



WEST PALM BEACH

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West Palm Beach, FL 33401
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APPROVED MATERIALS LIST (AML)

REVISED: April 16, 2026

PLEASE REFER TO THE GENERAL NOTES AND SUBMITTAL GUIDELINES SECTION STARTING ON PAGE 6 PRIOR TO FILLING OUT ANY OF THE SUBMITTAL SHEETS.

OFFICIAL USE ONLY - THIS SECTION

Contractor: _____ Engineer: _____

Project Name: _____ Project No.: _____

APPROVED: _____ SIGNATURE DATE

APPROVED AS NOTED: _____ SIGNATURE DATE

NOT APPROVED: _____ SIGNATURE DATE

OFFICIAL USE ONLY - THIS SECTION

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INSTRUCTIONS AND GENERAL NOTES:

Sections 1 through 4 are listed materials for specific uses in City-owned and maintained water and wastewater systems. Sections 5 through 8 are listed material for specific use in the construction and maintenance of infrastructure to be owned and maintained by the City. Materials are listed by type of material, group, short specification listed with each approved item, approved manufacturer, and manufacturer's part number.

When applicable, standard detail sheet number(s) will be identified on the Approved materials List (AML) page for the purpose of cross referencing the material to the drawing.

SUBMITTAL GUIDELINES:

1. Submit two (2) complete original AML packages with a transmittal letter. One (1) original to be retained in the project file and one (1) original provided to staff for use.
 - A. Submit with the original AML package any additional copies, as needed, to be approved and returned for the Engineer/Contractor/Supplier' use.
 - B. Submit with the original AML package a Concurrency form executed by the Engineer and Contractor.
 - C. Submittals shall be complete AML packages. Complete AML's by indicating the following:
 - i. Check each type of material item to be used.
 - ii. Check each corresponding manufacturer and model number to be used.
 - iii. Initial any written changes or corrections to an AML.
 - D. Any proposed non-standard material submittals shall include two (2) original copies for City retention and a Shop Drawing material Approval for each separate material item. Submit with the original AML package any additional shop drawing copies, as needed, to be approved and returned for the Engineer/Contractor/Supplier's use.
2. The City of West Palm Beach approves materials to be utilized in the water distribution system within the rights of ways, easements and on private property up to the downstream side of the backflow preventers in the following Municipalities in our utility service coverage area:
 - A. City of West Palm Beach
 - B. Town of Palm Beach
 - C. Town of South Palm Beach
 - D. Parts of Palm Beach County (Served by City of West Palm Beach)

The City of West Palm Beach approves materials to be utilized in the sanitary collection system, wastewater lift stations, force mains, and services within the rights of ways and easements of:

- A. City of West Palm Beach
3. Material cut sheets from a supply house catalog will not be considered a suitable shop drawing submittal.
 4. Foreign and domestic materials manufacturers shall meet the same criteria for quality and craftsmanship.
 5. All materials, fittings, pipe and equipment shall be new, unused, and warranted for a minimum period of one (1) year after acceptance.
 6. The City of West Palm Beach undertakes a continual effort to maintain an AML that reflects the latest technological advances and industry capabilities. The AML is updated as often as it is practical.

7. The AML does not supersede the policies and procedures of the City of West Palm Beach Purchasing Department. Any direct and specifically identifiable conflicts between the AML and City technical specifications shall be arbitrated by the Department Director responsible for the related material (e.g. any conflict with water distribution pipe would be decided by the Director of Public Utilities).
8. The most current edition of the AML is maintained on the City of West Palm Beach Engineering Services web page and is available via email or paper copy, upon request. AML's associated with City capital construction projects will utilize the edition stipulated by the contract execution date, all other shall utilize the latest edition at the time of initial submission.
9. City may implement new and additional materials and/or manufacturers to a project-specific AML or in general. Project-specific material shall be added to a shop drawing amendment with Engineer of Record (EOR)'s approval. In general material may added to the next edition of the AML with City's approval.
10. By signing the Concurrency form, the Engineer and Contractor agree to adhere to the material specifications of the AML. It shall be acknowledged that the City has right to reject construction materials not in accordance with the AML.
11. All material parts utilized in the City's water distribution system, except hydrants, shall meet the provisions of Chapter 62-555.335, Florida Administrative Code.
12. Product/Material can be removed from the AML at any time after if City does not satisfied with the quality and performance.

- End of Section -



**ENGINEERING SERVICES
DEPARTMENT**
P.O. Box 3366,
West Palm Beach, FL 33402
TEL (561) 494-1040
FAX (561) 494-1116

CERTIFICATION AND CONCURRENCY FORM

Project Name: _____

Concurrence of Contractor: _____
Signature Date

Firm

Concurrence from the
Engineer of Record (EOR): _____
Signature Date

Firm

The execution of this document acknowledges that I (We), the above signed, have reviewed this Approved Materials List (AML) in its entirety, initialed all error corrections to the AML, and concur that the materials listed are acceptable and appropriate for the project noted above. As the engineer-of-record and/or contractor, I (We), the above signed, shall provide written notification to the City for any material listed in the AML to which I object being utilized for the project noted above.

Individual material shop drawings will be required for all non-standard items. Materials not listed in the AML, or AML listed material that defers in specification, shall be considered non-standard material.



WEST PALM BEACH

**APPROVED MATERIALS LIST
SECTION ONE
PRESSURE PIPE**

PRESSURE PIPE STANDARDS ARE TO BE USED FOR:

1. Potable water distribution system, water distribution transmission mains, large meter services and private fire lines. Distribution System Utility Service Area includes:
 - A. City of West Palm Beach
 - B. Town of Palm Beach
 - C. Town of South Palm Beach.

2. Sanitary Collection Force Mains. Sanitary Collection System Utility Service Area includes:
 - A. City of West Palm Beach.

Submittal: FIRE HYDRANTS

FIRE HYDRANTS APPROVED FOR USE:

Hydrants shall conform to requirements of AWWA Standard C502-94 for Dry Barrel Hydrants or the latest revision, as to the design, component materials, construction and manufacture except as modified or noted in the City technical specifications (a copy of those specifications can be supplied on request). Approved hydrants will be used in the construction of systems to be owned and operated by the City of West Palm Beach Public Utilities Department. Approved hydrants shall be used in the construction of private systems within the corporate boundaries of the City of West Palm Beach.

Clow
Medallion

American
B-84-B

Mueller
Super Centurion 250

Kennedy
Guardian

HYDRANT COATINGS:

When constructed to the City of West Palm Beach technical specifications, hydrants shall have a shop coat of silver paint applied at the manufacturer. Contractors shall paint the hydrant bonnets with the following coating after installation and prior to acceptance. Contractors shall clean, prep, and paint all damaged factory paint.

Paint for Fire Hydrant Bonnet (REQUIRED)

HENTZEN COATING, INC.: Alert Series Light Reflective Coating

Paint for the Barrel Section and Nozzle Caps (TOUCH-UP PAINT)

SHERWIN-WILLIAMS: Silver-Brite Aluminum paint. Sale identification No. B59S11

MISCELLANEOUS COLORS:

Hydrants installed outside the City of West Palm Beach corporate boundaries, may be painted alternate colors. A letterhead correspondence from the Fire Chief or Fire Marshal of the corresponding service area (Town of Palm Beach, Town of South Palm Beach, and Unincorporated Palm Beach County), may request permission to paint the barrel section any alternate color. An original copy of the request shall accompany the AML submittal. The reflective bonnet paint color cannot be changed.

Proposed Color: _____

Manufacturer: _____

Paint Color No.: _____

AUTOMATIC FLUSHING DEVICE:

Kupferle Foundry Co., 9800-WC Eclipse

Kupferle Foundry Co., 9400-WC Eclipse

Submittal: DUCTILE IRON PIPE

Pipe shall comply with ANSI/AWWA Standard or latest revision. 3", 10", 14" and 16" pipe are considered "odd" sizes and can only be used to tie into existing lines. The minimum standards for 3 to 12" pressure pipe Class 52. The minimum standard for 14" to 64" pressure pipe is Class 51. The minimum standard for all F.J. (Flanged) pipes, for any usage, shall be Class 53. The minimum standard for all size diameter sanitary collection system gravity mains shall be Class 50 or Pressure Class 350.

MANUFACTURER:

- American U.S. Pipe McWane

CLASS:

- Class 52, sizes to be used on water mains: _____
- Class 51, sizes to be used on water mains: _____
- Class 52, sizes to be used on force mains: _____
- Class 51, sizes to be used on force mains: _____
- Class 50, sizes to be used on gravity mains: _____
- Pressure Class 350, sizes to be used on gravity mains: _____
- Class 53, sizes to be used for FJ pipe: _____

BELL TYPE:

- FLANGE JOINTS:**
Flanges shall be ANSI Standard Class 125, plain faced and drilled, in accordance with ANSI B16.1. Flanges shall be solid with a uniform thickness as shown on Table 15.3 and Figure 15.1 of the ANSI/AWWA C115/A21.15 standard or latest revision. Submit a letterhead correspondence from the manufacturer/vendor certifying that the flanged pipe complies with ANSI/AWWA Flange standard, the ANSI/AWWA pipe standard and the ANSI/AWWA lining standard (if for water) or the lining for gravity or force mains.
- MECHANICAL JOINT:**
All mechanical joints shall conform to ANSI/AWWA C111/A21.11 standard or latest revision.
- SLIP OR PUSH-ON JOINTS:**
All push-on type joints shall conform to ANSI/AWWA C111/A21.11 standard or latest revision. The gasket material shall be SBR type or equal.
- RESTRAINED JOINT:**
All restrained joints shall conform to the latest edition of ANSI/AWWA C151 standard.

Submittal: DUCTILE IRON LININGS AND COATINGS

DISTRIBUTION SYSTEM WATER MAINS:

INTERIOR:

Cement mortar lining required, per ANSI/AWWA C104/A21.4 standard or the latest revision.

EXTERIOR:

In ground placement, bituminous asphalt coating required, per ANSI/AWWA C104/A21.4 standard or latest revision.

Fusion-Bonded Epoxy Coating, per ANSI/AWWA C116/A.21.16

ENCASEMENT:

Polyethylene Encasement, per ANSI/AWWA C105/A21.5 standard or latest revision. Encasement shall be 4 mil CL/HDPE.

American Ductile Iron Pipe Company

U. S. Pipe Company

SANITARY SEWER COLLECTION GRAVITY MAINS, FORCE MAINS, AND LATERALS (DIP):

NOTE: When DIP is used in wetwells and air release valve vault applications, the interior coating shall be applied to the inside and outside of the pipe.

INTERIOR:

PERMITE
Permax PCS-9043, Glass Flake Epoxy

VULCAN PAINTERS, INC.
Protecto 401, Ceramic Epoxy Lining.

EXTERIOR:

In ground placement, bituminous asphalt coating required, per ANSI/AWWA C104/A21.4 standard or latest revision.

ENCASEMENT:

Polyethylene Encasement, per ANSI/AWWA C105/A21.5 Standard or latest revision. for in-ground placement. Encasement shall be a minimum of 4 mils thick, CL/HDPE.

American Ductile Iron Pipe Company

U. S. Pipe Company

COATING CERTIFICATIONS:

Certification letter must state the pipe and or fitting manufacturer to be used, the applicable ANSI/AWWA standard, the coating to be used and the thickness of the coating.

Shop for pipe (attach certification letter after this page)

Shop for fittings (attach certification letter after this page)

Submittal: DUCTILE IRON FITTINGS

DUCTILE IRON FITTINGS:

Cast ductile iron fittings 3" through 24" shall be pressure rated at 350 psi minimum. Flange -joint fittings shall be rated at 250 psi minimum. All 30" and 36" fittings shall be pressure rated to 250 psi minimum. All fittings shall conform to the latest edition of either ANSI/AWWA C110/A21.10 or ANSI/AWWA C153/A21.53, and C111/A21.11 standards.

- | | |
|--|---|
| <input type="checkbox"/> TYLER/UNION | <input type="checkbox"/> SIGMA PRODUCTS |
| <input type="checkbox"/> GRIFFIN PIPE PRODUCTS | <input type="checkbox"/> STAR PIPE PRODUCTS |

List sizes to be used: _____

RESTRAINED JOINT TYPE (by pipe manufacturer):

- | | |
|--------------------------|--|
| <input type="checkbox"/> | American Cast Iron Pipe, 4" - 12" Field Lock Gaskets |
| <input type="checkbox"/> | American Cast Iron Pipe, Fast-Grip gaskets 4 thru 16" |
| <input type="checkbox"/> | American Cast Iron Pipe, Lok-Ring 42" - 64" |
| <input type="checkbox"/> | American Cast Iron Pipe, Flex Ring 4" - 36" |
| <input type="checkbox"/> | American Cast Iron Pipe, 14" - 36"; 4"-16" Fast-Grip gaskets |
| <input type="checkbox"/> | US PIPE/Griffin Pipe Products, Snap-Lok 6"-48" |
| <input type="checkbox"/> | U.S. Pipe, T.R. Flex 4" - 64" |
| <input type="checkbox"/> | U. S. Pipe, Field LOK Gaskets 4" -24". |

MECHANICAL JOINT RESTRAINT:

Mechanical type joint shall be furnished with high strength corten T-head bolts and hex nuts with composition, dimensions, and threading in accordance with C-111 Standard. For all joint restraint products, apply corrosion resistant coating Mega-bond (or approved equal). Polyester based powder electro-statically applied in two coats and heat cured after each coating for cast body. Xylan Fluoropolymer coating will be used for wedge assemblies. Applicable for all restraint devices through 24". Clow Field Lok Gaskets will use a normal cast or ductile iron mechanical joint gland or the Clow Field Lok gland.

- DIP:
- | | | |
|--|---|--|
| <input type="checkbox"/> EBAA IRON
Megalug
Series 1100 | <input type="checkbox"/> STAR PIPE
Stargrip
Series 3000 | <input type="checkbox"/> FORD
Uniflange
Series 1300, 1390, 1400, & 1450 |
| <input type="checkbox"/> SIGMA PRODUCTS
Series SLD | | <input type="checkbox"/> CLOW
MJ Field Lok Gasket
Series DI, 4 to 24" only |

NOTE: All restrained joint systems shall be pressure rated to the same as Ductile Iron pipe and fittings. All components of the restrained system shall meet or exceed the requirements of the latest edition of ANSI/AWWA C-111/A21.21.11 standard. Restraints shall provide a non-point loading type of restraint contact on the pipe with sufficient positive gripping action to secure the gland to the pipe and be designed so that the restraint action is increased as a result of increases in the line pressure.

BELL RESTRAINTS FOR DIP:

- | | | |
|--|--|--|
| <input type="checkbox"/> EBAA IRON 1700
Megalug Harness | <input type="checkbox"/> Sigma ONE-LOK SLDEH
Wedge Harness Restraint | <input type="checkbox"/> Ford Uni-Flange Restraint
Wedge Action Series 1450 |
| <input type="checkbox"/> EBAA IRON 1100 HD
Split Megalug Restraint
Harness | <input type="checkbox"/> Sigma ONE-LOK SSLDH
Split Wedge Harness
Restraint | <input type="checkbox"/> EBAA IRON Series 1500TD
Bell Restraint Harness |

Submittal: DUCTILE IRON FITTINGS (CONTINUED)

FLANGED JOINT RESTRAINT:

Flange Bolts and nuts shall be carbon steel, hex head, ASTM A183, with a Zinc electroplated finish. The flange type gasket material shall be 1/8-inch thick rubber type conforming to ANSI B16.21 and AWWA C-207, unless otherwise specified. For all joint restraint products, apply corrosion resistant coating Mega-bond (or approved equal). Polyester based powder electro-statically applied in two coats and heat cured after each coating for cast body. Xylan Fluoropolymer coating will be used for wedge assemblies. Applicable for all restraint devices through 24".

- EBAA IRON
Megalug
Series 2100

APPROVED JOINT RESTRAINT FITTINGS:

- UNION FOUNDRY
Swivel joint fittings

APPROVED JOINT RESTRAINT FOR PVC:

In some cases there are existing PVC mains that need to be cut or tied into and restrained back due to the addition of elbows, tees and valves. This section covers the types and approved joint restraint allowed. For all joint restraint products, apply corrosion resistant coating Mega-bond (or approved equal). Polyester based powder electro-statically applied in two coats and heat cured after each coating for cast body. Xylan fluoropolymer coating will be used for wedge assemblies. Applicable for all restraint devices through 24".

BELL RESTRAINTS:

- | | | |
|---|--|--|
| <input type="checkbox"/> EBAA IRON
Series 1600 (4 thru 12")
Series 2800 (14 thru 36") | <input type="checkbox"/> Sigma
PV-LOK PWH (4 thru 12") | <input type="checkbox"/> EBAA IRON
1100HV (14 thru 30") |
| | <input type="checkbox"/> Sigma
ONE-LOK SLCEH (4 thru 12") | <input type="checkbox"/> EBAA IRON
Series 1500TD (4 thru 12") |

TIE RODS AND ACCESSORIES:

- SIGMA PRODUCTS:
Duc Lugs (bent eye bolts not allowed):
Socket Clamps (with cast iron washers)
All thread rod, zinc plated (3/4" only)

Submittal: PVC FOR FORCE MAIN

Polyvinyl Chloride (PVC):

PVC pressure pipe (4-inch through 12-inch) shall conform to the applicable requirements of ANSI/AWWA C900 and subject to additional requirements specified herein. PVC pressure pipe (14-inch through 36-inch) shall conform to the applicable requirements of ANSI/AWWA C905 and subject to additional requirements specified herein. Pipe shall be colored green for force main application.

MANUFACTURER:

- JM Manufacturing Company*
- CertainTeed*
- IPEX, Inc.
- Sanderson Pipe

- Diamond Plastic Corporation*
- North American Pipe Corporation
- National Pipe and Plastic

NOTE: *No Pipe deflection at joint allowed

LOCATING / TRACER WIRE:

Trace wire system must be installed as a continuous single wire. No looping or coiling of wire is allowed. Trace wire must be properly grounded at all dead ends/stubs. All trace wire termination points shall utilize a trace wire access box.

Locating wire shall be 14 AWG single strand, soft drawn copper wire; 4/64 – inch polyvinyl chloride insulation, color coated per APWA standard for the specific utility being marked. Locating wire shall be spliced before and after all valve boxes and when connecting at Tee's. All splices should be covered with electrical tape. When splicing wire at Tee's, keep clear of fittings.

All main line trace/locating wires must be interconnected in intersections, at tees, and crosses. At tees, the three wires shall be joined using a single 3-way lockable connector. At Crosses, the four wires shall be joined using a 4-way connector.

All new trace wire installations shall be located using typical low frequency (512 Hz) line tracing equipment, witnessed by City, prior to acceptance.

Manufacturer/Model Num.: _____

Submittal: PVC FOR FORCE MAIN (CONTINUED)

DIP FITTINGS FOR PVC:

Fittings in the pipe shall be ductile iron fittings. All fittings shall conform to the latest edition of either ANSI/AWWA C110/A21.10 or ANSI/AWWA C153/A21.53, and C111/A21.11 standards.

TYLER/UNION
 GRIFFIN PIPE PRODUCTS
 SIGMA PRODUCTS

UNION FOUNDRY COMPANY
 STAR PIPE PRODUCTS

List sizes to be used: _____

JOINTS:

All joints for the buried PVC shall be either an integral bell manufactured on the pipe or a separate coupling both employing a rubber ring joint. Deflection at all joints should not exceed 1.5 degrees or one half the maximum deflection recommended by the manufacturer.

RESTRAINED JOINT TYPE (by pipe manufacturer):

Certain Teed Certalok
 JM Eagle Lok

MECHANICAL JOINT RESTRAINT:

Mechanical joint restraint shall be incorporated in the design of the follower gland. Glands shall be manufactured of ductile-iron conforming to ASTM A536-80. The restrained glands shall have a pressure rating equal to that of the PVC pipe which it is used. All mechanical joints shall conform to ANSI/AWWA C111/A21.11 and ANSI/AWWA C1530/A21.53 latest revision.

PVC / C900/C905 PVC:

<input type="checkbox"/>	EBAA IRON Series 2000	<input type="checkbox"/>	STAR PIPE Series 4000
<input type="checkbox"/>	SIGMA PRODUCTS Series SLC	<input type="checkbox"/>	CLOW MJ Field Lok Gasket and or Gland Series PV, 4 to 12" only

NOTE: All restrained joint systems shall be pressure rated to the same as Ductile Iron pipe and fittings. All components of the restrained system shall meet or exceed the requirements of the latest edition of ANSI/AWWA C-111/A21.21.11 standard. Restraints shall provide a non-point loading type of restraint contact on the pipe with sufficient positive gripping action to secure the gland to the pipe and be designed so that the restraint action is increased as a result of increases in the line pressure.

Submittal: VALVES

RESILIENT WEDGE GATE VALVES (RWGV):

Distribution Water Mains and Sanitary Sewer Collection Force Mains.

Valves shall conform to the latest edition of ANSI/AWWA C509-87 standard, non-rising stems (NRS) with 2" square operating nuts. Minimum valve size shall be 4". Valves smaller than 4" see curb stop material section. UL/FM required on shut-off RSGV for Double Detector check valves application only. See backflow prevention.

- | | | | | | | | |
|--------------------------|-------------------------|--------------------------|--------------------------------------|--------------------------|--|--------------------------|-------------------|
| <input type="checkbox"/> | AMERICAN
2500 Series | <input type="checkbox"/> | CLOW
F-6100 Series | <input type="checkbox"/> | KENNEDY
Ken-Seal
2370 (Super Seal) | <input type="checkbox"/> | MUELLER
A-2360 |
| <input type="checkbox"/> | WATEROUS
Series 500 | <input type="checkbox"/> | M & H
Style 3067 or
Style 3068 | | | | |

RESILIENT SEAT BUTTERFLY VALVES:

For use on 14" and larger water mains only.

2" square operating nuts. Valves shall conform to the latest edition of AWWA 504 standard.

- | | | | | | |
|--------------------------|--|--------------------------|--------------------------|--------------------------|--------------------|
| <input type="checkbox"/> | CLOW
5300 Series
H Series 450 & 4500 | <input type="checkbox"/> | Dresser
14501 | <input type="checkbox"/> | DEZURIK
BAW |
| <input type="checkbox"/> | KENNEDY | <input type="checkbox"/> | MUELLER
Line Seal III | <input type="checkbox"/> | PRATT
Groundhog |

PLUG VALVES (To be used on force mains only):

Valves shall conform to the latest edition of AWWA C517 standard.

- | | |
|--------------------------|-------------------------------------|
| <input type="checkbox"/> | PRATT
Model Num.: _____ |
| <input type="checkbox"/> | Milliken Valve
Model Num.: _____ |
| <input type="checkbox"/> | DEZURIK
Model Num.: _____ |

JOINT TYPES (For all Valve Types):

- | | | | |
|--------------------------|----|--------------------------|--|
| <input type="checkbox"/> | MJ | <input type="checkbox"/> | FJ |
| <input type="checkbox"/> | SJ | <input type="checkbox"/> | TF / MJ (Tapping Flange to Mechanical Joint) |

Submittal: VALVE BOXES

NOTE: The valve box, valve lid and valve extension shall be utilized for each valve. The UVI tags will be used where the debris cap cannot be used.

VALVE BOXES:

Heavy duty, Cast Iron ASTM-A48 Class 30, 2 piece, 5-1/4" opening, flanged base, 18 to 24" adjustable, screw type, valve box, with Locking lid (in paved areas), embossed with "WATER" on the lid for water mains and services.

- Tyler/Union 461-S SIGMA 461-S Part # VB261X/60WT Bingham & Taylor Non-Flip Option
(SIGMA and Tyler are interchangeable)

VALVE BOX LIDS: (Box Lid Shall Match Box Manufacturer)

Non-Locking Lid: Cast Iron ASTM-A48, Class 30. Class 30, embossed with "SEWER" on the lid for force mains, embossed with "WATER" on the lid for water mains and meter service connections.

- Tyler/Union SIGMA Bingham & Taylor

Locking Lid (For All Paved Areas): Cast Iron ASTM-A48, Class 30, embossed with "SEWER" on the lid for force mains. To be used on Tyler model 461S, 5-1/4", screw type box.

- Tyler/Union SIGMA Bingham & Taylor

Locking Lid (For All Paved Areas): Cast Iron ASTM-A48 Class 30, embossed with "WATER" on the lid for water mains and services.

- Tyler/Union SIGMA Bingham & Taylor

VALVE STEM EXTENSION:

Utilized on all in-ground valves 36" or more below finished grade. Used in place of the American Trench Adapter (valve box). Valve extension must be secured to the valve stem, not set over the operating key.

- MUELLER PROSELECT

UNDERGROUND VALVE IDENTIFICATION (UVI) TAGS:

To be used when the Tyler style valve box with the Debris Cap are not used, such as with the AMERICAN valve trench adapter. 3" x 1/4", Brass, with 1-1/2" theft proof "J" rod anchor. **Stamped**, 1/4" to 3/8" capital lettering. Each valve will have the following minimum information on the tag, words in parentheses are examples of wording to use, City code (WPB), valve size (6"), type of valve (RV, BV, PV), type of use (WM, FM, RW), and operation instructions (R-21) right 21 turns to open, plus valve number, if applicable. In paved and unpaved areas, the UVI will be placed in the concrete collar around valve boxes.

- WAGCO MARKER

Submittal: PERMANENT BLOW-OFFS

CORPORATIONS FOR BLOW-OFFS:

Corporations to be screwed into a cast iron plug or cap shall meet these specifications: 2" Male Iron Pipe Thread (for tap side) by 2" Female or Male Iron Pipe Thread for tie-in to blow-off.

(NOTE: It is recommended to utilize a male thread to eliminate the need for a brass nipple between the corporation and the permanent blow-off).

- | | | | | | |
|--------------------------|--------------|--------------------------|-------------|--------------------------|-------------|
| <input type="checkbox"/> | FORD | <input type="checkbox"/> | MUELLER | <input type="checkbox"/> | AY MCDONALD |
| | FB1700-7, or | | B-20046, or | | 3131B |
| | 3149B, or | | H-15015, or | | |
| | FB500-7 | | H-9969 | | |

BRASS NIPPLES:

All brass shall be of non-lead brass (maximum lead content of 0.10% by weight).

- Connections from corporation to blow-off must be 2" iron pipe thread by 6" long brass nipples.

BLOW-OFFS: Prefabricated

Model VB2000B, the Hydrant Plus for meter box installation, as manufactured by Water Plus Corporation. Due to dead-end streets where water mains cannot be looped, the following automatic flush type blow-offs are to be used at all dead-ends:

- Hydro-Guard Standard Unit or:
 Hydro-Guard Vacuum Breaker DDU (Direct Discharge Unit).

Submittal: TAPPING SLEEVES & SADDLES

TAPPING SLEEVES:

DUCTILE IRON:

Allowed for 4" and larger size taps. May be used on DIP, CIP, ACP and PVC.

Ductile iron with mechanical joints.

- | | | | | | | | |
|--------------------------|--------------------------|--------------------------|-----------------------|--------------------------|------------------------------|--------------------------|---------------------|
| <input type="checkbox"/> | AMERICAN
2800
1004 | <input type="checkbox"/> | CLOW
F-5200 Series | <input type="checkbox"/> | MUELLER
H-615 or
H-616 | <input type="checkbox"/> | U.S. PIPE
Type 9 |
|--------------------------|--------------------------|--------------------------|-----------------------|--------------------------|------------------------------|--------------------------|---------------------|

List sizes to be used: _____

STAINLESS STEEL TAPPING SLEEVE:

NOTE: The following materials shall be used when an existing PVC or Transite water or force main is encountered and a sample point, air release or test tap needs to be installed.

Allowed only when tapped line is more than twice as large as tapping diameter (i.e., 12 x 4 is allowable, a 12 x 6 is not allowed). For use on Water Distribution System and/or Force Main System, all 304 stainless steel (SS) with 304 SS hardware required for water or force main taps. May be used on DIP, CIP, AC, or PVC.

- | | | | | | |
|--------------------------|-------------------------|--------------------------|----------------------|--------------------------|---|
| <input type="checkbox"/> | JCM
J432
J462 | <input type="checkbox"/> | MUELLER
H-304 | <input type="checkbox"/> | SMITH BLAIR
662, 663, 664, or 665 |
| <input type="checkbox"/> | ROMAC
SST
SST III | <input type="checkbox"/> | FORD
FAST
FTSS | <input type="checkbox"/> | Total Piping Solutions, Inc. (*)
Part# _____ |

List sizes to be used: _____

* Product/Material is in Trial.

Submittal: TAPPING SLEEVES & SADDLES (CONTINUED)

SERVICE SADDLES:

All brass shall be of no-lead brass (maximum lead content of 0.10% by weight).

All straps shall be either double stainless steel or single wide stainless steel strap with two bolts on each side of the strap. Usage, size and tapping thread for the corporation to be attached to the saddle shall be as follows:

- A. Water Services: Only 1" and 1-1/2"x 2" AWWA tapping thread are allowed.
- B. Sample Point/Vent pipe (temporary): 1" AWWA tapping thread
- C. Terminal Blow-offs: 2" Iron pipe tapping thread
- D. Air Releases: 1-1/2"x 2" AWWA tapping thread

List the following with each saddle to be used:

- A. Size of pipe to be tapped _____
- B. Type of pipe to be tapped _____
- C. Size of tap to be made _____
- D. Usage (See A through D above).

FORD
202BS Double Band Brass Saddles

Total Piping Solution, Inc
T3 Service Saddle (*)

* Product/Material is in Trial.

Submittal: CASING MATERIAL

CASING SPACERS:

Install casing spacers 4 feet on both sides of each carrier pipe joints. All bolts, nuts, and washers to be attach to spacer sections shall be cadmium plated or stainless steel. All casing spacers larger than 36" shall be factory designed, taking into consideration the weight of the carrier pipe filled with water. Wooden skids are not acceptable as an alternative.

24" OR LARGER 24" CARRIER PIPE:

- Pipeline Seal and Insulators, Inc
A8G-2
C8G-2
A12G-2
C12G-2

24" OR SMALLER CARRIER PIPE:

- Pipeline Seal and Insulators, Inc.
Ranger Model

- APS - Advance Products Systems

- Cascade CCS

END SEALS:

Casing ends shall be completely closed at both openings of all Jack and bore crossings. These seals shall be no less than 1/8" thick and made of specially compounded synthetic rubber.

- Model "C" as manufactured by PSI
- Model "W" as manufactured by PSI
- LINK-SEAL, Stainless steel 316 bolts, washers and nuts.
- Cascade CCES

Submittal: AIR RELEASES

GENERAL:

ARV's should be painted blue (potable water) green (force main) for ease of identification. For force mains, the air release will be placed on the upstream side of a vertical offset. The same practice will be applicable for distribution system main, where the direction of normal flow can be determined. ARV's must be supplied with all back-flush valves, which must use stainless steel nipples and ball valves.

AIR RELEASE VALVE:

ARV's should be painted blue (potable water) green (force main) for ease of identification.

Water:

- GA Industries 920 (Short)
- Val-Matic 45 Series (Long)

Sewer:

- GA Industries 929 (Short)
- A.R.I. USA Inc. D-025 (Short)

SIZE:

- 1" Thread
- 2" Thread
- 4" Flanged (For special uses to be called out on the plans)

CORPORATIONS FOR AIR RELEASES:

The 1" or 2" corporation shall be used in conjunction with a brass saddle. AWWA tapping thread by male or female iron pipe thread, otherwise a nipple (SS) will be required between the corporation and the ball valve increasing the height of the top of the air release).

THREAD TYPE:

- | | | | |
|---------------------------------|----------------------------------|--------------------------|-------------|
| <input type="checkbox"/> Female | <input type="checkbox"/> Male | | |
| <input type="checkbox"/> FORD | <input type="checkbox"/> MUELLER | <input type="checkbox"/> | AY MCDONALD |

Submittal: AIR RELEASES (CONTINUED)

AIR RELEASE MANHOLE RING AND COVER:

Heavy duty, traffic rated, large manhole rings with double covers. The cover must have the offset inner access lid. Ordering information must include: "WEST PALM BEACH" embossed in the lid. If it is a privately owned sewer system, then omit "WEST PALM BEACH". If the air release is on a force main, then it should come with "SANITARY" embossed on the lid. If the air release is on a water main, then it should come with "WATER" embossed on the lid. Manhole lid style "D" must be used in sidewalk areas (non-skid, pedestrian traffic design). Manhole lid style "D" must be used in traffic areas and grass medians.

- USF 690-AH-M. 10" high casting with a base of 62", large lid is 50-7/8" wide. 105 lbs. Access lid weight, 760 lbs. Main lid weight, 700 lbs. Ring weight.

BALL VALVES:

- NIBCO
- Approved Equal:
Manufacturer: _____
Model Number: _____

NIPPLES:

- 2" NPT stainless steel. 3" or 4" in length.
- 1" NPT stainless steel. 3" or 4" in length.

SADDLE CLAMP:

- SS Saddle
List sizes to be used: _____
- Total Piping Solution, Inc
T3 Service Saddle (*)

* Product/Material is in Trial.

Submittal: AIR RELEASES (CONTINUED)

WATER AND FORCE MAIN AIR RELEASE MANHOLES COATINGS AND LININGS:

To be applied per manufacturers specifications and by a certified applicator (supply letter of certification).

FORCE MAIN ARV MANHOLES:

INTERIORS:

SPRAY OR BUSH APPLIED (by certified applicator)

MADEWELL: Mainstay ML72 Sprayable micro silica cement mortar base, with DS-5 epoxy lining coat.

LAFARGE ALUMINATES: SewperCoat PG (new and rehabbed manholes)

FLOWRITE FIBERGLASS LINING SYSTEMS (for rehabilitation of manholes)

SPECTRAGUARD by SPECTRUM COATING, INC. (new and rehabbed manholes)

FACTORY APPLIED (joints sealed in the field by a certified applicator)

U. S. PRECAST/AGRU: Studded polypropylene welded liner fabric. Must be applied by a certified pre-caster.

U. S. PRECAST/AGRU: Studded HDPE welded liner fabric. Must be applied by a certified pre-caster.

T-LOCK: Polyethylene or polybutylene welded fabric. Must be applied by a certified pre-caster.

EXTERIOR:

KOPPERS: 300M

Sherwin – Williams (Previously MAB): Ply-Tile Epoxy Tar Coating for exterior coating of manholes.

WATER MAIN ARV MANHOLES:

INTERIOR AND EXTERIOR:

KOPPERS: 300M

Sherwin – Williams (Previously MAB): Ply-Tile Epoxy Tar Coating for exterior coating of manholes.

Submittal: DUCTILE IRON PIPE AND STEEL PIPE PAINTING AND FINISHING

Exposed Ductile Iron Pipe shall be painted as specified in the applicable material list.

NEW AERIAL CROSSINGS

- TNE MEC (Minimum 7.5 mils)
Prime Coat: 90-97 Tneme-Zinc (2.5-3.5 DFT-Mils)
Intermediate: 1095 EnduraShield (3.5-5.0 DFT-Mils)
2nd Coat: 701 Hydroflon (2.0-3.0 DFT-Mils)

NOTE: Substitute series 700 for a gloss finish

Color Identification

- Water: 11SF / True Blue (Safety)
- Force Main: 09SF / Spearmint Green (Safety)
- Reclaimed Water: _____
- Sanitary: _____

EXISTING AERIAL CROSSINGS

- TNE MEC (Minimum 9.5 mils)
Prime Coat: 1 Ominithane (2.5-3.5 DFT-Mils)
Intermediate: 27WB Typoxy (5.0-7.0 DFT-Mils)
2nd Coat: 701 Hydroflon (2.0-3.0 DFT-Mils)

NOTE: Substitute series 700 for a gloss finish

Color Identification

- Water: 11SF / True Blue (Safety)
- Force Main: 09SF / Spearmint Green (Safety)
- Reclaimed Water: _____
- Sanitary: _____

NOTE: The contractor shall provide at the end of the project at least one (1) gallon of each generic topcoat.

- End of Section -



**APPROVED MATERIALS LIST
SECTION TWO
WATER SERVICES**

WATER SERVICES STANDARDS ARE TO BE USED FOR:

1. Potable water distribution services and private fire lines. Distribution System Utility Service includes:
 - A. City of West Palm Beach
 - B. Town of Palm Beach
 - C. Town of South Palm Beach.
2. If DIP pipe and or fittings are required, review and use the appropriate pages in Section One “Pressure Pipe” submittal package for materials.
3. All brass fittings shall be of no-lead brass (maximum lead content of 0.10% by weight). **NOTE: Some manufacturers in this list may not be able to produce compliant lead content material and subsequently are restricted.**

Submittal: TAPPING SADDLES

NOTE: The following materials are to be used when an existing PVC or Transite water main are encountered and a service, sample point, air release or test tap needs to be installed.

SERVICE SADDLES:

All brass shall be of non-lead brass (maximum lead content of 0.10% by weight). All straps shall be either double strap brass with two bolts on each side of the strap. Usage, size and tapping thread for the corporation to be attached to the saddle shall be as follows:

- A. Water Services: Only 1" and 2" AWWA tapping thread are allowed.
- B. Sample Point/Vent pipe (temporary): 1" AWWA tapping thread
- C. Terminal Blow-offs: 2" Iron pipe tapping thread
- D. Air Releases: 1-1/2"x 2" AWWA tapping thread

List the following with each saddle to be used:

- A. Size(s) of pipe to be tapped: _____
- B. Type(s) of pipe to be tapped: _____
- C. Size(s) of tap to be made: _____
- D. Usage (See A through D above): _____

FORD
202BS Double Band Brass Saddles

Total Piping Solution, Inc.
T3 Service Saddle (*)

* Product/Material is in Trial.

Submittal: 5/8", 3/4", and 1" WATER METER

NOTE: Brass fittings listed in these specifications must meet 85-5-5-5 ASTM B62 Cast Brass Specs. Use NPT by copper tubing compression fittings, such as; Pack Joint, 110,Mac-Pak or "T" compression. If polyethylene pipe is used, then stainless steel stiffeners are required in conjunction with fittings.

METER BOXES:

All box lids will have a non-skid surface, the metal hinged meter readers lid will be self-closing. All boxes and lids will be H-20 traffic rated. All boxes will come with mouse holes and be of the flared design.

		CDR/HUBBELL
Box:	<input type="checkbox"/>	11"X18"X12"
Lid:	<input type="checkbox"/>	11"X18"X1-3/4"

PIPE:

Service line pipe shall be continuous length with no joints or fittings allowed in the service, except at the corporation and angle stop.

1" CTS polyethylene service tubing (Manufactured by Endot Industries)

1" Copper tubing, ASTM B88, and WWT-799, type "K", soft or hard drawn, rolls or 20' straight lengths.

(Copper tubing use requires the approval of the City of West Palm Beach)

<input type="checkbox"/>	Endotrace, CTS, polyethylene, with attached tracing wire
<input type="checkbox"/>	Mueller Industries, Inc.
<input type="checkbox"/>	Cerro Flow Products LLC

ANGLE VALVES (Plug or Ball):

1" compression by 1" meter coupling, locking style, quarter turn.

	FORD		AY MCDONALD
<input type="checkbox"/>	BA43-444W-NL	<input type="checkbox"/>	74602B-22

METER BUSHING:

1" meter size (male IPT) reducer to 3/4" meter size (female IPT) to be used on 1" angle valves to set 5/8 x 3/4 and 3/4" meters.

	FORD
<input type="checkbox"/>	A34-NL
<input type="checkbox"/>	A24-NL

METER COUPLING (Consumer Side): 3/4" or 1"

	FORD		AY MCDONALD
<input type="checkbox"/>	3/4" PART #C38-23-2-5-NL	<input type="checkbox"/>	3/4" PART #74620 (3/4"X3/4"X2.50)
<input type="checkbox"/>	1" PART# C38-44-2-625-NL	<input type="checkbox"/>	1" PART #74620 (1"X1"X2.63")

CORPORATIONS:

1" AWWA tapping thread by 1" compression coupling

	FORD		AY MCDONALD
<input type="checkbox"/>	FB1000-4	<input type="checkbox"/>	4701-22, 4701T, 4701B-22 or 4701BT

Submittal: 5/8", 3/4", and 1" WATER METER (CONTINUED)

Residential Dual Check Valves (Angled):

All brass shall be of non-lead brass (maximum lead content of 0.10% by weight) and ASSE Approved.

- Ford 3/4" PART #HHCA31-323-NL
- Ford 1" PART #HHCA31-444-NL

Residential Dual Check Valves (Straight):

All brass shall be of non-lead brass (maximum lead content of 0.10% by weight) and ASSE Approved.

- Ford 3/4" PART #HHS31-323-NL
- Ford 1" PART #HHC31-444-NL

Submittal: 1-1/2" and 2" WATER METER

NOTE: Brass fittings listed in these specifications must meet 85-5-5-5 ASTM B62 Cast Brass Specs. Use NPT by copper tubing compression fittings, such as; Pack Joint, 110,Mac-Pak or "T" compression. If polyethylene pipe is used, then stainless steel stiffeners are required in conjunction with fittings.

METER BOXES:

All box lids will have a non-skid surface, the metal hinged meter readers lid will be self-closing. All boxes and lids will be H-20 traffic rated. All boxes will come with mouse holes and be of the flared design.

		CDR/HUBBELL
Box:	<input type="checkbox"/>	17"X30"X12"
Lid:	<input type="checkbox"/>	17"X30"X2"

PIPE:

Service line pipe shall be continuous length with no joints or fittings allowed in the service, except at the corporation and angle stop. Locating wire shall be 14 AWG single strand, soft drawn copper wire; 4/64 – inch polyvinyl chloride insulation. Locating wire shall be spliced before and after all valve boxes and when connecting at Tee's. All splices should be covered with electrical tape. When splicing wire at Tee's, keep clear of fittings.

2" CTS polyethylene service tubing (Manufactured by Endot Industries)
2" Copper tubing, ASTM B88, and WWT-799, type "K", soft or hard drawn, rolls or 20' straight lengths.

(Copper tubing use requires the approval of the City of West Palm Beach)

<input type="checkbox"/>	Endotrace, CTS, polyethylene, with attached tracing wire
<input type="checkbox"/>	Mueller Industries, Inc.
<input type="checkbox"/>	Cerro Flow Products LLC

ANGLE VALVES (plug or ball style):

2" compression by 1 - 1/2 & 2" meter flange coupling, locking style, quarter turn to open.

	FORD	AY MCDONALD	
<input type="checkbox"/>	BF43-777W-NL	<input type="checkbox"/>	4602B-22

METER FLANGE (Consumer Side):

Two sizes of couplings are listed. The first size is to come out of the back of a 1-1/2" meter, and the other is to come out the back of a 2" meter. Two types of couplings are specified. The first is a meter flange to compression coupling iron pipe size, the second is meter flange to compression coupling copper tubing size.

		FORD
<input type="checkbox"/>	1-1/2" x IP Size	CF35-66-NL
<input type="checkbox"/>	1-1/2" x CT Size	CF34-66-NL
<input type="checkbox"/>	2" x IP Size	CF35-77-NL
<input type="checkbox"/>	2" x CT Size	CF34-77-NL

Submittal: 1-1/2" and 2" WATER METER (CONTINUED)

CORPORATIONS:

2"AWWA tapping thread by 2" compression coupling.

FORD

FB1000-7NL

AY MCDONALD

3128B

Must use:

2" female by compression fitting and

FORD

FC1477NL

AY MCDONALD

4754-22

2" x 2"Brass Bushing

FORD

C18-67

AY MCDONALD

3126-626

Submittal: DUAL WATER SERVICE

NOTE: The following material is required for all dual services. The City of West Palm Beach specifies two sizes for its dual water services, 1" copper tubing for short services, and 2" for longer services. Dual services cannot have more than 2 - 3/4" meters on the one 1" service. Brass fittings listed in these specifications must meet 85-5-5-5 ASTM B62 Cast Brass Specs. Use NPT by copper tubing compression fittings, such as; Pack Joint, 110, Mac-Pak or "T" compression. If polyethylene pipe is used, then stainless steel stiffeners are required in conjunction with fittings.

METER BOXES:

All box lids will have a non-skid surface, the metal hinged meter reader's lid will be self-closing. All boxes and lids will be H-20 traffic rated. All boxes will come with mouse holes and be of the flared design.

		CDR/HUBBELL
Box:	<input type="checkbox"/>	15"X17"X12"
Lid:	<input type="checkbox"/>	15"X17"X1-1/2"

PIPE:

Service line pipe shall be continuous length with no joints or fittings allowed in the service, except at the corporation and angle stop.

1" CTS polyethylene service tubing (Manufactured by Endot Industries)
1" Copper tubing, ASTM B88, and WWT-799, type "K", soft or hard drawn, rolls or 20' straight lengths.

(Copper tubing use requires the approval of the City of West Palm Beach)

- Endotrace, CTS, polyethylene, with attached tracing wire
- Mueller Industries, Inc.
- Cerro Flow Products LLC

ANGLE VALVES (Plug or Ball):

- 1" female by 1" meter coupling, locking style, quarter turn (for dual services only).
- FORD, FBA13444WNL (Ford "U" branch comes with angle valves)
- AY MCDONALD, # 4604, or 4644B, to be used with the "U" branches listed below

"U" BRANCHES:

- 2" female iron pipe thread by 2 - 1" male iron pipe threads by 7.5" separation between angle valves.
- FORD, # UV43-62W (1-1/2" by 3/4" for the long side)
- FORD, # UV43-42W (1" by 3/4" for the short side)
- AY MCDONALD, _____
- Need to supply angle valves with "U" branch (see above)
- 2" compression by 1-1/2" male iron pipe thread

METER COUPLING (Consumer Side): 3/4" or 1"

- | | | | |
|--------------------------|--------------------------|--------------------------|------------------------------------|
| <input type="checkbox"/> | FORD | <input type="checkbox"/> | AY MCDONALD |
| <input type="checkbox"/> | 3/4" PART #C38-23-2-5-NL | <input type="checkbox"/> | 3/4" PART #74620 (3/4"X3/4"X2.50") |
| <input type="checkbox"/> | 1" PART #C38-44-2-625-NL | <input type="checkbox"/> | 1" PART #74620 (1"X1"X2.63") |

Submittal: DUAL WATER SERVICE (CONTINUED)

CORPORATIONS:

2"AWWA tapping thread by 2" compression coupling.

FORD		AY MCDONALD
<input type="checkbox"/>	FB1000-7NL	<input type="checkbox"/> 3128B

Must use:

2" female by compression fitting and 2" x 2"Brass Bushing

FORD		AY MCDONALD	FORD		AY MCDONALD
<input type="checkbox"/>	FC1477NL	<input type="checkbox"/> 4754-22	<input type="checkbox"/>	C18-67	<input type="checkbox"/> 3126-626

Submittal: EXTENDED & MULTIPLE WATER SERVICE

The City of West Palm Beach specifies a 2" water service for multiple. A multiple service line is any service with more than two (2) single services or combination of two (2) services that include a 1" or larger meter. Two-inch (2") water service is required for any single service in excess of 50'. The next two pages will pertain only to the additional materials needed beyond those specified under the submittals for 1", 2" or Dual Services. Select the required materials from those lists and the additional materials listed in these submittals.

All 2" water service lines shall be extended from a minimum of pipe size of 4". Review and select material listed in the "Pressure Pipe Submittal Package" for the material needed.

The Engineer of Record (EOR) shall be responsible to calculate and properly size the service piping to meet hydraulic flow demand from the main through the meter(s), backflow preventer(s) and to the residence or business.

CURB STOPS:

2" compression by 2" female IPT. To be placed on the end of an extended service.
 FORD B41-777 AY MCDONALD 6106-22

VALVE BOXES:

Heavy duty, Cast Iron ASTM-A48 Class 30, 2 piece, 5-1/4" opening, flanged base, 18" to 24" adjustable, screw type, valve box, with locking lid (for all paved areas), embossed with "WATER" on the lid for water mains and services

Tyler/Union SIGMA Bingham & Taylor
 461-S 461-S Part # VB261X/60WT Non-Flip Option
(SIGMA and Tyler are interchangeable) Model: _____

VALVE BOX LIDS: (Box Lid shall match Box Manufacturer)

Non-Locking Lid:
Cast Iron ASTM-A48, Class 30, embossed with "SEWER" on the lid for force mains, embossed with "WATER" on the lid for water mains and services.
 Tyler/Union SIGMA Bingham & Taylor

Locking lid (For all paved areas):
Cast Iron ASTM-A48, Class 30, embossed with "SEWER" on the lid for force mains. To be used on Tyler model 461S, 5-1/4", screw type box.
 Tyler/Union SIGMA Bingham & Taylor

Locking lid (in paved areas):
Cast Iron ASTM-A48 Class 30, embossed with "WATER" on the lid for water mains and services.
 Tyler/Union SIGMA Bingham & Taylor

VALVE EXTENSION STEMS:

Utilized on all in-ground valves 36" or more below finished grade. Used in place of the American Trench Adapter (valve box). Valve extension must be secured to the valve stem, not set over the operating key.
 Mueller Proselect

Submittal: EXTENDED & MULTIPLE WATER SERVICE (CONTINUED)

UNDERGROUND VALVE IDENTIFICATION (UVI) TAGS:

To be used when the Tyler-style valve box with the Debris Cap is used, such as with the American Trench Adapter. Dimensions: 3" x 1/4", Brass, with 2-1/2" theft proof "J" rod anchor. Stamped: 1/4" to 3/8" Capital lettering. Each valve will have the following minimum information on the tag, words in parentheses are examples of wording to use: City code (WPB), valve size (6"), type of valve (RV, BV, PV), type of use (WM, FM), and operation instructions (R-21) right 21 turns to open, plus valve number, if applicable. In paved and unpaved areas, the UVI will be placed in the concrete collar around valve boxes.

WAGCO MARKER

BRASS BUSHING:

All brass shall be of non-lead brass (maximum lead content of 0.10% by weight).

2" male IPT by 1" female IPT solid brass bushing. To be placed on the end of the curb stop for an extended 1" or Dual service. Use 2 bushings in the tee listed below for two one inch or dual services. See the 2 by 1" - "Y" fitting which can be used in lieu of the 2" tee, brass bushing and compression fittings.

LEE BRASS MERIT BRASS

BRASS TEE:

All brass shall be of non-lead brass (maximum lead content of 0.10% by weight).

2" male IPT. To be placed on the end of the extended service for a multiple service connection. See the 2 by 1" - "Y" fitting to be used in lieu of the tee, brass bushing and compression fittings.

LEE BRASS MERIT BRASS

BRASS FITTINGS:

All brass shall be of non-lead brass (maximum lead content of 0.10% by weight).

1" compression by 1" female IPT to be placed in the bushings on the run of the tee for multiple services. See the 2 by 1" - "Y" fitting to be used in lieu of the tee, brass bushing and compression fittings.

FORD MUELLER AY MCDONALD

2" male IPT by 2" Female IPT

FORD MUELLER AY MCDONALD

BRASS NIPPLE:

All brass shall be of non-lead brass (maximum lead content of 0.10% by weight).

2" threaded by 6" long solid brass nipple. To be placed between the curb stop and tee for multiple services.

LEE BRASS FORD

BRASS "Y" BRANCH:

All brass shall be of non-lead brass (maximum lead content of 0.10% by weight).

2" by 1" compression double ended "Y" branch fitting. Placed on end of curb stop to multiple services. Use in lieu of the tee, brass bushing and compression fittings.

FORD MUELLER

Submittal: MISCELLANEOUS PARTS

On occasion, a variety of parts are required to install service lines and these parts are not listed in the AML. Parts to be utilized in the construction on water distribution mains and service lines, which are not contained in the AML, shall be submitted as a shop drawing for approval.

All brass shall be of non-lead brass (maximum lead content of 0.10% by weight).

Submittal: 3" OR LARGER WATER SERVICE

GENERAL REQUIREMENTS:

1. See the standard detail sheet WS-6 and WS-6.1 for the location of the material for a large meter installation. Review Section One "Pressure Pipe" for the approved material requirements for water mains and make your selections from that list and submit those applicable sheets. Remember each meter installation will have its own character and may call for additional material.
2. Backflow preventers are required behind the meter so the pipe is not required to be offset back down to the proper laying depth until after the backflow preventer installation.
3. The material list pertains to a meter that will be set on a new or existing stub. Materials for each individual service will call for additional materials, refer to the plan design. The itemized list of material used for the water service will not include the following; tapping valve and sleeve, material for the backflow preventer riser after the meter installation, and material to go from a larger direct tap for fire flow to tee off to the water service.
4. Location and piping for the meter may be rotated to fit the available parkway, sidewalk and/or easement space.
5. A single tapping valve and sleeve may be made on a City water main for both the private fire line and metered service. A tee can be installed in the line after the tapping valve and sleeve for the metered service. If this is the way it is to be installed, then separate valves will need to be installed after the tee to operate the fire line and metered line separately. The tapping valve and sleeve will need to be sized for the larger of the two services (6" private fire line and 4" water service would call for a 6" minimum tap).
6. The following is an itemization of minimum amount and type of materials specifically detailed for a three inch meter. For a 4", 6 or 8" meter, delete item "E" and change all other items to the meter size. For a more thorough list of the specifications for the material, refer to Section One "PRESSURE PIPE".
7. The contractor may choose to use F.J. instead of M.J. Fittings on the meter assembly, but not in the roadway. The tapping valve, and first elbow (item "G") in the service line must be M.J.

Submittal: 3" OR LARGER WATER SERVICE (CONTINUED)

VALVE BOXES:

Two (2) required on the valves listed above.

Heavy duty, Cast Iron ASTM-A48 Class 30, 2 piece, 5-1/4" opening, flanged base, 18" to 24" adjustable, screw type, valve box, with locking lid (for all paved areas), embossed with "WATER" on the lid for water mains and services

- | | | | | | |
|--------------------------|-------------|--------------------------|--------------------------|--------------------------|------------------|
| <input type="checkbox"/> | Tyler/Union | <input type="checkbox"/> | Russell/Russco | <input type="checkbox"/> | Bingham & Taylor |
| | 461-S | | 461-S Part # VB261X/60WT | | Non-Flip Option |
- (Russco and Tyler are interchangeable) Model Num.: _____

VALVE BOX LIDS: (Box Lid shall match Box Manufacturer)

Two (2) required on the valves listed above.

Non-Locking Lid:

Cast Iron ASTM-A48, Class 30, embossed with "SEWER" on the lid for force mains, embossed with "WATER" on the lid for water mains and services.

- | | | | | | |
|--------------------------|-------------|--------------------------|-------|--------------------------|------------------|
| <input type="checkbox"/> | Tyler/Union | <input type="checkbox"/> | SIGMA | <input type="checkbox"/> | Bingham & Taylor |
|--------------------------|-------------|--------------------------|-------|--------------------------|------------------|

Locking lid (For all paved areas):

Cast Iron ASTM-A48, Class 30, embossed with "SEWER" on the lid for force mains. To be used on Tyler model 461S, 5-1/4", screw type box.

- | | | | | | |
|--------------------------|-------------|--------------------------|-------|--------------------------|------------------|
| <input type="checkbox"/> | Tyler/Union | <input type="checkbox"/> | SIGMA | <input type="checkbox"/> | Bingham & Taylor |
|--------------------------|-------------|--------------------------|-------|--------------------------|------------------|

Locking lid (in paved areas):

Cast Iron ASTM-A48 Class 30, embossed with "WATER" on the lid for water mains and services.

- | | | | | | |
|--------------------------|-------------|--------------------------|-------|--------------------------|------------------|
| <input type="checkbox"/> | Tyler/Union | <input type="checkbox"/> | SIGMA | <input type="checkbox"/> | Bingham & Taylor |
|--------------------------|-------------|--------------------------|-------|--------------------------|------------------|

VALVE EXTENSION STEMS:

Utilized on all in-ground valves 36" or more below finished grade. Used in place of the American Trench Adapter (valve box). Valve extension must be secured to the valve stem, not set over the operating key.

- | | | | |
|--------------------------|---------|--------------------------|-----------|
| <input type="checkbox"/> | Mueller | <input type="checkbox"/> | Proselect |
|--------------------------|---------|--------------------------|-----------|

UNDERGROUND VALVE IDENTIFICATION (UVI) TAGS:

To be used when the Tyler-style valve box with the Debris Cap is used, such as with the American Trench Adapter. Dimensions: 3" x 1/4", Brass, with 1-1/2" theft proof "J" rod anchor. Stamped: 1/4" to 3/8" Capital lettering. Each valve will have the following minimum information on the tag, words in parentheses are examples of wording to use: City code (WPB), valve size (6"), type of valve (RV, BV, PV), type of use (WM, FM), and operation instructions (R-21) right 21 turns to open, plus valve number, if applicable. In paved and unpaved areas, the UVI will be placed in the concrete collar around valve boxes.

- | | |
|--------------------------|--------------|
| <input type="checkbox"/> | WAGCO MARKER |
|--------------------------|--------------|

Submittal: 3" OR LARGER WATER SERVICE (CONTINUED)

ITEM "A", VALVES:

2 required, 4", Resilient Wedge, M. J., 2" square operating nut. To be installed in line with the meter, on each side and as close as the pipe and fittings will allow. If one will fit in the meter box, usually the one after the meter then delete one each of the valve boxes and debris caps.

ITEM "B", FLANGE ADAPTERS: (2 required)

3", Megalug series 2100 flange to P.E. pipe (restrained). One on each side of the meter/strainer/test port.

ITEM "C", METER: (1 required)

Meter to be paid by Contractor and supplied by City of West Palm Beach
"C-1" a length of pipe 5 times the diameter of the pipe before the strainer/meter and
"C-2" a length of pipe 3 times the diameter of the pipe after the meter.

ITEM "D", STRAINER :(1 required)

As manufactured by Badger Meter, flanged, NSF 61 Envirobrass II housing, stainless steel strainer with twice the flow capacity as the meter, stainless steel bolts and nuts. Does not take the place of the straight pipe (C-1). Not required when the meter comes supplied with a built in strainer (Fire Flow Meter).

ITEM "E", REDUCERS: (2 required)

4 by 3", P. E. on the 4" end is allowed to save on the amount of Megalugs and pipe to be used. The reducers cannot be used in lieu of the straight pipe listed under item "C".

ITEM "F", METER VAULTS: (1 to 2 required)

Vaults for 3 and 4" compound meters will be 48" wide and 48" long and 18" deep. All lids will have the metal, hinged, meter readers lid within the heavy duty, hot dipped galvanized, steel, traffic rated lid (2-piece). 4" Fire flow and larger meters will call for a minimum of a 48" wide and 72" vault with a three piece lid. The hinged meter reader's lid will be centered over the meter dial. All boxes and lids will be H-20 traffic rated. Due to the size of the services the bypass (see item "H") may need to be installed in a separate 48 by 48" vault.

All lids will have a blank mushroom screwed into the hole drilled for the touch read module. Use TR/PL Housing Item No. 45 with Sensor Button (blank) Item No. 53907152-39004.

US Precast

Brooks

ITEM "G", MECHANICAL OFFSET:

The service at the meter is to be offset higher than the depth of the road crossing. To bring up the service to the proper grade (14" of cover) use one group of the following:

1. M.J., 18" Offset, (2) M.J. 45 degree bends, cement mortar lined,
2. M.J. 90 degree bends, Backflow preventer(s) are required behind the meter so the pipe is not required to be offset back down to the proper laying depth until after the backflow preventer installation.

Submittal: 3" OR LARGER WATER SERVICE (CONTINUED)

ITEM "H", BY-PASS:

Bypass piping around meter to allow meter to be tested, repaired or replaced. Bypass piping to be same size as metered service piping (4, 6, or 8").

(2) 4", Resilient Wedge Gate Valves, F.J., with wheel handles

(2) 4", Megalug series 2100, flange to P.E. pipe (restrained). One on each side of the two valves.

(2) 4", M. J., tees, cement mortar lined. One on the outside of each of Item # A.

(1) 4" x 2", F.J. By threaded tee or 4 x 4 tee with a tapped plate, to be installed between the F.J. valves, with the 2" threaded "branch" looking straight up.

with,

(1) 2 x 6" brass nipple threaded into the tee to,

(1) 2" locking style curb cock,

(2) 4" M. J. 90 degree bends,

ITEM "I", TEST PORT:

Flanged tee is to be bolted to the back of the meter and may be used as part of "C-2".

(1) 3" Flanged tee with 2" threaded branch.

(1) 2" by 3" brass nipple.

(1) 2" Stainless steel ball valve or curb stop with handle.

ITEM "J", MISCELLANEOUS ITEMS:

(16) 4" Megalug series 1100 restrainer glands for M. J. fittings (minimum).

(2) 3" Megalug series 1100 restrainer glands for M. J. fittings (minimum).

3", DIP, Class 52, cement mortar lined.

List Manufacturer: _____

4", DIP, Class 52, cement mortar lined.

List Manufacturer: _____

3", DIP, Class 53, FJ, cement mortar lined.

List Pipe Manufacturer and Company installing the flanges (attach certification letter from shop):

4", DIP, Class 53, FJ, cement mortar lined.

List Pipe Manufacturer and Company installing the flanges (attach Certification letter from shop):

(2) 4" Megalug series 2100 may be used in lieu of the flanged pipe.

Submittal: PRIVATE FIRE LINES

GENERAL REQUIREMENTS:

1. Review Section One "Pressure Pipe" for the approved material requirements for water mains. Private Fire Line (PFL) installation will have its own challenge and may require additional material.
2. Backflow preventers are required at the property line.
3. The material list pertains to a new tap for a private fire line (PFL). Information and materials for each individual case will call for additional materials, refer to the plan design for this material. The itemized list of material used for the private fire line will not include the material for the backflow preventer riser after the property line.
4. A single tapping valve and sleeve may be made on a City water main for both the PFL and the metered service. A tee can be installed in the line after the tapping valve and sleeve for the metered service. If this is the way it is installed, then separate valves will need to be installed after the tee to operate the fire line and metered line separately. The tapping valve and sleeve will need to be sized for the larger of the two services (6" private fire line 4" water service would call for a 6" minimum tap). This material is listed separately under "DUAL SERVICE MATERIAL"
5. There is no standard detail sheet for a Private Fire Line. A breakdown of the minimum required material for a private fire line installation are listed below. Remember each PFL installation will have its own character and may call for additional material.
6. The following is an itemization of minimum amount and type of materials specified for a 4" fire line. For a 6", 8" or 10" PFL revise all items to the corresponding meter size. For a 3" PFL, add the items under "D". See a 2" water service and an extended water service for the materials used for a 2" PFL.

Submittal: PRIVATE FIRE LINES (CONTINUED)

VALVES:

Two (2) required, 4", Resilient Wedge, M. J., 2" square operating nut. To be installed in line with the meter, on each side and as close as the pipe and fittings will allow. If one will fit in the meter box, usually the one after the meter then delete one each of the valve boxes and debris caps.

VALVE BOXES:

Two (2) required on the valves listed above. Heavy duty, Cast Iron ASTM-A48 Class 30, 2 piece, 5-1/4" opening, flanged base, 18" to 24" adjustable, screw type, valve box, with locking lid (for all paved areas), embossed with "WATER" on the lid for water mains and services

<input type="checkbox"/>	Tyler/Union	<input type="checkbox"/>	SIGMA	<input type="checkbox"/>	Bingham & Taylor
	461-S		461-S Part # VB261X/60WT		Non-Flip Option
			(SIGMA and Tyler are interchangeable)		Model _____

VALVE BOX LIDS: (Box Lid shall match Box Manufacturer)

Two (2) required on the valves listed above.

Non-Locking Lid:

Cast Iron ASTM-A48, Class 30, embossed with "SEWER" on the lid for force mains, embossed with "WATER" on the lid for water mains and services.

<input type="checkbox"/>	Tyler/Union	<input type="checkbox"/>	SIGMA	<input type="checkbox"/>	Bingham & Taylor
--------------------------	-------------	--------------------------	-------	--------------------------	------------------

Locking lid (For all paved areas):

Cast Iron ASTM-A48, Class 30, embossed with "SEWER" on the lid for force mains. To be used on Tyler model 461S, 5-1/4", screw type box.

<input type="checkbox"/>	Tyler/Union	<input type="checkbox"/>	SIGMA	<input type="checkbox"/>	Bingham & Taylor
--------------------------	-------------	--------------------------	-------	--------------------------	------------------

Locking lid (in paved areas):

Cast Iron ASTM-A48 Class 30, embossed with "WATER" on the lid for water mains and services.

<input type="checkbox"/>	Tyler/Union	<input type="checkbox"/>	SIGMA	<input type="checkbox"/>	Bingham & Taylor
--------------------------	-------------	--------------------------	-------	--------------------------	------------------

Submittal: PRIVATE FIRE LINES (CONTINUED)

DEBRIS CAP:

2-required in the valve boxes listed above. All Debris Caps within the system shall have color coded operating handles to the following standard; "Yellow" for curb stops and valves on water services.

VALVE EXTENSION STEMS:

Utilized on all in-ground valves 36" or more below finished grade. Used in place of the American Trench Adapter (valve box). Valve extension must be secured to the valve stem, not set over the operating key.

Mueller Proselect

UNDERGROUND VALVE IDENTIFICATION (UVI) TAGS:

To be used when the Tyler-style valve box with the Debris Cap is used, such as with the American Trench Adapter. Dimensions: 3" x 1/4", Brass, with 2-1/2" theft proof "J" rod anchor. Stamped: 1/4" to 3/8" Capital lettering. Each valve will have the following minimum information on the tag, words in parentheses are examples of wording to use: City code (WPB), valve size (6"), type of valve (RV, BV, PV), type of use (WM, FM), and operation instructions (R-21) right 21 turns to open, plus valve number, if applicable. In paved and unpaved areas, the UVI will be placed in the concrete collar around valve boxes.

WAGCO MARKER

TAPPING SLEEVE:

One (1) required, size of the main to be tapped by 4"

MISCELLANEOUS ITEMS:

One (1) 4" Megalug series 1100 restrainer glands for M.J.fittings.

REDUCER:

For a 3" PFL, One (1) 4" X 3", M.J. Reducer, to be installed in the City Right of Way, just before the property line.

(1) Additional 4" Megalug series 1100 restrainer glands for M. J. fittings.

(1) 3" Megalug series 1100 restrainer glands for M. J. fittings.

Submittal: PRIVATE FIRE LINES (CONTINUED)

VALVES:

- Two (2) required,
- (1) M.J., R.W. Valve, on the building side of the tee to isolate the PFL (sized to fit the run).
- (1) M.J., R.W. Valve, on the branch of the tee to isolate the water service (sized to fit the branch).

VALVE BOXES:

Two (2) required on the valves listed above.
Heavy duty, Cast Iron ASTM-A48 Class 30, 2 piece, 5-1/4" opening, flanged base, 18" to 24" adjustable, screw type, valve box, with locking lid (for all paved areas), embossed with "WATER" on the lid for water mains and services

- Tyler/Union 461-S
- SIGMA 461-S Part # VB261X/60WT (SIGMA and Tyler are interchangeable)

VALVE BOX LIDS: (Box Lid shall match Box Manufacturer)

Two (2) required on the valves listed above.

Non-Locking Lid:

Cast Iron ASTM-A48, Class 30, embossed with "SEWER" on the lid for force mains, embossed with "WATER" on the lid for water mains and services.

- Tyler/Union
- SIGMA

Locking lid (For all paved areas):

Cast Iron ASTM-A48, Class 30, embossed with "SEWER" on the lid for force mains. To be used on Tyler model 461S, 5-1/4", screw type box.

- Tyler/Union
- SIGMA

Locking lid (in paved areas):

Cast Iron ASTM-A48 Class 30, embossed with "WATER" on the lid for water mains and services.

- Tyler/Union
- SIGMA

DEBRIS CAP:

Two (2) required in the valve boxes listed above.
All Debris Caps within the system shall have color coded operating handles for each type service. "Yellow" for curb stops and valves on water services.

VALVE EXTENSION STEMS:

Utilized on all in-ground valves 36" or more below finished grade. Used in place of the American Trench Adapter (valve box). Valve extension must be secured to the valve stem, not set over the operating key.

- Mueller
- Proselect

UNDERGROUND VALVE IDENTIFICATION (UVI) TAGS:

To be used when the Tyler-style valve box with the Debris Cap is used, such as with the American Trench Adapter. Dimensions: 3" x 1/4", Brass, with 2-1/2" theft proof "J" rod anchor. Stamped: 1/4" to 3/8" Capital lettering. Each valve will have the following minimum information on the tag, words in parentheses are examples of wording to use: City code (WPB), valve size (6"), type of valve (RV, BV, PV), type of use (WM, FM), and operation instructions (R-21) right 21 turns to open, plus valve number, if applicable. In paved and unpaved areas, the UVI will be placed in the concrete collar around valve boxes.

- WAGCO MARKER

Submittal: PRIVATE FIRE LINES (CONTINUED)

TEE:

M.J, Run of the tee sized to fit the PFL, branch sized by the service size required (4", 6" or 8").

MISCELLANEOUS ITEMS:

Minimum of 7 Megalug series 1100 restrainer glands for M. J. fittings to be used on the tee and valves.

PIPE:

Service line pipe shall be continuous length with no joints or fittings allowed the service, except at the corporation and angle stop.

1" CTS polyethylene water service tubing. (Manufactured by Endot Industries).

1" Copper tubing, ASTM B88, and WWT-799, type "K", soft or hard drawn, rolls or 20' straight lengths.

(Copper tubing use requires the approval of the City of West Palm Beach).

- Endotrace, CTS, polyethylene, with attached tracing wire
- Mueller Industries, Inc.
- Cerro Flow Products LLC

FITTINGS:

- Brass, 90 degree elbows, compression to female IPT.
To screw into the ball valves on the backflow preventer.
- Brass, 90 degree elbows, compression on both ends.
Located at the bottom of the backflow preventer.
- Brass or copper, 90 degree elbows, solder to female IPT.
To screw into the ball valves on the backflow preventer.
Size: _____
- Brass or copper, 90 degree elbows, solder joint on both ends.
Located at the bottom of the backflow preventer.

ACCEPTABLE JOINTS:

- Solder Joints, per Plumbing and Health Department regulations (lead free).
- Use NPT by copper tubing compression fittings, such as:
Pack Joint, 110 Mac-Pak or "T" Compression

Submittal: BACKFLOW PREVENTER(S)

NOTE: It is recommended that you review the City's Manual on Cross Connection Control. All backflow prevention assemblies used on City properties such as buildings, irrigation systems, lift stations, water re-pump stations, water treatment facilities and wastewater treatment facilities must comply with the latest list of Approved Backflow Prevention Assemblies from the University of South California's Foundation.

List the backflow prevention assemblies to be used; include type, manufacturer, model number, model name (if applicable) size and what type of system it will protect.

The following are the minimum standards to be met:

1. All assemblies must appear on the latest approval list from the University of South California's Foundation for Cross Connection Control
2. Only assemblies on that list that are currently being manufactured will be allowed.

BACKFLOW PREVENTER TYPE	TYPE OF SYSTEM TO BE PROTECTED	MAKER	MODEL NUMBER	SIZE	ORIENTATION
EXAMPLE	RP	Watts	709DC-A	3"	

Submittal: BACKFLOW PREVENTER(S) (CONTINUED)

GENERAL REQUIREMENTS:

The following lists of material are for:

1. 3" or larger, single, approved Double Check Detector Assembly (DCDA) or a 3" or larger, single, approved Reduced Pressure Principle Assembly (RPPA).
2. Additional material will be required for a parallel 3" or larger RPA with the first assembly.
3. ¾" to 2", single, approved Reduced Pressure Principle Assembly (RPPA).
4. Additional material for a ¾" to 2" parallel RPPA with the first assembly.
5. Additional material for a ¾" RPPA for a City owned lift station.
6. Dual, parallel installations of RPPA's are not required, but it is strongly suggested for restaurants and businesses that cannot afford to have their water turned off during regular working hours.
7. Backflow prevention assemblies and piping are required behind the meter on private property. The Public Utilities Department shall approve the material used through the backflow prevention assembly installation.
8. Location and piping for the backflow prevention assemblies may be rotated to fit the available property lay-out space with no increase in materials or distance from the property line.
9. Landscaping is a requirement for the installation of backflow preventers. Since backflow preventers must be installed at the property line, hedges must be planted around the assemblies to hide them. The hedges are also suggested as a security measure, this may avoid the backflow prevention assemblies not to be tampered by vandals.
10. See the standard detail sheet for the minimum design standards required for backflow installations. Remember the standard detail sheet is the standard, each backflow installation will have its own character and may call for additional material.
11. Some backflow prevention assemblies come built with elbows into the body and others are built with the purpose of being installed in the vertical position. By using these assemblies you can reduce the amount of fittings used. Call your supplier or our backflow techs for a list of this type of approved assemblies.
12. The Fire Department of the local Municipality that the DCDA is installed may have their own requirements. Check with the local official on these items. One item is the installation of tamper switches on the OS & Y valves to insure against them being operated.
13. The following is an itemization of minimum amount and type of materials specifically detailed for a 3" DCDA or RPPA. For a 4", 6" or 8" backflow preventer, change all items to the size required.
14. All backflow preventers used must be new, on the latest USC, FCCC approved list and be a device that is currently manufactured.

Submittal: BACKFLOW PREVENTER(S) (CONTINUED)

3" OR LARGER, SINGLE DCDA OR RPPA INSTALLATION:

FITTINGS:

(4) 3", 90 degree elbows are required. Most installers use two F.J. elbows at the top where they are attached to the flanged valves on the assembly and two MJ elbows on the bottom. All flanged elbows are allowed, but it is suggested that mechanical joint elbows be used underground.

FLANGE ADAPTERS:

(2) 3", Megalug series 2100 flange to P.E. pipe (restrained). If flanged pipe is not used or flanged joint (F.J.) by plain end (P.E.) Pipe is used then flange joint to plain end adapters will be required.

MISCELLANEOUS ITEMS:

(4) 3" Megalug series 1100 restrainer glands for M. J. fittings (minimum).

3", DIP, Class 52, cement mortar lined. List Manufacturer:

3", DIP, Class 53, FJ, cement mortar lined. Supply Company installing the flanges on the pipe.

NOTE: If pipe flanged on both ends is used it must be manufactured to fit the correct height requirement for the backflow preventers, or the assembly will not be approved.

Supports under each device.

Electrical conduit, wiring and two tamper switches. May be required to be installed on the O. S. & Y. Valves on DCDA only. Check with local Fire Department and Building Official.

FIRE DEPARTMENT CONNECTIONS (FDC): (Not a Public Utilities Requirement or review item)

To reduce the amount of pipe and fittings many contractors are placing the siamese connections on the back of the DCDA. It must be understood in West Palm Beach it is required that the FDC must not be more than 150' (hose length) from the closest City fire hydrant. To install the FDC on the backflow preventer do not place a flanged 90 degree bend on the back of the DCDA, but instead place the following (WITH PERMISSION AND MATERIAL REVIEW FROM THE BUILDING DEPARTMENT AND THE FIRE DEPARTMENT):

3" F. J. Tee, one end of run coming off of the DCDA, the branch going down and;

3" flanged 90 degree bend, on the other end of the run and then;

3" wafer check valve, then;

3" flange tapped for 3" IPT, then;

3" steel nipple (IPT), and a

3" FDC (Siamese).

Check with your local Fire, Mechanical, Plumbing plan reviewers and construction inspectors for the requirements of the local municipality you are working in.

3" OR LARGER, PARALLEL RPA INSTALLATION

3", F. J., Tee, run and branch same size to fit the riser pipe.

(2) or (4), 3", DIP, length to fit, Class 53, F.J., cement mortar lined spool pieces. None may be required if there is enough space between the tee and 90 degree bends to separate the backflow preventers. Supply certification letter from the Company installing the flanges.

¾" to 2", SINGLE RPA INSTALLATION

The brass fittings listed in these specifications must meet 85-5-5-5 ASTM B62 Cast Brass Specs. If solder joint fittings are used they must meet the brass spec unless they are pressed cooper fittings. **All brass shall be of non-lead brass (maximum lead content of 0.10% by weight).**

- End of Section -



WEST PALM BEACH

**APPROVED MATERIALS LIST
SECTION THREE
GRAVITY SEWERS**

GRAVITY SEWERS STANDARDS ARE TO BE USED FOR:

1. The City of West Palm Beach approves materials to be utilized in the sanitary collection system, wastewater lift stations, force mains, and services within the rights-of-ways and easements of:
 - A. City of West Palm Beach
2. If DIP pipe and or fittings are required, review and use the appropriate pages in Section One “Pressure Pipe” submittal package for materials.

Submittal: SANITARY GRAVITY SEWER

These submittals shall cover non-pressurized sanitary gravity sewer pipe for the City of West Palm Beach.

GRAVITY SANITARY SEWER PIPE:

PVC sewer pipe shall conform to the requirements of ASTM D-3034 standard with minimum wall thickness of SDR 26.

- J-M Napco Diamond Plastic Corporation
- CertainTeed

PVC sewer pipe required when a gravity main or gravity lateral intersect with a DIP water main pipe, shall be C-900, Class 150, DR 18, PVC water main pipe or (if not available Class 350, ductile iron, epoxy lined, pipe. Review Section 1, Pressure Pipe).

- J-M Napco Diamond Plastic Corporation
- CertainTeed

GRAVITY SEWER FITTINGS:

PVC sewer fittings shall conform to the requirements of ASTM D-3034 standard with minimum wall thickness of SDR 26. Fittings 8-inch and smaller shall be molded in one piece with gasket joints that are of a molded "locked-in" design to prevent loss during transport or "fish mouthing" during pipe insertion. The minimum socket depths shall comply with ASTM D-3034. Fittings 10-inch and larger shall be molded or fabricated with manufacturers standard pipe bells and gaskets. Gaskets shall have minimum cross sectional area of 0.20 square inch and conform to ASTM F0477 standard. All fittings shall be supplied by one manufacturer. Fitting types that are not approved are any "Tee", "Tee Wye" or "Cross" type fittings. Flows into a run from a branch must be at a minimum of a 30 degree angle. The smallest allowed main size is 8" the smallest allowed lateral size (owned by the City) is 6".

- IPEX PLASTIC TRENDS
- Multi Fitting HARRINGTON CORP.

CLEAN - OUTS:

PVC clean-outs shall have a handhold ring and cover for protection placed over it.

- U. S. F Model 7610
- SIGMA Model VB2610 (65lbs) set

TAPS INTO EXISTING PIPE:

Tie-in to an existing main that has been Insituformed or lined by another method.

- Inserta Tee

INSIDE DROP BOAL:

- Manufacturer: _____
- Model Num.: _____

Submittal: SANITARY GRAVITY SEWER (CONTINUED)

MANHOLE RING AND COVERS:

Manhole lid style "D" must be used in sidewalk and pedestrian crossing areas (non-skid, pedestrian traffic design). Ordering information must include: with "WEST PALM BEACH" and "SANITARY" embossed in the lid. If it is a privately owned sewer system then "SANITARY" only is embossed in the lid.

- USF: 420 ring and cover with an O-ring seal built into the lid (420-ORS).
Style: _____

MANHOLE LID AND RING SEAL:

Manhole lids that do not have O-ring seals are required to be retrofitted with seals. Between the lid and casting.

- CRETEX

JOINT SEALANT FOR MANHOLES, AIR RELEASE MANHOLES, AND WETWELLS

- K.T. SNYDER COMPANY, INC.: RAM-NEK, plastic gasket joint material.
MADEWELL: 806 Flexible Joint Sealant.

PVC MANHOLE TO PIPE ADAPTERS:

Used to seal the pipe to the manhole. All adapters will be made to fit PVC, SDR-26 pipe. Adapters for use with all new construction. PVC adapters shall have double gasketed bell, with sand coating cast into the outside to allow for adherence to the concrete seal.

- HARCO - The Harrington Corp., P.O. Box 10335, Lynchburg, VA 24306
 Approved Equal: Manufacturer - _____

OTHER MANHOLE TO PIPE ADAPTERS:

Used to seal the pipe to the manhole. All adapters will be made to fit PVC, SDR-26 pipe. Adapters for use with all new construction. Adapters shall have stainless steel ring seals to seal the adapter to the pipe and to the manhole if they are not poured in place.

- Press Seal Gasket Corporation - Press-Boot
 U.S. Precast Manhole w/HDPE liner cast-in boot to sleeve connection
 U.S. Precast HDPE liner system "Turn Back" joint installed after cast

MANHOLE PRECAST ADJUSTING:

Brick is allowed to be used to raise to grade manholes or air release manholes.

Concrete reinforced 12" wide, 2" high with OD of 36" precast concrete rings are required.

- TRI-COUNTY CONCRETE PRODUCTS

Submittal: SANITARY GRAVITY SEWER (CONTINUED)

COUPLINGS FOR USE ON EXISTING FACILITIES (VCP, ETC):

Must have the stiffening collars (shear rings) or they cannot be used.

- FERNCO, RC Series
- MISSION COUPLING

COUPLINGS FOR USE TO CHANGE PIPE TYPE:

Required when installing DIP in a PVC run of main or a lateral that is too close to another utility.

- HARRINGTON
- 8", PVC, C900 (DIP) x SDR 26 Bell to Bell Adapters.

MANHOLE COATINGS AND LININGS:

To be applied per manufacturers specifications and by a certified applicator (Supply letter of certification).

INTERIORS:

SPRAY OR BUSH APPLIED (by certified applicator)

- MADEWELL: Mainstay ML72 sprayable micro silica cement mortar base, with DS-5 epoxy lining coat.
- LAFARGE ALUMINATES: SewperCoat PG (new and rehabbed manholes)
- FLOWRITE FIBERGLASS LINING SYSTEMS (for rehabilitation of manholes)
- SPECTRAGUARD by SPECTRUM (new and rehabbed manholes)
- SPECTRASHEILD by Concrete Conservation, Inc.

FACTORY APPLIED (joints sealed in the field by a certified applicator)

- U. S. PRECAST/AGRU: Studded polypropylene welded liner fabric. Must be applied by a certified pre-caster.
- U. S. PRECAST/AGRU: Studded HDPE welded liner fabric. Must be applied by a certified pre-caster.
- T-LOCK: Polyethylene or polybutylene welded fabric. Must be applied by a certified pre-caster.

EXTERIOR:

- KOPPERS: 300M
- MAB: Ply-Tile Epoxy Tar Coating for exterior coating of manholes.

MANHOLE AND LIFT STATION WETWELL SEALANT:

On Rehabilitation projects It is required that all joints in manholes and lift station wetwells be sealed on the outside with an 8" wide band of Wrapid Seal on flat surfaces and a 12" wide band on angled surfaces at all riser rings and manhole castings. Must be used in conjunction with the joint sealant.

- CANUSA
- Wrapid Seal

- End of Section -



WEST PALM BEACH

**APPROVED MATERIALS LIST
SECTION FOUR
LIFT STATIONS**

LIFT STATION STANDARDS ARE TO BE USED FOR:

1. The City of West Palm Beach approves materials to be utilized in the sanitary collection system, wastewater lift stations, force mains, and services within the rights-of-ways and easements of:
 - A. City of West Palm Beach
2. If DIP pipe and or fittings are required, review and use the appropriate pages in Section One “Pressure Pipe” submittal package for materials
3. When addressing backflow prevention in lift station water service application, refer to appropriate pages in Section 2 “Backflow Preventers” submittal package.

Submittal: LIFT STATION

PUMP:

The pump manufacturer or builder shall supply a minimum five (5) year warrant on the equipment starting with the date of final acceptance by the City. The pump manufacturer shall supply three (3) sets of operation and maintenance manuals for the equipment.

FLYGHT (3085, 3102, 3127, 3153, 3171, 3202 or 3301)

MODEL S/N: _____

MOTOR: _____

IMPELLER: _____

PUMP RATE: _____

PUMPS TO OPERATE AT _____ GPM, TDH (TOTAL DYNAMIC HEAD) = _____ FT.

HORSEPOWER: _____

OUTLET: _____

MANHOLE AND LIFT STATION WETWELL SEALANT:

On Rehabilitation projects, It is required that all joints in manholes and lift station wetwells be sealed on the outside with an 8" wide band of Wrapid Seal on flat surfaces and a 12" wide band on angled surfaces at all riser rings and manhole castings. Must be used in conjunction with the joint sealant.

CANUSA
Wrapid Seal

WET WELL COATING

To be applied per manufactures specifications and by a certified applicator. The applicator shall supply the letter of certification.

SEWPERCOAT
Applicator: _____

SPECTRASHIELD
Applicator: _____

Approved Equal
Manufacturer/Model Num.: _____
Applicator: _____
Reference: _____

ACCESS DOOR

BILCO TYPE J-AL ALUM. Leaf Access Door with 316 SS Hardware
 Approved Equal
Manufacturer/Model Num.: _____
Reference: _____

FALL PROTECTION

HALLIDAY X RETRO-GRATE
 Approved Equal
Manufacturer/Model: _____
Reference: _____

Submittal: LIFT STATION (CONTINUED)

CHECK VALVE (AWWA C508)

APCO
Series 6000

Kennedy
Model: _____

Mueller
Model: _____

PRESSURE TRANSDUCER

Contractor shall supply calibration certificate for all installments.

TE Connectivity
MEAS KPSI 750

PRESSURE GAUGE AND DIAPHRAGM SEALS

Contractor shall use Glycerin fill for all Pressure Gauges.

ASHCROFT

Model: _____

WIKA

Model: _____

PRESSURE TRANSMITTER

Contractor shall supply **calibration certificate** for all instrumentation.

ROSEMOUNT, EMERSON
Model Num.3051

Submittal: LIFT STATION PANEL

RTU PANEL

All Applicable electrical codes (latest edition) must be adhered to including WPB, NEC, and FP&L company requirements.

- CC CONTROLS
5760 Corporate Way, WPB FL 33407
- DCR ENGINEERING SERVICE INC.
502 County Rd. 640, Mulberry FL 33860
- REVERE INC.
3810 Drain Field Rd, Lakeland FL 33811

CONTROL PANEL

Refer to Submersible Lift Station - Bill of Material standard detail.

NOTE: All electrical components and systems shall be UL listed, and shall be assembled in a UL listed/approved facility.

LANDSCAPE - HEDGE

Refer to City's landscaping code (Chapter 94 of the Code of Ordinances, Article XIV)

- Silver Buttonwood
- Coco Plum
- Jamaica Caper

LANDSCAPE – PHOTO SCREEN

- 9 oz. Key Banner Mesh, Single Sided, Mesh Digital Banner
Fire retardant, Meets NFPA 701
Latex and UV inks
Outdoor use

- End of Section -



**APPROVED MATERIALS LIST
SECTION FIVE
STORMWATER/DRAINAGE**

STORM SEWERS STANDARDS ARE TO BE USED FOR:

1. The City of West Palm Beach approves materials to be utilized in the storm water system, and services within the rights-of-ways and easements of:
 - A. City of West Palm Beach

Submittal: STORMWATER MANAGEMENT STRUCTURES

MANHOLE RING AND COVER STANDARD:

Ordering information must include: with "WEST PALM BEACH" and "STORM WATER" embossed in the lid. If it is a privately owned sewer system then "STORM WATER" only is embossed in the lid.

- USF: 240 ring and cover with an O-ring seal built into the lid (240-ORS).
- Lid style "D" for walkways and sidewalk areas

CURB INLET TOP, FRAME, AND GRATE:

Combination Inlet Frame, Grate, and Curb Box

- Neenah
R-3067 Grate Type R

- USF Curb & Gutter Inlet Frame, Hood and Grate Series
5130-6431 Heavy Duty Flow Area (190)

Enviro Notice Plates

- Neenah
R-3000-B Surface Mount
- Neenah
R-3000-D Surface Mount

CATCH BASINS:

Combination Frame and Grate

- USF Frame and Grate
4138-6218 Heavy Duty Flow Area (380)

EXFILTRATION TRENCH:

FILTER FABRIC

Non-woven and woven geotextile fabric, needle punched fibers, 100% polypropylene.

- Advanced Drainage Systems, Inc. (ADS)
- Amoco Fabrics and Fiber Company

Approved Use:

Weights	Storm Pipe Joints	Exfiltration Trench
2.3 oz.	Y	N
3.5 oz.	Y	N
4 oz.	Y	Y
6 oz.	Y	Y

- End of Section -



**APPROVED MATERIALS LIST
SECTION SIX
HARDSCAPE/FIXTURES**

HARDSCAPE/FIXTURE STANDARDS ARE TO BE USED FOR:

1. The City of West Palm Beach approves materials to be used within the rights-of-ways and easements of:
 - A. City of West Palm Beach

Submittal: HARDSCAPE

PEDESTRIAN SURACES:

- Detectable Warning Products (Comply with Florida Department of Transportation Standard Specifications for Road and Bridge Construction, Section 527)
- Yellow (preferred)
- Black
- Forest Green
- Other: _____ (Specify Color)

- End of Section -



**APPROVED MATERIALS LIST
SECTION SEVEN
STREET/PUBLIC LIGHTING**

STREET/PUBLIC LIGHTING STANDARDS ARE TO BE USED FOR:

1. The City of West Palm Beach approves materials to be used within the rights-of-ways and easements of:
 - A. City of West Palm Beach

Submittal: This section is under development

This section is under development

- End of Section -



WEST PALM BEACH

**APPROVED MATERIALS LIST
SECTION EIGHT
LANDSCAPE**

LANDSCAPE STANDARDS ARE TO BE USED FOR:

1. The City of West Palm Beach Engineering Department / Parks and Recreations Department approves materials to be used within the rights-of-ways, easements and public property of:
 - A. City of West Palm Beach

Submittal: This section is under development

This section is under development

- End of Section -



WEST PALM BEACH

**APPROVED MATERIALS LIST
SECTION NINE
IRRIGATION**

IRRIGATION STANDARDS ARE TO BE USED FOR:

1. The City of West Palm Beach Parks and Recreations Department approves materials to be used in the irrigation systems and services within the rights-of-ways and easements of:
 - A. City of West Palm Beach

Submittal: IRRIGATION SYSTEM COMPONENTS

CONTROLLERS:

The City of West Palm Beach utilizes two (2) types of irrigation controllers. Both types are manufacturer specific units. Exceptions will not be permitted.

Type I: Electrical Irrigation Controller (Utilized when electric service is available or may be installed)

- Toro Sentinel (Poured Concrete Slab) (Type I)
- SSA-K-12-PSI-6-N-S4-DR
- SSA-K-24-PSI-6-N-S4-DR
- SSA-K-36-PSI-6-N-S4-DR
- SSA-K-48-PSI-6-N-S4-DR

Type II: Solar Irrigation Controller (Utilized on small irrigation systems where electric service is not available)

- Leit Solar 4000 Series (Includes 2 Leit Operations Keys and Interface Kit) (Type II)

COMMUNICATIONS:

The Toro Sentinel controller is utilized by the City as a comprehensive irrigation management system. The City utilizes telemetry communications in conjunction with the Toro Sentinel controller. The following items must be included with a Toro Sentinel System:

- Antenna (AA101K) Unity Gain Kit (One Per Controller) Kenwood UHF Handheld Radio (TK3170K4)(Programmed to City Frequency), Kenwood Battery LITH ION (KNB35L),
- Kenwood Antenna UHF 3160/3180 (KRA27M), Kenwood Rapid Charge 110V (KSC25), With Marine-Grade Weather-Proof Clear Plastic UHF Radio Sealed Bag

HARDWARE:

- BPDJ Kaddy Shack Controller Protection Enclosure (KS-2) Forest Green w/Concrete Slab BPDJ Guard
- Shack Backflow Enclosure (GS-4) Forest Green w/Concrete Slab

VALVE BOX:

- Ametek 6" Round Plastic Valve Box w/Latching Lid
- Ametek 10" Round Plastic Valve Box w/Latching Lid
- Ametek 12" X 16" Rectangular Plastic Valve Box w/Latching Lid

PIPE (PVC):

- 6" Mainline Class 200 PVC "O" Ring w/Ductile Iron Fittings
- 4" Mainline Class 200 PVC "O" Ring w/Ductile Iron Fittings
- 3" Mainline Class 200 PVC "O" Ring w/Ductile Iron Fittings
- 2 1/2" Schedule 80 Lateral Supply Line to Zones
- 2" Schedule 80 Lateral Supply Line to Zones
- 1 1/2" Schedule 80 Lateral Supply Line to Zones
- 1 1/4" Schedule 40 Lateral Supply Line to Zones
- 1" Schedule 40 Lateral Supply Line to Zones
- 3/4" Schedule 40 Lateral Supply Line to Zones
- 1/2" Schedule 40 Lateral Supply Line to Zones
- Funny Pipe, Super Blue Flex, EHD 1295-010-D, 100' Coil

Submittal: IRRIGATION SYSTEM COMPONENTS (CONTINUED)

PIPE (DIRECTIONAL DRILL CONDUIT):

- 4" Directional Bore, Schedule 80 PVC
- 4" Directional Bore, HDPE, ASTM F 2160
- 4" Directional Bore, HDPE, UL 651B (Electrical Wiring)
- 6" Directional Bore, Schedule 80 PVC
- 6" Directional Bore, HDPE, ASTM F 2160
- 6" Directional Bore, HDPE, UL 651B (Electrical Wiring)
- 8" Directional Bore, Schedule 80 PVC
- 8" Directional Bore, HDPE, ASTM F 2160
- 8" Directional Bore, HDPE, UL 651B (Electrical Wiring)
- 12" Directional Bore, Schedule 80 PVC
- 12" Directional Bore, HDPE, ASTM F 2160
- 12" Directional Bore, HDPE, UL 651B (Electrical Wiring)

FITTINGS (PVC):

- 1/2" – 1 1/4" Fittings and Adapters, Schedule 40
- 1 1/2" – 2 1/2" Fittings and Adapters, Schedule 80
- Shrub Adapter, Irritrol HS 100

VALVES:

- 1 1/2" Nibco, Class 125 Bronze Gate Valve (T113 – 1 1/2")
- 2" Nibco, Class 125 Bronze Gate Valve (T113 – 2")
- 3" Nibco, Class 125 Bronze Gate Valve (T113 – 3")
- 3/4" Zone Valve: Irritrol 700 PRS Series with CDR Box
- 1" Zone Valve: Irritrol 700 PRS Series with CDR Box
- 1 1/2" Zone Valve: Irritrol 700 PRS Series with CDR Box
- 2" Zone Valve: Irritrol 700 PRS Series with CDR Box
- 2" Air Relief Valve

HEADS / BUBBLERS:

- Toro 4" Pop-Up Spray #570 Z-4P-PRX Series
- Toro 6" Pop-Up Spray #570 Z-6P-PRX Series
- Toro 12" Pop-Up Spray #570 Z-12P-PRX Series
- Hunter PGP Series, Pop-up Rotar
- Irritrol # 533 Flood Bubblers

BACKFLOW:

- 1" Febco 825Y
- 1 1/4" Febco 825Y
- 1 1/2" Febco 825Y
- 2" Febco 825Y
- Approved Equal

SENSORS:

- 1 1/2" Data Industries IR Series (IR220P) Flow Sensor
- 2" Data Industries IR Series (IR220P) Flow Sensor
- 3" Data Industries IR Series (IR220P) Flow Sensor

- End of Section -



WEST PALM BEACH

**APPROVED MATERIALS LIST
SECTION TEN
RECLAIMED WATER SYSTEM**

RECLAIMED WATER SYSTEM STANDARDS ARE TO BE USED FOR:

1. Reclaimed water distribution system. Distribution System Utility Service Area includes:
 - A. City of West Palm Beach

Submittal: This section is under development

This section is under development

- End of Section -