

Part 1 General**1.1 GENERAL INSTRUCTIONS**

- .1 All works and materials shall meet the requirements of the standards referenced herein, the General Instructions, and specific requirements outlined in the following sub-sections.
- .2 Submit shop drawings of tank and appurtenances for approval by Departmental Representative prior to manufacturing.

Part 2 Products**2.1 MAIN AST**

- .1 9,100 litre Gasoline (Exact volume may vary with tank manufacturer's standard sizes).
- .2 Horizontal cylindrical.
- .3 Steel.
- .4 Saddles and bands.
- .5 CAN/ULC-S601-14 labeled as per standard.
- .6 Double-walled with vacuum monitored interstitial space.
- .7 As per drawing M101.
- .8 Dipsticks and charts to be included with tank (cm).
- .9 Gasoline - pressure/vacuum vent 2 oz pressure/½ oz vacuum vent.
- .10 Spill fill box as per Detail 5 Drawing M101, c/w lockable hinged lid and drain valve.
- .11 25Ø Water Draw-Off with male tight fill connector, dust cap and drop pipe.
- .12 50Ø Dipping port with male tight fill connector and dust cap.
- .13 Gasoline - High Pressure Overfill Prevention Valve c/w 50Ø tight fill connection.
- .14 Overfill Prevention Valve shall be set to shut off at 95% of tank capacity.
- .15 Provide clock gauge with metric face plate (cm), c/w integral high level alarm and annunciator.
- .16 Surface preparation: - SSPC - SP 10, Commercial Blast Clean.
- .17 Coatings: 1 coat Hi-Build Epoxy primer (5-6 mils dft) to SSPC-PA2 and Polyurethane (2-3 mils dft) finish surface coat, colour "WHITE".
- .18 A 1/8" thick neoprene gasket shall be installed between the outer tank shell and the support saddles and restraining bands to prevent coating damage.
- .19 Two grounding tabs shall be provided (one on each end of the tank shell). Each tab shall have a 15 mmØ (1/2") hole for attachment of cable lugs to tank.
- .20 Lifting lugs shall be provided such that the tank and support can be lifted together as a unit.
- .21 The tank shall be marked in conformance with CPPI as well as requirements of the National Fire Code and ULC CAN-S601. The shell of the tank (on the fill piping side) and each end shall be stenciled (in 100mm tall black letters):

GASOLINE**CAPACITY 9,100 LITRES****MAXIMUM FILL 8,190 LITRES****SAFE FILL HEIGHT _____***

*Tank level at "Safe Fill Height" shall equal 90% of volumetric capacity of the tank in centimeters.

- .22 Angle uprights on tank provided to suit pipe support.
- .23 Access step shall be provided for the tank as per drawing M101. Stair treads shall be galvanized and bolted to stringers. Stringers and other structural steel elements shall be prepared and coated as per the tank specification. The step shall conform to the National Building Code and Saskatchewan Workers' Compensation Board (WCB) standards in all respects.

Part 3 Execution**3.1 TANK MANUFACTURING AND INSTALLATION SPECIFICATIONS**

- .1 This tank shall be delivered to the Sandy Bay RCMP site - Sandy Bay Avenue, Sandy Bay, SK S0P 0G0.
- .2 Tank to be installed by the Contractor.

3.2 CONDITION OF SERVICE

- .1 For gasoline fuel dispensing.
- .2 Environment is Northern Saskatchewan weather conditions.

3.2 TANK MANUFACTURING CODES AND STANDARDS

- .1 The tanks shall be manufactured to Underwriters Laboratories of Canada (ULC) Standard S601-14 "Standard for Shop Fabricated Steel Aboveground Horizontal Tanks for Flammable and Combustible Liquids".
- .2 The tanks shall be double wall with vacuum monitoring of the interstitial space to meet ULC Standard S601-14 requirements for double wall tanks.
- .3 The tank will be fitted with manual fuelling equipment to meet ULC/ORD-C142.19 "Spill Containment Devices for Aboveground Flammable and Combustible Liquid Storage Tanks".
- .4 The Steel Structure Painting Council Standards for Surface Preparation and Paint Applications as noted in this specification.
- .5 The tanks shall be supported on saddles, seismic restraint brackets, and bolts to meet the requirements of the National Building Code of Canada. Shop drawings shall be delivered to the Departmental Representative prior to start of fabrication.
- .6 Tank appurtenances to be supplied with the tank shall meet the requirements of CCME PN 1326, CEPA, NFCC, NBC, CSA, CEC, and B31.3, latest editions.
- .7 1 – Wood gauging stick (calibrated in cm) c/w plastic coated gauge chart and strike plate in tank bottom.
- .8 Grounding lugs as required.
- .9 Tanks to have ULC and manufacturer's labels affixed to the shell plate.

3.3 TANK INSTALLATION

- .1 The tank shall be visually inspected over the entire surface before and after shipping.

Special attention should be given to locations of shipping cradles and attachment straps. If any damage is present the tank shall not be installed until inspected by the Departmental Representative and repaired if necessary by the manufacturer's representative.

- .2 Inspect for the following defects before and after shipping:
 - .3 Visible damage to shell plate or nozzles; i.e. dents, appurtenance nozzles out of alignment, stress bends or deformation of shell plates and/or saddle supports and paint scrapes.
 - .4 Read and record vacuum gauge reading before off-loading including an annotation of the ambient temperature at the time of the readings. Record the vacuum gauge readings after the tanks are set on concrete slab. The Contractor will be provided with the vacuum gauge readings for the tank(s) recorded before shipping and the two readings shall be compared before off-loading at the site. Any readings varying more than 2" Hg less than the recorded vacuum at the plant site must be reported immediately to the Manufacturer before off-loading the tank.
- .3 The contractor shall immediately report all other defects to the Departmental Representative. The report of damage to the Departmental Representative shall include photographs signed and dated by the contractor's on-site foreman.

END OF SECTION

Part 1 GENERAL**1.1 REFERENCES**

- .1 Canadian Standards Association (CSA International)
 - .1 CSA C22.2 No. 211.1, Rigid Types EBI and DB2/ES2 PVC Conduit.
 - .2 CSA C22.2 No. 211.3, Reinforced Thermosetting Resin Conduit (RTRC) and Fittings (Bi-national standard, with UL 1684).

1.2 SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
 - .1 Submit manufacturer's printed product literature, specifications and datasheet and include product characteristics, performance criteria, physical size, finish and limitations.
- .3 Quality assurance submittals: submit following in accordance with Section 01 45 00 - Quality Control.
 - .1 Certificates: submit certificates signed by manufacturer certifying that materials comply with specified performance characteristics and physical properties.
 - .2 Manufacturer's Instructions: submit manufacturer's installation instructions and special handling criteria, installation sequence, cleaning procedures.

Part 2 PRODUCTS**2.1 PVC DUCTS AND FITTINGS**

- .1 Rigid PVC duct: to CSA C22.2 No. 211.1, Type DB2/ES2, with fabricated fittings, for direct burial, Trade size 5 or 6. Nominal length: 3 m plus or minus 12 mm.
- .2 Rigid PVC split ducts.
- .3 Rigid PVC bends, couplings, reducers, bell end fittings, plugs, caps, adaptors same product material as duct, to make complete installation.
- .4 Rigid PVC 90 degrees and 45 degrees bends.
- .5 Rigid PVC 5 degrees angle couplings.
- .6 Expansion joints as required.

2.2 SOLVENT WELD COMPOUND

- .1 Solvent cement for PVC duct joints.

2.3 FIBREGLASS DUCTS

- .1 Fibreglass reinforced thermoset duct: to CSA C22.2 No. 211.3, Trade size 5 or 6, watertight type.
- .2 Couplings, reducers, plugs, caps, adaptors, and supports to make complete installation.
- .3 Expansion joints as required.

2.4 PLASTIC POLYETHYLENE PIPE

- .1 Rigid plastic polyethylene pipe with approved couplings and fittings required to make complete installation.

2.5 CABLE PULLING EQUIPMENT

- .1 6 mm stranded nylon pull rope tensile strength 5 kN.

2.6 MARKERS

- .1 Concrete type cable markers: as indicated, with words: "Cable", "Joint" or "Conduit" impressed in top surface, with arrows to indicate change in direction of duct runs.
- .2 Cedar post type markers: 89 x 89mm square, 1.5 m long, pressure treated with clear, copper naphthenate or 5% pentachlorophenol solution, water repellent preservative, with nameplate fastened near post top, on side facing duct.
 - .1 Nameplate: aluminum anodized 89 x 125 mm, 1.5mm thick mounted on cedar post with mylar label 0.125 mm thick with words "Cable" "Joint" or "Conduit" with arrows to indicate change in direction.

Part 3 EXECUTION**3.1 MANUFACTURER'S INSTRUCTIONS**

- .1 Compliance: comply with manufacturer's written recommendations or specifications, including product technical bulletins, handling, storage and installation instructions, and datasheets.

3.2 INSTALLATION

- .1 Install duct in accordance with manufacturer's instructions.
- .2 Clean inside of ducts before laying.
- .3 Ensure full, even support every 1.5 m throughout duct length.
- .4 Slope ducts with 1 to 400 minimum slope.
- .5 During construction, cap ends of ducts to prevent entrance of foreign materials.

- .6 Pull through each duct steel mandrel not less than 300 mm long and of diameter 6 mm less than internal diameter of duct, followed by stiff bristle brush to remove sand, earth and other foreign matter.
 - .1 Pull stiff bristle brush through each duct immediately before pulling-in cables.
- .7 In each duct install pull rope continuous throughout each duct run with 3m spare rope at each end.
- .8 Install markers as required.

END OF SECTION