Section XIX

SANITARY SEWER PUMP STATION

CONSTRUCTION PROCEDURES

This section covers construction procedures normally required for work within the District. It does not cover any special construction procedures which may be encountered for abnormal conditions.

Special construction procedures are to be presented to the District by the Developer's Design Engineer.

A. SELF PRIMING PUMPS

1. Installation of unit.

    a. Block and shim as necessary to place at proper elevation plumb and level.

    b. Snug down anchor bolt nuts and grout uneven places beneath pump station base using non-shrink grout.

2. Piping:

    a. Install suction, discharge and air release piping. See Details in Section XX.

    b. Install reinforced, clear tygon tubing on air release lines to the wetwell.

    c. Locate interior piping parallel with, or at right angles to, walls ceilings, equipment, etc. unless otherwise indicated.

    d. Clean flange faces, fit joint with 1/16" red rubber full face gasket and make bolts up finger tight.
        1) Use torque wrench, alternately tightening bolts 180? apart until full gasket flow and seal are secured.
        2) Bias cut or unusual refacing of any flange is not acceptable.

3. Field wiring:

    a. Comply with NEC and local electrical codes.

    b. Mount and connect alarm light and bell for remote mounting.

4. Testing:

    a. Operate pumps utilizing manual and automatic modes, demonstrating proper operational sequences including alarm conditions.

B. SUBMERSIBLE SEWAGE PUMPS

1. Use base plate as a template for drilling individual hole patterns.

    a. Mount base plates using ¾" Type 316 stainless steel expansion anchors.

2. Set up 60? slope on both sides of wetwell using portland cement grout.

3. Locate jib crane socket from details in Section XX.

    a. Cast into concrete wetwell top.

4. Assemble guide rails to access frame and plumb the assembly.

5. Install float switch cable holder to precast top:

    a. Use Type 316 stainless steel anchors.

6. Install pumps and piping, plumbing assembly for proper alignment and fit.

7. Seal around inlet and discharge piping.

8. Install power cables using cable strain reliefs and cord grips.

9. Field wiring:

    a. Extend grounding wire from control panel main ground screw to external ground as shown in details.
        1) Comply with NEC and local electrical codes.

b. Make motor lead, mercury float switch, temperature sensor, moisture sensor, and power supply connections.

c. Seal all conduits between junction box and control panel as shown in details.
   1) Comply with all pertinent National Electric Code requirements.

d. Seal conduit terminations in control panel with duct seal.

e. Use licensed personnel.

3. Pump testing:

a. Provide the following inspections and tests on each pump before shipment from factory by the manufacturer:
   1) Check impeller, motor rating and electrical connections for compliance to the customer's purchase order.
   2) Make a motor and cable insulation test for:
      a) Moisture content.
      b) Insulation defects.
   3) Prior to submergence, run the pump dry to establish correct rotation and mechanical integrity.
   4) Run the pump for 30 minutes submerged, at a minimum of 6' underwater.
   5) After operational test No. 4, perform the insulation test (No. 2) again.
   6) Supply a written report stating the foregoing steps have been done with each pump at the time of shipment.

b. Provide the following tests after installation:
   1) In presence of the Developer's Engineer and the District:
      a) Remove pump from structure.
      b) Replace, demonstrating proper alignment and operation of mating parts.
   2) Operate pumps utilizing manual and automatic modes.
   3) Demonstrate proper operational sequences, including alarm conditions.
   4) Measure amperage, voltage, pumping rate and discharge pressure for:
      a) Each pump operating separately.
      b) Both pumps operating simultaneously.

5) Submit six (6) copies of final test report.

C. ULTRASONIC LEVEL CONTROLLER

1. Follow manufacturer's recommendation for the minimum separation between the transducer face and the maximum expected material level.

2. Mount the transducer to ensure a clear path to the material surface.

3. Additional cable for the transducer:

   a. RG62U coaxial.

4. Route wiring between the transmitter and the transducer through grounded conduit.

D. NOTICE OF CONSTRUCTION ACTIVITY

1. Immediately prior to beginning of construction the "Notice of Construction Activity" form as included in the appendix is to be completed and mailed to the District Representative with a copy mailed to the District's Engineering Representative.