

1. GENERAL

1.1 Intent

- .1 Provide complete, fully tested and operational mechanical systems to meet the requirements described herein and in complete accord with applicable codes and ordinances.
- .2 In general work in this Division includes:
 - Supply of pump discharge pipes.
 - Installation of pump systems.
 - Electrical room ventilation system.
- .3 Drawings are diagrammatic. They establish scope, material and installation quality and are not detailed installation instructions.
- .4 Follow Manufacturers' recommended installation details and procedures for equipment, supplemented by requirements of Contract Documents.
- .5 General Conditions and Supplementary Conditions shall apply to work in this system.
- .6 Connect to equipment specified in other Sections and to equipment supplied and installed by other Contractors or by the City of Winnipeg (City). Uncrate equipment, move in place, install complete; start-up and test.
- .7 'Provide' shall mean; "supply and install'.

1.2 Co-ordination of Work

- .1 Make reference to electrical, mechanical, structural and architectural Drawings when setting out Work. Consult with respective Divisions in setting out locations for ductwork, equipment, and piping, so that conflicts are avoided. Jointly resolve all conflicts on-site before fabricating or installing any materials or equipment.
- .2 Where dimensional details are required, coordinate with the applicable architectural and structural Drawings.

1.3 Quality of Work

- .1 All Work shall be by qualified tradesmen with valid Provincial Trade Qualification Certificates. Spot checks will be made by the Contract Administrator.
- .2 Work which does not conform to standards accepted by the Contract Administrator and the trade may be rejected by the Contract Administrator.

1.4 Operating and Maintenance Manuals

- .1 Combine Division 11, 15 and 16 Operating and Maintenance manual information into one binder with appropriate separation sheets and tags as required.

END OF SECTION

1. GENERAL

1.1 Scope

- .1 Install Pump System specified in Section 11000.
- .2 Supply pump discharge pipes.
- .3 Section 15010 shall apply to work in this section.

2. PRODUCTS

2.1 Pump Discharge Pipes

- .1 Supply two (2) Schedule 10 304 stainless steel discharge pipes and integral pump support plates as specified, as shown on the drawings, and to meet the requirements of the pump.
 - .2 Provide stiffening and guiding webs at the pump support seat as required to ensure concentric positioning of the pump within the discharge column.
 - .3 Use ASTM A312 Gr. TP304L butt welded, material for the entire pipe and pump support plate assembly.
 - .4 All welding shall be done by qualified welders, under CSA Specification W47 in accordance with the requirements of CSA W59.
 - .5 The following processes are approved for pipe fabrication, assembly and erection:
 - .1 Gas Tungsten Arc (GTAW) – manual or automatic welding, inert gas shielding.
 - .2 Gas Metal Arc (GMAW) – semi-automatic welding, inert gas shielding
 - .3 Plasma Arc (PAW) – automatic welding only for thickness above 3/8", neutral (non-alloying) flux shielding.
 - .4 Submerged Arc (SAW) – automatic welding only for thickness above 3/8", neutral (non-alloying) flux shielding.
- Inert gas shielding shall consist of Argon, Helium or a mixture of these two. Mixtures of Argon and / or Helium with not more than 5% by volume of H₂, O₂ and/or CO₂ shall be used only with Engineer's prior approval.

3. EXECUTION

3.1 Pump System – Install

- .1 Handle and transport the pumps according to the manufacturer's recommendations.
- .2 Install the pumps according to the manufacturer's recommendations.
- .3 Coordinate with Section 16 to ensure the integral pump cable and cable support system are securely installed to avoid movement when the pump is in operation and that this system does not rub against adjacent supports, walls, etc. Provide stainless bolts and anchors as required to install the pump cable support system.
- .4 Install and secure the pump hoisting cable system as per the pump manufacturer's recommendations and as shown on the drawings.

3.2 Pump System Testing

- .1 Co-ordinate all parties involved in scheduling, planning and executing the pump test specified in Section 11000. This shall include as required:
 - City of Winnipeg
 - KGS Group
 - Electrical Contractor
 - Equipment suppliers including, pump, electrical, control and other supplies as required to ensure testing can be completed expeditiously and that issues arising during testing can be addressed as they arise.

- .2 Assist the pump supplier in carrying out the flow tests specified in Section 11000. This may involve the following activities:
 - .1 lifting the pumps out of the FPS to permit the supplier to inspect the pump and make any necessary adjustments.
 - .2 Provide a safe closure panel at the FPS outlet to contain water used for testing. When testing has been completed, remove this panel from the site and release the test water to the floodway.
 - .3 Co-ordinate the pump testing schedule and make arrangements through the Contract Administrator for the City to provide water for pump testing via the FPS inlet pipe to a level of 226.3 m.

- .6 Timing of this test will be determined by the Contract Administrator. The Contractor will be responsible for any installation related issues or deficiencies that may arise during this testing program.

END OF SECTION

1. GENERAL

1.1 Scope

- .1 Supply and install an electrical room ventilation system as shown on the drawings and as specified.
- .2 Section 15010 shall apply to work in this section.

1.2 References

- .1 AMCA 210, Laboratory Methods of Testing Fans for Rating Purposes
- .2 National Electrical Code (NEC)
- .3 National Electrical Manufacturers Association (NEMA) MG1, Motors and Generators
- .4 National Fire Protection Association (NFPA) 70, National Fire Protection Code
- .5 Sheet Metal and Air Conditioning Contractors' National Association (SMACNA), Heating, Ventilation, and Air Conditioning (HVAC) Duct Construction Standards – Metal and Flexible

2. PRODUCTS

2.1 Supply Fan

- .1 Fan shall be "Howden Buffalo" baby vent set, size B, 1/3 H.P., 115/1/60, 3450 RPM motor.

2.2 Quality Assurance

- .1 Fabricate in accordance with Sheet Metal and Air Conditioning Contractors' National Association (SMACNA) duct manuals and American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) handbooks.

2.3 Material

- .1 Sealant: Water resistant, fire resistive, compatible with mating materials.

2.4 Flexible Connections

- .1 Fabricate of ULC approved neoprene coated flameproof glass fabric approximately 150 mm (6 in.) wide tightly crimped into metal edging strip and attached to ducting and equipment by screws or bolts at 150 mm (6 in.) intervals. Flexible connection airtight at 500 Pa (2 in wg).
- .2 Install on fan inlet connection.

2.5 Ductwork

- .1 Provide ductwork to conform to SMACNA Standards for low pressure ductwork.

2.6 Louvres

- .1 Provide two (2) 450 mm x 300 mm "E.H. Price" K609HP, fixed blade c/w bird screen or approved equal.

3.0 EXECUTION

3.1 Installation

- .1 Rigidly construct metal ducts with joints mechanically, substantially airtight, braced and stiffened so as not to rattle, vibrate or sag. Caulk duct joints and connections with sealant as ducts are being assembled. Seal duct seams watertight with mastic or low velocity duct sealant.

END OF SECTION