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1. General

1.1 Documents

1.1.1 Conform to the requirements stated in the General Conditions, the Supplementary General Conditions, the General Requirements, this specification and all addenda.

1.2 References

1.2.1 Applicable federal, provincial and territorial codes.

1.2.2 ULC-S601 (2000) Aboveground Horizontal Shop Fabricated Steel Tanks.

1.2.3 National Building Code of Canada (NBC) 2010.

1.2.4 National Fire Code of Canada (NFCC) 2010.

1.2.5 NFPA 30, 2008 Edition, Flammable and Combustible Liquids Code.

1.2.6 CCME Environmental Code of Practice for Aboveground and Below Ground Storage Tank Systems containing Petroleum and Allied Petroleum, 2003.

1.2.7 ANSI/ASME B31.3-2010, Process Piping.

1.2.8 CSA W47.1-09, Certification of Companies for Fusion Welding of Steel.

1.2.9 CSA W59-03 (R2008) - Welded Steel Construction (Metal Arc Welding).

1.2.10 Canadian Environmental Protection Act 1999, (2008 Update), Storage Tank System for Petroleum Products and Allied Petroleum Products Regulations.

1.2.11 CSA W178.2-08, Certification of Welding Inspectors.

1.3 Submission Requirements

1.3.1 Coordinate each submission with requirements of work and Contract Documents. Individual submissions will not be reviewed until all related information is available.

1.3.2 Allow seven (7) days for Owner or Owner's representative's review of each submission.

1.3.3 Accompany submissions with transmittal letter containing:

1. Date;
2. Project title and number;
3. Contractor's name and address;

4. Identification and quantity of each shop drawing, product data and sample; and
5. Other pertinent data.

1.3.4 Submissions shall include:

1. Date and revision dates;
6. Project title and number;
7. Name and address of:
   - Subcontractor;
   - Supplier; and
   - Manufacturer.
8. Contractor's stamp, signed by Contractors authorized representative certifying approval of submissions, verification of field measurements and compliance with Contract Documents; and
9. Details of appropriate portions of Work as applicable:
   - Fabrication;
   - Layout, showing dimensions, including identified field dimensions, and clearances;
   - Setting or erection details;
   - Capacities;
   - Performance characteristics;
   - Standards;
   - Operating weight; and
   - Relationship to adjacent work.

1.4 Shop Drawings

1.4.1 Shop drawings: original drawings or modified standard drawings provided by Contractor, to illustrate details of portions of Work, which are specific to project requirements.

1.4.2 Shop drawing data information to be submitted in PDF or Cad format via email or FTP.

1.4.3 Cross-reference shop drawing information to applicable portions of Contract Documents.

1.5 Quality Assurance

1.5.1 Contractor to submit quality inspection and test plan for tank construction. Include milestone signoff sheets and qualifications for inspection personnel.

1.6 Double Wall Horizontal Diesel Fuel Storage Tanks

1.6.1 Design, fabricate and supply two (2) 100,000L double wall, steel, horizontal, skid mounted fuel storage tanks to ULS S601.

1. Number of tanks = 2;
2. Nominal capacity =100,000 Liters;
3. Diameter: max. 3.0 meters;
4. Length: to suit required volume;
5. Specific gravity of contents = 0.82 – 0.95;
6. Appurtenances shall be as detailed on the drawings and include:
    a. 1 - 610Ø manway complete with emergency vent;
    b. 1 - 100Ø flanged gate hatch;
    c. 1- 75Ø flanged vent assembly;
    d. 1 - 200Ø flanged high level liquid float;
    e. 1 - 150Ø flanged tank fill drop tube complete with Morrison over fill protection valve and include 100Ø fill connection as detailed;
    f. 1 - 100Ø flanged level probe;
    g. 1 - 50Ø flanged drain valve; and
    h. 1 - 50Ø flanged dispensing unit supply pipe connection.
7. One (1) tank shall be complete with fuel dispensing unit enclosed within a weather tight insulated fuelling cabinet. Cabinet shall be complete with heater, hose reel & lockable access doors;
8. Design metal temperature extremes to National Building Code of Canada (NBC) data for Arctic Bay, Nunavut;
9. Design Pressure: Depth of fluid with tank at atmospheric and a 0.5 oz pressure/vacuum vent;
10. Location FOB Mary River, Baffin Island Nunavut;
11. Permits, Fees for Construction: Owner's responsibility;
12. Operating Temperature Range: -45°C to 20°C;
13. Plate and structural steel specification: (bottom, shell and roof) = CSA G40.21, Structural Quality Steels – 260WT Category 4 to -50°F;

14. Mill test reports on steel: Supplied by Contractor; and

15. All shell nozzles shall have slip-on flanges unless noted otherwise.

1.7 Double Wall Horizontal Jet A-1 Fuel Storage Tanks

1.7.1 Design, fabricate and supply five (5) 100,000L double wall, steel, horizontal, skid mounted fuel storage tanks to ULC-S601.

1. Number of tanks = 5;
2. Nominal capacity =100,000 Liters;
3. Diameter: max. 3.0 meters;
4. Length: to suit required volume;
5. Specific gravity of contents = 0.82 – 0.95;
6. Appurtenances shall be as detailed on the drawings and include:
    a. 1 - 610Ø manway complete with emergency vent;
    b. 1 - 100Ø flanged gate hatch;
    c. 1 - 75Ø flanged vent assembly;
    d. 1 - 200Ø flanged high level liquid float;
    e. 1 - 150Ø flanged tank fill drop tube complete with Morrison over fill protection valve and include 100Ø fill connection as detailed;
    f. 1 - 100Ø flanged level probe;
    g. 1 - 50Ø flanged drain valve;
    h. 1 - 50Ø flanged dispensing unit supply pipe connection; and
    i. 1 - 50Ø flanged floating suction.
7. One (1) tank shall be complete with fuel dispensing unit enclosed within a weather tight insulated fuelling cabinet. Cabinet shall be complete with heater, hose reel & lockable access doors;
8. Design metal temperature extremes to National Building Code of Canada (NBC) data for Arctic Bay, Nunavut;
9. Design Pressure: Depth of fluid with tank at atmospheric and a 0.5 oz pressure/vacuum vent;
10. Location FOB Mary River, Baffin Island Nunavut;
11. Permits, Fees for Construction: Owner's responsibility;

12. Operating Temperature Range: -45°C to 20°C;
13. Plate and structural steel specification: (bottom, shell and roof) = CSA G40.21, Structural Quality Steels – 260WT Category 4 to -50°F;
14. Mill test reports on steel: Supplied by Contractor;
15. All shell nozzles shall have slip-on flanges unless noted otherwise; and
16. All tank interior shall be coated as per section 09 91 99 “Painting for Minor Works”.

2. Products

2.1 Steel Tank

2.1.1 Plate material for tank shall be furnished to CSA G40.21-04 in Grade 260WT Category 4 to -50°F, rolled, kilned and made to fine grain practice.

2.1.2 Construction is a skid mounted horizontal tank to ULC-S601.

2.1.3 Tank appurtenances:

- See drawings for list and sizes and as described in this section.
- All internal studs, nuts and fasteners shall be stainless steel. ASTM A193, Grade B8M and ASTM A194, Grade 8/8M.
- Manway cover bolts and nuts shall be cadium plated. ASTM B766-86 (2008).

2.1.4 All tank attachments are to be fastened by use of seal welded doubler plates.

2.1.5 API Inspection and testing of tank:

1. All inspection shall be as per ULC-S601.
2. Submit records of Welders certification and test results to Owner or Owner's Representative.

3. Execution

3.1 Installation

3.1.1 Install tanks in accordance with the National Fire Code of Canada.

3.1.2 Contractor shall take care as to not puncture the dyke membrane. Any damage to the membrane shall be repaired as instructed by Owner or Owner's Representative at no additional cost to the Owner.

3.1.3 Position tank using lifting lugs and hooks, and where necessary use spreader bars. Do not use chains in contact with tank walls.

3.2 Field Quality Control

3.2.1 Test tank for leaks in presence of Owner or Owner's Representative.

3.2.2 All costs associated with testing shall be by the Contractor. All test results shall be provided to the Owner or Owner's Representative for review upon completion.