

# COUNTY *of* VENTURA

WATER AND SANITATION DEPARTMENT

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VENTURA COUNTY WATERWORKS DISTRICT NO. 1, 16, 17, 19, AND 38  
COUNTY SERVICE AREA NO. 29, 30, 34, AND CAMARILLO UTILITY ENTERPRISE

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APPROVED MATERIALS LIST

FOR

WATER AND SEWER



**PUBLIC**  
**VENTURA COUNTY**  
**WORKS**

REVISION DATE: 9/5/2024

VENTURA COUNTY WATERWORKS DISTRICT NO. 1, 16, 17, 19, AND 38  
COUNTY SERVICE AREA NO. 29, 30, 34, AND CAMARILLO UTILITY ENTERPRISE  
APPROVED MATERIALS LIST

**Foreword**

The Approved Materials List (AML) indicates those materials approved for use within the Ventura County Waterworks Districts (VCWWDs), County Service Areas (CSAs), and the Camarillo Utility Enterprise (CUE) water and or sewer entities under the Ventura County Water and Sanitation Department (WSD). All materials are approved on an individual job basis. The AML is subject to revisions and updates from time-to-time as determined by the WSD staff. Users of the WSD Standards and Approved Materials List shall be responsible for confirming they are using the most recent versions. See WSD website for latest version of Standards and Approved Materials List at:

<https://www.vcpublishworks.org/wsd/engineeringanddevelopment>

or contact Engineering and Development at [WSDevelop@ventura.org](mailto:WSDevelop@ventura.org) or (805) 378-3000 Ext. 4.

Materials designated allowing only a specific brand(s) or trade name(s) are approved based on careful selection and years of demonstrated performance within WSD facilities; and to maintain uniform conformity with existing materials and assets in place, reduce inventories, promote parts ease of replacement, reduce trainings for alternatives, and or to match those that are only available from a single source.

Contractors are strongly encouraged to use materials from the Approved Materials List as these will be expedited and do not require a full technical submittal for review by the WSD prior to material approval. Use of "or equal" materials where allowed will require a formal and complete submittal subject to review by the Engineer prior to approval. Any schedule delays as a result of a submittal or use of "or equal" materials will be borne by the Contractor.

The WSD makes meaningful efforts to keep this list and the manufacturer model code numbers shown up to date. It is ultimately the responsibility of the Contractor to confirm they are providing the correct materials for the job. Should any information contained in this AML become outdated or incorrect, please contact Engineering and Development at [WSDevelop@ventura.org](mailto:WSDevelop@ventura.org) or (805) 378-3000 Ext. 4 to resolve the issue.

All water meters will be supplied by the WSD at the Contractors' expense. See WSD website for latest meter fee schedule at: <https://www.vcpublishworks.org/wsd/engineeringanddevelopment>

All materials used for potable water systems must meet California Health and Safety Code 116875. All materials that come into contact with potable water must be lead free NSF approved, website link at <http://www.nsf.org>. All potable water material submittals must include evidence of lead free and NSF compliance.

All materials used in a cross-connection hazard must meet the State Water Resources Control Board's Cross-Connection Control Policy Handbook (CCCPH). All cross-connection hazards must be properly planned for and mitigated to the full intent of the law. This includes, but is not limited to, agricultural premises, industrial and commercial services, fire sprinkler systems, auxiliary fire protection systems, and any other assessed cross-connection hazards.

The following products are not allowed for use in WSD facilities. Products may become not allowed due to repeated chronic issues, catastrophic failures, lack of documentation regarding necessary performance capabilities and requirements, manufacturer's poor customer service, and or failure of the manufacture to honor product warranties. The WSD makes every effort to allow for equals to promote competition and parts availability where permissible, and only under necessary considerations does not allow a product.

AVK Fire Hydrants  
Diamond Plastics Corporation PVC Pipe  
Mueller Valves, All  
Mueller Fire Hydrants

VENTURA COUNTY WATERWORKS DISTRICT NO. 1, 16, 17, 19, AND 38  
COUNTY SERVICE AREA NO. 29, 30, 34, AND CAMARILLO UTILITY ENTERPRISE  
APPROVED MATERIALS LIST

**Acronyms and Definitions**

AC / ACP	Asbestos Concrete / Pipe
ANSI	American National Standards Institute
APWA	American Public Works Association
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
AWWA	American Water Works Association
BPA	Backflow Prevention Assembly
CA	California
CCCPH	Cross-Connection Control Policy Handbook
CI	Cast Iron
CL	Class
CML	Cement Mortar Lined
CO	Cleanout
Co	Company
CPVC	Chlorinated Polyvinyl Chloride
CTS	Compression Tube Size
DC	Double Check Valve Backflow Prevention Assembly
DCDA	Double Check Detector Backflow Prevention Assembly
DCL	Double Cement Lined
DFT	Dry Film Thickness (coating thickness gauge)
DI / DIP	Ductile Iron / Pipe
DIPRA	Ductile Iron Pipe Research Association
DR	Dimension Ratio
EPDM	Ethylene Propylene Diene Monomer
FIP	Female Iron Pipe
FKM	Fluoropolymer elastomer, AKA Viton
FL	Flange
FM	Factory Mutual
FNPT	Female National Pipe Thread
GR	Grade
HDPE	High Density Polyethylene
HMWPE	High Molecular Weight Polyethylene
HP	Horsepower
ID	Inner Diameter
ISO	International Organization for Standardization
LB / LBS	Pound / Pounds
Lead Free	CA Health and Safety Code 116875 subdivision (b) defines "Lead free" as the maximum allowed lead content is: 0.20 percent lead in solder and flux; 0.25 percent lead in wetted surfaces of pipes, pipe fittings, plumbing fittings and fixtures, as determined by a weighted average.
MFR	Manufacturer
MH	Manhole
Mil	one thousandth of an inch
MIP	Male Iron Pipe
MJ	Mechanical Joint

VENTURA COUNTY WATERWORKS DISTRICT NO. 1, 16, 17, 19, AND 38  
COUNTY SERVICE AREA NO. 29, 30, 34, AND CAMARILLO UTILITY ENTERPRISE  
APPROVED MATERIALS LIST

MNPT	Male National Pipe Thread
NBR	Nitrile Butadiene Rubber
NFPA	National Fire Protection Association
NPT	National Pipe Thread
NSF	National Sanitation Foundation
OD	Outer Diameter
OS&Y	Outside Stem and Yoke
PE	Polyethylene
PJ	Pack Joint
PS	Pipe Stiffness
PVC	Polyvinyl Chloride
RAC	Rigid Aluminum Conduit
RGB	Red, Green, and Blue (color code designation)
RGS	Rigid Galvanized Steel
RP	Reduced Pressure Principle Backflow Prevention Assembly
RPDA	Reduced Pressure Detector Backflow Prevention Assembly
SBR	Styrene-Butadiene Rubber
SCH	Schedule
SDR	Standard Dimension Ratio
SPPWC	Standard Plans for Public Works Construction
SS	Stainless Steel
SSPWC	Standard Specifications for Public Works Construction, AKA Greenbook
STEP	Septic Tank Effluent Pump
THHN	Thermoplastic High Heat-resistant Nylon-coated wire
TWHN	Thermoplastic High Water-resistant Nylon-coated wire
UL	Underwriters Laboratories
UPC	Uniform Plumbing Code
Vac	Vacuum
VCP	Vitrified Clay Pipe
VOC	Volatile Organic Compounds

VENTURA COUNTY WATERWORKS DISTRICT NO. 1, 16, 17, 19, AND 38  
 COUNTY SERVICE AREA NO. 29, 30, 34, AND CAMARILLO UTILITY ENTERPRISE  
 APPROVED MATERIALS LIST

**Category: Air Release and Vacuum Valve Assembly**

No.	Description	Manufacturer & Model No.
<b>Isolation Valves</b>		
1.	MIP inlet x PJ CTS Ball type Curb Stop Valve with 2" square operating nut adapter. Sizes: 1"x1" and 2"x2".	a) Ford B84-xxx-NL (valve) with Ford QT67 (nut adapter) b) No Equal
2.	MIP inlet x FIP outlet Ball type Corporation Stop Valve Sizes: 1"x1" and 2"x2"  Note: Only for Air-Vac assemblies installed under non-typical alternative (riser style) configuration, see WSD Standard W-5 ALT "A" for details.	a) Ford FB1700-x-NL b) Jones E1931 c) No Equal
3.	FIP x FIP Ball type Curb Stop Valve with Lever Handle. Sizes: 1"x1" and 2"x2".  Note: Only for above ground shutoff for Air-Vac assemblies, see WSD Standard W-5 for details.	a) Ford B11-444W with HB34S-NL b) Ford B11-777W with HB67S-NL c) Jones: E-1905 d) No Equal
<b>Air Release and Vacuum Valve</b>		
4.	Single body combination air release and vacuum valve. FIP inlet x FIP outlet. Cast Iron ASTM A126 Class B or Ductile Iron ASTM A536 Grade 65 body with a non-clog design. All SS internals, epoxy coated or primed, and conforming to AWWA C512. Rated with a maximum working pressure of 300 psig.  Sizes: 1" and 2"	a) APCO Models 143C and 145C b) Cla-Val Model 33A c) Cla-Val Model 36 d) Crispin Models UL10 and UL20 e) Valmatic Models 201C.2 and 202C.2 f) No Equal
<b>Bug Screen</b>		
5.	Fiberglass nylon air vac bug screen with stainless steel screen in either 10 or 20 mesh size. MIP inlet.  Sizes: 1" and 2"	a) Hytech Models 961-1001/2 and 961-2001/2 b) Flow Ezy Models M8 and M16 c) Or Equal

VENTURA COUNTY WATERWORKS DISTRICT NO. 1, 16, 17, 19, AND 38  
 COUNTY SERVICE AREA NO. 29, 30, 34, AND CAMARILLO UTILITY ENTERPRISE  
 APPROVED MATERIALS LIST

Category: Backflow Prevention Assemblies (BPA)

No.	Description	Manufacturer & Requirements
1.	<p>Double Check Valve BPA (DC)                      Sizes: 1" through 2"</p> <p>Only permitted for low hazard services in residential single-family dwellings for sole feed to its non-chemical-based fire protection sprinkler system and when installed immediately downstream of domestic service meter.</p>	
2.	<p>Double Check Detector BPA (DCDA)                      Sizes: 1" through 10"</p> <p>Only permitted for low hazard services, such as a non-chemical-based fire protection sprinkler system, where system does not contain any contaminants and poses at worst a non-health hazard pollutant threat. Assembly must include outside stem and yoke (OS&amp;Y) valving with Type I bypass double check valve and meter detection assembly.</p> <p>A DCDA is usually used on water lines that are static and not typically metered but need the ability to detect unauthorized use of water or any leaks in the system, such as a fire protection sprinkler system.</p> <p>Note: Detection meter is provided by Water and Sanitation.</p>	<p>Backflow Prevention Assembly (BPA) shall comply with lead-free requirements of Safe Drinking Water Act, containing less than or equal to 0.25% lead (Pb) in wetted surfaces as determined by its weighted average, NSF/ANSI 61 &amp; 372 compliant, and conforming to AWWA C510 or C511 as applicable.</p> <p>Additionally, the assembly shall be from one of the below listed manufacturers and be listed on the latest edition of University of Southern California (USC) Foundation for Cross-Connection Control and Hydraulic Research "List of Approved Backflow Prevention Assemblies", website link provided for convenience:  <a href="https://fccchr.usc.edu/list.html">https://fccchr.usc.edu/list.html</a></p> <ul style="list-style-type: none"> <li>- Ames</li> <li>- Febco</li> <li>- Watts</li> <li>- Wilkins</li> <li>- Zurn</li> </ul>
3.	<p>Reduced Pressure Principle BPA (RP)                      Sizes: 1" through 10"</p> <p>For high hazard service.</p>	
4.	<p>Reduced Pressure Detector BPA (RPDA)                      Sizes: 1" through 10"</p> <p>For high hazard service requiring a detector assembly, such as an automatic sprinkler system that contains a known contaminant or poses a health hazard threat. Assembly must include outside stem and yoke (OS&amp;Y) valving with Type I bypass double check valve and meter detection assembly.</p> <p>An RPDA is usually used on water lines that are static and not typically metered but need the ability to detect unauthorized use of water or any leaks in the system, such as a fire protection sprinkler system.</p> <p>Note: Detection meter is provided by Water and Sanitation.</p>	<p><b>"Low hazard cross-connection"</b> means a cross-connection that has been found to not pose a threat to the potability or safety of the public water supply but may adversely affect the aesthetic quality of the potable water supply. Materials entering the public water supply through a low hazard cross-connection are pollutants or non-health hazards.</p> <p><b>"High hazard cross-connection"</b> means a cross-connection that poses a threat to the potability or safety of the public water supply. Materials entering the public water supply through a high hazard cross-connection are contaminants or health hazards.</p>

VENTURA COUNTY WATERWORKS DISTRICT NO. 1, 16, 17, 19, AND 38  
 COUNTY SERVICE AREA NO. 29, 30, 34, AND CAMARILLO UTILITY ENTERPRISE  
 APPROVED MATERIALS LIST

Category: Coatings

No.	Description	Manufacturer & Model No.
For Above Grade Pipe, Valves, and Fittings		
1.	Aliphatic Polyurethane Coating System  A two-component aliphatic acrylic polyurethane coating material providing superior color and gloss retention, resistance to splash from acid and alkaline chemicals, resistance to chemical fumes and severe weathering and with a minimum solids content of 58 percent by volume. Primer shall be a rust inhibitive two-component epoxy coating with a minimum solids content of 68 percent by volume.	Prime Coat: PPG Amerlock 2 Finish Coat: PPG Amershield  Color Selections for Amershield: See Description for RGB codes, provide close color match.
2.	1. Prime Coat Min DFT = 4 mils <b>Note: Shop coated pipe, valves, and fittings do not require prime coating.</b>	Prime Coat: Carboline 893 Finish Coat: Carbothane 134 VOC  Color Selections for Carbothane 134 VOC: 1. Fire Hydrants: Safety Yellow #6637 or #6666 2. Blow-Offs (Wharf Hydrants): Desert Sands #7218 or Dunes Tan #G245 3. Fire Services: Forest Green #5359 Or Safety Red #4522 or #5555 4. Reclaim/Recycled Water Facilities: Pantone 512 #G124 5. All Other Potable Water Facilities: Forest Green #5359
3.	2. Finish Coat (one or more applications) Min DFT = 3 mils  3. Total System (Prime + Finish) Min DFT = 7 mils.  4. More than one finish coat shall be applied as necessary to produce a finish with uniform color and texture.  Color selection for finish coat, unless otherwise specified on plans and specs, shall match as close as possible the following:	Prime Coat: Tnemec N69 or V69 Finish Coat: Tnemec Endura-shield II 1075  Color Selections for Tnemec Endura-shield II 1075: 1. Fire Hydrants: Lemon Yellow/Safety #02SF 2. Blow-Offs (Wharf Hydrants): Desert Sands #04BR 3. Fire Services: Fairway #21GN or Chilean Red #07SF 4. Reclaim/Recycled Water Facilities: Purple Rain/Safety #14SF 5. All Other Potable Water Facilities: Fairway #21GN
4.	1. Fire Hydrants: Safety Yellow RGB 238, 210, 2  2. Blow-Offs (Wharf Hydrants): Desert Sands RGB 217, 184, 140  3. Fire Services: Dark Forest Green RGB 50, 102, 66 Or Safety Red RGB 151, 51, 46	Prime Coat: Sherwin-Williams Macropoxy 646 Finish Coat: Sherwin-Williams Hi-Solids Polyurethane 250  Color Selections for Sherwin-Williams Hi-Solids Polyurethane 250: 1. Fire Hydrants: Safety Yellow #SW4084 2. Blow-Offs (Wharf Hydrants): Pallet Tan #SW4003 3. Fire Services: Rain Forest #SW4071 or Safety Red #SW4081 4. Reclaim/Recycled Water Facilities: Safety Purple #SW4080 5. All Other Potable Water Facilities: Rain Forest #SW4071
5.	4. Reclaim/Recycled Water Facilities: Pantone 512 RGB 131, 49, 119  5. All Other Potable Water Facilities: Dark Forest Green RGB 26, 70, 50	Prime Coat: International/Devoe Bar-Rust 233H Finish Coat: International/Devoe Devthane 359H  Color Selections for International/Devoe Devthane 359H: See Description for RGB codes, provide close color match.

VENTURA COUNTY WATERWORKS DISTRICT NO. 1, 16, 17, 19, AND 38  
 COUNTY SERVICE AREA NO. 29, 30, 34, AND CAMARILLO UTILITY ENTERPRISE  
 APPROVED MATERIALS LIST

No.	Description	Manufacturer & Model No.
<b>For Rebar on Thrust and Anchor Blocks</b>		
6.	High build low VOC coal tar epoxy polyamide coating for protection of steel and concrete in single or two-coat applications in a broad variety of aggressive industrial applications. 16 mils per coat.	a) Carboline Bitumastic 300M b) Carboline Bitumastic 50 c) Hy-Tech Bituminous Mastic 50-HT d) Or Equal
<b>Miscellaneous</b>		
7.	Zinc-rich primer-coating for touch up of damaged galvanized steel, or coating of miscellaneous steel components.	a) Carboline Carbozinc 11 b) Or Equal
8.	Two-component epoxy coating. Sealing miscellaneous non-critical concrete works such as cored holes for corrosion-resistance purposes only.	a) Sika Sikagard-62 b) Keysite 740 c) ProteX Epoxy Resin d) Or Equal

**Category: Enclosure Boxes for Meters, Air-Vacs, and Water Sample Stations**

No.	Description	Manufacturer & Model No.
<b>Meter Boxes for Potable Water Service</b>		
1.	For 3/4" and 1" size meters.  Gray colored 22" x 15-1/4" meter box body size with 18-1/4" x 11-3/8" cover lid size with no hook lid design.	a) DFW Plastics (Body and Cover Lid) DFW486WBC4-12-4T NHK-LID; b) No Equal
2.	For 1-1/2" and 2" size meters.  Gray colored 33-3/4" x 12" meter box body size.	a) DFW Plastics (Body Only) DFW1640C4-12-BODY b) No Equal
3.	For 1-1/2" and 2" size meters.  Gray colored 30-1/2" x 17-7/16" cover lid size with no hook lid design.	a) DFW Plastics (Lid Only) DFW1640C-4T-LID NHK-LID b) No Equal
<b>Meter Boxes for Reclaim Water Service</b>		
4.	For 3/4" and 1" size meters.  Purple colored 22" x 15-1/4" meter box body size with 18-3/16" x 11-3/16" cover lid size with no hook lid design.	a) DFW Plastics (Body and Cover Lid) DFW486WBC-12-5T NHK-LID; b) No Equal
5.	For 1-1/2" and 2" size meters.  Purple colored 33-3/4"x12" meter box body size with 30-1/2"x17-7/16" cover lid size with no hook lid design.	a) DFW Plastics (Body and Cover Lid) DFW1640C-12-5T NHK-LID b) No Equal
<b>Air Release and Vacuum Valve Enclosure</b>		
6.	For 1" and 2" air release and vacuum valve assemblies. 24" diameter x 36" high polyethylene enclosure. Standard sandstone color.	a) Armorcast P6002001 b) No Equal
<b>Water Sample Station Enclosure</b>		
7.	12" diameter x 36" high polyethylene enclosure. Standard sandstone color with hinged cover design and padlock hasp.	a) Armorcast P6002010-Hinged b) No Equal



VENTURA COUNTY WATERWORKS DISTRICT NO. 1, 16, 17, 19, AND 38  
 COUNTY SERVICE AREA NO. 29, 30, 34, AND CAMARILLO UTILITY ENTERPRISE  
 APPROVED MATERIALS LIST

**Category: Fire Hydrants, Bury Elbows, Extension Spools, and Blow-Offs**

No.	Description	Manufacturer & Model No.
<b>Fire Hydrants</b>		
1.	Wet barrel design with gray cast or ductile iron body. UL and FM certified. Shall include gray cast or ductile iron lid with chain, plastic lid not allowed. National Hose outlet nozzles. Rated to minimum 200 psig working pressure. Coated safety yellow.  6" inlet flange drilled with (6) 3/4" holes. Outlet Configuration: (1) 2-1/2" x (1) 4"	a) Clow 850 b) Jones J4040 c) Jones J4040HP d) No Equal
2.	Same as Fire Hydrant Item No. 1 above except, Outlet Configuration: (2) 2-1/2" x (1) 4"	a) Clow 860 b) Jones J4060 c) Jones J4060HP d) No Equal
3.	Same as Fire Hydrant Item No. 1 above except, Outlet Configuration: (1) 2-1/2" x (2) 4"	a) Clow 865 b) J4065 c) No Equal
4.	Wet barrel design with bronze body. UL and FM certified. Shall include bronze lid with chain, plastic lid not allowed. National Hose outlet nozzles. Rated to 200 psig working pressure. Coated safety yellow.  6" inlet flange drilled with (6) 3/4" holes. Outlet Configuration: (1) 2-1/2" x (1) 4"	a) Clow 2050 b) No Equal
5.	Same as Fire Hydrant Item No. 4 above except, Outlet Configuration: (2) 2-1/2" x (1) 4"	a) Clow 2060 b) No Equal
6.	Same as Fire Hydrant Item No. 4 above except, Outlet Configuration: (1) 2-1/2" x (2) 4"	a) Clow 2065 b) No Equal
<b>Bury Elbows</b>		
7.	Ductile iron bury elbow for wet barrel fire hydrants. Rated to 350 psig. CML and asphaltic coated. 6" MJ inlet x FL outlet.  Flange end drilled with (6) 3/4" holes on 9.5" bolt circle diameter.	a) Clow b) South Bay Foundry c) SIP Industries d) SIGMA e) No Equal
<b>Extension Spools</b>		
8.	Gray cast iron extension spool for wet barrel fire hydrants. Rated to 250 psig. CML and asphaltic coated. 6" FL x FL.  Flange ends drilled with (6) 3/4" holes on 9.5" bolt circle diameter.	a) Clow b) South Bay Foundry c) SIP Industries d) SIGMA e) No Equal
<b>Blow-Offs</b>		
9.	Wharf head blow-off design with brass body. Bronze lid with chain, plastic lid not allowed. Pent nut operator. National Hose outlet nozzle. Rated to 200 psig working pressure. Configuration: 4" FIP inlet x 2-1/2" NH outlet.	a) Jones J344 HP b) No Equal
10.	Threaded (companion) flange forged from 304 or 316 stainless steel. Flange conforming to ASME B16.5 CL 150 with NPT threading per ASTM B1.20.1.	a) Smith-Cooper International S1014TH (or S1016TH) b) Or Equal

VENTURA COUNTY WATERWORKS DISTRICT NO. 1, 16, 17, 19, AND 38  
 COUNTY SERVICE AREA NO. 29, 30, 34, AND CAMARILLO UTILITY ENTERPRISE  
 APPROVED MATERIALS LIST

Category: Tubing, Pipe, and Fittings for Non-Main Lines

No.	Description	Manufacturer & Model No.
<b>Tubing</b>		
1.	Domestically manufactured seamless Type K soft copper tubing per ASTM B88. Certified NSF 61 and lead free compliant.	a) Cambridge-Lee Industries b) Cerro Flow Products c) CMC Howell Metals d) Mueller Industries e) Or Equal
2.	Municipex, cross-linked polyethylene, tubing for potable water service.	a) Rehau Municipex Water Service Pipe b) No Equal
<b>Red Brass Pipe and Nipples</b>		
3.	Domestically manufactured lead-free copper alloy "Red Brass" C230 schedule 40 pipe and nipples, conforming to ASTM B43 and B687-88. NPT threading per ASME B1.20.1. Meets NSF 61 and 372.	a) Edmund A. Gray Company b) Or Equal
<b>Brass Fittings</b>		
4.	Domestically manufactured lead-free cast brass fittings. Alloy C89833 per ASTM B584 and ANSI/ASME B16.15. NPT threading per ASME B1.20.1. Meets NSF 61 and 372.	a) Lee Brass Lee Free (Domestic) Products b) Merit Brass (Domestic) c) Or Equal
<b>Schedule 80 Solid Wall PVC and CPVC Pipe and Fittings for Pressure Applications</b>		
5.	Domestically manufactured from virgin rigid PVC with cell class 12454 per ASTM D1784 and D1785. Injection molded PVC fittings per ASTM D2467. Pipe and fittings shall meet NSF 14 and 61. Flanges designed to CL150 bolt pattern per ANSI B16.5.  Sizes: 1/2" through 12"	a) Charlotte Pipe and Foundry Co. b) Spears Manufacturing c) George Fisher Piping Systems d) Or Equal
6.	Domestically manufactured from virgin rigid CPVC with cell class 24448 per ASTM D1784 and F441. Injection molded CPVC fittings with cell class 23447 per ASTM F439. Pipe and fittings shall meet NSF 14 and 61. Flanges designed to CL150 bolt pattern per ANSI B16.5.  Sizes: 1/2" through 12"	a) Charlotte Pipe and Foundry Co. b) Spears Manufacturing c) George Fisher Piping Systems d) Or Equal
<b>Schedule 40 Stainless Steel Pipe and Nipples</b>		
7.	Stainless steel 304 or 316 schedule 40 pipe conforming to ASTM A733 / ASME SA733, from pipe that is in accordance with ASTM A312 / ASME SA312. NPT threading per ASME B1.20.1. Meets NSF 61 and 372.	a) Merrit Brass b) Or Equal

VENTURA COUNTY WATERWORKS DISTRICT NO. 1, 16, 17, 19, AND 38  
 COUNTY SERVICE AREA NO. 29, 30, 34, AND CAMARILLO UTILITY ENTERPRISE  
 APPROVED MATERIALS LIST

Category: Water Main Pipe, Fittings, Couplings, Valves, and Restraints

No.	Description	Manufacturer & Model No.
<b>C900 PVC Pipe</b>		
1.	<p>Domestically manufactured. Integral gasketed, bell and spigot, push-on joint pipe conforming to AWAA C900 for potable water transmission service. Gaskets composed of SBR or EPDM. Cast iron outside diameter pipe. The required Pressure Rating shall be Class 305 psi DR 14.</p> <p>Sizes: 6" through 12"</p> <p>Note: Color selection shall be as follows: blue for potable water, green for sewer, and Pantone 512 purple for reclaim water.</p>	<p>a) Vinyltech C900 Blue                      b) JM Eagle Blue Brute                      c) Westlake Pipe &amp; Fittings (NAPCO) C900/IB                      d) No Equal</p>
<b>Ductile Iron Pipe</b>		
2.	<p>Domestically manufactured. Integral gasketed, bell and spigot, push-on joint pipe conforming to AWWA C150, C151, and C111. Gaskets composed of SBR or EPDM. The internal surfaces shall be lined with a uniform thickness of cement mortar and sealed with a bituminous coating in accordance with AWWA C104. The minimum thickness class shall be Class 350, 52, or 53 as shown on Plans.</p> <p>For below grade installations pipe shall be asphaltic coated. For above grade installations pipe shall be shop prime coated per manufacturer's recommendation using a high solids epoxy based coating.</p> <p>Custom pipe with flange and groove end joints shall additionally conform to AWWA C115, C606, and C110. Flanges in accordance with ANSI Class 125 per ASME B16.1 and ANSI/AWWA C111/A21.11.</p> <p>Sewer applications shall be per ASTM A746 and requires use of special epoxy based lining and application specific seal material per WSD requirements.</p> <p>Sizes: 3" through 24"</p> <p>Note: US Pipe and McWane both use the Tyton gasket design and may be interchangeable with one another. American Ductile however uses a different Fastite gasket design that is not compatible with US Pipe or McWane.</p>	<p>a) US Pipe Tyton                      b) McWane Ductile Iron Tyton                      c) American Ductile Iron Fastite                      d) Custom Pipe &amp; Coupling                      e) No Equal</p>

VENTURA COUNTY WATERWORKS DISTRICT NO. 1, 16, 17, 19, AND 38  
 COUNTY SERVICE AREA NO. 29, 30, 34, AND CAMARILLO UTILITY ENTERPRISE  
 APPROVED MATERIALS LIST

No.	Description	Manufacturer & Model No.
<b>Fittings for Pipe Sizes 2" through 12"</b>		
3.	Domestically manufactured. Gray Cast Iron per ASTM A48 Grade 25B or Ductile Iron per ASTM A536 body. Double cement mortar lined; and meet the requirements of AWWA C104, C110, C111, C153 and C200. Internal surfaces shall meet the requirements of AWWA C151/ANSI A21.51-96. Gaskets composed of SBR or EPDM.  The pressure rating for C110 (full body) fittings shall be 250 psi for Cast Iron and 350 psi for Ductile Iron. For C153 (compact body) fittings the pressure rating shall be 350 psi.	Full Body C110 FL Type: a) SIGMA b) SIP Industries c) Star Pipe d) Tyler Union e) No Equal
4.	Joints shall be either flange or mechanical type. Flanges in accordance with ANSI Class 125 per ASME B16.1 and ANSI/AWWA C111/A21.11.  For below grade installations fittings shall be asphaltic coated.	Full Body C110 MJ Type: a) SIGMA b) SIP Industries c) Tyler Union d) No Equal
5.	For above grade installations pipe shall be shop prime coated per manufacturer's recommendation using a high solids epoxy based coating for protection against abrasion, moisture, corrosive fumes, chemical attack and immersion.  Sewer applications shall be per ASTM A746 and requires use of special epoxy based lining per WSD requirements.	Compact Body C153 MJ Type: a) SIGMA b) SIP Industries c) Star Pipe d) Tyler Union e) No Equal
<b>Fittings for Pipe Sizes 14" through 24"</b>		
6.	Domestically manufactured. Ductile Iron per ASTM A536 body. Double cement mortar lined; and meet the requirements of AWWA C104, C110, C111, C153 and C200. Internal surfaces shall meet the requirements of AWWA C151/ANSI A21.51-96. Gaskets composed of SBR or EPDM.  The pressure rating for C110 (full body) fittings and C153 (Compact body) fittings shall be 350 psi up to 24" size.	Full Body C110 FL Type: a) SIGMA; b) SIP Industries c) Star Pipe d) Tyler Union e) No Equal
7.	Joints shall be either flange or mechanical type. Flanges in accordance with ANSI Class 125 per ASME B16.1 and ANSI/AWWA C111/A21.11.  For below grade installations fittings shall be asphaltic coated.	Full Body C110 MJ Type: a) SIGMA b) SIP Industries c) Tyler Union d) No Equal
8.	For above grade installations pipe shall be shop prime coated per manufacturer's recommendation using a high solids epoxy based coating for protection against abrasion, moisture, corrosive fumes, chemical attack and immersion.  Sewer applications shall be per ASTM A746 and requires use of special epoxy based lining per WSD requirements.	Compact Body C153 MJ Type: a) SIGMA b) SIP Industries c) Star Pipe d) Tyler Union e) No Equal
<b>Flexible Wide Range Couplings</b>		
9.	Flexible compression joint couplings shall be lined and coated with a fusion bonded epoxy per AWWA C213. Gasket made of either: SBR or EPDM. Short or long barrel sleeve composed of ductile iron per ASTM A536.  Sizes: 4" through 12"	a) Smith-Blair 461 b) Smith-Blair 462 c) Romac XR501 (epoxy lined and coated) d) No Equal

VENTURA COUNTY WATERWORKS DISTRICT NO. 1, 16, 17, 19, AND 38  
COUNTY SERVICE AREA NO. 29, 30, 34, AND CAMARILLO UTILITY ENTERPRISE  
APPROVED MATERIALS LIST

No.	Description	Manufacturer & Model No.
<b>High Deflection Couplings</b>		
10.	High Deflection Stop Coupling for change of direction for new pipeline alignments using C900 PVC. ASTM D1784 coupling compound with SBR Gasketed joints conforming to ASTM D3139 and F477. Rated to 305 psig pressure rate. Sizes: 6" through 10"	a) Westlake High Deflection Stop Coupling b) No Equal
<b>Gate Valves</b>		
11.	Fully body AWWA C509 Resilient Wedge Gate Valve. Gray cast or ductile iron body. Flanges per ASME B16.1 CL125 or ASME B16.42 CL150. Must be OS&Y configuration if intended for a fire service BPA. Sizes: 2" through 16" Connection configuration: FLxFL, MJxFL, MJxMJ, and OS&Y	a) American AVK Series 45 b) Clow Model 2639 c) Clow Model 2640 d) No Equal
12.	Reduced Wall AWWA C515 Resilient Wedge Gate Valve. Ductile iron body. Flanges per ASME B16.1 CL125 or ASME B16.42 CL150. Must be OS&Y configuration if intended for a fire service BPA. Sizes: 2" through 16" Connection configuration: FLxFL, MJxFL, MJxMJ, and OS&Y	a) American AVK Series 65 b) Clow Model 2638 c) No Equal
<b>Wedge Action Mechanical Joint Restraints</b>		
13.	Wedge Action Mechanical Joint Restraint for Ductile Iron Pipe. Sizes: 3" through 16"	a) EBAA Iron Megalug 1100 b) SIP Industries EZ Grip EZD c) Star Pipe Products DI Stargrip Series 3000 d) SIGMA One-Lok SLDE e) No Equal
14.	Wedge Action Mechanical Joint Restraint for C900 PVC Pipe. Sizes: 6" through 12"	a) EBAA Iron Series 2000PV b) SIP Industries EZ Grip EZPVCU c) Star Pipe Products PVC Stargrip Series 4000 d) SIGMA One-Lok SLCE e) No Equal
<b>Restraint Push-on Joint Gaskets</b>		
15.	Specialty push-on joint restrained gaskets, only for ductile iron pipe. Only use gasket produced by the same manufacturer as pipe, do not mix between manufacturers. Rated to 350 psig. Sizes: 3" through 18" Note: US Pipe and McWane both use the Tyton gasket design and may be interchangeable with one another. American Ductile however uses a different Fastite gasket design that is not compatible with US Pipe or McWane.	a) US Pipe Field Lok 350 b) McWane Sure Stop 350 c) American Ductile Iron Amarillo Fast-Grip d) No Equal
<b>Restraint Harnesses</b>		
16.	Restraint harness for ductile iron pipe push-on joints. Rated to 350 psig. Sizes: 3" through 16"	a) EBAA Iron Megalug 1700 b) No Equal
17.	Restraint harness for C900 PVC pipe push-on joints. Rated to Class 305 DR14. Sizes: 6" through 12"	a) EBAA Iron Series 1900 b) No Equal
<b>Flexible Expansion Joints</b>		
18.	Force-Balanced Flexible Expansion Joint. Sizes: 3" though 16"	a) EBAA Iron Flex-Tend Force Balanced Flexible Expansion Joint b) No Equal
19.	Non-Balanced Flexible Expansion Joint. Sizes: 3" though 18"	a) EBAA Iron Flex-Tend Flexible Expansion Joint b) No Equal

VENTURA COUNTY WATERWORKS DISTRICT NO. 1, 16, 17, 19, AND 38  
 COUNTY SERVICE AREA NO. 29, 30, 34, AND CAMARILLO UTILITY ENTERPRISE  
 APPROVED MATERIALS LIST

Category: Water Service Saddles, Corp Stops, Angle Stops, Curb Stops, Customer Valves, Couplings, Pipe Stiffeners, and Pressure Regulators

No.	Description	Manufacturer & Model No.
<b>Service Saddles</b>		
1.	Service Saddle for AC pipe. Sizes: 1" or 2" Female Iron Pipe Thread outlet.	a) Ford 202B-xxx-IPx b) Jones J-969 c) No Equal
2.	Service Saddle for CI or DI pipe. Sizes: 1" or 2" Female Iron Pipe Thread outlet.	a) Ford 202B-xxx-IPx b) Jones J-979 c) No Equal
3.	Service Saddle for C900 PVC pipe. Sizes: 1" or 2" Female Iron Pipe Thread outlet.	a) Ford 202BS-xxx-IPx b) Jones J-969 c) No Equal
<b>Corporation Valve Stops</b>		
4.	MIP inlet x PJ CTS outlet Ball type Corporation Valve Stop Sizes: 1"x1" or 2"x2"	a) Ford FB1100-x-NL b) Jones E1935 c) No Equal
<b>Angle Meter Stop Valves</b>		
5.	PJ CTS x Meter Swivel Nut, ball type angle meter stop valve. Sizes: 1"x1" and 1"x3/4"	a) Ford BA43-xxxW-NL b) Jones E1963W c) No Equal
6.	FIP x Meter Flange, ball type angle meter stop valve. Sizes: 2"x2" Note: For 1-1/2" meter installations, use 2"x2" valve (flanges will mate).	a) Ford BFA13-777W-NL b) Jones E1974W c) No Equal
<b>Curb Stop Valves</b>		
7.	FIP x FIP Ball type Curb Stop Valve with Lockwing. Sizes: 1"x1" or 2"x2". Note: Item specific for bypass piping on 3" or 4" meter assembly, see WSD Standard W-7 and W-8 for details.	a) Ford B11-xxx-NL with Lockwing b) Jones E-1900W c) No Equal
<b>Customer Service Shutoff Valves</b>		
8.	Meter Swivel Nut x FIP, ball type "straight" "inline" service shutoff valve with handle. Sizes: 3/4"x1" and 1"x1"	a) Ford B13-xxxW (valve) with Ford HB34S-NL (handle) b) Jones E-1908W c) No Equal
9.	Meter Flange x FIP, ball type "straight" "inline" service shutoff valve with handle. Sizes: 2"x2" Note: For 1-1/2" meter installations, use 2"x2" valve (flanges will mate)	a) Ford BF13-xxxW (valve) with Ford HB67S-NL (handle) b) Jones E-1913WJ c) No Equal
<b>Couplings for Copper or Muncipex Tubing</b>		
10.	MIP x PJ CTS Straight Coupling Sizes: 1"x1" or 2"x2"	a) Ford C84-xx-NL b) Jones E2605 c) No Equal
<b>Pipe Stiffener for PJ CTS Connections (For Connections using Muncipex Tubing)</b>		
11.	2" stainless steel pipe stiffener (liner) for PJ CTS connections. Required for all connections involving Muncipex tubing. Note: Pipe Stiffener and mating valve/coupling/or fitting must be from the same manufacturer. Ford and Jones stiffeners will vary in lengths.	a) Ford INSERT-55 b) Jones J-2808 c) No Equal

VENTURA COUNTY WATERWORKS DISTRICT NO. 1, 16, 17, 19, AND 38  
 COUNTY SERVICE AREA NO. 29, 30, 34, AND CAMARILLO UTILITY ENTERPRISE  
 APPROVED MATERIALS LIST

No.	Description	Manufacturer & Model No.
<b>Pressure Regulator for Services</b>		
12.	Suggested pressure regulator for typical services where pressure reduction is required by the Building Authority.  Cast bronze body and bell housing per ASTM B584 with integral bypass check valve and screen. Stainless steel internals. Certified NSF 61 and lead free compliant. Sizes: 3/4" through 2"	a) Zurn Wilkins 600XL Series b) Or Equal

**Category: Mixes, Aggregates, and Specialty Materials**

No.	Description	Manufacturer & Model No.
<b>Concrete and Slurry Mixes (per SSPWC)</b>		
1.	560-C-3250 Concrete	a) Cemex Ready Mix No. 1418558 b) National Ready Mix No. S59590 c) Associated Ready Mix No. 85901 d) Spragues Ready Mix No. S5603250 e) Or Equal
2.	100-E-100 Slurry	a) National Ready Mix No. S10510 b) Associated Ready Mix No. 81100 c) Spragues Ready Mix No. S100E100 d) State Ready Mix No. 14100E e) Or Equal
<b>Aggregates (per SSPWC)</b>		
3.	1" Crushed Rock	a) Grimes Canyon Rock Facility No. 3 Concrete Rock (1" Aggregate) b) Or Equal
4.	3/4" Crushed Rock	a) Santa Paula Materials Inc 3/4" Crushed Rock b) Grimes Canyon Rock Facility 3/4" Crush Rock c) Or Equal
5.	3/8" Crushed Rock	a) Grimes Canyon Rock Facility No. 4 Concrete Rock (3/8" Aggregate) b) Or Equal
6.	Washed Concrete Sand	a) Grimes Canyon Rock Facility Washed Concrete Sand b) Or Equal
<b>Grouts, Adhesives, Waterstops, Specialty Concrete Mixes, and Expansion Joint Filler</b>		
7.	Non-shrink grout for general construction fill application. Non-structural and non-corrosive grouting applications.	a) Sika SikaGrout 212 b) Or Equal
8.	Epoxy resin-based adhesive, for bonding fresh and plastic concrete to hardened concrete.	a) Sika Armatec 110 b) Sika Sikadur-32 Hi-Mod c) Or Equal
9.	Non-swelling waterstop. Pre-formed sealant for water sealing non-moving concrete joints.	a) Henry Synko Flex Waterstop b) Sika Lockstop c) Or Equal
10.	Hydrophilic swellable waterstop. For water sealing cast-in-place and below grade precast concrete applications.	a) Sika Swellstop b) ConSeal CS-231 c) Or Equal
11.	Very rapid hardening concrete mix.	a) Rapidset Concrete Mix b) Or Equal



VENTURA COUNTY WATERWORKS DISTRICT NO. 1, 16, 17, 19, AND 38  
 COUNTY SERVICE AREA NO. 29, 30, 34, AND CAMARILLO UTILITY ENTERPRISE  
 APPROVED MATERIALS LIST

No.	Description	Manufacturer & Model No.
12.	Polystyrene Bond Breaker (Expansion Joint Foam Filler).	a) W.R. Meadows Deck-O-Foam b) Sakrete Concrete Expansion Joint c) Or Equal
13.	Polyethylene Foam Backer Rod.	a) W.R. Meadows Kool-Rod b) Sakrete Backer Rod c) Or Equal
14.	Sealant and Primer for sealing static and dynamic joints.	a) Sika Duoflex NS (sealant) with Duoflex NS (primer) b) Or Equal

**Category: Miscellaneous**

No.	Description	Manufacturer & Model No.
<b>Anchor Bolts</b>		
1.	Wedge Action Mechanical Expansion Anchors. Stainless Steel 316.	a) Redhead Trubolt 316SS b) Hilti KB TZ2 316SS c) Or Equal
2.	Epoxy Chemical Adhesive Anchors. Stainless steel 316 rods when anchoring.	a) Hilti HIT-HY 500 316SS b) Or Equal
<b>Bolts and Nuts for ASME B16.1 CL125 or ASME B16.5 CL150 Flanges</b>		
3.	For Joints in Water Service Applications: Bolts per ASTM A307 GR B (or A) and nuts per ASTM A563 GR A. Dimensions per ASME B18.2.1 and threads per ASME B1.1. Coated with: zinc plating, hot dipped galvanized, fluoropolymer, or Teflon.	a) Tripac b) Pacific Bolt c) Or Equal
4.	For Break Off Joints on Fire Hydrants: Alloy steel break-off bolts per ASTM A307 GR A and nuts per ASTM A563 GR A. Dimensions per ASME B18.2.1 and threads per ASME B1.1. 100% silicone-filled per ASTM C920. Coated with: zinc plating, hot dipped galvanized, fluoropolymer, or Teflon.	a) Tripac b) Pacific Bolt c) Or Equal
5.	For Joints in Sewer and Reclaim Water Service Applications: Stainless Steel T-316 hex bolts per ASTM F593 and nuts per ASTM F594. Dimensions per ASME B18.2.1 and threads per ASME B1.1.	a) Tripac b) Pacific Bolt c) Or Equal
<b>Cleaner, Primer, and Cement for Socket Glued PVC/CPVC Pipe and Fittings for Pressurized Applications</b>		
6.	Cleaner for PVC and CPVC pipe and fittings.	a) Oatey Clear Cleaner b) Or Equal
7.	Purple-tinted fast setting primer for use on PVC and CPVC pipe and fittings. Conforming to ASTM F656, NSF 61 and IAPMO listed.	a) Oatey Purple Primer b) Or Equal
8.	Fast Setting solvent cement for PVC and CPVC pipe and fittings, all schedules. Conforming to ASTM D2564, D2235, and F493. NSF 61 and IAPMO listed.	a) Hercules Multipurpose Medium Body Fast Set Milky White Cement b) Or Equal
<b>Detectable Warning Tape</b>		
9.	Detectable warning tape with warning message for the buried utility. Message printed on both sides of tape and encased by a clear film cover to protect from degradation when exposed to soils. Tape shall be minimum 5.0 mil thickness, contain a 0.35 mil solid aluminum foil core, use 1" letter size, and be 6" wide. Color for service is as follows: Blue for Water, Green for Sewer, Purple for Reclaim Water, and Red for Electrical.	a) Christy's Detectable Tape b) Hytech Detectable Tape c) Or Equal
<b>Gaskets for ASME B16.1 CL125 or ASME B16.5 CL150 Flanges</b>		
10.	Non-Asbestos material gaskets for bolting to ASME B16.1 CL125 or ASME B16.5 CL150 Flanges. Drop-in ring type, 1/16" thick, NBR or EPDM material-based gasket per ASTM B16.2.1. NSF 61 certified.  Pipe Sizes: 2-16"	a) Garlock MULTI-SWELL Style 3760-U b) Durlon 7910 c) Or Equal



VENTURA COUNTY WATERWORKS DISTRICT NO. 1, 16, 17, 19, AND 38  
 COUNTY SERVICE AREA NO. 29, 30, 34, AND CAMARILLO UTILITY ENTERPRISE  
 APPROVED MATERIALS LIST

No.	Description	Manufacturer & Model No.
<b>Lubricants and Greases</b>		
11.	Lubricant for Push-on type joints. NSF 61 certified.  Note: Always use lubricant provided by pipe manufacturer when available.	a) JTM Phoenix 27-XL b) Northtown Ease-on Lube c) Christy's Pro-Lube d) Whitlam Blue Lube e) Or Equal
12.	Anti-Seize lubricant for bolts and nuts.	a) Permatex Nickel Anti-Seize b) Loctite Nickel Anti-Seize LB 771 c) Or Equal
13.	No-Ox-ID "A-Special" rust preventative coating grease.	a) Sanchem No-Ox-ID A-Special WW b) Or Equal
<b>Pipe Supports (Stands)</b>		
14.	Steel saddle mount type pipe support with base plate for anchoring to foundation. Threaded riser adjustable style. Powder coated or hot dipped galvanized.  Only for supporting pipe sizes: 6" and smaller	a) Pipeline Products PS-(100 or 150 or 200)-(S or G) b) Or Equal
15.	Heavy duty steel saddle mount type pipe support with base plate for anchoring to foundation. Threaded riser adjustable style. Hot dipped galvanized or all stainless steel.	a) Pipeline Products PS-(300 or 400)-XXS-30-(HDG or 316) b) Or Equal
<b>Pipe Wrap</b>		
16.	Tubular polyethylene encasement wrap for underground main size pipe installations. Minimum 8 mil thickness. Meets AWWA C105. Color for service is as follows: Blue for Water, Green for Sewer, and Purple for Reclaim Water.	a) Christy's Polywrap b) Northtown Polywrap c) Or Equal
17.	Tubular polyethylene encasement wrap for underground meter service tubing size installations. Minimum 6 mil thickness. Meets AWWA C105 as applicable. Color for service is as follows: Blue for Water, Green for Sewer, and Purple for Reclaim Water.	a) Christy's Polywrap-C b) Northtown Polywrap-C c) Or Equal
18.	V-Bio Enhanced Polyethylene Encasement. Three-layer tubular encasement for corrosive soils.	a) McWane V-Bio b) US Pipe V-Bio c) Or Equal
<b>Tape</b>		
19.	PVC wrapping tape per UPC. Minimum 10 mil.	a) Northtown PVC Tape Wrap b) Or Equal
<b>Tracer (Locator) Wire and Accessories</b>		
20.	Tracer wire for open-cut trenches (typical). High strength solid copper-clad steel conductor tracer wire for open cut and trenching installations. Designed for buried service and rated to 30 volts, insulated with a 45 mil HDPE jacket rated for direct burial use at 600 volts. 452 lb break load. Must conform to ASTM B1010 and ASTM B910. #12 AWG wire size.  Color selection shall be as follows: blue for potable water, green for sewer, and purple for reclaim water.	a) Copperhead 1245-HS b) No Equal
21.	Tracer wire for directional drills and borings. High strength solid copper-clad steel conductor tracer wire for directional drilling/boring applications. Designed for buried service and rated to 30 volts, insulated with a 45 mil HDPE jacket rated for direct burial use at 600 volts. 1,150 lb break load. Must conform to ASTM B1010 and ASTM B227. #12 AWG wire size.  Color selection shall be as follows: blue for potable water, green for sewer, and purple for reclaim water.	a) Copperhead 1245-EHS b) No Equal

VENTURA COUNTY WATERWORKS DISTRICT NO. 1, 16, 17, 19, AND 38  
 COUNTY SERVICE AREA NO. 29, 30, 34, AND CAMARILLO UTILITY ENTERPRISE  
 APPROVED MATERIALS LIST

No.	Description	Manufacturer & Model No.
22.	Tracer wire for pipe bursts. High strength solid copper-clad steel conductor tracer wire for pipe bursts applications. Designed for buried service and rated to 30 volts, insulated with a 50 mil HDPE jacket rated for direct burial use at 600 volts. 4,700 lb break load. Must conform to ASTM B1010 and ASTM B227. #12 AWG wire size.  Color selection shall be as follows: blue for potable water, green for sewer, and purple for reclaim water.	a) Copperhead Soloshot Extreme PBX-50 b) No Equal
23.	Mainline to service three-way connector for tracer wire runs on service laterals. Waterproof and designed for direct buried applications. Pre-filled with dielectric silicone. Fully inter-compatible with either copper clad steel, solid copper, and stranded copper conductors.	a) Copperhead Mainline-to-Service Connector 3WB-01 b) No Equal
24.	Quick auto-stripping connector for tracer wire. Waterproof and designed for direct buried applications. Pre-filled with dielectric silicone.	a) Copperhead SnakeBite Locking Connector LSC1230C b) No Equal
25.	Twist-on type wire connectors pre-filled with dielectric silicone. Meets UL 486C and 486G. Waterproof, corrosion resistant, and listed for direct buried application. Minimum (3) #22 AWG to Maximum (3) #12 AWG. Fully inter-compatible with either copper clad steel, solid copper, and stranded copper conductors.  Note: Only allowed for splicing to existing tracer wire. For new water mains use Copperhead SnakeBite Locking Connector LSC1230C or Copperhead Mainline-to-Service Connector 3WB-01	a) Copperhead Twist-On SCB-01 b) Ideal Underground Model 64 c) Or Equal
26.	Drive-in Ground Rod. 1.5 lb. magnesium grounding rod for direct burial applications with #12 AWG wire.	a) Copperhead Ground Rod ANO-12 b) No Equal
27.	Access Point (wire stack) for tracer wire. Incidental traffic (sidewalk and driveway) rated.  Color selection shall be as follows: blue for potable water, green for sewer, and purple for reclaim water.	a) Copperhead SnakePit Concrete/Driveway Access point CD14*2T-SW. b) No Equal
<b>Valve Extension Stems</b>		
28.	Steel valve stem extension with 2" square operating nut	a) Pipeline Products SX-906 b) South Bay Foundry c) Or Equal
29.	Fiberglass valve stem extension with 2" square operating nut	a) Pipeline Products Fiberplas Stem Extension b) Or Equal
<b>Valve (Can, Stack) Access Box</b>		
30.	Cast Iron Two-Piece Slip-on-Style Valve Box and Drop Lid Set. Domestically manufactured and Heavy Duty rated. Lid engraved for applicable service: Water, Sewer, or Reclaim. For valve sizes up to 18".  Use 25 LB Drop Lid model for non-residential or locations with posted speed limits greater than 35 miles per hour.	a) Tyler Two-Piece Full Slip 6855 Domestic Heavy Duty Set b) Or Equal
<b>Pipe Seal for Wall Penetrations</b>		
31.	Modular link-seal for metal and non-fragile pipes. EPDM seal element. Reinforced nylon polymer pressure plate. All stainless steel 316 hardware.	a) Garlock Link-Seal S-316 b) PSI Link-Seal S-316 c) No Equal
32.	Modular link-seal for PVC or fragile pipes. EPDM low durometer rated seal element. Reinforced nylon polymer pressure plate. All stainless steel 316 hardware. Do not use for C-PVC pipe.	a) Garlock Link-Seal LS-316 b) PSI Link-Seal BS-316 c) No Equal

VENTURA COUNTY WATERWORKS DISTRICT NO. 1, 16, 17, 19, AND 38  
 COUNTY SERVICE AREA NO. 29, 30, 34, AND CAMARILLO UTILITY ENTERPRISE  
 APPROVED MATERIALS LIST

Category: Gravity Sewer Pipe, Fittings, and Repair Couplings

No.	Description	Manufacturer & Model No.
<b>Extra Strength Vitrified Clay Pipe and Fittings</b>		
1.	Domestically manufactured. Integral gasketed, bell and spigot joint, pipe conforming to SSPWC 207 and 208, ASTM C700, and the National Clay Pipe Institute's Vitrified Clay Pipe Engineering Manual. Polyurethane joints conforming to ASTM C425. Pipe and fittings shall be from the same (one) manufacturer.  Sizes: 4" through 27"	a) Mission Clay b) Gladdin and McBean c) No Equal
<b>PVC Pipe</b>		
2.	Domestically manufactured. Integral gasketed, bell and spigot joint, solid wall PVC pipe conforming to ASTM D3034 Type PSM and ASTM F679 in accordance with ASTM D1784. Made with an integral bell "water-tight" joint that meets the requirements of ASTM D3212 and that utilizes a Rieber® locked-in gasket design for sealing that meets the requirements of ASTM F477 and ASTM D3219. Gaskets composed of SBR for gravity sanitary sewer application.  Required pipe stiffness (PS) shall be 115 PSI SDR 26.  Sizes: 4" through 15", ASTM D3034 TYPE PSM PS 115 SDR 26 Sizes: 18" through 27", ASTM F679 PS 115  Note: Where matching an existing pipe inner diameter, PS 46 SDR 35 may be allowed.	a) JM Eagle Ring-Tite b) Vinyltech c) Westlake Pipe and Fittings (NAPCO) d) No Equal
<b>PVC Pipe Fittings</b>		
3.	Requirements shall be the same as those for Gravity Sewer PVC Pipe Item No. 2; additionally conform to ASTM F1336, and;  Sizes: 4"-12", Injection Molded design Sizes: greater than 12", Fabricated design  Note: Where matching an existing pipe inner diameter, PS 46 SDR 35 may be allowed.	a) GPK Products b) Harco Fittings c) Multi Fittings d) Westlake Pipe and Fittings (NAPCO) e) No Equal
<b>Repair Couplings</b>		
4.	Only for repairs, alterations of and house sewers with connections of dissimilar materials. Banded rubber couplings shall have four (4) clamps and metal shear (shield) band, all stainless steel.  Submit on custom coupling design if a flush alignment on bottom inside of connecting pipes cannot be positively confirmed.	a) Fernco Strong Back RC 5000 Series b) Mission Rubber Flex-Seal Arc Shielded Adjustable Sewer Repair Couplings c) No Equal

VENTURA COUNTY WATERWORKS DISTRICT NO. 1, 16, 17, 19, AND 38  
 COUNTY SERVICE AREA NO. 29, 30, 34, AND CAMARILLO UTILITY ENTERPRISE  
 APPROVED MATERIALS LIST

Category: Manhole Materials, Cleanouts, Backwater Valves, and Sewer Sample Station

No.	Description	Manufacturer & Model No.
<b>Manholes</b>		
1.	Precast Manholes. Conforming to SPPWC and SSPWC. No steps. Type II/V or V Portland cement only. Shaft/Ring Sizes: 48"/30", 60"/30", 72"/36"	a) Precon Products b) Or Equal
<b>Frame and Covers</b>		
2.	Standard Manhole Frame and Cover. See WSD Standard Drawing S-1 for design requirements. Generally described as per SSPWC with following modifications:  (1) 1" pick hole, circular frame with (4) 5/8" equidistant drilled holes, cover casted with 2-1/2" lettering and raised 3/16", cover textured with 3/16" diamond thread surface. Cover engraved with one of the following: VCWWD NO. 1 SEWER, VCWWD NO. 16 SEWER, or COUNTY OF VENTURA SEWER.  Clear Opening/Frame Outer Diameter Size: 30"/38", 36"/44"	a) South Bay Foundry b) EJ Company (formerly Alhambra) c) Long Beach Iron Works d) Or Equal
3.	Watertight Gasketed Manhole Frame and Cover. See WSD Standard Drawing S-1 for design requirements. Generally described as per SSPWC with following modifications:  (1) 1" closed pick hole <b>embedded within cover</b> , circular frame with (4) 5/8" equidistant drilled holes, cover casted with 2-1/2" lettering and raised 3/16", cover textured with 3/16" diamond thread surface. Cover engraved with one of the following: VCWWD NO. 1 SEWER, VCWWD NO. 16 SEWER, or COUNTY OF VENTURA SEWER.  Clear Opening/Frame Outer Diameter Size: 30"/38", 36"/44"	a) South Bay Foundry b) EJ Company (formerly Alhambra) c) Long Beach Iron Works d) Or Equal
<b>Manhole Seals</b>		
4.	Joint Sealant Compound, for Precast Manhole Shafts  Pre-formed rubber rope gasket for watertight seal between precast manhole sections. Cold-applied adhesive in pre-formed rope configuration. Rubber material must be either: butyl, bituminous, or bitumen based. Must meet ASTM C990 and AASHTO M-198 Type B.	a) A-Lok Butyl Lok b) ConSeal CS-102 c) ConSeal CS-102B d) Henry Ram-Nek e) Press Seal EZ-Stik f) No Equal
<b>Manhole Connectors</b>		
5.	Pipe to Manhole Connector, for Cast-in-Place or Precast Manholes.  Rubber flexible boot type connector or epoxy sanded manhole gasketed adapters.	a) A-Lok X-Cell b) NPC Kor-N-Seal c) GPK Epoxy Sanded Manhole Gasketed Adapters d) Multi Fittings Epoxy Sanded Manhole Gasketed Adapters e) Or Equal
6.	Pipe to Manhole Connector, for Breaking into Existing Manholes.  Rubber flexible boot type connector, Epoxy sanded gasketed adapter, or Waterstop ring.	a) Press-Seal PSX Direct Drive b) GPK Epoxy Sanded Manhole Gasketed Adapters c) Multi Fittings Epoxy Sanded Manhole Gasketed Adapters d) Press Seal WS Waterstop e) No Equal
<b>Manhole Step</b>		
7.	Stainless steel rung step for Manholes. Per SPPWC.	a) Long Beach Iron Works LB 404T-11 b) Or Equal

VENTURA COUNTY WATERWORKS DISTRICT NO. 1, 16, 17, 19, AND 38  
 COUNTY SERVICE AREA NO. 29, 30, 34, AND CAMARILLO UTILITY ENTERPRISE  
 APPROVED MATERIALS LIST

No.	Description	Manufacturer & Model No.
<b>Infiltration Reducers</b>		
8.	Surface infiltration reducing cover for manhole frames. Traffic rated, with seal gasket, and exhaust valve.	a) 316 Stainless Steel Rainstoper with Extended Life Gasket b) Or Equal

**Category: Gravity Sewer Cleanouts, Backwater Valves, Sample Station, and Miscellaneous**

No.	Description	Manufacturer & Model No.
<b>Cleanouts</b>		
1.	Cleanout valve box for sewer laterals in non-traffic rated locations. Frame and cover made of gray cast iron, ductile iron, or precast concrete. Cover marked "S", "CO", or "SEWER".	a) Jensen Precast HTV10-5 Valve Box b) Christy F08 Light Duty Valve Box c) Christy G03 Traffic Rated Valve Box d) Or Equal
2.	Traffic rated cleanout valve box for: terminal sewer main line cleanouts and lateral cleanouts installed in vehicular load locations.  Conforming to SSPWC 204-3. Gray cast iron cover and frame per ASTM A48 Class 35B, traffic rated per AASHTO H20. 11-1/2" clear opening, 1" pick hole, with asphaltic coating, and cover marked with either: "S", "CO", or "SEWER".	a) Alhambra A-1241 b) Long Beach Iron Works LB 1241/X-510B "S" or "CO" c) EJ Company 3510Z 3510C d) South Bay Foundry 1241 e) Or Equal
<b>Backwater Valve</b>		
3.	Extendable Backwater Valve. Suitable for buried service. Flapper attached to an inner riser assembly emplaced within outer riser pipe. Flapper and inner riser assembly fully removable from above ground. Outer riser pipe includes an upper cover plug for access.  Use the normally open (typical) flapper design.	a) Rectorseal Extendable Clean Check b) Mainline Adapt-A-Valve Inspection Chamber c) Or Equal
<b>Sewer Sample Station</b>		
4.	Sewer Sampling Well (Box).	a) Schier SV24-O with Shier FCR2 riser to bring cover frame to grade b) No Equal

VENTURA COUNTY WATERWORKS DISTRICT NO. 1, 16, 17, 19, AND 38  
 COUNTY SERVICE AREA NO. 29, 30, 34, AND CAMARILLO UTILITY ENTERPRISE  
 APPROVED MATERIALS LIST

Category: Septic Tank Effluent Pump (STEP) System Specific Materials

No.	Description	Manufacturer & Model No.
<b>STEP Tank</b>		
1.	Precast traffic rated concrete septic tank designed for commercial application. 1500 Gallon or as sized by the Engineer. Riser rings as needed. Tank and manhole risers shall be fully coated with 1-3 mil epoxy based primer and lined with minimum 125 mil Zebron 386 lining per coating manufacturer's recommendation.	a) Jensen Precast JP-1500 coated with Zebron 386 b) Or Equal
2.	Non-Grinder type Submersible Effluent Pump. Sized to pump up to 3/4" round solids with double mechanical seals.  Configuration: 1/2 HP / 240V / 1PH / 5.1 FLA / 10.1 LRA	a) Barnes Series STEP 522 DS b) No Equal
3.	Non-mercury type float switches. Switches configured Normally Open for pump down operation, single pole single throw; where contacts are open when floats are in the hanging position and close when floats become horizontal. Floats and cable suitable for raw sewage application. At minimum cable shall be 18 AWG Size, type SJOOW, and 300V rated.  Order with necessary cable length based on field verified conditions.	a) Conery 2900 Series B8 Normally Open "Green" Color Shell b) No Equal
4.	#2 (or #135) size x 30 ft. Stainless Steel 304 or 316 Straight Link Chain. Minimum working load limit of 345 lbs.	a) Home Depot Everbilt Model 806450 b) Or Equal
5.	3/8" x 4" long eye bolt. Stainless steel 316.	a) Home Depot Deckmate Model 867540 b) Or Equal
<b>Valve Box and Electrical Pull Boxes</b>		
6.	Valve Box. Polymer Concrete Box and Lid, box and lid both ANSI Tier 22 traffic rated. Lid engraved with "SEWER" by the manufacturer or blank but marked in the field. Specify mouseholes (knockouts) for pipe penetration through box.  Size: 17" wide x 30" long, and depth of 12" or 18"  Note: Only allowed in driveways. Any road location must be AASHTO H20 Traffic Rated.	a) Jensen Precast Box HPC 1730 with Lid HPC 1730-T22-L02 b) Oldcastle Polymer 1730 with T22 (85 lb.) Lid c) Or Equal
7.	Electrical Pull Box. Polymer Concrete Box and Lid, box and lid both ANSI Tier 22 traffic rated. Lid engraved with "ELECTRICAL" by the manufacturer or blank but marked in the field. Specify mouseholes (knockouts) for pipe penetration through box.  Size: 17" wide x 30" long, and depth of 12" or 18"  Note: Only allowed in driveways. Any road location must be AASHTO H20 Traffic Rated.	a) Jensen Precast Box HPC 1730 with Lid HPC 1730-T22-L02 b) Oldcastle Polymer 1730 with T22 (85 lb) Lid c) Or Equal
<b>Specialty Valves and Couplings</b>		
8.	True Union ball type PVC valve. Socket x Socket end connections. FPM or EPDM seals.	a) Hayward TBH b) No Equal
9.	True Union ball type PVC check valve. Socket x Socket end connections. FPM or EPDM seals.	a) Hayward TC b) No Equal
10.	Flexible compression joint style coupling. Sleeve composed of ductile iron per ASTM A536. Lined and coated with a fusion bonded epoxy per AWWA C213. Gasket made of either: NBR (Buna-N), SBR, EPDM, or FKM/Viton. All 326 stainless steel hardware.	a) Smith-Blair 441 OMNI Coupling with 316 Stainless Steel Bolts and Nuts b) No Equal

VENTURA COUNTY WATERWORKS DISTRICT NO. 1, 16, 17, 19, AND 38  
 COUNTY SERVICE AREA NO. 29, 30, 34, AND CAMARILLO UTILITY ENTERPRISE  
 APPROVED MATERIALS LIST

No.	Description	Manufacturer & Model No.
<b>STEP Control Panel</b>		
11.	UL 698A stamped STEP Control Panel.  Contact WSD for panel fabrication drawings. Panel must be fabricated by a UL certified panel fabrication shop per WSD fabrication drawings.	a) Instrument Services Control Ventura, CA <a href="mailto:ics@instrumentcontrol.com">ics@instrumentcontrol.com</a> b) Soffa Electric Commerce, CA <a href="mailto:Sales@soffaelectric.com">Sales@soffaelectric.com</a> c) Tesco Controls Temecula, CA <a href="mailto:sales@tescocontrols.com">sales@tescocontrols.com</a> d) Or Equal
12.	1" Aluminum Locknut, for panel knockout UNY connection.	a) McMaster-Carr Part No. 9147T125 b) Or Equal
13.	1" NPT Neoprene Gaskets (two), for panel knockout UNY connection.	a) McMaster-Carr Part No. 97725K33 b) Or Equal
14.	Plastic Insulating Bushing (Grommet), for panel knockout UNY connection.	a) McMaster-Carr Part No. 7513K213 b) Or Equal
15.	316 stainless steel Unistrut and Floor Mount. Use all 316 stainless steel spring-loaded hardware. 1-5/8" x 1-5/8", 12 Gauge, Slotted Unistrut design.	a) Atkore Unistrut (P1000T-ST) with floor mount (P2072A-ST or P2072SQ-ST) and hardware (P1006-SS thru P1010-SS) b) Power Strut (PS200EH-ST) with floor mount (PS3033-ST or P3033ST-ST) and hardware (PS-RS-ST-SS) c) Or Equal
<b>Electrical Conduit and Wiring</b>		
16.	Electrical PVC Conduits and fittings for Buried Applications. Schedule 40 or 80. Compliant with and labeled NEMA TC 2, UL 651, and NFPA 70. Fittings additionally compliant with NEMA TC 3.	a) ABB Carlon b) Cantex c) JM Eagle d) Or Equal
17.	Rigid Aluminum Conduit (RAC) and fittings for above ground applications. UL 6A listed.	a) American Conduit RAC b) Atkore Calconduit RAC c) Atkore Allied Tube & Conduit RAC d) Wheatland Tube RAC e) Or Equal
18.	Aluminum explosion proof conduit seal off fitting per UL 1203. FNPT x FNPT.  Note: Only use aluminum fittings if using rigid aluminum Conduit.	a) Appleton EYF-xxx-AL 25% Fill b) Eaton Crouse Hinds EYS-xx-SA c) Or Equal
19.	Aluminum explosion proof conduit union fitting per UL 1203. FNPT x MNFP. For joining conduit to control panel (knockout).  Note: Only use aluminum fittings if using rigid aluminum Conduit.	a) Appleton UNY-xxxNR-A b) Eaton Crouse Hinds UNY-xxx-SA c) Or Equal
20.	PVC Coated Rigid Galvanized Steel (RGS) conduit and fittings for above ground applications. UL 6 listed and compliant with NEMA RN 1. 2-mil thick internal coating and 40-mil thick external coating.	a) Perma-Cote b) Robroy Industries Plasti-Bond c) Thomas & Betts Ocal Blue d) Or Equal
21.	THWN-2 rated soft-drawn copper wiring. Listed per UL 83, 758, and 1063. Designed for conduit and cable tray service. Rated to 600 volts. Rated to 90°C (Dry) and 75°C (Wet / Exposed to Oil).	a) Southwire SIMpull b) Cerrowire THHN/THWN-2 c) Or Equal



VENTURA COUNTY WATERWORKS DISTRICT NO. 1, 16, 17, 19, AND 38  
 COUNTY SERVICE AREA NO. 29, 30, 34, AND CAMARILLO UTILITY ENTERPRISE  
 APPROVED MATERIALS LIST

**A Helpful Guide for More Typical Installations**

Provided for reference. It is ultimately the responsibility of the Contractor to confirm they are providing the correct materials for the job.

<b>1" or 3/4" Water Meter Service</b>		
Material Description	Category / Sub-Category	Category Item No.
1" Saddle	Water Service / Saddles	1 through 3
1" MIP x CTS Ball Corp Stop	Water Services / Corporation Valve Stops	4
1" Type K Copper Service Line	Tubing / Tubing	1
1" Compression Angle Meter Stop or 1" x 3/4" Compression Angle Meter Stop	Water Service / Angle Meter Stop Valve	5
1" FIP x Meter Nut Customer Hand Valve w/ Handle or 3/4" FIP x Meter Nut Customer Hand Valve	Water Services / Customer Shutoff Valves	8
1" Meter Box or 2" Meter Box	Enclosures / Meter Boxes	1 through 3
Detectable Warning Tape	Miscellaneous / Detectable Warning Tape	9
Poly Pipe Wrap	Miscellaneous / Pipe Wrap	17
Washed Concrete Sand	Mixes / Aggregates	6
Slurry	Mixes / Concrete and Slurry	2
Concrete	Mixes / Concrete and Slurry	1

<b>2" Water Meter Service</b>		
Material Description	Category / Sub-Category	Category Item No.
2" Saddle	Water Service / Saddles	1 through 3
2" MIP x PJ CTS Ball Corp Stop	Water Service / Corporation Valve Stop	4
2" Municipex Service Line	Tubing / Tubing	2
SS Pipe Stiffeners, Specific to PJ CTS fitting Manufacturer	Water Services / Pipe Stiffener	11
2" CTS x MIP Coupling	Water Services / Couplings	10
2" FIP Brass Elbow	Tubing / Brass Fittings	4
2" Brass Pipe	Tubing / Brass pipe	3
2" FIP x FL Angle Meter Stop	Water Services / Angle Meter Stop	6
2" FIP x FL Customer Ball Curb Valve w/ Handle	Water Services / Customer Shutoff Valves	9
2" Meter Box	Enclosures / Meter Boxes	2 through 3
Detectable Warning Tape	Miscellaneous / Detectable Warning Tape	9
Tracer Wire (for Municipex)	Miscellaneous / Tracer Wire	20, 23 through 27
Poly Pipe Wrap	Miscellaneous / Pipe Wrap	17
Washed Concrete Sand	Mixes / Aggregates	6
Slurry	Mixes / Concrete and Slurry	2
Concrete	Mixes / Concrete and Slurry	1



VENTURA COUNTY WATERWORKS DISTRICT NO. 1, 16, 17, 19, AND 38  
 COUNTY SERVICE AREA NO. 29, 30, 34, AND CAMARILLO UTILITY ENTERPRISE  
 APPROVED MATERIALS LIST

<b>3" or 4" Meter Assembly (For Above Grade Installations)</b>		
Material Description	Category / Sub-Category	Category Item No.
4" DI 90 Elbow, MJ x MJ	Water Main Pipe / Fittings 2"-12"	3 through 5
4" DI Pipe, CL 52	Water Main Pipe / Ductile Iron Pipe	2
4" DI 90 Elbow, FL x FL	Water Main Pipe / Fittings 2"-12"	3
4" DI FL Tee, w/ 4" x 2" Companion FL	Water Main Pipe / Fittings 2"-12"	4 through 5
2" Brass Pipe (Bypass Assembly)	Tubing / Brass Pipe	3
2" Brass Fittings (Bypass Assembly)	Tubing / Brass Fittings	4
2" Brass Ball Valve with Lockwing (Bypass Assembly)	Water Service / Curb Stop	7
4" Resilient Wedge Gate Valve, FL x FL	Water Main Pipe / Gate Valves	11 through 12
4" x 3" DI Reducer, FL x FL for (3" Assembly Only)	Water Main Pipe / Fittings	3
4" DI Blind Flange	Water Main Pipe / Fittings	3
MJ Wedge Action Restraints	Water Main Pipe / Wedge Action MJ Restraints	13
Pipe Stands	Miscellaneous / Pipe Supports	14 through 15
Forest Green Coating	Coatings / Above Grade	1 through 5
Poly Pipe Wrap	Miscellaneous / Pipe Wrap	17
Detectable Warning Tape	Miscellaneous / Detectable Warning Tape	9
Tracer Wire	Miscellaneous / Tracer Wire	20, 23 through 27
Flange Gaskets	Miscellaneous / Gaskets	10
Washed Concrete Sand	Mixes / Aggregates	6
Slurry	Mixes / Concrete and Slurry	2
Concrete	Mixes / Concrete and Slurry	1

<b>Fire Hydrant</b>		
Material Description	Category / Sub-Category	Category Item No.
6" DI Bury Elbow, MJ x FL	Fire Hydrants / Bury Elbows	7
MJ Wedge Action Restraints	Water Main Pipe / Wedge Action MJ Restraints	14
6" Extension Spool (Do NOT submit with break-off feature)	Fire Hydrants / Extension Spools	8
Fire Hydrant	Fire Hydrants / Fire Hydrants	1 through 6
Break-Away Bolts and Silicon Sealant	Miscellaneous / Bolts and Nuts	4
Flange Gaskets	Miscellaneous / Gaskets	10
6" DI CL 52 Pipe	Water Main Pipe / Ductile Iron Pipe	2
Detectable Warning Tape	Miscellaneous / Detectable Warning Tape	9
Tracer Wire	Miscellaneous / Tracer Wire	20, 23 through 27
Washed Concrete Sand	Mixes / Aggregates	6
Slurry	Mixes / Concrete and Slurry	2
Concrete	Mixes / Concrete and Slurry	1

VENTURA COUNTY WATERWORKS DISTRICT NO. 1, 16, 17, 19, AND 38  
 COUNTY SERVICE AREA NO. 29, 30, 34, AND CAMARILLO UTILITY ENTERPRISE  
 APPROVED MATERIALS LIST

<b>4" Blow Off</b>		
Material Description	Category / Sub-Category	Category Item No.
4" Wharf Head Blow-Off	Fire Hydrants / Blow-Offs	9
4" Brass or SS Nipple	Tubing / (Red Brass Pipe and Nipples) or (Schedule 40 Stainless Steel Pipe and Nipples)	3 or 7
4" SS Companion Flange x FIPT	Fire Hydrants / Blow-Offs	10
Break Away Bolts and Silicon Sealant	Miscellaneous / Bolts and Nuts	4
4" DI CL 52 Pipe	Water Main Pipe / Ductile Iron Pipe	2
Flange Gaskets	Miscellaneous / Gaskets	10
4" DI 90 Elbow, FL x MJ	Water Main Pipe / Fittings 2"-12"	3 through 5
MJ Wedge Action Restraints	Water Main Pipe / Wedge Action MJ Restraints	14
Desert Tank Coating	Coatings / Above Grade	1 through 4
Detectable Warning Tape	Miscellaneous / Detectable Warning Tape	9
Tracer Wire	Miscellaneous / Tracer Wire	20, 23 through 27
Washed Concrete Sand	Mixes / Aggregates	6
Slurry	Mixes / Concrete and Slurry	2
Concrete	Mixes / Concrete and Slurry	1

<b>1"-2" Reduced Pressure Backflow Prevention Assembly</b>		
Material Description	Category / Sub-Category	Category Item No.
Brass Pipe	Tubing / Red Brass	3
90 Brass Elbow, FIPT x FIPT	Tubing / Brass Fittings	4
Brass Union Fitting	Tubing / Brass Fittings	4
RP Backflow Prevention Assembly	Backflow Prevention Assemblies	3
Pipe Supports	Miscellaneous / Pipe Supports	14 through 15
Forest Green Coating	Coatings / Above Grade	1 through 4
Poly Pipe Wrap	Miscellaneous / Pipe Wrap	17
Washed Concrete Sand	Mixes / Aggregates	6
Slurry	Mixes / Concrete and Slurry	2
Concrete	Mixes / Concrete and Slurry	1

VENTURA COUNTY WATERWORKS DISTRICT NO. 1, 16, 17, 19, AND 38  
 COUNTY SERVICE AREA NO. 29, 30, 34, AND CAMARILLO UTILITY ENTERPRISE  
 APPROVED MATERIALS LIST

<b>Double Check Detector Assembly</b>		
Material Description	Category / Sub-Category	Category Item No.
DI CL 52 Pipe	Water Main Pipe / Ductile Iron Pipe	2
DI 90 Elbow, MJ x MJ	Water Main Pipe / Fittings 2"-12"	4 through 5
DI 90 Elbow, FL x FL	Water Main Pipe / Fittings 2"-12"	3
Flange Gaskets	Miscellaneous / Gaskets	10
Resilient Wedge Gate Valve	Water Main Pipe / Gate Valves	12
DCDA	Backflow Prevention Assemblies	2
MJ Wedge Action Restraints	Water Main Pipe / Wedge Action MJ Restraints	13
Pipe Supports	Miscellaneous / Pipe Supports	13 through 14
Forest Green Coating	Coatings / Above Grade	1 through 4
Poly Pipe Wrap	Miscellaneous / Pipe Wrap	17
Washed Concrete Sand	Mixes / Aggregates	6
Slurry	Mixes / Concrete and Slurry	2
Concrete	Mixes / Concrete and Slurry	1

<b>3" or Greater RP Backflow Prevention Assembly</b>		
Material Description	Category / Sub-Category	Category Item No.
DI CL 52 Pipe	Water Main Pipe / Ductile Iron Pipe	2
DI 90 Elbow, MJ x MJ	Water Main Pipe / Fittings 2"-12"	4 through 5
DI 90 Elbow, FL x FL	Water Main Pipe / Fittings 2"-12"	3
Flange Gaskets	Miscellaneous / Gaskets	10
Resilient Wedge Gate Valve	Water Main Pipe / Gate Valves	12
RP Device, Select from Approved RP Device List	Backflow Prevention Assemblies	2
MJ Wedge Action Restraints	Water Main Pipe / Wedge Action MJ Restraints	13
Pipe Supports	Miscellaneous / Pipe Supports	13 through 14
Forest Green Coating	Coatings / Above Grade	1 through 4
Poly Pipe Wrap	Miscellaneous / Pipe Wrap	17
Washed Concrete Sand	Mixes / Aggregates	6
Slurry	Mixes / Concrete and Slurry	2
Concrete	Mixes / Concrete and Slurry	1

VENTURA COUNTY WATERWORKS DISTRICT NO. 1, 16, 17, 19, AND 38  
 COUNTY SERVICE AREA NO. 29, 30, 34, AND CAMARILLO UTILITY ENTERPRISE  
 APPROVED MATERIALS LIST

<b>Cut-in Tee for 3" or Larger Services (New Valve Only on Lateral)</b>		
Material Description	Category / Sub-Category	Category Item No.
(Main Size) Transition Coupling or (Main Size) PVC Slip Coupling or (Main Size) DI MJ Sleeve with Restraints	Water Main Pipe / Flexible Wide Range Couplings or Water Main Pipe / Fittings 2"-12"	9 or 4
PVC C900 DR-14 Pub or DI CL 52 Pub	Water Main Pipe / C900 PVC Pipe or Ductile Iron Pipe	1 or 2
(Main Size) MJ x (Lateral Size) FL DI Tee	Water Main Pipe / Fittings 2"-12" and Fittings 14"-24"	3 through 5 and 6 through 8
(Lateral Size) Resilient Wedge Gate Valve FL x MJ	Water Main Pipe / Gate Valves	11 through 12
MJ Wedge Action Restraints	Water Main Pipe / Wedge Action MJ	13 through 14
Flange Gaskets	Miscellaneous / Gaskets	10
Detectable Warning Tape	Miscellaneous / Detectable Warning Tape	9
Tracer Wire	Miscellaneous / Tracer Wire	20, 23 through 27

<b>Cut-in Tee for 3" Larger Services (New Valves on Main and Lateral)</b>		
Material Description	Category / Sub-Category	Category Item No.
(Main Size) Transition Coupling or (Main Size) PVC Slip Coupling or (Main Size) DI MJ Sleeve with Restrainer	Water Main Pipe / Flexible Wide Range Couplings	9
PVC C900 DR-14 Pub or DI CL 52 Pub	Water Main Pipe / C900 PVC Pipe or Ductile Iron Pipe	1 or 2
(Main Size) Resilient Wedge Gate Valve FL x MJ	Water Main Pipe / Gate Valves	11 through 12
(Main Size) FL x (Lateral Size) FL DI Tee	Water Main Pipe / Fittings 2"-12" and Fittings 14"-24"	3 through 5 and 6 through 8
(Lateral Size) Resilient Wedge Gate Valve FL x MJ	Water Main Pipe / Gate Valves	11 through 12
Flange Gaskets	Miscellaneous / Gaskets	10
MJ Wedge Action Restraints	Water Main Pipe / Wedge Action MJ	13 through 14
Detectable Warning Tape	Miscellaneous / Detectable Warning Tape	9
Tracer Wire	Miscellaneous / Tracer Wire	20, 23 through 27

<b>Valve Box for 3" or Larger Valves</b>		
Material Description	Category / Sub-Category	Category Item No.
Tracer Wire	Miscellaneous / Tracer Wire	20, 23 through 27
Valve Box and Drop Lid	Miscellaneous / Valve Access Box	30
6" PVC SDR-35 (Valve Box Extension, if needed)	Gravity Sewer Pipe / PVC Pipe	2
Valve Stem Extension	Miscellaneous / Valve Extension Stems	28 through 29

VENTURA COUNTY WATERWORKS DISTRICT NO. 1, 16, 17, 19, AND 38  
COUNTY SERVICE AREA NO. 29, 30, 34, AND CAMARILLO UTILITY ENTERPRISE  
APPROVED MATERIALS LIST

<b>New STEP System, Complete</b>		
<b>Material Description</b>	<b>Category / Sub-Category</b>	<b>Category Item No.</b>
STEP Septic Tank	Septic Tank Effluent Pump (STEP) System Specific Materials	All, 1 through 21
Watertight Manhole frame and cover	Manhole Materials / Frame and Cover	3
Traffic Rated Sewer Cleanout Frame and Lid	Gravity Sewer Cleanouts / Cleanouts	2
Sealant for Precast Concrete Manholes	Manhole Materials / Manhole Seals	4
Pipe Penetration Link-Seal	Miscellaneous / Pipe Seal for Wall Penetrations	31
Pipe Penetration Core Seal Coat	Coatings / Miscellaneous	9
Pipe Penetration Swellstop	Mixes / Grouts, Adhesives	10
Pipe Penetration Backer Rod	Mixes / Grouts, Adhesives	13
Pipe Penetration Sealant	Mixes / Grouts, Adhesives	14
SDR PVC Pipe	Gravity Sewer Pipe / SDR PS 115 PVC Pipe	2
SDR PVC Fittings	Gravity Sewer Pipe / SDR PS 115 PVC Fittings	3
Backwater Valve	Gravity Sewer Cleanouts / Backwater Valve	3
SCH 80 PVC Pipe and Fittings	Tubing / Schedule 80 Solid Wall PVC	5
PVC Pipe Cleaner	Miscellaneous / Cleaner, Primer, and Cement	6
PVC Pipe Primer	Miscellaneous / Cleaner, Primer, and Cement	7
PVC Pipe Cement	Miscellaneous / Cleaner, Primer, and Cement	8
Detectable Warning Tape	Miscellaneous / Detectable Warning Tape	9
Tracer Wire	Miscellaneous / Tracer Wire	20, 23 through 27
Tracer Wire Drive-In Ground Rod	Miscellaneous / Tracer Wire	26
Stainless Steel Wedge Anchor	Miscellaneous / Anchor Bolts	1
Washed Concrete Sand	Mixes / Aggregates	6
3/4" Crushed Rock	Mixes / Aggregates	4
Concrete	Mixes / Concrete	1