

SECTION IV-5 - ELECTRICAL AND INSTRUMENTATION DESIGN CRITERIA

5.1 Pump Control and Level Monitor

All new submersible pump lift stations within the City of Fort Worth shall be controlled using approved control system and equipment with ultrasonic level control. A high water alarm float shall be included within the monitoring system.

5.2 Load Analysis

The design engineer shall prepare a load analysis that will be used to size the main disconnect, switches, generator (if required), motor breakers and starters, transformer, wiring and conduit, and enclosures. Electrical system shall meet the requirements of the City of Fort Worth Electrical Code.

5.3 Single Line Diagrams

The design engineer shall prepare a single line diagram of the lift station electrical system and include the diagram within the engineering plans.

5.4 Control System Wiring Diagrams

The design engineer shall prepare the control wiring diagram(s) and include the diagram(s) within the engineering plans.

5.5 Enclosure Layout Diagrams

The engineer shall prepare a schematic of the electrical enclosure layout, motor control center, and support structures and include the schematics within the engineering plans.

5.6 Enclosures

When mounted outside, all enclosures shall be NEMA 4, type 304 or type 316 stainless steel. Enclosures must be mounted above the 100 year base flood elevation. Motor control centers mounted inside a control building may be NEMA 3R.

5.7 Lighting

The lift station site shall be lighted with an approved outdoor site light, 400 watts minimum, with photocell and manual switch. In addition, valve vaults and motor control center buildings and enclosures shall be lighted.

5.8 SCADA Control

Design engineer shall provide SCADA monitoring system within the plans and specifications. SCADA remote monitoring system shall be of the type and manufacturer required by the Fort Worth Water Department. For sites requiring radio telemetry, design engineer may be required to provide radio frequency study as part of the project.