. SIZE AS INDICATED ON TANK DRAWINGS. MORRISON FIGURE 244-F OR APPROVED EQUAL.

VENT CAPS - ALUMINUM BODY, STAINLESS STEEL SCREEN, 2" FPT CONNECTION. MORRISON FIGURE 155 OR APPROVED EQUAL.

GAUGE HATCH - BRASS CAP AND CHAIN, BUNA-N GASKET, 2" FPT CONNECTION. MORRISON FIGURE 307 OR APPROVED EQUAL.

OVERFILL PREVENTION VALVE - 2-INCH NPT FLOAT-TYPE MECHANICAL SHUT-OFF VALVE. ANODIZED ALUMINUM BODY, CLOSED CELL BUNA-N FLOAT, BRASS PLUNGER, STAINLESS STEEL LINKAGE. PROVIDE ADAPTER FOR INSTALLATION ON A 4" NPT PIPE NOZZLE WITH 2" FPT INLET. PROVIDE WITH ALUMINUM DROP TUBE CUT TO LENGTH AT 45 DEGREES AS REQUIRED TO TERMINATE 6 INCHES ABOVE TANK BOTTOM. MORRISON FIGURE 9095-A OR APPROVED EQUAL.

SPILL CONTAINMENT MANHOLE - 7 GALLON CAPACITY 12 GAUGE STEEL SPILL CONTAINMENT MANHOLE WITH HINGED AND LOCKING COVER AND POWDER COATED FINISH. 1/4" STEEL BASE WITH 4" DOUBLE-TAPPED FNPT CONNECTION AND INTERNAL BRASS CONTAINMENT DRAIN VALVE. PROVIDE 2" HOSE COUPLING WITH CAP, FILL LIMITING VALVE AS SPECIFIED ABOVE AND 2" DROP TUBE. POMECO 311AST OR APPROVED EQUAL.

CLOCK-TYPE LIQUID LEVEL GAUGE - ALUMINUM BODY, 2" MPT CONNECTION, STAINLESS STEEL FLOAT SIZED TO PASS THROUGH 2" BUNG OPENING, CLOCK-STYLE GAUGE WITH READOUT IN FEET AND INCHES UP TO 12 FEET, ACCURATE WITHIN 1/4" OVER FULL SCALE. MORRISON FIGURE 818 OR APPROVED EQUAL.

FLOAT SWITCHES - CONTRACTOR PROVIDED 2 POSITION: FLOAT ACTIVATED MAGNETIC LEVEL SWITCH WITH ASME CLASS 150 RAISED FACE FLANGED TANK CONNECTION. ACTUATION SET POINTS SHALL BE AS INDICATED. UL LISTED FOR CLASS I, DIVISION 1 HAZARDOUS ENVIRONMENTS. KTECH MODEL F5301 ORE..

PAINTING

NEW TANKS

OWNER PROVIDED FACTORY COATING SYSTEM. CONTRACTOR RESPONSIBLE FOR FIELD TOUCH UP IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS ONLY.

MISCELLANEOUS STEEL STRUCTURES - AFTER FABRICATION SANDBLAST OR WIRE BRUSH ALL STEEL TO CLEAN BARE METAL AND PRIME WITH UNIVERSAL RED OXIDE PRIMER, DEVOE RUST GUARD 4140 OR APPROVED EQUAL, COLOR RED, TO 1.5 MILS DRY FILM THICKNESS. PAINT WITH TWO COATS OF ALKYD ENAMEL, DEVOE SPEED ENAMEL 4318 OR APPROVED EQUAL, COLOR HAZE GRAY EXCEPT AS NOTED, TO 4 MILS DRY FILM THICKNESS.

ABOVE GRADE PIPE COATING: PRIOR TO SHIPPING PIPING THAT WILL BE INSTALLED ABOVE GRADE, WHEEL ABRAD E OR

SANDBLAST TO BARE METAL AND PRIME WITH OF UNIVERSAL RED OXIDE PRIMER (1.5 MILS MINIMUM DFT), DEVOE RUSTGUARD 4160 OR EQUAL. AFTER FABRICATION SANDBLAST OR WIRE BRUSH ALL FITTINGS AND JOINTS TO CLEAN BARE METAL AND PRIME EQUAL TO PIPE. TOP COAT PIPING WITH TWO COATS OF WHITE ALKYD ENAMEL TO MATCH TANKS, DEVOE SPEEDENAMEL 4318 OR EQUAL

ABOVE GRADE PIPE COLOR CODE: GASOLINE (RED), DIESEL (GREEN).

AFTER PAINTING, LABEL ABOVE GRADE PIPING WITH PERMANENT SELF ADHESIVE DECALS. DECALS SHALL INDICATE PRODUCT TYPE AND FLOW DIRECTION. DECALS SHALL HAVE BLACK LETTERING ON WHITE BACKGROUND.

PIPE AND FITTINGS (COMPONENTS IN THIS SECTION ARE OWNER PROVIDED UNLESS OTHERWISE NOTED)

DESIGN, CONSTRUCTION, INSPECTION AND TESTING OF ALL PRESSURE PIPING SHALL BE IN ACCORDANCE WITH ASME B31.4-2009 "LIQUID TRANSPORTATION SYSTEMS FOR HYDROCARBONS AND OTHER LIQUIDS".

STEEL PIPING SHALL BE SEAMLESS, ASTM A106, GRADE B PIPE, SCHEDULE 160 FOR 1"Ø AND SMALLER, SCHEDULE 80 FOR 2"Ø, AND SCHEDULE 40 FOR 3"Ø.

STEEL PIPE FITTINGS: ASTM A234 GRADE WPB BUTT WELD FITTINGS, SCHEDULE TO MATCH THE PIPING IN WHICH THE FITTING IS INSTALLED. ELBOWS SHALL BE LONG RADIUS. FITTINGS SMALLER THAN 2" MAY BE ASTM A105 FORGED STEEL SOCKET WELD FITTINGS, 3000 POUND MINIMUM (THREADED WHERE INDICATED).

FLANGES: ASME CLASS 150 RAISED FACE FLANGES, ASTM A105 FORGED STEEL. BORE SHALL MATCH THE PIPE IN WHICH THE FLANGE IS INSTALLED. FLANGE NUTS AND STUDS SHALL BE A320 GRADE L7, PLATED, CASE HARDENED, CORROSION RESISTANT.

GASKETS SHALL BE 1/8" THICK SPIRAL WOUND, STAINLESS STEEL, FILLED FUEL RESISTANT GASKETS RATED FOR -50° F SERVICE WITH A CARBON STEEL CENTERING RING. PROVIDE 1/8" THICK FULL FACED NON-ASBESTOS FIBER COMPOSITE GASKETS AND FLAT FACED FLANGES WHERE REQUIRED FOR CONNECTION TO EQUIPMENT.

ALL PIPE AND FITTINGS SHALL BE WELDED. THREADED FITTINGS ARE NOT ALLOWED EXCEPT WHERE SHOWN ON THE DRAWINGS, OR WHERE REQUIRED FOR CONNECTION TO EQUIPMENT. PERFORM ALL WELDING IN ACCORDANCE WITH ASME SECTION IX AND API 1104 FOR WELDING PROCEDURE AND PERFORMANCE QUALIFICATION. VISUALLY INSPECT WELD JOINTS IN ACCORDANCE WITH API 1104. PROVIDE FLANGED CONNECTIONS AS REQUIRED TO ALLOW REMOVAL OF INDIVIDUAL COMPONENTS.

PRIOR TO PAINTING OR CONCEALING, CONTRACTOR SHALL PERFORM A ONE HOUR PNEUMATIC OR HYDROSTATIC TEST OF THE PIPING AT A MINIMUM OF 125 PSI. AIR TESTING IS HAZARDOUS IN NATURE AS AIR IS COMPRESSIBLE AND MAY BE RELEASED EXPLOSIVELY SHOULD THE PIPING SYSTEM RUPTURE. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING LIFE AND PROPERTY DURING TESTING. SHOULD WATER BE USED FOR TESTING, ALL WATER MUST BE REMOVED AFTER THE TEST. PROTECT AND ISOLATE ITEMS THAT MAY BE DAMAGED BY THE TEST PRESSURE (SUCH AS PRESSURE RELEASE VALVES AND FILTERS). PROVIDE BLIND FLANGES, THREADED CAPS OR PLUGS AT EACH END OF THE TEST SECTION. SOAK EACH JOINT WITH A LEAK DETECTION SOLUTION AND VISUALLY INSPECT FOR LEAKS. REPAIR ANY DEFECT AND RETEST. ALL WELDS THAT FAIL INSPECTION SHALL BE CUT OUT, REWELDED AND RETESTED. REASSEMBLE SYSTEM AFTER TESTING AND INSTALL NEW GASKETS ON ANY FLANGED JOINTS THAT WERE TAKEN APART. AFTER FINAL SYSTEM ASSEMBLY PERFORM AN ADDITIONAL LEAK TEST USING FUEL AT 50 PSI. REPAIR ALL DEFECTS.

MISCELLANEOUS STEEL STRUCTURES

THE DESIGN, FABRICATION AND ERECTION OF ALL MISCELLANEOUS STEEL STRUCTURES SHALL COMPLY WITH THE CURRENT CODE OF STANDARD PRACTICE FOR THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION.

ALL STRUCTURAL STEEL SHALL BE ASTM A36 FOR ROLLED SECTIONS AND A500 FOR STRUCTURAL TUBING.

PROVIDE ASTM A325 BOLTS FOR ALL NON-WELDED CONNECTIONS.

ALL WELDING SHALL BE DONE IN ACCORDANCE WITH THE CURRENT CODE OF THE AMERICAN WELDING SOCIETY. MINIMUM WELD SHALL BE 3/16". USE AWS 5.1 E70XX ELECTRODES.

TOLERANCES: STRUCTURAL COMPONENT TOLERANCES SHALL BE ±1/8 INCH AND AS REQUIRED TO ADEQUATELY SUPPORT LOADS.

SUPPORTS AND FASTENERS

SUPPORT PIPING AND EQUIPMENT AS SHOWN ON DRAWINGS USING SPECIFIED SUPPORTS AND FASTENERS. IF NOT DETAILED ON DRAWINGS, SUPPORT FROM STRUCTURAL MEMBERS WITH PIPE HANGERS, CLAMPS, OR PIPE STRAPS SPECIFICALLY INTENDED FOR THE APPLICATION. DO NOT SUPPORT PIPING FROM CONNECTIONS TO EQUIPMENT.

STRUT - COLD FORMED MILD STEEL CHANNEL STRUT, HOT DIPPED GALVANIZED FINISH AND SLOTTED BACK UNLESS SPECIFICALLY INDICATED OTHERWISE. STANDARD STRUT - 12 GA, 1-5/8" x 1-5/8", UNISTRUT P-1000T (HG) OR EQUAL. DOUBLE STRUT - 12 GA, 1-5/8" x 3-1/4", UNISTRUT P-1001T (HG) OR EQUAL. SHALLOW STRUT - 14 GA, 1-5/8" x 13/16", UNISTRUT P-4100T (HG) OR EQUAL. WHERE STRUT IS WELDED TO TANKS OR STRUCTURES PROVIDE PLAIN (UN-FINISHED BLACK) SOLID BACK STRUT - 12 GAUGE, 1-5/8" x 1-5/8", UNISTRUT P-1000 (PL) OR APPROVED EQUAL. PAINT IN ACCORDANCE WITH SPECIFICATIONS.

FITTINGS AND ACCESSORIES - PROVIDE CARBON STEEL FITTINGS, BRACKETS, CHANNEL NUTS, AND ACCESSORIES DESIGNED SPECIFICALLY FOR USE WITH SPECIFIED CHANNEL STRUT. GALVANIZED OR ZINC-PLATED FINISH.

PIPE CLAMPS - GALVANIZED CARBON STEEL TWO-PIECE PIPE CLAMP DESIGNED TO SUPPORT PIPE TIGHT TO STRUT. UNISTRUT P-11## OR EQUAL.

PIPE STRAPS - CARBON STEEL TWO-HOLE PIPE STRAP. UNISTRUT P-2558 NO SUBSTITUTES.

FASTENERS - ALL BOLTS, NUTS, AND WASHERS GALVANIZED OR ZINC PLATED CARBON STEEL UNLESS SPECIFICALLY INDICATED AS STAINLESS STEEL. ALL LAGS HOT DIPPED GALVANIZED UNLESS SPECIFICALLY INDICATED AS STAINLESS STEEL. ALL STAINLESS STEEL FASTENERS TYPE 304. DO NOT USE STAINLESS STEEL IN CONTACT WITH GALVANIZED ITEMS.

SECURITY

WHERE NEW FENCE IS REQUIRED IT SHALL BE CHAIN LINK FENCE: 6 FOOT HIGH FENCING SYSTEM WITH 3-STRAND



CHALKYITSIK, ALASKA
 CHALKYITSIK BULK FUEL UPGRADES
 PROJECT SPECIFICATIONS

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1	CONCEPTUAL DRAWINGS	NCP	9/3/20

Plot Date: 9/3/20	Designed: NCP
Drawn: NCP	Approved: KRH

File: J:\JobsData\30415.00 Aea Beaver And Chalkyitsik Blu\00 Cadd 20\#\challyitsik 01 Working Set\00 General\30415.00 Chalkyitsik Specifications.dwg Plot Date: 9/3/2020 2:49 PM

BARBWIRE, MAN GATES AS SHOWN. FENCE MATERIALS AND INSTALLATION SHALL CONFORM WITH THE CHAIN LINK FENCE MANUFACTURER'S INSTITUTE STANDARD SPECIFICATIONS EXCEPT AS MODIFIED HERE IN. 6" HIGH, 2" MESH, 9 GAUGE GALVANIZED CHAIN LINK FABRIC WITH 3/16" X 3/4" STRETCHER BARS. MINIMUM 18' LONG 1-5/8" Ø FULL-WEIGHT PIPE TOP RAILS WITH 6" LONG COUPLINGS AND 7 GAUGE COIL SPRING CLASS III BOTTOM TENSION WIRE. 2-3/8" Ø X 10' LONG FULL-WEIGHT PIPE LINE POSTS. 2-7/8" Ø X 12' LONG FULL-WEIGHT PIPE TERMINAL POSTS (GATE, CORNER, PULL, AND END). MAX SPACING OF PULL POSTS IS 100'. PROVIDE 1-5/8" Ø FULL-WEIGHT PIPE POST BRACES AND 3/8" TRUSS RODS WITH TIGHTENERS FOR EACH TERMINAL POST. 1-7/8" Ø COMMERCIAL QUALITY (CQ-20) GATE FRAMES COMPLETE WITH LOCKING FROST-FREE LATCHES, STOPS, KEEPERS, AND HEAVY PATTERN POST AND GATE FRAME HINGES. PROVIDE 3 STRANDS OF 12-1/2 GAGE, 4 POINT CLASS III BARB WIRE OVER TOP OF ENTIRE FENCE INCLUDING GATES. PROVIDE HEAVY-PRESSED STEEL OR MALLEABLE FITTINGS FOR ALL ATTACHMENTS. ALL STEEL AND IRON PARTS SHALL BE ZINC COATED AFTER FABRICATION.

VALVES AND MECHANICAL ACCESSORIES

SWING CHECK VALVES - (2" AND LARGER) CARBON STEEL BODY, ANSI 150# RAISED FACE FLANGED ENDS, STEEL DISC AND TRIM, 150 PSIG MINIMUM WORKING PRESSURE. CRANE CLASS 150 NO. 147 OR APPROVED EQUAL. (1") BONNEY FORGE BOLTED BONNET FULL/REDUCED THREADED SWING CHECK VALVE

FLANGED BALL VALVES - REDUCED PORT CARBON STEEL UNI-BODY, ANSI 150# RAISED FACE FLANGED ENDS, STAINLESS STEEL BALL AND TRIM, GLASS FILLED TEFLON SEAT, GRAPHITE SEALS, LOCKABLE HANDLE, 150 PSIG MINIMUM WORKING PRESSURE, NACE MR0175 CONFORMANCE, FIRE SAFE PER API 607. PBV C5410-31-2236-FTNL, NO SUBSTITUTES. PROVIDE ALL-WEATHER PADLOCK FOR EACH VALVE, ALL PADLOCKS TO BE KEYED ALIKE.

THREADED BALL VALVES - CARBON STEEL BODY, THREADED ENDS, STAINLESS STEEL BALL AND TRIM, PTFE SEAT, GRAPHITE SEALS, LOCKABLE HANDLE, 150 PSIG MINIMUM WORKING PRESSURE, NACE MR0175 CONFORMANCE, FIRE SAFE PER API 607. PBV C5312-38-2236-FNCC, NO SUBSTITUTES. PROVIDE ALL-WEATHER PADLOCK FOR EACH VALVE, ALL PADLOCKS TO BE KEYED ALIKE.

FLANGED PRESSURE RELIEF VALVES - STEEL BODY, ANSI 150# RAISED FACE FLANGE INLET AND OUTLET, 1/2" SOFT SEAT ORIFICE, CLOSED CAP, SIZE AND PRESSURE SETTING AS INDICATED. HYDROSEAL 1FLARVOO OR APPROVED EQUAL.

ANTI-SIPHON VALVES - BRONZE BODY ANTI-SIPHON VALVE SET TO OPEN AT 20-FT HEAD PRESSURE WITH SPECIAL EXPANSION RELIEF SET AT 25 PSI. MORRISON BROS. CO. MODEL 910ER-7215 AP WITH EXPANSION RELIEF, OAE.

STRAINER - FLANGED ENDS, CARBON STEEL BODY, BOTTOM CLEAN-OUT Y-STRAINER WITH BLOW OFF TAPPING PLUG. PROVIDE #10 SCREEN. MUELLER STEAM SPECIALTIES FIG. 781, OR APPROVED EQUAL.

BULK TRANSFER EQUIPMENT:

DISTRIBUTION PUMP: DUCTILE IRON, SELF-PRIMING, CENTRIFUGAL PUMP FOR PETROLEUM SERVICE. 2" NPT INLET & OUTLET, BRONZE IMPELLER AND SELF LUBRICATED BUNA-N MECHANICAL SEAL. CLOSE COUPLED TO 3,450 RPM, 2 HP EXPLOSION PROOF 230V/1PH/60HZ MOTOR. PUMP SHALL PRODUCE 80 GPM @ 70' TDH. GORMAN-RUPP 02K31-X2, NO SUBSTITUTES.

METER: POSITIVE DISPLACEMENT METER RATED FOR 100 GPM OF CONTINUOUS FLOW WITH A 150 PSI WORKING PRESSURE. ACCURACY SHALL BE +/- 0.22% OR BETTER FROM 6-60 GPM. PROVIDE 2 INCH INLET & OUTLET COMPANION FLANGES WITH O-RING SEALS, PRESET COUNTER WITH DIRECT MECHANICAL LINKAGE TO SHUT-OFF VALVE, RESETABLE REGISTER, NON-RESETABLE TOTALIZER, AIR ELIMINATOR AND STRAINER. ALL ELASTOMERIC SEALS SHALL BE LOW TEMPERATURE NITRILE RUBBER (BUNA-N). FACTORY CALIBRATE FOR NO. 1 DIESEL FUEL OR GASOLINE AS APPROPRIATE. LIQUID CONTROLS M-7-K-1, OR APPROVED EQUAL.

HOSE REEL: SPRING REWIND HOSE REEL CAPABLE OF HOLDING 40 FEET OF 1 1/2 INCH I.D. HOSE. REEL SHALL BE TOP REWIND. HANNAY 922-25-26A(TR) (TOP REWIND) WITH UTILITY HOSE ROLLERS AND BALL STOP FOR 1 1/2 ARCTIC HOSE, OR APPROVED EQUAL.

ARCTIC HOSE: 1 1/2 INCH DIAMETER WITH 1 1/2 INCH NPT CONNECTIONS AT EACH END. PROVIDE 30 FOOT LONG SECTION OF HOSE WITH EACH HOSE REEL ASSEMBLY. GOODYEAR ARCTIC ORTAC OR APPROVED EQUAL.

HOSE SWIVEL: UL LISTED HOSE SWIVEL. PT COUPLING MODEL FOB150MF OAE.

BREAKAWAY CONNECTION: UL LISTED 1 1/2-INCH BREAKAWAY FITTING. OPW MODEL NO. 66SP-5150 ALONG WITH HOSE SECTION OPW MODEL NO. 66H-1300 OR APPROVED EQUAL.

HOSE NOZZLE: UL LISTED AUTOMATIC SHUT OFF, HEAVY DUTY, HIGH FLOW FILL NOZZLE WITH HOLD OPEN LATCH. OPW 1290-0050 OR APPROVED EQUAL.

STATIC GROUNDING REEL: ENAMEL COATED STEEL FRAME AND REEL WITH PERMANENTLY SEALED SPRING RETURN. PROVIDE WITH 50 FEET OF 1/8 INCH GALVANIZED CARBON STEEL CABLE, MINIMUM 100 AMPERE GROUNDING CLIP, AND STOP BALL. HANNAY GR75 OAE.

CAM LOCK COUPLINGS: ALUMINUM BODY CAM AND GROOVE MALE FITTING WITH FNPT CONNECTION, 150 PSI MINIMUM WORKING PRESSURE. PROVIDE DUST CAP WITH BUNA-N SEAL FOR EACH FITTING PROVIDED. PT COUPLING OR EQUAL.

FILTER: SINGLE ELEMENT FILER HOUSING WITH DIFFERENTIAL PRESSURE GAUGE. CIM-TEK GENERAL 1 FILTER (#40165) OAR. PROVIDE SIX(6) 30 MICRON HYDROSORB II FILTER CARTRIDGES (#3003) AND TWO SPARE BUNA-N COVER GASKETS (#90137) FOR EACH FILTER.

FLEX FITTINGS: STAINLESS STEEL CORRUGATED INNER CORE WITH STAINLESS STEEL BRAIDED OUTER COVER, ASME CLASS 150 FIXED FLANGE BY FLOATING FLANGE ENDS WITH 18" LIVE LENGTH UNLESS A DIFFERENT LENGTH IS INDICATED. 150 PSI MINIMUM WORKING, FACTORY TESTED TO 225 PSI MINIMUM. PROVIDE FACTORY TEST CERTIFICATION FOR EACH FLEX. METRAFLEX METRA-MINI OR APPROVED EQUAL.

RETAIL DISPENSER AND EQUIPMENT

MECHANICAL DISPENSER: UL LISTED DISPENSER FOR USE WITH REMOTE SUBMERSIBLE PUMP. FIVE FIGURE MECHANICAL REGISTER WITH TENTHS OF A GALLON AS THE SMALLEST UNIT, NON-RESETABLE TOTALIZER, LIGHTED DISPLAY, 10:1 PULSER, 110VAC POWERED. PROVIDE INTERNAL 30 MICRON SPIN-ON FILTER AND 10 SPARE ELEMENTS. DISPENSER SHALL BE CERTIFIABLE FOR RETAIL SALES. PRIOR TO DELIVERY, REPLACE FACTORY APPLIED STANDARD GREASE IN MECHANICAL REGISTER WITH A SEVERE COLD ARCTIC-GRADE LUBRICANT. ONE-HOSE ONE-PRODUCT DISPENSER, GASBOY 9152QXCXFL, NO SUBSTITUTES.

-OR-
TWO-HOSE DUAL-PRODUCT DISPENSER, GASBOY 9152QXTW2CXFL.

DISPENSER SHEAR VALVE: UL LISTED 1-1/2" X 1-1/2" DISPENSER SHEAR VALVE WITH FUSIBLE LINK. MORRISON BROS., CO. MODEL 636F, OR APPROVED EQUAL.

DISPENSER HOSE: 18 FEET (MAXIMUM) OF 3/4" LOW TEMPERATURE FUEL RATED DISPENSING HOSE. GOODYEAR ARCTIC ORTAC, OR APPROVED EQUAL.

DISPENSER HOSE BREAKAWAY COUPLING: UL LISTED 3/4 INCH BREAKAWAY FITTING. OPW MODEL 66V-0250 WITH 66H-0075 HOSE SECTION, OR APPROVED EQUAL.

DISPENSER HOSE SWIVEL: UL LISTED DISPENSER HOSE SWIVEL. OPW MODEL NO. 45M-0492, OR APPROVED EQUAL.

DISPENSER NOZZLE: UL LISTED AUTOMATIC SHUT-OFF, AUTOMOTIVE FUELING NOZZLE WITH HOLD OPEN LATCH AND COLOR CODED HANDLE, RED FOR GASOLINE AND GREEN FOR DIESEL. OPW MODEL NO.11BP-0300 AND 11B-0100, OR APPROVED EQUAL.

EQUIPMENT NAME PLATES & VALVE TAGS:

MATERIAL: 3"x5" (OR LARGER IF REQUIRED)X0.08" ALUMINUM W/ 3/16" DIAMETER HOLES DRILLED IN EACH CORNER, BLACK GERBER THERMAL TRANSFER FILM PRINTED LETTERS ON GERBER 220 HIGH PERFORMANCE VINYL BACKGROUND, COLOR AS INDICATED, ONE SIDE ONLY, AS MANUFACTURED BY WARNING LIGHTS OF ALASKA OR APPROVED EQUAL.

COLOR:

1. NAMEPLATES: WHITE BACKGROUND WITH BLACK LETTERING
2. OPERATIONAL TAGS: DIESEL COMPONENTS: APPLE GREEN BACKGROUND WITH BLACK LETTERING. GASOLINE COMPONENTS: RED BACKGROUND WITH BLACK LETTERING.

INFORMATION:

1. NAMEPLATES: PROVIDE NAMEPLATES FOR ALL PUMPS, ELECTRICAL PANELS, AND OTHER COMPONENTS AS REQUIRED ON THE DRAWINGS. NAMEPLATES TO INCLUDE COMPONENT ID AS SHOWN ON THE DRAWINGS.
2. OPERATIONAL TAGS: PROVIDE OPERATIONAL TAGS FOR COMPONENTS AS SHOWN ON SHEET G2, G5, & G6 OF THE DRAWINGS.

OPERATIONAL TAGS TO INCLUDE COMPONENT ID (E.G. BV-1, MV-3, ETC), NORMAL OPERATING CONDITION (NORMALLY OPEN OR CLOSED), AND ANY ADDITIONAL INFORMATION REQUIRED FOR PROPER OPERATION.

CONCRETE

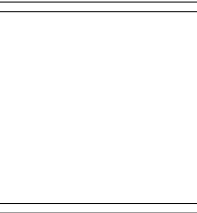
CONCRETE SHALL HAVE A 28 DAY STRENGTH (Fc) OF 3,000 PSI FOR TYPE I CEMENT. MINIMUM CEMENT CONTENT SHALL BE 6 SACKS PER CUBIC YARD. CONCRETE MIX DESIGN SHALL CONFORM TO ACI 318 FOR DURABILITY AND QUALITY.

REBAR REINFORCING SHALL BE ASTM A615 GRADE 60 INSTALLED IN ACCORDANCE WITH ACI 318.

CONCRETE ANCHOR ADHESIVE SHALL BE A TWO-COMPONENT HIGH-SOLIDS, EPOXY-BASED SYSTEM SUPPLIED IN MANUFACTURER'S STANDARD CARTRIDGE AND DISPENSED THROUGH A STATIC-MIXING NOZZLE SUPPLIED BY THE MANUFACTURER. THE ADHESIVE ANCHOR SHALL HAVE BEEN TESTED AND QUALIFIED FOR PERFORMANCE IN CRACKED AND UNCRACKED CONCRETE PER ICC-ES AC308. ADHESIVE SHALL BE SET-XP-> EPOXY-TIE-> ADHESIVE FROM SIMPSON STRONG-TIE, OR APPROVED EQUAL. ANCHORS SHALL BE INSTALLED PER MANUFACTURERS INSTRUCTIONS.

PORTABLE FIRE EXTINGUISHERS

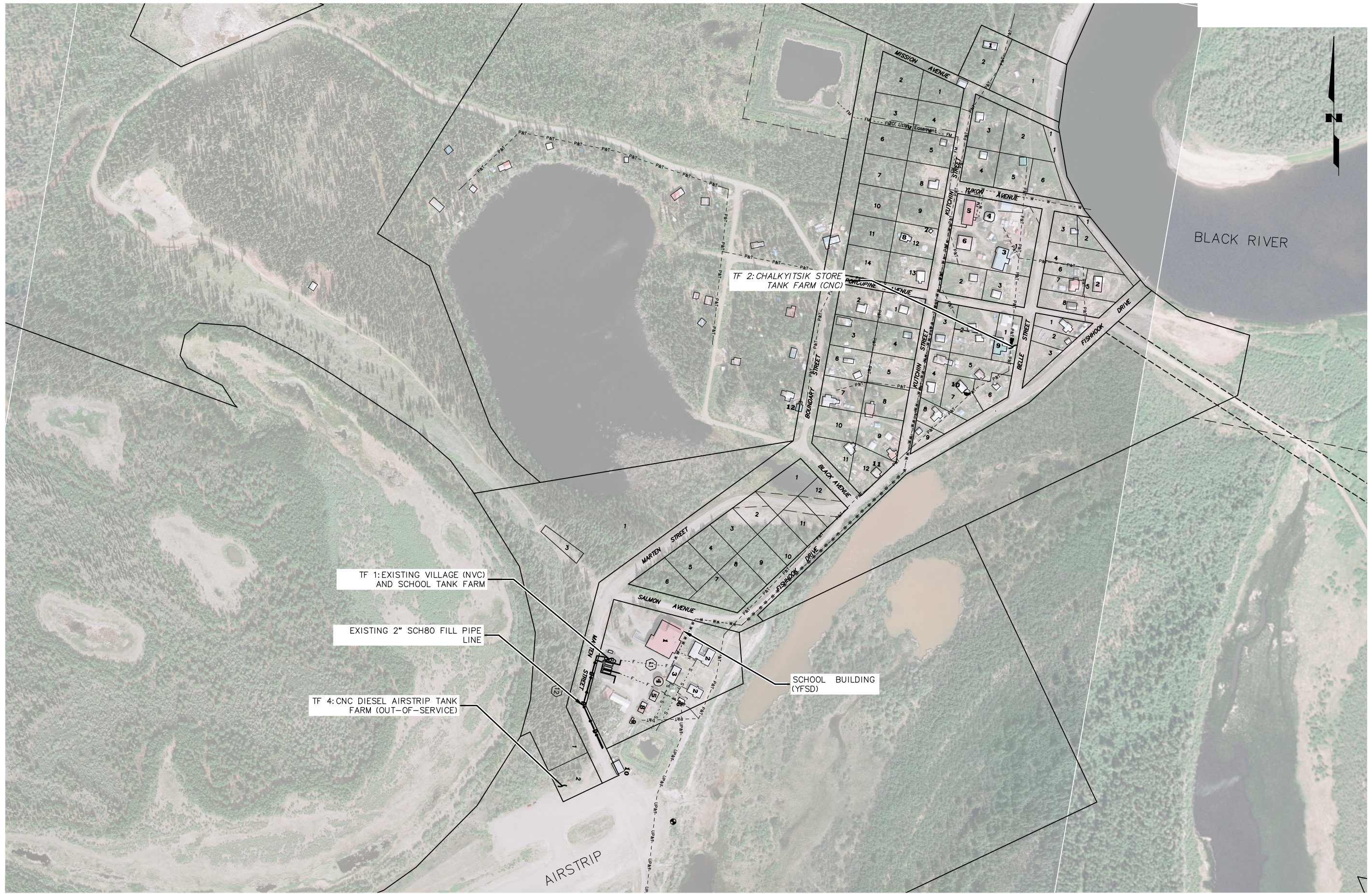
ALL FIRE EXTINGUISHERS WILL BE PORTABLE WITH A RATING OF 3A-40BC. THE LOCATION, INSTALLATION, AND CONTAINMENT OF ALL EXTINGUISHERS SHALL BE IN ACCORDANCE WITH NFPA 10 REQUIREMENTS.



CHALKYITSIK, ALASKA
CHALKYITSIK BULK FUEL UPGRADES
PROJECT SPECIFICATIONS

NO.	REVISION	BY	DATE
1	CONCEPTUAL DRAWINGS	NCP	9/3/20

Plot Date: 9/3/20
Designed: NCP
Drawn: NCP
Approved: KRH



TF 1: EXISTING VILLAGE (NVC) AND SCHOOL TANK FARM

EXISTING 2" SCH80 FILL PIPE LINE

TF 4: CNC DIESEL AIRSTRIP TANK FARM (OUT-OF-SERVICE)

TF 2: CHALKYITSIK STORE TANK FARM (CNC)

SCHOOL BUILDING (YFSD)

1

VICINITY MAP
SCALE: GRAPHIC



CHALKYITSIK, ALASKA
CHALKYITSIK BULK FUEL UPGRADES
EXISTING FACILITIES

NO.	REVISION	BY	DATE
1	CONCEPTUAL DRAWINGS	NCP	9/3/20

Plot 9/3/20
Date
Designed NCP
Drawn NCP
Approved KRH

Sheet No. **C1.1**



1 TANK FARM 1 AND 2 SITE PLANS
SCALE: GRAPHIC



CHALKYITSIK, ALASKA
CHALKYITSIK BULK FUEL UPGRADES
PROPOSED UPGRADES

NO.	REVISION	BY	DATE
1	CONCEPTUAL DRAWINGS	NCP	9/3/20

Plot: 9/3/20	Designed: NCP
Date: 9/3/20	Drawn: NCP
	Approved: KRH

File: J:\JobsData\30415.00 Aca Beaver And Chalkyitsik Bfu\00 Cadd 20\#\chalkyitsik\01 Working Set\01 Civil\02 Design\30415.00 Chalkyitsik Vicinity Map.dwg Plot Date: 9/3/2020 2:49 PM

TANK FARM 1 – DECOMMISSIONING CHART							
TANK NO.	DIA.	HEIGHT/LENGTH	VERTICAL/HORIZONTAL	TANK TYPE	PRODUCT	APPROX AGE (YEARS)	GROSS CAPACITY (GALLONS)
D1	9'	13'	V		DIESEL	40	6,200
D2	9'	13'	V		DIESEL	40	6,200
D3	9'	13'	V		DIESEL	40	6,200
D4	8'	14'-3"	H		NIS	40	5,400
TOTAL GALLONS							24,000

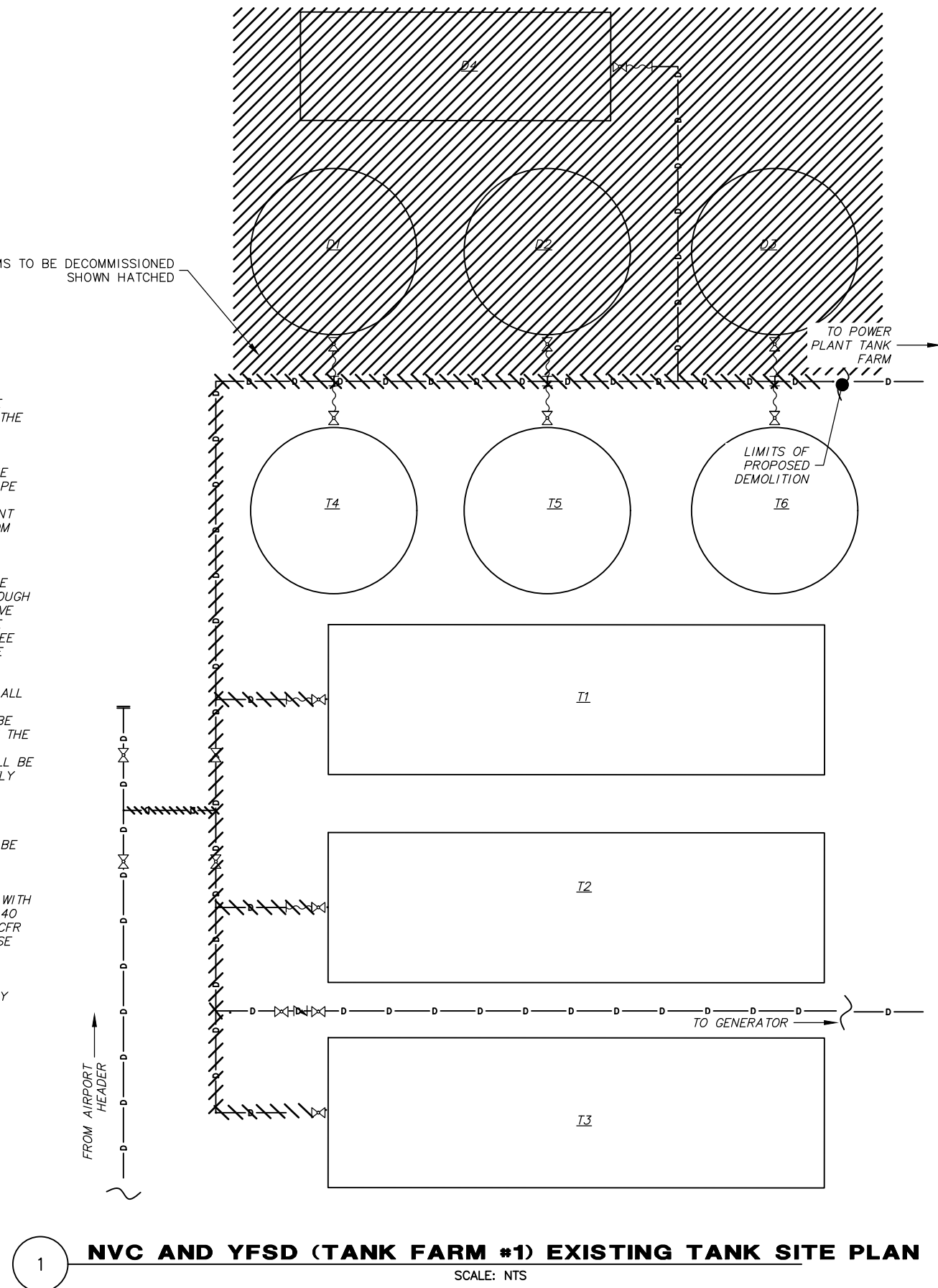
TANK DECOMMISSIONING AND DISPOSAL

- THE CONTRACTOR SHALL VISUALLY INSPECT ALL ABOVEGROUND TANKS DESIGNATED ON THE CONTRACT DRAWINGS FOR DECOMMISSIONING. CONTRACTOR SHALL DETERMINE IF PRODUCT EXISTS WITHIN EACH TANK. IF PRODUCT EXISTS, CONTRACTOR SHALL PUMP, FILTER AND TRANSFER ALL USEABLE PRODUCT TO TEMPORARY STORAGE. AFTER ALL USEABLE PRODUCT AND ANY ACCUMULATED WATER HAVE BEEN REMOVED, CONTRACTOR SHALL MEASURE THE INSIDE DIAMETER OF THE TANK AND DEPTH OF SLUDGE, IF ANY. FROM THESE MEASUREMENTS, THE APPROXIMATE VOLUME OF SLUDGE IN EACH TANK WILL BE CALCULATED.
- THE CONTRACTOR SHALL CLEAN THE INTERIOR OF EACH TANK IN ACCORDANCE TO API 2015 OR OTHER APPROVED METHOD. THE CONTRACTOR SHALL IMPLEMENT A CONFINED SPACE ENTRY PERMIT SYSTEM BEFORE ANY WORKER ENTERS EACH TANK. THE CONTRACTOR SHALL MONITOR THE TANK ATMOSPHERE FOR TOXICITY, OXYGEN LEVELS, AND EXPLOSIVE VAPORS.
- IF SLUDGE IS REMOVED FROM THE TANK, THE CONTRACTOR SHALL PLACE IN AN APPROPRIATE CONTAINER AND ATTACH A LABEL THAT CONTAINS THE FOLLOWING INFORMATION:
 - CONTAINER IDENTIFICATION NUMBER
 - TANK ID#S
 - OWNER OF TANK
 - DATE REMOVAL

THE CONSOLIDATION OF SLUDGE FROM TANKS CONTAINING DIFFERENT PRODUCTS OR OWNED BY DIFFERENT ENTITIES WILL NOT BE ALLOWED WITHOUT PRIOR WRITTEN APPROVAL OF THE ENGINEER AND BOTH TANK OWNERS. SHOULD THIS OCCUR WITHOUT PRIOR APPROVAL, THE CONTRACTOR SHALL TAKE IMMEDIATE OWNERSHIP OF THE COMBINED WASTE AND BE FULLY RESPONSIBLE FOR ALL COST ASSOCIATED WITH THE MANIFESTING, TRANSPORT AND PROPER DISPOSAL OF IT.
- APPROPRIATE PERSONAL PROTECTION EQUIPMENT WILL BE USED TO PROTECT WORKERS FROM WORK SITE HAZARDS.
- ALL TANKS SHALL BE RENDERED UNUSABLE BY THE CONTRACTOR AT THE TIME OF DECOMMISSIONING BY CUTTING A HOLE AT BOTTOM OF TANK SIDE WALL OR OTHER MEANS ACCEPTABLE TO AEA.

PIPE DECOMMISSIONING AND DISPOSAL

- ALL FUEL AND RESIDUAL LIQUID SHALL BE COMPLETELY REMOVED FROM EXISTING PIPING AS FOLLOWS, OR BY ALTERNATE MEANS AND METHOD SUBMITTED BY THE CONTRACTOR. IF ALTERNATE MEANS AND METHODS WILL BE USED BY THE CONTRACTOR THIS SHALL BE DESCRIBED IN THE WORK PLAN REQUIRED BY THIS SECTION.
 - PIPING 2-INCH NOMINAL DIAMETER AND SMALLER: REMOVE FUEL BY DISCONNECTING EACH END OF THE PIPING SYSTEM AND BLOWING FUEL OUT OF THE PIPE WITH A COMPRESSED GAS. THE VELOCITY OF THE COMPRESSED GAS IN THE PIPE SHALL BE SUFFICIENT TO REMOVE ESSENTIALLY ALL RESIDUAL LIQUID FROM THE PIPE.
 - PIPING LARGER THAN 2-INCH NOMINAL DIAMETER: REMOVE FUEL BY DISCONNECTING EACH END OF THE PIPING SYSTEM AND PROPELLING A FOAM PIG THROUGH THE PIPELINE AT A SUFFICIENT VELOCITY TO REMOVE ESSENTIALLY ALL REMAINING LIQUID. PIG SHALL BE PROPELLED BY A COMPRESSED GAS. AT LEAST THREE (3) PIGS SHALL BE PROPELLED THROUGH EACH PIPE SEGMENT.
 - THE CONTRACTOR SHALL CONTAIN, FILTER, AND TRANSFER ALL USEABLE FUEL REMOVED FROM PIPING TO THE RESPECTIVE ENTITIES TANKS. ANY UNUSABLE FUEL OR SLUDGE SHALL BE ASSUMED TO BE HAZARDOUS WASTE AND DISPOSED OF BY THE CONTRACTOR IN ACCORDANCE WITH THIS SPECIFICATIONS.
 - AFTER FUEL IS REMOVED FROM THE PIPING THE PIPE SHALL BE CUT INTO MAXIMUM 10 FOOT LENGTHS AND STACKED NEATLY AT AN APPROVED LOCATION.
- HAZARDOUS WASTES**
- THE HAZARDOUS NATURE OF CONTAINERIZED SLUDGE WILL BE BASED UPON COMPOSITE TESTING PERFORMED BY THE CONTRACTOR IN ACCORDANCE WITH 40 CFR 261.
 - ALL WASTE THAT IS DEEMED HAZARDOUS IN ACCORDANCE WITH 40 CFR 261 SHALL BE MANIFESTED IN ACCORDANCE WITH 40 CFR 262 AND SHIPPED IN ACCORDANCE WITH US DOT 49 CFR PARTS 100-199 REGULATIONS. THE CONTRACTOR SHALL USE EPA UNIFORM HAZARDOUS WASTE MANIFEST, OMB NO. 2050-0039, EPA FORM 8700-22.
 - PAYMENT OF TRANSPORT AND DISPOSAL FEES SHALL BE BY CONTRACTOR.



1 NVC AND YFSD (TANK FARM #1) EXISTING TANK SITE PLAN
SCALE: NTS

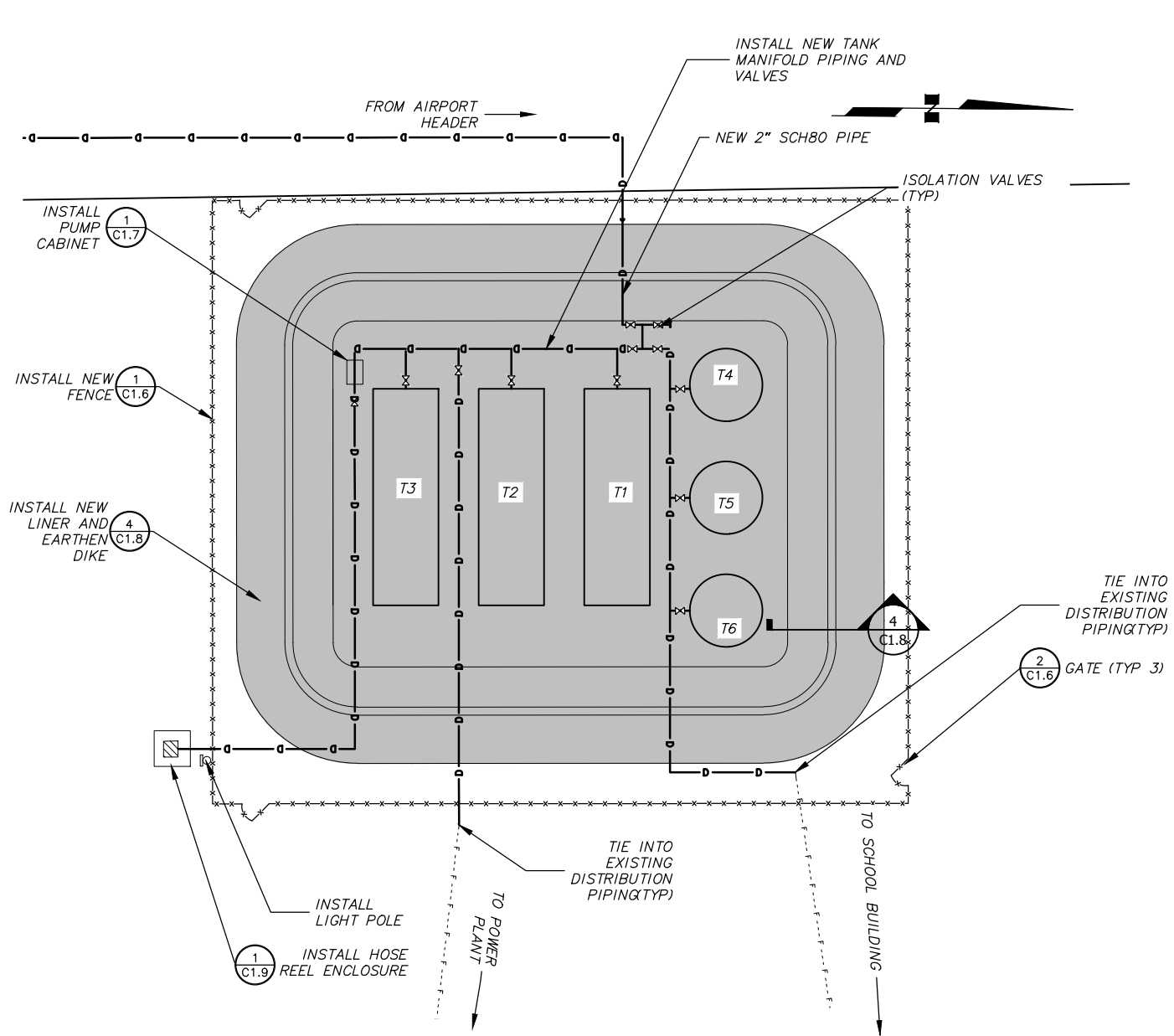


CHALKYITSIK, ALASKA
CHALKYITSIK BULK FUEL UPGRADES
DECOMMISSIONING AND DEMOLITION REQUIREMENTS

NO.	REVISION	DATE	BY
1	CONCEPTUAL DRAWINGS	9/3/20	NCP

Plot Date: 9/3/20
Designed: NCP
Drawn: NCP
Approved: KRH

File: J:\JobsData\30415.00 Area Beaver And Chalkyitsik Bfu\00 Cadd 20#\chalkyitsik\01 Working Set\01 Civil\02 Design\30415.00 Chalkyitsik Vicinity Map.dwg Plot Date: 9/3/2020 2:56 PM

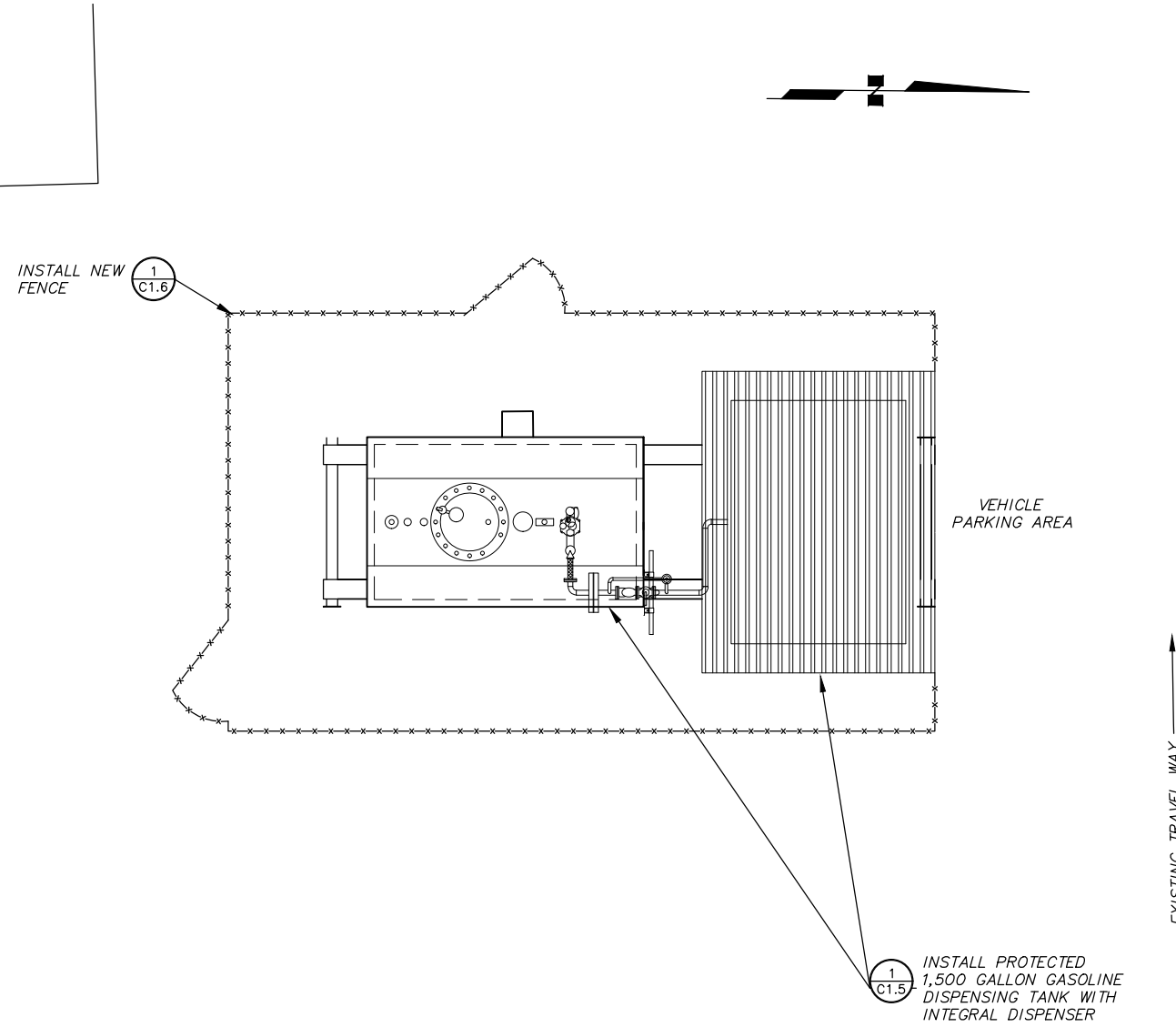


1 TANK FARM TF 1 PROPOSED UPGRADES
SCALE: GRAPHIC 1" = 20'

TF1 SCOPE OF WORK

1. TRANSFER FUEL FROM EXISTING TANKS TO TEMP STORAGE.
2. MOVE TANKS OUT OF SECONDARY CONTAINMENT DIKE.
3. DECOMMISSION SELECT TANKS AND MANIFOLD PIPING AS SHOWN ON SHEET C1.3.
4. PREP AND PAINT TANKS TO REMAIN IN SERVICE IN ACCEPTANCE WITH SPECIFICATIONS.
5. DEMO EXISTING SECONDARY CONTAINMENT LINER. REPAIR EXISTING EARTHEN DIKE AND INSTALL NEW LINER SYSTEM AS SHOWN.
6. PLACE REFURBISHED TANKS WITHIN SECONDARY CONTAINMENT AREA. FOUND TANKS ON MINIMUM 8X8 TIMBERS. SPACING AND QUANTITY AS REQUIRED TO LIMIT GROUND PRESSURE TO 1500 PSF MAX.
7. INSTALL NEW TANK MOUNTED APPURTENANCES (VENTS, CLOCK GAUGE, ETC.)
8. INSTALL NEW 3" DIAMETER WELDED STEEL MANIFOLD PIPING, VALVES AND APPURTENANCES AS SHOWN.
9. INSTALL PUMP CABINET AND HOSE REEL ENCLOSURE.
10. THE TANK MANIFOLD PIPING INTO EXISTING DISTRIBUTION PIPING SYSTEMS TO SCHOOL AND POWER PLANT.
11. ELECTRICAL AND LIGHTING IMPROVEMENTS AS REQUIRED.
12. INSTALL NEW SECURITY FENCE.

TANK FARM 1 – TANK SCHEDULE							
TANK NO.	DIA.	HEIGHT/LENGTH	VERTICAL/HORIZONTAL	TANK TYPE	PRODUCT	APPROX AGE (YEARS)	GROSS CAPACITY (GALLONS)
T1	8'	27'	H	SW	DIESEL	40	9,800
T2	8'	27'	H	SW	DIESEL	40	9,800
T3	8'	27'	H	SW	DIESEL	40	9,800
T4	8'	13'	V	SW	DIESEL	40	4,900
T5	8'	13'	V	SW	DIESEL	40	4,900
T6	8'	13'	V	SW	DIESEL	40	4,900
TOTAL GALLONS							44,100



2 TANK FARM TF 2 PROPOSED UPGRADES
SCALE: GRAPHIC 3" = 6'

TF2 SCOPE OF WORK

1. ESTABLISH TEMPORARY GASOLINE DISPENSING FACILITIES.
2. DECOMMISSION EXISTING TF2 TANK, DISPENSER, PIPING, AND ANCILLARY SYSTEMS IAW WITH NOTES ON C1.3.
3. INSTALL NEW 1,500 GALLON UL2085 PACKAGED DISPENSING TANK W/ RETAIL DISPENSER.
4. INSTALL ELECTRICAL AND LIGHTING
5. INSTALL SECURITY FENCE.

TANK FARM 2 – TANK SCHEDULE (PROPOSED)							
TANK NO.	DIA.	HEIGHT/LENGTH	VERTICAL/HORIZONTAL	TANK TYPE	PRODUCT	APPROX AGE (YEARS)	GROSS CAPACITY (GALLONS)
T7	6'	9.5'	H	DW	GASOLINE	NEW	1,500
TOTAL GALLONS							1,500



CHALKYITSIK, ALASKA
CHALKYITSIK BULK FUEL UPGRADES
TANK FARM 1 AND 2 SITE PLANS

NO.	REVISION	DATE	BY
1	CONCEPTUAL DRAWINGS	9/3/20	NCP

Plot Date: 9/3/20
Designed: NCP
Drawn: NCP
Approved: KRH

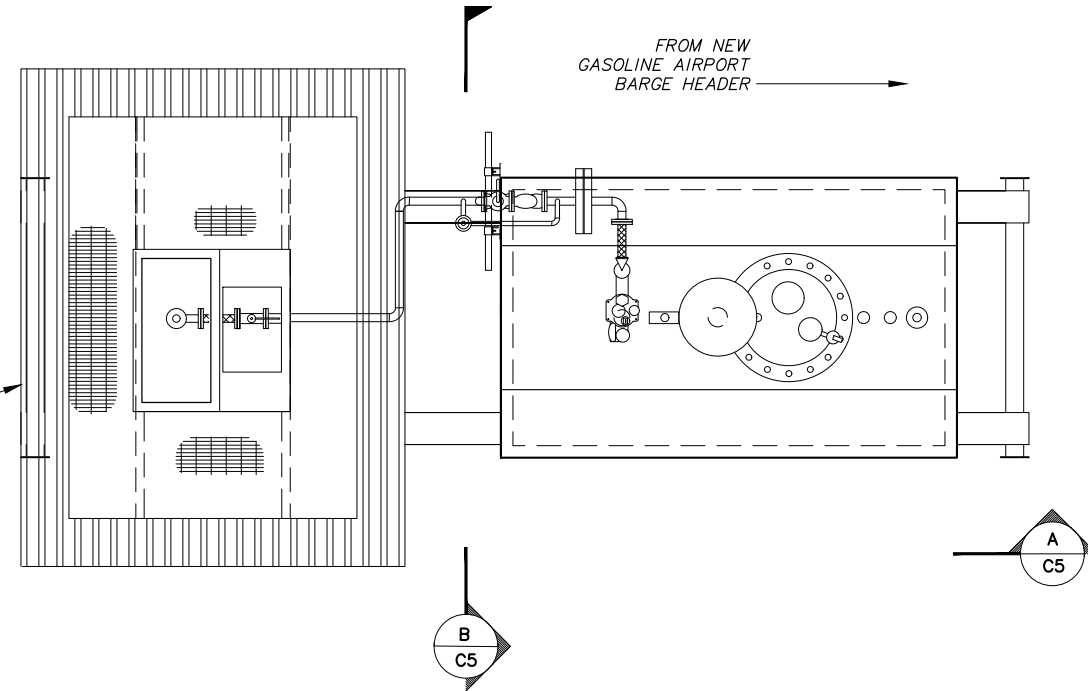
SPECIFIC NOTES

- 1 3" FLANGED (LEVEL SWITCH)
- 2 2" THREADED PENETRATION (WATER DRAW)
- 3 2" FPT (GAUGE HATCH INSTALLED ON 2"x4" NIPPLE)
- 4 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
- 5 6" FLANGED PENETRATION (PRIMARY E-VENT)
- 6 24" MANWAY
- 7 4" FPT FILL w/ 4X3 DOUBLE TAP BUSHING & 3" DROP TUBE (FILL)
- 8 2" FILL LIMITER
- 9 2" THREADED PENETRATION (CLOCK GAUGE INSTALLED ON 2" X 18" NIPPLE)
- 10 4" FPT (SUBMERSIBLE PUMP)
- 11 6" FLANGED (SECONDARY E-VENT)
- 12 ANTI SIPHON VALVE
- 13 FILL ISOLATION VALVE AND STRAINER
- 14 DISPENSER CONNECTIVE PIPING

NOTES:

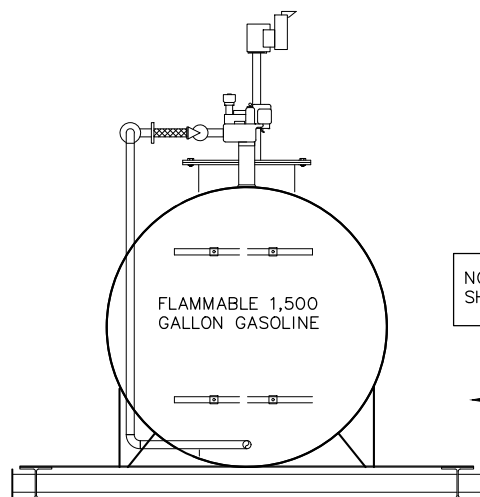
1. THIS SHEET SHOWS THE DESIRED FUNCTIONALITY AND GENERAL LAYOUT OF THE PROPOSED SYSTEMS. THE INTENT IS NOT TO SHOW EVERY REQUIRED COMPONENT BUT TO PROVIDE THE CONTRACTOR WITH SUFFICIENT INFORMATION TO FINALIZE THE DESIGN AND PREPARE SHOP DRAWINGS FOR FINAL REVIEW AND APPROVAL PRIOR TO FABRICATION. IT IS ASSUMED THAT THE CONTRACTOR HAS IN-HOUSE DESIGNS AND TECHNIQUES FOR FABRICATING INTEGRAL TANK / DISPENSING SYSTEMS AND IT IS THE CONTRACTOR'S RESPONSIBILITY TO SUPPLEMENT THE SCHEMATIC DRAWINGS AS NECESSARY TO PROVIDE A FULLY FUNCTIONAL, CODE COMPLIANT SYSTEM.
2. CONTRACTOR SHALL INTEGRATE REQUIRED SUPPORTS, STAND OFFS, ETC AS NECESSARY TO FACILITATE THE FIELD INSTALLATION OF ELECTRICAL CONDUIT, CONDUCTOR, AND DEVICES REQUIRED.

SKID MOUNTED RETAIL DISPENSER ENCLOSURE (DESIGN BY TANK MANUFACTURE)



TANK 1 - 1,500 GALLON PROTECTED DISPENSING TANK

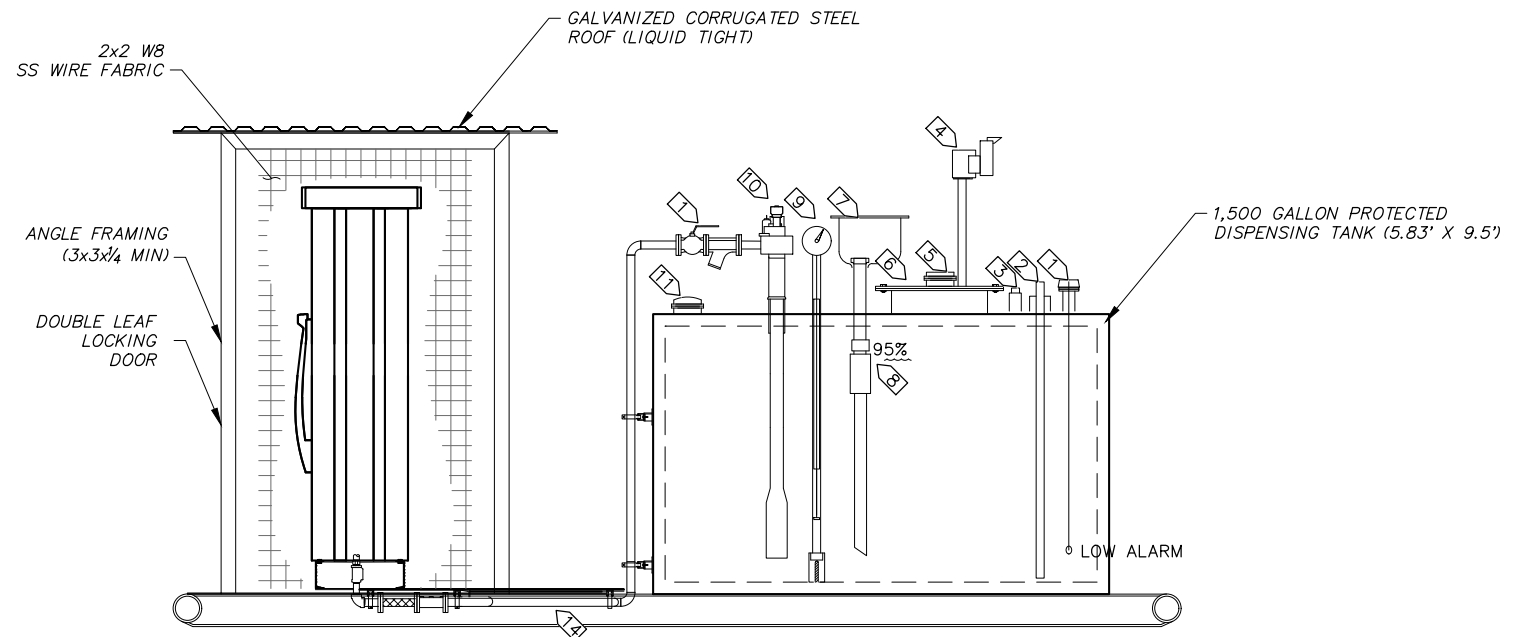
SCALE: GRAPHIC



NOTE: DISPENSER NOT SHOWN ON END VIEW

END VIEW

SCALE: GRAPHIC



SECTION VIEW

SCALE: GRAPHIC



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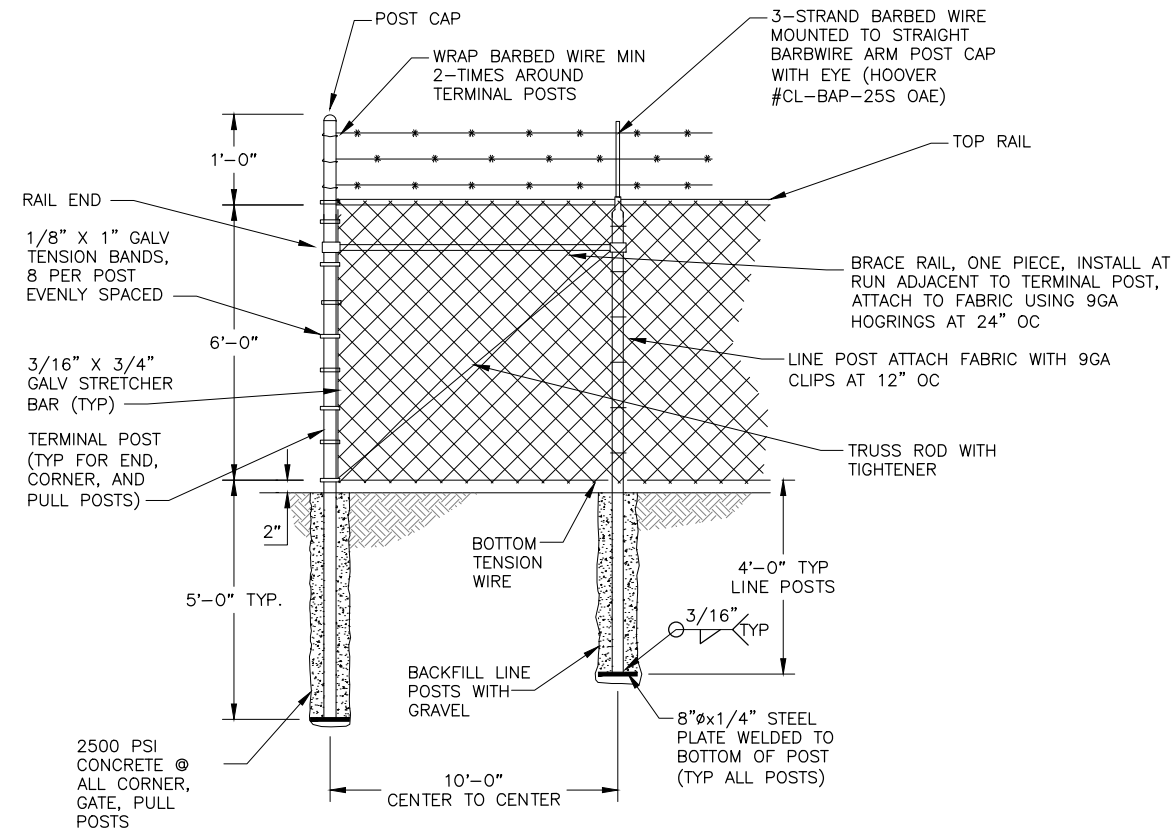
CHALKYITSIK, ALASKA
CHALKYITSIK BULK FUEL UPGRADES
TANK DETAILS

NO.	REVISION	DATE	BY
1	CONCEPTUAL DRAWINGS	9/3/20	NCP

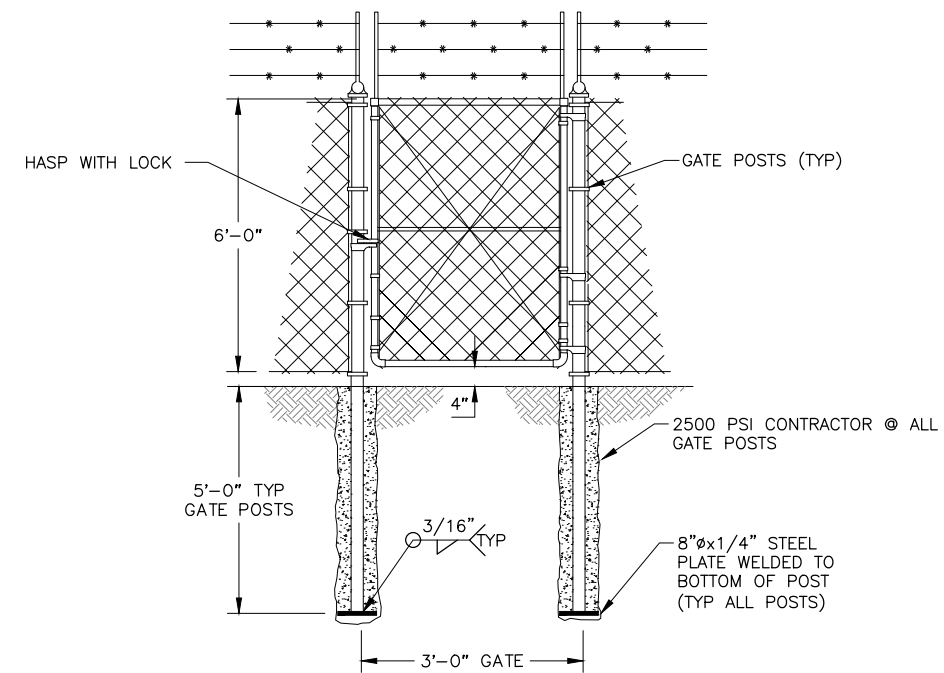
Plot Date	Designed NCP	Drawn NCP	Approved KRH
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Sheet No. **C1.5**

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1 **FENCE DETAIL**
 SCALE: NTS



2 **GATE DETAIL**
 SCALE: NTS

GENERAL FENCE NOTES:

1. MAXIMUM PULL POST SPACING 75 FEET. EACH PULL POST SHALL BE SUPPORTED WITH A DIAGONAL BRACE RAIL TO THE ADJACENT LINE POSTS.
2. BRACE RAILS AND TRUSS RODS SHALL BE SECURELY FASTENED TO POSTS WITH BRACE BANDS AND THREADED TAKE-UP ADAPTER FOR TRUSS RODS.



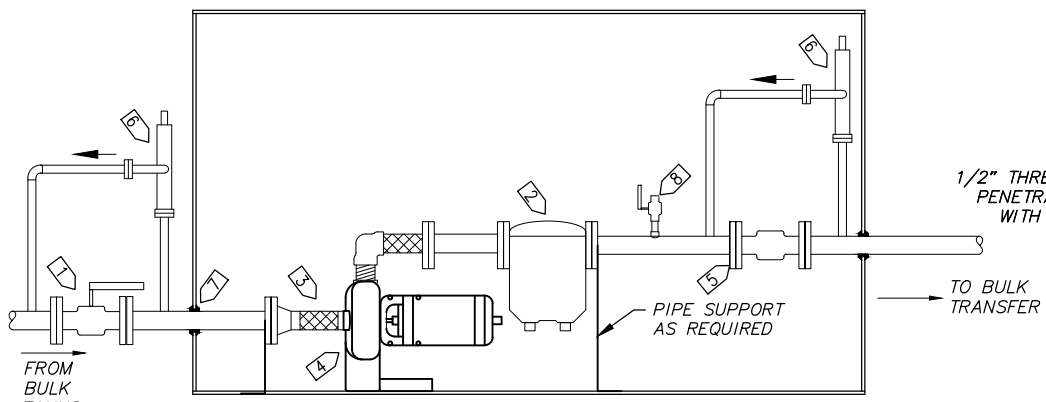
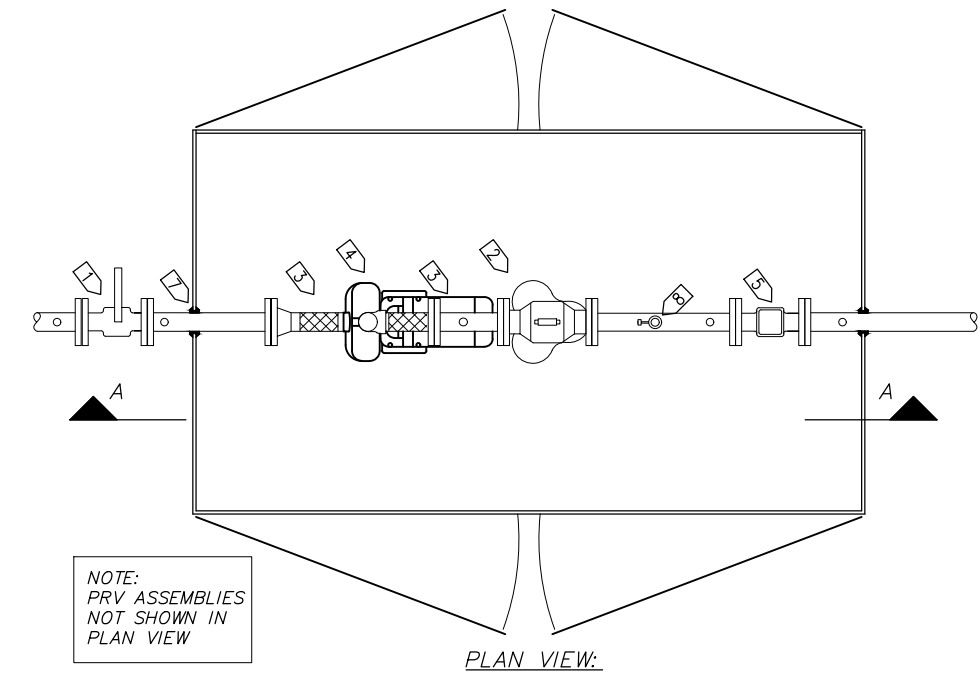
CHALKYITSIK, ALASKA
 CHALKYITSIK BULK FUEL UPGRADES
 FENCE DETAILS

NO.	REVISION	BY	DATE
1	CONCEPTUAL DRAWINGS	NCP	9/3/20

Plot Date	Designed NCP
Drawn NCP	Approved KRH

Sheet No. **C1.6**

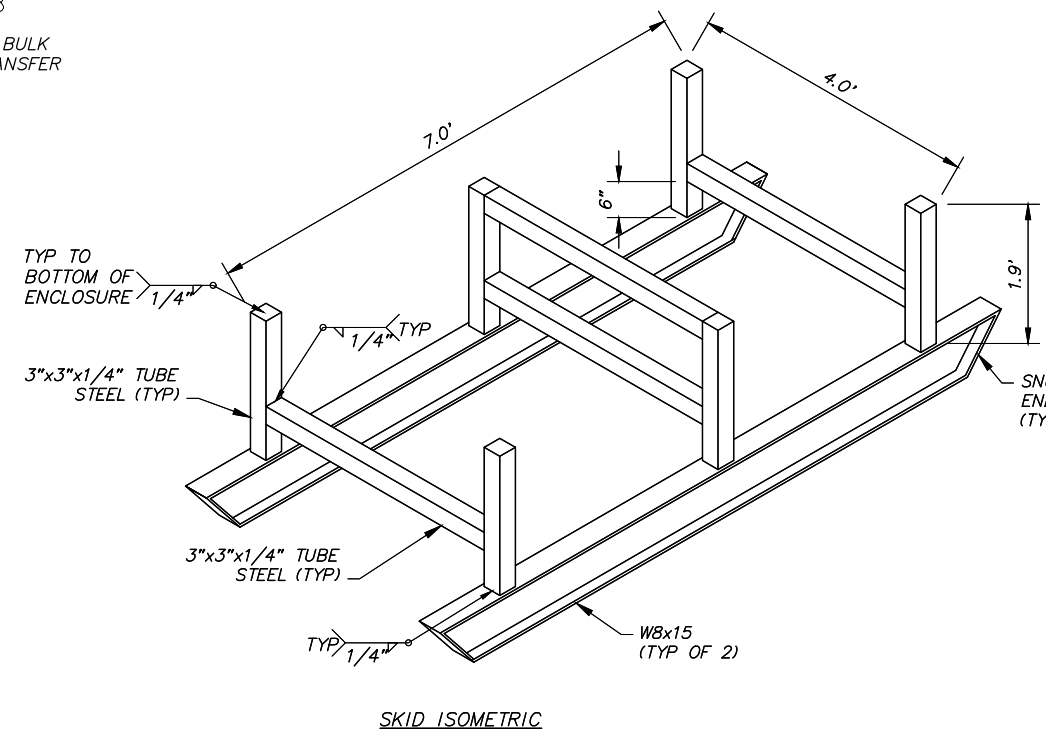
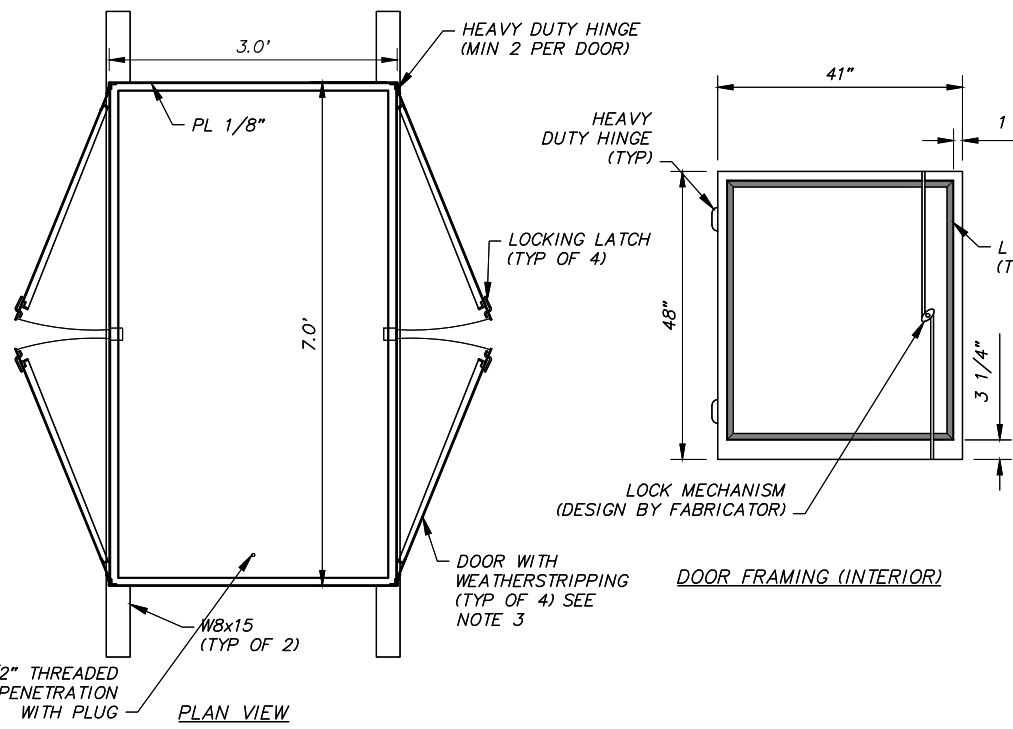
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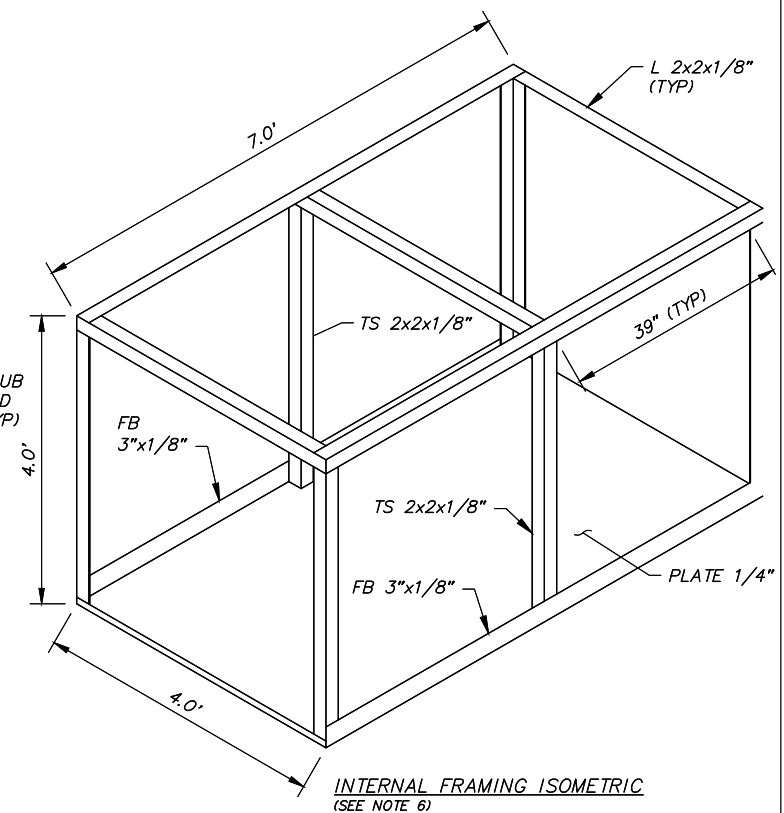
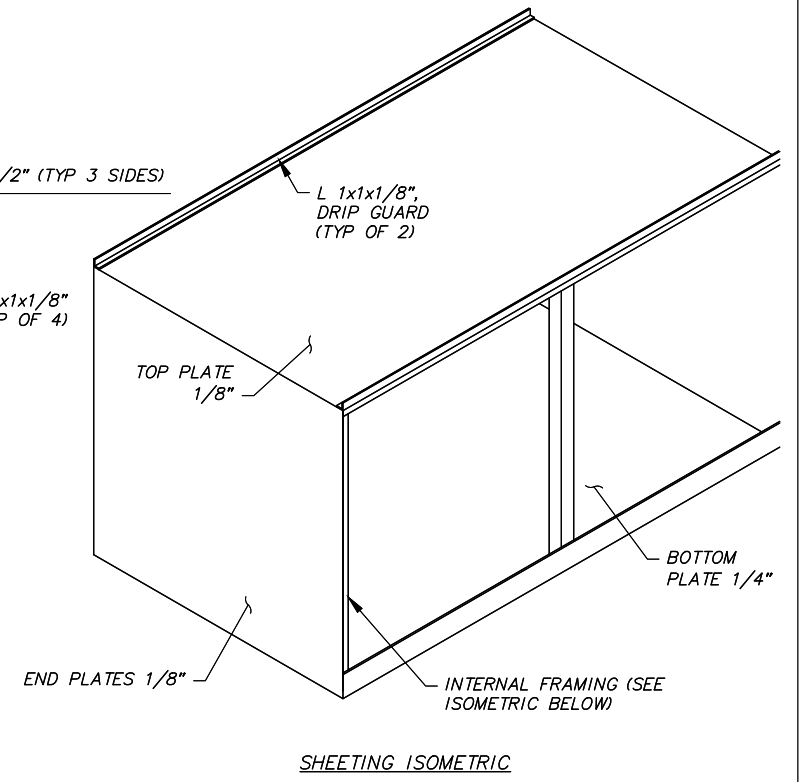
- 1 2" BALL VALVE
- 2 FILTER
- 3 FLEX FITTING
- 4 TRANSFER PUMP
- 5 2" BALL VALVE
- 6 PRESSURE RELIEF VALVE
- 7 ENVIROFLEX PENETRATION BOOT (TYP)
- 8 PRESSURE TEST CONNECTION (SEE DETAIL 5, SHEET C509)

PUMP CABINET
SCALE: NTS

- NOTES:**
- THE DESIGN, FABRICATION, AND ERECTION OF ALL STRUCTURAL STEEL COMPONENTS SHALL COMPLY WITH THE CURRENT CODE OF STANDARD PRACTICE OF THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION. ALL WELDING TO BE DONE IN ACCORDANCE WITH THE CURRENT CODE OF AMERICAN WELDING SOCIETY.
 - MAKE ALL CONNECTIONS WITH CONTINUOUS FILLET OR BUTT WELDS. ROUND ALL CORNERS & SHARP EDGES AFTER FABRICATION.
 - ALL SEAMS SHALL BE CONTINUOUSLY WELDED, AND WATER-TIGHT, UNLESS OTHERWISE NOTED. ADHESIVE BACK WEATHERSTRIPPING (PEMCO PK33 OAE) SHALL BE INSTALLED AROUND EACH DOOR. SET DOOR HINGES TO ALLOW FOR THICKNESS OF COATING AND WEATHERSTRIPPING.
 - SEE SPECIFICATIONS FOR INTERIOR AND EXTERIOR CABINET COATING SYSTEM.
 - CABINET FABRICATOR SHALL SUBMIT SHOP DRAWINGS TO ENGINEER PRIOR TO FABRICATION FOR REVIEW AND APPROVAL.
 - CABINET MAY BE CONSTRUCTED WITH INTERNAL FRAMING AS SHOWN OR A COMBINATION OF FRAMING AND BENT SECTIONS. CABINET SHALL BE WEATHER TIGHT, HAVE A LIQUID TIGHT DRIP PAN AND HAVE ADEQUATE STRENGTH FOR A 100 PSF ROOF LOAD.



PUMP CABINET FABRICATION DETAILS
SCALE: NTS

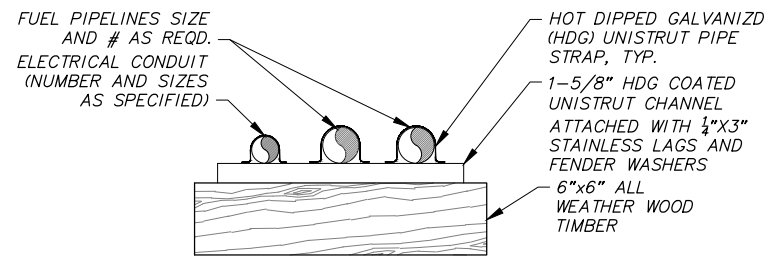


CHALKYITSIK, ALASKA
CHALKYITSIK BULK FUEL UPGRADES
PUMP CABINET DETAILS

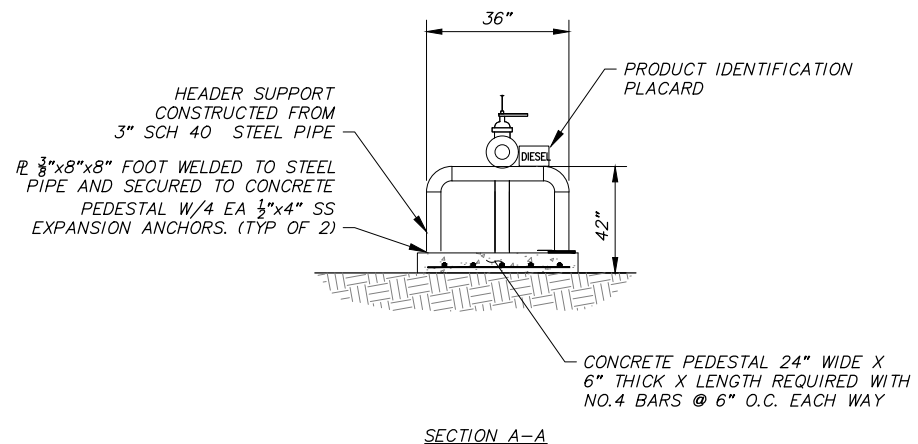
NO.	REVISION	DATE	BY	DATE
1	CONCEPTUAL DRAWINGS	9/3/20	NCP	

Plot Date	Designed NCP	Drawn NCP	Approved KRH
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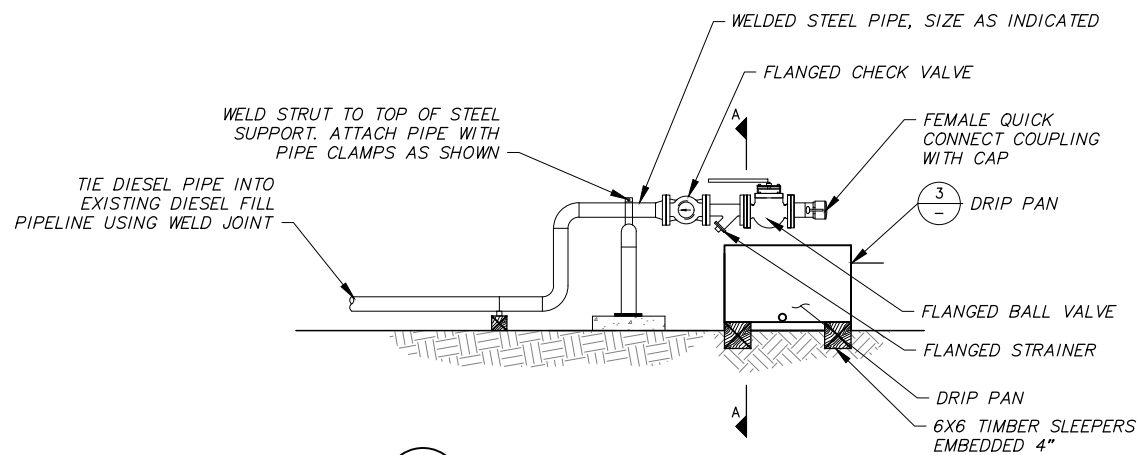
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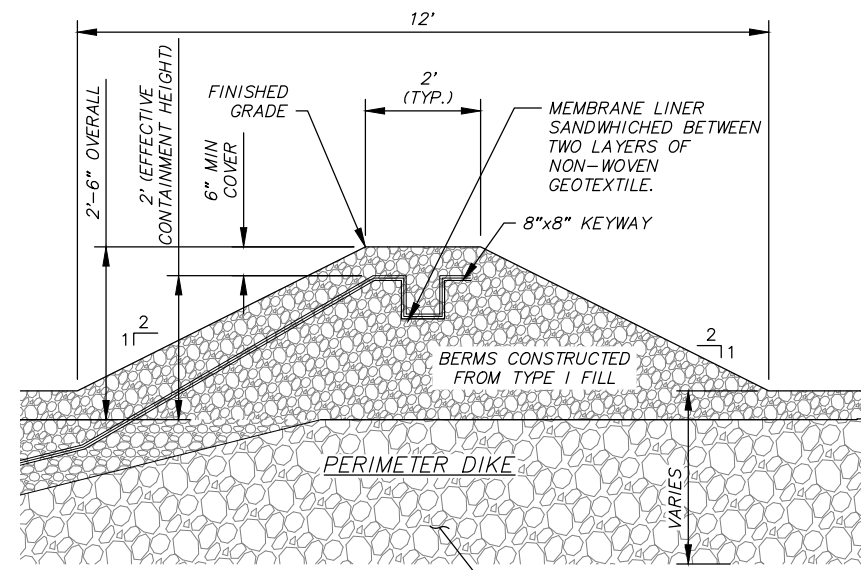
1 **TIMBER PIPE SUPPORT**
SCALE: NTS



2 **DRIP PAN**
SCALE: NTS



3 **AIRPORT HEADER**
SCALE: NTS



4 **DIKE DETAIL**
SCALE: NTS

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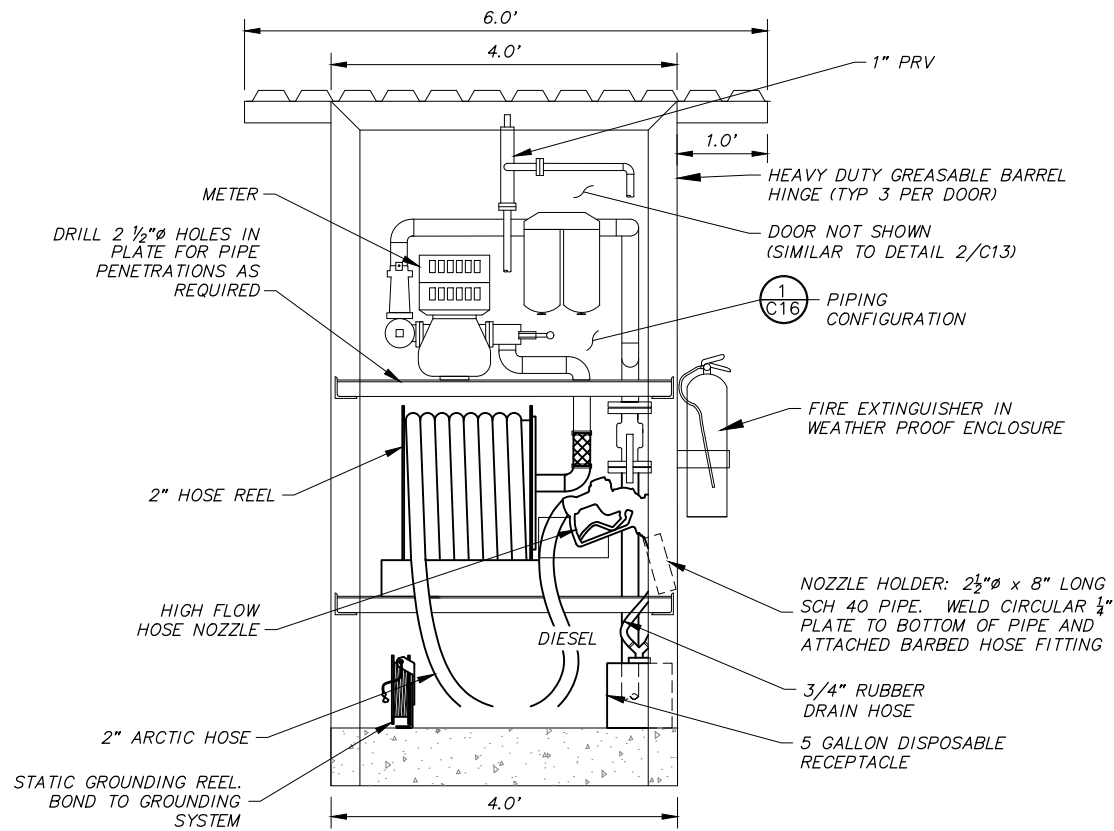


CHALKYITSIK, ALASKA
CHALKYITSIK BULK FUEL UPGRADES
MISCELLANEOUS DETAILS

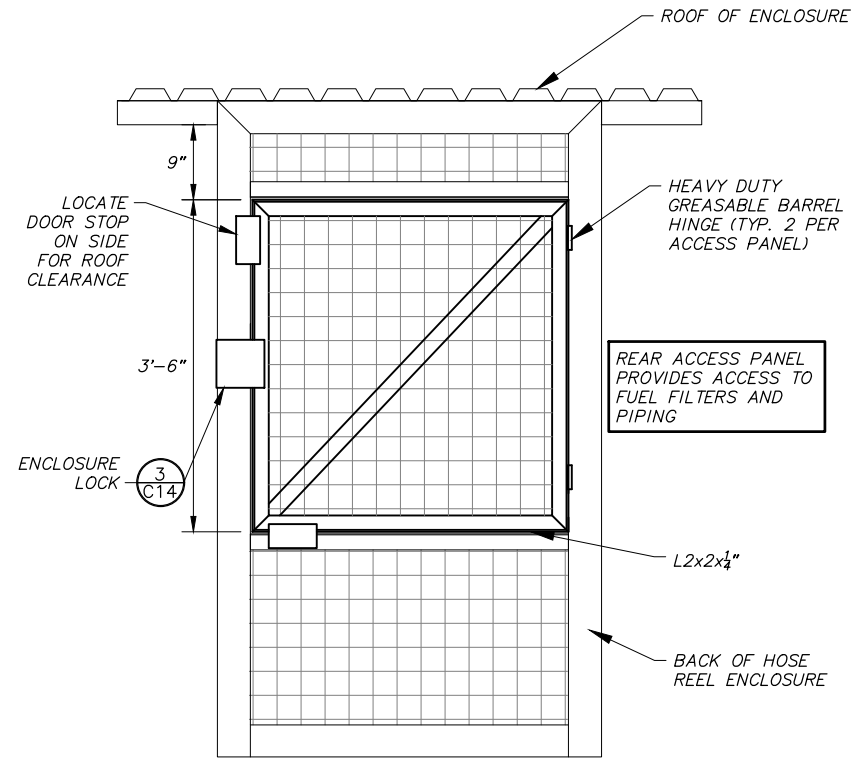
NO.	REVISION	DATE
1	CONCEPTUAL DRAWINGS	9/3/20

Plot Date	Designed NCP	Drawn NCP	Approved KRH
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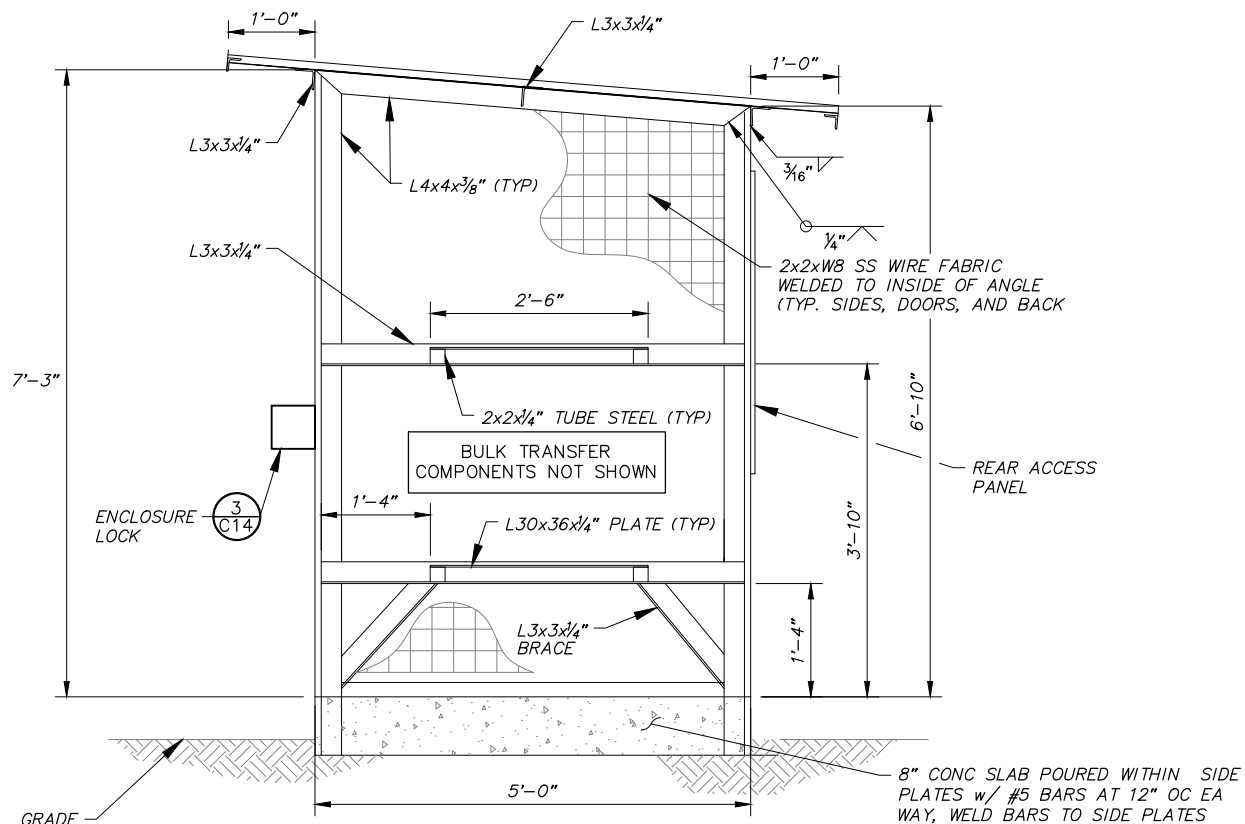
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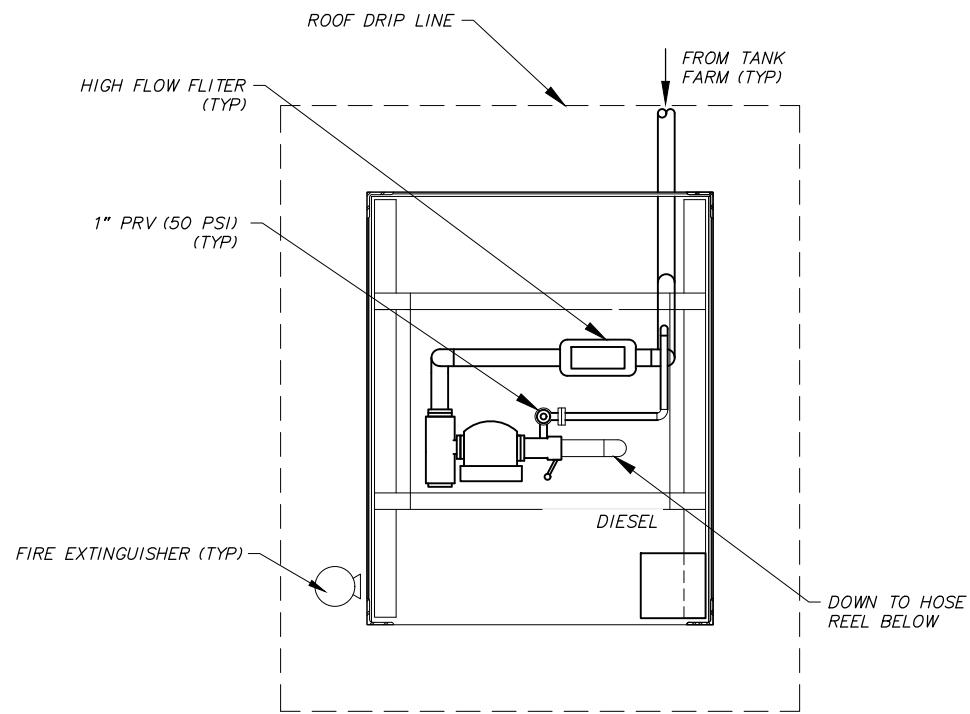
1 BULK TRANSFER HOSE REEL ELEVATION
NOT TO SCALE



3 REAR ACCESS PANEL
NOT TO SCALE



2 BULK TRANSFER HOSE REEL SECTION
NOT TO SCALE



4 BULK TRANSFER HOSE REEL ENCLOSURE
NOT TO SCALE

GENERAL NOTES:

1. THE DESIGN, FABRICATION, AND ERECTION OF ALL STRUCTURAL STEEL COMPONENTS SHALL COMPLY WITH THE CURRENT CODE OF STANDARD PRACTICE OF THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION. ALL WELDING TO BE DONE IAW THE CURRENT CODE OF AMERICAN WELDING SOCIETY.
2. MAKE ALL CONNECTIONS WITH CONTINUOUS FILLET OR BUTT WELDS. ROUND ALL CORNERS & SHARP EDGES AFTER FABRICATION.
3. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE ENGINEER PRIOR TO FABRICATION FOR REVIEW AND APPROVAL.
4. ALL STRUCTURAL STEEL COMPONENTS TO BE HOT DIP GALVANIZED. WELDED WIRE FABRIC TO BE STAINLESS STEEL.



CHALKYITSIK, ALASKA
CHALKYITSIK BULK FUEL UPGRADES
HOSE REEL DETAILS

NO.	REVISION	DATE	BY
1	CONCEPTUAL DRAWINGS	9/3/20	NCP

Plot Date: 9/3/20	Designed: NCP	Drawn: NCP	Approved: KRH
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