

5.0 INTERIOR

5.1 SLIDE RAILS

All pump lifting slide rails shall be made of 316 or 304 stainless steel pipe. Slide rails shall be installed and sized per manufacturer's instructions. The slide rails shall be firmly braced to the wet well wall with stainless steel support brackets placed at a maximum spacing of 8 feet.

5.2 LIFTING CHAIN

Pump lifting chain, clevises and shackles shall be made of 316 or 304 stainless steel. The chain shall be sized to accommodate the installed pump weight, but shall not be sized smaller than 3/16-inch stainless steel diameter links.

5.3 BOLTS

All field installed bolts, nuts, and washers used inside either the pump or valve chamber shall be made of 316 or 304 stainless steel.

5.4 FASTENERS

All concrete fasteners used for installation of braces, brackets or boxes shall be stainless steel Wej-It type stud anchors. Anchor holes shall be drilled to the manufacturer's recommended depth. Anchors shall be Hilti Quick Bolt Two or an approved equal. Pump base anchor studs shall be sized as per pump manufacturer's recommendation.

5.5 FLOATS AND SETTINGS

- A. Pump floats shall consist of a mercury tube switch sealed in a corrosion resistant polypropylene housing with a minimum of 18 gauge, 2-wire, SJOW/A jacketed cable. The cable must be of sufficient length to reach the junction box with no splices and to allow removal of the float without entering the wet well. The level controls shall be suspended so that adjustment or replacement may be done without the use of any tools or without entering the wet well. The floats shall be UL/CSA listed.
- B. Floats shall not be located near the flow of the incoming sanitary lines.
- C. Sewage shall not rise to the level of the incoming gravity lines or the 8-hour retention pipe during normal pump operation for either single or double pump operation.

- D. All floats shall be located away from the turbulence of the incoming flow.
- E. The following levels shall guide the setting of float levels.
 - 1. Off Float -The pump shall have water covering the top of the pump volute at the off level.
 - 2. First Pump - No Less than one foot above top of pump motor.
 - 3. High Level Alarm - No less than 2 feet above the top of pump motor.
 - 4. Lag Pump - No less than 2 feet above top of pump motor and no more than one inch below the 8-hour retention line.
- F. Float leads and pump cords shall be suspended with stainless steel kellum grips from the bracket supplied by the pump manufacturer. The bracket shall be attached to the wet well hatch frame or firmly bolted to the concrete immediately below the hatch frame. The bracket shall be positioned so that float leads and pump cords are easily accessible without entering the wet well.
- G. Float wires shall be neatly routed away from the pump access hatch opening then through the chamber access conduit, without excessive wire strain or pull. Wire length on all float wires shall be such that each float may be adjusted to the bottom of the station wet well.
- H. Installed pump top and bottom elevations as well as the float elevations shall be shown on the pump station interior drawing.

5.6 ACCESS HATCHES

All pump and valve chambers shall be provided with aluminum access hatches as follows:

- A. The access hatches shall be of aluminum construction rated for a 300 lbs. per square foot loading. Door size shall be as indicated on the drawings. The access frame and cover shall be flush with the top of the concrete with hinged and flush-locking mechanism, upper guide holder and level sensor cable holder. Frame shall be securely placed, mounted above the pumps. Hatches shall be equipped with form skirts, sized for the slab top thickness. Doors

shall be provided with padlock lugs.

- B. Hatches shall be Bilco Type PCM or PDCM, or Halliday model S1S, or R1R or approved equal.
- C. All access hatch construction materials and appurtenances shall be manufactured from stainless steel, aluminum or brass.

5.8 PRESSURE SENSORS

Pressure sensors, if required, may be of the full-flange design with thru bolt holes or one piece wafer style with carbon steel flanges. Sensors shall clamp between standard ANSI pipeline flanges. All exposed surfaces to be epoxy painted or of a non-corrosive material. Sensor shall be flow thru design with flexible Buna-N elastomer sensing ring around the full circumference.

Gauges to be 2 1/2-inch dial, Span Model 220 with 1/4-inch connection.

Pressure switches shall have Nema-7 Housings with Single Pole Double Throw, snap-action switching elements. Switches shall be wired normally closed, with adjustable pressure settings. The pressure range shall be specified for each specific installation. Switches shall be, "NEO-DYN Model 132P4-8C6."

Accessory piping to be 1/2-inch or 1/4-inch Parker Hex stainless steel with reducing fittings where necessary to connect instruments. Pressure sensors shall be "Red Valve" Series 40 flanged wafer sensors EVR type PES or approved equal.

5.9 PUMP CHAMBER INSPECTION

Following placement of the wet pit pumps and prior to allowing water in to the pump station, the pump station floor will need to be inspected by the City. The pit floor must be clean and dry for this inspection. The contractor/developer shall be responsible for arranging this inspection with the City.