<u>LEGEN</u>

PROPERTY LINE
CENTERLINE OF R/W
UTILITY CROSSING
S PROP. SANITARY MANHOLE
-F-F-F-PROP. FIRE LINE PIPE
PROP. FIRE HYDRANT
PROP. FIRE DEPT CONNECTION
IRR PROP. IRRIGATION MAIN PIPE
OE PROP. OVERHEAD LINE
TEL TEL PROP. TELEPHONE LINE
- FPL - FPL - PROP. FPL LINE
—— GAS—— GAS—— PROP. GAS LINE
— — — — — PROP. UTILITY EASEMENTS
THE TOTAL PRODUCTION

	EXIST SANITARY FORCE MAIN
	EXIST SANITARY PIPE
S	EXIST SANITARY MANHOLE
— F — F — F	EXIST FIRE LINE PIPE
	EXIST WATER PIPE
	EXIST FIRE HYDRANT
	EXIST FIRE DEPT CONNECTION
	EXIST WATER PIPE
IRR IRR	EXIST IRRIGATION MAIN PIPE
—— FOC—— FOC——	EXIST FIBER OPTIC LINE
—— OE —— OE ——	EXIST OVERHEAD LINE
—— TEL —— TEL ——	EXIST TELEPHONE LINE
	EXIST COMMUNICATIONS LINE
— E— E— E—	EXIST UNDERGROUND ELECTRIC
— FPL — FPL —	EXIST FPL LINE
—————E——	EXIST ELECTRICAL LINE
—— GAS—— GAS——	EXIST GAS LINE
	EXIST UTILITY EASEMENTS
— STRM — STRM —	STORM PIPE (SEE PAVING, GRADING & DRAINAGE PLANS)
	STORM AREA INLET
	STORM CURB INLET

STORM MANHOLE

UTILITY NOTES

- 1. CONTRACTOR SHALL FURNISH AND INSTALL NECESSARY PIPE AND FITTINGS TO TRANSITION PIPE MATERIALS WHEN REQUIRED AND TO CONNECT TO BUILDING PLUMBING.
- 2. CONTRACTOR SHALL SUPPORT AND PROTECT ALL EXISTING UTILITIES WHEN CONSTRUCTING NEW UTILITIES.
- 3. ALL MANHOLES, VALVES, CLEANOUTS AND OTHER SUCH BOXES IN PAVEMENT OR SIDEWALKS SHALL BE SET
- FLUSH WITH PAVEMENT TO MATCH THE PROPOSED SLOPE AND SHALL BE H-20 TRAFFIC RATED.

 4. ANY TREES OR SHRUBS PLACED WITHIN WATER, SEWER, OR DRAINAGE EASEMENTS SHALL CONFORM TO THE PALM BEACH STANDARD DETAILS.
- 5. NO PROPOSED IMPROVEMENTS, BUILDINGS OR ANY KIND OF CONSTRUCTION CAN BE PLACED ON OR WITHIN ANY WATER, SEWER, OR DRAINAGE EASEMENTS, UNLESS APPROVED BY THE PALM BEACH CITY ENGINEER.
- 6. NO PROPOSED STRUCTURES SHALL BE INSTALLED WITHIN A HORIZONTAL DISTANCE OF 10—FEET FROM ANY EXISTING OR PROPOSED WATER, SEWER, OR DRAINAGE FACILITIES, UNLESS APPROVED BY THE PALM BEACH CITY ENGINEER.
- 7. ALL WATER MAIN (WM) SHALL BE PVC C-900 DR-18 UNLESS OTHERWISE NOTED.
- 8. ALL FIRE MAIN (FM) SHALL BE DIP WITH ALL JOINTS RESTRAINED WITH MEGALUGS UNLESS OTHERWISE NOTED. ALL FIRE MAIN SHALL BE LAID AT 36" MIN. COVER. ALL FIRE RELATED CONSTRUCTION SHALL FOLLOW THE FLORIDA FIRE PREVENTION CODE 5TH EDITION FLORIDA SPECIFIC NFPA 1, FIRE CODE, 2012 EDITION AND FLORIDA SPECIFIC NFPA 101, LIFE SAFETY CODE, 2012 EDITION.
- 9. ALL DUCTILE IRON PIPE (DIP) SHALL BE CLASS 350 UNLESS OTHERWISE NOTED. ALL DIP SHALL BE MARKED PER FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (FDEP) STANDARDS.
- 10. ALL NEW FIRE HYDRANTS SHALL HAVE "OUT OF SERVICE" SIGNS AFFIXED AT TIME OF INSTALLATION. SIGNS SHALL REMAIN IN PLACE UNTIL THE WATER SYSTEM IS CLEARED FOR USE.
- 11. ALL WATER MAIN AND FORCE MAINS SHALL HAVE A MINIMUM 36" COVER OVER THE TOP OF THE PIPE UNLESS OTHERWISE NOTED. WATER AND FIRE MAINS SHALL HAVE MIN. 6" VERTICAL SEPARATION FROM EACH OTHER.
- 12. A MINIMUM HORIZONTAL DISTANCE OF 10 FEET MUST BE PROVIDED BETWEEN WATER MAINS AND STORM OR SANITARY SEWERS.ALL FITTINGS FOR WATER MAIN AND FIRE MAIN SHALL BE DUCTILE IRON MECHANICAL JOINT FITTINGS UNLESS OTHERWISE NOTED.
- 13. WATER METER SIZES SHALL BE DESIGNED BY ENGINEER OF RECORD AND SHALL BE CHECKED AND AUTHORIZED BY PALM BEACH UTILITIES DIVISION.
- 14. PIPE DEFLECTION OF WATER MAIN AND FIRE MAIN SHALL NOT EXCEED MANUFACTURER'S RECOMMENDATIONS.
- 15. ALL GRAVITY SEWER MAINS SHALL BE PVC SDR-26 UNLESS OTHERWISE NOTED
- 16. ALL GRAVITY SEWER LATERALS SHALL BE PVC SDR-35 UNLESS OTHERWISE NOTED.
- 17. ALL SEWER FORCE MAIN (SFM) SHALL BE PVC C-900 DR-18 UNLESS OTHERWISE NOTED. ALL SEWER FORCE MAIN IS PRIVATE.
- 18. ANY VITRIFIED CLAY PIPE (VCP) DAMAGED BY NEW CONSTRUCTION OR CONNECTIONS SHALL BE REPLACED WITH NEW SANITARY SEWER MAIN PIPE.
- 19. SANITARY SEWER PIPE LENGTHS ARE MEASURED FROM CENTER OF MANHOLE TO CENTER OF MANHOLE. CONTRACTOR SHALL ADJUST LIMITS OF PVC TO DIP AS SHOWN IN PROFILE.

21. EXISTING WATER MAIN AND SEWER MAIN SHALL BE REMOVED AFTER PROPOSED WATER MAIN AND/OR

- 20. ALL SEWER LATERALS SHALL BE CONNECTED TO SEWER MAIN AND NOT DIRECTLY INTO SEWER MANHOLES.
- SEWER MAIN HAS BEEN TESTED AND ACCEPTED BY PALM BEACH COUNTY HEALTH DEPARTMENT AND EXISTING SERVICES HAVE BEEN RELOCATED.

 PROPOSED WATER AND SEWER IMPROVEMENTS IN PRIVATE PROPERTY SHALL MEET PALM BEACH COUNTY
- 22. PROPOSED WATER AND SEWER IMPROVEMENTS IN PRIVATE PROPERTY SHALL MEET PALM BEACH COUNTY HEALTH DEPARTMENT SEPARATION REQUIREMENTS, THESE CONFLICTS WILL BE ADDRESS DURING CONSTRUCTION AND WON'T AFFECT THE PUBLIC SAFETY.
- CONSTRUCTION AND WON'T AFFECT THE PUBLIC SAFETY.

 23. CONTRACTOR SHALL COORDINATE UNDERGROUND ELECTRIC SERVICE CONNECTION WITH FPL FOR CONDUIT

24. THE PALM BEACH UTILITIES DIVISION MUST BE GIVEN AT LEAST 48 HOURS NOTIFICATION PRIOR TO ANY

SHUT-DOWN AND/OR REMOVAL OF EXISTING WATER MAIN OR SANITARY SEWER LINES.

- 3. CONTRACTOR SHALL COORDINATE UNDERGROUND ELECTRIC SERVICE CONNECTION WITH FPL FOR CONDUIT SIZE AND BURIED DEPTH REQUIREMENT.
- 25. CITY MAINTAINED UTILITIES WILL NEED TO BE TESTED AND PROTECTED (IE. PAVED AT LEAST UP TO FIRST LIFT, IF NOT ROADWAY) PRIOR TO ISSUANCE OF CERTIFICATION OF OCCUPANCY.
- 26. LEAD FREE BRASS WATER WORKS PRODUCTS SHALL MEET THE REQUIREMENT OF ASNI/AWWA C800 AND THE MAXIMUM LEAD CONTENT OF S.3872 AND NSF 61 ANNEX G. THE MANUFACTURER'S DESIGNATION AS A LEAD FREE PRODUCT SHALL BE PERMANENTLY STAMPED OR CAST INTO THE PRODUCT'S BODY. EFFECTIVE JANUARY 1, 2013, ONLY LEAD FREE BRASS WATER WORKS PRODUCTS SHALL BE INSTALLED IN CONTACT WITH POTABLE WATER.
- 27. ALL PROPOSED BACKFLOW PREVENTERS AND DOUBLE DETECTOR CHECK VALVES SHALL BE USC CERTIFIED AND LEAD FREE.

ANY BUILDING FIRE LINE SHOWN ON THESE PLANS IS BEING SHOWN FOR COORDINATION PURPOSES ONLY. KIMLEY—HORN IS ONLY RESPONSIBLE FOR THE DESIGN OF THE WATER MAIN UP TO THE POINT OF SERVICE NOTED ON THE PLANS. PLEASE SEE PLANS BY (FIRE LINE DESIGNER) FOR PLAN AND DETAILS OF THE BUILDING FIRE LINE BEYOND THE POINT OF SERVICE.

VERTICAL DATUM

ELEVATIONS SHOWN HEREON ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988. NAVD '88 ELEV. + 1.52' = NGVD '29 ELEVATION

THE PRESENCE OF GROUNDWATER SHOULD BE ANTICIPATED. CONTRACTOR'S BID SHALL INCLUDE CONSIDERATION FOR ADDRESSING THIS ISSUE AND OBTAINING ALL NECESSARY PERMITS

CALL 2 WORKING DAYS BEFORE YOU DIG

DIAL 811

Know what's below.
Call before you die

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LICENSED PROFESSIONAL
JOSHUA D. HORNING

FLORIDA LICENSE NUMBER 67505

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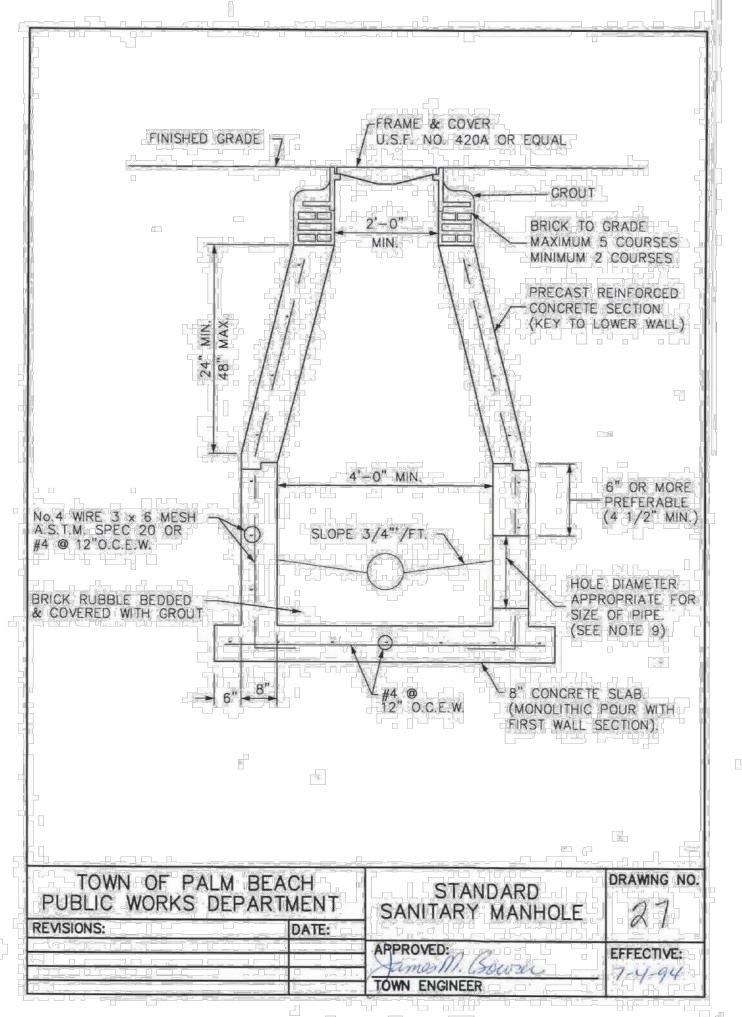
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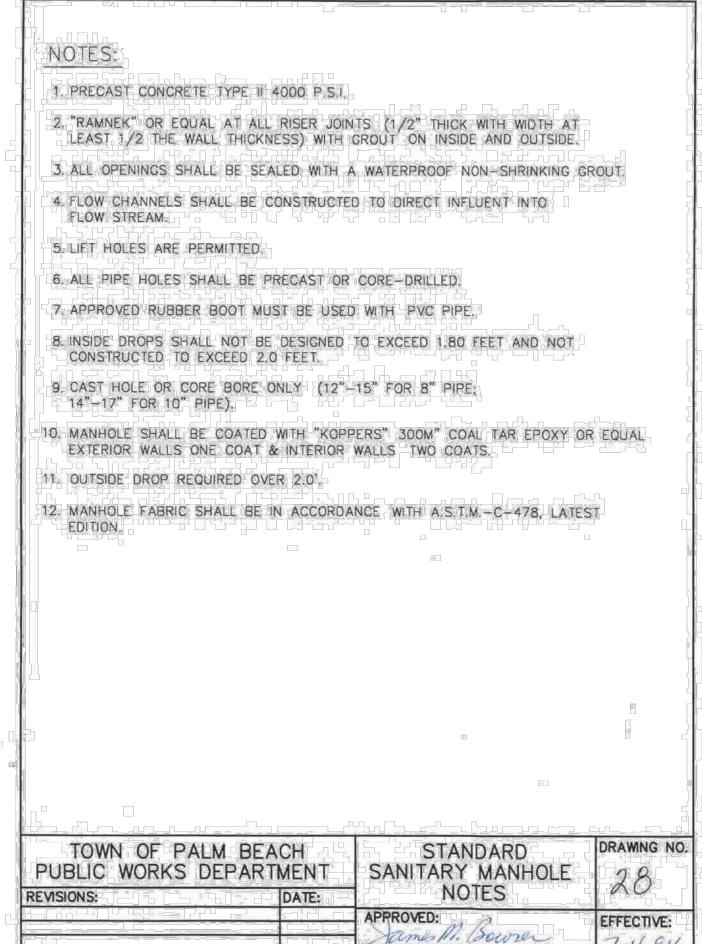
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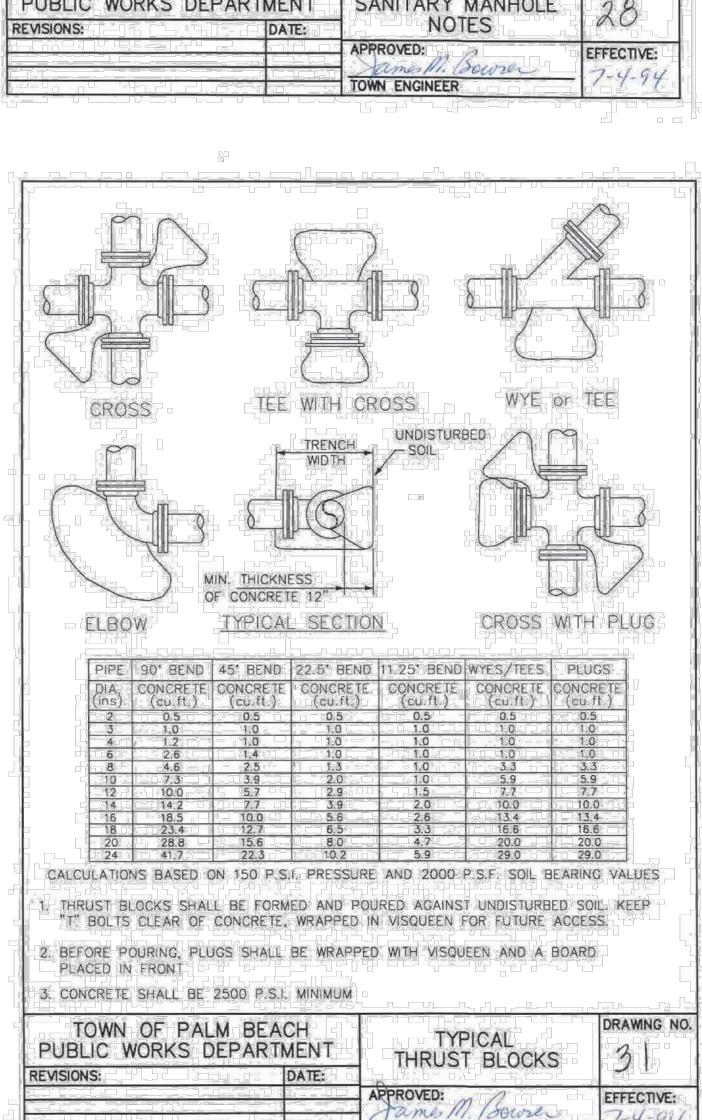
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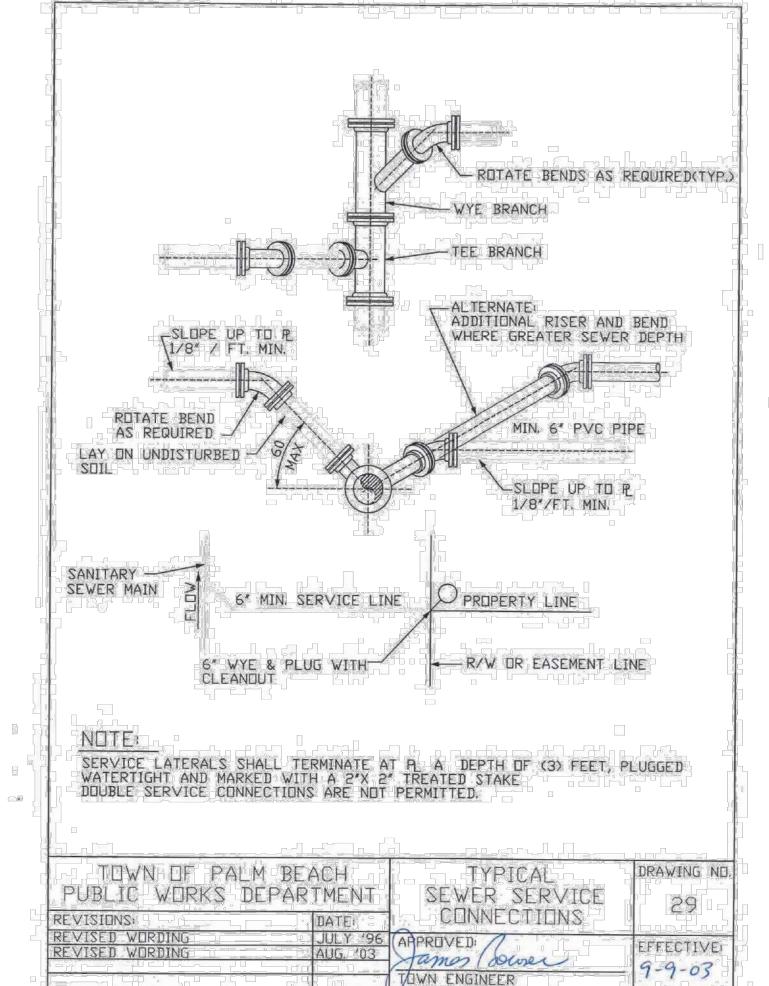
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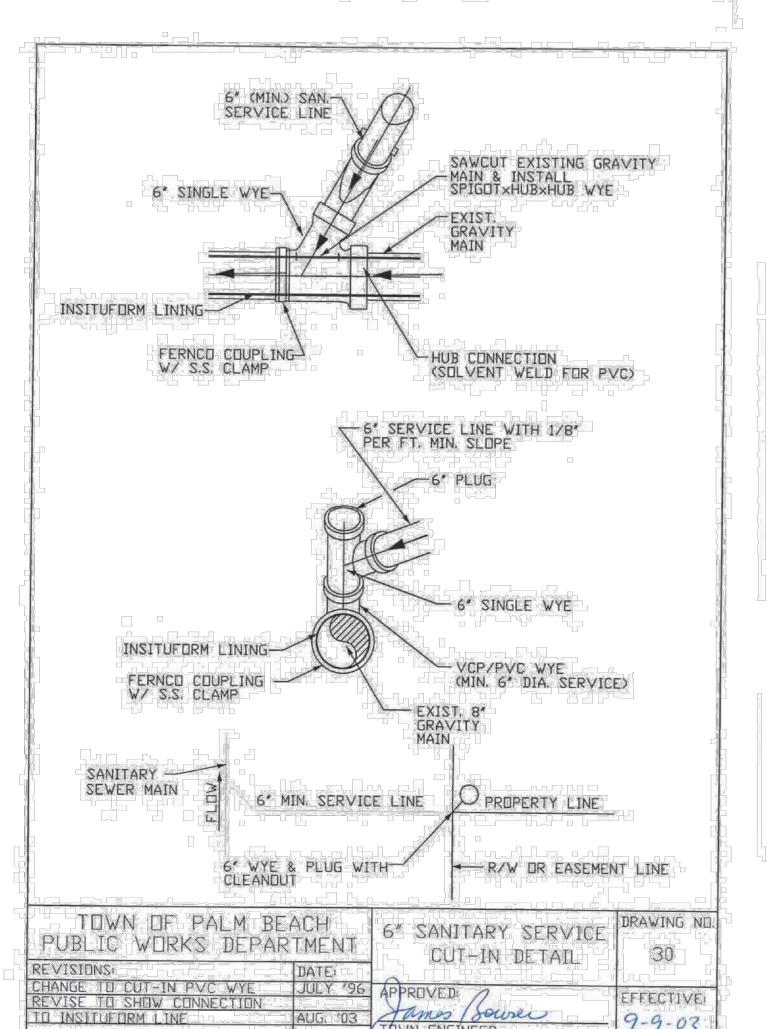




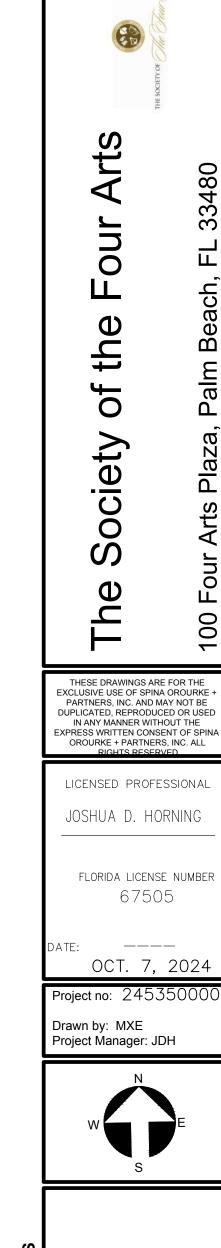


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TOWN ENGINEER



/≫Horn

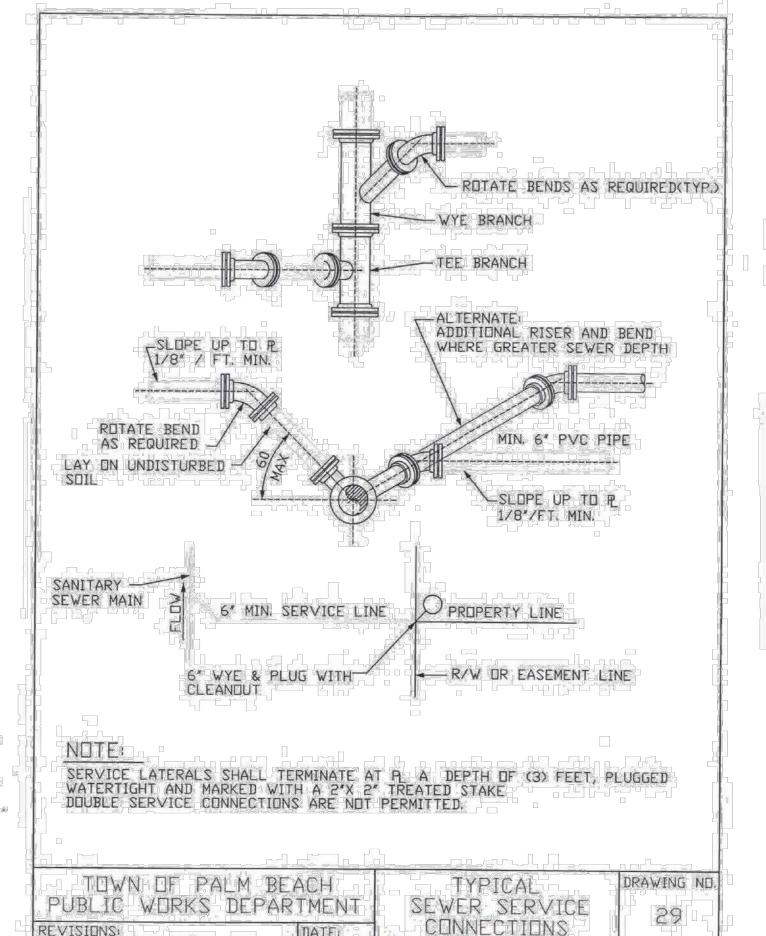
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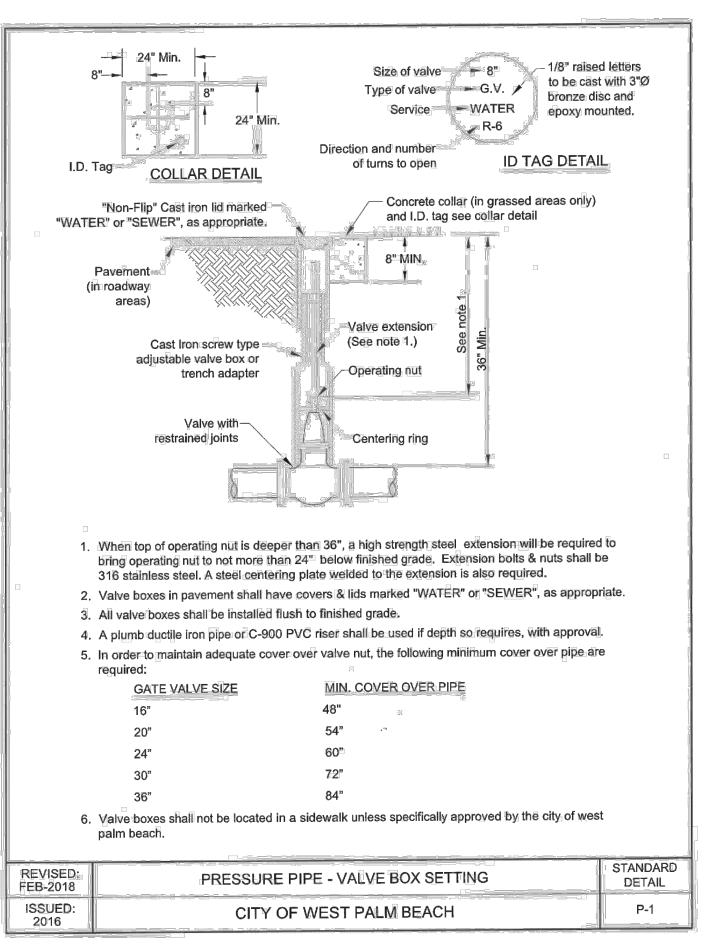
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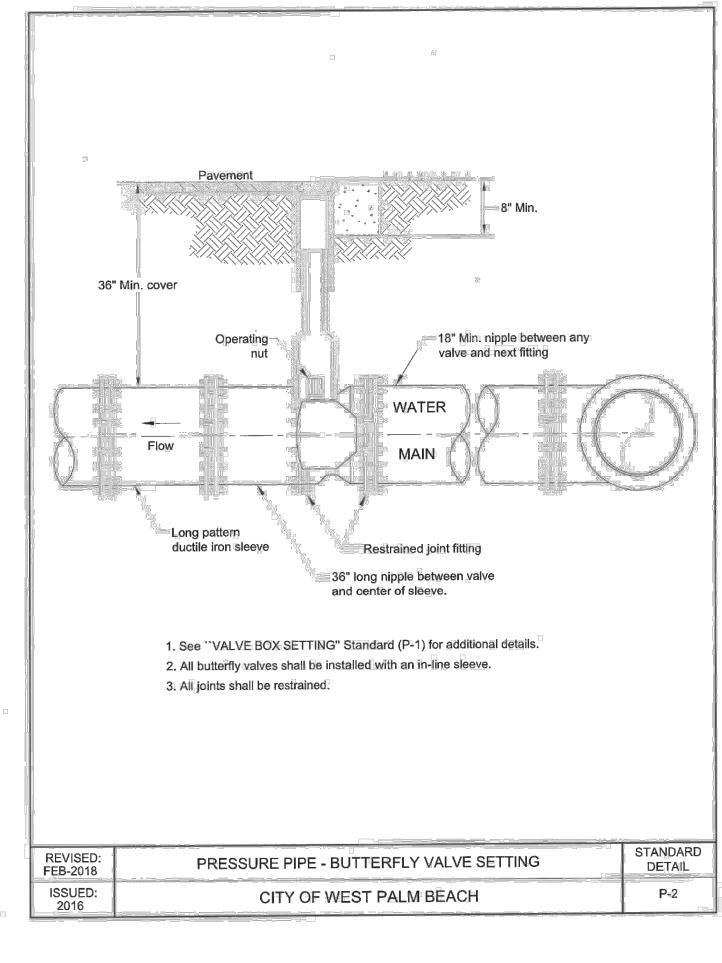
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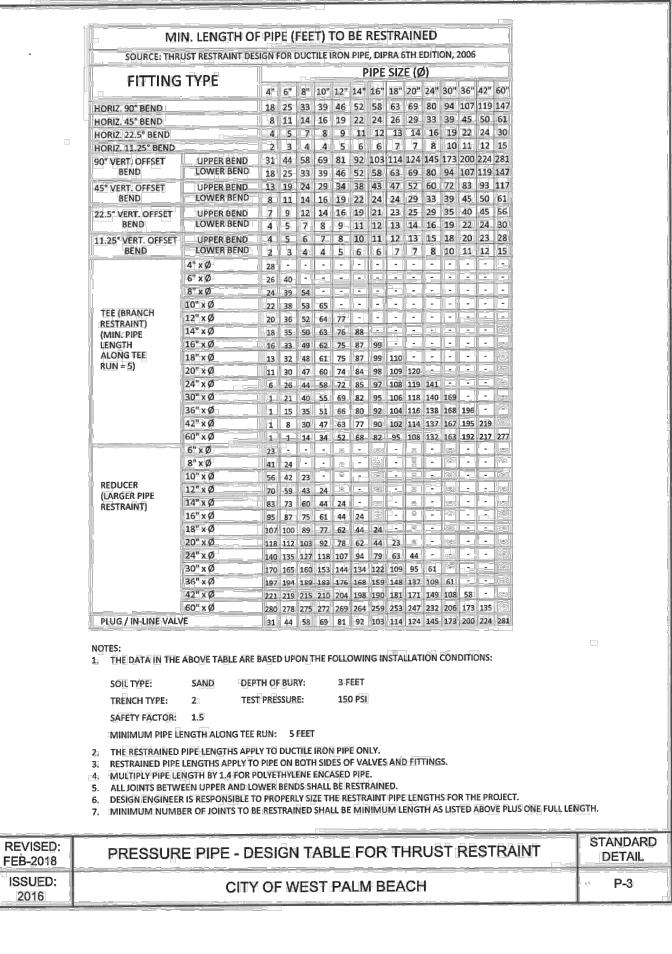
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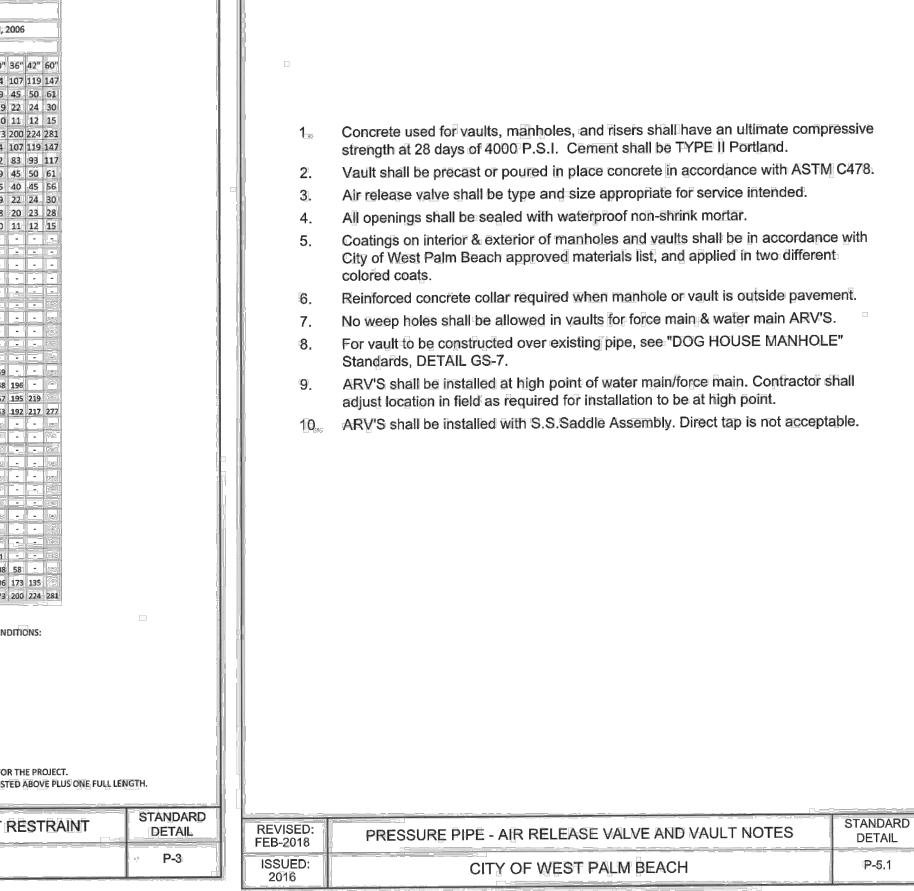
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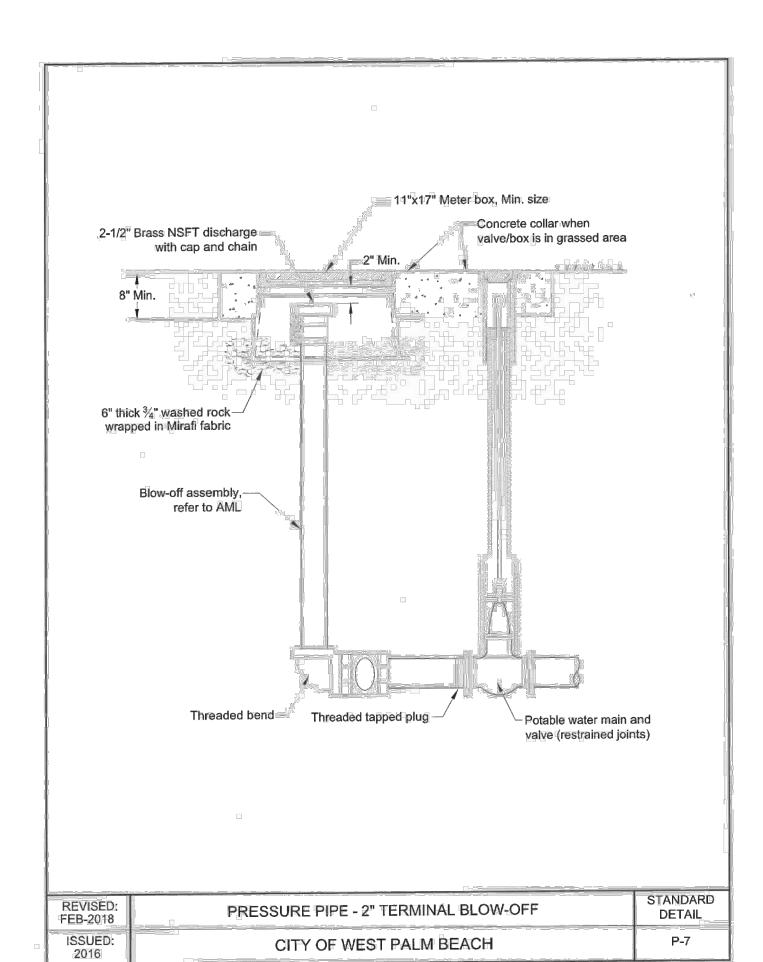


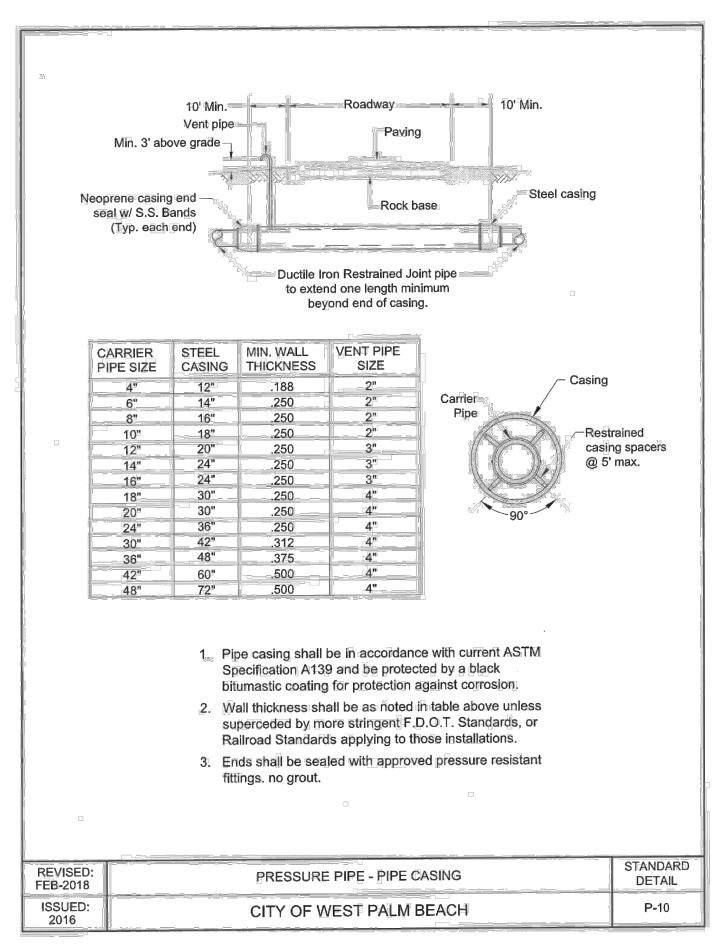


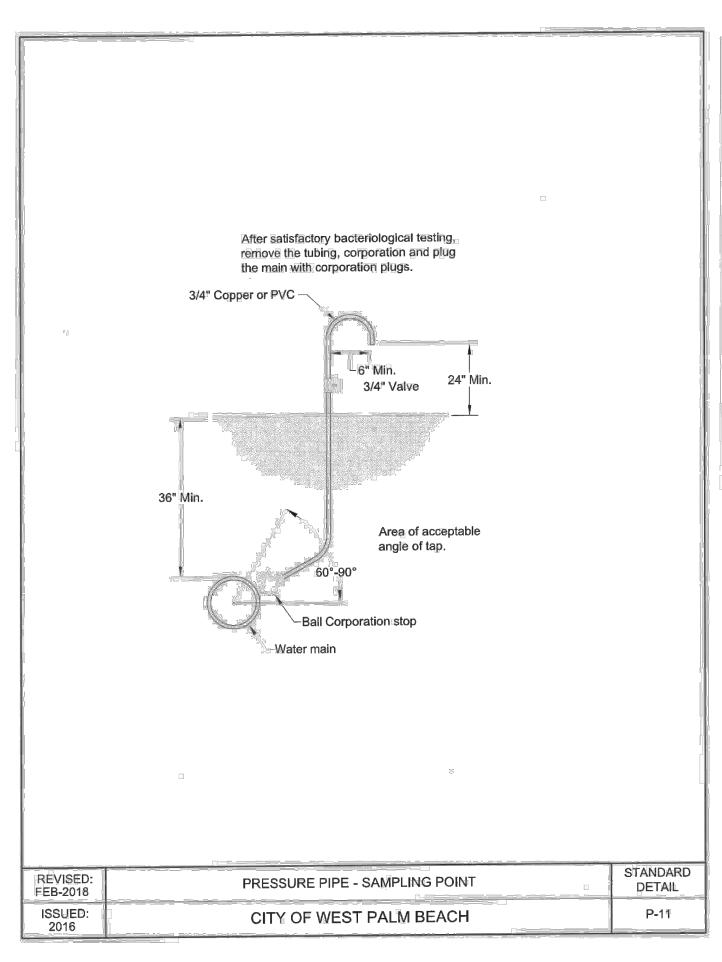


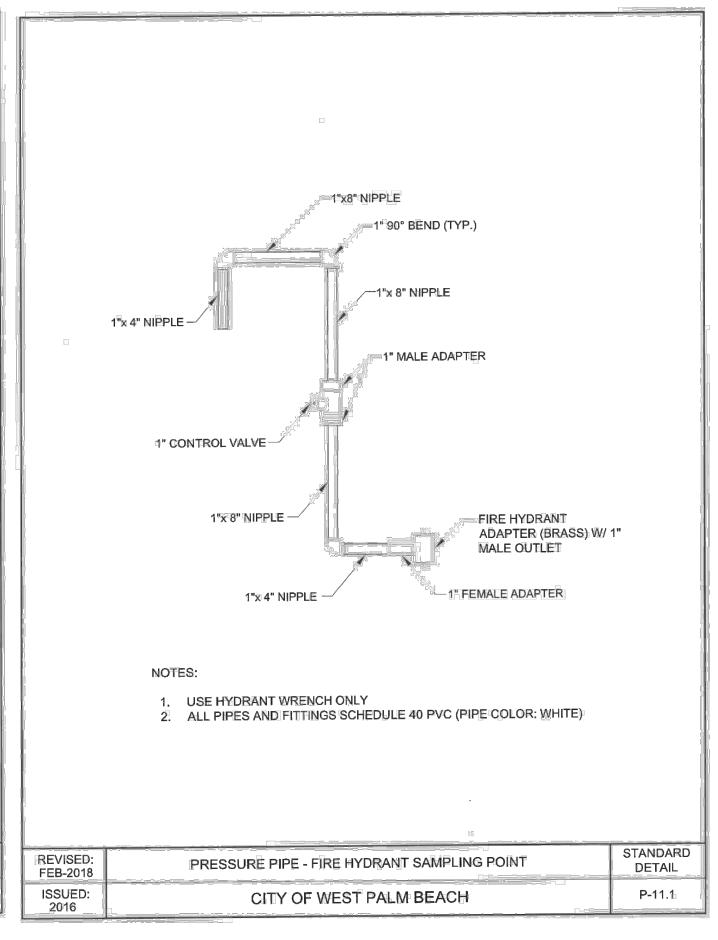


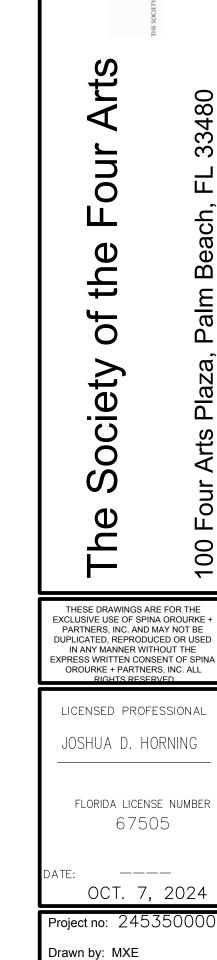


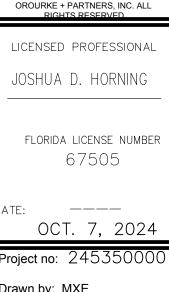






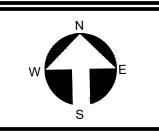




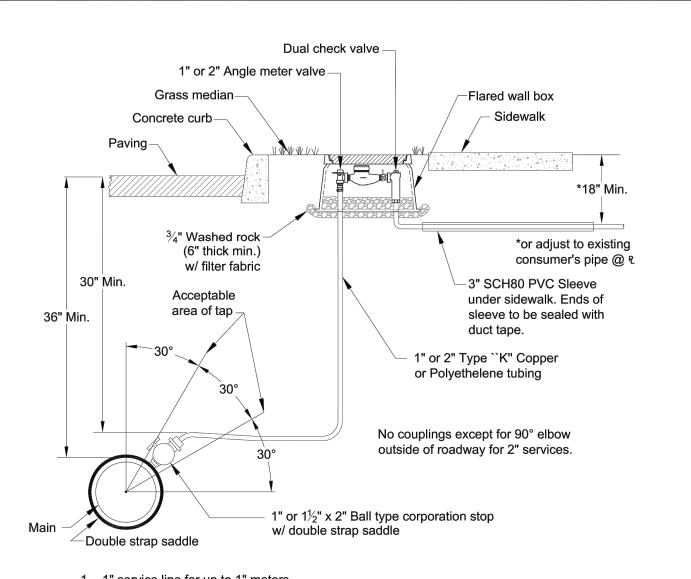


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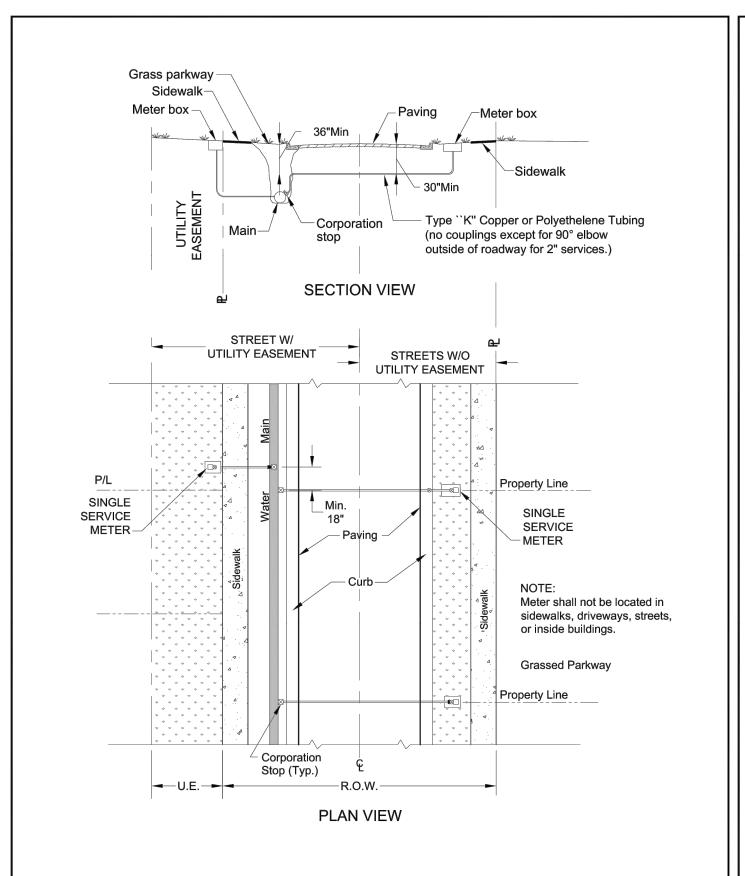


Project Manager: JDH



- 1. 1" service line for up to 1" meters. 2" service line for 2" meters.
- 2. Preferred location of meters to be set in grass parkway or at back of utility easements. See domestic service location Detail WS-5.
- 3. Traffic rated meter box and lid supplied and installed by contractor. Size to be compatible with service size (see City's AML).
- 4. Min. 12 inches separation along main between service taps or fittings.
- 5. All irrigation systems for non-residential applications shall install
- a City approved RPZ backflow preventor. Refer to Standard Detail WS-11.
- 6. Residential dual check valves are required as a minimum for all new residential potable water meters 1" and smaller.
- 7. All brass or copper in contact with potable water shall be "LEAD FREE".
- 8. 1" and 2" single water service shall not feed fire sprinklers.
- 9. Meter box should be located minimum 3 ft away from objects such as poles and trees.

on this	- I	WATER SERVICES - 1" & 2" SINGLE SERVICE INSTALLATION	STANDARD DETAIL
liance		CITY OF WEST PALM BEACH	WS-1



WATER SERVICES - DOMESTIC SERVICE LOCATION

CITY OF WEST PALM BEACH

REVISED:

SEPT-2019

STANDARD

DETAIL

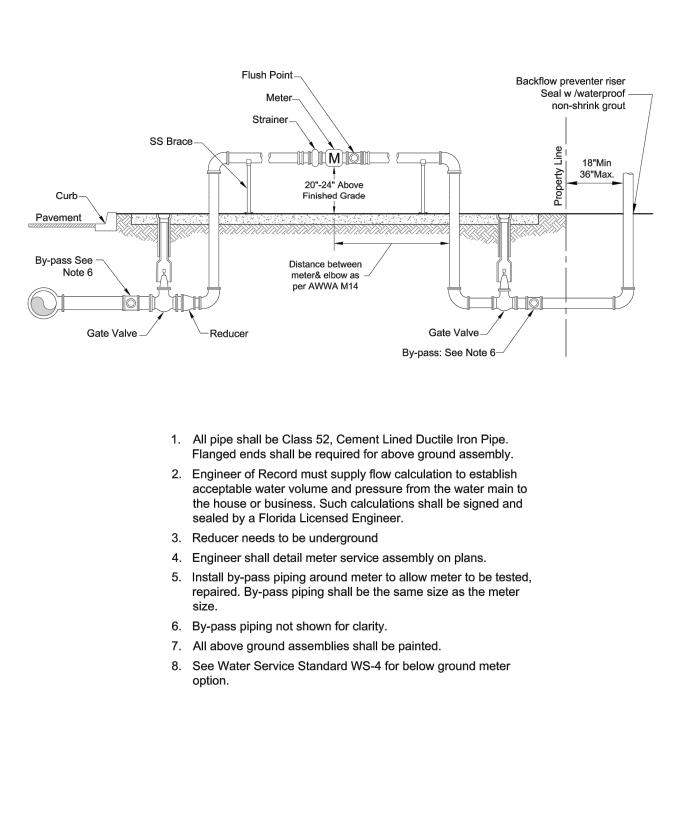
WS-2

REVISED:

SEPT-2019

REVISED:

SEPT-2019



WATER SERVICES - 3" & 4" DOMESTIC ABOVE GROUND METER

CITY OF WEST PALM BEACH

LISTING OF COMPONENTS:

- A. Two 4" Resilient Wedge (RW) valves, with locking valve boxes & lids each side of the meter. Valves to be installed in line with or as close as possible to the meter.
- B. Two Series 2100 3" Megalug, locking style flange adapters, one on each side of
- the meter, strainer and test tee. C. One 3" flanged meter to be paid for by contractor and supplied by the City of West
- Palm Beach. Call for length of meter.
- C.1 A length of straight pipe equal to 5 times the diameter shall be installed installed before the meter & after the strainer.

C.2 A length of straight pipe equal to 3 times the diameter shall be installed after the meter.

- D. One strainer, same size as meter, flanged, bronze case with strainer to be supplied by the contractor. Ccall for dimensions.
- E. 4" x 3" Mechanical Joint reducers before and after the meter. These may not be
- used in lieu of the straight pipe (see c.1 & c.2). F. 4' x 6' vault with a lock down heavy duty aluminum traffic lid with spring loaded
- hinges. Vault & lid are to be positioned so meter dial is centered under meter
- G. Service is to be offset to the proper height using one grouping of the following:
 - G.1 One 4" mechanical joint offset
 - G.2 -Two 4" mechanical joint 90° bends w/ straight pipe as required.
- G.3 -Two 4" mechanical joint 45° bends w/ straight pipe as required. H. Install bypass piping around meter to allow meter to be tested, repaired or
- replaced. Bypass piping shall be the same size as the meter size.
- H.1- Two F.J. Resilient Wedge valves w/ wheel handles & megalug flange adapters series 2100.
 - H.2 Two Mechanical Joint tees
 - H.3 One flanged tee, one flange plate tapped for 2" N.P.T., one
- 2" brass nipple, one locking style 2" curb stop w/ 2" brass plug
- H.4 Two Mechanical Joint 90° elbows.
- I. Flush point to test meters and to flush system.
 - I.1- 3" flanged tee tapped for 2", attached to meter.
 - I.2 2"x 3" brass nipple
 - I.3 2" locking style curb stop
 - I.4 2" brass plug

STANDARD

DETAIL

WS-3

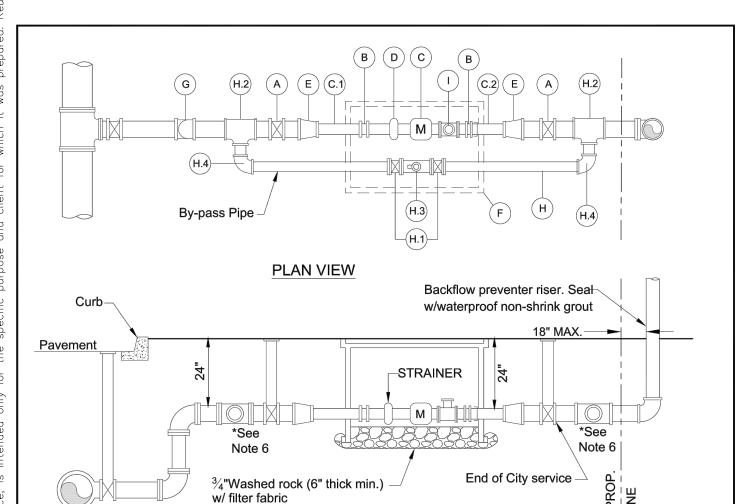
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WATER SERVICES - 3" & LARGER DOMESTIC METER LEGEND

CITY OF WEST PALM BE

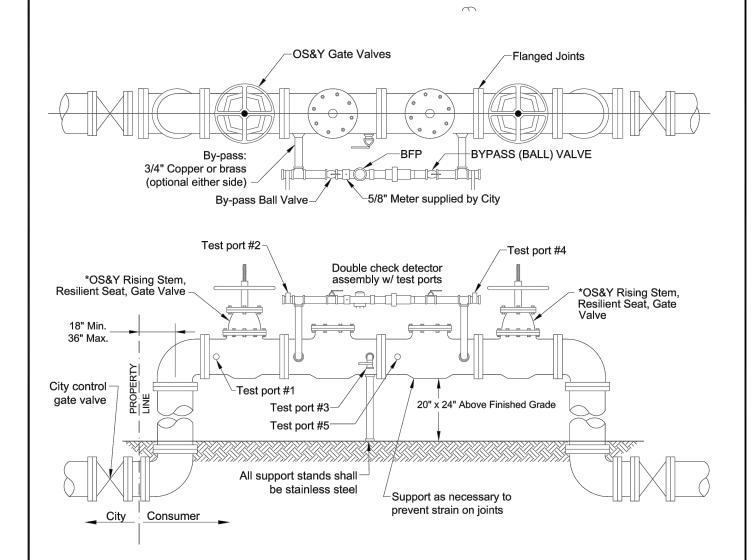
STIC METER LEGEND	STANDARD DETAIL		
EACH	WS-4.1		



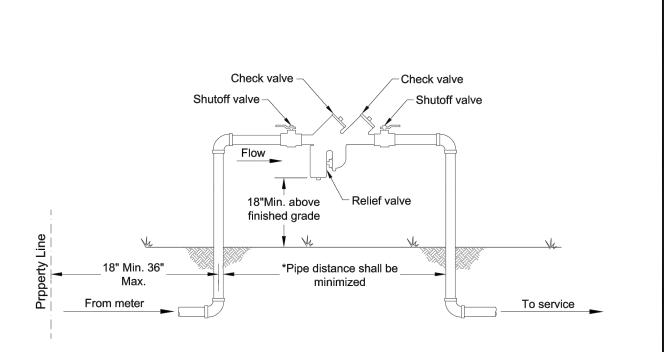
ELEVATION VIEW

- 1. For letter denotations, see Water Service Standard WS-4.1, 3" and larger domestic meter
- 2. The following is an itemization of materials specifically detailed for a 3" meter. For a 4" or 6" meter, eliminate item "E" and change the remaining items to correspond with the meter size.
- 3. All mechanical joint fittings to use Megalug Series 1100 Restrained Joint adapters.
- 4. Location of meter may be rotated to fit available parkway/easement width.
- 5. All pipe shall be Class 52, Cement ILned Ductile Iron Pipe. 6. Bypass piping not shown for clarity.
- 7. Engineer of Record must supply flow calculation to establish acceptable water volume and pressure from the water main to the house or business. Such calculations shall be signed and sealed by a Florida Licensed Engineer.
- 8. Below ground 3" and larger domestic meter is for project specific, if required, only with City of West Palm Beach Public Utilities Department approval.
- 9. 3" water service shall not feed fire sprinklers or hydrants.

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	REVISED:	WATER SERVICES - 3" & LARGER DOMESTIC METER	STANDARD DETAIL	
5	SEPT-2019	CITY OF WEST PALM BEACH	WS-4	



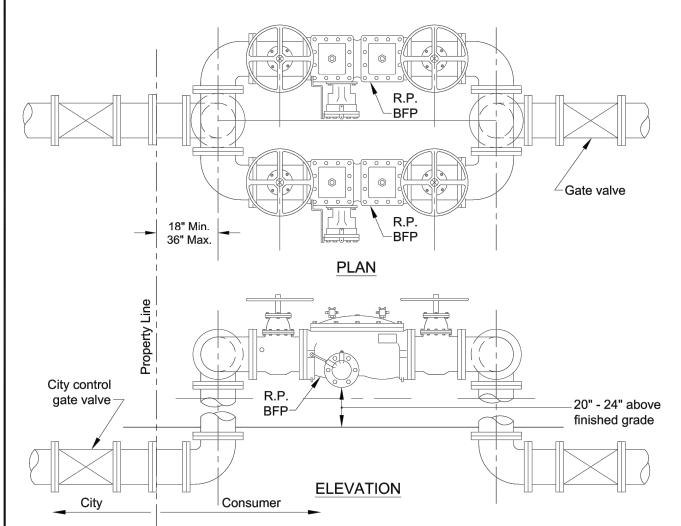
- Installation of 3/4" to 2" assemblies require ball valves with test ports. 3" and larger require Resilient Wedge (RW) valves. 2. All piping prior to & after backflow prevention assemblies shall be either Cement Lined Ductile Iron Pipe, Copper or Brass for the smaller assemblies. this includes all assemblies.
- 3. All piping after the assembly shall meet the latest edition of plumbing, fire line & mechanical codes of the municipality.
- 4. Electronic switches may be required on the O.S.&Y. valves. Check with local fire marshal and/or municipal building 5. All back flow prevention devices must be approved by the Foundation for Cross-Connection Control and Hydraulic Research,
- University of Southern California. 6. Device shall be installed directly after the property line outside of utility easements. Installation must be pre-approved by
- Public Utilities Customer Service Representative 7. Refer to City of West Palm Beach Cross Connection Ordinance for further information.
- 9. Engineer of Record must supply flow calculation to establish acceptable water volume and pressure from the water main to the house or business. Such calculations shall be signed and sealed by a Florida Licensed Engineer.
- 10. All brass or copper in contact with potable water shall be "LEAD FREE".
- STANDARD FIRE LINE - DOUBLE DETECTOR ASSEMBLY and METER REVISED: DETAIL INSTALLATION SEPT-2019 WS-5 CITY OF WEST PALM BEACH



- 1. All backflow prevention assemblies and orientation must be approved by the Foundation for Cross Connection Control and Hydraulic Research, University of California.
- 2. Assemblies shall have test cocks and have enough clearance for test
- 3. Piping from meter to backflow assembly shall be type "K" or "L" copper, brass or stainless steel.
- 4. Assemblies are to be installed directly after the meter on private property, outside of utility easement and Right of Way. 5. Refer to City of West Palm Beach Backflow Cross Connection Control
- Ordinances for further information.
- 6. Installation of 3/4" to 2" assemblies require ball valves with test ports. 7. All brass or copper in contact with potable water shall be "LEAD FREE".
- 8. Backflow assembly shall not be located on sidewalks, roads, or inside buildings and shall not be installed below ground, in vault or in boxes.

CITY OF WEST PALM BEACH

STANDARD WATER SERVICES - SMALL REDUCED PRESSURE DETAIL BACKFLOW PREVENTER ASSEMBLY (3/4" THROUGH 2") WS-6



- 1. Installation of 3/4" to 2" assemblies require ball valves with test ports. 3" and larger require Resilient Wedge (RW) valves.
- 2. All piping before & after backflow prevention assemblies shall be either cement lined ductile iron pipe, copper or brass for the smaller assemblies. This includes all assemblies, irrigation & fire line devices. All piping after the assembly shall meet the local Plumbing/Mechanical Codes (latest edition) of the municipality.
- 3. All backflow prevention devices must be approved by the Foundation for Cross-Connection Control and Hydraulic Research, University of Southern California.
- 4. Refer to City of West Palm Beach Cross Connection Ordinance for further information.
- 5. Assembly shall be installed directly after the meter on private property outside of utility easements.
- 6. Installation must be pre-approved by City of West Palm Beach customer service representative.
- 7. Engineer of Record must supply flow calculation to establish acceptable water volume and pressure from the water main to the house or business. Such calculations shall be signed and sealed by a Florida Licensed
- 8. Only one RP backflow preventor required, second backflow preventor shown for redundancy.

9. All brass or copper in contact with potable water shall be "LEAD FREE".

	REVISED: SEPT 2019	WATER SERVICES - 3" & LARGER REDUCED PRESSURE BACKFLOW PREVENTER ASSEMBLY	STANDARD DETAIL
		CITY OF WEST PALM BEACH	WS-7

Horn

Kimley

BEYER BLINDER BELLE

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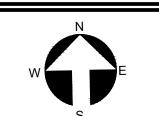
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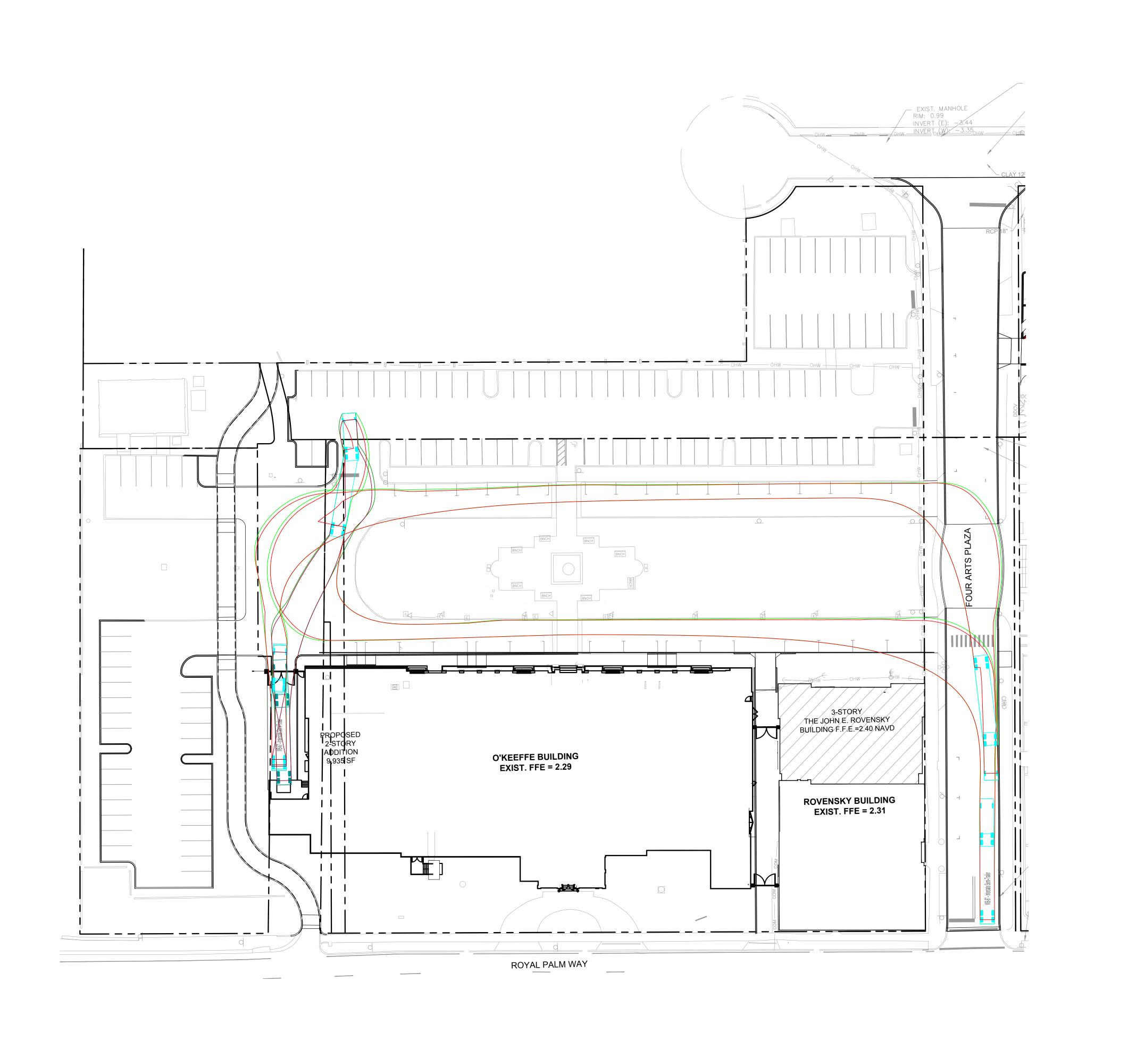
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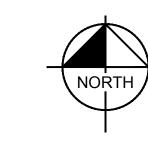
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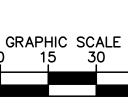
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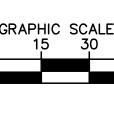
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Kimley >>> Horn
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DATE: ----OCT. 7, 2024

Project no: 245350000 Drawn by: MXE Project Manager: JDH

