

# **APPENDIX “A” CITY OF RICHLAND MATERIALS LIST**

**Updated February 2024**



## 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	Model/Part#
<b>Traffic Signals</b>			
Advanced Traffic Controller Cabinet (ATCC) & Appurtenances	M65 Double Door Controller Cabinet, 32 channels	SWARCO/McCain	M93916
	Cabinet Monitor Unit, Model 2212-HV-MC(ip), 32 channel with Model 2220 Auxiliary Display Unit (ADU)	SWARCO/McCain	M36259
	Model 2202-HV Switch Pack/Flasher Unit (provide 10 each, or as noted on plans)	SWARCO/McCain	M36256
	Model SIU-2218-MC Serial Interface Unit (provide 2 each, or as noted on plans)	SWARCO/McCain	M36258
	Suppressor, HESCO, #HE103C-9 (provide 8 each, or as noted on plans)	SWARCO/McCain	M73486LED
	Suppressor, Modular Loop (provide 2 each, or as noted on plans)	SWARCO/McCain	M73488
	Model 242L DC Isolator (provide 2 each, or as noted on plans)	EDI	M56812
	Cabinet Door Lock	Best (Green Core)	M67519
Control Cabinet Foundation	Quazite Composite Foundation for Type M cabinet footprint	Hubbell Power Systems, Inc	PB24360612B18
Controller Unit (CU)	For NEMA TS2, Type 1 Signal Cabinet	Econolite	Cobalt ATC Touch with EOS Part# <b>COB21120110000</b> with 2070 2B+ card
Emergency Preemption – Priority Control System	Optical Detector	GTT	Model 722, Model 721, & Model 711
	Phase Selector	GTT	Model 764
	Auxiliary Interface Panel	GTT	Model 768
	Detector Mount	Pelco Products	Astro-Brac AB-0155-42 (mast) Post Top SE-3106 (Type 1 Pole)
Traffic Signal Poles	Type PPB Post and Type I Pole (Fixed Base unless noted)	WSDOT Pre-Approved Signal Standards	Per <a href="#">WSDOT Drawing Numbers</a> , modified as necessary for City Terminal Compartment and Luminaire Arm
	Type II and Type III Poles (with integral terminal compartment using Best Brand Slam Lock (Green Core) per City Standard Detail TR-12. Type III Pole requires 7-gauge wall thickness for luminaire arms)		
Terminal Blocks	Terminal Blocks	Marathon	1606ST or 1612ST
Conductor Wire Labeling	Markers	Floy Tag	#FT-200S (dry) #FT-205 (wet)
Junction Boxes (Standard / non-traffic bearing)	Quazite Composite Junction Boxes with embossed logo “TRAFFIC”	Hubbell Power Systems, Inc	PG1324BA12 (Type I box) PG1324CA00 (Type I lid) PG1730BA18 (Type II box) PG1730CA00 (Type II lid) PG2436BA18 (Type III box) PG2436CA00 (Type III lid)
Junction Box Lids (Heavy Duty / traffic bearing, i.e. driveways, pathways & curb ramp areas at intersections)	Quazite Composite Junction Boxes with embossed logo “TRAFFIC”	Hubbell Power Systems, Inc	PG1324HH0017 (Type I HH lid) PG1730HH0017 (Type II HH lid) PG2436HH0017 (Type III HH lid)

Material	Description	Pre-Approved Manufacturer	Model/Part#
<b>Traffic Signals (continued)</b>			
Combination Service Pedestal & Disconnect	Disconnect with breakers for Traffic Signal and Street Lighting per City Standard Detail TR-13	Midwest	Model #M101CP6 Load Center with Model #GL-6 External Ground Lug and Model #FBEM9 Footing Base
		Unicorn	HP-UP04-Blank
Signs for Mounting on Signal Standards (Illuminated and Non-Illuminated)	LED Street Signs (used in commercial areas)	Southern Manufacturing	Clean Profile Single Faced LED with Rigid Back Mount (RD Type) per manufacturer specifications
	Sign Connectors - Twist Lock Cord Cap & Plug Disconnect consisting of all part #'s listed.	Leviton	4570-C, 4579-C, 6017-L and 6018L
	Traffic Sign Sheeting for both LED and standard signs.	3M	Use Material from <b>Traffic Signs</b> section of the Materials List. Series 4000 DG3 sheeting with series 1170 Film and series 1160 pre-mask
	Illuminated Street Name Sign Mounts	Pelco Products, Inc.	AG-0142-CTC-LL-SS-PNC
	Non-Illuminated Street Name Sign Mounts	WSDOT QPL vendors	Signs meeting WSDOT Standard Plan G-30.10-04
Vehicle Signal Heads	Signal Housing - Polycarbonate (Color = Signal Green)	SWARCO/McCain	
	Visors – Aluminum Tunnel Visors (Color = Signal Green)	SWARCO/McCain	
	Backplates (Louvered) - Aluminum (Color = Black with 2" Yellow Reflective Borders using 3M DG3 4081 Tape)	SWARCO/McCain	
	Optical Units – LED Lamps	Dialight (Green LED's and Bi-modal Yellow/Green arrows have clear lens type. All others have tinted)	12" Red Ball, part #433-1210-003XL15 12" Yellow Ball, part #433-3230-901XL15 12" Green Ball, part #433-2270-001XL15 12" Red Arrow, part #432-1314-001XOD15 12" Yellow Arrow, part #431-3334-901XOD15 12" Green Arrow, part #432-2374-001XOD15 12" Yellow/Green Arrow, part #430-6370-001
		Trastar (Green LED's and all arrows have clear lens type. Red and Yellow ball indications are tinted)	12" Red Ball, JXC300-HFTR04(15) 12" Yellow Ball, JXC300-HFTY04(15) 12" Green Ball, JXC300-HFG-C(15) 12" Red Arrow, JXJ300-07TR03(15) 12" Yellow Arrow, JXJ300-07TY03(15) 12" Green Arrow, JXJ300-07G04(15) 12" Yellow/Green Arrow, JXJ-300VIYGA(15)
	Geometrically Programmed Louvers, (GPL)	Pelco Products, Inc.	GPL GL-1010-8-UC-P71
Signal Head Mounting Brackets & Fittings	Type N Mounting for Mast Arms and Side of Pole Mount on Type II and III poles. (DD is the Cable Length appropriate for the signal including the Ty-back)	Pelco Products, Inc.	Astro-Brac AG-0125-3-DD-SS-PNC (for 3-section) with Ty-back AB-0506-ZN2 Astro-Brac AG-0138-DD-SS-PNC (for 5-section) with Ty-back AB-0506-ZN2
	Type K & Type F mounts for Type I Poles (Top of Pole)	Pelco Products, Inc.	SE-3270-SS-P71 or SE 5008-SS-P71 respectively for 1 or 2 signal head mounts. Both Upper and Lower Arm assemblies shall use the SE-5007-P71 Upper Arm Assembly with elbows
Vehicle Detection	Cameras - Video Detector Units (VDU)	Econolite	AVISION
	Supervisor - Cabinet Interface Unit + Communications Interface Panel (CIP)	Econolite	AVCM
	VDU Communications Cable	Econolite	Part #1175-11 with EasyLock connector
	Camera Mounts	Econolite	AMBKTM11S - Standard 10" Pedestal Arm Mount
		Econolite	33409P14 Side mount - Side mount
		Econolite	AMBKTM13S J-Mount (when mounted on Luminaires)
		Pelco	Model# AG-0169-46-XX-SS-PNC, Mast Arm mount - Extended

Material	Description	Pre-Approved Manufacturer	Model/Part#
Traffic Signals (continued)			
Pedestrian Push Buttons	Guardian® Wave with BT® Add-On – Federal Yellow Color with Black Button, Natural Finish Arrow	PedSafety (FKA Campbell Company)	#501-0821C (Button) #501-0652 (Bluetooth)
	Signal Power Interface (SPI) cable, 120AC		Part #501-0300
Pedestrian Push Button Signs	Traffic Signals - PUSH BUTTON TO CROSS	PedSafety (FKA Campbell Company)	Sign Type, R10-3e (5" X 7.75")
	RRFB - PUSH BUTTON TO TURN ON WARNING LIGHTS		Sign Type, R10-25 (5" X 7.75")
Pushbutton Extensions & Adapters (all parts shall be Federal Yellow)	Universal Static Extension Bracket 2.5"	PedSafety (FKA Campbell Company)	503-0201-2
	Universal Telescoping Extension Bracket 4-7"		503-0241S
	Universal Telescoping Extension Bracket 7-13"		503-0241M
	Universal Telescoping Extension Bracket 13-24"		503-0241L
	90-Degree Extension Bracket Adapter		503-0192
	Inverted Mounting Adapter		503-0194
	AGPS to Guardian Adapter		503-0196
	Base Station Post-Top Adapter 3.5"		503-0169
Pedestrian Signals	Housing (Polycarbonate) with No Visor. Type E Aluminum Clamshell Mount (Color = Signal Green)	SWARCO/McCain	
	LED Lamps (Countdown Heads)	Trastar Duralight	JXM-400VIEIL01(15)
		Dialight	430-6479-001X
Flashing Beacons (RRFB's & School Beacons)			
RRFB System	Standard Model (AC or Solar as specified on plans) – Includes Controller box, controller, light bars, and other necessary appurtenances to be complete including batteries and solar panels as required.	Carmanah Technologies Corp.	SC315-G
	Compact Model (when called out on plans) - Integrated controller box (with controller, batteries and solar panel), light bars and other necessary appurtenances	Carmanah Technologies Corp.	R920-E (15W) or F (30W)
In-Line Breakaway Fused & Non-Fused Disconnect	Fuse holders for pole bases on breakaway poles	Ideal	30-1212 & 30-1212N
Overhead Sign & RRFB Light Bar Mount	Overhead Mount – Includes Galaxy T-Spar Cable Mount, Telespar Post, and Carmanah Telespar Light Bar Mounting Bracket (or approved equal)	Pelco Products, Inc., Carmanah Technologies Corp.	AB-3056-LL-SS-PNC (LL= Length as req.) SE-4191-78-GLV
Pedestrian Push Button Equipment	See <b>Traffic Signals</b> section for Pedestrian Pushbuttons, Pedestrian Pushbutton Signs, and Pushbutton Extensions & Adapters. All parts to be Federal Yellow.		
Pedestrian & School Signs	See <b>Traffic Signs</b> section		
Pole Structure & Base System	Pole Cap Dome	Pelco Products, Inc.	PB-5402-PNC
		Traffic Parts, Inc.	5811
	Pole	Pelco Products, Inc.	PB-5100-14-PNC (AC) PB-5100-15-PNC (Solar)
		Traffic Parts, Inc.	6054 (School Beacon, cut to size) 7349 (AC) 6055(Solar, cut to size)
		Pelco Products, Inc.	PB-5334-3S-GL-PNC
	Pedestal Base w/ Aluminum Door	Traffic Parts Inc.	7366
	Oxide Inhibitor	IlSCO or Equivalent	DE-OX
	Anchor Bolt Cage	Pelco Products, Inc.	AP-1095-GLV
	Pre-Cast Concrete Foundation	Wilbert Precast, Inc. H2 Pre-cast Inc.	Foundations meeting WSDOT Standard Plans J-20.11.03 or J- 21.10-04
School Beacon Controller	Programmable Time Based Controller for School Beacons	Eltec Corp.	TC-18
School Beacon Controller Cabinet	School Beacon Clock Enclosure	Traffic Parts, Inc.	FLCAB XN1-N1N-NN1-1PN (wired for Eltec TC-18 Clock, Not Incl.)
School Beacon Signal Head	Signal Head Housing (Requires 12" Yellow LED, see <b>Traffic Signals</b> section under Vehicle Signal Heads)	Traffic Parts, Inc.	TAY-235-BTN-EVN-ON
Street Light Mounting for Signal Heads	Aluminum Nipple and 90 degree elbow attached with Pole Plate	Traffic Parts, Inc.	Parts & pieces as required
School Beacon Signal Post Top Adapter	Adapter to mount School Beacons to top of post.	Traffic Parts, Inc.	Y2Y-TX

Material	Description	Pre-Approved Manufacturer	Model/Part#
<b>Illumination</b>			
Junction Boxes (Standard / non-traffic bearing)	Quazite Composite Junction Boxes with embossed logo "ELECTRIC"	Hubbell Power Systems, Inc	PG1730BA18 (Type II box) PG1730CA00 (lid)
Junction Box Lids (Heavy Duty / traffic bearing, i.e. driveways, pathways)	Quazite Composite Junction Boxes with embossed logo "ELECTRIC"	Hubbell Power Systems, Inc	PG1730HH0017 (Type II HH lid)
Streetlight Poles (Foundation)	Height = 30' Luminaire Arm = 8'	Valmont	DS32-R750A286-8S-GV
		Union Metal	Dwg# T71043-B3/Design# T71043-Y10
		KW Industries	010-2101261430 Sht. 1 of 3
		Ameron	N-308-WARL94LT01
	Height = 30' Luminaire Arm = 12'	Valmont	DS32-R800A286-12S-GV
		Union Metal	Dwg# T71043-B3/Design# T71043-Y12
		KW Industries	010-2101261430 Sht. 2 of 3
		Ameron	
	Height = 30' Luminaire Arm = 15'	Valmont	DS32-R800A286-15S-GV
		Union Metal	Dwg# T71043-B3/Design# T71043-Y13
		KW Industries	010-2101261430 Sht. 3 of 3
		Ameron	
Streetlight Poles (Direct Buried)	Height = 30' Luminaire Arm = 8'	Valmont	EM30-900A350-8S-GV-HH
		Union Metal	70950-B41-Y3
		KW Industries	Dwg# 10-31-U-325
		Ameron	
	Height = 30' Luminaire Arm = 12'	Valmont	
		Union Metal	
		KW Industries	
		Ameron	Dwg# 010-2302141428
Luminaire (High Lumen Output)	Lumens=15,000±500 CCT= 4000K	American Electric	ATBM-P40-MVOLT-R3-MP-NL-VR-P7-PCLL
		Leotek	GCM2-60J-MV-40K-3R-GY-155-PCR7-LLPC
		Cree	RSWL-A-HT-2LG-14L-40K7-UL-GY-N
Luminaire (Low Lumen Output)	Lumens=5,500±500 CCT= 4000K	American Electric	ATBS-P20-MVOLT-R2-MP-NL-VR-P7-PCL1
		Leotek	CV1-H-MV-40K-2R-GY-055-PCR7-LLPC
		Cree	RSWS-A-HT-2LG-5L-40K7-UL-GY-N
Luminaire (Low Lumen Output)	Lumens=5,500±500 CCT= 3000K	American Electric	ATBS-P20-MVOLT-R2-3K-MP-NL-VR-P7-PCL1
		Leotek	CV1-H-MV-30K-2R-GY-055-PCR7-LLPC
		Cree	RSWS-A-HT-2LG-5L-30K7-UL-GY-N
Breakaway System	Breakaway Mounting System	Transpo Industries	Pole-Safe Coupling, Model No. 4100
Combination Pedestal/Disconnect		Midwest	Model #M101CP6 Load Center with Model #GL-6 External Ground Lug and Model #FBEM9 Footing Base
		Unicorn	HP-UP04-Blank
Line Connectors within underground Junction Boxes	UL 489B and UL 486D	Burndy	
		Impact	
Ground System Connectors	Exothermically Welded	nVent ERICO	Cadweld
Photocontrol	<b>Note: Approved Luminaire Model #'s for American Electric and Leotek include photocontrols. Cree units do not.</b>	Ripley Lighting Controls	6390LL-BK
		Dark to Light	DLL127-1.5-BK
		Sun-Tech (Sunrise Technologies)	ELL124-BK

Material	Description	Pre-Approved Manufacturer
<b>Streets</b>		
Crack sealing	Rubberized creak sealant	TruFlex
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>Traffic Signs</b>		
Reflective Sheeting	3M™ Diamond Grade™ DG³ Reflective Sheeting – Series 4000 Series 4000 White – 4090 Fluorescent Yellow 4081 Fluorescent Yellow Green – 4083 (School related & Playground signs Only) Fluorescent Orange – 4084 Red – 4092	3M™
ElectroCut Film	3M™ Electrocut Film - Series 1170 Red – 1172 Blue – 1175 Green- 1177 Black- 1178 Brown - 1179	3M™
Graffiti Film	3M™ Premium Protective Overlay Film with Premask 1160	3M™
Posts and Anchors	Breakaway System per NCHRP 350 Galvanized coating shall conform to ASTM A-525, Des. G-90	Telespar® Zumar Industries, Inc. Ulti-Mate by Ultimate Highway Solutions
Sign Brackets and Crosspieces	Aluminum	Zumar Industries, Inc. Traffic Safety Supply Company MDSolutions, Inc
Pole Mount Hardware	¾" x 0.030 ss bands, ¾" ss ear lock, buckles, ss flared leg brackets with one bolt and metal flat washer with 1-1/4" O.D. and 5/16" I.D.	Band-It ®

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	Romac
	Concrete Pipe	
	PVC Pipe	
	C-900 Pipe	
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	Olympic
	Drain Heavy Duty H-20 Rated	EJ: 00371700002
	Sewer Heavy Duty H-20 Rated	EJ: 00371700000
	Water Heavy Duty H-20 Rated	EJ: 00371700001
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)	Olympic: M1007
		EJ:
		OWA775300002 or
		OWA775300001
	Vane Grate (one-direction flow)	EJ: 007750 M2
	Bi-Van Grate (two-direction flow)	EJ: 007750 M3
Mortar / Grout	Complete Repair	American All Patch 20 Jet Set
	Target Expanding Non-Shrink	
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	<u>Cast-in flexible pipe connectors:</u> Sanitary Sewer, all diameters	A-LOK X-Cel
	<u>Storm Drain:</u> 12" diameter pipe and smaller	A-LOK X-Cel
	Larger than 12" diameter pipe	A-LOK Premium



Material	Description	Pre-Approved Manufacturer
<b>Irrigation Distribution System</b>		
Pipe	<u>OUTSIDE ROW:</u> PVC Class 200, SDR21 or better Purple color, 3" and smaller: solvent welded, Sch. 80 4" and larger: ring gasketed joints  <u>WITHIN ROW:</u> HDPE Pipe (4" and smaller)	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 Star Pipe Products
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

Material	Description	Pre-Approved Manufacturer
<b>Water</b>		
Pipe	Ductile Iron Thickness Class 50 PVC , DR18 AWWA C-900 (4" to 8")	
Fittings	<u>For Ductile Iron &amp; PVC Pipe:</u> 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 Star Pipe Products
Gaskets	<u>For Ductile Iron &amp; PVC Pipe:</u> Rubber gasket joints shall conform to ANSI/AWWA C111/A21.11	Tyler Sigma Star Pipe Products
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	EBAA Iron Romac (Romagrip) Ford (Uni-Flange) Star Pipe Products
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 Linesal III [No substitutions]
Ball Valve	2" ball valve	Ford (B11-777)
Tapping Sleeves	Ford Fast Style Stainless Steel	Ford
	Romac Model SST Stainless Tapping Sleeve	Romac
	Smith-Blair Stainless Steel Tapping Sleeve	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
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, Star Pipe Products or approved equal  Heavy Duty

Material	Description	Pre-Approved Manufacturer
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)
2" Curb Stop	For 2" poly service line	Ford B44-777 (pack joint only)
Service Fittings:	<u>Couplings used in service lines</u>	
	(copper to copper)	Ford (Pack Joint) or (Quick Joint)
	(poly to copper)	Ford (Pack Joint)
	(poly to galvanized)	Ford (Pack Joint)
	(poly to poly)	Ford (Pack Joint)
	(copper to galvanized)	Ford (Pack Joint) and Dielectric Bushing
	All service connections between dissimilar materials require a dielectric bushing.	
Meter Boxes & Lids	Heavy Wall flush cover with max view reader door, Ductile Iron, Black, 13244285	Carson
	FL30P 13" X 24" Fibrelyte meter box cover black with badger AMR hole marked "Water Meter" 02001492	Carson
	13" X 24" X 12" Heavywall meter box without mouse holes, 13242510	Carson
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)

Material	Description	Pre-Approved Manufacturer
Polyethylene (HDPE)	1 ¼", 1 ½", 2" service line material with copper tubing outside diameter size	US Poly Company Polytubes
Water Pressure Reducing Valve (PRV)	Individual PRV, ¾" or 1"	Zurn (Wilkins) Model 500XL
PRV plastic box	Box for private PRV install (outside installation)	Oldcastle Carson 1220
<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
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>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	<u>1" Service Box: Poly Plastic Box</u> (alternative to concrete)  <u>1 ½" to 2" Service Box: Poly Plastic Box</u> (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)