STANDARD DETAILS

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Date Last Issued: June 22, 2011
Date First Issued: Prior To 1988

This document approved by the Broward County Water & Wastewater Services Technical Standards Committee.

Steven W. Uhrick, P.E, Chair
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<td></td>
<td></td>
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<tr>
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<td>RECLAIMED MAIN INSTALLATION</td>
<td></td>
<td></td>
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<tr>
<td>521</td>
<td>RECLAIMED WATER SERVICE CONNECTION</td>
<td></td>
<td></td>
</tr>
<tr>
<td>525</td>
<td>RECLAIMED METER BOX COVER</td>
<td></td>
<td></td>
</tr>
<tr>
<td>526</td>
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<td></td>
</tr>
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<td></td>
<td></td>
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<td>528</td>
<td>RECLAIMED WATER MASTER METER ASSEMBLY (4&quot; AND LARGER)</td>
<td></td>
<td></td>
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<tr>
<td>552</td>
<td>RECLAIMED WATER MANUAL BLOW OFF</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
1. PRIOR TO BEGINNING ANY WORK, CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES THAT HAVE FACILITIES WITHIN THE PROJECT AREA.
2. THE ABOVE NOTICE SHALL APPEAR ON THE COVER SHEET OF ALL CONSTRUCTION PLANS SUBMITTED TO THE COUNTY.
LEGEND
GS - GRAVITY SEWER
RW - RECLAIMED WATER
WM - POTABLE WATER MAIN
### WATER MAIN SEPARATION IN ACCORDANCE WITH F.A.C. RULE 62-555.314

<table>
<thead>
<tr>
<th>OTHER PIPE</th>
<th>HORIZONTAL SEPARATION</th>
<th>CROSSINGS (1)-(4)</th>
<th>JOINT SPACING @ CROSSINGS (FULL JOINT CENTERED)</th>
</tr>
</thead>
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<td>STORM SEWER, STORM WATER FORCE MAIN, RECLAIMED WATER (2)</td>
<td>Water Main 3 ft. minimum</td>
<td>Alternate 3 ft. minimum</td>
<td>Alternate 3 ft. minimum</td>
</tr>
<tr>
<td>VACUUM SANITARY SEWER</td>
<td>Water Main 3 ft. minimum</td>
<td>Alternate 3 ft. minimum</td>
<td>Alternate 3 ft. minimum</td>
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<tr>
<td>GRAVITY SANITARY SEWER, (3) SANITARY SEWER FORCE MAIN, RECLAIMED WATER</td>
<td>Water Main 6 ft. minimum</td>
<td>Alternate 6 ft. minimum</td>
<td>Alternate 6 ft. minimum</td>
</tr>
<tr>
<td>ON-SITE SEWAGE TREATMENT &amp; DISPOSAL SYSTEM</td>
<td>10 ft. minimum</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. WATER MAIN SHOULD CROSS ABOVE OTHER PIPE. WHEN WATER MAIN MUST BE BELOW OTHER PIPE, THE MINIMUM SEPARATION IS 12 INCHES.
2. RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.
3. 3 FT. FOR GRAVITY SANITARY SEWER WHERE THE BOTTOM OF THE WATER MAIN IS LAID AT LEAST 6 INCHES ABOVE THE TOP OF THE GRAVITY SANITARY SEWER.
4. 18" VERTICAL MINIMUM SEPARATION REQUIRED BY WWS, UNLESS OTHERWISE APPROVED.
FINISH GRADE

WATER MAIN

SEE FIG. 105

DISTANCE AS REQUIRED

6'

BOTH SIDES

FORCE MAIN, RECLAIMED MAIN

J O I N T S  S H A L L  N O T  B E  D E F L E C T E D

M O R E  T H A N  5 0 %  O F  M A N U F A C T U R E R ' S

R E C O M M E N D E D  D E F L E C T I O N

REPLACES FORMER DWG NO. 16B

FIGURE 106

STANDARD UTILITY CROSSING

REVISED 2/23/2011

STANDARD DETAIL
WHEREVER POSSIBLE DEFLECTION OF THE PIPE WILL BE USED TO AVOID EXISTING OBSTRUCTIONS. THIS CROSSING SHALL BE USED ONLY WHEN APPROVED BY WWS.
**HORIZONTAL**

- 11 1/2" - 90° BEND
- TEE OR TAPPING SLEEVE
- CROSS
- VALVE OR DEAD END

**45° VERT OFFSET**

- CROSSES SHALL BE RESTRAINED IN ALL DIRECTIONS.
- FITTINGS AND VALVES NEED TO BE RESTRAINED PER STANDARD DETAILS 109-112, EVEN WHEN THE FITTINGS OR VALVES ARE CUT IN AFTER THE INITIAL PIPE INSTALLATION. ASBESTOS CEMENT PIPE WILL BE REPLACED WITH DUCTILE IRON PIPE AT LEAST THROUGH THE RESTRAINING LENGTH.

### DUCTILE IRON PIPE

<table>
<thead>
<tr>
<th>Diameter</th>
<th>11 1/2°</th>
<th>22 1/2°</th>
<th>45°</th>
<th>90°</th>
<th>Tee or Cross</th>
<th>Valves and Dead End</th>
<th>UPPER</th>
<th>LOWER</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>1</td>
<td>2</td>
<td>4</td>
<td>10</td>
<td>3</td>
<td>20</td>
<td>9</td>
<td>3</td>
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<tr>
<td>6</td>
<td>2</td>
<td>3</td>
<td>6</td>
<td>14</td>
<td>11</td>
<td>28</td>
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<td>4</td>
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<tr>
<td>8</td>
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<td>4</td>
<td>8</td>
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<td>2</td>
<td>5</td>
<td>10</td>
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<td>27</td>
<td>44</td>
<td>19</td>
<td>6</td>
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<tr>
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<td>3</td>
<td>5</td>
<td>10</td>
<td>24</td>
<td>34</td>
<td>52</td>
<td>22</td>
<td>6</td>
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</table>

### PVC PIPE

<table>
<thead>
<tr>
<th>Diameter</th>
<th>11 1/2°</th>
<th>22 1/2°</th>
<th>45°</th>
<th>90°</th>
<th>Tee or Cross</th>
<th>Valves and Dead End</th>
<th>UPPER</th>
<th>LOWER</th>
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<tbody>
<tr>
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<td>2</td>
<td>3</td>
<td>5</td>
<td>12</td>
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<td>43</td>
<td>71</td>
<td>30</td>
<td>7</td>
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<tr>
<td>12</td>
<td>3</td>
<td>6</td>
<td>12</td>
<td>29</td>
<td>55</td>
<td>83</td>
<td>35</td>
<td>7</td>
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</tbody>
</table>

THE NOTED REQUIREMENTS WERE CALCULATED IN ACCORDANCE WITH THRUST RESTRAINT CALCULATOR V6.1 BY EBAA IRON WITH THE FOLLOWING ASSUMPTIONS:

- **SOIL CONDITIONS**: SAND (SW, SP, GW)
- **LAYING CONDITION**: 4, SAND BEDDING, BACKFILL COMPACTED > 80%
- **MINIMUM COVER**: 3.0 FT  **SAFETY FACTOR**: 1.5  **BARE PIPE**

IF FIELD CONDITIONS DIFFER FROM THE ABOVE, CONTRACTOR SHALL NOTIFY WWS. FOR PIPE LARGER THAN INCLUDED IN THE ABOVE TABLES, ENGINEER OF RECORD SHALL SUBMIT CALCULATIONS FOR EACH JOINT REQUIRING RERAINT.

**SINGLE FITTING RESTRANDED JOINT**

**150 PSI TEST PRESSURE**

**REPLACES FORMER DWG NO.109**

**REVISED**

2/23/2011
The noted requirements were calculated in accordance with thrust restraint calculator V6.1 by EBAA Iron with the following assumptions:

- Soil conditions: Sand (SW, SP, GW)
- Laying condition: 4, sand bedding, backfill compacted > 80%
- Minimum cover: 3.0 ft
- Safety factor: 1.5
- Bare pipe

If field conditions differ from the above, contractor shall notify WWS. For pipe larger than included in the above tables, engineer of record shall submit calculations for each joint requiring restraint.

**Restrained Reducing Fitting**

150 PSI Test Pressure

### Ductile Iron Pipe

<table>
<thead>
<tr>
<th>Diameter</th>
<th>6&quot;</th>
<th>8&quot;</th>
<th>10&quot;</th>
<th>12&quot;</th>
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<tbody>
<tr>
<td>4&quot;</td>
<td>15'</td>
<td>27'</td>
<td>36'</td>
<td>45'</td>
</tr>
<tr>
<td>6&quot;</td>
<td>16'</td>
<td>27'</td>
<td>38'</td>
<td></td>
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<tr>
<td>8&quot;</td>
<td>15'</td>
<td>28'</td>
<td></td>
<td></td>
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<tr>
<td>10&quot;</td>
<td>16'</td>
<td></td>
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### PVC Pipe

<table>
<thead>
<tr>
<th>Diameter</th>
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<th>8&quot;</th>
<th>10&quot;</th>
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<td>4&quot;</td>
<td>24'</td>
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<tr>
<td>10&quot;</td>
<td>25'</td>
<td></td>
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### Branch Size

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<th>10&quot;</th>
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</tr>
<tr>
<td>6&quot;</td>
<td>6'</td>
<td>1'</td>
<td>1'</td>
<td></td>
</tr>
<tr>
<td>8&quot;</td>
<td>15'</td>
<td>10'</td>
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</tr>
<tr>
<td>10&quot;</td>
<td>23'</td>
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</table>

**Restrained Joint Requirements Reducing Fittings**

**Figure 112**

Replaces former DWG No. 112

Revised 2/23/2011
VALVE IDENTIFICATION MARKERS (TAG)

BROWARD COUNTY ID
VALVE NUMBER
VALVE SIZE IN INCHES
TYPE OF VALVE (GV, BV, OR PV.)
USAGE: "POTABLE WATER", "RAW WATER", "RECLAIMED WATER", "SEWER"
OPENING DIRECTIONS,
NUMBER OF TURNS

BCWWS
(Optional)
6"
GV
RAW WATER
L-19

VALVE IDENTIFICATION MARKERS (TAG)

3" DIA BRONZE DISC MARKED "WATER", "SEWER" OR "RECLAIMED"

VALVE BOX COVER (TYP)
ANCHORED IN CONCRETE COLLAR OR ASPHALT AS REQ'D

3" DIA BRONZE DISC ANCHORED IN CONCRETE COLLAR OR ASPHALT AS REQ'D

24" DIAMETER OR 24"X24" CONCRETE COLLAR TYP. EACH VALVE BOX OMIT COLLAR IN PAVED AREAS

CENTER VALVE BOX IN COLLAR

DRILL 3/8" HOLE EPOXY FILL

24" DIAMETER OR 24"X24" CONCRETE COLLAR TYP. EACH VALVE BOX OMIT COLLAR IN PAVED AREAS

CENTER VALVE BOX IN COLLAR

DRILL 3/8" HOLE EPOXY FILL

VALVE COLLAR AND IDENTIFICATION MARKER

FIGURE 121

REPLACES FORMER DWG NO.3E
REVISED 2/23/2011

WATER & WASTEWATER SERVICES
ENGINEERING DIVISION
2555 WEST COPANS ROAD
POMPANO BEACH, FL 33069
PHONE NO. 954-831-0745
FAX: 954-831-0925
1. WHEN VALVE IS NOT LOCATED IN PAVEMENT, PLACE AN APPROPRIATE PAVEMENT REFLECTOR MARKER IN THE DRIVE LANE, ADJACENT TO THE VALVE.

2. OPERATOR EXTENSION SHAFT SHALL BE PROVIDED WHEN OPERATING NUT IS MORE THAN 24" BELOW TOP OF VALVE BOX.

3. PVC PIPE OR DUCTILE IRON PIPE IS NOT ACCEPTABLE FOR VALVE BOX RISER.
1. Lift holes are to be sealed with mortar inside and outside after installation.
2. Maintenance access structure walls to be coated inside and outside with 16 mil. thickness coal tar epoxy.
3. All openings shall be sealed with a waterproof, expanding grout. Actual location and maintenance access structure frame elevation shall be determined by engineer based on as-built survey data.
4. The chimney area shall be a minimum of 4" and a maximum of 12" in height. A minimum of 3 courses of brick shall be installed.
5. Set maintenance access structure frame on a bed of Portland cement and silica sand. Bring mortar up over frame.
ALL JOINTS TO BE RESTRAINED BY APPROVED METHODS.
EXISTING GALVANIZED STEEL PIPE & GATE VALVE

EXISTING TEE

REMOVE EXISTING TAPPED PLUG, INSTALL SOLID RESTRAINED PLUG (REQUIRES LINE SHUT DOWN)

LIVE LINE SEALING
2" AND 3" G.S.P.

PIPE TO BE ABANDONED
(LIVE LINE LESS THAN 4"

FIGURE 141
1. INSTALL 2" PIPE AT BOTH ENDS OF LINE TO BE ABANDONED. GROUT IN PLACE WITH QUICK SETTING HYDRAULIC CEMENT.

2. PUMP FLOWABLE GROUT FROM ONE END, OR INTERMEDIATE POINTS ALONG THE PIPELINE, UNTIL PIPE IS FILLED AS WITNESSED BY THE DISCHARGE FROM 2" PIPE(S). REMOVE 2" PIPE AND FILL WITH QUICK SETTING HYDRAULIC CEMENT.
AT EXISTING VALVE OR FITTING

SEQUENCE OF CONSTRUCTION

1. RESTRAIN VALVE OR FITTING. CONTRACTOR TO PROVIDE TEMPORARY RESTRAINT AS REQUIRED.
2. REMOVE EXISTING PIPE FOR NEW CONCRETE PLUG.
3. INSTALL PLUG INTO BELL OF VALVE OR FITTING AND CAP ON END OF EXISTING PIPE TO BE ABANDONED.
4. INSTALL ALL THREAD RODS (COATED, 3/4" DIA., MIN) AND POUR CONCRETE PLUG.

PIPE TO BE ABANDONED (LIVE LINE 4" AND LARGER)

FIGURE 143
1. The end of the casing pipe shall extend beyond the edge of pavement a minimum of 5'.

2. When construction is within FDOT or railroad jurisdiction, additional requirements of the utility accommodation manual shall be met.
1" VENT PIPE
(MATERIAL OPTIONAL)
& BOX TYP EACH END

"A"

CARRYING PIPE

SPACERS

Casing

END SEAL

FILL WITH SAND
TO SPRINGLINE
OF PIPE

STAINLESS STEEL BAND

CASING SEAL

"A"

CARRIER PIPE

SPACER

CASING PIPE

SECTION "A-A"

1. THE DISTANCE BETWEEN SPACERS & THEIR
POSITIONING ON THE CARRIER PIPE
IS TO BE IN ACCORDANCE WITH THE
MANUFACTURER'S RECOMMENDATIONS
2. THE CARRIER PIPE SHALL BE CENTERED
IN THE CASING PIPE.
THE SKIDS ON THE SPACER SHALL
RESTRAIN CARRIER PIPE MOVEMENT.
### Specifications for Carrier and Casing Pipes

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<thead>
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<th>Carrier Pipe</th>
<th>Casing Pipe</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Contents to be handled</strong></td>
<td>WATER/WASTEWATER</td>
<td>NONE</td>
</tr>
<tr>
<td><strong>Outside diameter</strong></td>
<td>DETERMINED BY PROJECT</td>
<td>SEE TABLE</td>
</tr>
<tr>
<td><strong>Pipe material</strong></td>
<td>DIP</td>
<td>STEEL</td>
</tr>
<tr>
<td><strong>Specification and grade</strong></td>
<td>ANSI/AWWA C151/A21.5'</td>
<td>ASTM A139, GRADE &quot;B&quot;</td>
</tr>
<tr>
<td><strong>Pressure class/wall thickness</strong></td>
<td>350</td>
<td>0.500”</td>
</tr>
<tr>
<td><strong>Actual working pressure</strong></td>
<td>150 PSI</td>
<td>NONE</td>
</tr>
<tr>
<td><strong>Type of joint</strong></td>
<td>RESTRAINED</td>
<td>WELDED</td>
</tr>
<tr>
<td><strong>Coating</strong></td>
<td>BLACK BITUMINOUS</td>
<td>BLACK BITUMINOUS</td>
</tr>
<tr>
<td><strong>Method of installation</strong></td>
<td>CASING SPACERS</td>
<td>JACK AND BORE</td>
</tr>
<tr>
<td><strong>Protection at ends of casing</strong></td>
<td>N/A</td>
<td>CASING END SEAL</td>
</tr>
</tbody>
</table>

1. CASING PIPE TO BE INSTALLED UNDER ROAD BY JACKING AND BORING.
2. ALL WORK DONE WITHIN FDOT OR RAILROAD RIGHT OF WAY IS SUBJECT TO INSPECTION AND DIRECTION OF THEIR ENGINEER.
3. ALL WORK SHALL BE DONE IN ACCORDANCE WITH CURRENT AWWA STANDARDS FOR PIPE LINES CONVEYING NONFLAMMABLE SUBSTANCES AND FDOT REQUIREMENTS AS PER UTILITY ACCOMMODATION GUIDE, LATEST VERSION.
4. FIELD AND SHOP WELDS OF THE CASING PIPES SHALL CONFORM WITH AWS STANDARD SPECIFICATIONS. FIELD WELDS SHALL BE COMPLETE PENETRATIONS, SINGLE-BEVEL GROOVE TYPE JOINTS.
5. STEEL CASING SHALL CONFORM TO THE REQUIREMENTS OF ASTM DESIGNATION A139. THE CASING PIPES SHALL HAVE THE MINIMUM NOMINAL DIAMETER AND MINIMUM WALL THICKNESS AS SHOWN.
6. CONTRACTOR SHALL VERIFY LOCATION AND DEPTH OF ALL EXISTING UTILITIES PRIOR TO STARTING JACKING AND BORING.
7. MINIMUM VERTICAL CLEARANCE BETWEEN PROPOSED CASING PIPE AND OTHER EXISTING UTILITIES SHALL BE 12” MINIMUM.
8. STAINLESS STEEL CASING SPACERS WITH POLYMER RUNNERS SUBJECT TO APPROVAL OF WWS.

### Jack and Bore Pipe Details

<table>
<thead>
<tr>
<th>CARRIER PIPE SIZE</th>
<th>NOMINAL DIAM OF STEEL CASING PIPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>6&quot;</td>
<td>14&quot;</td>
</tr>
<tr>
<td>8&quot;</td>
<td>16&quot;</td>
</tr>
<tr>
<td>10&quot;</td>
<td>20&quot;</td>
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<tr>
<td>12&quot;</td>
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<td>14&quot;</td>
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<td>16&quot;</td>
<td>30&quot;</td>
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<td>18&quot;</td>
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</tr>
<tr>
<td>42&quot;</td>
<td>54&quot;</td>
</tr>
<tr>
<td>48&quot;</td>
<td>72&quot;</td>
</tr>
</tbody>
</table>
1. ALL CONFLICT MAINTENANCE ACCESS STRUCTURE SHALL CONFORM TO THE DETAILS SHOWN ON THIS DRAWING, AND TO THE REQUIREMENTS OF ASTM C-478 AND BROWARD COUNTY HIGHWAY CONSTRUCTION AND ENGINEERING DIVISION'S "MINIMUM STANDARDS", LATEST EDITION.

2. POTABLE WATER PIPE SHALL NOT PASS THROUGH OR CONTACT STORM DRAINAGE MAINTENANCE ACCESS STRUCTURE WITHOUT WRITTEN PERMISSION OF WWS TECHNICAL STANDARDS COMMITTEE.

3. POTABLE WATER PIPE SHALL NOT PASS THROUGH OR CONTACT SANITARY SEWER MAINTENANCE ACCESS STRUCTURE.
1. UNLESS OTHERWISE SPECIFIED, BEDDING MATERIAL SHALL CONSIST OF SELECT BACKFILL MATERIAL 2" MAX. SIZE, COMPACTED TO AT LEAST 100% OF MAX. DENSITY, 6" LIFTS, PER AASHTO SPEC. NO. T-99C.

2. WHERE REQUIRED, SHEETING AND SHORING SHALL BE IN ACCORDANCE WITH OSHA REQUIREMENTS.

3. WHERE UNSTABLE SOILS ARE ENCOUNTERED, INCLUDING PEAT, MUCK OR OTHER ORGANIC SOILS, ELASTIC SILT AND CLAYS, A FOUNDATION IS REQUIRED AS DETERMINED BY THE ENGINEER OF RECORD.
1. BASE MATERIAL SHALL HAVE A MINIMUM LBR OF 100 AND A MINIMUM CARBONATE CONTENT OF 70% (60% FOR LOCAL STREETS).
2. BASE SHALL BE PLACED IN 6" MAXIMUM THICKNESS LAYERS WITH EACH LAYER COMPACTED AS REQUIRED AND TESTED PRIOR TO THE PLACEMENT OF THE SUCCEEDING LAYERS.
3. SUBGRADE MATERIAL SHALL BE GRANULAR AND ANGULAR AND SHALL HAVE A MINIMUM LBR OF 40.
4. BACKFILL SHALL BE PLACED AND COMPACTED IN 6" LAYERS, BUT TESTING WILL BEGIN 12" ABOVE THE INSTALLED FACILITY.
5. ALL EDGES OF EXISTING ASPHALT PAVEMENT THAT ABUT RESURFACING SHALL BE SAW CUT IN STRAIGHT LINES PARALLEL TO OR PERPENDICULAR TO THE ROADWAY, PRIOR TO RESURFACING.
6. RESURFACING MATERIAL SHALL BE CONSISTENT WITH SURROUNDING SURFACE, AND SHALL BE APPLIED IN 2 LIFTS, A MINIMUM OF ¾ INCH AND A MAXIMUM OF 2" IN THICKNESS.
7. TRAFFIC STRIPES SHALL NOT BE PLACED DIRECTLY ON TOP OF THE JOINT.
8. FOR STATE ROADS REFER TO FDOT SPECIFICATIONS AND REQUIREMENTS.
1. Base material over ditch shall be twice the thickness of the original.
2. Base material shall be placed in 6" maximum layers (loose measurement) and each layer thoroughly rolled or tamped to 98% of maximum density, per AASHTO T-180.
3. Asphalt concrete pavement joints shall be mechanically saw cut.
4. Surface material shall be consistent with the surrounding surface material.
5. Base material shall have a minimum carbonate of 70% (60% for local streets).
6. Sub grade material shall be granular and angular and shall have a minimum LBR of 40.
7. If the ditch is filled temporarily, it shall be covered with a 2" thick asphalt concrete patch to keep the fill material from raveling, until replaced with a permanent patch.
8. For state roads refer to FDOT specifications and requirements.
**RESTORATION SPECIFICATION SUMMARY TABLE**

<table>
<thead>
<tr>
<th>TYPE</th>
<th>MATERIAL</th>
<th>SPECIFICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>TYPE I</td>
<td>SOD, SEED OR MULCH</td>
<td>COMPACTED SUBGRADE (95% PER AASHTO T-99C) BAHIA OR ST. AUGUSTINE SOD TO MATCH EXISTING</td>
</tr>
<tr>
<td>TYPE II-A</td>
<td>ASPHALT DRIVEWAY</td>
<td>1-1/2&quot; ASPHALT, 6&quot; LIMEROCK (98% PER AASHTO T-180), COMPACTED SUBGRADE (100% PER AASHTO T-99C)</td>
</tr>
<tr>
<td>TYPE III</td>
<td>CONCRETE DRIVEWAY</td>
<td>6&quot; CONCRETE (NO WIRE MESH) COMPACTED SUBGRADE (100% PER AASHTO T-99C)</td>
</tr>
</tbody>
</table>
6" SCHEDULE 40 STEEL PIPE FILLED WITH CONCRETE

COLOR OF FINISH COAT SHALL BE OSHA SAFETY YELLOW (REFLECTIVE)

3000 PSI CONCRETE

FINISHED GRADE
1. CONCRETE SLAB DESIGNED BY ENGINEER OF RECORD.
2. EXTEND CONCRETE SLAB UNTIL COVER EXCEEDS 30 INCHES FOR DIP OR 36 INCHES FOR PVC.
3. CONCRETE TO BE 3,000 PSI.
4. THIS DETAIL TO BE USED ONLY UPON WRITTEN APPROVAL FROM WWS TECHNICAL STANDARDS COMMITTEE.
1. REMOVE TEMPORARY CONNECTION AT CORPORATION STOP ON EXISTING MAIN AFTER FILLING AND FLUSHING OF NEW LINE.
2. DO NOT REMOVE TEMPORARY CONNECTION AT CORPORATION STOP ON NEW MAIN UNTIL ALL TESTING HAS BEEN CLEARED BY HEALTH DEPARTMENT.
3. CLOSE CORPORATION STOPS AND PLUG/CAP WITH BRASS FITTINGS AFTER SAMPLING IS COMPLETED.
1. SAMPLE POINTS SHALL BE LOCATED AND LATER REMOVED AS REQUIRED BY BROWARD COUNTY HEALTH DEPARTMENT.
2. CORPORATION STOP SHALL BE CLOSED AND PLUGGED/CAPPED WITH A BRASS FITTING AFTER HEALTH DEPARTMENT CLEARANCE.
3. SAMPLING POINTS MAY BE PLACED AT THE ENDS OF WATER SERVICES BEFORE THE METERS AND ON BLOW OFFS FOR TERMINAL WATER MAINS, WHERE SERVICES AND BLOW OFFS ARE REQUIRED BY THE PLANS.
1. Successive taps into the water main shall be spaced not less than 18” on center. No taps shall be closer than 18” to a joint.
2. 1” service require a 2" minimum inside diameter casing pipe.
3. 2” service require a 3" minimum inside diameter casing pipe.
4. All casing pipe shall extend a minimum of 2' beyond the edge of paving streets.
5. For 1" service lines the minimum radius shall be 14”.
   For 2” service lines the minimum radius shall be 21”.
6. All casing pipe ends shall be filed smooth with no burrs and sealed with urethane foam.
7. The polyethylene or copper tubing shall be one continuous piece from the corporation stop to the check valve. No joints will be permitted between these points.
8. The check valve is to be installed 5 feet before the meter valve.

This detail applies only to residential roads with less than 70’ R.O.W. (no median) or within easements.

Type 1 Water Service Connection

Figure 221

Replaces former DWG No. 1A

Revised 2/23/2011
1. SUCCESSIVE TAPS INTO THE WATER MAIN SHALL BE SPACED NOT LESS THAN 18" ON CENTER. NO TAPS SHALL BE CLOSER THAN 18" TO A JOINT.
2. 1" SERVICES REQUIRE A 2" MINIMUM INSIDE DIAMETER CASING PIPE.
3. 2" SERVICES REQUIRE A 3" MINIMUM INSIDE DIAMETER CASING PIPE.
4. ALL CASING PIPE SHALL EXTEND A MINIMUM OF 2' BEYOND THE EDGE OF PAVED STREETS.
5. FOR 1" SERVICE LINES THE MINIMUM RADIUS SHALL BE 14". FOR 2" SERVICE LINES THE MINIMUM RADIUS SHALL BE 21".
6. ALL CASING PIPE ENDS SHALL BE FILED SMOOTH WITH NO BURRS AND SEALED WITH URETHANE FOAM.
7. THE POLYETHYLENE OR COPPER TUBING SHALL BE ONE CONTINUOUS PIECE FROM THE CORPORATION STOP TO THE CHECK VALVE. NO JOINTS WILL BE PERMITTED BETWEEN THESE POINTS.
8. THE CHECK VALVE IS TO BE INSTALLED 5 FEET BEFORE THE METER VALVE.

THIS DETAIL APPLIES ONLY TO COUNTY ARTERIAL AND COLLECTOR ROADS (70' TO 120' R/W) AND ALL STATE ROAD R/W

REPLACES FORMER DWG NO.1B
REVISED 2/23/2011

TYPE 2 WATER SERVICE CONNECTION

FIGURE 222
2" METER SET
(SEE FIG. 228 FOR WATER METER INSTALLATION)

2" POLYETHYLENE TUBING OR 2" TYPE "K" COPPER TUBING (TYP.)

CHECK VALVE

4" PLUG WITH 2" TAP & 2" CORPORATION STOP (TYP.)

21" MINIMUM RADIUS (TYP.)

4" MECHANICAL JOINT TEE

4" GATE VALVE (OMIT IF LESS THAN 16' TO MAIN LINE)

1. ALL JOINTS TO BE RESTRAINED.

4" WM

4" GATE VALVE

TAPPING SADDLE OR MECHANICAL JOINT TEE

WATER MAIN (SIZE VARIES)

ALTERNATIVELY, THE WATER MAIN CAN BE TAPPED FOR EACH METER.

METER INSTALLATION FOR TWO 2" METERS

FIGURE 224
1. ALL STRUCTURES TO BE TRAFFIC BEARING TYPE.
2. R/W LINE OR EASEMENT LINE IS THE CUSTOMER'S SIDE OF METER BOX.
3. WWS RESPONSIBILITY ENDS AT THE CUSTOMER'S SIDE OF METER.
4. CURVE IN SERVICE LINE SHALL BE AS CLOSE TO METER BOX AS PRACTICAL, WITH A MINIMUM RADIUS SHALL BE 14" FOR 1" TUBING.
5. ALL METERS WILL BE SUPPLIED AND INSTALLED BY WWS. METER HAS IRON PIPE THREAD MALE CONNECTION ON EACH END.
6. WHEN SIDEWALKS ARE PRESENT, OR PLANNED FOR IN THE R/W, THE BACK EDGE OF THE METER BOX SHALL LINE UP WITH THE BACK EDGE OF THE SIDEWALK.
7. METER SHALL BE CENTERED IN BOX DIRECTLY UNDER THE ACCESS LID.
8. THE CHECK VALVE IS TO BE INSTALLED 5 FEET BEFORE THE METER BALL VALVE.
9. WHEN THERE ARE NO SIDEWALKS, CONSTRUCT 6" WIDE x 6" THICK CONCRETE COLLAR AT GRADE.

<table>
<thead>
<tr>
<th>METER SIZE</th>
<th>LAYING LENGTH (IN)</th>
<th>HEIGHT (IN)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5/8&quot;</td>
<td>7.5</td>
<td>4.56</td>
</tr>
<tr>
<td>1&quot;</td>
<td>10.75</td>
<td>5.75</td>
</tr>
</tbody>
</table>
1. All structures to be traffic bearing type.
2. R/W line or easement line is the customer's side of meter box.
3. WWS responsibility ends at the customer's side of meter.
4. Curve in service line shall be as close to meter box as practical, with a minimum radius shall be 14" for 1" tubing.
5. All meters will be supplied and installed by WWS. Meter has iron pipe thread male connection on each end.
6. When sidewalks are present, or planned for in the R/W, the back edge of the meter box shall line up with the back edge of the sidewalk.
7. Meter shall be centered in box directly under the access lid.
8. The check valve is to be installed 5 feet before the meter valve.
9. When there are no sidewalks, construct 6' wide x 6' thick concrete collar at grade.

Double Meter Installation for Two 5/8" Meters

Replaces former DWG No. 3B
Revised 2/23/2011

Figure 227
1. ALL STRUCTURES TO BE TRAFFIC BEARING TYPE.
2. R/W LINE OR EASEMENT LINE IS THE CUSTOMER'S SIDE OF METER BOX.
3. WWS RESPONSIBILITY ENDS AT THE CUSTOMER'S SIDE OF METER.
4. CURVE IN SERVICE LINE SHALL BE AS CLOSE TO METER BOX AS PRACTICAL, WITH A MINIMUM RADIUS SHALL BE 21" FOR 2" TUBING.
5. ALL METERS WILL BE SUPPLIED AND INSTALLED BY WWS.
6. METER HAS IRON PIPE THREAD MALE CONNECTION ON EACH END.
7. WHEN SIDEWALKS ARE PRESENT, OR PLANNED FOR IN THE R/W, THE BACK EDGE OF THE METER BOX SHALL LINE UP WITH THE BACK EDGE OF THE SIDEWALK.
8. METER SHALL BE CENTERED IN BOX DIRECTLY UNDER THE ACCESS LID.
9. WHEN THERE ARE NO SIDEWALKS, CONSTRUCT 6" WIDE x 6" THICK CONCRETE COLLAR AT GRADE.

**METER INSTALLATION**

**FOR 1 1/2" OR 2" METERS**

<table>
<thead>
<tr>
<th>METER SIZE</th>
<th>LAYING LENGTH (IN)</th>
<th>HEIGHT (IN)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 1/2&quot;</td>
<td>13</td>
<td>6 7/8&quot;</td>
</tr>
<tr>
<td>2&quot;</td>
<td>17</td>
<td>7 3/8&quot;</td>
</tr>
</tbody>
</table>
1. HYDRANT COATED WITH YELLOW REFLECTIVE PAINT.
2. USE RESTRAINED JOINTS FOR THE ENTIRE ASSEMBLY SHOWN.
3. HYDRANT SET BACK SHALL CONFORM TO FDOT AND BCHCSP REQUIREMENTS, WHERE APPLICABLE.
4. GATE VALVE IS NORMALLY LOCATED NEXT TO TEE.
5. IF DISTANCE FROM MAIN LINE TO FIRE HYDRANT IS GREATER THAN 20 FEET ANOTHER GATE VALVE WILL BE PROVIDED CLOSE TO THE HYDRANT. THIS SECOND VALVE SHALL BE INSTALLED WITHIN 5' OF THE FIRE HYDRANT. CHECK VALVE SHALL BE WITHIN 3' OF FIRE HYDRANT UNLESS CHECK VALVE INTEGRAL TO HYDRANT ASSEMBLY.
6. HYDRANT FEED PIPE MAY BE TAPPED FOR A SERVICE LINE UPSTREAM OF THE ISOLATION GATE VALVE.
1. THE DOUBLE CHECK VALVE SHALL BE PRIVATELY OWNED BY PROPERTY OWNER.
2. FIRE SYSTEM TO BE CONSTRUCTED/TESTED IN ACCORDANCE WITH NFPA STDS. & ALL APPLICABLE CODES.
3. METER BOX AND SERVICE LINE SHALL BE IN ACCORDANCE WITH WWS STANDARD DETAIL FOR WATER METER INSTALLATION AND NFPA STDS & CODES. USE TYPE "K" COPPER TUBING AND BRASS OR COPPER FITTINGS.
4. BACKFLOW PREVENTER FOLLOWING THE METER SHALL BE THE SAME TYPE DEVICE (DEGREE OF HAZARD) AS THE FIRE MAIN DEVICE. THIS SHALL BE PRIVATELY OWNED BY THE PROPERTY OWNER, METER BOX SHALL BE SUPPLIED BY CONTRACTOR.
5. EXTENT OF WWS OWNERSHIP IS LIMITED TO THE BYPASS METER AND ALL PIPING PRIOR TO THE POINT OF SERVICE FOR THE FIRE SYSTEM AS SHOWN ON THIS DRAWING VIA PLAN AND PROFILE ABOVE.
6. 1" VENT PIPE TO BE REMOVED AFTER WWS APPROVAL.

DEDICATED FIRE SYSTEM

TYPE 1
PRIVATE FIRE PROTECTION
4", 6" AND 8" DIAMETER CONNECTION
1. The double check valve shall be privately owned by the property owner.
2. WWS responsibility is between water main and meter.
3. Easement shall be provided in accordance with WWS minimum requirements.
4. All above ground pipe shall be flanged, DI (ductile iron) type.
5. All pipe leading from water main to flanged piping shall be D.I. pipe, restrained joints.
6. All above ground piping, fittings, gate valves and check valves and the meter assembly shall be painted with polyurethane coating (blue).
1. THE DOUBLE CHECK VALVE SHALL BE PRIVATELY OWNED BY PROPERTY OWNER.
2. FIRE SYSTEM TO BE CONSTRUCTED/TESTED IN ACCORDANCE WITH NFPA STDS AND ALL APPLICABLE CODES.
3. METER BOX AND SERVICE LINE SHALL BE IN ACCORDANCE WITH WWS STANDARD DETAIL FOR WATER METER INSTALLATION AND NFP STDS AND CODES. USE TYPE "K" COPPER TUBING AND BRASS OR COPPER FITTINGS.
4. BACKFLOW PREVENTER FOLLOWING THE METER SHALL BE THE SAME TYPE DEVICE (DEGREE OF HAZARD) AS THE FIRE MAIN DEVICE. THIS SHALL BE PRIVATELY OWNED BY THE PROPERTY OWNER. METER AND METER BOX SHALL BE SUPPLIED BY CONTRACTOR.
5. EXTENT OF WWS OWNERSHIP IS LIMITED TO THE BYPASS METER AND ALL PIPING PRIOR TO THE POINT OF SERVICE FOR THE FIRE SYSTEM AS SHOWN ON THIS DRAWING VIA PLAN AND PROFILE ABOVE.
STANDARD DETAIL

FINISHED GRADE

TRAFFIC BEARING VALVE BOX AND COVER

6" MIN

2" THREADED BRASS PLUG

RESTRAINED PLUG

2" BRONZE ANGLE VALVE

3"

PEA ROCK

90° STREET ELBOW SCH 40 STAINLESS STEEL

11 7/8" ID MIN.

2" PIPE SCH 40 STAINLESS STEEL

2" - 90° ELBOW SCH 40 STAINLESS STEEL

DUCTILE IRON PIPE WATER MAIN

GATE VALVE

PROFILE

1. 2" TAP IN BOTTOM OF PLUG.
2. USE RESTRAINED JOINT PIPE.
3. IN GRASS AREA USE CONCRETE COLLARS, 6" THICK.

MANUAL BLOW OFF

FIGURE 252

REPLACES FORMER DWG NO. 5A

REVISED 2/23/2011
36" DIA. PERF. PIPE

AUTOMATIC BLOW OFF

2" CHECK VALVE

2" WATER SERVICE CONNECTION

2" GATE VALVE

PVC SCH 80

JUMPER SIZED FOR 2" WATER METER, SEE FIG 228

FILTER FABRIC

PEA ROCK

24" CONC. COLLAR

3" MIN

6"
R/W LINE
2" PE WATER SERVICE
TAPPED PLUG
2" C.V.
2" METER JUMPER
2" SCH 80 PVC PIPE
AUTOMATIC BLOW OFF
(USE 4 BOLLARDS OFF R/W)

AUTOMATIC BLOW OFF
WATER MAIN

E O P

254

BROWARD COUNTY
PUBLIC WORKS DEPARTMENT

STANDARD DETAIL

AUTOGRAPHIC SERVICES
SUBURBAN ENTERPRISES
PO BOX 620400
MIAMI, FL 33162-0400
PHONE NO. 954-716-2200
FAX: 954-716-2201

WATER & WASTEWATER SERVICES
ENGINEERING DIVISION
2555 WEST COPANS ROAD
POMPANO BEACH, FL 33069
PHONE NO. 954-831-0745
FAX: 954-831-0925

L:\ED\DESIGN_DATA\STANDARDS\WWS STANDARD DETAILS\WWS STANDARD DETAILS.dwg, 254, 3/22/2012 12:22:29 PM, CBGARCIA
1. MAINTENANCE ACCESS STRUCTURE ADAPTOR COUPLING NEOPRENE BOOT OR APPROVED EQUAL ARE REQUIRED FOR ALL PIPE MATERIAL OR AS APPROVED BY WWS.

2. MAINTENANCE ACCESS STRUCTURE WALLS TO BE SEAL COATED INSIDE AND OUTSIDE WITH 16 MIL. THICKNESS OF COAL TAR EPOXY. THE 1st COAT IS RED AND THE 2nd COAT IS BLACK.

3. LIFT HOLES THROUGH PRECAST SECTIONS PERMITTED PER OSHA REQUIREMENTS.

4. ALL OPENINGS SHALL BE SEALED WITH WATERPROOF EXPANDING GROUT. SEE FIG. 322

5. A FLOW CHANNEL SHALL BE CONSTRUCTED INSIDE MAINTENANCE ACCESS STRUCTURE TO DIRECT INFLUENT INTO FLOW STREAM.

6. ALL CONCRETE SHALL BE TYPE II CEMENT, MEETING LATEST ASTM REQUIREMENTS AND PROVIDED WITH LABORATORY CERTIFICATION ON PRECAST STRUCTURES.

7. THE CHIMNEY AREA SHALL BE MINIMUM OF 4" AND A MAXIMUM OF 12" IN HEIGHT. A MINIMUM OF 3 CONCRETE GRADE RINGS SHALL BE INSTALLED. SET IN 2 STRIPS OF SEALANT/ADHESIVE COMPOUND ON EACH SEALING FACE.

8. SET MAINTENANCE ACCESS STRUCTURE FRAME ON 2 STRIPS OF SEALANT PLUS A BED OF PORTLAND CEMENT AND SILICA SAND. BRING MORTAR UP OVER FRAME.

9. APPLY MORTAR COATING TO INSIDE AND OUTSIDE OF CHIMNEY. BRING MORTAR UP AND OVER FRAME.
1. MAINTENANCE ACCESS STRUCTURE ADAPTOR COUPLING NEOPRENE BOOT OR APPROVED EQUAL ARE REQUIRED FOR ALL PIPE MATERIAL OR AS APPROVED BY WWS.

2. MAINTENANCE ACCESS STRUCTURE WALLS TO BE SEAL COATED INSIDE AND OUTSIDE WITH 16 MIL. THICKNESS OF COAL TAR EPOXY. THE 1st COAT IS RED AND THE 2nd COAT IS BLACK.

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5. A FLOW CHANNEL SHALL BE CONSTRUCTED INSIDE MAINTENANCE ACCESS STRUCTURE TO DIRECT INFLENT INTO FLOW STREAM.

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8. SET MAINTENANCE ACCESS STRUCTURE FRAME ON 2 STRIPS OF SEALANT PLUS A BED OF PORTLAND CEMENT AND SILICA SAND. BRING MORTAR UP OVER FRAME.

9. APPLY MORTAR COATING TO INSIDE AND OUTSIDE OF CHIMNEY. BRING MORTAR UP AND OVER FRAME.

WHERE DEPTH TO INVERT IS GREATER THAN 7'-0".

3'-0" MIN
4'-0" MAX

2'-0" MIN

4'-0"

1"/FT SLOPE

SEALANT (KEY LOWER & UPPER WALL)

PIPE OUTSIDE DIAMETER DESIGNED PLUS 4" CLEARANCE ALL AROUND WITH KEYWAY

8" CONCRETE SLAB CAST MONOLITHICALLY WITH WALLS

1. MAINTENANCE ACCESS STRUCTURE ADAPTOR COUPLING NEOPRENE BOOT OR APPROVED EQUAL ARE REQUIRED FOR ALL PIPE MATERIAL OR AS APPROVED BY WWS.

2. MAINTENANCE ACCESS STRUCTURE WALLS TO BE SEAL COATED INSIDE AND OUTSIDE WITH 16 MIL. THICKNESS OF COAL TAR EPOXY. THE 1st COAT IS RED AND THE 2nd COAT IS BLACK.

3. LIFT HOLES THROUGH PRECAST SECTIONS PERMITTED PER OSHA REQUIREMENTS.

4. ALL OPENINGS SHALL BE SEALED WITH WATERPROOF EXPANDING GROUT. SEE FIG. 322.

5. A FLOW CHANNEL SHALL BE CONSTRUCTED INSIDE MAINTENANCE ACCESS STRUCTURE TO DIRECT INFLENT INTO FLOW STREAM.

6. ALL CONCRETE SHALL BE TYPE II CEMENT, MEETING LATEST ASTM REQUIREMENTS AND PROVIDED WITH LABORATORY CERTIFICATION ON PRECAST STRUCTURES.

7. THE CHIMNEY AREA SHALL BE MINIMUM OF 4" AND A MAXIMUM OF 12" IN HEIGHT. A MINIMUM OF 3 CONCRETE GRADE RINGS SHALL BE INSTALLED. SET IN 2 STRIPS OF SEALANT/ADHESIVE COMPOUND ON EACH SEALING FACE.

8. SET MAINTENANCE ACCESS STRUCTURE FRAME ON 2 STRIPS OF SEALANT PLUS A BED OF PORTLAND CEMENT AND SILICA SAND. BRING MORTAR UP OVER FRAME.

9. APPLY MORTAR COATING TO INSIDE AND OUTSIDE OF CHIMNEY. BRING MORTAR UP AND OVER FRAME.
1. The manufacturer's portion of the concrete encasement for the drop connection shall be poured integrally with both the maintenance access structure slab and wall.

2. Drop connections shall be required whenever an influent sewer is located two (2) feet or more above the main invert channel.

3. All requirements for precast maintenance access structure without drop connections will also apply to precast maintenance access structure with drop connections. See precast maintenance access structure standard detail for other requirements.

4. All pipe to be same diameter as influent sewer main.
1. SEE FIGURE 315 FOR COVER REQUIREMENTS.
2. "O" RING OR RAM NECK SEAL (KEY LOWER & UPPER WALL).
3. ENTIRE BOTTOM SHALL BE POURED IN PLACE AFTER INSTALLATION OF STRUCTURE. CONCRETE SHALL BE 4,000 PSI, TYPE II.
4. COMPACT BOTTOM OF TRENCH 3' AROUND STRUCTURE TO 100% OF THE MAX-DENSITY AS PER AASHTO-T-99.
5. MAINTENANCE ACCESS STRUCTURE WALLS TO BE SEAL COATED INSIDE AND OUTSIDE WITH 16 MIL. THICKNESS OF COAL TAR EPOXY. THE 1st COAT IS RED AND THE 2nd COAT IS BLACK.
NON-PENETRATING PICKHOLE (2)

“SANITARY SEWER”

GRAVITY SEWER MAINTENANCE ACCESS STRUCTURE COVER

FIGURE 315
1. PROVIDE SPILLWAY FOR SMOOTH FLOW BETWEEN PIPES WITH DIFFERENT INVERT ELEVATIONS.
2. SLOPE MAINTENANCE ACCESS STRUCTURE SHELF 1"/FT MAINTENANCE ACCESS STRUCTURE WALL TO CHANNEL.
3. INVERT CHANNEL TO BE CONSTRUCTED FOR SMOOTH FLOW WITH NO OBSTRUCTIONS.
4. CHANNEL SHALL BE PRECAST CONCRETE OR FILLED WITH BRICK COVERED WITH 1" OF MORTAR.

TYPICAL SECTION

PLAN OF BOTTOM AND FLOW CURVES
WATER & WASTEWATER SERVICES
ENGINEERING DIVISION
2555 WEST COPANS ROAD
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STANDARD DETAIL

PRECAST MAINTENANCE ACCESS STRUCTURE WALL

GROUT

STAINLESS STEEL PIPE CLAMP

FLEXIBLE BOOT ADAPTER

STANDARD PRECAST MAINTENANCE ACCESS STRUCTURE PIPE CONNECTION

WWS MAY APPROVE ALTERNATE WATER TIGHT CONNECTION.

REVISED
3/9/2012
NEW SEWER MAIN

ROTATE BENDS AS REQUIRED TO ALIGN SERVICE BRANCH WITH SERVICE PIPE

"A"

WYE BRANCH

USE FLEXIBLE COUPLING WITH STAINLESS STEEL BANDS FOR PVC/VC PIPE CONNECTION

EXISTING SEWER MAIN

SEE NOTES 3 & 4

ALTERNATE ADDITIONAL RISER AND BEND WHERE REQUIRED BY GREATER SEWER DEPTH

SLOPE UP TO PROPERTY LINE (R/W LINE) AT MINIMUM 1% SLOPE

45° MAX

SECTION A-A

1. SINGLE SERVICE CONNECTIONS SHALL USE 6" SDR 26 PVC PIPE AND FITTINGS.
2. USE RISER CONNECTIONS WHERE INVERT OF SEWER IS MORE THAN 7'-0" DEEP.
3. WHERE BELL OF WYE AND SPIGOT OF EXISTING MAIN ARE NOT COMPATIBLE, USE A SECOND FLEXIBLE COUPLING.
4. RIGID COUPLINGS MAY BE USED IN LIEU OF FLEXIBLE COUPLINGS.
5. MAINTAIN 36" MINIMUM COVER FROM TOP OF SERVICE TO FINISH GRADE; WHERE NOT TECHNICALLY FEASIBLE CONTACT WWS ENGINEERING.
6. PVC SERVICES SHALL BE INSTALLED IN ACCORDANCE WITH MINIMUM STANDARDS OF THE UNI-BELL HANDBOOK OF PVC PIPE DESIGN AND CONSTRUCTION, LATEST EDITION.
1. The clean out shall be installed in the middle of the sidewalk. This dimension will vary depending upon the width of the sidewalk. 2.5' applies to 5' sidewalk width. If sidewalks do not exist, the clean out shall be installed 2.5' from the right of way line.
2. A new section of sidewalk shall be poured around the valve box when working in an area with existing sidewalks.
3. In grass area use 24"x24" or 24" diameter concrete collar.
1. FOR MAINS LARGER THAN 8"
   THIS DIMENSION SHALL BE
   THE FITTING DIAMETER PLUS 24"

2. FOR DEPTHS GREATER THAN
   12 FEET, USE C-900 PVC PIPE
1. TO BE USED ONLY WITH APPROVAL OF WWS TECHNICAL STANDARDS COMMITTEE.
2. INTERIOR OF MAINTENANCE ACCESS STRUCTURE TO BE COATED AS DIRECTED BY WWS.

*INFLUENT SHALL BE PARALLEL WITH EFFLUENT SIDE OF MAINTENANCE ACCESS STRUCTURE AND A MINIMUM OF 10 FEET FROM MAINTENANCE ACCESS STRUCTURE WALL.
1. SIGN SHALL BE 0.080 GAUGE ALUMINUM WITH ENGINEERING GRADE REFLECTIVE PANTONE PURPLE BACK, AND WHITE TEXT AND GRAPHICS.
2. SIGN SHALL BE ANCHORED WITH A 2" SQUARE GALVANIZED POST.
3. MOUNTING HARDWARE SHALL BE STAINLESS STEEL.
4. HEIGHT OF SIGN WILL DEPEND ON LOCATION AND SURROUNDING LANDSCAPE PLANT TYPES. IN ALL CASES, THE SIGN SHALL BE VISIBLE TO THE PUBLIC.
5. SIGN SHALL BE PLACED BY CONTRACTOR IN ACCORDANCE WITH FAC CHAPTER 62-610 "ACCESS CONTROL AND ADVISORY SIGNS", THE COUNTY APPROVED ENGINEERING PLANS AND/OR AS APPROVED BY WWS.
1. FOR COMMERCIAL PROPERTIES THE WORD "NEIGHBORHOOD" SHALL BE REPLACED WITH "AREA".
2. THIS SIGN SHALL BE POSTED AT THE ENTRANCE(S) TO SUBDIVISIONS AND COMMERCIAL PROPERTIES WHERE RECLAIMED WATER IS INSTALLED.
3. SIGN SHALL BE 0.080 GAUGE ALUMINUM WITH ENGINEERING GRADE REFLECTIVE PANTONE PURPLE BACK, AND WHITE TEXT AND GRAPHICS.
4. SIGN SHALL BE ANCHORED WITH A 2" SQUARE SHAPED GALVANIZED POST.
5. MOUNTING HARDWARE SHALL BE STAINLESS STEEL.
6. HEIGHT OF SIGN WILL DEPEND ON LOCATION AND SURROUNDING LANDSCAPE PLANT TYPES. IN ALL CASES, THE SIGN SHALL BE VISIBLE TO THE PUBLIC.
7. SIGNS SHALL BE PLACED BY THE CONTRACTOR IN ACCORDANCE WITH FAC CHAPTER 62-610 "ACCESS CONTROL AND ADVISORY SIGNS", THE COUNTY APPROVED ENGINEERING PLANS AND/OR AS APPROVED BY WWS.
1. DETECTABLE IDENTIFICATION TAPE SHALL BE INSTALLED DIRECTLY OVER CENTERLINE OF THE PIPE AT 18-INCHES ABOVE THE PIPE.
2. METALIZED DETECTOR TAPE SHALL BE ONE LAYER OF METALIZED FOIL LAMINATED BETWEEN TWO LAYERS OF INERT PLASTIC FILM (MINIMUM 5.5 MILS THICKNESS). TAPE SHALL BE PURPLE CONTINUOUSLY MARKED "CAUTION, RECLAIMED LINE BURIED BELOW".
1. SUCCESSIVE TAPS INTO THE RECLAIMED MAIN SHALL BE SPACED NOT LESS THAN 18" ON CENTER. NO TAPS SHALL BE CLOSER THAN 18" TO A JOINT.
2. 1" SERVICES REQUIRE A 2" MINIMUM INSIDE DIAMETER CASING PIPE.
3. 2" SERVICES REQUIRE A 3" MINIMUM INSIDE DIAMETER CASING PIPE.
4. ALL CASING PIPE SHALL EXTEND A MINIMUM OF 2' BEYOND THE EDGE OF PAVEMENT.
5. FOR 1" SERVICE LINES (DR-9) THE MINIMUM RADIUS SHALL BE 14".
   FOR 2" SERVICE LINES (DR-9) THE MINIMUM RADIUS SHALL BE 21".
6. ALL CASING PIPE ENDS SHALL BE Filed SMOOTH WITH NO BURRS AND SEALED WITH URETHANE FOAM.
7. THE POLYETHYLENE TUBING SHALL BE ONE CONTINUOUS PIECE FROM THE CORPORATION STOP TO THE METER VALVE. NO JOINTS WILL BE PERMITTED BETWEEN THESE POINTS.
RECLAIMED WATER
DO NOT DRINK
NO BEBER

WORDING & SYMBOL TO BE
EMBOSSED INTO LID

COVER TO BE EPOXY COATED WITH INFUSED PANTONE PURPLE.
1. ALL STRUCTURES TO BE TRAFFIC BEARING TYPE.
2. R/W LINE OR EASEMENT LINE IS THE CUSTOMER'S SIDE OF METER BOX
3. WWS RESPONSIBILITY ENDS AT THE CUSTOMER'S SIDE OF METER.
4. CURVE IN SERVICE LINE SHALL BE AS CLOSE TO METER BOX AS PRACTICAL, WITH A MINIMUM RADIUS OF 14" FOR 1" TUBING.
5. ALL METERS WILL BE SUPPLIED AND INSTALLED BY WWS. METER HAS IRON PIPE THREAD MALE CONNECTION ON EACH END.
6. WHEN SIDEWALKS ARE PRESENT, OR PLANNED FOR IN THE R/W, THE BACK EDGE OF THE METER BOX SHALL LINE UP WITH THE BACK EDGE OF THE SIDEWALK
7. METER SHALL BE CENTERED IN BOX DIRECTLY UNDER THE ACCESS LID.
8. WHEN THERE ARE NO SIDEWALKS, CONSTRUCT 6" WIDE x 6" THICK CONCRETE COLLAR AT GRADE.

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<th>METER SIZE</th>
<th>LAYING LENGTH (IN)</th>
<th>HEIGHT (IN)</th>
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<td>5/8&quot;</td>
<td>7.5</td>
<td>4.56</td>
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<tr>
<td>1&quot;</td>
<td>10.75</td>
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1. All structures to be traffic bearing type.
2. R/W line or easement line is the customer’s side of meter box.
3. WWS responsibility ends at the customer’s side of meter.
4. Curve in service line shall be as close to meter box as practical, with a minimum radius of 21" for 2" tubing.
5. All meters will be supplied and installed by WWS.
6. When sidewalks are present, or planned for in the R/W, the back edge of the meter box shall line up with the back edge of the sidewalk.
7. Meter shall be centered in box directly under the access lid.
8. When there are no sidewalks, construct 6" wide x 6" thick concrete collar at grade.

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<tbody>
<tr>
<td>1 1/2&quot;</td>
<td>13</td>
<td>6 3/8&quot;</td>
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<tr>
<td>2&quot;</td>
<td>17</td>
<td>7 3/52&quot;</td>
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1. ALL PIPES AND FITTINGS ABOVE GRADE SHALL HAVE FLANGED ENDS.
2. ALL PIPES AND FITTINGS BELOW GRADE SHALL BE MECHANICAL RESTRAINED JOINT ENDS.
3. INSTALLATION SHALL COMPLY WITH ALL REQUIREMENTS OF FAC CHAPTER 62-610.
4. PIPING AND APPURTENANCES SHALL BE PAINTED PANTONE PURPLE 522C. PIPE SHALL BE COLORED WITH PANTONE PURPLE 522C USING LIGHT STABLE COLORANTS.

**RECLAIMED WATER MASTER METER ASSEMBLY (4" AND LARGER)**

**FIGURE 528**
1. 2" TAP IN BOTTOM OF PLUG.
2. USE RESTRAINED JOINT PIPE.
3. IN GRASS AREA USE
   CONCRETE COLLARS, 6" THICK.
4. PIPE AND VALVE BOX SHALL BE
   EPOXY COATED WITH PANTONE
   PURPLE.

RECLAIMED WATER MANUAL BLOW OFF

FIGURE 552