PART 1 - GENERAL REQUIREMENTS

1.01 SUMMARY

A. This Section includes the following types of plumbing pumps:

1. Condensate pumps for HVAC equipment

B. Related Sections: The following sections contain requirements that relate to this Section:

1. Division 22 Section “Coordination” for basic requirements for electrical components that are an integral part of packaged system components.
2. Division 22 Section “Sanitary Drainage and Vent Piping and Specialties” for condensate pipe material and installation requirements.
3. Division 23 Section “Direct-Digital Control for HVAC” for interlock with HVAC equipment and interlock of alarms with building automation system and alarm wiring.
4. Division 26 Section “Common Work Results for Electrical” required electrical devices.
5. Division 26 Sections "Enclosed Switches and Circuit Breakers" for field-installed disconnects.

1.02 SUBMITTALS

A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections.

1. Product data including standard performance curves, weights (shipping, installed, and operating), furnished specialties, and accessories, plus installation and start-up instructions.
2. Wiring diagrams detailing wiring for power, signal, and control systems; differentiating between manufacturer-installed wiring and field-installed wiring.
3. Maintenance data for condensate pumps, for inclusion in Operating and Maintenance Manuals specified in Division 1 and Division 22 Section "General Plumbing Requirements."

1.03 QUALITY ASSURANCE

A. Hydraulic Institute Compliance: Design, manufacture, and install condensate pumps in accordance with "Hydraulic Institute Standards."

B. National Electrical Code Compliance: Components shall comply with NFPA 70 "National Electrical Code."

C. UL Compliance: Plenum rated condensate pumps shall be listed and labeled by UL and comply with Standard 2043 “Fire Test for Heat and Visible Smoke Release for Discrete Products and Their Accessories Installed in Air Handling Spaces”.

D. NEMA Compliance: Electric motors and components shall be listed and labeled NEMA.

E. Single-Source Responsibility: Obtain plumbing pumps of the same type from a single manufacturer.

F. Design Criteria: The Drawings indicate capacity, connections, and power requirements of condensate pumps and are based on the specific manufacturer types and models indicated. Pumps having equal performance characteristics by other manufacturers may be considered, provided that deviations in dimensions and profiles do not change the design concept or intended performance as judged by the Architect. The burden of proof for equality of plumbing pumps is on the proposer.

1.04 WARRANTY

A. Warranty on Pumps: Provide written warranty, signed by manufacturer, agreeing to replace/repair, within warranty period, pumps with inadequate or defective materials and workmanship, including leakage, breakage, improper assembly, or failure to perform as required; provided manufacturer's instructions for handling, installing, protecting, and maintaining units have been adhered to during warranty period. Replacement includes both parts and labor for removal and reinstallation.

1. Warranty Period: One year from date of substantial completion.

PART 2 - PRODUCTS AND MATERIALS

2.01 MANUFACTURERS

A. Products: Subject to compliance with requirements, provide one of the following:

1. Non-Plenum Rated HVAC Condensate Pump:

a) Little Giant
b) Liberty Pumps

2.02 PUMPS, GENERAL

A. Condensate Pumps: Factory assembled and factory tested.

B. Preparation for shipping: Provide suitable packaging to protect pump from damage during shipping.

2.03 CONDENSATE PUMPS FOR HVAC EQUIPMENT

A. General Description: Pumps shall be direct connected, single stage type with body and reservoir of a material suitable for plenum or non-plenum installation as scheduled on plans, normally open safety overflow switch with two dry contacts, integral check valve and power cord with ground.

B. Non-plenum rated: Reservoir and body shall be either ABS or PE plastic.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Install in accordance with manufacturer's installation instructions.

B. Install pumps in locations and arrange to provide access for periodic maintenance.

C. Support pumps and piping separately so that the weight of the piping system does not rest on the pump.

3.02 EXAMINATION

A. Examine areas, equipment foundations, and conditions with Installer present, for compliance with requirements for installation and other conditions affecting performance of plumbing pumps. Do not proceed with installation until unsatisfactory conditions have been corrected.

B. Examine rough-in for plumbing piping systems to verify actual locations of piping connections prior to installation.

3.03 CONNECTIONS

A. Piping between the HVAC unit and the pump shall be the greater of the discharge port size on the HVAC equipment or 3/4" pipe size or as shown on plans, whichever is larger. Discharge piping from the condensate pump shall be equal to or greater than the diameter of the pump nozzle, minimum 3/4", or as shown plans, whichever is larger. Condensate pump discharge pipe material is specified in Division 22 Section "Sanitary Drainage and Vent Piping and Specialties".

B. Electrical wiring and connections are specified in Division 26 section "Common Work Results for Electrical".

C. Coordinate interlock of condensate pump safety overflow switch with unit served to disable unit if safety overflow switch closes as noted on plans and schedules. HVAC interlock wiring and alarm interlock with the building automation system are specified in Division 23 Section "Direct-Digital Control for HVAC".

D. Coordinate interlock of condensate pump failure alarm with Building Automation System. HVAC interlock wiring and alarm interlock with the building automation system are specified in Division 23 Section “Direct-Digital Control for HVAC”.

3.04 STARTUP

A. Final Checks Before Start-Up: Perform the following preventative maintenance operations and checks before start-up:

1. Ensure pump is connected to the condensate discharge system.
2. Verify all power wiring is in place and power is provided to pump.

B. Testing procedure for condensate pumps:

1. Pour water into the pump reservoir until the water sensing switch is activated.
2. Verify water is pumped out of the reservoir and that there are no leaks in the condensate piping or at the connection point to the pump.
3. Verify integral check valve is operating properly, replace with new if found to be defective.

END OF SECTION