ROSS VALLEY SANITARY DISTRICT
SANITARY DISTRICT NO. 1 OF MARIN COUNTY

APPROVED MATERIALS LIST

APRIL 2015
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</tbody>
</table>
GENERAL REQUIREMENTS

PRODUCTS OF THE USA

Materials and products manufactured in the USA shall be used when feasible.

SUBSTITUTIONS

Materials and products included herein are used to establish the standards of quality and utility required. Additional performance based specifications are included in the District’s Standard Specifications, see applicable sections.

Substitutions which are equal in quality and utility to those included herein will be permitted subject to the following provisions:

1. The Contractor shall submit to the District sufficient data, drawings, samples, literature, calculations, or other detailed information as will demonstrate to the District or its appointed Representative that the proposed substitute is equal in quality and utility to the material or product included herein.

2. The District or its appointed Representative must favorably review in writing such proposed substitutions as are, in its opinion, equal in quality to the items or materials included herein and in conformance with the District’s Standard Specifications.

Failure of the Contractor to submit proposed substitutions for review in the manner described above shall be sufficient cause for rejection by the District of any substitutions otherwise proposed.

MISCELLANEOUS METALS

Unless otherwise noted, all bolts, nuts, and metal hardware shall be Type 316 stainless steel.
# MAIN SEWER PIPING SCHEDULE

Main sewer piping shall be the following, unless otherwise approved, specified, or directed by the District:

## Gravity Mains

<table>
<thead>
<tr>
<th>Installation Method and Conditions</th>
<th>Pipe Material</th>
<th>Joint type</th>
<th>Spec Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open Trench. Typical, unless otherwise required below</td>
<td>PVC Solid Wall C900/C905, DR 18 or thicker</td>
<td>Bell and Spigot</td>
<td>Section 15064, <strong>POLYVINYL CHLORIDE (PVC) PIPE</strong></td>
</tr>
<tr>
<td>Open Trench &lt;3 ft cover w/o pipe protection, or at utility crossings</td>
<td>Ductile Iron Pipe, Min Class 53</td>
<td>Push-On</td>
<td>Section 15061, <strong>DUCTILE IRON PIPE (DIP)</strong></td>
</tr>
<tr>
<td>Open Trench Repairs to Existing VCP</td>
<td>Vitrified Clay Pipe</td>
<td>Bell and Spigot</td>
<td>Section 15055, <strong>VITRIFIED CLAY PIPE (VCP)</strong></td>
</tr>
<tr>
<td>Pipe Bursting, Reaming, and/or HDD (Min 3 ft cover in ROW)</td>
<td>High Density Polyethylene SDR 17 or thicker</td>
<td>Butt-Fusion Welded, de-beaded</td>
<td>Section 15066, <strong>HIGH DENISTY POLYETHYLENE (HDPE) PIPE</strong></td>
</tr>
</tbody>
</table>

## Force Mains

<table>
<thead>
<tr>
<th>Installation Method and Conditions</th>
<th>Pipe Material</th>
<th>Joint Type (Restrained Where Indicated)</th>
<th>Spec Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open Trench, Buried</td>
<td>PVC Solid Wall C900/C905, DR 18 or thicker Or Ductile Iron Pipe, Min Class 53</td>
<td>Bell and Spigot Or Push-On or Mechanical</td>
<td>Section 15064, <strong>POLYVINYL CHLORIDE (PVC) PIPE</strong> Section 15061, <strong>DUCTILE IRON PIPE (DIP)</strong></td>
</tr>
<tr>
<td>Exposed Piping</td>
<td>Ductile Iron Pipe</td>
<td>Flanged or Grooved End</td>
<td>Section 15061, <strong>DUCTILE IRON PIPE (DIP)</strong></td>
</tr>
<tr>
<td>Pipe Bursting, Reaming, and/or HDD (Min 3 ft cover in ROW)</td>
<td>High Density Polyethylene SDR 17 or thicker</td>
<td>Butt-Fusion Welded, de-beaded</td>
<td>Section 15066, <strong>HIGH DENISTY POLYETHYLENE (HDPE) PIPE</strong></td>
</tr>
</tbody>
</table>
SIDE SEWER
PIPING SCHEDULE

Side sewer piping shall be the following, unless otherwise approved, specified, or directed by the District:

### Gravity Side Sewers

<table>
<thead>
<tr>
<th>Installation Method and Conditions</th>
<th>Pipe Material</th>
<th>Joint type</th>
<th>Spec Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open Trench, Typical, unless otherwise required below</td>
<td>PVC C900/C905, DR 18 or thicker</td>
<td>Bell and Spigot</td>
<td>Section 15064, POLYVINYL CHLORIDE (PVC) PIPE</td>
</tr>
<tr>
<td>Open Trench, w/ District Approval</td>
<td>PVC Schedule 80</td>
<td>Solvent Welded, Threaded as required</td>
<td>Section 15064, POLYVINYL CHLORIDE (PVC) PIPE</td>
</tr>
<tr>
<td>Open Trench. &lt;3 ft cover in ROW w/o pipe protection, or at utility crossings</td>
<td>Ductile Iron Pipe, Min Class 53</td>
<td>Push-On</td>
<td>Section 15061, DUCTILE IRON PIPE (DIP)</td>
</tr>
<tr>
<td>Pipe Bursting, Reaming, and/or HDD (min 3 ft cover in ROW)</td>
<td>High Density Polyethylene</td>
<td>Butt-Fusion Welded, de-beaded</td>
<td>Section 15066, HIGH DENISTY POLYETHYLENE (HDPE) PIPE</td>
</tr>
<tr>
<td>Exposed Piping</td>
<td>Ductile Iron Pipe, or Cast Iron Pipe</td>
<td>Push-on/bell &amp; Spigot</td>
<td>Section 15061, DUCTILE IRON PIPE</td>
</tr>
</tbody>
</table>

**Exposed Piping**

- Cast Iron Pipe per ASTM A74

### Pressure Side Sewers

(Discharge from Individual Lot Pump Stations)

<table>
<thead>
<tr>
<th>Installation Method and Conditions</th>
<th>Pipe Material</th>
<th>Joint type</th>
<th>Spec Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open Trench. Typical</td>
<td>PVC Schedule 80</td>
<td>Solvent Welded, Threaded as required</td>
<td>Section 15064, POLYVINYL CHLORIDE (PVC) PIPE</td>
</tr>
<tr>
<td>Pipe Bursting, Reaming, and/or HDD (min 3 ft cover in ROW)</td>
<td>High Density Polyethylene</td>
<td>Butt-Fusion Welded, de-beaded</td>
<td>Section 15066, HIGH DENISTY POLYETHYLENE (HDPE) PIPE</td>
</tr>
</tbody>
</table>
MANHOLE PRODUCTS

Precast Concrete Components
Precast Concrete components shall be manufactured by, or approved equal:
1. Central Precast (US Concrete Precast Group), Pleasanton, CA
2. Hanson Concrete Products, Milpitas, CA.
3. Cook Concrete Products, Redding, CA
4. Oldcastle Precast, Pleasanton, CA

Manhole Frames and Covers
Cast metal manhole frame and covers can be obtained from the following approved manufacturer:
1. D&L Foundry and Supply, Phone Number: (707) 557-4525

See SD-10 for design requirements. Top of cover shall be cast with District logo.

Joint Gaskets:
Manhole joints gaskets shall be manufactured by, or equal:
1. Henry Company, Ram-Nek joint sealant
2. ConSeal, CS-102 Butyl Rubber Sealant

External Joint Sealant Tape:
External manhole joint sealant tape shall be manufactured by, or equal:
1. Henry Company, RU116-Rub’R Nek External Joint Wrap
2. J-K Polysource, External Joint Wrap M-860

Manhole Waterproofing:
All concrete and grout on interior of manholes shall be coated with two coats of waterproofing. Waterproofing shall be one of the following, or approved equal:
1. Xypex Concentrate by the Xypex Chemical Corporation,
2. Tegraproof by Tremcrete Systems

O-Ring Waterstops:
At pipe penetrations into manhole walls and cast-in-place bases, manufactured by or approved equal:
• Calpico, Manhole Adapter Seals, EPDM

Flexible Pipe Connectors (only for approved pre-cast bases):
The flexible connector shall be manufactured by, or approved equal:
1. Z-Lok Connector manufactured by A-Lok Products, Inc

Pipe connector shall cast into the base at the precast plant.

HDPE Manholes
Only for use in easements with difficult access and with District approval.
HPDE manholes shall be manufactured by, or approved equal:
1. KATN Industries
MANHOLE PRODUCTS

Ram-Nek, Joint Gasket

Rub’R Neck, External Joint Wrap

Calpico, O-Ring Waterstops

Z-Lok, Flexible Pipe Connector
(Only for approved pre-cast bases):

KATN Industries, HDPE Manhole
(Only for use in easements)
MANHOLE AND WET WELL REHABILITATION LINERS/COATINGS

For rehabilitation of existing manholes and/or wet wells or new manholes where specified.

**Calcium Aluminate Mortar Systems:**
Manufactured by, or approved equal:
1. Kerneos, SewperCoat PG
2. Strong-Seal Systems, Strong-Seal High Performance

**Epoxy System:**
Manufactured by:
- Raven Lining Systems, Raven 405 epoxy system with Raven 155 primer

**Polyurethane System:**
Manufactured by:
- Sprayroq Protective Lining Systems, Spraywall
GROUTS

The District prefers the use of products manufactured by Sika, where feasible.

Non-Shrink Grout
Nonmetallic, non gas-liberating type, as manufactured by, or approved equal:
1. Sikagrout 328
2. BASF, Master Flow 713
3. UPCO Company, UPCON, High Flow

Epoxy Grout
Manufactured by, or approved equal:
1. Sika, Sikadur 35 Hi-Mod
2. Sikadur 42 Grout-Pak
3. Master Builders, Ceilcote HT648 Grout
4. BASF, Concresive No. 14011001

W.R. Meadows Rezi-Weld will *not* be allowed.
## UTILITY BOXES

All lids shall be **marked/labeled “Sewer”** as available, unless otherwise noted.

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>ITEM DESCRIPTION</th>
<th>PRODUCT</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Traffic Areas</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(including all paved areas</td>
<td>Cleanout Boxes</td>
<td>Christy B1017</td>
</tr>
<tr>
<td>and driveways)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Backwater Prevention Devices</td>
<td>Cleanout Boxes</td>
<td>Christy B1017</td>
</tr>
<tr>
<td>(Type 2)</td>
<td>Backwater Prevention Devices (Type 2)</td>
<td>Christy V12 Box w/ V12-71W grate.</td>
</tr>
<tr>
<td>Backwater Check Valves</td>
<td>Backwater Check Valves</td>
<td>Christy B1017</td>
</tr>
<tr>
<td>Box at end of pressure side</td>
<td>Box at end of pressure side sewer (for private pump</td>
<td>Christy B1324 w/ steel</td>
</tr>
<tr>
<td>sewer</td>
<td>stations)</td>
<td>cover</td>
</tr>
<tr>
<td>Forcemain Valve Boxes</td>
<td>Forcemain Valve Boxes</td>
<td>Christy G05T or G08T</td>
</tr>
<tr>
<td>Tracer Wire Connection Boxes</td>
<td>Tracer Wire Connection Boxes</td>
<td>Christy G05T or G08T</td>
</tr>
<tr>
<td><strong>Non-Traffic Areas</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cleanout Boxes</td>
<td>Cleanout Boxes</td>
<td>Christy B09 Box, w/ precast concrete lid</td>
</tr>
<tr>
<td>Backwater Prevention Devices</td>
<td>Backwater Prevention Devices (Type 2)</td>
<td>Christy V09 Box (Christy B09 box w/ V09-71C Grated Cast Iron Lid)</td>
</tr>
<tr>
<td>Box at end of pressure side</td>
<td>Box at end of pressure side sewer (for private pump</td>
<td>Christy B16</td>
</tr>
<tr>
<td>sewer</td>
<td>stations)</td>
<td></td>
</tr>
<tr>
<td>Backwater Check Valves</td>
<td>Backwater Check Valves</td>
<td>Christy B09 Box, w/ precast concrete lid</td>
</tr>
<tr>
<td>Tracer Wire Connection Box</td>
<td>Tracer Wire Connection Box</td>
<td>Christy F08 Box, w/ precast Concrete Lid</td>
</tr>
</tbody>
</table>
PRECAST VAULTS AND HATCH COVERS

Precast Concrete Vaults
Manufactured by, or equal:
1. Central Precast
2. Oldcastle Precast
3. Jensen Precast

Joints Gaskets
Manufactured by, or equal:
1. Henry Company, Ram-Nek joint sealant
2. ConSeal, CS-101 Butyl Sealant

External Joint Sealant Tape
Manufactured by, or equal:
1. Henry Company, RU116-Rub’R Nek External Joint Wrap
2. J-K Polysource, External Joint Wrap M-60

Aluminum Hatch Covers
Gutter-type, cast into precast at the precast plant, manufactured by the following, or approved equal:
1. Bilco, type “JD”
2. Babcock-Davis
3. Syracuse Castings, DTD

Hatches for openings larger than 42 inches will require double-leaf doors. Design for max 30 lb opening force.
DAMPROOFING & MOISTUREPROOFING
OF BELOW GRADE STRUCTURES

Waterproofing Membrane
For exterior surfaces of below grade vaults and/or structures, where specified.
Manufactured by, or equal:
• Grace Construction Products, Bituthene 4000 and Preprufe

Dampproofing
For below grade on exterior of all miscellaneous concrete structures, including, but not limited to electrical handholds, electrical pullboxes, vaults, and miscellaneous structures. Applied to exterior of manholes where specifically indicated. Manufactured by, or equal:
• Tremco Sealants, TREMproof 201/60

Total dry film thickness shall be 60 mils ±5; applied in two coats of 30 mils each.
GEOTEXTILE FABRIC

Geotextile fabric for laying and wrapping/separating backfill materials shall be manufactured by, or approved equal:

1. Mirafi, 140N
2. US Fabrics, US 135NW
3. Carthdage Mills, FX-45HS
ADJUSTABLE REPAIR COUPLINGS

Use for repairs and alterations to gravity piping at connections of dissimilar materials.

Banded rubber couplings shall have four (4) clamps and metal shear bands.

**All hardware shall be Type 316 Stainless Steel**, including shear bands.

Adjustable repair couplings shall be manufactured by, or approved equal:

1. Fernco, 5000 Series RC Coupling, w/ all type 316 SS hardware
2. Mission Rubber Company, Adjustable Repair Coupling

The following are not allowed:

- Mission® Band Seal
- Joints® Calder Coupling
- Anaco – Husky Couplings
- Fernco, Proflex Coupling
- Mission Clay Band-Seal (Type 1 or 2)
HDPE COUPLINGS

Use for field closure of HDPE pipe, as required.

Electrofusion couplings, manufactured by, or approved equal:
  1. Ipex USA LLC, Friatec Couplings
  2. Central Plastics

![Friatec - Electrofusion Coupling](image)
Backwater Prevention Devices (BPDs)

Required at every location where sanitary sewer piping exits a building/home to prevent sewage from entering homes and businesses and reroute the spill outside the building.

<table>
<thead>
<tr>
<th>BPD Type</th>
<th>MANUFACTURER</th>
<th>PRODUCT NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type 1 or &quot;Mushroom&quot; Type</td>
<td>Genplex</td>
<td>Kelly Backwater Device (No-Hub &amp; IPS)</td>
</tr>
<tr>
<td>Type 2</td>
<td>Stephens Corp</td>
<td>Sewer Popper™ Model S62-304</td>
</tr>
<tr>
<td></td>
<td>Unlimited Home Solutions LLC</td>
<td>Sewer Relief Cap</td>
</tr>
</tbody>
</table>

**Type 1**

![Mushroom Type](image1)

**Type 2**

![Sewer Popper™ OPD](image2)

![Sewer Relief Cap](image3)
BACKWATER CHECK VALVES

Backwater check valves shall be extendable type. Manufactured of PVC

Manufactured by the following, or approved equal

1. Rector Seal, Clean Check Backwater Valve
2. Mainline Backflow Products, Adapt-A-Valve Inspector chamber w/ Test-Eze Gate Feature

PVC Extendable Backwater Valve
TAP CONNECTIONS TO EXISTING SEWER MAINS

All connections to new mains shall be with new wye fittings matching the main pipe material, or electrofusion saddles for new HDPE mains.

Tap connections will only be allowed for connection to existing mains 10-inch and larger and will require District approval. However, all new connections to existing mains with an existing CIPP liner shall be with a tap connection (new wye fittings will not be allowed on existing CIPP).

Tap connections shall be “Wye type” were feasible.

<table>
<thead>
<tr>
<th>EX MAIN PIPE MATERIAL</th>
<th>MAINLINE TAP</th>
</tr>
</thead>
<tbody>
<tr>
<td>VCP, PVC, DIP, Cast Iron, or ACP</td>
<td>Cascade Waterworks MNFR Co, CSWRY Stainless Steel Sewer Saddle –Wye</td>
</tr>
<tr>
<td>HDPE</td>
<td>Electrofusion saddles: &lt;12” main wye type, &gt;12” main may be tee type, manufactured by, or equal:</td>
</tr>
<tr>
<td></td>
<td>• Central Plastics</td>
</tr>
<tr>
<td></td>
<td>• Industrial Pipe Fittings, LLC - Plasson</td>
</tr>
<tr>
<td>Ex Pipe Lined w/ CIPP</td>
<td>Remove host pipe at connection and install directly to CIPP.</td>
</tr>
<tr>
<td></td>
<td>• Inserta Wye or Inserta Tee</td>
</tr>
<tr>
<td></td>
<td>• Cascade Waterworks MNFR Co, CSWRY Stainless Steel Sewer Saddle –Wye</td>
</tr>
<tr>
<td></td>
<td>• LMK Technologies, Lined Main Tap</td>
</tr>
</tbody>
</table>

---

Cascade CS WRY

Inserta Wye

Inserta Tee

HDPE – Central Plastics

HDPE – IPF Plasson

LMK, Lined Main Tap
SIDE SEWER FITTINGS

Side sewer fitting material shall match side sewer pipe material, unless otherwise directed or allowed by the District.

Property line cleanouts shall be a two-way or a “Tee” wherever possible. However, a one-way will be allowed. Contractor is advised to discuss with property owner, and the District encourages the use of two-way cleanouts.

<table>
<thead>
<tr>
<th>SIDE SEWER MATERIAL</th>
<th>SIDE SEWER FITTINGS</th>
</tr>
</thead>
</table>
| PVC C900 DR-18      | PVC C900, min DR-18 thickness, bell and spigot. Tee, Wye, 45° fitting, or 90° sweep fittings. White color where feasible. Manufactured by, or equal:  
  • Specified Fittings, C900 Gasketed  
  • Multi Fittings, Sewer Brute |
| HDPE                | HDPE, SDR 17 min thickness.  
  • Butt fusion Tee, Wye, 45° fitting, or 90° elbow. Fuse directly to side sewer, or use couplings as required. Manufactured by: Performance Pipe, Agru America, or equal.  
  • Electrofusion tees. Manufactured by Central Plastics, Harrington Corp, or equal.  
  • Electrofusion taps (for cleanout risers). Manufactured by Central Plastics Harrington Corp, or equal. |
| SCH 80 PVC          | Schedule 80 PVC. Tee, Wye, 45° fitting, or 90° sweep fittings. Solvent welded, threaded, or flanged joints. |

HDPE FITTINGS

Butt Fusion Tee  
Butt Fusion Wye  
Electrofusion Tee  
Electrofusion Tap  
PVC C900 fittings  
Schedule 80 PVC fittings
Cured-in-Place Pipe (CIPP) Products

**Chemical Grout**
For sealing side sewer connection to mains and/or pipe connections to manholes. Manufacturer shall by, or approved Equal
- Avanti, AV-100

**CIPP Main to Side Sewer Seals**
For repairing side sewer connection to mains 8-inch or larger where main is in suitable condition, as Determined by the District. Manufactured by, or approved equal:
- Pro Pipe Professional Pipe Services, Top Hat Lateral Seals

**Main to Side Sewer CIPP Connection Liners**
For repairing side sewer connection to mains 8-inch or larger where the main is in suitable condition, as Determined by the District. Manufactured by, or approved equal:
- LMK Technologies, T-Liner/Shorty

**CIPP Point Repairs**
Use only where approved by the District. Manufacture by, or approved equal:
- LMK Technologies, Mainline Sectional Repair

**CIPP for Side Sewers**
Use only where approved by the District. Installer must be certified by the manufacturer. CIPP Manufacturer shall be, or approved equal:
- Perma-Liner Industries, LLC
- MAXLINER LLC
DUCTILE IRON PIPE (DIP) PRODUCTS

AWWA C150 and AWWA C151, Class 53 wall thickness

Ductile Iron Pipe
Manufactured in the USA, by one of the following, or approved equal:
1. U.S. Pipe and Foundry Co.
2. American
3. McWane Ductile

Ductile Iron Fittings
Manufactured in the USA, by one of the following, or approved equal:
1. Tyler Union
2. Mueller Company
3. American

Protective Lining
Interior surfaces of all ductile iron pipe and fittings shall be lined with one of the following:
1. Protecto 401 Ceramic Epoxy,
2. Tnemec 431 Perma-Shield, or approved equal.

The dry film thickness shall be no less than 40 mils.

Protective Coating
Buried DIP: asphaltic coating with polywrap
Exposed DIP: Coat per Standard Spec Section 09800, Protective Coatings
Exposed DIP in Wet Wells, one of the following:
1. Tnemec 141, at min dry film thickness of 16 mils
2. US Pipe Ceramawrap, at min Dry film thickness 20 mils

Polywrap
For all buried ductile iron pipe. Polywrap shall be manufactured by, or approved equal:
1. T. Christy Enterprises.

General purpose adhesive tape to connect plastic film shall be two inches wide by 10 mils thick. Adhesive tape shall be manufactured by, or equal:
1. Scotchwrap No. 50
2. Polyken No. 900
3. Tapecoat CT

Flange Gaskets:
EPDM, suitable for use with wastewater service.

Grooved Couplings and Adapters
Rigid type, manufactured by, Victaulic, or approved equal.
FORCEMAIN VALVES

Check valves
Swing Type with lever and weight, manufactured by, or approved equal:
1. Golden Anderson Industries, Fig. 220-DS
2. Apco Valve, Series 6000, CLW
3. CCNE/Miliken, Series 9001

Eccentric Plug Valves
Eccentric plug valves shall be manufactured by, or approved equal:
1. Milliken, Millcentric
2. Golden Anderson, ECO-Centric

Combination Air Valves
 Manufactured by, or approved equal:
- Vent-O-Mat Series RGX
FORCEMAIN COUPLINGS

All bolts and hardware shall be Type 316 stainless steel.

Sleeve-Type Couplings
Manufactured by, or approved equal:
1. Dresser, Style 38 or 138
2. Smith-Blair, Style 411

Sleeve length shall be a minimum of 7 inches.

Flange Coupling Adapters
Manufactured by, or equal.
1. Dresser, Style 128.
2. Smith-Blair

Grooved End Couplings
See Ductile Iron Pipe Products.
## JOINT RESTRAINT SYSTEMS

<table>
<thead>
<tr>
<th>PIPE MATERIAL</th>
<th>MANUFACTURER</th>
<th>JOINT RESTRAINT SYSTEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIP</td>
<td>U.S. Pipe</td>
<td>“TR FLEX” Restrained Push-On Joint</td>
</tr>
<tr>
<td></td>
<td>U.S. Pipe</td>
<td>“Field-Lok 350 Gaskets”</td>
</tr>
<tr>
<td></td>
<td>American Ductile Iron Pipe</td>
<td>“Lok-Fast” Restrained Joint</td>
</tr>
<tr>
<td></td>
<td>McWane Ductile</td>
<td>Thrust-Lock</td>
</tr>
<tr>
<td>PVC ≤ 16”</td>
<td>Diamond Plastics</td>
<td>Diamond Lok-21</td>
</tr>
<tr>
<td>Bulldog Restraint System</td>
<td>JM Eagle</td>
<td>Eagle Loc 900</td>
</tr>
<tr>
<td></td>
<td>Specified Fittings</td>
<td>Bulldog</td>
</tr>
<tr>
<td>PVC &gt; 16”</td>
<td>EBBA Iron</td>
<td>2800 Megalug Restraint Harness, or Series 2200 for connection to DIP fittings. All bolts and hardware type 316 SS.</td>
</tr>
</tbody>
</table>
INDIVIDUAL LOT PACKAGED PUMP SYSTEMS

Material Type(s): Pre-Approved Pump Systems, Pipe

Description:

<table>
<thead>
<tr>
<th>VENDOR</th>
<th>SYSTEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-One</td>
<td>D-Series, W-Series, I-Series and G-Series</td>
</tr>
<tr>
<td>Liberty</td>
<td>2448- Series, Pro370 Series, Pro380 Series</td>
</tr>
<tr>
<td>Aqua Pro Pump Systems</td>
<td>E-Series, EDP Series, ESP-Series, SG-Series, DG-Series</td>
</tr>
</tbody>
</table>

Note: Complete packages are required for Pre-Approved Pump Systems. This includes a pump, alarm panel, isolation and check valves, sump and sump extensions (as required). Individual parts of Pump System are not pre-approved by the District. Models include but are not limited to the ones below, contact the District for special approval of all others.
# MISCELLANEOUS APPROVED MATERIALS

<table>
<thead>
<tr>
<th>MATERIAL</th>
<th>MANUFACTURER</th>
<th>PRODUCT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Epoxy Adhesive Anchors</td>
<td>Sika</td>
<td>FI System with Sikadur® Injection Gel Epoxy</td>
</tr>
<tr>
<td></td>
<td>Hilti</td>
<td>HIT HY150 Adhesive Anchors</td>
</tr>
<tr>
<td></td>
<td>BASF</td>
<td>Concresive® 1420 Gel Epoxy Adhesive</td>
</tr>
<tr>
<td></td>
<td>BASF</td>
<td>Concresive® Paste LPL</td>
</tr>
<tr>
<td>Expanding Type Anchors</td>
<td>ITW</td>
<td>Red Head®, Trubolt Wedge Anchor</td>
</tr>
<tr>
<td></td>
<td>Hilti</td>
<td>Kwik-Bolt 3 Expansion Anchor</td>
</tr>
<tr>
<td>Glass Capsule Polyester Resin Adhesive Anchors</td>
<td>Hilti</td>
<td>HVU Adhesive Capsule</td>
</tr>
<tr>
<td>Solvent Cements (for Sch 80 PVC)</td>
<td>Weld-On</td>
<td>700 Series, PVC Solvent Cement</td>
</tr>
<tr>
<td></td>
<td>Oatey</td>
<td>Hercules, PVC Solvent Cement</td>
</tr>
<tr>
<td>Rubber Check Valves “Duckbill Valves”</td>
<td>Red Valve Company, Inc.</td>
<td>Tideflex Check Valves</td>
</tr>
<tr>
<td>Test Couplings for Side sewers</td>
<td>Rector Seal</td>
<td>HubSett</td>
</tr>
</tbody>
</table>
Miscellaneous Approved Materials

- Trubolt, Wedge Anchor
- HVU Adhesive Capsule
- HIT HY150 Adhesive Anchor

- Oatey, PVC Cement
- Weld-On, PVC Cement

- Tideflex, Rubber Check Valve
- HubSett, Test Couplings