



**SACRAMENTO AREA  
SEWER DISTRICT**

**PUMP STATION STANDARD  
EQUIPMENT AND REQUIREMENT LIST**

JUNE 21, 2018

Sacramento Area Sewer District  
10060 Goethe Road  
Sacramento CA 95827

Equipment/Category	Description
<b>Breakers</b>	<ul style="list-style-type: none"> <li>• All panel board breakers must have individual padlock hasps. Install in accordance with NEC code.</li> <li>• Hasps must be lockable in the “off” position. Provide lock out provisions for all breakers.</li> </ul>
<b>Canopy</b>	<ul style="list-style-type: none"> <li>• Design the canopy to provide shade from direct sunlight.</li> </ul>
<b>Cathodic Protection</b>	<ul style="list-style-type: none"> <li>• Cathodic protection must be designed by an NACE certified cathodic protection specialist or a licensed corrosion engineer.</li> </ul>
<b>Crane</b>	<ul style="list-style-type: none"> <li>• Cranes must have lifting capacity to remove all pumps from wet well onto a flatbed truck.</li> <li>• The hook must hang feely over the pick point of the pump.</li> </ul>
<b>Discharge Connection</b>	<ul style="list-style-type: none"> <li>• Provide necessary sliding gate bracket and discharge connection that, when bolted to the floor and to the discharge piping, will receive the pump discharge flange without needing adjustment, fasteners, clamps, or similar devices.</li> <li>• SASD will not accept connections that seal the discharge interface with a diaphragm, O-ring, or profile gasket.</li> </ul>
<b>Generator Software</b>	<ul style="list-style-type: none"> <li>• Provide manufacturer’s software for generator maintenance and troubleshooting.</li> </ul>
<b>Guide Rails</b>	<ul style="list-style-type: none"> <li>• Provide dual 316 stainless steel guide rails.</li> <li>• SASD will not accept wire rope guide rails.</li> <li>• SASD will not accept split joints; weld joints.</li> </ul>

<b>Hatch Covers</b>	<ul style="list-style-type: none"> <li>Use Syracuse Castings Safe Hatch system H-20 rated, or approved equal hatch covers.</li> </ul>
<b>Level Monitoring Transducer</b>	<ul style="list-style-type: none"> <li>Use PMC Submersible Level Transducer VL2113-B163-XX, where XX Designates cable length.</li> </ul>
<b>Locks</b>	<ul style="list-style-type: none"> <li>SASD will provide locks upon acceptance of the facility.</li> </ul>
<b>Meter (Electrical)</b>	<ul style="list-style-type: none"> <li>Stations &gt;100HP pumps: provide Square D power quality meter or approved equal for measuring: Amps, volts, total KW, harmonic distortion, KVAR, KVA, etc.</li> </ul>
<b>Monitors (Hazardous Gas)</b>	<ul style="list-style-type: none"> <li>Use MSA or approved equal gas detection monitors.</li> </ul>
<b>Motor Starters – Full Voltage Non Reversing (FVNR)</b>	<ul style="list-style-type: none"> <li>Use National Electrical Manufacturers Association (NEMA) rated Siemens, Cutler Hammer, Furnas, or approved equal, with electronic overload.</li> </ul>
<b>Motor Starters – Reduced Voltage Soft Starter (RVSS)</b>	<ul style="list-style-type: none"> <li>Use a NEMA rated soft starter with built-in bypass, Allen Bradley or approved equal sized to 125% of full load.</li> </ul>
<b>Odor Control</b>	<ul style="list-style-type: none"> <li>Provide a concrete pad for odor control unit. The pad must have no less than 4-inch conduit.</li> <li>Use a Peacemaker odor control scrubber or equivalent with equipment pad, vent pipe, and power conduit.</li> </ul>
<b>Variable Frequency Drive (VFD)</b>	<ul style="list-style-type: none"> <li>Use NEMA rated VFD Allen Bradley 18 pulse or approved equal. Where 18 pulse is not feasible provide adequate harmonic distortion compensation in accordance with IEEE standards.</li> </ul>
<b>Power Fail Relay</b>	<ul style="list-style-type: none"> <li>Use Time-Mark 258B with base and retaining strap.</li> </ul>

<b>Pressure Gage</b>	<ul style="list-style-type: none"> <li>• Use Ashcroft or approved equal properly sized for the application.</li> </ul>
<b>Pump</b>	<ul style="list-style-type: none"> <li>• Use Flygt, ABS submersible pumps, or approved equal.</li> <li>• Pumps required to have an installed flush valve.</li> </ul>
<b>Pump Monitoring Unit</b>	<ul style="list-style-type: none"> <li>• Use Mini CAS, MAS unit or other monitoring/protection device as recommended by the pump manufacturer.</li> </ul>
<b>SCADA – Cellular Antenna</b>	<ul style="list-style-type: none"> <li>• Use Laird P/N TRAB 806/17103P or approved equal.</li> </ul>
<b>SCADA – Cellular Antenna Feedline</b>	<ul style="list-style-type: none"> <li>• Use LMR 400 with Male N connectors.</li> </ul>
<b>SCADA – Cellular Antenna Mounting Bracket</b>	<ul style="list-style-type: none"> <li>• Use Pulse Larsen P/N: FB3Bracket or approved equal.</li> </ul>
<b>SCADA – Radio Antenna</b>	<ul style="list-style-type: none"> <li>• Use Scala TY-900 or approved equal.</li> </ul>
<b>SCADA – Radio Antenna Feedline</b>	<ul style="list-style-type: none"> <li>• Use LMR 400 with Male N connectors.</li> </ul>
<b>Security System</b>	<ul style="list-style-type: none"> <li>• Use SENTROL Door switches.</li> </ul>
<b>Transfer Switch (Automatic Transfer Switch [ATS])</b>	<ul style="list-style-type: none"> <li>• Use approved ATS, as per design. Use GE Zenith or approved equal.</li> </ul>
<b>Transfer Switch (Manual Transfer Switch [MTS])</b>	<ul style="list-style-type: none"> <li>• Use dual breakers: 1 main, 1 generator power with lockable mechanical interlock.</li> <li>• Wire generator breaker to a termination box.</li> </ul>
<b>Valve (Combination Air Relief Valve ) – Within pump station and above ground</b>	<ul style="list-style-type: none"> <li>• Use 2 inch ARI D-020 NS ST.ST as manufactured by A.R.I. Flow Control Accessories and distributed by T&amp;T Valve and instrument, Inc., 1181 Quarry Lane, Suite 150, Pleasanton, CA, 94566 or approved equal.</li> </ul>

<p><b>Valve (CARV) – Along Pressurized Pipeline</b></p>	<ul style="list-style-type: none"> <li>• Use Nylon, Model Number D-025-10 as manufactured by A.R.I. Flow Control Accessories or approved equal.</li> </ul>
<p><b>Valve (Backflow Preventer)</b></p>	<ul style="list-style-type: none"> <li>• As required by the local water purveyor.</li> </ul>
<p><b>Valve (Ball)</b></p>	<ul style="list-style-type: none"> <li>• Use bronze body, ball, and stem.</li> <li>• Seats, ball and stem housed in removable cartridge, full ports, screwed ends.</li> <li>• Use Jamesbury A11TT, Crane 2330-TF, or approved equal.</li> </ul>
<p><b>Valve (Plug)</b></p>	<ul style="list-style-type: none"> <li>• Use Type EP125: Eccentric plug valve, Class 125. Milliken Millcentric model601 or equal.</li> </ul>
<p><b>Valve (Swing Check)</b></p>	<ul style="list-style-type: none"> <li>• Use Apco Valve and primer Corporation Series 6000CLS, Crispin Valve Series SWC, or approved equal.</li> <li>• Include side-mounted air cushions with adjustable speed control, and an outside weight and lever or outside spring and lever.</li> <li>• Check Valve must consist of the following material:             <ul style="list-style-type: none"> <li>○ Body and Disk – ASTM A126 Grade B Cast Iron</li> <li>○ Seat - Bronze/Buna-N</li> <li>○ Hardware – ASTM A276 Stainless Steel (304)</li> </ul> </li> </ul>
<p><b>Valve (Rotating Double Disk Gate)</b></p>	<ul style="list-style-type: none"> <li>• Use American Rotating Disk, 50 Line Series or approved equal.</li> <li>• Valves must consist of the following material:             <ul style="list-style-type: none"> <li>○ Body, Bonnet, and Disk – ASTM A536 Ductile Iron</li> <li>○ Stem and Stem Nut – Bronze or Stainless Steel</li> <li>○ Hardware - ASTM A276 Stainless Steel (304)</li> </ul> </li> </ul>

<b>Valve (Isolation Gate)</b>	<ul style="list-style-type: none"><li>• Use resilient wedge gate valves in accordance with AWWA C-515.</li></ul>
<b>Wet Well and Valve Vaults</b>	<ul style="list-style-type: none"><li>• Use precast and H-20 rated.</li></ul>

## Abbreviations

NEC	National Electric Code
ABS	Acrylonitrile-Butadiene-Styrene
Amps	Amperes
ASTM	American Society for Testing and Materials
ATS	Automatic Transfer Switch
AWWA	American Water Works Association
HP	Horsepower
IEEE	Institute of Electrical and Electronics Engineers
KVA	Kilo-Volt-Ampere
KVAR	Kilo-Volt-Ampere-Reactive/Reactance
KW	Kilowatts
MSA	Mine Safety Appliances
NACE	National Association of Corrosion Engineers
NEMA	National Electrical Manufacturers Association
SWC	Swing Check Valve