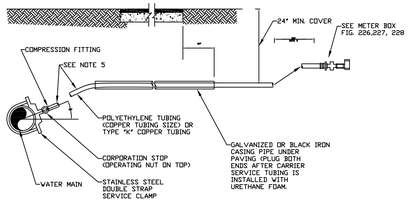
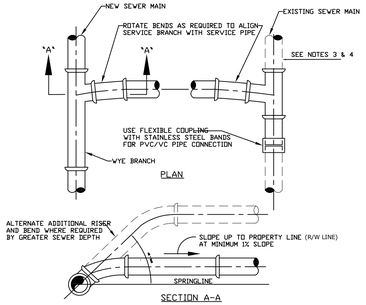


NOTES:

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 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.

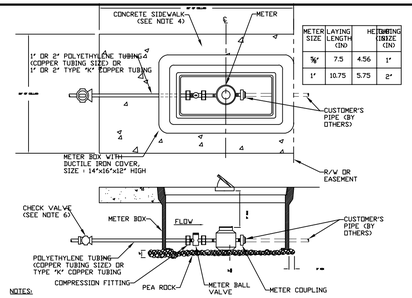
THIS DETAIL APPLIES ONLY TO RESIDENTIAL ROADS WITH LESS THAN 70' R.O.W. AND MEDIANS OR WITHIN EASEMENTS

TYPE 1 WATER SERVICE CONNECTION
DETAIL 221
NTS



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.

WYE SEWER SERVICE CONNECTION
DETAIL 331
NTS

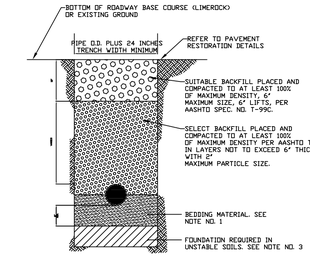


METER SIZE	LAYING LENGTH (IN)	METER LENGTH (IN)	TUBING SIZE (IN)
⅝"	7.5	4.56	1"
1"	10.75	5.75	2"

NOTES:

1. ALL STRUCTURES TO BE TRAFFIC BEARING TYPE.
2. WWS RESPONSIBILITY ENDS AT THE CUSTOMER'S SIDE OF METER COUPLING.
3. CURVE IN SERVICE LINE SHALL BE AS CLOSE TO METER BOX AS PRACTICAL, WITH A MINIMUM RADIUS OF BE 14' FOR 1" TUBING AND 21' FOR 2" TUBING.
4. ALL METERS WILL BE SUPPLIED AND INSTALLED BY WWS. METER HAS IRON PIPE THREAD MALE CONNECTION ON EACH END.
5. 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.
6. METER SHALL BE CENTERED IN BOX DIRECTLY UNDER THE ACCESS LID.
7. THE CHECK VALVE IS TO BE INSTALLED 5 FEET BEFORE THE METER BALL VALVE.
8. WHEN THERE ARE NO SIDEWALKS, CONSTRUCT 6" WIDE x 6" THICK CONCRETE COLLAR AT GRADE.

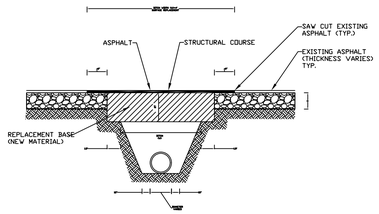
WATER METER INSTALLATION FOR ⅝" AND 1" METER
DETAIL 226
NTS



NOTES:

1. UNLESS OTHERWISE SPECIFIED, BEDDING MATERIAL SHALL CONSIST OF SELECT BACKFILL MATERIAL, 2" MAXIMUM PARTICLE 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.

TYPICAL TRENCH BACKFILL
DETAIL 180
NTS



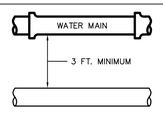
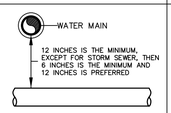
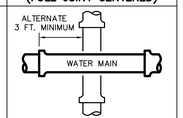
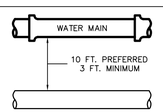
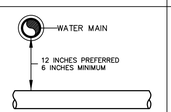
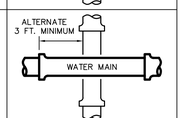
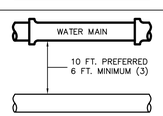
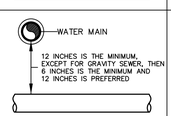
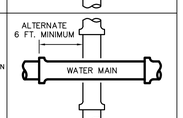
NOTES:

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%.
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.

T = EXISTING LIMEROCK BASE THICKNESS.

RESTORATION OF ROADWAY CUT FOR PERPENDICULAR UTILITY INSTALLATION
DETAIL 183
NTS

LOCATION OF PUBLIC WATER SYSTEM MAINS IN ACCORDANCE WITH F.A.C. RULE 62-555.314

OTHER PIPE	HORIZONTAL SEPARATION	CROSSINGS (1)	JOINT SPACING @ CROSSINGS (FULL JOINT CENTERED)
STORM SEWER, STORMWATER FORCE MAIN, RECLAIMED WATER (2)			
VACUUM SANITARY SEWER			
GRAVITY OR PRESSURE SANITARY SEWER, SANITARY SEWER FORCE MAIN, RECLAIMED WATER (4)			
ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEM	10 FT. MINIMUM	-----	-----

(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) RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.

WATER SYSTEM NOTES:

1. ALL WATER MAINS SHALL BE DESIGNED FOR A MINIMUM WORKING PRESSURE OF 150 PSI AND HAVE COMPRESSION TYPE JOINTS UNLESS OTHERWISE SPECIFIED. THE PIPE MATERIAL SHALL BE AS NOTED ON THE PLAN CONFORMING TO THE FOLLOWING SPECIFICATIONS:
   A) DUCTILE IRON PIPE (D.I.P.) – MANUFACTURED IN ACCORDANCE WITH AWWA/ANSI C151/A-21.51-02, JOINTS AWWA/ANSI C111/A21.11-00, CEMENT – MORTAR LINING AWWA/ANSI C104/A21.4-95. MINIMUM COVER FOR D.I.P. IS 30". 4" PIPE AND 6" PIPE SHALL BE MINIMUM CLASS 52, 8" AND LARGER MINIMUM CLASS 50.
   B) P.V.C. PIPE – MANUFACTURED IN ACCORDANCE WITH AWWA C900-97, SDR 18 WITH MINIMUM COVER OF 36". DETECTOR TAPE WITH A METALLIZED FOIL CORE SHALL BE LAID 18" ABOVE P.V.C. WATER MAINS. ALL PIPE LARGER THAN 12 INCHES SHALL BE D.I.P. WITH RESTRAINED JOINTS.
2. ALL WATER MAIN FITTINGS SHALL BE MECHANICAL JOINT DUCTILE IRON MANUFACTURED IN ACCORDANCE WITH AWWA/ANSI C110/A21.10-98 AND SHALL BE CEMENT LINED AND SEAL COATED AS SPECIFIED FOR D.I.P. PIPE. FITTINGS SHALL BE DESIGNED FOR A MINIMUM WORKING PRESSURE OF 150 PSI AND BE CLASS 350 THROUGH 12" AND CLASS 250 FOR 16" AND LARGER. ALL FITTINGS (4"-12") SHALL BE RESTRAINED THROUGH THE USE OF CONCRETE THRUST BLOCKS OR APPROVED RESTRAINED JOINT (MEG-A-LUG, O/E).
3. ALL GATE VALVES (GV) 4" THROUGH 10" SHALL BE RESILIENT – SEATED IN ACCORDANCE WITH AWWA/ANSI C509-01 WITH MECHANICAL JOINTS. OPERATING SYSTEMS TO BE EXTENDED WITHIN 12" OF FINISHED GRADE. ALL VALVES TO BE PROVIDED WITH EXTENSION TYPE CAST IRON BOXES WITH COVERS MARKED "WATER". USE 7500 O/E. VALVES LARGE THAN 10" SHALL BE BUTTERFLY VALVE IN ACCORDANCE WITH AWWA/ANSI C504-00.
4. ALL FIRE HYDRANTS (FH) SHALL HAVE A 5 1/4" VALVE AND BE IN ACCORDANCE WITH AWWA/ANSI C502-94 WITH TRAFFIC BREAKAWAY TYPE FEATURE, MUELLER A-423 O/E. HYDRANTS TO BE PAINTED IN ACCORDANCE WITH APPLICABLE CITY/FIRE DEPARTMENT ORDINANCES. A RAISED BLUE REFLECTIVE PAVEMENT MARKER SHALL BE PLACED IN THE **CENTER OF ADJACENT PAVEMENT LANE TO IDENTIFY LOCATION.**
5. ALL SERVICE LINES SHALL BE POLYETHYLENE (PE) TUBING CONFORMING TO AWWA C901-02, 200 PSI (DR9), PE 3408. ALL SERVICE LINES SHALL BE MARKED WITH A 2" X 2" STAKE PAINTED BLUE, EXTENDING A MINIMUM OF 18" ABOVE GRADE.
6. THE WATER SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH AWWA/ANSI C600-99, FLUSHED CLEAN (COORDINATE WITH UTILITY AND/OR CITY) AND HYDROSTATICALLY PRESSURE TESTED FOR A PERIOD OF NOT LESS THAN 2 HOURS AT 150 PSI. THE ALLOWABLE LEAKAGE SHALL NOT EXCEED THE FORMULA OF L=SD X √P/148,000; L=ALLOWABLE LEAKAGE IN GAL./HR.; S=LENGTH OF PIPE TESTED IN FEET, D=NOMINAL DIAMETER OF PIPE IN INCHES, P=AVERAGE TEST PRESSURE DURING TEST IN LBS./SQ. IN. DISINFECTION OF WATER SYSTEM SHALL BE IN ACCORDANCE WITH ANSI/AWWA C651-02.
7. CONTRACTOR SHALL SUBMIT A MINIMUM OF SIX (6) SETS OF SHOP DRAWINGS FOR THE WATER SYSTEM MATERIALS TO BE USED ON THE PROJECT TO THE ENGINEER FOR APPROVAL UNLESS OTHERWISE NOTIFIED.

GENERAL NOTES:

1. THE CONTRACTOR SHALL PROVIDE NOTIFICATION AND ARRANGE A PRE-CONSTRUCTION MEETING PRIOR TO THE START OF THE PROJECT AND INCLUDE A REPRESENTATIVE OF THE FOLLOWING:
   1. THE DESIGN ENGINEER
   2. BROWARD COUNTY WATER AND WASTEWATER
   3. APPLICABLE REGULATORY AGENCIES
2. LOCATION OF EXISTING UTILITIES SHOWN ARE BASED ON BEST AVAILABLE INFORMATION. CONTRACTOR TO VERIFY ALL EXISTING UTILITIES AND NOTIFY THE ENGINEER IN WRITING OF ANY CONFLICTS. CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF EXISTING UTILITIES FROM DAMAGE DURING CONSTRUCTION OF THE PROJECT.
3. ALL MATERIALS, INSTALLATION AND TESTING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE BCWWS MINIMUM TECHNICAL STANDARDS AND THE ATTACHED SPECIFICATIONS, WHERE APPLICABLE. WHERE DISCREPANCIES, OMISSIONS OR MODIFICATIONS EXIST BETWEEN THE PLANS AND BCWWS STANDARD SPECIFICATIONS, BCWWS TECHNICAL STANDARDS SHALL GOVERN.
4. ALL RESTORATIONS SHALL BE IN ACCORDANCE WITH CITY, COUNTY OR F.D.O.T. SPECIFICATIONS, WHERE APPLICABLE.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING (MINIMUM 48 HRS. NOTICE) THE ENGINEER AND UTILITY FOR REQUIRED INSPECTIONS AND TESTING INCLUDING BUT NOT LIMITED TO: TIE-INS, PRESSURE TEST, LAMPING, PRELIMINARY AND FINAL INSPECTIONS.
6. CONTRACTOR IS RESPONSIBLE FOR PROVIDING THE ENGINEER WITH COMPLETE "AS-BUILT" INFORMATION RELATIVE TO LOCATION OF MANHOLES, VALVES, SERVICES, FITTINGS, LENGTH OF PIPE, ETC. TO THE ENGINEER ALONG WITH ELEVATIONS TAKEN BY AN INDEPENDENT REGISTERED FLORIDA SURVEYOR FOR THE FOLLOWING BUT NOT LIMITED TO: MANHOLE RIM AND INVERT, INVERT OF SEWER STUBS AND LATERAL ENDS, TOP OF PIPE ELEVATIONS FOR WATER AND FORCE MAINS AT FITTINGS AND PIPE AT INTERVALS NOT TO EXCEED 200 FEET IN LENGTH.

ROBERT C SMITH
Digitally signed by ROBERT C SMITH
DN: c=US, o=Unaffiliated, ou=A01410D0000017672F6C67100007708, cn=ROBERT C SMITH
Date: 2021.06.15 15:41:52 -04'00'

ROBERT CLAYTON SMITH LICENSE No. 31177 STATE OF FLORIDA PROFESSIONAL ENGINEER

AAC
PZ21-12000024
12/07/21

BROWARD COUNTY WATER & WASTEWATER
STANDARD DETAILS

ARCHITECTUAL ALLIANCE
FORT LAUDERDALE, FLORIDA

RIVA WAREHOUSE II

JOHN B. SMITH ENGINEERS, INC.
1457 N.E. 4th AVENUE
FORT LAUDERDALE, FLORIDA 33304
PHONE: (954) 763-4177
CERTIFICATE OF AUTHORIZATION NO. 1688

DESIGN	DRAWN	DATE	FILE
R.C.S.	RCS	APRIL,2021	21-109

Approved By Robert C Smith
Robert C. Smith, P.E.
Registered Engineer No. 31177 State of Florida

SHEET C3 OF 4