Part 1 General

1.1 RELATED REQUIREMENTS

.1 Section 01 33 00 – Submissions/Shop Drawings

.2 Section 01 74 21 – Construction/Demolition Waste Management and Disposal

.3 Section 01 78 00 – Closeout Submittals

.4 Section 03 30 00 – Cast-In-Place Concrete

.5 Section 23 11 13 – Facility Fuel Oil Piping

1.2 REFERENCE STANDARDS

.1 Canadian Council of Ministers of the Environment (CCME).

.1 CCME-PN1326-04(R2015), Environmental Code of Practice for Aboveground and Underground Storage Tank Systems Containing Petroleum and Allied Petroleum Products.

.2 Department of Justice Canada (Jus).

.1 Canadian Environmental Protection Act, 1999 (CEPA).

.3 National Research Council Canada (NRC)

.1 National Fire Code of Canada, 2015 (NFC).

.4 Government of Nova Scotia:

.1 NS Regulation 44/2002 “Petroleum Management Regulations – Environment Act”.

.2 Nova Scotia Standards for Construction and Installation for Petroleum Storage Tank Systems.

.5 Underwriters' Laboratories of Canada (ULC).

.1 ULC-S601-2014, Aboveground Horizontal Shop Fabricated Steel Tanks.

.2 CAN/ULC-S661-10(R2016), Standard for Overfill Protection Devices for Flammable and Combustible Liquid Storage Tanks.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

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

.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 manufacturers 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 Size, materials and locations of railings, stairs, ladders and walkways.

.6 Finishes.

.7 Tank Anchors: description, material, size and locations.

.8 Level gauging: type and locations, include:

.1 Provide details and manufacturer's product data.

.9 Leak detection system, type and locations, and alarm system.

.10 Grounding and bonding: provide details of design, type, materials and locations.

.4 Provide maintenance data for tank appurtenances and leakage detection system for incorporation into manual specified in Section 01 78 00- Closeout Submittals.

1.4 WASTE MANAGEMENT AND DISPOSAL

.1 Separate waste materials for recycling in accordance with Section 01 74 21- Construction/Demolition Waste Management And Disposal.

.2 Remove from site and dispose of all packaging materials at appropriate recycling facilities.

.3 Collect and separate for disposal polystyrene, corrugated cardboard, plastic, and paper packaging material in appropriate on-site bins for recycling in accordance with Waste Management Plan.

.4 Separate for recycling and place in designated containers Metal, Plastic waste in accordance with Waste Management Plan.

.5 Place materials defined as hazardous or toxic in designated containers.

.6 Handle and dispose of hazardous materials in accordance with the CEPA, TDGA, Regional and Municipal regulations.

.7 Clearly label location of salvaged material's storage areas and provide barriers and security devices.

.8 Ensure emptied containers are sealed and stored safely.

.9 Divert unused metal materials from landfill to metal recycling facility as approved by Departmental Representative.

.10 Divert unused concrete materials from landfill to local facility as approved by Departmental Representative.

.11 Dispose of unused paint or coating material at an official hazardous material collections site as approved by Departmental Representative.

.12 Do not dispose unused paint material must into sewer system, into streams, lakes, onto ground or in other location where it will pose health or environmental hazard.

.13 Fold up metal banding, flatten and place in designated area for recycling.

Part 2 Products

2.1 TANKS: STAINLESS STEEL

.1 Horizontal tank: ULC-S601, stainless steel 13,500L diesel fuel complete with the following:

.2 Connections: 9 minimum. Sizes: 3 – Dn 100mm, 6 – Dn 50mm, refer to drawings for orientation

.3 Railings, stairs, ladders and walkways: stainless steel supplied by tank manufacturer as indicated on the drawings.

.4 Finishes:

.1 Exterior of tank:

.1 Stainless Steel

.2 Interior of tank: none

.3 Holes in cradles for anchors as per manufacturer's recommended anchoring.

.4 Grounding lug on cradle.

2.2 ANCHORAGE

.1 Tank to have anchor holes on support cradles, by tank manufacturer, for bolt anchorage.

2.3 CONCRETE

.1 In accordance with Section 03 30 00- Cast-in-Place Concrete.

2.4 PIPING, VALVES AND FITTINGS

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

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

2.5 LEVEL GAUGING

.1 Tank gauging stick: to manufacturer's standard.

.2 Tank level gauging and indicator.

.1 Mechanical, direct reading device to read in cm.

.2 Gauge and gauge openings: protected against liquid overflow and possible liquid and vapour release.

2.6 LEAKAGE DETECTION SYSTEM

.1 Storage tanks are double-walled with a vacuum gauge monitoring the interstitial space.

2.7 GROUNDING AND BONDING

.1 To Section 26 05 00- Common Work Results – Electrical, and CEC latest edition.

.2 Install ground plate or rod and connect to tank grounding connector on cradle using 4/0 stranded wire and exothermic connections.

2.8 OVERFILL AND SPILL CONTAINMENT

.1 Shop-fabricated AST overfill protection.

.1 Automatic valve closure on product supply line.

.2 Overfill protection device compatible with liquid tight method of filling, built and certified to ULC S661 with positive shut-off action at 95% full volume.

.3 Audible alarm located in vent piping, when whistle stops tank is 90% full volume.

.4 Level gauge located on storage tank for frequent monitoring throughout transfer operation permitting personnel to promptly shut down flow, or communicate immediately with person controlling delivery for shut down.

.5 tank equipped with spill containment manhole directly attached to tank shell.

2.9 PRODUCT TRANSFER

.1 ASTs with normal vent and separate emergency vent.

.1 Liquid- and vapour-tight connection on fill pipes for flammable products.

.2 Tanks and piping contained on curbed slab with controlled drainage. Product transfer area methodology outlined on design drawings.

2.10 SIGNAGE

.1 As per design drawings.

2.11 SPARE BUNGS

.1 Minimum 3 spare bungs, 1 of 100mm diameter, 2 of 50mm diameter, shall be available and plugged for future considerations.

2.12 DIP PORT

.1 New 32mm diameter dip port with camlock and dustcover to be installed in lockable spill container.

2.13 FILL CONNECTION

.1 New 50mm diameter camlock fill connection with dustcover to be installed in lockable spill container. Fill camlock to be equipped with integral cross bar or tab to prevent drop fueling of tank.

2.14 LIFTING LUGS

.1 As per ULC S601 requirements.

Part 3 Execution

3.1 INSTALLATION

.1 Install tanks in accordance with National Fire Code of Canada and manufacturer's recommendations and CEPA SOR/2008-197.

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

.3 Install tanks using certified installers, licensed in the province of Nova Scotia.

.4 Provide certification of installation to Departmental Representative.

3.2 FIELD QUALITY CONTROL

.1 Test tanks as per manufacturer’s specifications.

3.3 TOUCH-UP

.1 Where coating is damaged, touch-up with original coating material as per manufacturer’s instructions.

3.4 LEVEL GAUGE SYSTEM

.1 Calibrate system.

3.5 LEAK DETECTION SYSTEM

.1 Install in accordance with manufacturer's recommendations.

END OF SECTION