

**APPENDIX “A”  
MATERIALS LIST**

**August 2018 Update**



**CITY OF RICHLAND**  
**Materials List**

The following material list and specifications are provided as a summary of City of Richland preferred products and pre-approved manufacturers. Substitute materials shall be “engineer approved equal” and are required to be approved for use utilizing the Request for Approval of Material (RAM) procedure as outlined in the WSDOTSS Section 1-06.1(2). Provide submittals for materials and/or equivalents to the Engineer for approval in accordance with the Standard Specifications.

For all capital projects: Prior to use, the Contractor shall notify the Engineer of all proposed materials using a Request for Approval of Materials (RAM) form.

MATERIAL	DESCRIPTION	PRE-APPROVED MANUFACTURER
<b>SANITARY SEWER &amp; STORM DRAIN</b>		
PVC Sewer Pipe: Pipe and Joints & Fittings	Ring-Tite joint ASTM D 3212 4”-15” (4’-15’): PVC, ASTM D3034-SDR35 For over 15’ deep: ASTM D3034-SDR26 (PS 115)  18”-48” (all depths): PVC ASTM F679-08-SDR26(PS 115) Restrained gaskets ASTM F477	
New Service Saddle	Gasketed ‘wye’	
New Service Saddle Tap on existing main	Single 3 1/2” Wide Strap Saddle  Concrete Pipe PVC Pipe C-900 Pipe	Romac
Manholes (Precast)	ASTM C478 or cone section eccentric to 24” opening	
Manhole Frames	Ring adjustments- precast concrete ASTM A48-64, Class 30, cast iron or ductile iron, frame weight- 136 lbs.	EJ: 00371511 Olympic
Manhole Cover	“DRAIN” or “SEWER” in 2” letters Cast iron cover Weight – 150 lbs  Drain Heavy Duty H-20 Rated Sewer Heavy Duty H-20 Rated Water Heavy Duty H-20 Rated	Olympic  EJ: 00371700002EJ: 00371700000 EJ: 00371700001

<b>MATERIAL</b>	<b>DESCRIPTION</b>	<b>PRE-APPROVED MANUFACTURER</b>
Catch basin barrels	24" round barrels, 4' deep, Heavy wall precast Catch Basin.	RADA, Inc. Reese Concrete Products Wilbert Vault
Cleanout Lid	8" diameter frame / lid for 6" or 8" CO	EJ: 3675
Catch basin Frames and grates	Frame (round base)  Vane Grate (one-direction flow) Bi-Van Grate (two-direction flow)	Olympic: M1007  EJ: OWA775300002 or OWA775300001  EJ: 007750 M2 EJ: 007750 M3
Mortar / Grout	Complete Repair Target Expanding Non-Shrink	American All Patch 20 Jet Set
Spill Control Separator –	Backwater valve	Plastic Trends, G Series Part # L02
Pipe couplings	Transition	Romac Fernco
Geotextile Fabric	Non-woven fiber pore size 0-13mm maximum water permeability 0.05 cm/sec minimum grab strength (ASTM D 1682) 100 lbs. minimum fabric toughness 10,000 lbs.	
Manhole pipe connectors	Cast-in flexible pipe connectors: Sanitary Sewer, all diameters  Storm Drain: 12" diameter pipe and smaller Larger than 12" diameter pipe	A-LOK X-Cel  A-LOK X-Cel A-LOK Premium
<b>WATER</b>		
Pipe	Ductile Iron Thickness Class 50 PVC , DR18 AWWA C-900 (4" to 8")	
Fittings	For Ductile Iron & PVC Pipe: Fittings shall be cement lined cast or ductile iron and shall conform to ANSI/AWWA C110/A21.10 or ANSI/AWWA C153/A21.53 (compact)	Tyler Sigma
Gaskets	For Ductile Iron & PVC Pipe: Rubber gasket joints shall conform to ANSI/AWWA C111/A21.11	Tyler Sigma

<b>MATERIAL</b>	<b>DESCRIPTION</b>	<b>PRE-APPROVED MANUFACTURER</b>
Nuts, bolts, studs	Carbon steel, ASTM A 307, grd B	
Pipe couplings	Straight, transition, reducing, flanged coupling adapters, dismantling joints	Romac Ford Smith-Blair
Restrained Systems	Pipe joints, flanges, MJ fittings and others DI castings meeting ASTM A 536	EBA Iron Romac (Romagrip) Ford (Uni-Flange)
Joint lubricant	Nontoxic lubricant (water-soluble)	
Gate valves – 8” and smaller	Resilient wedge with cast iron body (AWWA C509 or AWWA C515), non-rising stem, Direction of Opening-Counter clockwise	
Butterfly valves - 10” or larger	Rubber seated (AWWA C504 Class 150B)	Pratt (Groundhog) Mueller Lineseal III [No substitutions]
Ball Valve	2” ball valve	Ford (B11-777)
Tapping Sleeves	Ford Fast Style Stainless Steel Romac Model SST Stainless Tapping Sleeve Smith-Blair Stainless Steel Tapping Sleeve	Ford Romac Smith-Blair
Tapping gate valve – 12” or less	Resilient wedge, Cast iron body (AWWA C509 or AWWA C515) Direction of Opening – Counter clockwise	Mueller (T-2360 series) Clow (F-16114) Kennedy M&H American Float Control EJIW
Fire Hydrant	Dry-barrel, Compression type with 5 ¼” valve opening, Working pressure 150 lb 1-1/2” Pentagon operating nut (left open) (AWWA C502)	Mueller (Centurion) Clow (Medallion) M&H (929 Reliant) M&H (129S) [No substitutions]
Fire Hydrant Connector & Cap 5” x 4 ½” NH	Storz HPHA50-45NH	Harrington, Inc [No substitutions]
Air relief valve (ARV)	Air-release for water works service (AWWA C512)	Val-matic [No substitutions]
Pressure Reducing Valve (PRV)	Pressure reducing valve (size varies)	Cla-Val [No substitutions]
PRV Dismantling Joint		Romac DJ 405

<b>MATERIAL</b>	<b>DESCRIPTION</b>	<b>PRE-APPROVED MANUFACTURER</b>
Valve Box – 5 ¼” Slip type	Olympic Foundry Style 931 D.I. valve box top Olympic Foundry Style 931 D.I. deep skirted lid w/ two pick holes & fluted drop lid Tyler Valve Box 6855 Series w/ 59-A Slip Type Adjustable riser & 5 ¼” Fluted Drop Lid	Sigma, Tyler or approved equal  Heavy Duty
Service Boxes  1” Service 2” Service	Cast iron, screw adjustable with screw down lid – water stamped Tyler # 93E Tyler # 93E w/ # 6500 Enlarged base	Sigma, Tyler or approved equal
Air Vac Vault	Min 42”x42” inside dimensions, no base concrete vault	Utility Vault (444-LA)
Meter Vault Access Hatch	H-20 Loading required	L.W. Aluminum (HS- 3)
Air Vac Vault Access Hatch	H-20 Loading required	Utility Vault (44- 332P)
Casing Spacer / Casing Wrap	Galvanized or stainless steel, sized for type of pipe	Calpico – Model “M” Series
<b>WATER SERVICES AND CONNECTIONS</b>		
1” Copper pipe (std. service)	Soft, Type K, seamless, ASTM B88 (AWWA C800 Underground service lines)	Cerro Muller
Galvanized pipe and fittings 1” and larger	ASTM A53 (AWWA C800 Sec. A.4, Steel pipe)	Smith Cooper [Domestic only]
1” Service Saddle	I.P. size and conform to AWWA c800 for AC pipe, PVC C900 and Ductile Iron pipe	Romac 101S – PVC Romac 202S – Ductile Ford 591-PVC Ford S91-X04 (C900) Ford FS101-XXXX- IP7 (Other) Smith-Blair 313, 317
2” Service Saddle	I.P. size and conform to AWWA c800 for AC pipe, PVC C900 and Ductile Iron pipe	Romac 101S – PVC Romac 202S – Ductile Ford S91-X07 (C900) Ford FS202-XXXX- IP7 (Other)
1” Corp. Stop	For 1” copper service line	Ford FB1100-4 (quick joint or pack joint)
2” Corp Stop	For 2” poly service line	Ford FB1100-7 (pack joint only)
1” Curb Stop	For 1” copper service line	Ford B44-444 (quick joint or pack joint)

MATERIAL	DESCRIPTION	PRE-APPROVED MANUFACTURER
2" Curb Stop	For 2" poly service line	Ford B44-777 (pack joint only)
Service Fittings:  (copper to copper)  (poly to copper)  (poly to galvanized)  (poly to poly)  (copper to galvanized)	Couplings used in service lines          All service connections between dissimilar materials require a dielectric bushing.	Ford (Pack Joint) or (Quick Joint)  Ford (Pack Joint)  Ford (Pack Joint)  Ford (Pack Joint)  Ford (Pack Joint) and Dielectric Bushing
Meter Boxes & Lids	<p>1" – Meter box cover hinged C I lid Brooks 37, meter box 67-HO, 21-1/2# lightweight composite</p> <p>1" – Meter box mid/bottom section no cutouts, 12" Brooks 37, meter box 67, 85# lightweight composite</p> <p>1" – Meter box top section 12" brooks 37, meter box 67-B, 85# lightweight composite</p> <p>1" – Meter box cover traffic Cast Iron, Brooks #37</p> <p>1-1/2" &amp; 2" – Meter box, black plastic cover with Cast Iron reader lid for BCF box, Carson 1730-LID5BML or Carson Mid-States MSBCF-1730-RL</p> <p>1-1/2" &amp; 2" – Meter box, BCF top/mid/bottom without outlet, for BCF box, Carson Mid-states MSBCF-1730-12-B</p>	<p>Brooks</p> <p>Brooks</p> <p>Brooks</p> <p>Brooks</p> <p>Brooks</p> <p>Carson Mid-States</p>
Meter vault (3" – 12")	Pre-cast cement with Aluminum spring assisted cover with locking latch inside dimensions must allow for specified clearances	Utility Vault Company Or approved Equal (Contractor Supplied)
Polyethylene (HDPE) PE-3408 SDR 9	1 ¼", 1 ½", 2" service line material with copper tubing outside diameter size	US Poly Company Polytubes
<b>MISCELLANEOUS WATER ITEMS</b>		
Tracer Wire	12 Gauge solid copper with UF installation Pipe Tracer Wire;	Service Wire Co., TRACE12YW
Pipe Stands	Adjustable pipe stands (varying heights)	Standon Pipe Support Or approved

		Equal
<b>MATERIAL</b>	<b>DESCRIPTION</b>	<b>PRE-APPROVED MANUFACTURER</b>
Marker Post for Air/Vac	Three sided (triangle shaped) marker, yellow with black cap and 4" wide reflective tape, 48" length, direct bury	Rhino TriView Marker Post
Chlorine	Chlorine for disinfecting water mains	
Quick Coupler Winter Blow-off	1" Brass quick coupler for winterization Blow-off (domestic water irrigation)	Rainbird 5RC
<b>STREETS</b>		
Detectable Warning Patterns	Per WSDOT std spec 8-14.3(3)	
Survey monument cover and frame	Cover with 1 open pick hole (center hole)	EJ: #00369501
Pre-cast Monument	Per Standard Detail ST-20	Reese Concrete
<b>IRRIGATION DISTRIBUTION SYSTEM</b>		
Pipe	<p>OUTSIDE ROW: PVC Class 200, SDR21 or better Purple color, 3" and smaller: solvent welded, Sch. 80 4" and larger: ring gasketed joints</p> <p>WITHIN ROW: HDPE Pipe (4" and smaller) PVC , DR18 C900 (larger than 4") purple color</p>	Pacific States US Pipe Griffin PW Pipe JM Pipe American Ductile
Valve Box – 5 ¼" Slip type	Tyler Valve Box 6855 Series w/ 59-A Slip Type Adjustable riser & 5 ¼" Fluted Drop Lid Marked "IRR" or "IRRIGATION"	Tyler
Fiberglass Irrigation Box	Irrigation box, Carson #1419 (12" standard) with T-cover #1419-4, green	Carson
Air Vent & Vacuum Relief Valve	Fresno Series 3000, Model 300B, 2" vent	Fresno Valves & Castings, Inc.
2" Curb Stop for Air / Vac Valve setup	For 2" galv. pipe	Ford B11-777 (Female x Female)
Gate valves – 8" and smaller	Resilient wedge with cast iron body (AWWA C509 or AWWA C515), non-rising stem, Direction of Opening-Counter clockwise	American Flow Control Clow Kennedy M&H Valve Mueller EJIW
Galvanized pipe and fittings 1" and larger	ASTM A53 (AWWA C800 Sec. A.4, Steel pipe)	Smith Cooper
Fittings 3" and smaller	Solvent Welded	[Domestic only]
Fittings 4" and larger	Cast Iron	

Polyethylene (HDPE) PE-3408 SDR9	1 ¼", 1 ½", 2" irrigation service line material with copper tubing outside diameter	US Poly Company Polytubes
2" Curb Stop	For use with 2" poly irrigation service line	Ford B44-777 (pack joint only)
Fittings for HDPE	Misc. fittings for HDPE irrigation service line	Pack-joint only
<b>WATER SERVICE CONNECTIONS – OPTIONAL BY APPROVAL ONLY</b>		
1" Pex water service pipe (std. service)	Pex tubing pipe (crosslinked polyethylene) Copper tube sizes AWWA C904, CSA B137.5	Uponor AquaPEX Blue Municipex
1" Corp. Stop	For 1" Pex service line	Ford FB1100-4 (pack joint only)
1" Curb Stop	For 1" Pex service line	Ford B44-444 (pack joint only)
Meter Boxes & Lids	1" Service Box: Poly Plastic Box (alternative to concrete)  1 ½" to 2" Service Box: Poly Plastic Box (alternative to concrete)	Mid-States Plastics, Inc. BCF Style Meter Box Series Part # MSBCF-1324-12  Sigma-Raven Products RMB 13x24 -12 w/ Poly Lid  Sigma-Raven Products RMB 17"x30"x18" – top and bottom the same  Polyethylene RMB 17"x30"x12" top and bottom the same  RMB 17"x30" R-Lid – Polyethylene (non- traffic areas) C.I. 17"x30" R-Lid – Cast iron (traffic areas)