

# TRIBUTARY SPINE ROAD (WEST) - PHASE A

## FOR

# THREE RIVERS DEVELOPERS, LLC

TRIBUTARY DRIVE

A PORTION OF SECTION 45 (ROBERT HARRIS GRANT), AND A PORTION  
OF SECTIONS 22, 23, 26, AND 27, TOWNSHIP 2 NORTH, RANGE 26  
EAST, ALL IN NASSAU COUNTY, FLORIDA.

PROJECT OWNER AND CONSULTANTS

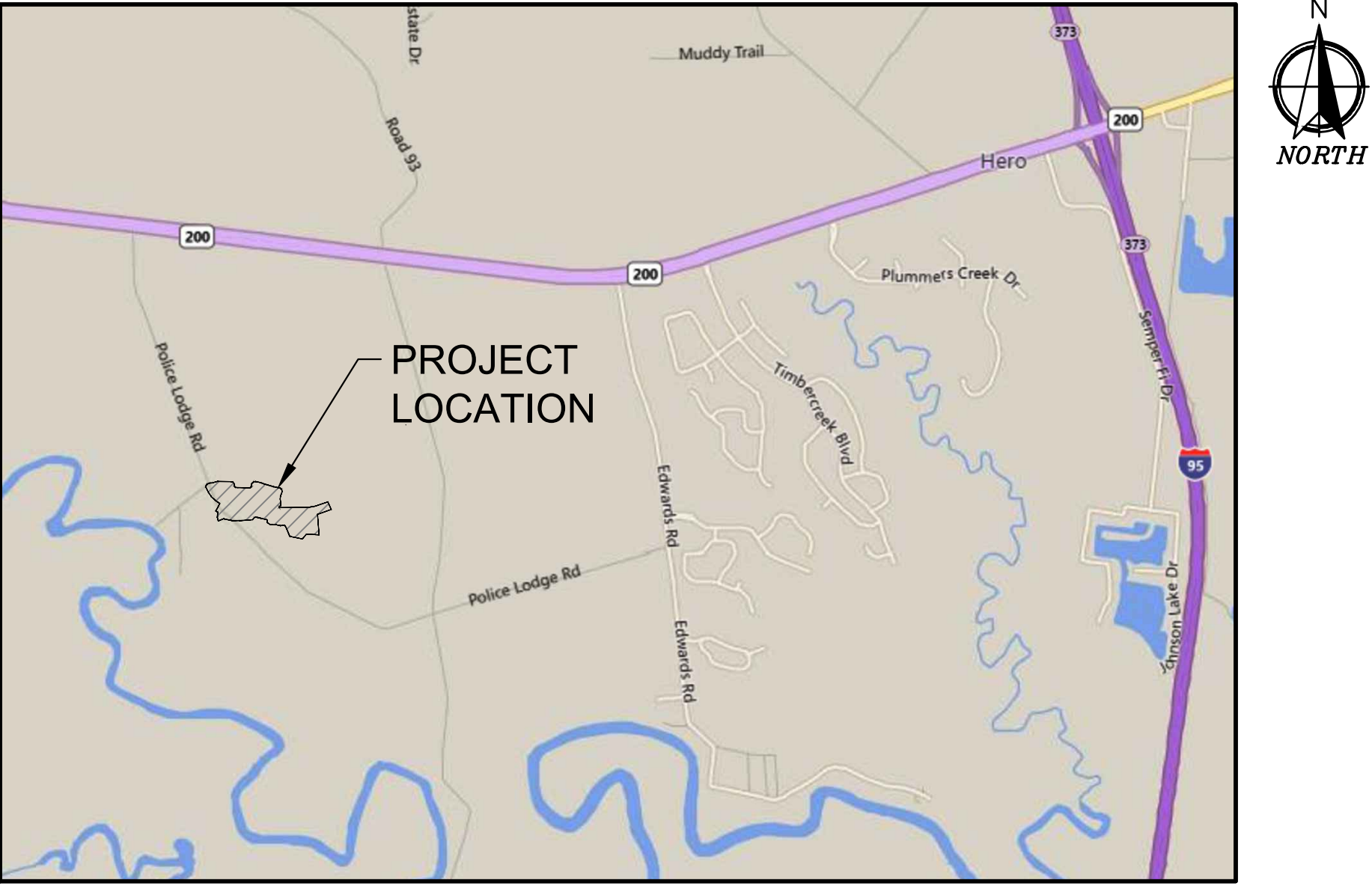
OWNER: THREE RIVERS DEVELOPERS, LLC  
7807 BAYMEADOWS ROAD EAST, SUITE 205  
JACKSONVILLE, FL 32256  
CONTACT: GREGG KERN  
TEL: (904) 996-2485

ENGINEER: DOMINION ENGINEERING GROUP, INC.  
4348 SOUTHPPOINT BLVD, SUITE 201  
JACKSONVILLE, FLORIDA 32216  
CONTACT: BILL SCHAEFER  
TEL: (904) 854-4500 FAX: (904) 854-4505

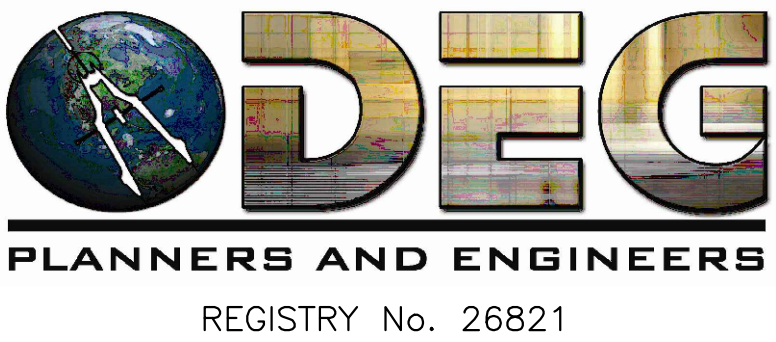
SURVEYOR: CLARY & ASSOCIATES, INC.  
3830 CROWNE POINT ROAD  
JACKSONVILLE, FLORIDA 32257  
TEL: (904) 260-2703

ENVIRONMENTAL: BIO-TECH CONSULTING, INC.  
1157 BEACH BLVD.  
JACKSONVILLE BEACH, FLORIDA 32250  
CONTACT: JASON MILTON  
TEL: (877) 894-5696

LANDSCAPE: A&K LAND PLANNING & DESIGN  
416 TORTOISE TRACE  
SAINT JOHNS, FLORIDA 32259  
CONTACT: KRIS REED  
TEL: (904) 476-9692



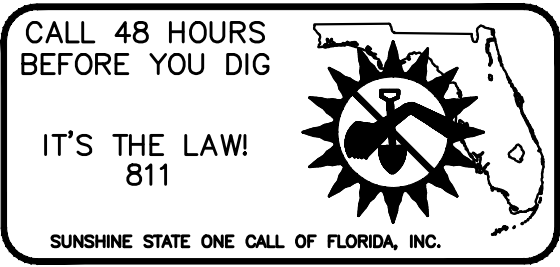
LOCATION MAP  
N.T.S.



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PIN # :  
11-2N-26-0000-0001-0020



SUBMITTALS	
COUNTY SUBMITTAL 1	05/13/2024
COUNTY SUBMITTAL 2	11/07/2024

WILLIAM E. SCHAEFER, P.E.  
FLA. REGISTERED ENGINEER # 40229

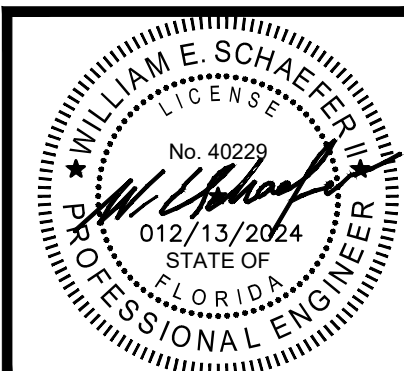
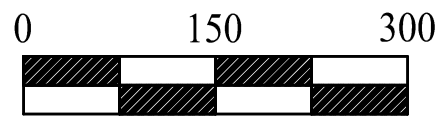


LEGEND

- SITE BOUNDARY
- EXISTING DRAINAGE FLOW
- DRAINAGE DIVIDE
- EXISTING SPOT ELEVATION
- EXISTING CONTOURS
- JURISDICTIONAL WETLAND LINE
- VEGETATED UPLAND BUFFER
- WETLAND IMPACT

NOTES:

- POST DEVELOPED CURVE NUMBER OF 93 IS A COMPOSITE CURVE NUMBER FOR THE SITE.



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PLANNERS AND ENGINEERS

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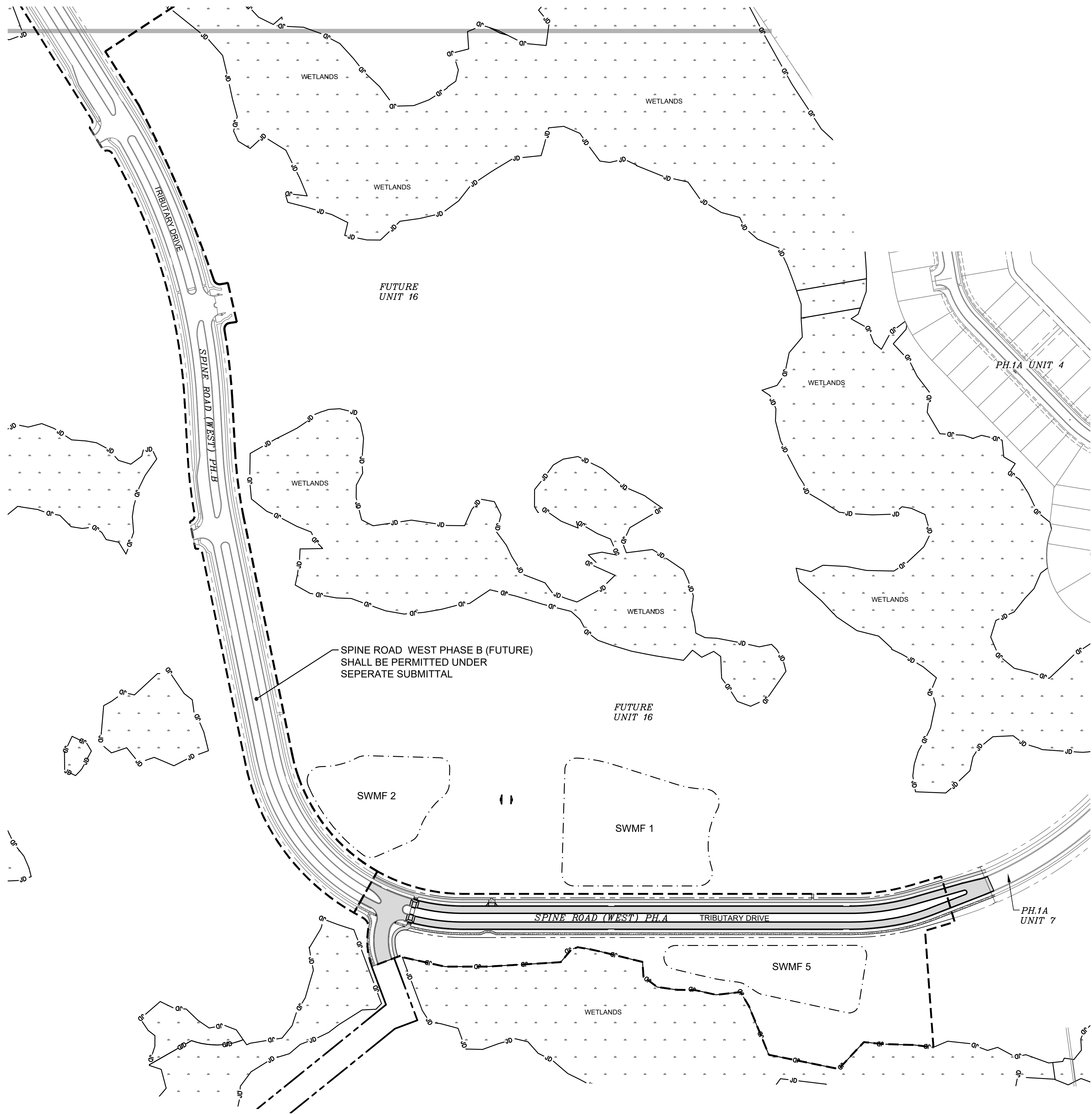
TRIBUTARY SPINE ROAD (WEST) PHASE A  
FOR  
THREE RIVERS DEVELOPERS, LLC

POST DEVELOPMENT PLAN

REVISIONS

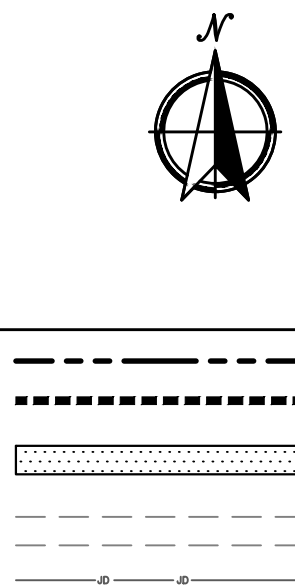
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SCALE: AS NOTED  
JOB NO.: 2016.011  
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SHEET NO.

C1



LEGEND

SITE BOUNDARY  
PHASE LINE  
VEGETATED NATURAL BUFFER  
(15' MIN, 25' AVG)  
EXISTING PAVEMENT  
STATE JURISDICTIONAL WETLAND LINE



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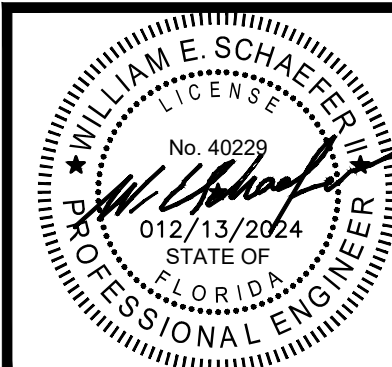
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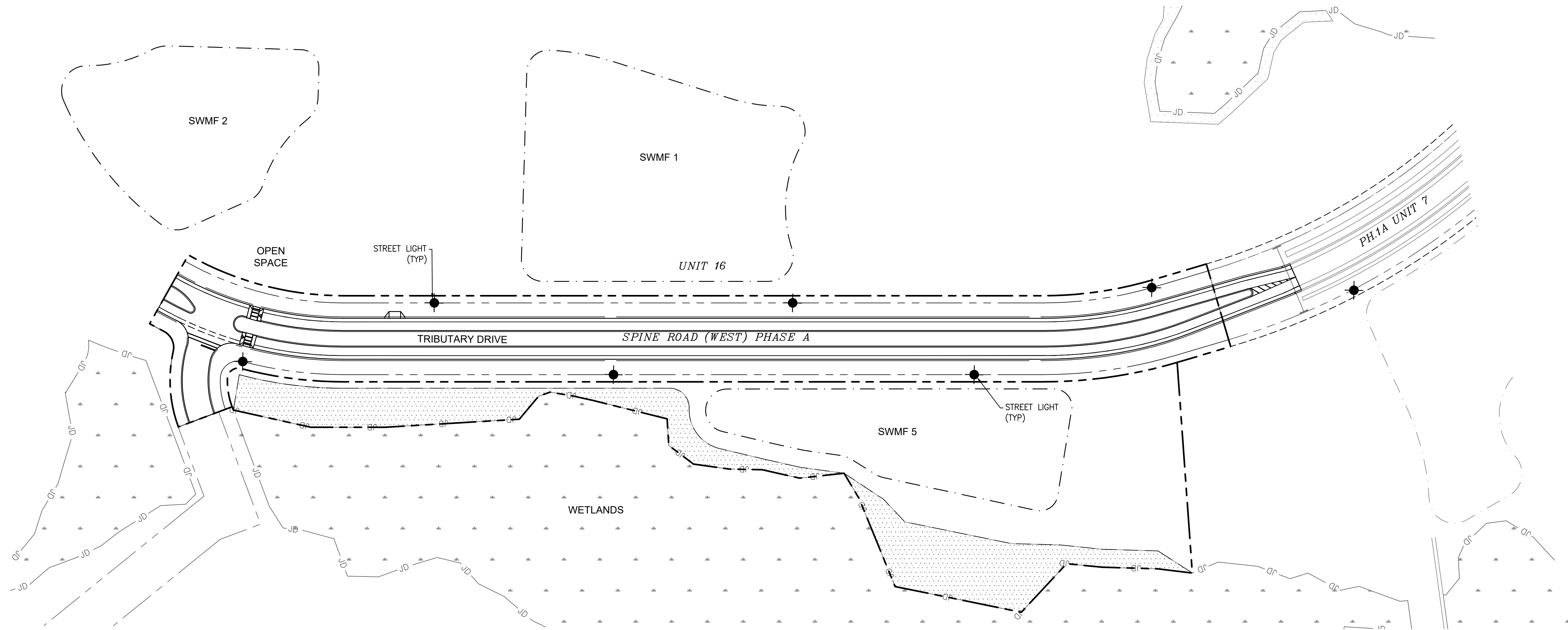
PHASING PLAN

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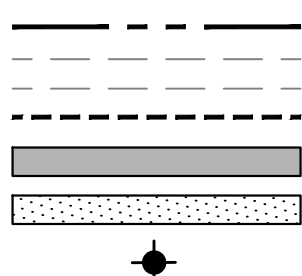
C2





LEGEND

- SITE BOUNDARY
- EXISTING PAVEMENT
- PHASE LINE
- PROPOSED PAVEMENT
- VEGETATED NATURAL BUFFER
- PROPOSED STREET LIGHT



NOTE:

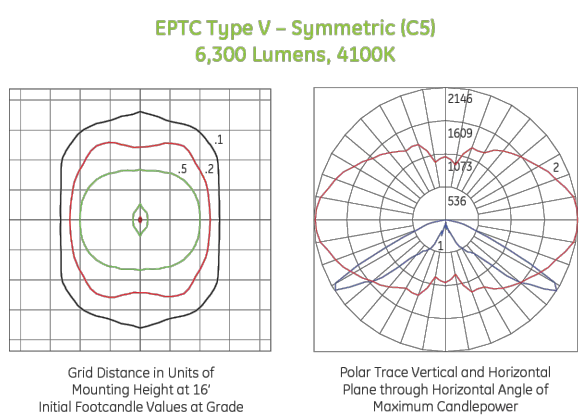
- NO LIGHTS ABOUT 90 DEGREES ABOVE HORIZONTAL PLANE, EXCEPT ACCENT LIGHTING.
- LIGHT SHIELDING REQUIREMENTS SHALL PROTECT FROM GLARE, LIGHT SPILLAGE TO PEDESTRIANS, AIRCRAFT AND CARS.
- MERCURY VAPOR SHALL NOT BE ALLOWED.

LIGHTING INFORMATION:

TIERED CONE TOP HOUSING, FIVE LIGHT PATTERN, 7,300 LUMENS, GLARE RATING (BUG) B3-U1-G1.

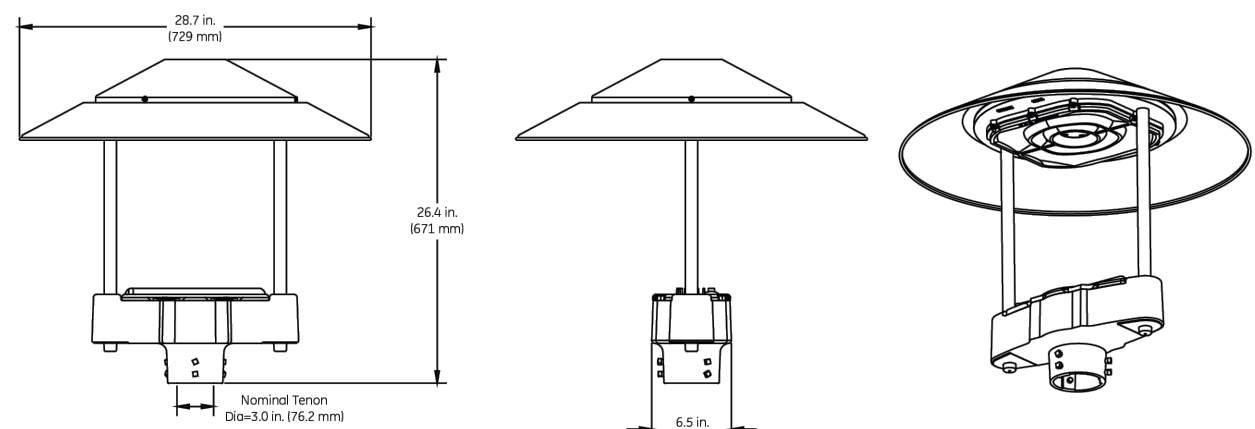
HOUSING IS MOUNTED ON A 13' STANDARD BLACK FIBERGLASS POLE.

PHOTOMETRICS



Manufacturer	Style	Fixture	Pole Options	Bracket Options	Light Pattern	Line Watts/ NEMA Label	Color Temp	Lumens	Glare Rating (BUG)	.ies File	Billing Tier
GE	EPTC	 (Black)	1 (20'), 2	NA	5	65/70	4000K	7,300	B3-U1-G1	epc02_07440____.ies	E4

Tiered Cone Top Housing

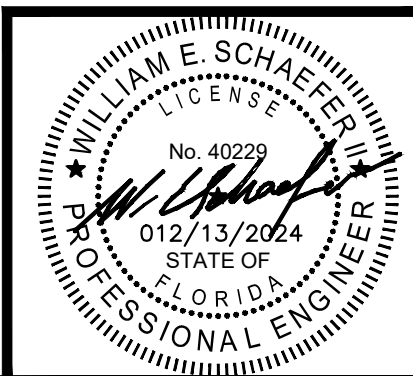
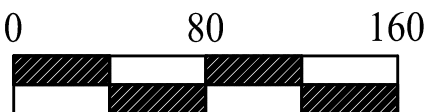


Standard Black Fiberglass



2

Tenon Mount  
13' (10' MH)



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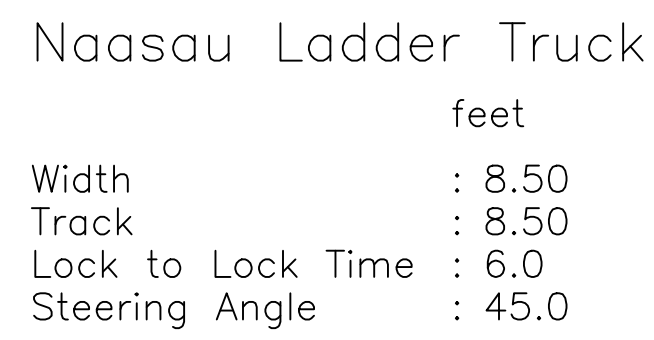
TRIBUTARY SPINE ROAD (WEST) PHASE A  
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LIGHTING PLAN

REVISIONS

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C2A



UNIT 16

TRIBUTARY DRIVE

WETLANDS

LOGAN ROAD  
(60-FOOT RIGHT-OF-WAY)

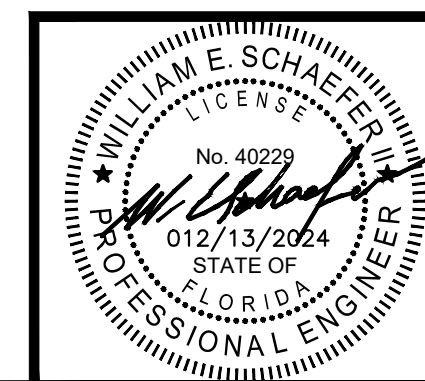
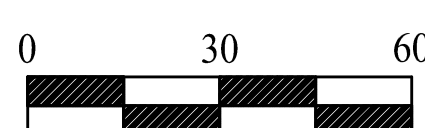
### LEGEND

**LEGEND**

SITE BOUNDARY

PROPOSED PAVEMENT

VEGETATED NATURAL BUFFER



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**DOMINION ENGINEERING GROUP, INC.**

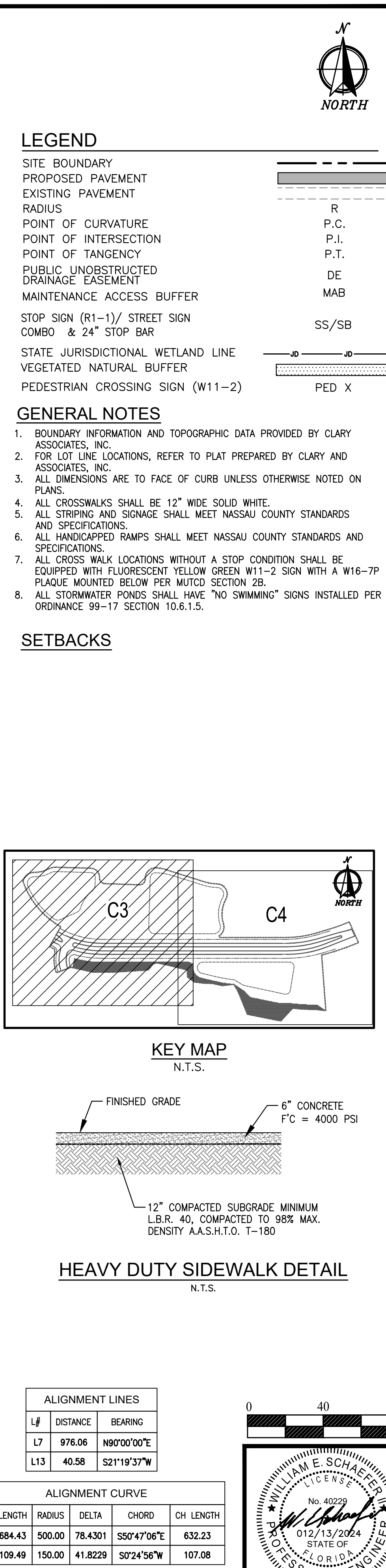
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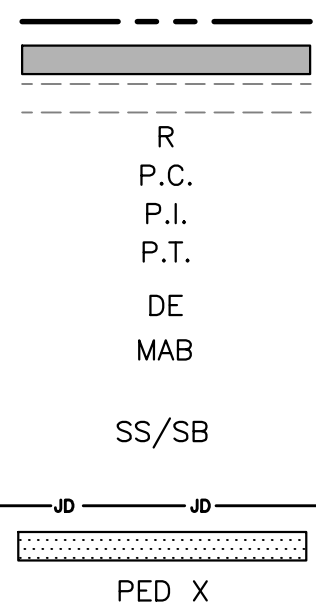
AUTOTURN PLAN



TRIBUTARY SPINE ROAD (WEST) PHASE A FOR THREE RIVERS DEVELOPERS, LLC	<b><u>PLANNERS AND ENGINEERS</u></b>  4348 SOUTHPOINT BLVD., SUITE 201, JACKSONVILLE, FLORIDA 32216  TEL: 904-854-4500    REGISTRY NUMBER: 26821    FAX 904-854-4505  <a href="http://www.dom-eng.com">www.dom-eng.com</a>
	GEOMETRY PLAN

LEGEND

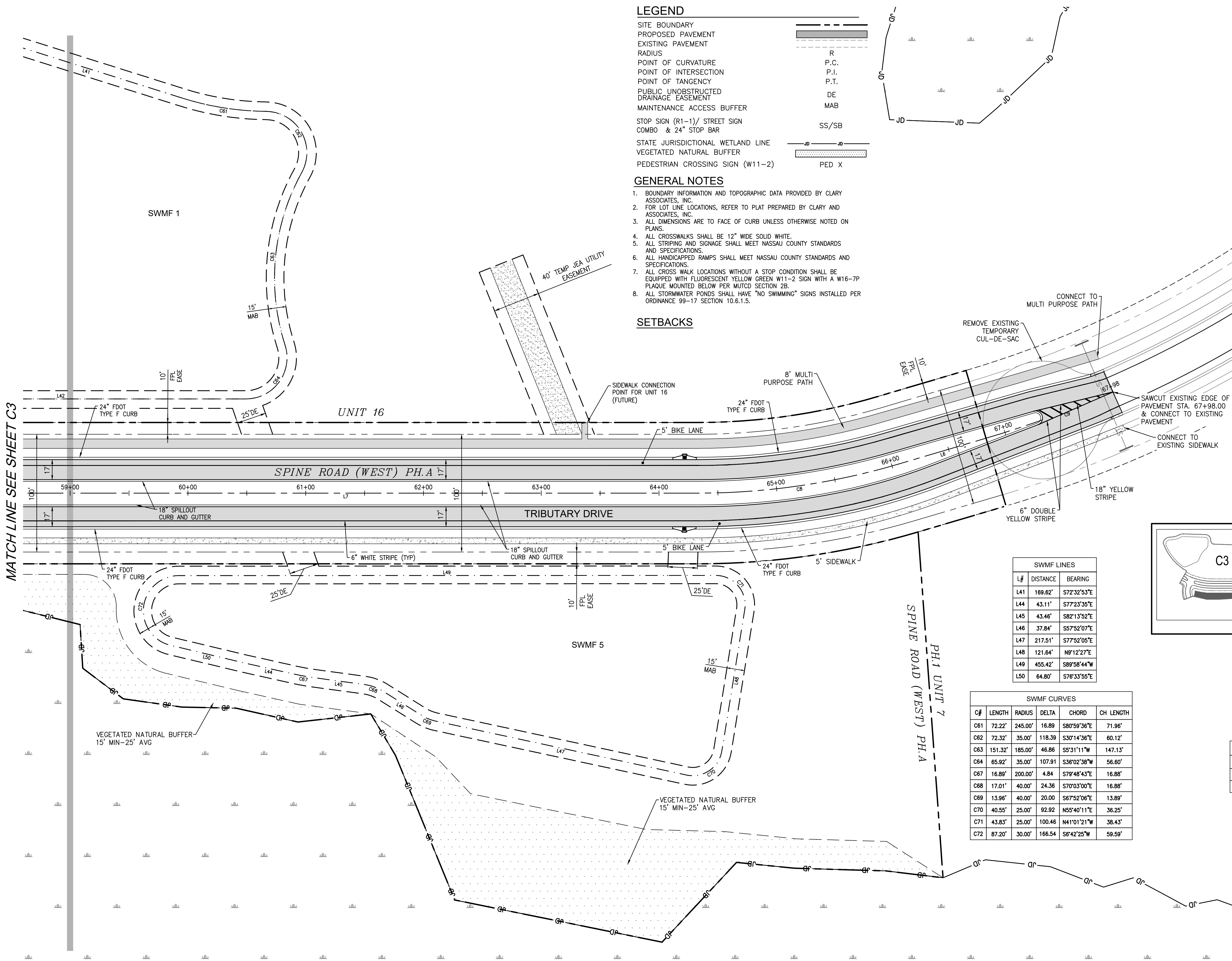
- SITE BOUNDARY  
PROPOSED PAVEMENT  
EXISTING PAVEMENT  
RADIUS  
POINT OF CURVATURE  
POINT OF INTERSECTION  
POINT OF TANGENCY  
PUBLIC UNOBSTRUCTED DRAINAGE EASEMENT  
MAINTENANCE ACCESS BUFFER  
STOP SIGN (R1-1)/ STREET SIGN COMBO & 24" STOP BAR  
STATE JURISDICTIONAL WETLAND LINE  
VEGETATED NATURAL BUFFER  
PEDESTRIAN CROSSING SIGN (W11-2)



GENERAL NOTES

- BOUNDARY INFORMATION AND TOPOGRAPHIC DATA PROVIDED BY CLARY ASSOCIATES, INC.
- FOR LOT LINE LOCATIONS, REFER TO PLAT PREPARED BY CLARY AND ASSOCIATES, INC.
- ALL DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED ON PLANS.
- ALL CROSSWALKS SHALL BE 12" WIDE SOLID WHITE.
- ALL STRIPING AND SIGNAGE SHALL MEET NASSAU COUNTY STANDARDS AND SPECIFICATIONS.
- ALL HANDICAPPED RAMPS SHALL MEET NASSAU COUNTY STANDARDS AND SPECIFICATIONS.
- ALL CROSS WALK LOCATIONS WITHOUT A STOP CONDITION SHALL BE EQUIPPED WITH FLUORESCENT YELLOW GREEN W11-2 SIGN WITH A W16-7P PLAQUE MOUNTED BELOW PER MUTCD SECTION 2B.
- ALL STORMWATER PONDS SHALL HAVE "NO SWIMMING" SIGNS INSTALLED PER ORDINANCE 99-17 SECTION 10.6.1.5.

SETBACKS

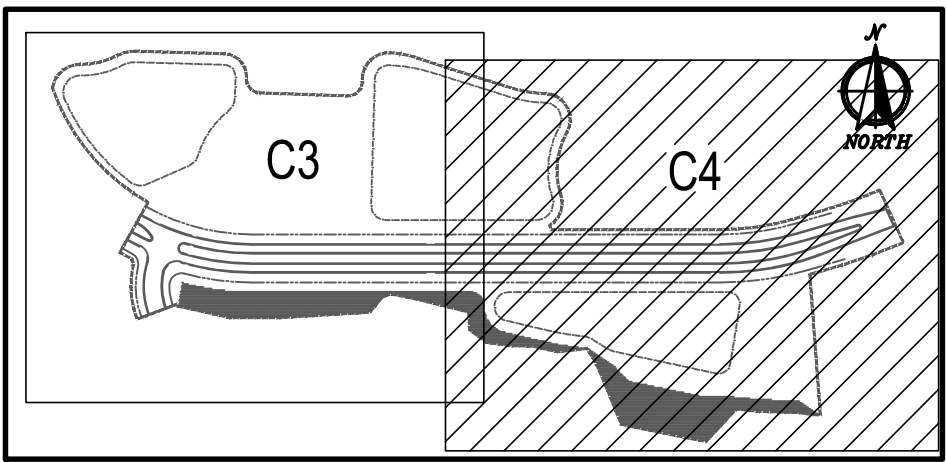


SWMF LINES		
L#	DISTANCE	BEARING
L41	169.62'	S72°32'53"E
L44	43.11'	S77°23'35"E
L45	43.46'	S82°13'52"E
L46	37.84'	S57°52'07"E
L47	217.51'	S77°52'05"E
L48	121.64'	N9°12'27"E
L49	455.42'	S89°58'44"W
L50	64.80'	S76°33'55"E

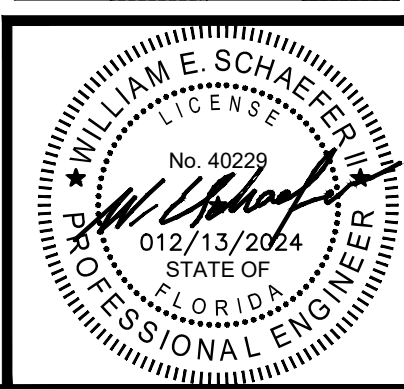
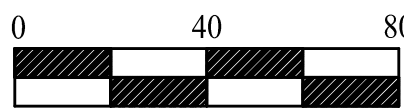
SWMF CURVES				
C#	LENGTH	RADIUS	DELTA	CH LENGTH
C61	72.22'	245.00'	16.89	S80°59'36"E 71.96'
C62	72.32'	35.00'	118.39	S30°14'36"E 60.12'
C63	151.32'	185.00'	46.86	S5°31'11"W 147.13'
C64	65.92'	35.00'	107.91	S36°02'38"W 56.60'
C67	16.89'	200.00'	4.84	S79°48'43"E 16.88'
C68	17.01'	40.00'	24.36	S70°03'00"E 16.88'
C69	13.96'	40.00'	20.00	S67°52'06"E 13.89'
C70	40.55'	25.00'	92.92	N55°40'11"E 36.25'
C71	43.83'	25.00'	100.46	N41°01'21"W 38.43'
C72	87.20'	30.00'	166.54	S6°42'25"W 59.59'

ALIGNMENT LINES		
L#	DISTANCE	BEARING
L6	77.79	N73°32'06"E
L7	976.06	N90°00'00"E

ALIGNMENT CURVE				
C#	LENGTH	RADIUS	DELTA	CH LENGTH
C8	172.42	600.00	16.4653	N81°46'02"E 171.83
C9	114.98	935.00	7.0460	N70°00'42"E 114.91



KEY MAP  
N.T.S.



DOMINION ENGINEERING GROUP, INC.

PLANNERS AND ENGINEERS

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TRIBUTARY SPINE ROAD (WEST) PHASE A

FOR  
THREE RIVERS DEVELOPERS, LLC

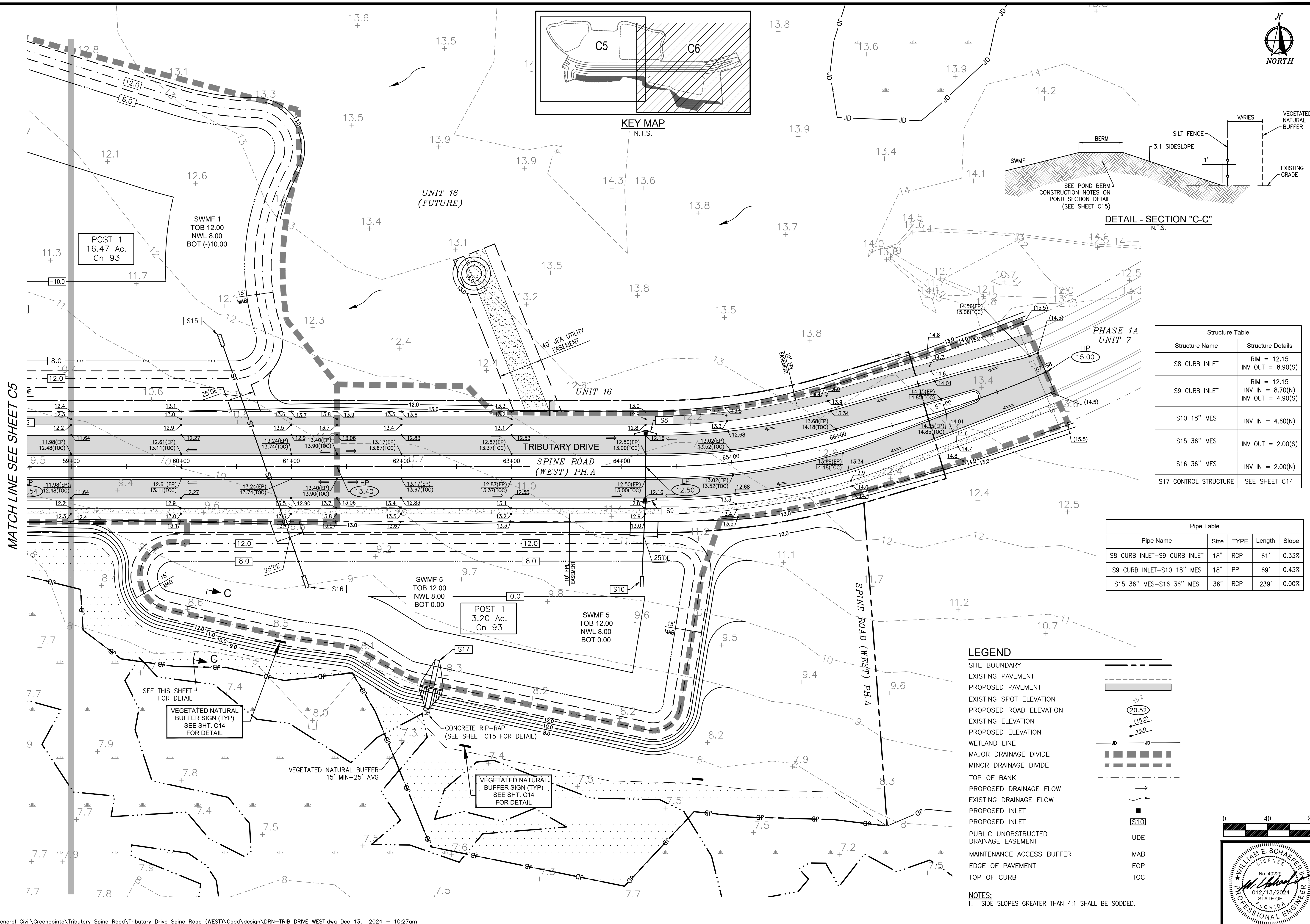
GEOMETRY PLAN

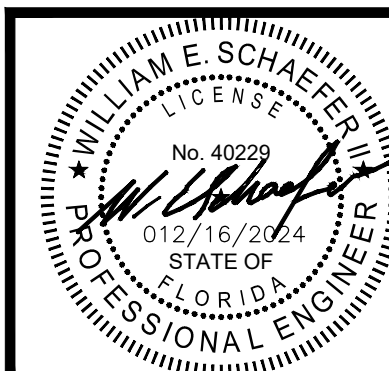
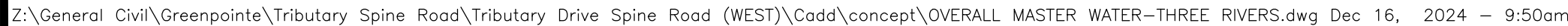
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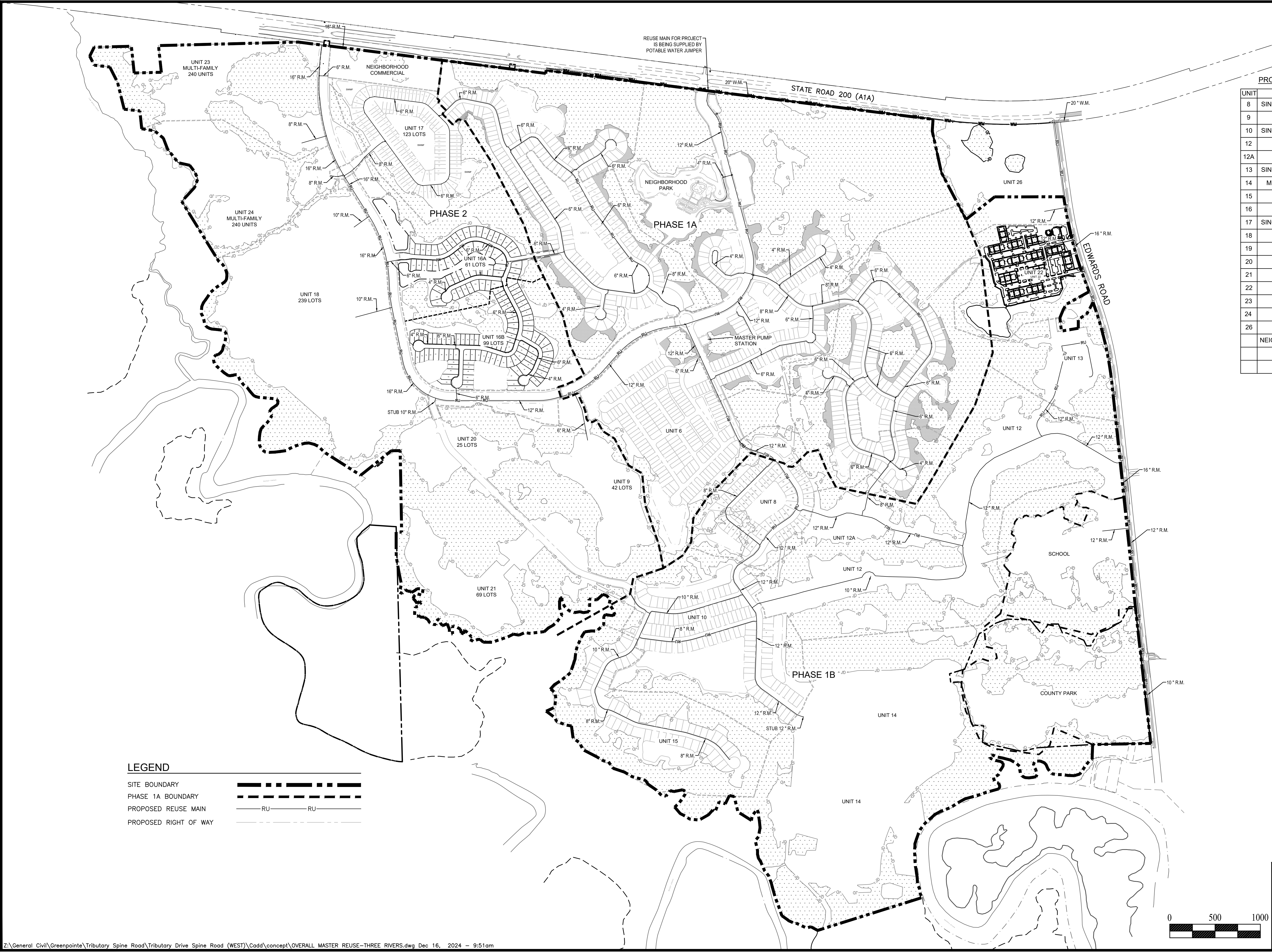
C4





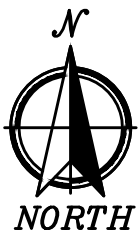


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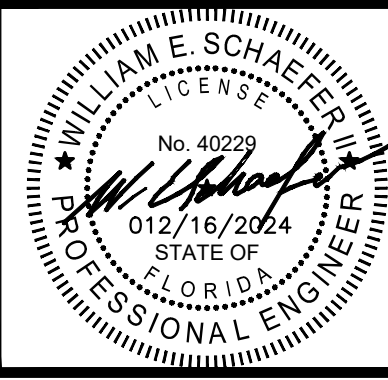
LEGEND

- SITE BOUNDARY
- PHASE 1A BOUNDARY
- PROPOSED REUSE MAIN
- PROPOSED RIGHT OF WAY



PROJECT UTILITY USES:

UNIT	TYPE
8	SINGLE FAMILY/MULTI-FAMILY
9	SINGLE FAMILY
10	SINGLE FAMILY/MULTI-FAMILY
12	SINGLE FAMILY
12A	SINGLE FAMILY
13	SINGLE FAMILY/MULTI-FAMILY
14	MIXED USE (SF/MF/COMM)
15	SINGLE FAMILY
16	SINGLE FAMILY
17	SINGLE FAMILY/MULTI-FAMILY
18	SINGLE FAMILY
19	SINGLE FAMILY
20	SINGLE FAMILY
21	SINGLE FAMILY
22	LIGHT INDUSTRIAL
23	MULTI-FAMILY
24	MULTI-FAMILY
26	COMMERCIAL
	NEIGHBORHOOD COMMERCIAL
	SCHOOL SITE
	COUNTY PARK



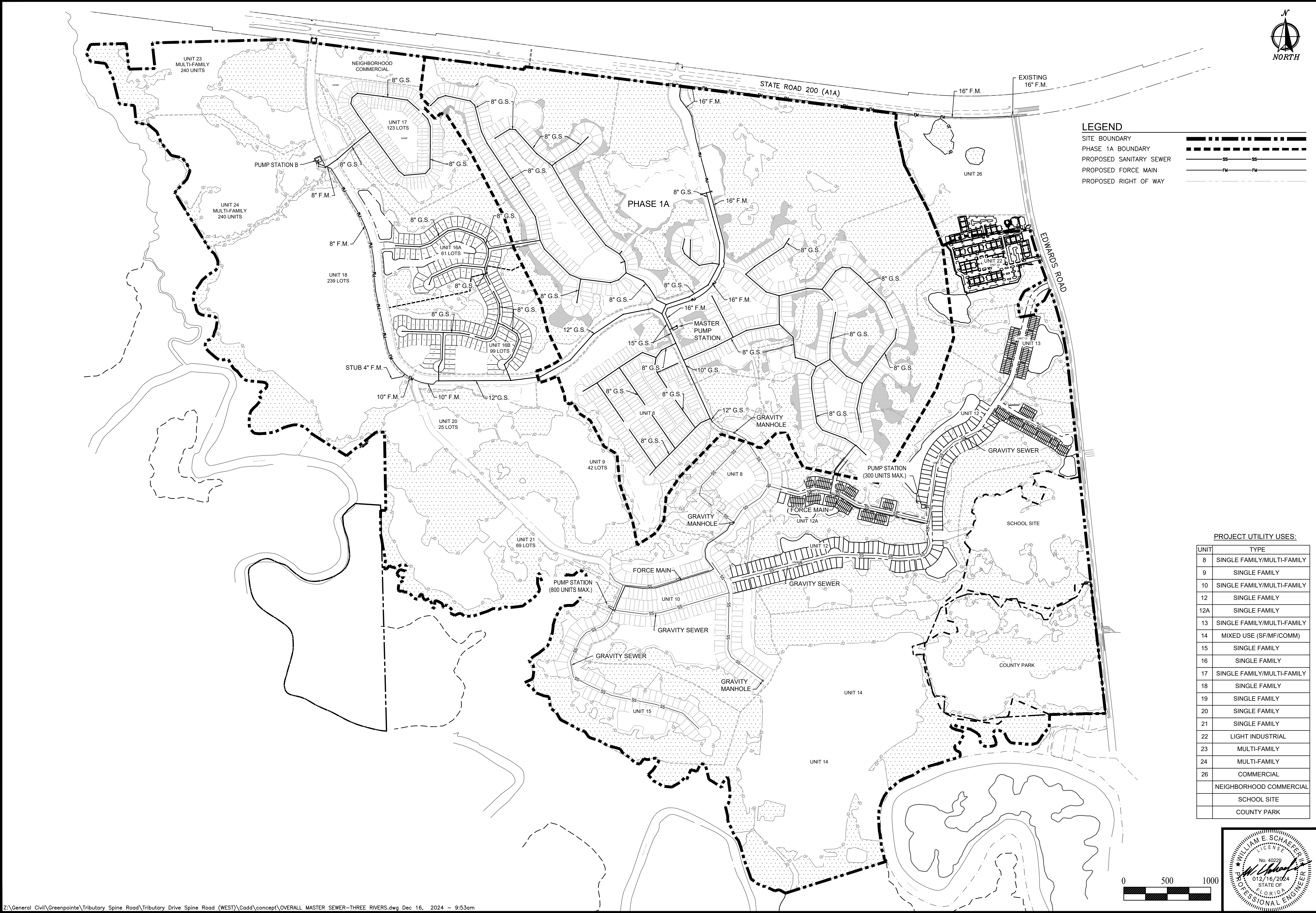
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TRIBUTARY SPINE ROAD (WEST) PHASE A  
FOR  
THREE RIVERS DEVELOPERS, LLC  
OVERALL MASTER REUSE PLAN

REVISIONS

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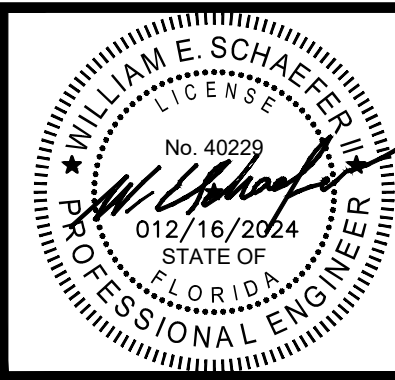
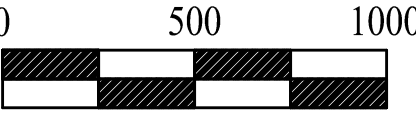


**LEGEND**

SITE BOUNDARY  
PHASE 1A BOUNDARY  
PROPOSED SANITARY SEWER  
PROPOSED FORCE MAIN  
PROPOSED RIGHT OF WAY

PROJECT UTILITY USES:

UNIT	TYPE
8	SINGLE FAMILY/MULTI-FAMILY
9	SINGLE FAMILY
10	SINGLE FAMILY/MULTI-FAMILY
12	SINGLE FAMILY
12A	SINGLE FAMILY
13	SINGLE FAMILY/MULTI-FAMILY
14	MIXED USE (SF/MF/COMM)
15	SINGLE FAMILY
16	SINGLE FAMILY
17	SINGLE FAMILY/MULTI-FAMILY
18	SINGLE FAMILY
19	SINGLE FAMILY
20	SINGLE FAMILY
21	SINGLE FAMILY
22	LIGHT INDUSTRIAL
23	MULTI-FAMILY
24	MULTI-FAMILY
26	COMMERCIAL
	NEIGHBORHOOD COMMERCIAL
	SCHOOL SITE
	COUNTY PARK



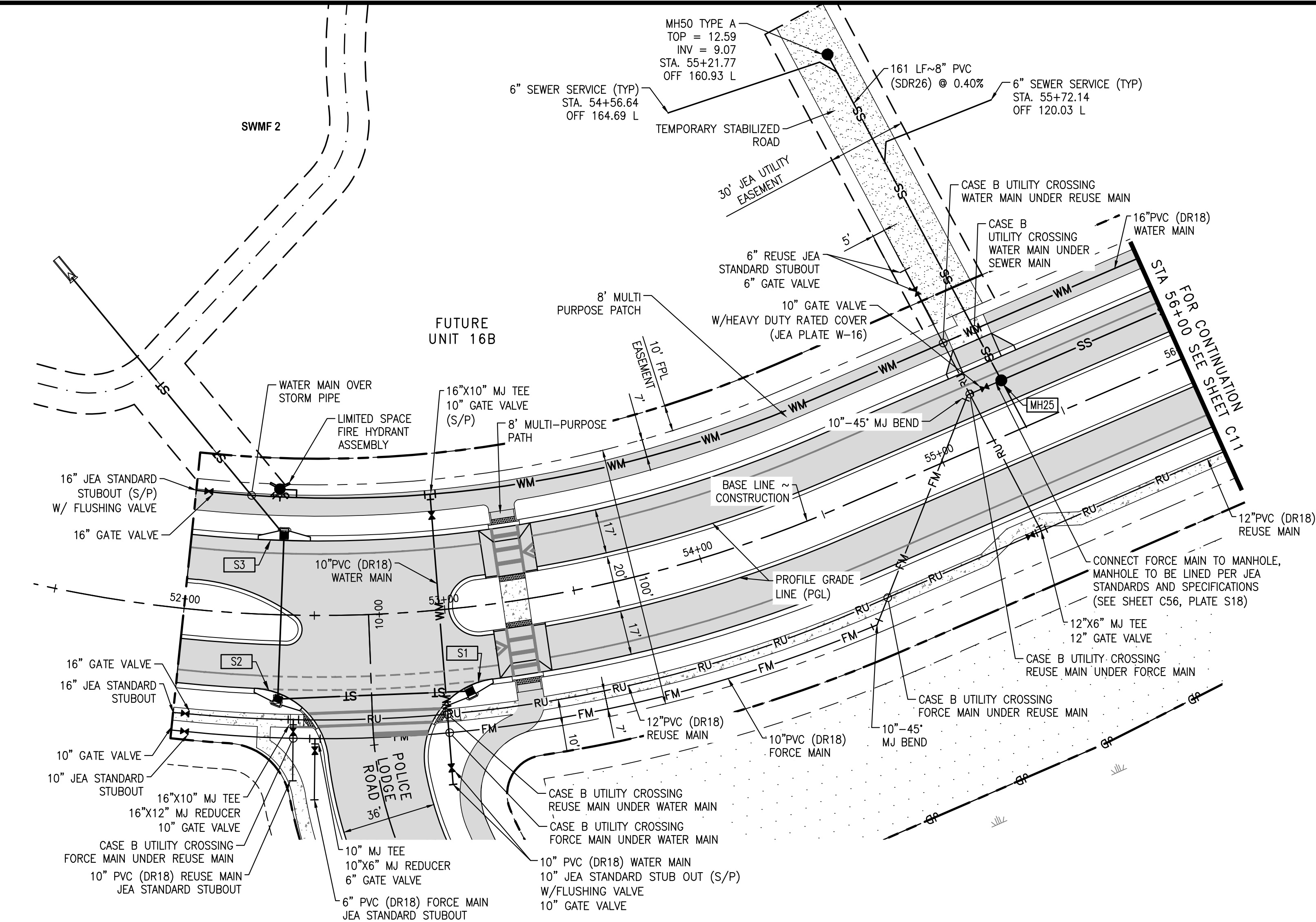
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TRIBUTARY SPINE ROAD (WEST) PHASE A  
FOR  
THREE RIVERS DEVELOPERS, LLC  
OVERALL MASTER SEWER PLAN

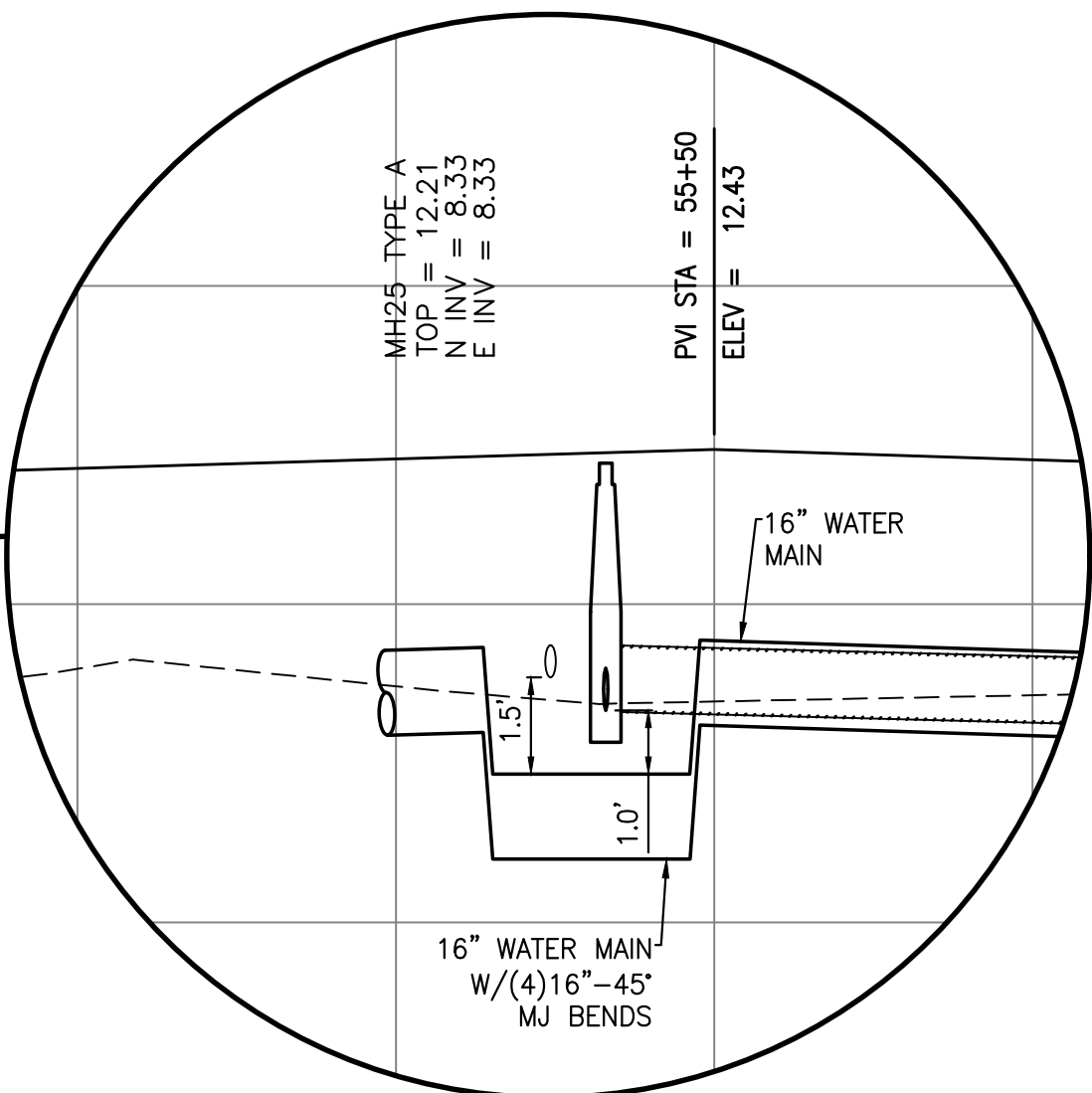
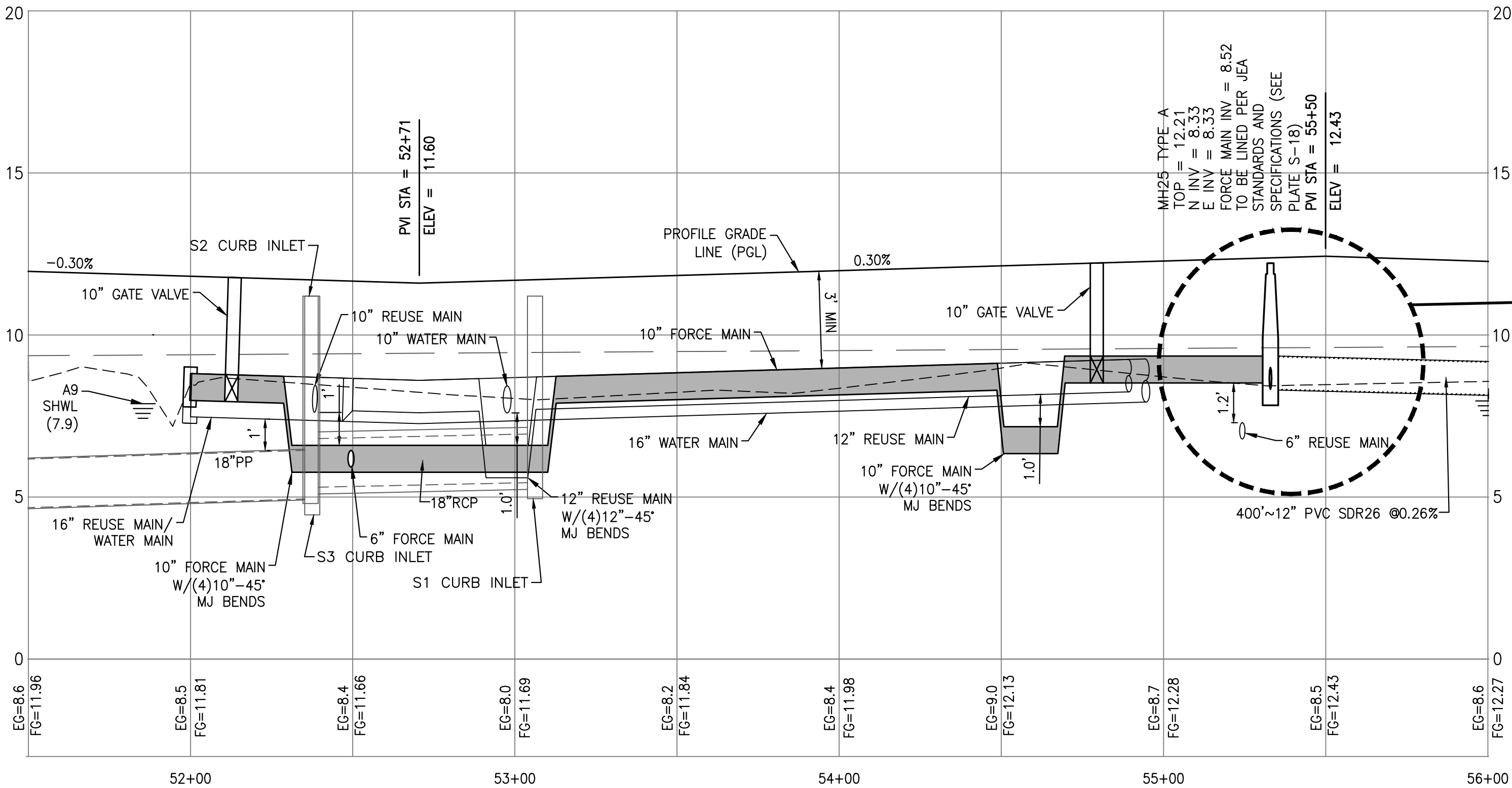
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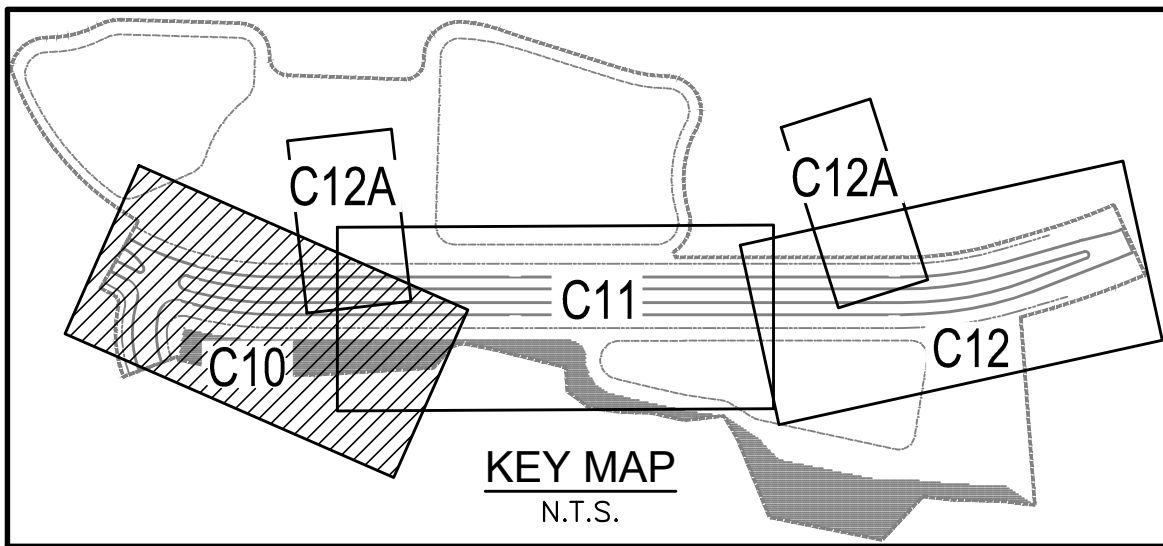
C9



TRIBUTARY DRIVE



WATER MAIN CROSSING

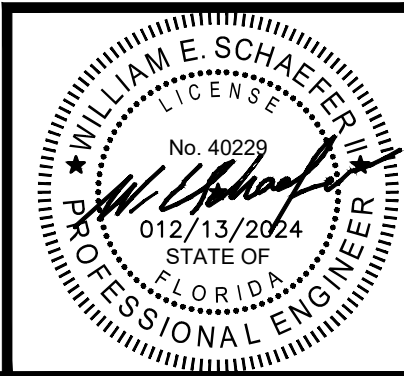
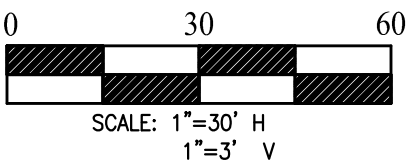


LEGEND

PROPOSED PAVEMENT	---
UTILITY EASEMENT	---
PROPOSED STORM WATER	---
PROPOSED SANITARY SEWER	---
EXISTING WATER MAIN	---
PROPOSED WATER MAIN	---
EXISTING FORCE MAIN	---
PROPOSED FORCE MAIN	---
PROPOSED FIRE HYDRANT	---
PROPOSED GATE VALVE	---
PROPOSED REDUCER	---
PROPOSED SEWER MANHOLE	---
STORM WATER STRUCTURE	---
PROPOSED SANITARY SEWER MANHOLE	---
SOIL BORING	---
SAMPLE POINT	---

NOTES:

- ALL WATER AND SEWER CONSTRUCTION SHALL COMPLY WITH THE LATEST JEA CONSTRUCTION STANDARDS AND SPECIFICATIONS.
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DOMINION ENGINEERING GROUP, INC.

PLANNERS AND ENGINEERS

4348 SOUTHPOINT BLVD, SUITE 201, JACKSONVILLE, FLORIDA 32216  
TEL: 904-854-4500 REGISTRY NUMBER: 26821 FAX 904-854-4505  
www.dom-eng.com

TRIBUTARY SPINE ROAD (WEST) PHASE A

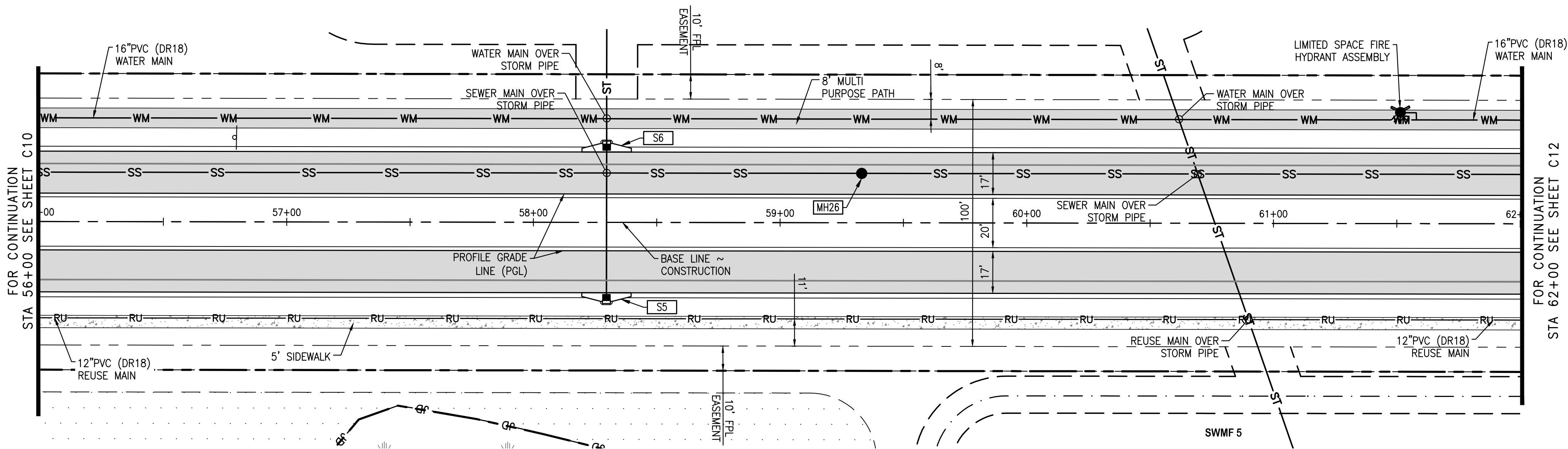
FOR  
THREE RIVERS DEVELOPERS, LLC

PLAN AND PROFILE

REVISIONS

PLOT DATE:  
DRAWN BY: JMM  
DESIGNED BY: JMM  
CHECKED BY: WES  
SCALE: AS NOTED  
JOB NO.: 2016.011  
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SHEET NO.

C10

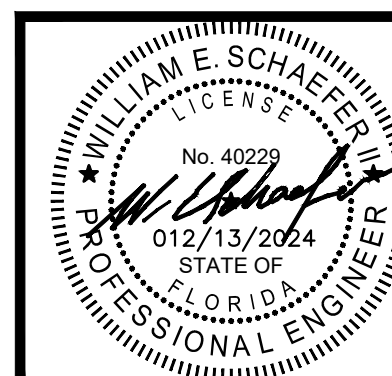
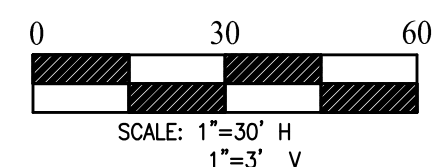
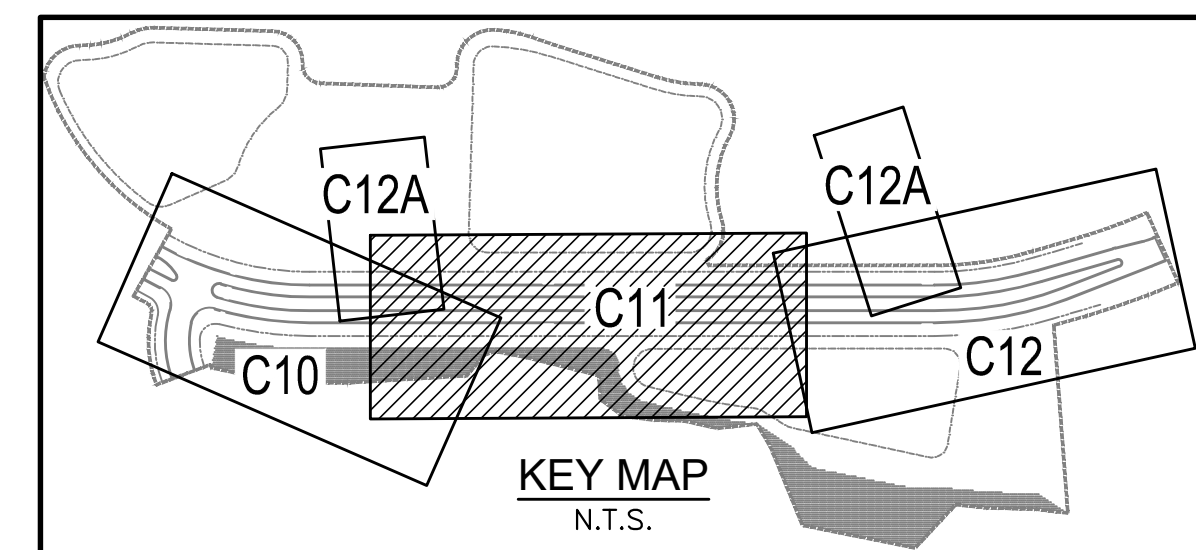
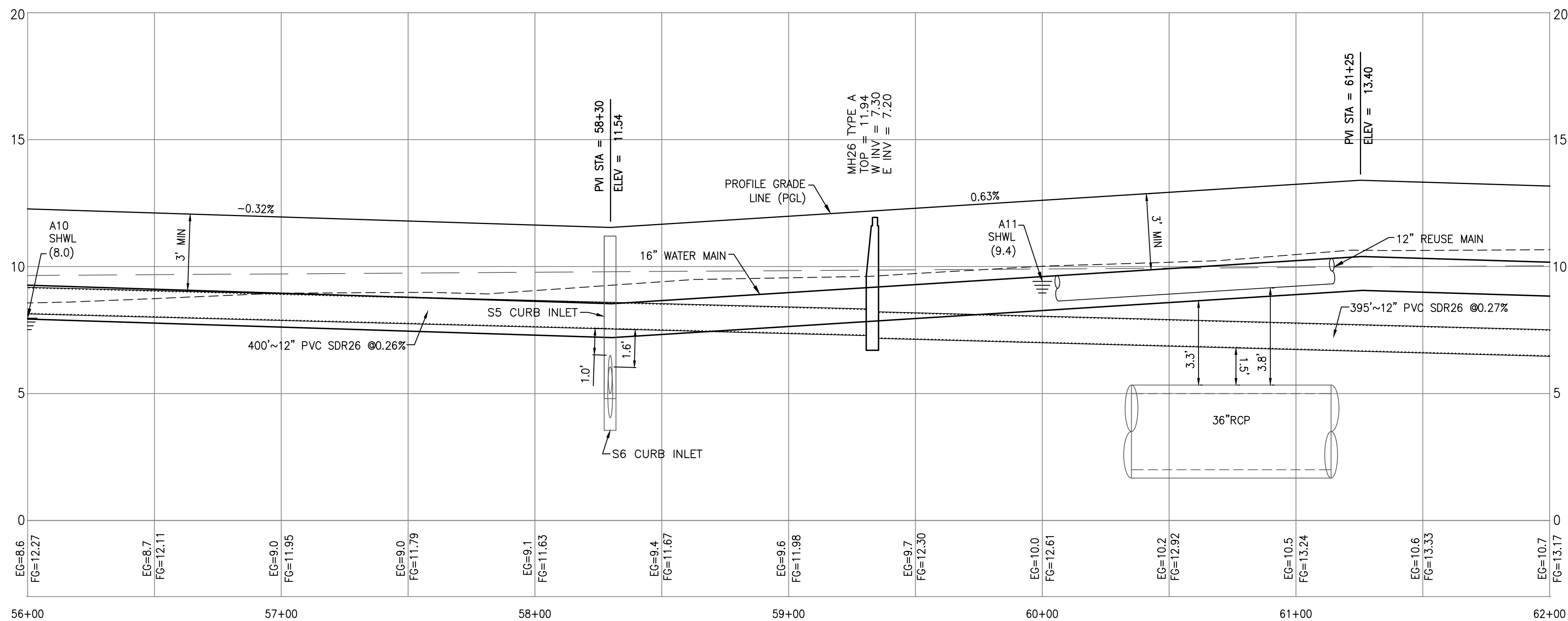


#### LEGEND

PROPOSED PAVEMENT	
UTILITY EASEMENT	
PROPOSED STORM WATER	
PROPOSED SANITARY SEWER	
EXISTING WATER MAIN	
PROPOSED WATER MAIN	
EXISTING FORCE MAIN	
PROPOSED FORCE MAIN	
PROPOSED FIRE HYDRANT	
PROPOSED GATE VALVE	
PROPOSED REDUCER	
PROPOSED SEWER MANHOLE	
STORM WATER STRUCTURE	
PROPOSED SANITARY SEWER MANHOLE	
SOIL BORING	
SAMPLE POINT	

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TRIBUTARY SPINE ROAD (WEST) PHASE A  
FOR

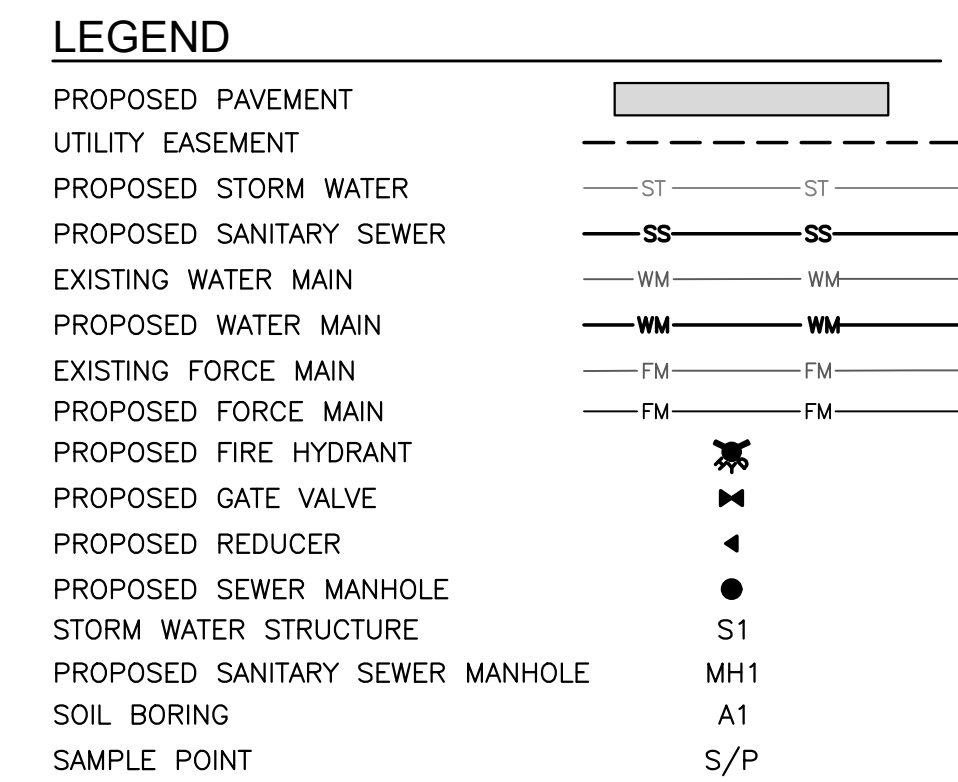
THREE RIVERS DEVELOPERS, LLC

PLAN AND PROFILE

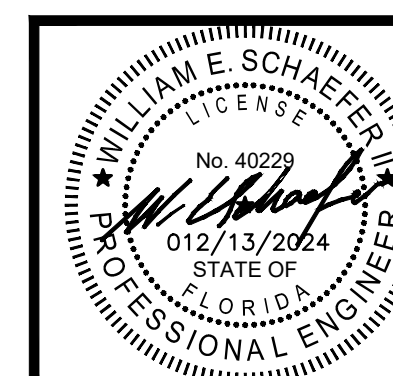
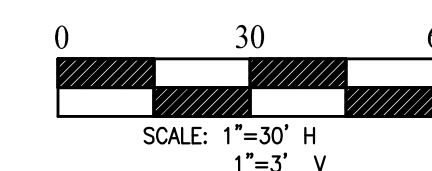
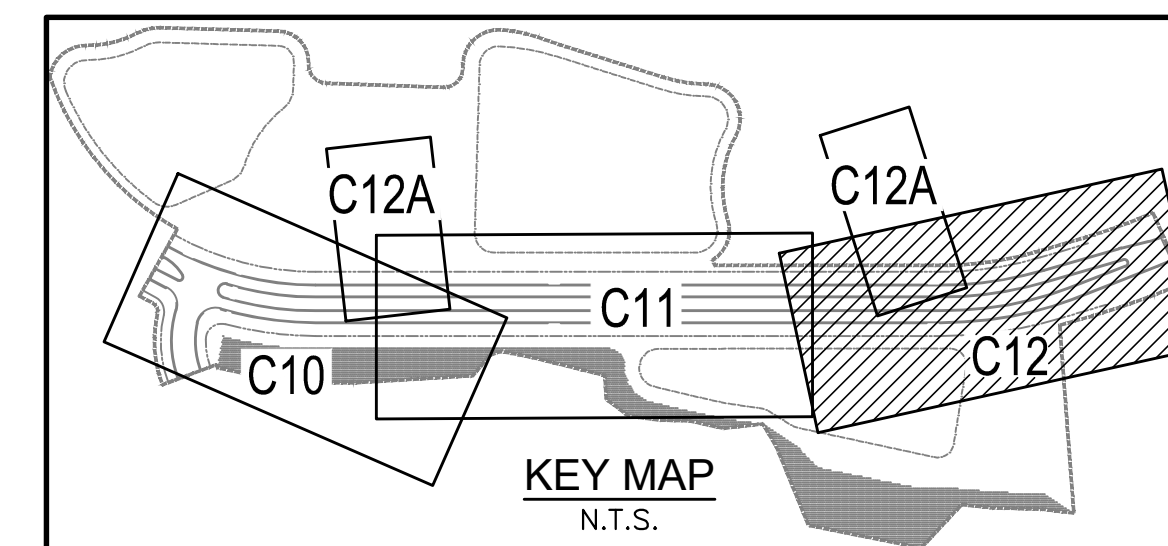
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**C11**



- NOTES:**
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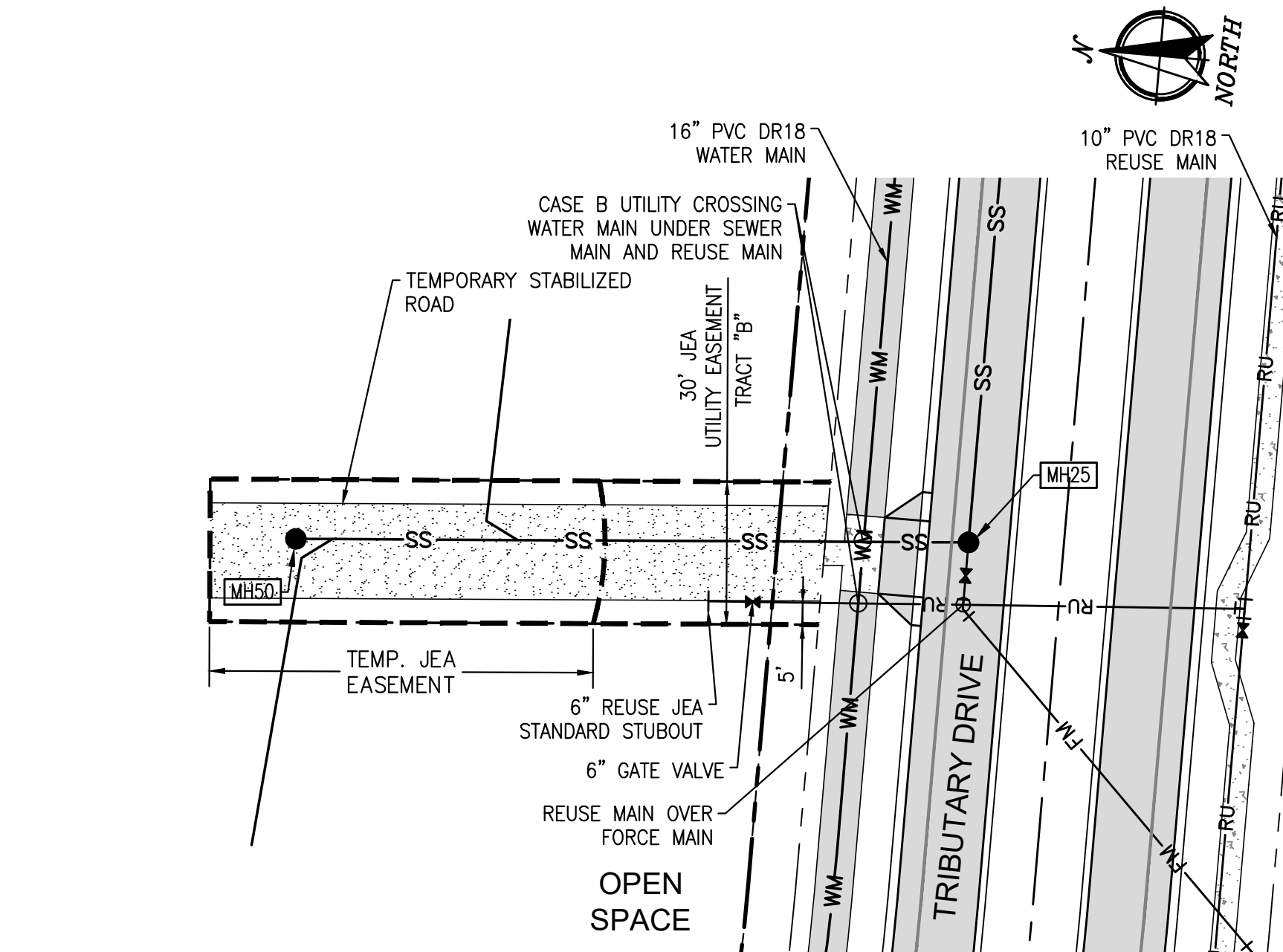
TRIBUTARY SPINE ROAD (WEST) PHASE A

FOR  
THREE RIVERS DEVELOPERS, LLC

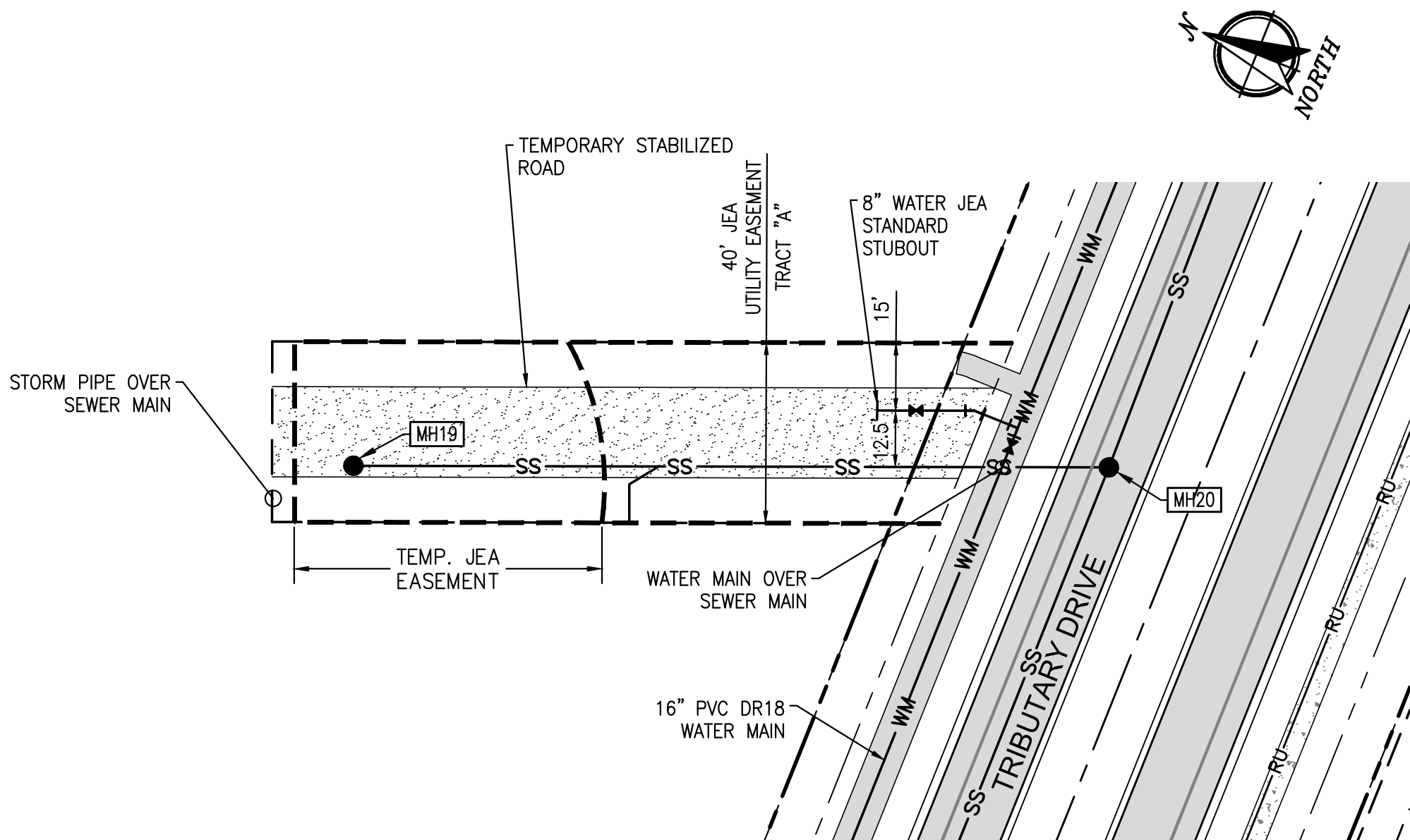
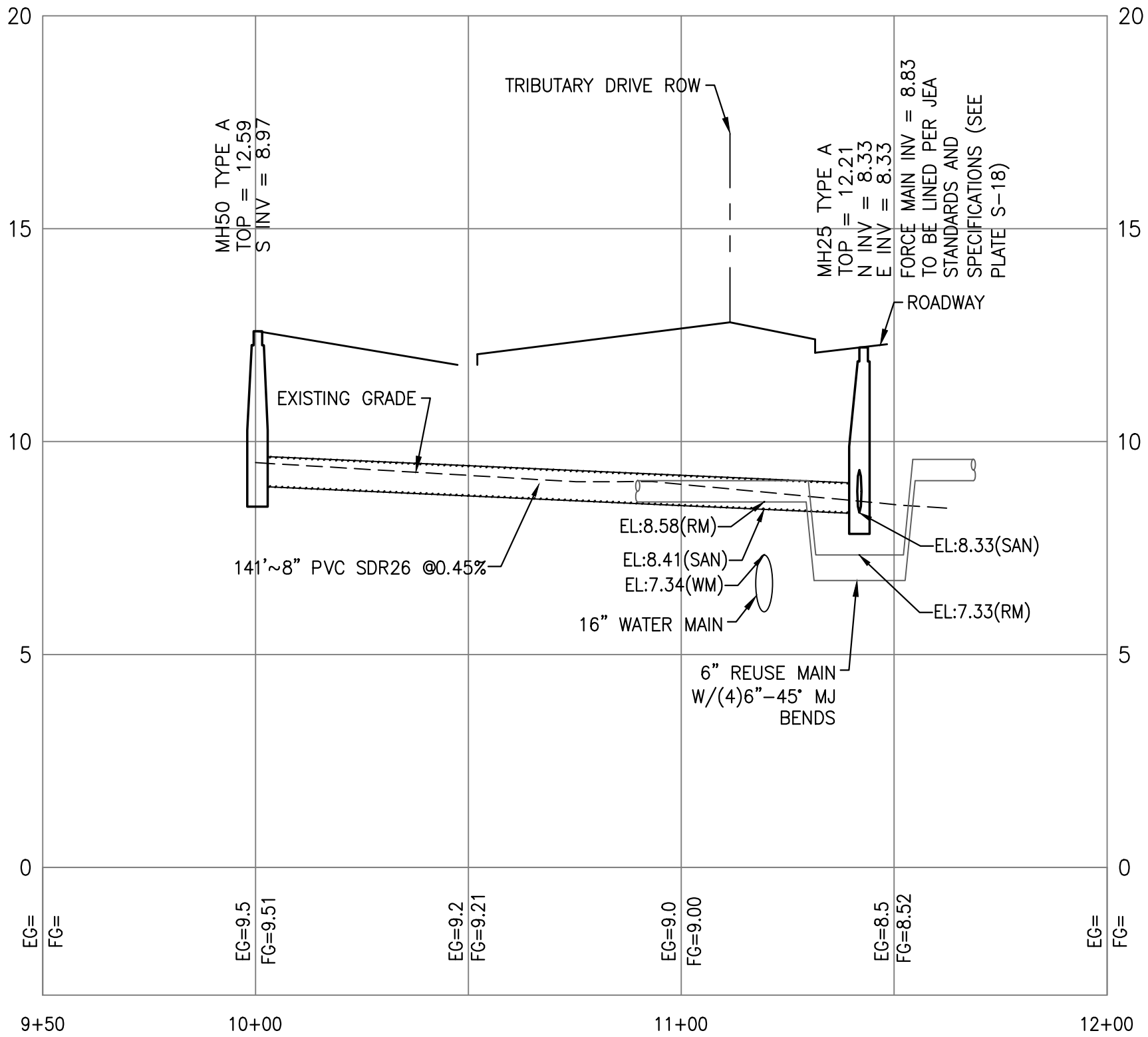
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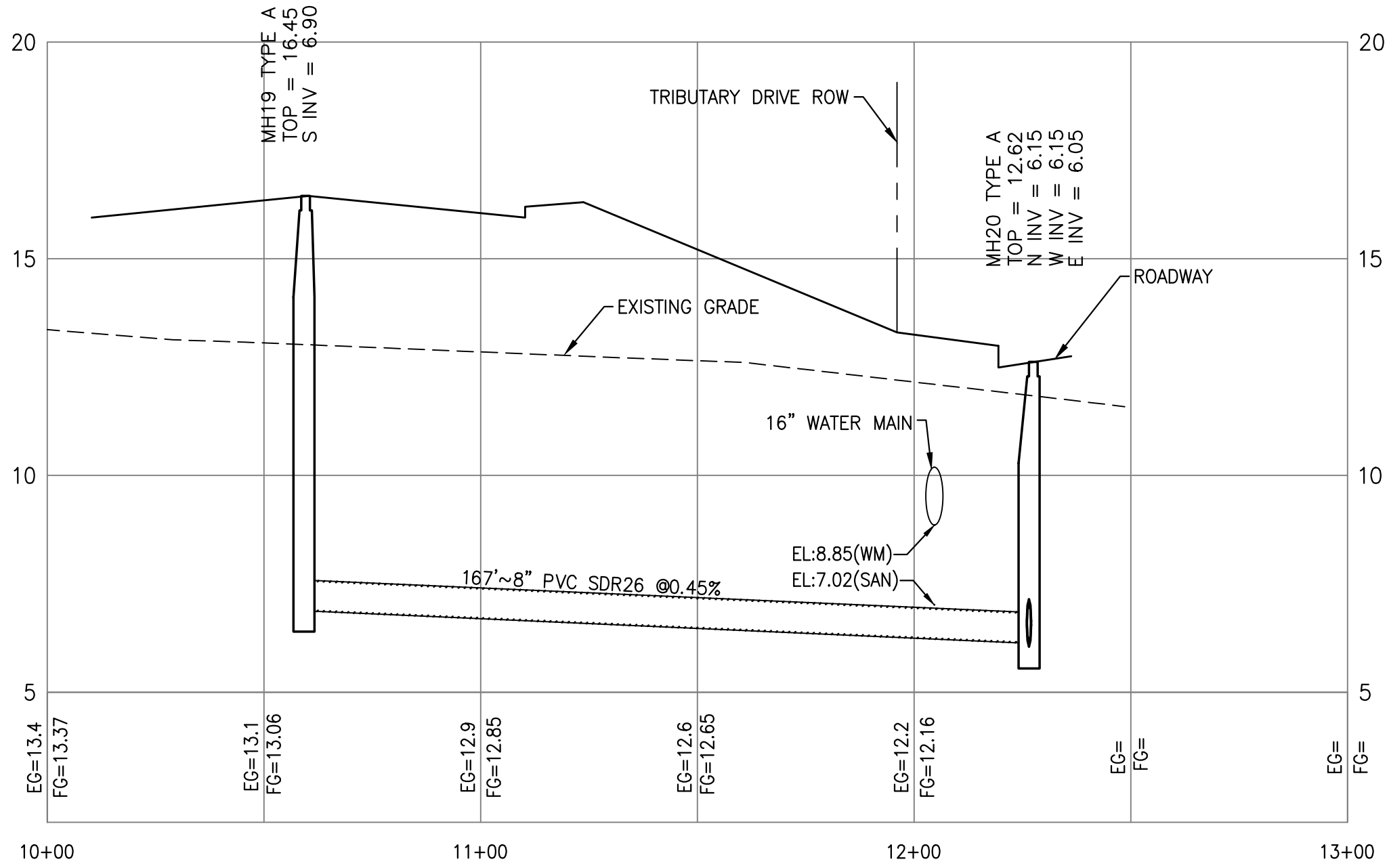
C12



MH50-MH25



MH19-MH20

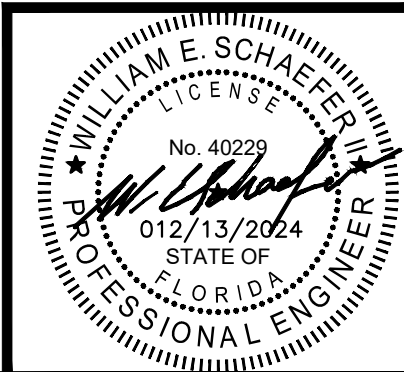
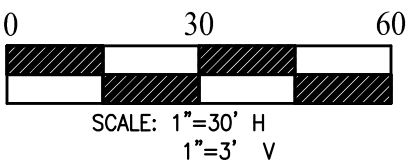
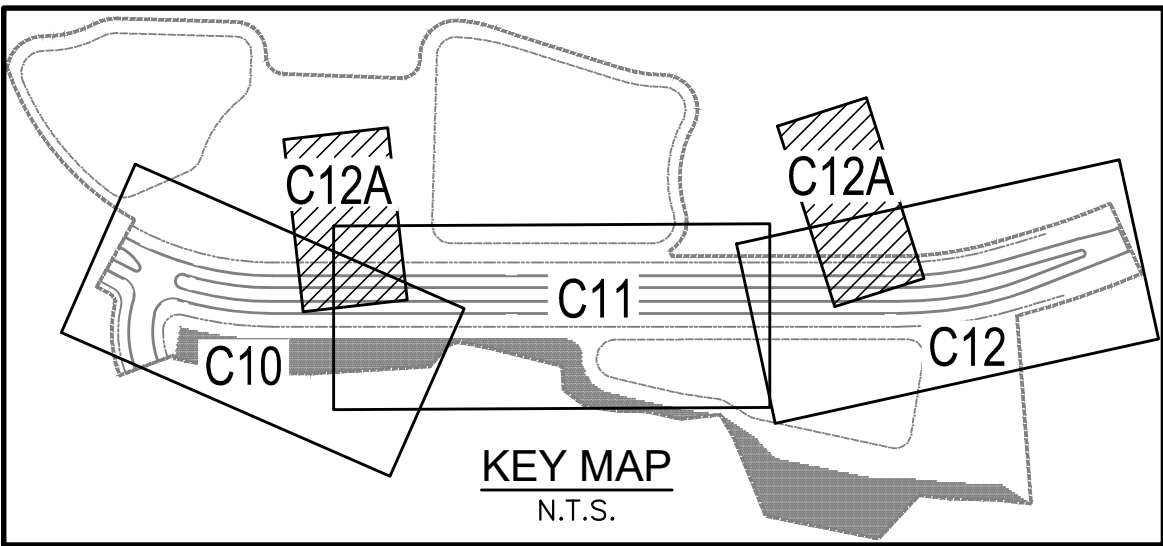


LEGEND

PROPOSED PAVEMENT	
UTILITY EASEMENT	
PROPOSED STORM WATER	ST ST
PROPOSED SANITARY SEWER	SS SS
EXISTING WATER MAIN	WM WM
PROPOSED WATER MAIN	WM WM
EXISTING FORCE MAIN	FM FM
PROPOSED FORCE MAIN	FM FM
PROPOSED FIRE HYDRANT	
PROPOSED GATE VALVE	
PROPOSED REDUCER	
PROPOSED SEWER MANHOLE	S1
STORM WATER STRUCTURE	MH1
PROPOSED SANITARY SEWER MANHOLE	A1
SOIL BORING	S/P
SAMPLE POINT	

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TRIBUTARY SPINE ROAD (WEST) PHASE A

FOR

THREE RIVERS DEVELOPERS, LLC

PLAN AND PROFILE

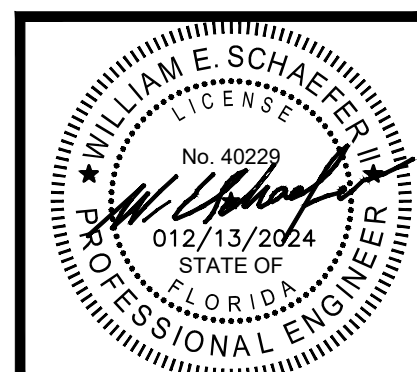
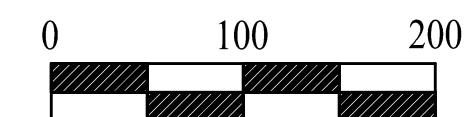
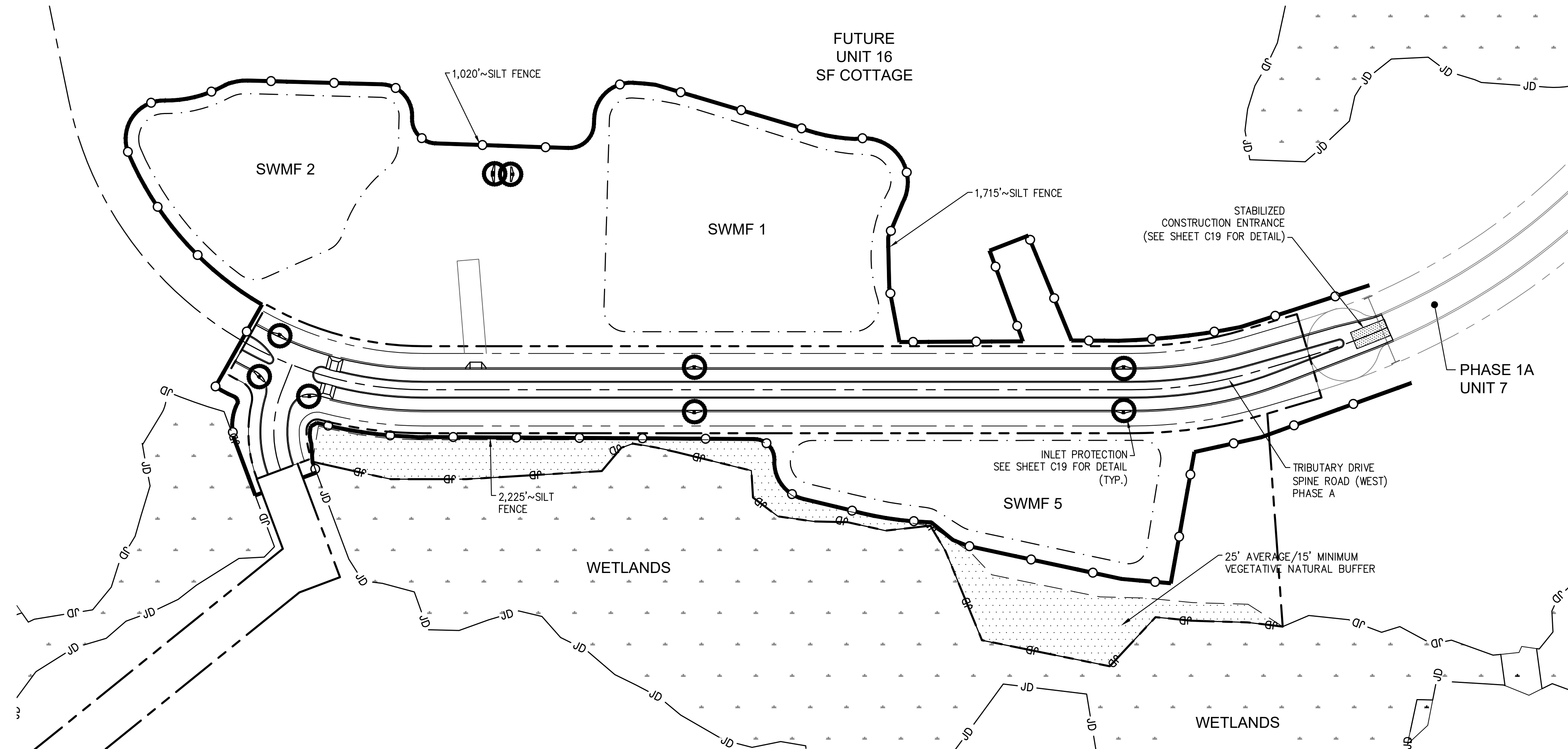
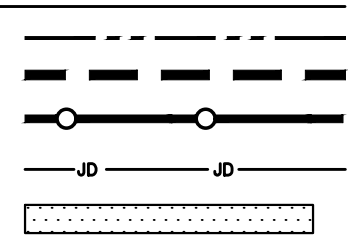
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C12A

### LEGEND

SITE BOUNDARY  
PHASE LINE  
SILT FENCE  
STATE JURISDICTIONAL WETLAND LINE  
UPLAND BUFFER (15'MIN, 25'AVG)



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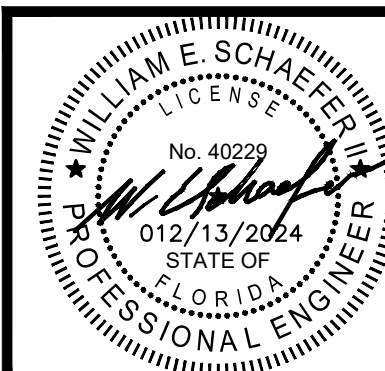
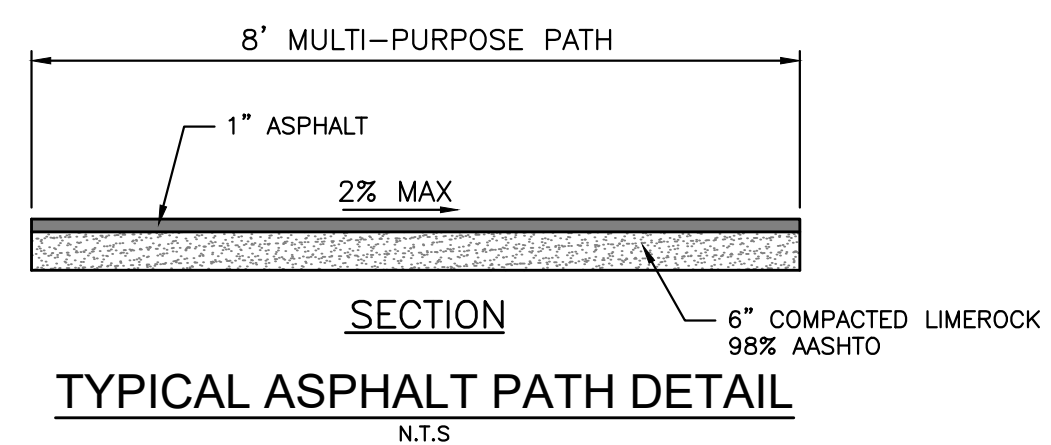
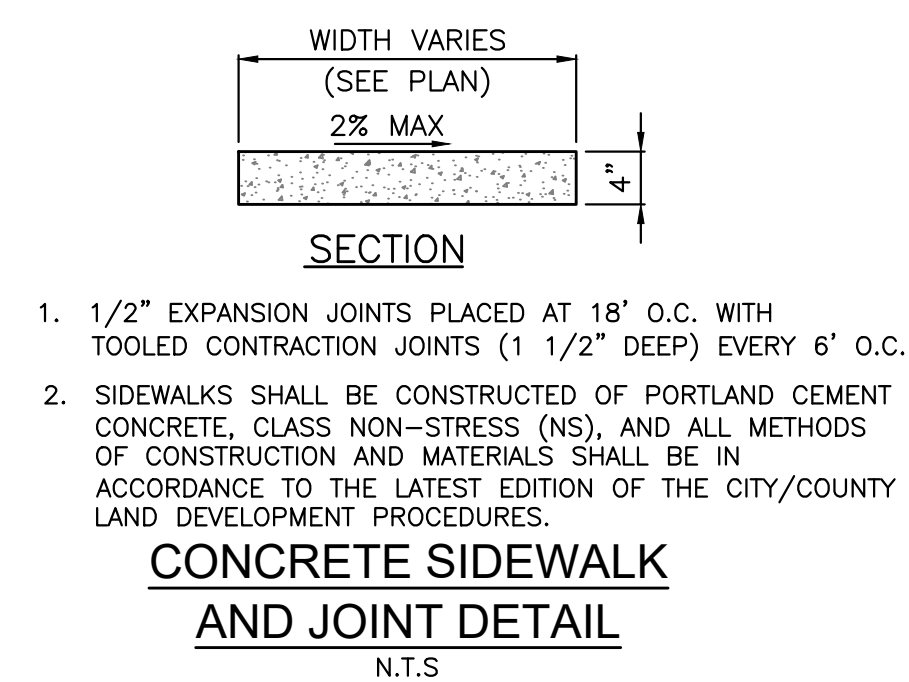
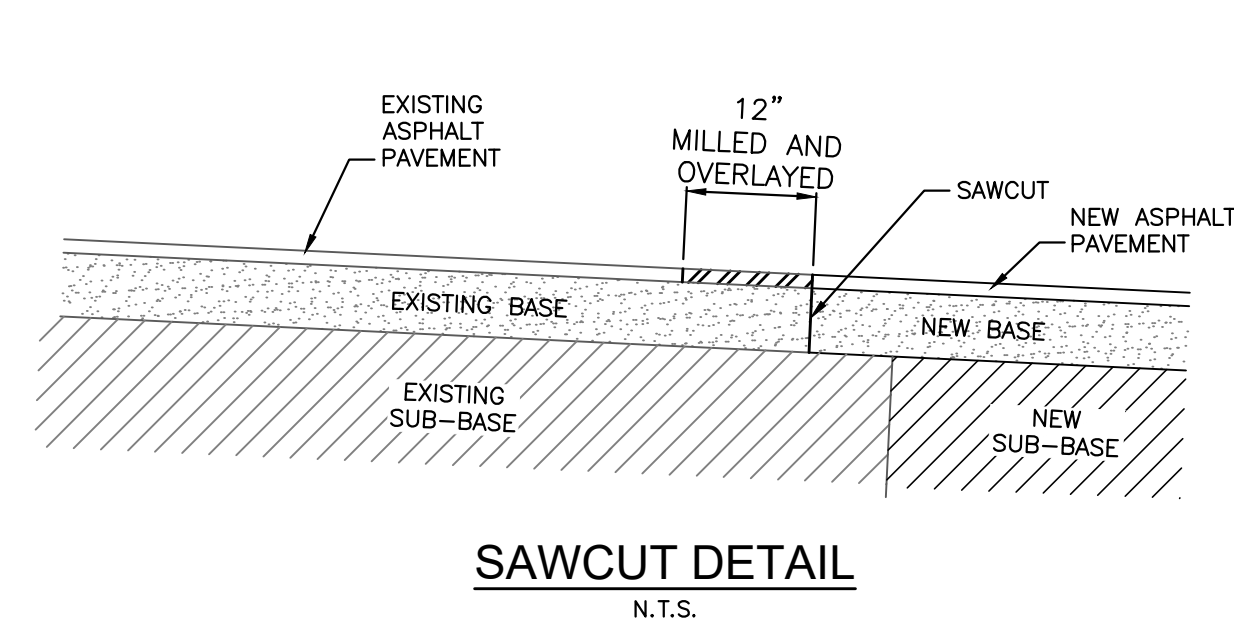
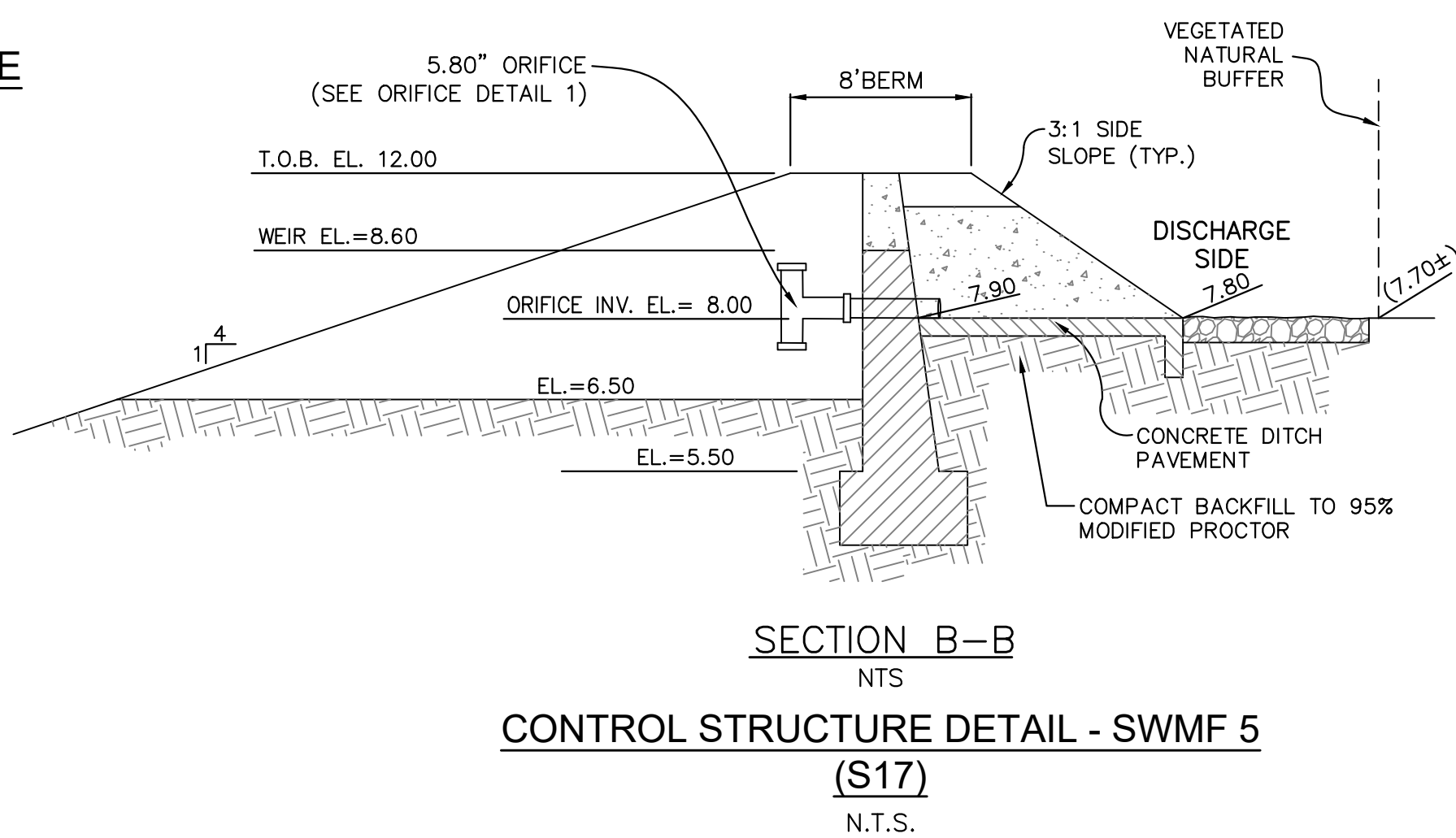
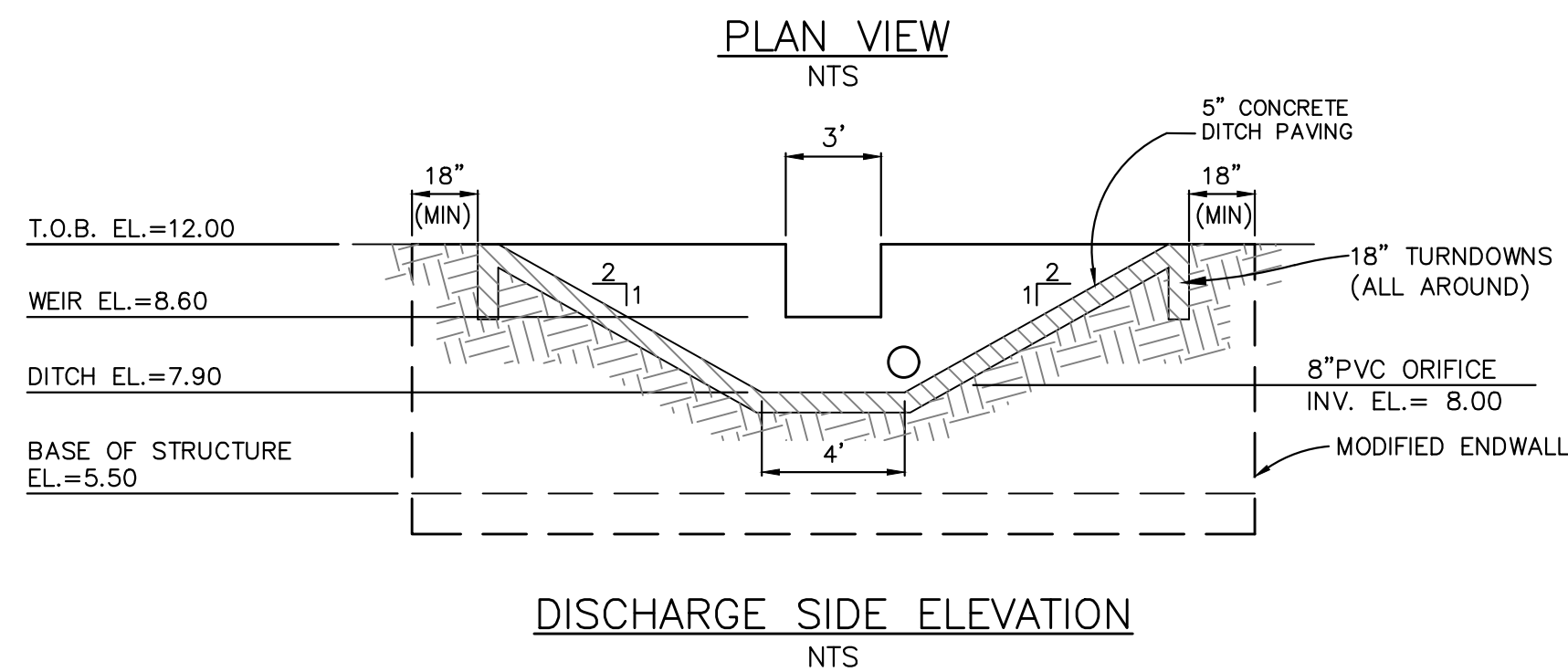
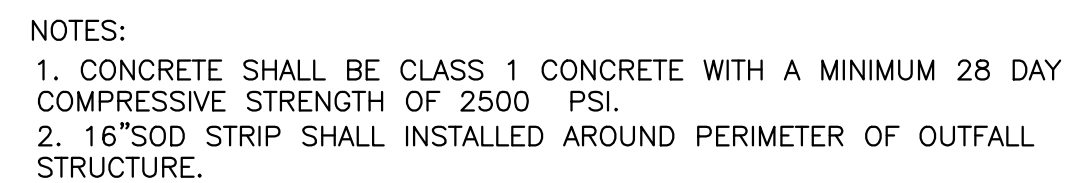
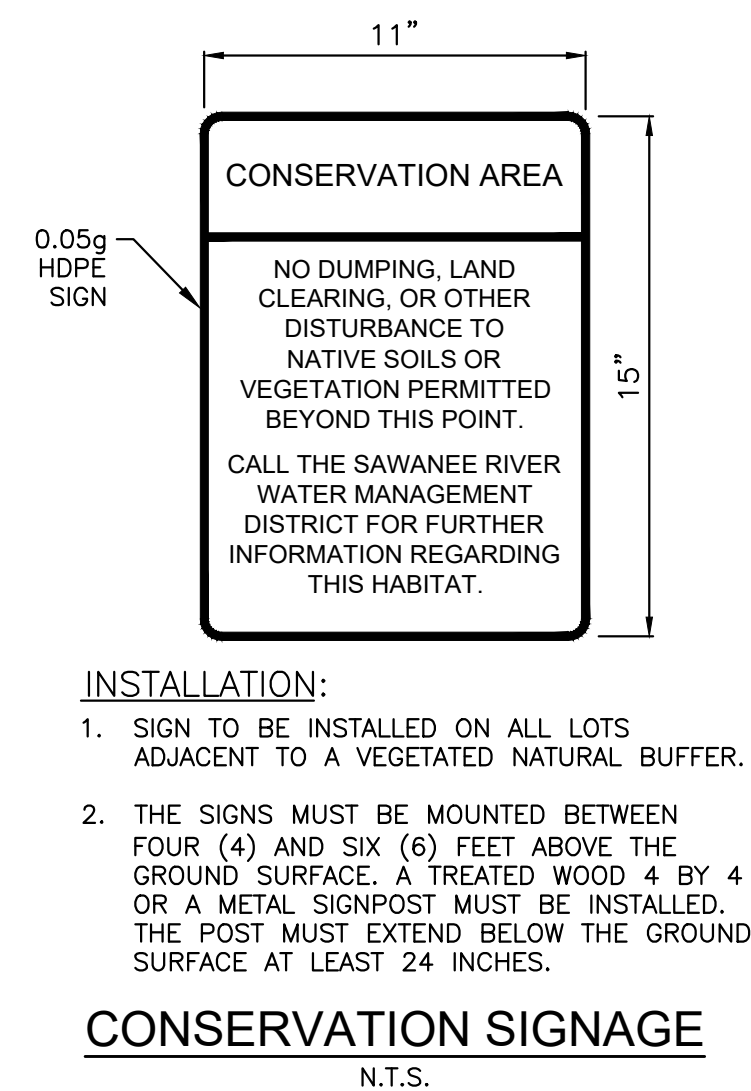
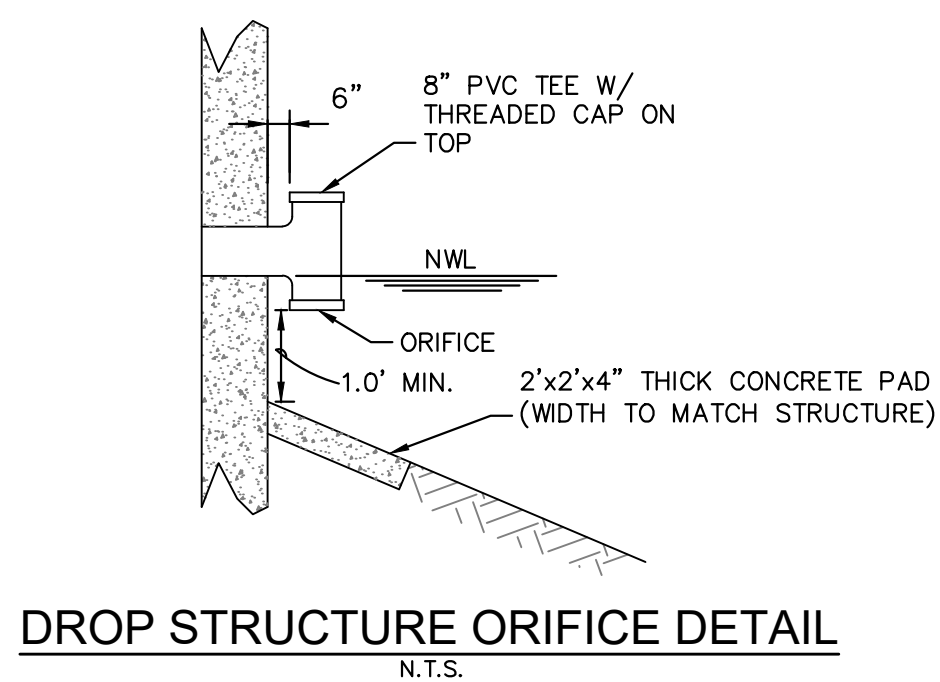
# EROSION CONTROL PLAN

## REVISIONS

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C13



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TRIBUTARY SPINE ROAD (WEST) PHASE A  
FOR  
THREE RIVERS DEVELOPERS, LLC  
PAVING AND DRAINAGE DETAILS

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C14

**18" CURB & GUTTER**  
SPECIFIC USE: LOCAL ROAD CLASSES

**HEADER CURB**  
SPECIFIC USE: PARKING LOTS, TREE PROTECTION, ETC.; NOT FOR USE IN ROADWAYS UNLESS APPROVED BY THE ENGINEERING SERVICES DEPARTMENT

**F.D.O.T. STANDARD TYPE "F" CURB & GUTTER**  
SPECIFIC USE: LOCAL MINOR COLLECTOR AND MAJOR COLLECTOR ROADWAY CLASSES

**18" MIAMI TYPE CURB & GUTTER**  
SPECIFIC USE: LOCAL ROAD CLASSES

**24" MIAMI TYPE CURB & GUTTER**  
SPECIFIC USE: LOCAL AND MINOR COLLECTOR ROADWAY CLASSES

**GENERAL NOTES:**

1. MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
2. CONCRETE SHALL BE CLASS 1 CONCRETE WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3000 PSI.
3. WHEN USED ON THE HIGH SIDE OF SUPER ELEVATED ROADWAY SECTIONS, THE CROSS SLOPE OF THE GUTTER SHALL MATCH THE CROSS SLOPE OF THE ADJACENT PAVEMENT. WHERE THIS CONDITION IS ENCOUNTERED, THE FRONT FACE VERTICAL DIMENSION SHALL REMAIN AS SHOWN FOR NORMAL SECTIONS SHOWN HEREON.

**REVISION DATES**

NO.	DATE	DESCRIPTION

**CURB AND CURB & GUTTER TYPICAL CONSTRUCTION DETAILS**

**DETAIL NO. 14**

**DWG:**

**ADOPTED:**



GENERAL NOTES:

1. Cross Slopes and Grades:

- A. Sidewalk, ramp, and landing slopes (i.e. 0.02, 0.05, and 1:12) shown in this Index are maximums. With approval of the Engineer, provide the minimum feasible slope where the requirements cannot be met.
- B. Landings must have cross-slopes less than or equal to 0.02 in any direction.
- C. Maintain a single longitudinal slope along each side of the curb ramp. Ramp slopes are not required to exceed 15 feet in length.
- D. Joints permitted at the location of Slope Breaks. Otherwise locate joints in accordance with Index 522-001. No joints are permitted within the ramp portion of the Curb Ramp.

2. Curb, Curb and Gutter, and/or Sidewalk:

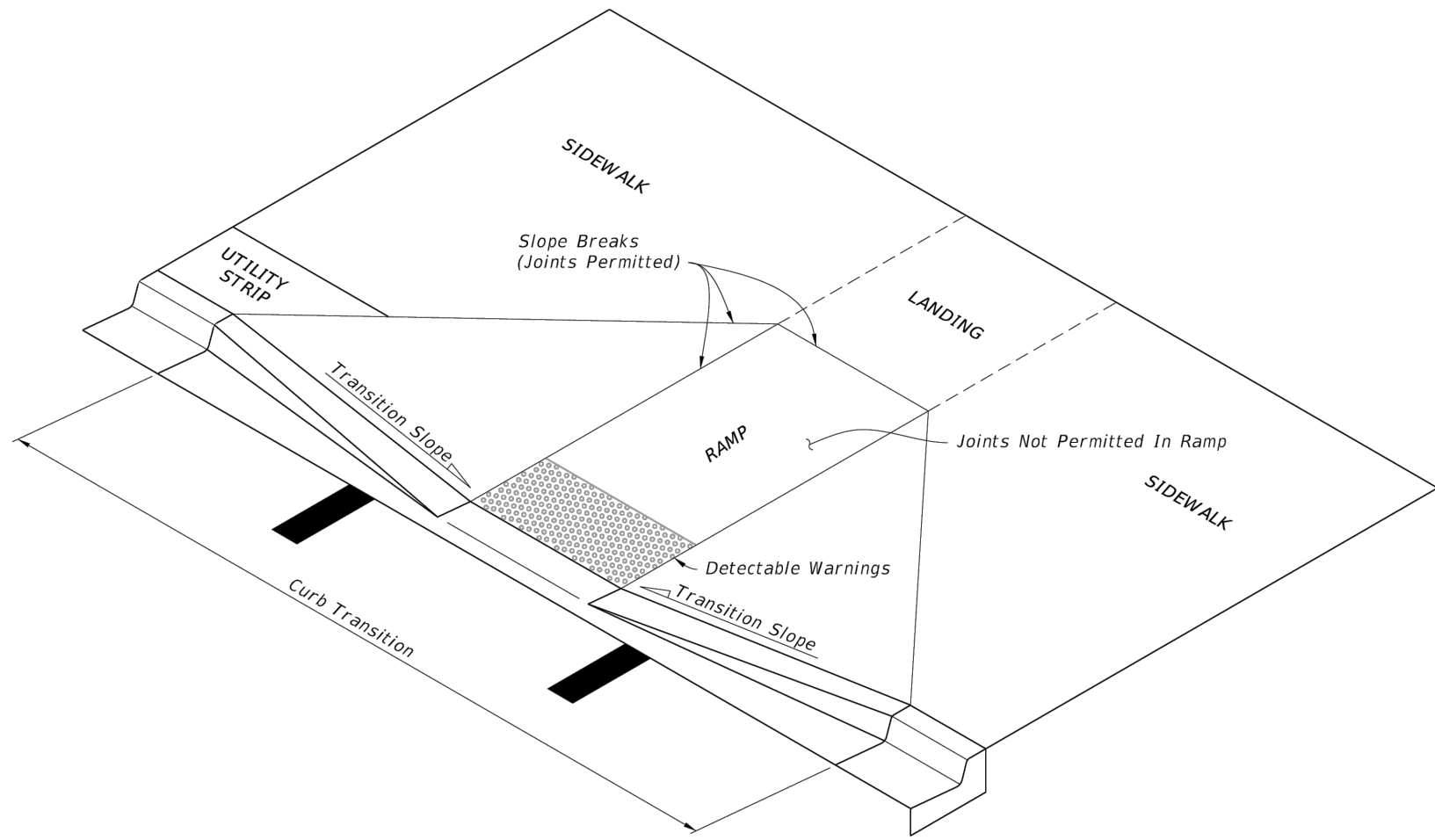
- A. Refer to Index 522-001 for concrete thickness and sidewalk details.
- B. Remove any existing curb, curb and gutter, or sidewalk to the nearest joint beyond the curb transition or to the extent that no remaining section is less than 5 feet long.
- C. Width of Curb Ramp is 4'-0" minimum. Match sidewalk or Shared Use Path width as shown in the Plans.

3. Curb Ramp Alpha-Identification:

- A. Sidewalk curb ramp alpha-identifications (e.g. CR-A) are provided for reference purposes in the Plans.
- B. Alpha-identifications CR-I and CR-J are intentionally omitted.

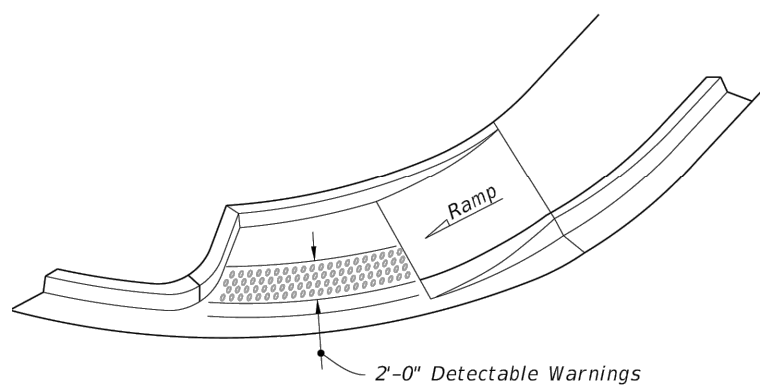
4. Detectable Warnings:

- A. Install detectable warnings in accordance with Specification 527.
- B. Place detectable warnings across the full width of the ramp or landing, to a minimum depth of 2 feet measured perpendicular to the curb line and no greater than 5 feet from the back of the curb or edge of pavement.
- C. If detectable warnings are shown in the Plans on slopes greater than 5%, align the truncated domes with the centerline of the ramp; otherwise, the truncated domes are not required to be aligned.

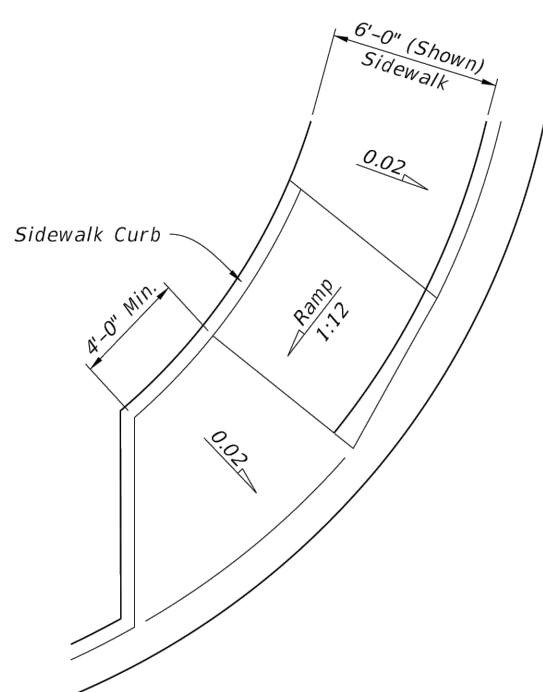


CURB RAMP NOMENCLATURE

ALL SIDEWALK DETAILS  
THIS SHEET PER FDOT FY  
2023-24 STANDARD PLANS

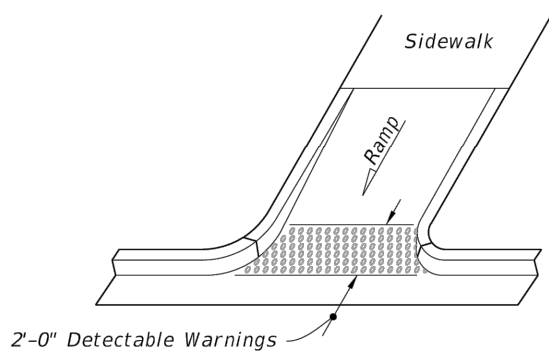


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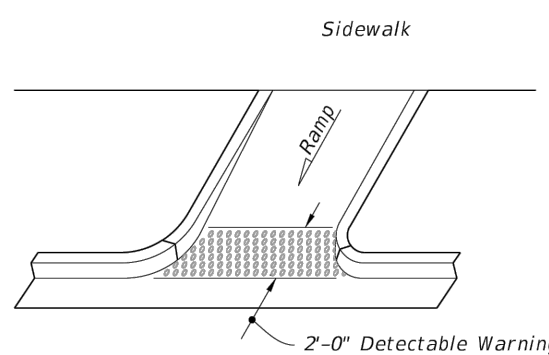


PLAN VIEW

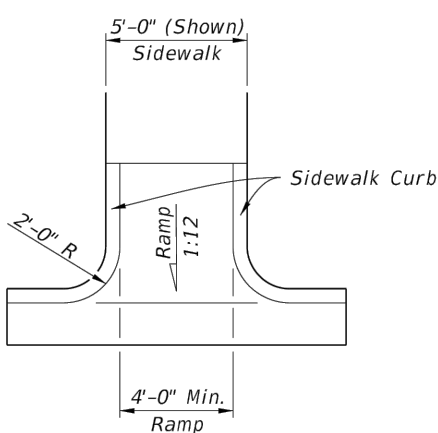
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OPTION A

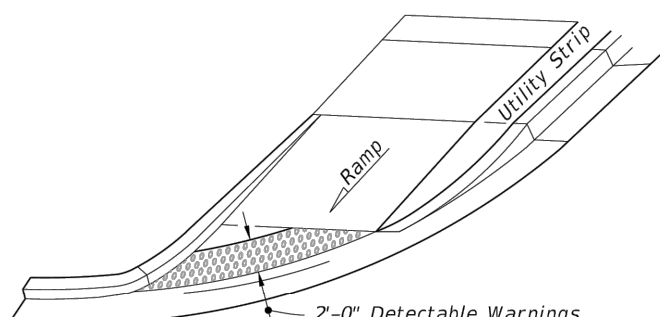


OPTION B  
ISOMETRIC VIEW

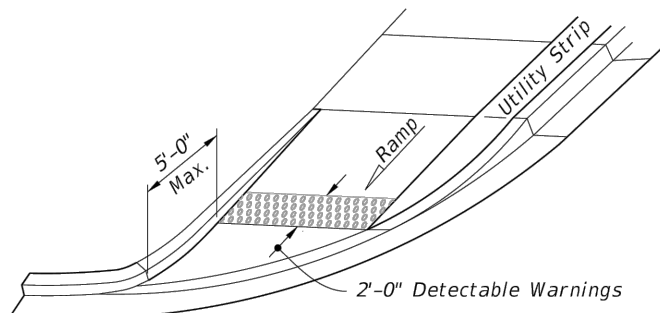


PLAN VIEW

CR-E

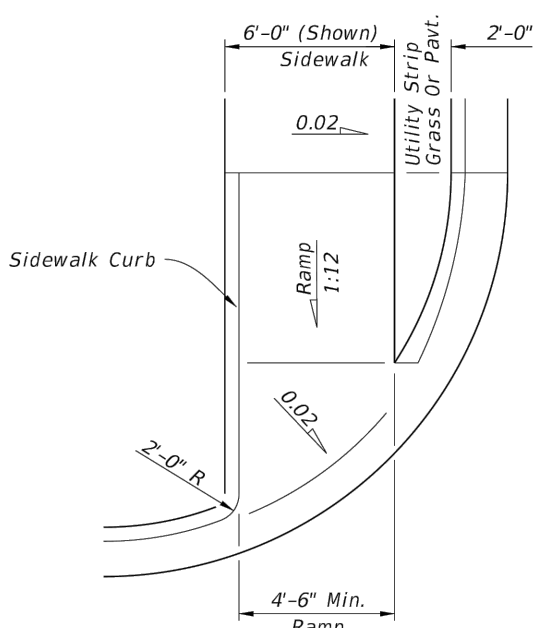


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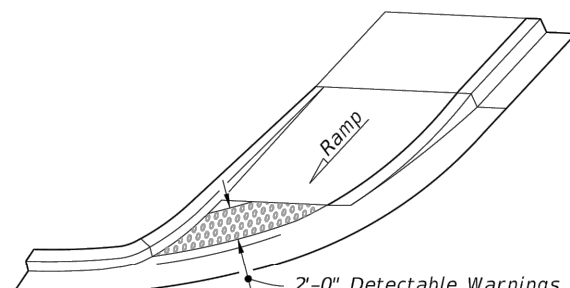
OPTION B

ISOMETRIC VIEW

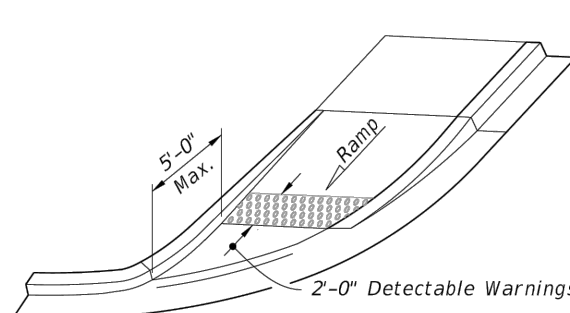


PLAN VIEW

CR-F

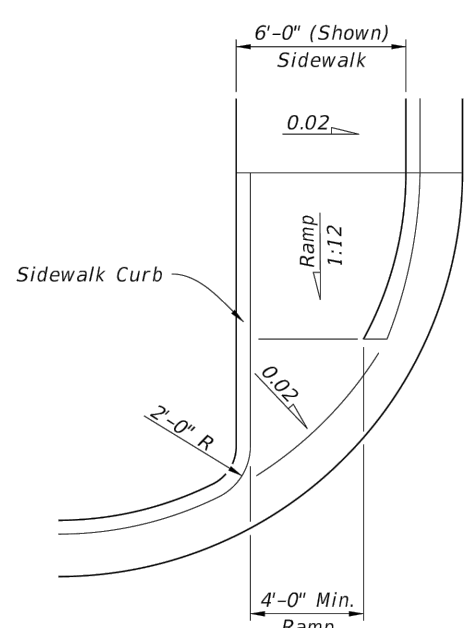


OPTION A



OPTION B

ISOMETRIC VIEW



PLAN VIEW

CR-G

DOMINION ENGINEERING GROUP, INC.

PLANNERS AND ENGINEERS

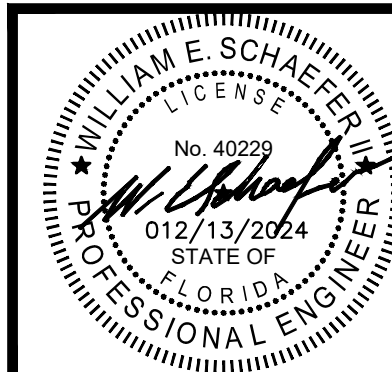
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FOR  
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PAVING AND GRADING DETAILS

REVISIONS

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GENERAL NOTES:

- ALL WORK AND MATERIALS SHALL BE IN COMPLETE ACCORDANCE WITH ALL RELATIVE SECTIONS OF THE NASSAU COUNTY ROADWAY AND DRAINAGE STANDARDS, (LATEST REVISION) AND ALL CURRENT COUNTY STANDARD DETAILS AS WELL AS ALL APPLICABLE STATE AND LOCAL REGULATIONS. THE WORK SHALL ALSO BE PERFORMED AND TESTED IN ACCORDANCE WITH THE RECOMMENDATIONS SET FORTH IN THE GEOTECHNICAL INVESTIGATION REPORT PROVIDED BY ECS FLORIDA, LLC (#35:31535--B). IF MORE STRINGENT THAN COUNTY REQUIREMENTS.
- ALL WORK SHALL BE PERFORMED IN A SAFE MANNER. ALL SAFETY RULES AND GUIDELINES OF O.S.H.A. SHALL BE FOLLOWED. THE CONTRACTOR SHALL BE WHOLLY RESPONSIBLE FOR ANY INJURIES OF HIS EMPLOYEES, AND ANY DAMAGE TO PRIVATE PROPERTY OR PERSONS DURING THE COURSE OF THIS PROJECT. ALL COSTS ASSOCIATED WITH COMPLYING WITH O.S.H.A. REGULATIONS AND THE FLORIDA TRENCH SAFETY ACT MUST BE INCLUDED IN THE CONTRACTORS BID.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR VISITING THE JOB SITE PRIOR TO PREPARING THE BID FOR THE PURPOSE OF FAMILIARIZING HIMSELF WITH THE NATURE AND THE EXTENT OF THE WORK AND LOCAL CONDITIONS, EITHER SURFACE OR SUBSURFACE, WHICH MAY AFFECT THE WORK TO BE PERFORMED, AND THE EQUIPMENT, LABOR AND MATERIALS REQUIRED. FAILURE TO DO SO WILL NOT RELIEVE THE CONTRACTOR OF COMPLETE PERFORMANCE UNDER THIS CONTRACT. THE CONTRACTOR IS ALSO URGED TO TAKE COLOR PHOTOGRAPHS ALONG THE ROUTE OF THE PROJECT TO RECORD EXISTING CONDITIONS PRIOR TO CONSTRUCTION, AND TO AID IN RESOLVING POSSIBLE FUTURE COMPLAINTS THAT MAY OCCUR DUE TO THE CONSTRUCTION OF THE PROJECT.
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO EITHER CONDUCT ANY FIELD EXPLORATION OR ACQUIRE ANY GEOTECHNICAL ASSISTANCE REQUIRED TO ESTIMATE THE AMOUNT OF UNSUITABLE MATERIAL THAT WILL REQUIRE REMOVAL AND/OR TO ESTIMATE THE AMOUNT OF OFF SITE BORROW THAT WILL BE REQUIRED.
- ALL IMPROVEMENTS SHOWN ARE TO BE WARRANTED BY THE CONTRACTOR TO THE DEVELOPER AND/OR THE COUNTY FOR A PERIOD OF ONE YEAR FROM DATE OF ACCEPTANCE BY THE OWNER AND THE COUNTY.
- ELEVATIONS ARE BASED ON NATIONAL GEODETIC VERTICAL DATUM OF 1988 (NAVD.) UNITED STATES COASTAL AND GEODETIC SURVEY (U.S.C. & G.S.), AS DETERMINED BY CLARY AND ASSOCIATES, INC.
- FOR BOUNDARY, ROADWAY AND LOT GEOMETRY INFORMATION SEE PLAT.
- THE CONTRACTOR WILL CONTRACT WITH AN INDEPENDENT TESTING LABORATORY TO PERFORM MATERIAL TESTING AND SOIL TESTING IN ACCORDANCE WITH COUNTY REQUIREMENTS. THIS SHALL INCLUDE DENSITY TESTS IN ALL PAVEMENT AREAS AND IN ALL UTILITY TRENCHES LOCATED IN PAVEMENT AREAS CONCRETE TESTING AND ALL OTHER MATERIAL TESTING. PRIOR TO LIMEROCK PLACEMENT, THE PROJECT GEOTECHNICAL ENGINEER SHALL MAKE RECOMMENDATION FOR UNDERDRAIN PLACEMENT.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND INSURANCE REQUIRED FOR THE PROJECT INCLUDING COUNTY RIGHT-OF-WAY PERMITS FOR WORK IN THE COUNTY RIGHT- OF-WAY OR EASEMENT.
- THE CONTRACTOR SHALL COORDINATE THE WORK WITHIN COUNTY OR STATE RIGHT-OF-WAY WITH THE PROPER AGENCIES FOR MAINTENANCE OF TRAFFIC AND METHOD OF CONSTRUCTION AND REPAIR.
- ALL PUBLIC DRAINAGE EASEMENTS SHALL BE "UNOBSTRUCTED" EASEMENTS. ALL "UNOBSTRUCTED" EASEMENTS TO BE CLEAR AND DRIVEABLE.
- "AS-BUILT" DRAWINGS - AS-BUILTS TO THE OWNER AND THE ST. JOHNS RIVER WATER MANAGEMENT DISTRICT ARE REQUIRED TO BE SIGNED AND SEALED BY A FLORIDA REGISTERED LAND SURVEYOR THEREFORE, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CONTRACT WITH A LAND SURVEYOR REGISTERED IN THE STATE OF FLORIDA FOR THE PREPARATION, FIELD LOCATIONS, CERTIFICATION AND SUBMITTAL OF "AS-BUILT" DRAWINGS IN ACCORDANCE WITH NASSAU COUNTY AS-BUILTS REQUIREMENT CHECKLIST AND SURMD REGULATIONS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROCESS THE "AS-BUILT" DRAWINGS FOR APPROVAL BY THE COUNTY, AND OWNER.
- THE CONTRACTOR SHALL COORDINATE THEIR CONSTRUCTION WITH ALL OTHER CONTRACTORS. IN THE EVENT OF ANY CONFLICT WHATSOEVER, THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND OWNER PRIOR TO PROCEEDING WITH CONSTRUCTION.
- ALL CLEARING AND GRUBBING REQUIRED FOR ALL ROADWAY, UTILITIES, DITCHES, AND BERMS INCLUDED IN THIS PROJECT AND THE CLEARING AND GRUBBING OF ALL RIGHT-OF-WAY OR EASEMENTS SHALL BE CONSIDERED AS PART OF THE PROJECT.
- ALL AREAS SHOWN TO BE FILLED SHALL BE CLEARED AND GRUBBED IN ACCORDANCE WITH NASSAU COUNTY ROADWAY AND DRAINAGEA STANDARDS AND SHALL BE FILLED WITH CLEAN STRUCTURAL FILL COMPACTED AND TESTED IN ACCORDANCE WITH THE GEOTECHNICAL INVESTIGATION REPORT.
- CONTRACTOR IS RESPONSIBLE FOR PROTECTION OF ALL SURVEY AND PROPERTY MONUMENTS. IF A MONUMENT IS DISTURBED, THE CONTRACTOR SHALL CONTRACT WITH THE SURVEYOR OF RECORD FOR REINSTALLATION OF THE MONUMENT.
- ALL DEBRIS RESULTING FROM ALL ACTIVITIES SHALL BE PROPERLY DISPOSED OF OFF-SITE BY CONTRACTOR.
- ALL EXCESS SUITABLE AND UNSUITABLE MATERIAL SHALL BE REMOVED FROM THE SITE BY THE CONTRACTOR UNLESS DIRECTED OTHERWISE BY ENGINEER OR OWNER.
- ALL EXISTING TREES TO REMAIN SHALL BE PRESERVED AND PROTECTED.
- BURNING OF TREES, BRUSH AND OTHER MATERIAL SHALL BE APPROVED, PERMITTED AND COORDINATED WITH COUNTY FIRE MARSHAL.
- ROADWAY UNDERDRAINS SHALL BE AS REQUIRED ON THE PLANS OR AS MAY BE DETERMINED NECESSARY BY THE GEOTECHNICAL ENGINEER DURING CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IF HIGH GROUND WATER CONDITIONS ARE PRESENT DURING THE PREPARATION OF THE ROADWAY SUB-BASE.
- CONTRACTOR SHALL PROVIDE CONTRACTION JOINTS AT 10' INTERVALS AND EXPANSION JOINTS SHALL BE CONSTRUCTED AT 50' INTERVALS AND AT ALL RADIUS POINTS ON ALL CURBING.
- CONTRACTOR SHALL PROVIDE EXPANSION JOINTS AT 18' INTERVALS AND CONTRACTION JOINTS SHALL BE SPACED AT 6' INTERVALS BETWEEN EXPANSION JOINTS.
- MAINTENANCE OF TRAFFIC SHALL CONFORM TO F.D.O.T. STANDARD INDEX 102-600, LATEST EDITION AND IN ACCORDANCE WITH THE NASSAU COUNTY ROAD CLOSURE POLICY.
- ALL SIGNING AND PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH F.D.O.T. STANDARD INDEXES 11860, 17346, AND 17352 LATEST EDITION.
- ALL EXISTING PAVEMENT MARKINGS THAT CONFLICT WITH THE PROPOSED ROADWAY/SITE DEVELOPMENT SHALL BE REMOVED BY THE CONTRACTOR UTILIZING THE HYDRO-BLASTING METHOD.
- ALL AREAS DISTURBED IN THE COUNTY RIGHT OF WAY SHALL BE SODDED.
- ANY CONCERNS OR CONFLICTS WITH ADA GRADING OR ANY OTHER GRADING ON SITE THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY.
- ALL DRAINAGE PIPES INSTALLED WITHIN ROADWAY RIGHT-OF-WAYS/EASEMENTS(PUBLIC OR PRIVATE) SHALL BE TELEVIEWED BY A COMPANY OR INDIVIDUAL CERTIFIED TO PERFORM SUCH WORK PER LDC 6.04.07.L5.G. THIS REQUIREMENT MAY ONLY BE WAIVED ON COMMERCIAL SITES IF THE ENGINEER OF RECORD CERTIFIES BY LETTER THAT THE SITE DOES NOT RECEIVE ANY RUNOFF FROM NASSAU COUNTY RIGHT-OF-WAYS. IF THERE IS ANY CONNECTION OR RELATIONSHIP BETWEEN THE PROJECT SITE AND A COUNTY OWNED OR MAINTAINED DITCH, POND OR STRUCTURE, IT SHALL BE REQUIRED. THIS TELEVIEWING OF THE DRAINAGE LINE SHALL BE DONE IN COLOR AND SHALL BE OF SUCH QUALITY AS TO VISUALLY IDENTIFY THE PROPER CONSTRUCTION OF ALL JOINTS AND PIPE ALIGNMENT. A VIDEO TAPE SHALL BE PROVIDED TO THE COUNTY UPON COMPLETION. THE TELEVIEWING OF THE DRAINAGE LINES SHALL BE PERFORMED AFTER THE PLACEMENT OF THE BASE MATERIAL AND PRIOR TO THE FINAL WEARING SURFACE OF THE ROADWAY. THE APPROVAL, BY THE COUNTY, OF THE TELEVIEWING SHALL BE REQUIRED PRIOR TO THE PLACEMENT OF THE FINAL WEARING SURFACE OF THE ROADWAY. TELEVIEWED RECORD SHALL BE REVIEWED AND CERTIFIED BY THE ENGINEER OF RECORD (EOR).
- A PRE-CONSTRUCTION MEETING WITH NASSAU COUNTY ENGINEERING SERVICES CONSTRUCTION INSPECTOR IS REQUIRED (904-530-6225).

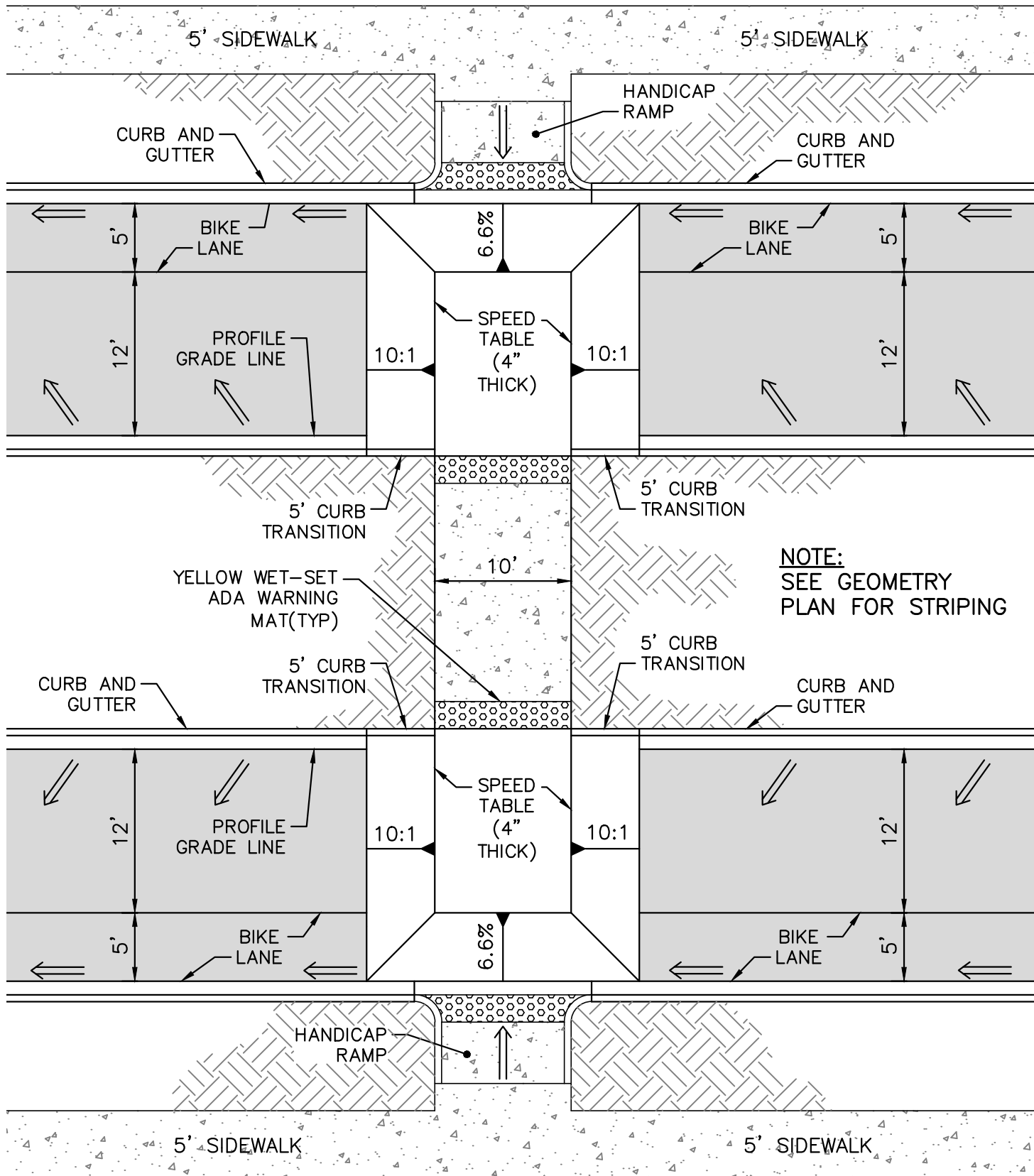
EROSION & SEDIMENT CONTROL NOTES:

- THESE PLANS INDICATE THE MINIMUM EROSION & SEDIMENT CONTROL MEASURES REQUIRED FOR THIS PROJECT. FOR ADDITIONAL INFORMATION ON SEDIMENT AND EROSION CONTROL REFER TO "THE FLORIDA DEVELOPMENT MANUAL--A GUIDE TO SOUND LAND AND WATER MANAGEMENT" FROM THE STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (F.D.E.P.) CHAPTER 6. THE CONTRACTOR SHALL PROVIDE EROSION PROTECTION AND TURBIDITY CONTROL AS REQUIRED TO INSURE CONFORMANCE TO STATE AND FEDERAL WATER QUALITY STANDARDS AND MAY NEED TO INSTALL ADDITIONAL CONTROLS TO CONFORM TO AGENCIES REQUIREMENTS. IF A WATER QUALITY VIOLATION OCCURS, THE CONTRACTOR SHALL BE WHOLLY RESPONSIBLE FOR ALL DAMAGE AND ALL COSTS WHICH MAY RESULT INCLUDING LEGAL FEES, CONSULTANT FEES, CONSTRUCTION COSTS AND FINES.
- THE CONTRACTOR IS RESPONSIBLE FOR FOLLOWING THE BEST EROSION AND SEDIMENT CONTROL PRACTICES AS OUTLINED IN THE PLANS AND SPECIFICATIONS AND THE ST. JOHNS RIVER WATER MANAGEMENT DISTRICT SPECIFICATIONS AND CRITERIA.
- EROSION AND SEDIMENT CONTROL BARRIERS SHALL BE PLACED ADJACENT TO ALL WETLAND AREAS WHERE THERE IS POTENTIAL FOR DOWNSTREAM WATER QUALITY DEGRADATION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING A PERMANENT STAND OF SOD AND/OR GRASS PER COUNTY STANDARDS AND MEETING THE N.P.D.E.S. FINAL STABILIZATION REQUIREMENTS.
- IF DEWATERING CAPACITIES REQUIRES A CONSUMPTIVE USE PERMIT (C.U.P.) IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO OBTAIN THE PERMIT THROUGH THE ST. JOHNS RIVER WATER MANAGEMENT DISTRICT.
- PRIOR TO COMMENCEMENT OF CONSTRUCTION AND EXCAVATION ACTIVITIES, THE CONTRACTOR SHALL PERFORM GROUNDWATER TESTING IN ACCORDANCE WITH THE ENVIRONMENTAL PROTECTION AGENCY FEDERAL REGISTER, PAGE 42739, PART 1A.5, TO DETERMINE PETROLEUM CONTAMINATION LEVELS. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING N.P.D.E.S. PERMIT, IF REQUIRED, IN ORDER TO DISCHARGE ANY GROUNDWATER ENCOUNTERED DURING CONSTRUCTION AND DEWATERING OPERATIONS.
- 48 HOURS PRIOR TO COMMENCEMENT OF CONSTRUCTION, THE CONTRACTOR WILL SUBMIT A "NOTICE OF INTENT" TO THE EPA IN ACCORDANCE WITH NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM RULES AND REGULATIONS.

UTILITY NOTES:

- THE LOCATION OF ALL EXISTING UTILITIES, STRUCTURES AND IMPROVEMENTS SHOWN ON THE DRAWINGS IS BASED ON LIMITED INFORMATION AND MAY NOT HAVE BEEN VERIFIED. THE LOCATIONS ARE APPROXIMATE. THE CONTRACTOR SHALL NOTIFY RESPECTIVE UTILITY OWNERS AND FIELD VERIFY LOCATIONS OF EXISTING UTILITIES AND OTHER IMPROVEMENTS PRIOR TO COMMENCING ANY CONSTRUCTION. IF THE LOCATIONS SHOWN ARE CONTRARY TO THE ACTUAL LOCATIONS, THE CONTRACTOR SHALL NOTIFY THE OWNER AND ENGINEER OF THE DISCREPANCY. THIS DISCREPANCY SHOULD BE RESOLVED PRIOR TO COMMENCING CONSTRUCTION. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHEN WORKING IN AREAS NEAR EXISTING UTILITIES AND IMPROVEMENTS AND SHALL BE RESPONSIBLE FOR AND SHALL REPAIR OR PAY FOR ALL DAMAGE MADE TO EXISTING UTILITIES OR OTHER IMPROVEMENTS. PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION, THE CONTRACTOR SHALL VERIFY ALL GRADES, INVERTS AND TYPE OF MATERIAL OF EXISTING UTILITIES TO WHICH HE SHALL CONNECT.
- THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS ON ALL MATERIALS, IF REQUIRED, TO THE ENGINEER FOR REVIEW AND APPROVAL, PRIOR TO SUBMITTAL TO THE COUNTY & JEA, AND PRIOR TO PURCHASE OR CONSTRUCTION OF ANY UTILITY PIPE OR STRUCTURE.
- ALL PIPE LENGTHS ARE SCALED DIMENSIONS. ALL DRAINAGE STRUCTURES SHALL BE CONSTRUCTED TO CONFORM WITH COUNTY REQUIREMENTS AND SHALL BE CONSTRUCTED TO CONFORM WITH CURBING, PROPERTY LINES AND LOW POINTS AS SHOWN ON THE PLANS.
- CONTRACTOR SHALL INSURE THAT ALL DRAINAGE STRUCTURES, PIPES, ETC. ARE CLEAN AND FUNCTIONING PROPERLY AT TIME OF ACCEPTANCE.
- ALL DRAINAGE STRUCTURES TO HAVE TRAFFIC BEARING GRATES UNLESS OTHERWISE NOTED.
- ALL DRAINAGE PIPE JOINTS IN COUNTY DRAINAGE EASEMENTS, DRAINAGE EASEMENTS BETWEEN PRIVATE LOTS, DRAINAGE RIGHT-OF-WAYS AND UNDER PAVED ROADS ARE TO BE FILTER-WRAPPED.
- ALL INVERTS IN DRAINAGE STRUCTURES TO BE PRE CAST OR BRICK WITH LAYER OF MORTAR BETWEEN EACH LAYER OF BRICK, OR REDDI-MIX CONCRETE WITH #57 STONE.
- UNSUITABLE MATERIALS UNDER WATER, SEWER PIPE, STORM PIPE OR STRUCTURES SHALL BE REMOVED AND REPLACED WITH SELECTED BACKFILL, PROPERLY COMPACTED.
- ALL UNDERGROUND UTILITIES MUST BE INSTALLED PRIOR TO PREPARATION OF SUB GRADE FOR PAVEMENT.
- ALL WATER AND SEWER CONSTRUCTION WITHIN THE COUNTY SHALL BE ACCOMPLISHED BY AN UNDERGROUND UTILITY CONTRACTOR LICENSED UNDER THE PROVISIONS OF CHAPTER 489 FLORIDA STATUTES.
- CONTRACTOR SHALL PROVIDE, TO THE ENGINEER, A SCHEDULE OF INVERT ELEVATIONS OF ALL SANITARY MANHOLES & DRAINAGE STRUCTURES PRIOR TO THE PLACEMENT OF THE LIMEROCK BASE COURSE. THIS SCHEDULE TO BE PROVIDED BY THE REGISTERED LAND SURVEYOR SUBMITTING THE "AS BUILT" DRAWINGS FOR THIS PROJECT.
- ALL SEWER MAINS SHALL BE PVC (ASTM-3034) SDR-26 FOR DEPTHS TO 12 FEET, SDR26 FOR DEPTHS 12' OR DEEPER, OR IN EASEMENTS UNLESS OTHERWISE NOTED. FORCE MAINS TO BE PVC - DR18 PIPE UNLESS OTHERWISE NOTED AND SHALL HAVE A MINIMUM COVER OF 36" FROM FINISHED GRADE.
- SANITARY SEWER SERVICES SHALL BE 6" PVC WITH A MINIMUM SLOPE OF 0.006 FEET PER FOOT AND SHALL BE TERMINATED AT THE RIGHT-OF-WAY LINE WITH A DEPTH OF 48" UNLESS OTHERWISE DETAILED OR RESTRICTED DUE TO DEPTH OF SEWER MAIN.
- ALL WATER MAINS SHALL BE FLUSHED IN ACCORDANCE WITH AWWA C651 DISINFECTION STANDARDS AND/OR JEA APPLICABLE STANDARDS AND SPECIFICATIONS.
- ALL WATER LINES 4" OR LESS SHALL BE NATIONAL SANITARY FOUNDATION POTABLE WATER (N.S.F.P.W.) RATED.
- WATER AND SEWER LINES ARE DESIGNATED TO FINISHED GRADES AND SHALL BE PROTECTED UNTIL FINISHED WORK IS COMPLETE.
- HORIZONTAL SEPARATION BETWEEN WATER MAINS, VALVES, FITTINGS AND SANITARY OR STORM SEWER SHALL IN ACCORDANCE WITH THE F.D.E.P. REGULATIONS AND JEA STANDARD DETAILS.
- ALL WATER LINE CROSSINGS SHALL HAVE A FULL LENGTH OF PIPE CENTERED OVER THE EXISTING UTILITY MAIN TO PROVIDE MAXIMUM JOINT SPACING AT CROSSINGS. WATER MAINS CROSSING SANITARY AND STORM SEWER LINES, AS WELL AS VALVES AND FITTINGS, MUST HAVE A MINIMUM 18" VERTICAL SEPARATION. IF THIS SEPARATION CANNOT BE OBTAINED, THE WATER MAIN MUST BE CONSTRUCTED OF DUCTILE IRON PIPE FOR A DISTANCE OF 10' EITHER SIDE OF THE SANITARY OR STORM SEWER MAIN, OR INSTALL WATER MAIN IN D.I. SLEEVE MIN. LENGTH 20' CENTERED, ENDS OF SLEEVE TO BE GROUT FILLED, IN EITHER CASE, MINIMUM OF 6" OF VERTICAL SEPARATION SHALL BE MAINTAINED.
- MECHANICAL RESTRAINING DEVICES ARE REQUIRED IN ACCORDANCE WITH JEA STANDARDS WHERE WATER MAINS ARE TERMINATED AND AT ALL BENDS AND TEES.
- UNLESS OTHERWISE NOTED, ALL OFF-SITE WATER MAIN TO BE PVC DR18, C-900 AND ALL ON-SITE WATER MAIN 4" AND GREATER SHALL BE DR25, C-900. ALL ON-SITE WATER MAIN 3" OR SMALLER SHALL BE SCHEDULE 40 PVC AND N.F.S.P.W. RATED.
- ALL GATE VALVES SHALL BE UTILITY COMPANY STANDARD. VALVES SHALL BE MECHANICAL JOINT, CAST IRON, BRONZE FITTED WITH RESILIENT SEAT. ALL VALVES SHALL OPEN BY TURNING TO THE LEFT. VALVES SHALL BE RATED AT 200 PSI WORKING PRESSURE AND 400 PSI TEST PRESSURE.
- FIRE HYDRANTS SHALL BE J.E.A. STANDARD. HYDRANTS SHALL BE PAINTED AS PER J.E.A. STANDARDS.
- ALL ELECTRIC CONDUIT WORK SHALL BE COMPLETED PRIOR TO THE PRESSURE TESTING OF WATER AND SEWAGE FORCE MAINS.
- ALL WATER MAINS SHALL BE BACTERIOLOGICAL AND PRESSURE TESTED AT 150 PSI FOR 2 HOURS IN ACCORDANCE WITH AWWA C-600 STANDARDS. NO CONNECTION TO EXISTING POTABLE WATER SYSTEM SHALL BE ALLOWED UNTIL ALL PROPOSED WATER LINES HAVE BEEN PRESSURE TESTED, DISINFECTED AND CLEARED FOR SERVICE. THE ENGINEER MUST BE NOTIFIED 48 HOURS PRIOR TO PERFORMING THE PRESSURE TEST AND MUST BE PRESENT.

- A UTILITY COMPANY PRE CONSTRUCTION CONFERENCE MUST BE HELD PRIOR TO COMMENCEMENT OF WATER OR SEWER WORK. THE CONTRACTOR SHALL CONTACT UTILITY COMPANY TO SCHEDULE THIS CONFERENCE.
- TELEVISION INSPECTION SHALL BE REQUIRED ON ALL GRAVITY SEWER MAINS. THIS SERVICE SHALL BE PROVIDED BY THE CONTRACTOR AS PART OF THE SANITARY SEWER CONTRACT. A FULL WRITTEN REPORT AS TO THE CONDITION OF THE PIPE WITH PERTINENT DATA SUCH AS DISTANCE BETWEEN MANHOLES, LOCATION OF SERVICES, ETC. SHALL BE SUBMITTED TO THE OWNER AND ENGINEER PRIOR TO ACCEPTANCE, AND ONE COPY OF THE VIDEO TAPE SHALL BE SUBMITTED TO THE COUNTY. ALL DEFECTIVE AREAS AND ITEMS SHALL BE REPLACED OR REPAIRED PRIOR TO FINAL ACCEPTANCE. ALL REPAIRED SECTIONS MUST BE REINSPECTED PRIOR TO ACCEPTANCE.
- THE CONTRACTOR SHALL AVOID SERVICE INTERRUPTIONS AND MAINTAIN ANY EXISTING WATER AND SEWER SERVICE TO MEET THE SYSTEM DEMANDS AT ALL TIMES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFICATION OF AFFECTED CUSTOMERS OF THE UTILITY A MINIMUM OF 48 HOURS IN ADVANCE OF ANY INTERRUPTION OF SERVICE.
- ALL NEW AND/OR RELOCATED WATER MAIN PIPES AND FITTINGS SHALL NOT CONTAIN MORE THAN EIGHT PERCENT LEAD AND ALL PACKING AND JOINT MATERIALS USED IN THE JOINTS SHALL CONFORM WITH ALL APPLICABLE AWWA STANDARDS. ALL NEW AND/OR RELOCATED WATER SERVICES AND PLUMBING SHALL CONTAIN NO MORE THAN EIGHT PERCENT LEAD AND ALL SOLDERES AND FLUX SHALL CONTAIN NO MORE THAN 0.2 PERCENT LEAD.
- ALL WATER AND SEWER CONSTRUCTION MATERIALS TO BE CONSTRUCTED IN COUNTY RIGHT-OF-WAY OR COUNTY EASEMENT MUST BE IN CONFORMANCE WITH THE J.E.A. APPROVED MATERIALS MANUAL.
- A PRECONSTRUCTION CONFERENCE IS REQUIRED AND SHALL BE SCHEDULED WITH JEA. CONTACT CHRIS BARRINGTON 904-665-4081
- CONTRACTOR SHALL INSTALL WARNING TAPE AND LOCATE WIRE ON ALL WATER MAINS AND FORCE MAINS IN ACCORDANCE WITH J.E.A. STANDARDS.
- IF SOLVENT CONTAMINATION IS FOUND IN THE PIPE TRENCH, WORK SHALL BE STOPPED AND THE AND SOLVENT RESISTANT GASKET MATERIAL SHALL BE USED IN THE CONTAMINATED AREA. THE DUCTILE IRON PIPE SHALL EXTEND AT LEAST 100 FEET BEYOND ANY SOLVENT NOTED.
- ALL SERVICE TAPS AND METERS 3" AND ABOVE TO EXISTING MAINS SHALL REQUIRE A SPECIAL ESTIMATE. THE SPECIAL ESTIMATE IS TO BE APPLIED FOR THROUGH J.E.A.
- ALL SEWER FORCE MAIN(S) SHALL BE TESTED @ 150 PSI FOR 2 HOURS AND LEAKAGE TESTING SHALL BE IN ACCORDANCE WITH AWWA C600-87 AND/OR JEA APPLICABLE STANDARDS AND SPECIFICATIONS. THE ENGINEER MUST BE NOTIFIED 48 HOURS PRIOR TO PERFORMING THE PRESSURE TEST AND MUST BE PRESENT.
- METER MUST BE APPLIED FOR A PAID FOR BY LICENSED MASTER PLUMBER OR UTILITY CONTRACTOR. APPLICATION IS TO BE MADE AT 515 NORTH LAURA STREET IN THE CUSTOMER SERVICE CENTER 1ST FLOOR.
- ALL FIRE LINE TAPS OR FIRE HYDRANT TO BE CONSTRUCTED IN COUNTY R/W MUST BE PERFORMED BY JEA CONTRACTOR. TAP MUST BE SCHEDULED THROUGH JEA INSPECTOR. CONSTRUCTION SHALL BE PERFORMED UPON APPLICATION AND PAYMENT BY CONTRACTOR OR LICENSED MASTER PLUMBER @ 515 N. LAURA STREET 1ST FLOOR, CUSTOMER SERVICE BUILDING. IN ADDITION, ANY APPLICATION D.E.P./JEA PERMITS SHALL BE SECURED BY THE ENGINEER OF RECORD SHALL BE SECURED BY THE ENGINEER OF RECORD PRIOR TO TAP APPLICATION AND INSTALLATIONS.
- AUTOMATIC SPRINKLER/FIRE MAIN SERVICES. A METERED DETECTOR CHECK BACKFLOW PREVENTER IS REQUIRED ON ALL A.S. SERVICES AND FIRE MAIN CONNECTIONS INSTALLED FOR ON SITE FIRE PROTECTION. AT THE TIME OF OR PRIOR TO FINAL PLAN APPROVAL A DETECTOR CHECK AFFIDAVIT SHALL BE ON FILE WITH JEA WATER AND SEWER INCLUDE AN ASSIGNED BUILDING AND ZONING STREET ADDRESS FOR THIS SITE. RESUBMITTAL SHALL BE REQUIRED IN THE EVENT THAT FIRE MARSHAL REVIEW OF BUILDING PLANS REQUIRES A SPRINKLER SYSTEM WHICH WAS NOT INDICATED ON THE CIVIL DESIGN PLANS.
- CONNECTION CONTINGENT UPON CONSTRUCTION, DEDICATION AND FINAL ACCEPTANCE OF THE OFFSITE WATER TRANSMISSION SYSTEM AND SEWER COLLECTION SYSTEM WITHIN THE LIMITS OF THIS PROJECT.
- WATER AND SEWER CAPACITY COUNTY FEES SHALL BE REQUIRED AT TIME OF METER APPLICATION. FEES WILL BE BASED ON TOTAL NUMBER OF PLUMBING FIXTURES UNITS SHOWN OR LISTED ON BUILDING PLANS.
- NOTICE OF BACKFLOW PREVENTOR LOCATION: APPROVED BACKFLOW PREVENTORS SHALL BE LOCATED ADJACENT TO RIGHT-OF-WAY LINE ON PRIVATE PROPERTY UNLESS APPROVED BY THE COMMERCIAL & NETWORK SERVICE FULFILLMENT.
- BACKFLOW PREVENTION ASSEMBLIES SHALL BE TESTED FOLLOWING INSTALLATION BY A LICENSED TESTER. SUBMIT BACKFLOW ASSEMBLY TEST TO JEA ATTN: BILL POUND, 21 W. CHURCH STREET 1-8 JACKSONVILLE, FL 32202. BACKFLOW PREVENTION ASSEMBLIES SHALL BE SELECTED AND INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF JEA'S CROSS-CONNECTION CONTROL POLICY MANUAL; CONTACT BILL POUND AT 904-665-5787
- ALL PIPING, JOINTS AND VALVES SHALL CONFORM WITH THE APPROPRIATE AWWA STANDARDS AND SPECIFICATIONS.
- ALL PIPING AND ASSOCIATED APPURTENANCES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST JEA STANDARDS, DETAILS AND MATERIALS MANUAL. LATEST REVISIONS.
- WATER MAIN SHALL BE A MINIMUM OF 3' HORIZONTAL DISTANCE FROM THE O.D. OF WATER MAIN TO O.D. OF STORM DRAIN PIPE OR STORM STRUCTURE(S).
- A \$20.00 TAP APPLICATION FEE IS REQUIRED AND SHALL BE PAID @ 515 NORTH LAURA STREET, 1ST FLOOR CUSTOMER SERVICE BUILDING. THIS MUST BE ACCOMPLISHED PRIOR TO CONNECTION TO THE JEAS' SEWER COLLECTION SYSTEM. IN ADDITION, SEWER CAPACITY FEE MUST BE PAID AT TIME OF OR PRIOR TO THE TAP FEE AND WILL BE BASED ON THE TOTAL NUMBER OF SEWER FIXTURE UNITS CURRENTLY SERVING THIS SITE AND DISCHARGING TO THE JEA SYSTEM FOR TREATMENT.



SPEED TABLE DETAIL

SCALE: 1" = 10'

DOMINION ENGINEERING GROUP, INC.

PLANNERS AND ENGINEERS

4348 SOUTHPOINT BLVD, SUITE 201, JACKSONVILLE, FLORIDA 32216

TEL: 904-854-4500 REGISTRY NUMBER: 26821 FAX 904-854-4505

www.dom-eng.com

TRIBUTARY SPINE ROAD (WEST) PHASE A  
FOR  
THREE RIVERS DEVELOPERS, LLC

GENERAL NOTES AND DETAILS

REVISIONS

PLOT DATE:

DRAWN BY: JMM

DESIGNED BY: JMM

CHECKED BY: WES

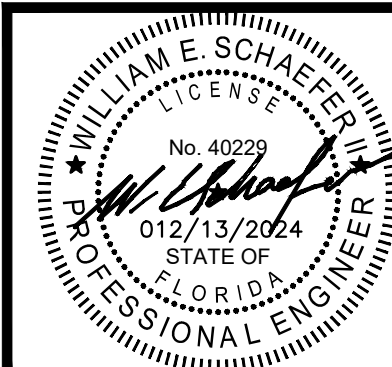
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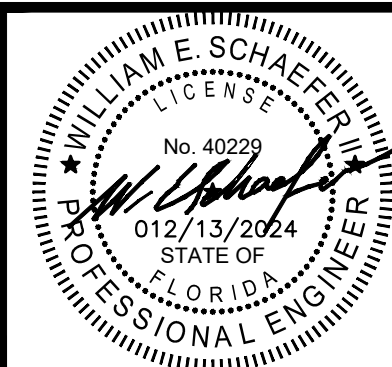
## CONTRACTOR'S REQUIREMENTS

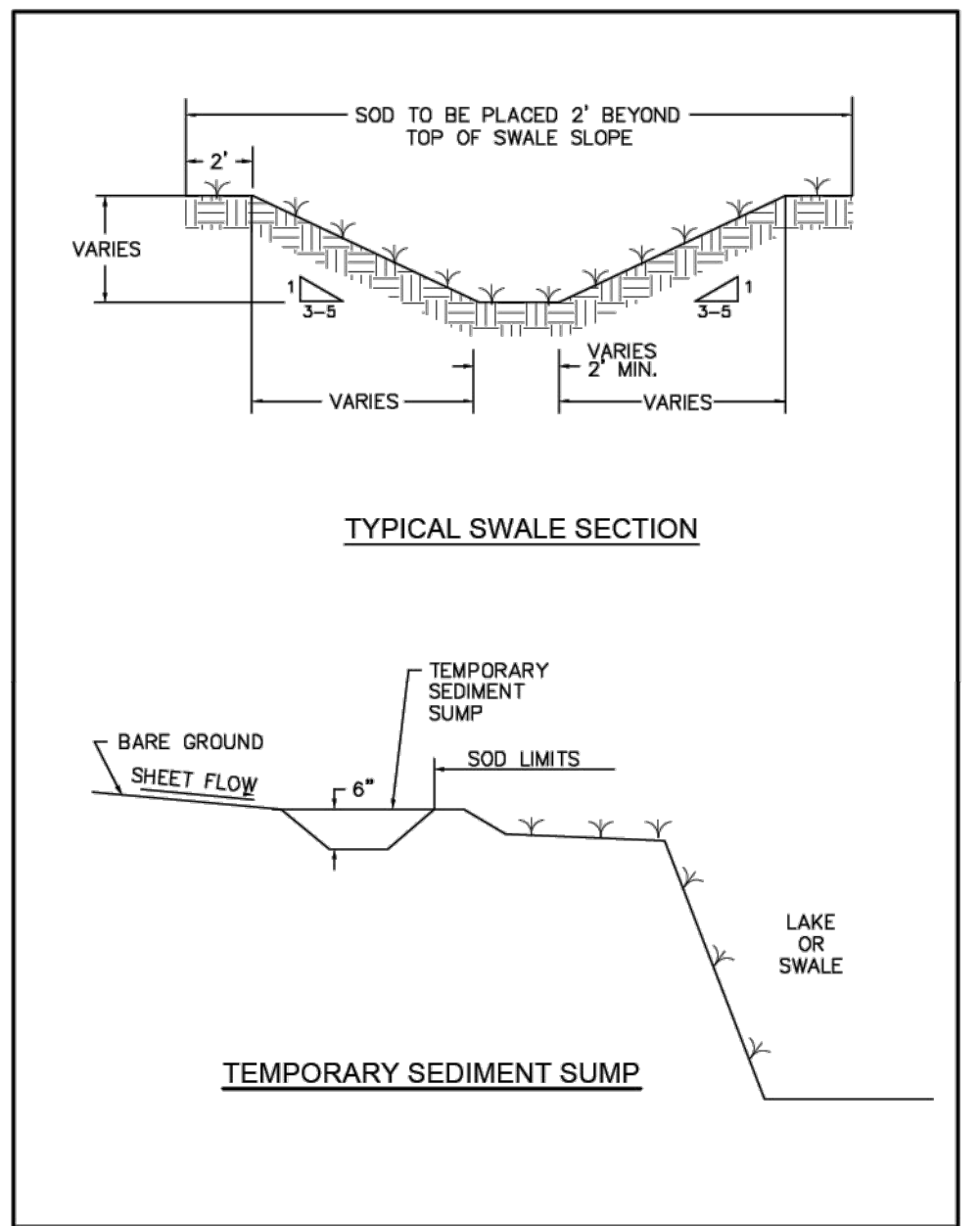
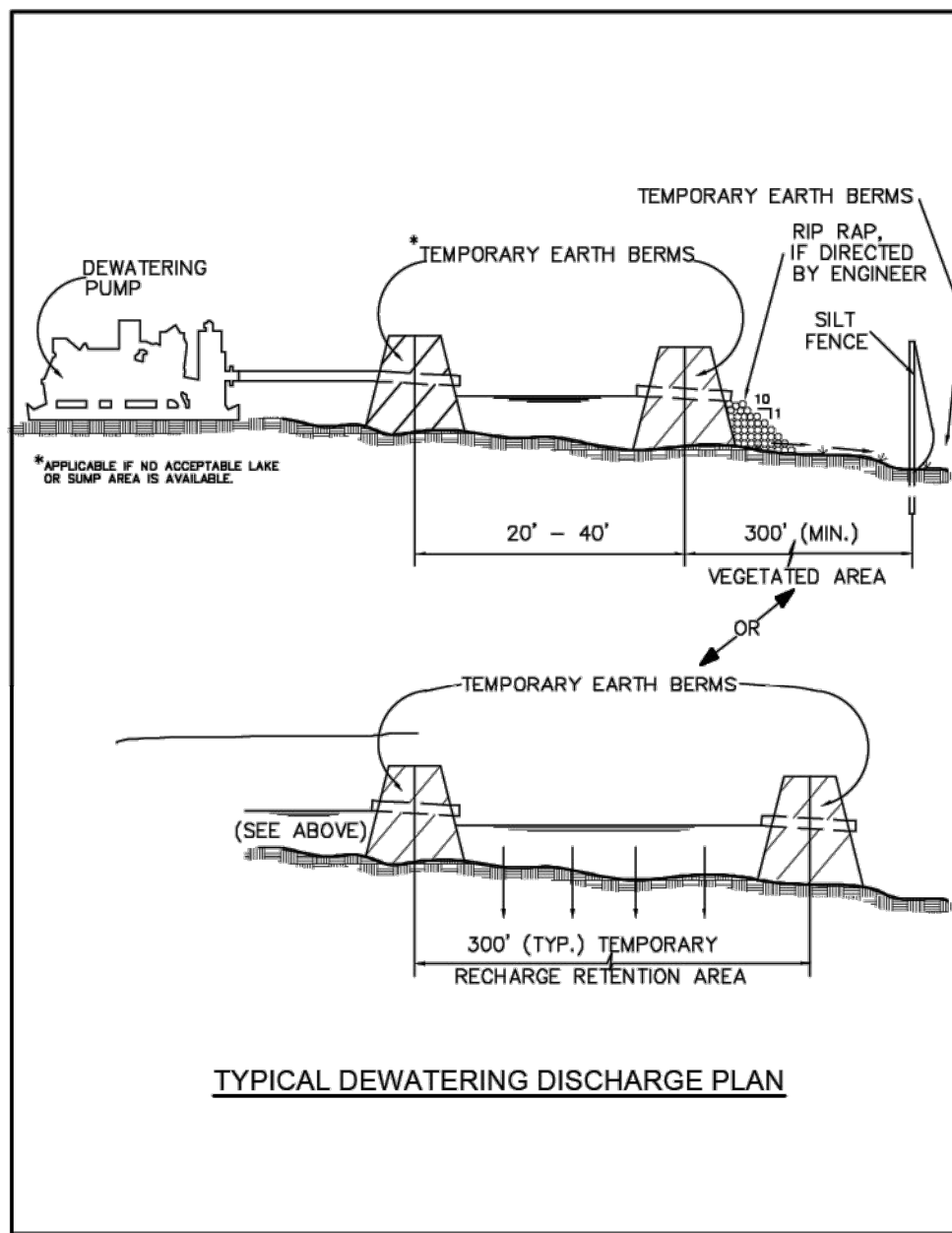
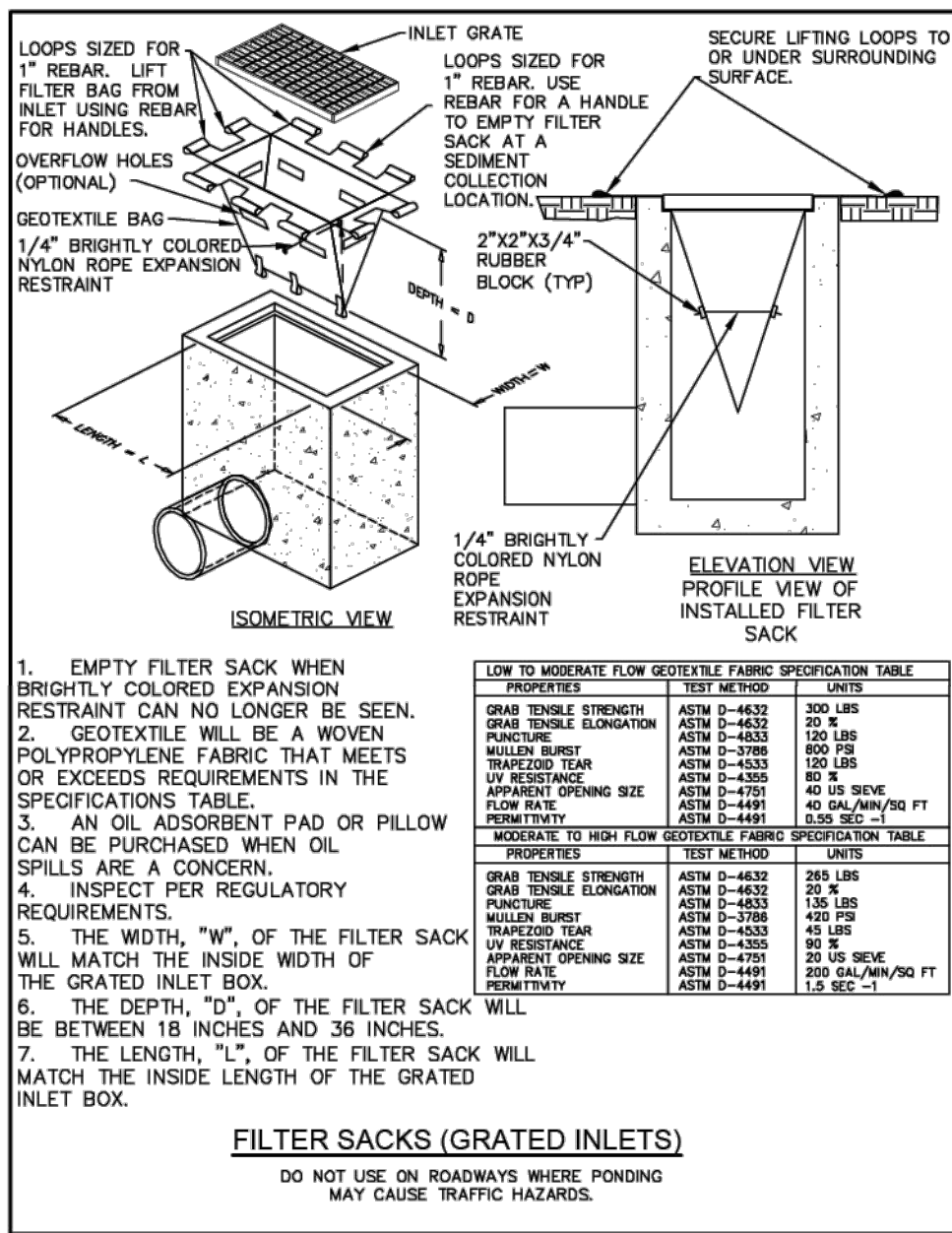
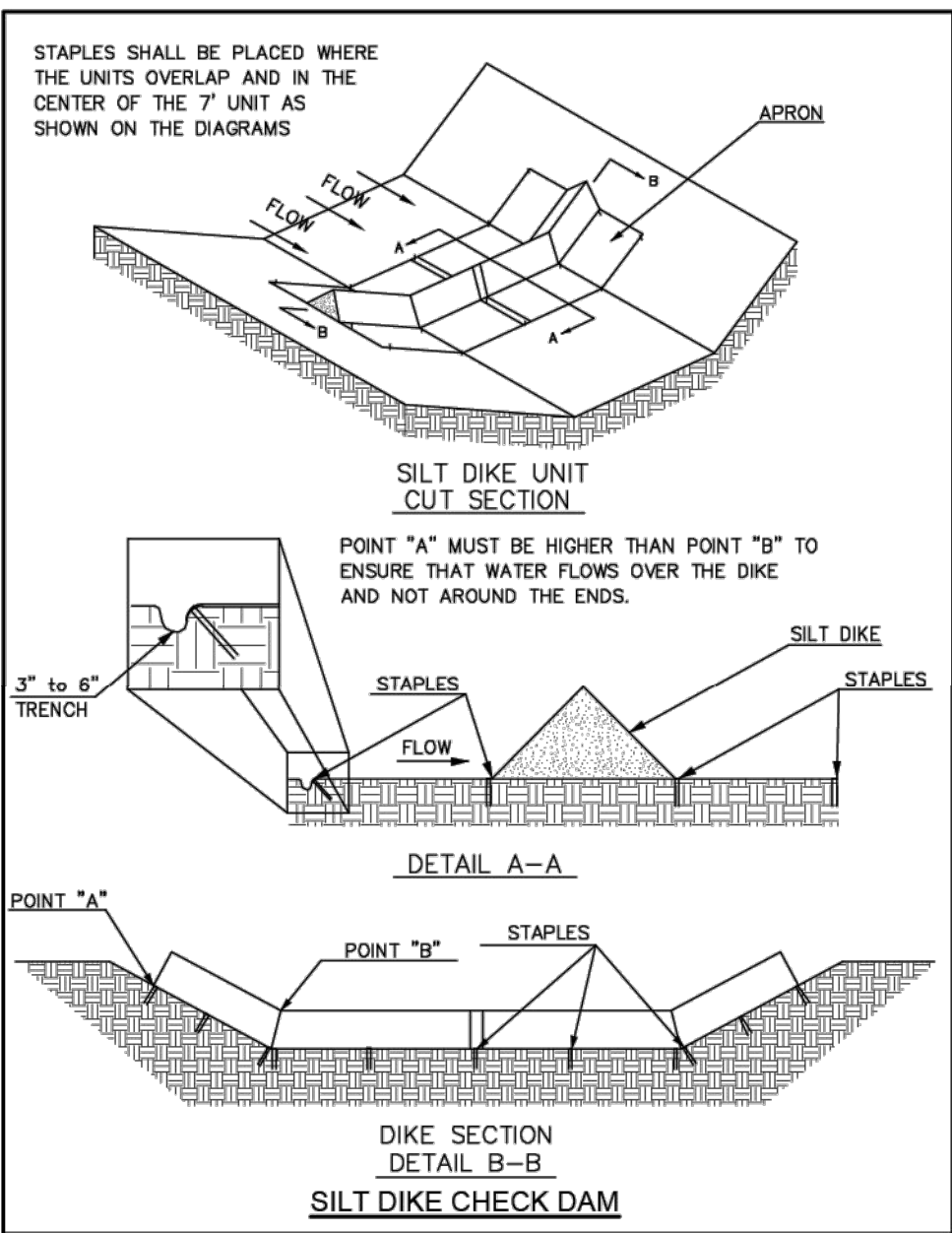
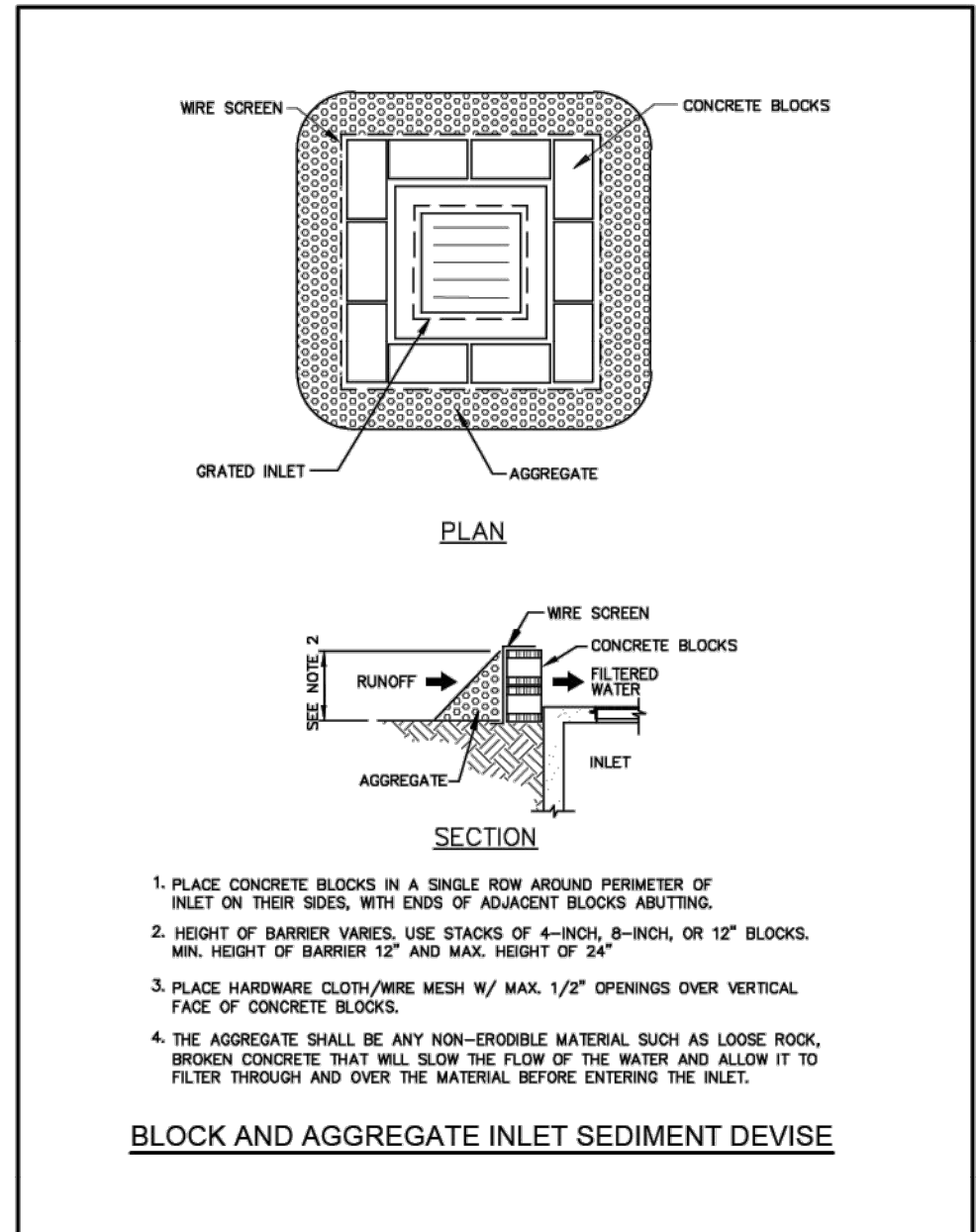
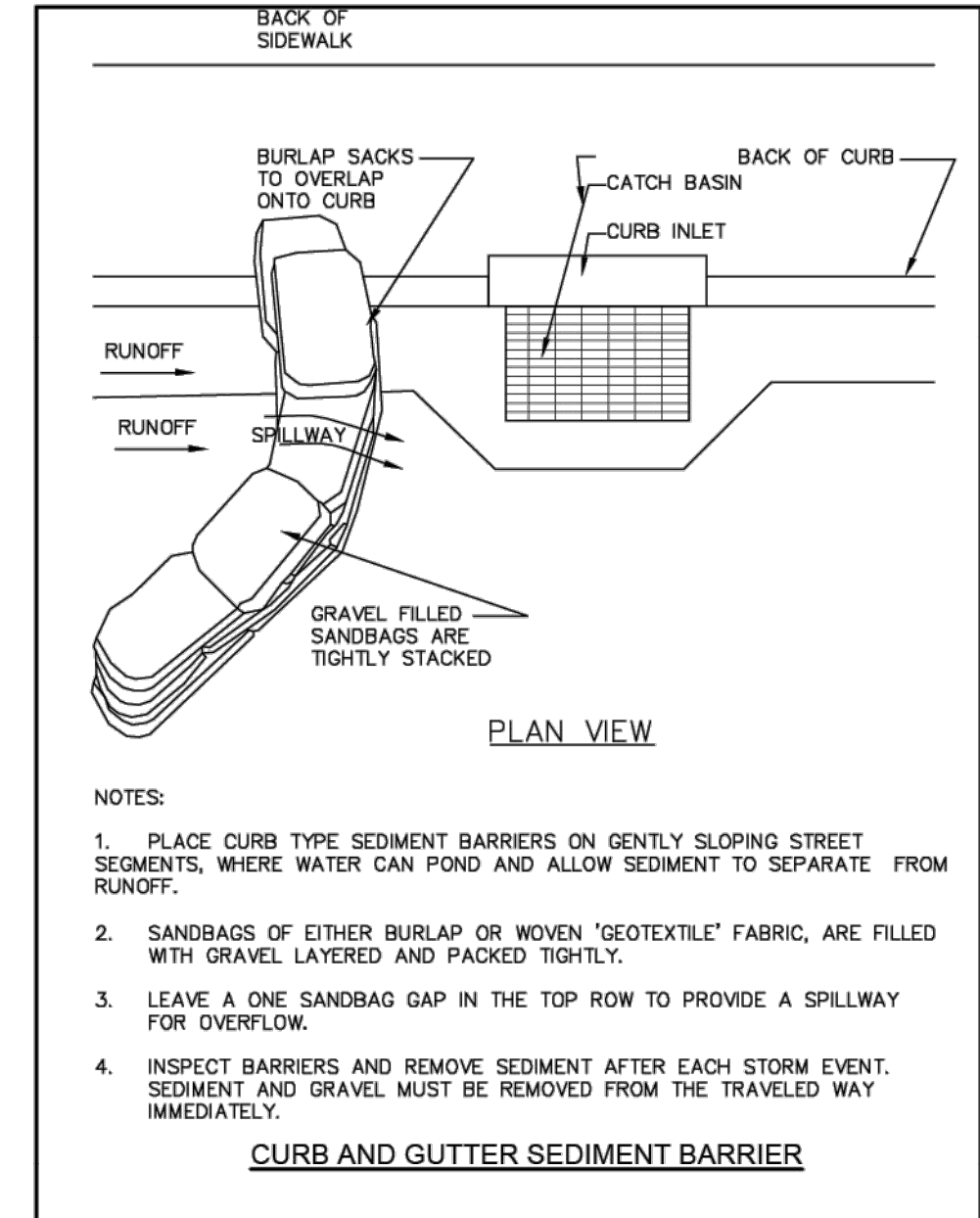
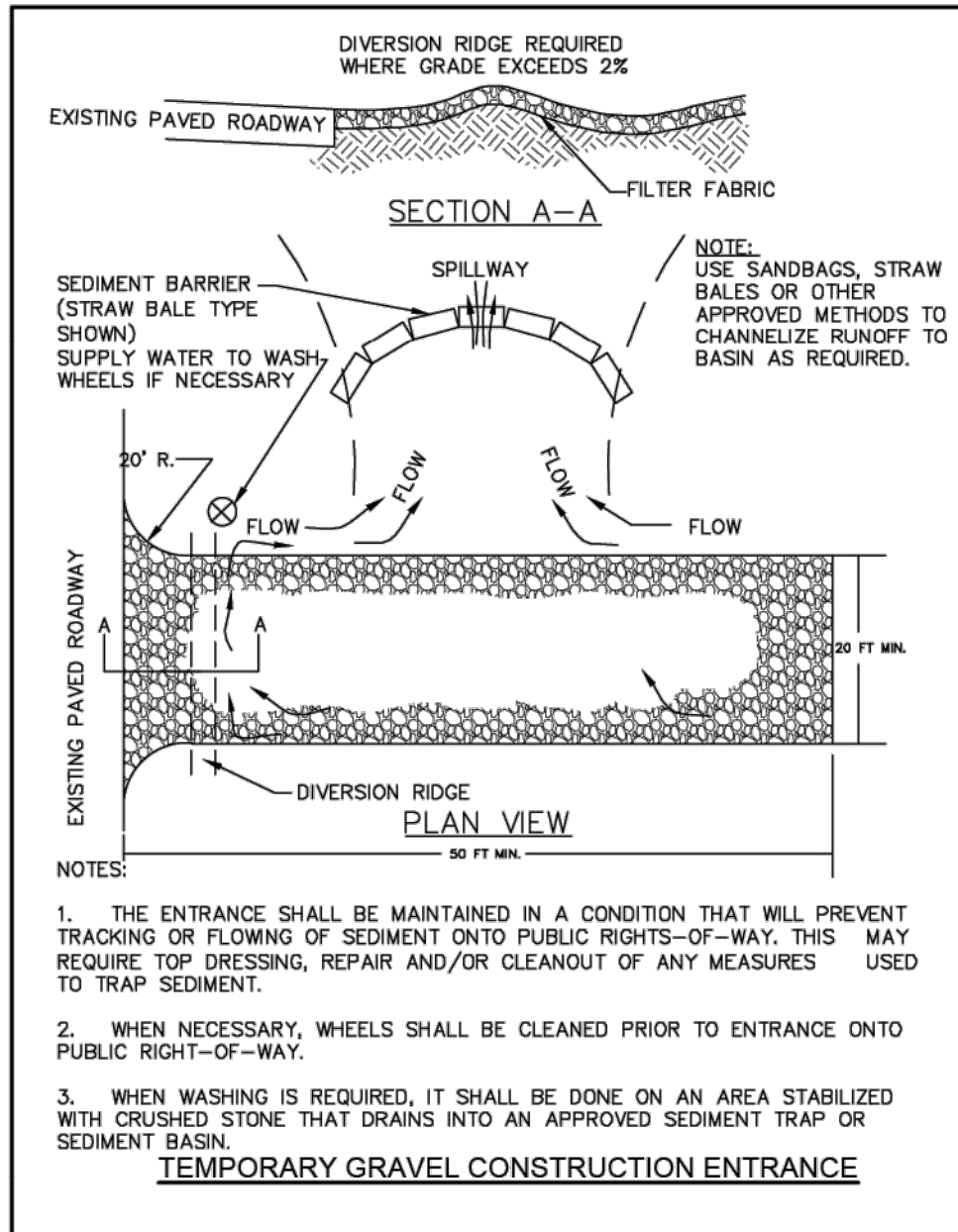
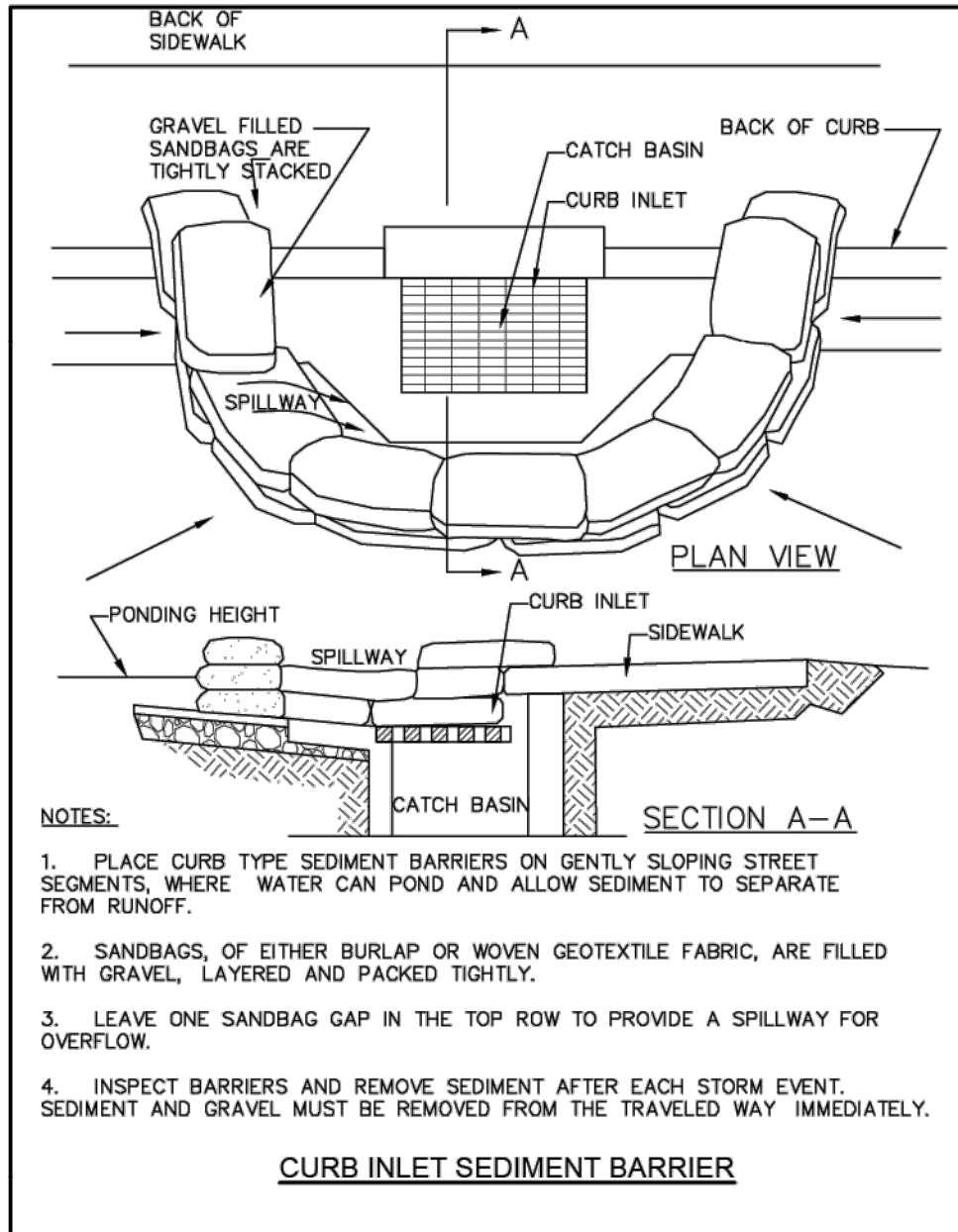
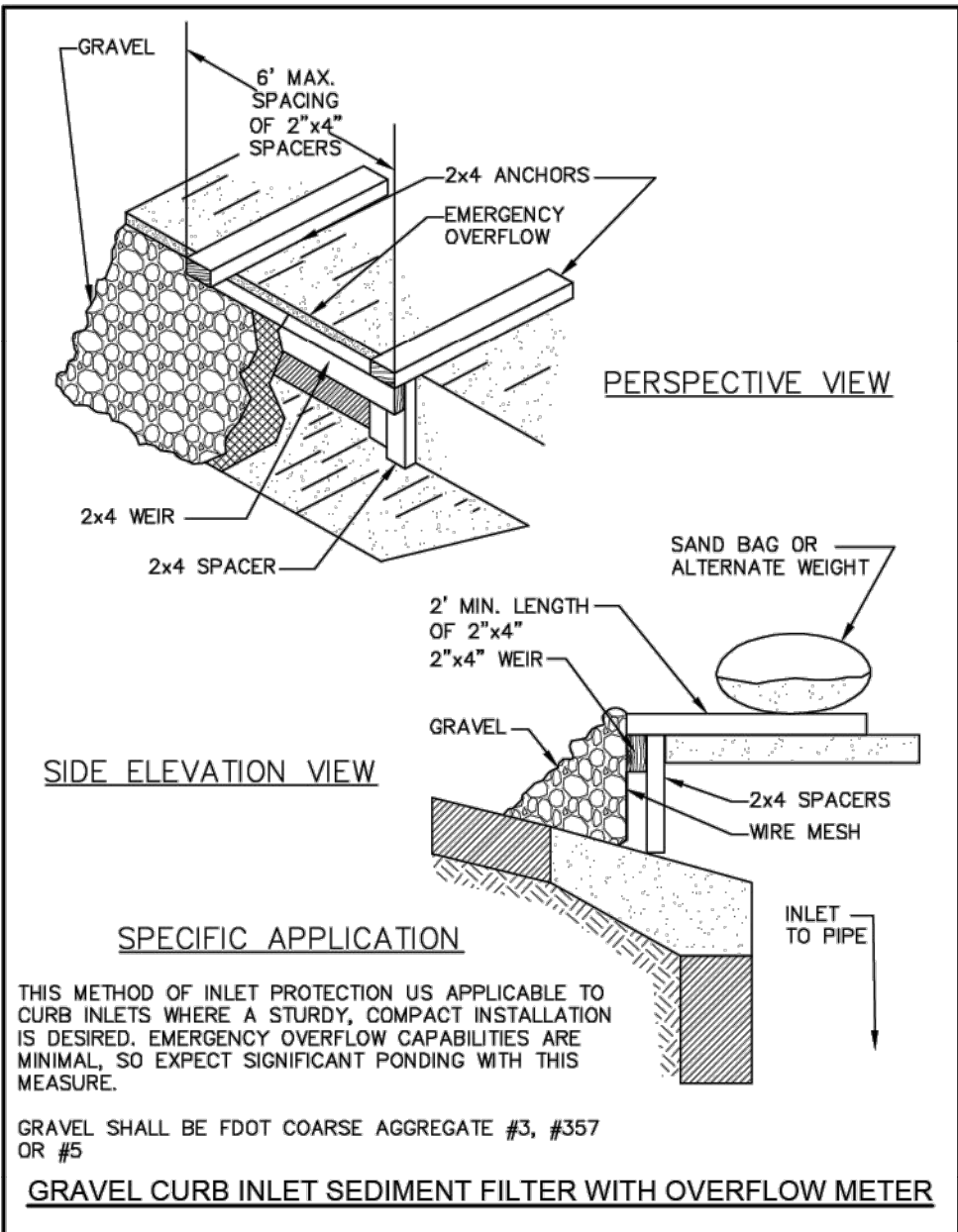
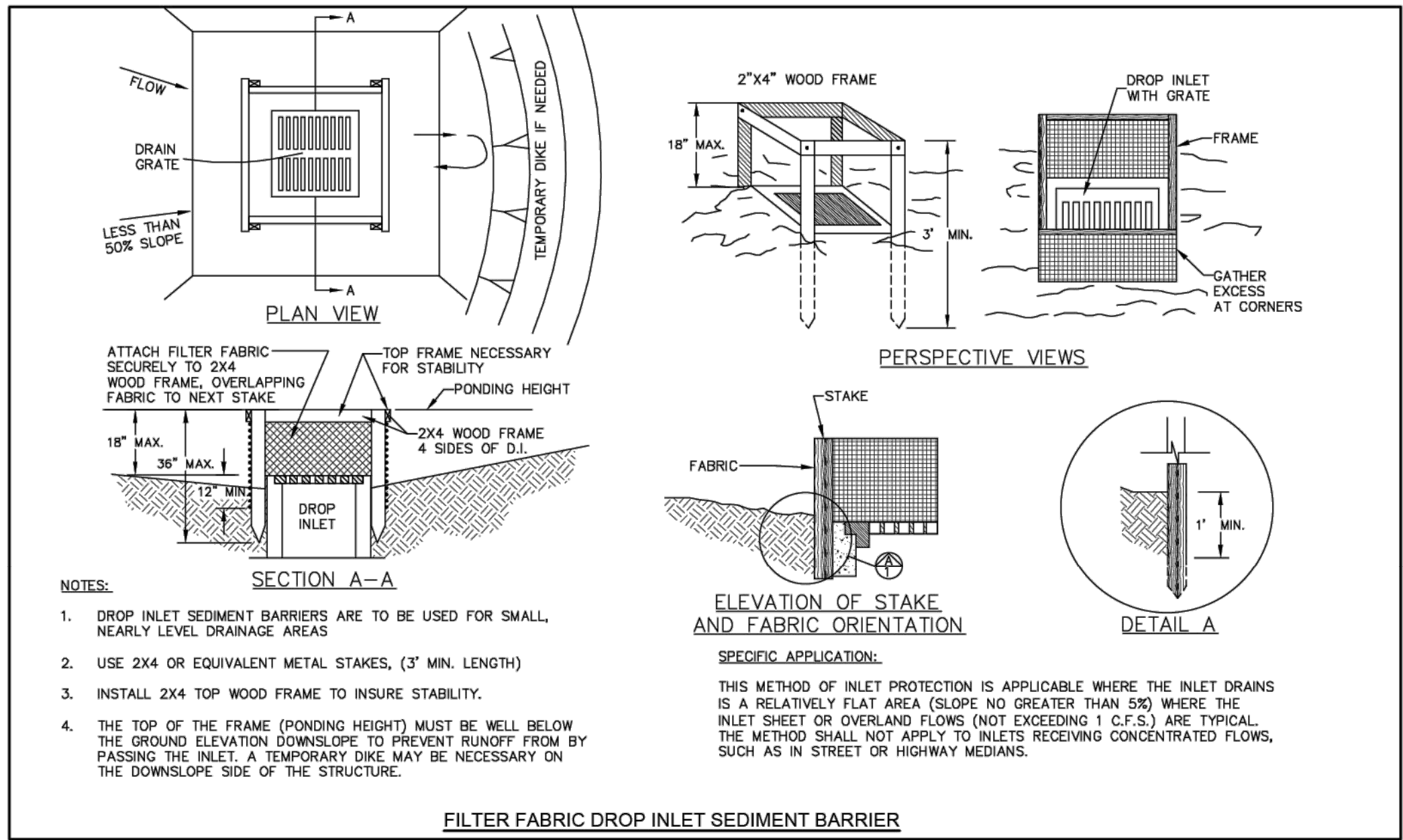
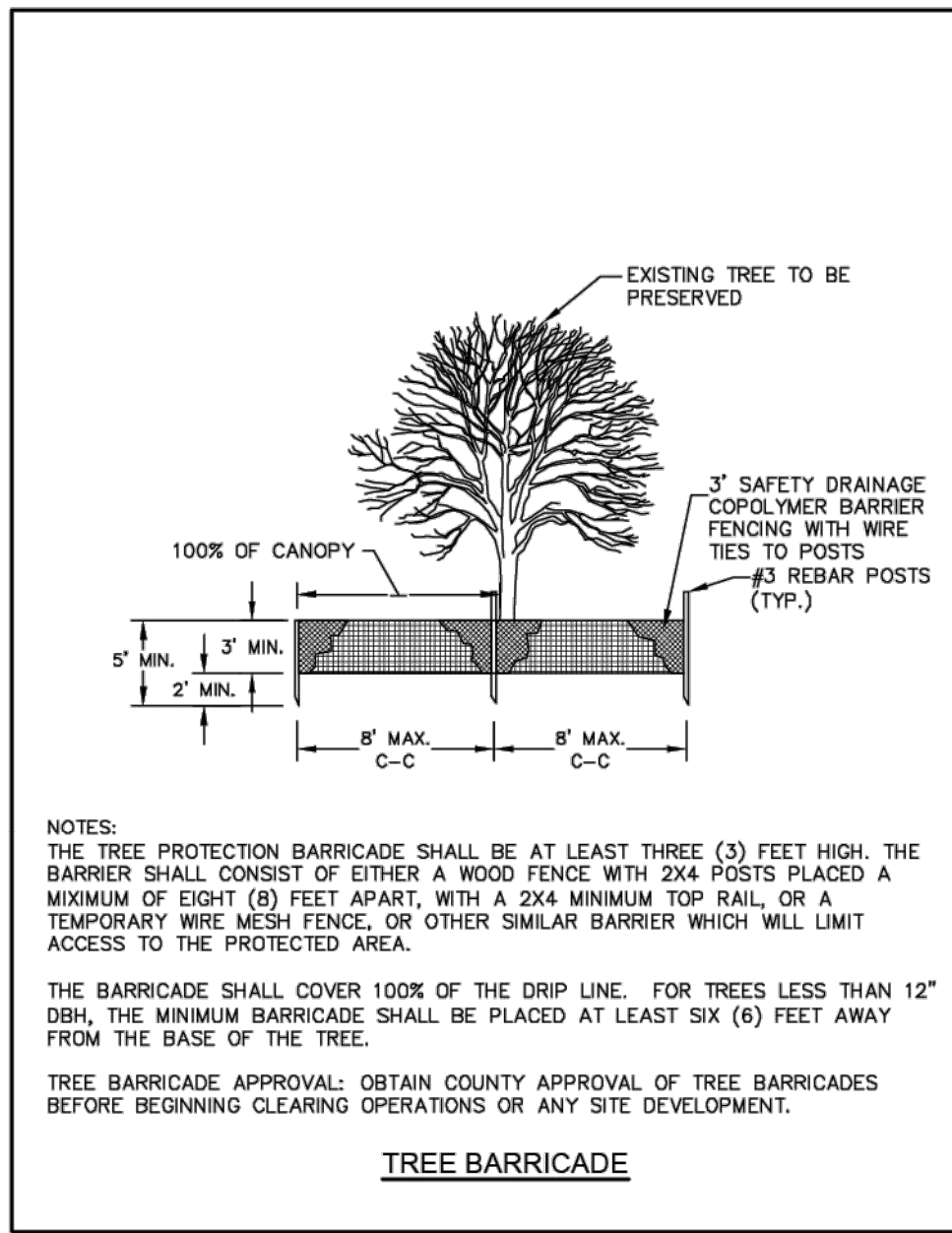
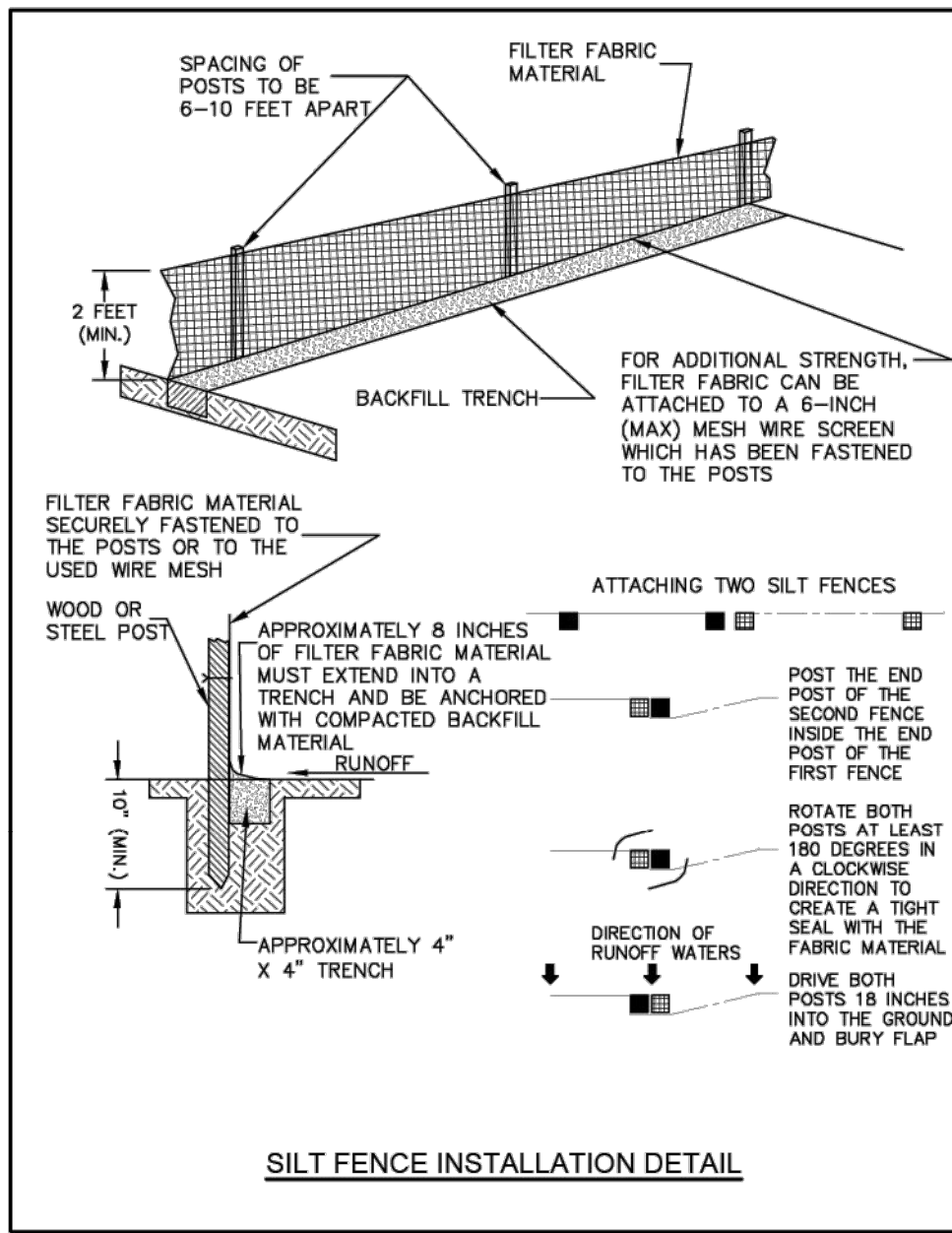
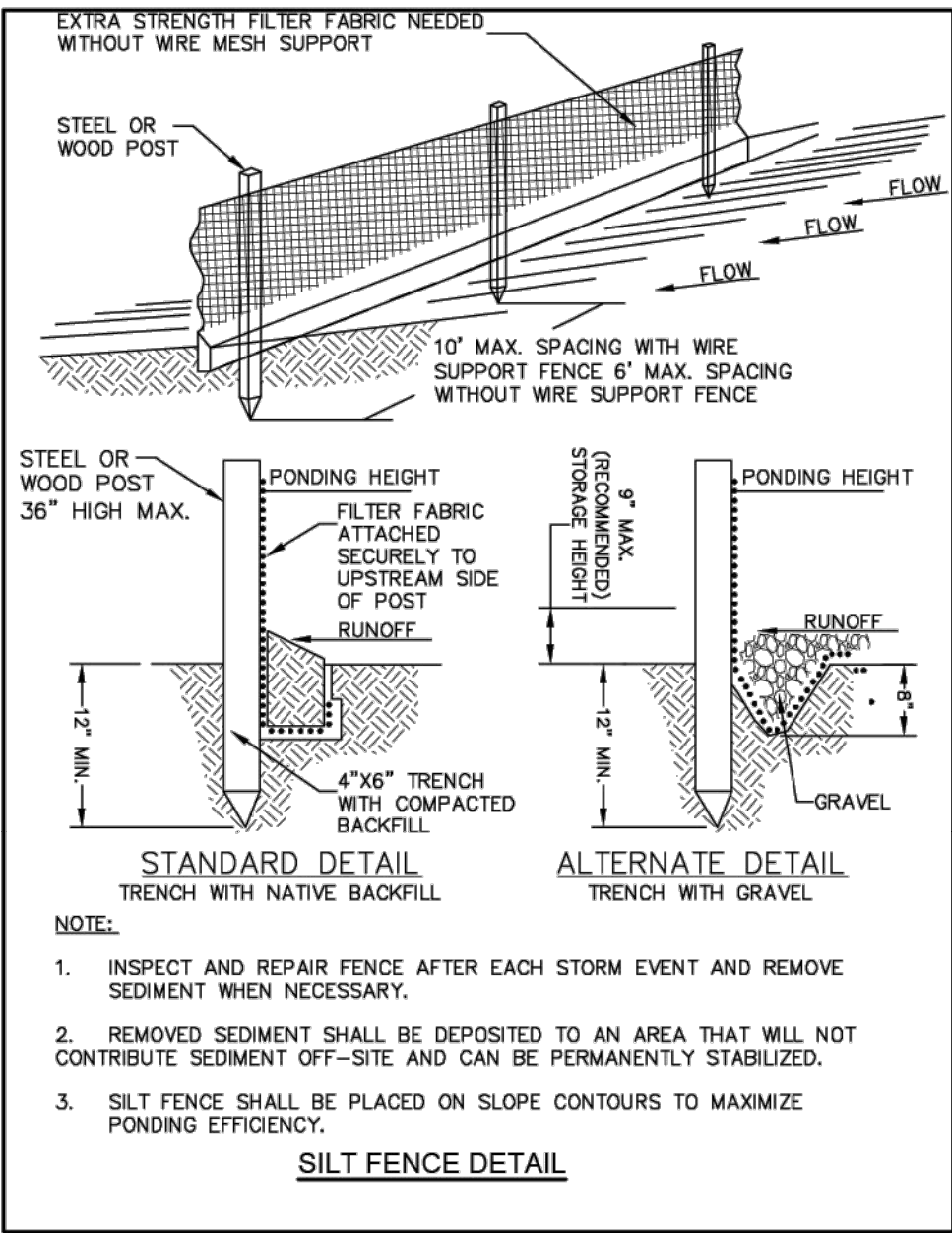
\\Greenpointe\Tributary Spine Road\Tributary Drive Spine Road (WEST)\Cadd\design\EROSION DETAILS - TRIB DRIVE WEST.dwg Dec 13, 2024 - 10:58am

## SWPPP-CONTRACTORS REQUIREMENTS

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# C18





**DOMINION ENGINEERING GROUP, INC.**

PLANNERS AND ENGINEERS

4348 SOUTHPOINT BLVD, SUITE 201, JACKSONVILLE, FLORIDA 32216  
TEL: 904-854-4500 REGISTRY NUMBER: 26821 FAX 904-854-4505  
www.dom-eng.com

TRIBUTARY SPINE ROAD (WEST) PHASE A

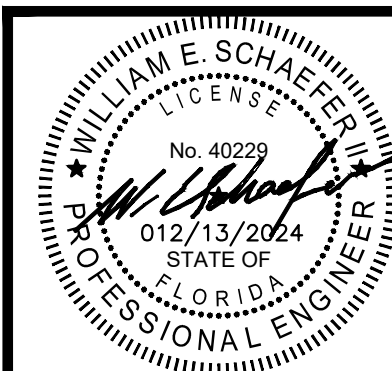
FOR  
THREE RIVERS DEVELOPERS, LLC

EROSION AND SEDIMENT CONTROL DETAILS

REVISIONS

PLOT DATE:  
DRAWN BY: JMM  
DESIGNED BY: JMM  
CHECKED BY: WES  
SCALE: AS NOTED  
JOB NO.: 2016.011  
© LATEST DATE HEREON  
SHEET NO.

C19



PROJECT: \_\_\_\_\_

STORM WATER POLLUTION PREVENTION PLAN  
INSPECTION AND MAINTENANCE REPORT FORM

TO BE COMPLETED EVERY 7 DAYS AND WITHIN 24 HOURS OF  
A RAINFALL EVENT OF 0.50 INCHES OR MORE

INSPECTOR: \_\_\_\_\_

INSPECTOR'S QUALIFICATIONS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

DATE: \_\_\_\_\_

AMOUNT OF LAST RAINFALL \_\_\_\_\_ INCHES

DAYS SINCE LAST RAINFALL: \_\_\_\_\_

STABILIZATION MEASURES

INSPECTION AREA (DESCRIPTION OF LOCATION)	DATE SINCE LAST DISTURBED	DATE OF NEXT DISTURBANCE	STABILIZED ? (YES/NO)	STABILIZED WITH	CONDITION

STABILIZATION REQUIRED: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

TO BE PERFORMED BY: \_\_\_\_\_ ON OR BEFORE: \_\_\_\_\_

PAGE 1 OF 4

DEPTH OF SEDIMENT IN BASIN	DEPTH OF SEDIMENT SIDE BASIN	ANY EVIDENCE OF OVERTOPPING OF THE EMBANKMENT ?	CONDITION OF OUTFALL FROM SEDIMENT BASIN

MAINTENANCE REQUIRED FOR SEDIMENT BASIN:

-----

-----

-----

-----

TO BE PERFORMED BY: ----- ON OR BEFORE: -----

OTHER CONTROLS

STABILIZED CONSTRUCTION ENTRANCE

DOES MUCH SEDIMENT GET TRACKED ON TO ROAD ?	IS THE GRAVEL CLEAN OR IS IT FILLED WITH SEDIMENT?	DOES ALL TRAFFIC USE THE STABILIZED ENTRANCE TO LEAVE THE SITE ?	IS THE CULVERT BENEATH THE ENTRANCE WORKING? (IF APPLICABLE)

MAINTENANCE REQUIRED FOR STABILIZED CONSTRUCTION ENTRANCE:

-----

-----

-----

TO BE PERFORMED BY: ----- ON OR BEFORE: -----

PAGE 3 OF 4

PROJECT: \_\_\_\_\_

STORM WATER POLLUTION PREVENTION PLAN  
INSPECTION AND MAINTENANCE REPORT FORM

STRUCTURAL CONTROLS

DATE: \_\_\_\_\_

EARTH DIKES/SWALES

DIKE OR SWALE	FROM	TO	IS DIKE/SWALE STABILIZED ?	IS THERE EVIDENCE OF WASHOUT OR OVERTOPPING

MAINTENANCE REQUIRED FOR EARTH DIKE/SWALE: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

TO BE PERFORMED BY: \_\_\_\_\_ ON OR BEFORE: \_\_\_\_\_

CATCH BASIN/CURB INLET/OUTFALL TURBIDITY CONTROLS

TURBIDITY CONTROLS

STRUCTURE/ OUTFALL	ARE TURBIDITY CONTROLS IN PLACE	ANY EVIDENCE OF CLOGGING/WASHOUT OR BYPASSING ?	ARE TURBIDITY CONTROLS IN NEED OF REPLACING	DOES SILT NEED TO BE REMOVED FROM AROUND CONTROL

MAINTENANCE REQUIRED FOR CATCH BASIN/CURB INLETS/OUTFALLS TURBIDITY CONTROLS: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

TO BE PERFORMED BY: \_\_\_\_\_ ON OR BEFORE: \_\_\_\_\_

PROJECT:	STORM WATER POLLUTION PREVENTION PLAN INSPECTION AND MAINTENANCE REPORT FORM
	CHANGES REQUIRED TO THE POLLUTION PREVENTION PLAN:  _____ _____ _____ _____ _____ _____ _____ _____
	REASONS FOR CHANGES:  _____ _____ _____ _____ _____ _____ _____ _____
	I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHERED AND EVALUATED THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSON OR PERSONS WHO MANAGE THE SYSTEM, OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION, THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.
	SIGNATURE: _____  DATE: _____

PAGE 4 OF 4

NOTE TO CONTRACTOR:

THIS IS THE CONTRACTORS CERTIFICATION REQUIRED BY THE EPA'S NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES), STORM WATER POLLUTION PREVENTION PLAN FOR CONSTRUCTION SITES OVER 5 ACRES. THIS CERTIFICATION MUST BE COMPLETED WEEKLY AND AFTER EVERY RAINFALL EVENT OVER 0.50 INCHES. IT IS SUGGESTED THAT THIS SHEET BE REMOVED FROM THE PLAN SET AND DUPLICATED AS NEEDED BY THE CONTRACTOR.

REVISIONS	
PLOT DATE:	
DRAWN BY:	JMM
DESIGNED BY:	JMM
CHECKED BY:	WES
SCALE:	AS NOTED
JOB NO.:	2016.011
© LATEST DATE HEREON SHEET NO.	
<div style="text-align: center; font-size: 2em;">C20</div>	

TRIBUTARY SPINE ROAD (WEST) PHASE A  
FOR  
THREE RIVERS DEVELOPERS, LLC  
SWPPP-CONTRACTORS CERTIFICATIONS

**DOMINION ENGINEERING GROUP, INC.**

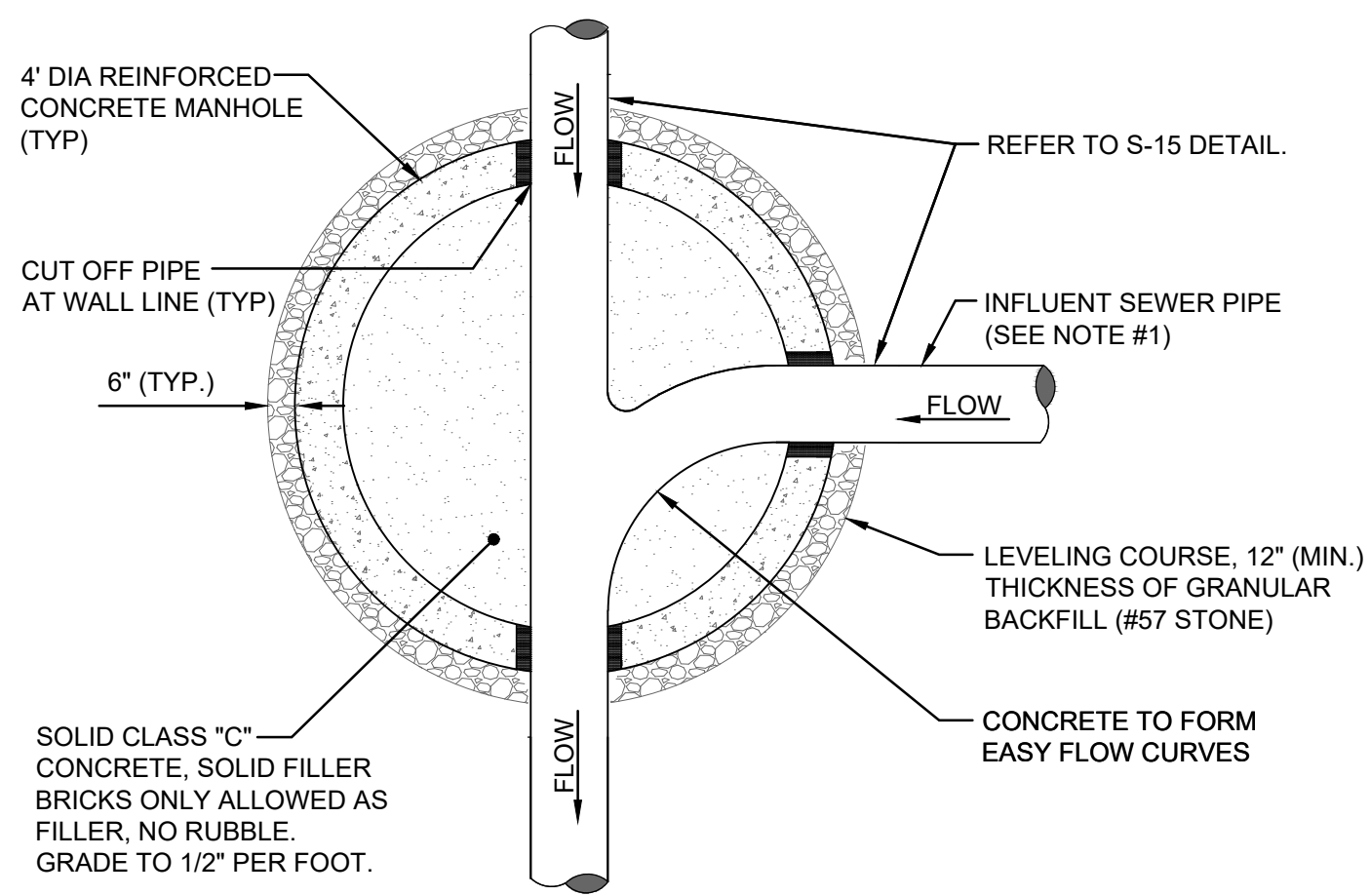
**PLANNERS AND ENGINEERS**

4348 SOUTHPOINT BLVD., SUITE 201, JACKSONVILLE, FLORIDA 32216

TEL: 904-854-4500    REGISTRY NUMBER: 26821    FAX 904-854-4505

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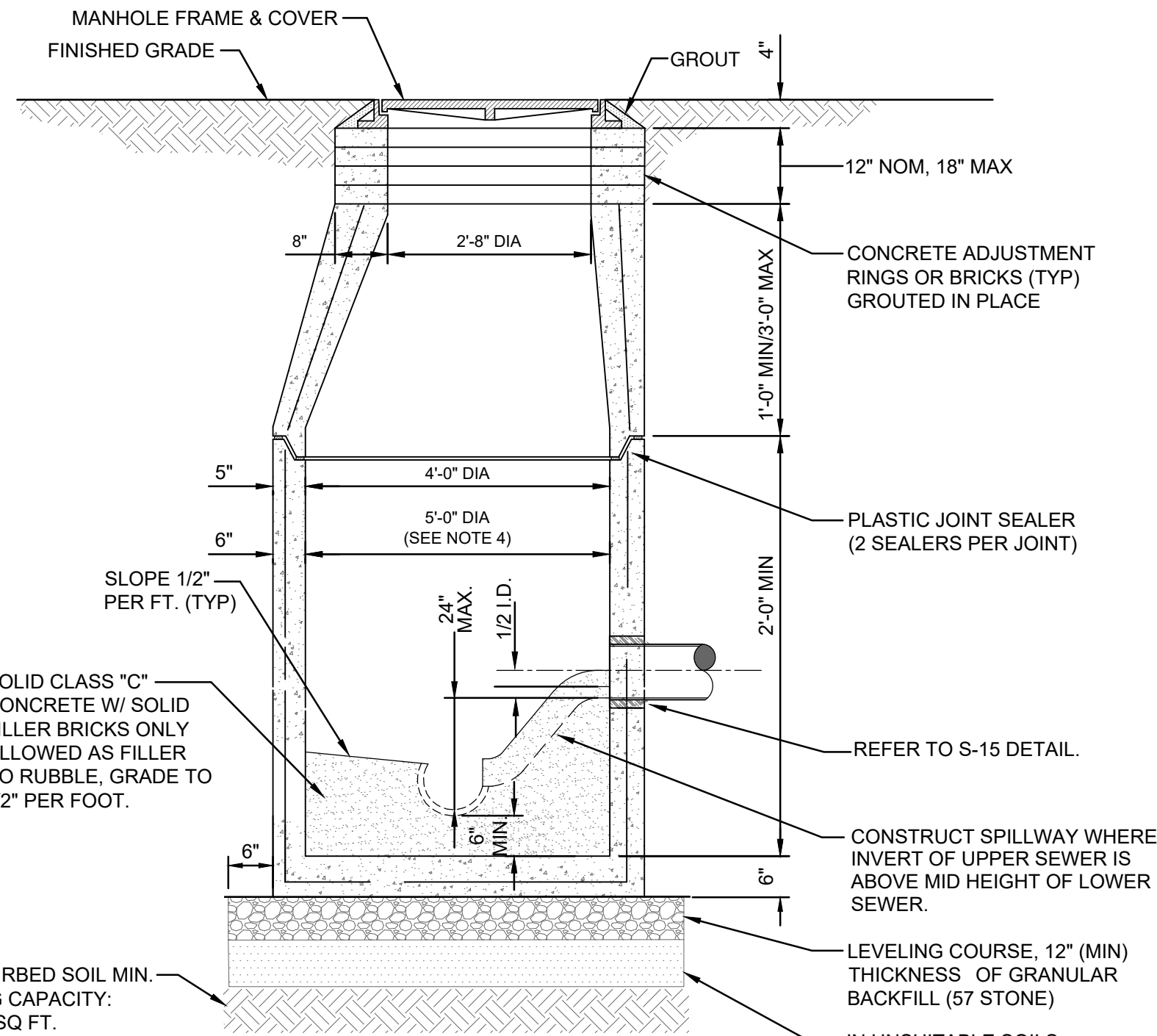
Z:\General\_Civil\Greenpoint\Tributary Spine Road\Tributary Spine Road\design\water and sewer details\WASTEWATER DETAILS 2024.dwg      Current Layout Tab = C21      Fri Dec 13, 2024      - 11:03



**NOTES:**

1. THE ANGLE BETWEEN ALL INFLUENT FLOW CHANNELS AND EFFLUENT PIPE SHALL BE BETWEEN 90° - 180° UNLESS OTHERWISE APPROVED BY JEA.

**PLAN VIEW (S-3)**  
(FOR SECTION VIEW SEE S-2)



**SECTION VIEW (S-2)**  
(FOR PLAN VIEW SEE S-3)

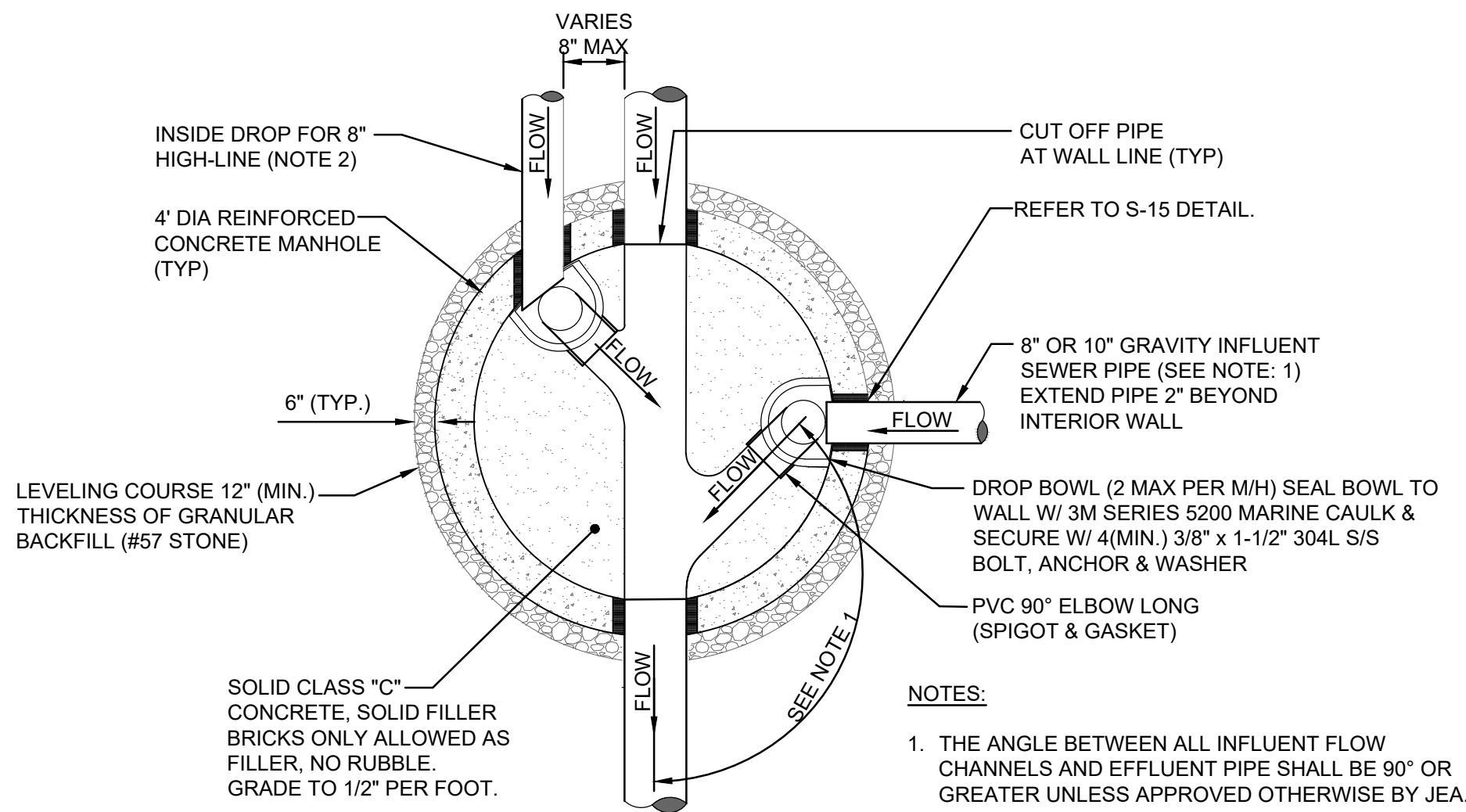
**NOTES:**

1. PRECAST MANHOLE SECTIONS TO BE MANUFACTURED IN ACCORDANCE WITH THE LATEST EDITIONS OF A.S.T.M. C-478 WITH 4000 LB. CONC., TYPE II CEMENT. ALL LIFTING HOLES AND OUTSIDE INSERTS SHALL BE FILLED WITH NON-SHRINK GROUT AND COATED WITH BITUMINOUS WATERPROOFING MATERIAL.
2. THE INTERIOR AND EXTERIOR OF MANHOLE AND ADJUSTING RINGS SHALL BE GIVEN TWO COATS OF BITUMINOUS WATERPROOFING MATERIAL.
3. IF SPECIALTY LINER IS TO BE INSTALLED ON INSIDE SURFACE OF MANHOLE, THE BITUMINOUS WATERPROOFING MATERIAL SHALL BE OMITTED ON THE INSIDE.
4. JUNCTION MANHOLE (CLOSEST TO WETWELL) SHALL BE 5' DIA WITH SPECIALTY LINER.
5. SEAL ALL EXTERIOR JOINTS PER PLATE S-17.
6. IN SILTS, CLAY OR HIGHLY ORGANIC SOILS (FINE-GRAINED SOILS INCLUDING SOIL GROUPS ML, CL, OL, MH, CH, OH AND PT) THE SOILS SHALL BE OVER-EXCAVATED AN ADDITIONAL 24" (AT A MIN.) AND BACKFILLED WITH AASHTO CLASS A-3 SOIL (COMPACTED TO 98%, ASTM D1557) OR OVER-EXCAVATE AN ADDITIONAL 12" (AT A MIN.) AND BACKFILL WITH GRANULAR BACKFILL (#57 STONE).

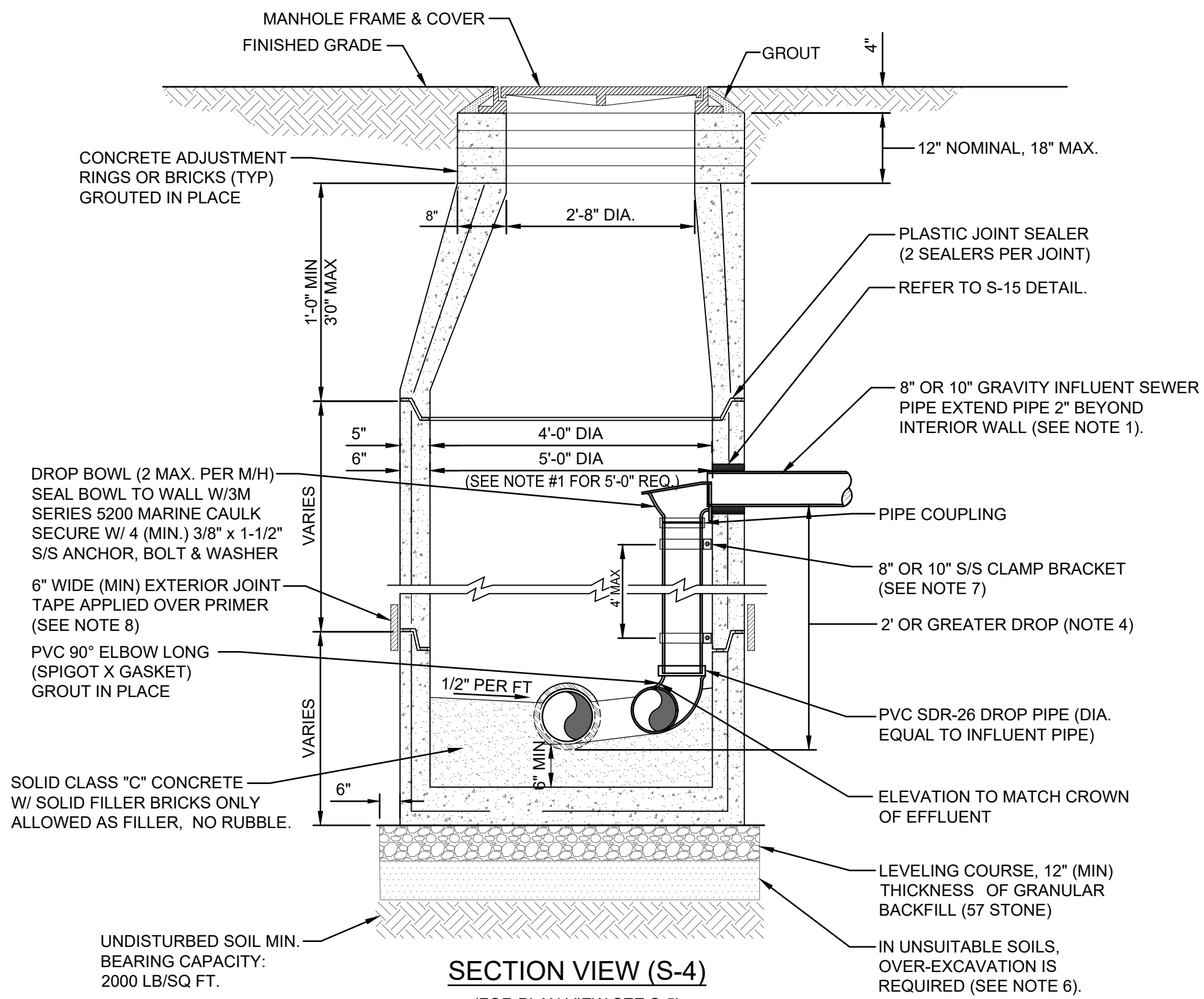
**SANITARY SEWER TYPE "A" MANHOLE**  
**8"-21" SEWERS**

JANUARY 2024

PLATES S-2, S-3



**PLAN VIEW (S-5)**  
(FOR SECTION VIEW SEE S-4)



**SECTION VIEW (S-4)**  
(FOR PLAN VIEW SEE S-5)

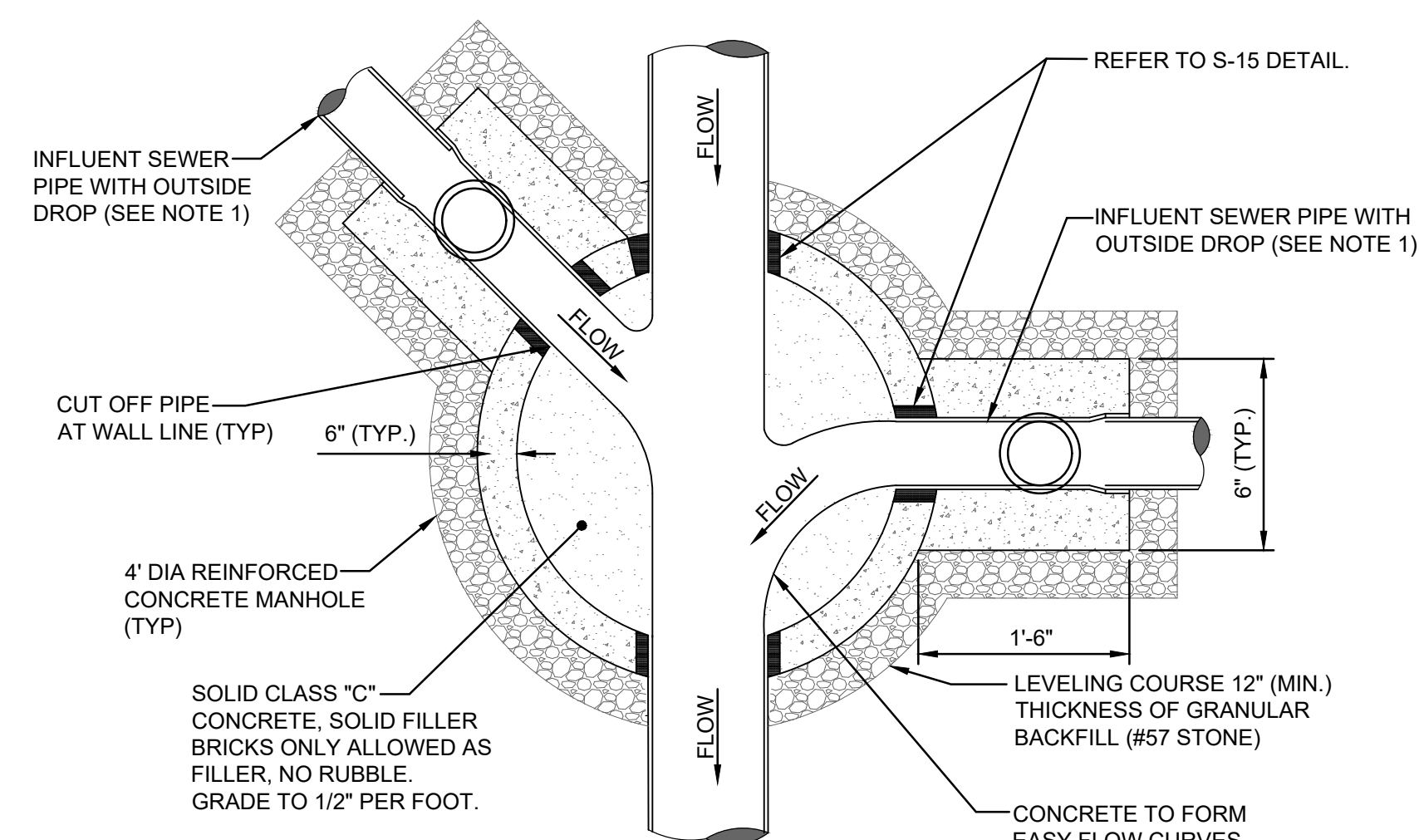
**NOTES:**

1. THIS ASSEMBLY IS FOR 8" OR 10" GRAVITY INFLUENT LINES ONLY. NO DROPS ALLOWED FOR FORCE MAINS. MAXIMUM OF 2 INSIDE DROP BOWLS PER MANHOLE. A 5'-0" DIA. MANHOLE (6" THICK WALLS) IS REQUIRED IF TWO INSIDE DROPS ARE CONSTRUCTED WITH ONE OR BOTH BEING 10" SIZE. DROP BOWL BY RELINER OR APPROVED EQUAL REQUIRED. THE INSIDE DROP FOR AN 8" HIGH-LINE SHALL BE CONSTRUCTED SIMILAR TO ABOVE (SEE PLATE S-5).
2. PRECAST MANHOLE SECTIONS TO BE MANUFACTURED IN ACCORDANCE WITH THE LATEST EDITIONS OF A.S.T.M. C-478 WITH 4000 LB. CONC., TYPE II CEMENT. ALL LIFTING HOLES AND OUTSIDE INSERTS SHALL BE FILLED WITH NON-SHRINK GROUT AND COATED WITH BITUMINOUS WATERPROOFING MATERIAL.
3. THE INTERIOR AND EXTERIOR OF MANHOLE AND THE INTERIOR OF ADJUSTMENT RINGS SHALL BE GIVEN TWO COATS OF BITUMINOUS WATERPROOFING MATERIAL.
4. TYPE "B" MANHOLE MUST BE USED FOR 2' OR GREATER INFLUENT PIPE DROPS.
5. THE DROP BOWL ASSEMBLY SHALL BE INSTALLED PRIOR TO APPLICATION OF SPECIALTY LINING MATERIAL.
6. A TYPE "D" MANHOLE SHALL BE UTILIZED WHEN THREE OR MORE (2' OR GREATER) DROPS ARE INVOLVED OR WHEN INFLUENT PIPES AREA LARGER THAN 10" IN SIZE.
7. ADJUSTABLE CLAMPING BRACKET (MIN. 2 PER DROP BOWL ASSY). 1-1/2" WIDE, 11 GA. W/ 3/8" DIA. 18-8 PINCH BOLTS AND NUTS. SECURE TO MH WALL WITH (2) 3/8" X 1" BOLT, ANCHOR & WASHER PER BRACKET ASSY. ALL 304 OR 316 STAINLESS STEEL MATERIALS.
8. SEAL ALL EXTERIOR JOINTS PER PLATE S-17.
9. IN SILTS, CLAY OR HIGHLY ORGANIC SOILS (FINE-GRAINED SOILS INCLUDING SOIL GROUPS ML, CL, OL, MH, CH, OH AND PT) THE SOILS SHALL BE OVER-EXCAVATED AN ADDITIONAL 24" (AT A MIN.) AND BACKFILLED WITH AASHTO CLASS A-3 SOIL (COMPACTED TO 98%, ASTM D1557) OR OVER-EXCAVATE AN ADDITIONAL 12" (AT A MIN.) AND BACKFILL WITH GRANULAR BACKFILL (#57 STONE).

**SANITARY SEWER TYPE "B" MANHOLE**  
**8"-10" SEWERS**

JANUARY 2024

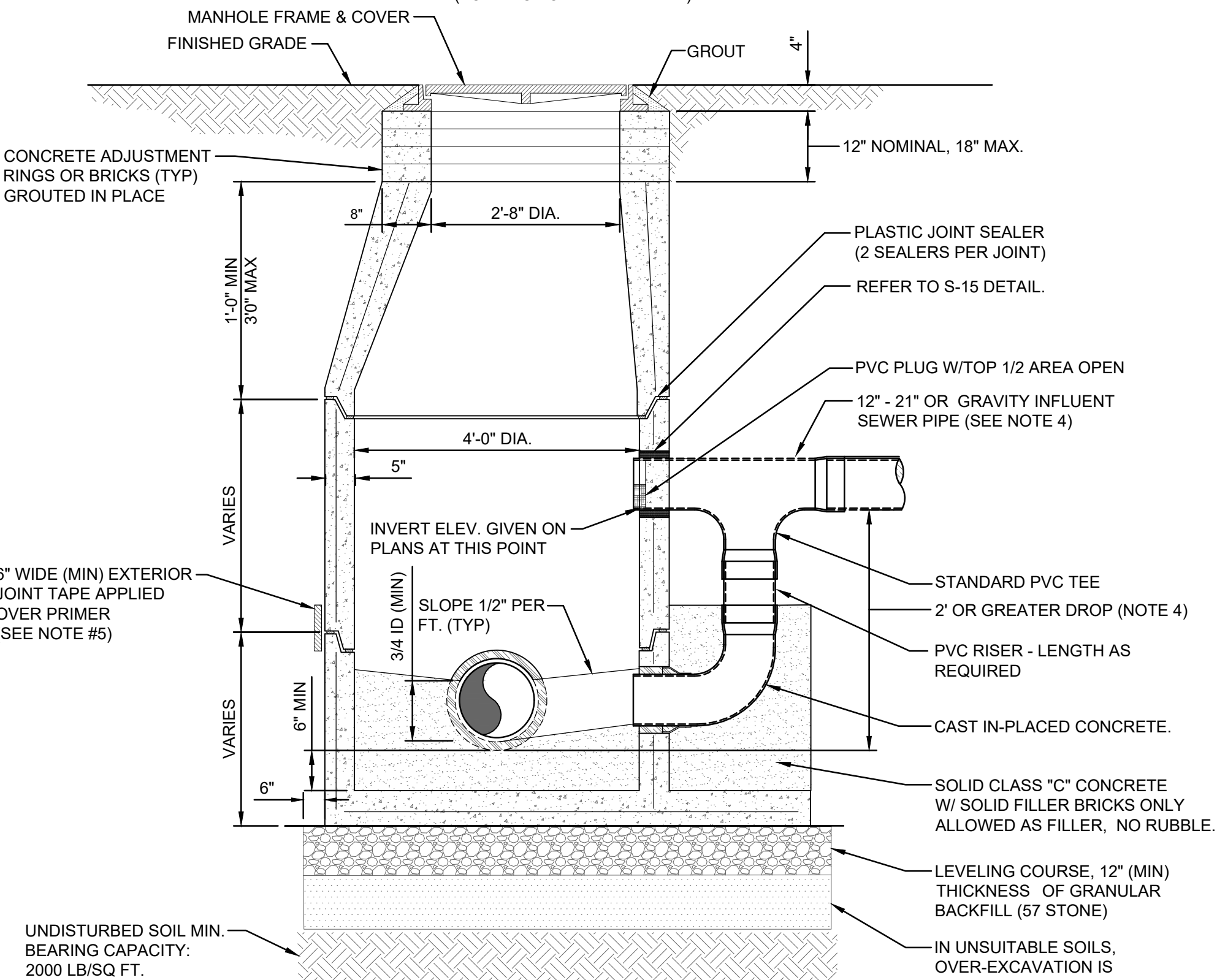
PLATES S-4, S-5



**NOTES:**

1. THE ANGLE BETWEEN ALL INFLUENT FLOW CHANNELS AND EFFLUENT PIPE SHALL BE 90° OR GREATER UNLESS APPROVED OTHERWISE BY JEA.
2. THE INTERIOR AND EXTERIOR OF THE MANHOLE AND THE INTERIOR OF THE ADJUSTMENT RINGS SHALL BE GIVEN 2 COATS OF BITUMINOUS WATERPROOFING MATERIAL.
3. IF SPECIALITY LINER IS TO BE INSTALLED ON INSIDE OF MANHOLE, THE BITUMINOUS WATERPROOFING MATERIAL SHALL BE OMITTED ON THE INSIDE.
4. TYPE "D" MANHOLES SHALL BE USED FOR 12" OR LARGER INFLUENT PIPES W/ 2' OR GREATER INFLUENT DROP.

**PLAN VIEW (S-8)**  
(FOR SECTION VIEW SEE S-7)



**SECTION VIEW (S-7)**  
(FOR PLAN VIEW SEE S-8)

**NOTES:**

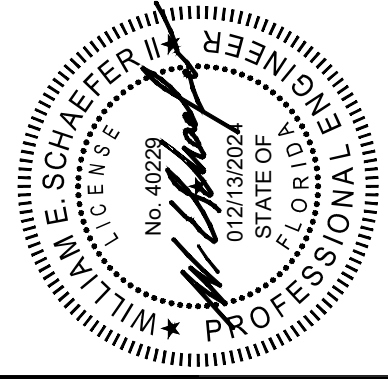
1. PRECAST MANHOLE SECTIONS TO BE MANUFACTURED IN ACCORDANCE WITH THE LATEST EDITIONS OF A.S.T.M. C-478 WITH 4000 LB. CONC., TYPE II CEMENT. ALL LIFTING HOLES AND OUTSIDE INSERTS SHALL BE FILLED WITH NON-SHRINK GROUT AND COATED WITH BITUMINOUS WATERPROOFING MATERIAL.
2. THE INTERIOR AND EXTERIOR OF MANHOLE AND THE INTERIOR OF THE ADJUSTMENT RINGS SHALL BE GIVEN TWO COATS OF BITUMINOUS WATERPROOFING MATERIAL.
3. IF SPECIALTY LINER IS TO BE INSTALLED ON INSIDE SURFACE OF MANHOLE, THE BITUMINOUS WATERPROOFING SHALL BE OMITTED ON INSIDE.
4. TYPE "D" MANHOLE SHALL BE USED FOR 12" OR LARGER INFLUENT PIPES W/ 2' OR GREATER INFLUENT DROP.
5. SEAL ALL EXTERIOR JOINTS PER PLATE S-17.
6. IN SILTS, CLAY OR HIGHLY ORGANIC SOILS (FINE-GRAINED SOILS INCLUDING SOIL GROUPS ML, CL, OL, MH, CH, OH AND PT) THE SOILS SHALL BE OVER-EXCAVATED AN ADDITIONAL 24" (AT A MIN.) AND BACKFILLED WITH AASHTO CLASS A-3 SOIL (COMPACTED TO 98%, ASTM D1557) OR OVER-EXCAVATE AN ADDITIONAL 12" (AT A MIN.) AND BACKFILL WITH GRANULAR BACKFILL (#57 STONE).

**SANITARY SEWER TYPE "D" MANHOLE**  
**12"-21" SEWERS**

JANUARY 2024

PLATES S-7, S-8

DOMINION ENGINEERING GROUP, INC.  
4348 SOUTHPOINT BLVD., SUITE 204  
JACKSONVILLE, FLORIDA 32216  
904-854-4500



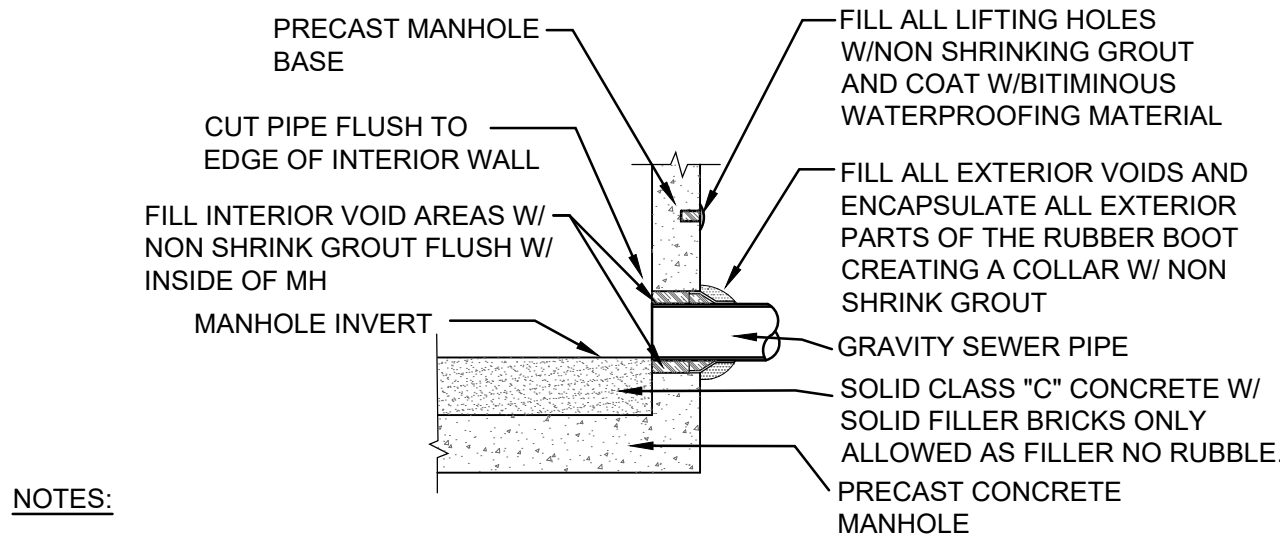
DESIGNED BY:  
DRAWN BY:  
DATE: 01/13/2024  
CHECKED BY:  
DATE:



JEA STANDARD  
SANITARY SEWER DETAILS

PROJ. NO.  
DATE: JANUARY 2014  
SCALE: AS NOTED  
NO. SHEETS: 1  
SHEET NO.: 5  
DRAWING NO.: C21

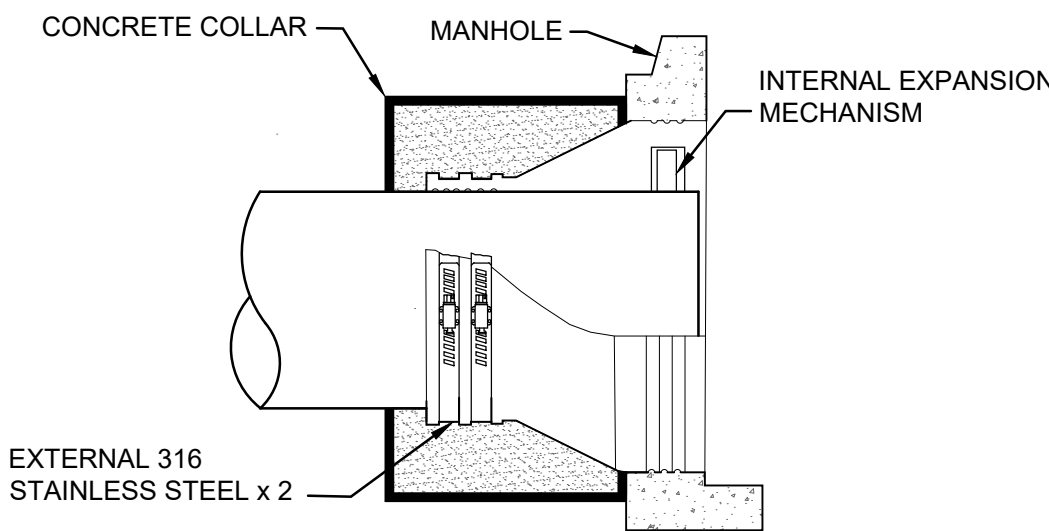
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NOTES:  
RUBBER BOOT, DOUBLE BANDED, 316 S/S CLAMPS, MEETING THE ASTM C923 STANDARD, Kor-N-Seal® I EX SERIES CONNECTOR WITH DOUBLE STAINLESS STEEL BANDS OR EQUAL

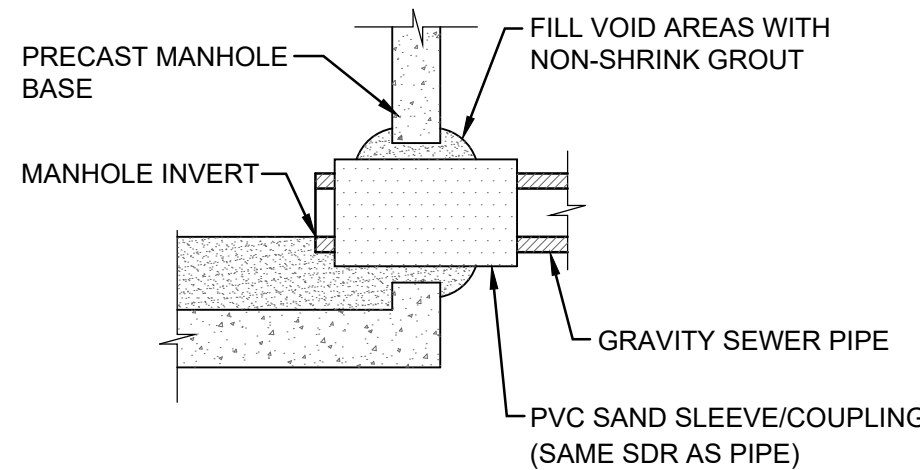
#### RUBBER BOOT

(FOR NEW M/H CONSTRUCTION ONLY, MAXIMUM DEPTH 15FT)



#### RUBBER BOOT DETAIL

(FOR EXISTING AND NEW M/H CONSTRUCTION)



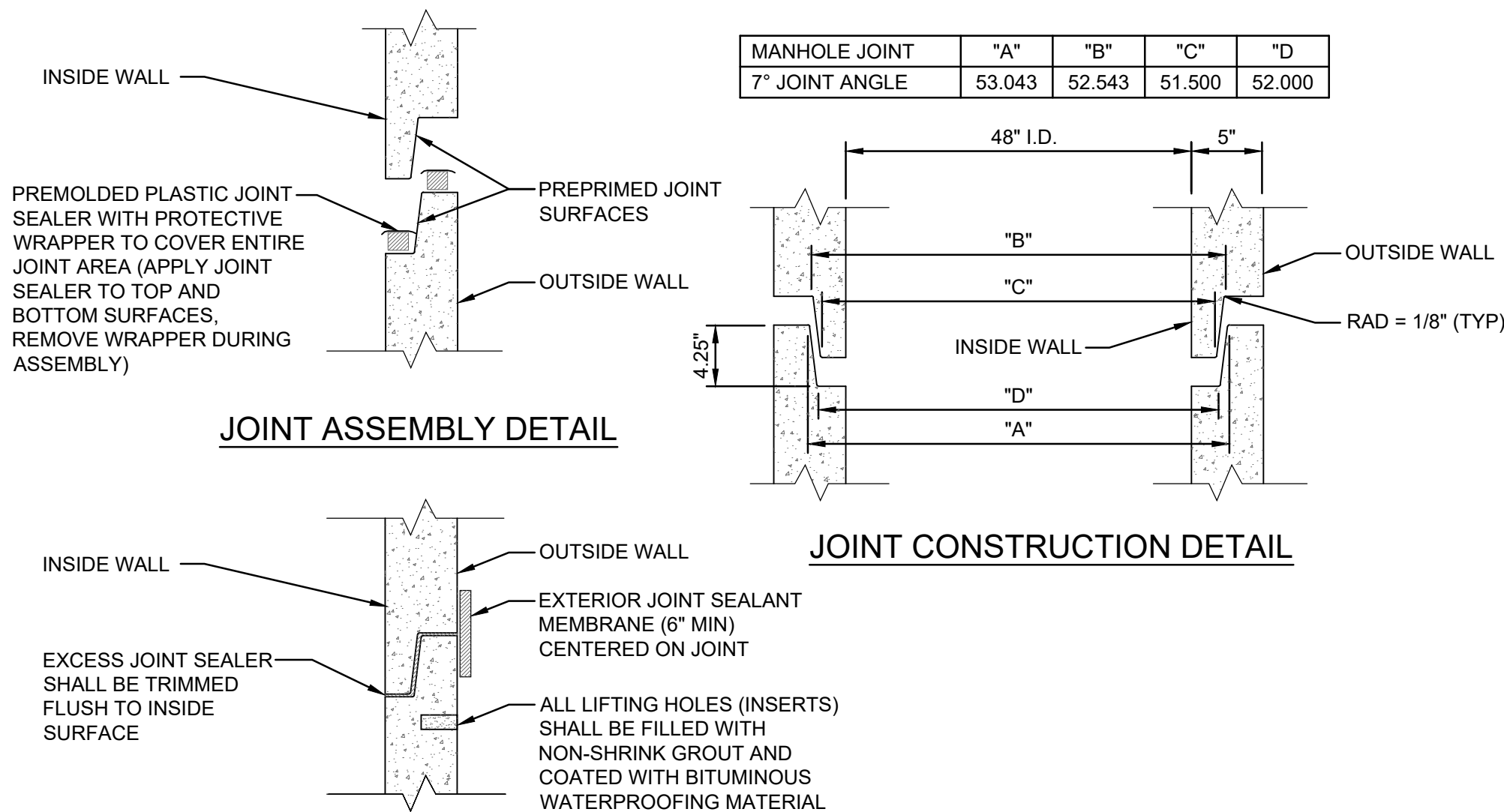
#### PVC SAND SLEEVE

(FOR EXISTING AND NEW M/H CONSTRUCTION)

### CONCRETE AND POLYMER MANHOLE PIPE CONNECTION DETAILS

JANUARY 2024

PLATE S-15



MANHOLE JOINT	"A"	"B"	"C"	"D"
7" JOINT ANGLE	53.043	52.543	51.500	52.000

#### COMPLETED JOINT DETAIL

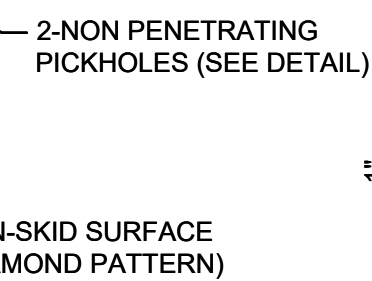
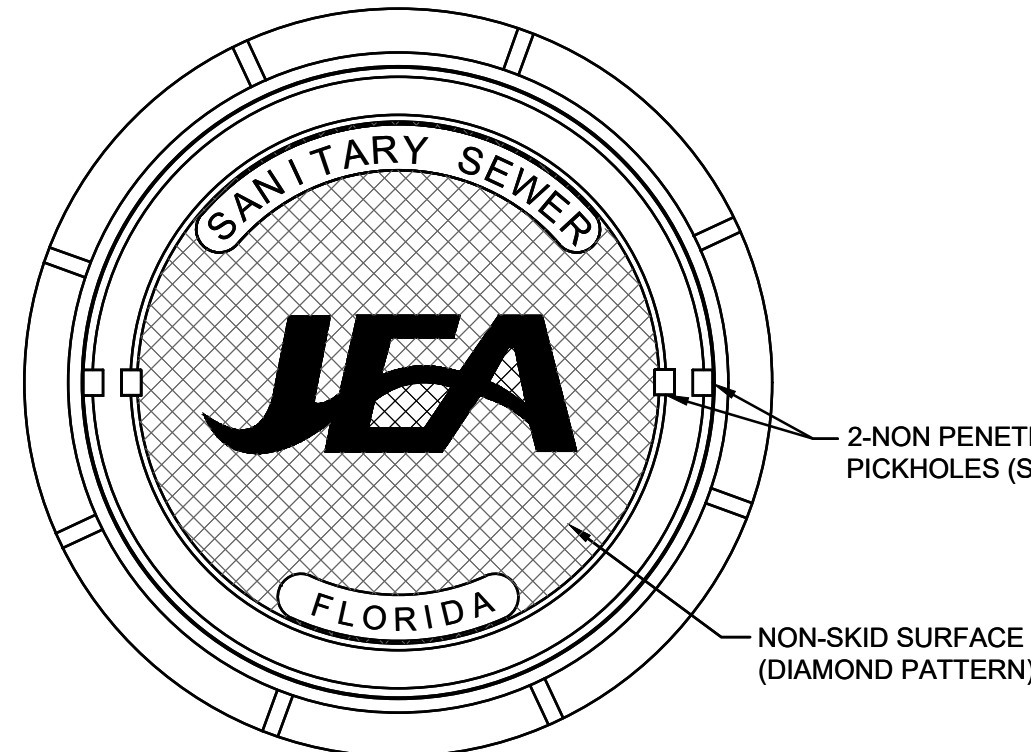
#### NOTES

ALL EXTERIOR MANHOLE JOINTS, INCLUDING BASE, RISER, AND CONE SECTIONS, AS WELL AS ADJUSTING RINGS TO BE SEALED IN ACCORDANCE WITH WATER AND WASTEWATER STANDARDS, SECTION 427 - WASTEWATER MANHOLES

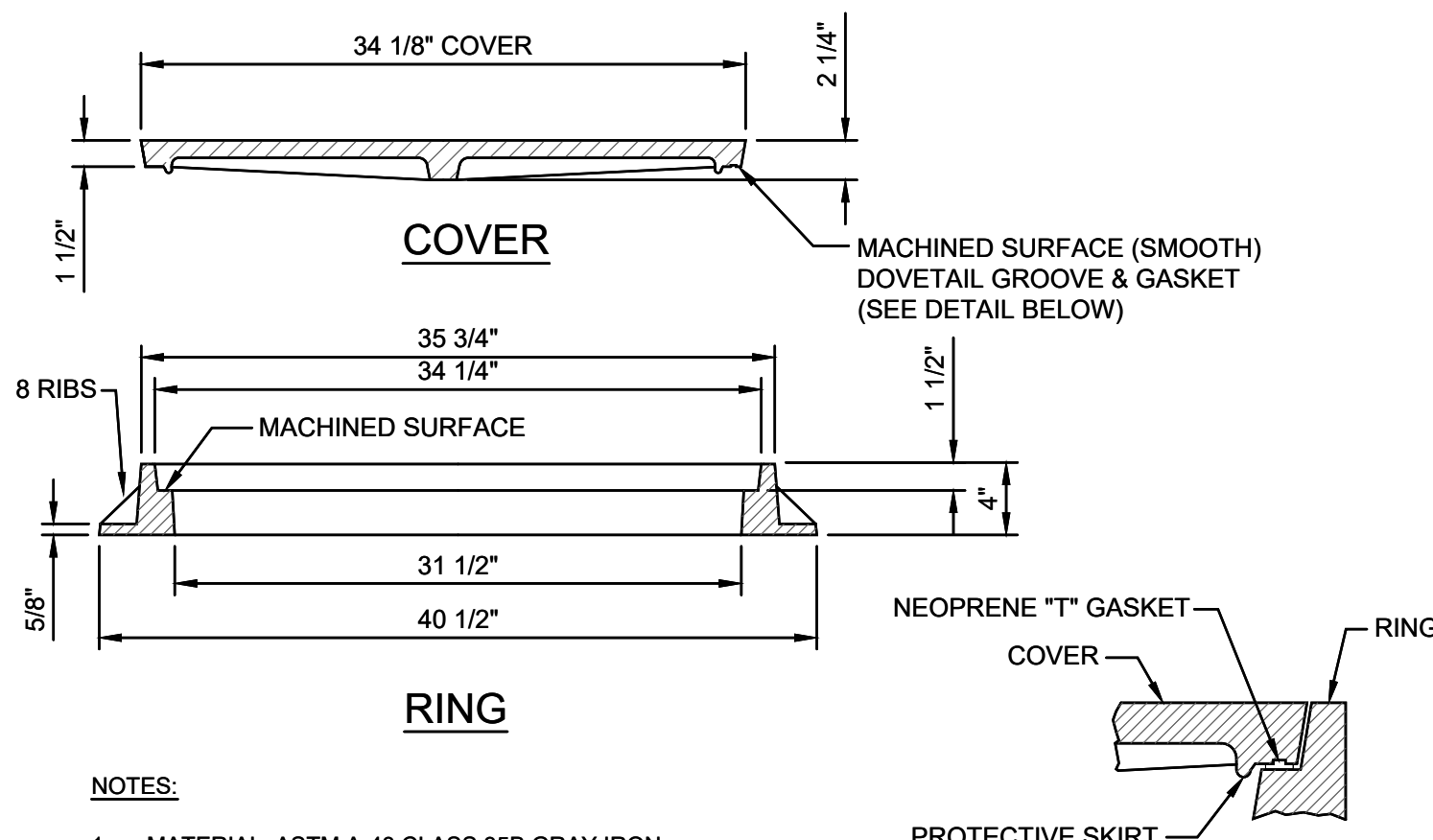
### PRECAST SEWER MANHOLE JOINT DETAIL

JANUARY 2024

PLATE S-17



#### PICKHOLE DETAIL



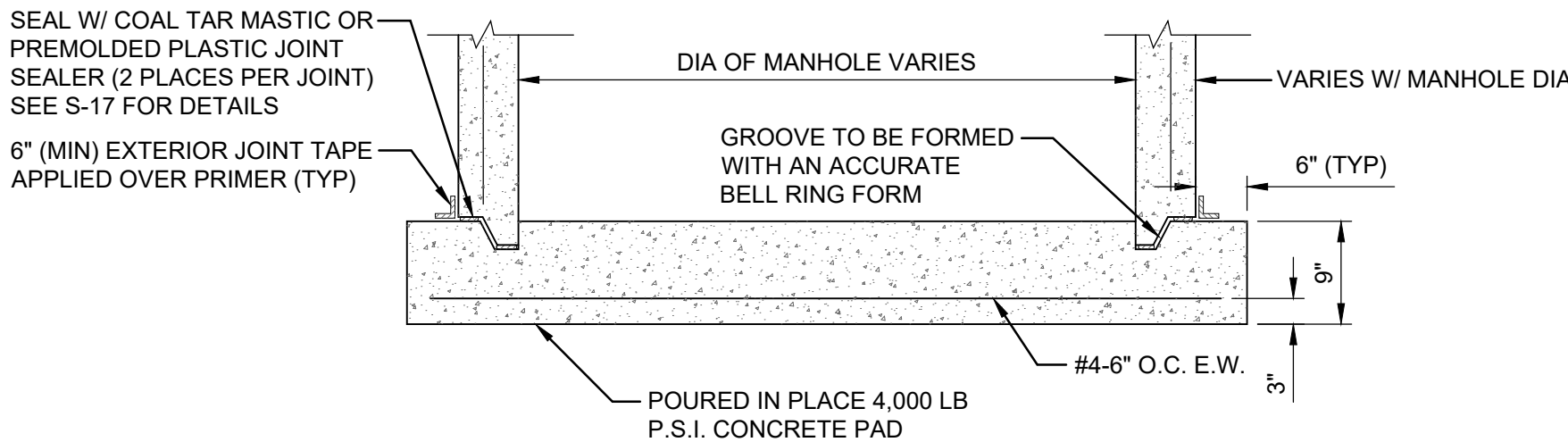
#### NOTES:

1. MATERIAL: ASTM A-48 CLASS 35B GRAY IRON.
2. RING WEIGHT 230 LBS APPROX.
3. COVER WEIGHT 230 LBS. APPROX.
4. ALL DIMENSIONS ARE SHOWN IN INCHES.
5. FOR MANHOLES WHICH WILL BE MAINTAINED BY JEA (INCLUDING UTILITY DEDICATION PROJECTS), THE COVER SHALL INCLUDE THE "JEA" LOGO AND A NEOPRENE GASKET.
6. FOR MANHOLES WHICH WILL BE MAINTAINED BY PARTIES OTHER THAN JEA (SUCH AS PRIVATE SEWER COLLECTION SYSTEMS, PRIVATE (FORCE MAIN) PUMP OUT BOX AND SYSTEMS NOT MAINTAINED BY JEA), THE COVER SHALL INCLUDE "SANITARY SEWER" GENERIC LETTERING (NO "JEA" LOGO OR NEOPRENE GASKET).
7. SEAL ALL EXTERIOR JOINTS PER PLATE S-17.

### SANITARY SEWER MANHOLE FRAME AND COVER

JANUARY 2024

PLATE S-1



#### NOTES:

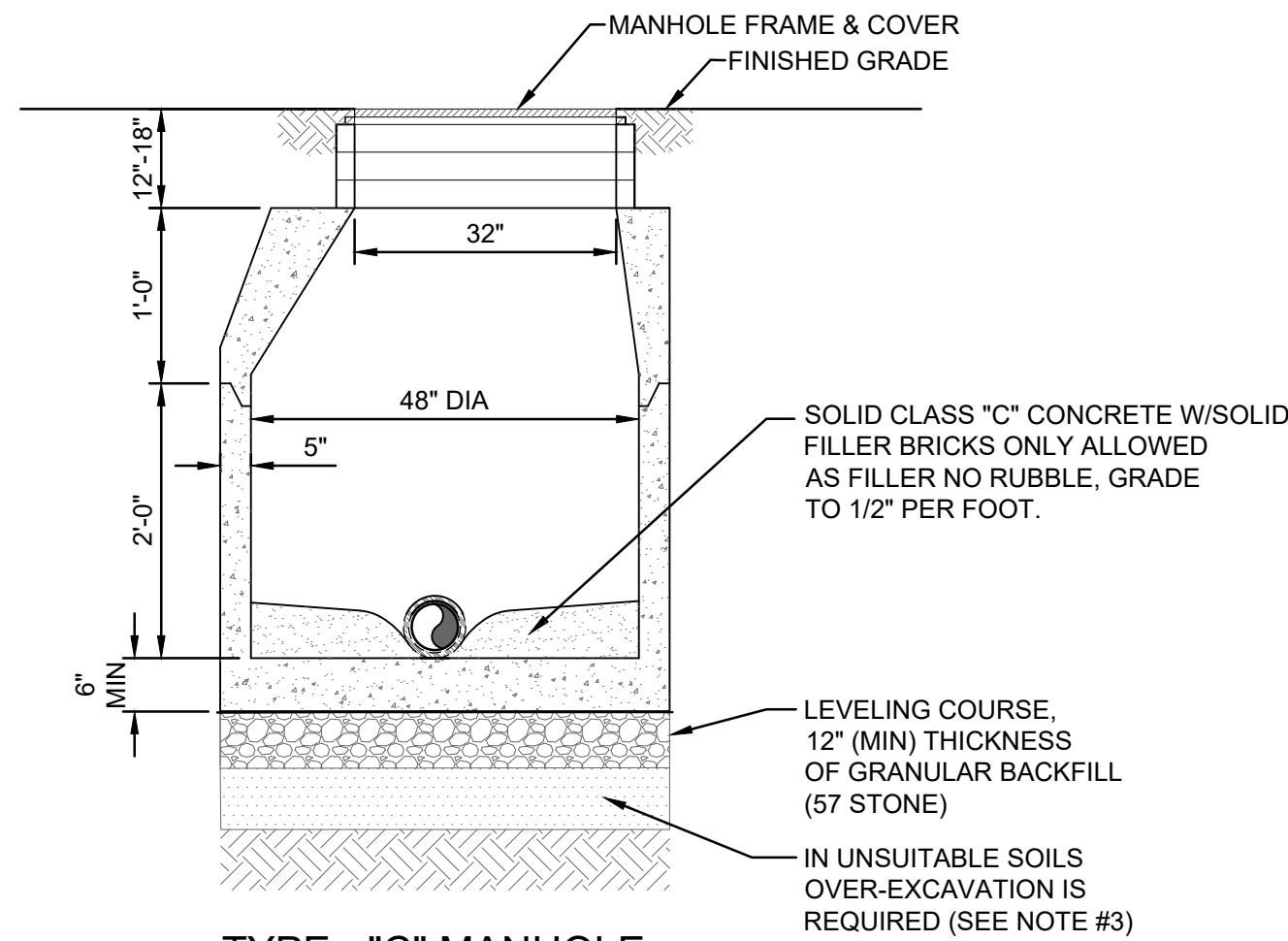
THE USE OF THE POURED IN PLACE MANHOLE BOTTOM SHALL BE MINIMIZED AND SHALL BE SPECIFICALLY APPROVED BY JEA PRIOR TO CONSTRUCTION.

#### MANHOLE BOTTOM

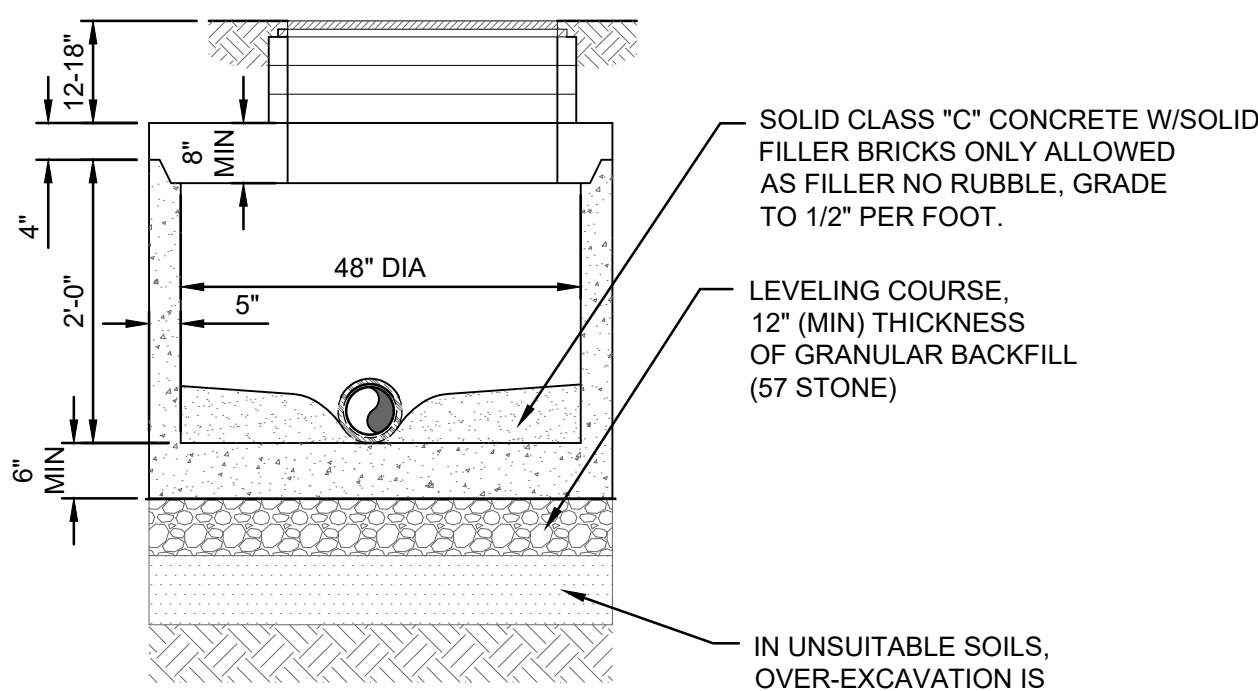
### MANHOLE BOTTOM DETAILS

JANUARY 2024

PLATE S-15A



#### TYPE - "C" MANHOLE



#### TYPE - "C" MANHOLE WITH FLAT TOP

#### SECTION VIEWS

#### NOTES:

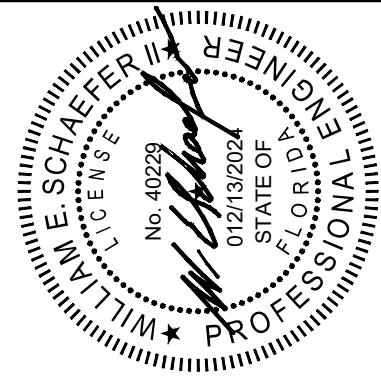
1. PRECAST MANHOLE SECTIONS TO BE MANUFACTURED IN ACCORDANCE WITH THE LATEST EDITIONS OF A.S.T.M. C-478 WITH 4000 LB. CONC., TYPE II CEMENT. ALL LIFTING HOLES AND OUTSIDE INSERTS SHALL BE FILLED WITH NON-SHRINK GROUT AND COATED WITH BITUMINOUS WATERPROOFING MATERIAL.
2. THE INTERIOR AND EXTERIOR OF MANHOLE AND INTERIOR OF ADJUSTMENT RINGS SHALL BE GIVEN TWO COAT OF BITUMINOUS WATERPROOFING MATERIAL.
3. IN SILTS, CLAY OR HIGHLY ORGANIC SOILS (FINE-GRAINED SOILS INCLUDING SOIL GROUPS ML, CL, OL, MH, CH, OH AND PT) THE SOILS SHALL BE OVER-EXCAVATED AN ADDITIONAL 24" (AT A MIN.) AND BACKFILLED WITH AASHTO CLASS A-3 SOIL (COMPACTED TO 98%, ASTM D1557) OR OVER-EXCAVATE AN ADDITIONAL 12" (AT A MIN.) AND BACKFILL WITH GRANULAR BACKFILL (57 STONE).
4. SEAL ALL EXTERIOR JOINTS PER PLATE S-17.

### SANITARY SEWER TYPE "C" MANHOLE 8"-21" SEWERS

JANUARY 2024

PLATE S-6

DOMINION ENGINEERING GROUP, INC.  
4348 SOUTHPOINT BLVD, SUITE 204  
JACKSONVILLE, FLORIDA 32216  
904-854-4500



DESIGNED BY:  
DATE:

DRAWN BY:  
DATE:

CHECKED BY:  
DATE:

JEA STANDARD  
SANITARY SEWER DETAILS

PROJ. NO.  
DATE: JANUARY 2014

SHEET NO.  
SCALE: AS NOTED

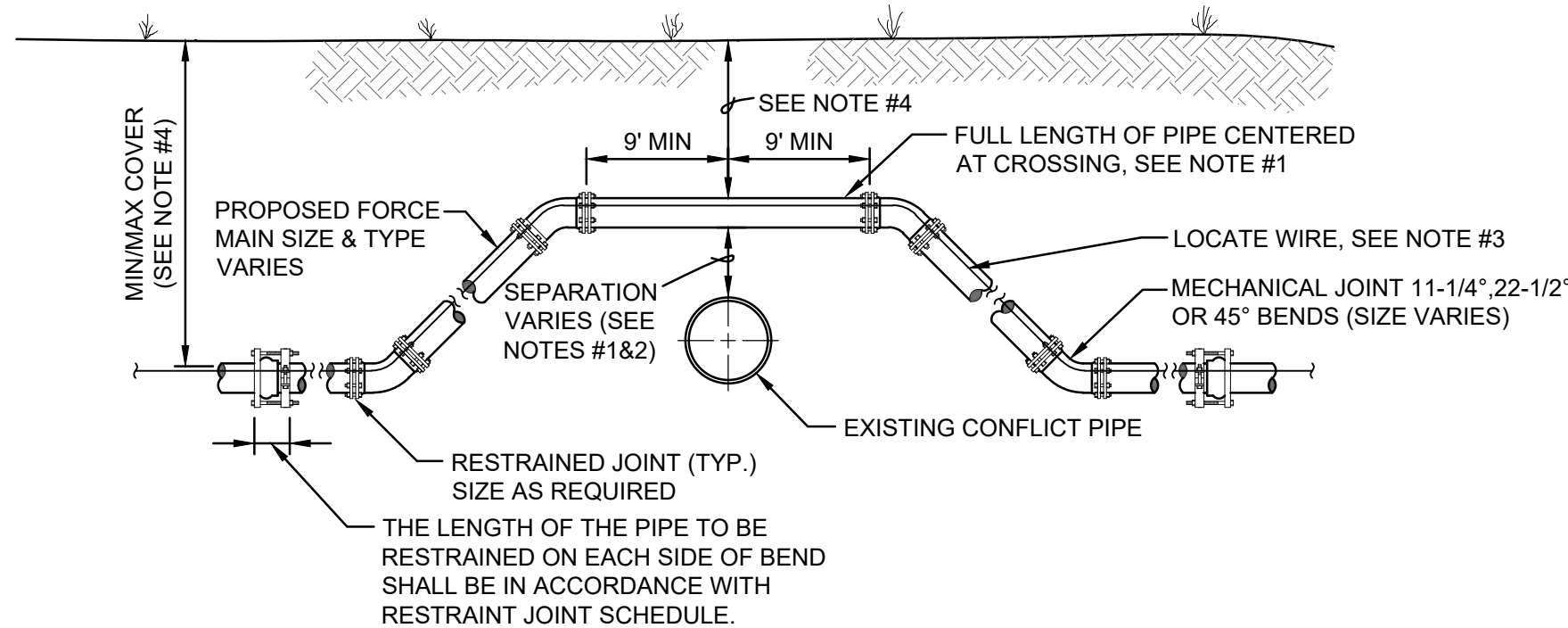
DRAWING NO.  
C22

NO. SHEETS  
1

SHEET NO.  
5

DRAWING NO.  
C22

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Current Layout Tab = C23  
Fri Dec 13, 2024 — 11:07



CASE "A" CROSSING

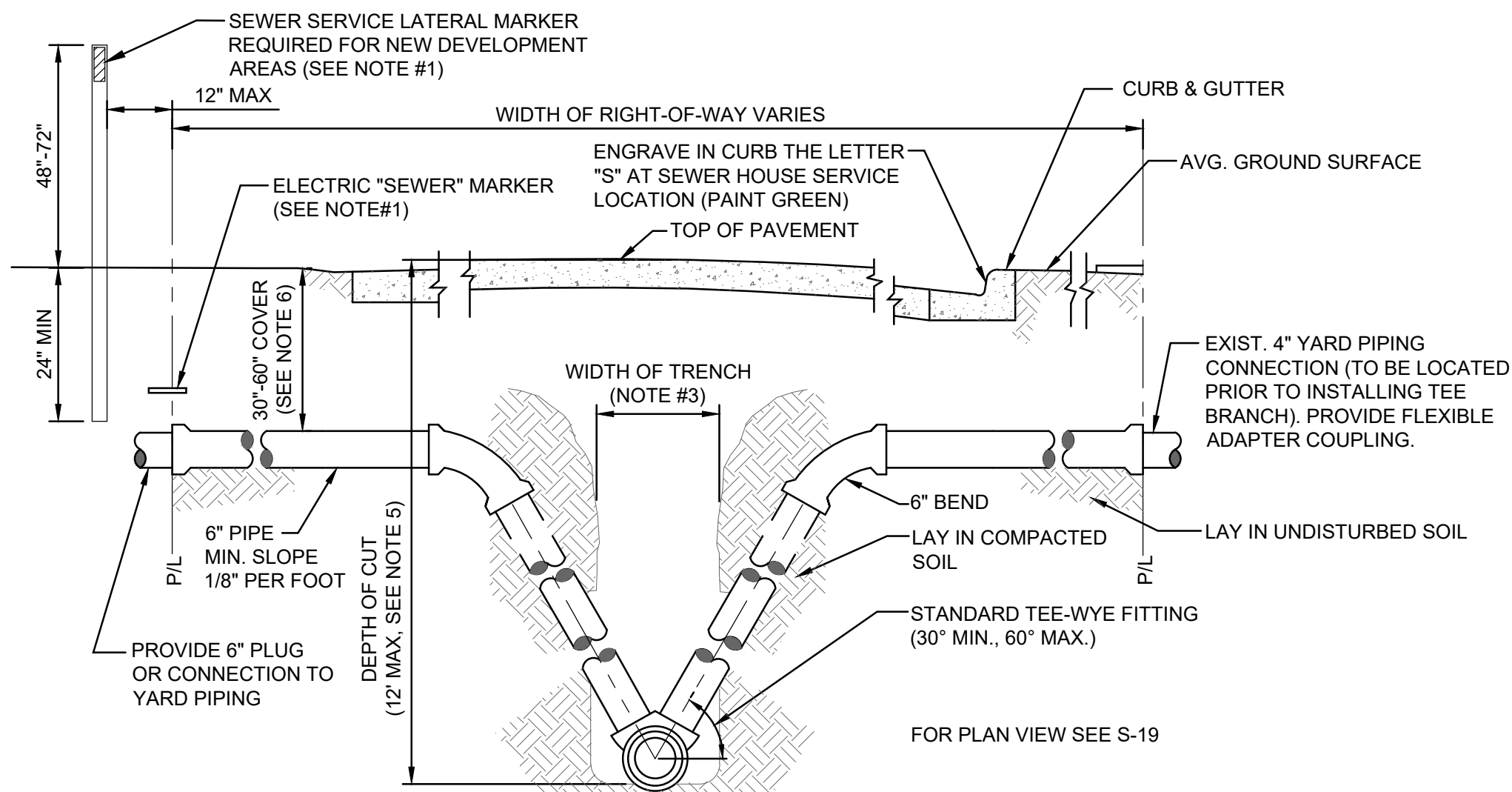
NOTES:

- IF EXISTING CONFLICT PIPE IS A WATER OR RECLAIMED WATER MAIN, 12-INCHES OF SEPARATION IS REQUIRED. A FULL LENGTH OF PIPE SHALL BE CENTERED OVER EXISTING UTILITY MAIN TO PROVIDE MAXIMUM JOINT SPACING FOR ALL CROSSINGS.
- FOR OTHER LOCATION LIMITATIONS SEE DETAIL (S-26 & S-27).
- LOCATING WIRE REQUIRED: SEE DETAIL S-49.
- THE COVER FOR PIPING LESS THAN 24" SIZE SHALL BE 30" (MIN) IN UNPAVED AREAS, 36" (MIN) IN PAVED AREAS AND A MAXIMUM COVER OF 60", UNLESS PRE-APPROVED BY JEA. THE COVER FOR PIPING 24" SIZE AND LARGER SHALL BE 36" (MIN) IN PAVED AND UNPAVED AREAS AND A MAXIMUM COVER OF 84", UNLESS APPROVED BY JEA.
- THE SOILS BETWEEN THE MAIN AND THE CONFLICT PIPE SHALL BE COMPACTED TO 98% OF THE MAXIMUM DENSITY AS DETERMINED BY THE LABORATORY MODIFIED PROCTOR TEST ASTM D 1557.

ADJUSTMENT OVER EXISTING UTILITIES  
MECHANICAL RESTRAINTS

JANUARY 2024

PLATE S-39



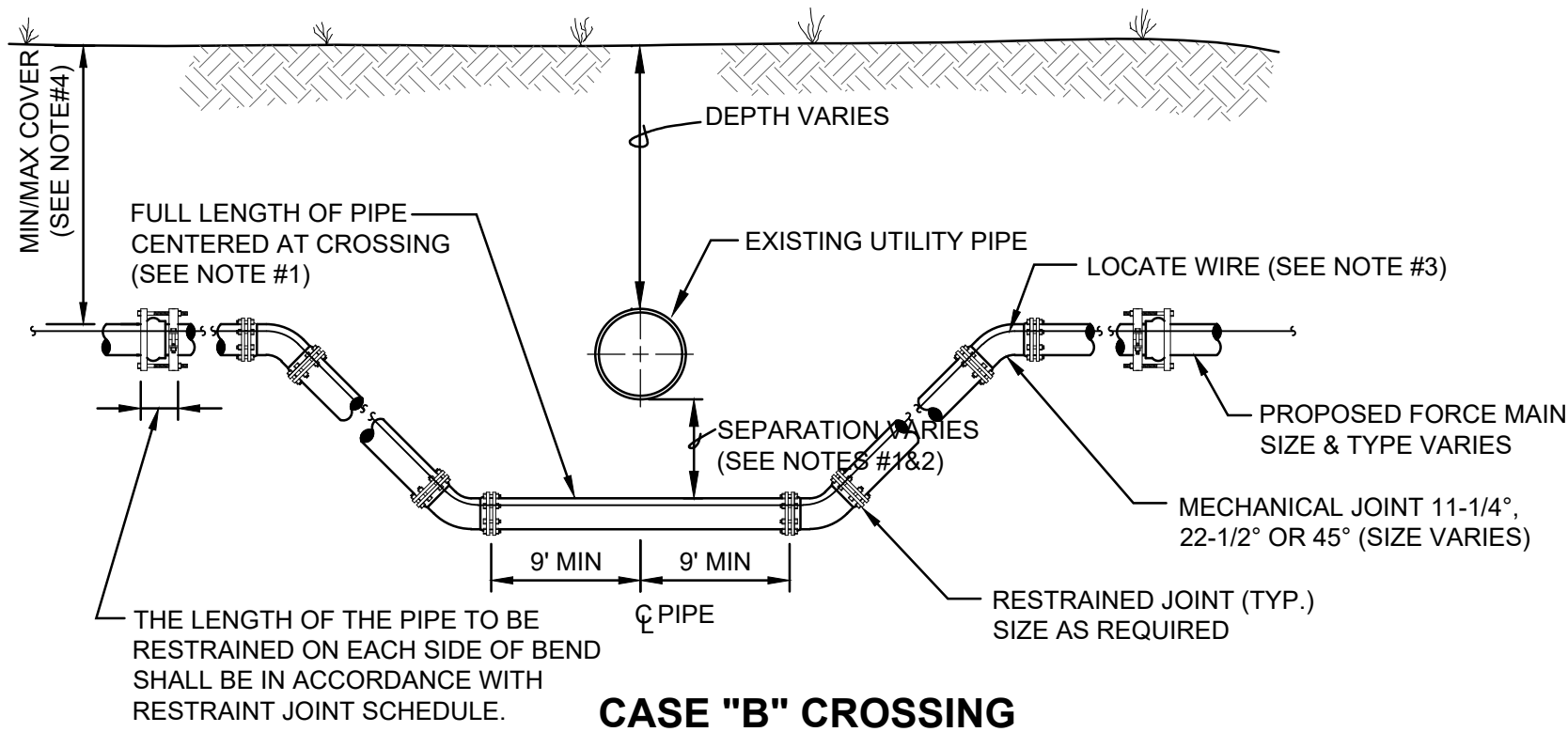
NOTES:

- TO MARK THE LOCATION OF THE 6" PLUG FOR NEW SERVICE: FOR PROJECTS WHERE NO CONCRETE CURB EXIST, AN ELECTRONIC "SEWER" MARKER IS REQUIRED FOR ALL LATERALS WHICH ARE "NOT" IN USE". FOR NEW DEVELOPMENT AREAS WHERE THE SEWER LATERAL IS "NOT" IN USE", A LANDSCAPE TIMBER OR 3x3 MIN. P.T. POST (TOP PAINTED GREEN) SHALL BE INSTALLED. WHERE REQUIRED BY JEA OR NO CONCRETE CURB EXIST, AN ELECTRONIC "SEWER" MARKER SHALL BE INSTALLED TO MARKER SHALL ALSO BE INSTALLED.
- THE MINIMUM SIZE OF ALL HOUSE LATERALS SHALL BE 6 INCHES. THE MAXIMUM LENGTH OF A HOUSE LATERAL SHALL BE 60 FEET (LENGTH BETWEEN SEWER MAIN OR MANHOLE TO CUSTOMERS PROPERTY LINE).
- SEE MEASUREMENT AND PAYMENT SECTION FOR MAXIMUM PAYMENT WIDTHS.
- ALL GRAVITY SEWER MAINS AND ASSOCIATED SEWER LATERAL PIPE AND FITTINGS (INCLUDING THE TEE-WYE FITTING) SHALL BE PVC SDR-26.
- UNLESS APPROVED OTHERWISE BY A JEA O&M MANAGER, NO GRAVITY SEWER MAIN WITH SEWER SERVICE LATERALS SHALL BE CONSTRUCTED WITH A "DEPTH OF CUT" GREATER THAN 12 FEET.
- SEWER SERVICE LATERALS ASSOCIATED WITH GRAVITY SEWER MAINS WHICH ARE DEEPER THAN 12 FEET, MUST BE ROUTED TO A GRAVITY SEWER HIGH-LINE, A MANHOLE OR OTHER JEA APPROVED METHOD.
- THE SEWER SERVICE LATERAL SHALL BE CONSTRUCTED AT A DEPTH TO ALLOW A GRAVITY CONNECTION BY THE CUSTOMER, WHERE POSSIBLE (CONTINGENT UPON MEETING THE CUSTOMER'S ON-SITE CONDITIONS AND LOCAL CONSTRUCTION STANDARDS). A LATERAL REQUIRING MORE THAN 60" OF COVER MUST BE APPROVED, PRIOR TO CONSTRUCTION, BY JEA.

HOUSE LATERAL - SECTION VIEW

JANUARY 2024

PLATE S-20



CASE "B" CROSSING

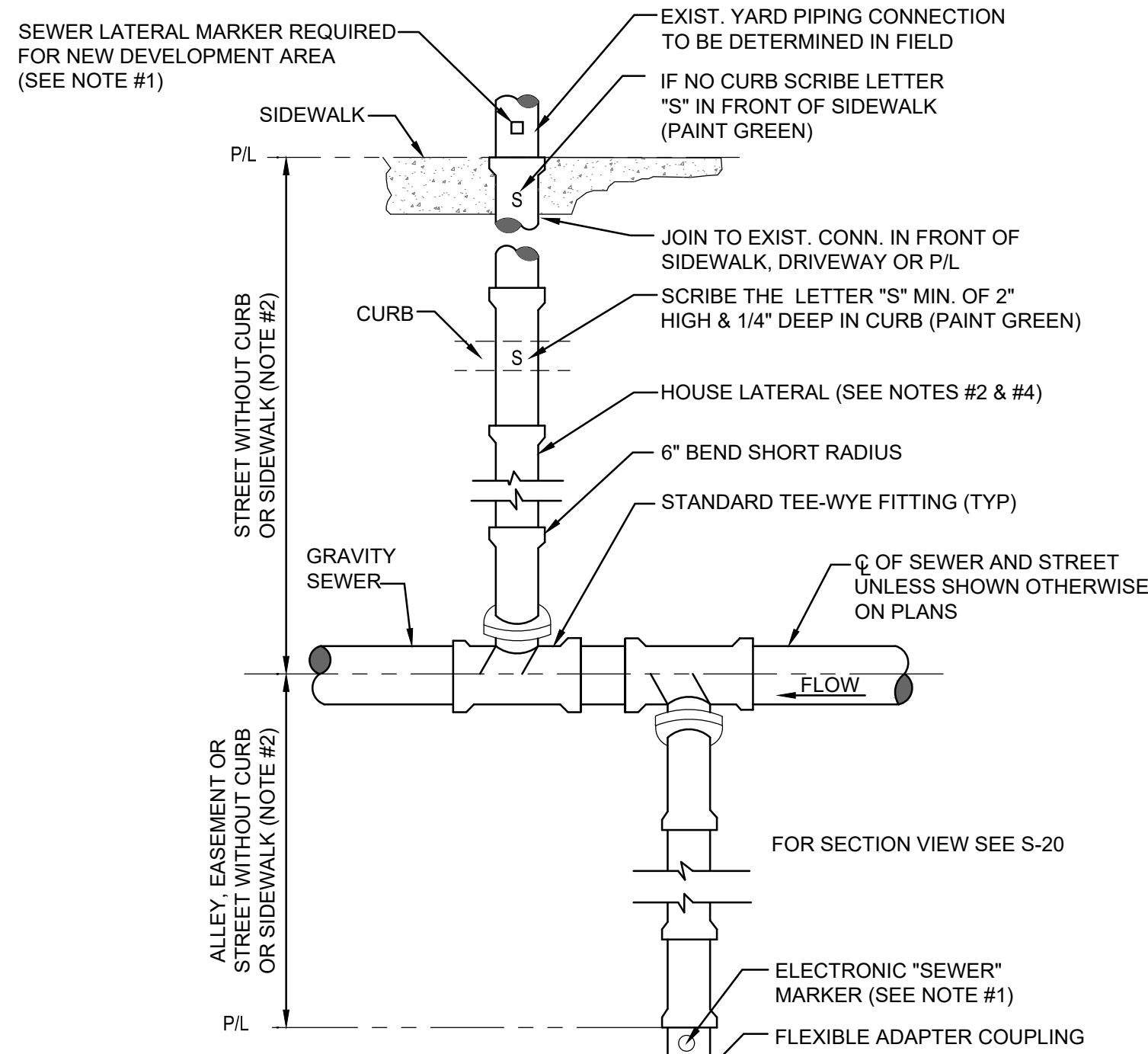
NOTES:

- IF EXISTING CONFLICT PIPE IS A WATER OR RECLAIMED WATER MAIN, 12-INCHES OF SEPARATION IS REQUIRED. A FULL LENGTH OF PIPE SHALL BE CENTERED OVER EXISTING UTILITY MAIN TO PROVIDE MAXIMUM JOINT SPACING FOR ALL CROSSINGS.
- FOR OTHER LOCATION LIMITATIONS SEE DETAIL (S-26 & S-27).
- LOCATING WIRE REQUIRED: SEE DETAIL S-49.
- THE COVER FOR PIPING LESS THAN 24" SIZE SHALL BE 30" (MIN) IN UNPAVED AREAS, 36" (MIN) IN PAVED AREAS AND A MAXIMUM COVER OF 60", UNLESS PRE-APPROVED BY JEA. THE COVER FOR PIPING 24" SIZE AND LARGER SHALL BE 36" (MIN) IN PAVED AND UNPAVED AREAS AND A MAXIMUM COVER OF 84", UNLESS APPROVED BY JEA.
- THE SOILS BETWEEN THE MAIN AND THE CONFLICT PIPE SHALL BE COMPACTED TO 98% OF THE MAXIMUM DENSITY AS DETERMINED BY THE LABORATORY MODIFIED PROCTOR TEST ASTM D 1557.

ADJUSTMENT UNDER EXISTING UTILITIES  
MECHANICAL RESTRAINTS

JANUARY 2024

PLATE S-41



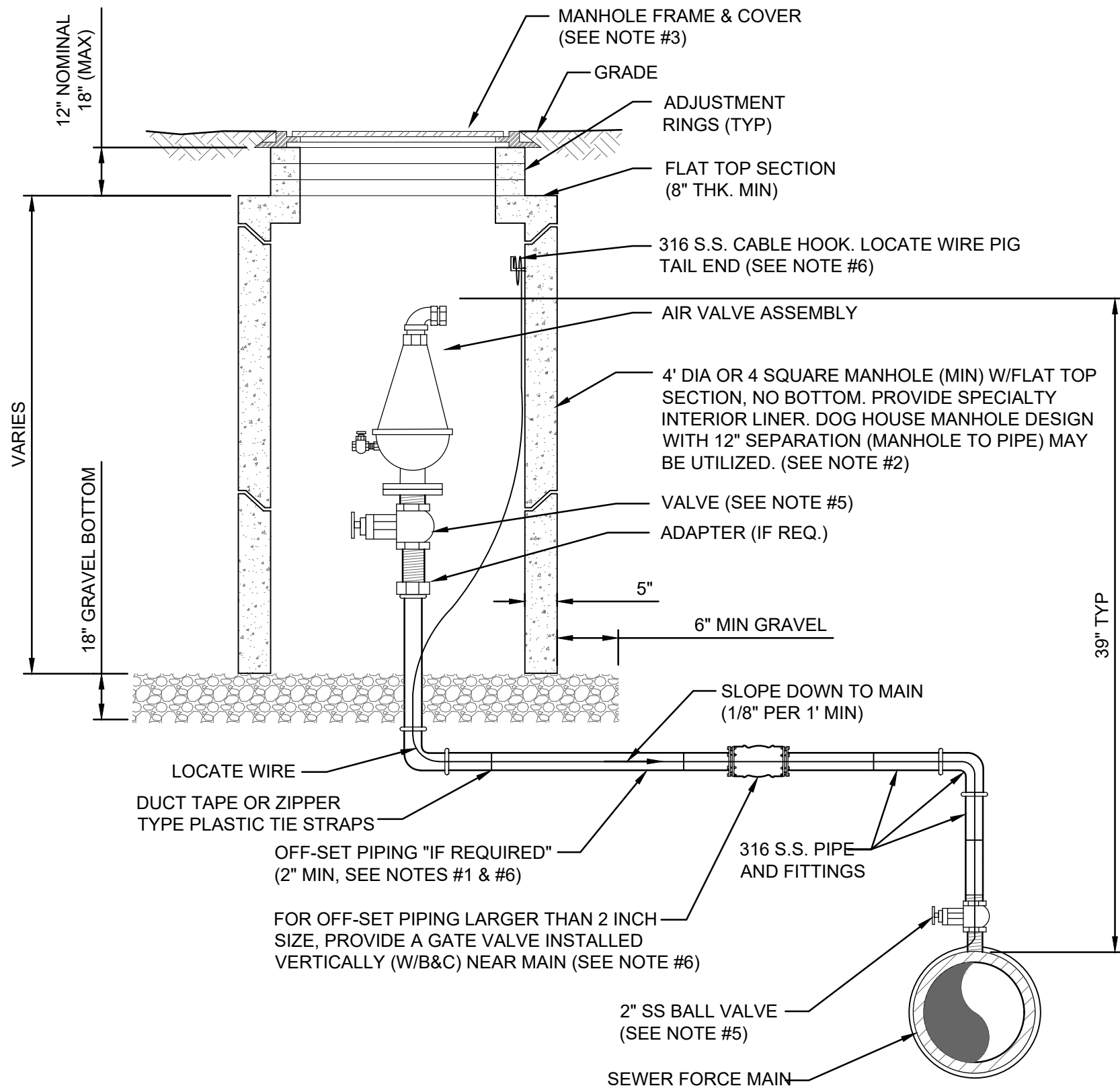
NOTES:

- TO MARK THE LOCATION OF THE 6" PLUG FOR NEW SERVICE: FOR PROJECTS WHERE NO CONCRETE CURB EXIST, AN ELECTRONIC "SEWER" MARKER IS REQUIRED FOR ALL LATERALS WHICH ARE "NOT" IN USE". FOR NEW DEVELOPMENT AREAS WHERE THE SEWER LATERAL IS "NOT" IN USE", A LANDSCAPE TIMBER OR 3x3 MIN. P.T. POST (TOP PAINTED GREEN) SHALL BE INSTALLED. WHERE REQUIRED BY JEA OR NO CONCRETE CURB EXIST, AN ELECTRONIC "SEWER" MARKER SHALL BE INSTALLED TO MARKER SHALL ALSO BE INSTALLED.
- THE MINIMUM SIZE OF ALL HOUSE LATERALS SHALL BE 6 INCHES. THE MAXIMUM LENGTH OF A HOUSE LATERAL SHALL BE 60 FEET (LENGTH BETWEEN SEWER MAIN OR MANHOLE TO CUSTOMERS PROPERTY LINE).
- NO SEWER SERVICE CONNECTIONS PERMITTED ON GRAVITY SEWER PIPE WHICH ARE 16" AND LARGER.
- ALL GRAVITY SEWER MAINS AND ASSOCIATED SEWER LATERAL PIPE AND FITTINGS (INCLUDING THE TEE-WYE FITTING) SHALL BE PVC SDR-26.

HOUSE LATERAL - PLAN VIEW

JANUARY 2024

PLATE S-19



NOTES:

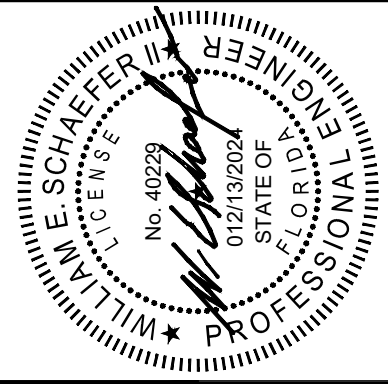
- THE AIR ASSEMBLY MANHOLE SHALL BE LOCATED OUTSIDE OF THE ROADWAY PAVEMENT AREA (I.E. LOCATED IN NON-TRAFFIC AREAS). IF OFF-SET PIPING IS REQUIRED, THE PIPING SHALL BE 2 INCH MINIMUM, (SAME SIZE AS AIR VALVE INLET). FOR PIPE SIZES 3 INCH AND SMALLER, PIPING SHALL BE 316 STAINLESS STEEL SCH 40, STD GRADE, THREADED. FOR PIPE SIZES 4 INCH AND LARGER, PIPING SHALL BE 316 STAINLESS STEEL SCH. 10 (MIN), WELDED OR PVC DR-16 PIPE AND FITTINGS-RESTRAINED.
- THE CONCRETE MANHOLE SHALL INCLUDE A POLYURETHANE SPECIALTY LINER (PER SPEC SECTION 446) TO BE INSTALLED ON THE INTERIOR SURFACES INCLUDING THE RISER SECTION TOP AND THE ADJUSTMENT RINGS. A BITUMINOUS WATERPROOFING MATERIAL SHALL BE PROVIDED ON THE OUTSIDE SURFACES OF THE MANHOLE.
- FRAME AND COVER SHALL BE JEA STANDARD. THE COVER SHALL HAVE NO GASKET TO ALLOW AIR TO EXIT VAULT (REMOVE GASKET IF NECESSARY FROM THE UNDER SIDE OF STANDARD JEA COVER). THE COVER (WHEN FLIPPED OPEN) MUST CLEAR THE AIR VALVE ASSEMBLY AT ALL TIMES OR A SQUARE TOP WITH ALUMINUM DOOR SHALL BE PROVIDED (NON-TRAFFIC LOCATIONS ONLY).
- FOR PIPE SIZES 3 INCH AND SMALLER, PROVIDE A STAINLESS STEEL BALL VALVE (2" MIN). FOR PIPE SIZES 4 INCH AND LARGER, PROVIDE A FLANGE GATE VALVE (WHEEL OPERATOR) OR PLUG VALVE. (LEVER ARM OPERATOR) SEE SPECIFICATION FOR ADDITIONAL REQUIREMENTS.
- FOR A 2" AIR VALVE, PROVIDE 2" STAINLESS STEEL BALL VALVE AT THE MAIN. FOR AIR VALVES LARGER THAN 2" SIZE, PROVIDE A TAPPING SLEEVE OR DUCTILE IRON TEE FITTING. ALSO, FOR OFF-SET PIPING LARGER THAN 2 INCH SIZE, PROVIDE A GATE VALVE (INSTALLED VERTICALLY NEAR MAIN). SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
- LOCATE WIRE SHALL HAVE ENOUGH SLACK TO REACH 4' ABOVE FINAL GRADE.

AIR VALVE ASSEMBLY INSIDE MANHOLE

JANUARY 2024

PLATE S-29

DOMINION ENGINEERING GROUP, INC.  
4348 SOUTHPOINT BLVD., SUITE 204  
JACKSONVILLE, FLORIDA 32216  
904-854-4500



DESIGNED BY:

DRAWN BY:

DATE:

CHECKED BY:

DATE:



JEA STANDARD  
SANITARY SEWER DETAILS

PROJ. NO.

DATE: JANUARY 2014

SCALE: AS NOTED

NO. SHEETS  
1

SHEET NO.  
5

DRAWING NO.  
C23

PVC PIPE RESTRAINT NOTES:

- THIS SCHEDULE SHALL BE UTILIZED ON ALL WATER, SEWER FORCE MAIN OR RECLAIMED WATER SYSTEMS. ALL FITTINGS SHALL BE RESTRAINED TO LENGTHS INDICATED ON THE ABOVE SCHEDULE, AT A MINIMUM.
- ASSUMPTIONS: PVC PIPE, SAFETY FACTOR=1.5, TEST PRESSURE=150PSI, SOIL=GM OR SM, TRENCH TYPE 3, DEPTH OF COVER=30 INCHES FOR 20" AND SMALLER PIPE SIZE OR 36 INCHES FOR 24" AND LARGER PIPE SIZE.
- BENDS AND VALVES: SHALL BE RESTRAINED ON EACH SIDE OF FITTING.
- VERTICAL OFFSETS: ARE APPROX. 3 FEET COVER ON TOP AND APPROX. 8 FEET COVER ON BOTTOM. PER THE DETAILS, LI IS THE RESTRAINED LENGTH FOR THE UPPER (TOP) LEVEL. LI IS THE RESTRAINED LENGTH FOR THE LOWER (DEEPER) LEVEL. ASSUME 45 DEGREE BENDS.
- TEES: TOTAL LENGTH BETWEEN FIRST JOINTS OR RESTRAINED LENGTH ON EITHER SIDE OF TEE (RUN) SHALL BE A TOTAL DISTANCE OF 30 FEET (MIN). SEE SCHEDULE ABOVE FOR RESTRAINT LENGTH ON TEE "BRANCH" LINE.
- HDPE TO PVC TRANSITIONS: THE PVC PIPE SIDE SHALL BE RESTRAINED 35 FT (MIN).
- THE INSTALLATION OF BELL HARNESS RESTRAINTS AT PVC JOINTS (DR-18 & 25 PIPE) SHALL BE COMPLETED PER THE MANUFACTURERS RECOMMENDATION, WHICH INCLUDES NOT OVER TIGHTENING THE PARALLEL RODS/NUTS. THESE NUTS SHOULD ONLY BE SNUG TIGHT. THE HOME MARKS ON THE PIPE SHOULD ALWAYS BE VISIBLE AFTER THE RESTRAINT IS INSTALLED. OVERHOMING THE JOINT MAY CAUSE A FAILURE AT THE BELL RESULTING IN A SERVICE OUTAGE.

LENGTH (L) TO BE RESTRAINED

NOMINAL PIPE SIZE (IN.)	HORIZONTAL BENDS				VERTICAL OFFSETS (SEE NOTE 4)		VALVES OR DEAD ENDS L (FT.)
	90° BENDS L (FT.)	45° BENDS L (FT.)	22.5° BENDS L (FT.)	11.25° BENDS L (FT.)	UPPER L (FT.)	LOWER L (FT.)	
4	21	9	5	3	17	3	47
6	30	13	6	3	23	4	66
8	38	16	8	4	30	6	86
10	45	19	9	5	36	7	103
12	53	22	11	6	43	8	121
14	61	26	13	6	50	9	140
16	66	28	14	7	55	10	154
18	73	30	15	8	60	11	170
20	79	33	16	8	66	12	186
24	79	33	16	8	77	15	185
30	93	39	19	10	97	17	222
36	106	39	21	11	107	20	257
42	117	49	24	12	120	24	289
48	144	53	26	13	133	26	321

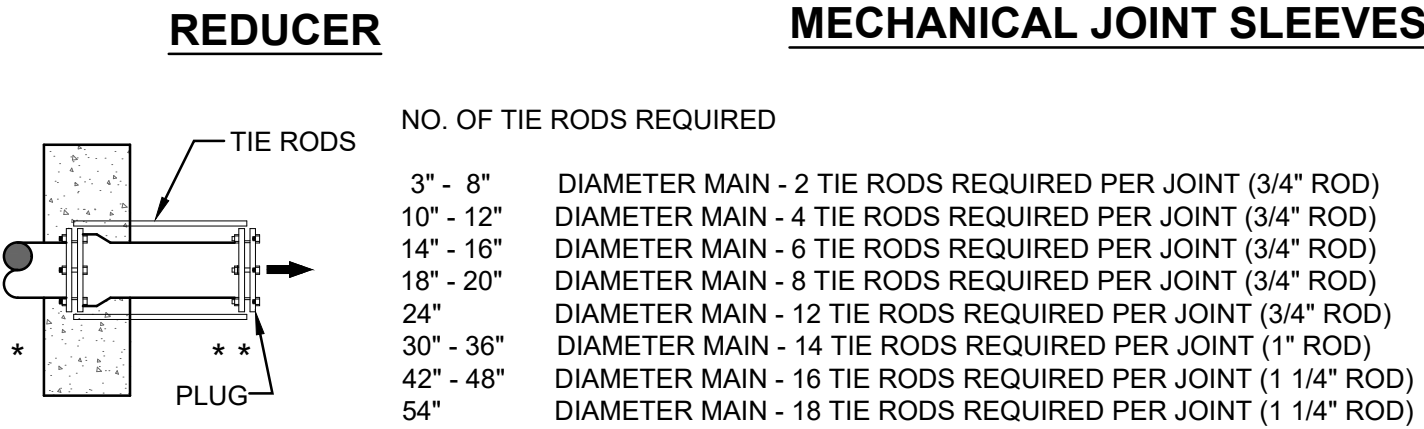
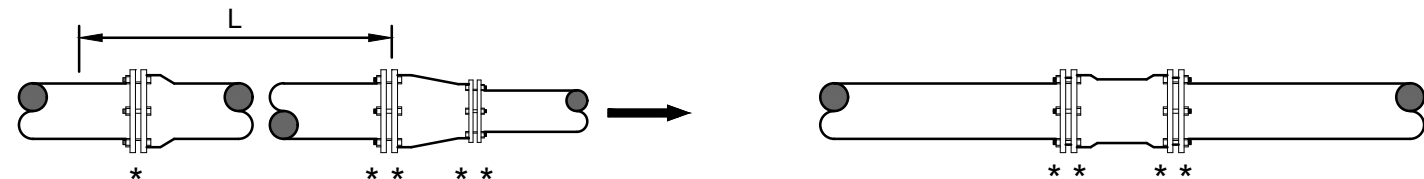
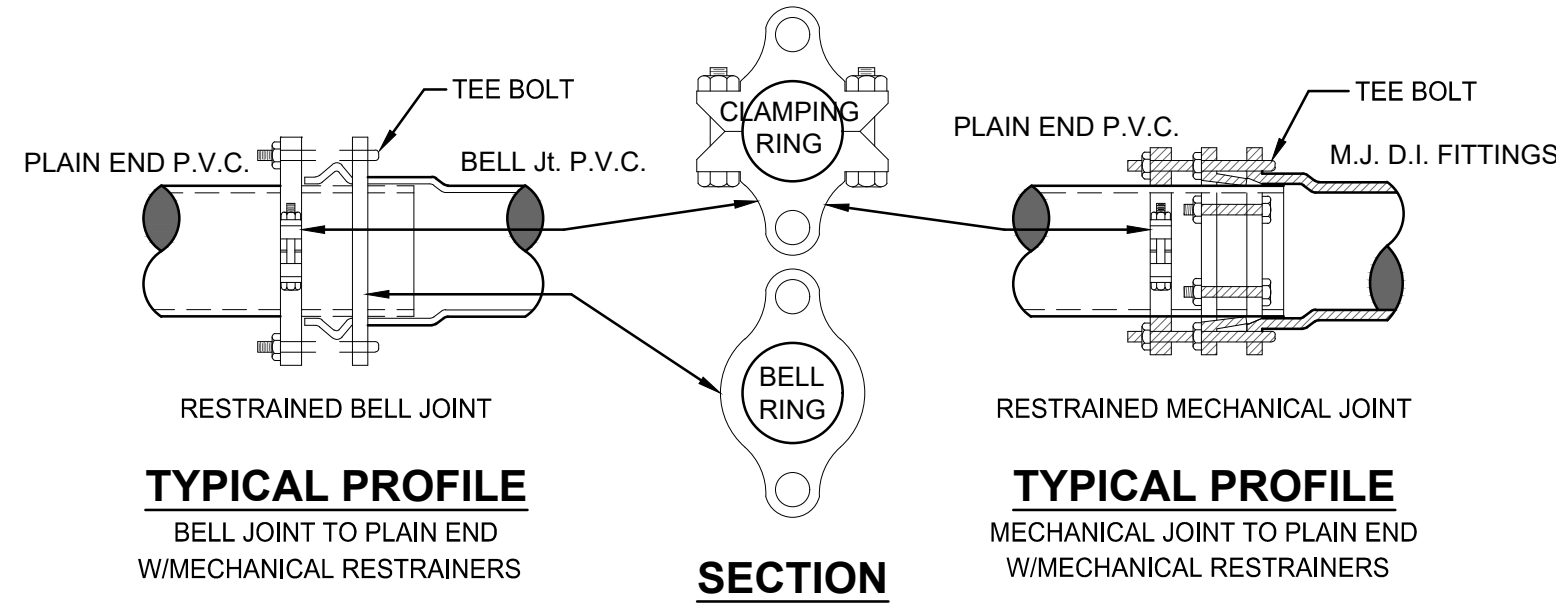
(SEE PLATE Nos. 38C & 38D FOR ADDITIONAL DETAILS)

REDUCERS	
SIZE (IN.)	L (FT.)
6x4	34
8x6	36
8x4	62
10x8	35
10x6	63
12x10	36
12x8	64
16x12	66
16x10	92
20x18	35
20x16	66
20x12	117
24x20	56
24x18	80
24x16	101
30x24	78
30x20	121
36x30	78
36x24	141
42x36	75
42x30	140
48x42	75
48x36	139

TEES SEE NOTE 5		
RUN SIZE (IN.)	BRANCH SIZE (IN.)	L (FT.)
4	4	F.O.
4	6	10
4	4 < LESS	F.O.
8	8	29
8	6 < LESS	F.O.
10	10	45
10	8	13
10	6 < LESS	F.O.
12	12	62
12	10	32
12	8 < LESS	F.O.
16	16	94
16	12	39
16	10	5
16	10 < LESS	F.O.
20	20	125
20	16	76
20	12	14
20	10 < LESS	F.O.
24	24	124
24	20	84
24	16	36
24	12 < LESS	F.O.
30	30	159
30	24	104
30	20	60
30	16	5
30	16 < LESS	F.O.
36	36	192
36	30	142
36	24	83
36	20	33
36	16 < LESS	F.O.
42	42	223
42	36	178
42	30	124
42	24	59
42	20	5
42	16 < LESS	F.O.
48	48	253
48	42	209
48	36	162
48	30	104
48	24	34
48	20 < LESS	F.O.

F.O. = FITTING ONLY

PVC PIPE RESTRAINT JOINT SCHEDULE  
JANUARY 2024  
PLATE S-38A

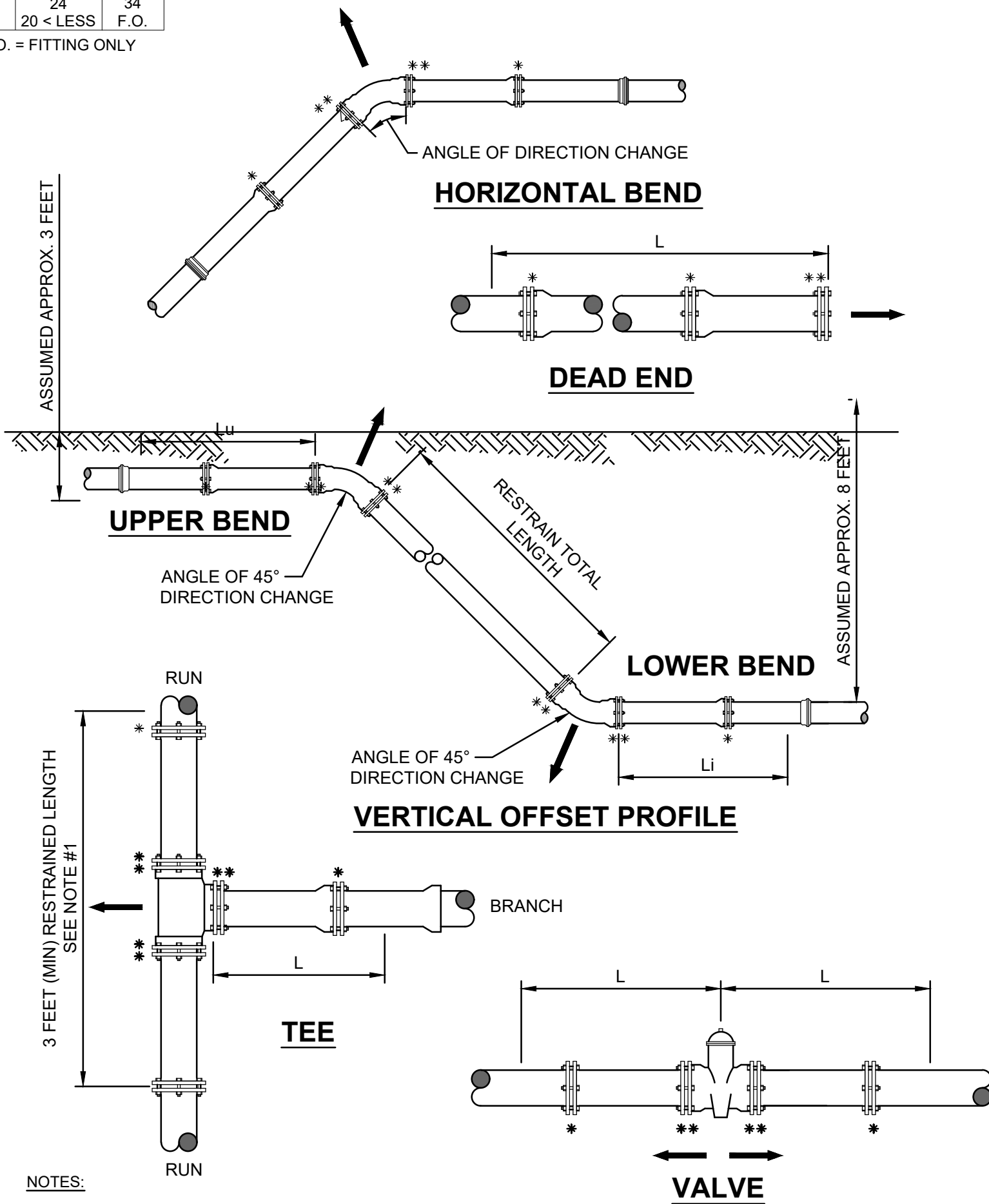


DEAD - END THRUST COLLAR ANCHOR  
TO BE USED INSTEAD OF TOTAL RESTRAINED LENGTH (OPTIONAL) SIZE AS PER THRUST BLOCK DETAIL (W-38). SEE DETAILS W-36 & W-37.

GENERAL NOTE:

- PAY ITEM \* \* \* DENOTES A RESTRAINT WHICH IS PAID FOR ON A PER EACH BASIS.
- PAY ITEM \* \* \* DENOTES A RESTRAINT WHICH IS INCLUDED IN THE UNIT PRICE BID FOR FITTING OR VALVE.
- ➡ INDICATES DIRECTION OF THRUST FORCE.

MECHANICAL RESTRAINT DETAILS - I  
JANUARY 2024  
PLATE S-38C

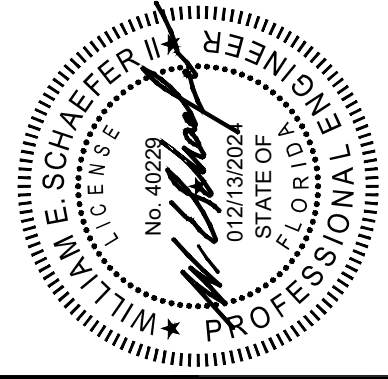


NOTES:

- TOTAL LENGTH BETWEEN FIRST JOINTS OR RESTRAINED LENGTH ON EITHER SIDE OF TEE (RUN) SHALL BE A TOTAL DISTANCE OF 6 FEET (MIN.). THE PROJECT ENGINEER CAN INCREASE THIS LENGTH TO REDUCE THE NUMBER OF RESTRAINS REQUIRED. ANY CHANGES TO THIS TABLE MUST BE SUBMITTED TO JEA FOR APPROVAL.
- PAY ITEM \*\*\* DENOTES A RESTRAINT WHICH IS PAID FOR ON A PER EACH BASIC.
- PAY ITEM \*\*\*\* DENOTES A RESTRAINT WHICH IS INCLUDED IN THE UNIT PRICE BID FOR FITTING OR VALVE.

MECHANICAL RESTRAINT DETAILS - II  
JANUARY 2024  
PLATE S-38D

DOMINION ENGINEERING GROUP, INC.  
4348 SOUTHPOINT BLVD., SUITE 204  
JACKSONVILLE, FLORIDA 32216  
904-854-4500



DESIGNED BY: \_\_\_\_\_  
DRAWN BY: \_\_\_\_\_  
DATE: 01/13/2024  
CHECKED BY: \_\_\_\_\_  
DATE: \_\_\_\_\_



JEA STANDARD  
SANITARY SEWER DETAILS

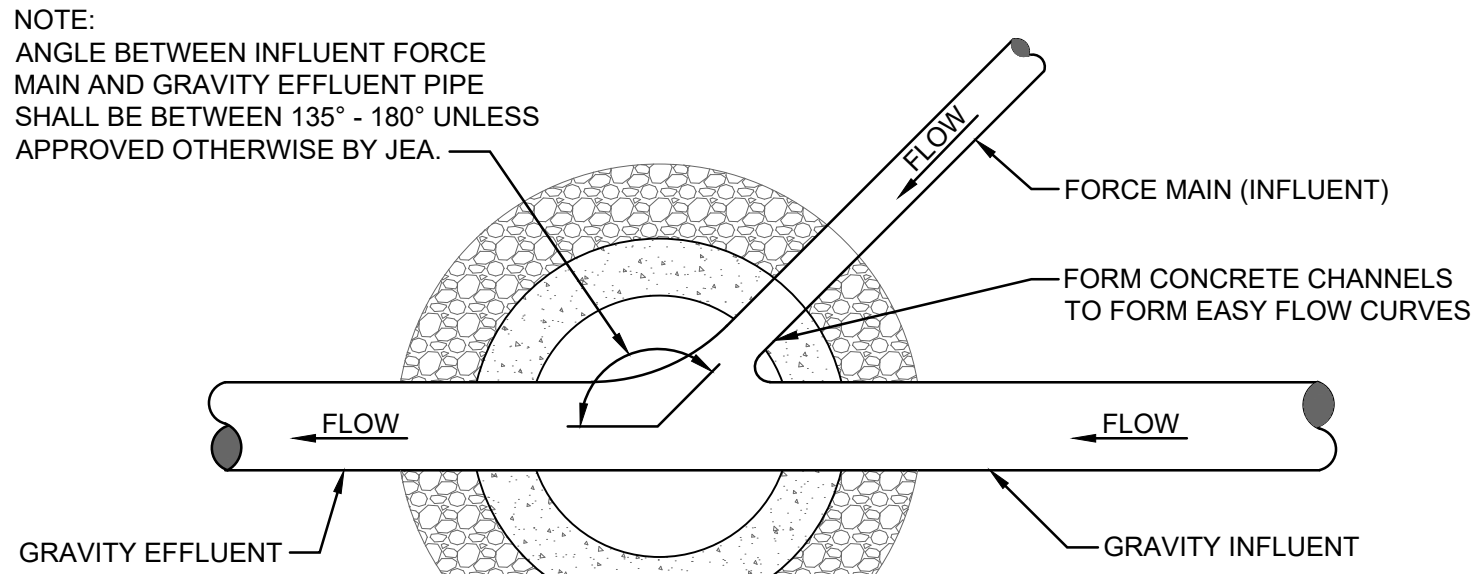
PROJ. NO. \_\_\_\_\_  
DATE: JANUARY 2014  
SCALE: AS NOTED

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SHEET NO.  
5  
DRAWING NO.  
C24

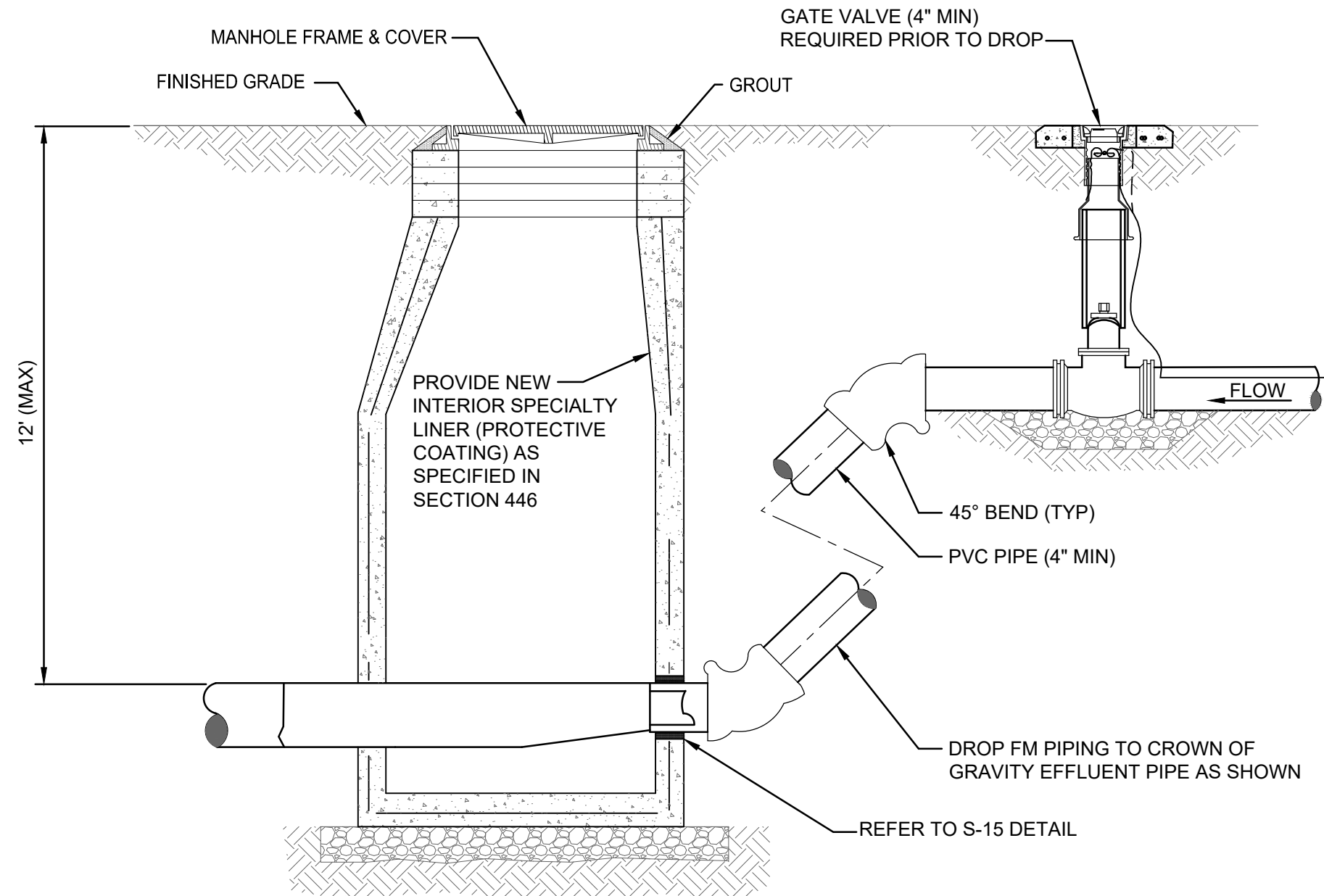
REVISIONS

NO. BY DATE

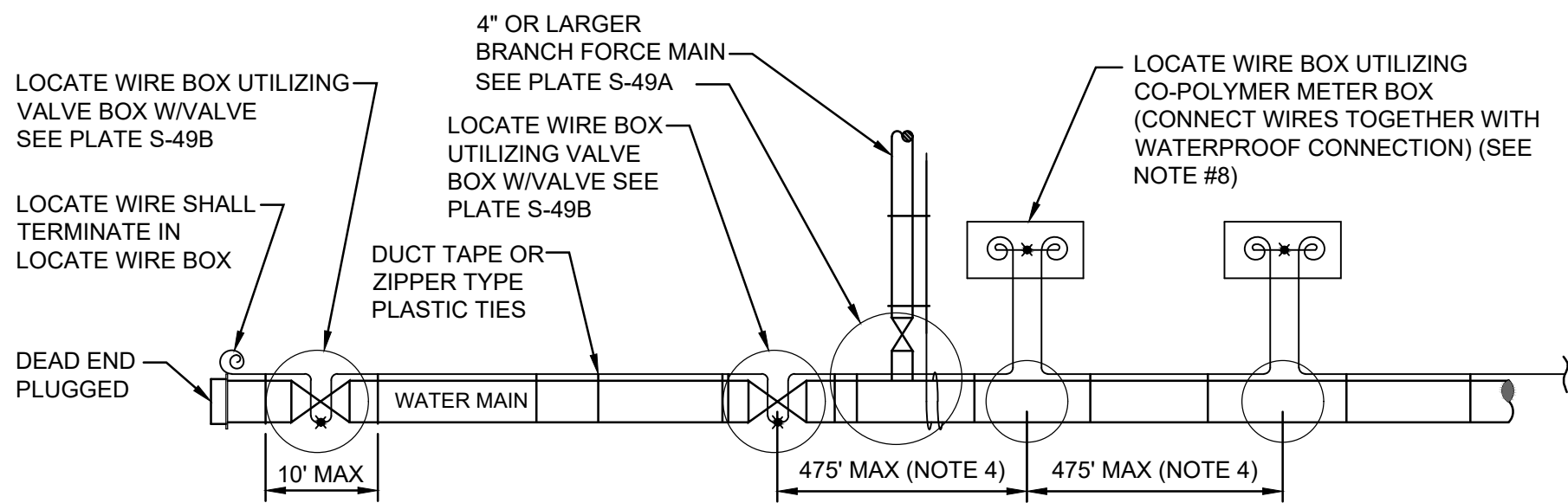
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Current Layout Tab = C25  
Fri Dec 13, 2024 11:10



PLAN



SECTION



LOCATE WIRE SYSTEM

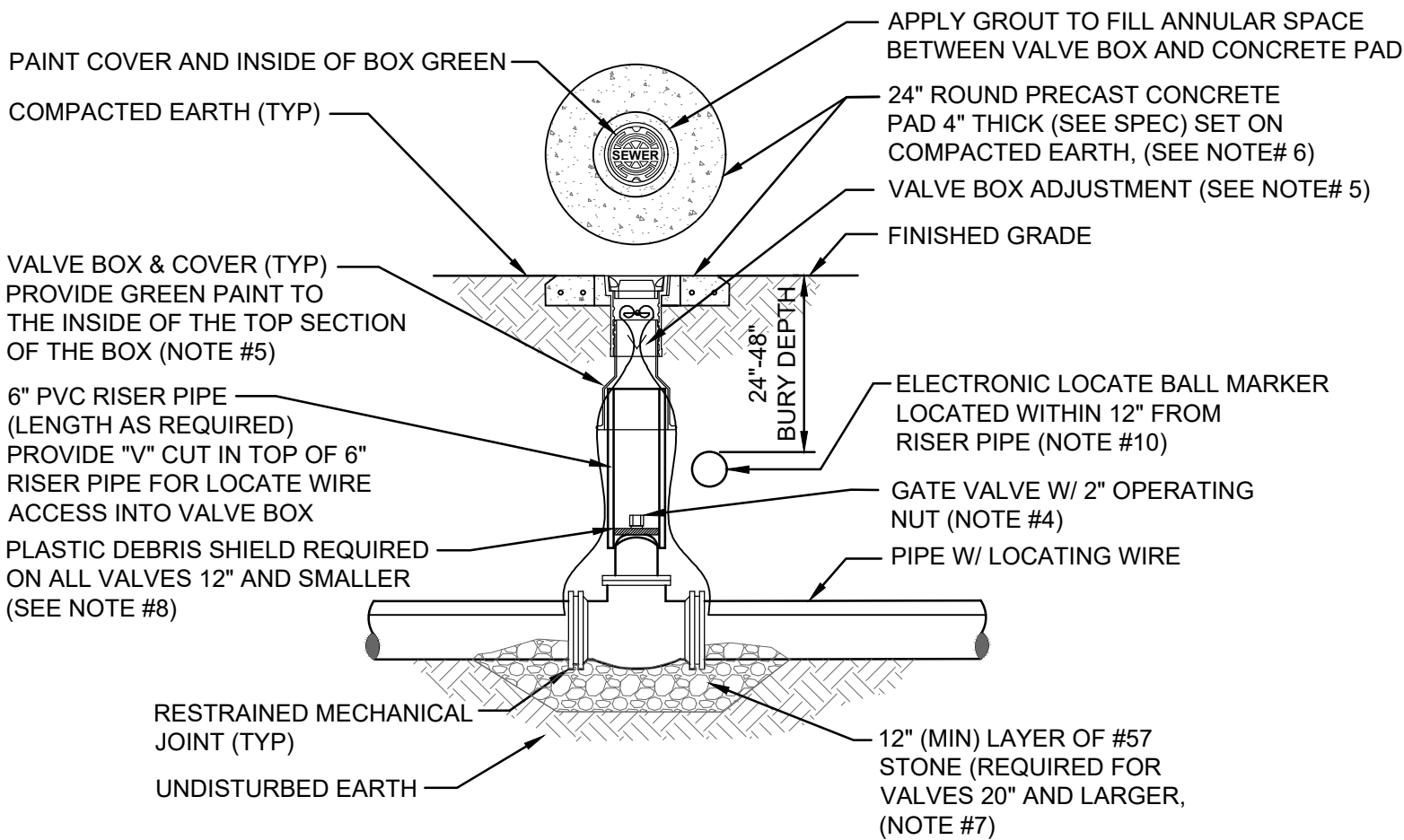
NOTES:

- LOCATING WIRE TO BE INSTALLED IN EITHER THE ONE OR ELEVEN O'CLOCK POSITION ON ALL DUCTILE IRON OR PVC (PRESSURE MAINS). LOCATE WIRE SHALL ALSO BE INSTALLED ON ALL (HDPE) POLY MAIN PIPING (1:00 OR 11:00 POSITION, IF POSSIBLE).
- SECURE LOCATING WIRE TO PVC FORCE MAIN BY USE OF DUCT TAPE OR ZIPPER TYPE PLASTIC TIE STRAPS SPACED AT A MAXIMUM DISTANCE OF TEN (10') AND AT EACH SIDE OF BELL JOINT OR FITTING.
- THE ENTIRE LOCATING SYSTEM SHALL BE SUBJECTED TO TESTING TO DETERMINE ITS RELIABILITY. WHERE INSTALLED UNDER PAVEMENT AREAS, TESTING SHALL BE DONE PRIOR TO THE PLACEMENT OF PAVEMENT, UNLESS APPROVED OTHERWISE BY JEA.
- LOCATING WIRE SHALL TERMINATE WITHIN AN ACTIVE VALVE BOX ( WITH A VALVE ) OR A METER BOX ( IF NO VALVE ) AT 475' INTERVALS. SEE DETAIL PLATE S-49B. WIRE CONNECTIONS BELOW GROUND (OUTSIDE OF A BOX) SHALL BE AVOIDED.
- LOCATING WIRE SHALL BE 12 GAUGE COPPER WIRE WITH .03 INCHES (MINIMUM) HDPE INSULATION THICKNESS, 0.141 INCHES (MINIMUM) O.D. RATED BREAK LOAD 250LBS. UP RATED (DIRECT BURIAL), GREEN COLOR. FOR HDD INSTALLATIONS, THE LOCATE WIRE SHALL BE COPPER CODED STEEL AS SPECIFIED IN SPEC. SECTION 750.
- ✕ INDICATES THAT THE WIRES ARE CONNECTED TOGETHER WITH WATERPROOF CONNECTION. (SEE DETAIL W-49B)
- Ⓞ INDICATES A WIRE PIG-TAIL (24" LONG)
- AN "LW" CUT SHALL BE CARVED IN THE CONCRETE CURB AND PAINTED AT ALL LOCATE WIRE BOXES.
- FOUR LANES OF TRAFFIC (HAVING TWO LANES OF TRAFFIC IN EACH DIRECTION) OR GREATER THE LOCATE WIRE AND VALVE BOX SHALL BE OFF-SET TO THE RIGHT-OF-WAY.

LOCATE WIRE CONSTRUCTION FOR FORCE MAINS

JANUARY 2024

PLATE S-49



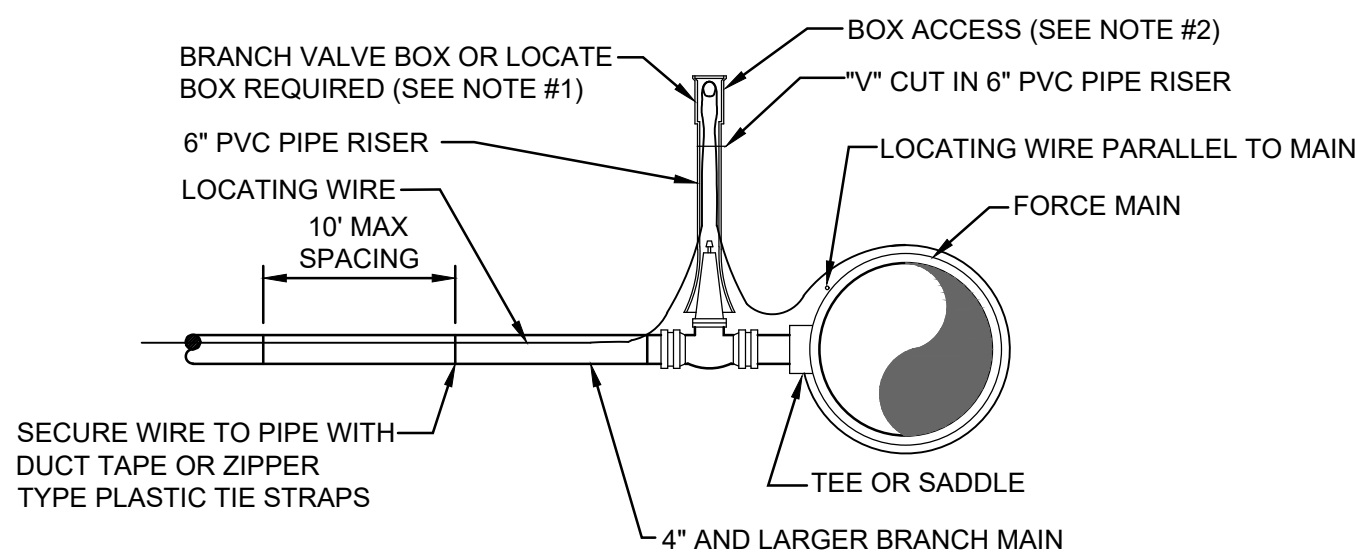
NOTES:

- FOR UNPAVED LOCATIONS, A PRECAST CONCRETE VALVE PAD SHALL BE PROVIDED AND INSTALLED FLUSH WITH GRADE. CONCRETE PAD IS NOT REQUIRED FOR VALVE LOCATED IN THE ROADWAY, UNLESS SHOWN OR NOTED OTHERWISE.
- LOCATING WIRE IS REQUIRED ON ALL PRESSURE PIPING (SEE DETAIL S-49).
- A "V" CUT SHALL BE CARVED IN THE CURB CLOSEST (ASPHALT IF NO CURB) ADJACENT TO ALL BELOW GRADE VALVES. THE "V" CUT IS TO BE PAINTED GREEN.
- IN PAVED AREAS, INSTALL VALVE AT A DEPTH TO ALLOW A 12" MIN. DISTANCE BETWEEN THE VALVE COVER PLATE AND THE TOP OF THE VALVE OPERATING NUT. OUTSIDE OF PAVED AREAS (GRASS), INSTALL VALVE AT A DEPTH TO ALLOW A 6" MINIMUM DISTANCE BETWEEN THE VALVE COVER AND THE TOP OF THE VALVE OPERATING NUT. OPERATING NUT/STEM EXTENSION SHALL BE PROVIDED (WHERE APPLICABLE) SO THAT THE OPERATING NUT WILL BE NO MORE THAN 30 INCHES BELOW FINISHED GRADE.
- FOR NEW CONSTRUCTION, THE VALVE BOX SHALL BE ADJUSTED TO MIDRANGE TO ALLOW FOR FUTURE BOX ADJUSTMENTS. ROUTE LOCATE WIRES THRU A "V" CUT IN THE TOP OF THE 6" PVC RISER PIPE FOR LOCATE WIRE ACCESS INTO VALVE BOX. THE LOCATE WIRES WITH A 24" LONG PIG-TAIL AT THE TOP SHALL BE CONNECTED TOGETHER WITH A WIRE NUT.
- BRASS IDENTIFICATION TAG INDICATING "SEWER", VALVE SIZE, DIRECTION AND TURNS TO OPEN & VALVE TYPE. PROVIDE A 1/2" HOLE IN BRASS TAG AND ATTACH TAG (TWIST WIRE AROUND TAG) TO THE END OF THE LOCATE WIRE. TAGS ARE NOT REQUIRED ON VALVES INSTALLED ON FIRE HYDRANT BRANCH LINES.
- IN LIEU OF PRECAST CONCRETE PAD, A 6" THICK X 24" (ROUND OR SQUARE) POURED CONCRETE PAD W/ 2 - #4 REBAR AROUND PERIMETER, MAY BE USED.
- GRAVEL SHALL BE PROVIDED UNDER ALL VALVES 20" AND LARGER. THE MINIMUM VERTICAL LIMIT OF GRAVEL IS 12" UNDER THE VALVE UP TO 1/2 THE OVERALL HEIGHT OF THE VALVE.
- FOR VALVES 12 INCH AND SMALLER, PROVIDE A WHITE OR BLACK PLASTIC DEBRIS SHIELD WHICH INSTALLS BELOW THE OPERATING NUT. THIS SHIELD SHALL CENTER THE RISER PIPE BOX OVER THE OPERATING NUT AND MINIMIZE INFILTRATION. SHIELD SHALL BE BY AFC, BOXLOK OR APPROVED EQUAL.
- ALL VALVES SHALL BE INSTALLED WITH AN ELECTRIC LOCATE MARKER. MARKER SHALL BE 4" DIA. COLOR CODED BALL MARKER (3M-1404XR FOR SEWER).

SEWER VALVE DETAIL

JANUARY 2024

PLATE S-30



BRANCH FORCE MAIN

(4" AND LARGER SEWER MAIN)

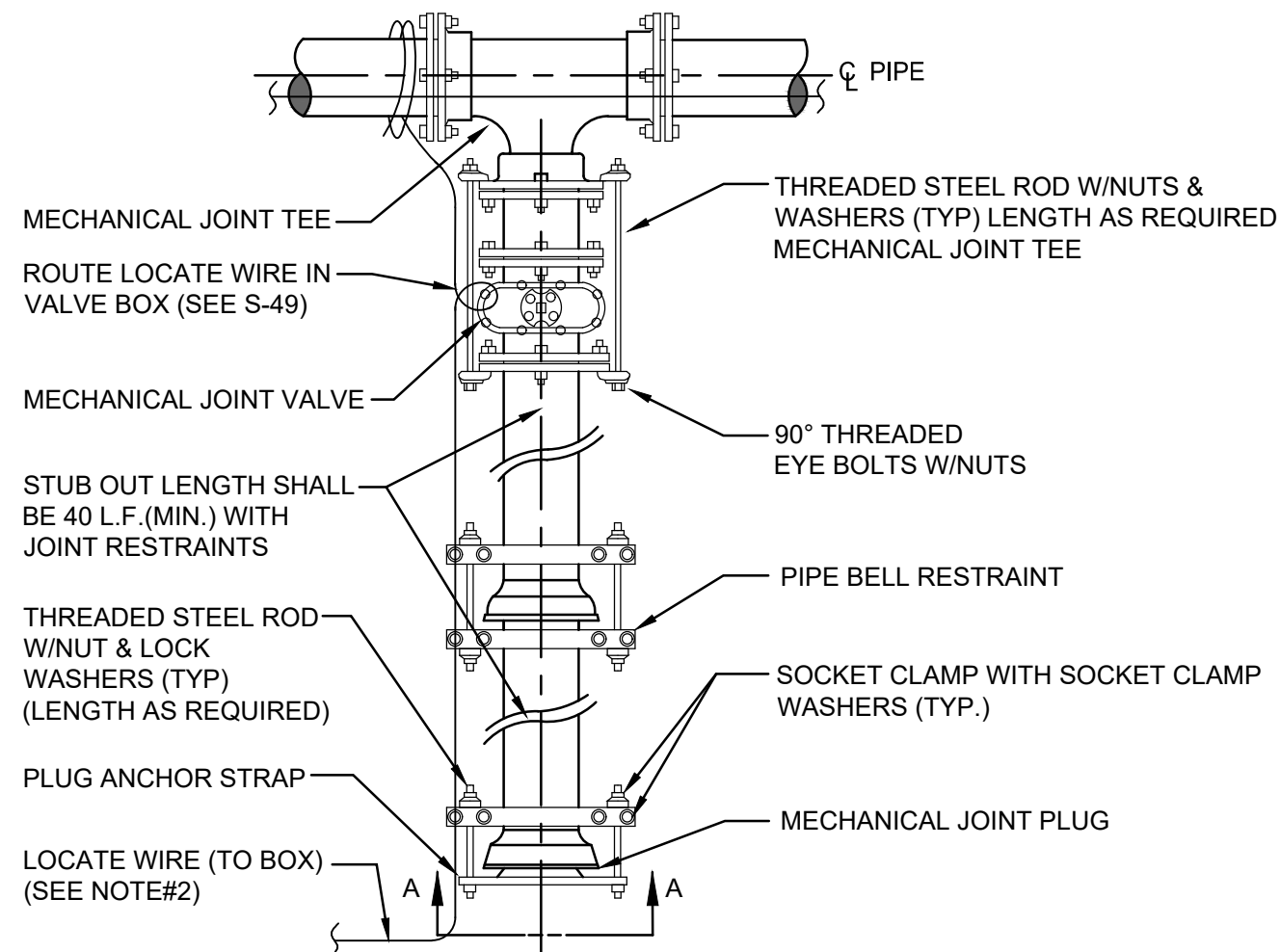
NOTE:

- NOTE THAT THE BRANCH WIRE IS NOT CONNECTED TO THE MAIN WIRE.
- LOCATE WIRE SHALL ENTER THE VALVE BOX THROUGH A "V" CUT IN THE 6" PVC RISER PIPE SECTION (SEE S-30).
- LOCATE WIRE BOX SHALL BE INSTALLED OUTSIDE OF SIDEWALKS, DRIVEWAYS AND PAVEMENT.
- Ⓞ INDICATES A WIRE PIG-TAIL (4' LONG)

LOCATE WIRE FOR BRANCH MAIN

JANUARY 2024

PLATE S-49A



PLAN

SECTION "A-A"

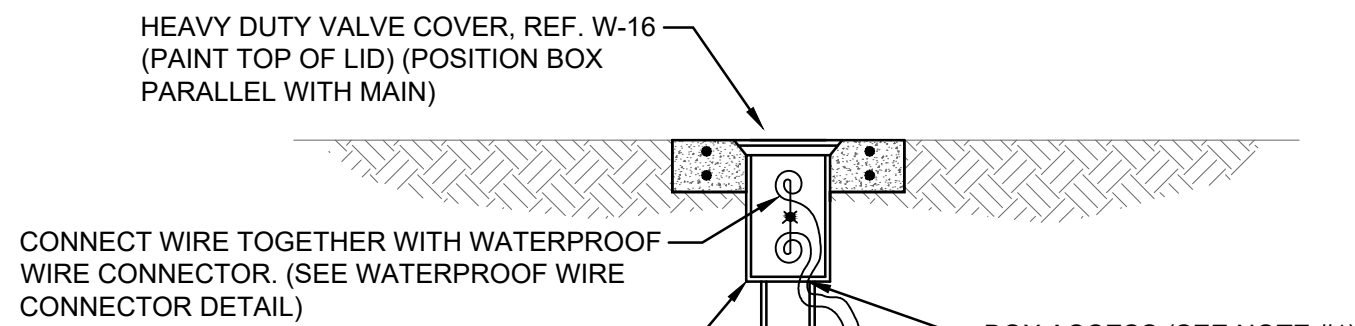
NOTES:

- IN LIEU OF BELL/ROD RESTRAINTS, MECHANICAL JOINT RESTRAINTS MAY BE USED.
- LOCATING WIRE REQUIRED, UTILIZING A LOCATE WIRE BOX INSTALLED AT PLUG LOCATION.
- NUMBER OF TIE RODS REQUIRED IS AS FOLLOWS:  
3" - 8" DIAMETER MAIN - 2 TIE RODS REQUIRED PER JOINT (3/4" ROD)  
10" - 12" DIAMETER MAIN - 4 TIE RODS REQUIRED PER JOINT (3/4" ROD)  
14" - 16" DIAMETER MAIN - 6 TIE RODS REQUIRED PER JOINT (3/4" ROD)  
18" - 20" DIAMETER MAIN - 8 TIE RODS REQUIRED PER JOINT (3/4" ROD)  
24" DIAMETER MAIN - 12 TIE RODS REQUIRED PER JOINT (3/4" ROD)  
30" - 36" DIAMETER MAIN - 14 TIE RODS REQUIRED PER JOINT (1" ROD)  
42" - 48" DIAMETER MAIN - 16 TIE RODS REQUIRED PER JOINT (1 1/4" ROD)  
54" DIAMETER MAIN - 18 TIE RODS REQUIRED PER JOINT (1 1/4" ROD)
- THE LOCATION OF THE DEAD END PLUG SHALL NOT BE UNDER PAVEMENT, IF POSSIBLE. THE STUB OUT SHALL EXTEND BEYOND THE INTERSECTION AREAS OR ROAD CROSSING BY 10 FEET (MIN.) WHERE POSSIBLE.

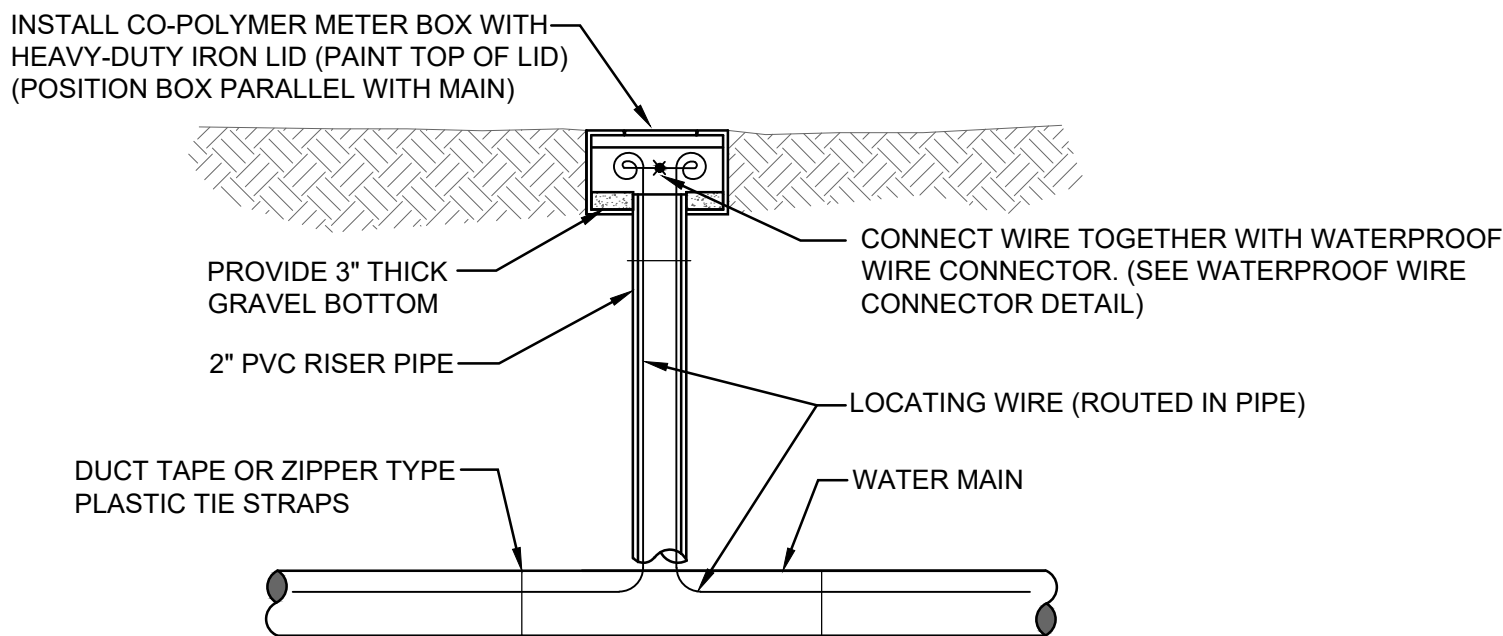
PLUGGED DEAD END USING MECHANICAL RESTRAINTS

JANUARY 2024

PLATE S-44



LOCATE WIRE BOX UTILIZING VALVE BOX



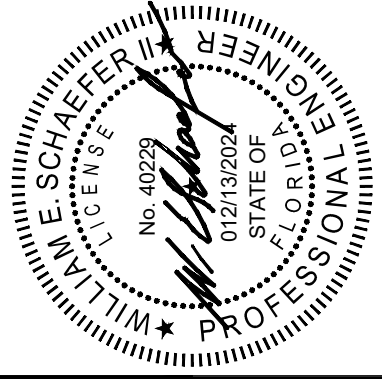
LOCATE WIRE BOX UTILIZING METER BOX

LOCATE WIRE BOX

JANUARY 2024

PLATE S-49B

DOMINION ENGINEERING GROUP, INC.  
4348 SOUTHPOINT BLVD., SUITE 204  
JACKSONVILLE, FLORIDA 32216  
904-854-4500



DESIGNED BY:

DRAWN BY:

CHECKED BY:

DATE:

DATE:

DATE:

DATE:

DATE:

JEA STANDARD  
SANITARY SEWER DETAILS

PROJ. NO.

DATE:

SCALE:

AS NOTED

NO. SHEETS

SHEET NO.

DRAWING NO.

C25

Z:\General Civil\Greenpoint\Tributary Spine Road (WEST)\Coord\design\water and sewer details\WATER AND RECLAIMED DETAILS 2024.dwg      Current Layout Tab = C26      Fri, Dec 13, 2024      -- 11:14

HORIZONTAL & VERTICAL SEPARATION REQUIREMENTS

PROPOSED UTILITY												
CONFLICTING UTILITY	POTABLE WATER			WASTEWATER GRAVITY AND FORCE MAIN			RECLAIMED WATER			VACUUM SEWERS		
	HORIZ.	VERT.	JOINT SPACING*	HORIZ.	VERT.	JOINT SPACING*	HORIZ.	VERT.	JOINT SPACING*	HORIZ.	VERT.	JOINT SPACING*
POTABLE WATER	3' NOTE 1	12"	3' NOTE 2	6' to 10'	12" NOTE 5	6' NOTE 2	3'	12"	6' NOTE 2	3' to 10'	12"	3' NOTE 2
RECLAIMED WATER	3'	12"	6' NOTE 2	3' NOTE 1	12"	3' NOTE 2	3'	12"	6' NOTE 2	3' NOTE 1	12"	3' NOTE 2
WASTEWATER (GRAVITY AND FORCE MAIN)	6' to 10'	12"	6' NOTE 2	3' NOTE 1	12"	6"	3' NOTE 1	12"	3' NOTE 2	3' NOTE 1	12"	3' NOTE 2
VACUUM SEWERS	3' to 10'	12"	3' NOTE 2	3' NOTE 1	12"	6"	3' NOTE 1	12"	3' NOTE 2	3' NOTE 1	12"	3' NOTE 2
RIGHT OF WAYS	3' NOTE 1	N/A	N/A	3' NOTE 1	N/A	N/A	3' NOTE 1	N/A	N/A	3' NOTE 1	N/A	N/A
PERMANENT STRUCTURES (SIGNS, POLES, ETC.)	3' NOTE 1	N/A	N/A	3' NOTE 1	N/A	N/A	3' NOTE 1	N/A	N/A	3' NOTE 1	N/A	N/A
STORM SEWERS	3' NOTE 1	12"	3' NOTE 2	3' NOTE 1	12"	3' NOTE 2	3' NOTE 1	12"	3' NOTE 2	3' NOTE 1	12"	3' NOTE 2
GAS	3' NOTE 1	12"	3' NOTE 2	3' NOTE 1	12"	3' NOTE 2	3' NOTE 1	12"	3' NOTE 2	3' NOTE 1	12"	3' NOTE 2
TREES	3'-6' NOTE 6	N/A	N/A	3'-6' NOTE 6	N/A	N/A	3'-6' NOTE 6	N/A	N/A	3'-6' NOTE 6	N/A	N/A
ALL OTHER UTILITIES	3' NOTE 1	12"	3' NOTE 2	3' NOTE 1	12"	3' NOTE 2	3' NOTE 1	12"	3' NOTE 2	3' NOTE 1	12"	3' NOTE 2

NOTES:

- THIS SEPARATION REQUIREMENT IS TO PROVIDE ACCESSIBILITY FOR CONSTRUCTION AND MAINTENANCE. THREE FEET OF HORIZONTAL SEPARATION IS THE MINIMUM FOR PIPES WITH THREE FEET OF COVER. FOR PIPES INSTALLED AT GREATER DEPTH, PROVIDE AN ADDITIONAL FOOT OF SEPARATION FOR EACH ADDITIONAL FOOT OF DEPTH.
- THE MINIMUM JOINT SPACING REQUIRED FROM CROSSING FROM OTHER UTILITIES WHILE STILL MAINTAINING MINIMUM VERTICAL SEPARATION.
- DISTANCES GIVEN ARE FROM OUTSIDE OF PIPE TO OUTSIDE OF PIPE.
- NO WATER PIPE SHALL PASS THROUGH OR COME INTO CONTACT WITH ANY PART OF SANITARY OR STORM WATER MANHOLE OR STRUCTURES.
- WATER MAIN SHOULD CROSS ABOVE OTHER PIPES WHENEVER POSSIBLE. WHEN WATER MAIN MUST BE BELOW OTHER UTILITY PIPING, THE MINIMUM SEPARATION SHALL BE 12 INCHES.
- REFER TO POTABLE WATER PIPING- SECTION 350, III.4.11.

SEPARATION REQUIREMENTS FOR  
WATER, WASTEWATER AND RECLAIMED WATER MAINS

JANUARY 2024

PLATE W-10

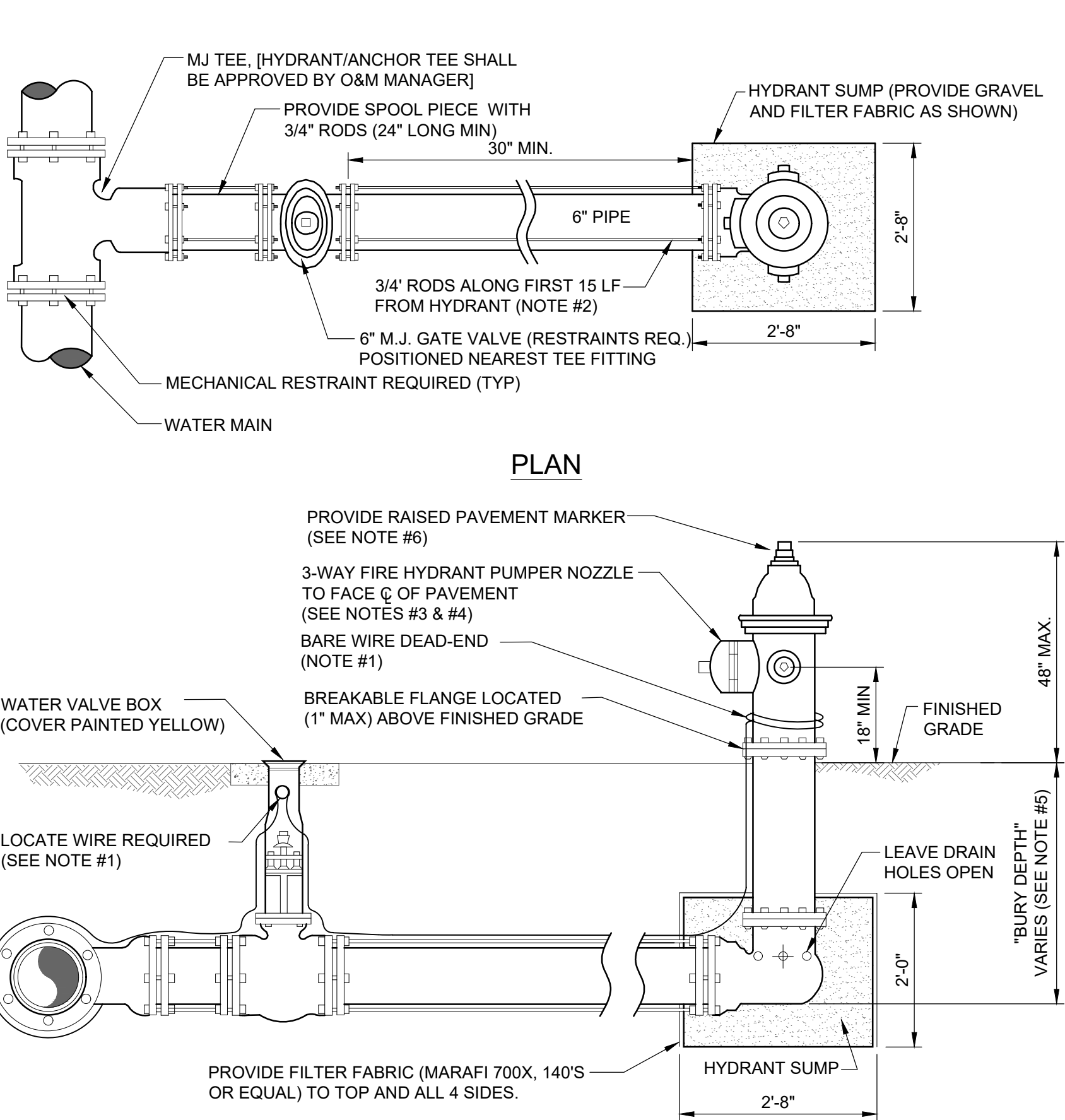
WATER MAIN AND NON-WATER MAIN SEPARATION REQUIREMENTS - NOTES

- IT IS REQUIRED THAT "WATER MAINS" BE INSTALLED, CLEANED, DISINFECTED AND HAVE A SATISFACTORY BACTERIOLOGICAL SURVEY PERFORMED IN ACCORDANCE WITH THE LATEST APPLICABLE AWWA STANDARDS, CHAPTER 62-555, F.A.C. AND LATEST JEA WATER AND SEWER STANDARDS. FOR THE PURPOSE OF THIS SECTION, THE PHRASE "WATER MAINS" SHALL MEAN MAINS, INCLUDING TREATMENT PLANT PROCESS PIPING, CONVEYING EITHER RAW, PARTIALLY TREATED, OR FINISHED DRINKING WATER, FIRE HYDRANT LEADS, AND SERVICE LINES THAT HAVE AN INSIDE DIAMETER OF THREE (3) INCHES OR GREATER. IN ADDITION, THE PHRASE "RECLAIMED WATER" REFERS TO THE WATER REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.
- NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST THREE (3) FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED STORM SEWER, STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER.
- NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST SIX (6) FEET, AND PREFERABLY TEN (10) 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 RECLAIMED WATER. THE MINIMUM HORIZONTAL SEPARATION DISTANCE BETWEEN WATER MAINS AND GRAVITY-TYPE SANITARY SEWERS MAY BE REDUCED TO THREE (3) FEET WHERE THE BOTTOM OF THE WATER MAIN IS LAID AT LEAST SIX (6) INCHES ABOVE THE TOP OF THE SEWER (SPECIAL CASE).
- 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 (6) INCHES, AND PREFERABLY TWELVE (12) INCHES, ABOVE OR AT LEAST TWELVE (12) INCHES BELOW THE OUTSIDE OF THE OTHER PIPELINE. HOWEVER, IT IS PREFERABLE TO LAY THE WATER MAIN ABOVE THE OTHER PIPELINE.
- NEW OR RELOCATED, UNDERGROUND WATER MAINS CROSSING ANY EXISTING OR PROPOSED PRESSURE-TYPE SANITARY SEWER, WASTEWATER OR STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER SHALL BE LAID SO THE OUTSIDE OF THE WATER MAIN IS A LEAST TWELVE (12) INCHES ABOVE OR BELOW THE OUTSIDE OF THE OTHER PIPELINE. HOWEVER, IT IS PREFERABLE TO LAY THE WATER MAIN ABOVE THE OTHER PIPELINE.
- AT THE UTILITY CROSSINGS DESCRIBED IN NOTES 4 AND 5 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 (3) FEET FROM ALL JOINTS IN VACUUM-TYPE SANITARY SEWERS, STORM SEWERS, STORMWATER FORCE MAINS, OR PIPELINES CONVEYING RECLAIMED WATER, AND AT LEAST SIX (6) FEET FROM ALL JOINTS IN GRAVITY OR PRESSURE-TYPE SANITARY SEWERS, WASTEWATER FORCE MAINS, OR PIPELINE CONVEYING RECLAIMED WATER.
- NEW OR RELOCATED FIRE HYDRANTS SHALL BE LOCATED SO THAT THE HYDRANTS ARE AT LEAST THREE (3) FEET FROM ANY EXISTING OR PROPOSED STORM SEWER, STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER; AT LEAST THREE (3) FEET, AND PREFERABLY TEN (10) FEET, FROM ANY EXISTING OR PROPOSED VACUUM-TYPE SANITARY SEWER; AT LEAST SIX (6) FEET, AND PREFERABLY TEN (10) FEET, FROM ANY EXISTING OR PROPOSED GRAVITY OR PRESSURE-TYPE SANITARY SEWER OR STORMWATER FORCE MAIN.
- WHERE AN UNDERGROUND WATER MAIN IS BEING LAID LESS THAN THE REQUIRED MINIMUM HORIZONTAL DISTANCE FROM ANOTHER PIPELINE AND WHERE AN UNDERGROUND WATER MAIN IS CROSSING ANOTHER PIPELINE AND JOINTS IN THE WATER MAIN ARE BEING LOCATED LESS THAN THE REQUIRED MINIMUM DISTANCE FROM JOINTS IN THE OTHER PIPELINE, THE CONTRACTOR SHALL CONSULT THE DESIGN ENGINEER TO OBTAIN APPROVAL OF ANY ALTERNATIVE CONSTRUCTION METHODS, PRIOR TO CONSTRUCTION.

NOTES ON UTILITY SEPARATION REQUIREMENTS

JANUARY 2024

PLATE W-11



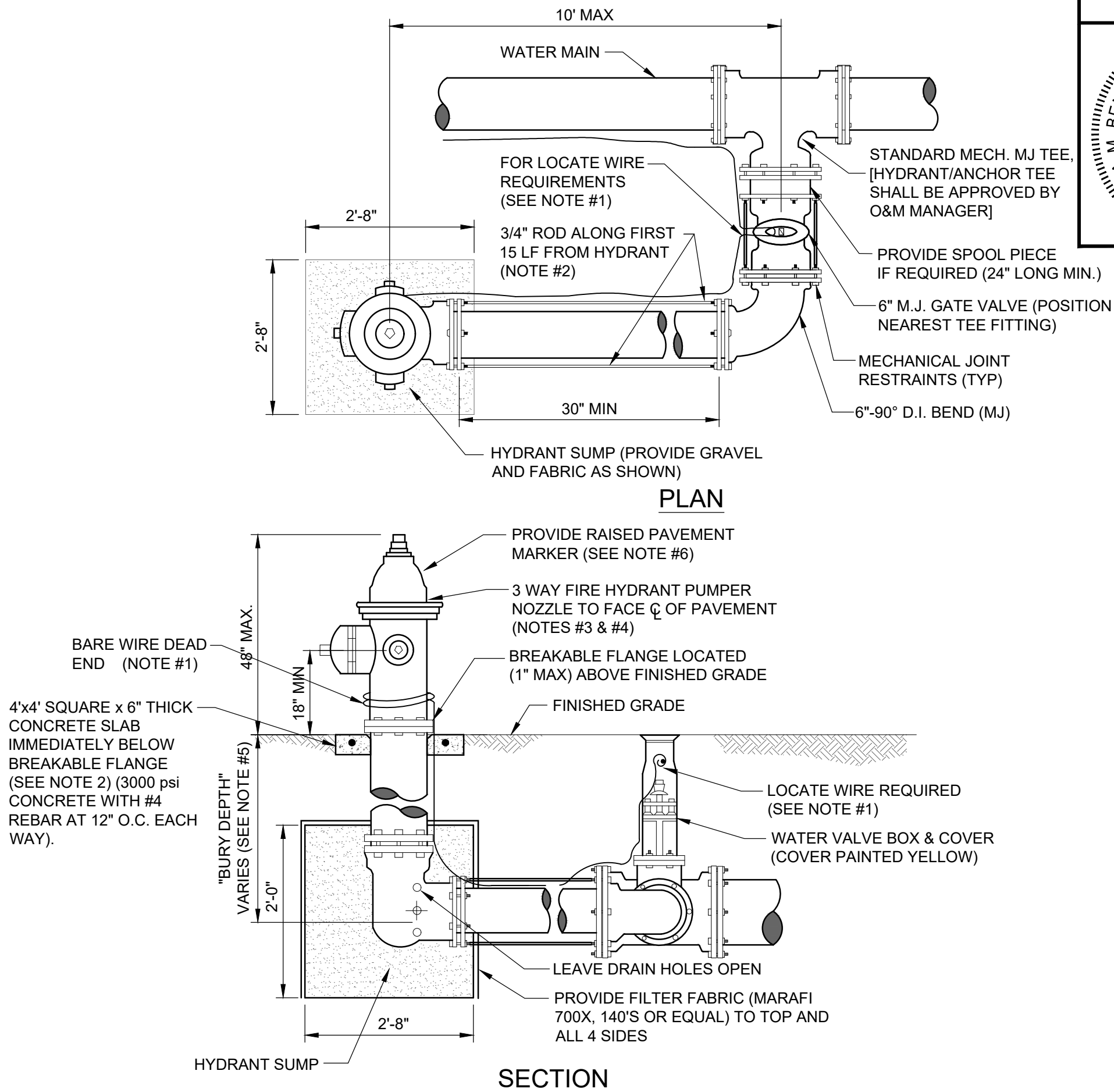
NOTES:

- LOCATE WIRE SHALL BE ROUTED FROM THE VALVE TO THE HYDRANT AS SHOWN ABOVE LEAVING ENOUGH SLACK TO REACH 4' ABOVE FINAL GRADE. THE END OF THE WIRE SHALL BE SECURED TO THE PIPE MAIN. SEE SECTION 350, LOCATE WIRE INSTALLATION PARAGRAPH.
- FIRE HYDRANTS SHALL BE INSTALLED BETWEEN BACK OF CURB AND FACE OF SIDEWALK AND NOT WITHIN SWALE/DITCH AREAS. THE DISTANCE RANGE FROM EDGE OF ADJACENT PAVEMENT, BACK OF CURB AND FACE OF SIDEWALK SHALL BE IN COMPLIANCE WITH LOCAL COUNTY FIRE DEPARTMENT RULES AND AS APPROVED BY JEA AND APPLICABLE PERMITTING AGENCIES. DISTANCE SHALL BE MEASURED TO THE CLOSEST PART OF THE FIRE HYDRANT (I.E. THE PUMPER NOZZLE). THE MAXIMUM DISTANCE (BACK OF CURB) SHALL BE IN COMPLIANCE WITH LOCAL COUNTY FIRE DEPARTMENT RULES AND AS APPROVED BY JEA. FOR OTHER LOCATION LIMITATIONS SEE PLATES W-10 AND W-11. IF PIPING BETWEEN TEE AND HYDRANT IS LONGER THAN 80 LF, AN ADDITIONAL 6\"/>
- NO WATER MAIN BRANCHES OR SERVICE TAPS SHALL BE ALLOWED ALONG THE HYDRANT BRANCH MAIN, UNLESS APPROVED BY JEA.
- OPERATION OF THE FIRE HYDRANT SHALL BE EITHER FULL OPEN POSITION OR TOTALLY CLOSED POSITION. THE HYDRANT SHALL NOT BE UTILIZED TO THROTTLE OUTLET FLOW.
- PRIOR TO PROJECT FINAL INSPECTION, THE HYDRANT AND ALL ABOVE GROUND PIPING SHALL BE RE-OILED, GREASED AND REPAINTED (RUS- KIL ENAMEL-INTERNATIONAL YELLOW OR EQUAL), PRIVATELY OWNED AND MAINTAINED FIRE HYDRANTS SHALL BE PAINTED RED.
- FIRE HYDRANTS SHALL BE ORDERED WITH PROPER "BURY DEPTH" TO MEET ACTUAL FIELD CONDITIONS. THIS IS ESPECIALLY IMPORTANT FOR BRANCH LINES WHICH TEE-OFF A 12\"/>
- BLUE REFLECTIVE MARKERS SHALL BE INSTALLED IN SUCH A MANNER THAT THE REFLECTIVE FACE OF THE MARKER IS PERPENDICULAR TO A LINE PARALLEL TO THE ROADWAY CENTERLINE. THE BLUE REFLECTIVE MARKERS SHALL BE PLACED IN THE CENTER OF THE TRAVEL LANE, DIRECTLY ACROSS FROM AND ADJACENT TO EACH FIRE HYDRANT.

FIRE HYDRANT INSTALLATION  
USING MECHANICAL JOINT TEE

JANUARY 2024

PLATE W-13



NOTES:

- LOCATE WIRE SHALL BE ROUTED FROM THE VALVE TO THE HYDRANT AS SHOWN ABOVE LEAVING ENOUGH SLACK TO REACH 4' ABOVE FINAL GRADE. THE END OF THE WIRE SHALL BE SECURED TO THE PIPE MAIN. SEE SECTION 350, LOCATE WIRE INSTALLATION PARAGRAPH.
- FIRE HYDRANTS SHALL BE INSTALLED BETWEEN BACK OF CURB AND FACE OF SIDEWALK. ALL HYDRANTS SHALL BE LOCATED NO LESS THAN THREE (3) FEET FROM THE EDGE OF PAVEMENT OR BACK OF CURB OF THE ADJACENT ROADWAY AND NO LESS THAN THREE (3) FEET FROM ANY PHYSICAL FEATURE WHICH MAY OBSTRUCT ACCESS OR VIEW OF ANY HYDRANT UNLESS OTHERWISE APPROVED BY THE JEA. THE MAXIMUM DISTANCE (BACK OF CURB) SHALL BE IN COMPLIANCE WITH LOCAL COUNTY FIRE DEPARTMENT RULES AND AS APPROVED BY JEA. FOR OTHER LOCATION LIMITATIONS SEE PLATES W-10 AND W-11. IF PIPING BETWEEN TEE AND HYDRANT IS LONGER THAN 80 LF, AN ADDITIONAL 6\"/>
- NO WATER MAIN BRANCHES OR SERVICE TAPS SHALL BE ALLOWED ALONG THE HYDRANT BRANCH MAIN, UNLESS APPROVED BY JEA.
- OPERATION OF THE FIRE HYDRANT SHALL BE EITHER FULL OPEN POSITION OR TOTALLY CLOSED POSITION. THE HYDRANT SHALL NOT BE UTILIZED TO THROTTLE OUTLET FLOW.
- PRIOR TO PROJECT FINAL INSPECTION, THE HYDRANT AND ALL ABOVE GROUND PIPING SHALL BE RE-OILED, GREASED AND REPAINTED (RUS- KIL ENAMEL-INTERNATIONAL YELLOW OR EQUAL), PRIVATELY OWNED AND MAINTAINED FIRE HYDRANTS SHALL BE PAINTED RED.
- FIRE HYDRANTS SHALL BE ORDERED WITH PROPER "BURY DEPTH" TO MEET ACTUAL FIELD CONDITIONS. THIS IS ESPECIALLY IMPORTANT FOR BRANCH LINES WHICH TEE-OFF A 12\"/>
- BLUE REFLECTIVE MARKERS SHALL BE INSTALLED IN SUCH A MANNER THAT THE REFLECTIVE FACE OF THE MARKER IS PERPENDICULAR TO A LINE PARALLEL TO THE ROADWAY CENTERLINE. THE BLUE REFLECTIVE MARKERS SHALL BE PLACED IN THE CENTER OF THE TRAVEL LANE, DIRECTLY ACROSS FROM AND ADJACENT TO EACH FIRE HYDRANT.

FIRE HYDRANT INSTALLATION LIMITED SPACE

JANUARY 2024

PLATE W-14

DOMINION ENGINEERING GROUP, INC.  
4348 SOUTHPOINT BLVD., SUITE 204  
JACKSONVILLE, FLORIDA 32216  
904-854-4500

NO. 1

BY

DATE

REVISIONS

DESIGNER: J.M. BENDIS

DRAWN BY: J.M. BENDIS

CHECKED BY: C26

DATE: 01/21/2024

PROJ. NO.

DATE: JANUARY 2014

SCALE: AS NOTED

NO. SHEETS 1

SHEET NO. 5

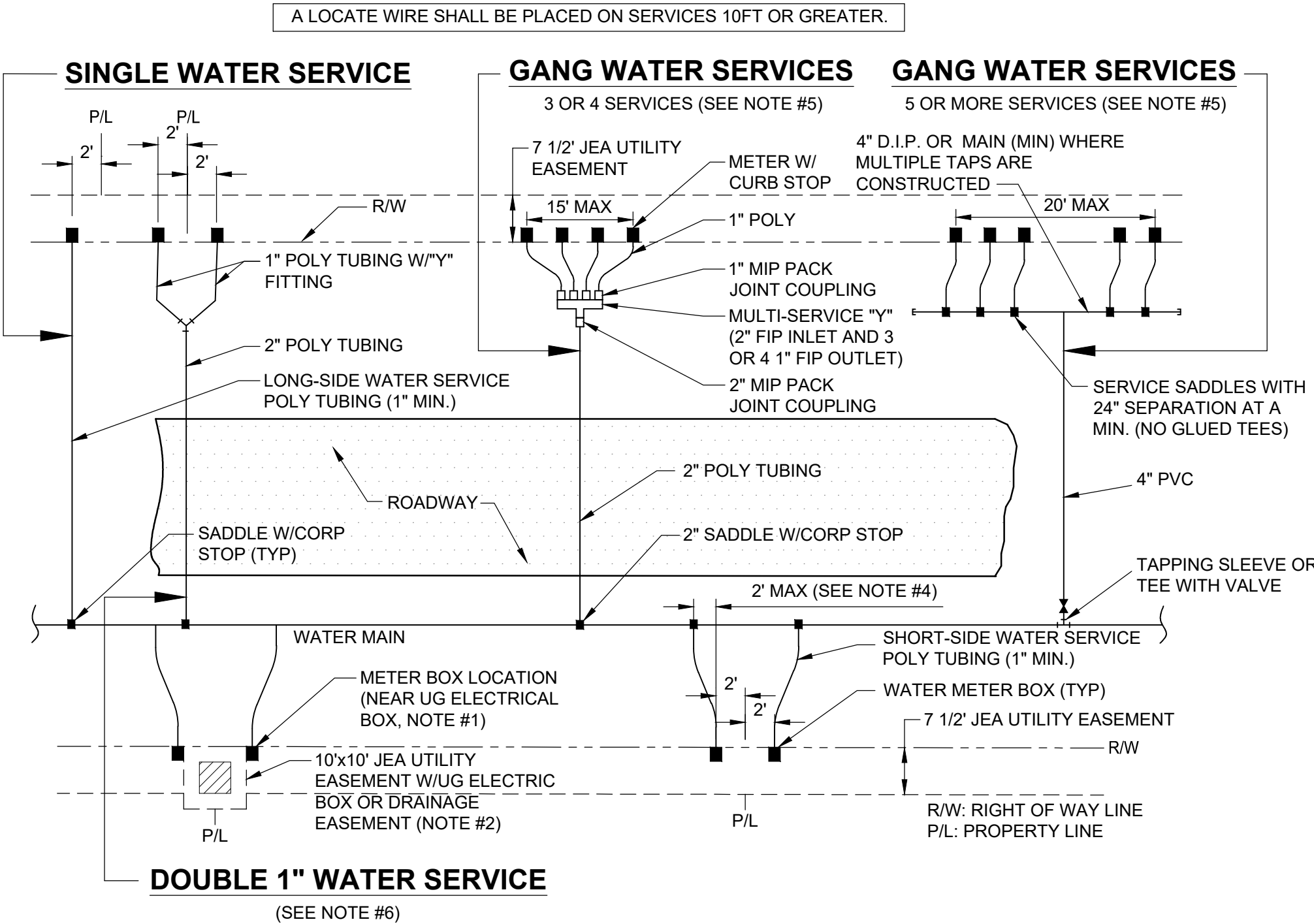
DRAWING NO. C26

JEA STANDARD

WATER AND RECLAIM DETAILS

JEA

Building Community

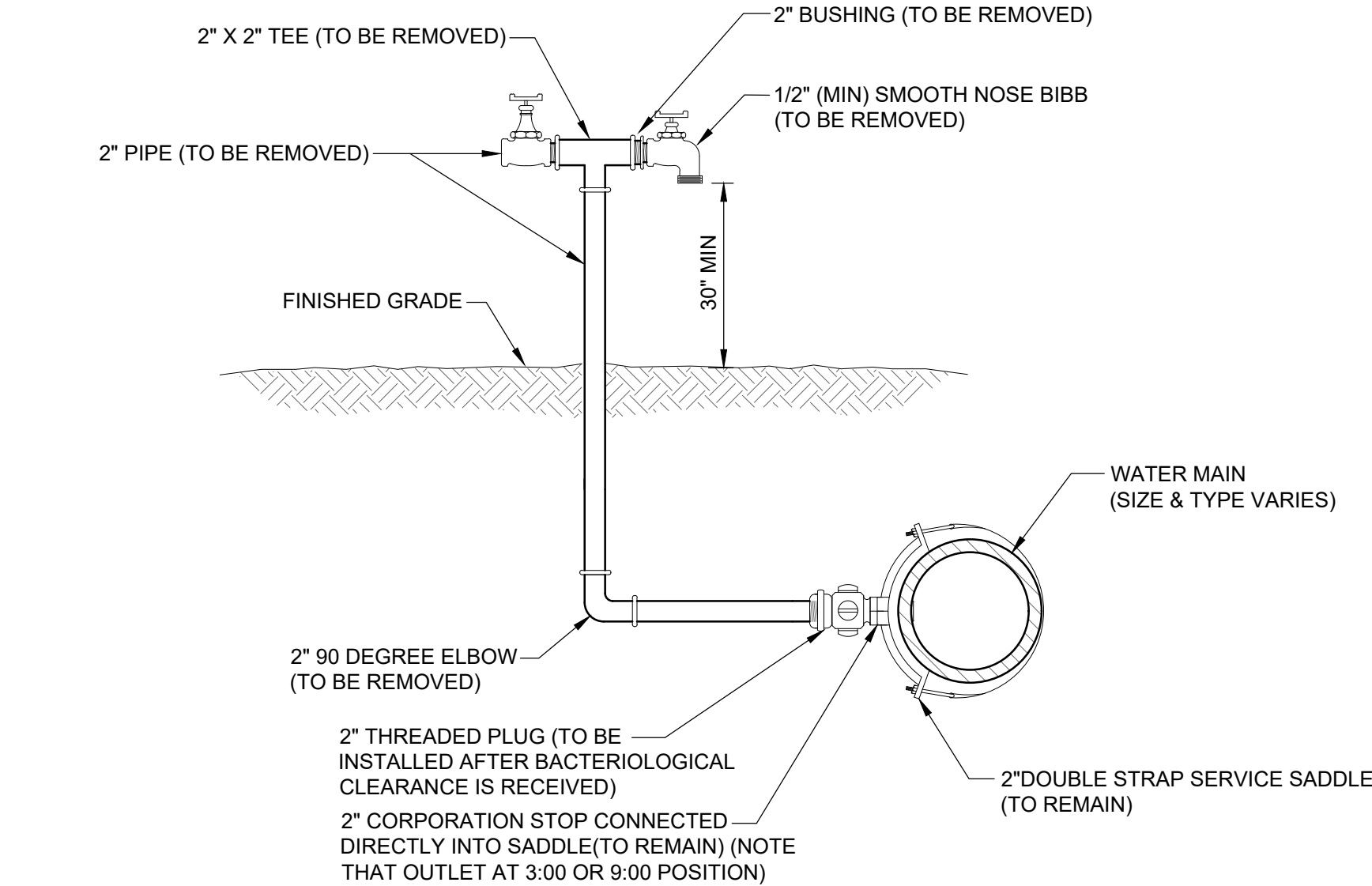


- NOTES :**
- THE SKETCHES ABOVE INDICATE TYPICAL WATER SERVICE AND METER BOX LOCATIONS. ACTUAL LOCATIONS OF BOXES MAY VARY SLIGHTLY ACCORDING TO FIELD CONDITIONS ENCOUNTERED. TYPICALLY, THE METER BOX SHALL LOCATED AT THE R/W LINE BUT INSIDE THE 7 1/2' ELECTRIC EASEMENT.
  - UNLESS SPECIFIED OTHERWISE BY THE APPLICABLE COUNTY (NASSAU, CLAY OR ST. JOHNS COUNTY), THE METER BOX SHALL BE LOCATED IN THE JEA 7 1/2' UTILITY EASEMENT, AND TWO FEET INSIDE OF THE PROLONGATION OF ONE OF THE SIDE PROPERTY LINES. IF A CONFLICT EXISTS WITH OTHER UTILITIES, THE METER BOX MAY BE ADJUSTED TO FOUR FEET (MAX.) INSIDE PROPERTY LINES (IN LIEU OF TWO FEET). UNLESS APPROVED OTHERWISE BY JEA, THE WATER METER BOX SHALL BE LOCATED IN NON-TRAFFIC AREAS (NOT IN SIDEWALKS OR DRIVEWAYS). IF THE METER BOX IS APPROVED BY JEA TO BE LOCATED IN A DRIVEWAY OR SIDEWALK, THEN THE CONSTRUCTION SHALL MEET STANDARD DETAIL NUMBERS W-384, AT A MINIMUM (SEE W-3 AND W-4 FOR THE REQUIREMENTS OF SPECIAL ORDER POLYMER BOX AND TOP). SET TOP OF BOX AT FINISHED GRADE. IF AN UNAPPROVED METER BOX IS IDENTIFIED BY JEA, THEN THE CONTRACTOR OR CUSTOMER SHALL BE RESPONSIBLE FOR THE COST OF RELOCATING ANY METER BOX WHICH IS LOCATED IN THE SIDEWALK OR DRIVEWAY OR THE COST TO PROVIDE THE CORRECT METER BOX. JEA SHALL APPROVE ALL DEVIATIONS TO THE ABOVE PRIOR TO CONSTRUCTION.
  - IF DRAINAGE OR OTHER EASEMENT LOCATED BETWEEN LOTS, METER BOXES SHALL BE LOCATED AT THE EASEMENT LINE BUT OUTSIDE THE EASEMENT AREA.
  - FOR SINGLE SERVICES, THE HORIZONTAL DISTANCE (PERPENDICULAR TO THE MAIN) BETWEEN THE SERVICES SADDLE AND THE METER BOX SHALL BE 2 FEET MAXIMUM. FOR DOUBLE 1" SERVICES, THE 2" POLY MAIN SHALL BE LOCATED CENTERED BETWEEN THE TWO METER BOXES. LOCATE WIRE IS REQUIRED ON ALL SERVICES 10' OR GREATER IN LENGTH. IF LOCATE WIRE IS REQUIRED, THE WIRE SHALL RUN FROM THE METER BOX (W/ PIG TAIL) TO THE MAIN (DEAD END SHALL BE TAPED WITH NO CONNECTION TO MAIN WIRE WITH THE LAST 24 INCHES STRIPED OF INSULATION/BARE WIRE AS GROUND). ALL EXCEPTIONS TO THIS REQUIREMENT MUST BE APPROVED BY JEA. THIS WILL ASSIST IN LOCATING EXISTING SERVICE LINES IN THE FUTURE.
  - GANG WATER SERVICES: FOR 3 OR 4 SERVICES IN ONE AREA, A DUCTILE IRON PIPE (D.I.P.) WATER MAIN EXTENSION W/LOCATE WIRE MAY BE UTILIZED ON EITHER SHORT-SIDE OR LONG SIDE SERVICES WHERE SHOWN ON THE DRAWINGS. LOCATE WIRE SHALL EXTEND FROM ONE METER BOX TO CORP STOP AT WATER MAIN. FOR 5 OR MORE SERVICES IN ONE AREA, A WATER MAIN EXTENSION W/LOCATE WIRE MAY BE UTILIZED ON EITHER SHORT-SIDE OR LONG SIDE SERVICES WHERE SHOWN ON THE DRAWINGS (TAPS STAGGERED AND AT 2 FEET ON CENTER-MIN). FOR WATER SUPPLY HEADERS WHERE 5 OR MORE TAPS ARE CONSTRUCTED, THE HEADER PIPE SHALL BE 4" AT A MINIMUM. EXAMPLE: CONSTRUCT A 4" MAIN PVC CROSSING THE STREET FOR 5 RESIDENTIAL CUSTOMERS, UTILIZING 4" DIP, 4" PIPE, 4"x1" SADDLES AND 1" CORP STOPS (NO GLUED TEE FITTINGS). THE 4" OR LARGER D.I.P. WATER MAIN MUST BE SIZED AND DESIGNED BY THE P.E. ENGINEER.
  - DOUBLE 1" WATER SERVICES IS ALLOWED FOR SHORT SIDE OR LONG SIDE SERVICES AND WHERE SHOWN ON THE DRAWINGS.
  - A 1" IRRIGATION SERVICE MAYBE TAPPED INTO THE (1" MIN) DOMESTIC WATER SERVICE LINE (WHICH SERVES THE SAME CUSTOMER) UTILIZING A 1" BRONZE "Y" FITTING. (IN AREAS WHERE NO RECLAIMED WATER IS AVAILABLE).
  - No 2" AND SMALLER WATER SERVICE TAPS PERMITTED ON WATER MAINS WHICH ARE 20" AND LARGER SIZE.
  - RECLAIMED WATER METER BOXES OR SERVICES SHALL BE CONSTRUCTED SIMILAR TO THE ABOVE AND SHALL BE LOCATED, AT A MIN. OF 10' FROM THE POTABLE WATER SERVICE, AND/OR BOX AND NOT ALLOWED IN CONCRETE OR ASPHALT UNLESS APPROVED OTHERWISE BY JEA.
  - SERVICE SIZE SHALL BE SAME AS THE METER SIZE.

## WATER OR RECLAIM SERVICE INSTALLATIONS 2" AND SMALLER METER

JANUARY 2024

PLATE W-1



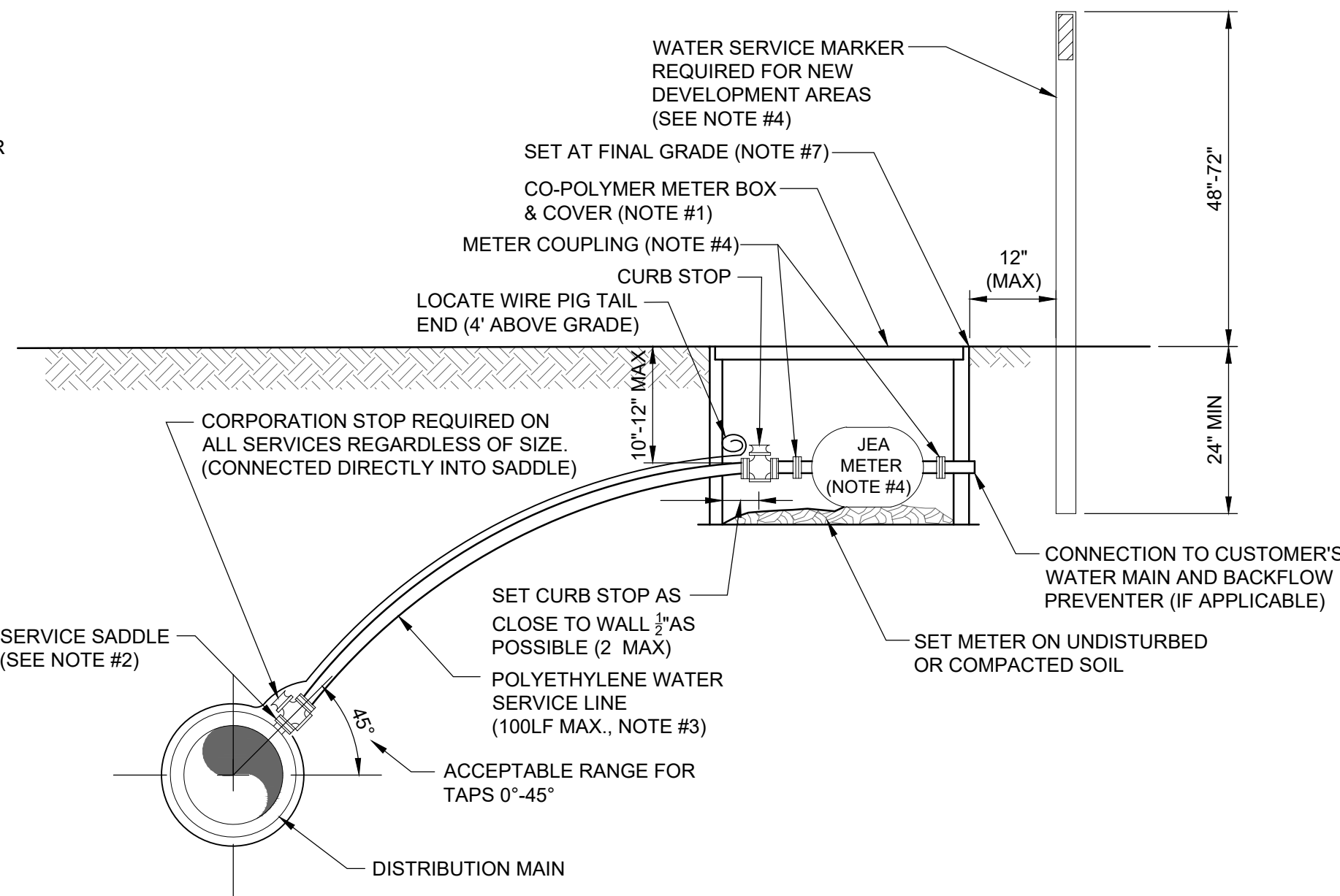
**NOTES:**

- LOCATION OF SAMPLE POINT BIBB SHALL NOT BE WITHIN THE ROADWAY BUT ROUTED TO THE ROADWAY SHOULDERS (NON-TRAFFIC AREAS).
- ALL PIPE & FITTING SHALL BE GALVANIZED MATERIAL OR PVC (S-40).
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL TEMPORARY PIPING & FITTING (AS NOTED) AFTER BACTERIOLOGICAL CLEARANCE IS RECEIVED
- THE CONTRACTOR SHALL COMPLY WITH ALL JEA RULES AND POLICES AS OUTLINED BY THE JEA'S ENVIRONMENTAL RESPONSE COORDINATOR (ERC) AND OTHER ASSOCIATED JEA STANDARDS.

## 2" TEMPORARY SAMPLE TAP FOR STUB OUT

JANUARY 2024

PLATE W-26



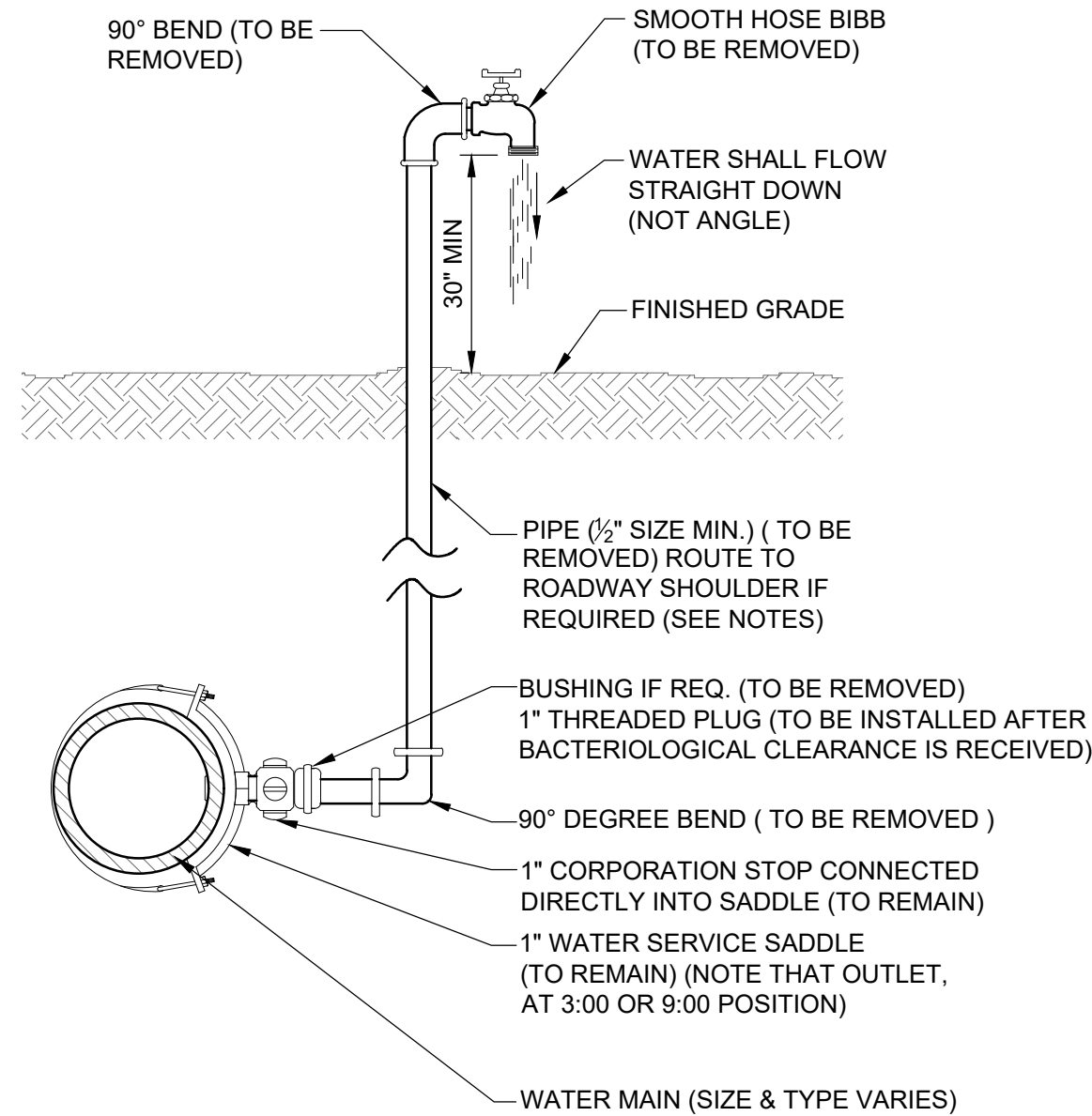
**NOTES:**

- SEE PLATE W-1 FOR METER LOCATION REQUIREMENTS.
- SINGLE BAND SADDLES SHALL BE UTILIZED ON NEW 1" WATER SERVICES WHICH ARE INSTALLED ON A DRY 10" SIZE OR SMALLER WATER MAIN (NEW WATER MAIN CONSTRUCTION). FOR WET TAPS OR WATER MAINS 12" SIZE AND LARGER, A DOUBLE BAND SADDLE IS REQUIRED. BRASS SADDLES MAY BE UTILIZED ON NEW 1 INCH AND SMALLER WATER SERVICES WHICH ARE INSTALLED ON A DRY 10 INCH OR SMALLER PVC WATER MAIN.
- NO OPEN CUT UNDER ROADWAY PAVING ALLOWED UNLESS THE ROADWAY IS BEING RECONSTRUCTED OR IF DIRECTED OTHERWISE BY JEA. CONSTRUCT POLY LINE WITH 24" (MIN.) COVER UNDER ROADWAYS. THE POLY WATER SERVICE LINE SHALL BE SAME SIZE AS THE METER (1" MINIMUM) AND BE INSTALLED PERPENDICULAR TO THE MAIN AND NOT EXCEED 100'LF UNLESS APPROVED OTHERWISE BY JEA.
- INSTALL PVC PLUG IN ALL CURB STOPS IF WATER SERVICE IS "NOT IN USE" (I.E.: IF NO METER IS INSTALLED). WATER SERVICES SERVING VACANT LOTS (SERVICE NOT IN USE), SHALL INCLUDE A "W" CUT INTO THE CURB (CLOSEST TO THE METER BOX), AND PAINTED BLUE (PAINTED PURPLE FOR RECLAIMED WATER). IN ADDITION, FOR NEW DEVELOPMENT AREAS WHERE THE WATER SERVICE IS "NOT IN USE", A LANDSCAPE TIMBER OR 3x3 MIN. P.T. POST (TOP PAINTED BLUE OR PURPLE FOR RECLAIMED WATER). THE REMOVAL OR TRANSFER OF A WATER SERVICE SHALL INCLUDE BRASS METER COUPLINGS (HEX ON BARREL TYPE).
- NO 2" AND SMALLER WATER SERVICE TAPS PERMITTED ON WATER MAINS WHICH ARE 20" AND LARGER SIZE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR OR REPLACEMENT OF THE METER OR ELECTRONIC DEVICES IF DAMAGED BY THE CONTRACTOR DURING THE CONSTRUCTION PERIOD.
- METER BOX AND TOP SHALL BE CLEAR OF ALL DEBRIS TO ALLOW FULL ACCESS TO BOX (I.E. NO DIRT, TRASH OR OTHER DEBRIS PLACED ON TOP OF BOX).
- LOCATE WIRING REQUIRED ON ALL SERVICES 10' OR GREATER IN LENGTH. SEE PLATE W-44.

## WATER SERVICE DETAIL- 2" AND SMALLER METER

JANUARY 2024

PLATE W-2



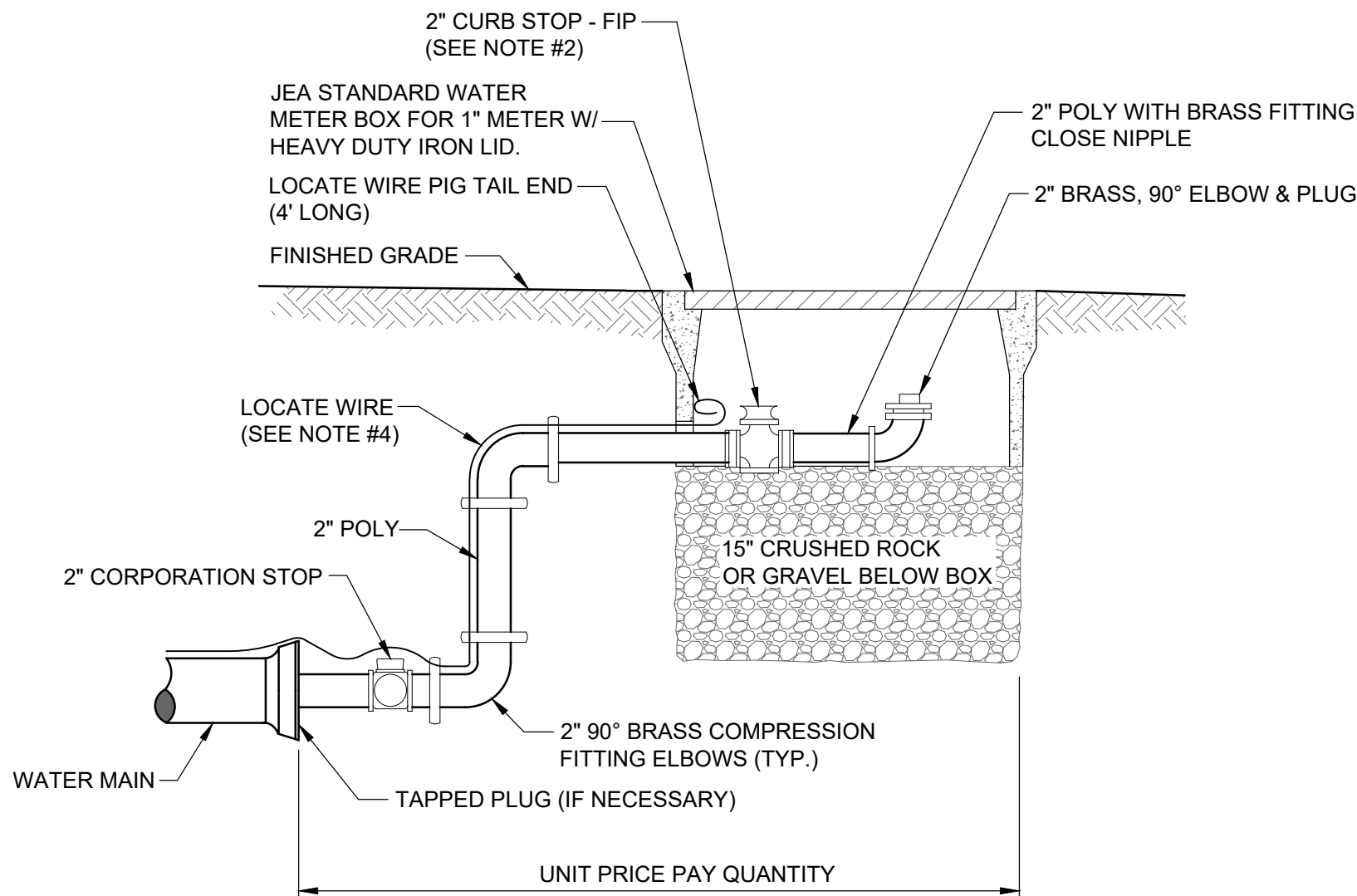
**NOTES:**

- LOCATION OF SAMPLE POINT BIBB SHALL NOT BE WITHIN THE ROADWAY BUT ROUTED TO THE ROADWAY SHOULDERS (NON-TRAFFIC AREAS).
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL TEMPORARY PIPING & FITTINGS (AS NOTED), AFTER BACTERIOLOGICAL CLEARANCE IS RECEIVED.
- PIPE AND FITTINGS SHALL BE PVC (SCH. 40) OR GALV. MATERIAL.
- THE USE OF THE ABOVE CONSTRUCTION FOR A TEMPORARY SAMPLE POINT SHALL BE LIMITED TO AREAS WHERE A SAMPLE TAP BY ALTERNATIVE METHODS (SEE W-24) IS NOT FEASIBLE OR IF DIRECTED OTHERWISE BY JEA.
- THE CONTRACTOR SHALL COMPLY WITH ALL JEA RULES AND POLICES AS AS OUTLINED BY JEA'S ENVIRONMENTAL RESPONSE COORDINATOR (ERC) AND OTHER ASSOCIATED JEA STANDARDS.

## TEMPORARY SAMPLE TAP

JANUARY 2024

PLATE W-25



**NOTES:**

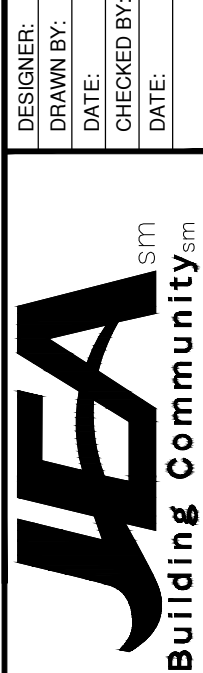
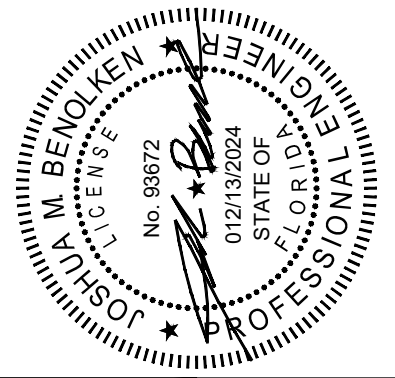
- PIPE SHALL BE POLYETHYLENE. FITTINGS SHALL BE BRASS.
- THE 2" CURB STOP SHALL BE ALL BRONZE. FITTINGS SHALL BE BRASS.
- ANY RECLAIMED WATER VALVE SHALL HAVE RECLAIMED EMBLEM.
- LOCATE WIRE FOR 10' OR GREATER IN LENGTH.
- CANNOT BE PLACED UNDER CONCRETE OR PAVEMENT.
- PLACE 2 FEET PAST LAST WATER MAIN SERVICE CONNECTION.

## FLUSHING VALVE BELOW GRADE

JANUARY 2024

PLATE W-28

DOMINION ENGINEERING GROUP, INC.  
4348 SOUTHPOINT BLVD., SUITE 204  
JACKSONVILLE, FLORIDA 32216  
904-854-4500



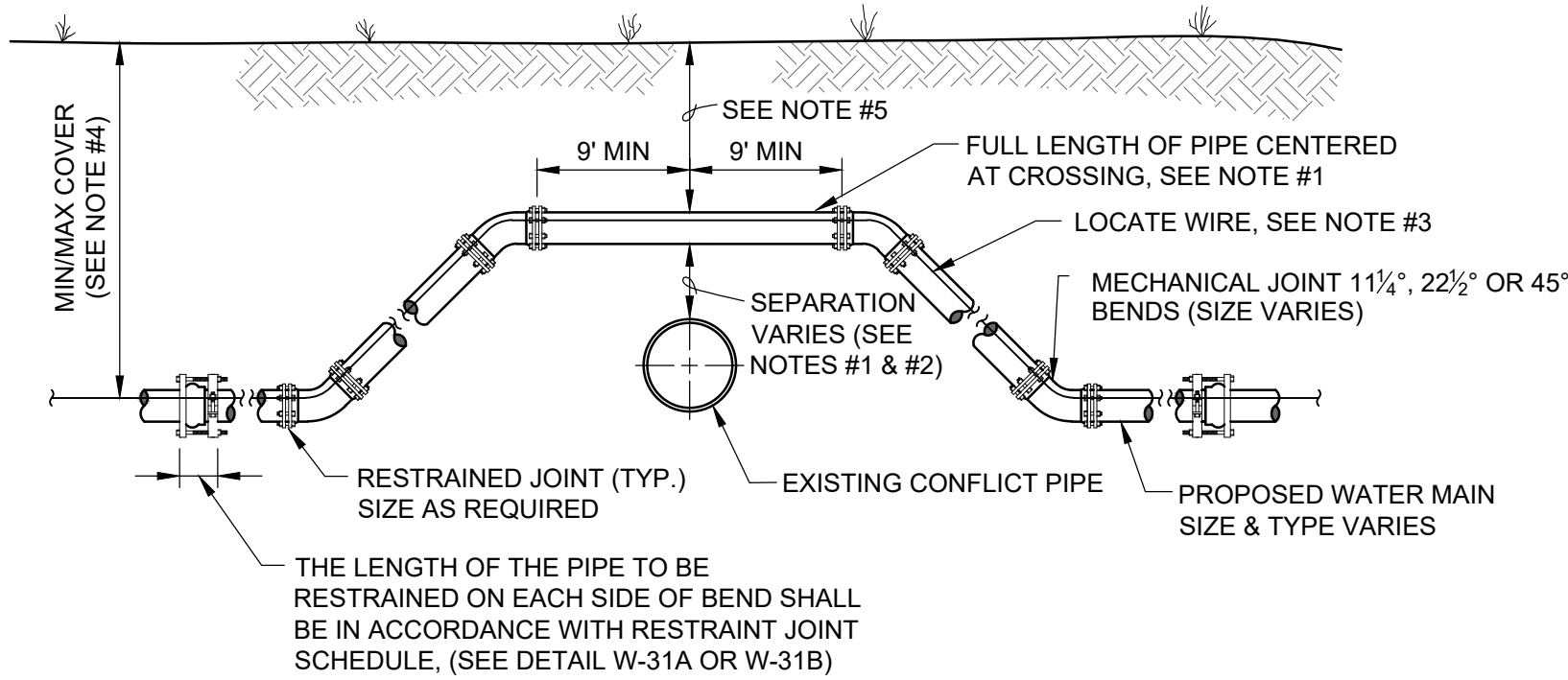
JEA STANDARD  
WATER AND RECLAIM DETAILS

NO. SHEETS	1
PROJ. NO.	
DATE:	JANUARY 2014
SHEET NO.	5
DRAWING NO.	C27
SCALE:	AS NOTED

REVISIONS

NO.	BY	DATE
6.		
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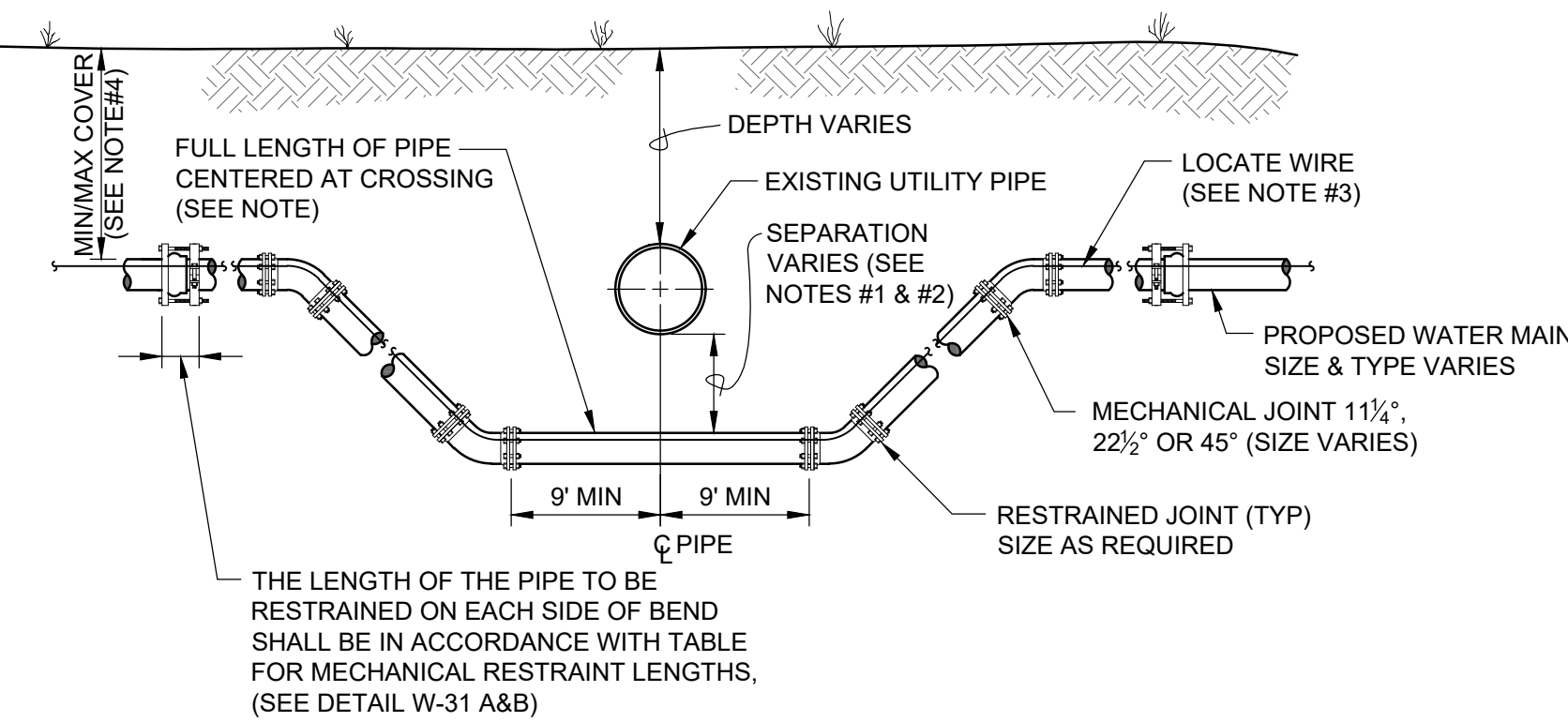
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#### CASE "A" CROSSING

##### NOTES:

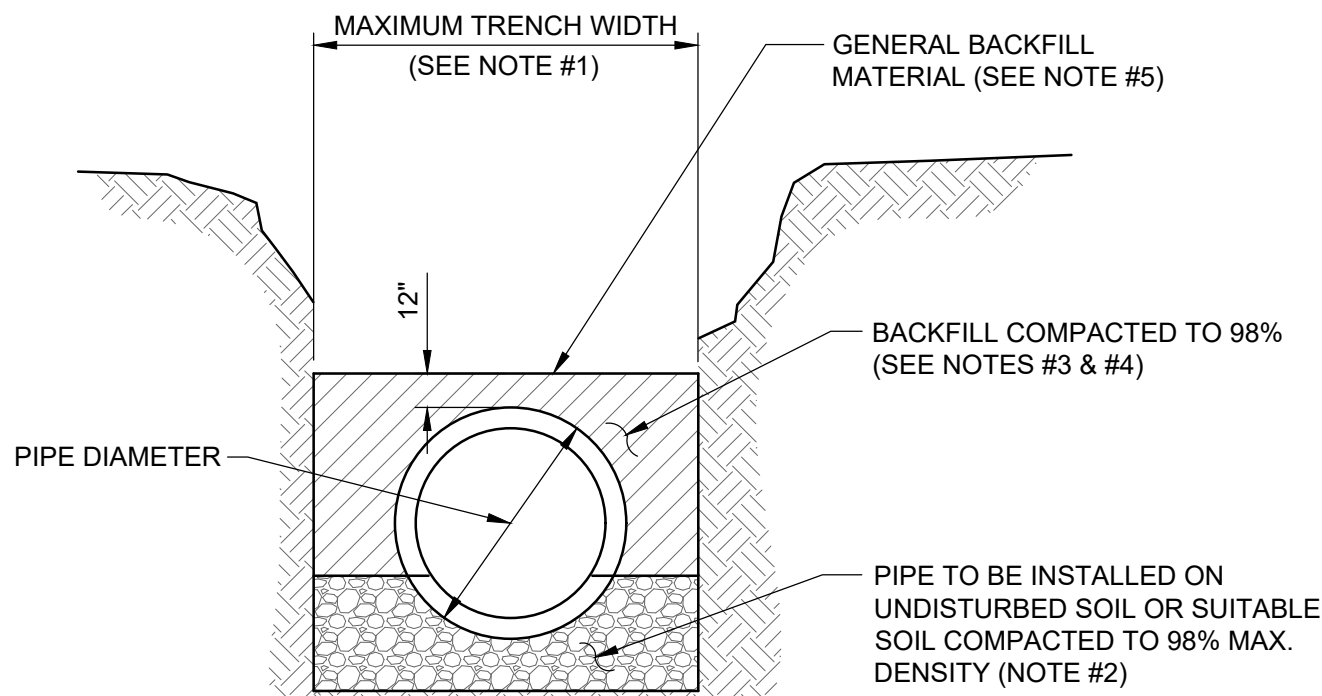
1. THE SOILS BETWEEN THE NEW MAIN AND THE CONFLICT PIPE SHALL BE COMPACTED TO 98% OF THE MAXIMUM DENSITY AS DETERMINED BY THE LABORATORY MODIFIED PROCTOR TEST, ASTM D 1557.
2. FOR MINIMUM VERTICAL SEPARATION REQUIREMENTS SEE DETAIL (W-10 AND W-11).
3. LOCATING WIRE REQUIRED: SEE DETAIL W-44.
4. THE COVER FOR PIPING LESS THAN 24" SIZE SHALL BE 30" (MIN) IN UNPAVED AREAS, 36" (MIN) IN PAVED AREAS AND A MAXIMUM COVER OF 60", UNLESS APPROVED BY JEA. THE COVER FOR PIPING 24" SIZE AND LARGER SHALL BE 36" (MIN) IN PAVED AND UNPAVED AREAS AND A MAXIMUM COVER OF 84", UNLESS APPROVED BY JEA.
5. IF UTILITY CONFLICT IS LOCATED IN A NON-TRAFFIC AREA (NO TRAFFIC LOADS) AND THE NEW PIPE IS D.I.P., THEN THE MINIMUM COVER MAY BE REDUCED TO 24 INCHES (ONLY IN THE AREA OF THE CONFLICT).



#### CASE "B" CROSSING

##### NOTES:

1. THE SOILS BETWEEN THE NEW MAIN AND THE CONFLICT PIPE SHALL BE COMPACTED TO 98% OF THE MAXIMUM DENSITY AS DETERMINED BY THE LABORATORY MODIFIED PROCTOR TEST, ASTM D 1557
2. FOR MINIMUM VERTICAL SEPARATION REQUIREMENTS SEE DETAILS (W-10 AND W-11)
3. LOCATING WIRE REQUIRED: SEE DETAIL W-44.
4. THE COVER FOR PIPING LESS THAN 24" SIZE SHALL BE 30" (MIN) IN UNPAVED AREA, 36" (MIN) IN PAVED AREAS AND A MAXIMUM COVER OF 60", UNLESS APPROVED BY JEA. THE COVER FOR PIPING 24" SIZE AND LARGER SHALL BE 36" (MIN) IN PAVED AND UNPAVED AREAS AND A MAXIMUM COVER OF 84", UNLESS APPROVED BY JEA.
5. IN LOCATIONS WHERE WATER/RECLAIM MAINS CROSS UNDER A BOX-CULVERT, OR 36-INCH DIAMETER AND LARGER STORM WATER MAIN, JEA WILL REQUIRE DIP TO BE UTILIZED FOR THE MAIN.



#### TYPICAL TRENCH

##### NOTES:

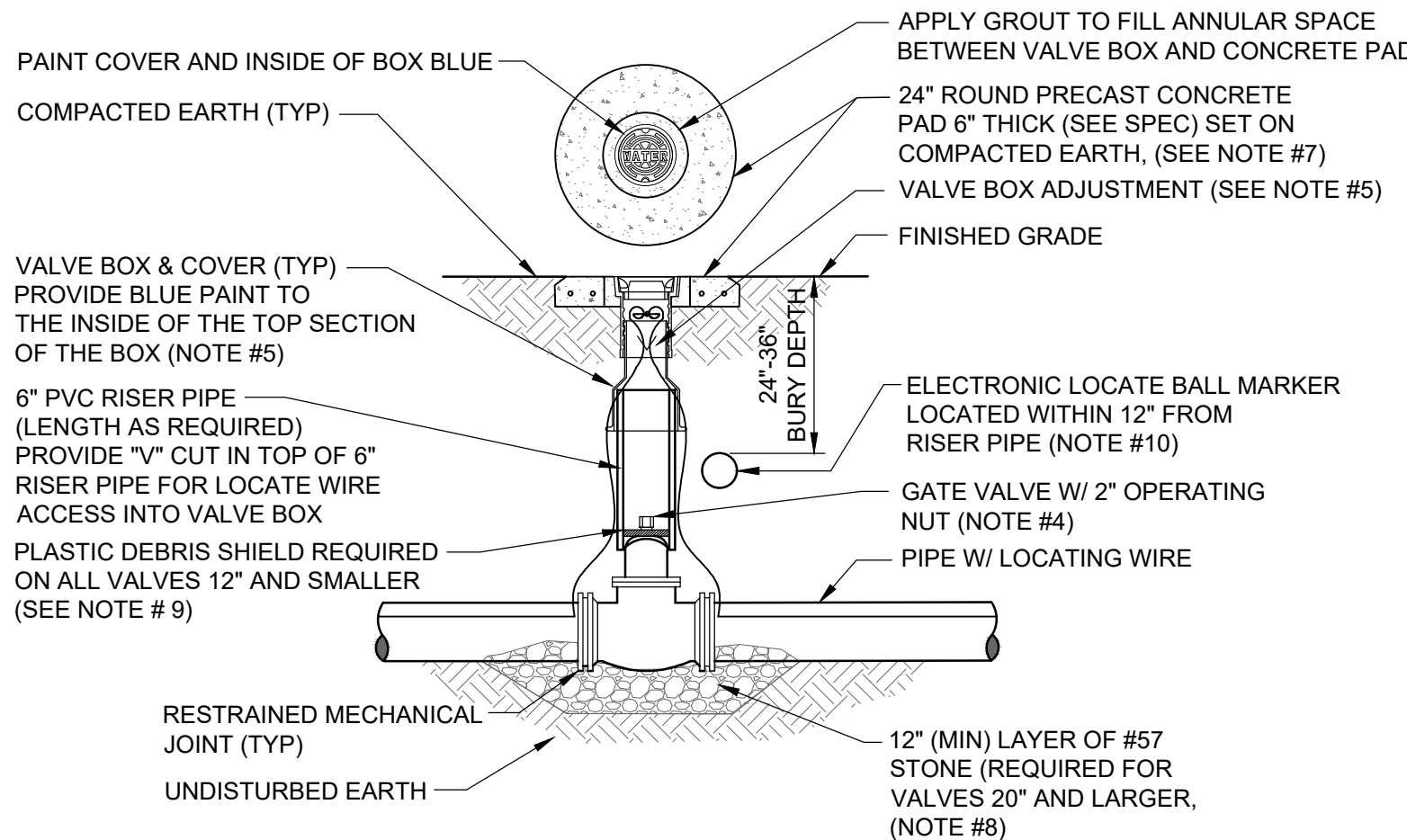
1. TRENCH SIDES SHALL BE APPROXIMATELY VERTICAL BETWEEN AN ELEVATION OF 1 FOOT ABOVE THE TOP OF THE PIPE AND THE CENTER LINE OF THE PIPE. OTHERWISE, TRENCH SIDES SHALL BE AS VERTICAL AS POSSIBLE OR AS REQUIRED BY OSHA STANDARDS. REFER TO THE MEASUREMENT AND PAYMENT SECTION (SECTION #801, PARAGRAPH #4)) TO DETERMINE MAXIMUM PAYLINE WIDTHS.
2. BELL HOLE SHALL BE DUG TO PERMIT THE ENTIRE STRAIGHT BARREL OF THE PIPE TO REST ON THE UNDISTURBED TRENCH BOTTOM. BOULDERS OR LOOSE ROCKS LARGER THAN 3/4 INCH IN SIZE WILL NOT BE PERMITTED IN BACKFILL UP TO 1 FOOT ABOVE THE TOP OF THE PIPE.
3. BACK FILL MATERIAL UP TO A LEVEL OF 1 FOOT OVER THE PIPE SHALL CONSIST OF AASHTO CLASS A-3 SOIL (SUITABLE SOIL) AND SHALL EXCLUDE CLAY MATERIALS AND LOOSE ROCKS LARGER THAN 3/4 INCH SIZE.
4. BACKFILL MATERIAL UP TO A LEVEL 1 FOOT OVER THE TOP OF PIPE OR BOTTOM OF STRUCTURES SHALL BE PLACED IN 6 INCH COMPACTED THICKNESS LAYERS AND SHALL BE COMPACTED TO 98% OF ITS MAXIMUM DENSITY AS DETERMINED BY THE LABORATORY MODIFIED PROCTOR TEST, ASTM D1557.
5. SEE " EXCAVATION AND EARTHWORK", SECTION 408 FOR ADDITIONAL REQUIREMENTS INCLUDING REMOVAL AND REPLACEMENT OF UNSUITABLE SOILS, DEWATERING, COMPACTION REQUIREMENTS AND DENSITY TESTING OF COMPACTED SOILS.

### OPEN CUT TRENCH FOR PRESSURE PIPE

JANUARY 2024

IN CITY RIGHT OF WAY

PLATE W-42



##### NOTES:

1. FOR UNPAVED LOCATIONS, A PRECAST CONCRETE VALVE PAD SHALL BE PROVIDED AND INSTALLED FLUSH WITH GRADE. CONCRETE PAD IS NOT REQUIRED FOR VALVE LOCATED IN THE ROADWAY, UNLESS SHOWN OR NOTED OTHERWISE.
2. LOCATING WIRE IS REQUIRED ON ALL PRESSURE PIPING (SEE DETAIL W-44).
3. A "V" CUT SHALL BE CARVED IN THE CURB CLOSEST/ADJACENT/( ASPHALT IF NO CURB) TO ALL BELOW GRADE VALVES. THE "V" CUT IS TO BE PAINTED BLUE WATER/PURPLE RECLAIMED.
4. IN PAVED AREAS, INSTALL VALVE AT A DEPTH TO ALLOW A 12" MIN. DISTANCE BETWEEN THE VALVE COVER PLATE AND THE TOP OF THE VALVE OPERATING NUT. OUTSIDE OF PAVED AREAS (GRASS), INSTALL VALVE AT A DEPTH TO ALLOW A 6" MINIMUM DISTANCE BETWEEN THE VALVE COVER AND THE TOP OF THE VALVE OPERATING NUT. OPERATING NUT/STEM EXTENSION SHALL BE PROVIDED (WHERE APPLICABLE) SO THAT THE OPERATING NUT WILL BE NO MORE THAN 30 INCHES BELOW FINISHED GRADE.
5. FOR NEW CONSTRUCTION, THE VALVE BOX SHALL BE ADJUSTED TO MIDRANGE TO ALLOW FOR FUTURE BOX ADJUSTMENTS. ROUTE LOCATE WIRES THRU A "V" CUT IN THE TOP OF THE 6" PVC RISER PIPE FOR LOCATE WIRE ACCESS INTO VALVE BOX. THE LOCATE WIRES WITH A 24" LONG PIG-TAIL AT THE TOP SHALL BE CONNECTED TOGETHER WITH A WIRE NUT.
6. BRASS IDENTIFICATION TAG INDICATING "WATER", VALVE SIZE, DIRECTION AND TURNS TO OPEN & VALVE TYPE. PROVIDE A 3/8" HOLE IN BRASS TAG AND ATTACH TAG (TWIST WIRE AROUND TAG) TO THE END OF THE LOCATE WIRE. TAGS ARE NOT REQUIRED ON VALVES INSTALLED ON FIRE HYDRANT BRANCH LINES.
7. IN LIEU OF PRECAST CONCRETE PAD, A 6" THICK X 24" (ROUND OR SQUARE) POURED CONCRETE PAD W/2 - #4 REBAR AROUND PERIMETER, MAY BE USED.
8. GRAVEL SHALL BE PROVIDED UNDER ALL VALVES 20" AND LARGER. THE MINIMUM VERTICAL LIMIT OF GRAVEL IS 12" UNDER THE VALVE UP TO 1/3 THE OVERALL HEIGHT OF THE VALVE.
9. FOR VALVES 12 INCH AND SMALLER, PROVIDE A WHITE OR BLACK PLASTIC DEBRIS SHIELD WHICH INSTALLS BELOW THE OPERATING NUT. THIS SHIELD SHALL CENTER THE RISER PIPE BOX OVER THE OPERATING NUT AND MINIMIZE INFILTRATION. SHIELD SHALL BE BY AFC, BOXLOK OR APPROVED EQUAL.
10. ALL VALVES SHALL BE INSTALLED WITH AN ELECTRIC LOCATE MARKER. MARKER SHALL BE 4" DIA. COLOR CODED BALL MARKER (3M-1403XR FOR WATER AND 1408XR FOR RECLAIMED WATER).

### ADJUSTMENT UNDER EXISTING UTILITIES PIPE JOINT DEFLECTION

JANUARY 2024

PLATE W-40

#### MAXIMUM ALLOWED OFFSET FOR PIPE BY JOINT DEFLECTION

PVC PIPE			
PIPE SIZE (IN.)	(X) MAX. OFFSET (IN.)	(Y) ANGLE AT ONE BELL	RESULTING RADIUS OF CURVE WITH 20FT. LENGTHS
2	30	7°	158 FT
4	10	2.4°	480 FT
6	10	2.4°	480 FT
8	10	2.4°	480 FT
10	10	2.4°	480 FT
12	8.5	2°	564 FT
14 - 24	5	1.2°	960 FT
30 - 48	3.25	0.8°	1477 FT

DUCTILE IRON PIPE (Mechanical Joint)			
PIPE SIZE (IN.)	(X) MAX. OFFSET (IN.)	(Y) ANGLE AT ONE BELL	RESULTING RADIUS OF CURVE WITH 20FT. LENGTHS
-	-	-	-
4	27	6.5°	177 FT
6	24	5.7°	200 FT
8 - 12	17.5	4.2°	273 FT
14 - 16	12	2.9°	400 FT
18 - 20	10	2.4°	477 FT
24 - 30	8	1.9°	600 FT
36	7	1.7°	687 FT
42 - 48	6.7	1.6°	716 FT

#### MAXIMUM ALLOWED OFFSET FOR PIPE BY JOINT DEFLECTION

PVC PIPE			
PIPE SIZE (IN.)	(X) MAX. OFFSET (IN.)	(Y) ANGLE AT ONE BELL	RESULTING RADIUS OF CURVE WITH 20FT. LENGTHS
-	-	-	-
2	30	7°	158 FT
4	10	2.4°	480 FT
6	10	2.4°	480 FT
8	10	2.4°	480 FT
10	10	2.4°	480 FT
12	8.5	2°	564 FT
14 - 24	5	1.2°	960 FT
30 - 48	3.25	0.8°	1477 FT

DUCTILE IRON PIPE (Mechanical Joint)			
PIPE SIZE (IN.)	(X) MAX. OFFSET (IN.)	(Y) ANGLE AT ONE BELL	RESULTING RADIUS OF CURVE WITH 20FT. LENGTHS
-	-	-	-
4	27	6.5°	177 FT
6	24	5.7°	200 FT
8 - 12	17.5	4.2°	273 FT
14 - 16	12	2.9°	400 FT
18 - 20	10	2.4°	477 FT
24 - 30	8	1.9°	600 FT
36	7	1.7°	687 FT
42 - 48	6.7	1.6°	716 FT

### ADJUSTMENT OVER EXISTING UTILITIES PIPE JOINT DEFLECTION

JANUARY 2024

PLATE W-41

### WATER VALVE INSTALLATION DETAIL

JANUARY 2024

PLATE W-18

DOMINION ENGINEERING GROUP, INC.  
4348 SOUTHPOINT BLVD., SUITE 204  
JACKSONVILLE, FLORIDA 32216  
904-864-4500

NO. SHEETS  
1

SHEET NO.  
5

DRAWING NO.  
C28

DESIGNER:  
DRAWN BY:  
DATE:  
CHECKED BY:  
DATE:

REVISIONS  
NO. BY DATE

PROJ. NO.  
DATE: JANUARY 2014  
SCALE: AS NOTED

NO. SHEETS  
1

SHEET NO.  
5

DRAWING NO.  
C28

JEA  
Building Community

JEA STANDARD  
WATER AND RECLAIM DETAILS

PVC PIPE RESTRAINT NOTES:

1. THIS SCHEDULE SHALL BE UTILIZED ON ALL WATER, SEWER FORCE MAIN OR RECLAIMED WATER SYSTEMS. ALL FITTINGS SHALL BE RESTRAINED TO LENGTHS INDICATED ON THE ABOVE SCHEDULE, AT A MINIMUM.
2. ASSUMPTIONS: PVC PIPE, SAFETY FACTOR=1.5, TEST PRESSURE=150PSI, SOIL=GM OR SM, TRENCH TYPE 3, DEPTH OF COVER=30 INCHES FOR 20" AND SMALLER PIPE SIZE OR 36 INCHES FOR 24" AND LARGER PIPE SIZE.
3. BENDS AND VALVES: SHALL BE RESTRAINED ON EACH SIDE OF FITTING.
4. VERTICAL OFFSETS: ARE APPROX. 3 FEET COVER ON TOP AND APPROX. 8 FEET COVER ON BOTTOM. PER THE DETAILS, L<sub>u</sub> IS THE RESTRAINED LENGTH FOR THE UPPER (TOP) LEVEL, L<sub>i</sub> IS THE RESTRAINED LENGTH FOR THE LOWER (DEEPER) LEVEL. ASSUME 45 DEGREE BENDS.
5. TEES: TOTAL LENGTH BETWEEN FIRST JOINTS OR RESTRAINED LENGTH ON EITHER SIDE OF TEE (RUN) SHALL BE A TOTAL DISTANCE OF 30 FEET (MIN). SEE SCHEDULE ABOVE FOR RESTRAINT LENGTH ON TEE "BRANCH" LINE.
6. HDPE TO PVC TRANSITIONS: THE PVC PIPE SIDE SHALL BE RESTRAINED 35 FT (MIN).
7. THE INSTALLATION OF BELL HARNESS RESTRAINTS AT PVC JOINTS (DR-18 & 25 PIPE) SHALL BE COMPLETED PER THE MANUFACTURERS RECOMMENDATION, WHICH INCLUDES NOT OVER TIGHTENING THE PARALLEL RODS/NUTS. THESE NUTS SHOULD ONLY BE SNUG TIGHT. THE HOME MARKS ON THE PIPE SHOULD ALWAYS BE VISIBLE AFTER THE RESTRAINT IS INSTALLED. OVERHOMING THE JOINT MAY CAUSE A FAILURE AT THE BELL RESULTING IN A SERVICE OUTAGE.

LENGTH (L) TO BE RESTRAINED

NOMINAL PIPE SIZE (IN.)	HORIZONTAL BENDS				VERTICAL OFFSETS 45° BENDS (SEE NOTE 4)		VALVES OR DEAD ENDS
	90° BENDS L (FT.)	45° BENDS L (FT.)	22.5° BENDS L (FT.)	11.25° BENDS L (FT.)	UPPER L (FT.)	LOWER L (FT.)	
4	21	9	5	3	17	3	47
6	30	13	6	3	23	4	66
8	38	16	8	4	30	6	86
10	45	19	9	5	36	7	103
12	53	22	11	6	43	8	121
14	61	26	13	6	50	9	140
16	66	28	14	7	55	10	154
18	73	30	15	8	60	11	170
20	79	33	16	8	66	12	186
24	79	33	16	8	77	15	185
30	93	39	19	10	97	17	222
36	106	39	21	11	107	20	257
42	117	49	24	12	120	24	289
48	144	53	26	13	133	26	321

(SEE PLATE Nos. 38C & 38D FOR ADDITIONAL DETAILS)

REDUCERS	
SIZE (IN.)	L (FT.)
6x4	34
8x6	36
8x4	62
10x8	35
10x6	63
12x10	36
12x8	64
16x12	66
16x10	92
20x18	35
20x16	66
20x12	117
24x20	56
24x18	80
24x16	101
30x24	78
30x20	121
36x30	78
36x24	141
42x36	75
42x30	140
48x42	75
48x36	139

TEES SEE NOTE 5	
RUN SIZE (IN.)	BRANCH SIZE (IN.)
4	4
4	6
4	8
4	10
4	12
4	14
4	16
4	18
4	20
4	24
4	30
4	36
4	42
4	48
6	6
6	8
6	10
6	12
6	14
6	16
6	18
6	20
6	24
6	30
6	36
6	42
6	48
8	8
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20	36
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20	48
24	24
24	30
24	36
24	42
24	48
30	30
30	36
30	42
30	48
36	36
36	42
36	48
42	42
42	48
48	48

F.O. = FITTING ONLY

DUCTILE IRON PIPE RESTRAINT NOTES:

1. THIS SCHEDULE SHALL BE UTILIZED ON ALL WATER, SEWER FORCE MAIN OR RECLAIMED WATER SYSTEMS. ALL FITTINGS SHALL BE RESTRAINED TO LENGTHS INDICATED ON THE ABOVE SCHEDULE, AT A MINIMUM.
2. ASSUMPTIONS: DUCTILE IRON PIPE (WITHOUT POLY WRAP), SAFETY FACTOR=1.5, TEST PRESSURE=150PSI, SOIL=GM OR SM, TRENCH TYPE 3, DEPTH OF COVER=30 INCHES FOR 20" AND SMALLER PIPE SIZE OR 36 INCHES FOR 24" AND LARGER PIPE SIZE. FOR D.I.P. W/POLY WRAP, USE RESTRAINT JOINT SCHEDULE FOR PVC PIPE.
3. BENDS AND VALVES: SHALL BE RESTRAINED ON EACH SIDE OF FITTING.
4. VERTICAL OFFSETS: ARE APPROX. 3 FEET COVER ON TOP AND APPROX. 8 FEET COVER ON BOTTOM. PER THE DETAILS, L<sub>u</sub> IS THE RESTRAINED LENGTH FOR THE UPPER (TOP) LEVEL, L<sub>i</sub> IS THE RESTRAINED LENGTH FOR THE LOWER (DEEPER) LEVEL. ASSUME 45 DEGREE BENDS.
5. TEES: TOTAL LENGTH BETWEEN FIRST JOINTS OR RESTRAINED LENGTH ON EITHER SIDE OF TEE (RUN) SHALL BE A TOTAL DISTANCE OF 30 FEET (MIN). SEE SCHEDULE ABOVE FOR RESTRAINT LENGTH ON TEE "BRANCH" LINE.
6. HDPE TO D.I.P. TRANSITIONS: THE D.I.P. PIPE SIDE SHALL BE RESTRAINED 35 FT (MIN).

LENGTH (L) TO BE RESTRAINED

NOMINAL PIPE SIZE (IN.)	HORIZONTAL BENDS				VERTICAL OFFSETS 45° BENDS (SEE NOTE 4)		VALVES OR DEAD ENDS
	90° BENDS L (FT.)	45° BENDS L (FT.)	22.5° BENDS L (FT.)	11.25° BENDS L (FT.)	UPPER L (FT.)	LOWER L (FT.)	
4	17	7	4	2	11	3	30
6	24	15	5	3	15	4	42
8	31	13	6	3	20	5	55
10	36	15	8	4	23	6	65
12	42	18	9	5	27	7	77
14	48	20	10	5	31	7	87
16	53	22	11	6	35	8	97
18	58	24	12	6	39	9	107
20	63	27	13	6	42	10	118
24	63	27	13	7	49	12	118
30	75	31	15	8	59	14	141
36	86	36	17	9	68	17	163
42	95	40	19	10	76	19	183
48	117	43	21	11	84	21	203

(SEE PLATE Nos. 38C & 38D FOR ADDITIONAL DETAILS)

REDUCERS	
SIZE (IN.)	L (FT.)
6x4	22
8x6	23
8x4	39
10x8	22
10x6	40
12x10	23
12x8	41
16x12	42
16x10	58
20x18	22
20x16	42
20x12	74
24x20	36
24x18	51
24x16	64
30x24	50
30x20	77
36x30	50
36x24	89
42x36	48
42x30	89
48x42	48
48x36	88

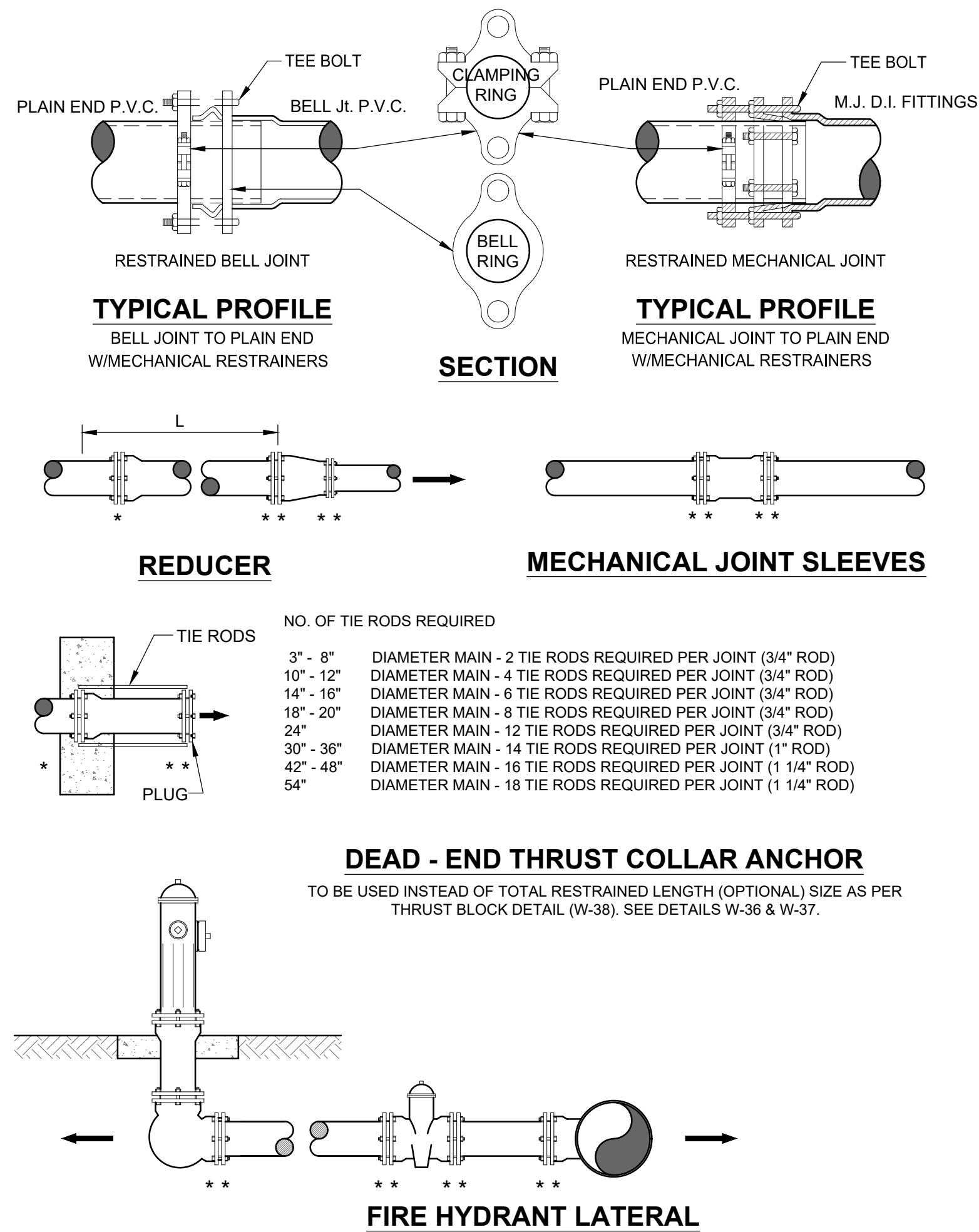
TEE SEE NOTE 5	
RUN SIZE (IN.)	BRANCH SIZE (IN.)
4	4
4	6
4	8
4	10
4	12
4	14
4	16
4	18
4	20
4	24
4	30
4	36
4	42
4	48
6	6
6	8
6	10
6	12
6	14
6	16
6	18
6	20
6	24
6	30
6	36
6	42
6	48
8	8
8	10
8	12
8	14
8	16
8	18
8	20
8	24
8	30
8	36
8	42
8	48
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10	12
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10	24
10	30
10	36
10	42
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12	12
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12	24
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20	48
24	24
24	30
24	36
24	42
24	48
30	30
30	36
30	42
30	48
36	36
36	42
36	48
42	42
42	48
48	48

F.O. = FITTING ONLY

PVC PIPE RESTRAINT JOINT SCHEDULE

JANUARY 2024

PLATE W-31A



GENERAL NOTE:

1. PAY ITEM \*\*\* DENOTES A RESTRAINT WHICH IS PAID FOR ON A PER EACH BASIS.
2. PAY ITEM \*\*\*\* DENOTES A RESTRAINT WHICH IS INCLUDED IN THE UNIT PRICE BID FOR FITTING OR VALVE.
3. → INDICATES DIRECTION OF THRUST FORCE.

MECHANICAL RESTRAINT DETAILS - I

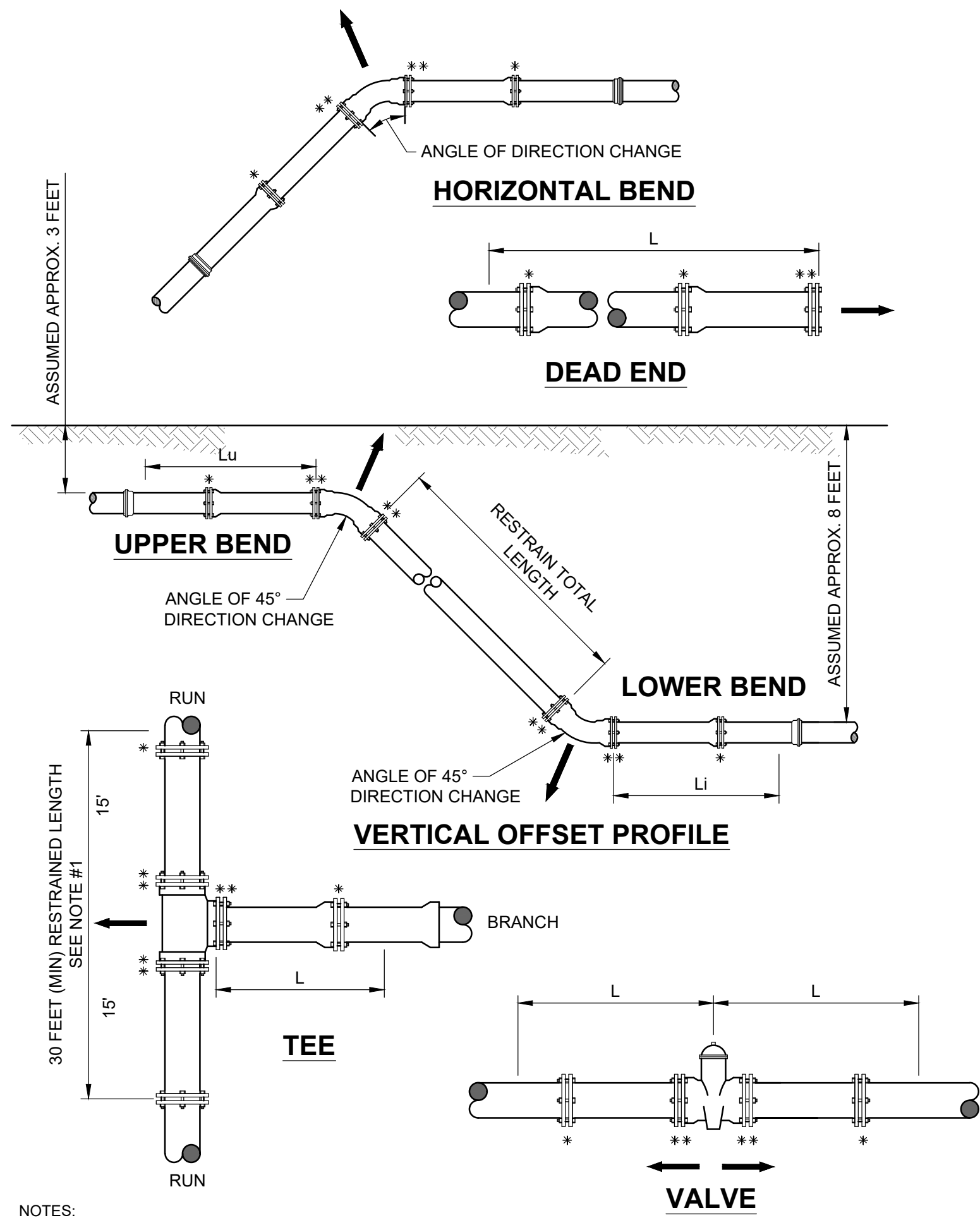
JANUARY 2024

PLATE W-31C

DUCTILE IRON PIPE RESTRAINT JOINT SCHEDULE

JANUARY 2024

PLATE W -31B



NOTES:

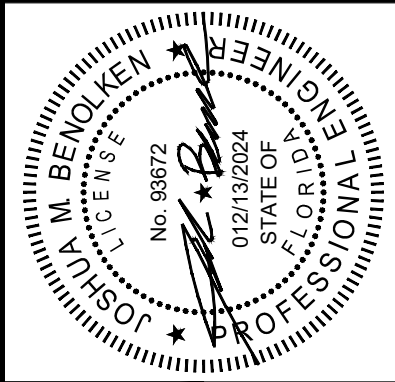
1. TOTAL LENGTH BETWEEN FIRST JOINTS OR RESTRAINED LENGTH ON EITHER SIDE OF TEE (RUN) SHALL BE A TOTAL DISTANCE OF 30 FEET (MIN.).
2. PAY ITEM \*\*\* DENOTES A RESTRAINT WHICH IS PAID FOR ON A PER EACH BASIC.
3. PAY ITEM \*\*\*\* DENOTES A RESTRAINT WHICH IS INCLUDED IN THE UNIT PRICE BID FOR FITTING OR VALVE.

MECHANICAL RESTRAINT DETAILS - II

JANUARY 2024

PLATE W-31D

DOMINION ENGINEERING GROUP, INC.  
4348 SOUTHPOINT BLVD, SUITE 204  
JACKSONVILLE, FLORIDA 32216  
904-864-4500



DESIGNER:  
DATE:

DRAWN BY:  
DATE:

CHECKED BY:  
DATE:

JEA STANDARD  
WATER AND RECLAIM DETAILS

PROJ. NO.  
DATE: JANUARY 2014

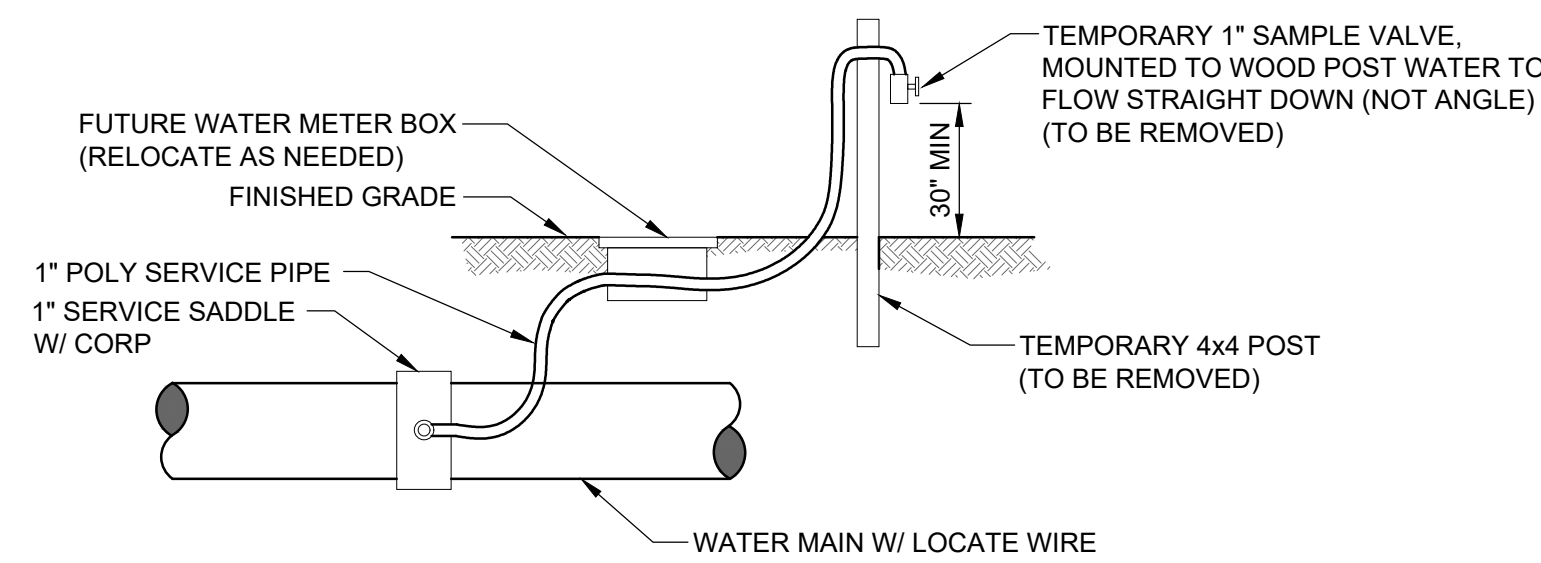
SHEET NO.  
SCALE: AS NOTED

DRAWING NO.  
C29

NO. SHEETS  
1

SHEET NO.  
5

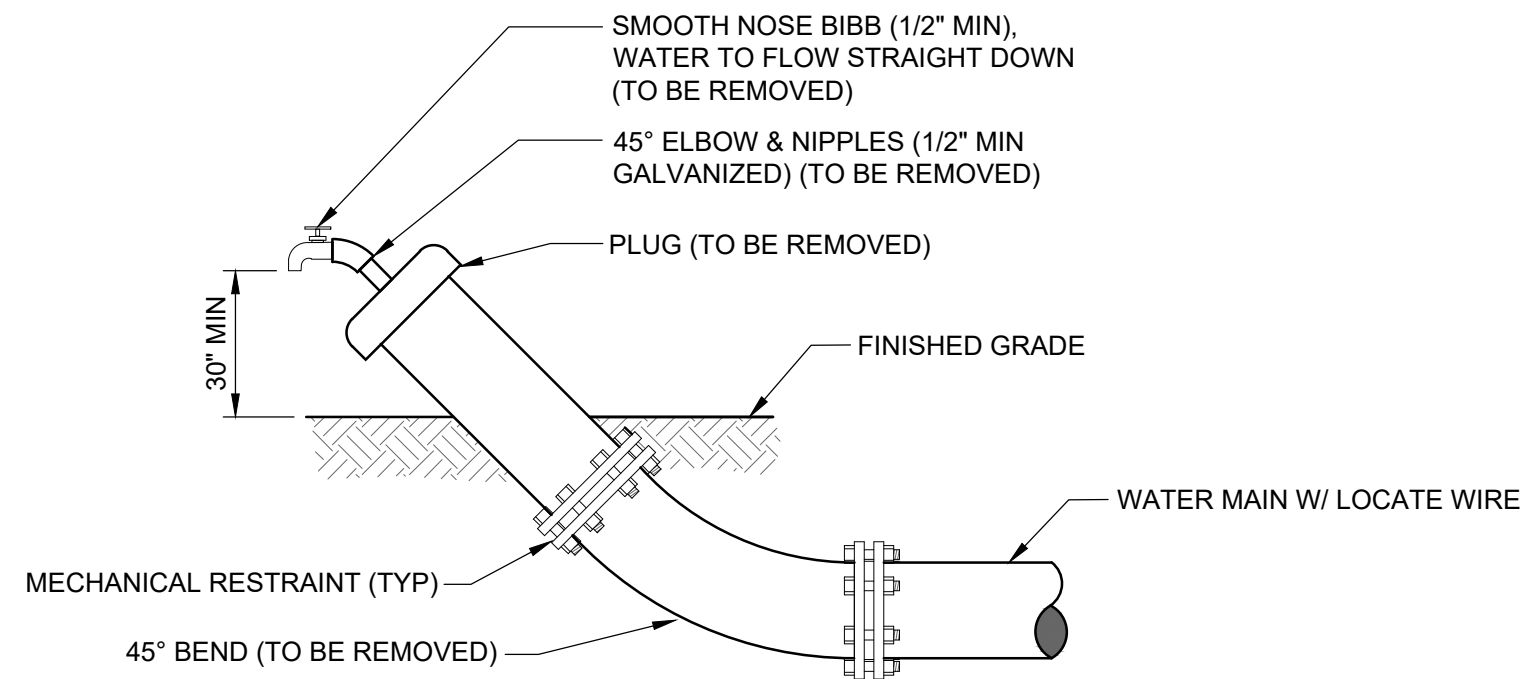
DRAWING NO.  
C29



### TEMPORARY SAMPLE TAP UTILIZING A NEW 1" WATER SERVICE

NOTES:

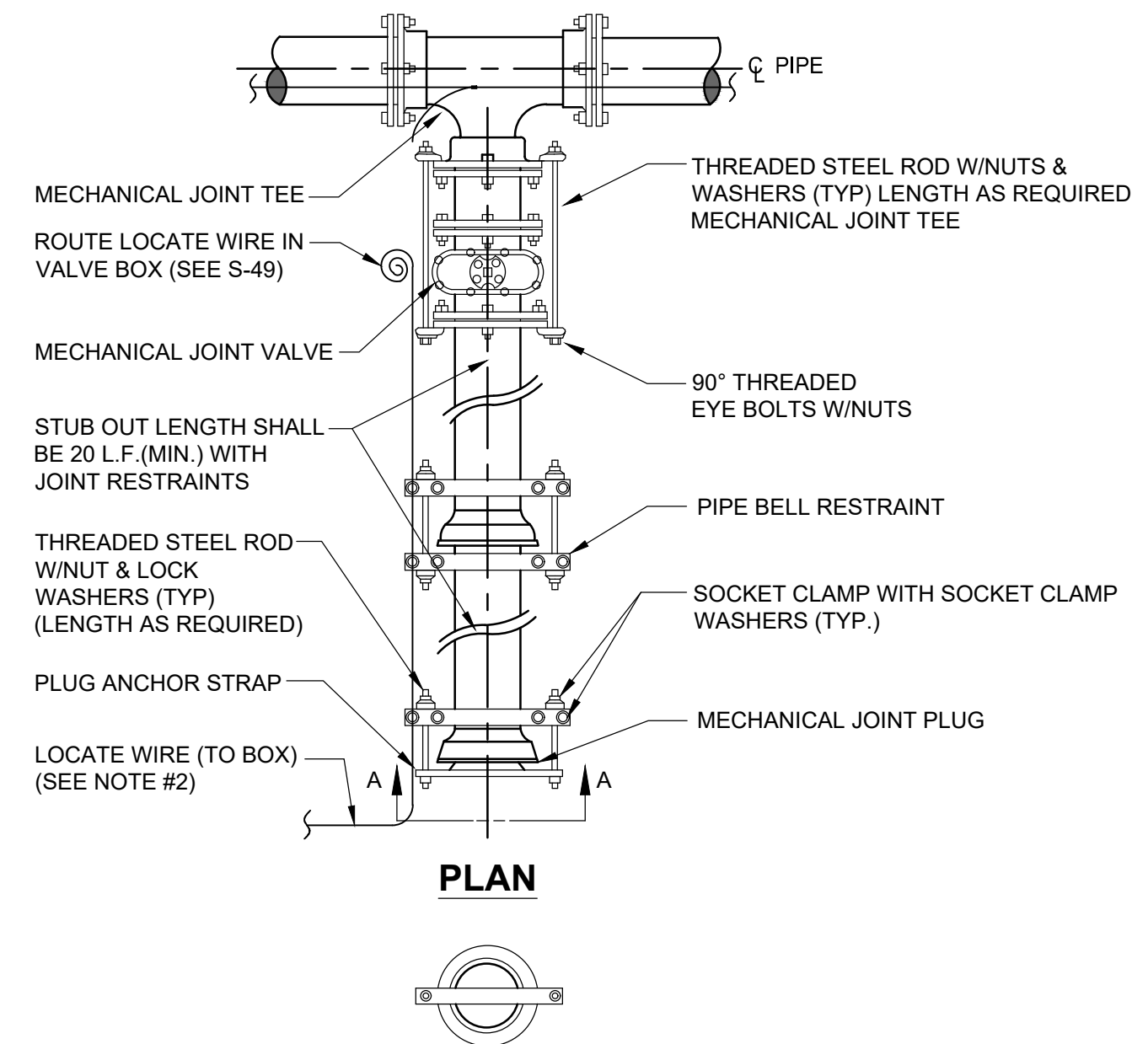
1. LOCATION OF SAMPLE POINT BIBB SHALL NOT BE WITHIN THE ROADWAY BUT ROUTED TO THE ROAD SHOULDERS.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL TEMPORARY PIPING & FITTINGS (AS NOTED) AFTER BACTERIOLOGICAL CLEARANCE IS RECEIVED.
3. THE CONTRACTOR SHALL UTILIZE THE ABOVE ALTERNATIVE METHODS FOR CONSTRUCTION OF TEMPORARY SAMPLE POINTS IN ALL AREAS, WHERE POSSIBLE.
4. THE CONTRACTOR SHALL COMPLY WITH ALL JEA RULES AND POLICIES AS OUTLINED BY THE JEA'S ENVIRONMENTAL RESPONSE COORDINATOR (ERC) AND OTHER ASSOCIATED JEA STANDARDS.



### TEMPORARY SAMPLE TAP UTILIZING PLUG AT FLUSHING LOCATION

NOTES::

1. LOCATION OF SAMPLE POINT BIBBS SHALL NOT BE WITHIN THE ROADWAY BUT ROUTED TO THE ROAD SHOULDERS.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL TEMPORARY PIPING & FITTINGS (AS NOTED) AFTER BACTERIOLOGICAL CLEARANCE IS RECEIVED.
3. THE CONTRACTOR SHALL UTILIZE THE ABOVE ALTERNATIVE METHODS FOR CONSTRUCTION OF TEMPORARY SAMPLE POINTS IN ALL AREAS, WHERE POSSIBLE.
4. THE CONTRACTOR SHALL COMPLY WITH ALL JEA RULES AND POLICIES AS OUTLINED BY THE JEA'S ENVIRONMENTAL RESPONSE COORDINATOR (ERC) AND OTHER ASSOCIATED JEA STANDARDS.



**SECTION "A-A"**

NOTES:

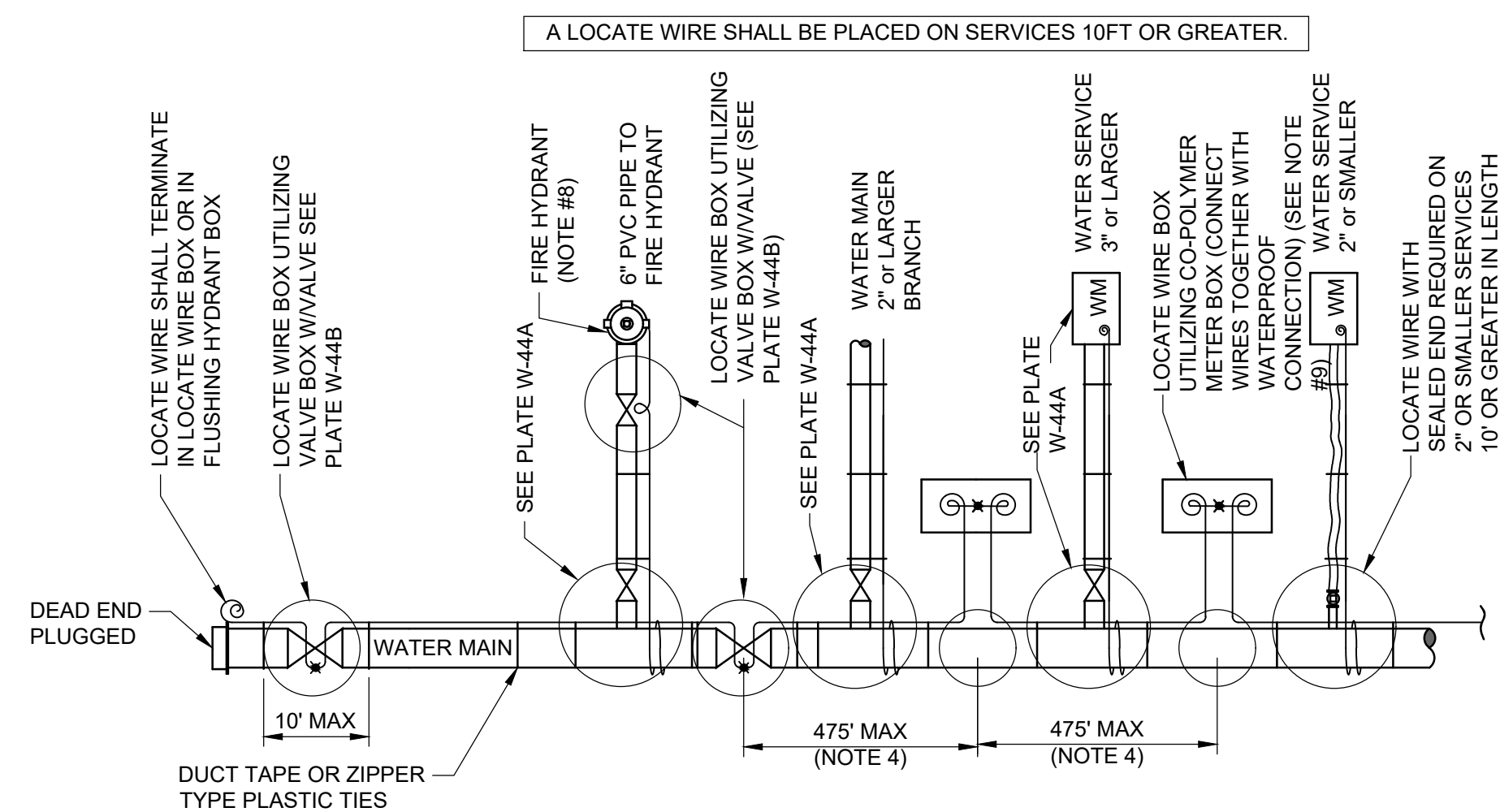
1. IN LIEU OF BELL/ROD RESTRAINTS, MECHANICAL JOINT RESTRAINTS MAY BE USED.
2. LOCATING WIRE REQUIRED, UTILIZING A LOCATE WIRE BOX INSTALLED AT PLUG LOCATION.
3. NUMBER OF THE RODS REQUIRED IS AS FOLLOWS:  

3" - 8"	DIAMETER MAIN - 2 TIE RODS REQUIRED PER JOINT (3/4" ROD)
10" - 12"	DIAMETER MAIN - 4 TIE RODS REQUIRED PER JOINT (3/4" ROD)
14" - 16"	DIAMETER MAIN - 6 TIE RODS REQUIRED PER JOINT (3/4" ROD)
18" - 20"	DIAMETER MAIN - 8 TIE RODS REQUIRED PER JOINT (3/4" ROD)
24"	DIAMETER MAIN - 12 TIE RODS REQUIRED PER JOINT (3/4" ROD)
30" - 36"	DIAMETER MAIN - 14 TIE RODS REQUIRED PER JOINT (1" ROD)
42" - 48"	DIAMETER MAIN - 16 TIE RODS REQUIRED PER JOINT (1 1/4" ROD)
54"	DIAMETER MAIN - 18 TIE RODS REQUIRED PER JOINT (1 1/4" ROD)
4. THE LOCATION OF THE DEAD END PLUG SHALL NOT BE UNDER PAVEMENT, IF POSSIBLE. THE STUB OUT SHALL EXTEND BEYOND THE INTERSECTION AREAS OR ROAD CROSSING BY 10 FEET (MIN.) WHERE POSSIBLE.

## TEMPORARY SAMPLE TAP ALTERNATIVE METHOD A

JANUARY 2024

PLATE W-24



## LOCATE WIRE SYSTEM

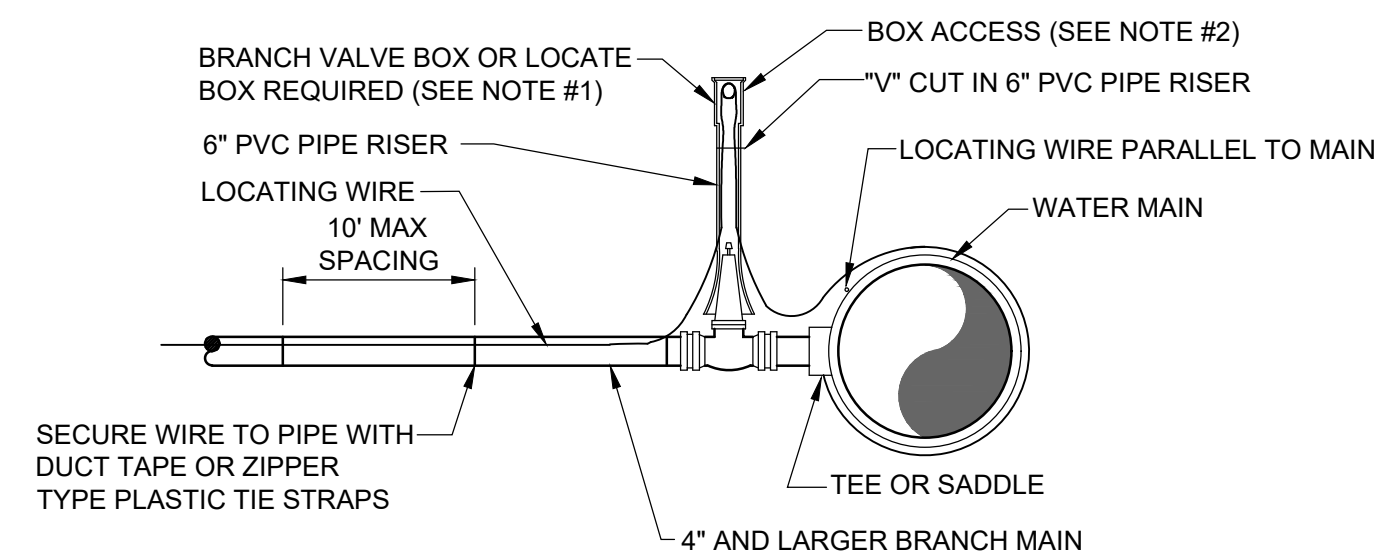
NOTES:

1. LOCATING WIRE TO BE INSTALLED IN EITHER THE ONE OR ELEVEN O'CLOCK POSITION ON ALL DUCTILE IRON OR PVC (PRESSURE MAINS). LOCATE WIRE SHALL ALSO BE INSTALLED ON ALL (HDPE) POLY MAIN PIPING (1:00 OR 11:00 POSITION, IF POSSIBLE).
2. SECURE LOCATING WIRE TO PVC & D.I.P. WATER MAIN BY USE OF DUCT TAPE OR ZIPPER TYPE PLASTIC TIE STRAPS SPACED AT A MAXIMUM DISTANCE OF TEN (10') AND AT EACH SIDE OF BELL JOINT OR FITTING.
3. THE ENTIRE LOCATING SYSTEM SHALL BE SUBJECTED TO TESTING TO DETERMINE ITS RELIABILITY. WHERE INSTALLED UNDER PAVEMENT AREAS, TESTING SHALL BE DONE PRIOR TO THE PLACEMENT OF PAVEMENT, UNLESS APPROVED OTHERWISE BY JEA.
4. LOCATING WIRE SHALL TERMINATE WITHIN AN ACTIVE VALVE BOX ( WITH A VALVE ) OR A METER BOX ( IF NO VALVE ) AT 475' INTERVALS. SEE DETAIL PLATE W-44B. WIRE CONNECTIONS BELOW GROUND (OUTSIDE OF A BOX) SHALL BE AVOIDED.
5. REFER TO SECTION 350 FOR LOCATE WIRE SPECIFICATIONS.
6. "■" INDICATES THAT THE WIRES ARE CONNECTED TOGETHER WITH A WATERPROOF CONNECTION. (SEE DETAIL W-44B)
7. "⊗" INDICATES A WIRE PIG-TAIL (4' LONG)
8. FOR FIRE HYDRANT LOCATE WIRE REQUIREMENTS AND EXCLUSIONS, SEE PLATES W-12,13 AND 14.
9. AN "LW" CUT SHALL BE CARVED IN THE CONCRETE CURB AND PAINTED AT ALL LOCATE WIRE BOXES.
10. FOUR LANES OF TRAFFIC (HAVING TWO LANES OF TRAFFIC IN EACH DIRECTION) OR GREATER THE LOCATE WIRE AND VALVE BOX SHALL BE OFF-SET TO THE RIGHT-OF-WAY.

## LOCATE WIRE CONSTRUCTION FOR WATER MAINS

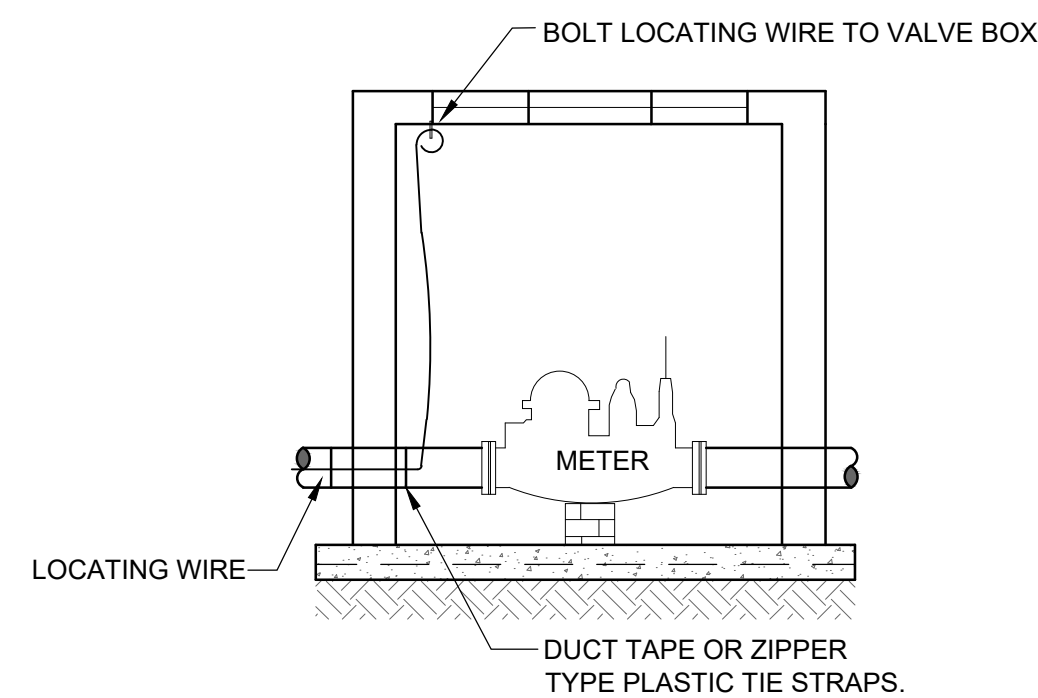
JANUARY 2024

PLATE W-44



**BRANCH FORCE MAIN**

(2" AND LARGER WATER MAIN OR 3" AND LARGER WATER SERVICE PIPE)



### CONNECTION AT LARGE METER BOX

(3" OR LARGER SERVICE)

NOTES:

1. NOTE THAT THE BRANCH WIRE IS NOT CONNECTED TO THE MAIN WIRE.
2. LOCATE WIRE SHALL ENTER THE VALVE BOX THROUGH A "V" CUT IN THE 6" PVC RISER PIPE SECTION (SEE W-18).
3. LOCATE WIRE SHALL HAVE ENOUGH SLACK TO REACH 4' ABOVE FINAL GRADE AND LOCATE POINTS.

## TEMPORARY SAMPLE TAP ALTERNATIVE METHOD B

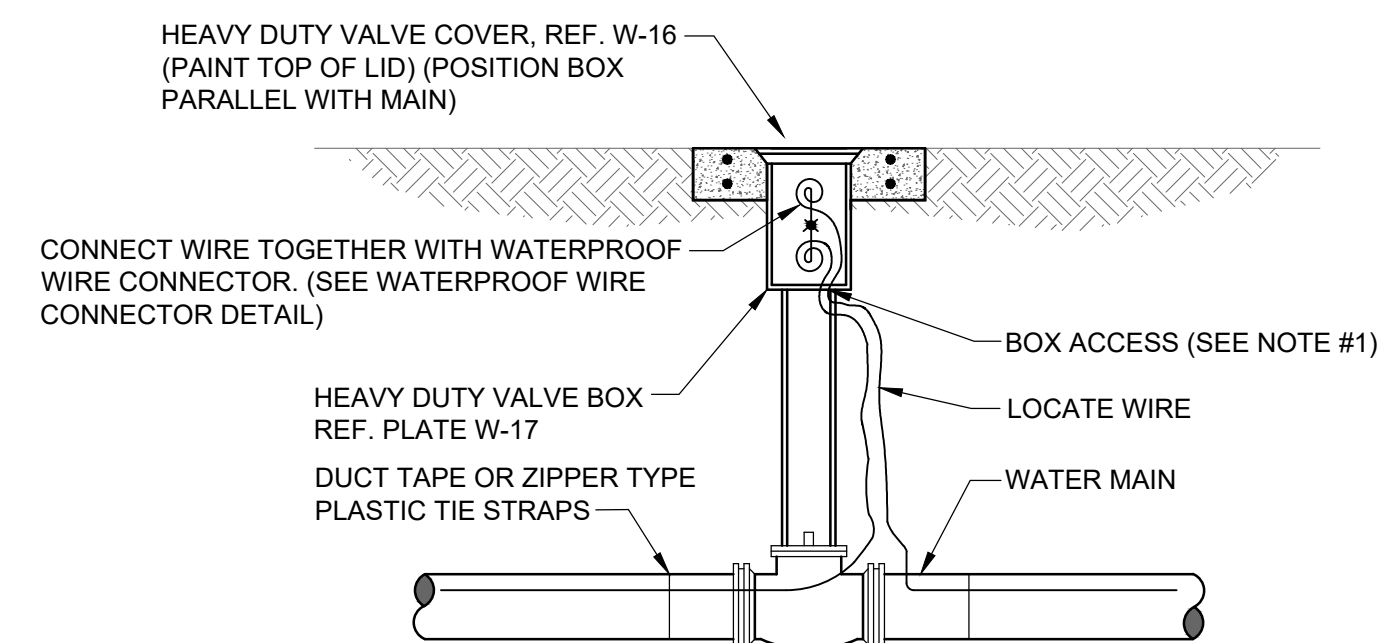
JANUARY 2024

PLATE W-24A

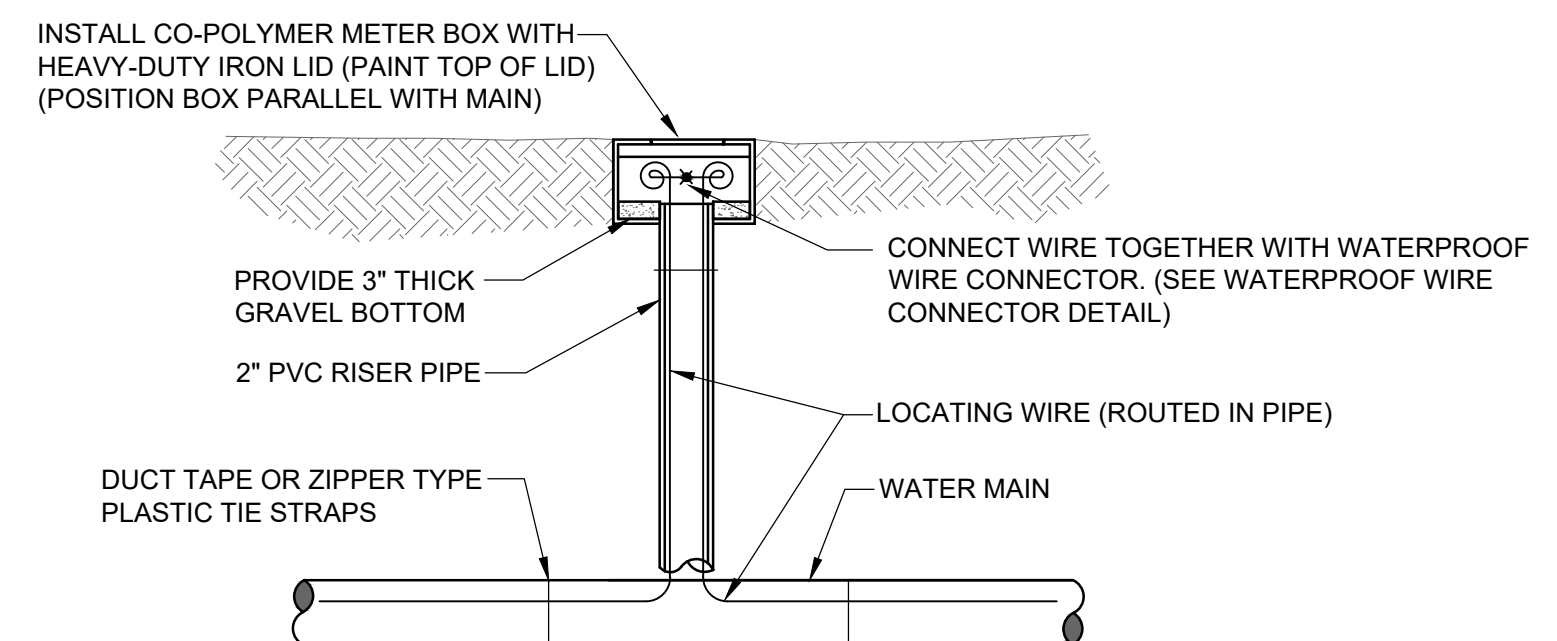
## PLUGGED DEAD END USING MECHANICAL RESTRAINTS

JANUARY 2024

PLATE W-37



## LOCATE WIRE BOX UTILIZING VALVE BOX



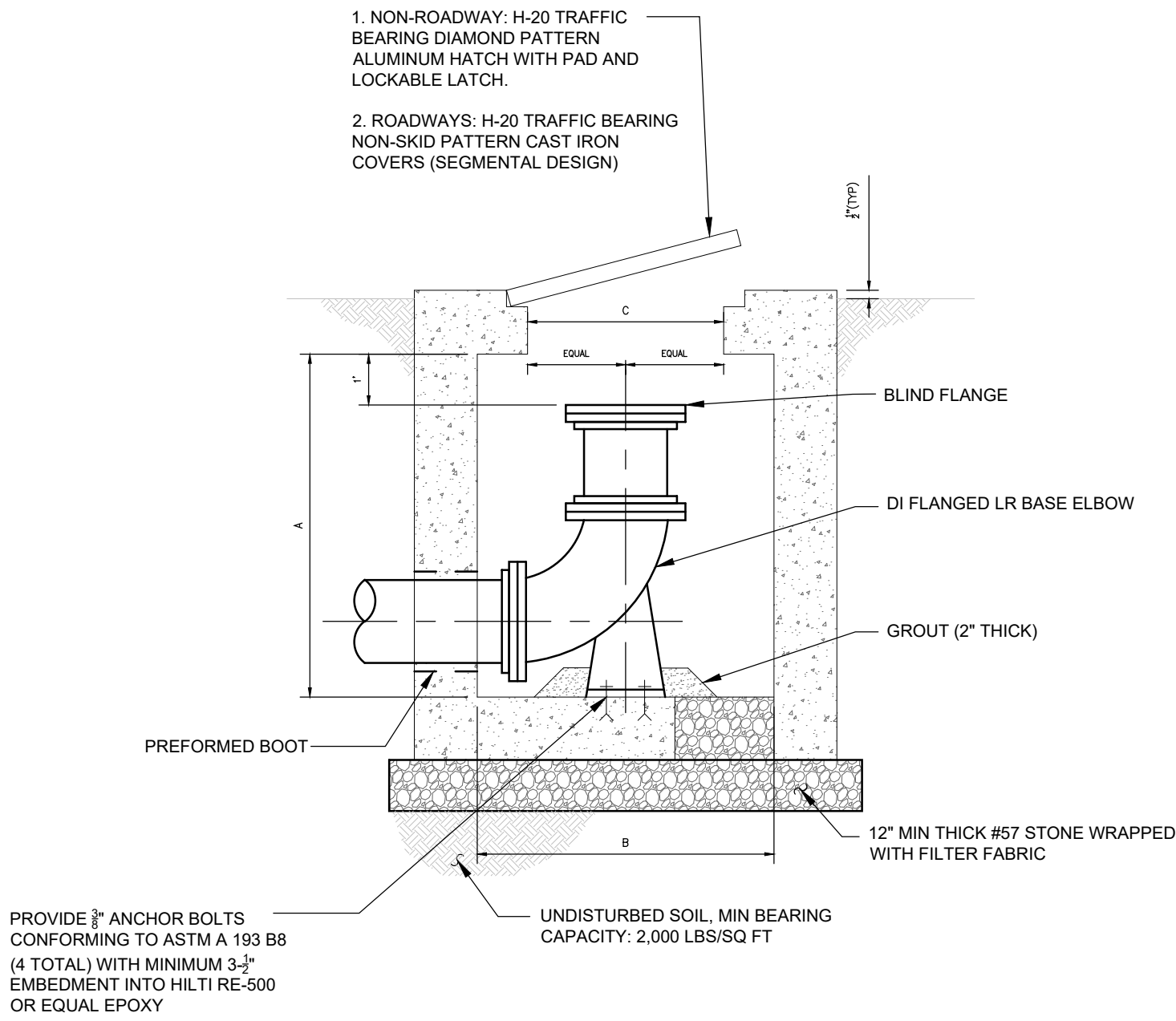
## LOCATE WIRE BOX UTILIZING METER BOX

## LOCATE WIRE BOX

JANUARY 2024

PLATE W-44B

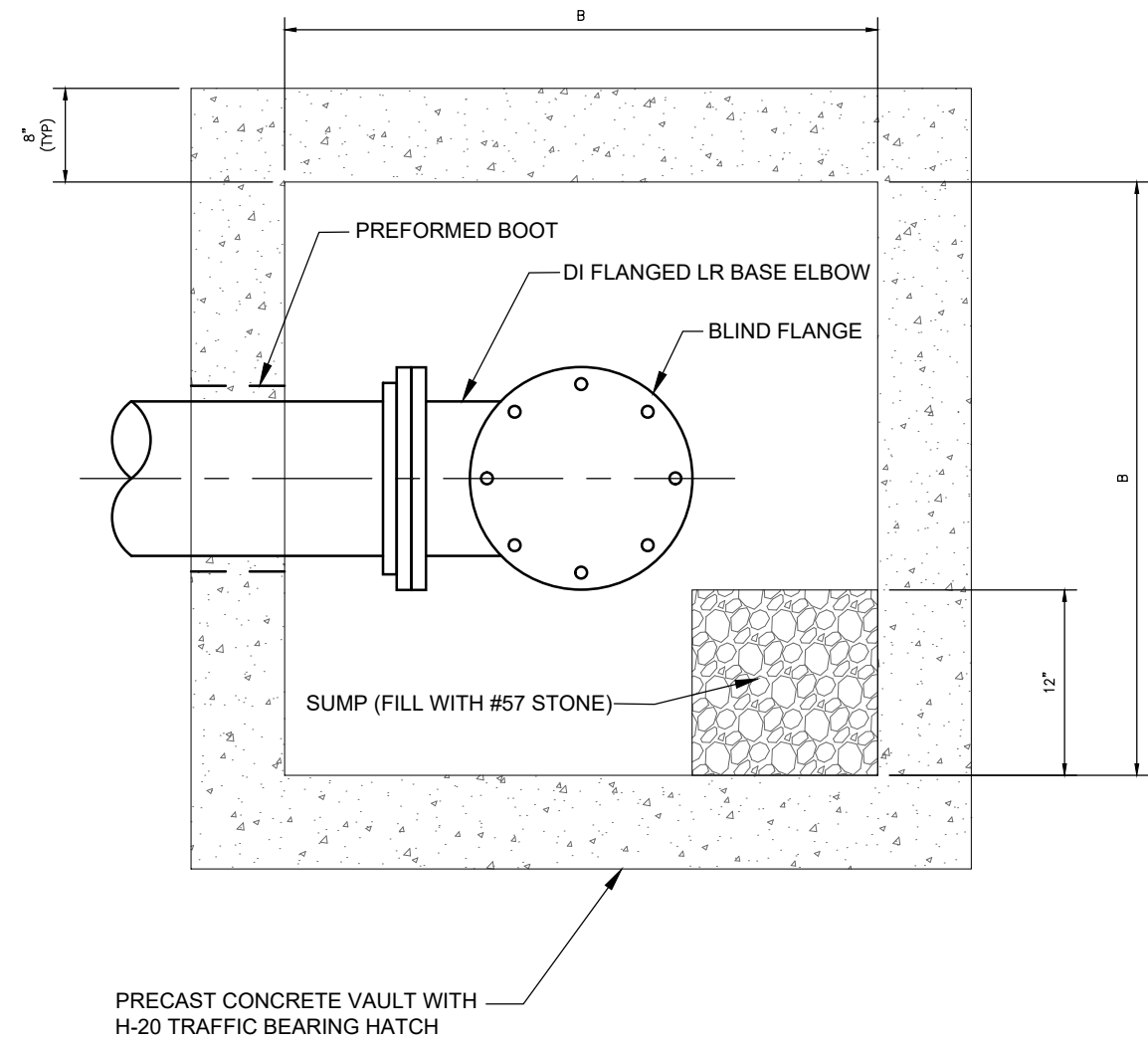
NO. SHEETS 1	PROJ. NO.	JEA STANDARD WATER AND RECLAIM DETAILS		DESIGNER: DRAWN BY: DATE: CHECKED BY: DATE:		NO.	BY	DATE	REVISIONS
	SHEET NO. 5					1.	2.	3.	
	DRAWING NO. C30					4.	5.	6.	



SWABBING PORT AND CLEAN OUT VAULT DETAIL - SECTION

JANUARY 2024

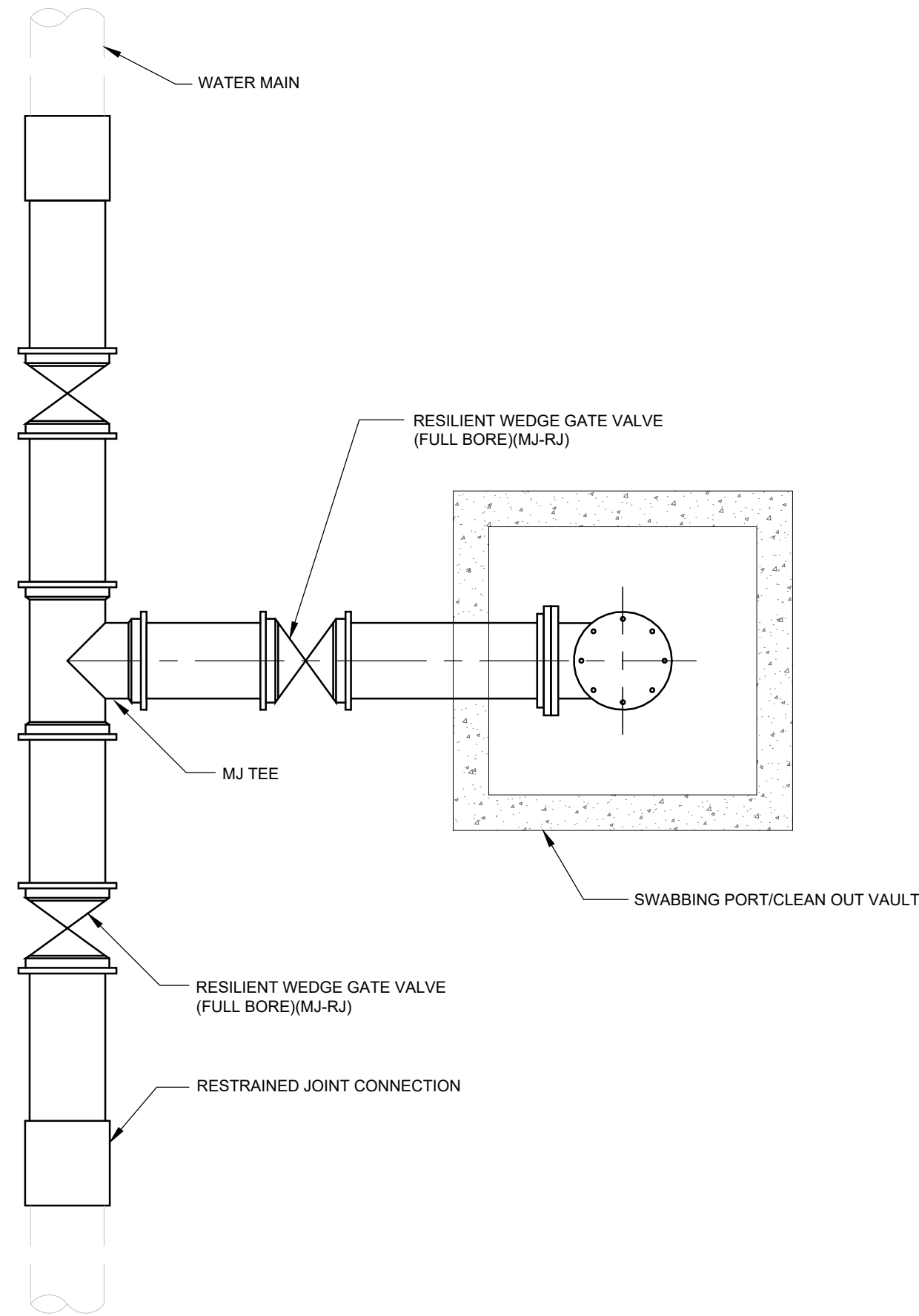
PLATE W-45



SWABBING PORT AND CLEAN OUT VAULT DETAIL - PLAN

JANUARY 2024

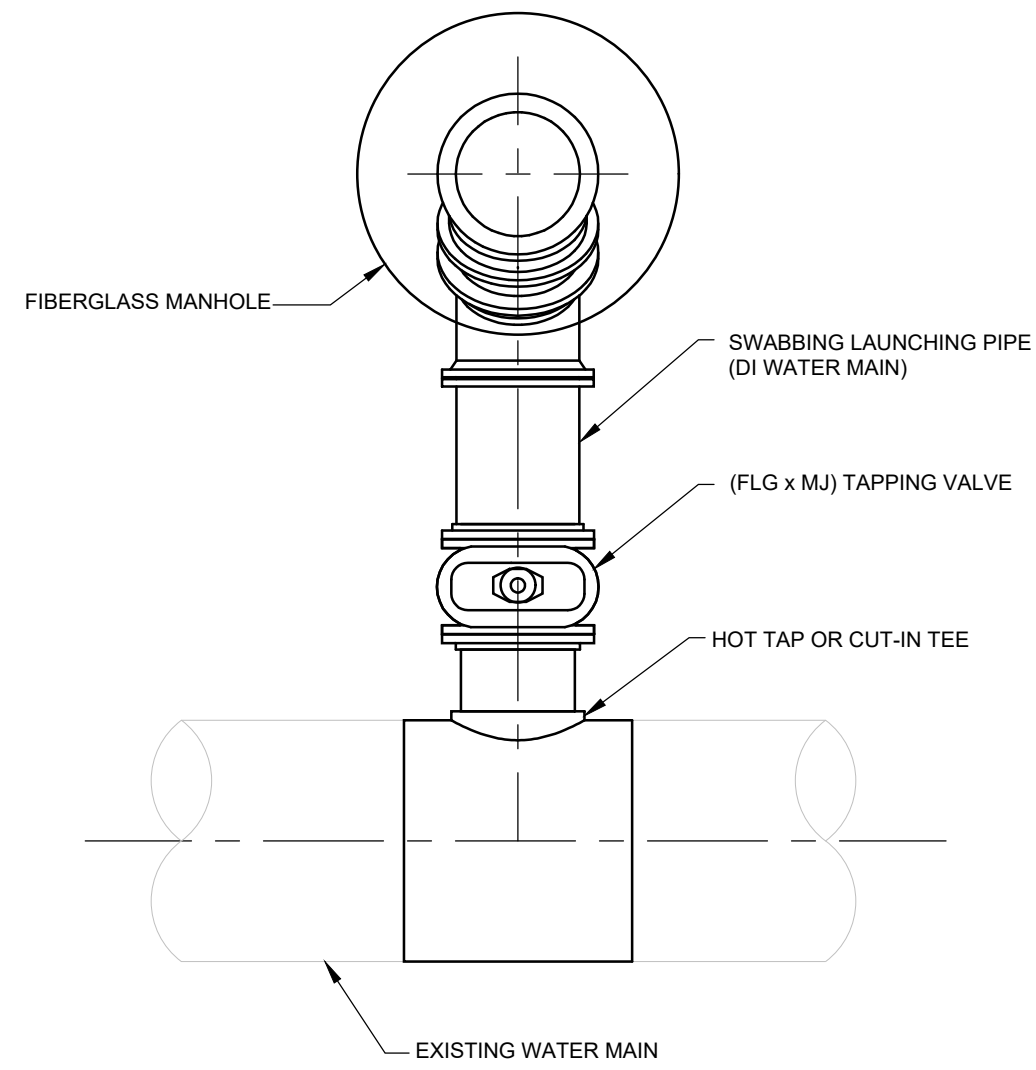
PLATE W-45A



SWABBING LAUNCHING STATION DETAIL FOR NEW WATER MAIN UP TO 24"

JANUARY 2024

PLATE W-45B

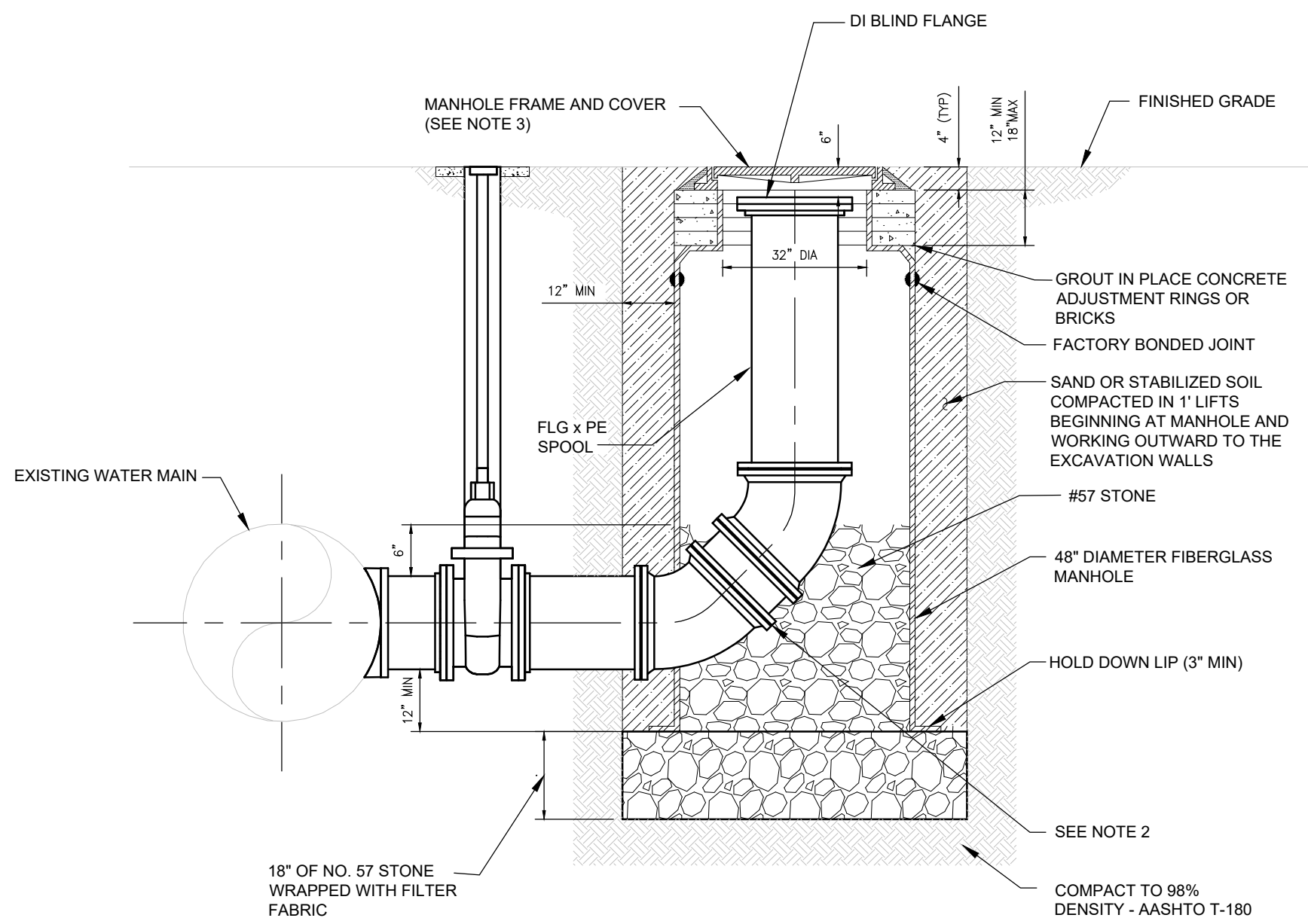


- NOTES:
- FOR HOT TAP CONNECTIONS ON EXISTING WATER MAINS 10" DIAMETER AND GREATER, DIAMETER OF TAPPING VALVE AND PIG LAUNCHING PIPE SHALL BE ONE NOMINAL SIZE LESS THAN EXISTING WATER MAIN.

SWABBING PIG LAUNCHING STATION DETAIL FOR WATER MAINS UP TO 24" - PLAN

JANUARY 2024

PLATE W-45C



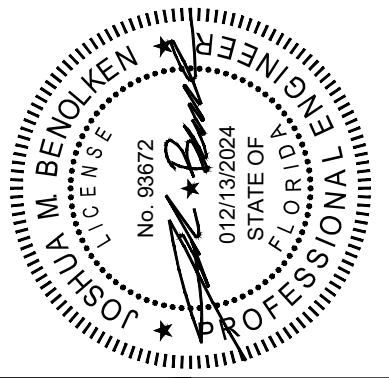
- NOTES:
- PROVIDE ALL MATERIALS IN ACCORDANCE TO JEA WATER AND WASTEWATER STANDARD SPECIFICATIONS.
  - USE TWO VERTICAL 45 DEGREE MJ BENDS OR LONG RADIUS 90 DEGREE MJ BEND.
  - PROVIDE STANDARD JEA FRAME AND COVER.
  - RESTRAIN ALL JOINTS.

RETROFIT SWABBING LAUNCHING STATION DETAIL FOR WATER MAINS UP TO 24" - SECTION

JANUARY 2024

PLATE W-45D

DOMINION ENGINEERING GROUP, INC.  
4348 SOUTHPOINT BLVD., SUITE 204  
JACKSONVILLE, FLORIDA 32216  
904-854-4500



DESIGNER:  
DATE:  
DRAWN BY:  
DATE:  
CHECKED BY:  
DATE:



JEA STANDARD  
WATER AND RECLAIM DETAILS

PROJ. NO.:  
DATE: JANUARY 2014  
SCALE: AS NOTED

NO. SHEETS  
1  
SHEET NO.  
5  
DRAWING NO.  
C31

REVISIONS

NO. BY DATE

1.

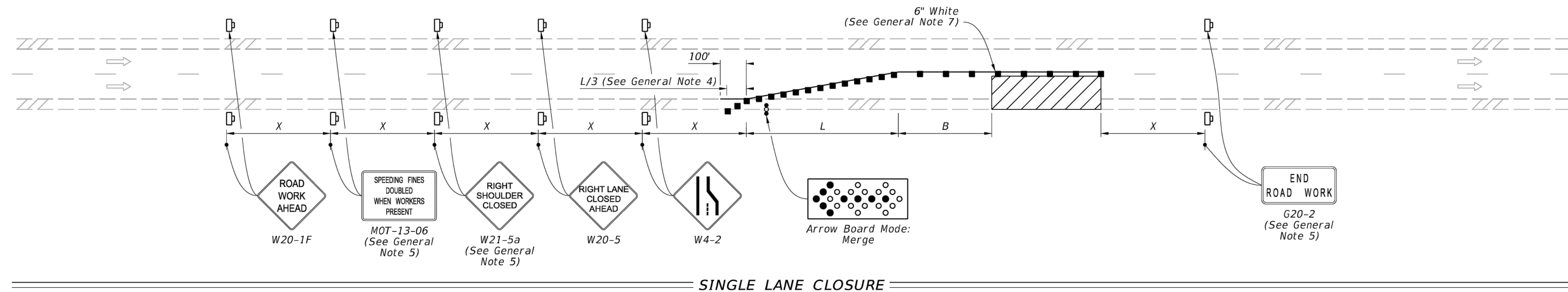
2.

3.






4.

5.

6.




**SYMBOLS:**

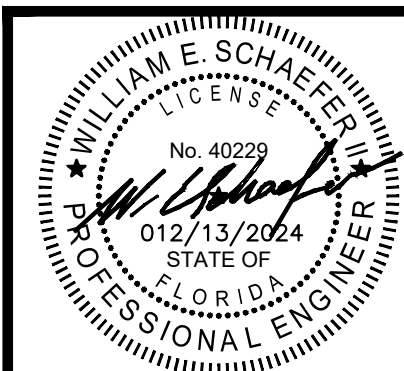
-  *Work Area*  
 *Channelizing Device (See Index 102-600)*  
 *Work Zone Sign*  
 *Arrow Board*  
 *Lane Identification and Direction of Traffic*

*GENERAL NOTE:*

1. *L* = Taper Length  
*B* = Buffer Length  
*X* = Work Zone Sign Distance  
See Index 102-600 for "L", "B", "X", and channelizing device spacing values.
2. *On undivided highways the median signs as shown are to be omitted.*
3. *On limited access facilities, omit "Right Shoulder Closed" signs (W21-5a) and associated work zone sign spacing distances.*
4. *If the paved shoulder is less than 4' in width, omit the taper and channelizing devices from the paved shoulder.*
5. *The "Speeding Fines Doubled When Workers Present" signs (MOT-13-06) and "End Road Work" signs (G20-2) and "Right Shoulder Closed" (W21-5a), along with associated work zone sign distances, may be omitted when the work operation will be in place for 24 hours or less. For Single Lane Closures, arrow boards and buffer (B) may also be omitted when the work operation will be in place for 60 minutes or less and the speed limit is 45 mph or less.*
6. *Use inverted plan of the illustrations for work on left side of roadways.*
7. *Temporary pavement markings may be omitted when the work operation is in place for 3 days or less.*

LAST REVISION 11/01/21	DESCRIPTION:  <div>  <div>             FY 2022-23 STANDARD PLANS           </div> </div>	MULTILANE ROADWAY, LANE CLOSURES	INDEX 102-613	SHEET 1 of 5
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ALLOWABLE LANE CLOSURE  
HOURS ARE 9:00 AM AND 4:00 PM.



REVISIONS	
PLOT DATE:	
DRAWN BY:	JMM
DESIGNED BY:	JMM
CHECKED BY:	WES
SCALE:	AS NOTED
JOB NO.:	2016.011
© LATEST DATE HEREON SHEET NO.	
C32	

**DOMINION ENGINEERING GROUP, INC.**  
**PLANNERS AND ENGINEERS**  
4348 SOUTHPOINT BLVD, SUITE 201, JACKSONVILLE, FLORIDA 32216  
TEL: 904-854-4500    REGISTRY NUMBER: 26821    FAX 904-854-4505  
[www.dom-eng.com](http://www.dom-eng.com)

TRIBUTARY SPINE ROAD (WEST) PHASE A  
FOR  
THREE RIVERS DEVELOPERS, LLC  
MAINTENANCE OF TRAFFIC