PART 1 - GENERAL

1.1 REFERENCES

.1 Department of Justice Canada (Jus).
.1 Canadian Environmental Protection Act, (CEPA).
.2 SOR/2008-197 - Storage Tanks Systems for Petroleum Products and Allied Petroleum Products Regulations.

.2 Canadian Council of Ministers of the Environment (CCME).
.1 CCME-PN1326-2008, Environmental Code of Practice for Aboveground and Underground Storage Tank Systems Containing Petroleum and Allied Petroleum Products.

.3 Canadian Standards Association (CSA)/CSA International.
.1 CAN/CSA-B139-15, Installation Code for Oil Burning Equipment.
.2 CSA C282-15 Emergency Electrical Power Supply for Buildings.

.4 The Master Painters Institute (MPI).
.1 Architectural Painting Specification Manual - September 2002.

.5 National Research Council/Institute for Research in Construction.
.1 NRCC 38727, National Fire Code of Canada (NFC)-2015.

.6 Transport Canada (TC)and Department of Justice.
.1 Transportation of Dangerous Goods Act, 1992 (TDGA).

.7 Underwriters' Laboratories of Canada (ULC).
.1 ULC/ORD-C107.19, Secondary Containment of Underground Piping.
.2 ULC-S601, Aboveground Horizontal Shop Fabricated Steel Tanks.
.3 CAN/ULC-S602, Aboveground Steel Tanks for Fuel Oil and Lubricating Oil.

1.2 SHOP DRAWINGS AND PRODUCT DATA

.1 Submit shop drawings in accordance with Section 01 33 00.

.2 Indicate details of construction, appurtenances, or installation of system components.

.3 Shop drawings to detail and indicate following as applicable to project requirements. Submit manufacturer's product data to supplement shop drawings.
.1 Size, materials and locations of ladders, ladder cages, catwalks and lifting lugs.
.2 Tanks capacity.
.3 Size and location of fittings.
.4 Accessories: provide details and manufacturers product data.
.5 Finishes.
.6 Electronic accessories: provide details and manufacturers product data.
.7 Piping, valves and fittings: type, materials, sizes, piping connection details, valve shut-off type and location, etc.
.8 Anchors: description, material, size and locations.
.9 Level gauging: provide details and manufacturer's product data.
.10 Ancillary devices: provide details and manufacturer's product data.

.4 Provide maintenance data for tank appurtenances for incorporation into Operations and Maintenance Manual as specified in Section 01 77 00 - Closeout Submittals.

1.3 CLOSEOUT SUBMITTALS

.1 Provide maintenance data for cleaning and maintenance of steel finishes for incorporation into manual specified in Section 01 78 00 - Closeout Submittals.

.2 Operation and Maintenance Manuals must be submitted for the tank storage system and must include, but not limited to:
.1 Approved shop drawings.
.2 Manufacturer's information.
.3 Design drawings.
.4 Red line drawings.

1.3 CLOSEOUT SUBMITTALS (Cont'd)

.2 (Cont'd)
.5 As-built drawings.
.6 Maintenace intervals and information.
.7 Warranty information.

PART 2 - PRODUCTS

2.1 TANKS

.1 As indicated on drawings.

.2 Tank of 10,000L capacity each, dimensions as indicated, double-walled.

.3 Horizontal tanks: ULC-S601, complete with one external coat of red oxide primer to MPI #23. Two final coast of "Coast Guard Red" epoxy paint in accordance with structural steel specification. All paint to be factory applied.

2.2 PIPING, VALVES AND FITTINGS

.1 In accordance with Section 23 11 13 - Facility Fuel Oil Piping.

.2 Mechanical joints on concealed primary piping is not permitted.

.3 Piping located below product level equipped with either manual or automatic shut-off at storage tank.

2.3 FUEL TANK ACCESSORIES

.1 Tank Vent Whistle: 50 x 33 32 metal tank whistle with 125 mm long 6 mm whistle tube, CSA/ULC listed, installed with bushings in existing spare 50 mm tank connection. Set at 90% fill level.

.2 Tank Secondary Containment Vacuum Sensor: Certified sensor capable of detecting vacuum for double wall steel tank with operating temperature range of -25°C to 75°C. Install device into existing tank monitoring port. CSA/ULC approved.

2.3 FUEL TANK ACCESSORIES (Cont'd)

.3 Tank Visible Fill Gauge: direct recording mechanical type, top mounted liquid level gauge with 50 mm bushing, HDPE lock nut, gauge guard cover for plastic barrel, nitrile gasket, plastic cellulose acetate inner and outer calibrations, suitable for 1778 mm dia. double wall tank. Provide extension pieces as required. OPW 200TG or approved equal.

.4 Anti Syphon Valve - 20 mm with clear anodized aluminum body, powder coated aluminum bonnett, coated aluminum cap, S.S. spring, hard coated aluminum poppet, hard coated aluminum screws and nitrile poppet seal. Temperature rated -29°C to 49°C.

.5 Foot Valve - metal to metal poppet seating, 24 wire mesh screen, brass body, poppet and mesh screen, 20 mm double poppet valve.

.6 Overflow Protection Device - mechanical overfull valve to automatically cut off for pressure fill delivery from fuel truck when tank level reaches full. Positive fuel oil shutoff device with cast aluminum body, closed cell Buna N Float, cast aluminum hard coated poppet, SS cam, brass follower, CRS zinc plated shaft sintered bronze bearing, suitable for pressurized fill aboveground tank.

.7 Dip Tube Port - 32 mm (1 1/4" FPT) equal to Morrison Bros: 305 GSP, or approved alternative. Port to be clearly marked as "Dip Tube Port" or similar marking. Ports to allow for tool free operation.

.8 Dip stick and chart to be provided. Dip chart to be laminated and located on underside of tank spill box.

.9 High fuel level switch complete with ULC S661 compliant high fuel level alarm on exterior of building. Set at 95% fill level.

2.4 EMERGENCY SPILL RESPONSE KIT

.1 Unit to be portable with 300 mm wheels and UV stablized weatherproof polyethylene container.

.2 Unit shoulw be HI-VIS yellow and have a capacity of 231 litres.

.3 The unit shall contain the following items.
- .1 One (1) 100 oil absorbent pads.
- .2 Six (6) small pillow.
- .3 Two (2) - 75 mm x 1220 mm socks.
- .4 Five (5) - 75 mm x 2440 mm socks.
- .5 One (1) 11 kg bag of granular absorbant.
- .6 One (1) plug pattie (instant leak stop).
- .7 One (1) neoprene drain cover.
- .8 Two (2) disposable bags.
- .9 One (1) pair nitrile gloves.
- .10 One (1) pair splash googles.
- .11 One (1) poly-coated tybek suit.
- .12 Two (2) disposable respirators.
- .13 Three (3) spill kit labels.

2.5 PRODUCT TRANSFER AREA SPILL PROTECTION AND COLLECTION

.1 See civil and mechanical drawings for details of the tank and pad complete with 150 mm high curb and drain with normally open (NO) valve.

PART 3 - EXECUTION

3.1 INSTALLATION

.1 Install tanks in accordance with CAN/CSA-B139 and National Fire Code of Canada, manufacturer's recommendations and CCME PN 1326.

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

.3 Install tanks using trained installers and overseen by a Professional Engineer licensed

3.1 INSTALLATION (Cont'd)

.3 (Cont'd) in the Province of Newfoundland and Labrador, Canada.

.4 Provide certification of installation to Departmental Representative.

.5 Install tank accessories as per manufacturer's instructions.

.6 Identification to be provided as per Section 23 05 53.01 - Mechanical Identification.

3.2 FIELD QUALITY CONTROL

.1 Test tanks for leaks in accordance with manufacturer's specifications and CSA B130. Check that vacuum is present for interstitial space.

3.3 TOUCH-UP

.1 Where coating is damaged, touch-up with original coating material.

3.4 LEVEL GAUGE SYSTEM

.1 Provide leak and vapour proof caulking at connections.

.2 Shield capillary and tubing connections in heavy duty 50 mm polyethylene pipe.

.3 Calibrate system.

3.5 DOCUMENTS REQUIRED PRIOR TO FIRST TANK FILL

.1 Before fuel can be delivered to the new tank, the following must be provided:

.1 Complete and documented commissioning process as per Section 01 91 13 - General Commissioning (Cx) Requirements of these specifications. Some specific taskts to be part of the commissioning process include, but are not limimted to:

.1 Testing of vent whistle to confirm setting at 90%.

.2 Testing of overfill prevention device set at 95% full.

3.5 DOCUMENTS REQUIRED PRIOR TO FIRST TANK FILL (Cont'd)

.1 (Cont'd)

.1 (Cont'd)

.3 Testing of high level switches to ensure proper location.

.4 Test full operation of system and provide trainging to the User.

.2 As-Built stamped and dated drawings by Professional Engineer licensed in the Province of Newfoundland and Labrador, Canada. Contractor responsible for as-built drawings.

.3 Updated Emergency Response Plan (ERP) - provided by Department of Fishers and Oceans (DFO).

.4 Valid EC registration number which is also displayed on the tank.

.5 Verification that VAT whistle operates prior to inlet shut off valve activation at 90% full.

.6 Letter from professional engineer received confirming the system installation was overseen by a professional engineer (enlisted by contractor) in accordance with SOR/2008-197.

.7 Verification that spill containment system works using water along with a video record. Test duration shall be no less than 4 hours.

.8 Once certified tank to be filled by contractor at contractor's expense.

END