ABBREVIATIONS

ACI AMERICAN CONCRETE INSTITUTE
AMERICAN INSTITUTE OF ARCHITECTS
AMERICAN INSTITUTE OF STEEL CONSTRUCTION
ADEC (MESH SIZE)

VALVE & PUMP TAGS - 3"x5"x.08" ALUMINUM, 3/16" HOLES IN ALL FOUR CORNERS, BLACK GERBER THERMAL TRANSFER FILM PRINTED LETTERS ON GERBER 220 HIGH PERFORMANCE VINYL BACKGROUND, COLOR AS REQUIRED.

FLANGED BASKET STRAINER (MESH SIZE)

INSTALLATION - SECURE EACH TAG TIGHT TO VALVE, PIPE, OR DEVICE WITH STAINLESS STEEL CABLE TIES

FUSIBLE VALVE
 bulk fuel upgrade
 BFU
 bottom
 BTM
 flanged expansion joint

TOMATO RED (KLTD - UNLEADED GASOLINE)

"NORMALLY CLOSED, OPEN ONLY FOR BARGE DELIVERY"

APPLE GREEN (KLP - FUEL OIL)

"NORMALLY CLOSED, OPEN ONLY FOR BARGE DELIVERY TO LKSD TANKS"

VIOLET (LKSD - FUEL OIL)

"NORMALLY CLOSED, OPEN ONLY FOR BARGE DELIVERY"

WARNING SIGN & INFORMATIONAL PLACARD SCHEDULE:

1. PROVIDE SIGNS AND PLACARDS AS SHOWN IN THE SCHEDULE BELOW. QUANTITY & LOCATION ARE SHOWN ON SITE PLAN. ALL SIGNS SHALL BE #600 PLASTIC PLATES, 3/16" HOLES IN ALL FOUR CORNERS, WHITE NON-REFLECTIVE VINYL BACKGROUND. SIGNS SHALL BE BIDDER'S DESIGN. SIGNS AND MATERIALS SHOWN IN THE SCHEDULE ARE TO BE PROVIDED AS PART OF THE BASE BID, PLUS SIGNAGE ASSOCIATED WITH THE COUNCIL FUEL SYSTEM.

2. ADDITIVE ALTERNATE #1: INCLUDES CORPORATION BULK STORAGE TANKS AND DIESEL BULK TANK MANIFOLD PIPING, AND ASSOCIATED SIGNAGE.

3. ADDITIVE ALTERNATE #2: INCLUDES CORPORATION DIESEL TRANSFER PUMP AND POLYBAGS, AND ASSOCIATED SIGNAGE.

4. IT IS UNLAWFUL AND DANGEROUS TO DISPENSE GASOLINE INTO UNAPPROVED CONTAINERS.

5. SEE SPECIFICATIONS SECTION 01 11 13 SUMMARY OF WORK FOR ADDITIONAL REQUIREMENTS.

PUMP SCHEDULE

SP-1 CORPORATION GASOLINE TRANSFER PUMP
CENTRIFUGAL, 3 HP, 115 V/60 HZ

SCHEDULE:

40 GPM @ 36 FT

SP-2 CORPORATION GASOLINE DISPENSING PUMP
3/4 HP, 240V/1PH, SUBMERSIBLE

10 GPM @ 80 FT

SP-1 CORPORATION DIESEL TRANSFER PUMP
CENTRIFUGAL, 3 HP, 115 V/60 HZ

10 GPM @ 80 FT

SP-2 CORPORATION DIESEL DISPENSING PUMP
3/4 HP, 240V/1PH, SUBMERSIBLE

10 GPM @ 80 FT

BID SCHEDULE NOTES:

1. BASE BID INCLUDES COURSES, BULK STORAGE TANKS AND APPURTENANCES, DIESEL BULK PIPE PUMPS AND VALVE INSTALLATION, BULK FUEL PIPING, ANTI-SIPHON VALVE INSTALLATION, BULK FUEL ENCLOSURE AND EQUIPMENT, AND FUEL PUMP INTERMEDIATE TANK AND ASSOCIATED SIGNAGE AND WORK AS SHOWN ON THE SITE PLAN.

2. ADDITIVE ALTERNATE #1: INCLUDES CORPORATION BULK STORAGE TANKS AND APPURTENANCES, DIESEL BULK PIPE PUMPS AND VALVE INSTALLATION, BULK FUEL PIPING, ANTI-SIPHON VALVE INSTALLATION, BULK FUEL ENCLOSURE AND EQUIPMENT, AND FUEL PUMP INTERMEDIATE TANK AND ASSOCIATED SIGNAGE AND WORK AS SHOWN ON THE SITE PLAN.

3. ADDITIVE ALTERNATE #2: INCLUDES CORPORATION BULK STORAGE TANKS AND APPURTENANCES, DIESEL BULK PIPE PUMPS AND VALVE INSTALLATION, BULK FUEL PIPING, ANTI-SIPHON VALVE INSTALLATION, BULK FUEL ENCLOSURE AND EQUIPMENT, AND FUEL PUMP INTERMEDIATE TANK AND ASSOCIATED SIGNAGE AND WORK AS SHOWN ON THE SITE PLAN.

4. THE PIPING SCHEMATIC ON SHEET 1.1 HAS BEEN CLOSED AND RADIATORS TO BE OPEN FOR ADDITIONAL ALTERNATIVE.

5. SEE SPECIFICATIONS SECTION 01 11 13 SUMMARY OF WORK FOR FURTHER CLASSIFICATION ON ADDITIONAL ALTERNATIVES.
1. CRITICAL HIGH LEVEL SWITCH: ACTIVATES CRITICAL HIGH LEVEL ALARM WHEN LIQUID LEVEL REACHES 97% OF TANK CAPACITY.

2. ALL TANKS ARE TO BE LABELED IN ACCORDANCE WITH THE INTERNATIONAL FIRE CODE CHAPTER 34 AS TO ANCHOR CHAIRS PRODUCTS STORED AND STORAGE CAPACITY. PROVIDE NFPA 704 PLACARDING, TANK DEPTH-TO-VOLUME CHART, AND OTHER SIGNAGE AS SPECIFIED.

3. HYDROSTATICALLY TEST ALL TANKS AFTER INSTALLATION IN ACCORDANCE WITH API 650.

4. SHOP FABRICATED TANK COATINGS: TANK EXTERIOR INCLUDING MANHOLE, NOZZLES, PIPE AND CONDUIT A DEVOE DEVTHANE 389 TOP COAT (2-3 MILS DFT) IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. COLOR SHALL BE WHITE.

5. ALL TANKS ARE TO BE LABELED IN ACCORDANCE WITH THE INTERNATIONAL FIRE CODE CHAPTER 34 AS TO ANCHOR CHAIRS PRODUCTS STORED AND STORAGE CAPACITY. PROVIDE NFPA 704 PLACARDING, TANK DEPTH-TO-VOLUME CHART, AND OTHER SIGNAGE AS SPECIFIED.

6. ALL PIPING ATTACHED TO AND PROVIDED WITH TANK SHALL BE SCHEDULE 40 WITH WELDED JOINTS UNLESS OTHERWISE SHOWN.

7. LIFTING EYES ARE REQUIRED FOR SHOP FABRICATED TANKS.
1. All connections shall be continuously welded unless otherwise noted.
2. Enclosure shall be welded to base legs (typical of 6).
3. Enclosure shall be from A36 steel.
4. Enclosure coating: interior and exterior of enclosure, and enclosure base shall be sandblasted to SSPC-SP-10 (near white). Finished color shall be white. Provide one gallon of touch-up paint. Coat with the following system:
   - Primed with Devoe Cathacoat 302H (3-4 mils DFT),
   - Intermediate coated with Devoe Bar Rust 233H (4-6 mils DFT), and
   - Top coated with Devoe Devthane 389 (2-3 mils DFT).
5. Continuously weld all sections of plate at corners.
6. Bottom 4" of enclosure floor shall be liquid tight. Provide two 1-1/4" threaded drain plugs in the bottom of enclosure.
7. Reinforce f loor for mounting all equipment and pipe supports. Provide additional channels to support bottom of enclosure with 3" minimum clearance between bottom of enclosure and chan- nels. For access to bonding bolt, pump mounts to be 6" above bottom of enclosure.
8. Enclosure fabricator shall submit shop drawings.
9. Shop fabricate enclosure with all piping, equipment and supports installed inside enclosure. Pressure test and assemble all piping prior to applying coatings.

SCALE: 1" = 2'

STATE OF ALASKA, AIDEA/AEA
KIPNUK BULK FUEL UPGRADES
CONSTRUCTION DOCUMENTS

M2.2
1. TANK SHALL BE SHOP FABRICATED, DESIGNED, CONSTRUCTED, TESTED, AND INSPECTED IN ACCORDANCE WITH UL STANDARD 142.

2. TANK IS TO BE LABELED IN ACCORDANCE WITH THE INTERNATIONAL FIRE CODE CHAPTER 22, AND CHAPTER 34 AS TO PRODUCT STORED AND STORAGE CAPACITY. PROVIDE NFPA 704 PLACARDING, TANK DEPTH-TO-VOLUME CHART, AND OTHER SIGNAGE AS SPECIFIED.

3. PRESSURE TEST ALL TANKS AFTER INSTALLATION IN ACCORDANCE WITH THE INTERNATIONAL FIRE CODE AND UL STANDARD 142.

4. TANK COATINGS: TANK EXTERIOR INCLUDING SADDLES, SKIDS, PIPE AND CONDUIT SUPPORTS, AND PIPING SHALL BE SAND BLASTED TO SSPC SP-10 (NEAR WHITE BLAST), PRIMED WITH DEVOE CATHA-COAT 302H (3-4 MILS DFT), HAVE A DEVOE BAR-RUST RESISTANT BOTTOM COAT (3-4 MILS DFT), AND A DEVOE DEVTHANE 389 TOP COAT (2-3 MILS DFT) IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS. COLOR SHALL BE WHITE.

5. ALL PIPING ATTACHED TO AND PROVIDED WITH TANK SHALL BE SCHEDULE 40 WITH WELDED JOINTS UNLESS OTHERWISE SPECIFIED.

6. LIFTING EYES ARE REQUIRED FOR TANK.

CONTROL LOGIC:

1. CRITICAL HIGH LEVEL SWITCH: SHUTS OFF CORPORATION TRANSFER PUMP AND ACTIVATES CRITICAL HIGH LEVEL ALARM WHEN LIQUID REACHES 95% OF TANK CAPACITY.

2. HIGH LEVEL SWITCH: SHUTS OFF CORPORATION TRANSFER PUMP AND ACTIVATES HIGH LEVEL ALARM WHEN LIQUID REACHES 90% OF TANK CAPACITY.

3. LOW LEVEL SWITCH: SHUTS OFF SUBMERSIBLE PUMP WHEN LIQUID LEVEL DROPS TO 12 INCHES ABOVE BOTTOM OF TANK.

4. TRANSFER PUMP: SHUTS OFF VIA MANUALLY OPERATED SHUTOFF VALVE, OR SHUTOFF BY CRITICAL HIGH LEVEL FLOAT SWITCH.

5. SUBMERSIBLE PUMP: TURNS ON BY NOZZLE HANG-UP SWITCH OR BY LOW LEVEL FLOAT SWITCH.
Control Logic:
1. Critical High Level Switch: Shuts off council transfer pumps and activates critical high level alarm when liquid reaches 95% of tank capacity.
2. High Level Switch: Shuts off council transfer pumps and activates high level alarms when liquid reaches 80% of tank capacity.

Notes:
1. Tank Shall be shop fabricated, designed, constructed, tested, and inspected in accordance with UL Standard 142.
2. Tank is to be labeled in accordance with the International Fire Code Chapter 34 as to product stored and storage capacity. Provide NFPA 704 placarding, tank depth-to-volume chart, and other signage as specified.
3. Pressure test all tanks after installation in accordance with the International Fire Code and UL Standard 142.
4. Tank Coatings: Tank exterior including saddles, skids, pipe and conduit supports, and piping shall be sandblasted to SSPC SP-10 (near white blast), primed with Devoe Cathacoat 302H (3-4 mils DFT), have a Devoe Bar-Rust 236 intermediate coating (4-6 mils DFT), and a Devoe Devthane 389 top coat (2-3 mils DFT) in accordance with manufacturers recommendations. Color shall be white.
5. All piping attached to and provided with tank shall be Schedule 80 with welded joints unless otherwise shown.
6. Lifting eyes are required for tank.
3/4" THREADED CAP OR PLUG
3/4" THREADED BALL VALVE
3/4" THREAD-O-LET
PIPE
PRESSURE GAUGE (0 TO 300 PSI)
OR PRESSURE VACUUM GAUGE
(-30" HG TO 100 PSI)
3/4" THREADED BALL VALVE
3/4" THREAD-O-LET
PIPE
3"X3" TEE
BAR EDGES TO BE SMOOTH AND FLUSH WITH INSIDE DIAMETER
1-1/4" X 1/4" FLAT BAR
COPE TO FIT
FLAT BAR TO BE CENTRALLY LOCATED IN BRANCH
3" BALL VALVE
COUNCIL 3" Ø DIESEL TANK FILL / ISSUE PIPE.
(CORPORATION FILL/ISSUE PIPE BEYOND)
3" Ø DIESEL "TYPE-A" PIPE SUPPORT
EXISTING GRADE ELEV= ±97’-6” ±5.0’
3" Ø GASOLINE "TYPE-C" PIPE SUPPORT
ELEV=102’-0”
5
M2.5
PS-C
PS-C
2" Ø DIESEL (2" Ø GASOLINE BEYOND)
±2.0’
4
M2.5
1" CONDUIT AND 2" Ø DIESEL TO POWER PLANT
1. PROVIDE ADDITIONAL PIPE STRAPS FOR MORE THAN TWO PIPES AND INCREASE PIPE SUPPORT WIDTH. PIPE SUPPORT SPACING SHOWN IS FOR (2) 3"Ø PIPES, SEE DETAIL 3 / SHEET M1.2 FOR SPACING FOR OTHER PIPE SIZES AND CONDUIT.
THE MINIMUM PIPE SUPPORT WIDTH IS 2’-6” FOR ONE PIPE.
2. UNISTRUT P2558 SERIES HDG PIPE STRAPS WITH 3/4" THICK UHMWP PIPE SLIDE PAD ATTACHED TO UNISTRUT CHANNEL WITH 3/8"Ø HDG PIPE STRAP BOLTS. PROVIDE 3/4" x1-3/4" CARBON BLACK UHMWP PIPE SLIDE PADS IN PRE-CUT LENGTHS PRE-DRILLED FOR EACH SIZE PIPE STRAP. ATTACH ELECTRICAL CONDUITS WITH UNISTRUT P1100 SERIES HDG CONDUIT CLAMPS.
3. FLEXIBLE MARKER: CARSONITE CTFM-072-04 YELLOW TUFF-FLEX MARKER WITH RSD30-12-02 YELLOW REFLECTORS APPLIED TO THE TOP OF THE MARKER, OR EQUAL. ATTACH MARKER TO TIMBER PIPE SUPPORTS WITH TWO 1/4" X2" HOT DIP GALVANIZED LAG BOLT WITH FLAT WASHER.
4. "TYPE-A" PIPE SUPPORT IS DETAILED. FOR "TYPE-B" SUPPORTS PROVIDE (2) 2’-0” LONG PRESSURE TREATED TIMBERS ON EACH SIDE OF SUPPORT FASTENED TOGETHER WITH (4) 3/8"Ø x4” HDG LAGS WITH FLAT WASHERS, PRE-DRILLED AND COUNTERSUNK.
4.1 "TYPE-A" PIPE SUPPORTS ARE ±8” HIGH
4.2 "TYPE-B" PIPE SUPPORTS ARE ±11” HIGH
4.3 LOCATE "TYPE-A" SUPPORTS IN HIGHER AREAS AND "TYPE B" SUPPORTS IN LOWER AREAS. PROVIDE ADDITIONAL PRESSURE TREATED BLOCKING TO LEVEL PIPE SUPPORTS AND MAINTAIN UNIFORM SLOPE. FASTEN LAYERS WITH 6” CERAMIC COATED WOOD SCREWS.
OVERSIZED HDG PIPE STRAP, PROVIDE 4" STRAP FOR 2" PIPE AND 5" STRAP FOR 3" PIPE (2) EACH 3" x10” PRESSURE TREATED TIMBERS FOR "TYPE A" PIPE SUPPORT (SHOWN).
3/8"Ø x5” HDG LAGS WITH FLAT WASHERS PRE-DRILLED AND COUNTERSUNK (TYPICAL OF 8)
4” x10” PRESSURE TREATED TIMBER
12 GAUGE P-1000 HDG UNISTRUT
PROVIDE 3/8"Ø x3” HDG LAG BOLTS 9” O.C. FOR SECURING TO 4” x10” PRESSURE TREATED TIMBERS (TYPICAL OF 4)
HDG THREADED ROD WITH DOUBLE HDG NUTS, FLAT WASHERS, AND LOCK WASHER, 1/2”Ø FOR 3” PIPE AND 3/8”Ø FOR 2” PIPE
GRINNEL/ANVIL FIG. 260 2”Ø OR 3”Ø HDG CLEVIS HANGER GRINNEL/ANVIL FIG. 94 HDG BEAM CLAMP STEEL PLATE DIKE FLOOR BEAM (TYPICAL)
EXISTING 3”Ø DIESEL TANK FARM 3”Ø DIESEL TO BULK TANK FARM 1”Ø PRESSURE RELIEF VALVE (TYPICAL OF 3) 2”Ø DIESEL FROM BULK TANK FARM
2”Ø GASOLINE FROM BULK TANK FARM 2”Ø GASOLINE TO DISPENSING STATION 2”Ø DIESEL TO DISPENSING STATION 3”Ø GASOLINE FROM MARINE HEADER EXISTING 3”Ø DIESEL FROM MARINE HEADER
1" WELD-O-LET (TYPICAL OF 6)
UNISTRUT PIPE SUPPORT AT TANK QUADRANT

4 M2.4 2" SCHEDULE 40 GALVANIZED STEEL PIPE SLEEVE WELDED INTO DIKE FLOOR AND TERMINATED ABOVE TOP OF DIKE

1" GRC UP TO TOP OF TANK

4 M2.4 ±5'-3" DIKE FLOOR, 1/4" STEEL PLATE

ROUTE 1" GRC INSIDE 2" PIPE

1" GRS CONDUIT BY RPSU

6,000 GALLON INTERMEDIATE TANK WALL

INSTALL BACKER ROD AND FILL TOP 2.0" OF ANNUAL SPACE WITH POLYURETHANE SEALANT

1/4" 3/16" SEAL
1/4" STEEL PLATE
2" SCHEDULE 40 GALVANIZED STEEL PIPE
3" RPSU CONDUIT PENETRATION

TYPICAL PIPE PENETRATION

TYPICAL DIKE FLOOR PENETRATION DETAILS (PIPE AND RPSU CONDUIT)

TANK BOTTOM LEAK DETECTION PIPE

1/4" FORGED WELDED BRANCH CONNECTION BY SOCKET WELD OR BUTT WELD

1-1/2"Ø x 6" LONG MPT BY PLAIN END SCHEDULE 80 NIPPLE

1-1/2"Ø FULL PORT THREADED BRONZE BALL VALVE WITH STAINLESS STEEL BALL AND TRIM

TANK FOUNDATION TOP PLATE

TANK FOUNDATION PENETRATION

1/2" CEMENT TANK BOTTOM LEAK DETECTION PIPE
HAZARDOUS LOCATIONS

<table>
<thead>
<tr>
<th>No</th>
<th>Classification of Location</th>
<th>Description of Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Class I, Division 1</td>
<td>1/2 in all directions from open end of gasoline tank vent see 2/842.2</td>
</tr>
<tr>
<td>2</td>
<td>Class I, Division 2</td>
<td>1 ft from shell edges or roof of gasoline tank see 2/842.2</td>
</tr>
<tr>
<td>3</td>
<td>Class I, Division 2</td>
<td>Space inside pipe to level of top of cistern see 2/842.2</td>
</tr>
<tr>
<td>4</td>
<td>Class I, Division 2</td>
<td>Area between 5 and 10 ft from open end of gasoline tank vent see 2/842.2</td>
</tr>
<tr>
<td>5</td>
<td>Class I, Division 1</td>
<td>Entire area within fuel dispensers</td>
</tr>
<tr>
<td>6</td>
<td>Class I, Division 2</td>
<td>Horizontally 1 ft from dispenser and then 2 ft horizontally 10 ft</td>
</tr>
<tr>
<td>7</td>
<td>Class I, Division 2</td>
<td>Entire area within pump enclosure</td>
</tr>
</tbody>
</table>

1. HAZARDOUS LOCATION - TANK FARM
2. HAZARDOUS LOCATION - DISPENSER ENCLOSURE
SHEET NOTES:
1. PROVIDE 1/4" SINK CUPPER GROUND CONDUCTOR SIZE 1/8" BRG FOR GROUNDING CONEAL TRAY.
2. PROVIDE 1/4" SINK CUPPER GROUND CONDUCTOR TO TANKS AND CHAIN LINK FENCE SEE SHEET 1/4/17.

GROUNDING PLAN
1

CONTRACT
1/8" BRG