PALM BEACH COUNTY WATER UTILITIES DEPARTMENT
ENGINEERING SERVICES DIVISION
8100 FOREST HILL BOULEVARD
WEST PALM BEACH, FL 33416

APPROVED MATERIALS AND EQUIPMENT LIST

_____

PROJECT NAME

_____

UNDERGROUND UTILITIES CONTRACTOR (Signature) (DATE)

_____

CONTRACTOR BUSINESS NAME AND SIGNATORY NAME (Printed)

_____

ENGINEER (Signature) (DATE)

_____

ENGINNERING FIRM NAME AND SIGNATORY NAME (Printed)

By signature above, the Utilities Contractor and Engineer for the referenced project agree to utilize the approved materials as indicated and follow Palm Beach County Water Utilities Department Minimum Engineering and Construction Standards.

1. OVERVIEW

Only the materials and equipment listed in Sections 4.3.3 through 4.3.8 are approved for use within the PBCWUD Potable Water, Reclaimed Water and Wastewater systems. The Department may also utilize other materials and equipment in categories not specifically identified, or as approved by Department Director.

(a) All materials and equipment shall be new and first quality. Damaged or faulty materials will not be accepted. Repair clamps may not be used on newly installed pipe. Sleeves may be used only with prior approval.

(b) All materials, fittings and appurtenances for pressure pipe systems 24" and smaller shall be designed and constructed for a minimum working pressure of 150 psi unless the specific application dictates a higher working pressure requirement. Potable Water and Reclaimed Water pipes, fittings and related appurtenances larger than 24" shall be designed, constructed and tested for a minimum test pressure of 200 psi or as specified on plans.

(c) All materials shall be permanently and visibly labeled with the name of the manufacturer, size, AWWA & NSF Standard and pressure rating. Glued on stickers are acceptable for ductile iron pipe only. The stickers shall name the manufacturer, pipe size, length, lining, pressure ratings and AWWA and NSF ratings (if applicable). The stickers shall be clearly visible and adhered well to the pipe.

Epoxy-lined pipe and fittings shall have legible markings on the interior with the date of application, application approved number, (if applicable), and have legible exterior markings identifying the lining and calling out "sewer use only". A certification shall be provided by the applicator and the manufacturer of the product being lined, that the pipe and fittings were bare and never lined with any type of material, before the epoxy was applied in accordance with manufacturer's specifications. Epoxy lined pipe and fittings shall be installed within a time period following the lining product application as specified by the lining manufacturer. All ductile iron fittings must comply with the following and must be certified by the manufacturer for compliance:

- All fittings must be tested in accordance with all applicable AWWA/NSF Standards.
- The foundry(s) shall be ISO-certified.
- Each fitting must have a cast-in "date code" which identifies the date and shift of manufacturer of that fitting.
- Each fitting must have cast-in clearly on the side of the fittings the name of the manufacturer, identify ofthe AWWA Standard, pressure rating, nominal diameter, the country where cast, the letters DI or word Ductile, and the number of degrees or fraction of the circle on all bends.

The material supplier and/or contractor shall furnish data certified by the pipe and/or fitting manufacturer that the fittings are of the material specified, and shall furnish physical and chemical certifications. Manufacturer shall furnish to the Department certifications that all fittings comply with the following requirements: All fittings shall be capable to withstand, without bursting, hydrostatic tests of minimum three times the rated water working pressure with results retained for at least two years for review.

(d) Raw water main shall be designed to Potable Water main standards.

(e) All valves shall be coated inside and out with factory applied epoxy. Valves shall operate "clockwise-close."

(f) Pipe and fitting linings/coatings shall be applied and/or warranted by thepipe/fitting manufacturer.

(g) Exposed pipe shall be painted as specified in the applicable material list.

(h) Buried pressure pipe fittings and appurtenances 3" and larger shall be ductile iron with restrained mechanical joints unless stated otherwise on the Department's standard details. Above ground fittings shall have flanged joints. Plain end fittings are not allowed. Fittings for force mains shall be ceramic epoxy lined. For sizes less than 3", fittings shall be suitable to the pipe material and application. Exposed buried non stainless steel hardware (bolts, nuts, and rods) shall be coated after assembly with a thick (low viscosity) tar product. Bell

restraint tie-rods and nuts shall be Type 304 stainless steel. Nuts shall be coated with fluoropolymer (or equal) to prevent galling. Pipe gaskets shall be as supplied by the pipe manufacturers. Profiled gaskets arerequired for flanged pipe. Split type restraining glands are preferred and should be used whenever available.

(i) Existing mains shall be tapped as long as the tapping line is smaller than the tapped line. No size-on-size taps are permitted unless approved for "line stop valves" or "insertion valves." Asbestos cement pipes may be tapped for water services only (up to 2"). A larger size connection into an AC pipe shall generally require a cut-in tee.

The Department may require the replacement of the asbestos cement pipe and clay pipe. Double strap saddles are required for 2" and smaller taps. Stainless steel sleeves are acceptable for service taps on pipes larger than 16". Equal size lines branch-offs shall require that a tee be cut in. A restrained joint, ceramic epoxy lined or cement lined ductile iron mechanical joint tapping sleeve is required for all taps unless the tapping line is less than half the diameter of the line to be tapped (a stainless steel tapping sleeve is permissible in those cases). Use of a stainless steel tapping sleeve is also permissible on taps on existing SDR-26 and SDR-21 PVC pipe only. For 4" and larger taps on pipes larger than 24", the Department may allow the use of epoxy coated carbon steel sleeves with stainless steel hardware. Restrained joint cut-in tee construction may be specified, depending on the circumstances and sizes involved. A concrete thrust block shall be installed behind a tapping tee or cut-in tee if the tapped pipe is not adequately restrained or supported means of existing pipe restraint will be considered, depending on circumstances. Insertion valves or temporary "line stops" may be required in order to limit service interruptions and/or excessive spillage.

(j) Transitions between DIP and PVC that are not specified or required by the plans or details are not permitted. PVC SDR-35 sewer pipe/ductile iron pipe adapters shall be used for DIP and PVC transition on all new constructions. Heavy-duty stainless steel flexible couplings are acceptable for transition joints with existing facilities only. Compression (pack joint) style adapters shall be used for transition from brass valves and fittings to PVCpipes.

(k) No joint deflection is allowed with PVC pipe unless approved by the pipe manufacturer (maximum 75% of the manufacturer allowed joint deflection).

(l) All dead ends (temporary and permanent) shall be mechanically restrained (plug or cap is required). Concrete thrust block restraint is not allowed. Permanent water main dead ends shall include an automatic flushing device (to be installed in grass area).

(m) Wet wells and manholes shall have precast, monolithic bases. Alternative methods for constructing wet well bases will be considered on a case-by-case basis. The depth of wet wells shall be limited to 22' unless approved in advance by the Department. All manholes shall have precast cones. Joint sealant shall be sized and placed as specified in detail by the precaster on shop drawings. Tongue joint surface shall be coated with a primer prior to joint sealant installation. External manhole joint seals must be applied between all manholes and wet well precast sections.

(n) Steel pipe installed on aerial crossings shall have ½' steel welded bearing pads at pile cap locations.

(o) No PVC Male/Female adapters shall be used. Approved "pack joint" style brass fittings or polyethylene adaptors are required.

(p) Concrete collars for valves and manholes shall be poured inplace.

(q) Any existing pipe which is not properly restrained at the designated point of connection shall have restraining installed by the Developer at no cost to the Department. The Engineer shall submit a drawing showing the proposed method of restraint. Pipe restraint and joint restraint shall be Factory Mutual approved unless specifically approved otherwise by the Department. Only wedge type restraint flange adapters are acceptable. When using flexible joint restraint pipe and fittings, the contractor shall follow the manufacturer's installation specification to eliminate "slack" by locking the restraining joints inplace.

(r) If the design and/or construction activities impact any existing Department owned Facilities, the Developer shall relocate, remove, adjust or replace these Facilities as directed, at no cost to the Department.

When using flexible joint restraint pipe and fittings, the contractor shall follow the manufacturer's installation specification

(s) "Premium Efficiency" rated motors shall be used whenever available.

(t) Motors used for plant operations, rated 500 hp or less, shall meet the requirements of NEMA MG 1-2003, Tables 12-12 and 12-13:

1. Efficiency
   a. Tested in accordance with MG-1 paragraph 12.54.1
   b. Guaranteed minimum at full load in accordance with Table 1 or as indicated in motor-driven equipment specifications.
2. Power Factor: Guaranteed minimum at full load in accordance with Table 1 or as indicated in motor-driven equipment specifications.

(u) For Palm Beach County Water Utilities Department initiated projects, the materials stated in the written specification for the project shall have precedent over the "Approved Material List".

(v) Wedge Anchors (316 SS) for Pump Base Elbows shall be permanently marked, providing a cross reference to verify the anchor's length after installation.

(w) All electrical components and systems shall be UL listed, and shall be assembled in a UL listed/approved facility.

(x) Underground.utility markers may be required for transmission mains.

(y) Buried ductile iron pipe 30" and larger shall be polybagged unless a soil survey confirms it to be unnecessary.

(z) Exposed ductile iron pipe and fittings to be shop painted with red oxide primer.

(aa) "Lead Free" brass water works products shall meet the requirement of ASNI/AWWA C800 and the maximum lead content of S.3874 and NSF 61 Annex G. The manufacturer's designation as a Lead Free product shall be permanently stamped or cast into the product's body. Effective January 1, 2013, only "Lead Free" brass water works products shall be installed in contact with potable water.

(bb) Sanitary sewer manhole castings shall be 7" tall. Alternative 4" models may be used with preapproval only.

(cc) PVC/DI pipe transitioning from HDPE pipe shall be restrained as a minimum to "in-line valve" condition.

(dd) Shop drawings for sewer concrete structures shall indicate the size and placement of joint sealant.

(ee) Stainless steel insert stiffeners shall be used at connections of brass pack joint fittings to polyethylene service pipes.

(ff) Selected service pipe material shall be used consistently in the whole project, as applicable.

(gg) Tensile strength test on the first daily butt fusion weld may be required.

(hh) Fusion weld data recording may be required for pipes larger than 12".

(ii) Removed materials shall be disposed in approved manner. WUD inspector shall advise the contractor which removed materials are to be returned to WUD (hydrants, valves, fittings, meters, vaults, manhole rings, pumps, motors, electrical and other mechanical equipment, etc.).

1.2 POTABLE WATER SYSTEM

All components that come in contact with potable water shall conform to NSF standards. Effective January 1, 2013 only Lead Free brass water products shall be installed in contact with potable water.

PW 1. Ductile Iron Pipe (Pipes shall be color coded with blue paint)
Approved Manufacturers/Products:

A. Push-on and mechanical joint pipe
(1) American Cast Iron Pipe Company
(2) U.S. Pipe
(3) McWane Ductile (Atlantic States, McWane, Pacific States, Clow Water Systems)

B. Flexible joint restraint pipe:
(1) American – Flex Ring, Lok Ring; push-on joint pipe with Armadillo Fast Grip Gasket (sizes 4"-24")
(2) U.S. Pipe - TR Flex; push-on joint pipe with Field Lok 350 Gasket (sizes 4"-24") - Bolt Lok
(3) McWane Corporation – TR Flex

Approved Fabrications for "Flanged" pipe:

- ASAP Fabrication Inc. (1-813-752-1999)
- US Pipe Fabrication Inc. (1-866-347-7473)

Note: The Fabricators must use pipe supplied by approved manufacturers.

Interior pipe surfaces must be cement mortar lined and sealed per AWWA C-104/A21.50. Minimum Special Thickness Class 53 is required for flanged pipe. "Toruseal" or "Flange-Tyte" gaskets are required for flanged pipes.

Non-Flanged Pipe Size	Minimum Pressure Class	Minimum Special Thickness Class
3",4"	350	51
6"-16"	350	50
20"	300	50
24"	250	50
30"	250	50

PW 2. Polyvinyl Chloride (PVC) Pipe (Mains 4" and larger shall be color-coded blue)
Approved Manufacturers/Products:

A. Push-on Joint Pipe, AWWA C900, SDR-18 min., 235 psi min., and AWWA C905, SDR-25 min., 165 psi min., NSF 61:
(1) JM Eagle*
(2) Diamond Plastic Corporation*
(3) North American Pipe Corp. (A.K.A. NAPCO)*
(4) IPEX, Inc. (4" – 12" only)***
(5) National Pipe and Plastics, Inc.**
(6) Sanderson Pipe Corporation (4" – 12" only)**

* No Pipe deflection at the joint allowed.
** Up to one (1) degrees deflection at pipe joint allowed.
*** Up to three (3) degrees deflection at pipe joint allowed.

B. Restrained Joint PVC Pipe, C900/C905, SDR 18/25 min., NSF61.

B1. Non-Metallic Modular Joint Restraint Design
(1) NAPCO (F.K.A. CertainTeed) Certa-lok

B2. Bell Integrated Metallic Ring Restraint Design
(1) JM Eagle Eagle Loc900

B3. Joint Free Restraint Piping System
(1) Underground Solutions Fusible PVC Pipe

C. Service Pipe Up to 6" – PVC Schedule 40 (Color: White or Blue), Schedule 80, (Color: White or Dark Grey), NSF61

(1) Heritage Plastics
(2) JM Eagle
(3) Charlotte Pipe and Foundry Company

PW 3. Exposed Steel Pipe (A53 Grade B, ERW, minimum 0.500" wall thickness, AWWA C200; flange shall be Class D or E per AWWA C204. Interior shall be lined with 7-11 mils DFT of Tnemec N-140 Pota-Pox Plus (White 00WH); Exterior shall be: Primer 3 mils Tnemec Zinc 90-97, intermediate 4-6 mils Tnemec 66 top coat 2 mils Tnemec 1074 (Black with Blue striping)
Approved Manufacturers/Products:

(1) US Pipe Fabrication

PW 4. High Density Polyethylene Pipes and Tubing.
Approved Products/Manufactures:

A. High Density Polyethylene (HDPE) pipe (Fusible HDPE, PE 4710, AWWA C906); Pipesshall be color-coded blue, minimum 40 feet standard lengths, DR 11 minimum, DIPS Size, 3" and larger

(1) Performance Pipe (DIV of CP CHEM) - DriscoPlex 4000, 4100
(2) JM Eagle.

B. High Density Polyethylene (HDPE) Tubing (PE 3408/3608), CTS, DR9, AWWAC901 up to 2" size (blue or blue striped)
Approved Manufacturers/Products:

(1) Charter Plastics, Inc.
(2) ENDOT Industries, Inc.
(3) JM Eagle
(4) IPEX, Inc. Blue904 PEX Service Tubing

PW 5. PVC Cement (Must be certified for both Schedule 40 and Schedule 80)
Approved Manufacturers/Products:

A. Plumbing Applications
(1) Harvey's Wet Set PVC Cement
(2) Christy's Red Hot Blue Glue
(3) WHITLAM Weatherproof Blue All Weather Low VOC Medium Body Cement

B. Electrical Conduit Applications (Medium Body Clear Cement)
(1) Oatey PVC Heavy Duty Clear Cement
(2) Harvey's P-12G Heavy Gray PVC Cement

PW 6. Thread Sealant
Approved Manufacturers/Products:

(1) E-Z Weld 209 by Fry Technology
(2) Pipe Fit, FPPI
(3) Teflon Tape (all manufacturers)

PW 7. Gate Valves (AWWA C509, C515, Ductile Iron Body)
Approved Manufacturers/Products:

(1) Mueller A-2361, A-2362
(2) American Series 2500 (MM, FF)
(3) Kennedy Ken Seal Series
(4) M & H Style 4067, 7561/7571
(5) Clow Models 2638, 2639/2640
(6) US Pipe Metroseal A-USP1, A-USP2

Minimum Pressure Class 200 is required for valves larger than 24"

PW 8. Butterfly Valves (AWWA C504)
Approved Manufacturers/Products:

(1) Mueller Lineseal III
(2) M & H Styles 4500, 1450
(3) Pratt "AWWA Groundhog"
(4) DeZURICK Class 150B
(5) Val-Matic

Note: Worm Gears are required for valves larger than 16" Minimum Pressure Class 200 is required for valves larger than 24"

PW 9. Combination Air Release Valves (Fusion bonded epoxy interior and exterior stainless steel cover bolts and plugs)

Minimum Sizes:

1" ARV for pipes 4" – 16"
2" ARV for pipes larger than 16"

Approved Manufacturers/Products:

(1) Val-Matic VMC-201C.1SV, VMC-202C.2DISV
(2) Crispin UL10, UL20
(3) VAG GA (F.K.A. GA Industries) Model 945-T
(4) APCO 143C, 145C

PW 10. Tapping Valves (AWWA C509, C515, Ductile Iron Body)
Approved Manufacturers/Products:

(1) American Series 2500
(2) Mueller T-2361, T-2362
(3) US Pipe Metroseal T-USP1, T-USP2
(4) M & H Style 4067-13, 7572
(5) Clow F-6114
Pressure Class 200 is required for valves larger than 24".

PW 11. Residential Dual Check Valves (Angled, Cartridge Style, ASSE Approved)-Lead Free
Approved Manufacturers/Products:

(1) Ford ¾" HHCA91-323-NL, 1" HHCA91-444-NL
(2) AY McDonald ¾" 712 -3YE 33, 1" 712-3YE 44
(3) Mueller ¾" H-14464-AN, 1" H-14464-AN

PW 12. Brass Pack Joint Branch Valves (PVC)-Lead Free
Approved Manufacturers/Products:

(1) AY McDonald 708U4M (1½ x ¾ x 7.5)
(2) Ford U78-63-NL
(3) Mueller V15361N

PW 13. Inflow Preventer for ARV's in Vaults and Manholes
Approved Manufacturers/Products:

(1) Val-Matic FloodSafe

PW 14. Screw Type 2 Piece Valve Box
Approved Manufacturers/Products:

(1) East Jordan Iron Works 8550
(2) Bingham/Taylor 4905
(3) SIGMA Corp. - Ductile Iron only - Top VB2611-D, Bottom VB2612-D

PW 15. Valve Box Lid (Min. weight 24 lbs., 4" skirt; Lid Marked "Water")
Approved Manufacturers/Products:

(1) East Jordan Iron Works Drop Lid# 0680045
(2) Bingham/Taylor # 4906
(3) SIGMA Corp. - Ductile Iron only - VB2600W-D

PW 16. Sliding Type 2 Piece Valve Box and Lid for Corporation Stops (arched bottom)
Approved Manufacturers/Products:

(1) Bingham/Taylor 4903
Box only: I4B143RSLL
Lid only: CUL4LHVTSKSVC

PW 17. Reduced Pressure Principle Backflow Prevention Assemblies (to be owned by PBCWUD, must be USC or ASSE [with field testing] approved)
Approved Manufacturers/Products:

(1) AMES 4000 SS/Watts 994 (Required for Plant Installations)
(2) WILKINS 975XL
(3) WILKINS 375 (3" and larger)
(4) AMES C400, C500/Watts 957, 957 RPDA

Note: All Reduced Pressure Principle Backflow Prevention Assemblies which are included on the latest "List of Approved Backflow Prevention Assemblies" as published by the University of Southern California or by the American Society of Sanitary Engineering (with field testing) may be used for private water services.

PW 18. Double Check Detector Assemblies (to be owned by PBCWUD, must be USC or ASSE [with field testing] approved)
Approved Manufacturers/Products:

(1) AMES C300, 3000 SS
(2) FEBCO LF856
(3) Wilkins 350
(4) Watts 757DCDA, 774DCDA

Note: Private fire lines with all no lead brass fittings may use any of the "Double Check Detector Assemblies" or "Reduced Pressure Principle Backflow Detector Assemblies" which are included on the latest "List of Approved Backflow Prevention Assemblies" as published by the University of Southern California **USC or ASSE [with field testing]**.

PW 19. Mechanical Joint Ductile Iron Tapping Sleeves (for Taps 4" and Larger)
Approved Manufacturers/Products:

(1) American Series 2800
(2) Mueller H-615
(3) US Pipe H-615

PW 20. Tapping Sleeves (For Outlets 4" and Larger)
Approved Manufacturers/Products:

A. Stainless Steel Body, Flange and Hardware
(1) Dresser 630
(2) Ford FTSS
(3) Cascade CST-EX
(4) JCM 432, 452
(5) Power Seal Model 3490-AS
(6) Smith Blair 663

B. Fabricated Epoxy-coated Steel Body and Flange with Stainless Steel Hardware (For Pipes Larger than 24")
(1) JCM 412
(2) Smith-Blair 622
(3) Power Seal Model 3460-CS
(4) Ford FTSC
(5) Dresser 610
(6) Cascade CFT-ESS, CFT-LP-ESS

PW 21. Mechanical Joint Restraining Devices
Approved Manufacturers/Products:

A. Solid Design for D.I. Pipe
(1) EBBA Iron – 1100 MEGALUG
(2) Sigma ONE-LOK SLDE
(3) Ford/Uni-Flange Series 1400
(4) Star Pipe StarGrip Series 3000 (up to 16")

B. Solid Ring Design for PVC Pipe
(1) EBBA Iron – 2000PV MEGALUG
(2) Sigma ONE-LOK SLCE
(3) Ford/Uni-Flange Series 1500
(4) Star Pipe StarGrip Series 4000 (up to 16")

C. Solid Ring Design for HDPE pipe up to 12" (requires stainless steel stiffening insert)
(1) EBBA Iron – 2000PV MEGALUG
(2) Ford/Uni-Flange Series 1500

D. Split Ring Design for D.I. Pipe
(1) EBBA Iron – 1100SD Split MEGALUG
(2) Sigma ONE-LOK SSLD
(3) Star Pipe StarGrip Series 3000S (up to 16")

E. Split Ring Design for PVC Pipe
(1) EBBA Iron – 2000SV MEGALUG

F. Split Ring Design for HDPE Pipe up to 8" (requires stainless steel stiffening insert)
(1) EBBA Iron – 2000SV MEGALUG

PW 22. Pressure Pipe Bell Restraints Bell side ring without serrations; rods, and nuts to be stainless steel 304 with nuts coated to prevent galling; split ring design shall be used if available.
Approved Manufacturers/Products:

A. Split Ring Design for DI Pipe
(1) EBBA Iron – Series 1600TD
(2) EBBA Iron – Series 1100HD
(3) Sigma ONE-LOK SSLDH

B. Split Ring Design for PVC Pipe
(1) EBBA Iron – Series 1600TD
(2) EBBA Iron – Series 1100HV
(3) Sigma PV-LOK PWH
(4) Ford/Uni-Flange Series 1355-C

C. Solid Ring Design for DI Pipe
(1) EBBA Iron – Series 1700
(2) Sigma ONE-LOK SLDEH
(3) Ford/Uni-Flange Series 1450

D. Solid Ring Design for PVC Pipe
(1) EBBA Iron – Series 3800
(2) Sigma ONE-LOK SLCEH
(3) Ford/Uni-Flange Series 1350

PW 23. Pressure Pipe Bell Joint Leak Clamps with stainless steel Type 304 hardware (bolts, nuts, etc.).
Approved Manufacturers/Products:

(1) Smith-Blair Model 274
(2) Ford FBC-XXX-E or FBCF-XXX-Y Style
(3) Romac Industries Style 516

Note: Split Ductile Iron Rings required. Buna-N gasket required. Longer bolts required for PVC pipe.

PW 24. Ductile Iron Restrained Flange Adapters with stainless steel Type 304 hardware (bolts, nuts, etc.). (Set Screw Design Not Acceptable)
Approved Manufacturers/Products:

(1) Smith-Blair Model 912-90 with anchor studs
(2) EBBA Iron – 2100 MEGAFLANGE
(3) PowerSeal Model 3521 with anchor studs

PW 25. Ductile Iron Fittings

Approved Manufacturers/Products:

A. Both ends mechanical joint and flanged joint fittings

(1) Tyler Union
(2) US Pipe/Metalfit
(3) American
(4) To be removed: ~~Union Foundry~~ (same as #1)
(5) Star
(6) Sigma
(7) Clow

B. Flexible restraint fittings

(1) American – FLEX-RING, LOK-RING
(2) US Pipe/Metalfit – TR FLEX, BOLT-LOK
(3) McWane Corporation – SuperLock

C. Welded on Outlet Tees for pipes larger than 24" non-flanged pipe. The welded on branch size shall not exceed ½ of the main pipe size. Welding shall be performed and tested by the pipe manufacturer.

(1) American Cast Iron Pipe Company
(2) US Pipe

Fittings must be ductile iron meeting the requirements of AWWA C-110, AWWA C-153 and must be cement mortar lined and sealed per AWWA C-104 or fusion bonded epoxy lined inside and outside per AWWA C116/ANSI A21.16. The epoxy shall be applied to both exterior and interior surfaces. The lining shall be warranted by the pipe manufacturer. TORUSEAL or Flange-Tyte gaskets are required for flanged fittings.

PW 26. PVC Fittings (Up to 6" Schedule 80 and Schedule 40)

Approved Manufacturers/Products:

(1) LASCO Fittings Inc.
(2) NIBCO, INC.
(3) Spears Manufacturing Company
(4) Charlotte Pipe and Foundry Company

PW 27. Brass Pack Joint Yoke Quarter Bend Couplings (PVC) – Lead Free

Approved Manufacturers/Products:

(1) Ford L91-23-NL, L91-44-NL
(2) Mueller H-14214N
(3) AY McDonald74779Y-44
(3/4" x 02; 1" x 04)

PW 28. Follower Glands

Approved Manufacturers/Products:

(1) Tyler Union
(2) US Pipe
(3) SIGMA

PW 29. Casing Pipe Spacers

Approved Manufacturers/Products:

(1) Cascade
(2) APS Spacing System
(3) RACI
(4) BWM

PW 30. Brass Curb Stops, Straight, FIP x FIP, Lead Free

Approved Manufacturers/Products:

(1) Ford B11(-333W-NL, -444W-NL, -666W-NL, -777W-NL)
(2) Mueller B-20200-3N
(3) AY McDonald 76101W

PW 31. Brass Curb Stops with Pack Joints (3/4"-2") (PVC) – Lead Free

Approved Manufacturers/Products:

(1) Ford B77 (-333W-NL, -444W-NL, -666W-NL, -777W-NL)
(2) AY McDonald 76100W-44
(3) Mueller V-25236-3N (1" only)

PW 32. Pack Joint Brass Male Adapters (PVC) – Lead Free

Approved Manufacturers/Products:

(1) Ford C87 (-44-NL, -46-NL, -66-NL, -77-NL)
(2) AY McDonald 74753-44 (1", 1 ½", 2")
(3) Mueller V-15440-3N (1", 1 ½", 2")

PW 33. Brass Yoke Angle Curb Stops (FIP x Yoke) -Lead Free

Approved Manufacturers/Products:

(1) Mueller B-24278-3N (5/8 x ¾), (5/8 x ¾ x ¾), (1)
(2) Ford BA91(-323W-NL, -344W-NL, -444W-NL)
(3) AY McDonald 74604 BY-44; -(3/4 x ¾ x 02), (1 x ¾ x 02), (1 x 1 x 04)

PW 34. Corporation Stops (PVC) with PVC pack joint outlet and tee head- Iron Pipe Thread – Lead Free

Approved Manufacturers/Products:
(1) Ford FB1102-6-TA-NL, FB1102-7-TA-NL

(2) AY McDonald 74104B-44 (1 ½", and 2")
(3) Mueller V-25058N (1 ½", and 2")

PW 35. Corporation Stops for ARV Installations (MIP & MIP) – Lead Free
Approved Manufacturers/Products:

(1) Ford FB500-NL
(2) AY McDonald 73131 B
(3) Mueller B-20013N -38, B-2969N -38

PW 36. Meter Yokes (must be epoxy coated, e-coated or powder coated)
Approved Manufacturers/Products:

(1) Ford Y502, Y504
(2) Mueller H-5020, H-5040
(3) AY McDonald 14-2, 14-4

PW 37. Yoke Expansion Connections- Lead Free
Approved Manufacturers/Products:

(1) Ford EC23-NL, EC4-NL
(2) Mueller H-14234N-26
(3) AY McDonald 714-2EHG, 714-4EHG

PW 38. Service Saddles/Sleeves (up to 2" Tap Size) Iron Pipe Thread
Approved Manufacturers/Products:

A. Ductile Iron Body, Double Steel Bales (up to 16")
(1) JCM 408
(2) Smith Blair 313
(3) Ford FC202 (Epoxy-coated)
(4) Romac 202, NU
(5) AY McDonald 4826A

B. Ductile Iron Body Double Stainless Steel Straps
(1) JCM 406
(2) Smith Blair 317
(3) Ford FCD 202
(4) Romac 202 NS (up to 16", pre-approval required)
(5) Power Seal 3417 DI
(6) Ay McDonald 4855A

C. Epoxy-coated Steel Body Threaded Outlet Tapping Sleeves, Stainless Steel Hardware Required (Larger than 16", Pre-approval Required)

(1) JCM 418
(2) Romac FTS420T

D. Stainless Steel Body Threaded Outlet Tapping Sleeves (Larger than 16")

(1) JCM 438
(2) Smith Blair 372

PW 39. Fire Hydrants
Approved Manufacturers/Products:

(1) Kennedy Guardian K81-D (5 ¼")
(2) Mueller Super Centurion 250 (5 ¼")
(3) American 5 ¼" American-Darling B-84-B-5
(4) Clow Medallion (5 ¼")

Buried hydrant bolts, washers and nuts shall be stainless steel. Bolts shall be 316 SS, washers shall be 316 SS, and nuts shall be 304 SS. Fire hydrants shall be ordered red in color with the finish epoxy coat applied by the manufacturer. New fire hydrants which need re-painting shall be field coated safety red. Approved security caps with chains are required.

PW 40. Fire Hydrant Paint
Approved Manufacturers/Products:

(1) Sherwin Williams (DTM acrylic coating) B66 SERIES
(2) PPG PITT-TECH PLUS GLOSS

All paint shall be gloss, safety red in color and two coats shall be applied.

PW 41. Meter Boxes (Tier-8 Load Category Minimum per ANSI/SCTE 77 – Fiber Reinforced Polymer Concrete [FRP] unless otherwise noted)
Approved Manufacturers/Products:

A. Single Service: (5/8" x 3/4" meters)
(1) CDR (AKA QUAZITE) B03111812L
(2) GlasMasters J111812SS0N08-1
(3) Armorcast A6001429 (polymer concrete box)

B. Double Service: (5/8 x 3/4" meters)
(1) CDR (AKA QUAZITE) B03151712L
(2) GlasMasters J151712S0N08-1
(3) Armorcast A6000510X12-PBC

C. Single Service: (1" meters)
(1) CDR (AKA QUAZITE) B03132412A
(2) GlasMasters S132412S0N08-1
(3) Armorcast A6001868X12-PBC

D. Single Service: (1½", 2", meters)
(1) CDR (AKA QUAZITE) B03173012A
(2) GlasMasters S173012S0N08-1
(3) Armorcast A6001534X12-PBC

E. Single Meter Service: (3" meters)
(1) CDR (AKA QUAZITE) B03173018A
(2) GlasMasters S173018S0N08-1
(3) Armorcast A6001534X18-PBC

F. Single Meter Service: 4" and larger meters shall be installed above ground

All meter boxes shall have vertical straight walls with no "mouse holes" and shall display the manufacturer name and date of manufacture.

Note: Traffic-bearing (Tier 15 minimum) boxes are required for all meters in hardscaped areas – see PW 79.

PW 42. Meter Box Lids (Grass Areas) (Tier-8 Load Category Minimum)
Approved Manufacturers/Products:

A. Single service (5/8" x ¾" meters)
A1. Without Antenna Opening - only to be used with prior Department approval
(1) CDR (AKA QUAZITE) C001118561365X
(2) Armorcast A6000484RCI-PBC
(3) GlasMasters S1118RN08-4-PBCWU

A2. AMR Antenna Ready
(1) GlasMasters S1118BN08-4-PBCWU
(2) CDR (AKA QUAZITE) C001118559365X

B. Double Service: (5/8" x ¾" meters)
B1. Without Antenna Opening - only to be used with prior Department approval
(1) CDR (AKA QUAZITE) C00151702F365XX
(3) Armorcast A6000469RCI-PBC
(4) GlasMasters S1517RN08-4-PBCWU

B2. AMR Antenna Ready
(1) GlasMasters S1517BN08-1-PBCWU

C. Single Service: (1" meters)
C1. Without Antenna Opening - only to be used with prior Department approval
(1) CDR (AKA QUAZITE) C00132402D365XX
(2) GlasMasters S1324RN08-4-PBCWU
C2. AMR Antenna Ready
(1) GlasMasters S1324BN 08-4-PBCWU

D. Single Service: (1-1/2", 2" & 3" meters)
D1. Without Antenna Opening - only to be used with prior Department approval
(1) CDR (AKA QUAZITE) C00173002D365XX
(2) Armorcast A6001643RCI-PBC
(3) GlasMasters S1730RN08-4-PBCWU

D2. AMR antenna Ready
(1) GlasMaster S1730BN08-4-PBCWU

Note: Traffic-bearing (Tier 15 minimum) lids are required for all meters in hardscaped areas – see PW 64.

PW 43. Manhole Adjustment Rings
Approved Manufacturers/Products:

A. Steel Rings for Existing Manholes (maximum 4" height adjustment)
(1) Manhole Systems MS-101
(2) Roblyn Series 2300, 2400
(3) EJ (Andrews Metal Style) M2-A, M5-A

B. Masonry Rings for new Manholes (maximum 12" total ring height)
(1) Brick chimney, field installed (2-5 courses of bricks) (field-applied corrosion barrier systems required).
(2) Precast reinforced concrete rings (4,000psi), field-installed for cast- in liner and for field-applied corrosion barrier systems.
Approved Manufacturers/Products:

(1) U.S. Precast
(2) US Concrete Products
(3) American Concrete Products

PW 44. Paint for Exposed Ductile Iron Pipe and Fittings (Exposed D.I. pipe and fittings to be shop painted with red oxide primer), black with blue stripes
Approved Manufacturers/Products:

A. Moderate Exposure
(1) SunTec – Primer 801 Rustking, Top Coat – 860A Rustking Acrylic Gloss (Black with Blue Stripes), two (2) coats at 3 mils each.
(2) Sherwin Williams Targuard Low VOC Coal Tar Epoxy with Reducer R7K111; two coats at 8-16 mils per coat, 50% overlap with each pass (not to be used for direct contact with potable water).

B. Severe Exposure
(1) Tnemec Company, INC.;
Primer: Zinc Series 90- 97 (3 mils DFT)
Intermediate: Hi-Build Epoxoline II Series N 69 (two (2) coats, 6 mils DFT/coat)
Topcoat: Endura Shield II Series 1074 (two (2) coats, 3 mils DFT/coat) color black

PW 45. Detectable Marking Tape for Potable Water Mains
Approved Manufacturers/Products:

(1) Empire Level MFG. Corp.-MAGNATEC#31-024
(2) T. Christy Enterprises -#TA-DT-6-BPW or BW
(3) Pro-Line Safety Products-103141153/103141253

Detectable blue tape 6" wide imprinted with the following in 1 1/2" MIN. high lettering with minimum wording of; **"CAUTION WATER LINE BELOW"**. The wording shall occur every 3 feet.

PW 46. Permanent Sampling Stations
Aluminum Housing, hinged door opening, padlock, unthreaded sample point with protective cap, stainless steel piping
Approved Manufacturers/Products:

(1) Kupferle Foundry - Eclipse #88WC-SS-PBC

PW 47. Remote Telemetry Units (PLC Type)
Approved Manufacturers/Products:

(1) Curry Control PBCRTU2015
(2) ESC PBCRTU2015
(3) AES PBCRTU2015
(4) CC Control PBCRTU2015
(5) Unitron PBCRTU 2015
(6) Champion Controls, Inc. PBCRTU 2015

PW 48. Root Barrier Systems
Approved Manufacturers/Products:

(1) TYPAR BIOBARRIER 39", 58.5"
(2) DeepRoot UB36-2, UB48-2

PW 49. Lead Free Brass Nipples (MTP x MTP)
Approved Manufacturers/Products:

(1) Meritt Brass 2012-400
(2) Lee Brass
(3) Mid –American Brass

PW 50. Pack Joint Quarter Bend Coupling (3/4"-2") PVC Compression x MPT –Lead Free
Approved Manufacturers/Products:

(1) Ford – L87 – NL Series
(2) AY McDonald (74779M-44) Series

PW 51. Pack Joint Quarter Bend Coupling Lead Free (PVC x PVC) (3/4"- 2")
Approved Manufacturers/Products:

(1) AY McDonald (74761-44) Series
(2) Ford L77 Series – NL

PW 52. Line Stop Tapping Sleeve
Approved Manufacturers/Products:

(1) JCM 440

PW 53. Brass Compression by Male Adapter (PVC) – Lead Free
Approved Manufacturers/Products:

(1) AY McDonald (74753-44)
(2) Ford C-87 Series – NL

PW 54. Brass Compression by Female Adapter (PVC x FIP), Straight, ¾" – 2", Lead Free
Approved Manufacturers/Products:

(1) AY McDonald (74754-44) Series
(2) Ford C-17 Series – NL

PW 55. HDPE/DIP Electrofusion Couplings and Fittings
Approved Manufacturers/Products:

(1) GF Central Plastics Company
(2) IPEX USA - Friatec

PW 56. HDPE/DIP MJ Adapter
Approved Manufacturers/Products:

(1) Independent Pipe Products, Inc.
(2) Improved Piping Products, Inc.
(3) Central Plastics

PW 57. Paint for Buried DIP/PCCP Pipe
Approved Manufacturers/Products:

(1) Induron Protective Coatings; Aquanaut (Color: Alaskan Blue) Min. 8 mils WFT, min 3 mils DFT

PW 58. Above Ground Utility Markers
Approved Manufacturers/Products:

A. Canal Crossings:
(1) Rocal, Inc. #RI-UPLPBC 12-6

B. Miscellaneous Locations:
(1) Rhino Marking & Protection Systems, Inc. – Triview Marker Post, color coded with decals.
(2) Rhino Marking & Protection Systems, Inc. - Rhino 3-Rak (66") color coded with decals.

PW 59. Meter Setter Assembly for 1 ½ " and 2" Meters – Lead Free
Approved Manufacturers/Products:

(1) AY McDonald 722G700WW44 (777x15.62x404)
Note: 1 ½" Meter requires adapter 710J67DH

(2) Ford CS-C95632-01 – NL
Note: 1 ½" Meter requires adapter A-67 – NL

PW 60. Manhole Ring and Cover for ARV
Approved Manufacturers/Products:

(1) US Foundry 690-AH-M
(2) PAMREX (Ductile Iron, 32")

Note: Manhole shall be marked: "Water-ARV"

PW 61. Aluminum Vault Frame and Cover for ARV
Approved Manufacturers/Products:

(1) US Foundry AHS or AHD
(2) Bilco J or JD (H-20)

PW 62. Insertion Valve (AWWA C515)
Approved Manufacturers/Products:

A. Ductile Iron Body, Resilient Seat Gate, Wedge to Seal against valve body, MJ Type End Restraints
(1) TEAM Insert Valve

B. Stainless Steel Body, Resilient Seat Gate, Wedge to Seal against valve body
(1) Hydro-Stop Insertion Valve 250

PW 63. Hose Bibbs (brass) – Lead Free
Approved Manufacturers/Products:

(1) NIBCO
(2) Jones
(3) American Standard

PW 64. Heavy Duty Meter Box Lids (ANSI Tier 15 minimum load rated)
Approved Manufacturers/Products:

A. Single Service (5/8" x ¾")
(1) EBAA – Cover MC1118-2R
(2) GlasMasters S1118RN15-4-PBCWU

B. Double Service: (5/8" x ¾")
(1) EBAA – Cover MC1416-3R
(2) GlasMasters S1517RN15-4-PBCWU

C. Single Service: (1" Meters)
(1) EBAA – Cover MC1324-4R
(2) GlasMasters S1324RN15-4-PBCWU

D. Single Service: (1-1/2", 2" & 3" Meters)
(1) EBAA – Cover MC1730-5R
(2) GlasMasters S1730RN15-4-PBCWU

PW 65. Stainless Steel Stiffening Inserts for HDPE Pipe Restraint (4" – 12")
Approved Manufacturers/Products:

1) JCM 231
(2) Cascades

PW 66. Typical Stainless Steel Stiffening Inserts for HDPE CTS Tubing (up to 2")
Approved Manufacturers/Products:

(1) Ford 50 series (Insert-51, 52, 54, 55)
(2) Mueller 5287 series (04, 05, 06, 07)
(3) AY McDonald 6133T (3/4, 1, 1-1/2, 2)

PW 67. Fire Hydrant Security Devices (Locking Nozzle Caps with Chains)
Approved Manufacturers/Products:

(1) American Flow Control Captivater – Locking Nozzle Cap

Note: An AFC Captivater adjustable wrench may be required for each 10 hydrants (min. one wrench per project) only at the Department's request.

PW 68. Valve Stem Extensions (Carbon Steel Hot Dip Galvanized with Centering Ring and Stainless Steel Set Screws)
Approved Manufacturers/Products:

(1) Custom Fab
(2) Trumbull Industries

PW 69. Directional Drill Tracer Wire - #12 AWG (APWA Colored Coded Blue)
Approved Manufacturers/Products:

(1) Copperhead 1245B-EHS
Pro-Line Safety Products Pro-Trace HDD-CCS PE45

PW 70. Brass Pack Joint Branch Valves (CTS) – Lead Free (HDPE: CTS x MIP)
Approved Manufacturers/Products:

(1) Ford U48-63 – NL
(2) Mueller H-15363N (1-1/2 x ¾ x 7- 1/2)
(3) AY McDonald 708U2M (1-1/2 x ¾ x 7.5)

PW 71. Brass Pack Joint Male Adapter (HDPE) - Lead Free
Approved Manufacturers/Products:

(1) Ford C84-NL (-44, -46, -66, -77, -36-AWT)
(2) Mueller P-15428N (1-1/2 x 1), (1-1/2), (1), (3/4)
(3) AY McDonald 74753-22 (1-1/2 x 1), (1-1/2), (1), (3/4)

PW 72. DELETED

PW 73. Brass Corporation Stop Valve – (HDPE: CTS) Lead Free – Compression/Pack Joint Outlet, Tee Head, Iron Pipe Thread)
Approved Manufacturers/Products:

(1) Ford FB 1100-6-TA-NL
(2) Mueller P-25028N-38
(3) AY McDonald 74104B-22 (1-1/2), (2)

PW 74. Curb Stop with Pack Joints (HDPE: CTS x CTS) – Lead Free
Approved Manufacturers/Products:

(1) Ford B44-NL (-333, -444, -666, -777)
(2) Mueller P-25146N -38 (3/4), (1-1/2), (2)
(3) AY McDonald 76100W22 (3/4), (1), (1-1/2), (2)

PW 75. Pack Joint Coupling (HDPE: CTS x CTS), Lead Free
Approved Manufacturers/Products:

A. Straight Coupling
(1) Ford C44-NL (-33, -44, -46, -66, -77)
(2) Mueller P-15403N (3/4, 1, 1 x 1-1/2, 1-1/2, 2)
(3) AY McDonald 74758-22 (3/4), (1), (1 x 1-1/2"), (1-1/2), (2)

B. Ell Coupling
(1) Ford L44-NL (-33, -44, -66, -77)
(2) Mueller P-15526N
(3) AY McDonald 74761-22 (3/4), (1), (1-1/2),

PW 76. Pack Joint Couplings (HDPE: CTS x PVC) - Lead Free
Approved Manufacturers/Products:

(1) Ford C47-NL (-33, -44, -66, -77)
(2) Mueller V-15441N (3/4, 1, 1-1/2, 2)
(3) AY McDonald 74758-22-44 (3/4, 1, 1-1/2, 2)

PW 77. HDPE Service Fittings (Couplings, Repair Couplings, Brass Adaptor Couplings, Blind End Stubs and Caps, Shut-off Valves with Coupling Outlets) (HDPE: CTS – SDR9)
Approved Manufacturers/Products:

(1) Elster Perfection: Hydrosert

PW 78. Brass 90 Degree Elbow (FTP x FTP)
Approved Manufacturers/Products:

(1) AY McDonald 72290 (3/4), (1)
(2) Merit Brass NL101 (3/4), (1)
(3) Lee Brass 60235 LF

PW 79. Heavy Duty Water Meter Boxes (ANSI Tier 15 Load Rating Minimum)
Approved Manufacturers/Products:

A. Single Service (5/8" x ¾" meters)
(1) GlasMasters J111812S2N15-1
(2) CDR (AKA QUAZITE) B04111812A

B. Double Service (5/8" x ¾" meters)
(1) GlasMasters J151712S2N15-1
(2) CDR (AKA QUAZITE) B04151712A

C. Single Service (1" meter)
(1) GlasMasters S132412S2N15-1
(2) CDR (AKA QUAZITE) B04132412A

D. Single Service (1 ½", 2" meters)
(1) GlasMasters S173012S2N15-1
(2) CDR (AKA QUAZITE) B04173012A

E. Single Service (3" meter)
(1) GlasMasters S173018S2N15-1
(2) CDR (AKA QUAZITE) B04173018A

PW 80. Valve Box Lid for 4 ¼" Corporation Stop Boxes (Heavy Weight, 4" Skirt, Labeled "SERVICE")
Approved Manufacturers/Products:

(1) Bingham/Taylor CUL4LHV5SKSVC

PW 81. Automatic Flushing Assembly (Battery powered)
Approved Manufacturers/Products:

(1) Mueller Hydro-Guard 100 Series
(2) Mueller Hydro-Guard 600 Series (only with prior Department approval)

PW 82. Brass Yoke Angle Curb Stop (Compression PVC x Yoke)
Approved Manufacturers/Products:

(1) AY McDonald 74602 BY-44 (3/4", 1")
(2) Mueller V-25103-N -38

PW 83. Brass Quarter Bend Yoke x FIPT
Approved Manufacturers/Products:

(1) AY McDonald 74779FY (3/4" x 02, 1" x 04)

PW 84. Fire Hydrant Bollard Paint
Approved Manufacturers/Products:

(1) PPG PITT-TECH PLUS GLOSS

All paint shall be gloss, safety yellow in color and two coats shall be applied.

1.3 WASTEWATER SYSTEM

WW 1. Ductile Iron Pipe (Pipes shall be color coded with green paint)
Approved Manufacturers/Products for push-on and mechanical joint pipe:

(1) American Cast Iron Pipe Company
(2) U.S. Pipe
(3) McWane Ductile (Atlantic States, McWane, Pacific States, Clow Water Systems)

Approved Manufacturers/Products for flexible joint restraint pipe:

(1) American – Flex-Ring, Lok Ring; push-on joint pipe with Armadillo Fast Grip Gasket (sizes 4"-24")
(2) U.S. Pipe – TR Flex; push-on joint pipe with Field Lok 350 Gasket (sizes 4"- 24") - Bolt Lok
(3) McWane Corporation – TR FLEX

Non Flanged Pipe Size	Minimum Pressure Class	Minimum Special Thickness Class
3", 4"	350	51
6"-16"	350	50
20"	300	50
24"	250	50
30" and larger	200	50

Minimum Special Thickness Class 53 is required for flanged pipe. Pipe must be ceramic epoxy lined with 'PROTECTO 401", or 'PERMITE 9043 type 2" or Permox CTF. The lining must be factory applied and warranted by the pipe manufacturer. Toruseal or Flange-Tyte gaskets are required for flanged pipe.

Approved Fabricators for "Flanged" pipe:

- ASAP Fabrication, Inc. (1-813-752-1999)
- US Pipe Fabrication Inc. (1-866-347-7473)

Note: The Fabricators must use pipe supplied by approved manufacturers.

WW 2. Polyvinyl Chloride (PVC) Pressure Pipe (Pipe to be color-coded green)
Approved Manufacturers/Products:

A. Push-on Joint Pipe, AWWA C900, SDR-18, 235 psi min, and AWWA C-905, SDR-25 min., 165 psi, (14"- 24") NSF 61:

(1) JM Eagle*
(2) Diamond Plastic Corporation*
(3) North American Pipe Corp. (A.K.A. NAPCO)
(4) IPEX, Inc. (14" – 24" only)***
(5) National Pipe and Plastics, Inc. **
(6) Sanderson Pipe Corporation (4" – 12" only) **

* No Pipe deflection at the joint allowed
** Up to one (1) degree deflection at pipe joint allowed.
*** Up to three (3) degrees deflection at pipe joint allowed.

B. Restrained Joint PVC Pipe, C900/C905, SDR 18 min., NSF61.

B1. Non-Metallic Modular Joint Restraint Design
(1) NAPCO Certa-lok

B2. Bell Integrated Metallic Ring Restraint Design
(1) JM Eagle Eagle Loc900

B3. Joint Free Restraint Piping System
(1) Underground Solutions Fusible PVC Pipe

C. Service Pipe Up to 6" PVC SCH 40 (White or Green), SCH 80 (White or Grey), NSF61
(1) Heritage Plastics South Inc.
(2) JM Eagle
(3) Charlotte Pipe and Foundry Company

WW 3. Exposed Steel Pipe (A53 Grade B, ERW, minimum 0.500" wall thickness, AWWA C200; flange shall be Class D per AWWA C204. Interior shall be lined with Permite 9043 Type II. Exterior shall be: Primer 3 mils Tnemec Zinc 90-97, intermediate 4-6 mils Tnemec 66, top coat 2 mils Tnemec 1074 (black with green stripes).
Approved Products/Manufacturers:

(1) US Pipe Fabrication

WW 4. High Density Polyethylene (HDPE) pipe and tubing
Approved Manufacturers/Products:

A. Fusible HDPE, PE4710, AWWA C906; Pipes shall be color-coded black with green stripes, minimum 40 feet standard lengths, DR 11 minimum, DIPS Size, 3" and larger
Approved Manufacturers/Products:

(1) Performance Pipe (DIV of CP CHEM) – DriscoPlex 4000, 4100
(2) JM Eagle

B. High Density Polythylene (HDPE) Tubing (PE3408/3608), CTS, DR9, AWWA C901, up to 2"

Approved Manufacturers/Products:

(1) Charter Plastics, Inc.
(2) ENDOT Industries, Inc.
(3) JM Eagle
(4) IPEX, Inc. Blue904 PEX Service Tubing

WW 5. PVC Cement (Certified for both Schedules 40 and Schedule 80)
Approved Manufacturers/Products:

A. Plumbing Applications
(1) Harvey's Wet Set PVC Cement
(2) Christy's Red Hot Blue Glue
(3) WHITLAM Weatherproof Blue All Weather Low VOC Medium Body Cement

B. Electrical Conduit Applications (medium body clear cement)
(1) Oatey PVC Heavy Duty Clear Cement
(2) Harvey's P-12G Heavy Gray PVC Cement

WW 6. Thread Sealant
Approved Manufacturers/Products:

(1) E-Z Weld 777 by Fry Technology
(2) Pipe Fit, FPPI
(3) Teflon Tape (all manufacturers)

WW 7. Polyvinyl Chloride (PVC) Gravity Mains and Laterals Pipe (Color: Green), ASTM-3034, SDR-26 Pipe within Wellfield Protection Zones 1 & 2 must meet the requirements of C-900, SDR-18, and 150 psi.
Approved Manufacturers/Products:

(1) JM Eagle
(2) Diamond Plastics Corporation
(3) North American Pipe Corp. (A.K.A. NAPCO)
(4) National Pipe and Plastics, Inc.
(5) Charlotte Pipe & Foundry (Accord Industries
(6) /Universal 100 Products now part of Charlotte Pipe & Foundry)
(7) Sanderson Pipe Corporation

WW 8. Gate Valves (AWWA C509, C515, Ductile Iron Body)
Approved Manufacturers/Products:

(1) Mueller A-2361, A-2362
(2) American Series 2500 (MM, FF)
(3) Kennedy Ken Seal Series
(4) M & H Style 4067, 7561/7571
(5) Clow Models 2638, 2639/2640

WW 9. Eccentric Plug Valves, AWWA C517, (Requires approval by PBCWUD during design process), Quarter Turn, min. 79% Port Area, Worm Gear Required for 10" and larger, Fusion Bonded Epoxy Inside and Outside, Ductile Iron Body, Nickel Seat Weld, Ductile Iron Plug Encupsulated with Bura-N Rubber, Bi-Directional Shutoff.
Approved Manufacturers/Products:

(1) Clow
(2) Pratt/Milliken
(3) Dezurik
(4) GA Industries

WW 10. Combination Air Release Valves (All Stainless Steel – 2" Min. required)
Approved Manufacturers/Products:

(1) H-Tec 986-01
(2) ARI D-020 NPT
(3) Val-Matic VM-801AS
(4) Bermad ARV C50-N

WW 11. Tapping Valves (AWWA C509, C515, Ductile Iron Body)
Approved Manufacturers/Products:

(1) American Series 2500
(2) Mueller T-2361, T-2362
(3) US Pipe Metroseal T-USP1, T-USP2
(4) M & H Style 4067-13, 7572
(5) Clow F-6114

WW 12. Ductile Iron Body Check Valves; AWWA C508; (Lever and Weight, Lever and Air Cushion, Level and Spring), Full Port, Fusion Bonded Epoxy inside and Outside, Stainless Steel Body Seat.
Approved Manufacturers/Products:

(1) M & H 159-02
(2) Mueller 2600-6-01
(3) Kennedy 106LW
(4) Clow 5382
(5) American 52-SC (lever & weight)

Valves larger than 24" shall be rated min. 200 psi.

WW 13. Screw Type (2) Piece Valve Boxes
Approved Manufacturers/Products:

(1) East Jordan Iron Works 8550
(2) Bingham/Taylor 4905
(3) SIGMA Corp. - Ductile Iron only - Top VB2611-D, Bottom VB2612-D

WW 14. Valve Box Lids (marked "Sewer") Minimum weight 24 lbs, 4" skirt
Approved Manufacturers/Products:

(1) East Jordan Ironworks 0680045
(2) Bingham Taylor 4906
(3) SIGMA Corp. - Ductile Iron only - VB2600S-D

WW 15. Valve Stem Extension (Carbon Steel, Hot Dip Galvanized with Centering Ring and Stainless Steel Set Screws)
Approved Manufacturers/Products:

(1) Custom Fab
(2) Trumbull Industries

WW 16. Mechanical Joint Ductile Iron Tapping Sleeves (Ceramic epoxy lined)
Approved Manufacturers/Products:

(1) American 2800 Series
(2) Mueller H-615
(3) US Pipe MJ

WW 17. Tapping Sleeves (Taps 4" and Larger)
Approved Manufacturers/Products:

A. Stainless Steel Body, Flange and Hardware
(1) Dresser 630
(2) Ford FTSS
(3) Cascade CST-EX
(4) JCM 432, 452
(5) Power Seal Model 3490-AS
(6) Smith Blair 663

WW 18. Mechanical Joint Restraining Devices
Approved Manufacturers/Products:

A. Solid Design for D.I. Pipe
(1) EBBA Iron – 1100 MEGALUG
(2) Sigma ONE-LOK SLDE
(3) Ford/Uni-Flange Series 1400
(4) Star Pipe StarGrip Series 3000 (up to 16")

B. Solid Ring Design for PVC Pipe
(1) EBBA Iron – 2000PV MEGALUG
(2) Sigma ONE-LOK SLCE
(3) Ford/Uni-Flange Series 1500
(4) Star Pipe StarGrip Series 4000 (up to 16")

C. Solid Ring Design for HDPE pipe up to 12" (required stainless steel stiffening insert)
(1) EBAA Iron – 2000PV MEGALUG
(2) Ford/Uni-Flange Series 1500

D. Split Ring Design for D.I. Pipe
(1) EBAA Iron - 1100SD Split MEGALUG
(2) Sigma ONE-LOK SSLD
(3) Star Pipe StarGrip Series 3000 (up to 16")

E. Split Ring Design for PVC Pipe
(1) EBAA Iron - 2000SV MEGALUG

F. Split Ring Design for HDPE Pipe up to 8" (required stainless steel stiffening insert)
(1) EBAA Iron - 2000SV MEGALUG

WW 19. Pressure Pipe Bell Restraint (Bell side ring without serrations; rods, and nuts to be stainless steel 316; split ring design shall be used if available)
Approved Manufacturers/Products:

A. Split Ring Design for D.I. Pipe
(1) EBAA Iron - Series 1600TD
(2) EBAA Iron - Series 1100HD
(3) Sigma ONE-LOK SSLDH

B. Split Ring Design for PVC Pipe
(1) EBAA Iron - Series 1600TD
(2) To be removed; ~~EBAA IRON Series 1600~~
(3) EBAA Iron - Series 1100HV
(4) SIGMA PV-LOK PWH
(5) Ford/Uni-Flange UFR 1355-C

C. Solid Ring Design for D.I. Pipe
(1) EBAA Iron - Series 1700
(2) Sigma ONE-LOK SLDEH
(3) Ford/Uni-Flange 1450

D. Solid Ring Design for PVC Pipe
(1) EBAA Iron - Series 2800
(2) Sigma ONE-LOK SLCEH
(3) Ford/Uni-Flange 1350

WW 20. Pressure Pipe Bell Joint Leak Clamps with stainless steel Type 316 hardware (bolts, nuts, etc.).
Approved Manufacturers/Products:

(1) Smith-Blair Model 274
(2) Ford FBC-XXX-E or FBCF-XXX-Y Style
(3) Romac Industries Style 516

Note: Split Ductile Iron Rings required. Buna-N gasket required. Longer bolts required for PVC pipe.

WW 21. Ductile Iron Restrained Flange Adapters with stainless steel Type 316 hardware (bolts, nuts, etc.). (Set Screw Design Not Acceptable)
Approved Manufacturers/Products:

(1) Smith-Blair Model 912-90 with anchor studs
(2) EBBA Iron – 2100 MEGALUG
(3) Power Seal Model 3521 with anchor studs

WW 22. Ductile Iron Fittings
Approved Manufacturers/Products:

A. Both ends mechanical joints and flanged joints
(1) Tyler Union
(2) US Pipe/Metalfit
(3) American
(4) Star
(5) Sigma
(6) Clow

B. Flexible Restraint Fittings
(1) American – FLEX-RING, LOK-RING
(2) US Pipe/Metalfit – TR FLEX, BOLT-LOK
(3) McWane Corporation – Super Lock

C. Welded on Outlet Tees for pipes larger than 24" non-flanged pipe. The welded on branch size shall not exceed ½ of the main pipe size. Welding shall be performed and tested by the pipe manufacturer.

(1) American
(2) US Pipe

AWWA C-110, AWWA C-153 "bare" ductile iron fittings must be ceramic epoxy lined with "Protector 401" or "Permite 9043 Type 2" OR lined with "Polybond Plus or "PERMOX CTF." The lining must be factory applied and/or warranted by the fitting manufacturer. TORUSEAL or Flange-Tyte gaskets are required for flanged fittings.

WW 23. Follower Glands
Approved Manufacturers/Products:

(1) Tyler
(2) US Pipe

WW 24. Casing Pipe Spacers
Approved Manufacturers/Products:

(1) Cascade
(2) APS Spacing System
(3) RACI
(4) BWM

WW 25. Pipe Adapter Couplings (for use on existing facilities)
Approved Manufacturers/Products:

(1) Fernco
(2) Indiana Sea
(3) Atlas
(4) HARCO

WW 26. Pipe Transition Couplings - SDR-35/SDR 26 PVC to DIP or to PVC C900
Approved Manufacturers/Products:

(1) Harco
(2) Flow Control
(3) NYOPLS
(4) WAGER

WW 27. Corporations Stops with T-Head, MIP x MIP, (3/4, 1, 1-1/2, 2)
Approved Manufacturers/Products:

(1) Ford FB500-TA
(2) AY McDonald 4104BP
(3) Mueller B-20013-10-38, B-2960-10 -38

WW 28. Corporation Stops for ARV and Pressure Gauge Installations (MIP & MIP)
Approved Manufacturers/Products:

(1) Ford FB 500
(2) AY McDonald 3131 B
(3) Mueller B-2969 -38, B-20013 -38

WW 29. Service Saddles/Sleeves (up to 2" Tap Size) – Iron Pipe Thread
Approved Manufacturers/Products:

A. Ductile Iron Body, Double Steel Bales (up to 16")
(1) JCM 408
(2) Smith Blair 313
(3) Ford FC202 (Epoxy-coated)
(4) Romac 202 NU
(5) AY McDonald 4826A

B. Ductile Iron Body Double Stainless Steel Straps
(1) JCM 406
(2) Smith Blair 317
(3) Ford FCD 202
(4) Romac 202 NS (up to 16", pre- approval required)
(5) Power Seal 3417 DI
(6) AY McDonald 4855A

C. Epoxy-coated Steel Body Threaded Outlet Tapping Sleeves - Stainless Steel hardware required (larger than 16", pre-approval required)
(1) JCM 418
(2) Romac FTS420T

D. Stainless Steel Body Threaded Outlet Tapping Sleeves (larger than 16")
(1) JCM 438
(2) Smith Blair 372

WW 30. Manhole Adjustment Rings
Approved Manufacturers/Products:

A. Existing Manholes only,(max. 4" height adjustment)

(1) Manhole Systems MS-101
(2) Roblyn Series 2300, 2400
(3) EJ Corp. (Andrews Metal Style) M2-A, M5-A

B. New manholes, max 12" total ring height

(1) Brick chimney, field installed (2-5 courses of bricks) (for field-applied corrosion barrier systems).

(2) Precast reinforced concrete rings (4,000psi), field-installed forecast-in liner and for field-applied corrosion barrier systems
(1) Tri-County
(2) U.S. Precast
(3) US Concrete Products

WW 31. Manhole Frame and Cover (Gravity Sewer) – 7" Casting Standard, 4" Casting must be Preapproved (Lid with PBC Logo required for all PBCWUD Manholes)
Approved Manufacturers/Products:

A. Casting frame 4" High:
(1) U.S. Foundry 465-KD
(2) EJ Corp. V1144-2

B. Casting frame 7" High:
(1) US Foundry 420-KD
(2) EJ Corp. 1072 Series (Frame EJ 1072 Z, Lid EJ 1072 A1)

Note: Lids must be machined to accept inflow protectors.

WW 32. Rigid Manhole to PVC Pipe Connectors ("Sand Collar")
Approved Manufacturers/Products:

(1) Harrington Corp. (A.K.A. HARCO) SDR 26
(2) Department Approved Equal

WW 33. Manhole Flexible Pipe Connector Sleeves (cast-in and/or placed in structures without cast-in liner)
Approved Manufacturers/Products:

(1) Press-Seal Gasket Corp.; Cast-A-Seal 12-08 (for 8" PVC SDR 26 pipe only with two stainless steel bands)
(2) Press-Seal Gasket Corp.; PSX Direct Drive 12M Boot (8") or 14M Boot (10") (for PVC C900 pipe only with two stainless steel bands)

WW 34. Manhole Flexible Pipe Connector Sleeves (for use in structures with cast-in liners and cast-in "turn-back").
Approved Manufacturers/Products:

(1) Press-Seal Gasket Corp.; PSX Direct Drive 12M Boot (8" pipe only) or 14M Boot (10" pipe only) (Double ridge sleeve with two stainless steel bands)
(2) NPC Trelleborg Kor-N-Seal I 10B Series
(3) A-LOK Products Inc.; sealing gasket for lower invert in outside drop manholes

WW 35. Manhole Inflow Protectors
Approved Manufacturers/Products:

(1) Southwestern Packing & Seals, Inc. - "Rainstopper PBC-1"
(2) L.F. Manufacturing, Inc. -"RainGuard LFN-SV"
(3) Knutson Enterprises Manhole Insert
(4) USSI – "Inflow Defender SV-1"

Note: All Protectors must have Stiffening Ribs; Sealing Gasket and pre-approved valve design.

WW 36. Paint for Exposed Ductile Iron Pipe and Fittings (Exposed D.I. Pipe and Fittings to be shop painted with red oxide primer) – Black with Green Stripes
Approved Manufacturers/Products:

A. Moderate Exposure
(1) SunTec – Primer 801 Rustking, Top Coat – 860A Rustking Acrylic Gloss (Black with Green Stripes), (2) coats at 3 milseach.
(2) Sherwin Williams Targuard Low VOC Coal Epoxy with Reducer R7K111; two coats at 8-16 mils per coat, 50% overlap with each pass.

B. Severe Exposure
(1) Tnemec Company, INC.;
Primer: Zinc Series 90-97 (3 mils DFT)
Intermediate: Hi-Build Epoxoline II Series N 69 (two (2) coats, 6 mils DFT/coat)
Top Coat: EnduraShield II Series 1074 (two (2) coats, 3 mils DFT/coat) color black

WW 37. Detectable Marking Tape for Force Mains
Approved Manufacturers/Products:

(1) Empire Level MFG. Corp.; MT61-FORCE MAIN
(2) T. Christy Enterprises; #TA-DT-6-BRFM
(3) Pro-Line Safety Products; 103142083

Detectable brown tape 6" wide imprinted with the following in 1 1/2" MIN. high lettering with minimum wording of; **"CAUTION FORCE MAIN BELOW"**. The wording shall occur every 3 feet.

WW 38. Sewer Lift Station Submersible Pumps
Approved Manufacturers/Products:

(1) Flygt
(2) WILO-EMU
(3) HOMA (up to 60 HP)

Note: Must comply with NEC Class 1, Group D, Division 1; Five Year Warranty Begins at Lift Station Start Up

WW 39. Remote Telemetry Units (PLC Based) – (Panel shop UL Approved)
Approved Manufacturers/Products:

(1) Curry Controls PBCRTU2015
(2) ESCPBCRTU2015
(3) AES PBCRTU2015
(4) CC Control PBCRTU2015
(5) Unitron PBCRTU 2015
(6) Champion Control PBCRTU 2015

WW 40. Corrosion Barrier System for Concrete Structure
Approved Manufacturers/Products:

A. Field applied systems
(1) Madewell Corp. Mainstay System (ML-10 hydraulic cement mortar, ML-72 microsilica mortar, DS-5 epoxy)
(2) SewperCoat by Kerneos
(3) Strong Seal High Performance Mix
(4) REFRATTA HAC 100 by Global Materials Company

B. Cast-in Solid Liners.
1. Agru SURE-GRIP Polypropylene liner with 3M sealant tape 5354 and ADEKA P-201 Waterstop
2. Agru SURE-GRIP HDPE Liner with 3M sealant tape 5354 and Adeka P-201 Waterstop
3. GU Systems of Florida, LLC: GU Liner System (Polypropylene Sealplate Wall Liner, Cone Liner (PP or FRP construction) and optional manhole base liner (PP or FRP) with 3M sealant tape 5354 and Adeka P-201 Waterstop

C. Field installed Thermo-Plastic Linersystems
(1) Agru SURE-GRIP HDPE Liner with ADEKA P-201 Waterstop

WW41. Cleanout Castings (with reversible rings)
Approved Manufacturers/Products:

(1) U.S. Foundry No. 7621
(2) SIGMA VB 762

WW 42. Lift Station Control Panel and Electrical Components (UL Shop Listing Required) Refer to standard details.
Approved Manufacturers/Products:

(1) Engineer Service Corp
(2) CC Controls
(3) Atlantic Environmental Systems
(4) Unitron Controls
(5) Curry Controls
(6) Champion Controls

WW 43. Standard Aluminum Access Cover (Channel Frame Design, Spring Lift Assists)
Approved Manufacturers/Products:

A. Rated 300 lbs
(1) Halliday Products W1S, W2S
(2) USF Fabrication TPS 300, TPD 300
(3) BILCO Type J-AL, JD-AL

B. Rated H-20 for off-street locations
(1) Halliday Products H1WS, H2W
(2) USF Fabrication THS, THD
(3) BILCO Type JAL-H20, JDAL- H20

WW 44. Flexible Manhole/Pipe Connector
Approved Manufacturers/Products:

(1) PSI-Link Seal by GPT

WW 45. Root Barrier System
Approved Manufacturers/Products:

(1) TYPAR BIOBARRIER 39", 58.5"
(2) DeepRoot UB36-2, UB48-2

WW 46. Fall Protection Systems
Approved Manufacturers/Products:

(1) Halliday Products Protective Grating Panel
(2) USF Fabrication Hinged Hatch Safety Grate

WW 47. External Manhole Joint Seal
Approved Manufacturers/Products:

(1) Cretex Specialty Products - Cretex Wrap
(2) CCI Piping Systems, LLC - WrapidSeal

WW 48. Line Stop Tapping Sleeve
Approved Manufacturers/Products:

(1) JCM 440

WW 49. HDPE/DIP Electrofusion couplings and fittings
Approved Manufacturers/Products:

(1) GF Central Plastic Company
(2) IPEX USA – Friatec (verify?)

WW 50. HDPE/DIP MJ Adapter
Approved Manufacturers/Products:

(1) Independent Pipe Products, Inc.
(2) Improved Piping Products, Inc.
(3) Central Plastics

WW 51. PVC Fittings (Up to 2")
Approved Manufacturers/Products:

(1) LASCO Fittings, Inc.
(2) NIBCO, Inc.
(3) Spears Manufacturing
(4) Charlotte Pipe and Foundry Company

WW 52. PVC Fittings (Gravity Mains and Laterals), ASTM 3034 SDR 35.
Approved Manufacturers/Products:

(1) Harrington Corp. (A.K.A. HARCO)
(2) Tigre USA
(3) Multi Fittings Corp.
(4) Royal Building Products G-Series

WW 53. Portable Trailer Mounted Generator Set (56 KW – 400 KW) (see specifications for required features)
Approved Manufacturers/Products:
(1) Tradewinds Corp: TP/TJ (size 56-400) - PBC
(2A) Magnum Power Products: MMG (size 75-405) – PBC

(2B) Generac Branded Units from Magnum Power Products (must include a certificate of authenticity and conformity)

(3) Baldor Electric: TS (size 80T-350T) – PBC
Note: Electrical connectors for power outlets and trailer plug must be compatible with PBCWUD equipment. Battery shut-off switch is required.

WW 54. Removed - See WW77

WW 55. Above Ground Utility Markers
Approved Manufacturers/Products:

A. Canal Crossings:
(1) Rocal, Inc. #RI-4PLPC 12-6

B. Miscellaneous Locations:
(1) Rhino Marking & Protection Systems, Inc.: Triview Marker Post, color coded with decals.

(2) Rhino Marking & Protection Systems, Inc, Rhino 3-Rail (66"), color coded with decals.

WW 56. Fabricated Manhole Flow Channels
Approved Manufacturers/Products:

A. Concrete
(1) Tri County
(2) US Precast

B. Fiberglass/Polypropylene Cast-In Base Liner
(1) GU Liner Systems

WW 57. Hydrophilic Waterstop
Approved Manufacturers/Products:

(1) ADEKA Ultraseal P-201(Min. 3/8" Bead)

WW 58. Manhole Ring and Cover (ARV)
Approved Manufacturers/Products:

(1) US Foundry 690-AH-M
(2) US Foundry 751-MS (Ductile Iron, 32")
(3) PAMREX (Ductile Iron, 32")

Note: Manholes shall be marked: "Sewer ARV"

WW 59. Aluminum Vault Frame and Cover (for ARV)
Approved Manufacturers/Products:

(1) US Foundry AHS or AHD
(2) Bilco J or JD (H-20)

WW 60. Grease Trap (Point of Use Type)
Approved Manufacturers/Products:

(1) ZURN 1170 RE-HD Model 800
(2) Department Approved Equal

Note: Facilities with total flow rates larger than 25 GPM require the installation of a minimum 750 gallon oil/grease interceptor.

WW 61. Wedge Anchors for Pump Base Elbows
(316 Stainless Steel, Minimum ¾" x 10", Minimum 2" thread length, Top of bolt permanently coded)
Approved Manufacturers/Products:

(1) Hilti Kwik Bolt 3, 316 SS, ¾" x 10" (Marked "R", Torque 150 ft/lbs)
(2) Simpson Strong-Tie WA751003 SS (Marked "R", Torque 150 ft/lbs)

WW 62. Lift Station Base Elbow Insert
Approved Manufacturers/Products:

(1) WILO EMU: Elbow Saver #2710169, 2710080

WW 63. Meter Box and lid for Force Main Flushing Connection (Tier 8 Load Category Minimum per Ansi/SCTE77)
Approved Manufacturers/Products:

(1) CDR: Box B0317302A Lid: C00173002

Note: Box lid shall be without reader lid.

WW 64. Insertion Valve (AWWA C515)
Approved Manufacturers/Products:

A. Ductile Iron Body, Resilient Seat Gate, Wedge to Seal against valve body, MJ Type End Restraints
   (1) TEAM Insert Valve

B. Stainless Steel Body, Resilient Seat Gate, Wedge to Seal against valve body
   (1) Hydro-Stop Insertion Valve 250

WW 65. Stainless Steel Stiffeners for HDPE Pipe Joint Restraint
Approved Manufacturers/Products:

(1) Cascade
(2) JCM
(3) Romac

WW 66. Sewer Pump Station Back up Pumping/Power/Control Unit (Critical Silenced, Diesel Powered, 6" Pump Size, Trailer Mounted, 30 Feet Suction and 30 Feet Discharge 4" Diameter Hoses, (2) 6" x 4" Hose Adapters, Self-Priming (No Water Adding Required to Operate), 4" Discharge Female Camlok/Male Hose Adapter, Enclosure Doors with a Clasp for a Padlock, Integrated Battery Disconnect, Double wall tank, DOT Trailer, Vacuum Assisted, Steel Frame and Tank Coated with RHINO or Equal, Aluminum Enclosure, Overall Length less than 15 feet (unless preapproved otherwise)
Approved Manufacturers/Products:

(1) Godwin Pumps (CD 150 or larger, with Primeguard Control Panel)
(2) Thompson Pumps

Note: Trailer plug connector must be compatible with PBC WUD equipment. Unit size must be preapproved. See also written specifications.

WW 67. Directional Drill Tracer Wire - #12 AWG (APWA Colored Coded Green)
Approved Manufacturers/Products:

(1) Copperhead 1245G-EHS
(2) Pro-Line Safety Products Pro-Trace HDD-CCS PE45

WW 68. Identification Paint for Buried DIP Force Main (APWA Green Stripes)
Approved Manufacturers/Products:

(1) Induron Protective Coatings; Aquanaut (Color: Euclid Green) Min. 8 mils WFT, min 3 mils DFT

WW 69. Force Main Flow Through Isolation Valve for Pressure Monitoring (1/2" Stainless Steel Body) Approved Products/Manufacturers:

(1) Red Valve Series 742
(2) WIKA
(3) Endress and Hauser

WW 70. Stainless Steel Stiffening Insert for HDPE Tubing
Approved Manufacturers/Products:

(1) Ford
(2) Mueller
(3) AY McDonald

WW 71. Sealant Gasket for Concrete Structure Joints
Approved Manufacturers/Products:

A. Concrete Structures without Cast-In Liner
(1) Henry Company Ramnek RN103/RN101
(2) Concrete Sealants Inc. Con Seal CS102B

B. Concrete Structures with Cast-In Liner
B1. Liner Turn Back Seal and Vertical Seal Riser
(1) Henry Company Rubr Nek LTMRU106
(2) Concrete Sealants Inc. Con Seal CS102
(3) Press-Seal EZ Stik Premium Butyl Joint Sealant

B2. Vertical Seal Riser
(1) Henry Company Ramnek RN103/RN101
(2) Concrete Sealants Inc. Con Seal CS102B

WW 72. Primer for Concrete Structure Joints (to be applied by precaster)
Approved Manufacturers/Products:

(1) Henry Company Rubr Nek LTMRU106
(2) Concrete Sealants Inc. Con Seal CS102
(3) Press-Seal EZ Stik Premium Butyl Joint Sealant

WW 73. Soft starters (SSRVS) with Intergral Bypass and Fan (Required for pumps 20HP and larger)
Approved Manufacturers/Products:

(1) Square D ATS 22D88S6U

WW 74. Lift Station Service Entrance Fused Disconnect Switch
Approved Manufacturers/Products:

(1) Square D H363NS Endress and Hauser

WW 75. Service Fuse for Disconnect Switch (600V, Dual Element, Time Delay Fuses Class RK1)
Approved Manufacturers/Products:

Bussmann LPS-RK

C. Concrete Structures without Cast-In Liner
(3) Henry Company Ramnek RN103/RN101
(4) Concrete Sealants Inc. Con Seal CS102B

WW 76. Radar Level Transmitter
Approved Manufacturers/Products:

(1) Vega Vegapuls C-21
(2) Endress & Hauser FMR20

WW 77. ARV Enclosure – Above Ground (black base with green cover)
Approved Manufacturers/Products:

(1) Channell Company SPH14206C1B5L08A27

1.4 RECLAIMED WATER SYSTEM

RW 1. Ductile Iron Pipe (Pipes shall be color coded with purple paint)
Approved Manufacturers/Products:

A. Push-on and mechanical joint pipe
(1) American Cast Iron Pipe Company
(2) U.S. Pipe
(3) McWane Ductile (Atlantic States, McWane, Pacific States, Clow Water Systems)

B. Flexible joint restraint pipe:
(1) American – Flex Ring, Lok Ring; push-on joint pipe with Armadillo Fast Grip Gasket (sizes 4"-24")
(2) U.S. Pipe - TR Flex; push-on joint pipe with Field Lok 350 Gasket (sizes 4"-24") - Bolt Lok
(3) McWane Corporation – TR Flex

Approved Fabrications for "Flanged" pipe:
- ASAP Fabrication Inc. (1-813-752-1999)
- US Pipe Fabrication Inc. (1-866-347-7473)

Note: The Fabricators must use pipe supplied by approved manufacturers.

Non-Flanged Pipe Size	Minimum Pressure Class	Minimum Special Thickness Class
3", 4"	350	51
6"-16"	350	50
20"	300	50
24"	250	50
30" and larger	200	50

Pipe must be cement mortar lined per AWWA C-104/A21.50. Minimum Special Thickness Class 53 is required for flanged pipe. Toruseal or Flange-Tyte gaskets are required for flanged pipes.

RW 2. Polyvinyl Chloride (PVC) Pipe (Color: Purple)
Approved Manufacturers/Products:

A. Push-on Joint Pipe, AWWA C-900,SDR-18 min, 235 psi min., and AWWA C905, SDR-25 min., 165 psi min., NSF61:

(1) JM Eagle*
(2) Diamond Plastic Corp.*
(3) North American Pipe Corp. (A.K.A. NAPCO) *
(4) IPEX, Inc. (14" – 24" only)***
(5) National Pipe and Plastics, Inc.**
(6) Sanderson Pipe Corporation (4" to 12" only) **

* No Pipe deflection at the joint allowed.
** Up to one (1) degree deflection at pipe joint allowed.
*** Up to three (3) degrees deflection at pipe joint allowed.

B. Restrained Joint PVC Pipe, C900/C905, SDR 18 min., NSF61.

B1. Non-Metallic Modular Joint Restraint Design
(1) NAPCO (F.K.A. CertainTeed) Certa-lok

B2. Bell Integrated Metallic Ring Restraint Design
(1) JM Eagle Eagle Loc900

B3. Joint Free Restraint Piping System
(1) Underground Solutions Fusible PVC Pipe

C. Service Pipe Up to 6"– PVC Schedule 40 and 80, white or purple in color

(1) Heritage Plastics
(2) JM Eagle
(3) Charlotte Pipe and Foundry Company

RW 3. Exposed Steel Pipe (A53 Grade B, ERW, minimum 0.500" wall thickness, AWWA C200; flange shall be Class D per AWWA C204. Interior shall be lined with 7-11 mils DFT of Tnemec N-140 Pota-Pox Plus; Exterior coat: Tnemec 1074,2 mils, color Pentone 522C, 2 coats.
Approved Manufacturers/Products:

(1) US Pipe Fabrication

RW 4. High Density Polyethylene (HDPE) pipe and Tubing
Approved Manufacturers/Products:

A. Fusible HDPE, PE 4710, AWWA C906; Pipes shall be color-coded purple, minimum 40 feet standard lengths, DR 11 minimum, DIPS Size, 3" and larger

(1) Performance Pipe (DIV of CP CHEM) – DriscoPlex 4000, 4100
(2) JM Eagle

B. High Density Polyethylene (HDPE) Tubing (PE 3408/3608), CTS, DR9, AWWA C901 up to 2" size (purple or purple striped)

(1) Charter Plastics, Inc.
(2) ENDOT Industries, Inc.
(3) JM Eagle
(4) IPEX, Inc. Blue904 PEX Service Tubing

RW 5. PVC Cement (Certified for both Schedule 40 and Schedule 80)
Approved Manufacturers/Products:

A. Plumbing Applicators:
(1) Harvey's Wet Set PVC Cement
(2) Christy's Red Hot Blue Glue
(3) WHITLAM Weatherproof Blue All Weather Low VOC Medium Body Cement

B. Electrical Conduit Applicators (Medium Body Clear Cement)
(1) Oatey PVC Heavy Duty Clear Cement
(2) Harvey's P-12G Heavy Gray PVC Cement

RW 6. Thread Sealant
Approved Manufacturers/Products:

(1) E-Z Weld 777 by Fry Technology Pipe Fit, FPPI
(2) Teflon Tape (all manufacturers)

RW 7. Gate Valves (AWWA C509, C515, Ductile Iron Body)
Approved Manufacturers/Products:

(1) Mueller A-2361, A-2362
(5) American Series 2500 (MM, FF)
(6) Kennedy Ken Seal Series
(7) M & H Style 4067, 7561/7571
(7) Clow Models 2638, 2639/2640
(5) US Pipe Metroseal A-USP1, A-USP2

Minimum Pressure Class 200 is required for valves larger than 24"

RW 8. Butterfly Valves (AWWA C504)
Approved Manufacturers/Products:

(1) Mueller Lineseal III
(2) M & H Styles 4500, 1450
(3) Pratt "AWWA Groundhog"
(4) DeZURICK Class 150B
(5) Val-Matic

Note: Worm Gears are required for valves larger than 16".

Minimum Pressure Class 200 is required for valves larger than 24"

RW 9. Combination Air Release Valves
Min. 1" ARV for pipes 4" – 16" Min. 2" ARV for pipes larger than 16" (Fusion Bonded Epoxy Interior and Exterior, Stainless Steel Bolts and Plugs)
Approved Manufacturers/Products:

(1) Val-Matic VMC-201C.1SV, VMC-202C.2D1SV
(2) Crispin UL10, UL20
(3) VAG GA (F.K.A. GA Industries) Model 945-T
(4) APCO 143C, 145C

RW 10. Tapping Valves (AWWA C509, C515, D.I. Body)
Approved Manufacturers/Products:

(1) American Series 2500
(2) Mueller T-2361, T-2362
(3) US Pipe Metroseal T-USP1, T-USP2
(4) M & H Style 4067-13, 7572
(5) Clow F-6114

Minimum Pressure Class 200 is required for valves larger than 24"

RW 11. Pack Joint Angle Single Check Valves – up to 1" (ASSE Approved)
Approved Manufacturers/Products:

(1) Ford HA91-323, HA91-444
(2) McDonald
(3) Mueller

RW 12. Pack Joint Single Check Valves – for 1-1/2" and 2" meters (ASSE Approved)
Approved Manufacturers/Products:

(1) Ford HS 11-777 HS 11-666
(2) Mueller

RW 13. Check Valve for Reuse Water Services - 3" and larger (AWWA C508)
Approved Manufacturers/Products:

(1) Val-Matic Swing Flex Check Valve
(2) APCO Rubber Flapper Swing Check

RW 14. Pack Joint Branch Valves
Approved Manufacturers/Products:

(1) AY McDonald 08U4M (1½ x ¾ x 7.5);

RW 15. Mechanical Joint Ductile Iron Tapping Sleeve (Taps 4" and Larger)
Approved Manufacturers/Products:

(1) American 2800 Series
(2) Mueller H-615
(3) US Pipe MJ

RW 16. Tapping Sleeves (Taps 4" and Larger)
Approved Manufacturers/Products:

A. Stainless Steel Body, Flange and Hardware
(1) Dresser 630
(2) Ford FTSS
(3) Cascade CST-EX
(4) JCM 432, 452
(5) Power Seal Model 3490-AS
(6) Smith Blair 663

B. Fabricated Epoxy-coated Steel Body and Flange with Stainless Steel Hardware (For Pipes Larger than 24")
(1) JCM 412
(2) Smith-Blair 622
(3) PowerSeal Model 3460-CS
(4) Ford FTSC
(5) Dresser 610
(6) Cascade CFT-ESS, CFT-LP-ESS

RW 17. Mechanical Joint Restraining Devices
Approved Manufacturers/Products:

A. Solid Design for D.I.Pipe
(1) EBBA Iron – 1100 MEGALUG
(2) Sigma ONE-LOK SLDE
(3) Ford/Uni-Flange Series 1400
(4) Star Pipe StarGrip Series 3000 (up to 16")

B. Solid Ring Design for PVC Pipe
(1) EBBA Iron – 2000PV MEGALUG
(2) Sigma ONE-LOK SLCE
(3) Ford/Uni-Flange Series 1500
(4) Star Pipe StarGrip Series 4000 (up to 16")

C. Solid Ring Design for HDPE pipe up to 12" (requires stainless steel stiffening insert)
(1) EBBA Iron – 2000PV MEGALUG
(2) Ford/Uni-Flange Series 1500

D. Split Ring Design for D.I. Pipe
(1) EBBA Iron – 1100SD Split MEGALUG
(2) Sigma ONE-LOK SSLD
(3) Star Pipe StarGrip Series 3000S (up to 16")

E. Split Ring Design for PVC Pipe
(1) EBBA Iron – 2000SV MEGALUG

F. Split Ring Design for HDP Pipe up to 8" (requires stainless steel stiffening insert)
(1) EBBA Iron – 2000SV MEGALUG

RW 18. Pressure Pipe Bell Restraint (Bell side ring without serrations; rods, and nuts to be stainless steel 316; split ring design shall be used if available)
Approved Manufacturers/Products:

A. Split Ring Design for DI Pipe
(1) EBAA Iron - Series 1600TD
(2) EBAA Iron - Series 1100HD
(3) Sigma ONE-LOK SSLDH

B. Split Ring Design for PVC Pipe
(1) EBAA Iron - Series 1600TD
(2) EBAA Iron - Series 1100HV
(3) Sigma PV-LOK PWH
(4) Ford/Uni-Flange Series 1355-C

C. Solid Ring Design for D.I. Pipe
(1) EBAA Iron - Series 1700
(2) Sigma ONE-LOK SLDEH
(3) Ford/Uni-Flange Series 1450

D. Solid Ring Design for PVC Pipe
(1) EBAA Iron - Series 3800
(2) Sigma ONE-LOK SLCEH
(3) Ford/Uni-Flange Series 1350

RW 19. Pressure Pipe Bell Joint Leak Clamps with stainless steel Type 316 hardware (bolts, nuts, etc.).
Approved Manufacturers/Products:

(1) Smith-Blair Model 274
(2) Ford FBC-XXX-E or FBCF-XXX-Y Style
(3) Romac Industries Style 516

Note: Split Ductile Iron Rings required. Buna-N gasket required. Longer bolts required for PVC pipe.

RW 20. Ductile Iron Restrained Flange Adapters with stainless steel Type 316 hardware (bolts, nuts, etc.). (Set Screw Design Not Acceptable)
Approved Manufacturers/Products:

(1) EBBA Iron – 2100 MEGAFLANGE
(2) Smith-Blair Model 912-90 with anchor studs
(3) PowerSeal Model 3521 with anchor studs

RW 21. Flange Adapters - for 1 ½ and 2" meters
Approved Manufacturers/Products:

(1) Ford CF31-77 (with slotted bolt holes)
(2) McDonald 610 F
(3) Mueller

RW 22. Ductile Iron Fittings
Approved Manufacturers/Products:

A. Both Ends Mechanical Joints and Flanged Joint fittings
   (1) Tyler Union
   (2) US Pipe/Metalfit
   (3) American
   (4) Star
   (5) Sigma
   (6) Clow

B. Flexible Restraint Fittings
   (1) American – FLEX-RING, LOK-RING
   (2) US Pipe/Metalfit – TR FLEX, BOLT-LOK
   (3) McWane Corporation – Super Lock

C. Welded on Outlet Tees for pipes larger than 24" non-flanged pipe. The welded on branch size shall not exceed ½ of the main pipe size. Welding shall be performed and tested by the pipe manufacturer.

(1) American Cast Iron Pipe Company
(2) US Pipe

Fittings must be ductile iron meeting the requirements of AWWA C-110, AWWA C-153 and must be cement mortar lined and sealed per AWWA C-104 or fusion bonded epoxy lined inside and outside per AWWA C116/ANSI A21.16. The epoxy shall be applied to both exterior and interior surfaces. The lining shall be warranted by the pipe manufacturer. TORUSEAL or Flange-Tyte gaskets are required for flanged fittings.

RW 23. Follower Glands
Approved Manufacturers/Products:

(1) Tyler International
(2) US Pipe
(3) Union Foundry
(4) Sigma/NAPPCO

RW 24. Casing Pipe Spacers
Approved Manufacturers/Products:

(1) Cascade
(2) APS Spacing System
(3) RACI
(4) BWM

RW 25. Pack Joint Curb Stops
Approved Manufacturers/Products:

(1) Ford BRW 77-777W
(2) AY McDonald 6100W RWT-44
    (Reclaimed Water size 2")

Must be permanently marked **"Reclaimed Water"**

RW 26. Pack Joint Yoke Angle Curb Stops (Compression PVC x Yoke)
Approved Manufacturers/Products:

(1) Ford BARW91-323W,
    BARW91-444W
(2) AY McDonald
    4602BY-44 RTW –44 (Reclaimed Water)

RW 27. Corporation Stops (PVC Pipe) with PVC Compression Outlet and Tee Head – Iron Pipe Thread
Approved Manufacturers/Products:

(1) AY McDonald 4704B-44 (reclaimed water)
(2) Ford FBRW 1102

RW 28. Corporation Stops for ARV Installations (MIP & MIP)
Approved Manufacturers/Products:

(1) AY McDonald 3131B (reclaimed water)
(2) Ford FBRW 500

RW 29. Meter Yokes (must be epoxy coated or powder coated)
Approved Manufacturers/Products:

(1) Ford Y502, Y504
(2) Mueller H5020, H5040
(3) AY McDonald 14-2, 14-4

RW 30. Yoke Expansion Connections
Approved Manufacturers/Products:

(1) Ford EC23, EC4
(2) Mueller H-14234
(3) AY McDonald 14-2EHG, 14-4EHG

RW 31. Double Strap Service Saddles/Sleeves (up to 2" Taps) – Iron Pipe Thread
Approved Manufacturers/Products:

A. Ductile Iron Body, Double Steel Bales (up to 16")
   (1) JCM 408
   (2) Smith Blair 313
   (3) Ford FC202 (Epoxy-coated)
   (4) Romac 202 NU
   (5) AY McDonald 4826A

B. Ductile Iron Body Double Stainless Steel Straps
   (1) JCM 406
   (2) Smith Blair 317
   (3) Ford FCD 202
   (4) Romac 202 NS (up to 16", pre-approval required)
   (5) Power Seal 3417 DI
   (6) Ay McDonald 4855A

C. Epoxy-coated Steel Body Threaded Outlet Tapping Sleeves, Stainless Steel Hardwar Required (Larger than 16", Pre-approval Required)
   (1) JCM 418
   (2) Romac FTS420T

D. Stainless Steel Body Threaded Outlet Tapping Sleeves (Larger than 16")
   (1) JCM 438
   (2) Smith Blair 372

RW 32. Post Type Flushing Hydrant
Approved Manufacturers/Products:

(1) Mueller 2-1/8"
(2) M & H 33

RW 33. Meter Boxes (Tier 8 ANSI/SCTE77 Load Rating Minimum)
Approved Manufacturers/Products:

A. Single Service: 5/8" x 3/4" meters
   (1) Box: CDR WB03-1015-12

B. Double Service: 5/8" x 3/4" meters
   (1) Box: CDR WB03-1517-12

C. Single Service: (1" meters)
   (1) Box: CDR WB03-1118-12

D. Single Service: (1½" and 2" meters)
   (1) Box: CDR WB03- 2436-18

E. Single Service: (3" meters)
(Direct Connect removed – Lake Discharge above ground installation only)

F. Single Service: (4" meters)
(Direct Connect removed – Lake Discharge above ground installation only)

G. Single Service: (6" meters)
(Direct Connect removed – Lake Discharge above ground installation only)

H. Single Service: (8" meters and larger)
(Direct Connect removed – Lake Discharge above ground installation only)

RW 34. Meter Box Lids (Permanently infusedwith purple color and marked "Reclaimed Water—Do Not Drink"), Tier 8 ANSI/SCTE77 Load Rating Minimum
Approved Manufacturers/Products:

A. Single service (5/8" x ¾" meter)
   (1) CDR C00101502P

B. Double service (5/8"x ¾"meter)
   (1) CDR C00151702P

C. Single service (1" meter)
   (1) CDR C00111802P

D. Single service (1-1/2" and 2" meter)
(1) CDR C00243602P (offset meter reader lid)

E. Single service (3" meter) Torsion Assist Lid Required (REMOVED)

F. Single service (4" meter) Torsion Assist Lid Required (REMOVED)

G. Single service (6" meter) Torsion Assist Lid Required (REMOVED)

H. Single service (8" meter and larger) Torsion Assist Lid Required (REMOVED)

RW 35. Manhole Cover Riser Rings (Max. 4" height, existing manholes only)
Approved Manufacturers/Products:

(1) Manhole Systems MS-101
(2) Rinker MR-1
(3) EJ Corp. Andrews Metal Style Inc. M2-A, M5-A

RW 36. Purple Identification Paint for Components with Asphaltic Coating
Approved Manufacturers/Products:

(1) Induron Protective Coatings; Aquanaut A1272-RT170 Color shall be Pantone 522c. (Minimum 8 mil WFT, minimum 3 mils DFT)

RW 37. Purple Identification Paint for Components with Non-Asphaltic Coating (minimum two coats required). Exposed ductile iron pipe and fittings shall be shop coated with red primer. (Color shall be Pantone522c.)
Approved Manufacturers/Products:

(1) TNEMEC Series 30 DTM acrylic
(2) Sherwin Williams DTM acrylic coating B66-100 Series

RW 38. Purple Identification Paint for PVC Components Color shall be Pantone 522c.
Approved Manufacturers/Products:

(1) Tnemec Series 66 Highbuild Polyamid Epoxy

RW 39. Screw Type (2) Piece Valve Boxes (Square Top)
Approved Manufacturers/Products:

(1) Bingham/Taylor 4905

RW 40. Valve Box Lid (Heavy Weight, Square top, 4" skirt, marked "REUSE")
Approved Manufacturers/Products:

(1) Bingham/Taylor

RW 41. Detectable Reclaimed Water Marking Tape
Approved Manufacturers/Products:

(1) Empire Level MFG. Corp.; MT61-RECLAIMED WATER
(2) T. Christy Enterprises; #TA-DT-6-PRW
(3) Pro-Line Safety Products; 103145173

Detectable purple tape 6" wide imprinted with the following in 1 1/2" MIN. high lettering with minimum wording of; **"CAUTION RECLAIMED WATER LINE BELOW"**. The wording shall occur every 3 feet.

RW 42. Root Barrier System
Approved Manufacturers/Products:

(1) TYPAR BIOBARRIER 39", 58.5"
(2) DeepRoot UB36-2, UB48-2

RW 43. Sliding Type 2 Piece 4 ¼" Valve Box and cover for corporation stop (lid marked "REUSE")
Approved Manufacturers/Products:

(1) Bingham Taylor 4903 Box (with Heavy Weight Tri-Skirt Lid) -I4B143SSR
Lid – CUL4LRSQLS
Top – CUL4TS
Bottom – CCO4B143S

RW 44. Brass Compression by Male Adapter
Approved Manufacturers/Products:

(1) AY McDonald 4753-44
(2) Ford C87 Series

RW 45. Brass Compressions by Female Adapter
Approved Manufacturers/Products:

(1) AY McDonald 4754-44
(2) Ford C17 Series

RW 46. Line Stop Tapping Sleeve
Approved Manufacturers/Products:

(1) JCM 440

RW 47. HDPE/DIP Electrofusion Couplings and Fittings:
Approved Manufacturers/Products:

(1) GF Central Plastics Company
(2) IPEX USA – Friatec (verify?)

RW 48. HDPE/DIP MJ Adapter (SS Stiffener Required)
Approved Manufacturers/Products:

(1) Independent Pipe Products Inc.
(2) Improved Piping Products, Inc.
(3) Central Plastics

RW 49. PVC Fittings (Up to 6" Schedule 40 and Schedule 80)
Approved Manufacturers/Products:

(1) LASCO Fittings, Inc.
(2) NIBCO, Inc.
(3) Spears Manufacturing Company
(4) Charlotte Pipe and Foundry Company

RW 50. Above Ground Utility Markers
Approved Manufacturers/Products:

A. Canal Crossings:
(1) Rocal, Inc. #RI-UPLPBC 12-6

B. Miscellaneous Locations:
(1) Rhino Marking & Protection Systems, Inc. – Triview Marker Post, color coded with decals.
(2) Rhino Marking & Protection Systems, Inc. - Rhino 3-Rak (66") color coded with decals.

RW 51. Manhole Ring and Cover (ARV)
Approved Manufacturers/Products:

(1) US Foundry 690-AH-MS
(2) US Foundry 751-MS (Ductile Iron, 32")
(3) PAMREX (Ductile Iron, 32")

Note: Manholes shall be marked: "Reuse ARV"

RW 52. Aluminum Vault Frame and Cover (ARV)
Approved Manufacturers/Products:

(1) US Foundry AHS or AHD
(2) Bilco J or JD (H-20)

RW 53. Stainless Steel Stiffener for HDPE Pipe Restraint
Approved Manufacturers/Products:

(1) Cascade
(2) JCM
(3) ROMAC

RW 54. Insertion Valve (AWWA C515)
Approved Manufacturers/Products:

A. Ductile Iron Body, Resilient Seat Gate, Wedge to Seal against valve body, MJ Type End Restraints
(1) TEAM Insert Valve

B. Stainless Steel Body, Resilient Seat Gate, Wedge to Seal against valve body
(1) Hydro-Stop Insertion Valve 250

RW 55. Lake Discharge Outfall Pipe Check Valve
Approved Manufacturers/Products:

(1) Cla-Valve - Duck-bill valve
(2) Tideflex

RW 56. Valve Stem Extension (Carbon Steel Hot Dip Galvanized with Centering Ring and Stainless Steel Set Screws)
Approved Manufacturers/Products:

(1) Custom Fab
(2) Trumbull Industries

RW 57. Directional Drill Trace Wire (APWA Color Coded Purple, AWG #12 Min)
Approved Manufacturers/Products:

(1) Copperhead 1245G-EHS
(2) Pro-Line Safety Products Pro-Trace HDD-CCSPE45

RW 58. Stilling Well Cover (1/4" Thick Aluminum Hinged End Cap, Lockable Stainless Steel Hinge)
Approved Manufacturers/Products:

(1) US Custom Fabrication, Inc.
EC-USCFAL 3501S-HL

RW 59. Stilling Well Pipe Screen (#3 Stainless Steel Mesh End Cap with 2" x 1/8" Stainless Steel Flat Bar Frame)
Approved Manufacturers/Products:

(1) US Custom Fabricator, Inc.
EC-USCFSS3310M

RW 60. Stainless Steel Stiffening Inserts for HDPE Pipe (4" -12")
Approved Manufacturers/Products:

(1) JCM 231
(2) Cascades

RW 61. Stainless Steel Stiffening Inserts for HDPE Tubing (up to 2")
Approved Manufacturers/Products:

(1) Ford
(2) Mueller
(3) AY McDonald

RW 62. Electronic Pressure/Flow Control Valve with Anti-Cavitation Kit, Hydraulic Float Pilot Override (Lake Discharge), and Flow Rate Transmitter
Approved Manufacturers/Products:

A. Lake Discharge Connection
(1) CLA-VAL 131-20 BCMPSVY KCO DS SSB 150AG

B. Direct Service Connection
(1) CLA-VALal 93EG-01 BCM PSVY KC DS SSB 150Ansi

RW 63. Remote Telemetry – Unit RTU (PLC Based)
Approved Manufacturers/Products:

(1) Curry Controls PBCRTU2013
(2) Engineer Service Corp. PBCRTU2013
(3) AES PBCRTU2013
(4) CC Control PBCRTU2013
(5) Unitron PBCRTU 2013
(6) Champion Controls PBCRTU2013

RW 64. Directional Drill Tracer Wire - #12 AWG (APWA Colored Coded Purple)
Approved Products/Manufacturers:

(1) Copperhead 1245P-EHS
(2) Pro-Line Safety Products Pro-Trace HDD-CCSPE45

1.5 LINE MAINTENANCE REPAIR MATERIALS

All components that come in contact with potable water shall conform to the current NSF Standard. Effective January 1, 2013, only "Lead Free" Brass Water Works Products shall be installed with Potable Water.

MR 1. Brass Plumbing Gate Valves with Female Threaded Ends (1/2" – 4")
Approved Manufacturers/Products:

(1) American Valve

MR 2. Brass Straight Curb Stop Ball Valve (Full Port, Female x Yoke)
Approved Manufacturers/Products:

(1) Ford B91-W-NL
(2) AY McDonald 76101 WY

MR 3. Bronze Swing Check Valve (3/4" – 3")
Approved Manufacturers/Products:

(1) American Valve

MR 4. Brass Pack Joint Couplings (1/2" – 2") – PVC x PVC; Lead Free
Approved Manufacturers/Products:

A. Straight Coupling
(1) Ford C77- NL Series
(2) Mueller - N
(3) AY McDonald 7 -4758 Series

B. ELL Coupling
(1) Ford L77 – NL Series
(2) AY McDonald 7-4761 Series

MR 5. Brass, Male x Pack Joint Adapter (1/2" – 2"); Compression PVC x MIP; Lead Free
Approved Manufacturers/Products:

(1) Ford C 87 NL - Series
(2) Mueller – V- 15440N Series
(3) AY McDonald 7 – 4753 Series

MR 6. Brass Dual Check Valve with Tail Pipe and Male Threaded Ends – Lead Free
Approved Manufacturers/Products:

(1) Ford (3/4" – 2") - NL
(2) Mueller (3/4") – H14272N

MR 7. Brass Fittings, Unions, Bushings, Tees, Bends, Service Plugs, Caps and Nipples (1/4" – 2"); Lead Free
Approved Manufacturers/Products:

(1) Merit Brass
(2) Lee
(3) Mid-American Brass

MR 8. Rubber Reducers for Sewer Pipe (6" x 4", 8" x 6", 8" x 4")
Approved Manufacturers/Products:

(1) FERNCO

MR 9. Pressure Pipe Repair Clamps
Approved Manufacturers/Products:

(1) Ford Style FS1, FS2, FS3
(2) Smith Blair 261, 262, 263
(3) PowerSeal Models 3121AS, 3122AS, 3123AS
(4) TPS Quick-CAM (up to 16" pipe only)
(5) JCM Models 161, 162 (up to 16" pipe only)

Up to 10" – single band at minimum 10" in length, all stainless steel

12" to 16" – double band at minimum 16" in length, all stainless steel

Greater than 16" – triple band with minimum length equal to pipe diameter, all stainless steel

MR 10. Sewer Pipe Repair Couplings (4" – 10")
Approved Manufacturers/Products:

(1) FERNCO
(2) IPEX

MR 11. Ductile Iron Restrained Flange Adapters with stainless steel Type 304 or Type 316 (wastewater only) hardware (bolts, nuts, etc.). (Set Screw Design Not Acceptable)
Approved Manufacturers/Products:

(1) Smith-Blair Model 912-90 with anchor studs
(2) EBBA Iron – 2100 MEGAFLANGE
(3) PowerSeal Model 3521 with anchor studs

MR 12. Restraint Straight and Transition Couplings (EPDM or SBR Gaskets are required) Stainless Steel 304 Rods and Nuts (Flouropolymer coated) Approved Manufacturers/Products:

(1) Smith Blair Pipe-Lock 470 Series
(2) EBAA Iron Mega Coupling Series 3800
(3) TPS Hymax (Maxi-Lube Bolt Required)
(4) ROMAC ALPHA Restraint Coupling

MR 13. Cement (Bagged)
Approved Manufacturers/Products:

(1) Sakrete
(2) Fabriform

MR 14. Fast Drying Cement (Bagged)
Approved Manufacturers/Products:

(1) QUADEX Quad-Plug
(2) BASF MasterSeal 595 (FKA Emaco Plug)
(3) Strong Company, Inc. Strong-Plug
(4) Madewell Products Corp. ML-10 Mortar

MR 15. Meter Adapters (from 1" meter to 5/8" x ¾", from 2" meter to 1") Lead Free
Approved Manufacturers/Products:

(1) Ford A24 – NL, A47- NL
(2) McDonald 7 -
(3) Mueller – H 10879N

MR 16. Teehead Bolt, MJ with Nut for MJ Assemblies, AWWA C111
(3" - 6 ½" long 5/8", ¾", 1" and 1 ¼" thick)
Approved Manufacturers/Products:

(1) Russell MSG
(2) Birmingham Fastener, Inc.

MR 17. Water Meters
Approved Manufacturers/Products:

A. Displacement, Compound, Turbine, Multijet
   (1) Sensus
   (2) Precision (5/8" x ¾" Multijet Type Only)
   (3) Neptune (Displacement up to 1 ½" and Turbine 2" and Larger)

B. Revenue Magnetic Type
   (1) Sensus iPerl System (5/8' x 3/4"; 1") And Related Appurtenances

MR 18. Corporation Stops (3/4" – 2") – Lead Free
Approved Manufacturers/Products:

A. MIP x MIP Thread
(1) Ford FB500-NL
(2) AY McDonald 73131B
(3) Mueller B-20013N (3/4", 1") V-25058N (1-1/2", 2")

B. MIP x FIP
(1) Ford FB1700 –NL
(2) AY McDonald 73149B
(3) Mueller B-20046N

MR 19. Straight Ball Meter Valve for 1 ½" and 2" Meter) (Lead Free)
Approved Manufacturers/Products:

(1) Ford BF 13-777W - NL
(2) AY McDonald 76101 MW (2")
(3) Mueller B-24337N -38 (2")

MR 20. Lift Station Main Breakers
Approved Manufacturers/Products:

(1) Square D
(2) Siemens
(3) Westinghouse
(4) Eaton-Cutler Hammer

MR 21. Lift Station Generator Breakers
Approved Manufacturers/Products:

(1) Square D
(2) Siemens
(3) Westinghouse
(4) Eaton-Cutler Hammer

MR 22. Lift Station Generator Receptacles
Approved Manufacturers/Products:

(1) Russellstohl
(2) Molex
(3) Appleton with corresponding Appleton generator plug

MR 23. Lift Station Transient Voltage Surge Suppressor
Approved Manufacturers/Products:

(1) ASCO 430240HP10ACSJ1

MR 24. Lift Station Surge Capacitors
Approved Manufacturers/Products:

(1) Delta
(2) GE
(3) Comm-OmniInternational

MR 25. Lift Station Motor Circuit Breakers
Approved Manufacturers/Products:

(1) Square D
(2) Siemens
(3) Westinghouse
(4) Eaton-Cutler Hammer

MR 26. Lift Station 120 V Transformers
Approved Manufacturers/Products:

(1) Square D
(2) Acme
(3) Westinghouse
(4) Eaton-Cutler Hammer

MR 27. Lift Station Motor Starters
Approved Manufacturers/Products:

(1) Square D
(2) Siemens
(3) Westinghouse
(4) Eaton-Cutler Hammer
(5) GE
(6) Allen Bradley

MR 28. Lift Station Phase Monitors (Voltage: 230V, 480V) programmed for phase reversal and under voltageonly
Approved Manufacturers/Products:

(1) Diversified
(2) MPE 001-230-118 PBC
(3) MPE 001-480-118 PBC

MR 29. Lift Station Fuses
Approved Manufacturers/Products:

(1) ~~Buss~~ Bussmann
(2) Ferraz Shawmut (FKA Gould Shawmut)
(3) ~~Little Fuse~~ Littelfuse

MR 30. Lift Station Circuit Breakers (120 V)
Approved Manufacturers/Products:

(1) Square D
(2) Eaton-Cutler Hammer
(3) Westinghouse

MR 31. Lift Station Outside Flood Light (LED Daylight Type 100W Bulb with Wire Guard)
Approved Manufacturers/Products:

(1) RAB HB101W with HG1W guard
(2) Department Prior Approved Equal

MR 32. Lift Station Control Panel Outlets
Approved Manufacturers/Products:

(1) Hubbell
(2) Eagle
(3) GE

MR 33. Lift Station Control Relay
Approved Manufacturers/Products:

(1) Plotter Brumfield
(2) Allen Bradley
(3) Square D
(4) Omron
(5) AAElectric

MR 34. Lift Station Pump Selector
Approved Manufacturers/Products:

(1) Square D
(2) GE
(3) Eaton-Cutler Hammer
(4) Westinghouse

MR 35. Lift Station Panel Terminal
Approved Manufacturers/Products:

(1) Square D
(2) Westinghouse
(3) Eaton-Cutler Hammer

MR 36. Lift Station Running Time Recorders
Approved Manufacturers/Products:

(1) Redington

MR 37. Lift Station Alternator Switches
Approved Manufacturers/Products:

(1) Square D
(2) GE
(3) Eaton-Cutler Hammer
(4) Westinghouse

MR 38. Lift Station Alternators
Approved Manufacturers/Products:

(1) Diversified Electronics
(2) AA Electric
(3) Zoeller
(4) MPE 008-120-13S

MR 39. Lift Station Flasher
Approved Manufacturers/Products:

(1) SSAC
(2) Zoeller

MR 40. Lift Station Outside Alarm Light (Minimum 100 W)
Approved Manufacturers/Products:

(1) RAB Lighting VXBR100DG (100W)
With GL 100R Globe

MR 41. Lift Station Outside Alarm Horn
Approved Manufacturers/Products:

(1) Edwards
(2) Zoeller
(3) Federal

MR 42. Lift Station Transformer (24 V)
Approved Manufacturers/Products:

(1) Square D
(2) Westinghouse
(3) Micron Power (Impervatron is actually imperviTran which is form of a 24VDC XFMR)

MR 43. Lift Station Pilot Lights (24 V)
Approved Manufacturers/Products:

(1) Square D
(2) GE
(3) Dialco

MR 44. Lift Station Silence Push Buttons
Approved Manufacturers/Products:

(1) Square D
(2) Eaton-Cutler Hammer
(3) Westinghouse

MR 45. Lift Station Float Switches (40' and 60' Long Cables) – Mercury Free
Approved Manufacturers/Products:

(1) Anchor Scientific
(2) Zoeller
(3) Flygt ENM–10 Level Regulator

MR 46. Lift Station Control Panel Wire Terminal
Approved Manufacturers/Products:

(1) Phoenix
(2) Panduit
(3) Molex
(4) Square D

MR 47. Lift Station Junction Box Power Terminal
Approved Manufacturers/Products:

(1) Marathon (1323572 and 1320572) per pump

MR 48. Electrical Stainless Steel Enclosures
Approved Manufacturers/Products:

A. NEMA 4X
(1) Hoffman
(2) Schaefer's

B. NEMA 3R and Modified 3R
(1) Hoffman
(2) Schaefer's

MR 49. Lift Station Panel Gas Seal
Approved Manufacturers/Products:

(1) O-Z/Gedney
(2) Circle Seal Control, Inc.

MR 50. Lift Station Panel Raintight Hub
Approved Manufacturers/Products:

(1) O-Z/Gedney
(2) Bridgeport
(3) Arlington
(4) Circle Seal Controls

MR 51. Lift Station Panel Power Distribution Block
Approved Manufacturers/Products:

(1) Square D
(2) Eaton-Cutler Hammer
(3) Westinghouse

MR 52. Lift Station Panel Ground Terminals
Approved Manufacturers/Products:

(1) Square D
(2) Eaton-Cutler Hammer
(3) Westinghouse
(4) Marathon

MR 53. Lift Station Remote Telemetry Units (PLC Based)
Approved Manufacturers/Products:

(1) CurryControls PBCRTU2013
(2) Engineer Service Corp. PBCRTU2013
(3) AES PBCRTU2013
(4) CC Control PBCRTU2013
(5) Unitron PBCRTU 2013
(6) Champion Controls PBCRTU2013

MR 54. Water Meter Boxes and Lids (polymer concrete, straight walls, all sizes)
Approved Manufacturers/Products:

(1) CDR
(2) GlasMasters
(3) Armorcast

MR 55. Hydrant Adapter
Approved Manufacturers/Products:

(1) Powhattan
(2) Trumbull Industries

MR 56. Brass Hosebibbs (Threaded Outlet) and Sampling Point Spigots (plain outlet); Lead Free
Approved Manufacturers/Products:

(1) NIBCO
(2) Jones
(3) AmericanStandard

MR 57. Vacuum Breaker; Lead Free
Approved Products/Manufacturers:

(1) AY McDonald #4421-146
(2) Ford
(3) Mueller

MR 58. Meter Tail Pipe Coupling (Brass) ¾" –2"; Lead Free
Approved Manufacturers/Products:

(1) AY McDonald 74620 Series
(2) Ford C38 -NL
(3) Mueller H-10896N

MR 59. Eye Bolt (3/4", 5/8" x 4")
Approved Manufacturers/Products:

(1) Unique Industries
(2) Action Bolt
(3) Florida Bolts

MR 60. Valve Box Extension (Max. 2 1/2" Valve Box Riser)
Approved Manufacturers/Products:

(1) Bingham/Taylor
(2) East Jordan Iron Works
(3) Sigma VB 26025-D (Ductile Iron)

MR 61. Gaskets (Flanged Pipe, Meters, Transition)
Approved Manufacturers/Products:

(1) Toruseal by ACIPCO
(2) Southern Mechanical Seals (flanged pipe fiber neoprene gaskets)
(3) Specification Rubber Products
(4) Flange-Tyte by US Pipe
(5) Garlock
(6) John Crane

MR 62. Stainless Steel Type 304 All Thread Rods (1/8"-1")
Approved Manufacturers/Products:

(1) Fastening Specialists
(2) Infasco
(3) Unistrut
(4) Action Bolt
(5) Florida Bolts

MR 63. Stainless Steel Nuts Type 304 (1/8" -1", Coated to Prevent Galling)
Approved Manufacturers/Products:

(1) Fastening Specialists
(2) Infasco
(3) Unistrut
(4) Action Bolt
(5) Florida Bolts

MR 64. PVC Unions (1/2"– 2")
Approved Manufacturers/Products:

(1) Heritage Plastics South
(2) LASCO Fittings
(3) Spears
(4) Colonial

MR 65. PVC Ball Valves Schedule 80 (1/2" – 3") (Full Port, Viton or EPDM "O" Rings) Female Thread or Slip Ends
Approved Manufacturers/Products:

(1) Heritage Plastics South
(2) NIBCO
(3) Spears
(4) Hayward Industrial Products
(5) Colonial

MR 66. Bronze Ball Valve (1/4 turn, 1/2" – 2"); Lead Free
Approved Manufacturers/Products:

(1) NIBCO
(2) AmericanValve

MR 67. Pressure Sensor Transducer (4-20mA output, IP68 Rated, NEMA 6 cable, 24 VDC)
Approved Manufacturers/Products:

(1) Endress & Hauser Cerabar-T PMC 131-
(2) Yokogawa
(3) WIKA S-10

MR 68. Minimum 4" Skirt Heavy Duty Valve Box Lids
Approved Manufacturers/Products:

(1) Bingham/Taylor (4906)
(2) East Jordan Iron Works (06800045)
(3) Sigma Corp. (Ductile Iron only) VB 2604WX (Water), VB 2604SX (Sewer)

Note: Drop lid shall weigh minimum 24 lbs.

MR 69. CPVC Pipe SCH 80 ASTM D-1784, D-2846, NSF (1/2" and ¾")
Approved Manufacturers/Products:

(1) Bristol Pipe (Bristoltherm CPVC 4120)

MR 70. Resetter/Iron Yoke (5/8" x ¾", including locking angle, curb stop, and dual check valve; Lead Free
Approved Manufacturers/Products:

(1) AY McDonalds 7170208 WD-2

MR 71. In-Line Residential Dual Check Valve (Cartridge Style, Straight Design, ASSE Approved); Yoke x FIP; Lead Free
Approved Manufacturers/Products:

(1) Ford HHCH 91 – NL

MR 72. In-Line Residential Dual Check (Straight Cascading Design, ASSE Approved); Yoke x FIP; Lead Free
Approved Manufacturers/Products:

(1) Ford HHS91 – NL Series
(2) Mueller H-714247

MR 73. Pack Joint Coupling (Female Copper Thread by PVC); Lead Free
Approved Products/Manufacturers:

(1) Ford C-07 – NL Series

MR 74. Pack Joint Coupling (Female Iron Pipe Thread by CTS); Lead Free
Approved Manufacturers/Products:

(1) Ford C14 – NL Series

MR 75. Pack Joint Coupling (Copper by Copper); Lead Free
Approved Manufacturers/Products:

(1) Ford C44 – NL Series

MR 76. Pack Joint Coupling (Male Iron Pipe Thread by CTS); Lead Free
Approved Manufacturers/Products:

(1) Ford C84 - NL Series

MR 77. Pack Joint Coupling (Male Iron Thread by EP); Lead Free
Approved Manufacturers/Products:

(1) Ford C86 – NL Series

MR 78. Brass Straight Curb Stop Ball Valve (Full Port, PVC Compression x Yoke), Lead Free
Approved Manufacturers/Products:

(1) Ford B-91W – NL Series with C87 Adapter (M x PVC)
(2) AY McDonald 76102 WY-44

MR 79. "Cam Lock" Style Adapters, Coupler, Fittings (1 ½" – 6"); Lead Free
Approved Manufacturers/Products:

(1) P-T Coupling Company
(2) Dixon Valve and Coupling Company

MR 80. Programmable Logic Controller (PLC)for RTU
Approved Manufacturers/Products:

(1) Allen Bradley MicroLogix 1400 with 1766 MMI Memory Module and Analog Extension Module 1762 –IF4

MR 81. RTU Battery (Lead Acid Sealed, 12V, 18 Ah)
Approved Manufacturers/Products:

(1) Power Sonic PS-12180

MR 82. RTU Battery Charger/Power Supply
Approved Products/Manufacturers:

(1) Allen-Bradley 1606-XLP 50B

MR 83. (Left Blank Intentionally)

MR 84. RTU Solar Panel and Mounting Bracket; Note: Antenna Mast to be 2" Sch. 40 Galvanized Steel
Approved Manufacturers/Products:

(1) SolarTech SPM055P-WP-F with DPW Solar Panel Mounting Kit (SPM, High Wind Version, Anodized Aluminum Components with stainless steel mounting hardware)
(2) Department Prior Approved Equal

MR 85. RTU Solar Controller
Approved Manufacturers/Products:

(1) Sunsaver SS-10L-24V

MR 86. Fire Hydrant Security Wrench
Approved Manufacturers/Products:

A. Full Size Wrench
(1) Amercian Flow Control: Captivater Adjustable Wrench

B. Hand Wrench
(1) American Flow Control: Captivater Hand Wrench

MR 87. Time Delay Relay-Delay on Break (1 to 1023 Second, 11 Pin Base, 24 AC Volts)
Approved Manufacturers/Products:

(1) SSAC TDB-120ALD for 120VAC
(2) SSAC TRDU-24A3 for 24VDC

MR 88. RTU Radio (Lift Stations)
Approved Manufacturers/Products:

(1) Microwave Data Systems MDS SD04MD-CES-NNSN

MR 89. Complete PBC Lift Station Control Panel Package (Panel, Junction Box, Transformer, Antennae, RTU, Alarm Light, Flood Light, Receptacle, Generator Receptacle) as specified in PBCWUD Standards
Approved Products:

(1) Model PBCLSP75 (up to 7.5 hp)
(2) Model PBCLSP15 (>7.5 hp and <= 15 Hp)
(3) Model PBCLSP25 (>15 hp and<= 25hp)

Approved Manufacturers:

(1) Engineer Service Corp.
(2) CC Control
(3) Atlantic Environmental Systems
(4) Unitron Controls
(5) Curry Controls
(6) Champion Controls

MR 90. AC Drive (Conversion of Single Phase to Three Phase Current – up to 10 HP
Approved Manufacturers/Products:

(1) Altivar ATV 71 HU75 MR

MR 91. Grease Solvent
Approved Manufacturers/Products:

(1) Red Hot #616 by Goldstar Products

Note: Limited use, Issue and Monitor by I&I Superintendent.

MR 92. Automatic Flushing Assembly Battery powered
Approved Manufacturers/Products:

(1) Mueller Hydro-Guard 100 Series
(2) Mueller Hydro-Guard 600 Series (only with prior Department approval)

MR 93. Insertion Valve (AWWA C515)
Approved Manufacturers/Products:

A. Ductile Iron Body, Resilient Seat Gate, Wedge to Seal against valve body, MJ Type End Restraints
   (1) TEAM Insert Valve

B. Stainless Steel Body, Resilient Seat Gate, Wedge to Seal against valve body
   (1) Hydro-Stop Insertion Valve 250

MR 94. (Left Blank Intentionally)

MR 95. Corrosion Barrier System for Concrete Structures (WUD Capital Improvement Projects)
Approved Manufacturers/Products:

A. Field applied systems

(1) Madewell Corp. Mainstay System (ML-10 hydraulic cement mortar, L-72 microsilica mortar, DS-5 epoxy)
(2) SewperCoat by Kerneos
(3) Strong High Performance Mix
(4) Refratta HAC by Global Materials Company

B. Cast-in Solid Liners
(1) Agru SURE-GRIP Polypropylene liner with 3M sealant tape 5354 and ADEKA P-201 Waterstop
(2) Agru SURE-GRIP HDPE Liner with 3M sealant tape 5354 and Adeka P-201 Waterstop
(3) GU Systems of Florida, LLC: GU Liner System (Polypropylene Sealplate Wall Liner, Cone Liner (PP or FRP construction) and optional manhole base liner (PP or FRP)with 3M sealant tape 5354

C. Field installed Thermo-Plastic Liner Systems
(1) Agru SURE-GRIP HDPE Liner and ADEKA P 201 Waterstop

D. Concrete structures with antimicrobial admixture (each structure must be certified by manufacturer for Admixture compliance).
(1) ConShield by US Precast

Note: The use of the antimicrobial admixture must be approved in advance by utility for each application.

MR 96. Concrete Structure Microbial Corrosion Indicator
Approved Manufacturers/Products:

(1) ConShield ID

MR 97. Cementitious Patching Material with Antimicrobial Additive
Approved Manufacturers/Products:

(1) ConShield Joint Set

MR 98. Sewer Pump Station Back Up Pumping/Power/Control System (Diesel Powered Pump, Sound Attenuated Enclosure Required, Trailer Mounted)
Double wall tank, DOT Trailer, Vacuum Assisted, Steel Frame and Tank Coated with RHINO or Equal, Aluminum Enclosure, Overall Length less than 15 feet (unless preapproved otherwise)
Approved Manufacturers/Products:

(1) Godwin Pumps
(2) Thompson Pumps

Note: See also written specifications

MR 99. Pressure Pipe Bell Restraint for IPS O.D. PVC Pipe
Approved Manufacturers/Products:

(1) Sigma PV Lok Series PVP-S
(2) EBAA Iron Series 6500

MR 100. Polymer Meter Vault (with Torsion Assist Frame and Covers, 20K Rated
Approved Manufacturers/Products:

(1) Armorcast A 600 1506 TAX 36 MT
    (48" x 72" x 36")

MR 101. Sewer Lateral Cured in Place Pipe Rehabilitation
Approved Manufacturers/Products:

(1) T-Liner by LMK
(2) SCS+L by BLD Services

MR 102. Gravity Sewer Main Cured in Place Sectional Pipe Lining (ASTM F2599)
Approved Manufacturers/Products:

(1) Stephen's Technologies, Inc.: New Life System
(2) LMK Performance Liner Sectional Repair

MR 103. Gravity Sewer Main Cured in Place Pipe Lining (MH to MH) – ASTM 1216
Approved Manufacturers/Products:

(1) Miller Pipeline
(2) Reynolds
(3) SAK
(4) Lanzo
(5) INSITUFORMLLC

MR 104. Manhole Inside Drop Inlet Fitting
Approved Manufacturers/Products:

(1) GU Systems of Florida, LLC Type 370
(2) Reliner Inside DropSystem

MR 105. Polybag for Ductile Iron Pipe (APWA Color Coded)
Approved Manufacturers/Products:

(1) Trumbull Industries
(2) Northtown Companies

MR 106. Asbestos Cement Pipe Restrainers:
Approved Manufacturers/Products:

A. FittingRestrainers
(1) JCM 630

B. Pipe CouplingRestrainers
(1) JCM 631
(2) TPS Hymax 2000 Coupling

MR 107. Adjustable Pipe Supports
Approved Manufacturers/Products:

(1) BPDI – Guard Shack APS Series
(2) Grinnell

MR 108. Leak Detection Equipment for Pressure Pipes:
Approved Manufacturers/Products:

(1) Sewerin
(2) Approved Equal

MR 109. Crimping Tool for HDPE Services
Approved Manufacturers/Products:

(1) Timberline TR270 (Short Model)

MR 110. Portable Power Generators (up to 400 KW) diesel powered.
Approved Manufacturers/Products:

(1) Tradewinds
(2) Magnum

Note: Minimum Design Requirements Apply

MR 111. Force Main Flow Through Isolation Valve for pressure monitoring (1/2", stainless steel body)
Approved Manufacturers/Products:

(1) Red Valve Series 742
(2) WIKA
(3) Endress & Hauser

MR 112. Universal Low Profile Tapping Saddle with integrated shut off housing for air release valves
Approved Manufacturers/Products:

(1) H-Tec Model 371

Note: Minimum Design Requirements Apply

MR 113. Encapsulated strap for low profile pipe tapping saddles for air release valve (pipe sizes specific)
Approved Manufacturers/Products:

(1) H-Tec Model 310

MR 114. Shut off blade for low profile tapping saddle with integrated shut off housing
Approved Manufacturers/Products:

(1) H-Tec Model 840

MR 115. Prestressed Concrete Pipe and Fittings
Approved Manufacturers/Products:

(1) Thompson Pipe Group

MR 116. Brass Dual Check Valve (Straight, Cascading Style); Meter Swivel Nut & MIP; Lead Free
Approved Manufacturers/Products:

(1) Ford HHA 38-323 NL
(2) Mueller H-14272N

MR 117. Brass Angle Ball Valve (FIP x Meter Swivel Nut); Lead Free
Approved Manufacturers/Products:

(1) Ford BA13-332W-NL; BA13-444W-NL

(2) Mueller B-24265N -38 (5/8" x ¾" x ¾", 1)
(3) AYMcDonald 7-4604B (3/4", 1)

MR 118. Chemical Grouting Material
Approved Manufacturers/Products:

(1) Avanti International

MR 119. Wastewater Mag Meters, Revenue Purpose, WUD AMR Compatible, IP68 Rated, 3" and Larger
Approved Manufacturers/Products:

(1) ABB WaterMaster

MR 120. Circular Saw Blades for Ductile Iron Cutting
Approved Manufacturers/Products:

(1) Desert Diamond Industries

MR 121. Polycarbonate Electrical Enclosures
Approved Manufacturers/Products:

(1) Hoffman
(2) Integra Enclosures

MR. 122 Restraining Plates for Flanges
Approved Manufacturers/Products:

(1) Trumbull "Flange Lugs"
(2) Romac "Harvest Lugs"

MR 123. General Use Mechanical Piping Products and Associated Special Tools
Approved Manufacturers/Products:

(1) Grinnell

MR 124. Weather Station
Approved Manufacturers/Products:

(1) Columbia Weather Systems

MR 125. Gravity Sewer Main "Fold and Form" Type Lining (manhole to manhole)
Approved Manufacturers/Products:

(1) Miller Pipeline

MR 126. Hydrogen Sulfide Monitors/Loggers
Approved Manufacturers/Products:

(1) Arizona Instruments LLC –Jerome (H2S)
Apptech International Oda Log

MR 127. Combo Shower/Eye Wash Station (Stainless Steel with Cover)
Approved Manufacturers/Products:

(1) Speakman 625-SS-CV"

MR 128. Pressure Gauge (Stainless Steel, 0-100 PSI)
Approved Manufacturers/Products:

(1) Ashcroft Duralife 1009 (25-1009-SW-Z2L-XLL-100#) (or equal with prior Department approval)

MR 129. Pressure Recorder
Approved Manufacturers/Products:

A. Hydrant Model
(1) TELOG HPR-31

B. Line Pipe Model
(1) TELOG LPR-31

MR 130. Brass Angle Ball Service Valve with Pad Wing (FIT x FIT)
Approved Manufacturers/Products:

(1) Ford BA 11 – NL Series (333W, 444W, 666W, 777W)

MR 131. Industrial Grade Metal Repair and Erosion – Corrosion Protection Compounds
Approved Manufacturers/Products:

(1) BELZONA

MR 132. Automatic Power Transfer Switch
Approved Manufacturers/Products:

(1) ASCO/Emerson

MR 133. Sewer Service Cleanout Installation System per ASTM F3097-15
Approved Products/Manufacturers

(1) LMK Technologies

MR 134. Radar Level Transmitter
Approved Manufacturers/Products:

(1) Vega Vegapuls C-21
(2) Endress & Hauser FMR20

MR 135. Lift Station Potable Water Pressure Gauge/Transmitter (NSF/ANSI Standard 61)
Approved Manufacturers/Products:

(1) ABB – AB261GSDKTNS1EAL1M5
(2) ABB – PGS100KA1ABYSHD4HMMLTUM5
(3) VEGA – VEGABAR38 PP-224 4GM 223 with M12 Connection cable AC-222 23E (50 FT)

MR 136. Lift Station Force Main Pressure Gauge/Transmitter
Approved Manufacturers/Products:

(1) ABB – AB261GSDKTNS1EAL1M5
(2) ABB – PGS100KA1ABYSHD4HMMLTUM5
(3) VEGA – VEGABAR38 PP-223 3JT 224 with M12 Connection cable AC-222 23E (50 FT)

1.6 WATER TREATMENT PLANT EQUIPMENT

- All components, which come in contact with potable water or with drinking water treatment chemicals, shall comply with the current NSF Standards.
- "Premium Efficiency" motors shall be used if available
- All electrical components and assemblies shall be UL listed.

WT 1. Well Pumps (Submersible, Turbine)
Approved Manufacturers/Products:

(1) Peerless
(2) Flowserve Ingersoll – Dresser
(3) Weir-Floway
(4) Flowserve-Byron Jackson
(5) Layne/Verti-line
(6) Goulds Water Technology Texas Turbine Operations

WT 2. Well Motors (Submersible)
Approved Manufacturers/Products:

(1) ALSTRA-SME
(2) Flowserve-Pluegler
(3) Franklin Electric
(4) Hitachi
(5) ITT Centron Pro

WT 3. Stainless Steel Membrane Feed Pumps (Vertical Turbine)
Approved Manufacturers/Products:

(1) Peerless
(2) Flowserve-Ingersoll – Dresser
(3) Flowserve-Byron Jackson
(4) Sulzer Pumps
(5) Afton Pumps Inc.
(6) Layne/Verti-line

WT 4. Pre-Membrane Cartridge Filters NSF Certified, Each Filter Model must be Pre-tested and Pre-approved for Each Treatment Plant)
Approved Manufacturers/Products:

A. Five (5) micron filters Filter Ends Configuration:
(1) Dual O-Rings- Integrated Collapsible Proplylene Spring
(2) Dual O-Rings- Blank Flange
(a) Parker –Hannifin
(b) Cuno Poly Klean
(3) MGS PA 05FDP40 B 222SC (GUA LRWTP, WUD # 3,9)

B. One (1) micronfilter:
(1) Parker – Hannifin M 39 R40 SXC
(2) MGS A01FDU40XCU

WT 5. Stainless Steel Cartridge Filter Housing
Approved Manufacturers/Products:

(1) Cuno
(2) Parker-Hannifan

WT 6. Sand Strainers (Automatic Self Cleaning)
Approved Manufacturers/Products:

(1) Boll Filter
(2) RP Adams
(3) Hydrac Autofilt

WT 7. Membrane Elements (Nanofiltration) (NSF certified, each model must be pretested and preapproved for each treatment plant)
Approved Manufacturers/Products:

(1) Dow FilmTec #NF90-400
(2) GE Desalak 4040 FF
(3) Fluid Systems TFC-SR100 (8" Element)

WT 7. Membrane Elements (Nanofiltration) (NSF certified, each model must be pretested and preapproved for each treatment plant)
Approved Manufacturers/Products:

(1) Dow FilmTec #NF90-400
(2) GE Desalak 4040 FF
(3) Fluid Systems TFC-SR100 (8" Element)
(4) Hydranautics ESPA4-LD and ESNA1-LF2-LD

WT 8. Membrane Train Pressure Vessel
Approved Manufacturers/Products:

(1) Codeline
(2) Protec

WT 9. Concentrate Booster Pumps (Horizontal, Split Case, Centrifugal)
Approved Manufacturers/Products:

(1) Flowserve-Ingersoll – Dresser
(2) Peerless
(3) urora
(4) ITT Goulds

WT 10. Degasifiers
Approved Manufacturers/Products:

(1) DuallDivision
(2) Delta CoolingTowers
(3) Indusco

WT 11. Blowers
Approved Manufacturers/Products:

(1) Gardner Denver, Inc.
(2) New YorkBlowers

WT 12. Transfer Pumps (Vertical Turbine)
Approved Manufacturers/Products:

(1) Peerless
(2) Flowserve-Ingersoll – Dresser
(3) Flowserve-Byron Jackson
(4) SulzerPumps
(5) Layne/Verti-line
(6) Goulds Water Technologies Texas Turbine Operation

WT 13. Transfer Pumps (Horizontal, Split-Case, Centrifugal)
Approved Manufacturers/Products:

(1) Flowserve-Ingersoll – Dresser
(2) Peerless
(3) Aurora
(4) ITT Goulds

WT 14. High Service Pumps (Horizontal, Split Case, Centrifugal)
Approved Manufacturers/Products:

(1) Flowserve-Ingersoll – Dresser
(2) Peerless
(3) Aurora
(4) ITT Goulds

WT 15. Sump Pumps
Approved Manufacturers/Products:

(1) Zoeller M98-B

WT 16. High Efficiency Pump Motors
Approved Manufacturers/Products:

(1) GE Water
(2) Teco-Westinghouse
(3) US Motors
(4) Reliance
(5) Marathon

WT 17. Variable Frequency Drives
Approved Manufacturers/Products:

(1) Square D
(2) Allen-Bradley
(3) ABB
(4) Yaskawa
(5) Eaton-Cutler Hammer
(6) ITT PumpSmart PS200

WT 18. Sodium Hydroxide Metering Pumps
Approved Manufacturers/Products:

(1) Milton Roy
(2) US Filter/Wallace & Tiernan
(3) Pulsafeeder
(4) Prominent

WT 19. Sulfuric Acid Metering Pumps
Approved Manufacturers/Products:

(1) Milton Roy
(2) US Filter/Wallace & Tiernan
(3) Pulsafeeder
(4) Prominent

WT 20. Ammonia Feed Systems
Approved Manufacturers/Products:

(1) US Filter/Wallace & Tiernan
(2) Capital Controls

WT 21. Sodium Hypochlorite Metering Pumps
Approved Manufacturers/Products:

(1) Milton Roy
(2) US Filter/Wallace & Tiernan
(3) Pulsafeeder
(4) Prominent

WT 22. Chlorine Gas Feed Systems (Including Pressure Reducing Valves)
Approved Manufacturers/Products:

(1) US Filter/Wallace & Tiernan
(2) Capital Controls

WT 23. Lime Softening Treatment Units
Approved Manufacturers/Products:

(1) InFilco Degremont (Accelator)

WT 24. In-Line Static Mixers
Approved Manufacturers/Products:

(1) Komax Systems, Inc.
(2) Chemineer Company

WT 25. Air Compressors
Approved Manufacturers/Products:

(1) Quincy
(2) Ingersoll-Rand
(3) Kellogg-American

WT 26. Diesel Storage Tanks
Approved Manufacturers/Products:

(1) Con Vault
(2) Tramont Corp.
(3) Simplex
(4) Modern Welding

WT 27. Stationary Emergency Diesel Powered Generators (Skid mounted, larger than 240 KW)
Approved Manufacturers/Products:

(1) Caterpillar
(2) Cummins

WT 28. Motor Control Centers
Approved Manufacturers/Products:

(1) Cutler Hammer/Westinghouse
(2) General Electric
(3) Square D

WT 29. Electrical Switchgear
Approved Manufacturers/Products:

(1) Cutler Hammer/Westinghouse
(2) General Electric
(3) Square D
(4) Russ Electric

WT 30. Data Acquisition and Control Systems (Remote Telemetry Units)
Approved Manufacturers/Products:

(1) Curry Controls
(2) Engineer Service Corporation (ESC)

WT 31. Programmable Logic Controllers
Approved Manufacturers/Products:

(1) Allen-Bradley

WT 32. Flow Meters (Magnetic Type) (Ground rod required for transmitter)
Approved Manufacturers/Products:

(1) ABB
(2) Rosemount
(3) Krohne

WT 33. Flow Meters (Orifice Plate Type)
Approved Manufacturers/Products:

(1) Flow-Lin Corp.
(2) Tri-Flo Tech

WT 34. Flow Meters Ultrasonic In-Line Style)
Approved Manufacturers/Products:

(1) ABB
(2) Allen Bradley
(3) GE Panametrics
(4) Thermo Fisher Scientific

WT 35. Flow Meters (Venturi Type)
Approved Manufacturers/Products:

(1) Primary Flow Signal
(2) BIF
(3) ABB

WT 36. Pressure Sensing Transmitters
Approved Manufacturers/Products:

(1) Yokogawa
(2) Rosemount

WT 37. Ozone System Air Compressors
Approved Manufacturers/Products:

(1) Nash
(2) Ingersoll-Rand

WT 38. Ozone System Refrigerators/Dryers
Approved Manufacturers/Products:

(1) General Air
(2) DIV/PSB Industries

WT 39. Ozone System Desiccant Dryers
Approved Manufacturers/Products:

(1) General Air
(2) DIV/PSB Industries

WT 40. Ozone System Generators
Approved Manufacturers/Products:

(1) WEDECO
(2) Praxair—Trailigaz Ozone Compass
(3) Fuji Electric
(4) Ozonia

WT 41. Ozone System Off-gas Demister
Approved Manufacturers/Products:

(1) KochGlitsch
(2) Trailigaz

WT 42. Ozone System Pressure/Vacuum Relief Valves
Approved Manufacturers/Products:

(1) L&JTechnologies
(2) EmersonProcessManagement.

WT 43. Ozone System Destructor Units
Approved Manufacturers/Products:

(1) WEDECO
(2) Ozocan Corporation

WT 44. Ozone System Gas Blowers
Approved Manufacturers/Products:

(1) New YorkBlower
(2) Spencer Turbine Co.

WT 45. Ball Valves, PVC (Chemical Treatment Process)
Approved Manufacturers/Products:

(1) Asahi/America
(2) Hayward
(3) Plast-O-Matic

WT 46. Check Valves (Lever and Weight Type) AWWA C508
Approved Manufacturers/Products:

(1) APCO
(2) Georgia-Alabama Valve & Controls
(3) Val-Matic 7800 Series

WT 47. Stainless Steel Pipe and Fittings (Type 316L, Schedule 10S)
Approved Manufacturers/Products:

(1) Aerex Industries
(2) Douglas Brothers
(3) Felker Fabricators

WT 48. Oxygen Reduction Potential (ORP) Meter
Approved Manufacturers/Products:

(1) Yokogawa
(2) Rosemount
(3) HACH/GLI DRD1P5

WT 49. Conductivity Meter
Approved Manufacturers/Products:

(1) Yokogawa, SC402G
(2) Rosemount
(3) HACH/GLI 3422 Series

WT 50. PH-Meter Analyzer
Approved Manufacturers/Products:

(1) ECD (Electric Chemical Devices) Model T21 - Probe shall be sodium chemical resistant Model: 2005130VIT
(2) Yokogawa, PH402G
(3) Rosemount
(4) HACH SC 200 Controller with HACH/GLI DPD 1P1 Sensor

WT 51. Chlorine Residual Analyzer
Approved Manufacturers/Products:

(1) Prominent Model DICA WIC10002G010E
(2) HACH CL17 (withDPD)
(3) Chem Scan
(4) HACH CLT 10 (Reagentless)

WT 52. Online Dissolved Oxygen Meter
Approved Manufacturers/Products:

(1) Yokogawa
(2) Rosemount
(3) HACH LDO(0.1-20 ppm)
(4) HACH Orbisphere (ppb)

WT 53. Online Turbidity Meter
Approved Manufacturers/Products:

(1) HACH 1720E (0.001-100 NTU)
(2) HACH Filter Trak 660 (0.0005-5 NTU)

WT 54. Fluoride Analyzer
Approved Manufacturers/Products:

(1) Wallace and Tiernan (for pH up to 10)
(2) Prominent (for pH up to8.5)
(3) HACH CA 610 (for pH up to 10)

WT 55. Odor Control System
Approved Manufacturers/Products:

(1) New YorkBlowers
(2) HeilProcess Equipment
(3) US Filter/Siemens
(4) Indusco
(5) Ceilcote
(6) DuallDivision

WT 56. Stainless Steel Air/Vacuum Valve
Approved Manufacturers/Products:

(1) Vent-O-Mat (International Valve Marketing)

WT 57. Polymer Pump
Approved Manufacturers/Products:

(1) Wallace and Tiernan

WT 58. Polymer Mixer
Approved Manufacturers/Products:

(1) Cleveland EasternMixers
(2) Lightnin

WT 59. Hexametaphosphate Pump
Approved Manufacturers/Products:

(1) Wallace and Tiernan / Penwalt

WT 60. Corrosion Inhibitor Pump
Approved Manufacturers/Products:

(1) Milton Roy

WT 61. Alkalinity System
Approved Manufacturers/Products:

(1) Cal-Flo

WT 62. Carbon Dioxide System
Approved Manufacturers/Products:

(1) TOMCO2

WT 63. Fluoride Metering Pump
Approved Manufacturers/Products:

(1) Grundfos
(2) Milton Roy

WT 64. Ferric Metering Pump
Approved Manufacturers/Products:

(1) Milton Roy

WT 65. Ammonia Analyzer
Approved Manufacturers/Products:

(1) Chem Scan
(2) HACH APA6000 Ammonia/Mono CL

WT 66. Ion Exchange System
Approved Manufacturers/Products:

(1) Tonka Equipment Co.
(2) MIEX

WT 67. Chemical Tanks (fiberglass, high density cross linked polyethylene)
Approved Manufacturers/Products:

(1) Plas-TankIndustries Inc.
(2) PolyProcessing
(3) Snyder Industries, Inc.

WT 68. Pressure Control Valves (Sustaining, Reducing, Flow Rate)
Approved Manufacturers/Products:

(1) Keystone
(2) Control ValveTechnology
(3) Toro
(4) Cla-Val
(5) OCV ControlValves

WT 69. Sodium Hypochlorite Pump (Hose Pumps)
Approved Manufacturers/Products:

(1) Verderflex
(2) Bredel

WT 70. Deep Injection Well Tubing (Fiberglass Reinforced Plastic – FRP)
Approved Manufacturers/Products:

(1) Red Box by Future Pipe Industries

WT 71. Deep Injection Well Packer
Approved Manufacturers/Products:

(1) THS Retrievable Mechanical Packer by Texas Iron Works
(2) TAM International
(3) YBI Packer

WT 72. Sodium Hypochlorite Pump (Magnet Drive Centrifugal Pump)
Approved Manufacturers/Products:

(1) March
(2) PeriFloChemXFR

WT 73 Fluoride Transfer Pump (Magnet Drive Centrifugal Pump)
Approved Manufacturers/Products:

(1) March
(2) PeriFlo ChemXFR

WT 74. Production Wells Acid (Minimum 28% Hydrochloric Acid)
Approved Manufacturers/Products:

(1) Various

WT 75. Production Wells Screen (Stainless Steel Well Screen, V-Wire Wrap, Slot Size Varies by Well Site, Rated for 1500 Feet and Deeper.)
Approved Manufacturers/Products:

(1) Johnson

WT 76. Monitoring Wells Screen (2 inch Schedule 80 PVC with 0.010 inch Slots)
Approved Manufacturers/Products:

(1) Various

WT 77. Monitoring Wells Sand Pack (20/40 Grade Silica Sand – 98% Pure Silica Sand per ASTM D 5092-90)
Approved Manufacturers/Products:

(1) Various

WT 78. Monitoring Well Secondary Filter Pack (30/65 Grade Sand Seal)
Approved Manufacturers/Products:

(1) Various

WT 79. Monitoring Well Cement Grout (ASTM C 150 Type 1 Portland Cement)
Approved Manufacturers/Products:

(1) Various

WT 80. Monitoring Well Protective Riser (Painted Green, Locking 4" X 4" Square Aluminum Riser)
Approved Manufacturers/Products:

(1) Various

WT 81. Production Well Fast Closing Check Valve
Approved Manufacturers/Products:

(1) Val-Matic "Surge Buster"

WT 82. Electric Valve Actuators
Approved Manufacturers/Products:

A. Standardon-off Operation
(1) Rotork
(2) AUMA
(3) Limitorque/Flowserve

B. Precision Modulating Operation
(1) Harold Beck and Sons

WT 83. Scale Inhibitor with Fluorescing Tracer
Approved Manufacturers/Products:

(1) NALCO PermaTreat PC-191T
(2) American Water Chemicals, Inc.; AWC A-102 Plus

WT 84. Odor Scrubber Packing
Approved Manufacturers/Products:

(1) Jaeger Tri-Pack

WT 85. Well Level Transducer/Monitoring Well Probes
Approved Manufacturers/Products:

(1) Level/Temperature Sensors (Range 5- 1000 psi)
(a) IN-SITU INC: Aqua Troll 100

(2) Level/Temperature/Conductivity Sensors (Range 5-1000 psi)
(a) IN-SITU Inc.: Aqua Troll 200

(3) Level/Temperature Sensor (Range 13- 108 psi)
(a) IN-SITU Inc.: Rugged Troll 200

WT 86. Well Level Tapes and Meters
Approved Manufacturers/Products:

(1) In-situ Inc.: Rugged Water Level Tape

WT 87. RTU Radio (Well Field Applications)
Approved Manufacturers/Products:

(1) Microwave Data Systems MDS iNET9000ENI

WT 88. Flow Meter (Magnetic Type; Full Pipe Insertion Style)
Approved Manufacturers/Products:

(1) McCrometer FPI

WT 89. Submersible Mixing System (with Residual Control System
Approved Manufacturers/Products:

(1) PAX Water Technologies

1.7 WASTEWATER TREATMENT PLANT EQUIPMENT

ST 1. Fine Mechanical Screen
Approved Manufacturers/Products:

(1) Parkson
(2) Infilco Degremont

ST 2. Flume Meter
Approved Manufacturers/Products:

(1) Drexel.
(2) Primary Flow Signal (PFS)

ST 3. Grit Tank Equipment
Approved Manufacturers/Products:

(1) EIMCO.

ST 4. Grit Cyclones
Approved Manufacturers/Products:

(1) Krebs Engineers

ST 5. Grit Classifiers
Approved Manufacturers/Products:

(1) EIMCO
(2) Parkson

ST 6. Grit Blowers
Approved Manufacturers/Products:

(1) Gardner Denver

ST 7. Screening Press
Approved Manufacturers/Products:

(1) Parkson Corp.

ST 8. Sluice Gates (Stop Gates & Slide Gates)
Approved Manufacturers/Products:

(1) Davis Process
(2) Waterman Industries
(3) Dezurik
(4) Hydro Gate Corp.
(5) Plastic – Fab

ST 9. Blowers
Approved Manufacturers/Products:

(1) Gardner/Denver (Multi-stage)
(2) Turblex (Single-stage)

Note: "Premium Efficiency" Motors shall be used if available; electrical components and assemblies shall be UL Listed.

ST 10. Diffusers
Approved Manufacturers/Products:

(1) Siemens
(2) Parkson Corporation
(3) Aerostrip Corp.

ST 11. Alkaline Monitoring
Approved Manufacturers/Products:

(1) HACH APA6000 ALK

ST 12. Odor Control System
Approved Manufacturers/Products:

(1) Heil Process Equipment
(2) Siemens
(3) Duall Division
(4) Ceilcote
(5) Indusco

ST 13. Clarifier Mechanism
Approved Manufacturers/Products:

(1) EIMCO Process Equipment

ST 14. Low Solids Content Centrifugal Sludge Pump
Approved Manufacturers/Products:

(1) Ingersoll-Dresser (Flowserve)
(2) Goulds
(3) Gorman Rupp

ST 15. Aeriation Basin Aluminum Covers
Approved Manufacturers/Products:

(1) TEMCOR

ST 16. Chlorination Systems (Chlorine Gas Feed System)
Approved Manufacturers/Products:

(1) US Filter/Wallace & Tiernan
(2) Capital Control

ST 17. Evaporators
Approved Manufacturers/Products:

(1) Wallace & Tiernan
(2) Capital Control

ST 18. Injectors
Approved Manufacturers/Products:

(1) US Filter/Wallace & Tiernan
(2) Capital Control

ST 19. Rota Meters
Approved Manufacturers/Products:

(1) US Filter/Wallace & Tiernan
(2) Blue-White Industries. Ltd.

ST 20. Chlorine Scrubber
Approved Manufacturers/Products:

(1) Siemens
(2) Northeast Control

ST 21. Polymer Feed System
Approved Manufacturers/Products:

(1) Siemens

ST 22. Gravity Belt Thickener
Approved Manufacturers/Products:

(1) Andritz Ruthner, Inc.

ST 23. Belt Filter Press
Approved Manufacturers/Products:

(1) Andritz Ruthner, Inc.

ST 24. Strainers
Approved Manufacturers/Products:

(1) Amiad
(2) SP Kinney

ST 25. Digester Covers (Fixed/Floating)
Approved Manufacturers/Products:

(1) EIMCO

ST 26. Waste Gas Burner
Approved Manufacturers/Products:

(1) Varec Biogas
(2) Coen

ST 27. Hot Water Pump
Approved Products/Manufacturers:

(1) Goulds
(2) Grundfos Group

ST 28. High Solids Content Positive Displacement Sludge Pump
Approved Manufacturers/Products:

A. Progressing Cavity Pump
(1) Moyno/Robbins & Myers

B. Lobe Rotary Pump
(1) Vogelsang
(2) Lobe Pro
(3) Boerger

ST 29. Mechanical Sludge Mixer
Approved Manufacturers/Products:

(1) EIMCO
(2) Aeration Industries

ST 30. Boilers
Approved Manufacturers/Products:

(1) Clever Brooks

ST 31. Heat Exchangers
Approved Manufacturers/Products:

(1) Alfa Laval

ST 32. Grinders
Approved Manufacturers/Products:

(1) JWC Environment (Muffin Monster)
(2) Moyno/Robbins & Myers
(3) Vogelsang

ST 33. Gas Monitoring
Approved Manufacturers/Products:

(1) Mine Safety Appliance

ST 34. Reclaimed Water Effluent Disk Filtration
Approved Manufacturers/Products:

(1) Aqua Aerobics: Aquadisk
(2) Nova Water Technologies, LLC
(3) Kruger

ST 35. Reclaimed Water Distribution Pumps (Vertical, Turbine Style)
Approved Manufacturers/Products:

(1) Layne/Verti-Line
(2) Flowserve-Ingersoll-Dresser
(3) Peerless
(4) Goulds
(5) Flowserve

ST 36. Reclaimed Water Transfer Pumps (Horizontal, Split-Case Centrifugal Style)
Approved Manufacturers/Products:

(1) Flowserve-Ingersoll-Dresser
(2) Aurora
(3) Peerless

ST 37. Pressure Control Valves (Sustaining, Reducing, Flow Rate)
Approved Manufacturers/Products:

(1) Keystone
(2) Control Valve Technology
(3) Toro
(4) Cla-Val
(5) OCV Control Valves

ST 38. Electric Valve Actuators:
Approved Manufacturers/Products:

A. On-off Application
  (1) Rotork
  (2) Auma
  (3) Limitorque/Flowserve

B. Precision Modulating Operation
  (1) Harold Beck and Sons

ST 39. Ductile Iron Body Check Valves (AWWA)
Approved Manufacturers/Products:

(1) APCO
(2) Georgia-Alabama Valve & Controls
(3) Val-Matic

ST 40. High Efficiency Electric Pump Motors
Approved Manufacturers/Products:

(1) US Motors
(2) Reliance
(3) Marathon
(4) GE Water
(5) Teco Westinghouse

ST 41. Chemical Feed Pumps
Approved Manufacturers/Products:

(1) Prominent
(2) Siemens-Stranco

ST 42. Metering Pumps (Diaphragm Type)
Approved Manufacturers/Products:

(1) Milton Roy
(2) Prominent
(3) LMI

ST 43. Blowers
Approved Manufacturers/Products:

(1) New York Blower
(2) Air Cure Dynamics

ST 44. Vacuum Pumps
Approved Manufacturers/Products:

(1) Beckers Pumps Corp

ST 45. Submersible Sump Pump
Approved Manufacturers/Products:

(1) Zoelller M98-B

ST 46. Submersible Wastewater Pumps (NEC Class 1, Group D, Division 1, Compliant)
Approved Manufacturers/Products:

(1) Flygt
(2) WILO-EMU
(3) HOMA (up to 60 HP)

ST 47. Fire Protection Systems
Approved Manufacturers/Products:

(1) Fire Master Safety
(2) SimplexGrinnell
(3) Amerex Corp.
(4) Notifier

ST 48. Variable Frequency Drives
Approved Manufacturers/Products:

(1) ABB
(2) Allen Bradley
(3) Square D
(4) Yaskawa
(5) Cutler Hammer (Eaton)

ST 49. Programmable Logic Controllers
Approved Manufacturers/Products:

(1) Allen Bradley

ST 50. Remote Telemetry Units (PLC Based)
Approved Manufacturers/Products:

(1) Curry Controls
(2) Engineer Service Corp. (ESC)
(3) Atlantic Environmental Systems, Inc.
(4) CC Control
(5) Unitron
(6) Champion Control

ST 51. Level Control Switches
Approved Manufacturers/Products:

(1) Delta Controls Corp.
(2) Whitman Controls Corp.

ST 52. Level Indicators
Approved Manufacturers/Products:

(1) AMETEK Drexelbrook
(2) Miltronics, 7ML10161AA110AB
(3) Siemens
(4) Endress + Hauser

ST 53. Pressure Transmitters
Approved Manufacturers/Products:

(1) Rosemount
(2) Yokogowa
(3) Endress + Hauser

ST 54. Temperature Transmitters
Approved Manufacturers/Products:

(1) Fluid Components
(2) Yokogawa, YTA110
(3) Rosemount, 3144PD1A1E5B5M5
(4) HACH SC200 w/pH or ORP

ST 55. Ball Valves, PVC (Chemical Treatment Process)
Approved Manufacturers/Products:

(1) Asahi/America
(2) Hayward
(3) Plast-O-Matic

ST 56. Online Turbidity Meter
Approved Manufacturers/Products:

HACH 1720E (Low NTU)
HACH Surface Scatter 7 (High NTU)

ST 57. Generator Controls
Approved Manufacturers/Products:

(1) Russelectric

ST 58. Hose Pumps
Approved Manufacturers/Products:

(1) Verderflex
(2) Bredel

ST 59. Online Dissolved Oxygen Meter
Approved Manufacturers/Products:

(1) Hach LDO
(2) Royce

ST 60. Online Total Suspended Solids Meter
Approved Manufacturers/Products:

(1) Royce
(2) HACH Solitax TSS
(3) Cerlic

ST 61. Online Chlorine Analyzer
Approved Manufacturers/Products:

(1) Prominent
(2) HACH CL17
(3) HACH CLT

ST 62. Electric Switch Gear
Approved Manufacturers/Products:

(1) Cutler Hammer
(2) GE
(3) Square D
(4) Russelectric

ST 63. Harmonic Filter
Approved Manufacturers/Products:

(1) Square D

ST 64. Pinch Valve
Approved Manufacturers/Products:

(1) Red Valve

ST 65. Expansion Flexible Pipe Joints
Approved Manufacturers/Products:

(1) Red Valve

ST 66. PH Meter
Approved Manufacturers/Products:

(1) HACH/GLI DPD 1P1
(2) Prominent

ST 67. Chemical Tanks (fiberglass, high density cross linked polyethylene)
Approved Manufacturers/Products:

(1) Plas-Tank Industries,Inc.
(2) PolyProcessing
(3) Snyder Industries, Inc.

ST 68. Air/Vacuum Valves – Stainless Steel
Approved Manufacturers/Products:

(1) Vent-O-Mat – Series RGZX stainless steel

ST 69. Gear Drive for Clarifier
Approved Manufacturers/Products:

(1) SEW-Eurodrive

ST 70. Deep Injection Well Tubing (Fiberglass Reinforced Plastic – FRP)
Approved Manufacturers/Products:

(1) Red Box by Future Pipe Industries

ST 71. Deep Injection Well Packer
Approved Manufacturers/Products:

(1) THS Retrievable Mechanical Packer by Texas Iron Works
(2) TAM International
(3) YBI Packer

ST 72. Deep Injection Well Corrosion Inhibitor
Approved Manufacturers/Products:

(1) BARACOR 100 by Exxon

ST 73. Deep Injection Well Cement Grout (ASTM C150 Type II Portland Cement)
Approved Manufacturers/Products:

(1) Various

ST 74. Monitoring Wells Screen (2 inch Schedule 80 PVC with 0.010 inch Slots)
Approved Manufacturers/Products:

(1) Various

ST 75. Monitoring Wells Sand Pack (20/40 Grade Silica Sand – 98% Pure Silica Sand per ASTM D 5092-90)
Approved Manufacturers/Products:

(1) Various

ST 76. Monitoring Well Secondary Filter Pack (30/65 Grade Sand Seal)
Approved Manufacturers/Products:

(1) Various

ST 77. Monitoring Well Cement Grout (ASTM C 150 Type 1 Portland Cement)
Approved Manufacturers/Products:

(1) Various

ST 78. Monitoring Well Protective Riser (Painted Green, Locking 4" X 4" Square Aluminum Riser)
Approved Manufacturers/Products:

(1) Various

ST 79. Gas Monitoring – Portable Style
Approved Manufacturers/Products:

(1) Environmental Monitoring Systems (EMS)

ST 80. Sodium Hypochlorite Pump (Magnet Drive Centrifugal Pump)
Approved Manufacturers/Products:

(1) March
(2) PeriFloChemXFR

ST 81. Flow Meters Magnetic Type (IP-68 Rated for Submersible Service)
Approved Manufacturers/Products:

(1) ABB
(2) Rosemount
(3) Krohne

(**Note:** Flow meters used for account billing purposes must be compatible with PBCWUD's used AMR technology)

ST 82. Odor Scrubber Packing
Approved Manufacturers/Products:

(1) Jaeger Tri-Pack

ST 83. Stationary Emergency Diesel Powered Generators (Skid mounted, larger than 240KW
Approved Manufacturers/Products:

(1) Caterpillar
(2) Cummins