PART 1 - GENERAL

1.1 RELATED REQUIREMENTS

.1 Section 23 20 13 - High Pressure Piping Systems Inside Buildings and CHC Plants

1.2 ACTION AND INFORMATIONAL SUBMITTALS

.1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.

.2 Product Data:

.1 Provide manufacturer's printed product literature and datasheets for units and pumps, and include product characteristics, performance criteria, physical size, finish and limitations.

.3 Shop Drawings:

.1 Provide drawings stamped and signed by professional engineer registered or licensed in Province of Ontario, Canada.

.1 Pump curves with point of operation.

.2 NPSH at design temperatures.

1.3 CLOSEOUT SUBMITTALS

.1 Provide operation and maintenance data for incorporation into manual specified in Section 01 78 00 - Closeout Submittals.

1.4 DELIVERY, STORAGE AND HANDLING

.1 Deliver, store and handle in accordance with Section 01 61 00 - Common Product Requirements.

.2 Deliver materials to site in original factory packaging, labelled with manufacturer's name, address.

.3 Packaging Waste Management: remove for reuse by manufacturer of pallets, crates, padding, and packaging materials in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

PART 2 - PRODUCTS

2.1 PACKAGED CONDENSATE UNIT, BASE MOUNTED PUMPS

.1 Suitable for service up to 121 degrees C.

.2 General: single unit mounted on concrete base with neoprene pad between pump and base. Neoprene pad thickness to manufacturer's specifications.

.3 Pump:

.1 Volute: cast iron radially split, flanged suction and discharge connections, tappings for vent, drain, pressure gauge on suction and discharge.

.2 Impeller: cast bronze, securely keyed to shaft, replaceable wear rings.

.3 Shaft: alloy steel.

.4 Seals: mechanical.

.5 Bearings: in-board and out-board single race ball bearings grease lubricated.

.6 Coupling: flexible self-aligning.

.7 Motor: EEMAC Class B, squirrel cage induction, 3450r/min, continuous duty, drip proof, ball bearing, maximum temperature rise 50 degrees C.

.4 Piping fittings: to Section 23 20 13 – High Pressure Piping Systems Inside Buildings and CHC Plants.

.5 Controls:

.1 Wall-Mounted Disconnect

.2 Wiring between pumps and disconnect by Division 23.

.3 All alarms must be tied back to existing pager system in control room.

.6 Condensate Pumps Sequence of Operations :

.1 Pumps are manual start/stop.

.2 **If condensate tank volume rises above high limit switch, pumps are turned on and alarm is sent to pager system in control room.**

.3 **If condensate tank volume drops below low limit switch, pumps are turned off and alarm is sent to pager system in control room.**

.7 Capacity: as indicated.

PART 3 - EXECUTION

3.1 APPLICATION

.1 Manufacturer's Instructions: comply with manufacturer's written recommendations, including product technical bulletins, handling, storage and installation instructions, and datasheets.

3.2 INSTALLATION

.1 Place level, shim unit and grout.

.2 Pipe up to system as indicated.

.3 Check rotation prior to start-up.

.4 Check bearings for lubrication.

3.3 SYSTEM START-UP AND PERFORMANCE VERIFICATION (PV)

.1 General:

.1 In accordance with Section 01 91 13 - General Commissioning (Cx) Requirements, supplemented as specified herein.

.2 Start-up:

.1 Check strainers and clean as often as necessary until system is clean.

.2 Tighten as necessary glands of valves, pumps.

.3 Check lubrication and add as necessary.

.4 Determine source of loss and rectify deficiencies.

.3 Performance Verification (PV):

.1 Test unit for capacity, NPSH at design temperatures.

.2 Discharge condensate to sewer until system is clean.

.4 Reports:

.1 In accordance with Section 01 91 13 - General Commissioning (Cx) Requirements: reports supplemented as specified herein.

.2 Include:

.1 Report forms as specified Section 01 91 13 - General Commissioning (Cx) Requirements: report forms and schematics.

3.4 CLEANING

.1 Clean in accordance with Section 01 74 11 - Cleaning.

.1 Remove surplus materials, excess materials, rubbish, tools and equipment.

.2 Waste Management: separate waste materials for reuse in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

END OF SECTION