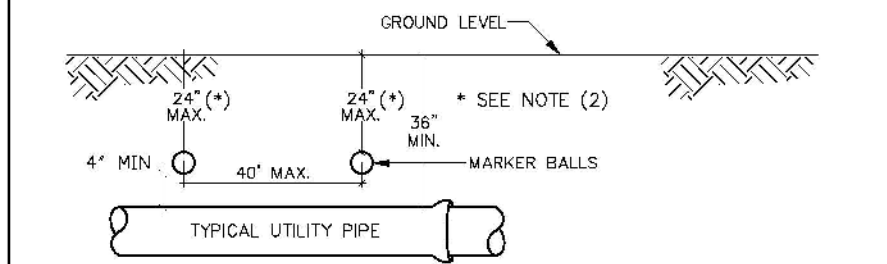


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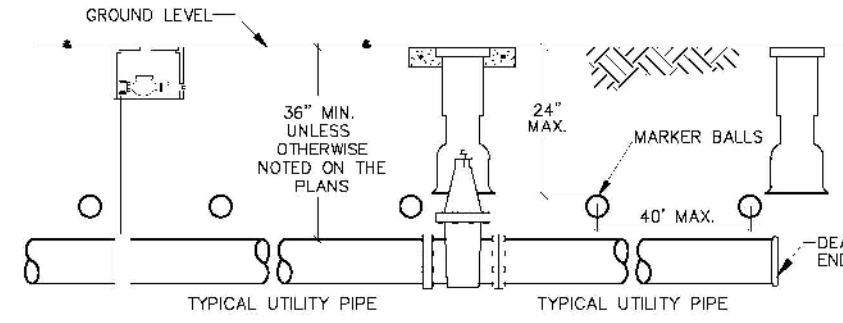
GENERAL NOTES:

1. ALL UTILITY PIPE SHALL BE INSTALLED WITH 4" MARKING BALLS PLACED EVERY 40' AND AT EVERY FITTING, FOR IDENTIFICATION AND MARKING PURPOSES, BURIED ABOVE THE PIPE AT A MAXIMUM DEPTH OF 24 INCHES OR AS APPROVED BY THE OWNER. IT SHALL BE COLOR CODED AND WORDED AS FOLLOWS:
POTABLE WATER:
A. COLOR: BLUE PER 62-555.320(2)(b)(3) F.A.C.
B. LETTERING: WATER
C. FREQUENCY OF MARKER BALLS SHALL BE 145.7 Hz.
D. THE MARKER BALLS CAN BE BURIED IN ANY ORIENTATION.
THE MARKER BALLS SHALL BE DETECTABLE BY STANDARD METAL DETECTION EQUIPMENT AND SHALL BE MANUFACTURED BY TEMPO OR 3M LOCATOR SYSTEM OR EQUIVALENT (FREQUENCY 145.7 KHz.)
2. FOR LARGE DIAMETER PIPE INSTALLED AT DEPTHS BELOW 4'-0" MARKER BALLS SHALL BE PLACED AT A MAXIMUM DEPTH OF 4'-0" BELOW GRADE.

WATER PIPE IDENTIFICATION

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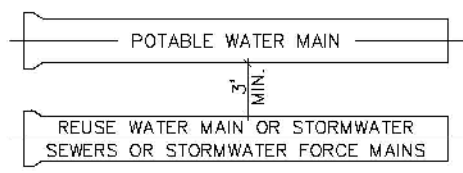
GENERAL NOTES:

1. ALL NONMETALLIC PIPE SHALL BE INSTALLED WITH 12 THIN SOLID COPPER TRACING WIRE.
2. THE MARKER BALLS MUST BE INSTALLED DIRECTLY ABOVE THE PIPE.
3. MARKER BALLS SHALL BE INSTALLED AT 40' O.C.
4. BALL COLOR CODING:
POTABLE WATER SYSTEM: BLUE PER 62-555.320(2)(b)(3) F.A.C.

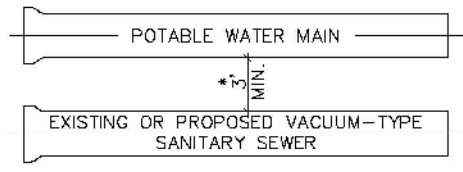
UTILITY PIPE AND MARKER BALLS LOCATION

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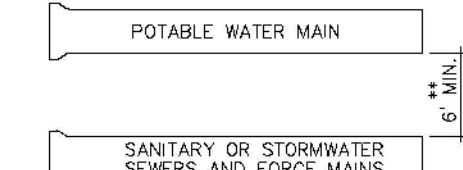
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A MINIMUM HORIZONTAL SEPARATION 3' (OUTSIDE TO OUTSIDE), SHALL BE MAINTAINED BETWEEN POTABLE WATER MAINS AND STORMWATER SEWERS, STORMWATER FORCE MAINS AND REGULATED REUSE WATER MAINS.



A MINIMUM HORIZONTAL SEPARATION 3' (OUTSIDE TO OUTSIDE), SHALL BE MAINTAINED BETWEEN EXISTING OR PROPOSED VACUUM-TYPE SANITARY SEWER. ** SEE NOTE D(1)(G).

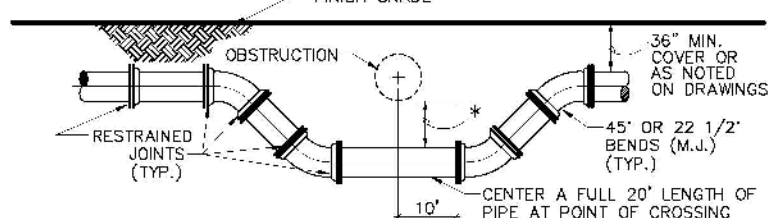


A MINIMUM HORIZONTAL SEPARATION OF 6' (OUTSIDE TO OUTSIDE), SHALL BE MAINTAINED BETWEEN POTABLE WATER MAINS AND EXISTING OR PROPOSED GRAVITY-OR PRESSURE-TYPE SANITARY SEWER, WASTEWATER FORCE MAIN OR NOT REGULATED REUSE WATER MAIN. ** SEE NOTE D(1)(G).

MINIMUM HORIZONTAL SEPARATION REQUIREMENTS FOR POTABLE WATER, REUSE, STORMWATER AND SEWER LINES

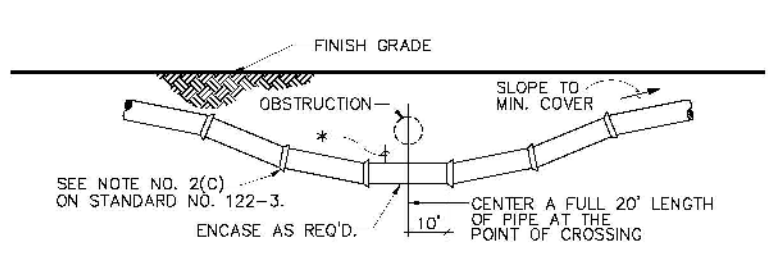
ENGINEERING STANDARDS 2019			
REVISIONS	BY	DATE	DESCRIPTION
S.S.	01/12	06/16	ENGINEERING DIVISION CITY OF POMPANO BEACH
SCALE: N.T.S.			DATE: JAN. 2012 DWG. NO. 121-1

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SPECIAL UTILITY CROSSING - FITTING TYPE

- * 12" MINIMUM CLEARANCE REQUIRED FOR PRESSURE-TYPE SANITARY SEWER, WASTEWATER OR STORMWATER FORCE MAIN OR REUSE WATER MAIN CROSSINGS. IF MINIMUM CLEARANCE CANNOT BE OBTAINED, REFER TO "PROTECTION OF POTABLE WATER SUPPLY" FOR WATER MAIN CROSSINGS. SEE NOTE 2(B), ON STANDARD NO. 122-3
- 6" MINIMUM CLEARANCE REQUIRED FOR WATER AND STORMWATER SEWER MAIN CROSSINGS. SEE NOTE 2(A), ON STANDARD NO. 122-3.



STANDARD UTILITY CROSSING - DEFLECTION TYPE

- NOTES:
1. THE DEFLECTION TYPE CROSSING SHALL BE USED WHEREVER POSSIBLE UNDER SPECIFIC ORDERS BY THE ENGINEER SHALL THE FITTING TYPE CROSSING BE ALLOWED.
 2. CONSTRUCT STANDARD CROSSING USING NO MORE THAN 75% OF MANUFACTURER'S MAXIMUM JOINT DEFLECTION.
 3. FOR POTABLE WATER MAINS, REFER TO "PROTECTION OF POTABLE WATER SUPPLY".

UTILITY CROSSINGS

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PROTECTION OF POTABLE WATER SUPPLY NOTES

- A. GENERAL
- IN ADDITION TO THESE REQUIREMENTS, ALL POTABLE WATER MAINS CONSTRUCTED IN THE COUNTY OF STORM SEWERS, SANITARY SEWERS OR FORCE MAINS SHALL COMPLY WITH THE APPLICABLE PROVISIONS OF FLORIDA ADMINISTRATIVE CODE CHAPTER 62-555, GREAT LAKES-UPPER MISSISSIPPI RIVER BOARD OF STATE SANITARY ENGINEERS (GLUMRB) "RECOMMENDED STANDARDS FOR WATER WORKS", AND GLUMRB "RECOMMENDED STANDARDS FOR WASTEWATER FACILITIES" FOR THE PURPOSES OF THIS SPECIFICATION, THE WORDS "OTHER PIPE" OR "OTHER PIPES" SHALL MEAN SANITARY SEWER MAIN, SEWAGE FORCE MAIN, STORMWATER MAIN OR ANY COMBINATION THEREOF.
- B. DEFINITIONS
- FOR THE PURPOSES OF THIS SPECIFICATION, THE WORDS "OTHER PIPE" OR "OTHER PIPES" SHALL MEAN SANITARY SEWER MAIN, SEWAGE FORCE MAIN, STORMWATER MAIN OR ANY COMBINATION THEREOF.
- C. CROSS CONNECTIONS PROHIBITED
- THERE SHALL BE NO PHYSICAL CONNECTIONS BETWEEN A PUBLIC OR PRIVATE POTABLE WATER SUPPLY SYSTEM AND ANY OTHER PIPE OR APPURTENANCES, THEREBY WHICH WOULD PERMIT THE PASSAGE OF ANY WASTEWATER, POLLUTED WATER, OR ANY OTHER WATER INTO THE POTABLE SUPPLY. NO WATER PIPE SHALL PASS THROUGH OR COME INTO CONTACT WITH ANY PART OF A SANITARY SEWER MANHOLE OR STORMWATER MANHOLE.
- D. RELATION OF OTHER PIPES TO POTABLE WATER MAINS
1. HORIZONTAL SEPARATION
- A. NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST THREE FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED STORM WATER, STORM WATER FORCE MAIN, OR PIPELINE CONVEYING REUSE WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610.F.A.C.
- B. NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST THREE FEET, AND PREFERABLY TEN FEET, BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED VACUUM-TYPE SANITARY SEWER.
- C. NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST SIX FEET, AND PREFERABLY TEN FEET, BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED GRAVITY-OR PRESSURE-TYPE SANITARY SEWER, WASTEWATER FORCE MAIN, OR PIPELINE CONVEYING REUSE WATER NOT REGULATED UNDER CHAPTER 62-610.F.A.C. THE MINIMUM HORIZONTAL SEPARATION DISTANCE BETWEEN WATER MAINS AND GRAVITY-TYPE SEWERS SHALL BE REDUCED TO THREE FEET WHERE THE BOTTOM OF THE WATER IS LAID AT LEAST SIX INCHES ABOVE THE TOP OF THE SEWER.

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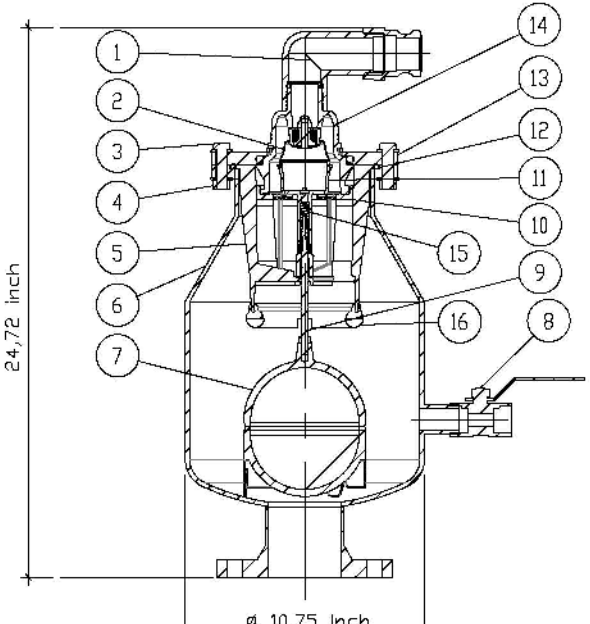
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- D. NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST TEN FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND ALL PARTS OF ANY EXISTING OR PROPOSED "ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEM".
2. VERTICAL SEPARATION
- A. NEW OR RELOCATED, UNDERGROUND WATER MAINS CROSSING ANY EXISTING OR PROPOSED GRAVITY-OR VACUUM-TYPE SANITARY SEWER OR STORM SEWER SHALL BE LAID SO THE OUTSIDE OF THE WATER MAIN IS AT LEAST SIX INCHES, AND PREFERABLY 12 INCHES, ABOVE OR AT LEAST 12 INCHES BELOW THE OUTSIDE OF THE OTHER PIPELINE. HOWEVER, IT IS PREFERABLE TO LAY THE WATER MAIN ABOVE THE OTHER PIPELINE.
- B. NEW OR RELOCATED, UNDERGROUND WATER MAINS CROSSING ANY EXISTING OR PROPOSED PRESSURE-TYPE SANITARY SEWER, WASTEWATER OR STORM WATER FORCE MAIN, OR PIPELINE CONVEYING REUSE WATER SHALL BE LAID SO THE OUTSIDE OF THE WATER MAIN IS AT LEAST 12 INCHES, ABOVE OR BELOW THE OUTSIDE OF THE OTHER PIPELINE. HOWEVER, IT IS PREFERABLE TO LAY THE WATER MAIN ABOVE THE OTHER PIPELINE.
- C. AT THE UTILITY CROSSINGS DESCRIBED IN PARAGRAPHS 6(A) AND 6(B) ABOVE, ONE FULL LENGTH OF WATER MAIN PIPE SHALL BE CENTERED ABOVE OR BELOW THE OTHER PIPELINE SO THE WATER MAIN JOINTS WILL BE AS FAR AS POSSIBLE FROM THE OTHER PIPELINE. ALTERNATIVELY, AT SUCH CROSSINGS, THE PIPES SHALL BE ARRANGED SO THAT ALL WATER MAIN JOINTS ARE AT LEAST THREE FEET FROM ALL JOINTS IN VACUUM-TYPE SANITARY SEWERS, STORM SEWERS, STORM WATER FORCE MAINS, OR PIPELINES CONVEYING REUSE WATER REGULATED UNDER PART III OF CHAPTER 62-610.F.A.C. AND AT LEAST SIX FEET FROM ALL JOINTS IN GRAVITY-OR PRESSURE-TYPE SANITARY SEWERS, WASTEWATER FORCE MAINS, OR PIPELINES CONVEYING REUSE WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610.F.A.C. WHERE THE HORIZONTAL CAN BE LOCATED LESS THAN THE REQUIRED MINIMUM DISTANCES FROM JOINTS IN THE OTHER PIPELINE OR THE HORIZONTAL IS LESS THAN THREE FEET FROM ANOTHER PIPELINE OR THE UNDER GROUND WATER MAIN IS CROSSING ANOTHER PIPELINE AND IS LESS THAN THE REQUIRED MINIMUM VERTICAL DISTANCE FROM THE OTHER PIPELINE, THE CONTRACTOR SHALL CONTACT THE ENGINEER IMMEDIATELY FOR RECOMMENDED SOLUTIONS TO MEET THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION REQUIREMENTS PER CHAPTER 62-555, F.A.C.

PROTECTION OF POTABLE WATER SUPPLY NOTES

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AUTOMATIC AIR & VACUUM VALVE FOR POTABLE WATER

Model 986
Automatic Air and Vacuum Release Valve, steel - epoxy powder coated for operating range 0-250 PSI (1/2 Bar)

Type	Size ANSI	Maximum Pressure PSI/Bar	Body Material	Overall Width B Inch/mm	Overall Height H Inch/mm	Weight Lbs/Kg
Thread	2" FNPT	250 PSI 17.2 Bar	Steel	10.75" 270 mm	23.2" 600 mm	50.7 lbs 23.0 Kg

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No.	Component	Series - Epoxy-coated steel
1	Outlet elbow w. screen/canlock 1.5"	Polyethylene (PE)
2	Diaphragm	Buna NBR
3	Hex Head Bolt	Stainless Steel
4	Hexagon nut	Stainless Steel
5	Debris shield	Polyethylene (PE)
6	Body	Steel - epoxy powder coated
7	Float	Delrin@CFDM
8	Ball valve 1"	Stainless Steel
9	Float spool	Stainless Steel 316/1
10	Debris screen	Delrin@CFDM
11	Diaphragm holder	Delrin@CFDM
12	O-Ring 157 x 6 mm	Buna NBR
13	Clamping flange	Steel - epoxy powder coated
14	Upper air valve part	Delrin@CFDM
15	Valve spring	Stainless Steel
16	Lamper ring	Buna NBR

Automatic Air and Vacuum Release Valve, steel - epoxy powder coated (Model # 986).

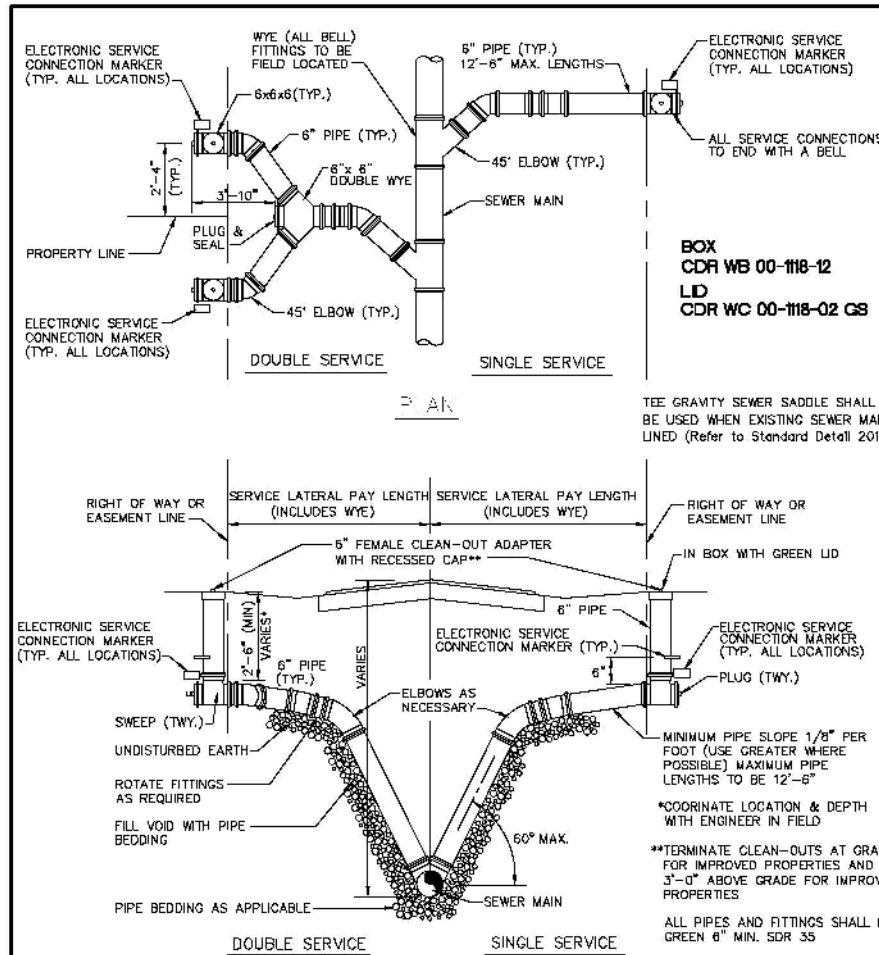
Automatic Air and Vacuum Valves shall be infinitely variable automatic air and vacuum valves designed to allow escape of air for a operating range starting from pressure range 0.0 through 250 psi (0 - 17.2 bar), allow air to enter in the event of a vacuum, and soft working behavior as water hammer mitigation realized by roll-on diaphragm and spring reaction. A debris shield made of PE allows no contact between fluid and sealing area. A secondary debris screen provides an additional protection for the diaphragm. The float shall be Delrin (Polyoxymethylene, POM) the valve seat and all working parts shall be of corrosion-resistant materials.

Air and vacuum valves shall be, from H-TEC, Inc. (Bottle company)

PAINT BODY OF THE VALVE BLUE USING AN EPOXY PAINT.

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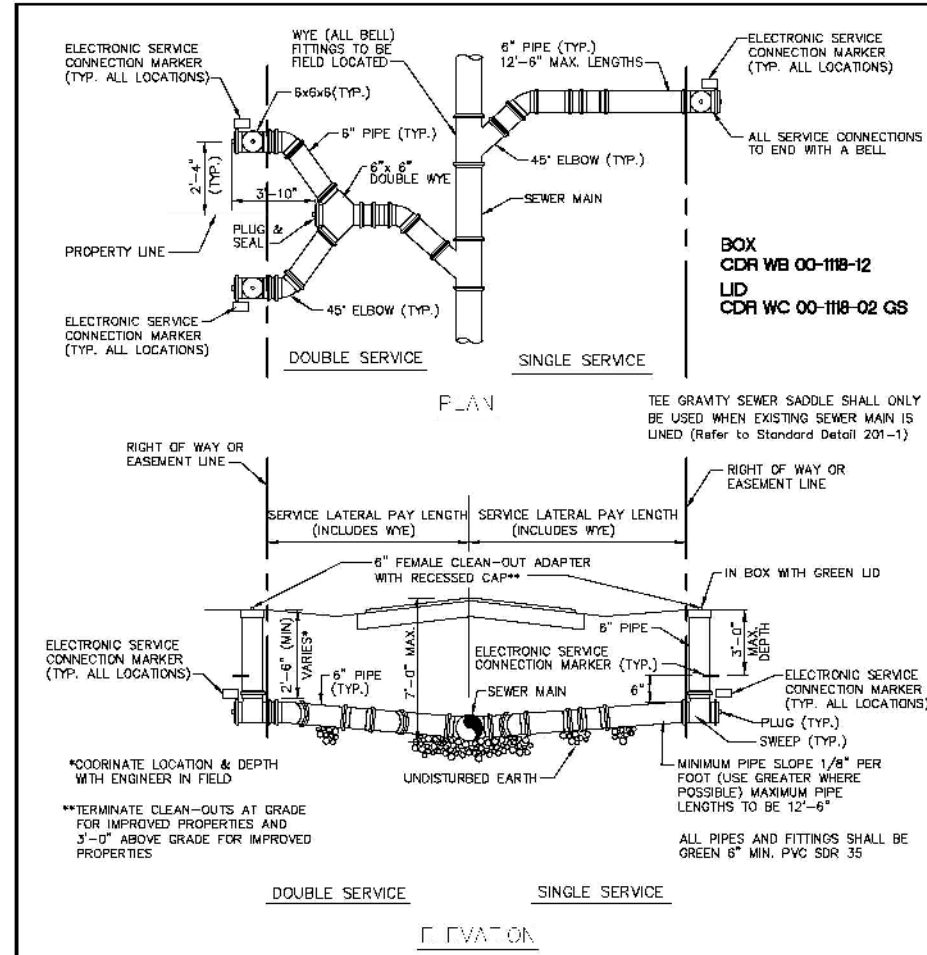
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SERVICE LATERALS WITH RISERS

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S.S.	01/12	06/16	ENGINEERING DIVISION CITY OF POMPANO BEACH
SCALE: N.T.S.			DATE: JUNE 1996 DWG. NO. 200-1

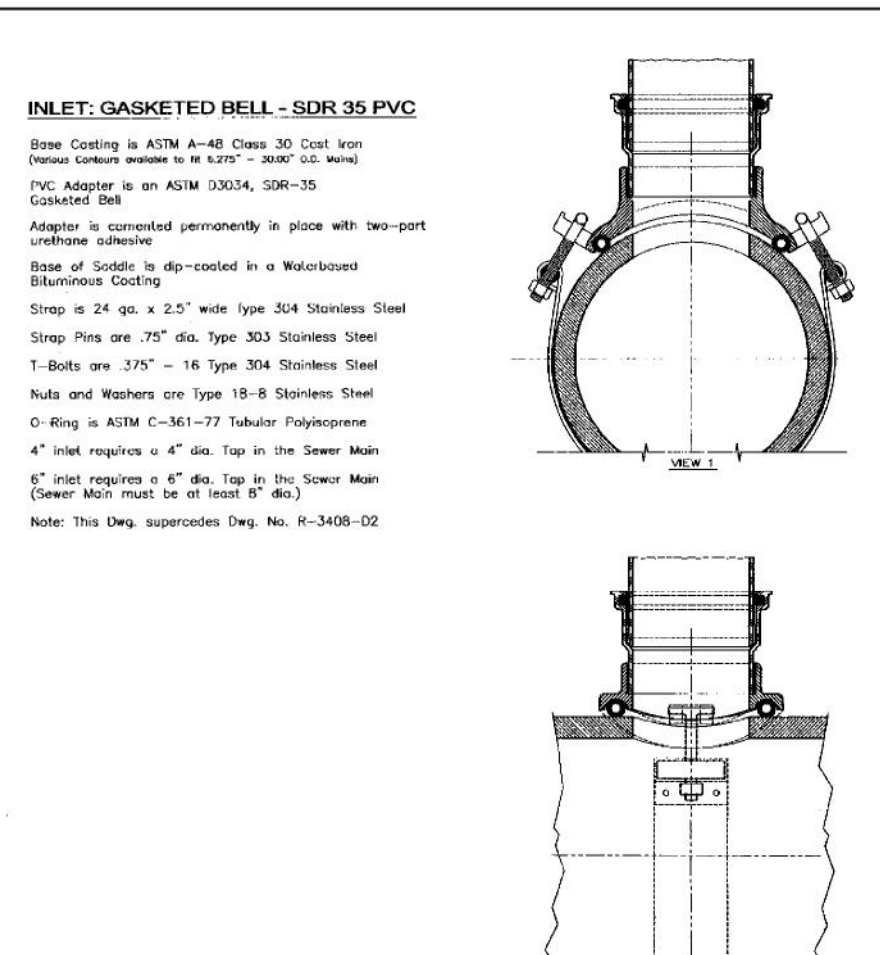
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SHALLOW SERVICE LATERALS

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SCALE: N.T.S.			DATE: JUNE 1996 DWG. NO. 200-3

Gary G. Bloom, State of Florida, Professional Engineer, License No. 19832
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Printed copies of this document shall not consider signed and sealed and the SHA-1 authentication code must be verified on a scanned copy.

PZ18-12000037
10/06/2020

PROJECT: Universal Air and Heat
980 SW 12th Avenue
POMPANO BEACH
TASK: CONSTRUCTION DETAILS

GGB Engineering, Inc.
CIVIL AND FORENSIC ENGINEERS • LAND PLANNERS
• CONSTRUCTION MANAGERS
• FLORIDA REGISTRATION NO. 8118
2899 Stirling Road, Suite C-202
Fort Lauderdale, Florida 33312
Phone: (954) 986-9899
Fax: (954) 986-8655

DATE: July 2017
DESIGNED BY: G.C.B.
SCALE: N.T.S.
DRAWN BY: M.M.

PROJECT NO. 17-1172
SHEET 006.1

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01/19/2020
SHA-1
authentication
code
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be
verified
on
a
scanned
copy

REVISIONS:
1. 01/14/19 DRC COMMENTS
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4.
5.
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7.
8.

MICHAEL A. FORGIONE
1060 N.E. 27th WAY
POMPANO BEACH, FL 33062