

GENERAL
All construction shall be performed in accordance with the approved plans and comply with all standard city policies and practices. City approval is contingent upon any required state or federal permit approvals such as those from the Department of Environmental Protection or the St. Johns River Water Management District (SJRWMD).

UTILITY WORK
Plan approval through Development Services does not include utilities. Proposed water, sewer or electric construction must be approved separately through the respective utility company. In most cases, this will be:
JEA
JEA Tower - 4th Floor, 21 W. Church Street, Jacksonville, FL 32202
<http://www.jea.com/business/services/devandbuild/developers.asp>

WORK WITHIN THE RIGHT-OF-WAY
CITY: Except for new subdivision infrastructure construction, all work performed within a City of Jacksonville right-of-way or easement requires a Right-of-way Permit. The contractor performing the proposed work must have a current Right-of-way Bond on file with Development Services. Right-of-way Permit applications are processed at:
Development Services Customer Service Counter
Edward Ball Building, 2nd Floor
214 N. Hogan St.
Jacksonville, FL 32202
(904) 255-8572
<http://frow.jaxdev.info/>

STATE: All work performed within a state right-of-way requires a permit from the Florida Department of Transportation (FDOT). It is the developer's responsibility to obtain required FDOT permits or maintenance-of-traffic approvals for work within FDOT right-of-ways. The FDOT regional office can be contacted at (904) 360-5200. Any changes to the approved plans needed for FDOT approval must be submitted to Development Services as revisions.

Adjacent State Roads:

RAILROAD: Railroad companies may require special approvals or permits to work within their right-of-ways. It is the developer's responsibility to obtain permission from any railroad right-of-way owner before performing any work within their right-of-way.

STORMWATER
Annual reports in compliance with the SJRWMD stormwater permits are required from the maintenance entity of all stormwater management facilities. Send copies of the reports to:

Engineering and Construction Management
Edward Ball Building, 10th Floor
214 N. Hogan St.
Jacksonville, FL 32202
<http://www.coj.net/Departments/Public+Works/Engineering+and+Construction+Management/>

The owner of any project one (1) acre or larger is required to provide a Notice of Intent (NOI) in accordance with criteria set forth in the city's NPDES permit within 48 hours of beginning construction. Send NOI and NOI fee to:

Florida Department of Environmental Protection
NPDES Stormwater Notices Center, Mail Station #2510
2600 Blair Stone Road
Tallahassee, Florida 32399-2400
(866) 336-6312
<http://www.dep.state.fl.us/water/stormwater/npdes/>

The contractor shall contact Environmental Quality Division, Erosion and Sedimentation Control Section (ESC) to provide verification that applicable stormwater permits have been obtained and to schedule a pre-construction ESC site inspection:

Environmental Quality Division
407 North Laura Street, Third Floor
Jacksonville, FL, 32202
(904) 255-7222

FIRE MARSHALL
Plan review and approval does not relieve the contractor of complying with all applicable State Fire Codes.

Underground mains and hydrants shall be installed, completed, and in service prior to construction work.

Underground contractor shall submit to the Fire Marshall for approval complete specs for all underground pipe and fittings relating to fire protection PRIOR to installation and inspection. Contractor shall include manufacturer's name and pipe ID along with contractor's state license number.

LANDSCAPE
A Site Work Permit is required for this project.

Tree Fund payment is due: _____ inches at \$ _____ = \$ _____
 Article 25 funds are due: _____ inches at \$ _____ = \$ _____

TRAFFIC ENGINEERING
TRAFFIC SIGNS

Metro Name (each) _____
Standard (each) _____
Stop/Yield (each) _____
Design (per plat) 1 per plat
Installation (per hour) 1 per 2 signs (rounded up)
_____ Streetlights Required

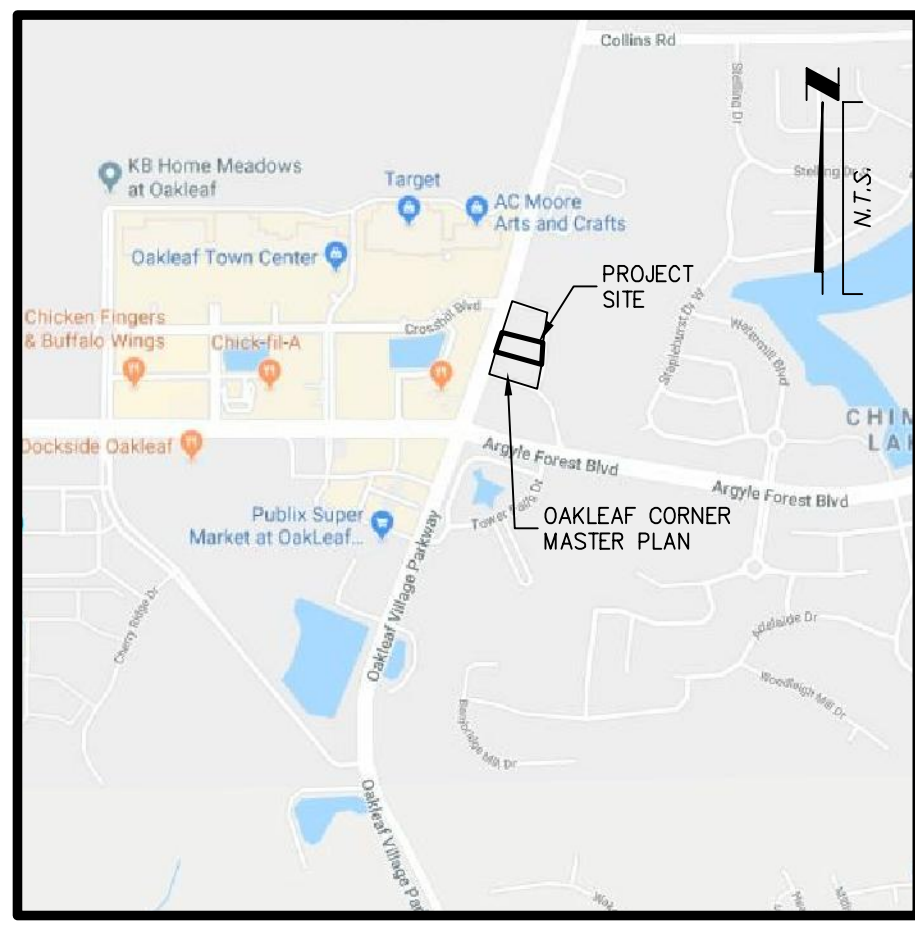
NOTE: Traffic sign costs change from time to time. Consult Attachment 8 of the Land Development Procedures Manual (<http://ldpm.jaxdev.com/>) for the current rates before paying for any sign installations.

No lane closures allowed from 7 a.m. till 9 a.m. and from 4 p.m. till 6 p.m.

NOTE:
IF YOU DIG IN FLORIDA, YOU ARE REQUIRED TO CALL SUNSHINE STATE ONE-CALL OF FLORIDA, INC. 1-800-432-4770 FOR LOCATES. IT'S THE LAW.

OAKLEAF CORNER OUTPARCEL 3

DUVAL COUNTY, FLORIDA



LOCATION MAP
N.T.S.

PREPARED FOR

OAKLEAF 31 DEVELOPMENT CORP.

12276 SAN JOSE BLVD.
JACKSONVILLE, FL 32223



England-Thims & Miller, Inc.
14775 Old St. Augustine Road
Jacksonville, FL 32258
TEL: (904) 642-8990
FAX: (904) 646-9485
CA - 00002584 LC - 0000316

DRAWING INDEX		
DRAWING NUMBER	DRAWING TITLE	REVISION
1	COVER	
2	GENERAL NOTES & LEGEND	
3	OAKLEAF CORNER MASTER PLAN	
4	MASTER SITE PLAN	
5	SITE GEOMETRY PLAN	
6	PAVING & DRAINAGE PLAN	
7	UTILITY PLAN	
8B - 8A	PAVING & DRAINAGE DETAILS	
9A - 9K	JEA UTILITY NOTES & DETAILS	
10	SEDIMENT & EROSION CONTROL PLAN	
11	SEDIMENT & EROSION CONTROL DETAILS	
12	STORM WATER POLLUTION PREVENTION PLAN	
13	CONTRACTOR'S CERTIFICATION	

JEA AVAILABILITY #: 2019-3525

PLAN APPROVAL

Date _____	Development Services Division (Chief)
Date _____	Review Group (Reviewer)

Plan approval valid for five years after the initial approved date. Revisions made after the initial approved date do not extend this five year time frame.

PLAN APPROVAL IS SUBJECT TO THE FOLLOWING NOTES AND CONDITIONS:

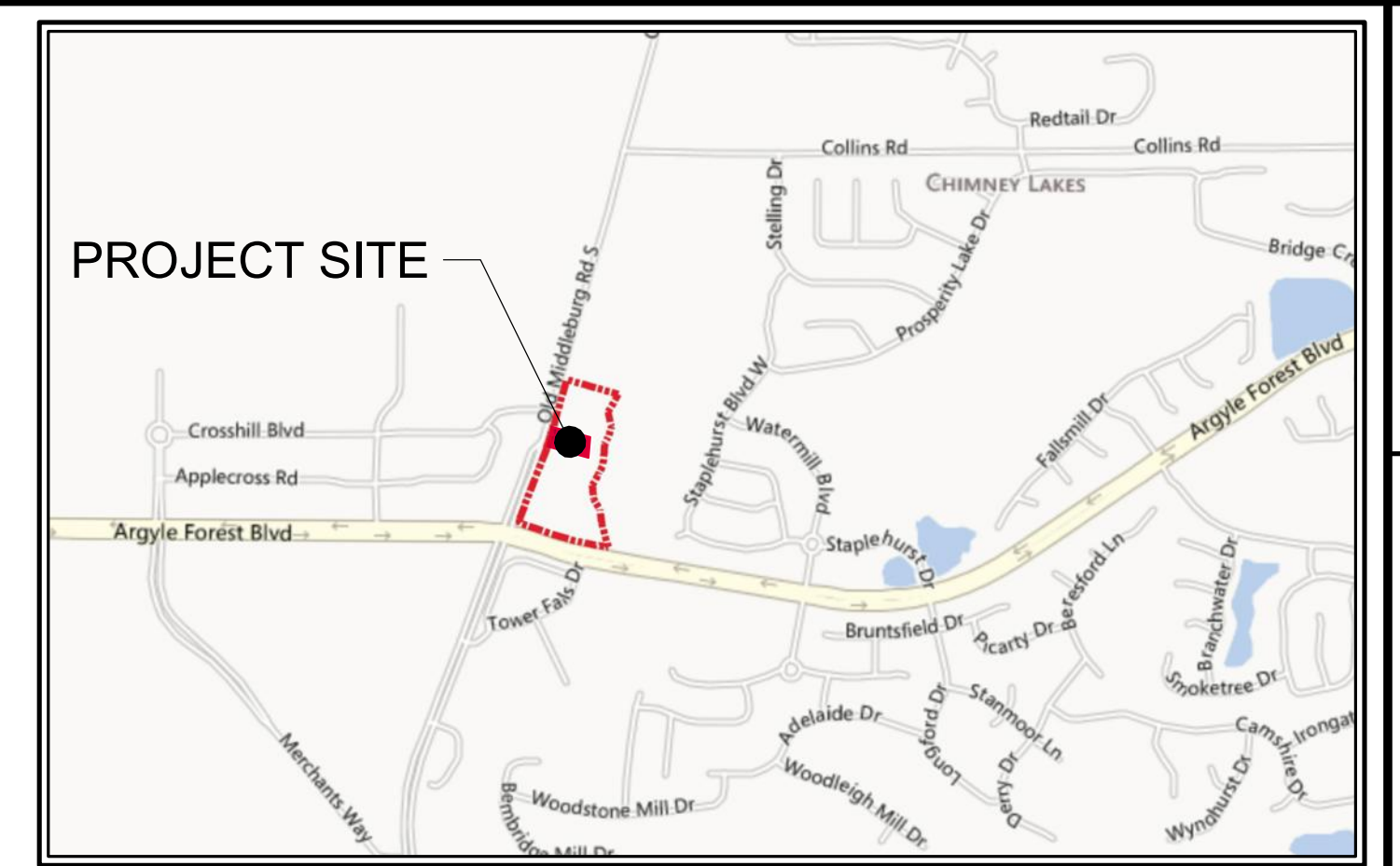
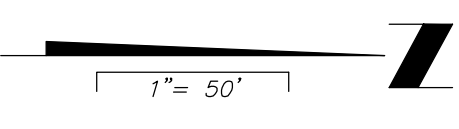
GENERAL PROJECT INFO.

GENERAL
City Development Number _____
Concurrence Application Number _____
Property Appraiser Number (RE #) 016416 1450
Zoning Designation PUD
ZONING Application(s) (if any) _____
PUD Ordinance Number 1999-0804
FIRM - Community - Panel 12031C0505H
Flood Zones (Show in Plans) ZONE X
Base Flood Elev. (Show in Plans) N/A
Vertical Datum Used for Project NAVD 1988
JEA Availability Number 2019-3525
SUBDIVISION
PSD Number N/A
City or Private Inspection PRIVATE
Public or Private Roads N/A
Subdivision ("911") Disk Provided? N/A
NON-SUBDIVISION
North American Industry Classification System (NAICS) 722513
Impervious Area (Sq. Ft.) 27,800

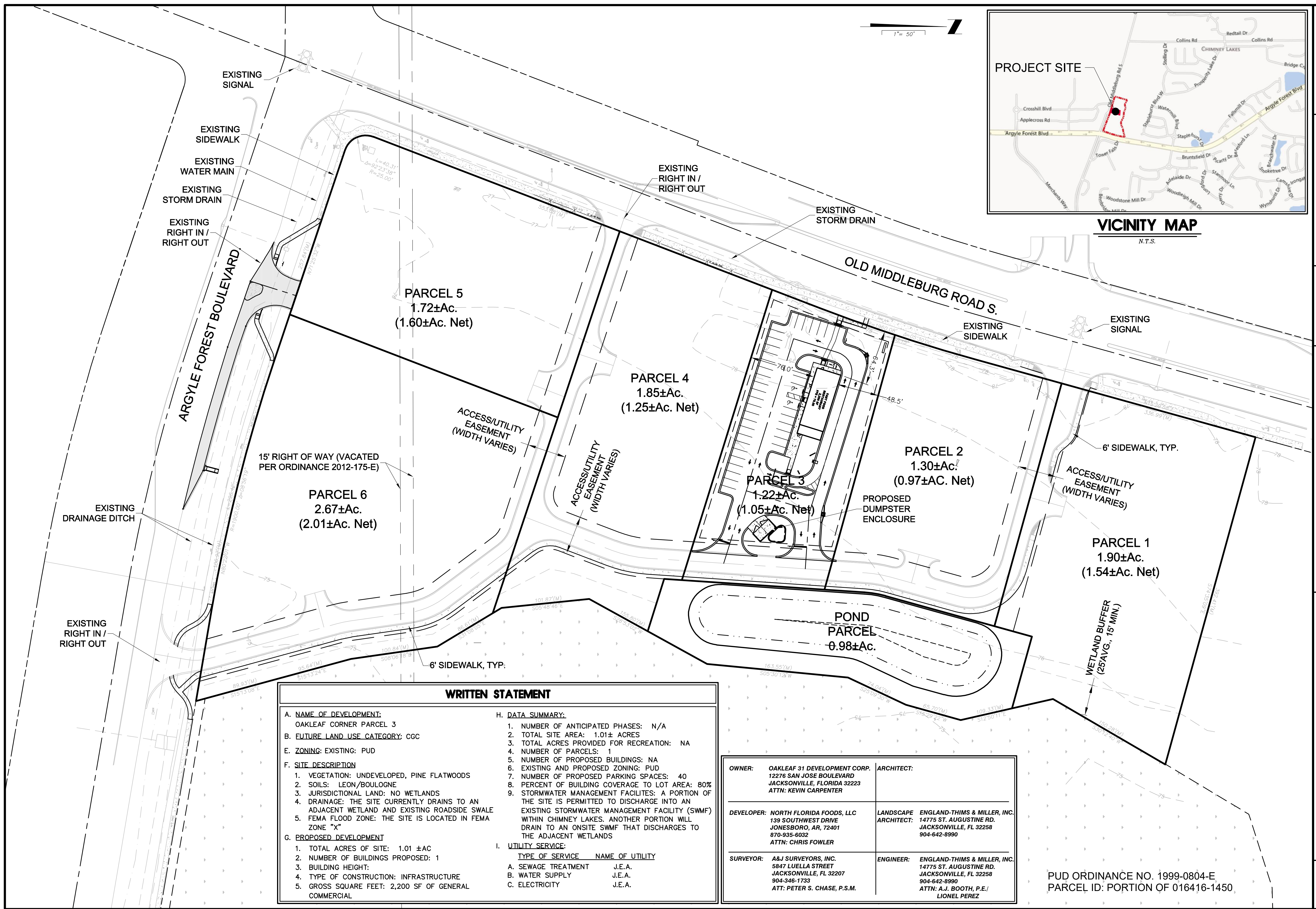
FOR AGENCY REVIEW ONLY
NOT FOR CONSTRUCTION

VERTICAL DATUM USED FOR THIS PROJECT: NAVD 1988

<p>ETM VISION • EXPERIENCE • RESULTS</p>	<p>REVIEWS: ETM NO. 19-227 DRAWN BY: A-B DESIGNED BY: A-B CHECKED BY: A-AH DATE: NOVEMBER, 2019</p>
	<p>Plans Prepared Under The Direction Of: ANDREW J. BOOTH P.E. NUMBER: 82302</p>
<p>COVER OAKLEAF CORNER OUTPARCEL 3 FOR OAKLEAF 31 DEVELOPMENT CORP.</p>	<p>DRAWING NUMBER 1</p>



VICINITY MAP
N.T.S.



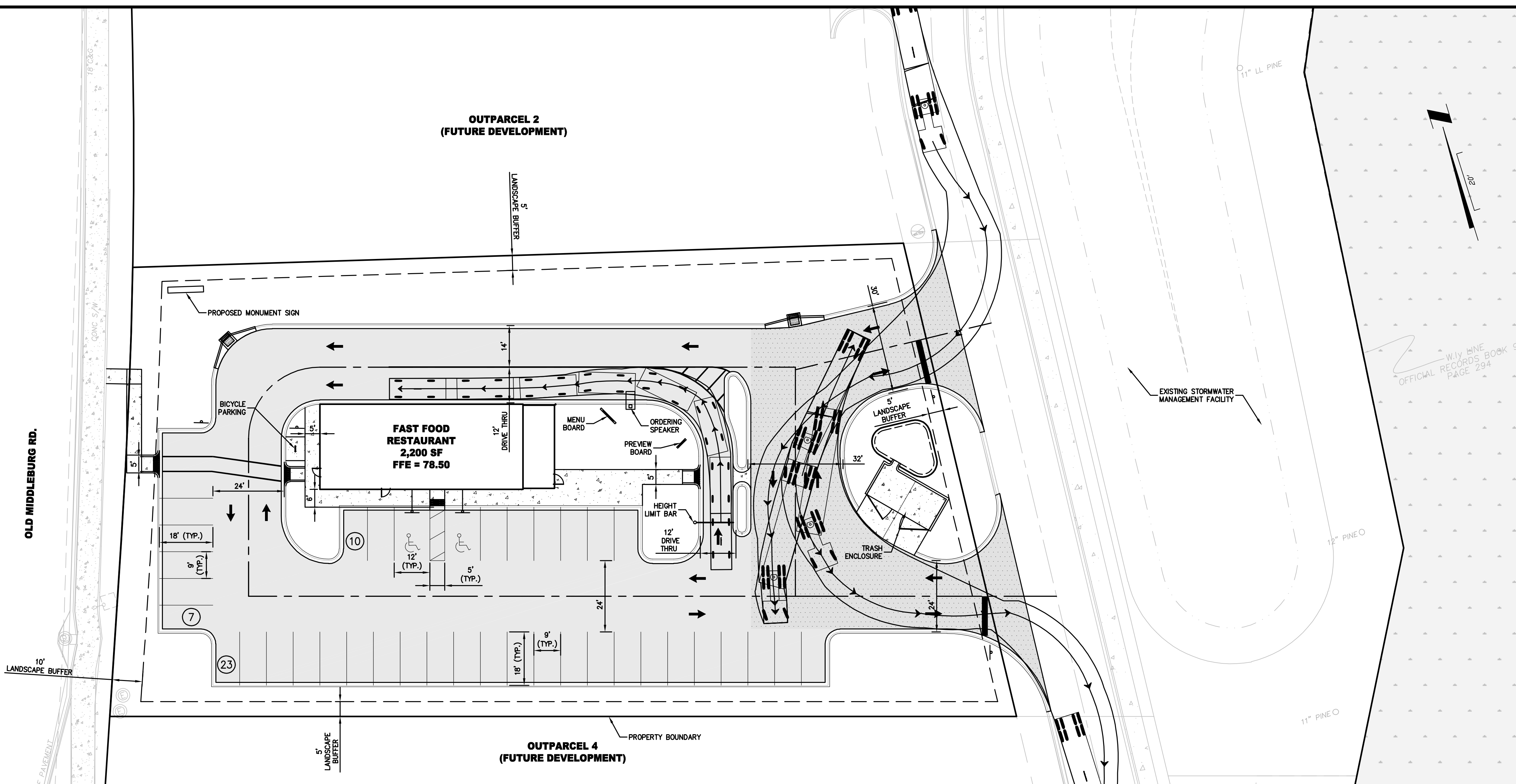
WRITTEN STATEMENT

- | | | | | | | | | | |
|---|---|-----------------|-----------------|---------------------|--------|-----------------|--------|----------------|--------|
| <p>A. NAME OF DEVELOPMENT:
OAKLEAF CORNER PARCEL 3</p> <p>B. FUTURE LAND USE CATEGORY: CGC</p> <p>E. ZONING: EXISTING: PUD</p> <p>F. SITE DESCRIPTION</p> <ol style="list-style-type: none"> 1. VEGETATION: UNDEVELOPED, PINE FLATWOODS 2. SOILS: LEON/BOULOGNE 3. JURISDICTIONAL LAND: NO WETLANDS 4. DRAINAGE: THE SITE CURRENTLY DRAINS TO AN ADJACENT WETLAND AND EXISTING ROADSIDE SWALE 5. FEMA FLOOD ZONE: THE SITE IS LOCATED IN FEMA ZONE "X" <p>G. PROPOSED DEVELOPMENT</p> <ol style="list-style-type: none"> 1. TOTAL ACRES OF SITE: 1.01 ± AC 2. NUMBER OF BUILDINGS PROPOSED: 3 3. BUILDING HEIGHT: 4. TYPE OF CONSTRUCTION: INFRASTRUCTURE 5. GROSS SQUARE FEET: 2,200 SF OF GENERAL COMMERCIAL | <p>H. DATA SUMMARY:</p> <ol style="list-style-type: none"> 1. NUMBER OF ANTICIPATED PHASES: N/A 2. TOTAL SITE AREA: 1.01± ACRES 3. TOTAL ACRES PROVIDED FOR RECREATION: NA 4. NUMBER OF PARCELS: 1 5. NUMBER OF PROPOSED BUILDINGS: NA 6. EXISTING AND PROPOSED ZONING: PUD 7. NUMBER OF PROPOSED PARKING SPACES: 40 8. PERCENT OF BUILDING COVERAGE TO LOT AREA: 80% 9. STORMWATER MANAGEMENT FACILITIES: A PORTION OF THE SITE IS PERMITTED TO DISCHARGE INTO AN EXISTING STORMWATER MANAGEMENT FACILITY (SWMF) WITHIN CHIMNEY LAKES. ANOTHER PORTION WILL DRAIN TO AN ONSITE SWMF THAT DISCHARGES TO THE ADJACENT WETLANDS <p>I. UTILITY SERVICE:</p> <table border="0"> <tr> <td>TYPE OF SERVICE</td> <td>NAME OF UTILITY</td> </tr> <tr> <td>A. SEWAGE TREATMENT</td> <td>J.E.A.</td> </tr> <tr> <td>B. WATER SUPPLY</td> <td>J.E.A.</td> </tr> <tr> <td>C. ELECTRICITY</td> <td>J.E.A.</td> </tr> </table> | TYPE OF SERVICE | NAME OF UTILITY | A. SEWAGE TREATMENT | J.E.A. | B. WATER SUPPLY | J.E.A. | C. ELECTRICITY | J.E.A. |
| TYPE OF SERVICE | NAME OF UTILITY | | | | | | | | |
| A. SEWAGE TREATMENT | J.E.A. | | | | | | | | |
| B. WATER SUPPLY | J.E.A. | | | | | | | | |
| C. ELECTRICITY | J.E.A. | | | | | | | | |

OWNER: OAKLEAF 31 DEVELOPMENT CORP. 12276 SAN JOSE BOULEVARD JACKSONVILLE, FLORIDA 32223 ATTN: KEVIN CARPENTER	ARCHITECT:
DEVELOPER: NORTH FLORIDA FOODS, LLC 139 SOUTHWEST DRIVE JONESBORO, AR, 72401 870-935-6032 ATTN: CHRIS FOWLER	LANDSCAPE ARCHITECT: ENGLAND-THIMS & MILLER, INC. 14775 ST. AUGUSTINE RD. JACKSONVILLE, FL 32258 904-642-8990
SURVEYOR: A&J SURVEYORS, INC. 5847 LUELLA STREET JACKSONVILLE, FL 32207 904-346-1733 ATT: PETER S. CHASE, P.S.M.	ENGINEER: ENGLAND-THIMS & MILLER, INC. 14775 ST. AUGUSTINE RD. JACKSONVILLE, FL 32258 904-642-8990 ATTN: A.J. BOOTH, P.E./ LIONEL PEREZ

PUD ORDINANCE NO. 1999-0804-E
PARCEL ID: PORTION OF 016416-1450

PLANS PREPARED UNDER THE DIRECTION OF: A.J. BOOTH, P.E. P.E. NUMBER: 82302
 PLOTTED: November 26, 2019 - 3:03 PM, BY: Kyle Veazey
 REVISIONS:
 ETM NO. 19-227
 DRAWN BY: ENGLAND-THIMS & MILLER, INC. 14775 ST. AUGUSTINE RD. JACKSONVILLE, FL 32258
 DESIGNED BY: TEL: (904) 642-8990
 CHECKED BY: FAX: (904) 646-9485
 DATE: OCT 18, 2019 CA: 00002854 LC: 0000316
ETM
 VISION • EXPERIENCE • RESULTS
OAKLEAF CORNER MASTER PLAN
OAKLEAF CORNER PARCEL 3
JACKSONVILLE, FLORIDA
NORTH FLORIDA FOODS, LLC
 DRAWING NUMBER **3**
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OLD MIDDLEBURG RD.

LEGAL DESCRIPTION (PER COMMITMENT):

OUTPARCEL 3
 A portion of Tract 10, Block 1, Section 32, Township 3 South, Range 25 East, as depicted on the plat of Jacksonville Heights, Duval County, Florida, recorded in Plat Book 5, page 93, of the current Public Records of said county, being a portion of those lands described and recorded in Official Records Book 17185, page 1944, of said current Public Records, being more particularly described as follows:

For a Point of Reference, commence at the intersection of the centerline of Branam Field / Chaffee Road, a variable width limited access right of way as presently established, with the centerline of Argyle Forest Boulevard, a 200 foot right of way as presently established; thence South 89°27'34" East, along said centerline of Argyle Forest Boulevard, 4271.53 feet to its intersection with the centerline of Old Middleburg Road, a variable width right of way as presently established; thence North 20°59'55" East, departing said centerline of Argyle Forest Boulevard and along said centerline of Old Middleburg Road, 128.69 feet; thence South 69°00'05" East, departing said centerline of Old Middleburg Road, 50.00 feet to a point lying on the Easterly right of way line of said Old Middleburg Road; thence North 20°59'48" East, along said Easterly right of way line, 493.69 feet to the Point of Beginning.

From said Point of Beginning, thence continue North 20°59'48" East, along said Easterly right of way line of Old Middleburg Road, 59.70 feet to the point of curvature of a curve concave Westward having a radius of 1960.08 feet; thence Northward, continuing along said Easterly right of way line and along the arc of said curve, through a central angle of 02°40'49", an arc length of 91.69 feet to the Southwesterly corner of those lands described and recorded in Official Records Book 18274, page 180, of said current Public Records, said arc being subtended by a chord bearing and distance of North 19°39'23" East, 91.68 feet; thence South 74°31'04" East, departing said Easterly right of way line and along the Southerly line of said Official Records Book 18274, page 180, a distance of 259.48 feet to the Southeastery corner thereof, said corner lying on the Westerly line of that certain Drainage and Utility Easement as described and recorded in Official Records Book 18274, page 94, of said current Public Records; thence South 03°50'44" West, along said Westerly line, 163.78 feet; thence North 72°43'20" West, departing said Westerly line, 305.08 feet to the Point of Beginning.

Containing 1.01 acres, more or less.

PARKING REQUIREMENTS

OFF STREET PARKING REQUIREMENTS

1 SPACE PER 4 SEATS IN RESTAURANT (30 SEATS) + 1 SPACE PER 2 EMPLOYEES (NO MAXIMUM PER PUD ORD. 1999-0804 APPENDIX A)
 (1*30 SEATS/4) = 7.5 SPACES + (110 EMPLOYEES/2) = 5 SPACES

REQUIRED = 12.5 SPACES

OFF-STREET PARKING = 13 SPACES MIN.

PROVIDED = 40 SPACES (INCLUDES 2 HC SPACES)

ACCESSIBLE PARKING REQUIREMENTS

** PER FLORIDA STATUTE 316.1955 & 316.1956
 ** PER ADAAG 208.2

TOTAL PARKING IN LOT	REQUIRED ACCESSIBLE SPACES
1-25	1
26-50	2
51-75	3
76-100	4
101-150	5
151-200	6
201-300	7
301-400	8
401-500	9
501-1000	2 PERCENT OF TOTAL (EACH LOT)
1001-OVER	20 PLUS 1 PER 100 OVER 1000

REQUIRED = 2 SPACES
 PROVIDED = 2 SPACES

BICYCLE PARKING REQUIREMENTS

** 2% OF THE REQUIRED OFF STREET PARKING (PER CO.)
 2% x 13 = 0.26

PARKING REQUIRED = 1 SPACE
 PARKING PROVIDED = 2 SPACES

DEVELOPMENT SUMMARY

A. PROJECT NAME: OAKLEAF CORNER OUTPARCEL 3
 B. ZONING DESIGNATION: PUD
 C. PUD ORDINANCE NUMBER: 1999-0804
 D. CITY DEVELOPMENT NUMBER:
 E. OWNER/DEVELOPER NAME, ADDRESS, PHONE NUMBER
 OAKLEAF 31 DEVELOPMENT CORP.
 12276 SAN JOSE BLVD.
 JACKSONVILLE, FL 32223
 F. ENGINEER NAME, ADDRESS, PHONE NUMBER
 ANDREW J. BOOTH, P.E.
 ENGLAND-THIMS & MILLER, INC.
 14775 OLD ST. AUGUSTINE ROAD
 JACKSONVILLE, FLORIDA 32258
 PHONE: (904) 642-8990

G. DATA SUMMARY

- TOTAL PROJECT AREA: 1.01 Ac.
- SQUARE FOOTAGE OF BUILDING: 2,200 SF
- TOTAL IMPERVIOUS AREA: 0.64 Ac. (65% IMPERVIOUS)
- REAL ESTATE NUMBER: 016416 1450

H. SITE DESCRIPTION

- VEGETATION: THE SITE IS CURRENTLY UNDEVELOPED AND PRIMARILY CONSISTS OF PINE TREES AND SCRUB BRUSH.
- DRAINAGE: THE SITE DRAINAGE SYSTEM WILL BE CONNECTED TO AN EXISTING 18" PIPE STUB-OUT. THIS IS PART OF THE PREVIOUSLY PERMITTED MASTER STORMWATER MANAGEMENT SYSTEM.
- WETLANDS: NONE PRESENT ON-SITE
- FEMA FLOOD ZONE: ZONE X

I. UTILITY SERVICES

- SEWAGE TREATMENT JEA
- WATER SUPPLY JEA
- ELECTRICITY JEA

LEGEND

	ASPHALT PAVEMENT
	HEAVY DUTY ASPHALT PAVEMENT
	CONCRETE PAVEMENT
	JURISDICTIONAL WETLANDS

PLANS PREPARED UNDER THE DIRECTION OF:

REVISIONS:

ETM NO. 19-227
 DRAWN BY: AJB
 DESIGNED BY: AJB
 CHECKED BY: AAH
 DATE: NOVEMBER, 2019

England-Thims & Miller, Inc.
 14775 Old St. Augustine Road
 Jacksonville, FL 32258
 TEL: (904) 642-8990
 FAX: (904) 646-9485
 CA-00002584 LC-0000316

ETM
 VISION • EXPERIENCE • RESULTS

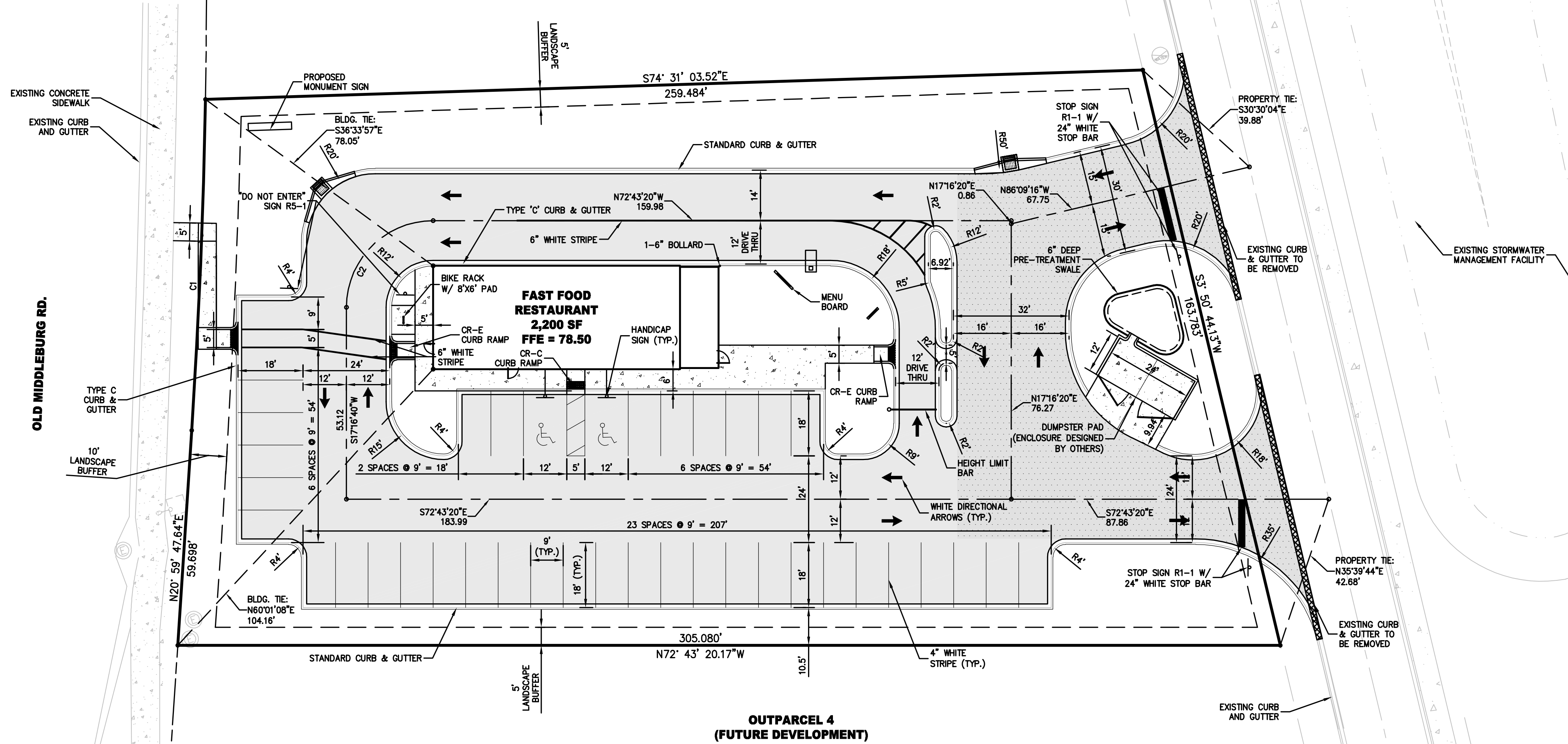
MASTER SITE PLAN
OAKLEAF CORNER OUTPARCEL 3
FOR
OAKLEAF 31 DEVELOPMENT CORP.

DRAWING NUMBER
4

PLOTTED: November 26, 2019 - 3:03 PM, BY: Kyle Veazey

**OUTPARCEL 2
(FUTURE DEVELOPMENT)**

**OUTPARCEL 4
(FUTURE DEVELOPMENT)**



CURVE TABLE						
CURVE	RADIUS	LENGTH	TANGENT	BEARING	CHORD	DELTA
C1	1960.08'	91.69'	45.85'	N19°39'23"E	91.68'	2°40'49"
C2	24.00'	37.70'	24.00'	S62°16'40"W	33.94'	90°00'00"

- GENERAL NOTES:**
- SEE DRAWING NO. 2 FOR GENERAL NOTES AND LEGEND.
 - ALL DIMENSIONS ARE TO BE TO THE FACE OF CURB UNLESS OTHERWISE NOTED.
 - CONTRACTOR SHALL PROVIDE CURB RAMP AT ALL PLACES WHERE SIDEWALK TERMINATES INTO PAVEMENT. CURB RAMP SHALL COMPLY WITH LATEST ADA CODE PER FDOT INDEX NO. 522-002.
 - ALL STRIPING, PAVEMENT MARKINGS AND RPM'S SHALL BE IN ACCORDANCE WITH FDOT INDEX 711-001.
 - STOP BARS SHALL BE LOCATED 4' MINIMUM FROM CROSSWALKS AND/OR CURB RAMP.
 - CONTRACTOR SHALL NOT SCALE PLAN, BUT SHALL REFER TO COUNTY APPROVED SITE PLAN FOR ALL LINE DIMENSIONS. ELECTRONIC FILES PROVIDED FOR INFORMATIONAL PURPOSES ONLY.
 - BUILDING FOOTPRINT SHOWN REPRESENTS THE EXTERIOR ENVELOPE OF THE BUILDING AS RECEIVED FROM THE ARCHITECT. CONTRACTOR TO NOTIFY CIVIL ENGINEER IMMEDIATELY OF ANY DISCREPANCIES.

LEGEND	
	ASPHALT PAVEMENT
	HEAVY DUTY ASPHALT PAVEMENT
	CONCRETE PAVEMENT
	JURISDICTIONAL WETLANDS
	DEMO HATCH

PLANS PREPARED UNDER THE DIRECTION OF:
ANDREW J. BOOTH
P.E. NUMBER: 82302

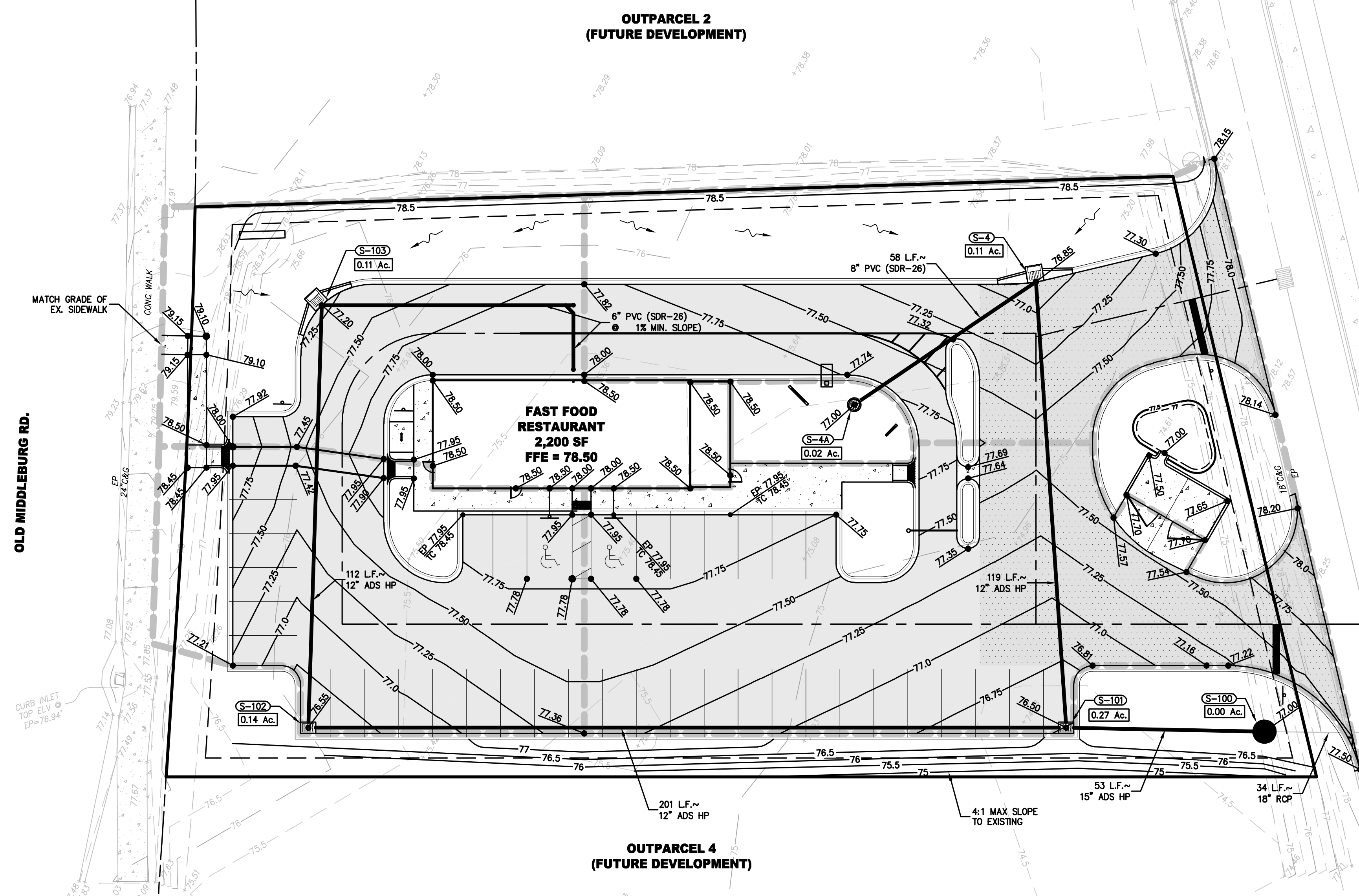
REVISIONS:
EM NO. 19-227
DRAWN BY: AJB
DESIGNED BY: AJB
CHECKED BY: AAH
DATE: NOVEMBER 2019

England-Thims & Miller, Inc.
10000 Highway 90
Jacksonville, FL 32258
TEL: (904) 642-8990
FAX: (904) 646-9485
CA 00002584 LC 0000316



SITE GEOMETRY PLAN
OAKLEAF CORNER OUTPARCEL 3
FOR
OAKLEAF 31 DEVELOPMENT CORP.

DRAWING NUMBER
5



OLD MIDDLEBURG RD.

OUTPARCEL 2
(FUTURE DEVELOPMENT)

FAST FOOD RESTAURANT
2,200 SF
FFE = 78.50

OUTPARCEL 4
(FUTURE DEVELOPMENT)

IMPERVIOUS AREA CALCULATIONS

PARCEL IS 1.01 AC± PERMITTED TO 85% IMPERVIOUS PER S.R.WMD PERMIT NO. 17232-47

PERMITTED IMPERVIOUS (85%) = 0.86 AC
PROPOSED IMPERVIOUS (65%) = 0.64 AC

DRAINAGE STRUCTURE TABLE

STR. NO.	STRUCTURE TYPE	TOP/GRATE EL.	INVERT EL.
4	CURB INLET - SINGLE	76.85	12" ADS HP - 73.25 (S) 8" PVC (SDR-26) - 73.80 (W)
4A	YARD DRAIN	77.75	8" PVC (SDR-26) - 73.80 (E)
100	CONSTRUCT 'DOGHOUSE' STRUCTURE ON EX. 18" RCP	77.00	18" RCP - 72.20 (E) 15" ADS HP - 72.65 (W)
101	TYPE "C" INLET	76.50	15" ADS HP - 72.45 (E) 12" ADS HP - 72.90 (N) 12" ADS HP - 73.60 (W)
102	TYPE "C" INLET	76.55	12" ADS HP - 72.90 (E) 12" ADS HP - 73.95 (N)
103	CURB INLET - SINGLE	77.20	12" ADS HP - 73.60 (S) 8" PVC (SDR-26) - 73.60 (E)

LEGEND

- DRAINAGE DIVIDE LINE
- DRAINAGE SUB-DIVIDE LINE
- ASPHALT PAVEMENT
- HEAVY DUTY ASPHALT PAVEMENT
- CONCRETE PAVEMENT
- JURISDICTIONAL WETLANDS

- GENERAL NOTES:**
- SEE DRAWING NO. 2 FOR GENERAL NOTES & LEGEND.
 - 2'-6" TO 20" UNDERDRAIN STUBOUTS AT EACH PAVEMENT DRAINAGE INLET.
 - ALL PIPE LENGTHS SHOWN HEREON ARE APPROXIMATE AND ARE TAKEN FROM THE APPROXIMATE CENTER OF GRATE / RING AND COVER TO THE BACK OF THE MITERED END SECTIONS.
 - SIDEWALK CONSTRUCTION TO MEET ADA REQUIREMENTS.
 - A. RAMPS MAXIMUM SLOPE: 1:12 (8.33%)
 - B. SIDEWALK/CROSSWALK MAXIMUM CROSS SLOPE 1:48 (2%)
 - C. SIDEWALK/CROSSWALK MAXIMUM RUNNING SLOPE 1:20 (5%)
 - CONTRACTOR RESPONSIBLE FOR NOTIFYING CITY FOR ALL/ANY REQUIRED INSPECTIONS FOR WORK WITHIN A PUBLIC RIGHT OF WAY.
 - CONTRACTOR SHALL NOT SCALE PLAN, BUT SHALL REFER TO PLAT FOR ALL HORIZONTAL LINE DIMENSIONS.
 - ALL DRAINAGE MANHOLE TOPS ARE APPROXIMATE.
 - REFER TO DRAWINGS 08 & 0A FOR PAVING AND DRAINAGE DETAILS.
 - UNSATURABLE MATERIAL SHALL BE REMOVED AND REPLACED AS PER RECOMMENDATIONS IN THE GEOTECH REPORT
 - SEED AND MULCH ALL DISTURBED AREAS.

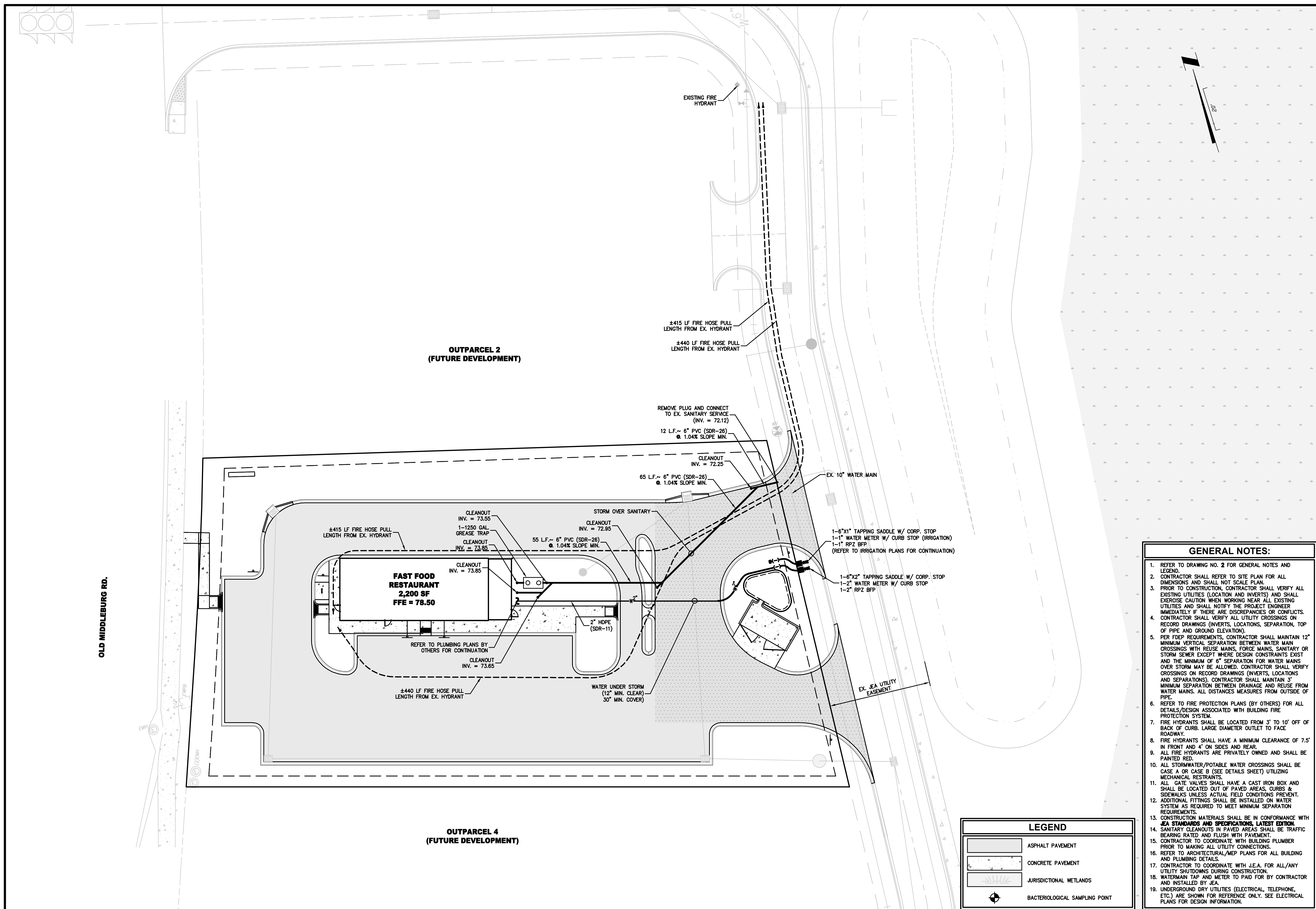
PAVING & DRAINAGE PLAN
OAKLEAF CORNER OUTPARCEL 3
FOR
OAKLEAF 31 DEVELOPMENT CORP.

DRAWING NUMBER
6

England-Thins & Miller, Inc.
10000 Highway 90
Jacksonville, FL 32258
TEL: (904) 642-8890
FAX: (904) 646-3465
CA 00002584 LC 0000316

EM NO. 19-227
DRAWN BY: AJB
DESIGNED BY: AJB
CHECKED BY: AAH
DATE: NOVEMBER, 2019

PLANS PREPARED UNDER THE DIRECTION OF:
ANDREW J. BOOTH
P.E. NUMBER: 82302
PLOTTED: November 26, 2019 - 3:04 PM. BY: Kyle Veazey



OLD MIDDLEBURG RD.

**OUTPARCEL 2
(FUTURE DEVELOPMENT)**

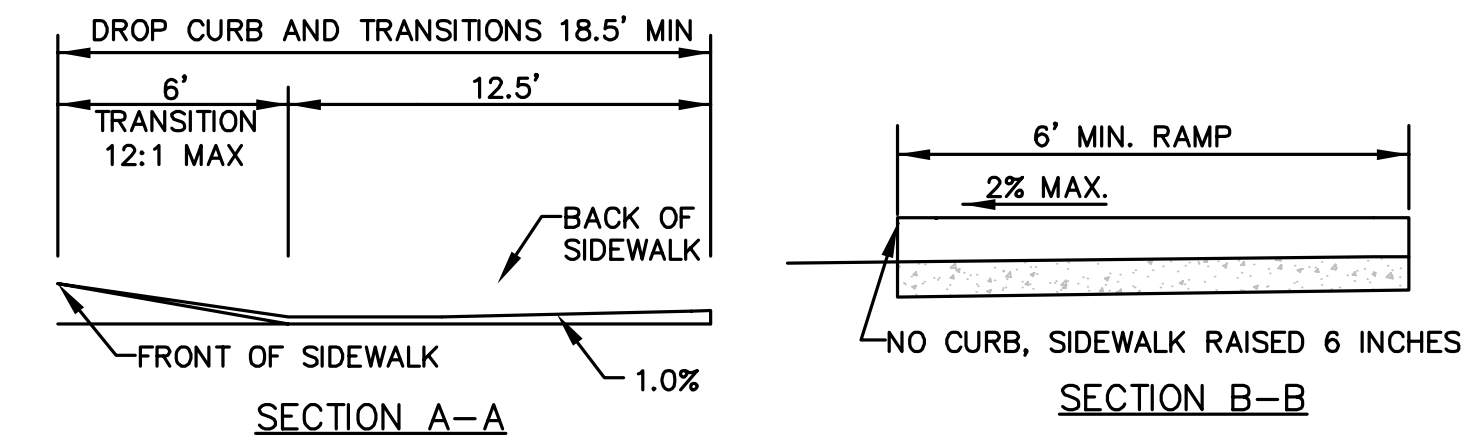
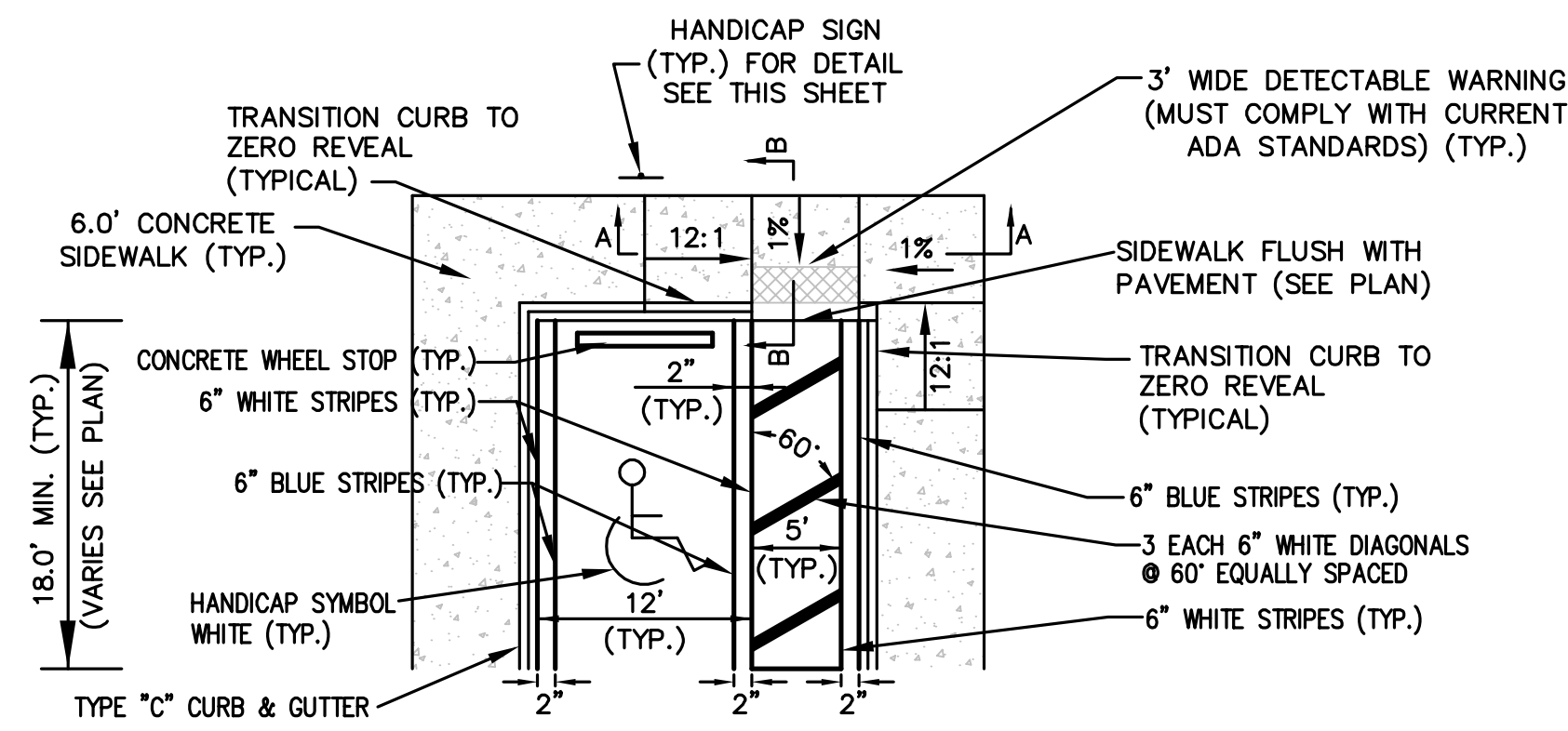
**OUTPARCEL 4
(FUTURE DEVELOPMENT)**

**FAST FOOD RESTAURANT
2,200 SF
FFE = 78.50**

LEGEND	
	ASPHALT PAVEMENT
	CONCRETE PAVEMENT
	JURISDICTIONAL WETLANDS
	BACTERIOLOGICAL SAMPLING POINT

- GENERAL NOTES:**
- REFER TO DRAWING NO. 2 FOR GENERAL NOTES AND LEGEND.
 - CONTRACTOR SHALL REFER TO SITE PLAN FOR ALL DIMENSIONS AND SHALL NOT SCALE PLAN.
 - PRIOR TO CONSTRUCTION, CONTRACTOR SHALL VERIFY ALL EXISTING UTILITIES (LOCATION AND INVERTS) AND SHALL EXERCISE CAUTION WHEN WORKING NEAR ALL EXISTING UTILITIES AND SHALL NOTIFY THE PROJECT ENGINEER IMMEDIATELY IF THERE ARE DISCREPANCIES OR CONFLICTS. CONTRACTOR SHALL VERIFY ALL UTILITY CROSSINGS ON RECORD DRAWINGS (INVERTS, LOCATIONS, SEPARATION, TOP OF PIPE AND GROUND ELEVATION).
 - PER FDEP REQUIREMENTS, CONTRACTOR SHALL MAINTAIN 12" MINIMUM VERTICAL SEPARATION BETWEEN WATER MAIN CROSSINGS WITH REUSE MAINS, FORCE MAINS, SANITARY OR STORM SEWER EXCEPT WHERE DESIGN CONSTRAINTS EXIST AND THE MINIMUM OF 6" SEPARATION FOR WATER MAINS OVER STORM MAY BE ALLOWED. CONTRACTOR SHALL VERIFY CROSSINGS ON RECORD DRAWINGS (INVERTS, LOCATIONS AND SEPARATIONS). CONTRACTOR SHALL MAINTAIN 3' MINIMUM SEPARATION BETWEEN DRAINAGE AND REUSE FROM WATER MAINS. ALL DISTANCES MEASURES FROM OUTSIDE OF PIPE.
 - REFER TO FIRE PROTECTION PLANS (BY OTHERS) FOR ALL DETAILS/DESIGN ASSOCIATED WITH BUILDING FIRE PROTECTION SYSTEM.
 - FIRE HYDRANTS SHALL BE LOCATED FROM 3' TO 10' OFF OF BACK OF CURB. LARGE DIAMETER OUTLET TO FACE ROADWAY.
 - FIRE HYDRANTS SHALL HAVE A MINIMUM CLEARANCE OF 7.5' IN FRONT AND 4' ON SIDES AND REAR.
 - ALL FIRE HYDRANTS ARE PRIVATELY OWNED AND SHALL BE PAINTED RED.
 - ALL STORMWATER/POTABLE WATER CROSSINGS SHALL BE CASE A OR CASE B (SEE DETAILS SHEET) UTILIZING MECHANICAL RESTRAINTS.
 - ALL GATE VALVES SHALL HAVE A CAST IRON BOX AND SHALL BE LOCATED OUT OF PAVED AREAS, CURBS & SIDEWALKS UNLESS ACTUAL FIELD CONDITIONS PREVENT. ADDITIONAL FITTINGS SHALL BE INSTALLED ON WATER SYSTEM AS REQUIRED TO MEET MINIMUM SEPARATION REQUIREMENTS.
 - CONSTRUCTION MATERIALS SHALL BE IN CONFORMANCE WITH JEA STANDARDS AND SPECIFICATIONS, LATEST EDITION.
 - SANITARY CLEANOUTS IN PAVED AREAS SHALL BE TRAFFIC BEARING RATED AND FLUSH WITH PAVEMENT.
 - CONTRACTOR TO COORDINATE WITH BUILDING PLUMBER PRIOR TO MAKING ALL UTILITY CONNECTIONS.
 - REFER TO ARCHITECTURAL/MEP PLANS FOR ALL BUILDING AND PLUMBING DETAILS.
 - CONTRACTOR TO COORDINATE WITH J.E.A. FOR ALL/ANY UTILITY SHUTDOWNS DURING CONSTRUCTION.
 - WATERMAIN TAP AND METER TO PAID FOR BY CONTRACTOR AND INSTALLED BY JEA.
 - UNDERGROUND DRY UTILITIES (ELECTRICAL, TELEPHONE, ETC.) ARE SHOWN FOR REFERENCE ONLY. SEE ELECTRICAL PLANS FOR DESIGN INFORMATION.

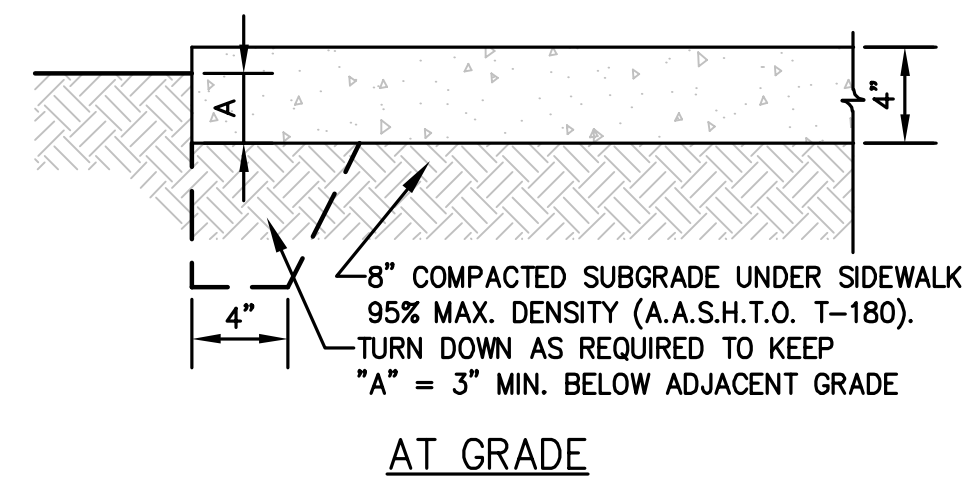
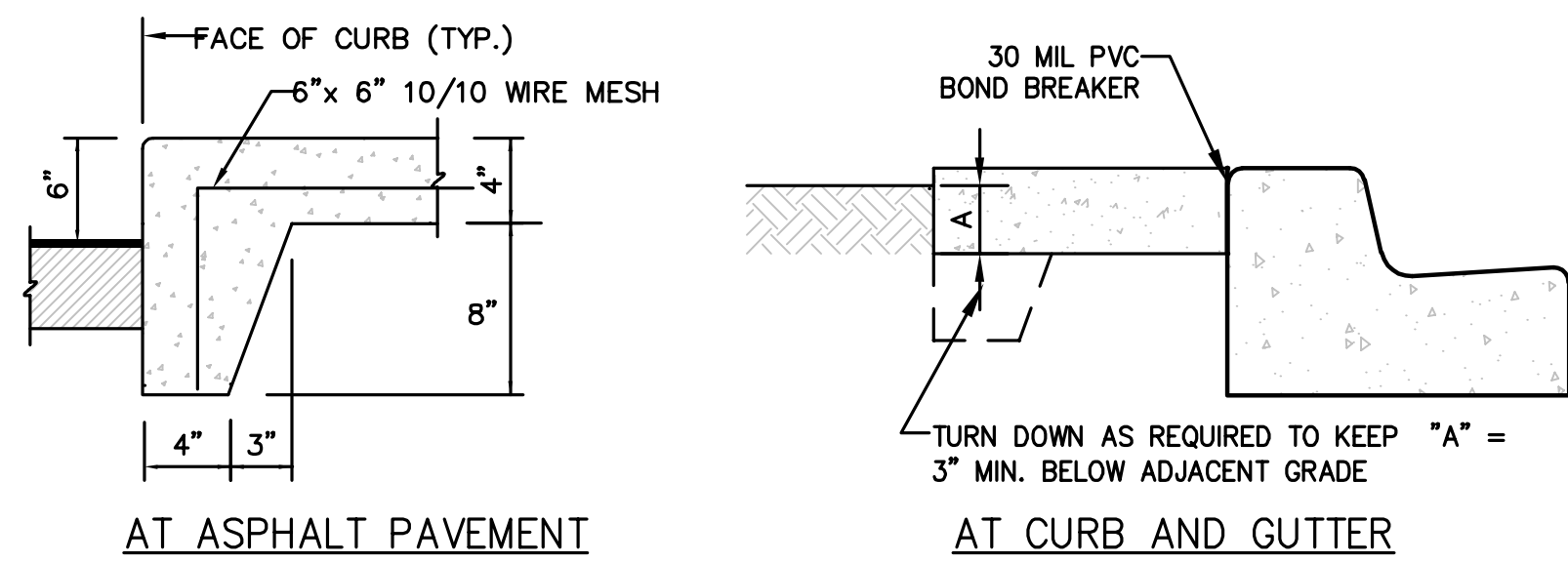
<p>ETM VISION • EXPERIENCE • RESULTS</p>	<p>England-Thins & Miller, Inc. 11111 Highway 90 Jacksonville, FL 32218 TEL: (904) 642-8890 FAX: (904) 646-9485 CA 00002864 LC 0000316</p>						
	<p>UTILITY PLAN OAKLEAF CORNER OUTPARCEL 3 FOR OAKLEAF 31 DEVELOPMENT CORP.</p>						
<p>PLANS PREPARED UNDER THE DIRECTION OF: ANDREW J. BOOTH P.E. NUMBER: 82302</p>	<p>REVISIONS:</p> <table border="1"> <tr> <td>ETM NO. 19-227</td> <td>DESIGNED BY: AJB</td> </tr> <tr> <td></td> <td>CHECKED BY: AAH</td> </tr> <tr> <td></td> <td>DATE: NOVEMBER 2019</td> </tr> </table>	ETM NO. 19-227	DESIGNED BY: AJB		CHECKED BY: AAH		DATE: NOVEMBER 2019
ETM NO. 19-227	DESIGNED BY: AJB						
	CHECKED BY: AAH						
	DATE: NOVEMBER 2019						
<p>DRAWING NUMBER 7</p>	<p>t:\2019\19-227\LandDev\Design\Plots\19-227_MS.dwg PLOTTED: November 26, 2019 - 3:04 PM, BY: Kyle Veazey</p>						



NOTE:

- HANDICAP RAMPS, SPACES AND SIGNAGE SHALL MEET REQUIREMENTS OF FLORIDA ADMINISTRATIVE CODE CHAPTER 9B-7 AND AMERICAN NATIONAL STANDARD A117.1 AND ALL APPLICABLE CITY AND STATE REQUIREMENTS.
- CONTRACTOR SHALL INSTALL A DETECTABLE WARNING SURFACE IN ACCORDANCE WITH A.D.A. REQUIREMENTS AND FLORIDA BUILDING CODE SECTION 11.
- REFER TO PAVING AND DRAINAGE PLAN FOR SIDEWALK TRANSITION AND DIMENSIONS.
- SEE SHEET NUMBER 2 FOR GENERAL NOTE REGARDING DETECTABLE WARNING AREAS.

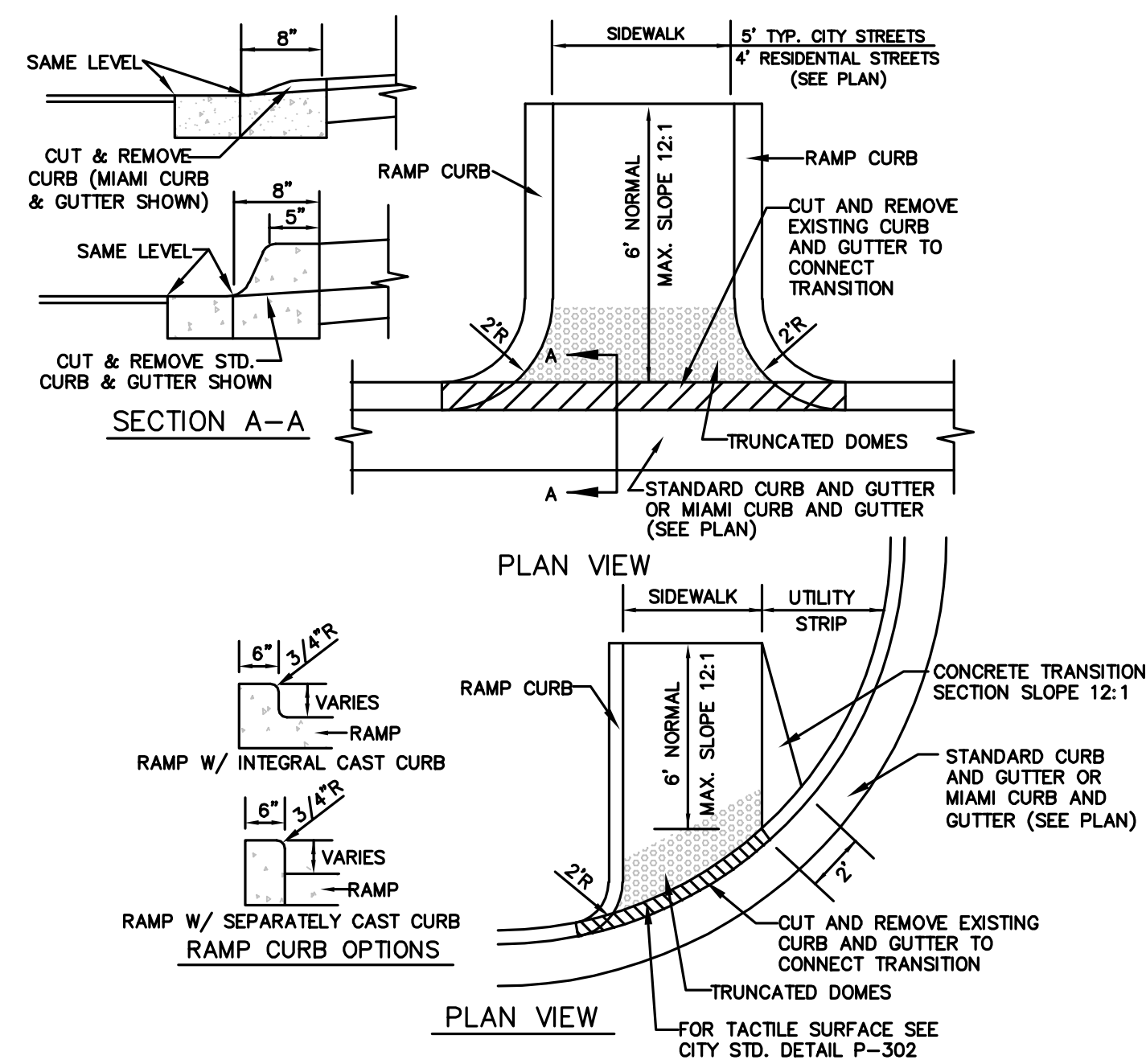
HANDICAP RAMP DETAILS
N.T.S.



NOTES:

- CONSTRUCT STRAIGHT JOINTS WITH FACE PERPENDICULAR TO SURFACE OF CONCRETE. TRAVERSE JOINTS SHALL BE AT RIGHT ANGLES TO CENTERLINE UNLESS OTHERWISE INDICATED ON PLANS.
- PROVIDE EXPANSION JOINTS AT 100' INTERVAL MAXIMUM SPACING ON CENTER.
- PROVIDE EXPANSION JOINTS FILLER FOR JOINTS ABUTTING CURBS, CATCH BASINS, MANHOLES, INLETS STRUCTURES, WALKS AND OTHER FIXED OBJECTS UNLESS OTHERWISE INDICATED ON PLANS.
- EXTEND JOINTS FILLER FULL WIDTH AND DEPTH OF JOINT, AND 1/2" BELOW FINISHED SURFACE. PLACE SEALANT OVER JOINT FILLER PER MANUFACTURERS RECOMMENDATIONS.
- USE PREMOLDED ASPHALT-IMPREGNATED FIBERBOARD, 1/2" THICK CONFORMING TO ASTM D1751. CONTRACTION JOINT SHALL BE SAW CUT (1/4" WIDE BY 1" DEEP).
- FINISHED SURFACE FOR CONCRETE SIDEWALK SHALL BE GRAY CONCRETE WITH LIGHT BROOM FINISH PERPENDICULAR TO LINE OF TRAFFIC (UNLESS OTHERWISE INDICATED ON PLANS).
- PROVIDE CRACK CONTROL JOINTS @ (SAME AS WIDTH) O.C.
- PROVIDE 16" STRIP SOD ADJACENT TO ALL EDGES OF SIDEWALK, CURB AND PAVEMENT AREAS.
- CONCRETE COMPRESSION STRENGTH 3000 P.S.I. @ 28 DAYS UNLESS OTHERWISE APPROVED BY ENGINEER OF RECORD.
- SIDEWALK TO BE CONSTRUCTED WITH SLOPES COMPLYING TO WITH LATEST ADA CODE AND FDOT INDEX 522-001. SIDEWALK MAX. VERTICAL SLOPE OF 5.0% AND MAX CROSS SLOPE OF 2.0%.

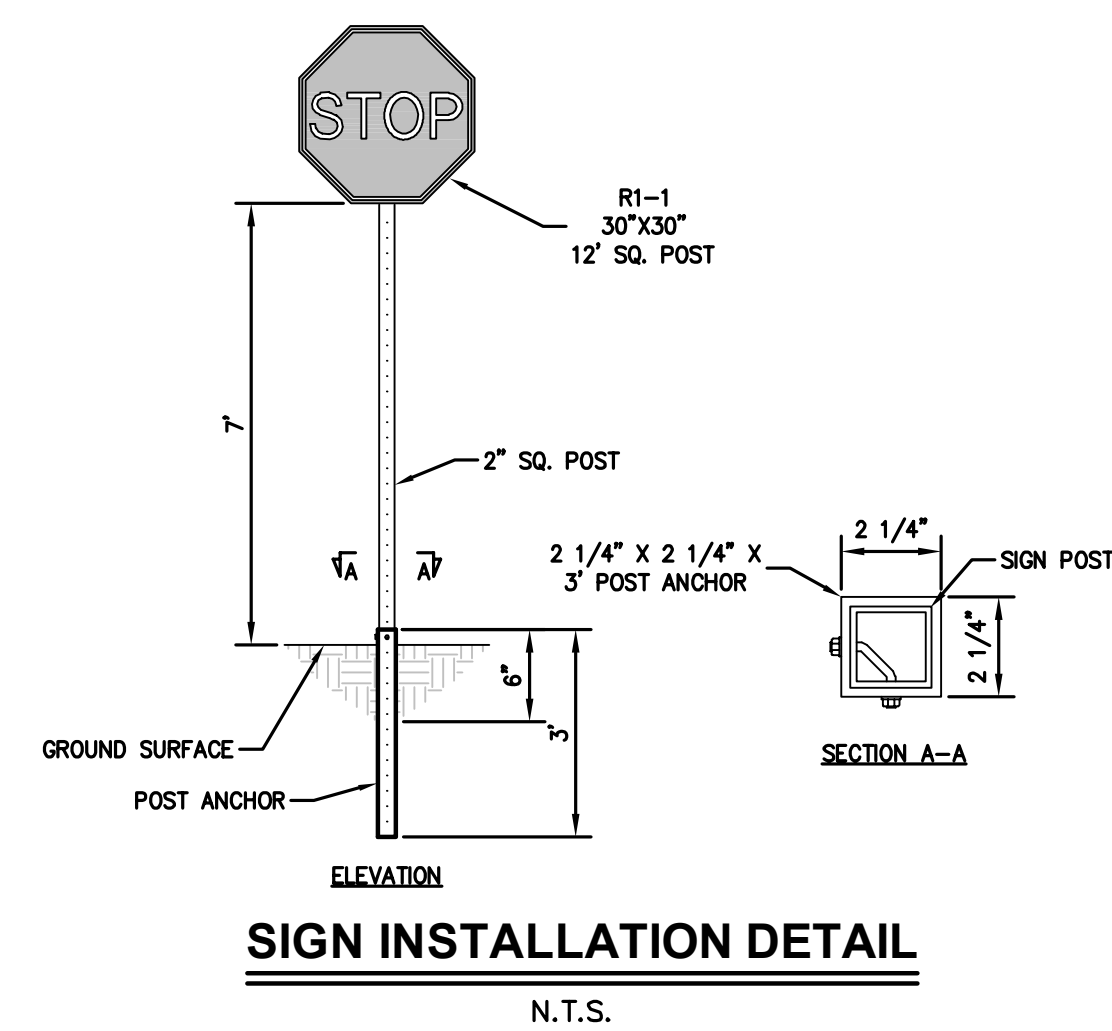
CONCRETE WALK
N.T.S.



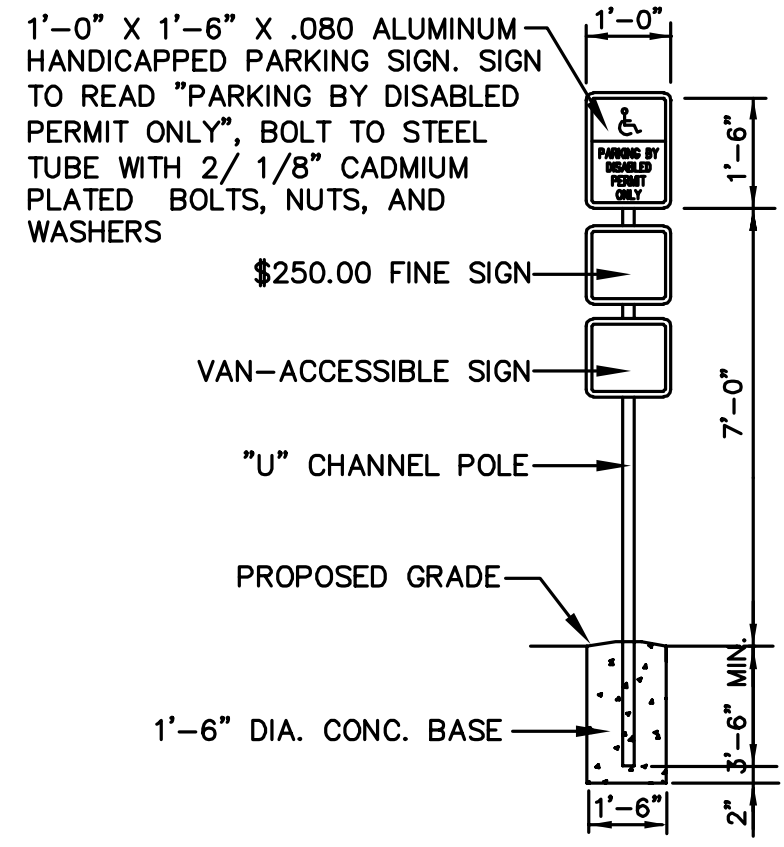
NOTES:

- HANDICAP RAMPS, SPACES AND SIGNAGE SHALL MEET AMERICAN NATIONAL STANDARD A117.1 AND ALL APPLICABLE CITY AND STATE REQUIREMENTS.
- THE CONTRACTOR SHALL INSTALL DETECTABLE WARNING SURFACES IN ACCORDANCE WITH A.D.A. REQUIREMENTS. REFER TO FDOT STANDARD INDEX 502-002 FOR FURTHER INFORMATION.

STANDARD HANDICAP RAMP DETAILS
N.T.S.

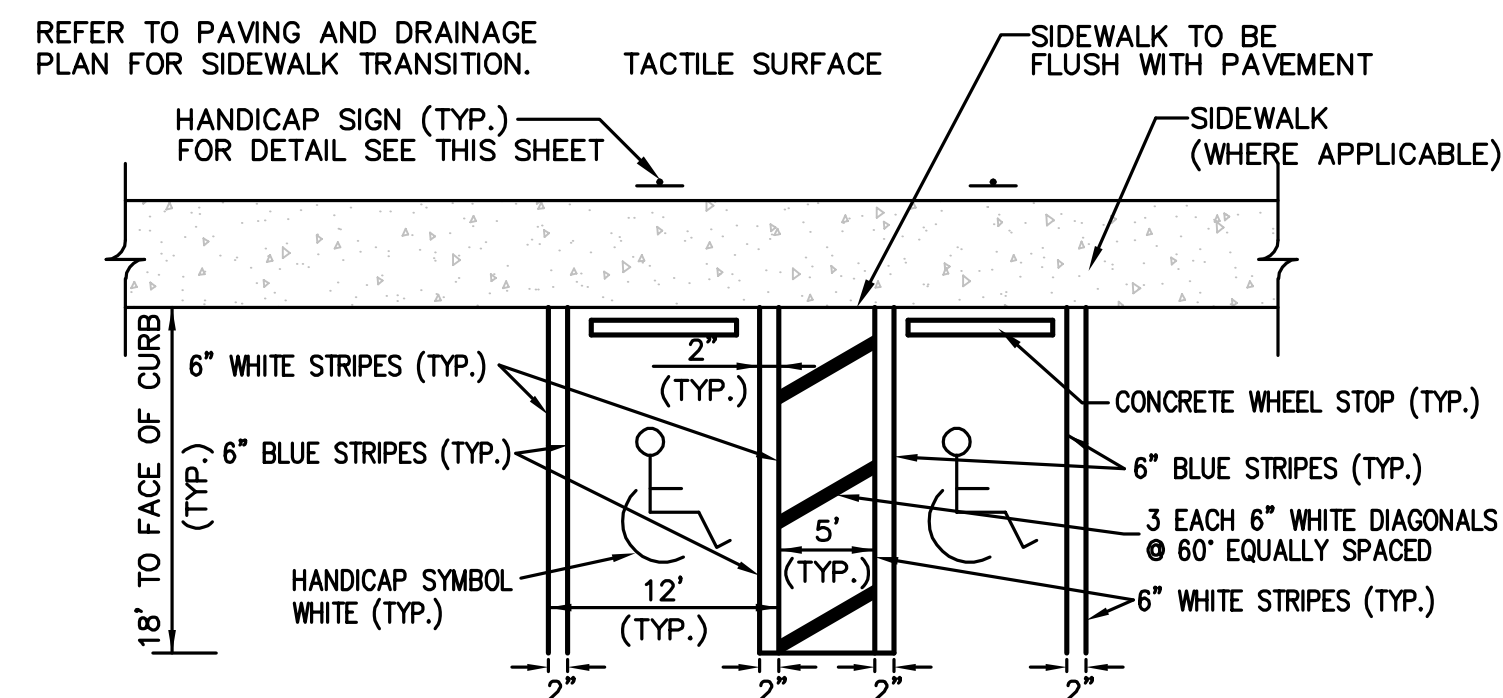


SIGN INSTALLATION DETAIL
N.T.S.



NOTE:
HANDICAPPED PARKING SIGN SHALL CONFORM WITH CURRENT STATE AND LOCAL AND FEDERAL CODES AND REGULATIONS.

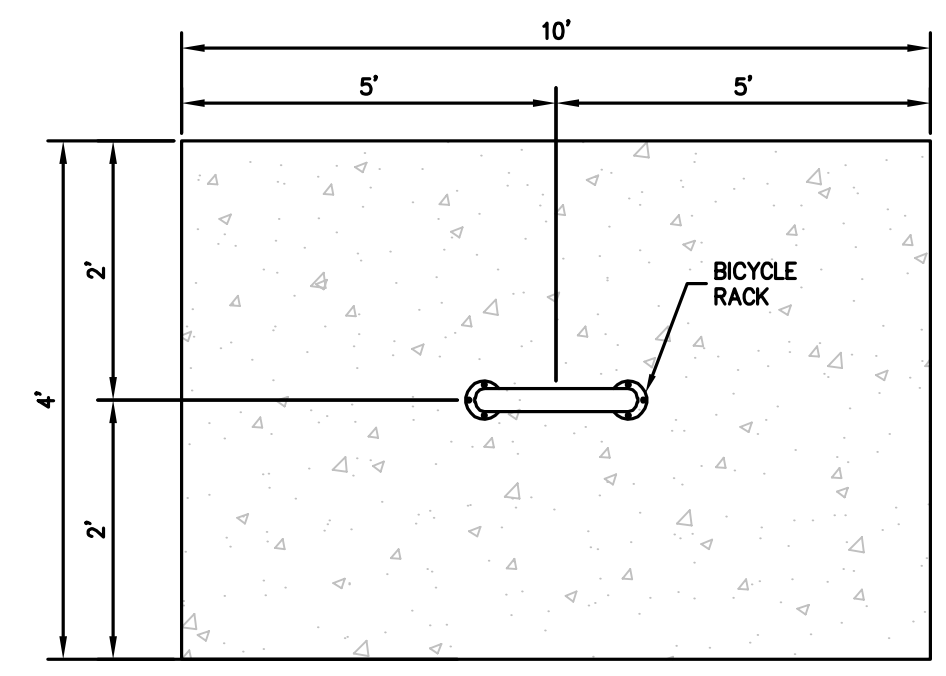
HANDICAP PARKING SIGN DETAIL
N.T.S.



NOTE:

- HANDICAP RAMPS, SPACES AND SIGNAGE SHALL MEET AMERICAN NATIONAL STANDARD A117.1 AND ALL APPLICABLE CITY AND STATE REQUIREMENTS.
- THE CONTRACTOR SHALL INSTALL DETECTABLE WARNING SURFACES IN ACCORDANCE WITH A.D.A. REQUIREMENTS. REFER TO FDOT STANDARD INDEX 522-002 FOR DETECTABLE WARNING PLACEMENT.

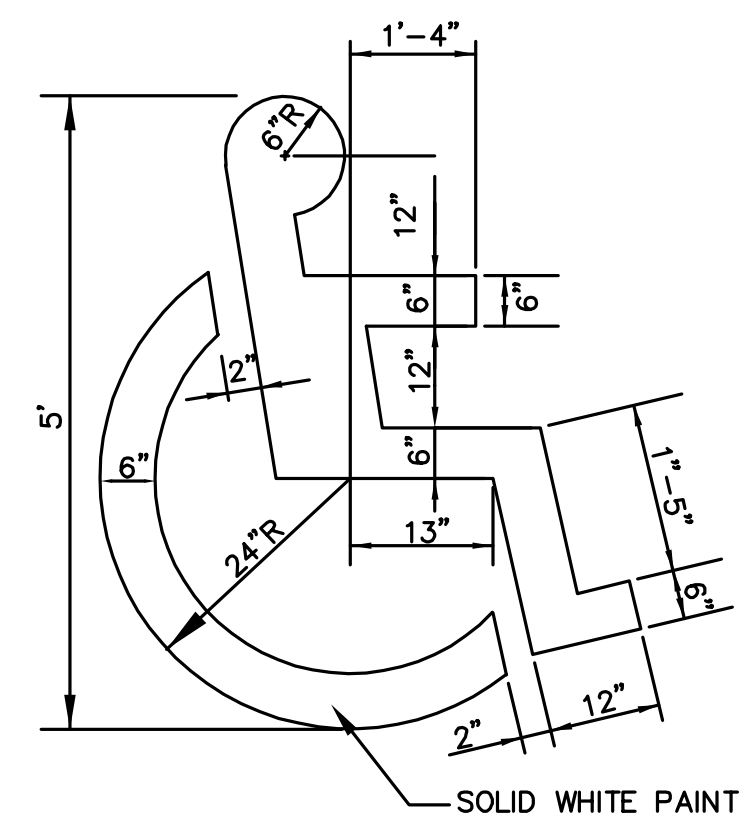
UNIVERSAL HANDICAP PARKING DETAIL
N.T.S.



NOTES:

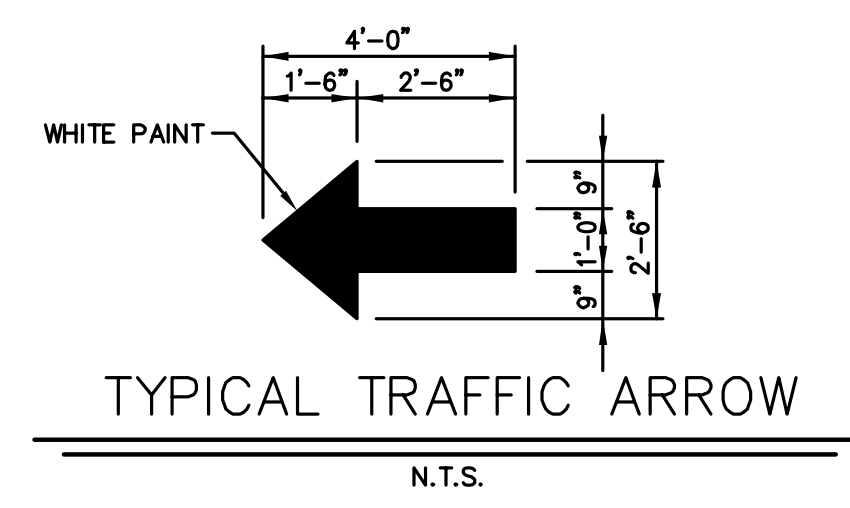
- INVERTED "U" SHAPED BICYCLE RACK (OR APPROVED EQUIVALENT) HOT DIPPED GALVANIZED WITH SURFACE MOUNT.
- RACK MUST SUPPORT BICYCLE IN TWO PLACES PER COJ LAND DEVELOPMENT CODE SEC. 656.609.
- BICYCLE RACKS SHALL BE A MINIMUM OF 3' FROM ANY BUILDING.

BICYCLE RACK DETAIL
N.T.S.

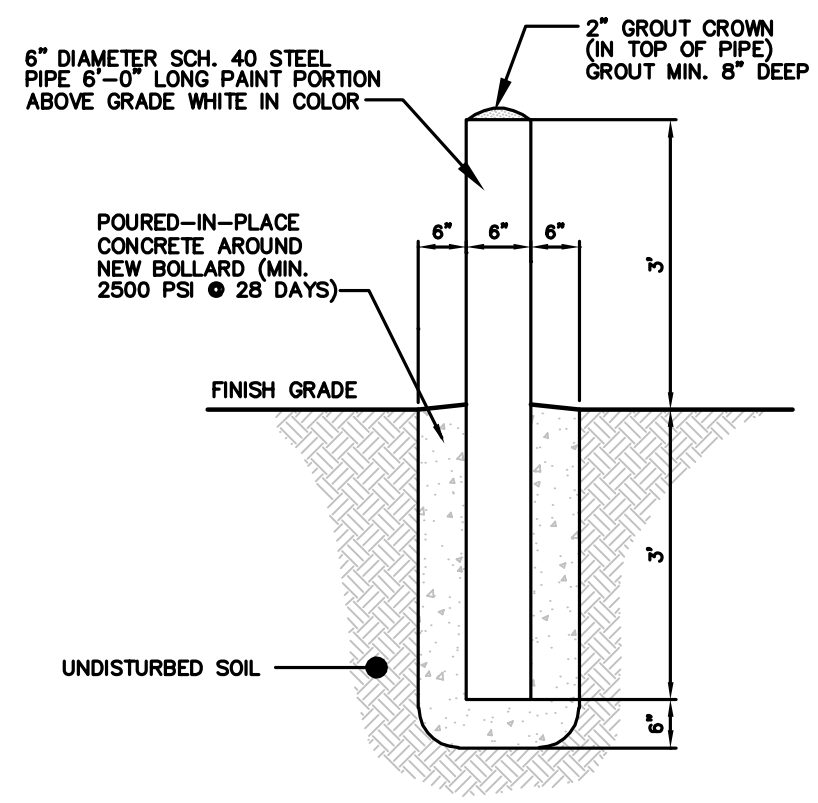


NOTE:
ALL FINISH AND STRIPING SHALL BE IN ACCORDANCE WITH FDOT INDEX 711-001

HANDICAP PAVEMENT MARKINGS
N.T.S.



TYPICAL TRAFFIC ARROW
N.T.S.



6\"/>

PLANS PREPARED UNDER THE DIRECTION OF:

REVISIONS:

ETM NO. 19-227	DRAWN BY: A-AB
DESIGNED BY: A-AB	CHECKED BY: A-AB
DATE: NOVEMBER 2019	

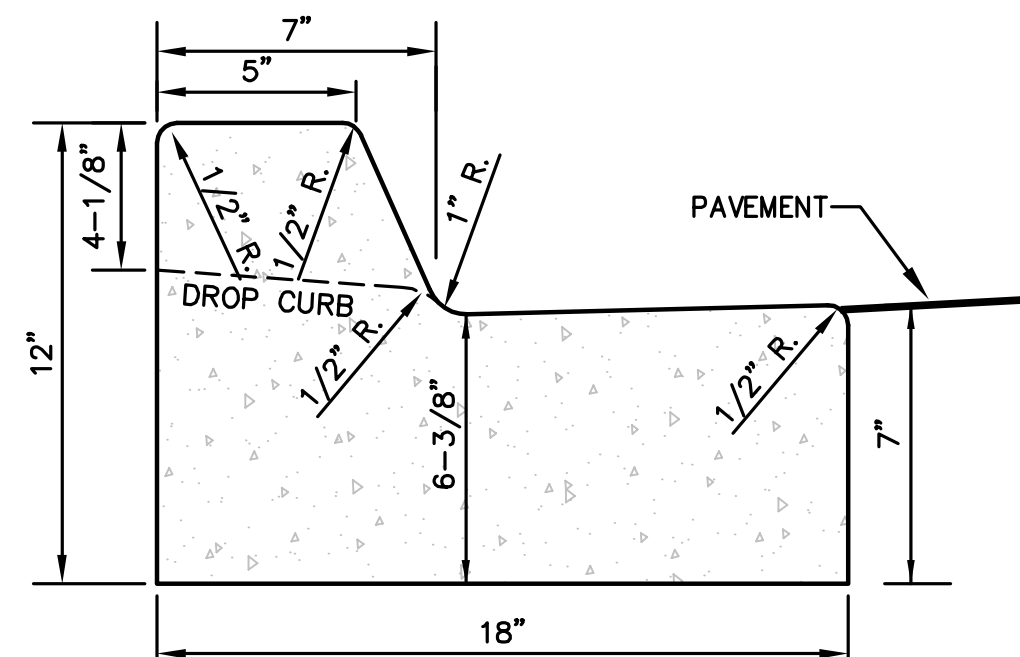
Englund-Thins & Miller, Inc.
10000 Highway 19
Jacksonville, FL 32228
TEL: (904) 642-8890
FAX: (904) 646-9485
CA: 00002864 LC: 00003616

ETM
VISION • EXPERIENCE • RESULTS

PAVING & DRAINAGE DETAILS
OAKLEAF CORNER OUTPARCEL 3
OAKLEAF 31 DEVELOPMENT CORP.

DRAWING NUMBER
8A

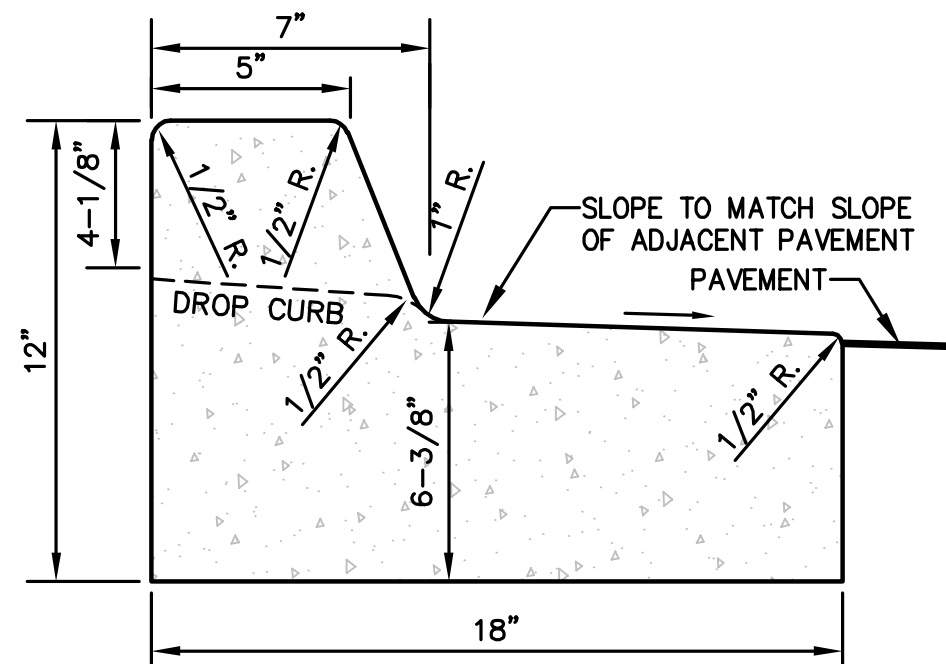
t:\2019\19-227\LandDev\Design\Plots\19-227_PD_DET5.dwg PLOTTED: November 26, 2019 - 3:05 PM, BY: Kyle Veazey



STANDARD CURB AND GUTTER

N.T.S.

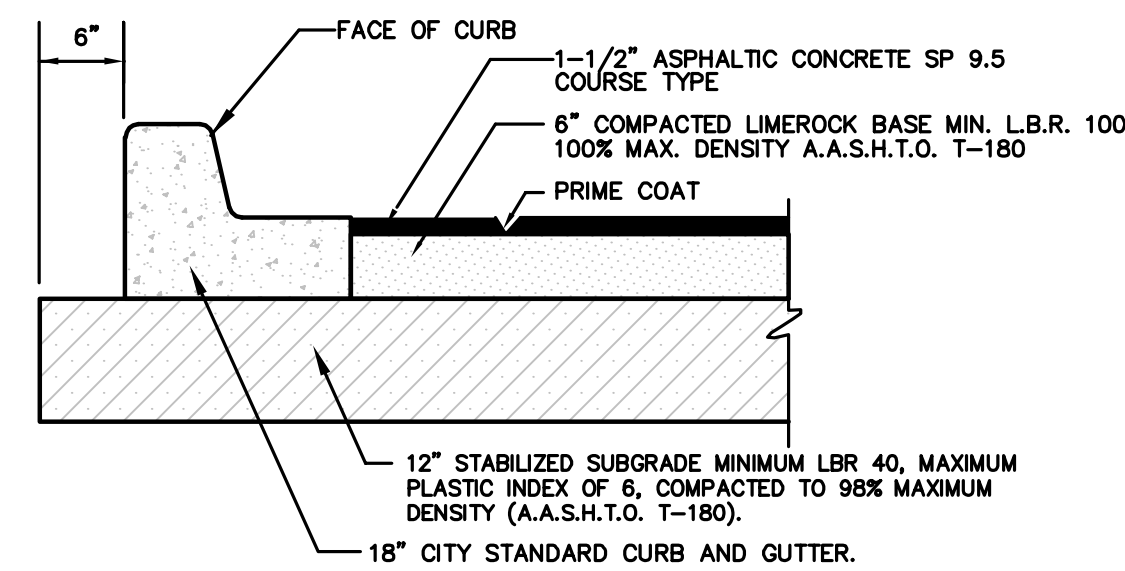
- CURB AND GUTTER NOTES:**
- MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE LATEST FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
 - CONCRETE SHALL BE CLASS 1 CONCRETE WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3,000 PSI UNLESS OTHERWISE APPROVED BY THE ENGINEER OF RECORD.
 - WHEN USED ON THE HIGH SIDE OF 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.



TYPE "C" CURB AND GUTTER TO BE USED AT ALL MEDIANS

N.T.S.

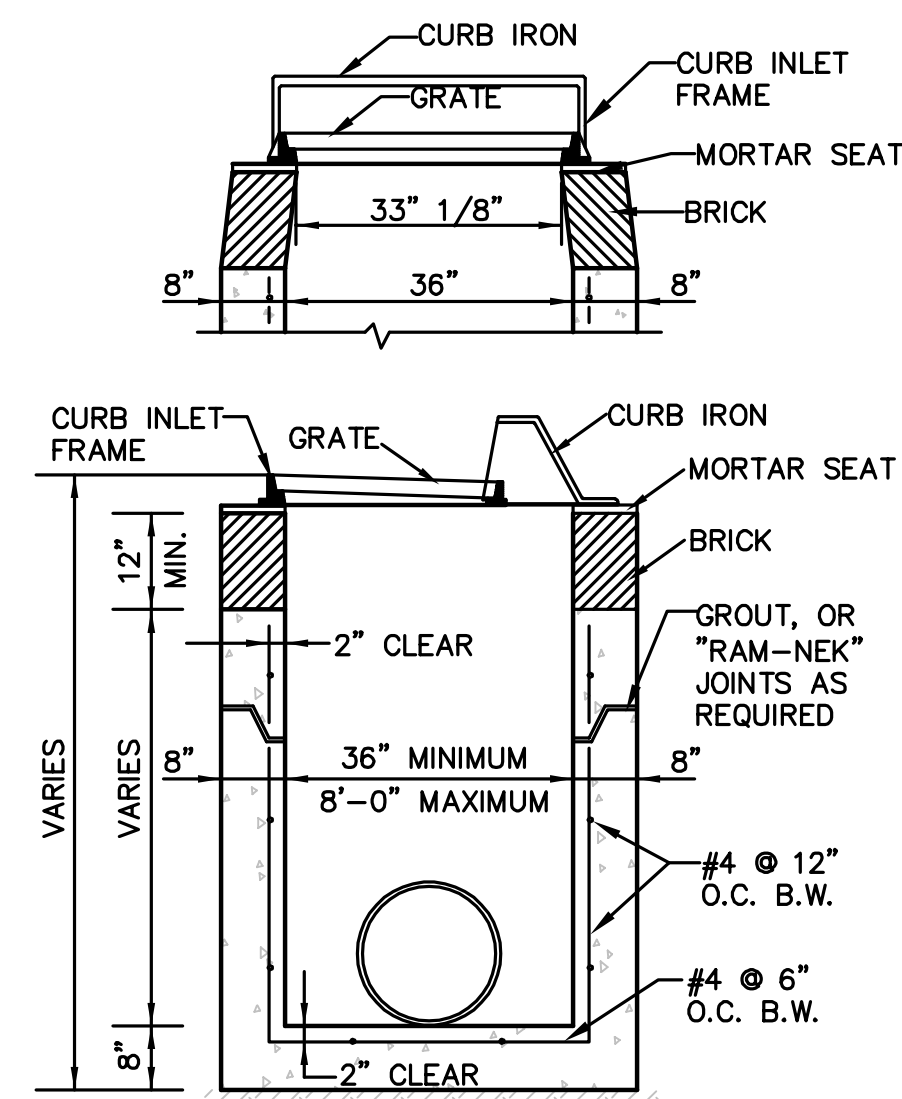
- CURB AND GUTTER NOTES:**
- MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE LATEST FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
 - CONCRETE SHALL BE CLASS 1 CONCRETE WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3,000 PSI UNLESS OTHERWISE APPROVED BY THE ENGINEER OF RECORD.
 - WHEN USED ON THE HIGH SIDE OF 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.



TYPICAL PAVEMENT SECTION

N.T.S.

- NOTES:**
- ALL DISTURBED AREAS TO BE SEEDED AND MULCHED
 - SOIL ANALYSIS MAY INDICATE THE NEED FOR THICKER BASE COURSES THAN THOSE HEREIN. THE PAVEMENT THICKNESS SHOWN HEREIN ARE NOT INTENDED TO BE ABSOLUTE, BUT ARE PRELIMINARY CRITERIA AND MAY BE MODIFIED TO ACCOMMODATE THE BEARING CAPACITY OF VARIOUS SUBGRADES.
 - ALL ASPHALTIC CONCRETE SHALL MEET THE REQUIREMENTS OF SECTION 331 AND/OR 333, FDOT STANDARD SPECIFICATIONS, LATEST EDITION.

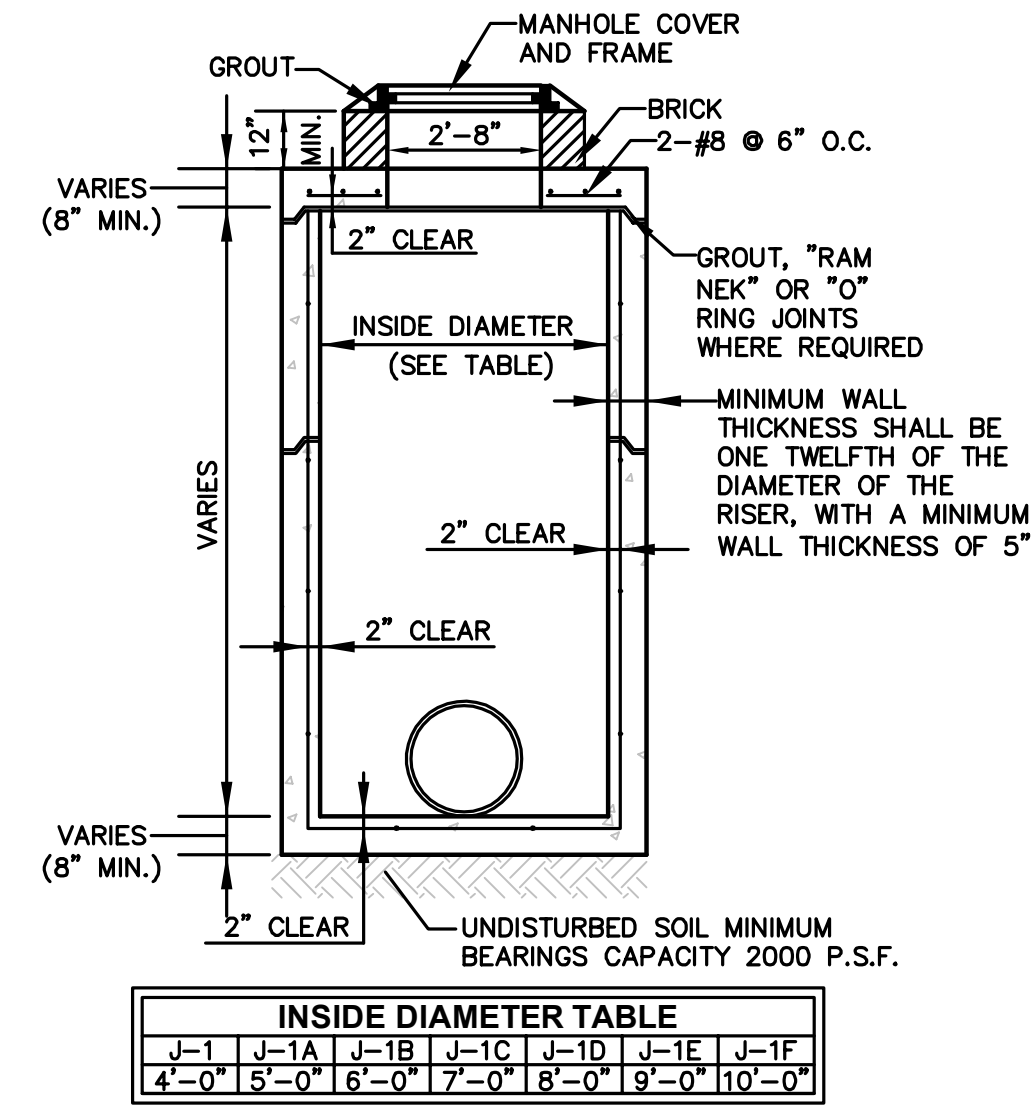


TYPE "A" SINGLE CURB INLET

N.T.S.

- NOTES:**
- PROVISION SHALL BE MADE AT THE TIME OF DRAINAGE STRUCTURE PRE-CASTING TO PROVIDE OPENINGS FOR UNDERDRAIN STUBOUTS ON EACH SIDE OF INLET.
 - CONCRETE DESIGN STRENGTH 4,000 PSI.
 - PIPE SHALL NOT BE IN CONSTRUCTION JOINT.

TYPE "A" SINGLE CURB INLET



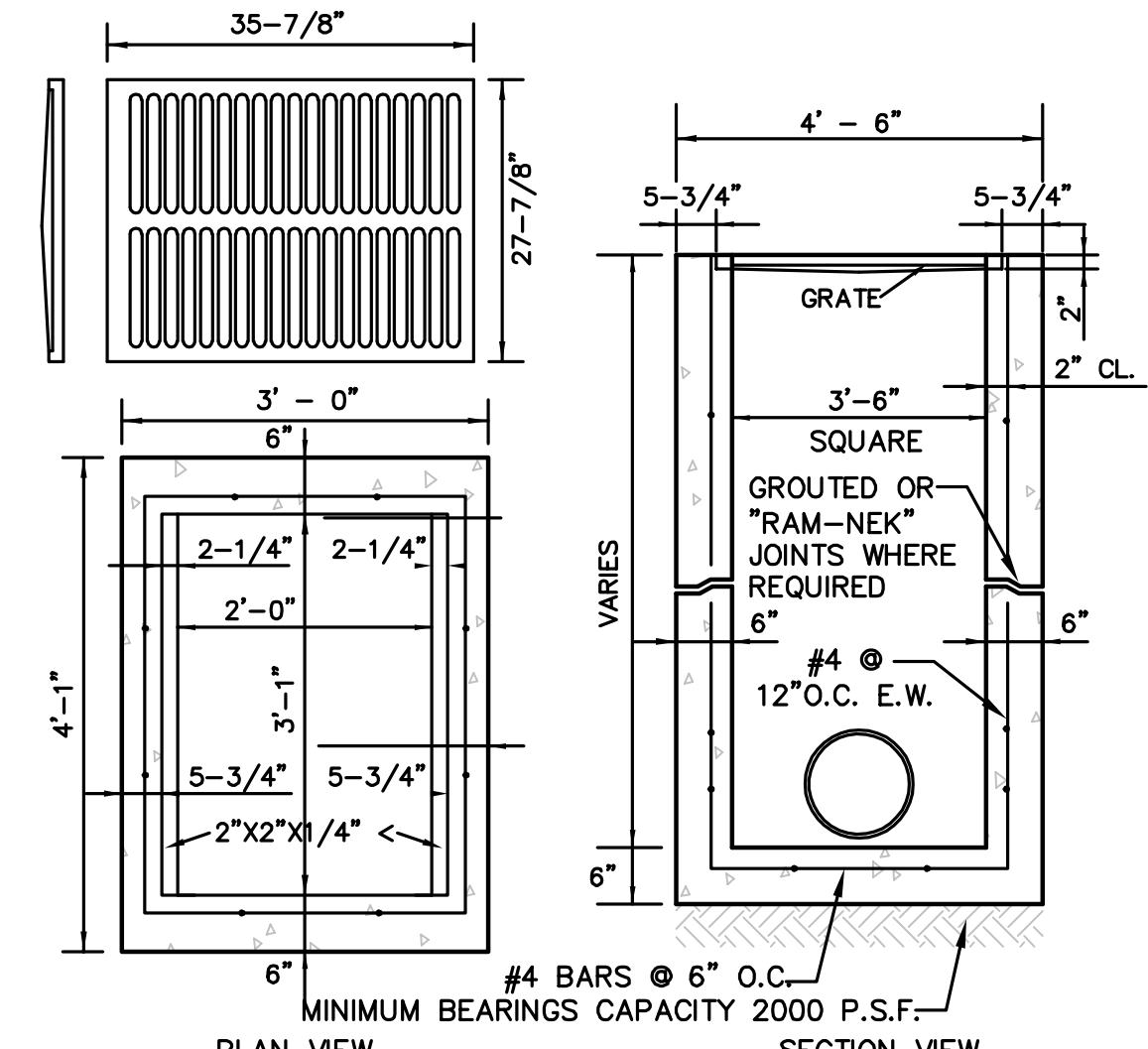
STORM SEWER J-1 MANHOLE

N.T.S.

- NOTES:**
- CONCRETE DESIGN STRENGTH 4,000 PSI.
 - PRECAST IN ACCORDANCE WITH LATEST EDITIONS OF ASTM C 478.
 - PIPES SHALL BE FLUSH WITH INSIDE WALL.
 - IN PAVED AREAS FRAME AND GRATE MUST MATCH FINAL ASPHALT AND CROSS-SLOPE.
 - RING AND COVER SHALL BE TRAFFIC BEARING

INSIDE DIAMETER TABLE

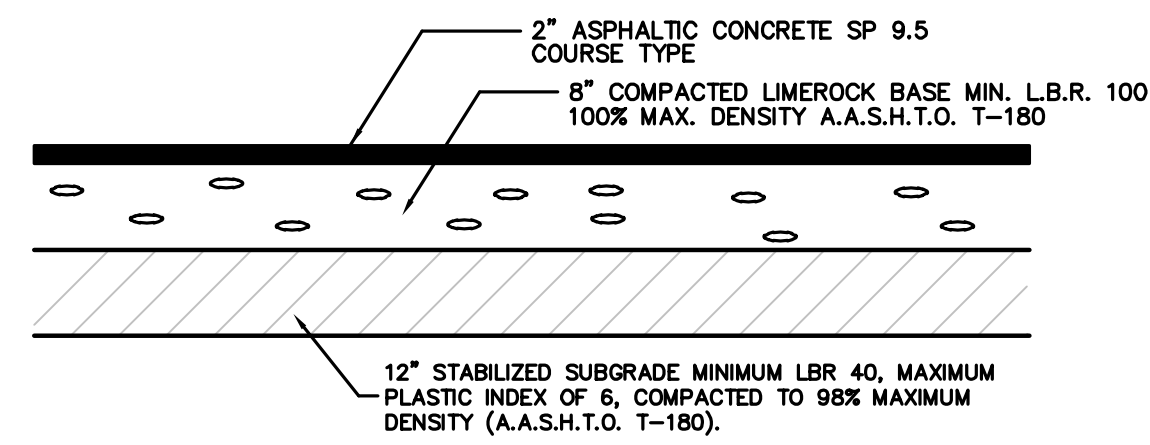
J-1	J-1A	J-1B	J-1C	J-1D	J-1E	J-1F
4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"



STORM SEWER TYPE "C" INLET

N.T.S.

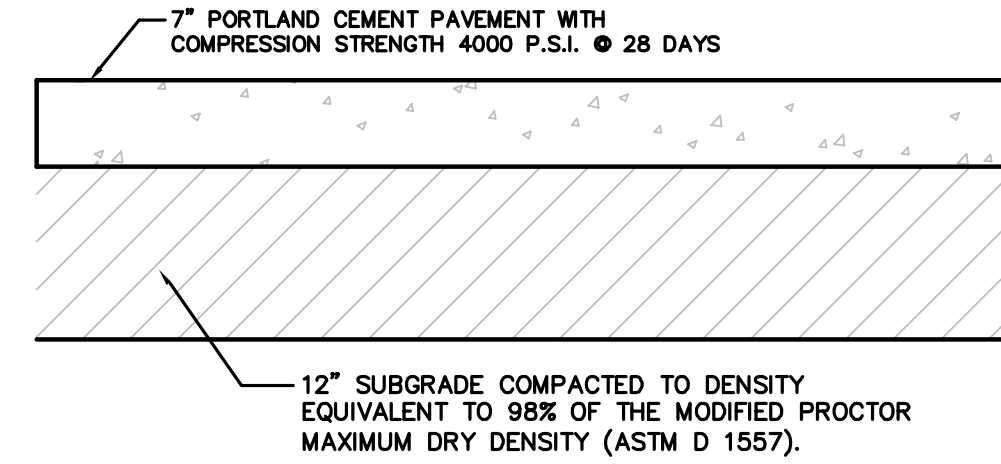
- NOTES:**
- CONCRETE DESIGN STRENGTH 4,000 PSI.
 - ALL GRATES TO BE TRAFFIC BEARING GRATE.
 - CONTRACTOR SHALL PLACE A 10' WIDE SOD COLLAR AROUND ALL INLETS (NOT IN PAVEMENT)



HEAVY DUTY ASPHALT PAVEMENT SECTION

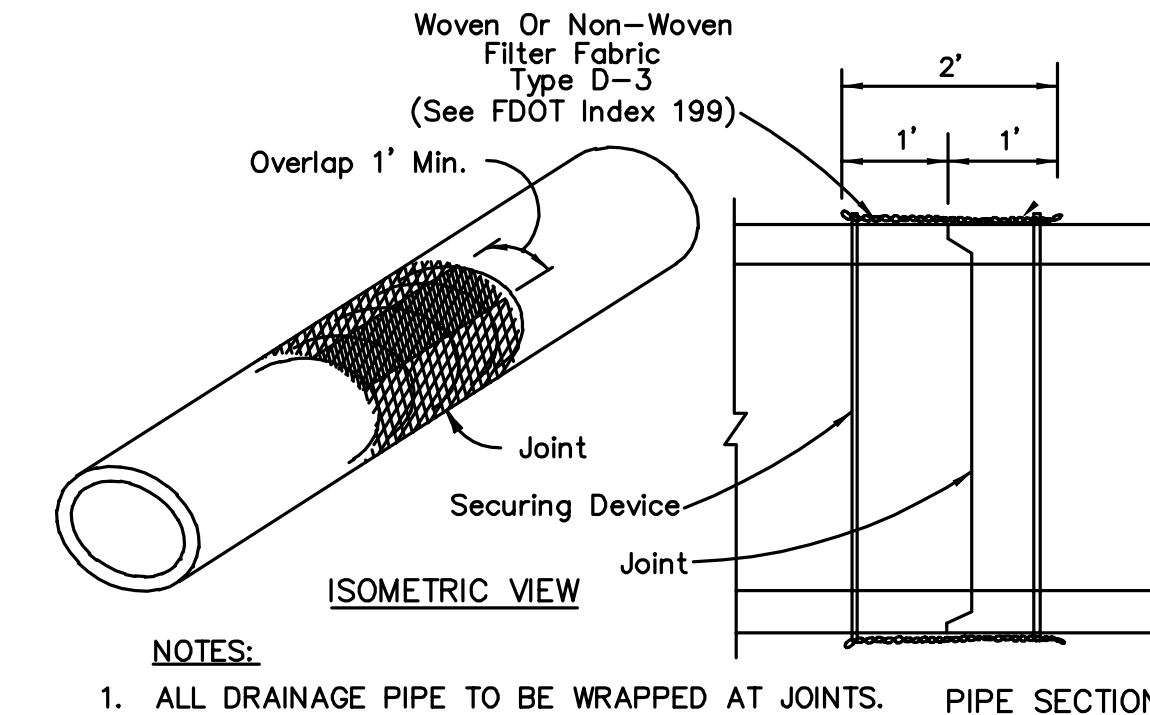
N.T.S.

- NOTES:**
- ALL DISTURBED AREAS TO BE SEEDED AND MULCHED
 - SOIL ANALYSIS MAY INDICATE THE NEED FOR THICKER BASE COURSES THAN THOSE HEREIN. THE PAVEMENT THICKNESS SHOWN HEREIN ARE NOT INTENDED TO BE ABSOLUTE, BUT ARE PRELIMINARY CRITERIA AND MAY BE MODIFIED TO ACCOMMODATE THE BEARING CAPACITY OF VARIOUS SUBGRADES.
 - ALL ASPHALTIC CONCRETE SHALL MEET THE REQUIREMENTS OF SECTION 331 AND/OR 333, FDOT STANDARD SPECIFICATIONS, LATEST EDITION.



TYPICAL CONCRETE PAVEMENT SECTION

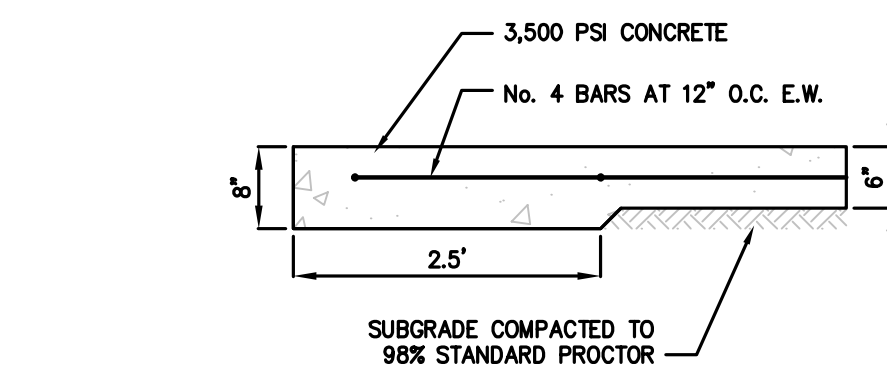
N.T.S.



FILTER FABRIC JACKET

N.T.S.

- NOTES:**
- ALL DRAINAGE PIPE TO BE WRAPPED AT JOINTS.
 - COST OF FILTER FABRIC JACKET TO BE INCLUDED IN COST OF PIPE CULVERTS.



DUMPSTER PAD APRON PAVEMENT SECTION

N.T.S.

PLANS PREPARED UNDER THE DIRECTION OF:

ANDREW J. BOOTH
P.E. NUMBER: 82302

REVISIONS:

EM NO. 19-227

DRAWN BY: AAB

DESIGNED BY: AAB

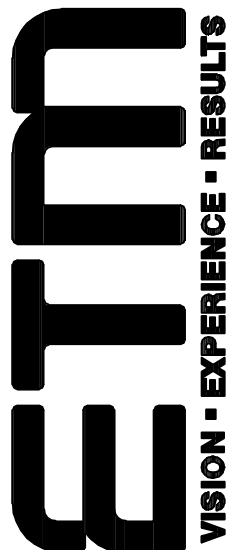
CHECKED BY: AAH

DATE: NOVEMBER 2019

England, Thins & Miller, Inc.
10000 Road
Jacksonville, FL 32258

TEL: (904) 642-8890
FAX: (904) 646-3485

CA: 00002584 LC: 0000316



PAVING & DRAINAGE DETAILS
OAKLEAF CORNER OUTPARCEL 3
FOR
OAKLEAF 31 DEVELOPMENT CORP.

DRAWING NUMBER

8B

NOT APPLICABLE
APPLICABLE

SURVEY AND LOCATE DATA:

- 1. ALL ELEVATIONS ARE BASED ON U.S.C.&G.S. DATUM AND SHOWN IN FEET.
- 2. ELEVATIONS ARE BASED ON NAVD 1988.
- 3. LOCATION OF EXISTING UTILITIES OBTAINED BY SOFT DIG LOCATES WHERE SHOWN ON PLANS, OR INCLUDED WITH BID SPECS.
- 4. EXISTING WATER AND SEWER LINES ARE SHOWN AS PER FIELD LOCATES AND SUBDIVISION AS-BUILT PLANS.
- 5. UNDERGROUND UTILITIES WERE LOCATED UTILIZING GROUND PENETRATING RADAR (GPR) AND A DIGITAL LOCATOR. CONTRACTOR SHALL BE AWARE THAT IN SOME CASES UTILITIES HAVE BEEN LOCATED, AND SURVEY HAS BEEN COMPLETED ONLY ON ONE SIDE OF THE ROAD.
- 6. ALL PIPE LENGTHS SHOWN ON PLAN AND PROFILES ARE FROM CENTER TO CENTER OF MANHOLES, CATCH BASINS, INLETS ETC. OR ALONG THE CENTER LINE OF FORCE MAINS AND WATER MAINS.
- 7. INVERT ELEVATIONS SHOWN ON DRAWINGS REFER TO THE CENTERLINE OF MANHOLES, UNLESS OTHERWISE INDICATED.
- 8. THE LOCATION OF ALL EXISTING SEWER AND WATER SERVICE LINES MAY NOT BE INDICATED ON THESE PLANS. THE LOCATION OF NEW SERVICES SHALL BE VERIFIED IN THE FIELD.
- 9. BENCHMARK DATA: _____

PERMIT REQUIREMENTS (NOT ALL INCLUSIVE):

- 1. CONTRACTOR TO OBTAIN ALL REQUIRED RIGHT-OF-WAY PERMITS.
- 2. CONTRACTOR SHALL NOT OPEN CUT STREETS IN THE PROJECT AREA UNLESS SPECIFICALLY SHOWN ON PLANS
- 3. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING A CONSUMPTIVE USE PERMIT (C.U.P.) THROUGH THE ST. JOHNS WATER MANAGEMENT DISTRICT SHOULD DEWATERING ACTIVITIES BE REQUIRED.
- 4. THE DEPARTMENT OF TRANSPORTATION, RAILROAD COMPANIES AND C.O.J. ARE TO BE NOTIFIED IN ADVANCE OF CONSTRUCTION PER THEIR RESPECTIVE PERMIT CONDITIONS.
- 5. ALL WORK SHALL BE IN ACCORDANCE WITH BID DOCUMENTS, JEA WATER AND SEWER STANDARDS, DETAILS AND MATERIALS MANUAL, REV. 2018, AND CITY OF JACKSONVILLE STANDARD SPECIFICATIONS AND DETAILS AND ALL APPLICABLE STATE AND LOCAL REGULATIONS.
- 6. IF SOLVENT CONTAMINATION IS FOUND IN THE PIPE TRENCH, WORK SHALL BE STOPPED AND THE PROPER AUTHORITIES NOTIFIED. WITH APPROVAL OF THE PERMITTING AGENCY, DUCTILE IRON PIPE, FITTINGS 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.
- 7. THE CONTRACTOR SHALL NOTIFY APPLICABLE UTILITY CONTACT PERSONNEL NOT LESS THAN ONE WEEK PRIOR TO CONSTRUCTION OF FACILITIES IN THEIR RESPECTIVE AREAS.
- 8. TREE PROTECTION SHALL BE IN ACCORDANCE WITH JACKSONVILLE ORDINANCE CODE 656 AND/OR AS DETAILED ON SPECIFIC PLAN SHEETS. NO TRIMMING OF OVERHANGING TREE LIMBS WILL BE ALLOWED. USE SMALLER EQUIPMENT IF NECESSARY.
- 9. THE CONTRACTOR SHALL LOCATE THE DRAINAGE INLET STRUCTURES IN THE PROJECT AREA AND ERECT SEDIMENTATION CONTROL DEVICES AS NECESSARY PER THE CITY OF JACKSONVILLE STORMWATER POLLUTION PREVENTION PLAN.
- 10. CONTRACTOR TO COORDINATE WORK WITH OTHER UTILITIES DURING CONSTRUCTION.

EXISTING UTILITY PROTECTION:

- 1. IN ORDER TO REDUCE THE DISRUPTION AND COST OF UTILITY DAMAGES OCCURRING IN THE DUVAL COUNTY RIGHT-OF-WAY AND EASEMENTS, THE CONTRACTOR SHALL PREVENT DAMAGES TO EXISTING UTILITIES CAUSED BY HIS WORK THROUGH FIELD VERIFICATION OF THE LOCATION OF THE EXISTING UTILITIES. IN THE CASE OF OPEN EXCAVATION, VERIFICATION MAY BE PERFORMED DURING THE CONTRACTORS WORK. IN THE CASE OF DIRECTIONAL DRILLING, VERIFICATION SHALL TAKE PLACE PRIOR TO MOBILIZATION OF THE DRILLING EQUIPMENT.
- 2. THE CONTRACTOR SHALL VERIFY THE LOCATION OF EXISTING UTILITIES AS NEEDED TO AVOID CONTACT. EXISTING UTILITIES SHALL BE EXPOSED USING DETECTION EQUIPMENT OR OTHER ACCEPTABLE MEANS. SUCH METHODS MAY INCLUDE BUT SHALL NOT BE LIMITED TO "SOFT DIG" EQUIPMENT AND GROUND PENETRATING RADAR (GPR). THE EXCAVATOR SHALL BE HELD LIABLE FOR DAMAGES CAUSED TO THE CITY'S/JEA'S INFRASTRUCTURE AND THE EXISTING FACILITIES OF OTHER UTILITY COMPANIES.
- 3. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE AND AVOID ALL UTILITIES, OTHER STRUCTURES AND OBSTRUCTIONS BOTH ABOVE AND BELOW GROUND SURFACE. ALL DAMAGE RESULTING FROM THE CONTRACTOR'S FAILURE TO COMPLY WITH THIS REQUIREMENT SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.

RESTORATION NOTES:

- 1. THE CONTRACTOR SHALL EMPLOY A LAND SURVEYOR, REGISTERED IN THE STATE OF FLORIDA, TO REFERENCE AND RESTORE PROPERTY CORNERS AND LANDMARKS WHICH MAY BE DISTURBED BY CONSTRUCTION. KNOWN CORNER LOCATIONS ARE AVAILABLE FROM THE CITY OF JACKSONVILLE ENGINEERING DIVISION.
- 2. THE CONTRACTOR SHALL RESTORE/REPLACE ALL CULVERTS, HEADWALLS AND STORM DRAIN INLETS REMOVED OR DISTURBED BY THE CONSTRUCTION OPERATION.
- 3. TRAFFIC SIGNS AND PAVEMENT MARKINGS SHALL BE RESTORED TO THEIR PRE-CONSTRUCTION CONDITION IN ACCORDANCE WITH CITY OF JACKSONVILLE/FDOT STANDARD SPECIFICATIONS.
- 4. SIDEWALKS, DRIVEWAYS AND CURBING DAMAGED OR REMOVED DURING CONSTRUCTION SHALL BE REPLACED IN ACCORDANCE WITH JACKSONVILLE STANDARD SPECIFICATIONS. SIDEWALKS REMOVED AND REPLACED IN CURB AND GUTTER AREAS AT INTERSECTIONS SHALL HAVE HANDICAP RAMPS INSTALLED. DRIVEWAYS AND SIDEWALKS SHALL BE SAWCUT ALONG THE RIGHT-OF-WAY LINE OR NEAREST JOINT AND REMOVED AND REPLACED TO THE EDGE OF STREET.
- 5. GRASS SOD SHALL BE FURNISHED AND PLACED IN THE AREAS DISTURBED OR DAMAGED BY THE CONSTRUCTION OPERATION.
- 6. ALL PAVEMENT REPAIR SHALL BE IN ACCORDANCE WITH THE CITY OF JACKSONVILLE/FDOT STANDARD DETAILS AND SPECIFICATIONS LATEST EDITION.
- 7. UNLESS OTHERWISE NOTED, REMOVE AND REPLACE EXISTING PAVEMENT AS PER C.O.J. CASE X (10) PAVEMENT REPLACEMENT DETAIL.
- 8. CONTRACTOR MUST MAINTAIN AND PRESERVE NEWLY GRADED AREAS AND REPAIR AREAS WHERE SETTLING AND EROSION HAVE OCCURRED.

UTILITY CONTACTS:

- A. AT&T - GENERAL NUMBER-----904-519-2529
- B. AT&T - ADAM DUGAN - NORTH DISTRICT-----904-781-0741
- C. AT&T - BILL LAKE - SOUTH DISTRICT-----904-303-8754
- D. CITY OF JACKSONVILLE - PUBLIC WORKS DEPT.-----904-255-8762
- E. CITY OF JACKSONVILLE - TRAFFIC OPERATIONS-----904-387-8861
- F. FLORIDA DEPT. OF TRANSPORTATION-----904-360-5200
- G. JEA - WATER COLLECTION & DISTRIBUTION - BOB ALLSBROOK-----904-665-7299
- H. JEA - SEWER COLLECTION & DISTRIBUTION - BOB ALLSBROOK-----904-665-7299
- I. JEA - GENERAL INFORMATION-----904-665-6000
- J. JEA - PROJECT OUTREACH-----904-665-7500
- K. JEA - POWER OUTAGES-----904-665-6000
- L. JEA - SEWER PROBLEMS-----904-665-4802
- M. JEA - WATER PROBLEMS-----904-665-4801
- N. JEA - WATER & SEWER LOCATES-----904-665-8410
- O. NASSAU COUNTY - PUBLIC WORKS - CHARLES HOUSTON-----904-491-7334
- P. ST. JOHNS COUNTY - RIGHT-OF-WAY PERMITTING - RICK MAULDIN-----904-209-0134
- Q. ST. JOHNS COUNTY - TRAFFIC SIGNALS - HANK MEIN-----904-209-0173
- R. COMCAST - EMERGENCY HOTLINE-----904-380-6274
- S. TECO/PEOPLES GAS - BEN MOBLEY-----904-545-8958
- T. SUNSHINE ONE CALL-----911

NOT APPLICABLE
APPLICABLE

INSTALLATION NOTES:

- 1. CONTRACTOR TO REHABILITATE ALL MANHOLES ON PIPE BURST SEWERS VIA COATING/LINING PER JEA SPECIFICATION 446-2, UNLESS OTHERWISE NOTED ON THE PLANS.
- 2. CONTRACTOR TO RENEW, REHABILITATE, REPLACE OR REINSTALL AS APPLICABLE ALL SERVICE LATERALS TO R.O.W. LINE.
- 3. CONTRACTOR TO INSTALL SEWER SERVICE PIPING A MINIMUM OF 60 INCHES BELOW GRADE. WHERE NEW SANITARY SEWER MAIN IS LESS THAN 5 FEET DEEP, THE SEWER SERVICE PIPE SHALL BE INSTALLED AS DEEP AS POSSIBLE.
- 4. WHEN THE DISTANCE BETWEEN A POWER POLE AND THE TRENCH IS LESS THAN THE TRENCH DEPTH, THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH JEA ELECTRICAL PERSONNEL TO SECURE POWER POLES. THE CONTACTS FOR JEA ARE AS FOLLOWS:
NORTHSIDE - EAST of US-1 MIKE CORBITT @ 665-7991 (mobile 662-0635)
NORTHSIDE - WEST of US-1 ANDY YEAGER @ 665-7998 (mobile 662-0622)
NORTHSIDE - BACKUP ALAN AINSLEY @ 665-7303 (mobile 662-6557)
SOUTHSIDE - SOUTH of BEACH BLVD. TOM KERNS @ 665-6847 (mobile 860-1687)
SOUTHSIDE - NORTH of BEACH BLVD. DERYL BASFORD @ 665-6855 (mobile 662-0616)
SOUTHSIDE - BACKUP EDDIE GALES @ 665-6855 (mobile 662-0616)
A MINIMUM OF TWO (2) WORKING DAYS NOTICE IS REQUIRED FOR AN OUTSIDE MEETING WITH JEA ELECTRICAL TO DISCUSS THE REQUIRED WORK. ADDITIONAL TIME WILL BE REQUIRED BY JEA ELECTRICAL FOR ANY REQUIRED WORK TO BE ACCOMPLISHED.
- 5. ALL NEW STORM DRAIN PIPE JOINTS SHALL BE WRAPPED WITH FILTER FABRIC.
- 6. THE DESIGN FOR THE PROJECT IS BASED UPON THE "OPEN-CUT" METHOD OF CONSTRUCTION. IF USING ALTERNATIVE MEANS OR METHODS, THE CONTRACTOR SHALL FOLLOW ALL APPLICABLE STANDARDS FOR THAT MEANS OR METHOD.
- 7. THE CONTRACTOR SHALL MINIMIZE SERVICE INTERRUPTIONS AT SERVICE CONNECTIONS. THE MEANS AND METHODS SHALL BE LEFT TO THE DISCRETION OF THE CONTRACTOR, SUBJECT TO THE REQUIREMENTS OF THE CONTRACT SPECIFICATIONS. NO EXISTING ACTIVE SERVICE SHALL BE LEFT INTERRUPTED AT THE END OF THE WORK DAY.
- 8. CONTRACTOR SHALL PROVIDE ADDITIONAL CORPORATION STOPS FOR FILLING AND DRAINING PURPOSES DURING CONSTRUCTION AS NEEDED. CORPORATION STOPS ARE TO BE PLUGGED AND LEFT IN PLACE. INDICATE CORPORATION STOP LOCATIONS ON RECORD DRAWINGS (AS-BUILTS).
- 9. WATER AND SEWER SERVICES SHALL BE TRANSFERRED TO THE NEW MAIN UPON COMPLETION AND F.D.E.P./J.E.A. CERTIFICATION, AND PRIOR TO THE EXISTING MAINS BEING ABANDONED.
- 10. IF EXISTING VALVES ARE IN UNPAVED AREAS AND ARE TO BE TAKEN OUT OF SERVICE, THEY SHALL BE CLOSED AND THE VALVE BOX AND COVER SHALL BE REMOVED. IF THE VALVES ARE UNDER PAVED AREAS, THEY SHALL BE CLOSED, THE VALVE BOX GROUT FILLED AND THE COVER REMOVED.
- 11. CONTRACTOR SHALL REPLACE EXISTING WATER METER BOXES WHEN DEEMED NECESSARY BY THE JEA INSPECTOR.
- 12. CONTRACTOR TO PROVIDE ADDITIONAL DEPTH OF BURY VIA PIPE JOINT DEFLECTION TO ACCOMMODATE VALVE SELECTION PER JEA STANDARDS.
- 13. WATER METERS MAY REQUIRE RELOCATION FOR CONSTRUCTION, CONTRACTOR SHALL CONTACT JEA METER DEPARTMENT AND RELOCATE WATER METERS AS NECESSARY.
- 14. PRIOR TO COMMENCING ANY EXCAVATION OR GRADING, THE CONTRACTOR SHALL OBTAIN ALL GEOTECHNICAL AND TOPOGRAPHIC SURVEY DATA AND LOCATIONS OF ABOVE GROUND AND UNDERGROUND UTILITIES. SHOULD THE CONTRACTOR DISCOVER ANY INACCURACIES, ERRORS OR OMISSIONS IN THE SURVEY DATA, HE SHALL IMMEDIATELY NOTIFY THE DESIGN ENGINEER IN ORDER THAT PROPER ADJUSTMENTS CAN BE ANTICIPATED AND ORDERED.
- 15. SHEET PILING WILL BE REQUIRED ON ALL EXCAVATIONS DEEPER THAN 16 FEET.

Englund, Thoms & Miller, Inc.
14175 Old St. Augustine Road
Jacksonville, FL 32248
TEL: (904) 642-8980
FAX: (904) 642-8981
CA - 00026264 LC - 0008316

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THESE DETAILS AS SHOWN ON THIS DRAWING ARE BY THE JEA. WE TAKE NO EXCEPTION TO THE DESIGN

DESIGN ENGINEER	ANDREW J. BOOTH
FLORIDA REGISTRATION NO.	82302

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

JEA STANDARD
GENERAL NOTES LEGEND, AND SHEET INDEX
OAKLEAF CORNER OUTPARCEL 3

NO. SHEETS	PROJ. NO.	19-227
5	DATE:	JANUARY 2017
SHEET NO.	SCALE:	AS NOTED
5		
DRAWING NO.		
9A		



HORIZONTAL & VERTICAL SEPARATION REQUIREMENTS

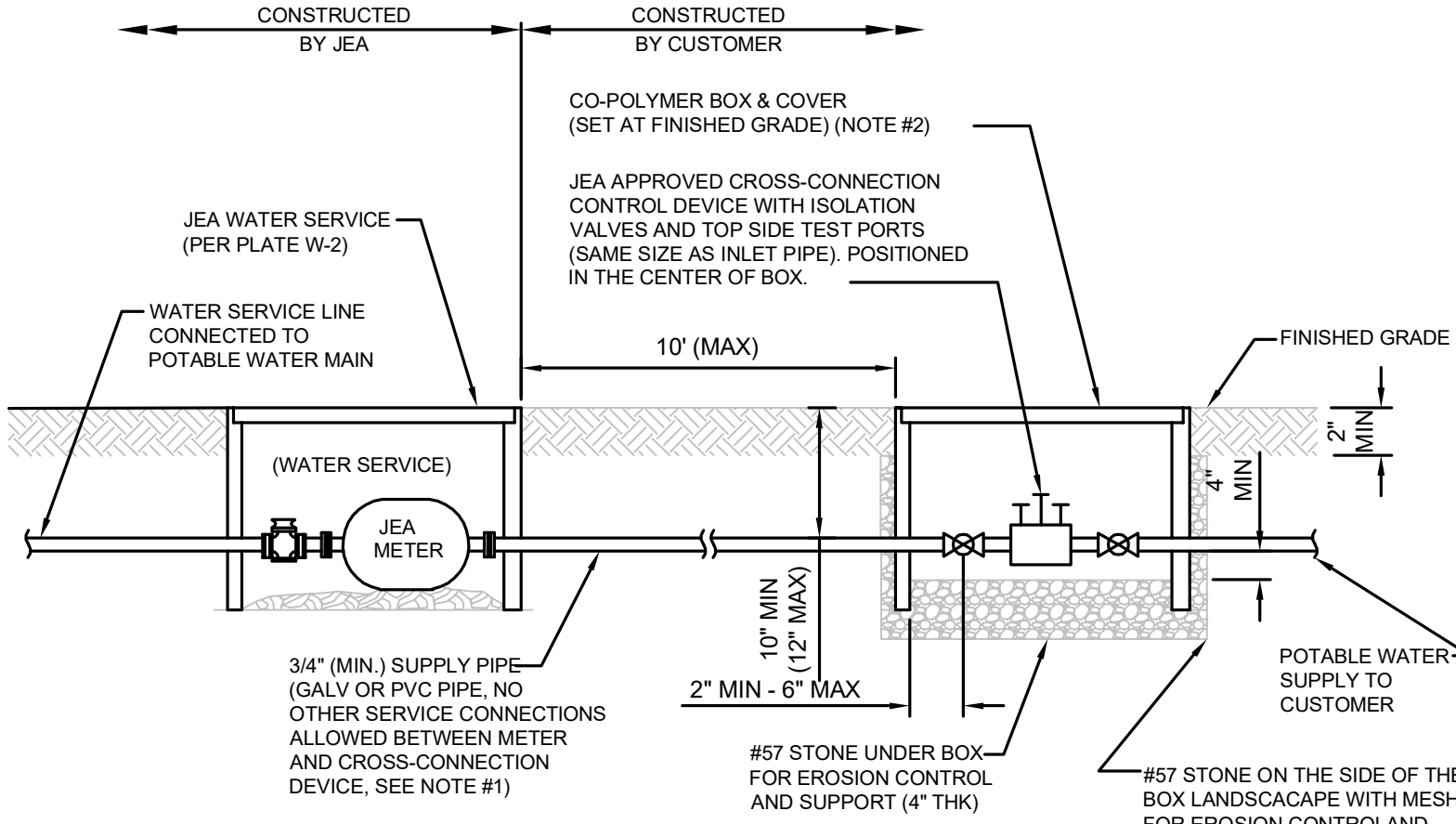
CONFLICTING UTILITY	PROPOSED UTILITY											
	POTABLE WATER			WASTEWATER GRAVITY AND FORCE MAIN			RECLAIMED WATER			VACUUM SEWERS		
	HORIZ.	VERT.	JOINT SPACING*	HORIZ.	VERT.	JOINT SPACING*	HORIZ.	VERT.	JOINT SPACING*	HORIZ.	VERT.	JOINT SPACING*
POTABLE WATER	3' NOTE 1	12"	3' NOTE 2	6' to 10'	12"	6' 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 2019 PLATE W-10

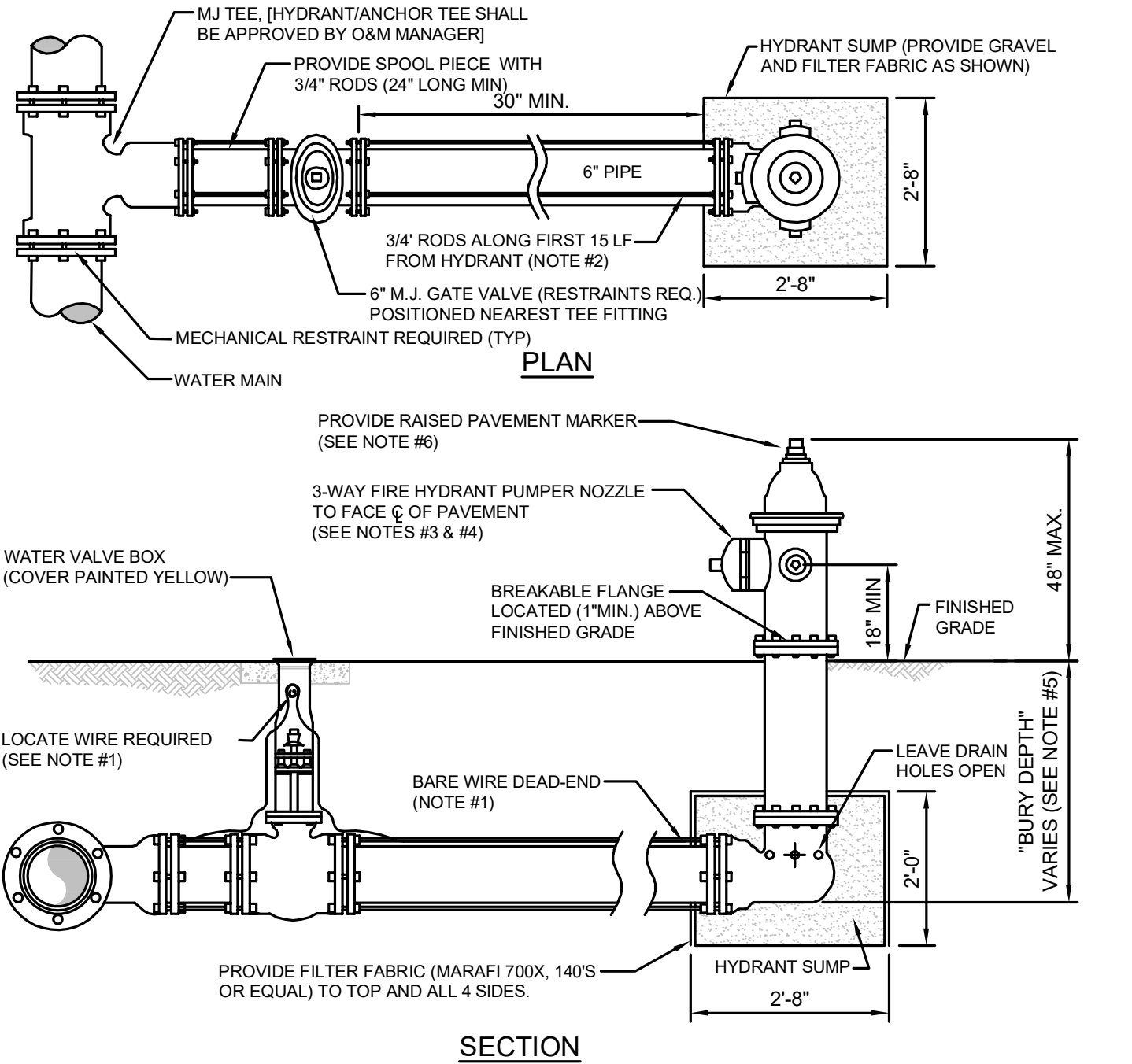
- WATER MAIN AND NON-WATER MAIN SEPARATION REQUIREMENTS - NOTES**
- IT IS REQUIRED THAT "WATER MAINS" BE INSTALLED, CLEANED, DISINFECTED AND HAVE A SATISFACTORY BACTERIOLOGICAL SURVEY PERFORMED IN ACCORDANCE WITH THE LATEST APPLICABLE AWWA STANDARDS, CHAPTER 62-555, F.A.C. AND LATEST JEA WATER AND SEWER STANDARDS. FOR THE PURPOSE OF THIS SECTION, THE PHRASE "WATER MAINS" SHALL MEAN MAINS, INCLUDING TREATMENT PLANT 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 AT 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 WASTEWATER 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 2019 PLATE W-11



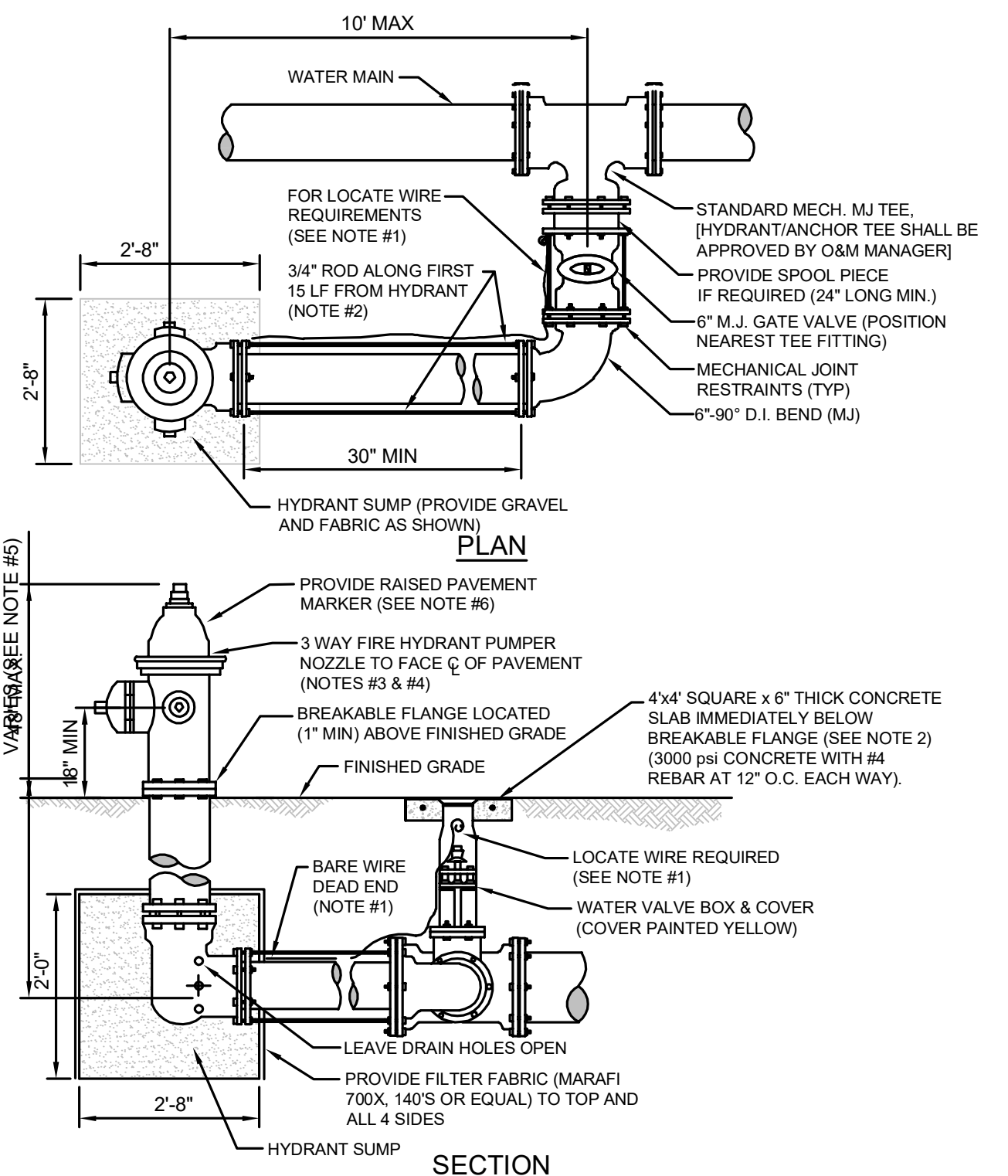
- NOTES:**
- THE POTABLE WATER CUSTOMER IS REQUIRED TO INSTALL AND MAINTAIN A JEA APPROVED CROSS-CONNECTION DEVICE ON THEIR POTABLE WATER SERVICE LINE. OPERATION AND MAINTENANCE OF THIS CROSS-CONNECTION DEVICE SHALL COMPLY WITH JEA'S CROSS-CONNECTION CONTROL PROGRAM AND ASSOCIATED OPERATIONS POLICIES. ALL REDUCED PRESSURE ASSEMBLIES SHALL BE MOUNTED ABOVE GRADE.
 - ONLY DOUBLE CHECK VALVE ASSEMBLIES MAY BE INSTALLED BELOW GROUND. THESE DEVICES MAY BE INSTALLED IN A TYPICAL 1" (CO-POLYMER) METER BOX WITH SOLID LID (GENERIC LID WITH NO "JEA" LOGO, SEE ALSO W-3). THE SIZE OF BOX SHALL BE 12"X20" AT A MINIMUM. IT SHALL BE NOTED THAT IF THE HIGH MEAN GROUND WATER LEVEL FALLS INSIDE THIS BOX, THEN THE CROSS-CONNECTION CONTROL DEVICE MUST BE INSTALLED ABOVE GROUND. ACCEPTABLE DOUBLE CHECK VALVE ASSEMBLIES (BRONZE BODY WITH TWO CHECK VALVES, TWO BALL VALVES AND UNION CONNECTIONS BETWEEN BALL VALVES AND THE DEVICE). INCLUDE: WATTS U007M2QT, WILKINS 950XLTU OR JEA APPROVED EQUAL.
 - BACKFLOW PREVENTION DEVICES REQUIRED WHEN: IRRIGATION SYSTEMS - REQUIRED ON IRRIGATION SYSTEMS AT THE CONNECTION TO POTABLE SYATEM. RESIDENTIAL SYSTEMS - REQUIRED ON WATER SERVICE IF RECLAIMED SERVICE WATER AVAILABLE TO SITE. COMMERCIAL SITES - REQUIRED ON ALL WATER SERVICES. INDUSTRIAL SITES - REQUIRED ON BOTH WATER AND RECLAIMED SERVICE ON, WATER SERVICE EVEN IF NO RECLAIMED.
 - JEA IRRIGATION SERVICE CONNECTIONS REQUIRE ABOVE GRADE REDUCED PRESSURE BACKFLOW PREVENTERS. (SEE PLATE W-15A)

RECLAIM CROSS CONNECTION CONTROL DEVICE
 JANUARY 2019 PLATE W-15



- NOTES:**
- LOCATE WIRE SHALL BE ROUTED FROM THE VALVE TO THE HYDRANT AS SHOWN ABOVE. 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" GATE VALVE IS REQUIRED AT THE HYDRANT LOCATION (PROVIDE 3" SEPARATION). ALL PIPING, VALVES AND FITTINGS ALONG THE HYDRANT BRANCH MAIN WHICH IS WITHIN 15 LF OF THE HYDRANT SHALL BE RESTRAINED UTILIZING ONLY TWO 3/4" DIA. (THREADED ENDS) STEEL RODS AND EYE BOLTS (NO JOINT RESTRAINT DEVICES REQUIRED). A SPLIT SERRATED RING WITH RESTRAINT EARS (EBAA 15 PF06 OR EQUAL) MAYBE USED IN THIS ASSEMBLY. ALL OTHER JOINTS ALONG THE HYDRANT BRANCH MAIN OUTSIDE OF THE FIRST 15 LF SHALL INCLUDE JOINT RESTRAINTS.
 - 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" OR LARGER WATER MAIN. UNLESS APPROVED OTHERWISE BY JEA, THE INSTALLATION OF (45°) BENDS IS NOT ACCEPTABLE WHEN UTILIZED TO CORRECT AN IMPROPERLY FURNISHED HYDRANT. THE USE OF HYDRANT EXTENSIONS SHOULD BE MINIMIZED.
 - 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 2019 PLATE W-13



- NOTES:**
- LOCATE WIRE SHALL BE ROUTED FROM THE VALVE TO THE HYDRANT AS SHOWN ABOVE. 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" GATE VALVE IS REQUIRED AT THE HYDRANT LOCATION (PROVIDE 3" SEPARATION). ALL PIPING, VALVES AND FITTINGS ALONG THE HYDRANT BRANCH MAIN WHICH IS WITHIN 15 LF OF THE HYDRANT SHALL BE RESTRAINED UTILIZING ONLY TWO 3/4" DIA. (THREADED ENDS) STEEL RODS AND EYE BOLTS (NO JOINT RESTRAINT DEVICES REQUIRED). A SPLIT SERRATED RING WITH RESTRAINT EARS (EBAA 15 PF06 OR EQUAL) MAYBE USED IN THIS ASSEMBLY. ALL OTHER JOINTS ALONG THE HYDRANT BRANCH MAIN OUTSIDE OF THE FIRST 15 LF SHALL INCLUDE JOINT RESTRAINTS.
 - 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" OR LARGER WATER MAIN. UNLESS APPROVED OTHERWISE BY JEA, THE INSTALLATION OF (45°) BENDS IS NOT ACCEPTABLE WHEN UTILIZED TO CORRECT AN IMPROPERLY FURNISHED HYDRANT. THE USE OF HYDRANT EXTENSIONS SHOULD BE MINIMIZED.
 - 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 2019 PLATE W-14

Englund, Thoms & Miller, Inc.
 14775 Old St. Augustine Road
 Jacksonville, FL 32248
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 CA - 0002264 LC - 000316

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DESIGN ENGINEER: ANDREW J. BOOTH
 FLORIDA REGISTRATION NO.: 82302

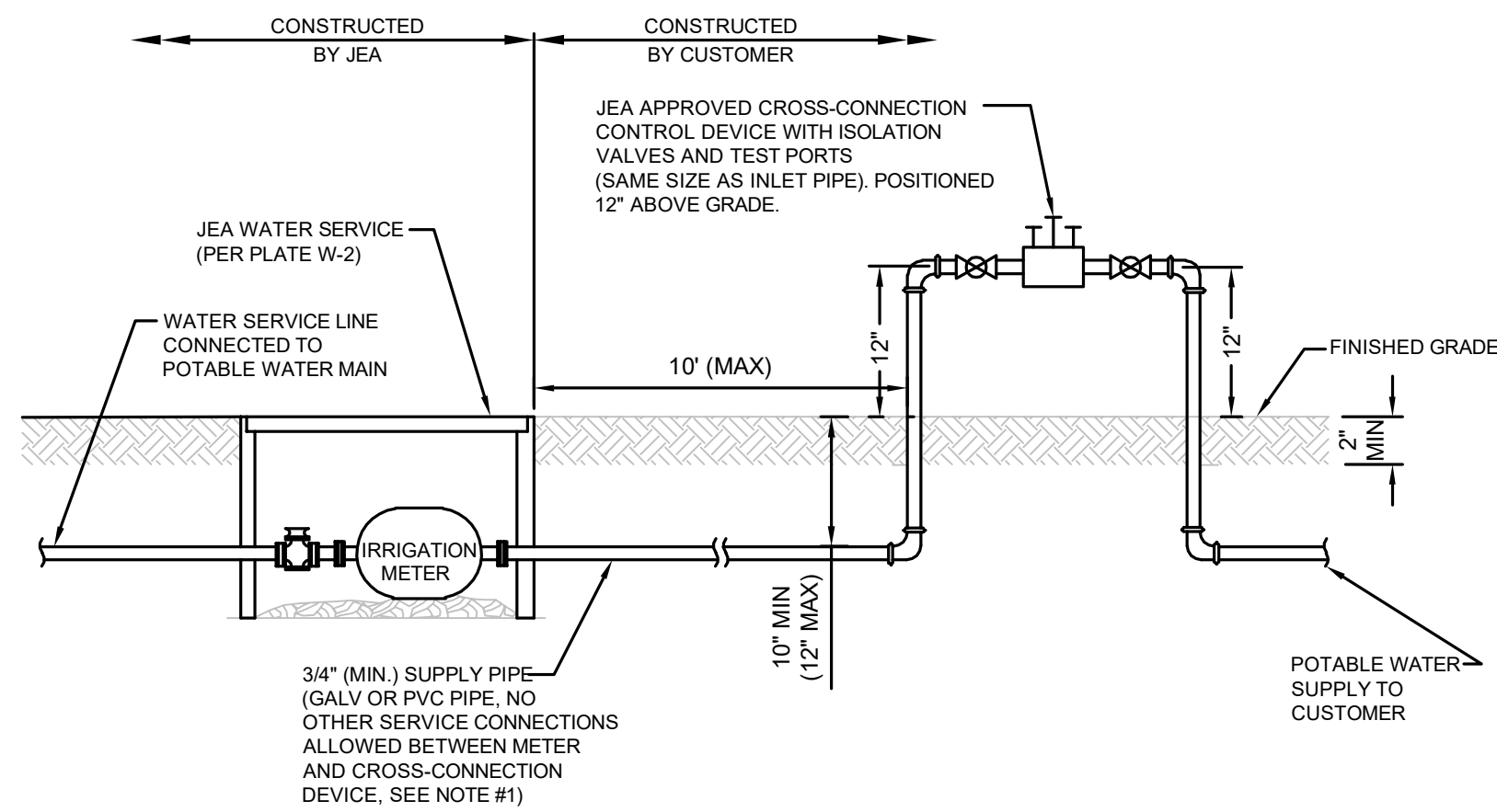
JEA Building Community

JEA STANDARD WATER MAIN DETAILS OAKLEAF CORNER OUTPARCEL 3

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DRAWN BY:	CHECKED BY:
DATE:	DATE:

PROJ. NO.: 19-227
 DATE: JANUARY 2019
 SCALE: AS NOTED

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 SHEET NO.: 1
 DRAWING NO.: 9B



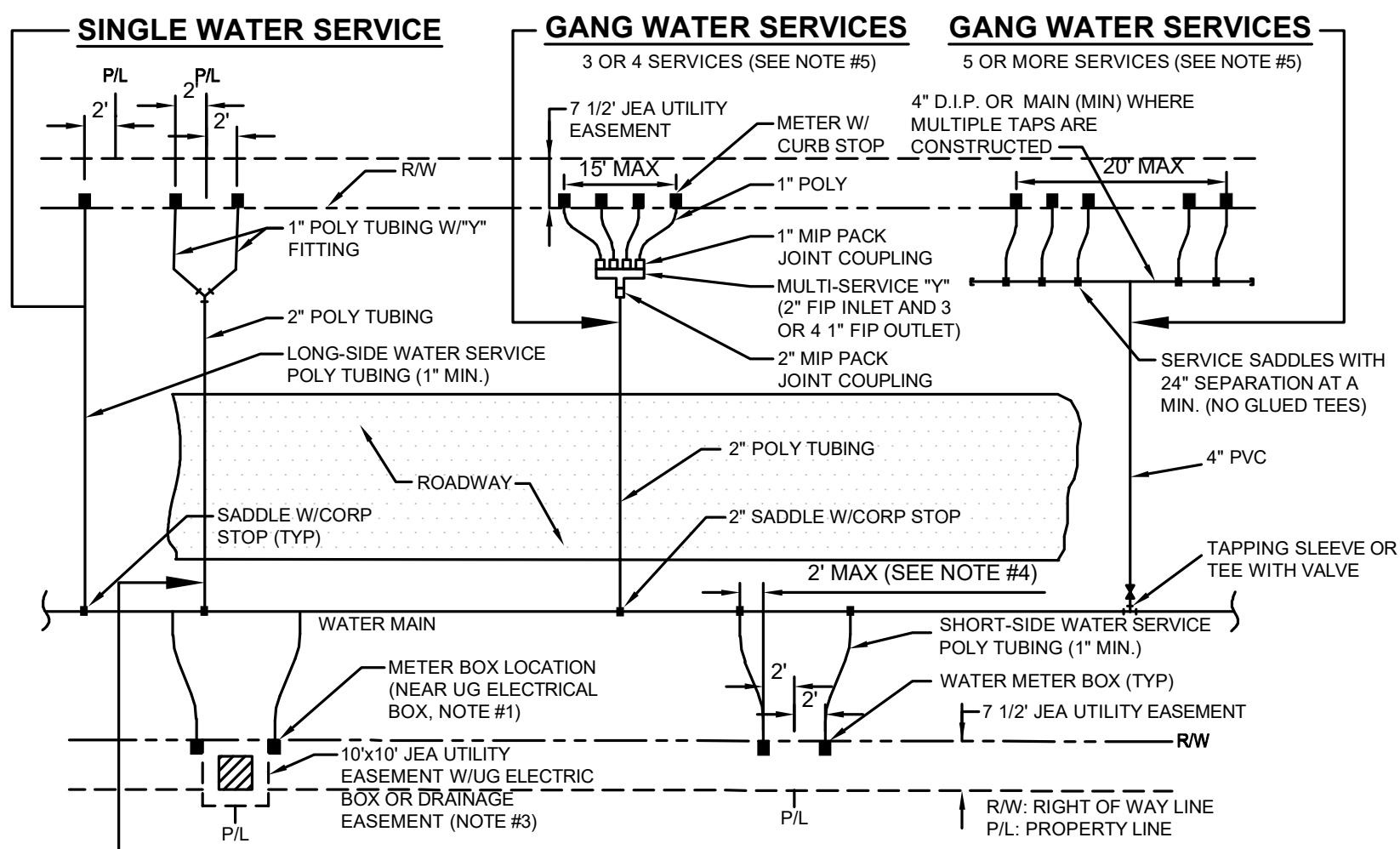
NOTES:

1. WATER SERVICE CONNECTIONS REQUIRE ABOVE GRADE REDUCED PRESSURE BACKFLOW PREVENTERS. (SEE PLATE W-15)
2. BACKFLOW PREVENTION DEVICES REQUIRED WHEN:
IRRIGATION SYSTEMS - REQUIRED ON IRRIGATION SYSTEMS AT THE CONNECTION TO POTABLE SYSTEM
RESIDENTIAL SYSTEMS - REQUIRED ON WATER SERVICE IF RECLAIMED SERVICE WATER AVAILABLE TO SITE
COMMERCIAL SITES - REQUIRED ON ALL WATER SERVICES
INDUSTRIAL SITES - REQUIRED ON BOTH WATER AND RECLAIMED SERVICE CONNECTIONS.
3. RESIDENTIAL IRRIGATION SERVICES MAY UTILIZE AN ALTERNATE BACKFLOW PREVENTER LOCATION IF THE FOLLOWING CONDITIONS EXIST:
3.a. CUSTOMER HAS SUBMITTED A COMPLETED "CUSTOMER AFFIDAVIT" FORM AND
3.b. THERE ARE NO ADDITIONAL CONNECTIONS BETWEEN THE METER AND THE BACKFLOW PREVENTER, AND
3.c. THE ALTERNATE BACKFLOW LOCATION IS EASILY ACCESSIBLE TO JEA AND BACKFLOW TESTERS.

CROSS CONNECTION CONTROL DEVICE

JANUARY 2019 JEA IRRIGATION SERVICE CONNECTIONS PLATE W-15A

A LOCATE WIRE SHALL BE PLACED ON SERVICES 10FT OR GREATER.



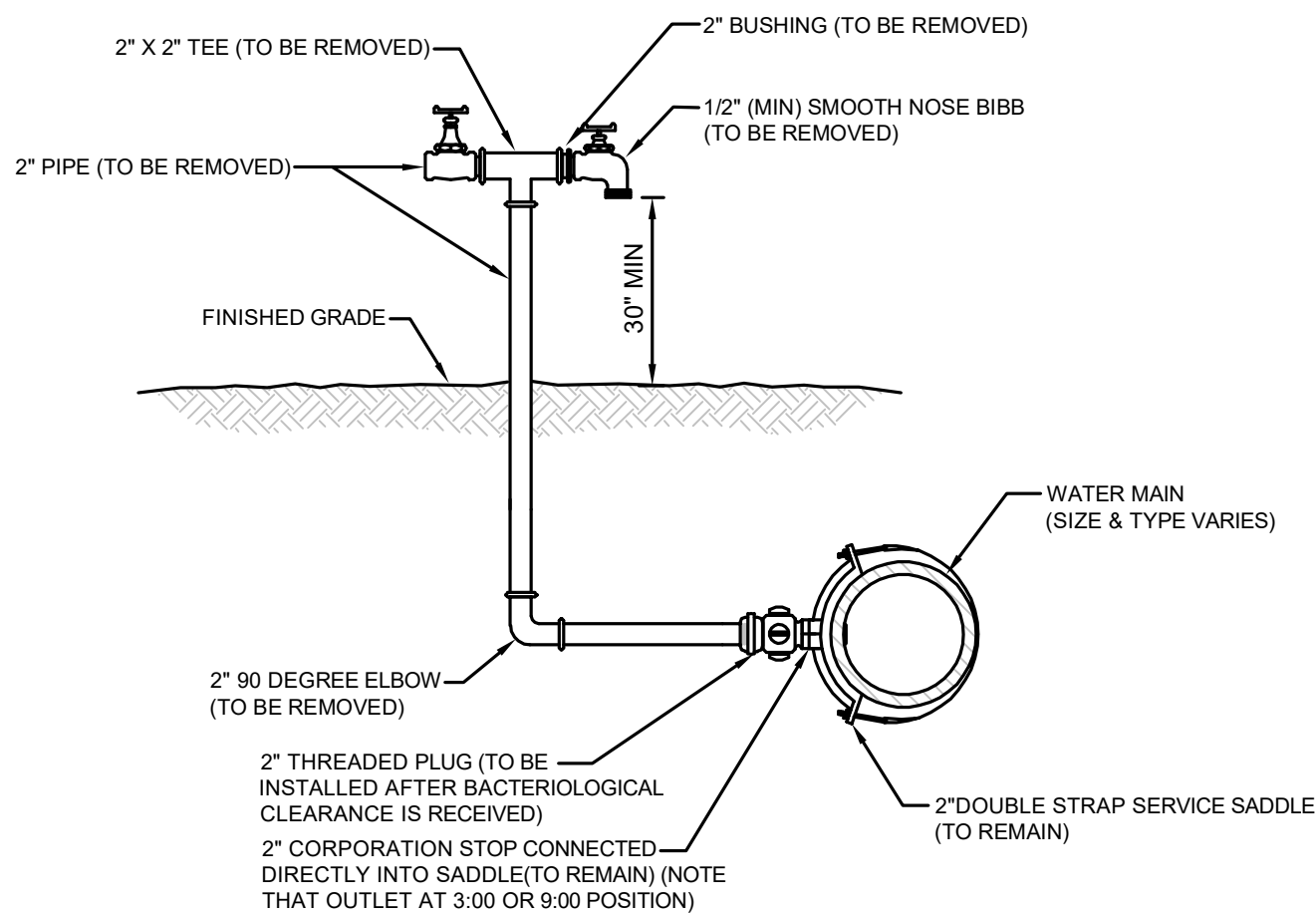
NOTES:

1. 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 BE LOCATED AT THE RW LINE BUT INSIDE THE 7 1/2" ELECTRIC EASEMENT.
2. UNLESS SPECIFIED OTHERWISE BY THE APPLICABLE COUNTY (MASSAU, 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.
3. IF DRAINAGE OR OTHER EASEMENT LOCATED BETWEEN LOTS, METER BOXES SHALL BE LOCATED AT THE EASEMENT LINE BUT OUTSIDE THE EASEMENT AREA.
4. 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 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.
5. 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" D.I.P., 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.
6. DOUBLE 1" WATER SERVICE IS ALLOWED FOR SHORT SIDE OR LONG SIDE SERVICES AND WHERE SHOWN ON THE DRAWINGS.
7. 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).
8. NO 2" AND SMALLER WATER SERVICE TAPS PERMITTED ON WATER MAINS WHICH ARE 20" AND LARGER SIZE.
9. 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.
10. SERVICE SIZE SHALL BE SAME AS THE METER SIZE.

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

JANUARY 2019

PLATE W-1



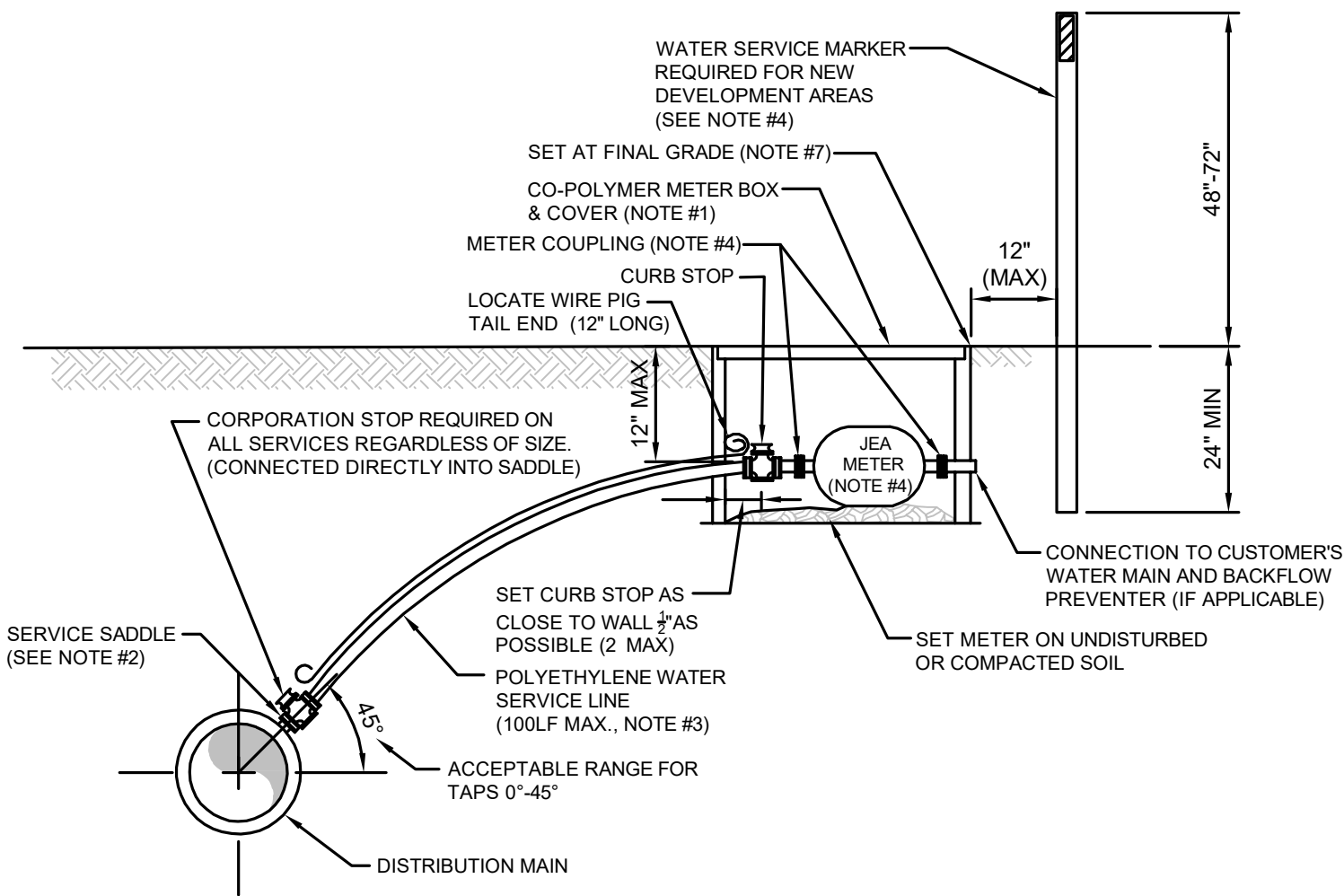
NOTES:

1. LOCATION OF SAMPLE POINT BIBB SHALL NOT BE WITHIN THE ROADWAY BUT ROUTED TO THE ROADWAY SHOULDERS (NON-TRAFFIC AREAS).
2. ALL PIPE & FITTING SHALL BE GALVANIZED MATERIAL OR PVC (S-40).
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL TEMPORARY PIPING & FITTING (AS NOTED) AFTER BACTERIOLOGICAL CLEARANCE IS RECEIVED.
4. 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 2019

PLATE W-26



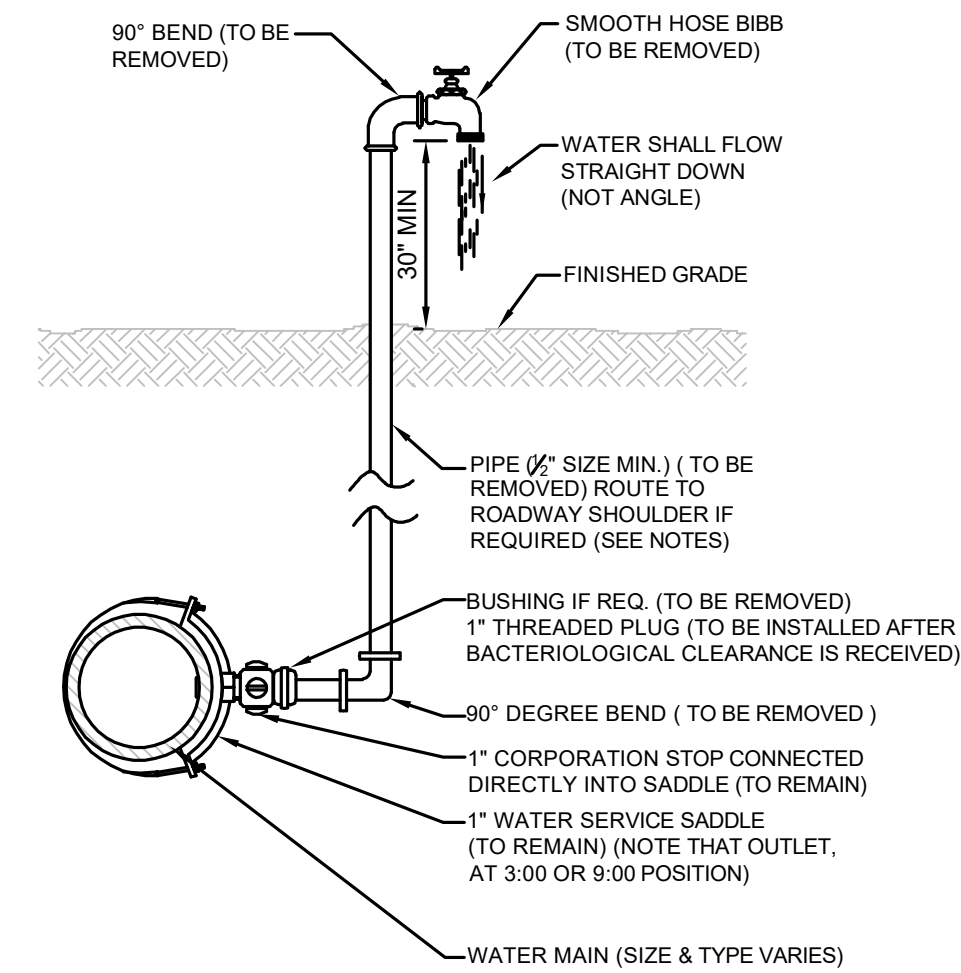
NOTES:

1. SEE PLATE W-1 FOR METER LOCATION REQUIREMENTS.
2. SINGLE BAND SADDLES MAYBE 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.
3. 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 100LF UNLESS APPROVED OTHERWISE BY JEA.
4. 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 TMBER OR 3/4 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 (IHX ON BARREL TYPE).
5. NO 2" AND SMALLER WATER SERVICE TAPS PERMITTED ON WATER MAINS WHICH ARE 20" AND LARGER SIZE.
6. 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.
7. 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).
8. LOCATE WIRING REQUIRED ON ALL SERVICES 10' OR GREATER IN LENGTH. SEE PLATE W-4.

WATER SERVICE DETAIL- 2" AND SMALLER METER

JANUARY 2019

PLATE W-2



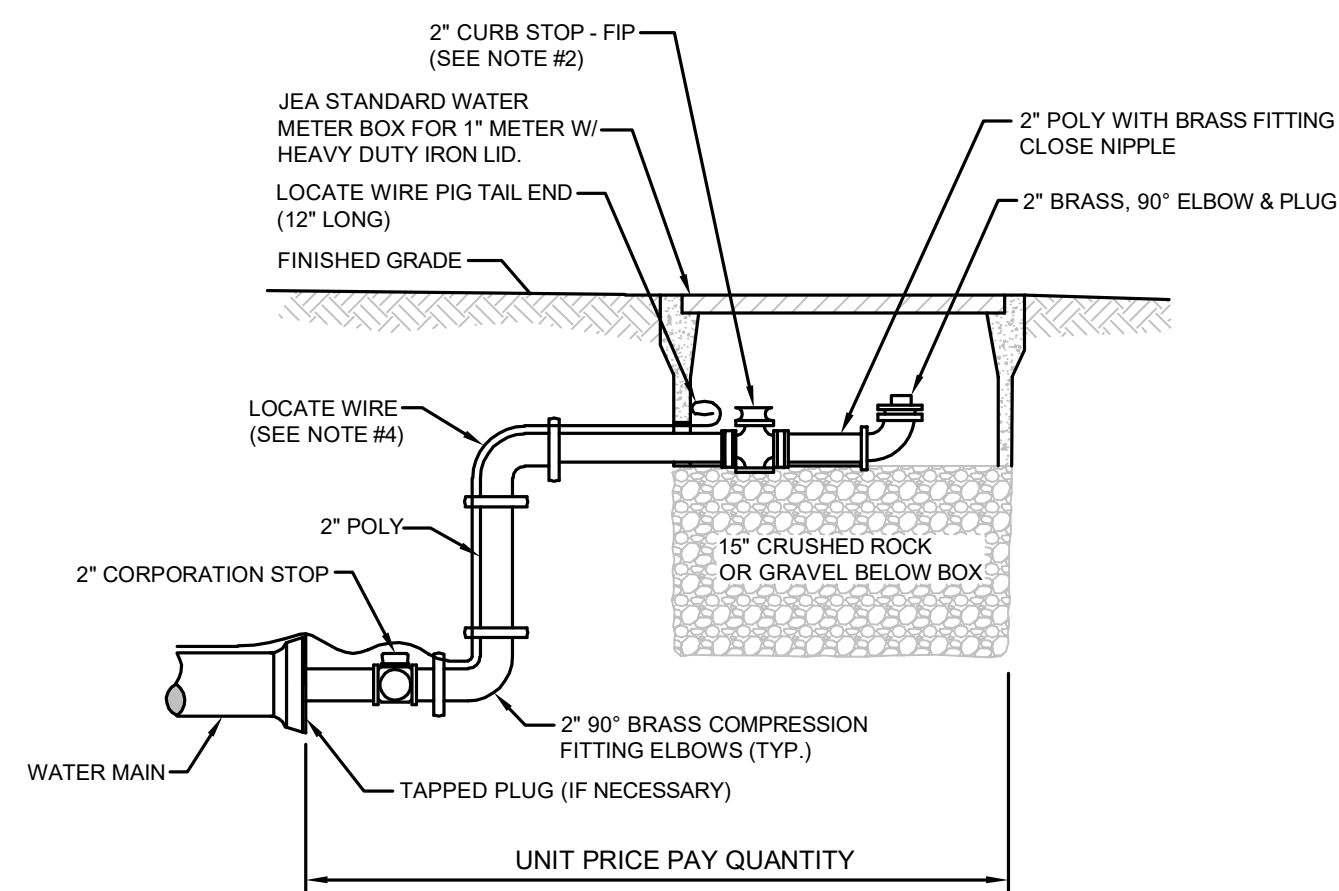
NOTES:

1. LOCATION OF SAMPLE POINT BIBB SHALL NOT BE WITHIN THE ROADWAY BUT ROUTED TO THE ROADWAY SHOULDERS (NON-TRAFFIC AREAS).
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL TEMPORARY PIPING & FITTINGS (AS NOTED) AFTER BACTERIOLOGICAL CLEARANCE IS RECEIVED.
3. PIPE AND FITTINGS SHALL BE PVC (SCH. 40) OR GALV. MATERIAL.
4. 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.
5. 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 2019

PLATE W-25



NOTES:

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

FLUSHING VALVE BELOW GRADE

JANUARY 2019

PLATE W-28

Englund, Thoms & Miller, Inc.
14175 Old St. Augustine Road
Jacksonville, FL 32218
TEL: (904) 642-8990
FAX: (904) 642-8991
CA - 0002284 LC - 0008316

ETM
VISION • EXPERIENCE • RESULTS

THESE DETAILS AS SHOWN ON THIS DRAWING ARE BY THE JEA. WE TAKE NO EXCEPTION TO THE DESIGN

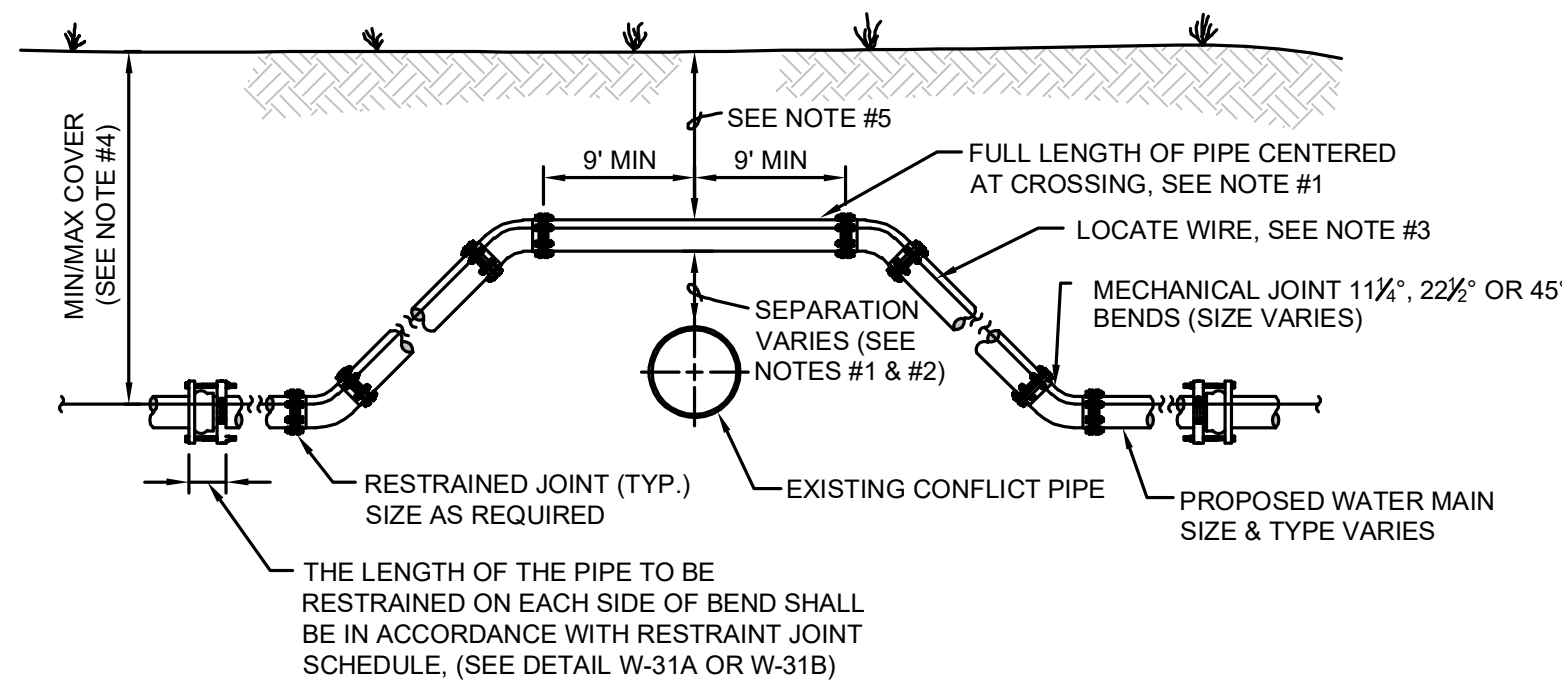
NO.	BY	DATE	REVISIONS
4.			
3.			
2.			
1.			

DESIGN ENGINEER: ANDREW J. BOOTH
FLORIDA REGISTRATION NO.: 82302

JEA STANDARD
WATER MAIN DETAILS
OAKLEAF CORNER OUTPARCEL 3

PROJ. NO.	DATE	SCALE
19-227	JANUARY 2019	AS NOTED

NO. SHEETS	SHEET NO.	DRAWING NO.
5	2	9C



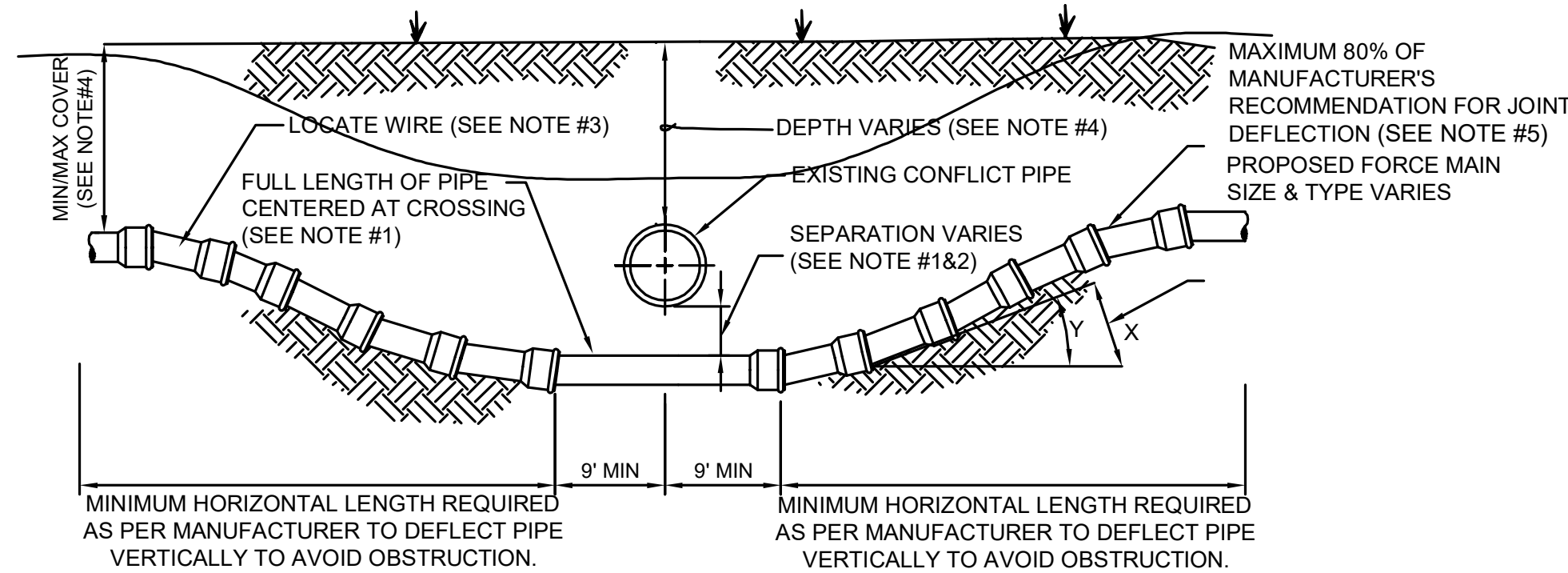
CASE "A" CROSSING

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).

**ADJUSTMENT OVER EXISTING UTILITIES
MECHANICAL RESTRAINTS**

JANUARY 2019 PLATE W-32



CASE "B" CROSSING

NOTES:

1. IF EXISTING CONFLICT PIPE IS A 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 CROSSING.
2. FOR OTHER LOCATION LIMITATIONS SEE DETAIL (W-10 & W-11).
3. LOCATING WIRE REQUIRED: SEE DETAIL W-44.
4. THE COVER OVER ALL PIPING LESS THAN 24" SIZE SHALL BE A MINIMUM OF 30" IN UNPAVED AREAS AND 36" IN PAVED AREAS WITH A MAXIMUM COVER OF 60" UNLESS APPROVED OTHERWISE BY JEA. COVER FOR PIPING 24" SIZE AND LARGER SHALL BE MINIMUM OF 36" (PAVED AND UNPAVED) AND MAXIMUM OF 84" UNLESS APPROVED OTHERWISE BY JEA. 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.
5. JEA ONLY ALLOWS 80% OF THE PIPE MANUFACTURER'S RECOMMENDATION FOR JOINT DEFLECTION. BENDING THE PIPE BARREL IS NOT ALLOWED, UNLESS OTHERWISE APPROVED BY JEA. THE MAXIMUM ARE LISTED IN TABLE BELOW. ONLY MANUAL FORCE CAN BE UTILIZED TO OBTAIN THESE JOINT DEFLECTION. ALL OFFSETS ARE BASED ON MINIMUM 20LF PIPE LENGTH.

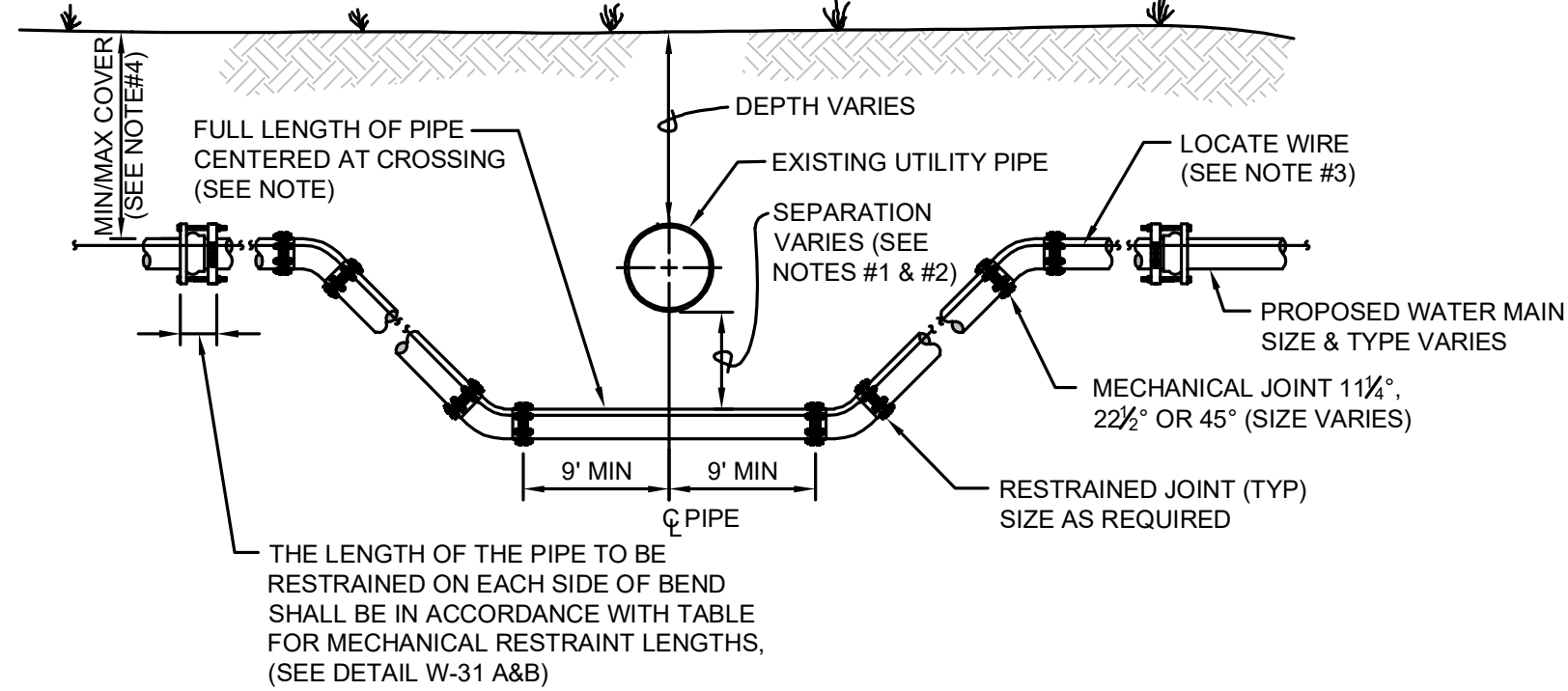
MAXIMUM ALLOWED OFFSET FOR PIPE BY JOINT DEFLECTION

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 UNDER EXISTING UTILITIES
PIPE JOINT DEFLECTION**

JANUARY 2019 PLATE W-40



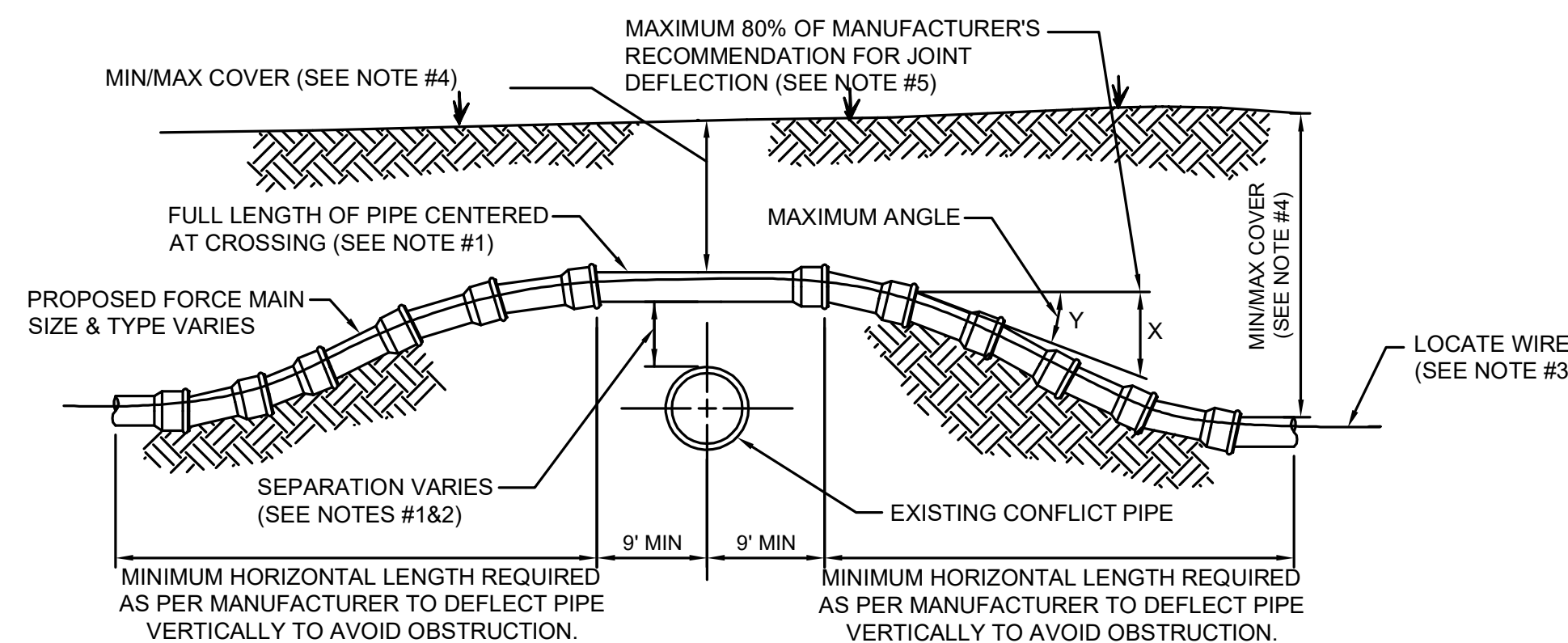
CASE "B" CROSSING

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.

**ADJUSTMENT UNDER EXISTING UTILITIES
MECHANICAL RESTRAINTS**

JANUARY 2019 PLATE W-34



CASE "A" CROSSING

NOTES:

1. IF EXISTING CONFLICT PIPE IS A 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 CROSSING.
2. FOR OTHER LOCATION LIMITATIONS SEE DETAIL (S-10 & W-11).
3. LOCATING WIRE REQUIRED: SEE DETAIL W-44.
4. THE COVER OVER ALL PIPING LESS THAN 24" SIZE SHALL BE A MINIMUM OF 30" IN UNPAVED AREAS AND 36" IN PAVED AREAS WITH A MAXIMUM COVER OF 60" UNLESS APPROVED OTHERWISE BY JEA. COVER FOR PIPING 24" SIZE AND LARGER SHALL BE MINIMUM OF 36" (PAVED AND UNPAVED) AND MAXIMUM OF 84" UNLESS APPROVED OTHERWISE BY JEA. 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.
5. JEA ONLY ALLOWS 80% OF THE PIPE MANUFACTURER'S RECOMMENDATION FOR JOINT DEFLECTION. BENDING THE PIPE BARREL IS NOT ALLOWED, UNLESS OTHERWISE APPROVED BY JEA. THE MAXIMUM ARE LISTED IN TABLE BELOW. ONLY MANUAL FORCE CAN BE UTILIZED TO OBTAIN THESE JOINT DEFLECTION. ALL OFFSETS ARE BASED ON MINIMUM 20LF PIPE LENGTH.

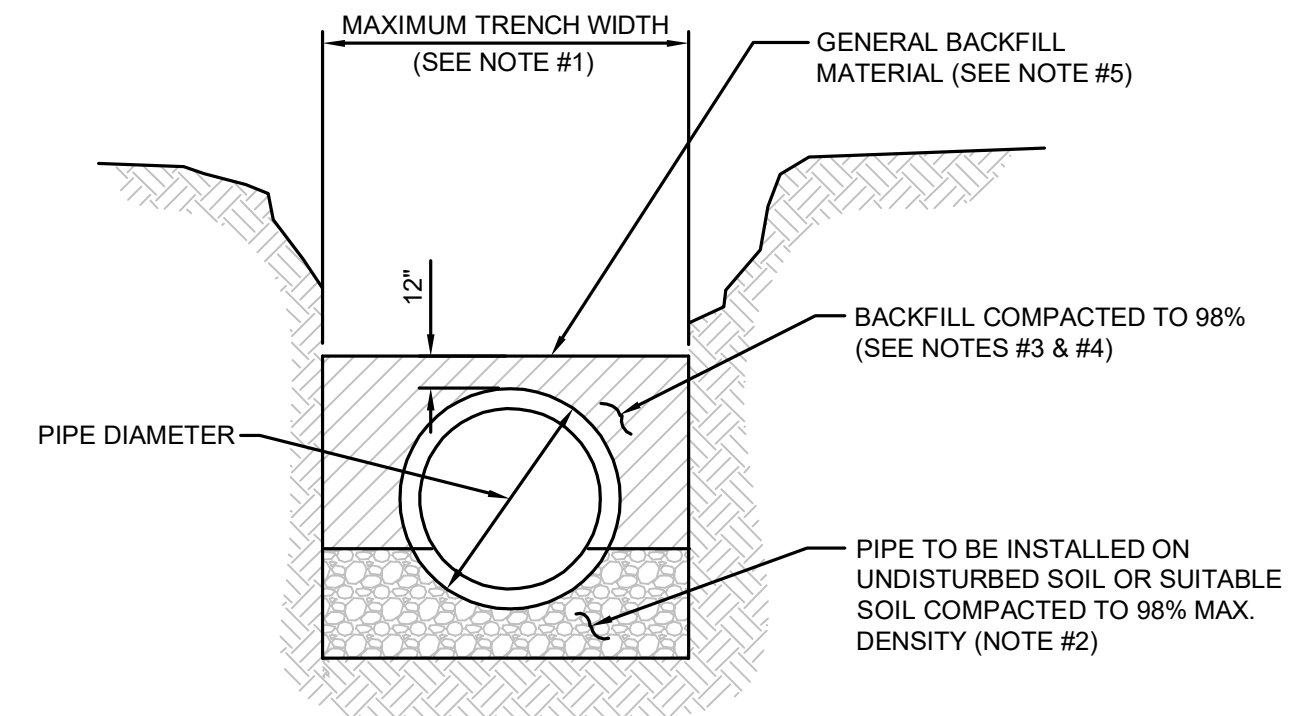
MAXIMUM ALLOWED OFFSET FOR PIPE BY JOINT DEFLECTION

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 - 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
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 2019 PLATE W-41



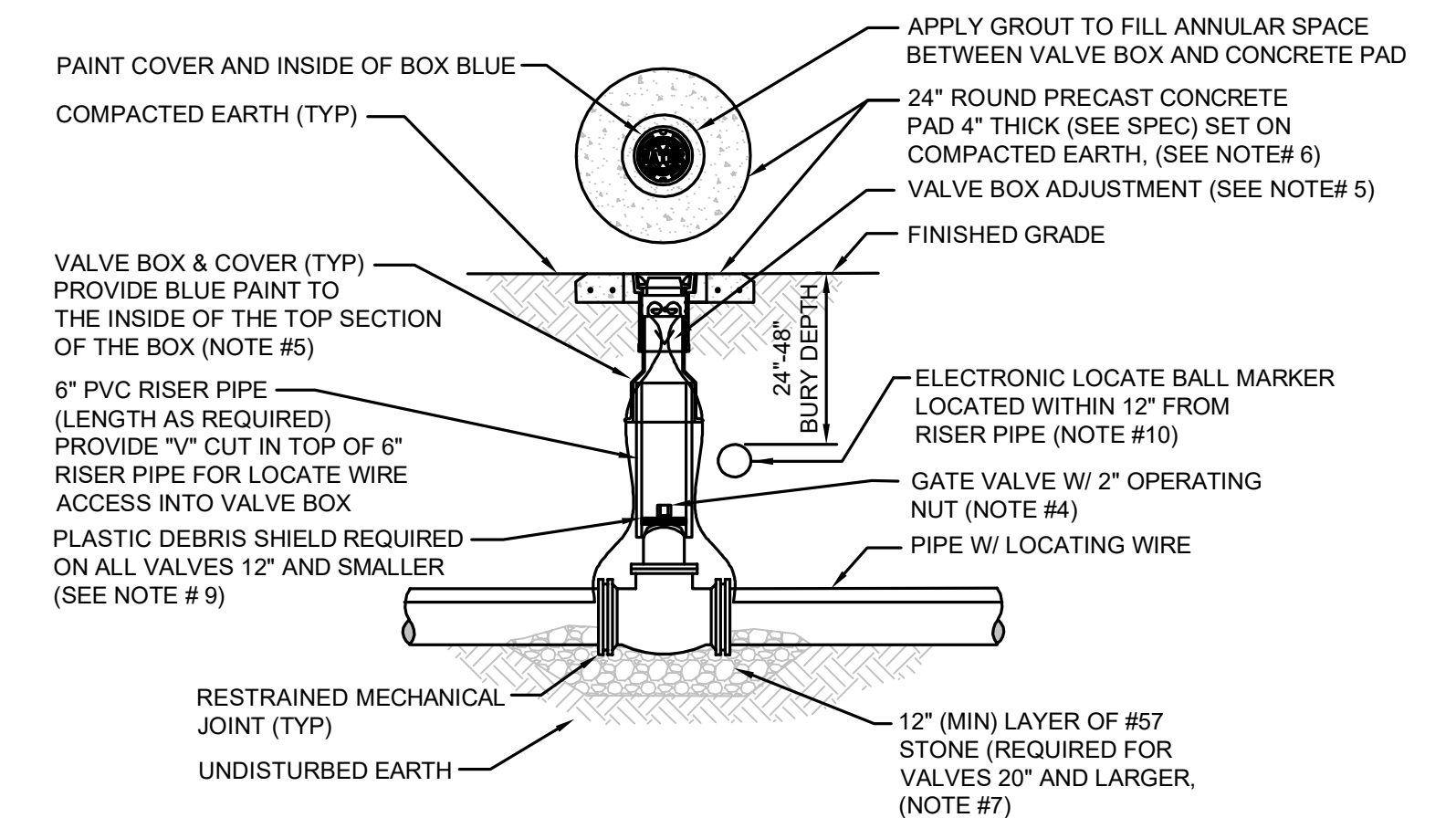
TYPICAL TRENCH

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 #601, PARAGRAPH #4) TO DETERMINE MAXIMUM PAVLINE 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 2019 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 TO ALL BELOW GRADE VALVES. THE "V" CUT IS TO BE PAINTED GREEN.
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 12" 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 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.
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 1/2 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).

WATER VALVE INSTALLATION DETAIL

JANUARY 2019 PLATE W-18

ETM
Englund, Thoms & Miller, Inc.
14775 Old St. Augustine Road
Jacksonville, FL 32218
TEL: (904) 642-8980
FAX: (904) 642-8981
CA - 0002284 LC - 000316

THESE DETAILS AS SHOWN ON THIS DRAWING ARE BY THE JEA. WE TAKE NO EXCEPTION TO THE DESIGN

DESIGN ENGINEER
ANDREW J. BOOTH
FLORIDA REGISTRATION NO.
82202

DESIGNER
DRAWN BY
DATE
CHECKED BY
DATE

JEA STANDARD
WATER MAIN DETAILS
OAKLEAF CORNER OUTPARCEL 3

PROJ. NO. 19-027
DATE: JANUARY 2019
SCALE: AS NOTED

NO. SHEETS 5
SHEET NO. 3
DRAWING NO. 9D

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, L_u IS THE RESTRAINED LENGTH FOR THE UPPER (TOP) LEVEL. L_i 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 RESTRAINED 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.

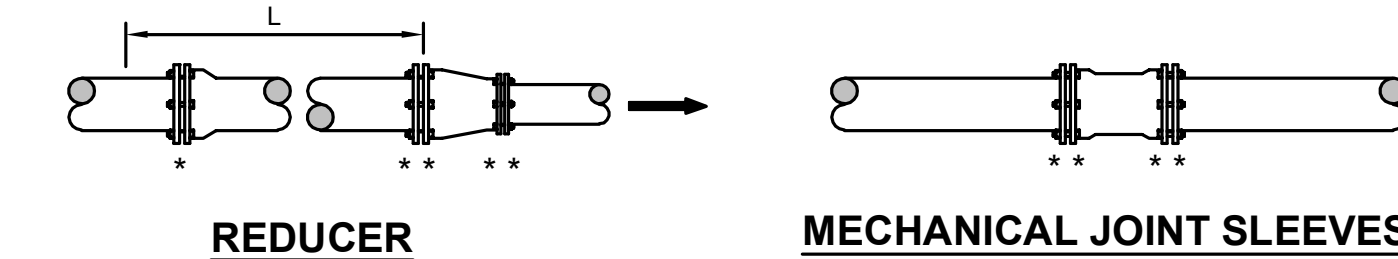
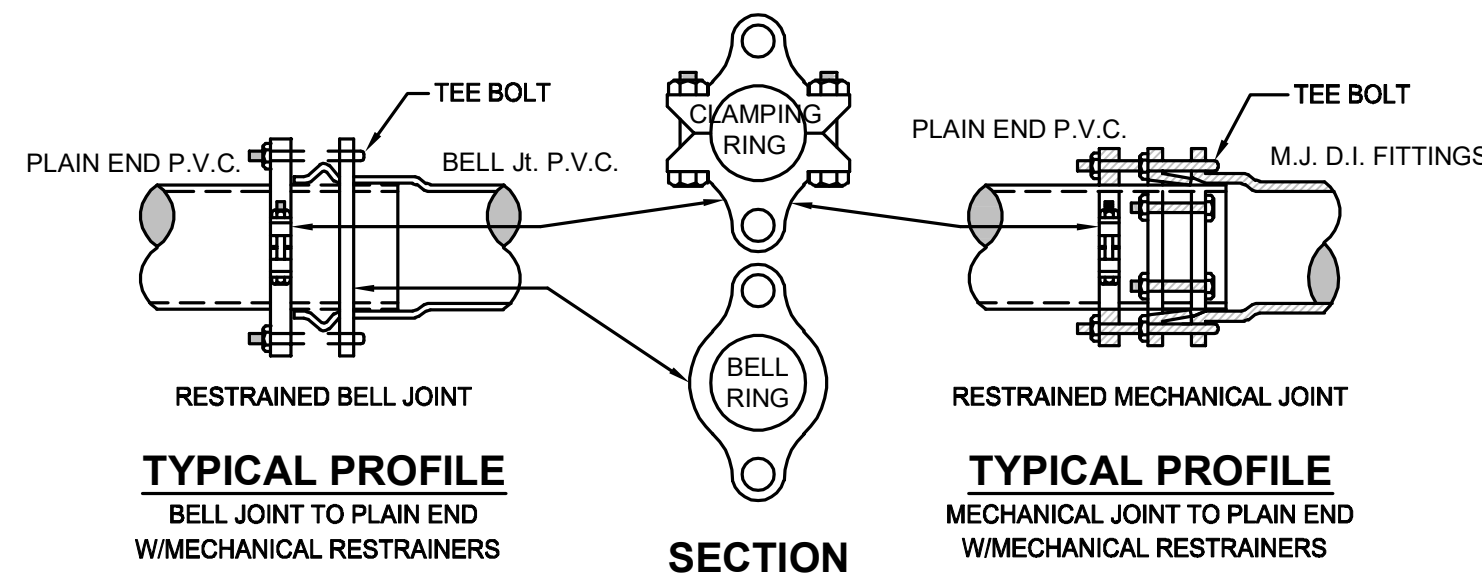
NOMINAL PIPE SIZE (IN.)	LENGTH (L) TO BE RESTRAINED				(SEE PLATE Nos. 38C & 38D FOR ADDITIONAL DETAILS)					
	HORIZONTAL BENDS				VERTICAL OFFSETS (SEE NOTE 4)		VALVES OR DEAD ENDS		REDUCERS	
	90° BENDS L (FT.)	45° BENDS L (FT.)	22.5° BENDS L (FT.)	11.25° BENDS L (FT.)	UPPER L (FT.)	LOWER L (FT.)	OR DEAD ENDS L (FT.)	SIZE (IN.)	L (FT.)	
4	21	9	5	3	17	3	47	6x4	34	
6	30	13	6	3	23	4	66	8x6	36	
8	38	16	8	4	30	6	86	8x4	62	
10	45	19	9	5	36	7	103	10x8	35	
12	53	22	11	6	43	8	121	10x6	63	
14	61	26	13	6	50	9	140	12x10	36	
16	66	28	14	7	55	10	154	12x8	64	
18	73	30	15	8	60	11	170	16x12	66	
20	79	33	16	8	66	12	186	16x10	92	
24	79	33	16	8	77	15	185	20x18	35	
30	93	39	19	10	97	17	222	20x16	66	
36	106	39	21	11	107	20	257	20x12	117	
42	117	49	24	12	120	24	289	24x20	56	
48	144	53	26	13	133	26	321	24x18	80	
								24x16	101	
								30x24	78	
								30x20	121	
								36x30	78	
								36x24	141	
								42x36	75	
								42x30	140	
								48x42	75	
								48x36	139	

F.O. = FITTING ONLY

PVC PIPE RESTRAINT JOINT SCHEDULE

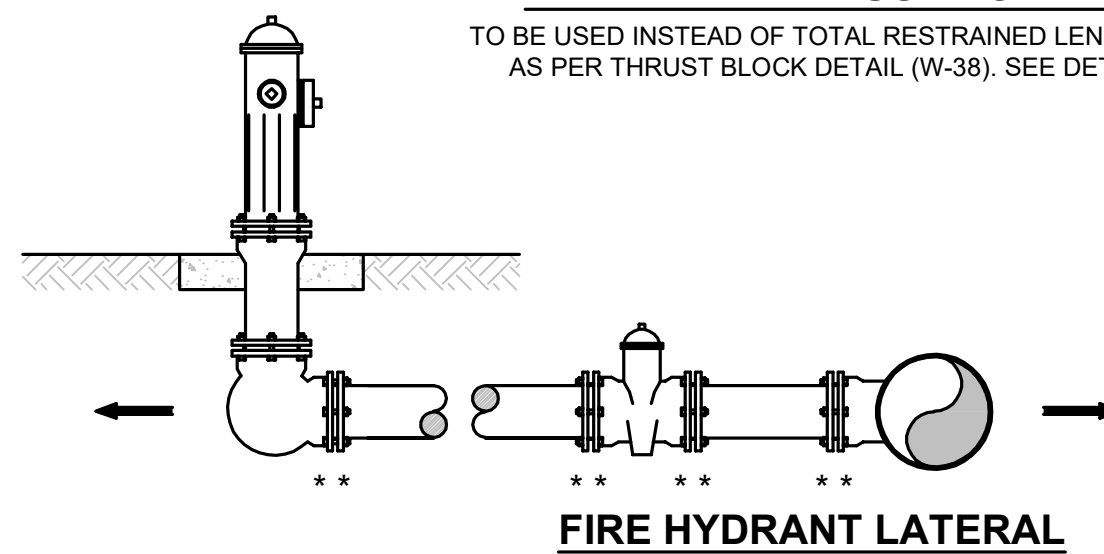
JANUARY 2019

PLATE W-31A



NO. OF TIE RODS REQUIRED	
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)

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 2019

PLATE W-31C

DUCTILE IRON PIPE RESTRAINT NOTES:

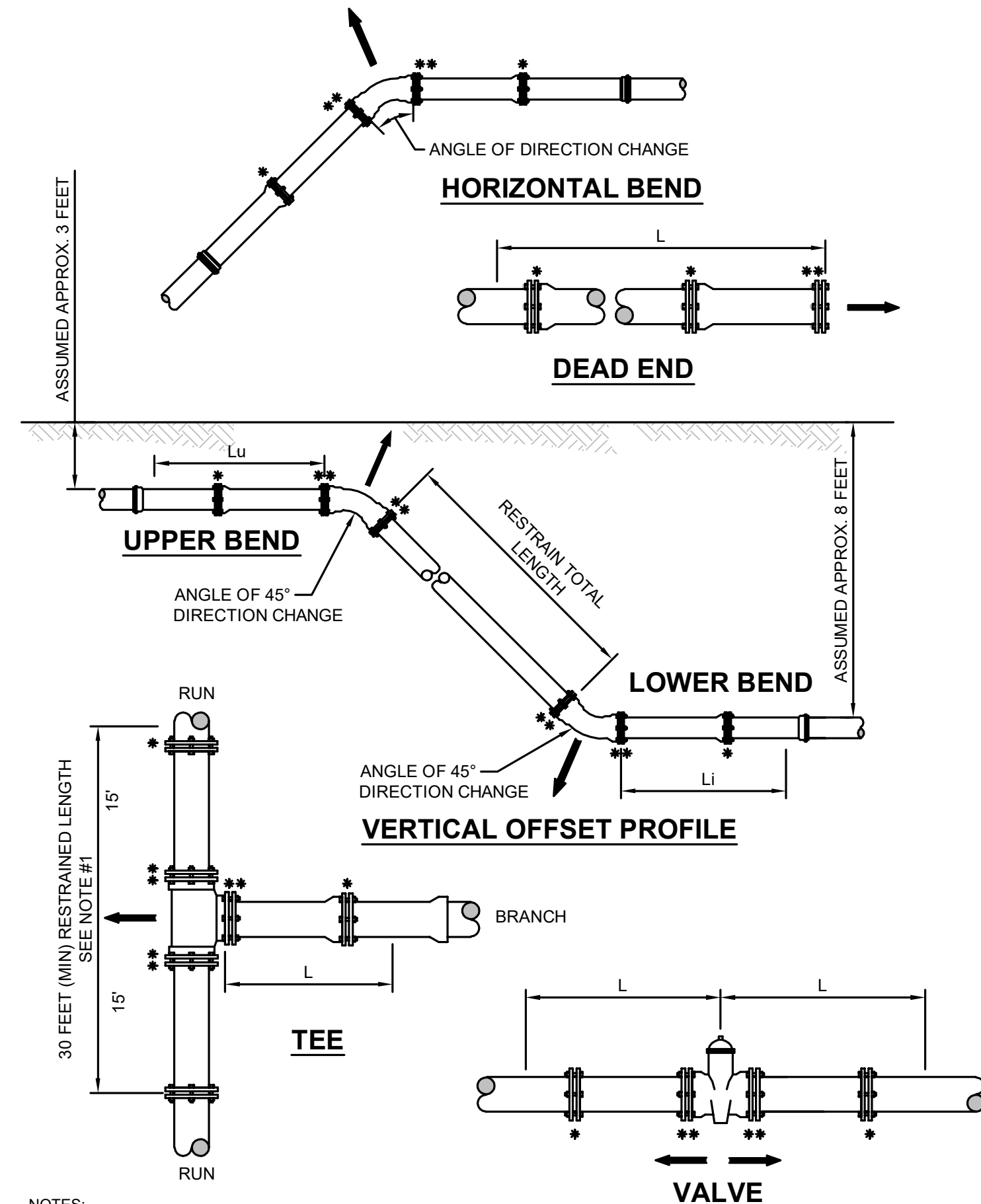
- THIS SCHEDULE SHALL BE UTILIZED ON ALL WATER, SEWER FORCE MAIN OR RECLAIMED WATER SYSTEMS. ALL FITTINGS SHALL BE RESTRAINED TO LENGTHS INDICATED ON THE ABOVE SCHEDULE, AT A MINIMUM.
- ASSUMPTIONS: DUCTILE IRON PIPE (WITHOUT POLY WRAP), SAFETY FACTOR=1.5, TEST PRESSURE=150PSI, SOIL=GM OR SM, TRENCH 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.
- 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, L_u IS THE RESTRAINED LENGTH FOR THE UPPER (TOP) LEVEL. L_i 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 RESTRAINED LENGTH ON TEE "BRANCH" LINE.
- HDPE TO D.I.P. TRANSITIONS: THE D.I.P. PIPE SIDE SHALL BE RESTRAINED 35 FT (MIN).

NOMINAL PIPE SIZE (IN.)	LENGTH (L) TO BE RESTRAINED				(SEE PLATE Nos. 38C & 38D FOR ADDITIONAL DETAILS)					
	HORIZONTAL BENDS				VERTICAL OFFSETS (SEE NOTE 4)		VALVES OR DEAD ENDS		REDUCERS	
	90° BENDS L (FT.)	45° BENDS L (FT.)	22.5° BENDS L (FT.)	11.25° BENDS L (FT.)	UPPER L (FT.)	LOWER L (FT.)	OR DEAD ENDS L (FT.)	SIZE (IN.)	L (FT.)	
4	17	7	4	2	11	3	30	6x4	22	
6	24	10	5	3	15	4	42	8x6	23	
8	31	13	6	3	20	5	55	8x4	39	
10	36	15	8	4	23	6	65	10x8	22	
12	42	18	9	5	27	7	77	10x6	40	
14	48	20	10	5	31	7	87	12x10	23	
16	53	22	11	6	35	8	97	12x8	41	
18	58	24	12	6	39	9	107	16x12	42	
20	63	27	13	6	42	10	118	16x10	58	
24	63	27	13	7	49	12	118	20x18	22	
30	75	31	15	8	59	14	141	20x16	42	
36	86	36	17	9	68	17	163	20x12	74	
42	95	40	19	10	76	19	183	24x20	36	
48	117	43	21	11	84	21	203	24x18	51	

DUCTILE IRON PIPE RESTRAINT JOINT SCHEDULE

JANUARY 2019

PLATE W-31B



NOTES:

- TOTAL LENGTH BETWEEN FIRST JOINTS OR RESTRAINED LENGTH ON EITHER SIDE OF TEE (RUN) SHALL BE A TOTAL DISTANCE OF 30 FEET (MIN).
- 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.

MECHANICAL RESTRAINT DETAILS - II

JANUARY 2019

PLATE W-31D

English, Thoms & Miller, Inc.
14775 Old St. Augustine Road
Jacksonville, FL 32218
TEL: (904) 442-8890
FAX: (904) 442-9890
CA - 0002964 LC - 0000316

VISION • EXPERIENCE • RESULTS

NO.	BY	DATE	REVISIONS
4.			
3.			
2.			
1.			

DESIGN ENGINEER: ANDREW J. BOOTH
FLORIDA REGISTRATION NO.: 82302

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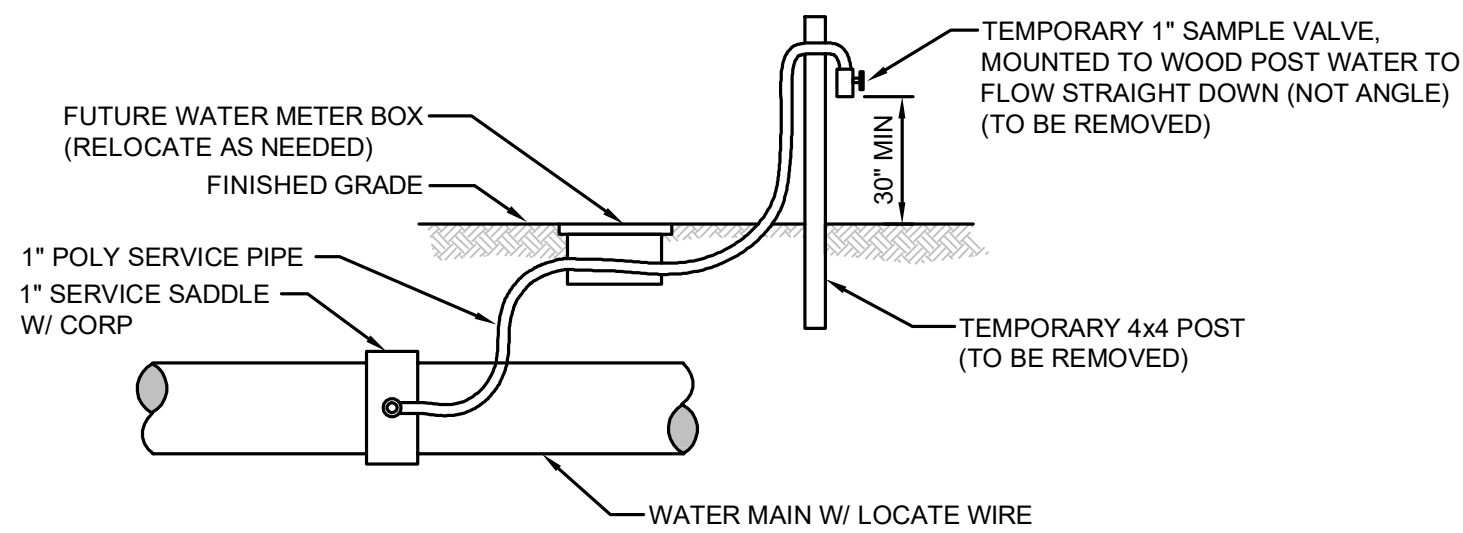
Building CommunitySM

JEA STANDARD
WATER MAIN DETAILS
OAKLEAF CORNER OUTPARCEL 3

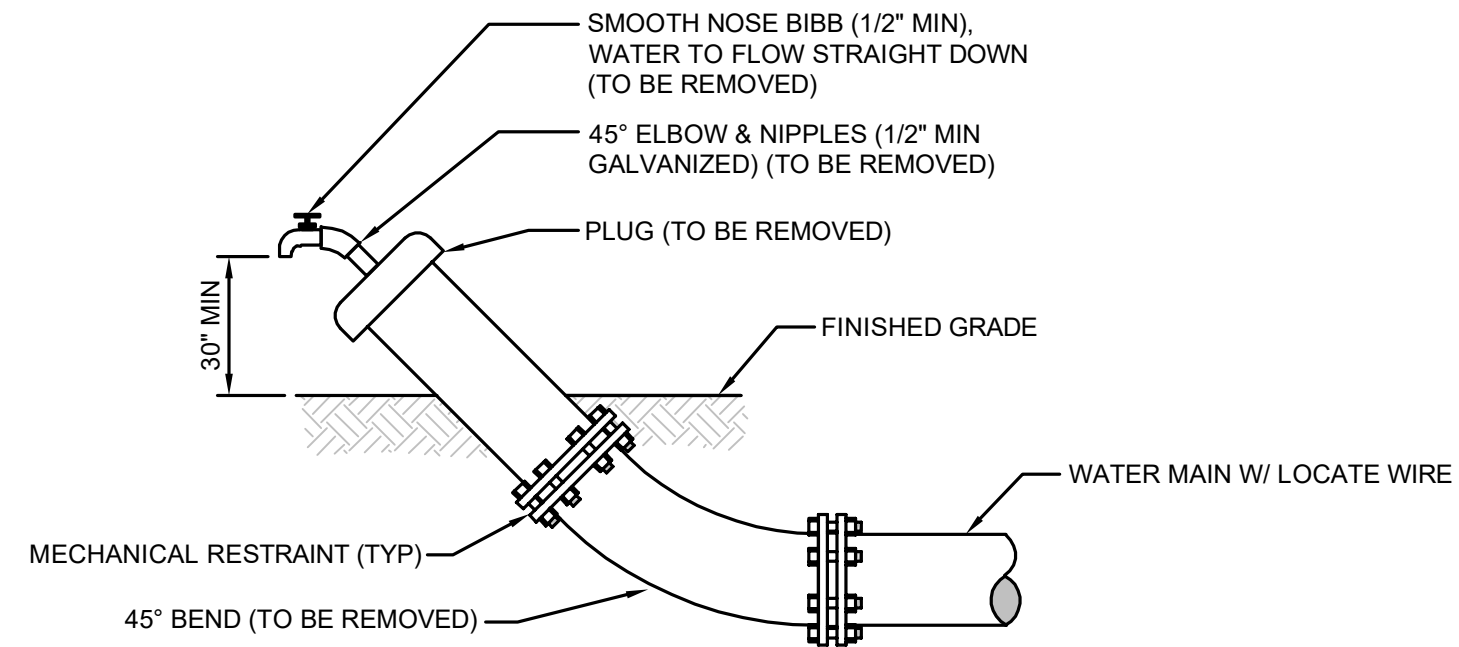
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DRAWING NO. 9E	DRAWING NO. 9E

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TEMPORARY SAMPLE TAP UTILIZING A NEW 1" WATER SERVICE



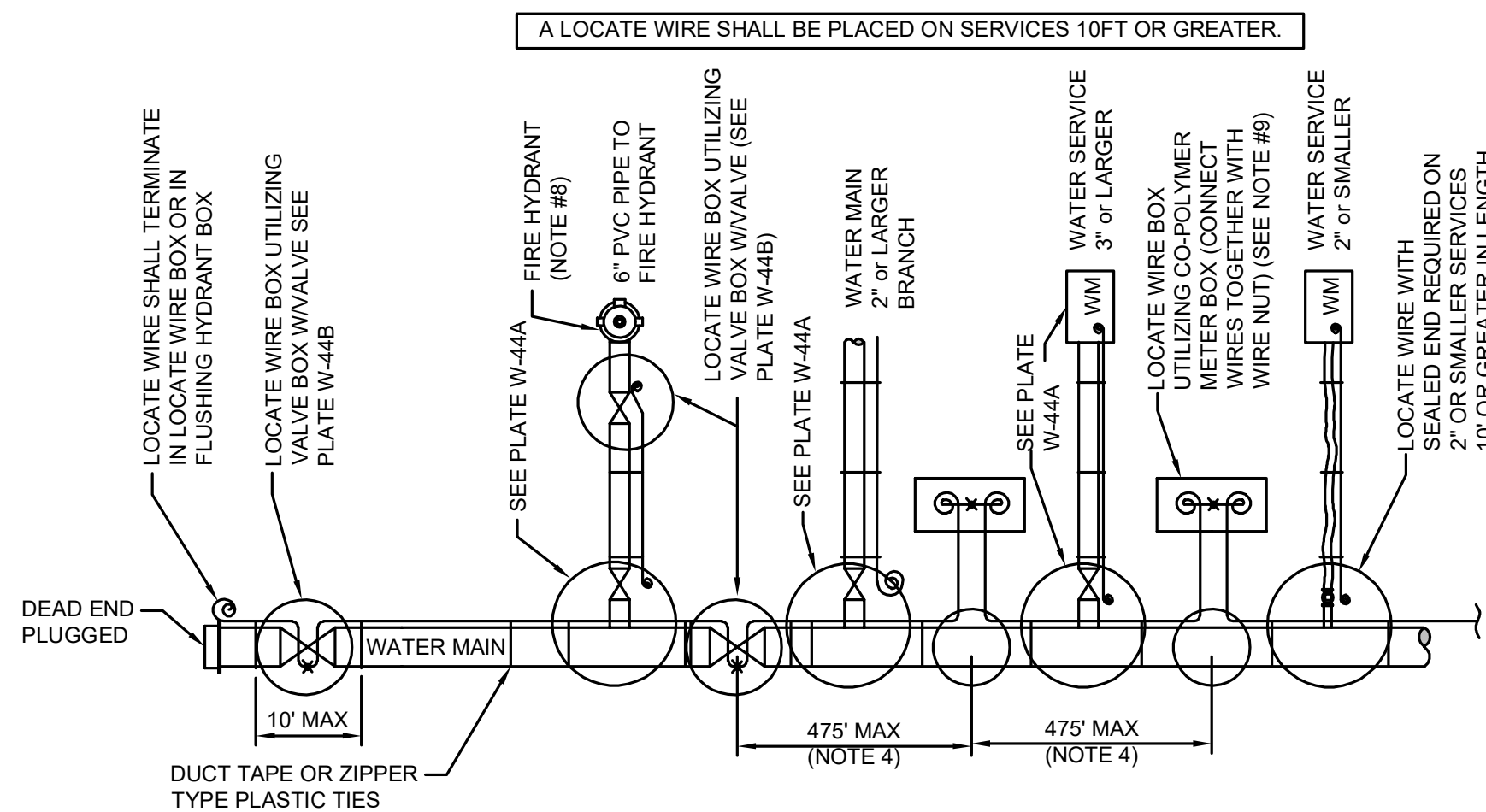
TEMPORARY SAMPLE TAP UTILIZING PLUG AT FLUSHING LOCATION

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 ALTERNATIVE METHODS

JANUARY 2019 PLATE W-24



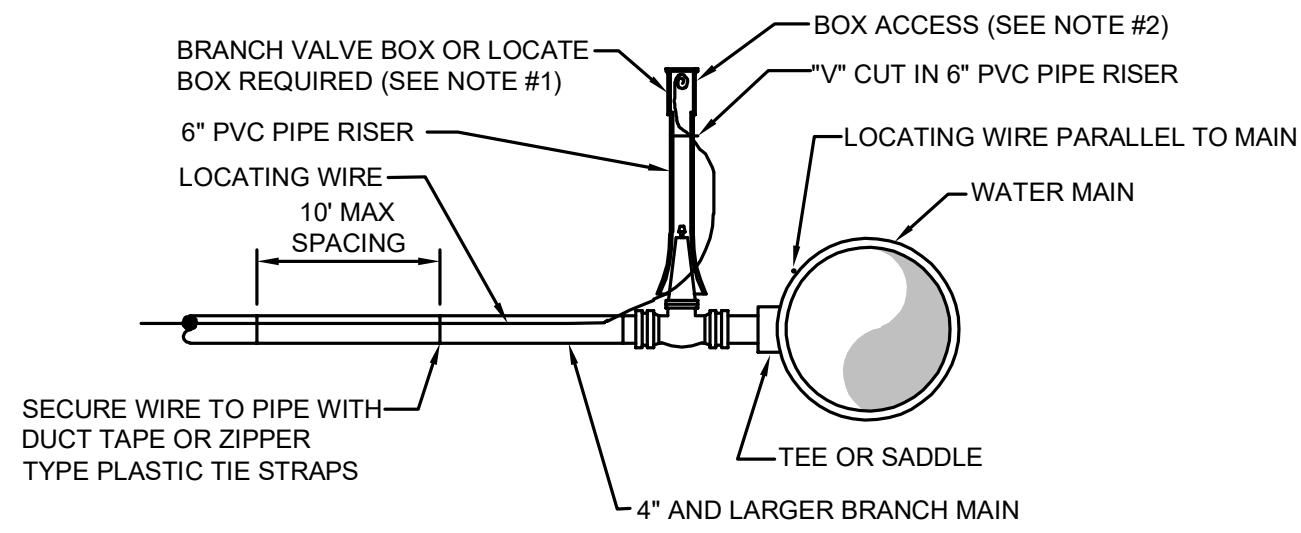
LOCATE WIRE SYSTEM

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. *X* INDICATES THAT THE WIRES ARE CONNECTED TOGETHER.
7. *G* INDICATES A WIRE PIG-TAIL (24" 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.

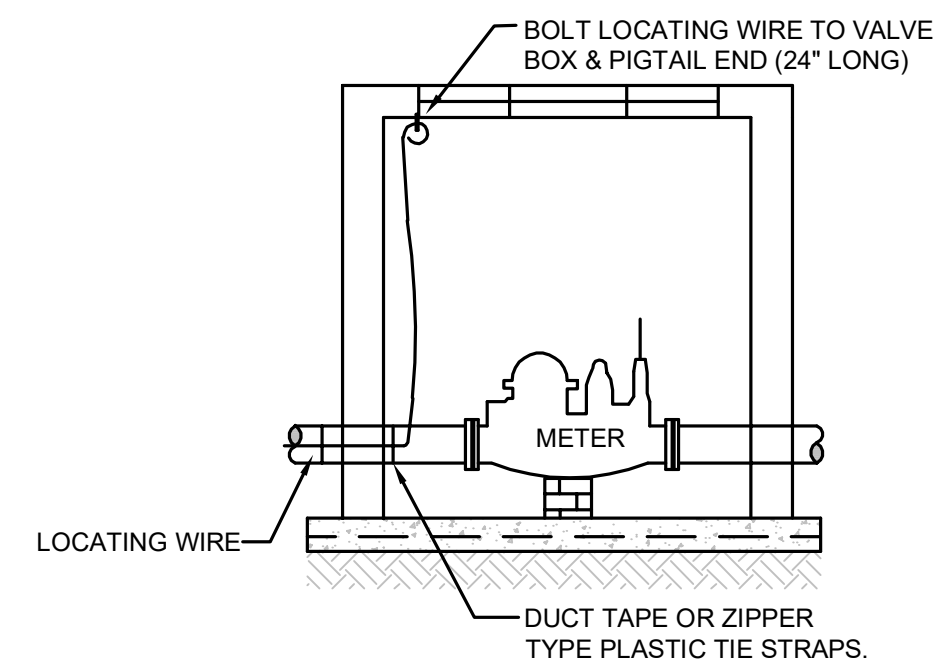
LOCATE WIRE CONSTRUCTION FOR WATER MAINS

JANUARY 2019 PLATE W-44



BRANCH FORCE MAIN

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



CONNECTION AT LARGE METER BOX

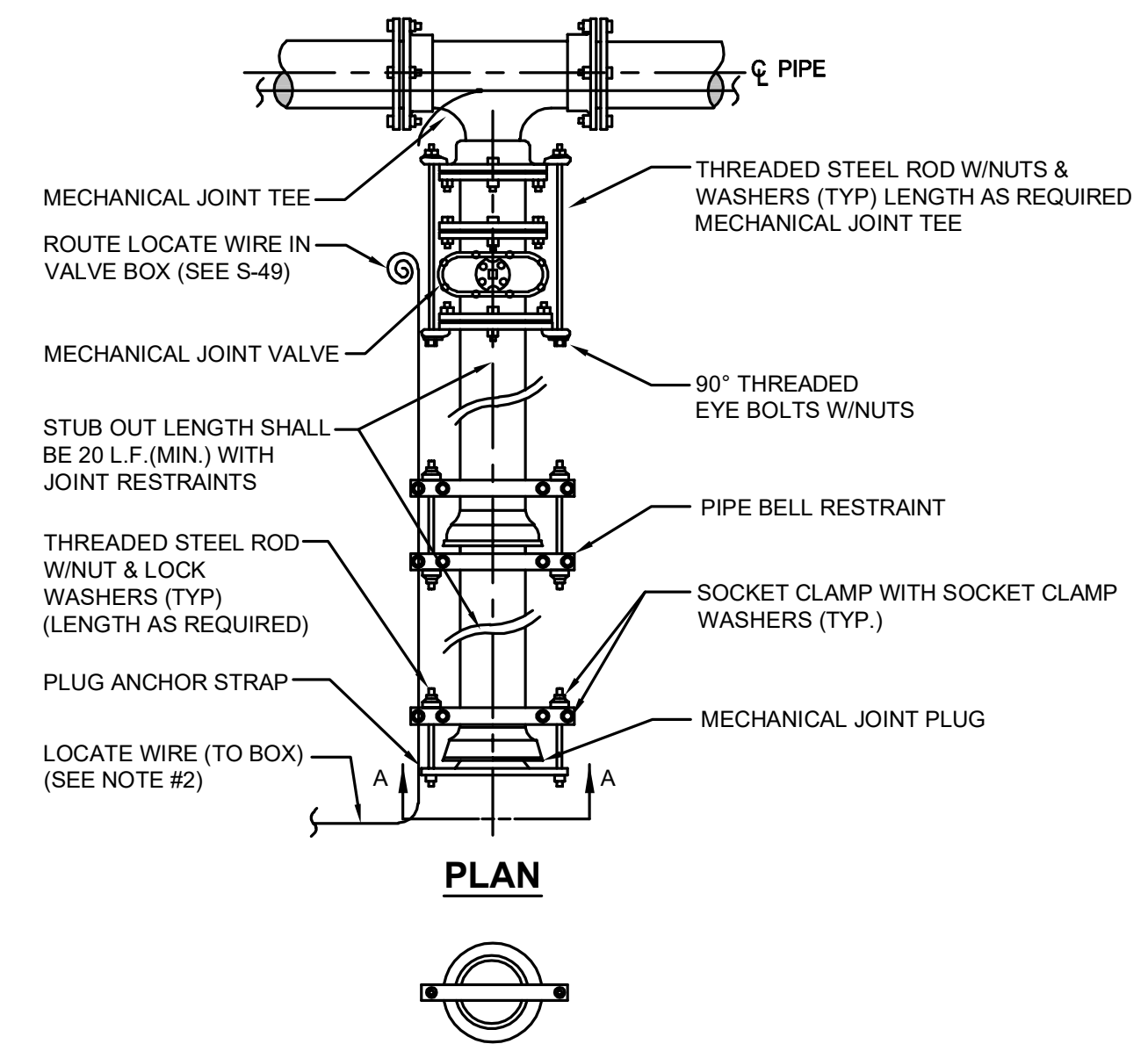
(3" OR LARGER SERVICE)

NOTES:

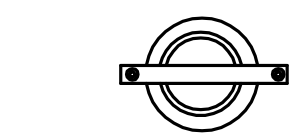
1. NOTE THAT THE BRANCH WIRE IS NOT CONNECTED TO THE MAIN WIRE.
2. LOCATE WIRE SHALL ENTER THE VALVE BOX THROUGH A "V" CUT IN THE 6" PVC RISER PIPE SECTION (SEE W-18).
3. LOCATE WIRE SHALL HAVE 2' OF SLACK INSIDES VALVE AND LOCATE POINTS.

LOCATE WIRE FOR BRANCH MAIN

JANUARY 2019 PLATE W-44A



PLAN



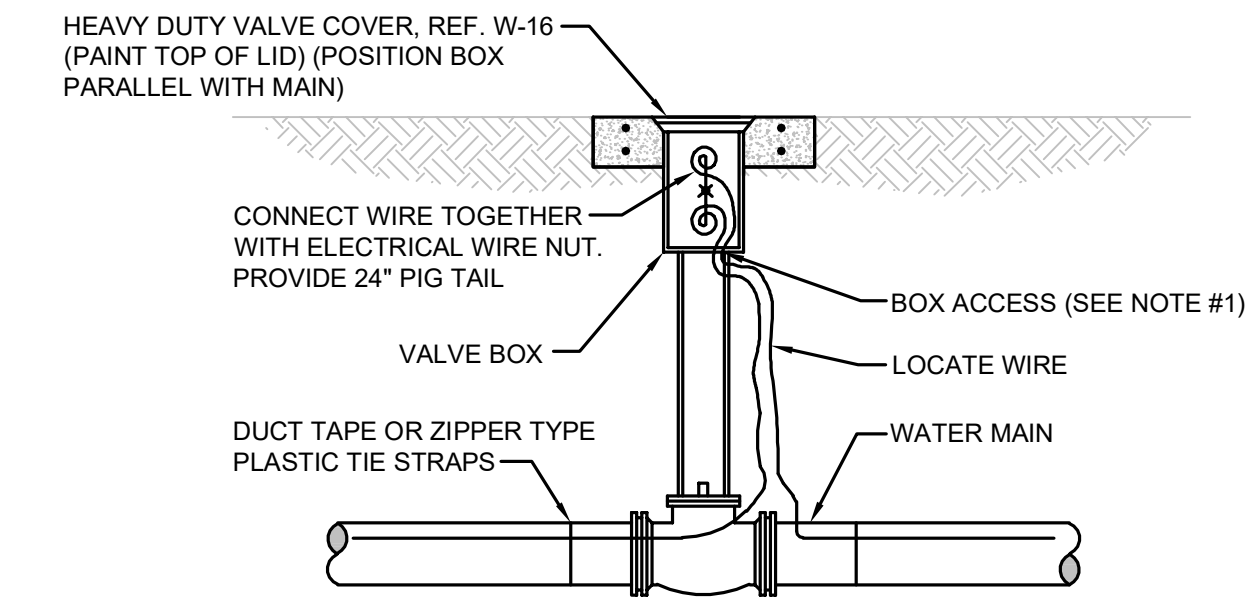
SECTION "A-A"

NOTES:

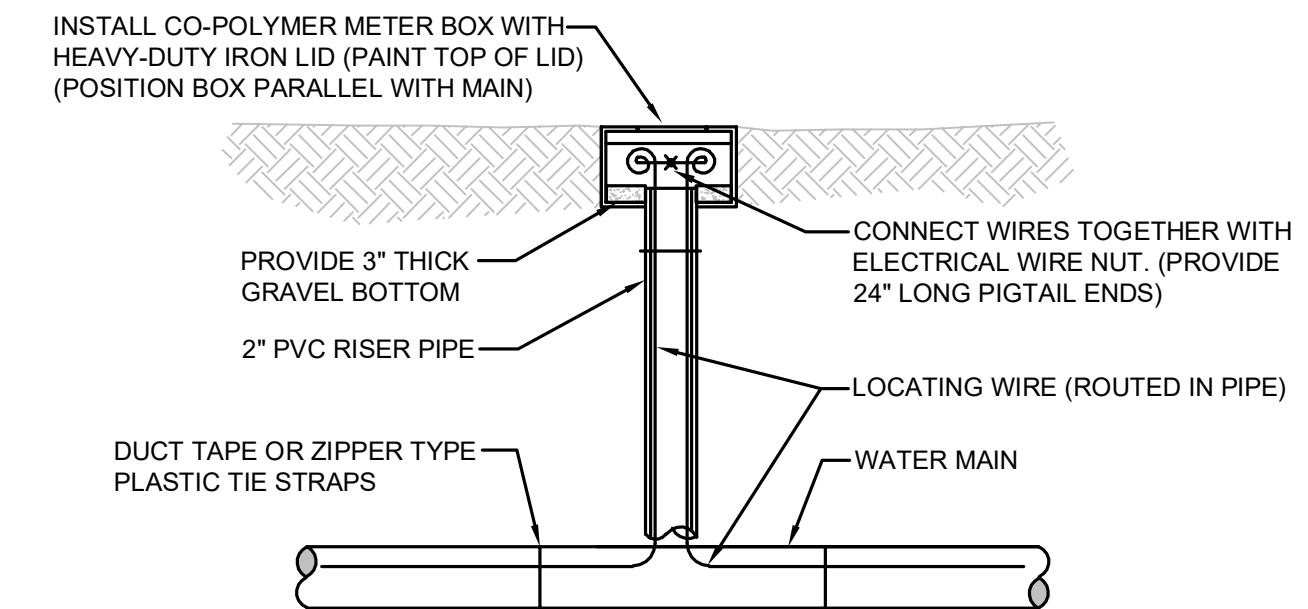
1. IN LIEU OF BELL/ROD RESTRAINTS, MECHANICAL JOINT RESTRAINTS MAY BE USED.
2. LOCATING WIRE REQUIRED, UTILIZING A LOCATE WIRE BOX INSTALLED AT PLUG LOCATION.
3. NUMBER OF TIE RODS REQUIRED IS AS FOLLOWS:
 3" - 8" DIAMETER MAIN - 2 TIE RODS REQUIRED PER JOINT (3/4" ROD)
 10" - 12" DIAMETER MAIN - 4 TIE 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)
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.

PLUGGED DEAD END USING MECHANICAL RESTRAINTS

JANUARY 2019 PLATE W-37



LOCATE WIRE BOX UTILIZING VALVE BOX



LOCATE WIRE BOX UTILIZING METER BOX

NOTES:

1. LOCATE WIRE SHALL ENTER THE VALVE BOX THROUGH A "V" CUT IN THE 6" PVC RISER PIPE (SEE W-18).
2. LOCATE WIRE SHALL HAVE 2' OF SLACK INSIDES VALVE AND LOCATE POINTS.

LOCATE WIRE BOX

JANUARY 2019 PLATE W-44B

Englund, Thoms & Miller, Inc.
 14175 Old St. Augustine Road
 Jacksonville, FL 32218
 TEL: (904) 642-8980
 FAX: (904) 642-8981
 CA - 00028264 LC - 0008316

DESIGNER: ANDREW J. BOOTH
 FLORIDA REGISTRATION NO. 82302

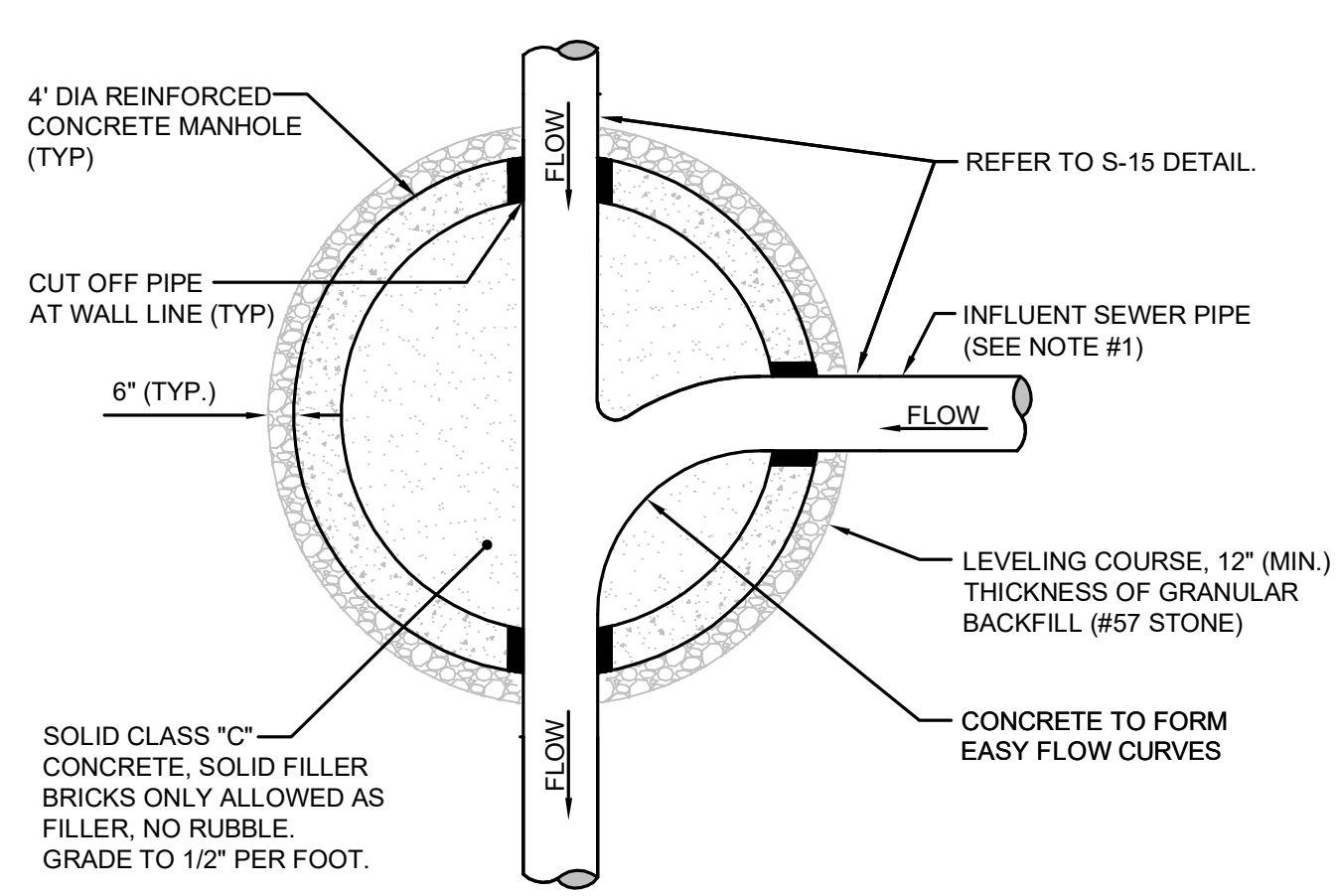
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JEA STANDARD
WATER MAIN DETAILS
OAKLEAF CORNER OUTPARCEL 3

JEA Building Community

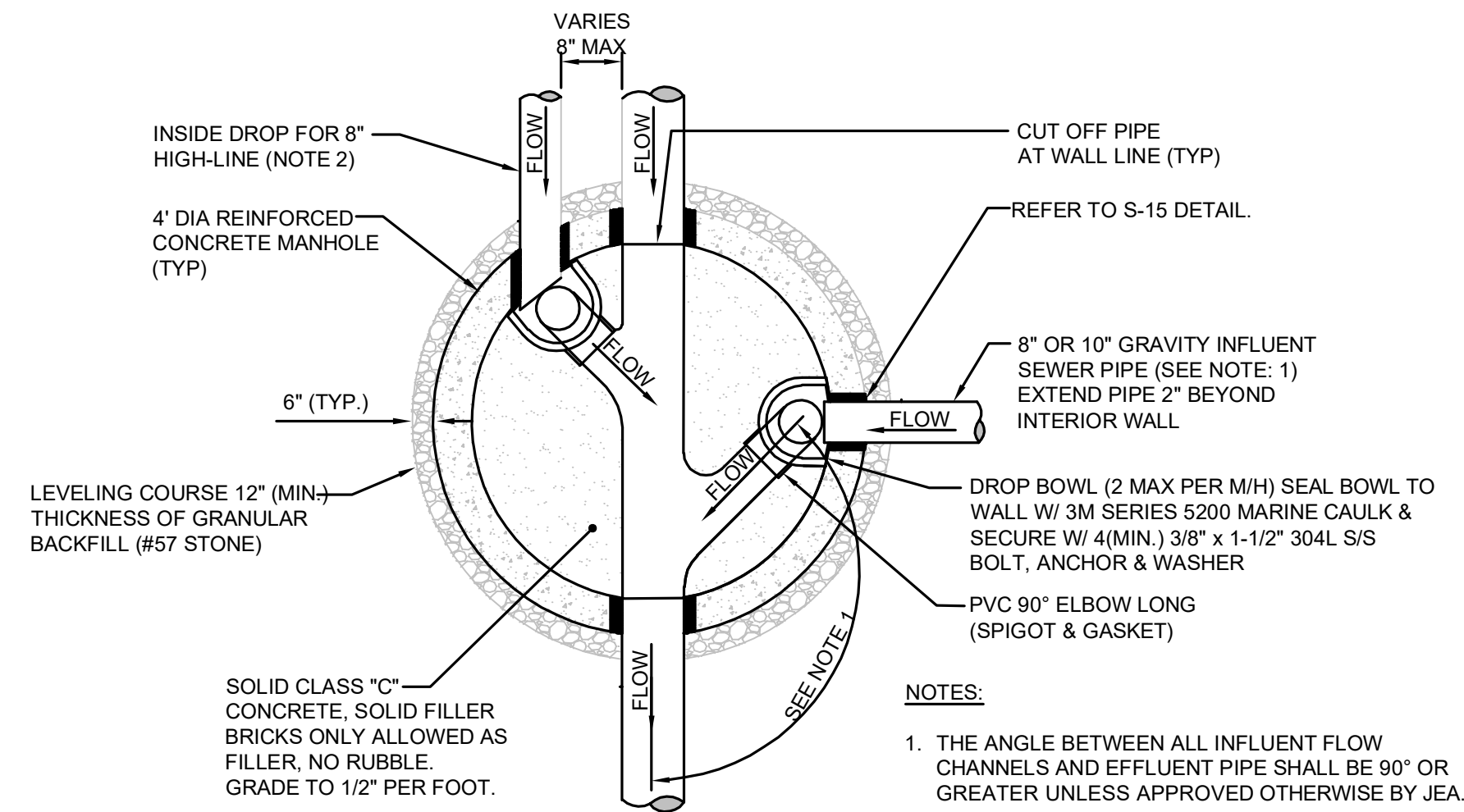
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PLAN VIEW (S-3)
(FOR SECTION VIEW SEE S-2)

NOTES:

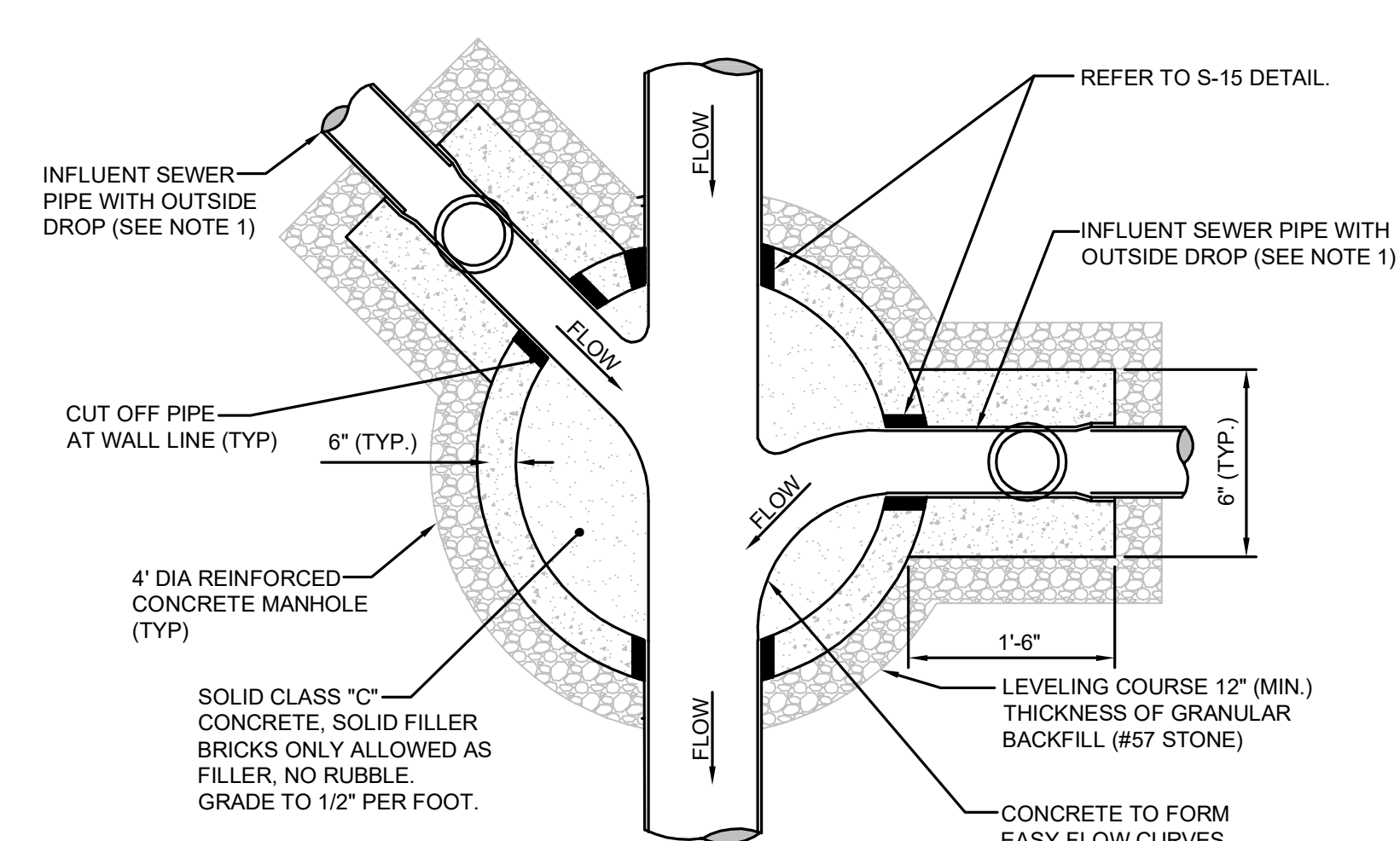
1. THE ANGLE BETWEEN ALL INFLUENT FLOW CHANNELS AND EFFLUENT PIPE SHALL BE BETWEEN 90° - 180° UNLESS OTHERWISE APPROVED BY JEA.



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

NOTES:

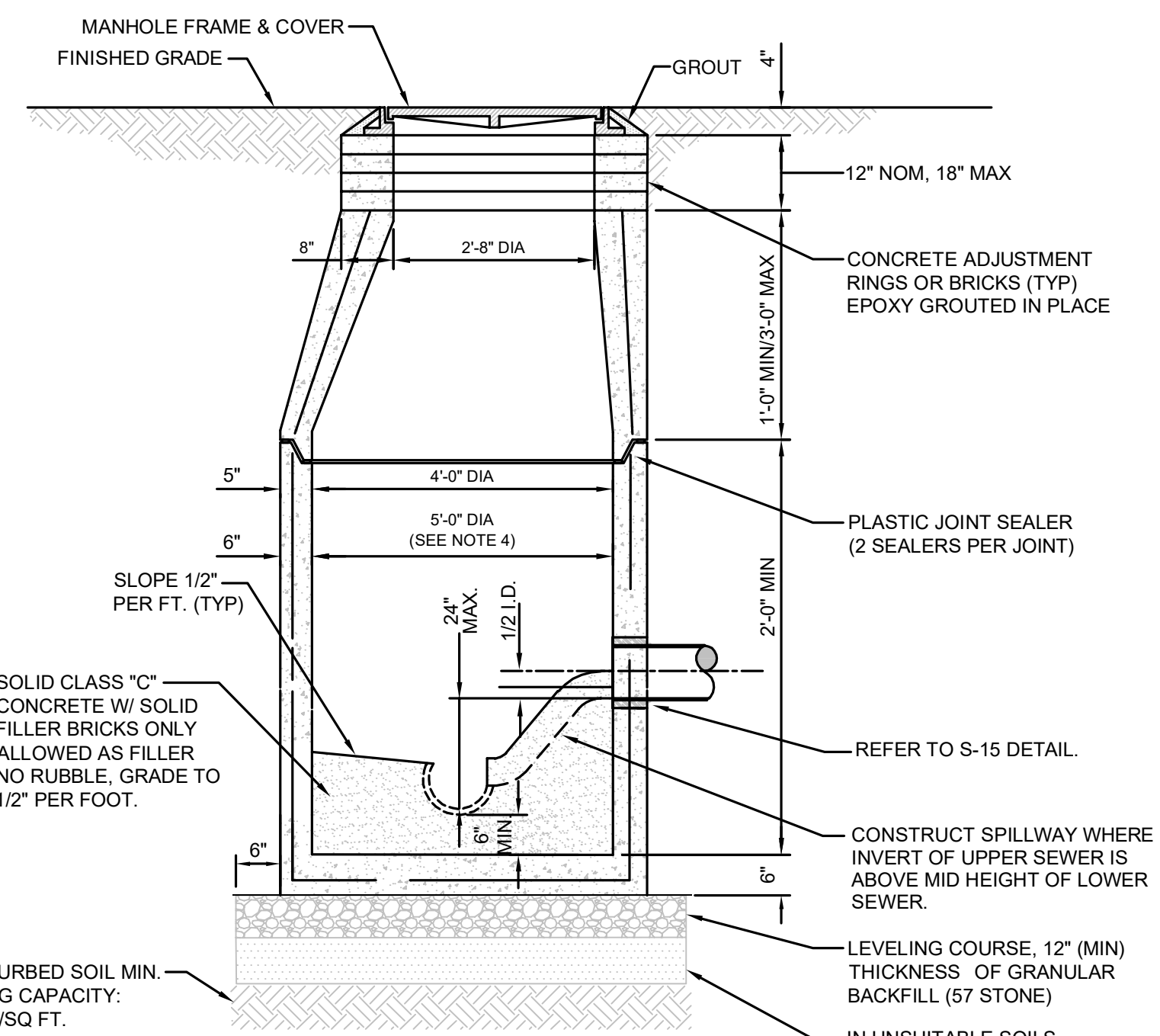
1. THE ANGLE BETWEEN ALL INFLUENT FLOW CHANNELS AND EFFLUENT PIPE SHALL BE 90° OR GREATER UNLESS APPROVED OTHERWISE BY JEA.
2. THE 8" HIGH-LINE, WHERE UTILIZED, SHALL ENTER THE MANHOLE ON-CENTER OR OFF-CENTER AS SHOWN ABOVE.



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

NOTES:

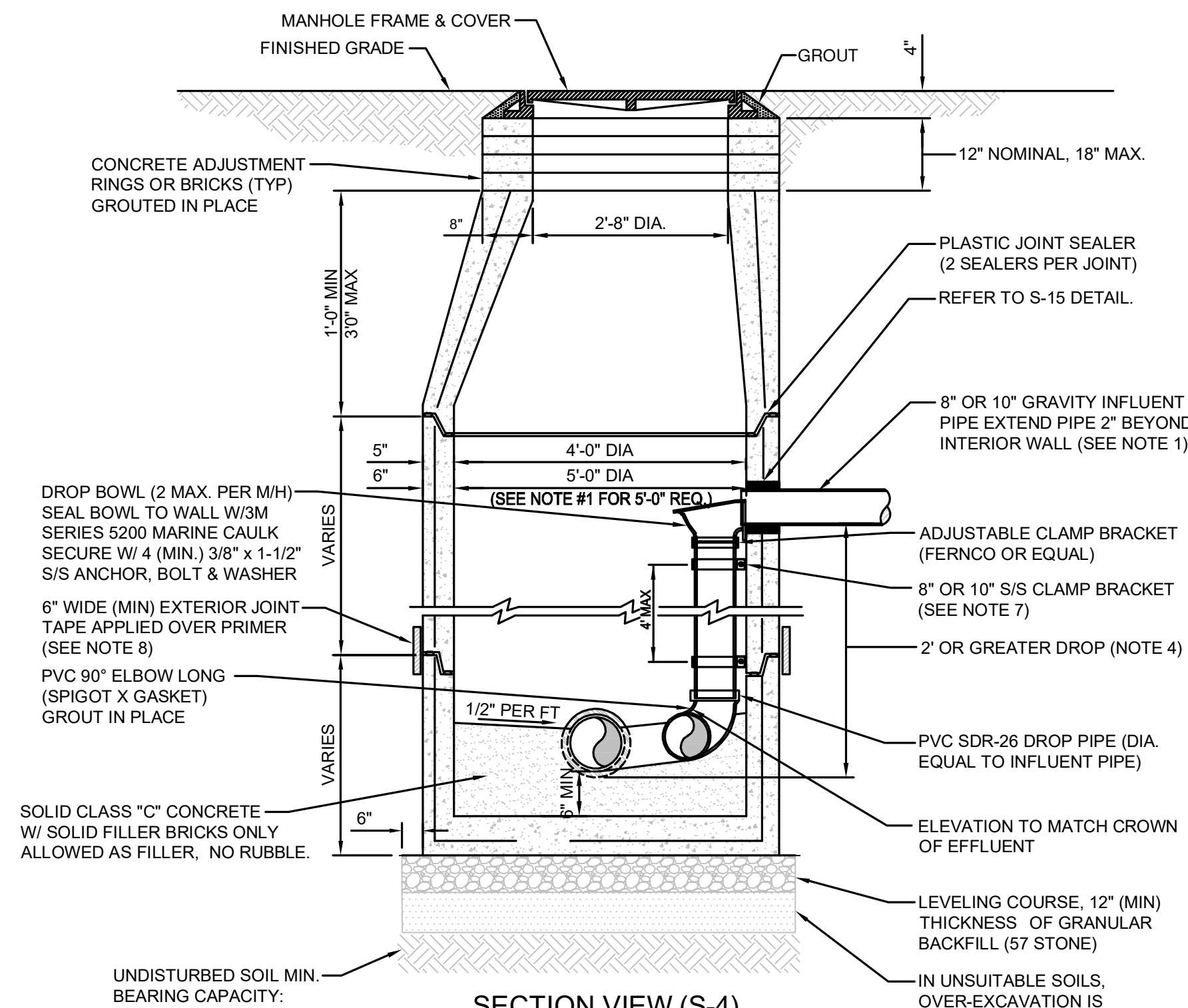
1. THE ANGLE BETWEEN ALL INFLUENT FLOW CHANNELS AND EFFLUENT PIPE SHALL BE 90° OR GREATER UNLESS APPROVED OTHERWISE BY JEA.
2. THE INTERIOR AND EXTERIOR OF THE MANHOLE AND THE INTERIOR OF THE ADJUSTMENT RINGS SHALL BE GIVEN 2 COATS OF BITUMINOUS WATERPROOFING MATERIAL.
3. IF SPECIALTY LINER IS TO BE 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.



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

NOTES:

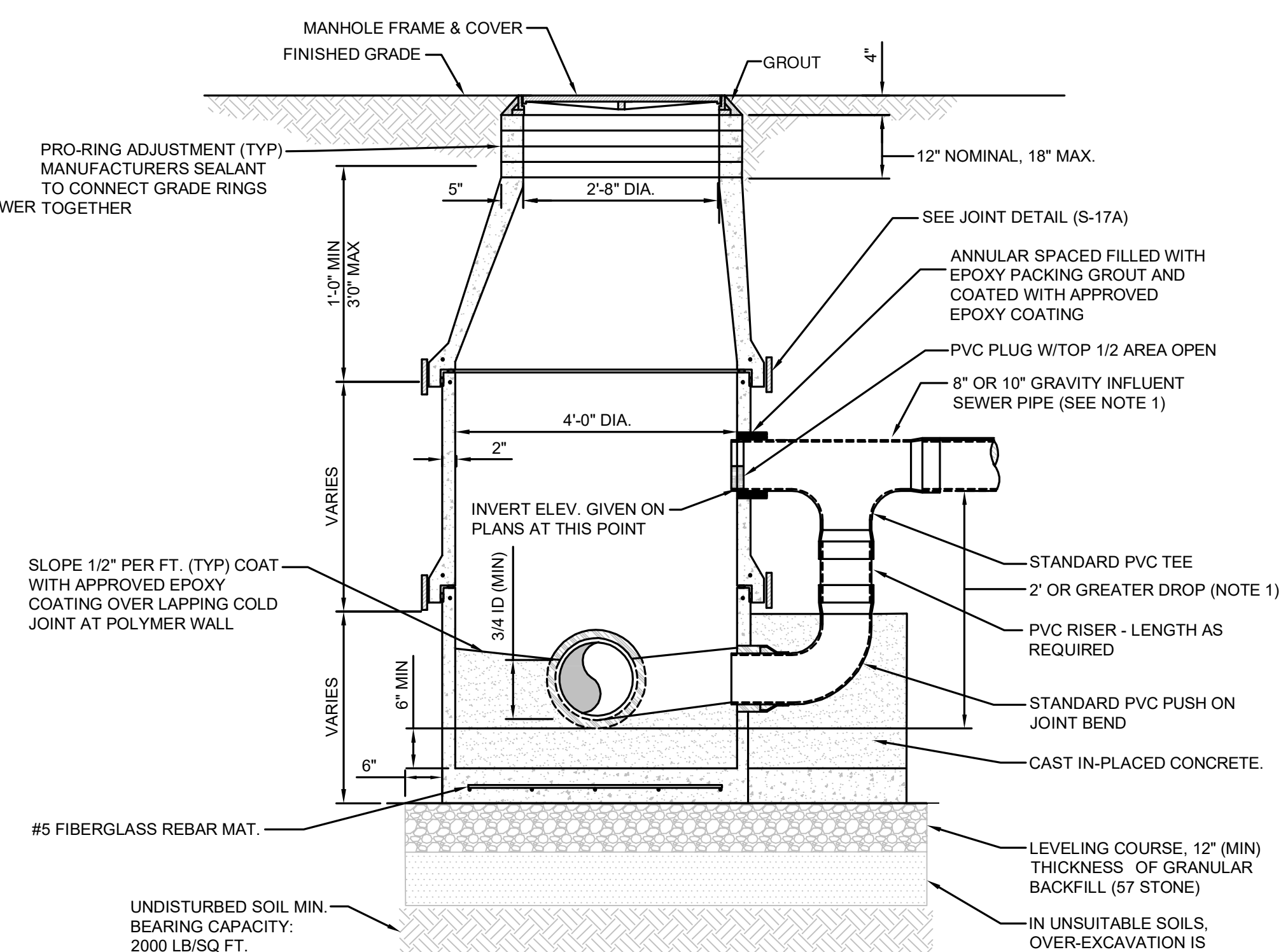
1. PRECAST MANHOLE SECTIONS TO BE MANUFACTURED IN ACCORDANCE WITH THE LATEST EDITIONS OF A.S.T.M. C-478 WITH 4000 LB. CONC., TYPE II CEMENT. ALL LIFTING HOLES AND OUTSIDE INSERTS SHALL BE FILLED WITH NON-SHRINK GROUT AND COATED WITH BITUMINOUS WATERPROOFING MATERIAL.
2. THE INTERIOR AND EXTERIOR OF MANHOLE 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. ALL MANHOLE JOINTS BELOW THE TOP COVER SECTION SHALL INCLUDE A 6" WIDE (MIN) EXTERIOR JOINT TAPE (WITH PRIMER). TAPE ON THE CONE SECTION IS OPTIONAL. SEE 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).



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

NOTES:

1. THIS ASSEMBLY IS FOR 8" OR 10" GRAVITY INFLUENT LINES ONLY. NEW CONSTRUCTION ONLY NO FORCE MAINS LARGER THAN 6". 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. ALL MH JOINTS BELOW THE TOP CONE SECTION SHALL INCLUDE A 6" WIDE (MIN) EXTERIOR JOINT TAPE (W/PRIMER). TAPE ON THE CONE SECTION IS OPTIONAL.
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).



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

NOTES:

1. TYPE "D" MANHOLE SHALL BE USED FOR 10" OR LARGER INFLUENT PIPES W/ 2' OR GREATER INFLUENT DROP.
2. ALL MH JOINTS BELOW THE TOP CONE SECTION SHALL INCLUDE A 18" WIDE (MIN) EXTERIOR JOINT TAPE (W/PRIMER). TAPE ON THE CONE SECTION IS OPTIONAL.
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).

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

JANUARY 2019

PLATES S-2, S-3

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

JANUARY 2019

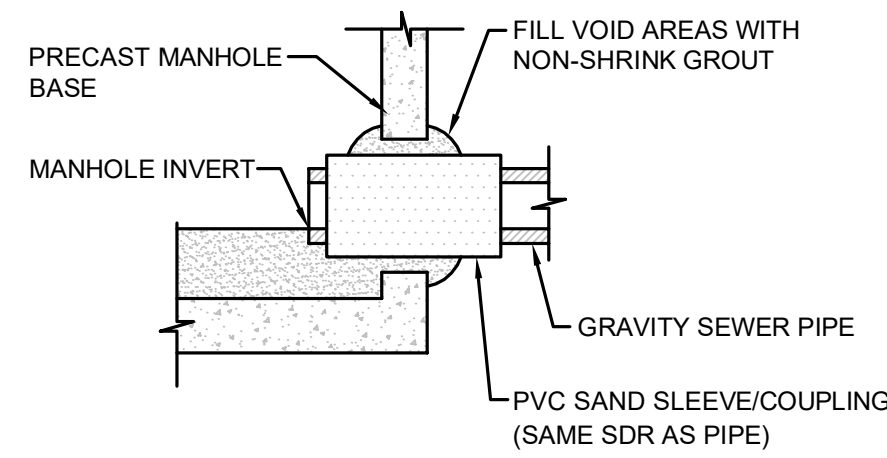
PLATES S-4, S-5

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

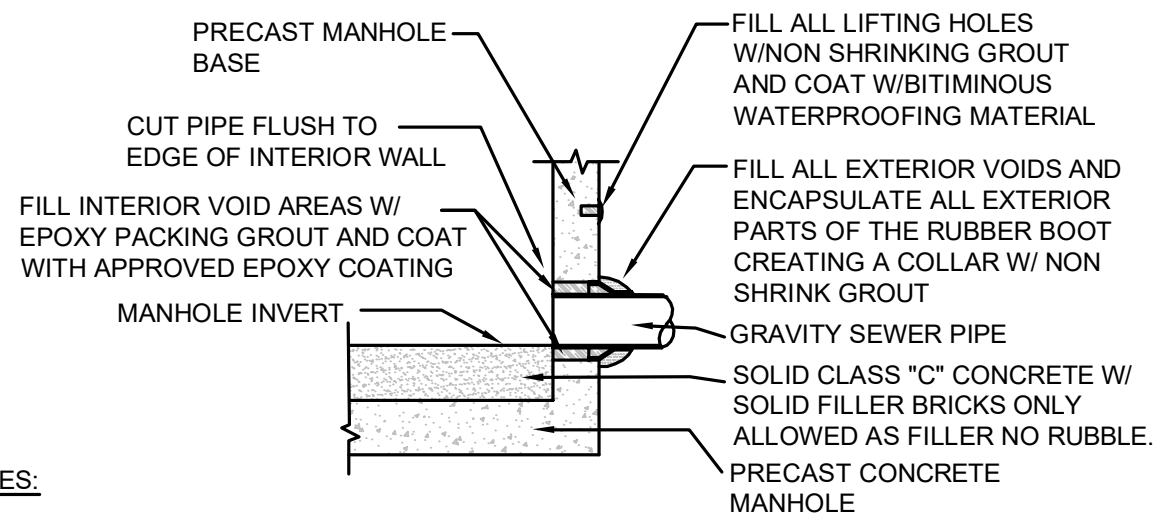
JANUARY 2019

PLATES S-7A, S-8

<p>ETM VISION • EXPERIENCE • RESULTS 14775 Old St. Augustine Road Jacksonville, FL 32218 TEL: (904) 642-8890 FAX: (904) 642-8891 CA - 000284 LC - 000316</p>		REVISIONS	
		NO. BY DATE	
<p>THESE DETAILS AS SHOWN ON THIS DRAWING ARE BY THE JEA. WE TAKE NO EXCEPTION TO THE DESIGN</p>	DESIGN ENGINEER	ANDREW J. BOOTH	
	DRAWN BY	ANDREW J. BOOTH	
	CHECKED BY	FLORIDA REGISTRATION NO. 82302	
<p>JEA Building Communitysm</p>		<p>JEA STANDARD SANITARY SEWER DETAILS OAKLEAF CORNER OUTPARCEL 3</p>	
PROJ. NO.	19-227	DATE	JANUARY 2019
SHEET NO.	1	SCALE	AS NOTED
DRAWING NO.	9G		



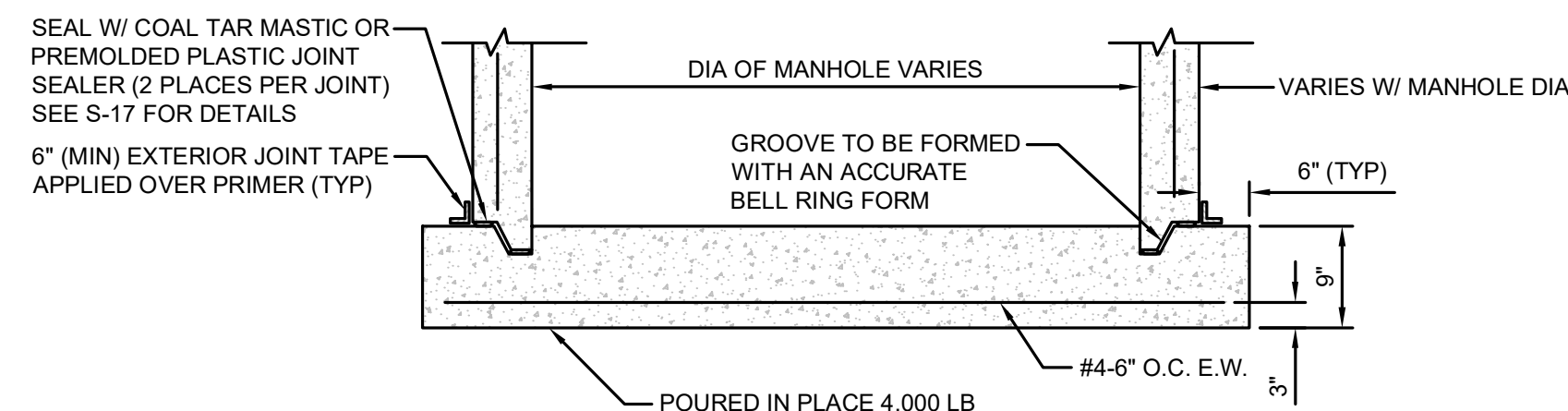
PVC SAND SLEEVE
(FOR EXISTING AND NEW MH CONSTRUCTION)



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 MH CONSTRUCTION ONLY, MAXIMUM DEPTH 15FT)



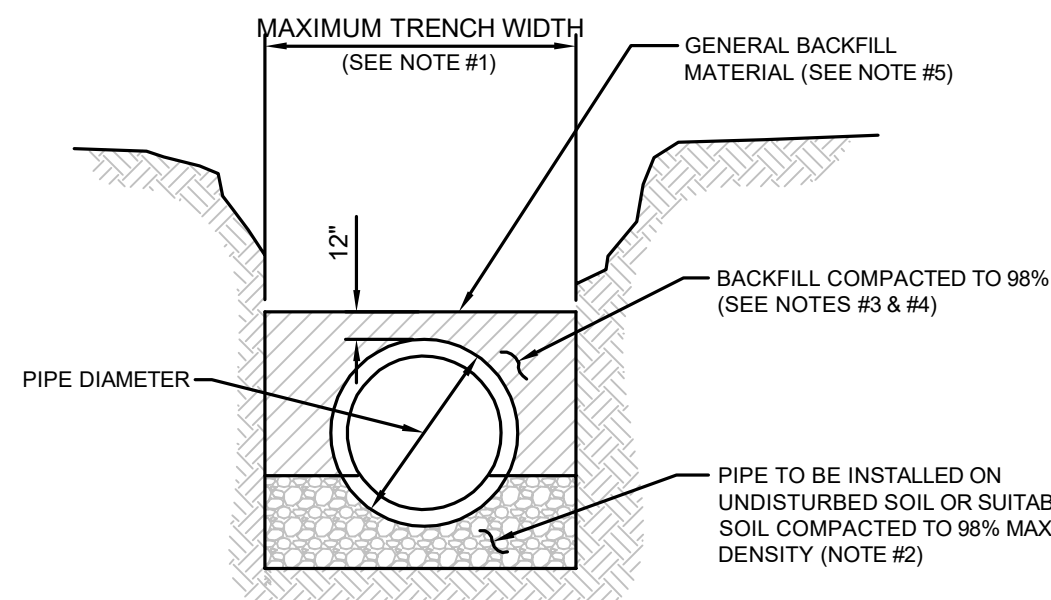
NOTES:

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

MANHOLE BOTTOM

CONCRETE MANHOLE PIPE CONNECTION DETAIL

JANUARY 2019 PLATE S-15



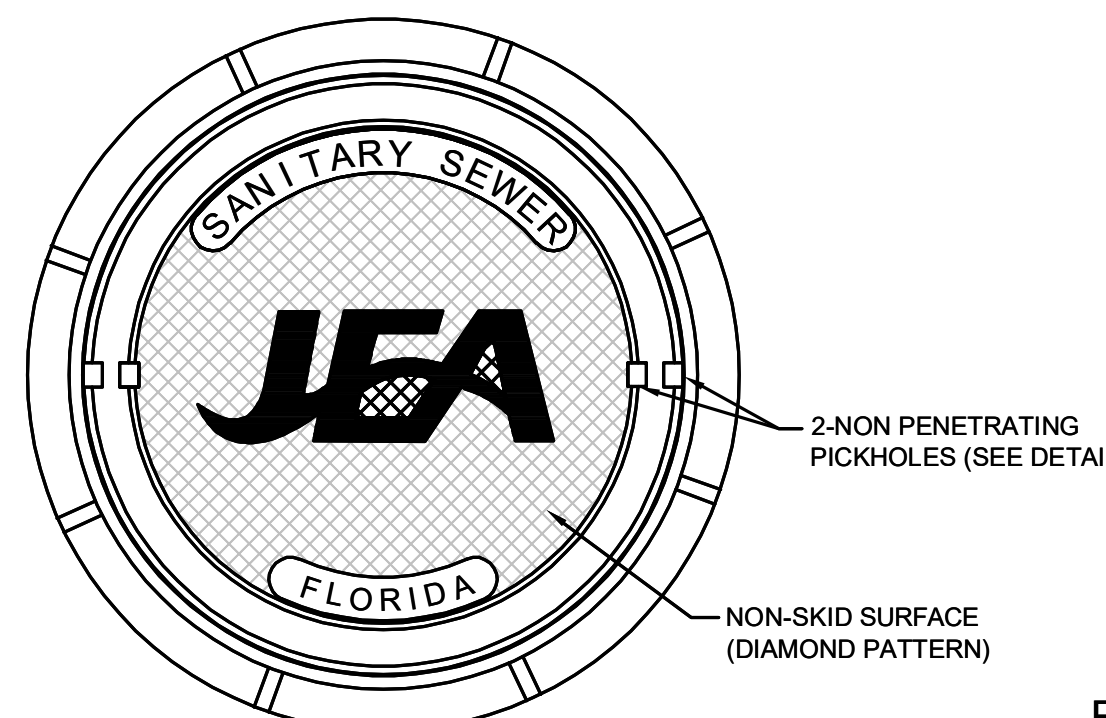
TYPICAL TRENCH

NOTES:

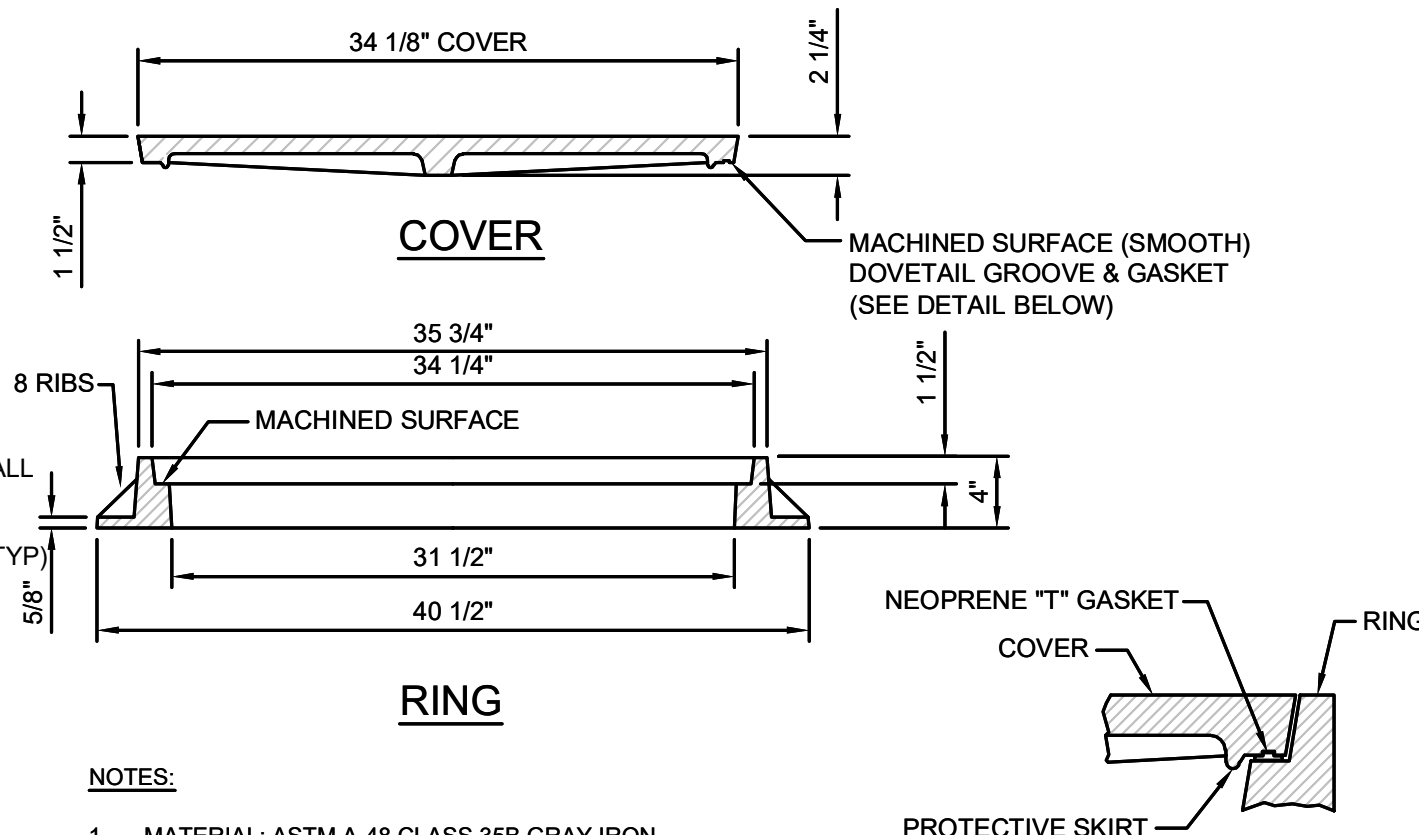
- TRENCH SIDES SHALL BE APPROXIMATELY VERTICAL BETWEEN AN ELEVATION OF 1 FOOT ABOVE THE TOP OF THE PIPE AND THE CENTER LINE OF THE PIPE. OTHERWISE, TRENCH SIDES SHALL BE AS VERTICAL AS POSSIBLE OR AS REQUIRED BY OSHA STANDARDS. REFER TO THE MEASUREMENT AND PAYMENT SECTION (SECTION #801, PARAGRAPH #4) TO DETERMINE MAXIMUM PAYLINE WIDTHS.
- 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.
- 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.
- 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.
- 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 2019 IN CITY RIGHT-OF-WAY PLATE W-42



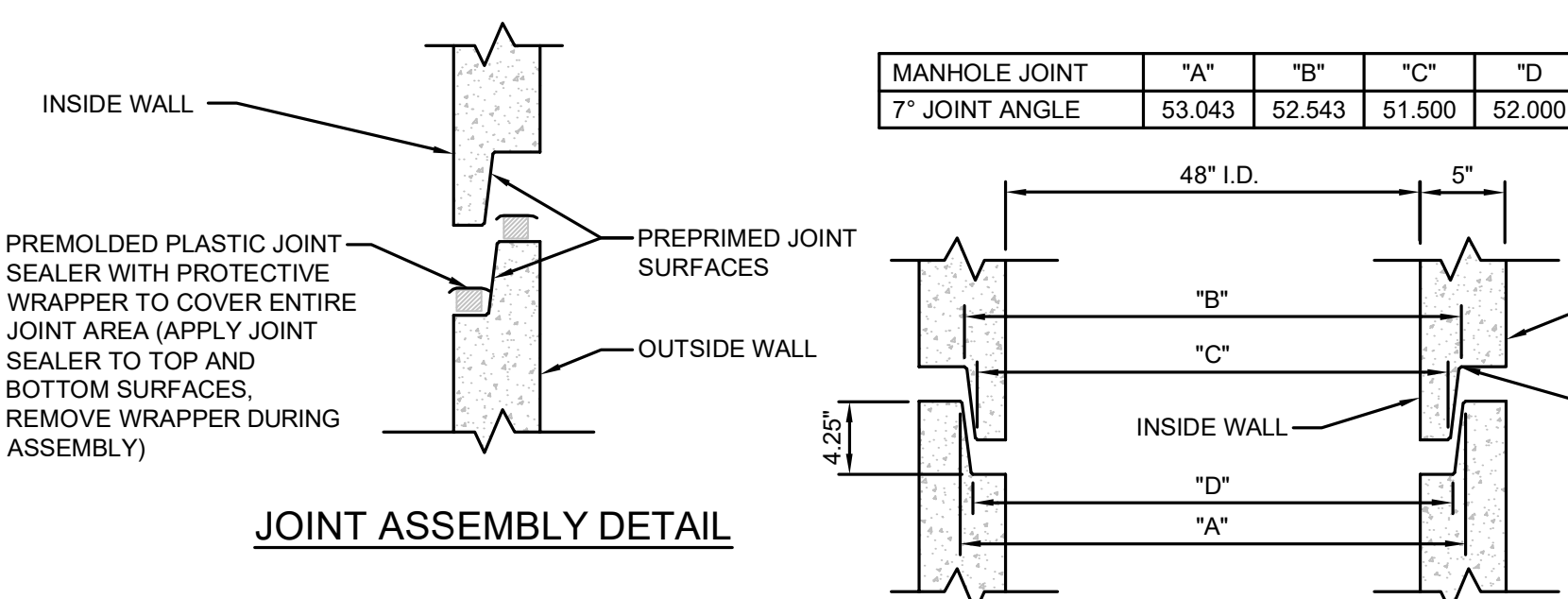
PICKHOLE DETAIL



NOTES:

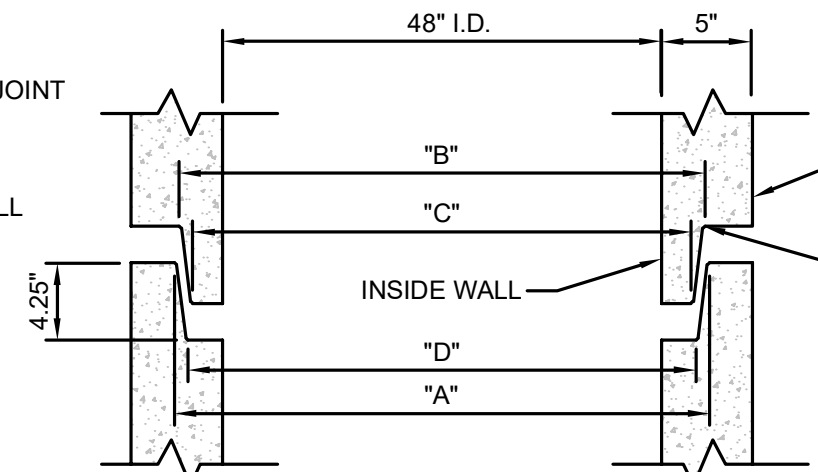
- MATERIAL: ASTM A-48 CLASS 35B GRAY IRON.
- RING WEIGHT 230 LBS APPROX.
- COVER WEIGHT 230 LBS. APPROX.
- ALL DIMENSIONS ARE SHOWN IN INCHES.
- FOR MANHOLES WHICH WILL BE MAINTAINED BY JEA (INCLUDING UTILITY DEDICATION PROJECTS), THE COVER SHALL INCLUDE THE "JEA" LOGO AND A NEOPRENE GASKET.
- FOR MANHOLES 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).

GROOVE & GASKET DETAIL

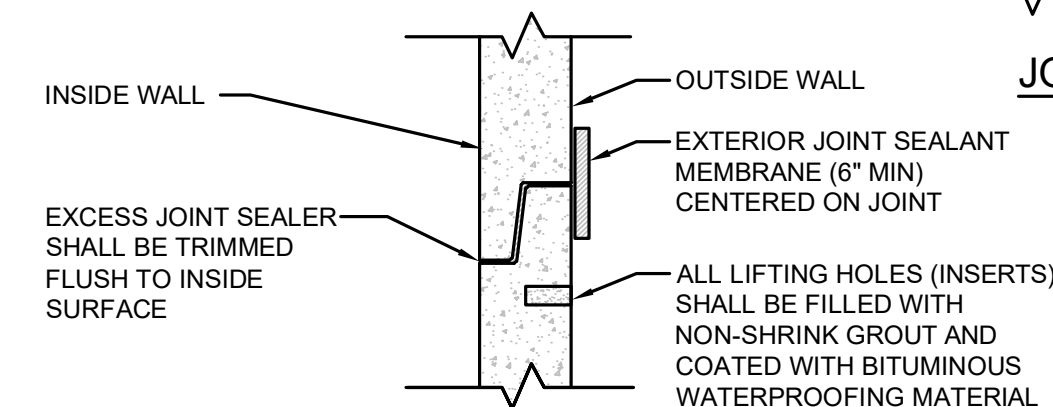


JOINT ASSEMBLY DETAIL

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



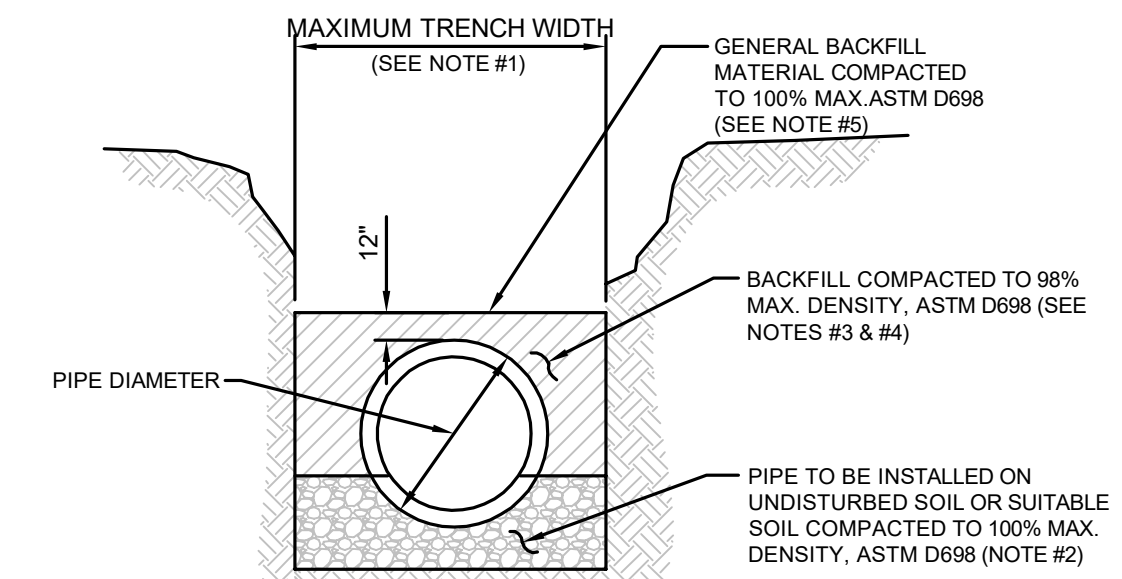
JOINT CONSTRUCTION DETAIL



COMPLETED JOINT DETAIL

PRECAST CONCRETE SEWER MANHOLE JOINT DETAIL

JANUARY 2019 PLATE S-17



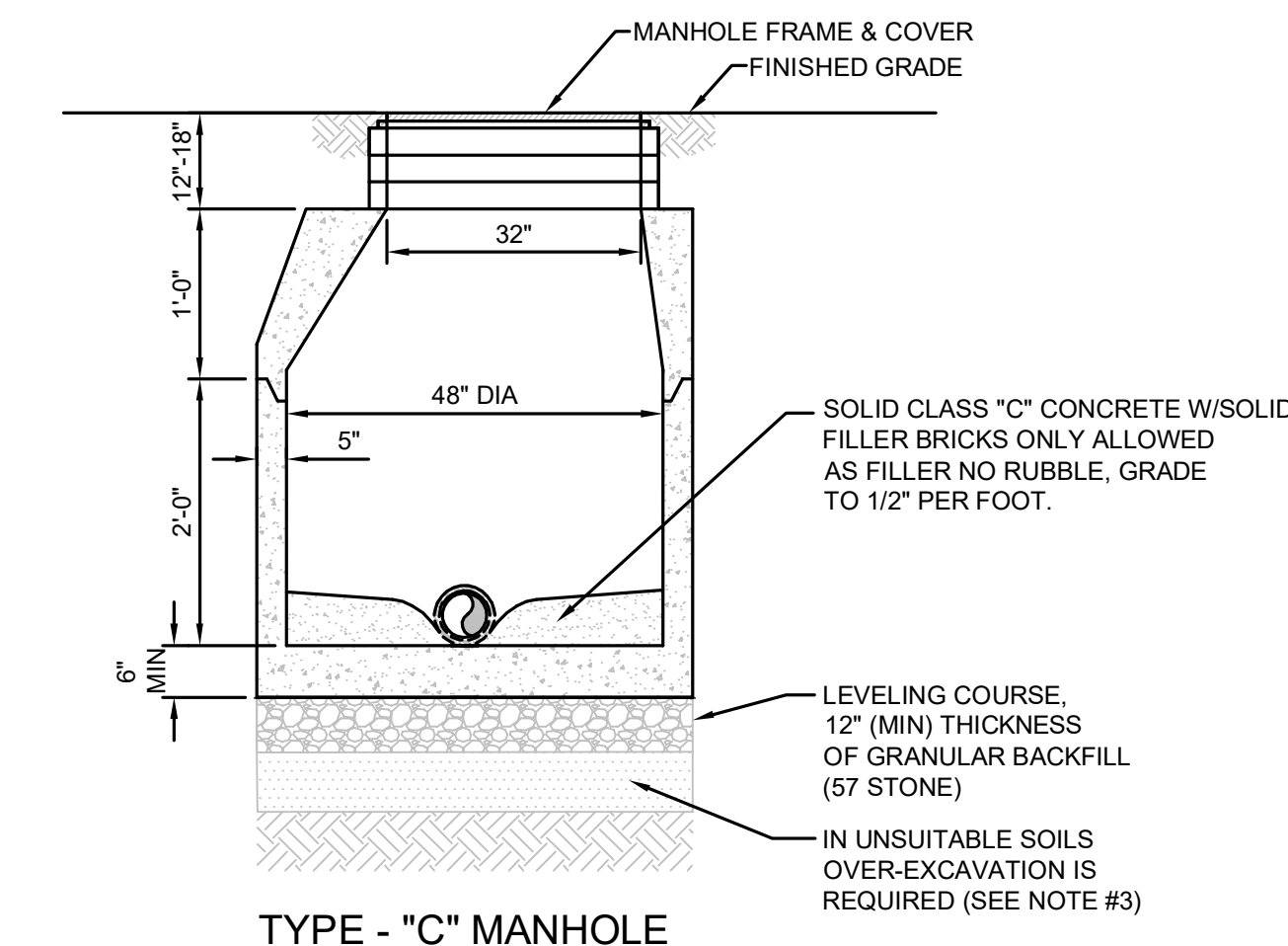
TYPICAL TRENCH

NOTES:

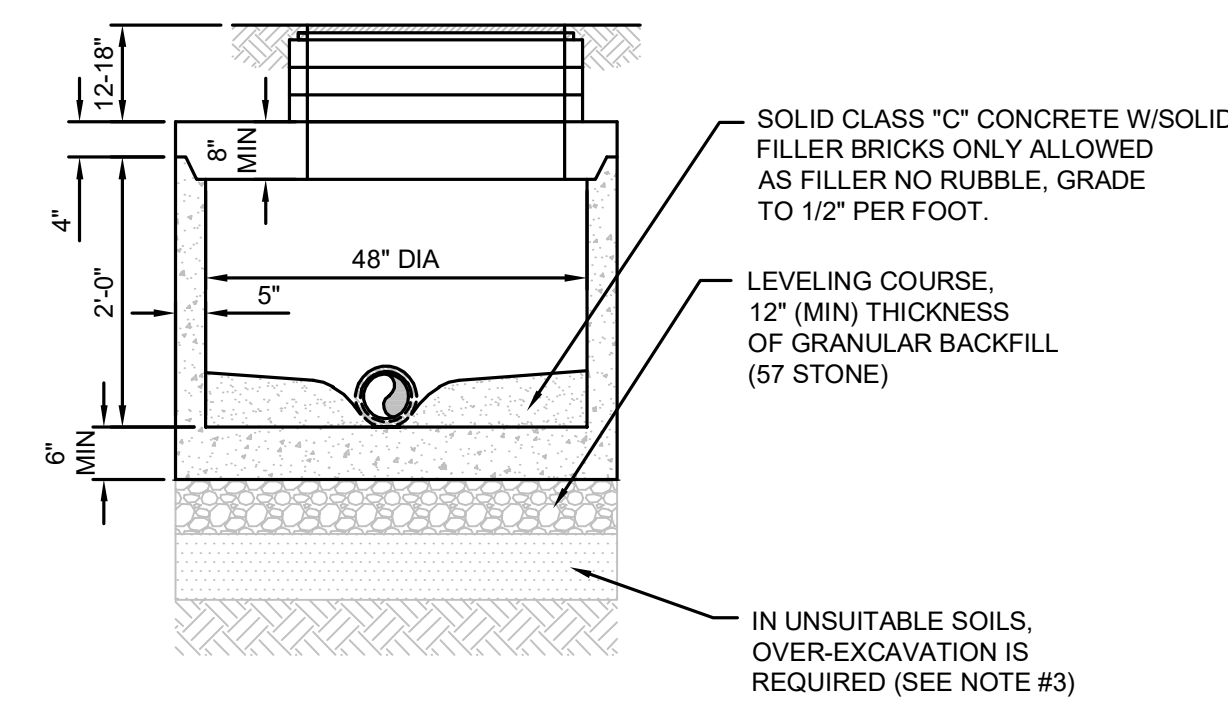
- TRENCH SIDES SHALL BE APPROXIMATELY VERTICAL BETWEEN AN ELEVATION OF 1 FOOT ABOVE THE TOP OF THE PIPE AND THE CENTER LINE OF THE PIPE. OTHERWISE, TRENCH SIDES SHALL BE AS VERTICAL AS POSSIBLE OR AS REQUIRED BY OSHA STANDARDS. REFER TO THE MEASUREMENT AND PAYMENT SECTION (SECTION #801, PARAGRAPH #4) TO DETERMINE MAXIMUM PAYLINE WIDTHS.
- 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.
- 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.
- 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 100% OF ITS MAXIMUM DENSITY AS DETERMINED BY THE LABORATORY MODIFIED PROCTOR TEST, ASTM D698.
- SEE "EXCAVATION AND EARTHWORK", SECTION 408 FOR ADDITIONAL REQUIREMENTS AND EXCEPTIONS INCLUDING REMOVAL AND REPLACEMENT OF UNSUITABLE SOILS, DEWATERING, COMPACTION REQUIREMENTS AND DENSITY TESTING OF COMPACTED SOILS.

OPEN CUT TRENCH FOR PRESSURE PIPE

JANUARY 2019 IN STATE ROAD RIGHT-OF-WAY PLATE W-42A



TYPE - "C" MANHOLE



TYPE - "C" MANHOLE WITH FLAT TOP

SECTION VIEWS

NOTES:

- 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.
- THE INTERIOR AND EXTERIOR OF MANHOLE AND INTERIOR OF ADJUSTMENT RINGS SHALL BE GIVEN TWO COAT OF BITUMINOUS WATERPROOFING MATERIAL.
- 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 CONCRETE TYPE "C" MANHOLE
8"-21" SEWERS**

JANUARY 2019 PLATE S-6

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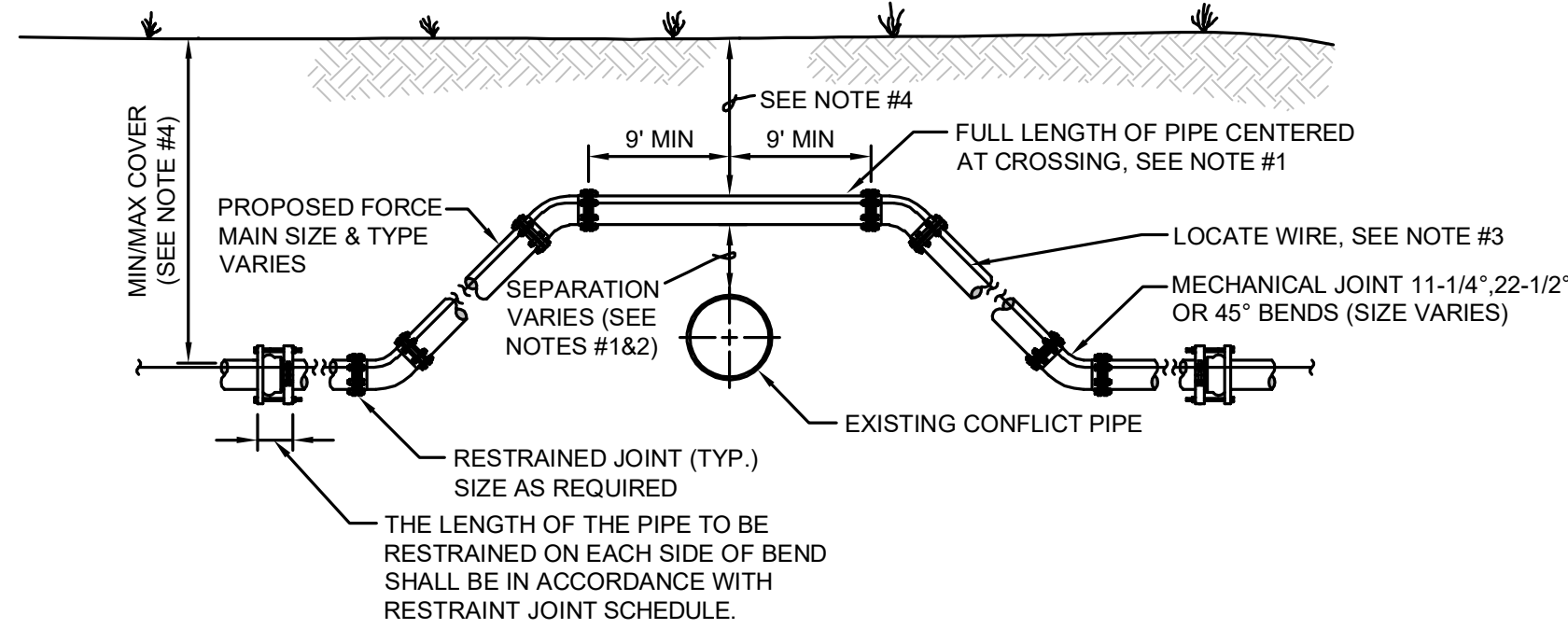
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DESIGNER: ANDREW J. BOOTH
DRAWN BY: ANDREW J. BOOTH
CHECKED BY: ANDREW J. BOOTH
DATE: 01/15/19
FLORIDA REGISTRATION NO. 82302

JEA STANDARD
SANITARY SEWER DETAILS
OAKLEAF CORNER OUTPARCEL 3

PROJ. NO. 19-227
DATE: JANUARY 2019
SCALE: AS NOTED

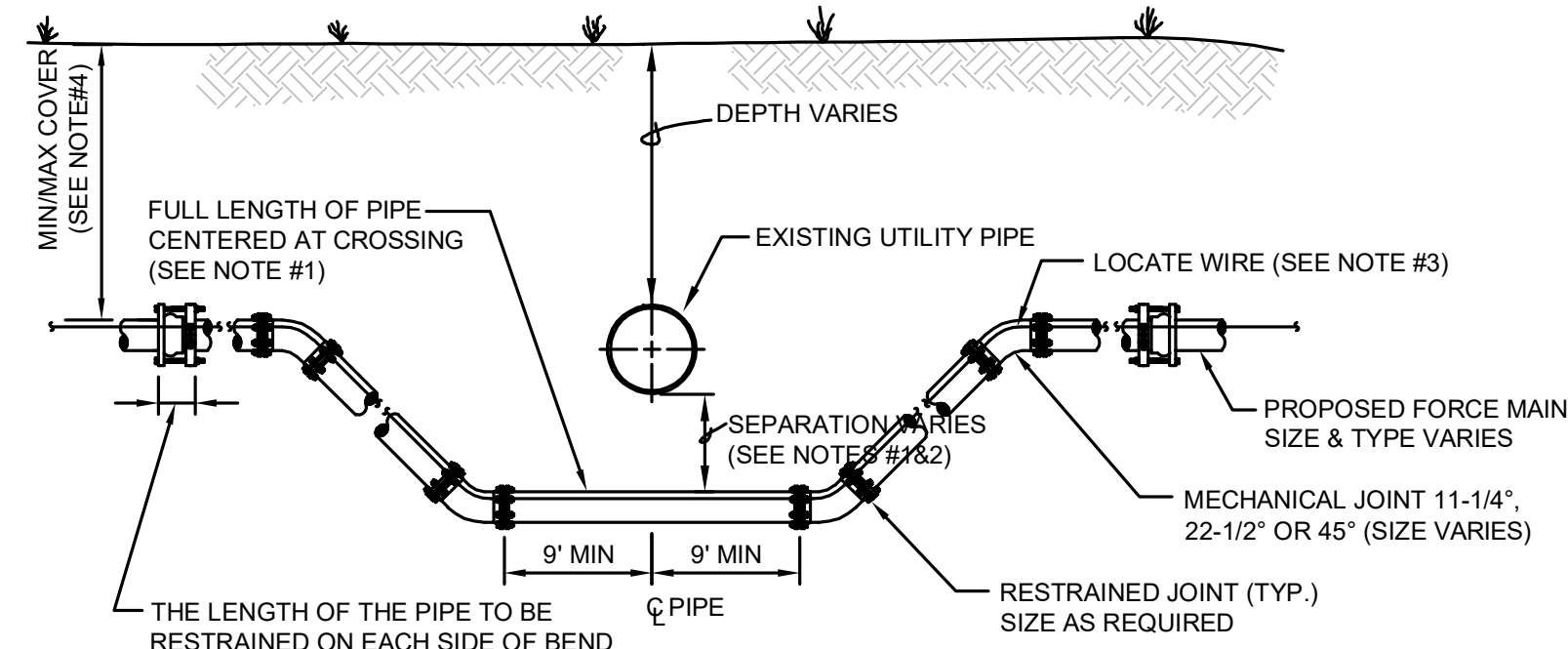
NO. SHEETS 5
SHEET NO. 2
DRAWING NO. 5H



CASE "A" CROSSING

NOTES:

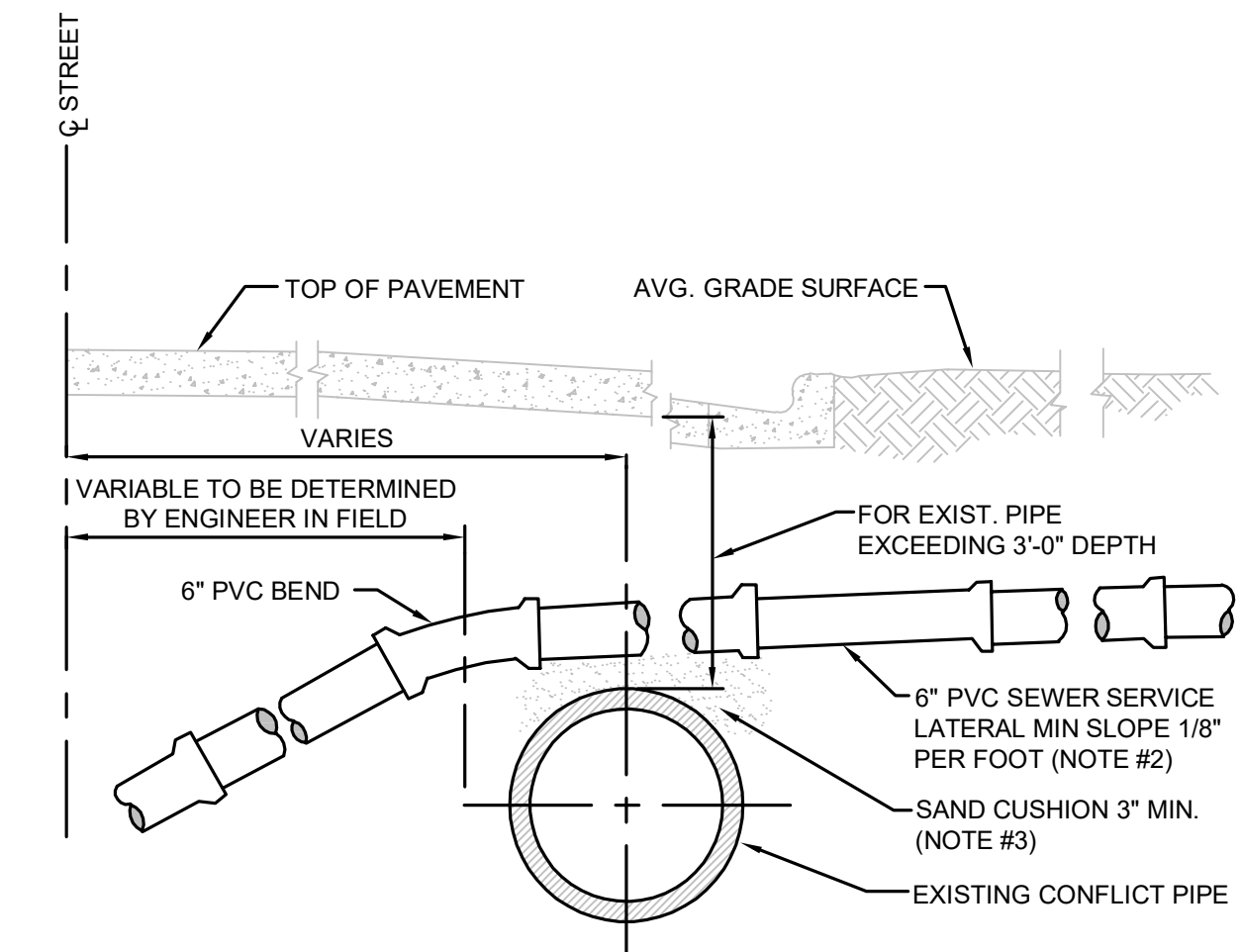
- IF EXISTING CONFLICT PIPE IS A WATER OR RECLAIMED WATER MAIN, 12-INCHES OF SEPARATION IS REQUIRED. A FULL LENGTH OF PIPE SHALL BE CENTERED OVER EXISTING UTILITY MAIN TO PROVIDE MAXIMUM JOINT SPACING FOR ALL CROSSINGS.
- FOR OTHER LOCATION LIMITATIONS SEE DETAIL (S-26 & S-27).
- LOCATING WIRE REQUIRED; 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.



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.



NOTES:

- ALTERNATE GRADIENT FOR 6 INCH LATERAL SEWERS AT CONFLICTS WITH EXISTING UTILITIES.
- FLATTER SLOPES MUST BE PRE-APPROVED BY JEA O&M MANAGER (ONLY) PRIOR TO CONSTRUCTION.
- 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.

**ADJUSTMENT UNDER EXISTING UTILITIES
MECHANICAL RESTRAINTS**

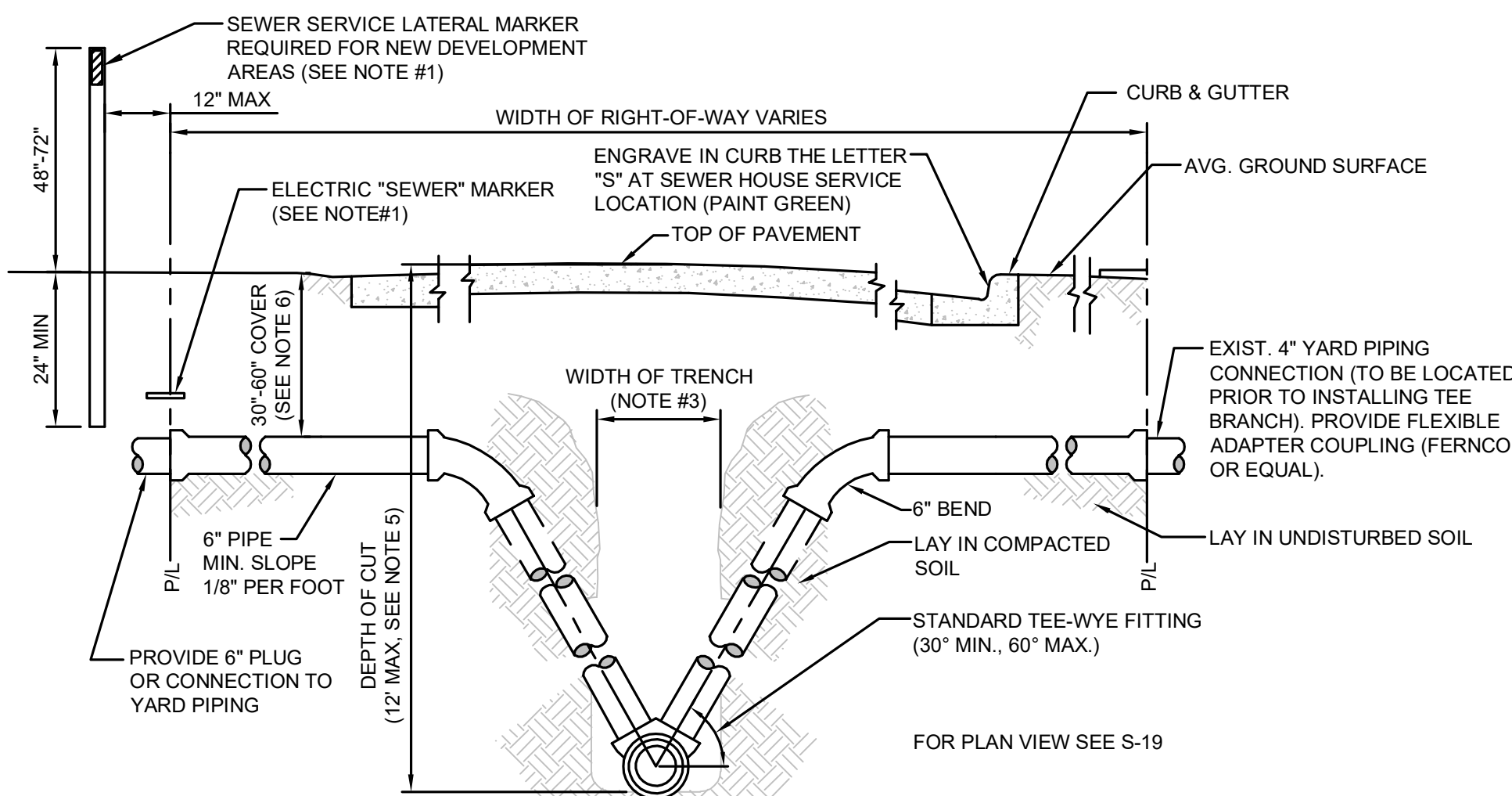
JANUARY 2019

PLATE S-41

**ADJUSTMENT OVER EXISTING UTILITIES
MECHANICAL RESTRAINTS**

JANUARY 2019

PLATE S-39



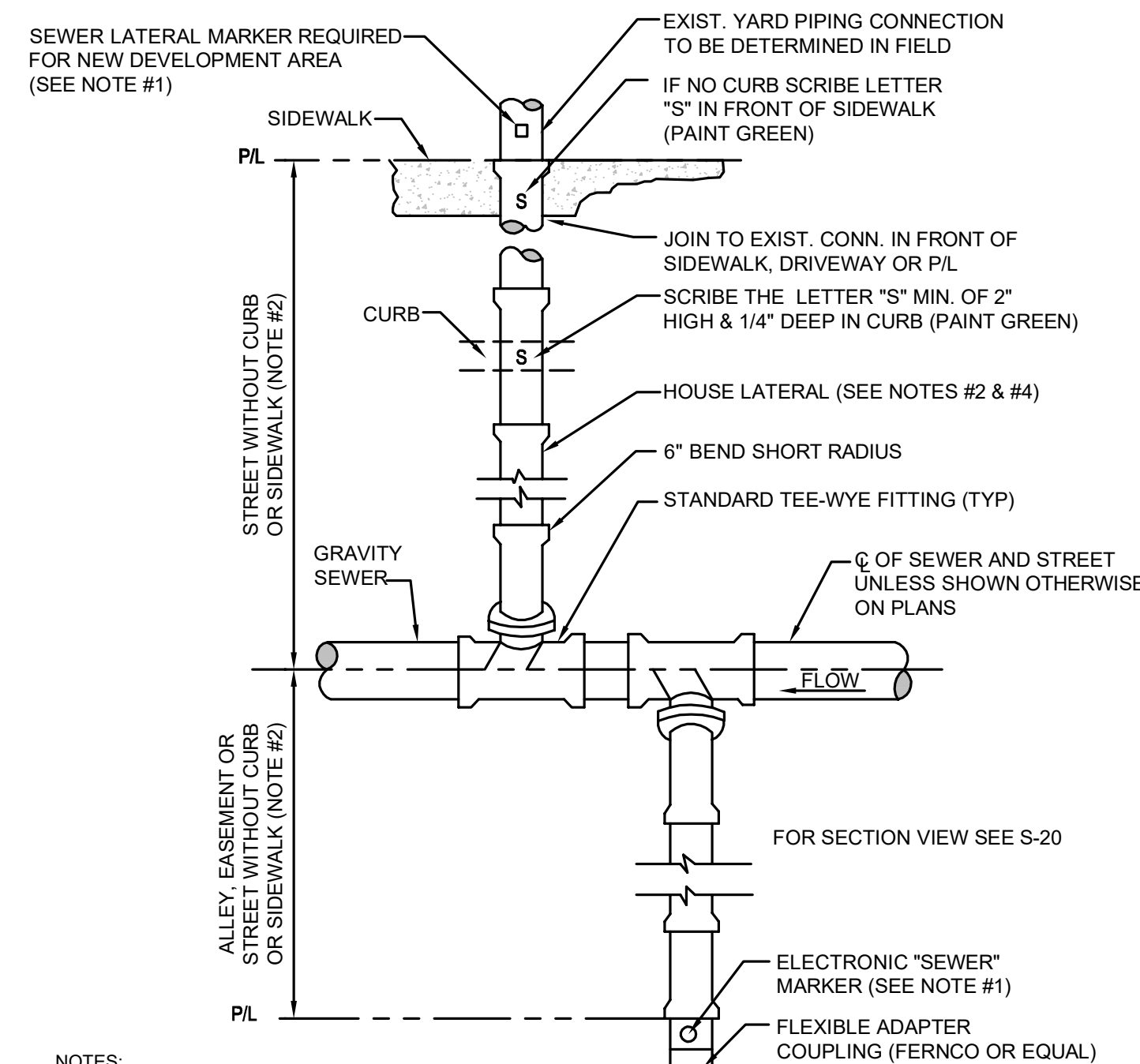
NOTES:

- 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 BEING INSTALL FOR FUTURE USE AT A MAX DEPTH OF 3' AT FINISH GRADE. 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 FITTINGS) 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 2019

PLATE S-20



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 BEING INSTALL FOR FUTURE USE AT A MAX DEPTH OF 3' AT FINISH GRADE. 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

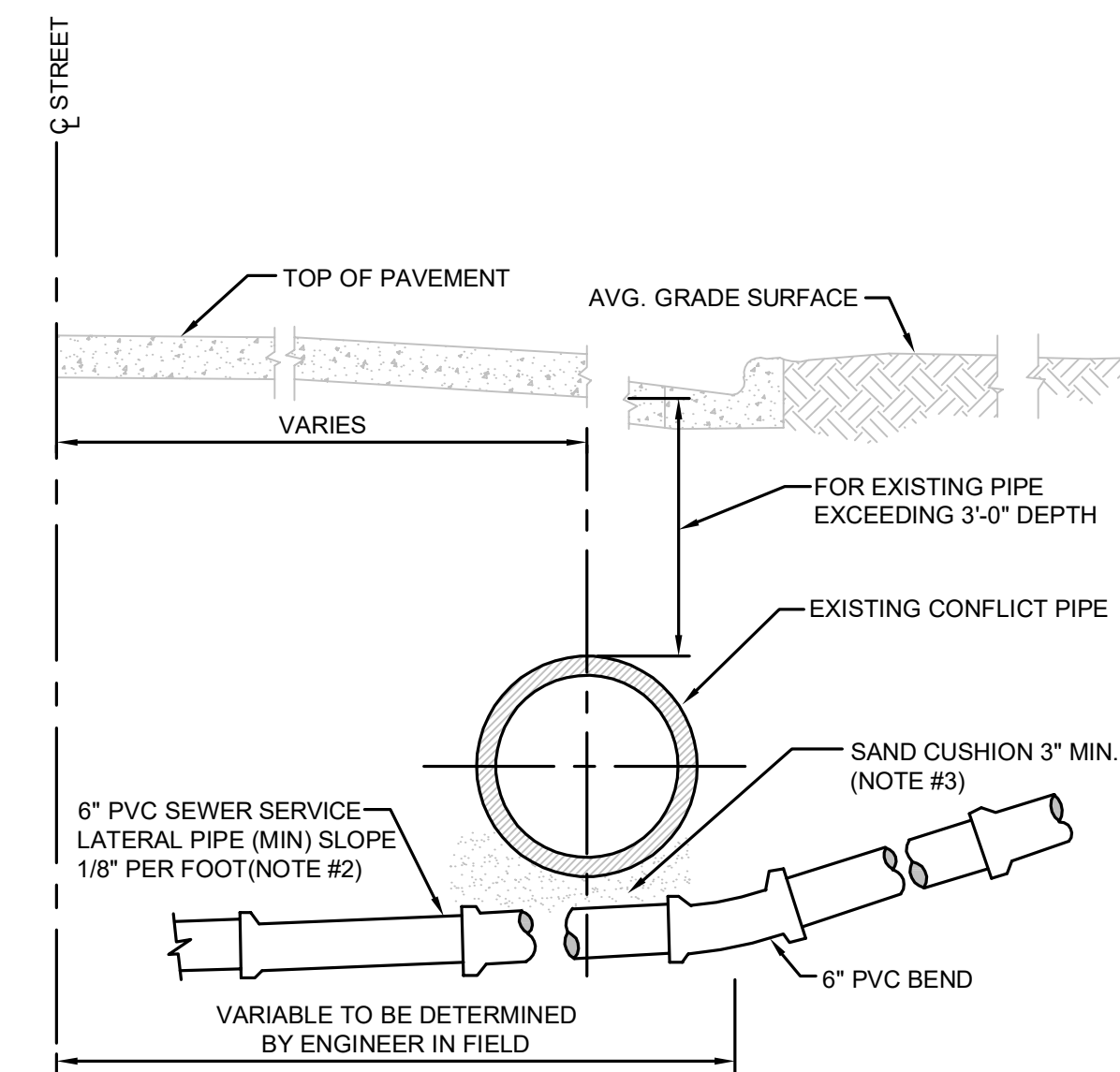
JANUARY 2019

PLATE S-19

HOUSE LATERAL OVER CONFLICT PIPE

JANUARY 2019

PLATE S-23



NOTES:

- ALTERNATE GRADIENT FOR 6 INCH LATERAL SEWERS AT CONFLICTS WITH EXISTING UTILITIES.
- FLATTER SLOPE MUST BE PRE-APPROVED BY JEA O&M MANAGER (ONLY) PRIOR TO CONSTRUCTION.
- 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.

HOUSE LATERAL UNDER CONFLICT PIPE

JANUARY 2019

PLATE S-24

T:\2019\19-227\LandDev\Design\Plats\19-227-JES SEWER DETS.dwg Current Layout Tab = 1 Tue Nov 26, 2019 15:06

Englund, Thoms & Miller, Inc.
14775 Old St. Augustine Road
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ETM
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DESIGNER: ANDREW J. BOOTH
DRAWN BY: ANDREW J. BOOTH
CHECKED BY: ANDREW J. BOOTH
DATE: 1/20/19

FLORIDA REGISTRATION NO. 82302

PROJ. NO. 19-227
DATE: JANUARY 2019
SCALE: AS NOTED

NO. SHEETS 5
SHEET NO. 3
DRAWING NO. 91

REVISIONS

NO. BY DATE

1. _____

2. _____

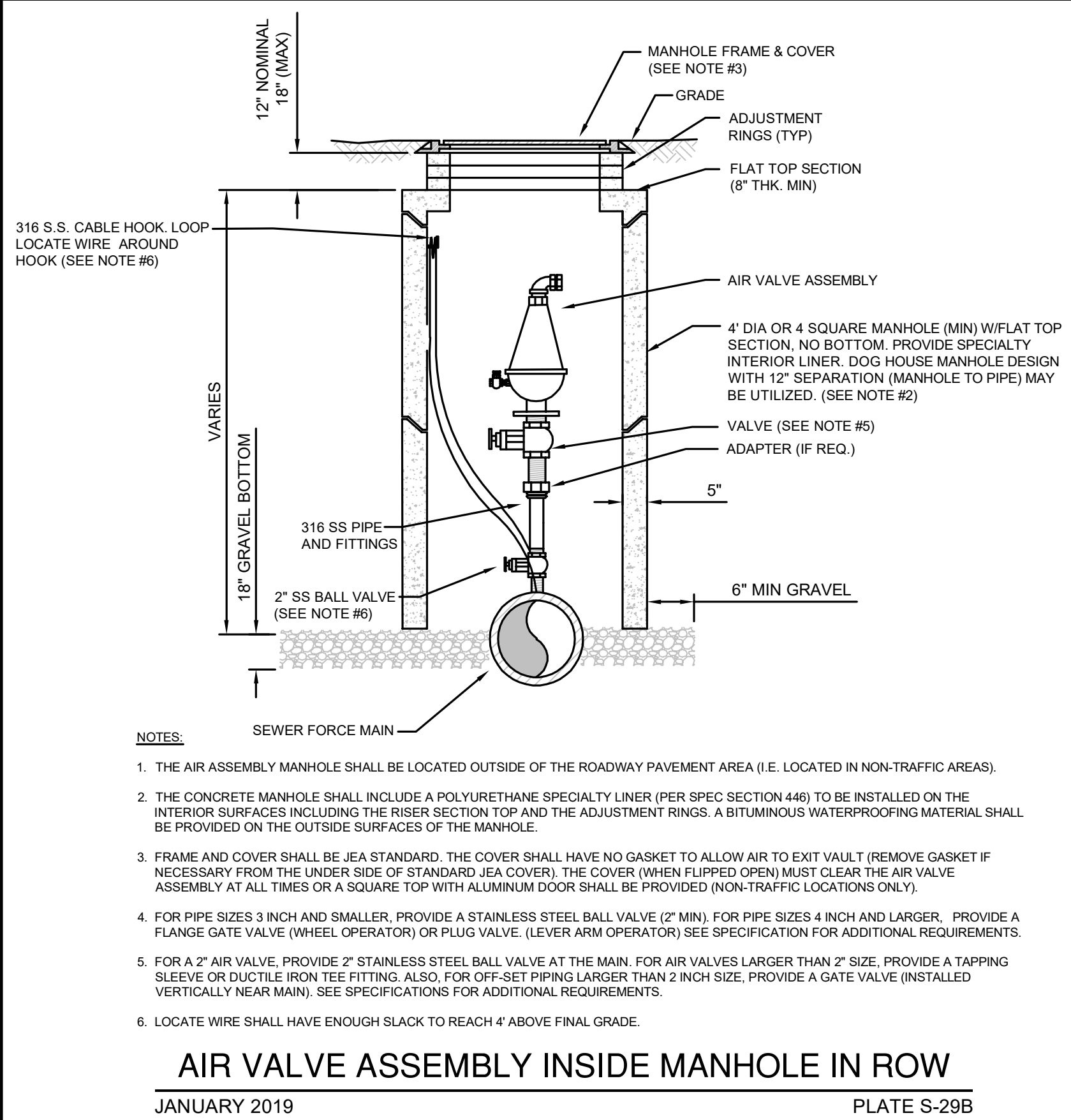
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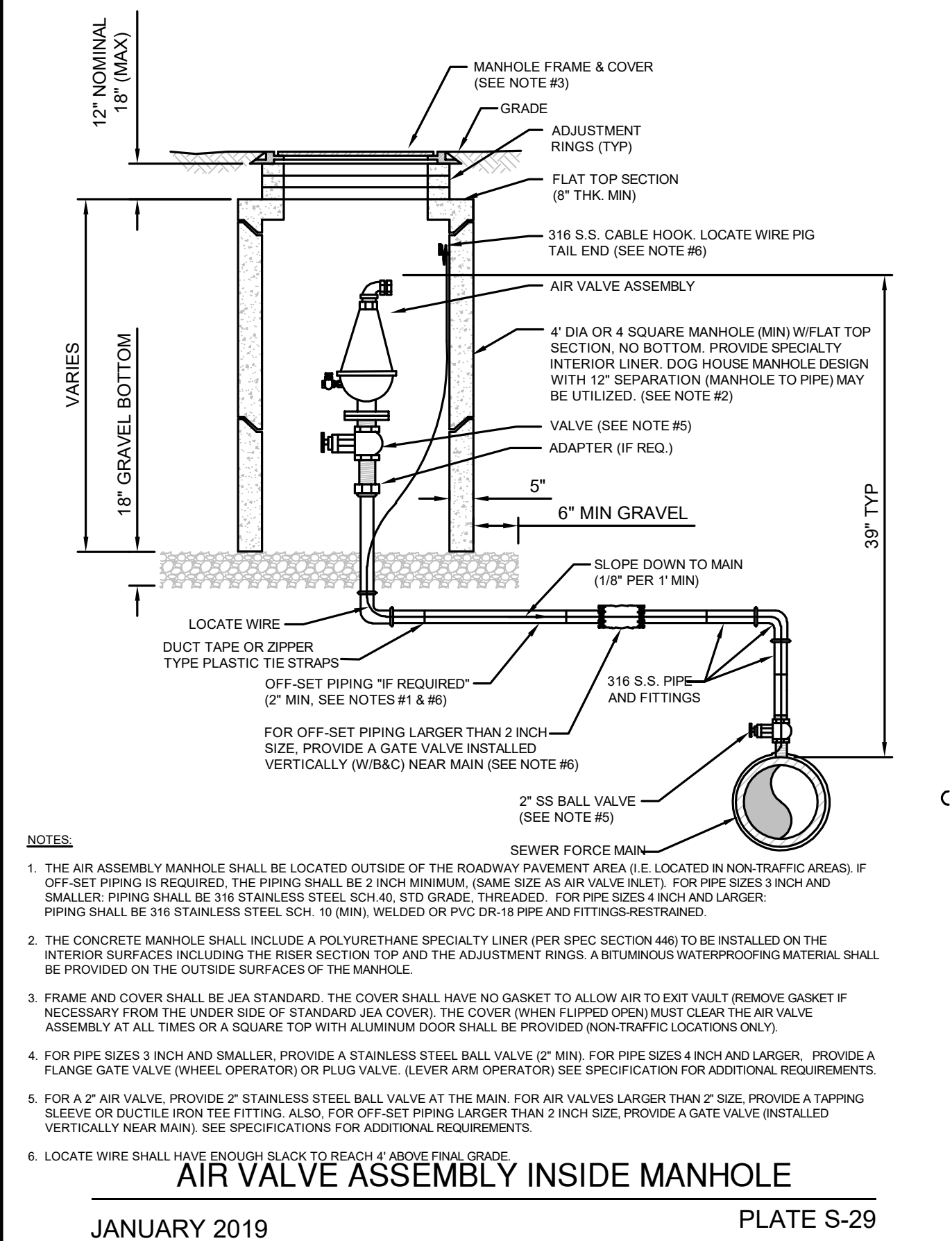
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JEA STANDARD
SANITARY SEWER DETAILS
OAKLEAF CORNER OUTPARCEL 3

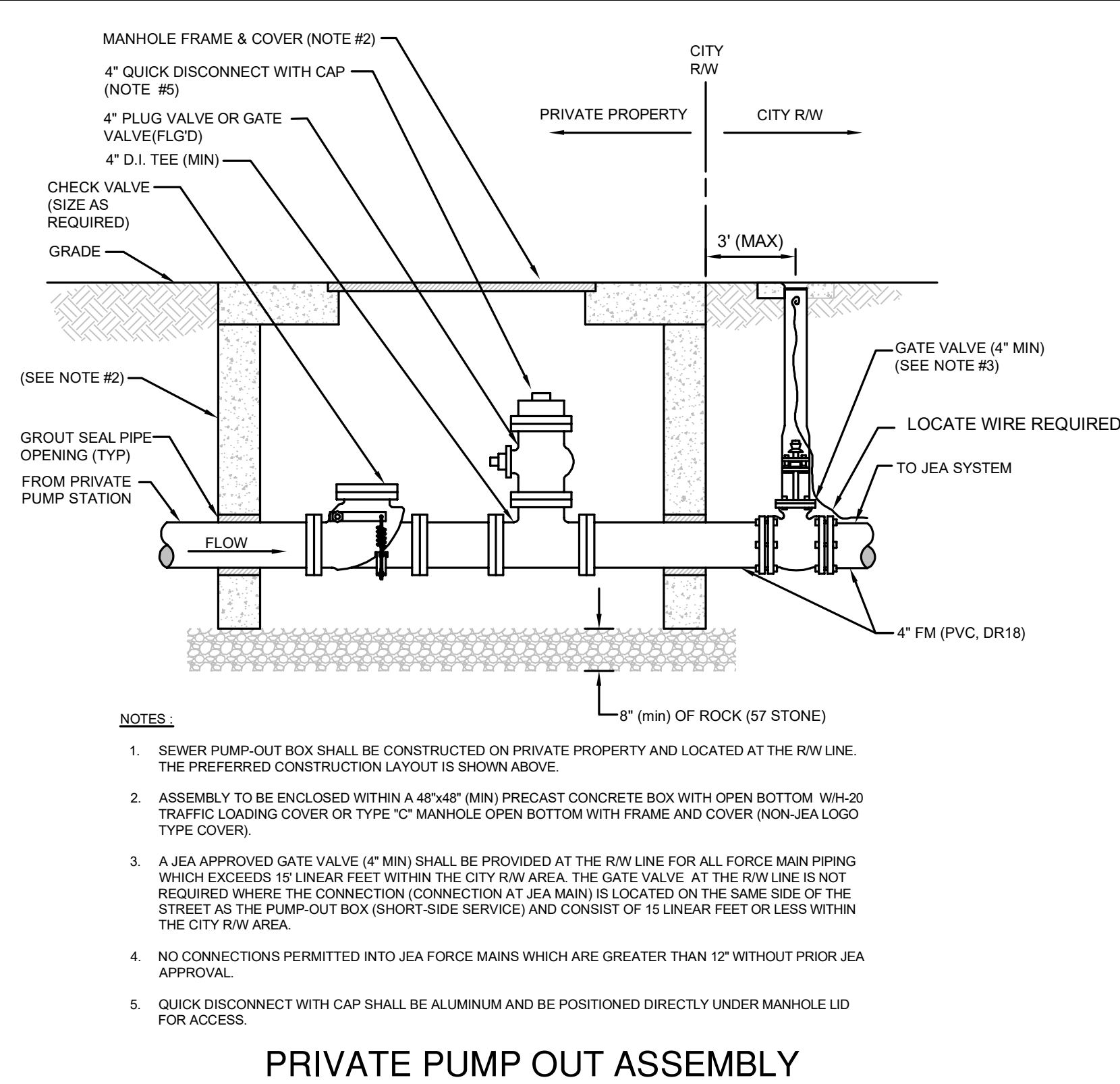
JEA
Building Communitysm



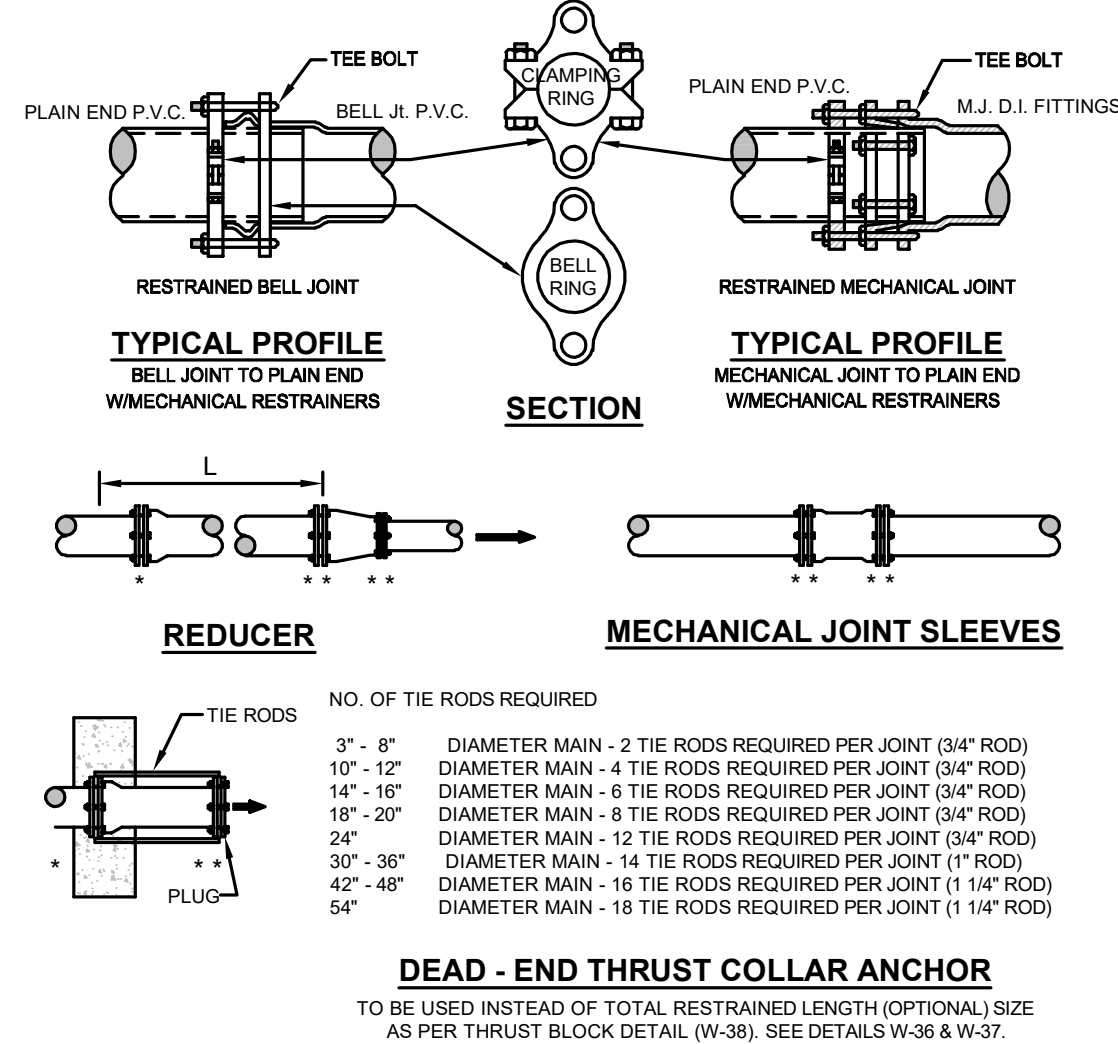
AIR VALVE ASSEMBLY INSIDE MANHOLE IN ROW
 JANUARY 2019 PLATE S-29B



AIR VALVE ASSEMBLY INSIDE MANHOLE
 JANUARY 2019 PLATE S-29



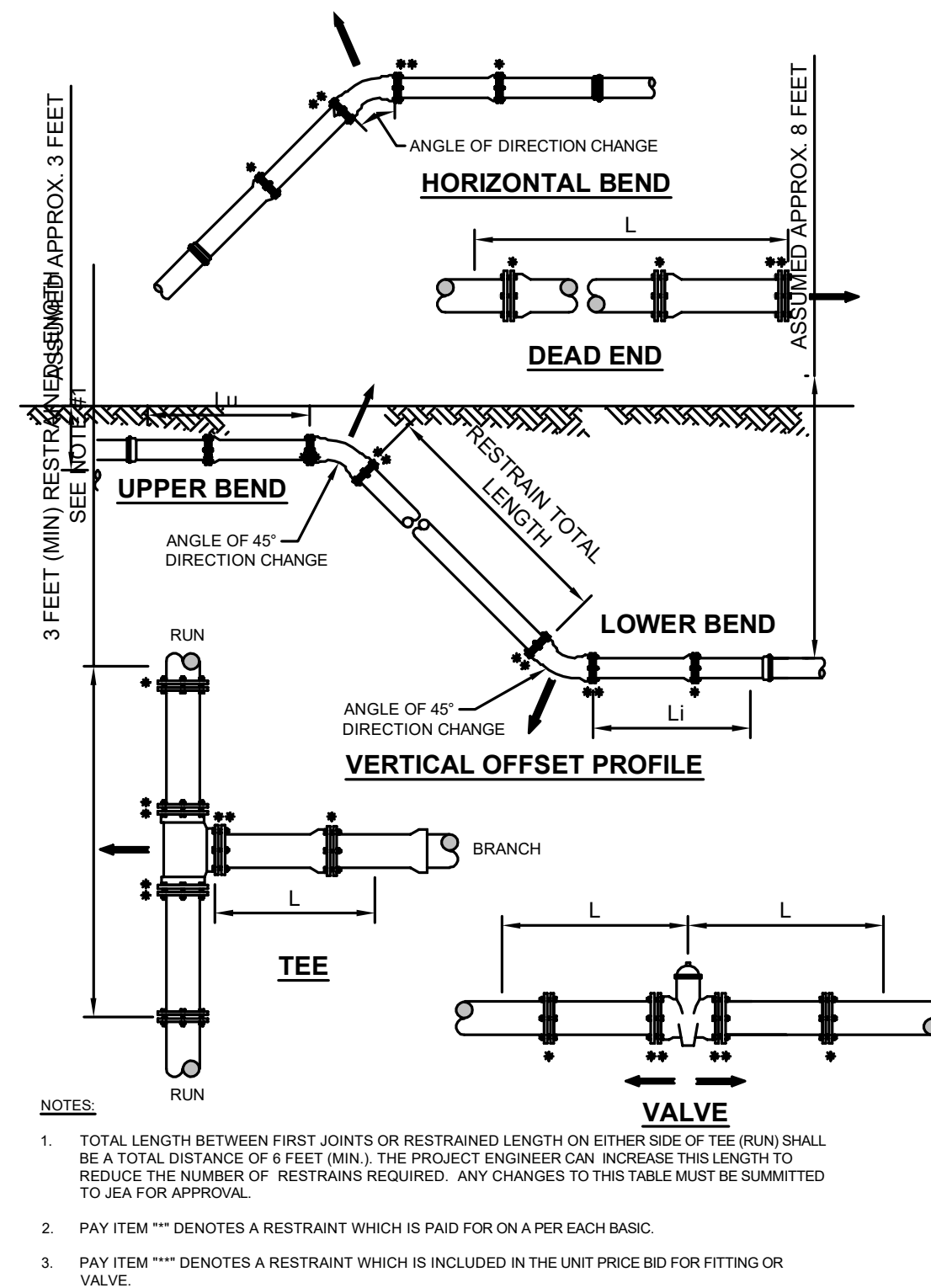
PRIVATE PUMP OUT ASSEMBLY
 JANUARY 2019 PLATE S-46



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 2019 PLATE S-38C



MECHANICAL RESTRAINT DETAILS - II
 JANUARY 2019 PLATE S-38D

LENGTH (L) TO BE RESTRAINED (SEE PLATE Nos. 38C & 38D FOR ADDITIONAL DETAILS)

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

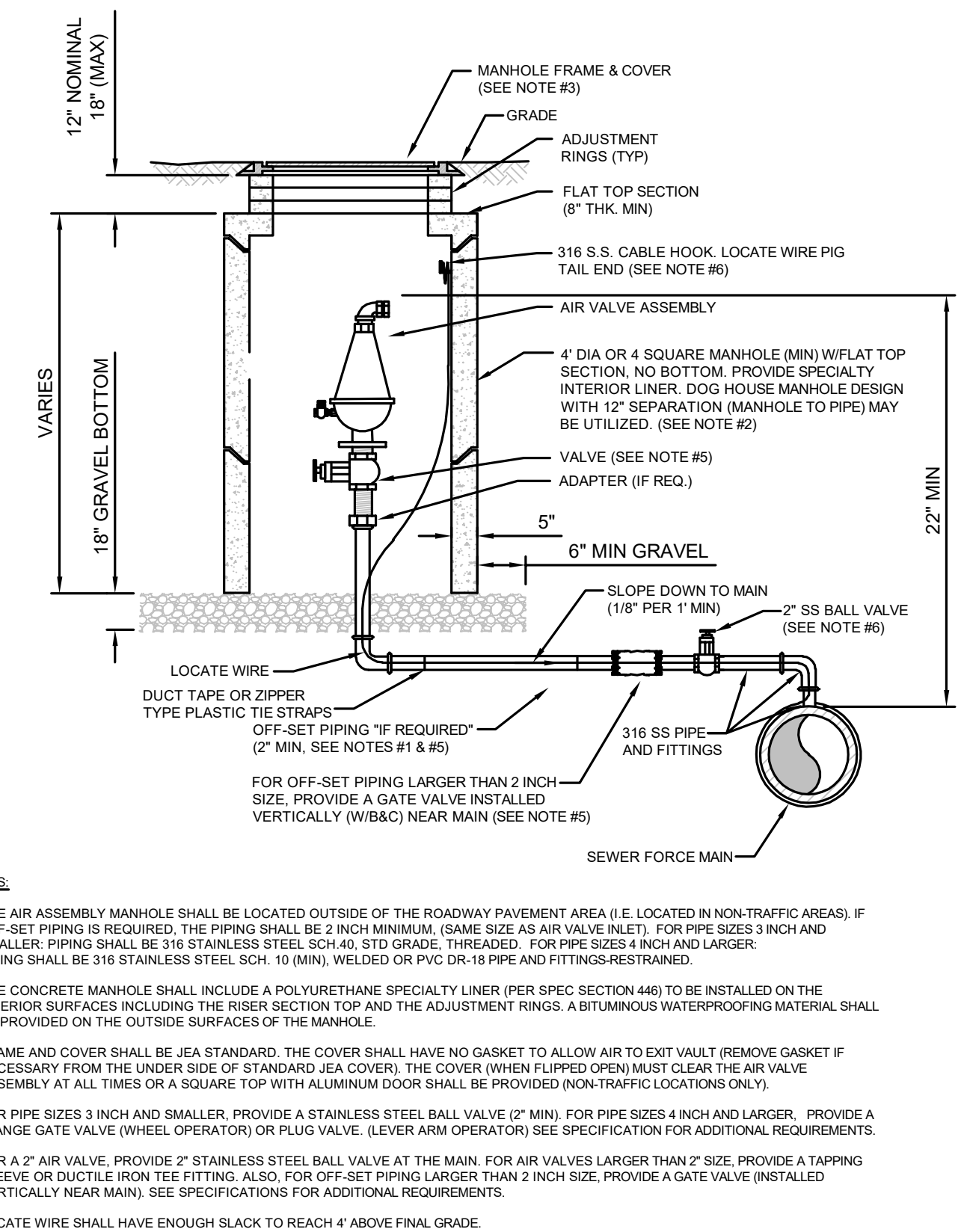
SIZE (IN.)	L (FT.)	TEES SEE NOTE 5	
		RUN SIZE (IN.)	BRANCH SIZE (IN.)
4	4	4	F.O.
6	6	4	10
8	8	4 < LESS	29
10	10	6 < LESS	45
12	12	8 < LESS	62
14	14	10 < LESS	83
16	16	12 < LESS	104
18	18	14 < LESS	124
20	20	16 < LESS	159
24	24	20 < LESS	209
30	30	24 < LESS	283
36	36	30 < LESS	362
42	42	36 < LESS	456
48	48	42 < LESS	564

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, L_U IS THE RESTRAINED LENGTH FOR THE UPPER (TOP) LEVEL. L_L 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 RESTRAINED LENGTH ON TEE "BRANCH" LINE.
- HOPE 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.

PVC PIPE RESTRAINT JOINT SCHEDULE

JANUARY 2019 PLATE S-38A



OPTIONAL LOW PROFILE AIR VALVE ASSEMBLY INSIDE MANHOLE
 JANUARY 2019 PLATE S-29A

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 FAX: (904) 642-8981
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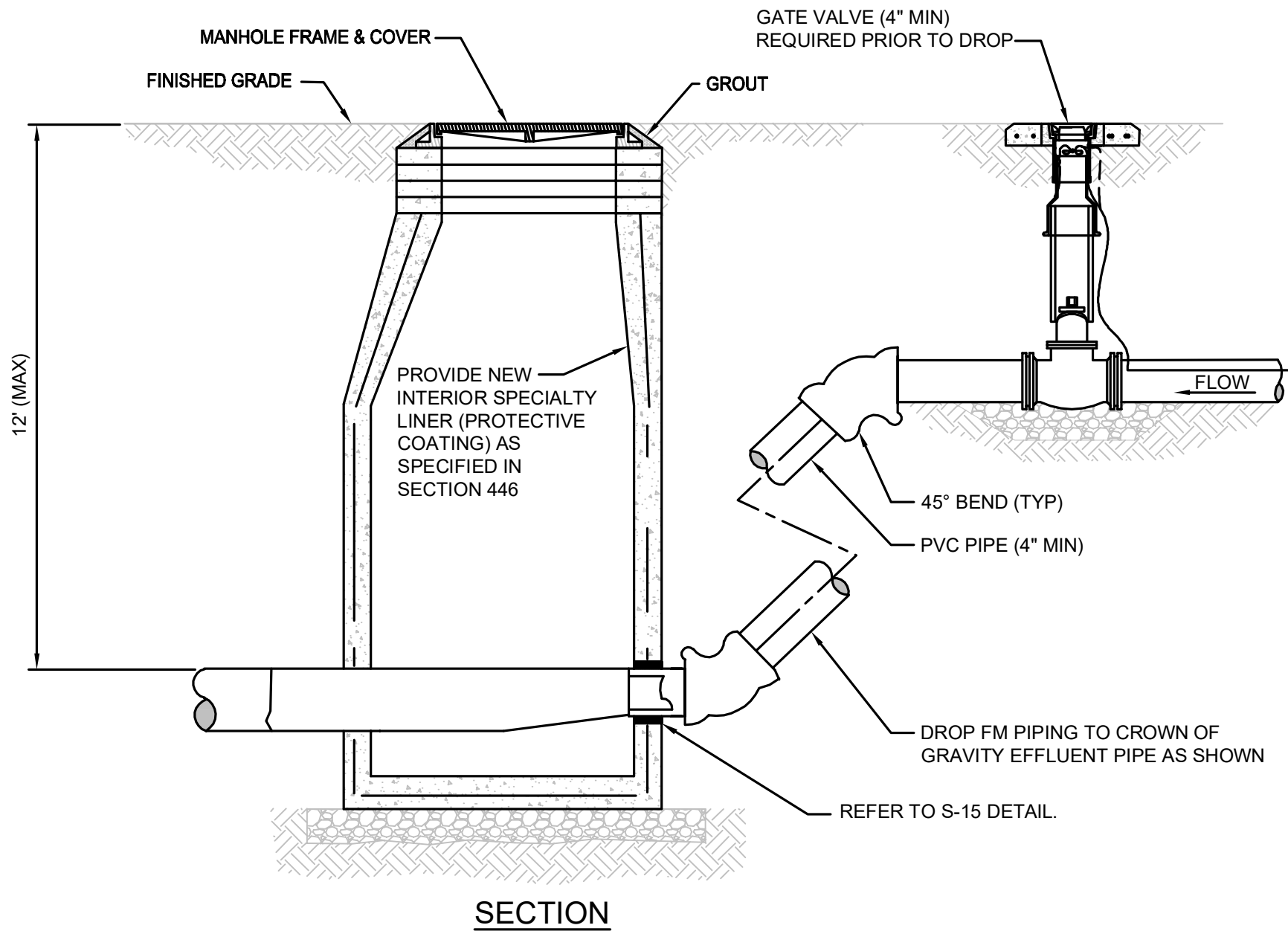
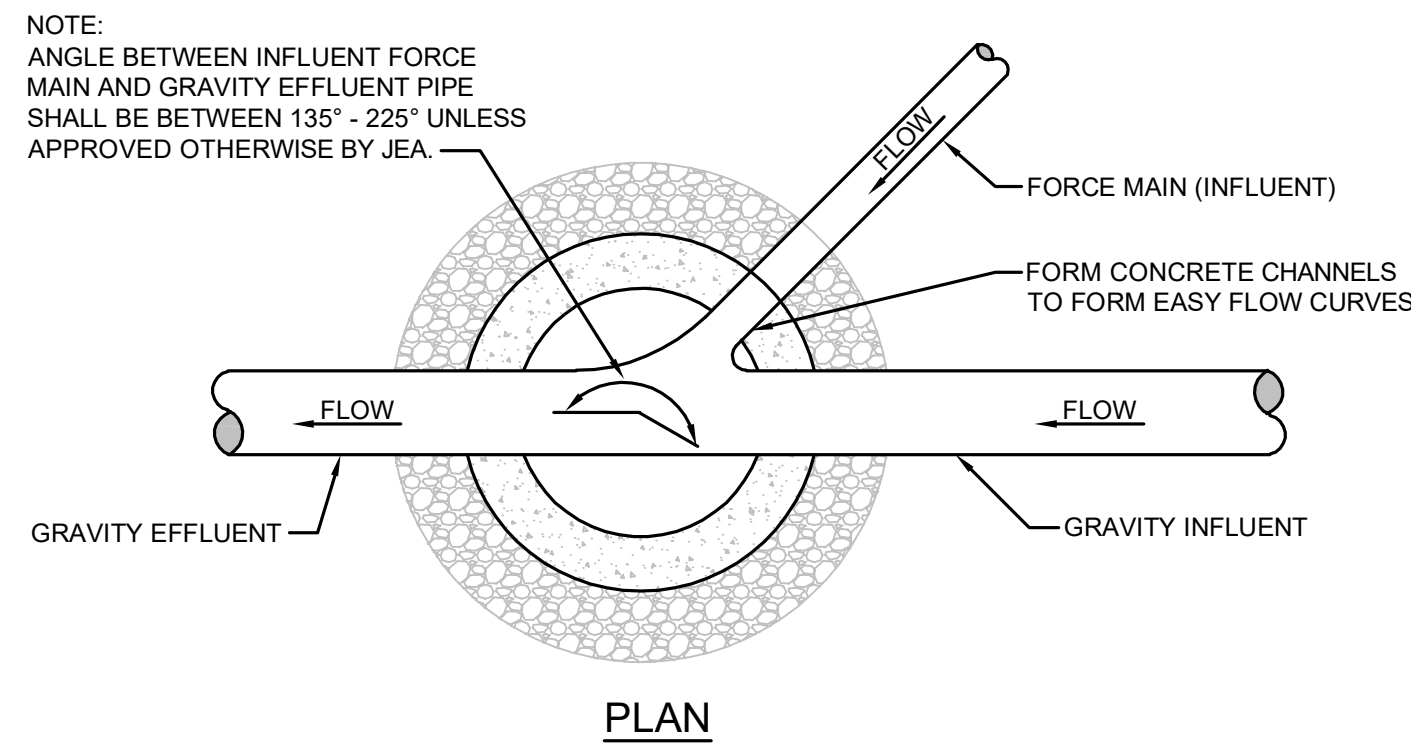
NO.	BY	DATE	REVISIONS
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1			

DESIGN ENGINEER: ANDREW J. BOOTH
 FLORIDA REGISTRATION NO.: 82302

DESIGNER: JEA STANDARD
 DRAWN BY: JANUARY 2019
 DATE: JANUARY 2019
 CHECKED BY: AS NOTED
 DATE: AS NOTED

JEA Building Communitysm
 SANITARY SEWER DETAILS
 OAKLEAF CORNER OUTPARCEL 3

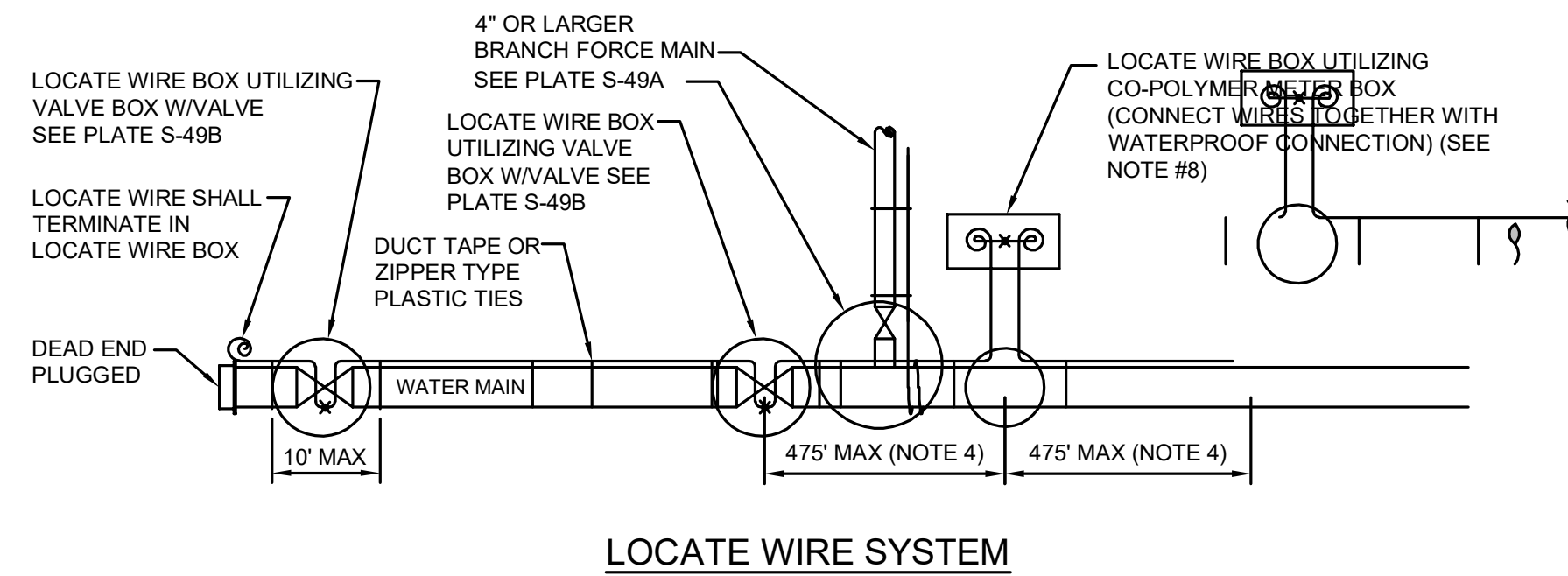
PROJ. NO.: 19-227
 SHEET NO.: 4
 DRAWING NO.: 3U



TYPICAL FORCE MAIN CONNECTION TO MANHOLE

JANUARY 2019

PLATE S-18



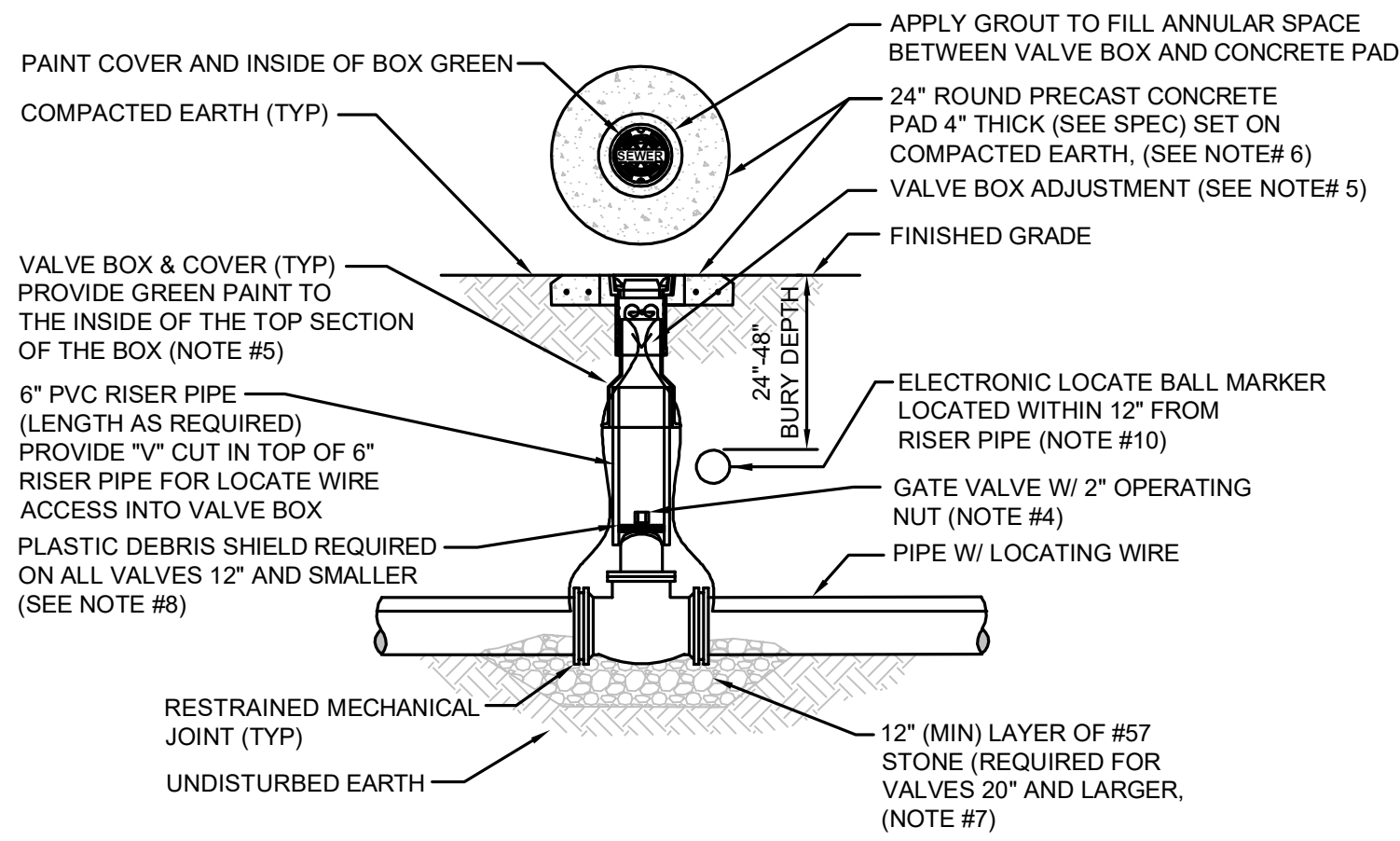
NOTES:

- 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 "LV" 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 2019

PLATE S-49



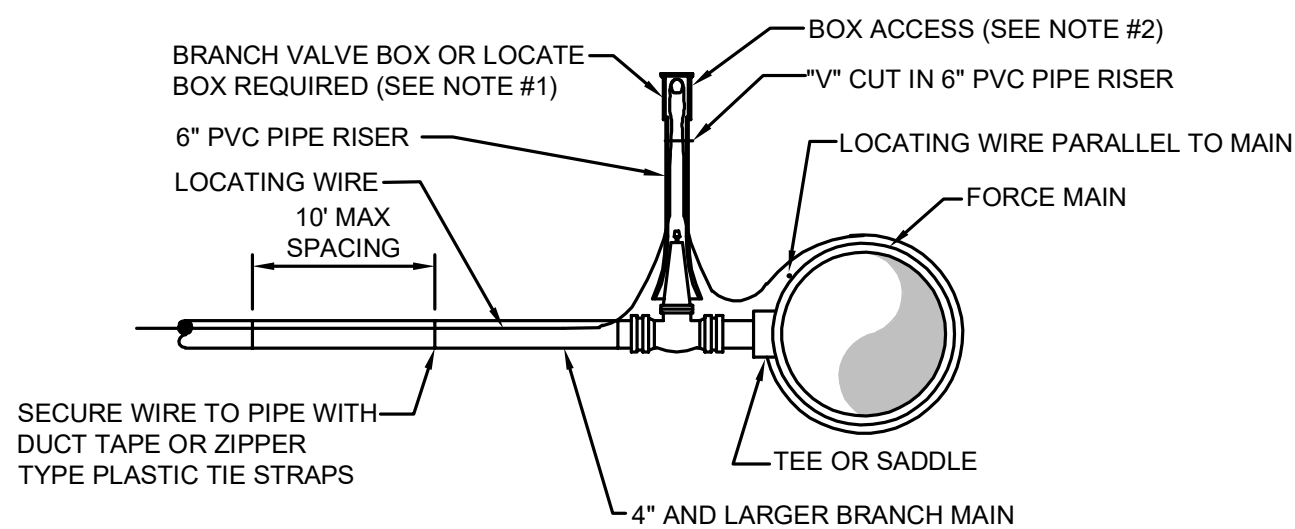
NOTES:

- 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/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 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 2019

PLATE S-30



BRANCH FORCE MAIN (4" AND LARGER SEWER MAIN)

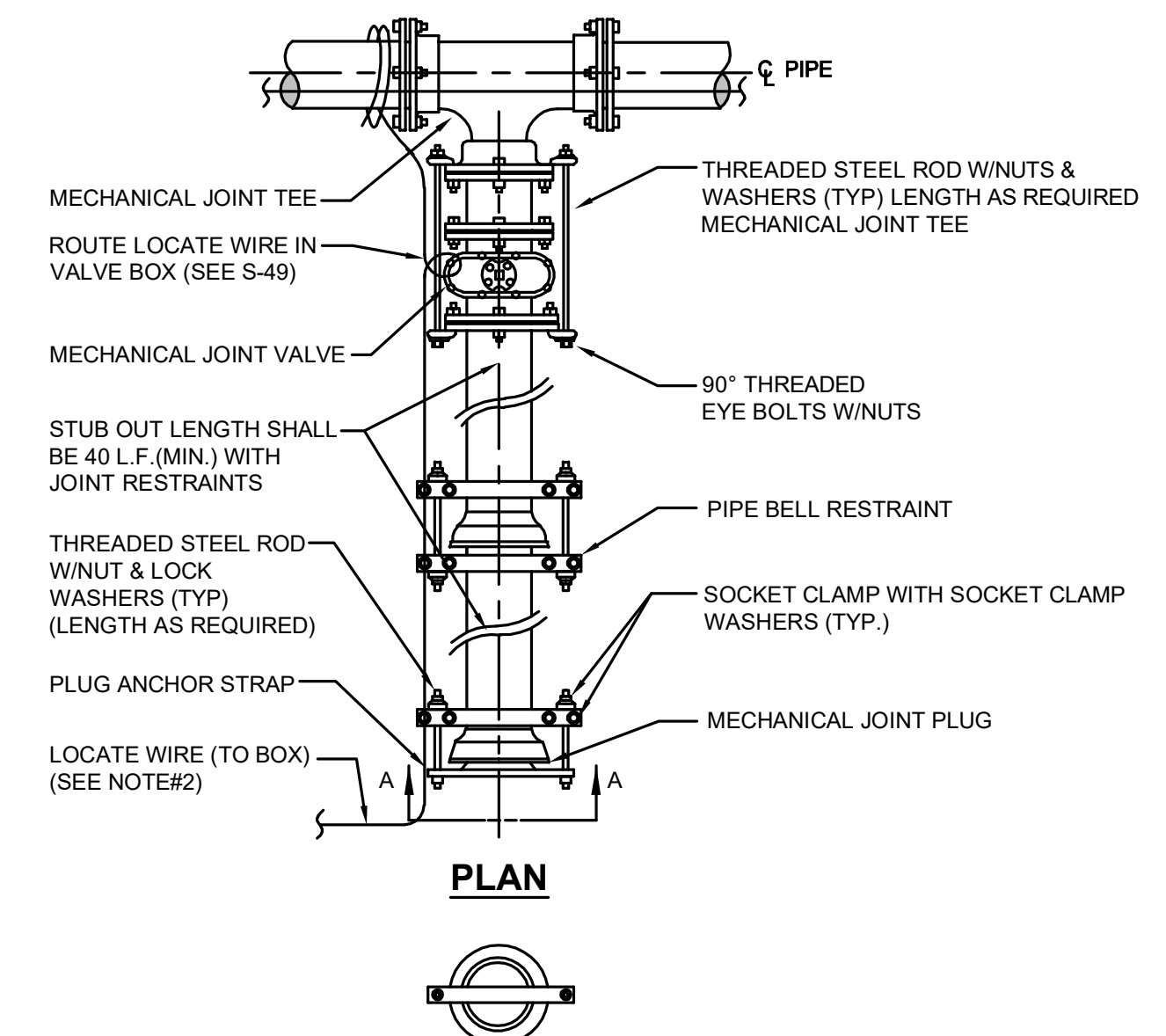
NOTE:

- 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 2019

PLATE S-49A



SECTION "A-A"

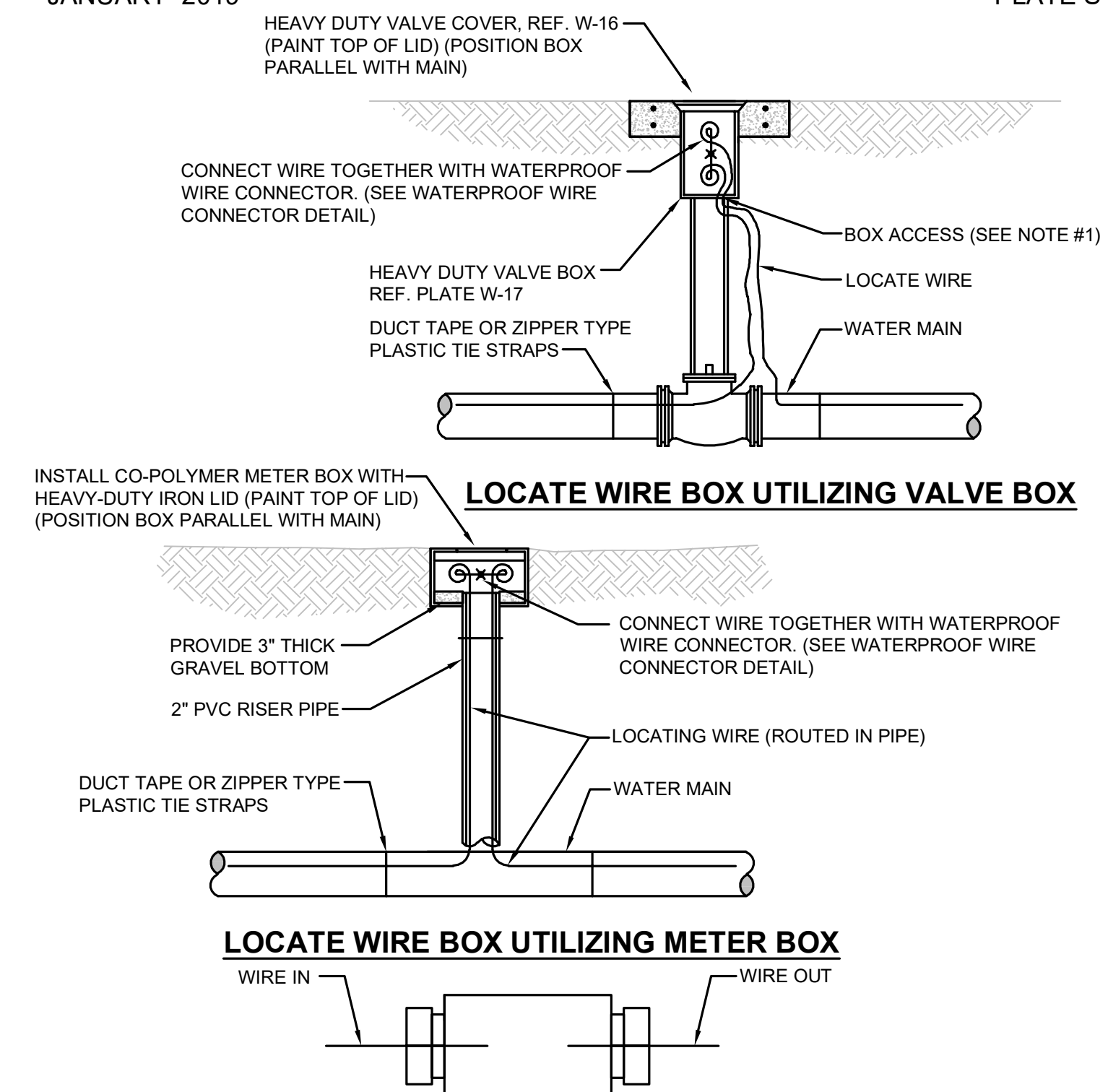
NOTES:

- 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 2019

PLATE S-44



LOCATE WIRE BOX UTILIZING METER BOX

NOTES:

- LOCATE WIRE SHALL ENTER THE VALVE BOX THROUGH A "V" CUT IN THE 6" PVC RISER PIPE (SEE W-18).
- LOCATE WIRE SHALL HAVE ENOUGH SLACK TO REACH 4' ABOVE FINAL GRADE AND LOCATE POINTS.
- LOCATE WIRE CONNECTION SHALL ONLY BE A 2 WAY CONNECTION.

WATERPROOF WIRE CONNECTOR DETAIL

LOCATE WIRE BOX

JANUARY 2019

PLATE S-49B

Englund, Thoms & Miller, Inc.
 14175 Old St. Augustine Road
 Jacksonville, FL 32248
 TEL: (904) 642-8980
 FAX: (904) 642-8981
 CA - 0002284 LC - 000316

ETM
 VISION • EXPERIENCE • RESULTS

THESE DETAILS AS SHOWN ON THIS DRAWING ARE BY THE JEA. WE TAKE NO EXCEPTION TO THE DESIGN

NO.	BY	DATE	REVISIONS
4.	ANDREW J. BOOTH		
3.			
2.			
1.			

DESIGNER: ANDREW J. BOOTH
 DRAWN BY: ANDREW J. BOOTH
 DATE: 11/26/19
 CHECKED BY: ANDREW J. BOOTH
 DATE: 11/26/19
 FLORIDA REGISTRATION NO. 82302

JEA STANDARD
 SANITARY SEWER DETAILS
 OAKLEAF CORNER OUTPARCEL 3

NO. SHEETS	PROJ. NO.	19-227
5	DATE:	JANUARY 2019
SHEET NO.	SCALE:	AS NOTED
5		
DRAWING NO.		
5K		

CONC. MEDIAN

ASPHALT PAVEMENT

OLD MIDDLEBURG RD.

EDGE OF PAVEMENT

EDGE OF PAVEMENT

ASPHALT PAVEMENT

EDGE OF PAVEMENT

CONCRETE

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OUTPARCEL 2 (FUTURE DEVELOPMENT)

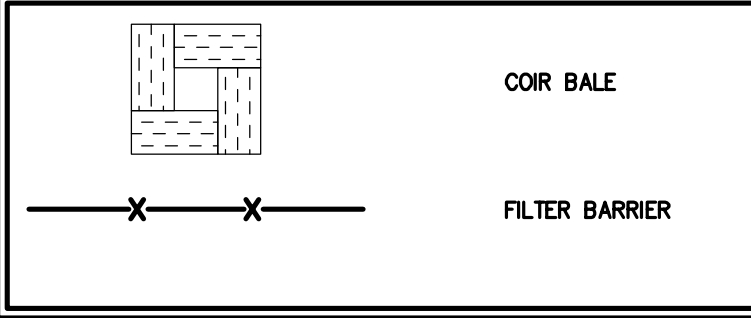
FAST FOOD RESTAURANT
2,200 SF
FFE = 78.50

OUTPARCEL 4 (FUTURE DEVELOPMENT)

NOTES

1. SEE DRAWING NO. 2 FOR GENERAL NOTES.
2. REFER TO DRAWING NO. 11 FOR SEDIMENT AND EROSION CONTROL NOTES AND DETAILS
3. COIR BALES TO BE INSTALLED AROUND EACH INLET STRUCTURE BY CONTRACTOR.
4. CONTRACTOR SHALL PROVIDE COIR BALES AT ALL DEWATERING SUMPS.
5. FILTER BARRIER TO BE PLACED A MINIMUM OF 6' FROM ANY TREE TO REMAIN.
6. FILTER BARRIER SHOWN IS FOR GRAPHICAL PURPOSES ONLY. CONTRACTOR SHALL COORDINATE INSTALLATION OF FILTER BARRIER TO ENSURE NEIGHBORHOOD GRADING PLAN CAN BE COMPLETED IN ITS ENTIRETY.
7. COIR BALES TO BE REMOVED AFTER CONSTRUCTION AND STABILIZATION COMPLETE.

LEGEND



SEDIMENT & EROSION CONTROL PLAN
OAKLEAF CORNER OUTPARCEL 3 FOR OAKLEAF 31 DEVELOPMENT CORP.

ETM
VISION • EXPERIENCE • RESULTS

England, Thins & Miller, Inc.
11407 Highway 90
Jacksonville, FL 32218
TEL: (904) 642-8890
FAX: (904) 646-3485
CA - 00002584 LC - 0000316

REVISIONS:

ETM NO. 19-227	DRAWN BY: AJB
	DESIGNED BY: AJB
	CHECKED BY: AAH
	DATE: NOVEMBER 2019

PLANS PREPARED UNDER THE DIRECTION OF:
ANDREW J. BOOTH
P.E. NUMBER: 82302

DRAWING NUMBER
10

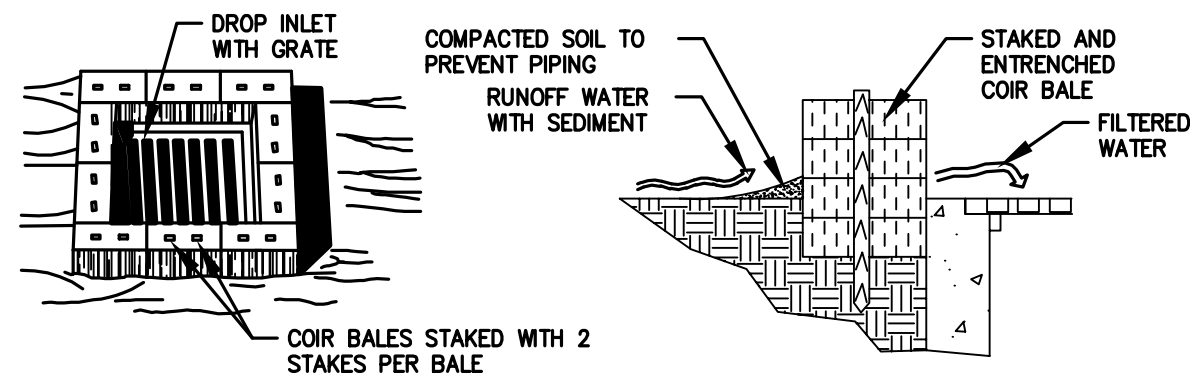
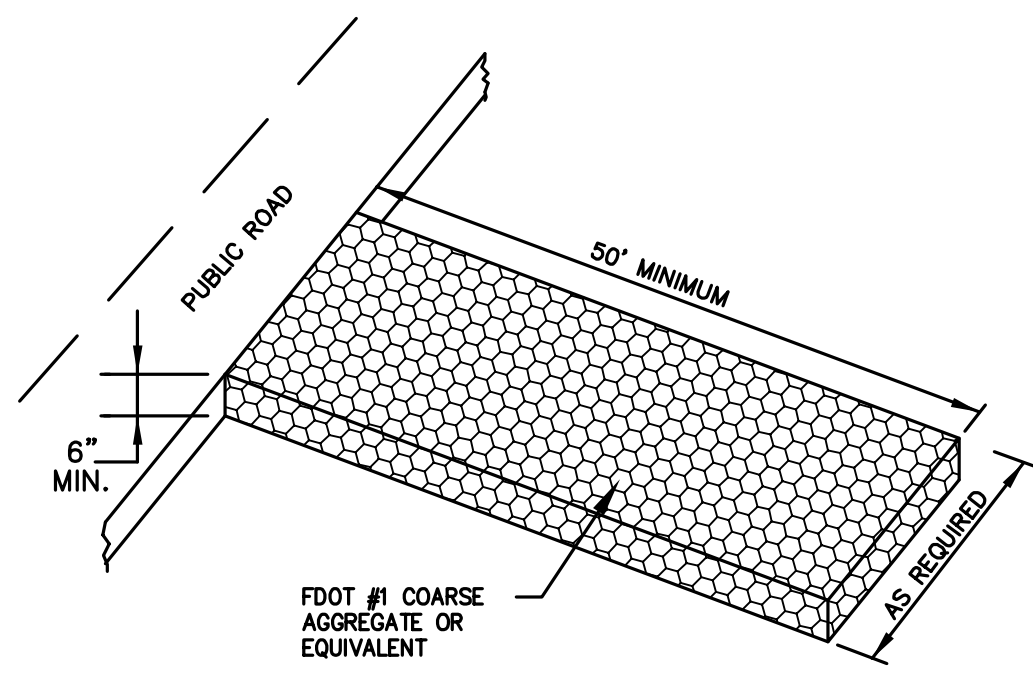
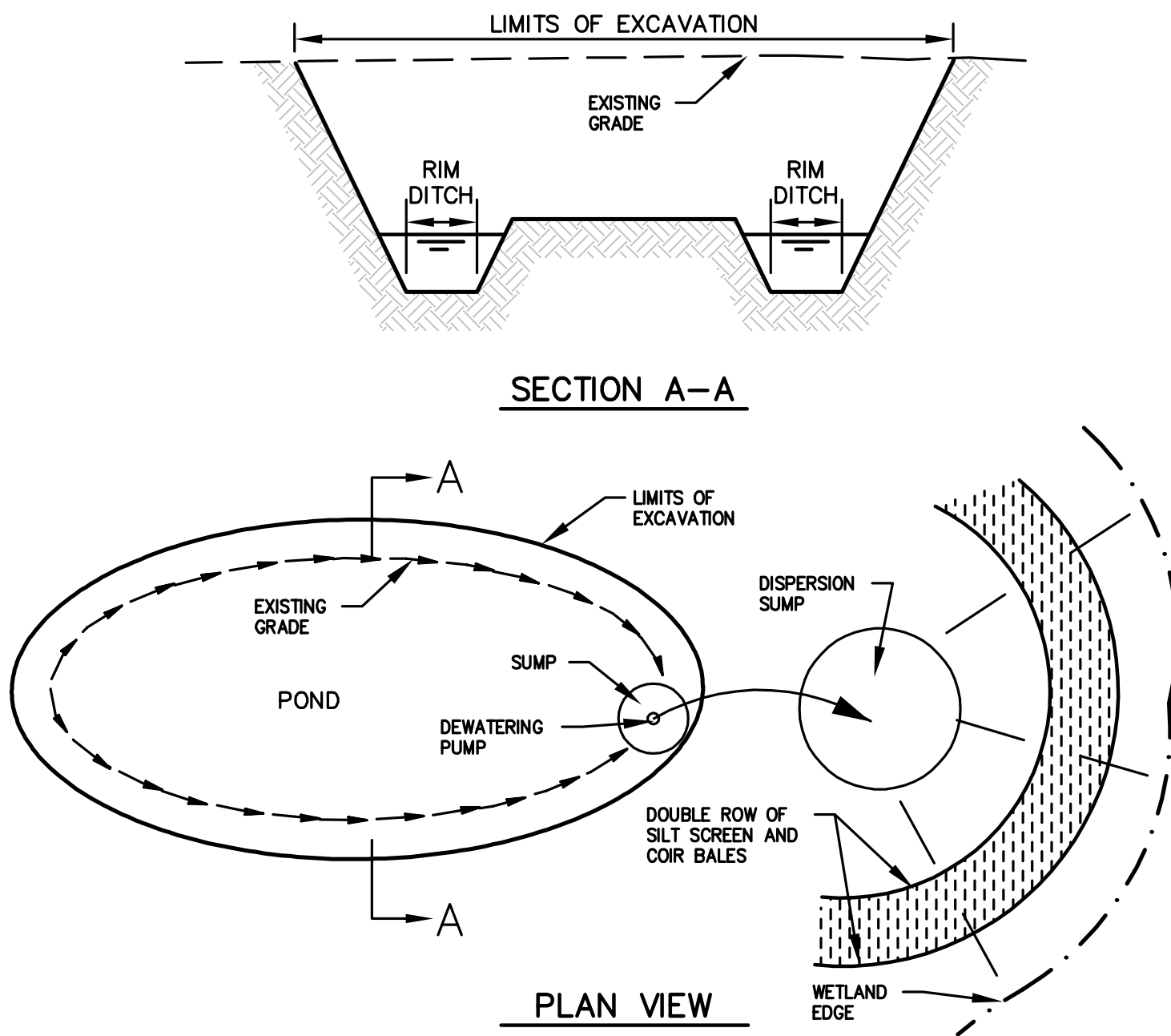
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PLOTTED: November 26, 2019 - 3:06 PM, BY: Kyle Veazey

SEDIMENT AND EROSION CONTROL NOTES

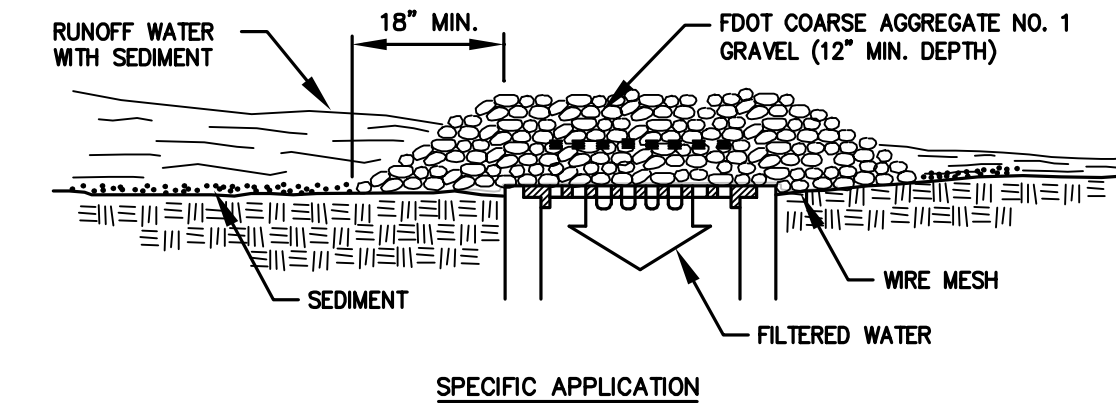
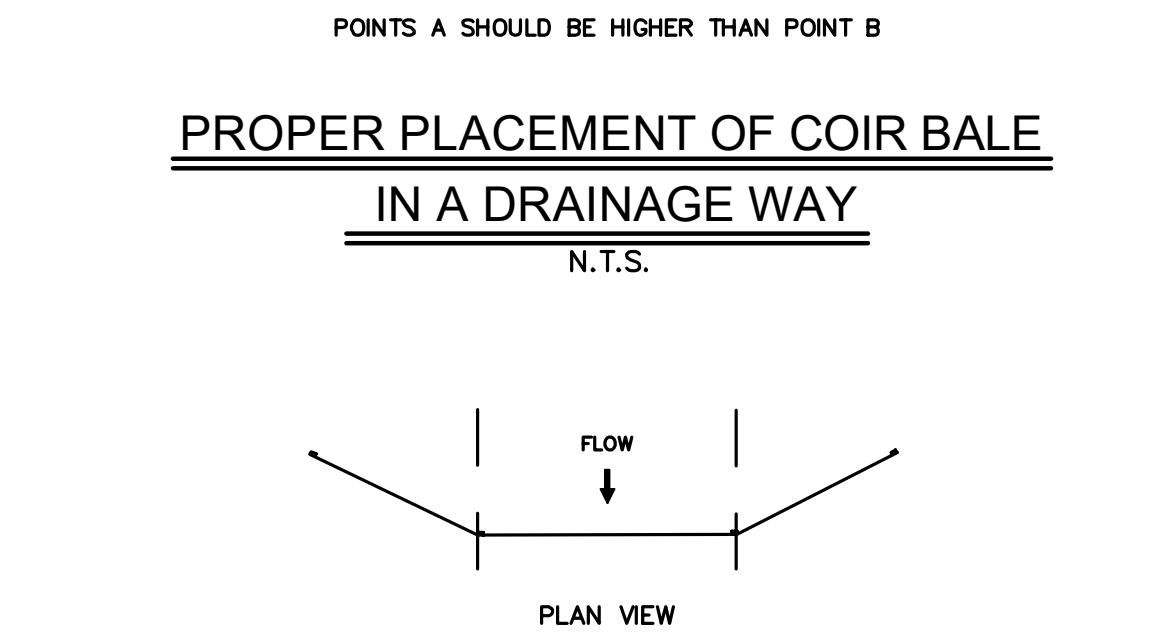
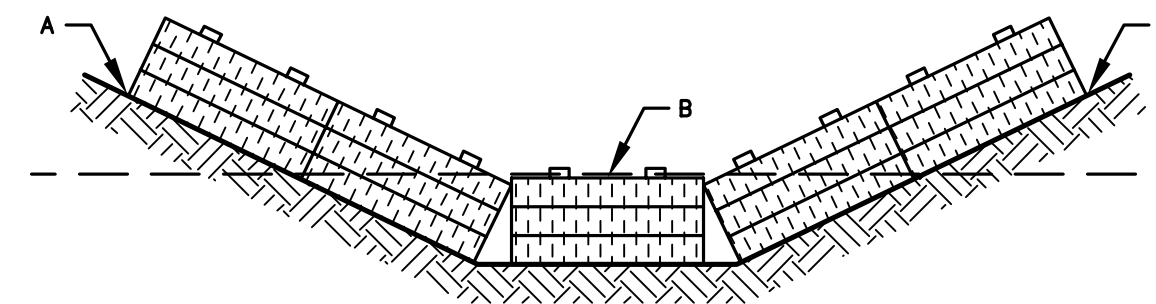
1. THE CONTRACTOR IS RESPONSIBLE FOR REMOVING SILT FROM SITE IF NOT REUSABLE ON-SITE AND ASSURING PLAN ALIGNMENT AND GRADE IN ALL DITCHES AND SWALES AT COMPLETION OF CONSTRUCTION.
2. THE SITE CONTRACTOR IS RESPONSIBLE FOR REMOVING THE TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES AFTER COMPLETION OF CONSTRUCTION AND ONLY WHEN AREAS HAVE BEEN STABILIZED.
3. ADDITIONAL PROTECTION - ON-SITE PROTECTION IN ADDITION TO THE ABOVE MUST BE PROVIDED THAT WILL NOT PERMIT SILT TO LEAVE THE PROJECT CONFINES DUE TO UNSEEN CONDITIONS OR ACCIDENTS.
4. CONTRACTOR SHALL INSURE THAT ALL DRAINAGE STRUCTURES, PIPES, ETC. ARE CLEANED OUT AND WORKING PROPERLY AT TIME OF ACCEPTANCE.
5. WIRE MESH SHALL BE LAID OVER THE DROP INLET SO THAT THE WIRE EXTENDS A MINIMUM OF 1 FOOT BEYOND EACH SIDE OF THE INLET STRUCTURE. HARDWARE CLOTH OR COMPARABLE WIRE MESH WITH 1/2-INCH OPENINGS SHALL BE USED. IF MORE THAN ONE STRIP OF MESH IS REQUIRED, THE STRIPS SHALL BE OVERLAPPED.
6. FOOT NO. 1 COARSE AGGREGATE SHALL BE PLACED OVER THE WIRE MESH AS INDICATED ON SEDIMENT FILTER DETAIL (SEE DETAIL THIS SHEET). THE DEPTH OF STONE SHALL BE AT LEAST 12 INCHES OVER THE ENTIRE INLET OPENING. THE STONE SHALL EXTEND BEYOND THE INLET OPENING AT LEAST 18 INCHES ON ALL SIDES.
7. IF THE STONE FILTER BECOMES CLOGGED WITH SEDIMENT SO THAT IT NO LONGER ADEQUATELY PERFORMS ITS FUNCTION, THE STONES MUST BE PULLED AWAY FROM THE INLET, CLEANED AND REPLACED.
8. BALES SHALL BE EITHER WIRE-BOUND OR STRING-TIED WITH THE BINDINGS ORIENTED AROUND THE SIDES RATHER THAN OVER AND UNDER THE BALES.
9. BALES SHALL BE PLACED LENGTHWISE IN A SINGLE ROW SURROUNDING THE INLET, WITH THE ENDS OF ADJACENT BALES PRESSED TOGETHER.
10. THE FILTER BARRIER SHALL BE ENTRENCHED AND BACKFILLED. A TRENCH SHALL BE EXCAVATED TO A MINIMUM DEPTH OF 4 INCHES. AFTER THE BALES ARE STAKED, THE EXCAVATED SOIL SHALL BE BACKFILLED AND COMPACTED AGAINST THE FILTER BARRIER.
11. EACH BALE SHALL BE SECURELY ANCHORED AND HELD IN PLACE BY AT LEAST TWO STAKES OR REBARS DRIVEN THROUGH THE BALE.
12. LOOSE COIR SHOULD BE WEDGED BETWEEN BALES TO PREVENT WATER FROM ENTERING BETWEEN BALES.
13. COIR BALE BARRIERS SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL.
14. CLOSE ATTENTION SHALL BE GIVEN TO THE REPAIR OF DAMAGED BALES, END RUNS AND UNDERCUTTING BENEATH BALES.
15. NECESSARY REPAIRS TO BARRIERS OR REPLACEMENT OF BALES SHALL BE ACCOMPLISHED PROMPTLY.
16. SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH RAINFALL. IT MUST BE REMOVED WHEN THE LEVEL OF DEPOSITION REACHES APPROXIMATELY ONE-HALF THE HEIGHT OF THE BARRIER.
17. ANY SEDIMENT DEPOSITS REMAINING IN PLACE, AFTER THE COIR BALE OR FILTER BARRIERS, AND OR SILT FENCES ARE NO LONGER REQUIRED, SHALL BE DRESSED TO CONFORM TO THE EXISTING GRADE, PREPARED AND SEEDED.
18. SILT FENCES AND FILTER BARRIERS SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.
19. SHOULD THE FABRIC ON A SILT FENCE OR FILTER BARRIER DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND THE BARRIER STILL BE NECESSARY, THE FABRIC SHALL BE REPLACED IMMEDIATELY.
20. STRUCTURES SHALL BE INSPECTED AFTER EACH RAIN AND REPAIRS MADE AS REQUIRED.
21. SEDIMENT SHALL BE REMOVED AND THE TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO 1/2 THE DESIGN DEPTH OF THE TRAP. REMOVED SEDIMENT SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE.
22. THE CONTRACTOR IS RESPONSIBLE FOR FOLLOWING THE BEST EROSION AND SEDIMENT CONTROL PRACTICES AS OUTLINED IN THE PLANS, SPECIFICATIONS AND ST. JOHNS RIVER WATER MANAGEMENT DISTRICT RULES AND REGULATIONS.
23. 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 REGULATION (F.D.E.P.) CHAPTER 6.
24. EROSION AND SEDIMENT CONTROL BARRIERS SHALL BE PLACED ADJACENT TO ALL WETLAND AREAS WHERE THERE IS POTENTIAL FOR DOWNSTREAM WATER QUALITY DEGRADATION. SEE DETAILS (THIS SHEET) FOR TYPICAL CONSTRUCTION.
25. SOD SHALL BE PLACED IN AREAS WHICH MAY REQUIRE IMMEDIATE EROSION PROTECTION TO ENSURE WATER QUALITY STANDARDS ARE MAINTAINED.
26. ANY DISCHARGE FROM DEWATERING ACTIVITY SHALL BE FILTERED AND CONVEYED TO THE OUTFALL IN A MANNER WHICH PREVENTS EROSION AND TRANSPORTATION OF SUSPENDED SOLIDS TO THE RECEIVING OUTFALL.
27. DEWATERING PUMPS SHALL NOT EXCEED THE CAPACITY OF THAT WHICH REQUIRES A CONSUMPTIVE USE PERMIT FROM THE ST. JOHNS RIVER WATER MANAGEMENT DISTRICT.
28. ALL DISTURBED AREAS SHALL BE GRASSED, FERTILIZED AND MULCHED UNTIL A PERMANENT VEGETATIVE COVER IS ESTABLISHED. CONTRACTOR SHALL USE ADDITIONAL MEASURES TO STABILIZE DISTURBED AREAS THROUGH COMPACTION, SILT SCREENS, COIR BALES, AND GRASSING. ALL FILL SLOPES 3:1 OR STEEPER TO RECEIVE STAKED SOLID SOD.
29. ALL DEWATERING, EROSION, AND SEDIMENT CONTROL SHALL REMAIN IN PLACE UNTIL AFTER COMPLETION OF CONSTRUCTION, AND REMOVED ONLY WHEN AREAS HAVE BEEN STABILIZED.
30. THIS PLAN INDICATES THE MINIMUM EROSION AND SEDIMENT MEASURES REQUIRED FOR THIS PROJECT. THE CONTRACTOR IS RESPONSIBLE FOR MEETING ALL APPLICABLE RULES, REGULATIONS AND WATER QUALITY GUIDELINES AND MAY NEED TO INSTALL ADDITIONAL CONTROLS.
31. THE CONTRACTOR SHALL BE REQUIRED TO RESPOND TO ALL WATER MANAGEMENT DISTRICT INQUIRIES, RELATIVE TO COMPLIANCE OF SRWMD FOR EROSION AND SEDIMENTATION CONTROL. THE COST OF THIS COMPLIANCE SHALL BE PART OF THE CONTRACT.
32. EROSION AND SEDIMENT CONTROL BARRIERS SHALL BE PLACED ADJACENT TO ALL WETLAND AREAS AND PRESERVATION EASEMENTS WHERE THERE IS POTENTIAL FOR DOWNSTREAM WATER QUALITY DEGRADATION.
33. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING A PERMANENT STAND OF SOD AND/OR GRASS PER THE CONTRACT DOCUMENTS AND MEETING THE ST. JOHNS RIVER WATER MANAGEMENT DISTRICT, XXXXXXXX AND NPDES FINAL STABILIZATION REQUIREMENTS.
34. THESE PLANS INCLUDING THE POLLUTION PREVENTION PLAN 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. 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.

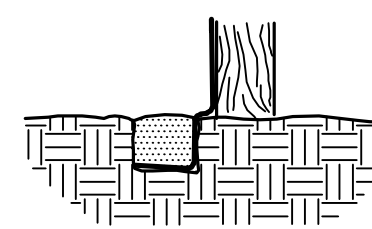
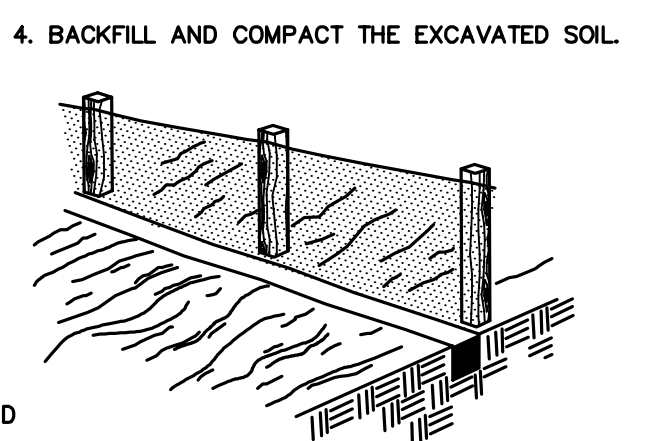
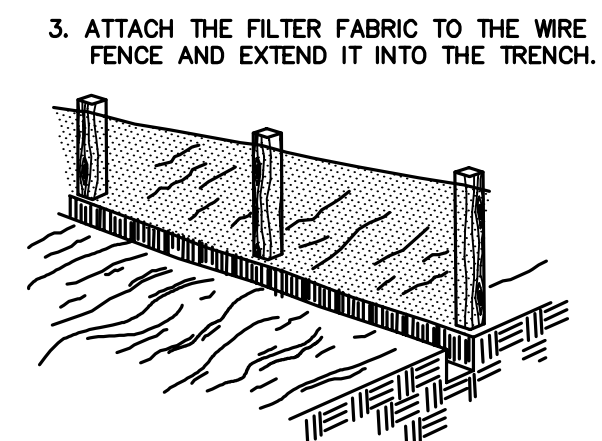
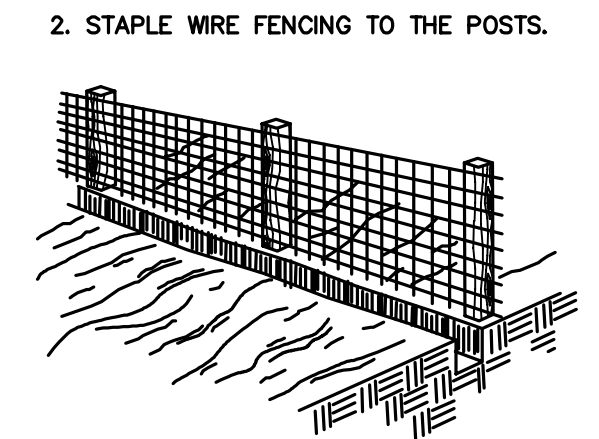
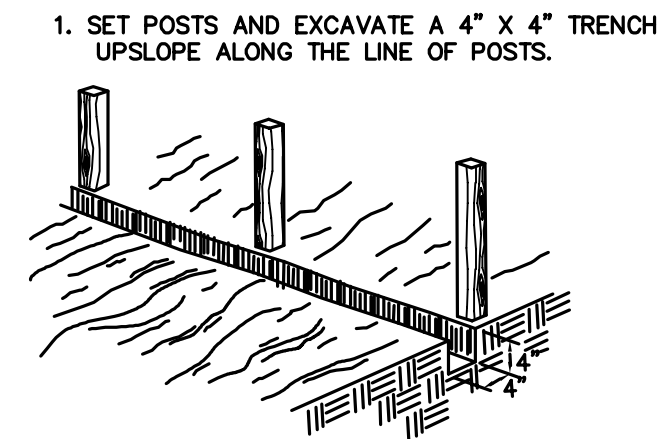
35. 48 HOURS PRIOR TO COMMENCEMENT OF CONSTRUCTION, THE CONTRACTOR WILL SUBMIT A "NOTICE OF INTENT" TO THE EPA IN ACCORDANCE WITH NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM RULES AND REGULATIONS. (FOR ANY CONSTRUCTION NOT COVERED BY THE OWNER'S "NOTICE OF INTENT" PERMIT)



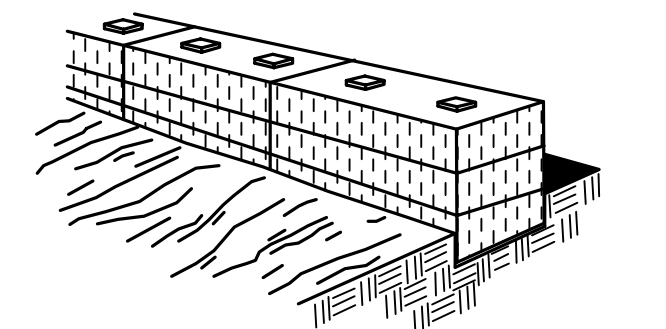
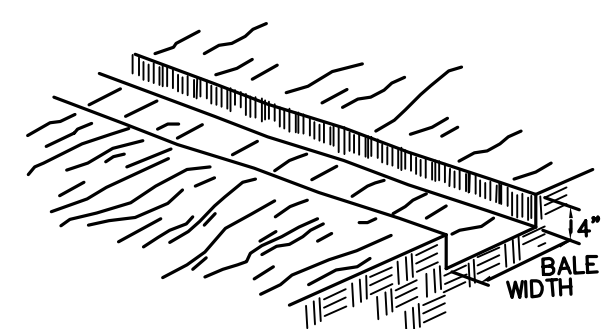
THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE THE INLET DRAINS A RELATIVELY FLAT AREA (SLOPES NO GREATER THAN 5 PERCENT) WHERE SHEET OR OVERLAND FLOWS (NOT EXCEEDING 0.5 cfs) ARE TYPICAL. THE METHOD SHALL NOT APPLY TO INLETS RECEIVING CONCENTRATED FLOWS, SUCH AS IN STREET OR HIGHWAY MEDIANS.



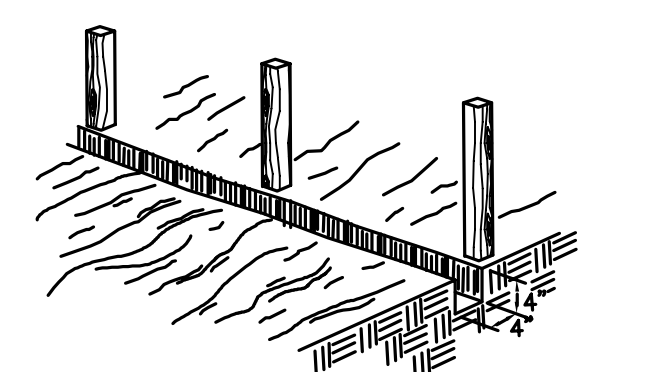
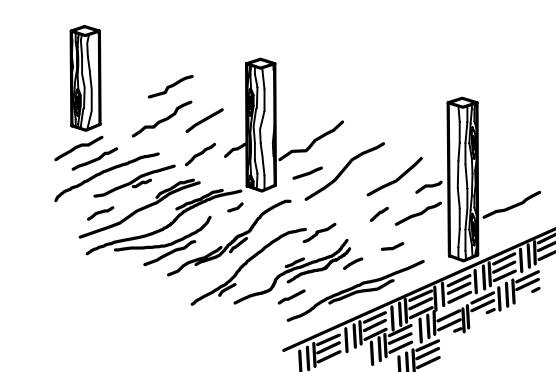
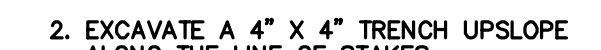
THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE HEAVY CONCENTRATED FLOWS ARE EXPECTED, BUT NOT WHERE PONDING AROUND THE STRUCTURE MIGHT CAUSE EXCESSIVE INCONVENIENCE OR DAMAGE TO ADJACENT STRUCTURES AND UNPROTECTED AREAS.



CONSTRUCTION OF SILT FENCE
N.T.S.



CONSTRUCTION OF A COIR BALE BARRIER
N.T.S.



CONSTRUCTION OF A FILTER BARRIER
N.T.S.

PLANS PREPARED UNDER THE DIRECTION OF:

REVISIONS:

EM NO. 19-227
DRAWN BY: A:AB
DESIGNED BY: A:AB
CHECKED BY: AAH
DATE: NOVEMBER, 2019

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SEDIMENT & EROSION CONTROL DETAILS
OAKLEAF CORNER OUTPARCEL 3 FOR FOR
OAKLEAF 31 DEVELOPMENT CORP.

DRAWING NUMBER

11

OWNER'S REQUIREMENTS

CONTRACTOR'S REQUIREMENTS

Main table with columns for SITE DESCRIPTION, GENERAL, INVENTORY FOR POLLUTION PREVENTION PLAN, MAINTENANCE/INSPECTION PROCEDURES, CONTROLS, and DEWATERING. Includes project details, activity sequences, and various regulatory requirements.

Vertical sidebar containing project title 'STORM WATER POLLUTION PREVENTION PLAN', company logo 'ETM', contact information for Englund-Thins & Miller, Inc., and drawing number '12'.

Vertical text on the far right edge: 'PLOTTED: November 26, 2019 - 3:07 PM. BY: Kyle Veazey' and 't:\2019\19-227\LandDev\Design\19-227_SWPPP.dwg'.

**OAKLEAF CORNER OUTPARCEL 3
STORM WATER POLLUTION PREVENTION PLAN
INSPECTION AND MAINTENANCE REPORT FORM**

THIS IS THE CONTRACTOR'S CERTIFICATION REQUIRED BY THE EPA'S NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES), STORM WATER POLLUTION PREVENTION PLAN FOR CONSTRUCTION SITES OVER 1 ACRE. THIS CERTIFICATION MUST BE COMPLETED WEEKLY AND AFTER EVERY RAINFALL EVENT OVER 0.25 INCHES

INSPECTOR: _____
INSPECTOR'S QUALIFICATIONS: _____

DAYS SINCE LAST RAINFALL: _____ AMOUNT OF LAST RAINFALL: _____ INCHES

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 _____

**OAKLEAF CORNER OUTPARCEL 3
STORM WATER POLLUTION PREVENTION PLAN
INSPECTION AND MAINTENANCE REPORT FORM**

DATE: _____

STRUCTURAL CONTROLS

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

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 CONTROL

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

TO BE PERFORMED BY: _____ ON OR BEFORE _____

**OAKLEAF CORNER OUTPARCEL 3
STORM WATER POLLUTION PREVENTION PLAN
INSPECTION AND MAINTENANCE REPORT FORM**

SEDIMENT BASIN

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: _____

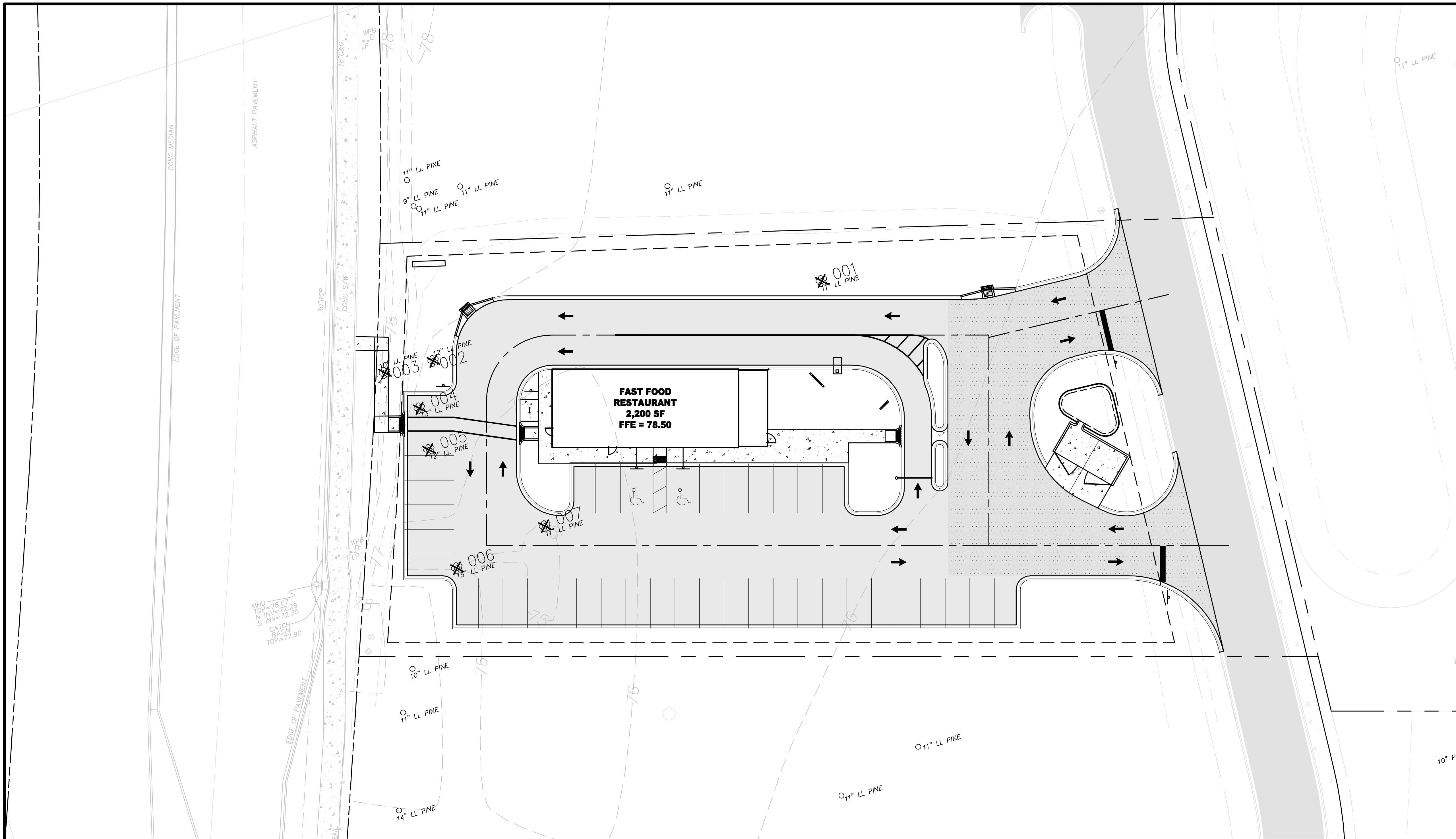
TO BE PERFORMED BY: _____ ON OR BEFORE _____

**OAKLEAF CORNER OUTPARCEL 3
STORM WATER POLLUTION PREVENTION PLAN
INSPECTION AND MAINTENANCE REPORT FORM**

CHANGES REQUIRED TO THE POLLUTION PREVENTION PLAN: _____

REASONS FOR CHANGES: _____

SIGNATURE: _____
DATE: _____

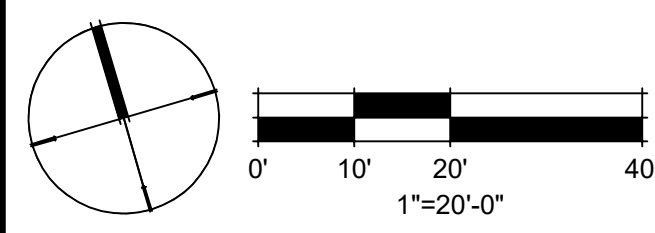


MHD
TOP = 78.07
S INV = 72.28
CATCH
BASIN
TOP = 77.90

TREES TO BE REMOVED DEVELOPMENT AREA				
Point Number	SPECIES COMMON NAME	D.B.H. PER TRUNK		MITIGATED INCHES
1	LONGLEAF PINE	11		11
2	LONGLEAF PINE	12		12
3	LONGLEAF PINE	10		10
4	LONGLEAF PINE	13		13
5	LONGLEAF PINE	12		12
6	LONGLEAF PINE	15		15
7	LONGLEAF PINE	11		11
TOTAL				84

TREE MITIGATION LEGEND

⊗ PROTECTED TREE TO BE REMOVED



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TM-1 TREE MITIGATION PLAN
OAKLEAF CORNER OUTPARCEL 3
FOR
OAKLEAF 31 DEVELOPMENT CORP.

ETM NO. 19-227
DRAWN BY:
DESIGNED BY:
CHECKED BY:
DATE: NOVEMBER 2019

PLANS PREPARED UNDER THE
DIRECTION OF:
L.A. NUMBER:
PLOTTED: November 26, 2019 - 3:07 PM, BY: Kyle Veazey

DRAWING NUMBER
TM-1

LANDSCAPE CODE REQUIREMENT SUMMARY

DESCRIPTION	REQUIRED	PROVIDED
STREET PERIMETER LANDSCAPE AREA WEST (146 L.F. X 5 S.F./L.F.) OLD MIDDLEBURG ROAD	730 S.F.	760 S.F.
STREET PERIMETER SCREEN WEST (146 L.F. X 0.75) EAST (103 L.F. X 0.75)	110 L.F. 78 L.F.	135 L.F. 91 L.F.
STREET PERIMETER TREES	TOTAL SHADE 3 TREES 2 TREES 3 TREES 1 TREES	TOTAL SHADE 3 TREES 2 TREES 3 TREES 1 TREES
OTHER PERIMETER LANDSCAPE AREA NORTH (260 L.F. x 5 S.F./ L.F.) SOUTH (305 L.F. x 5 S.F./ L.F.)	1,300 S.F. 1,525 S.F.	1522 S.F. 1867 S.F.
OTHER PERIMETER TREES NORTH (260 L.F. /50)*** SOUTH (305 L.F. /50)****	TOTAL SHADE 6 TREES 3 TREES 6 TREES 3 TREES	TOTAL SHADE 6 TREES 4 TREES 7 TREES 3 TREES
VEHICLE USE AREA PUBLIC VEHICLE USE AREA NON-PUBLIC VEHICLE USE AREA	23,230 S.F. N/A	
PUBLIC VUA LANDSCAPE AREA (VUA S.F. X 0.10)	2,323 S.F.	5713 S.F.
NON-PUBLIC VUA LANDSCAPE AREA (VUA S.F. X 0.05)	N/A	N/A
VUA SHRUBS (VUA LANDSCAPE S.F. X 0.25)	581 S.F.	704 S.F.
VUA TREES (VUA S.F./ 4000 S.F.)	TOTAL SHADE 6 TREES 3 TREES	TOTAL SHADE 6 TREES 3 TREES

- * PROVIDED QUANTITY INCLUDES 4 PALM TREES COUNTED AS 1 SHADE TREE
- ** PROVIDED QUANTITY INCLUDES 2 NON-SHADE TREES COUNTED AS 1 SHADE TREES COUNTED AS 8 NON-SHADE TREES & 2 EXISTING ELM TREES
- *** PROVIDED QUANTITY INCLUDES 6 PALM TREES COUNTED AS 3 NON-SHADE TREES
- **** PROVIDED QUANTITY INCLUDES 6 NON-SHADE TREES COUNTED AS 3 SHADE TREES

NATIVE MATERIALS CALCULATIONS

TYPE	QUANTITY	PERCENTAGE
Trees	36	83%
Shrubs	462	51%

TREE MITIGATION TABLE

PROTECTED TREES REMOVED	INCHES REMOVED (DBH)	MITIGATION RATE 1:	MITIGATION OBLIGATION (Inches)
LIVE OAKS 24" +	0	1	0
LIVE OAKS 11.5" - 23.5"	0	1	0
LIVE OAKS < 11.5"	0	1	0
SUBTOTAL			0
OTHER 24" +	0	1	0
OTHER 11.5" - 23.5"	52	3	17.3
OTHER < 11.5"	32	3	10.66
SUBTOTAL			28
TOTAL OTHER INCHES REMOVED			0
TOTAL OTHER INCHES REPLACED WITH PLANTINGS			62
TOTAL LIVE OAK INCHES REMOVED			0
TOTAL LIVE OAK INCHES REPLACED WITH PLANTINGS			12
MITIGATION BALANCE DUE			0
TREE FUND PAYMENT	0" @ \$99 PER INCH		\$0.00

PLANT SCHEDULE

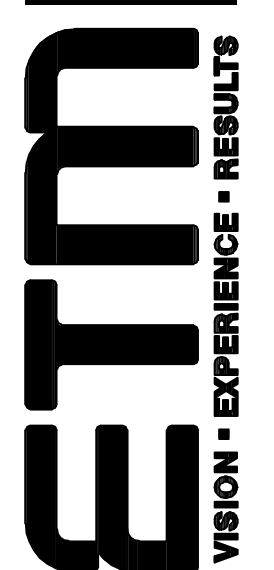
TREES	QTY	BOTANICAL NAME	COMMON NAME	CONT	CAL	SIZE	REMARKS	
AR	3	ACER RUBRUM	RED MAPLE	30 GAL	2" CAL	12-14' HT X 6' SPD		
IO2	10	ILEX OPACA 'EAST PALATKA'	AMERICAN HOLLY	FG	2" CAL	10'-12' HT X 3'-4' SPD		
LI	6	LAGERSTROEMIA X 'NATCHEZ'	WHITE CRAPE MYRTLE MULTI-TRUNK	6" CAL. 8-10' HT, 4-5' SPRD. MIN.			MULTI-TRUNKED TOTAL OF 6"	
QV	4	QUERCUS VIRGINIANA	SOUTHERN LIVE OAK	SIZE AS NEEDED	3" CAL.	10' HT. X 4.5' SPD.		
SP16	5	SABAL PALMETTO	CABBAGE PALM	FG		16' CT.		
SP18	8	SABAL PALMETTO	CABBAGE PALM	FG		18' CT.		
SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	CONT			SPACING	REMARKS
IP	93	ILICLIUM PARVIFLORUM	ANISE	3 GAL., 2' O.C., 18" HT. X 18" SPR.			36" o.c.	
IVS	63	ILEX VOMITORIA 'SCHILLINGS'	SCHILLINGS DWARF	3 GAL., 2.5' O.C., 18" HT X 18" SPR			30" o.c.	
VOS	77	VIBURNUM OBOVATUM 'MS. SCHILLER'S DELIGHT'	MS. SCHILLERS DELIGHT WALTER'S VIBURNUM	3 GAL., 3' O.C., 18" HT. X 18" SPR.			36" o.c.	
VS	15	VIBURNUM SUSPENSUM	SANDANKWA VIBURNUM	3 GAL., 3.5 O.C., 24" HT X 18 SPR			42" o.c.	
SHRUB AREAS	QTY	BOTANICAL NAME	COMMON NAME	CONT			SPACING	REMARKS
MC	193	MUHLENBERGIA CAPILLARIS	PINK MUHLY GRASS	3 GAL.			30" o.c.	
SB	36	SPARTINA BAKERI	SAND CORDGRASS	3 GAL. MIN.			36" o.c.	36" O.C., 18" HT. FULL
GROUND COVERS	QTY	BOTANICAL NAME	COMMON NAME	CONT			SPACING	REMARKS
JB	67	JUNIPERUS CONFERTA 'BLUE PACIFIC'	BLUE PACIFIC JUNIPER	1 GAL @ 2'OC, 18"HT X 18"SPD			30" o.c.	12" SPREAD MINIMUM
TA	304	TRACHELOSPERMUM ASIATICUM 'ASIATIC'	ASIATIC JASMINE	1 GAL. @ 2' O.C.			24" o.c.	
TV	67	TULBAGHIA VIOLACEA	SOCIETY GARLIC	1 GAL. @ 2' O.C.			30" o.c.	
SOD/SEED	QTY	BOTANICAL NAME	COMMON NAME	CONT			SPACING	REMARKS
SOD	TBD	PASPALUM NOTATUM 'ARGENTINE'	BAHIA GRASS	SOD				

PLANS PREPARED UNDER THE DIRECTION OF:

REVISIONS:

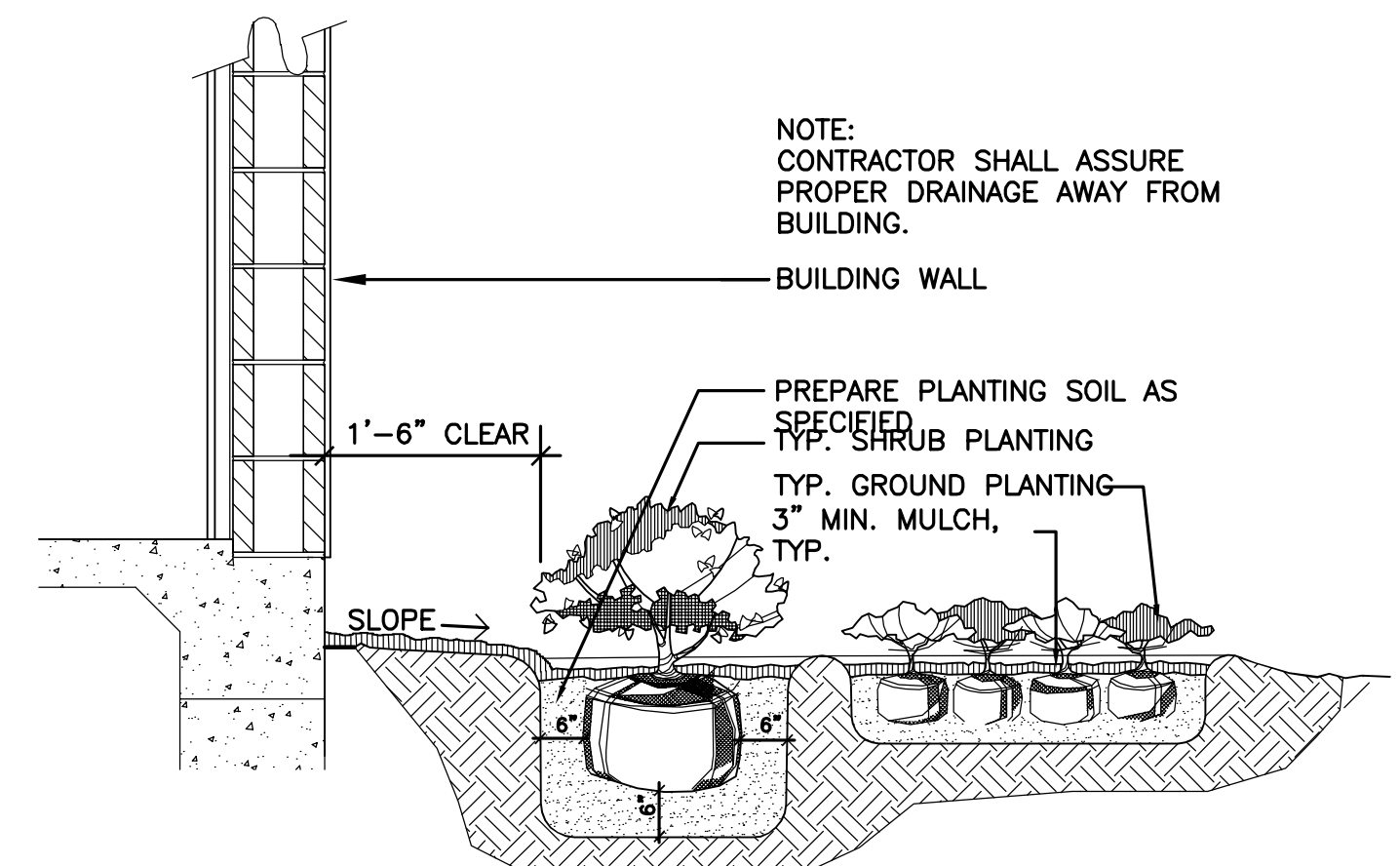
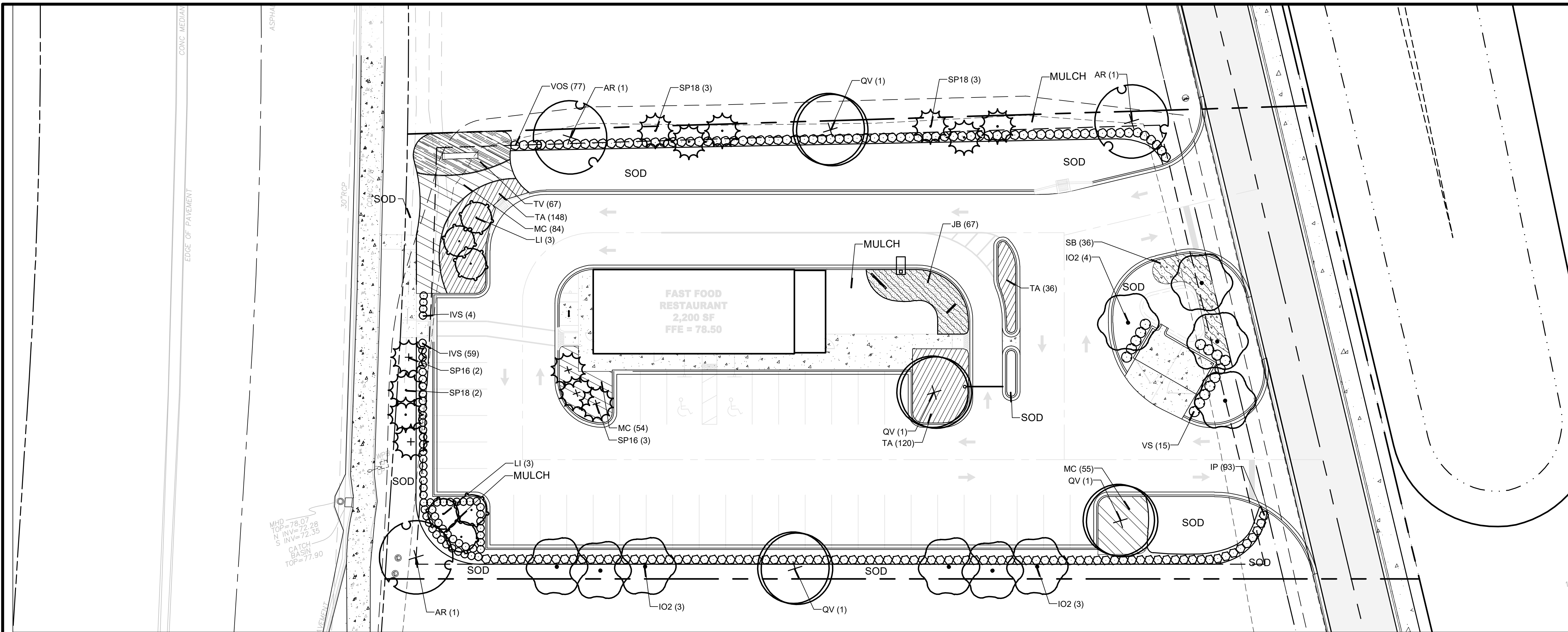
ETM NO. 19-227
DRAWN BY:
DESIGNED BY:
CHECKED BY:
DATE: NOVEMBER, 2019

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CA 00002854 LC 0000316



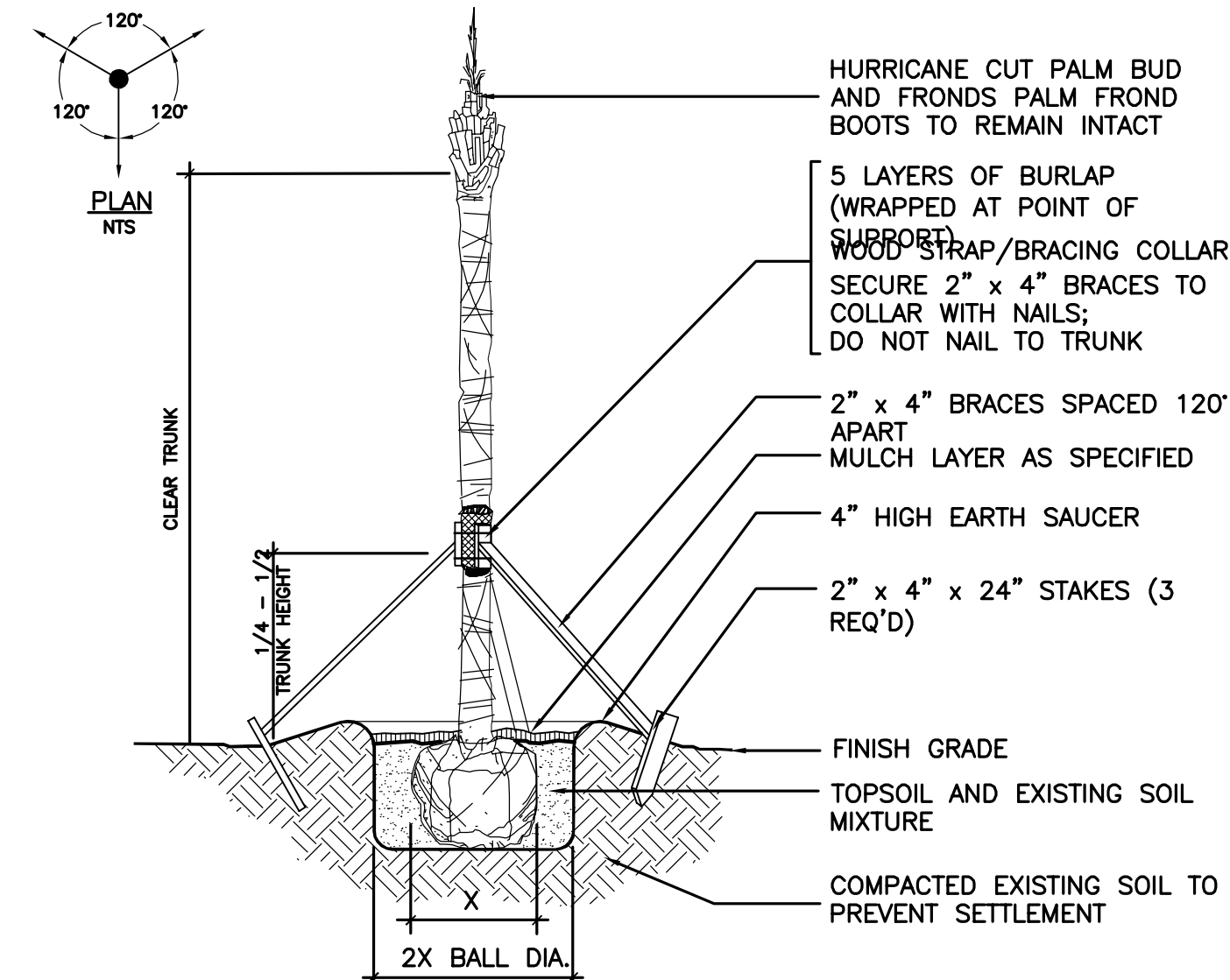
LS-1 LANDSCAPE CODE CALCULATIONS AND NOTES
OAKLEAF CORNER OUTPARCEL 3 FOR OAKLEAF 31 DEVELOPMENT CORP.

DRAWING NUMBER
LS-01



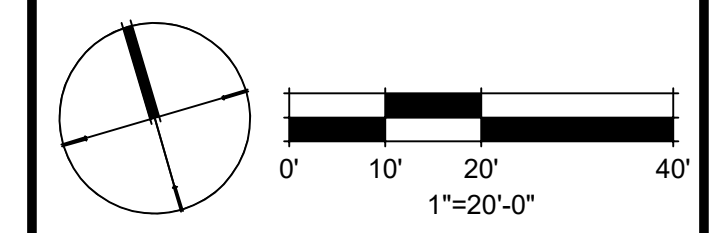
TYPICAL SHRUB AND GROUND PLANTING DETAIL AT BUILDING FOUNDATION

SCALE: NTS



SABAL PALM PLANTING DETAIL

SCALE: NTS



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PLANS PREPARED UNDER THE DIRECTION OF:

REVISIONS:

ETM NO. 19-227
DRAWN BY:
DESIGNED BY:
CHECKED BY:
DATE: NOVEMBER, 2019

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LS-2 LANDSCAPE PLAN
OAKLEAF CORNER OUTPARCEL 3
FOR
OAKLEAF 31 DEVELOPMENT CORP.

DRAWING NUMBER
LS-02

LANDSCAPE SPECIFICATIONS:

PART 1 GENERAL NOTES

- 1.1 Scope. This section includes all planting of shrubs, trees, ground covers, and other supplementary work shown on the drawings and specified herein, complete.
- 1.2 Applicable Documents. The following publications, specifications, and standards of the issues listed in this paragraph (including the amendments and addenda designated), but referred to hereinafter by basic designation only, form a part of this specification to the extent required by the references thereto.
- 1.3 Publication of Reference. Publications as herein listed shall be held in basic reference:
 - 1.3.1 Grades and Standards for Nursery Plants, Parts I and II, State Department of Agriculture and/or State Plant Board of Florida, Seagle Building, Gainesville, Florida.
 - 1.3.2 State of Florida Fertilizer Law, Office of the Secretary of State, Tallahassee, Florida.
 - 1.3.3 American Standard for Nursery Stock (ANSI Z60.1-), American Association of Nurserymen.
 - 1.3.4 Tree Care Operations (ANSI Z133.1-)
 - 1.3.5 Guideline Specifications to Sodding, America Sod Producers Association (ASPA).
- 1.4 Substitutions of Plant Material. If a plant is found to be unavailable, submit proof of non-availability and a proposal for use of equivalent material. When authorized, adjustment of contract amount will be made. No substitutions will otherwise be authorized. To prove non-availability, The Contractor must provide at least five (5) letters from growers or dealers from the States of Florida and Georgia explaining the non-availability of the plant material. Substitutions made without prior approval may be rejected after planting and any replacement of materials will be at the contractors expense.
- 1.5 On-Site Conditions and Adjustments. The locations of plants as shown on the plans are approximate. Planting shall be adjusted to fit actual as-built conditions on the site, including but not limited to separation from hardscapes and utilities as governed by municipal codes. Any changes in locations caused thereby shall be made without additional cost to the Owner, Owner's Representative, or Landscape Architect. The Contractor shall immediately notify the Owner's Representative when conditions detrimental to plant growth are encountered, such as rubble fill, lime rock, or obstructions; and when field conditions are different than portrayed on the plans prior to planting. The Owner or Owner's Representative may adjust the layout or location of specified plant materials to avoid these areas without additional costs.
- 1.6 Coordination of Plantings. Coordinate all landscape work with the Owner's Representative and other contractors. Plant trees and shrubs after final grades are established and prior to planting of lawns, unless otherwise directed by the Owners Representative.
- 1.7 Fine Grading. Provide fine grading necessary to establish finish grade in all landscape areas. Fine grading shall include only minor grading to correct random or infrequent grade irregularities of 12" or less; unless otherwise noted on plans.
- 1.8 Liability of Contractor. The contractor shall be liable for any and all damages to property that result from his performance, including damage to preserved trees. He shall, without extra cost, mitigate or restore to original condition any areas and/or construction damaged, defaced, disturbed, or destroyed by him or his workmen.
- 1.9 Tree Tagging. A tree tagging trip may be requested by Owner's Representative prior to approval of plant material. Landscape contractor shall be responsible for providing transportation and accommodations if necessary.
- 1.10 Inferior Materials. Contractor shall be responsible for rejecting inferior materials. Materials in a damaged or unhealthy state may be rejected by the Owners Representative if necessary.
- 1.11 Onsite Debris. Contractor shall be responsible for removing and disposing of offsite all stones over 1" in diameter, sticks, roots, and other extraneous matter in planted areas to a depth of 2'. If debris is excessive and results from construction waste please contact owners representative for appropriate actions.

PART 2 SUBMITTALS

- 2.1 Soil Testing for Plant Material. The Contractor shall be responsible for testing soils in planted areas to confirm that soil is suitable for healthy plant growth.
- 2.2 Seed Certification. All seed must comply with regulatory agencies for fertilizer and herbicide composition.
- 2.3 Inspection Certificates, Manufacturer's Data. Upon request of Owners representative copies of inspection certificates or manufacturer's data shall be provided for any material used onsite; in addition to existing materials found onsite.

PART 3 MATERIALS

- 3.1 General Plant Materials Requirements. Provide state inspected, nursery grown plants, unless otherwise specified. Conform to the plant schedule, "Florida Department of Agriculture Grades and Standards for Nursery Plants", local landscape ordinance, and, where applicable, to ANSI Z60.1 All plant materials shall be nursery grown, Florida No.1 stock. Any material not consistent with Florida Number 1 standards may be rejected after planting and replacement of materials will be at the contractors expense. All materials shall be healthy, vigorous, free of diseases and insects, pruned for best shape without appearance of "de-horning", and without symptoms of nutritional deficiency. Furnish plants grown under climatic conditions similar to those in the locality of the project. All plants must be true of variety, cultivars, and/or species. Plants must measure according to sizing requirements detailed on the drawings. Plants must be naturally bushy, dense, in good foliage, well branched, and of good appearance. The nursery/nurseries from which they are derived shall be under regulatory inspection by the Florida State Department of Agriculture and/or the Florida State Plant Board or an equivalent agency, if derived from outside the State of Florida. Plants entering from outside the State of Florida must bear the entry certificate of the State Department of Agriculture of the State of Florida. All plant materials will be subject to approval of the Owner or Owner's Representative for quality, size and color.
- 3.2 Soil Additives. Contractor shall be responsible for adding peat, humus, fertilizer, manure, pH adjusters or any other commercially accepted soil additive to insure normal, healthy plant growth.
- 3.3 Balled and Burlapped Trees. Ensure that field grown material follows local industry standards for root pruning, digging, baling and burlapping, etc. All balled and burlapped materials must be hardened off before shipment. All materials are subject to approval by the Owners Representative prior to shipping to project site.
- 3.4 Spaded Trees. Trees shall have been spaded from a commercial nursery field that has been inspected by The Department of Agriculture and Consumer Services within the last 9 months. The Contractor shall provide a copy of the most recent Nursery, Stock dealer and Special Inspection Report for verification upon Owners Representative request. Ball size shall be at least one size greater than recommended by ANSI Z60.1, American Standard for Nursery Stock, unless otherwise specified. Spaded material is subject to approval and tagging by the Owner's Representative prior to shipping to project site.

- 3.5 Container Plants. Provide container grown plants with sufficient roots to hold the container soil together after removal from the container. Root bound plants and plants with inadequate root systems are not acceptable.
- 3.6 Surface Mulch. Plans shall specify mulch type. Mulch shall be in a non-decomposed state; not more than one (1) season old.
- 3.7 Herbicides, Insecticides. Chemical sprays, dusts, or gaseous compounds used on or around plant materials, including but not limited to trees, shall be approved for such uses by the environmental protection agency and the Florida department of agriculture and consumer services. Such materials as may be used shall not constitute a hazard to human health or interfere with site working conditions and habitation.
- 3.8 General Seed Requirements. Where seeding may be required on the plans, the seed required shall comply with all minimum provisions of the Florida seed certification and testing law. Noxious weed seeds shall be non-existent and foreign materials shall not exceed two percent. All disturbed areas not shown as sodded shall be seeded.
- 3.9 General Sod Requirements. See plan for specified sod. All sod shall be healthy, strongly rooted and not less than two (2) years old, free of weeds and undesirable native grasses in 16" x 24" pads, 1-1/2" thick. Sod shall conform to "nursery grown" grade as established by American Sod Producers Association (ASPA). Sod shall be considered free of weeds if less than 5 weeds are found per 100 square feet of area. Brown, dry, irregularly smooth, and/or un-fresh sod will be rejected.

PART 4 PLANTING PROCEDURES

- 4.1 General. Prior to commencement of any work, the landscape contractor shall inspect the site, locate planting areas, placement of guying devices, locate electrical cables, conduits, and other underground and above utilities so that proper precautions and procedures may be followed during and throughout construction. The contractor shall become familiar with other job trade activity which has an impact upon his work or upon which his work has an impact and shall arrange to carefully coordinate his work with other trades through the owner's representative on-site. All planting practices listed herein shall insure healthy plant growth.
- 4.2 Layout. The location of plants and planting beds, as shown on these plans, are approximate. The locations and bed lines shall be staked on the project site by the contractor and approved by the owner's representative before any plant pits or beds are dug. The contractor is responsible for verifying that proper setbacks, as defined by local codes and rules, are provided between trees and their proximity to utilities and hardscapes. Unless otherwise noted, no tree shall be planted closer than four feet to a hardscape surface. The owner's representative may adjust plant material locations to meet field conditions. Contractor shall make minor adjustments without additional cost to the owner.
- 4.3 Finish Grades. The landscape contractor is responsible for all fine grading and preparation for planting. Finish grades (top of soil) for all sod areas after settlement shall be one-half inch below the top of abutting curbs, walks, walls and abutments. The finish grade of all plant beds prior to mulching shall be three inches below finish grade of sod, abutting curbs, walks and walls. Three inches of mulch shall be added after planting.
- 4.4 Planting Seasons/Times. The planting of plant materials and lawns may proceed at any time, period, or season agreed upon by the contractor and the owner or owner's representative.
- 4.5 Plant Pits. The contractor shall excavate plant pits, unless otherwise approved, according to the drawings.
- 4.6 Setting Plants. Each plant shall be established in a manner consistent with plant details. All plants shall be set plumb and straight. Plants shall be established to a depth that is not greater than that at which they grew when in the nursery container or field. All back fill shall be tamped and worked firmly under and around the root ball to fill all voids.
- 4.7 Soil Preparation for Trees, Shrubs and Groundcover. All areas to be planted shall be prepared in a manner to insure normal, vigorous and healthy growth of plant material.
- 4.8 Staking. All trees are to be staked unless otherwise instructed by owner or owner's representative. Refer general staking details on the drawings. Materials used shall insure healthy plant growth.
- 4.9 Mulching. All plant beds and plant saucers shall be uniformly covered with a four-inch (4") layer of mulch. Hedges shall be mulched the full width of the hedge bed. Contain mulch within landscape borders.
- 4.10 Sod. All areas to be either seeded, sprigged, or sodded shall be prepared in a manner to insure normal, vigorous and healthy growth.
 - 4.10.1 Fine grade lawn areas to smooth, even surface with loose, uniformly fine texture. Roll, rake and drag lawn areas, remove ridges and fill depressions with topsoil as required to meet finish grades. In areas to be sodded, allow for sod thickness.
 - 4.10.2 Sod Installation. Lay sod in straight, parallel rows to form a solid mass with tightly fitted joints, without overlap. Stagger strips to offset joints. Work topsoil into minor cracks. On 1:3 slopes or greater, lay sod with long dimension of pads parallel to contours and stake sod as necessary to stabilize. Drive sod stakes flush with top of sod.
 - 4.10.3 Sprigging and Seeding. Sprigging/seeding shall be done in a manner to insure a quick green in period achieving a uniform green lawn prior to final acceptance.

PART 5 MAINTENANCE

- 5.1 Plant Material. Maintain all plant materials until final acceptance. Maintenance shall include all required watering, cultivation, weeding, mowing, pruning, wound dressing, immediate replacement of dead and unacceptable material, straightening plants which lean or sag, adjustments of plants which are planted too low, and any other procedure consistent with good horticultural practice necessary to insure normal, vigorous and healthy growth of all planting under this contract.
- 5.2 Lawn. Maintain lawns until final acceptance. Reset settled or eroded sod areas to proper grade. Fill open joints with topsoil. Keep sod free of insects and disease.

PART 6 FINAL INSPECTION AND ACCEPTANCE

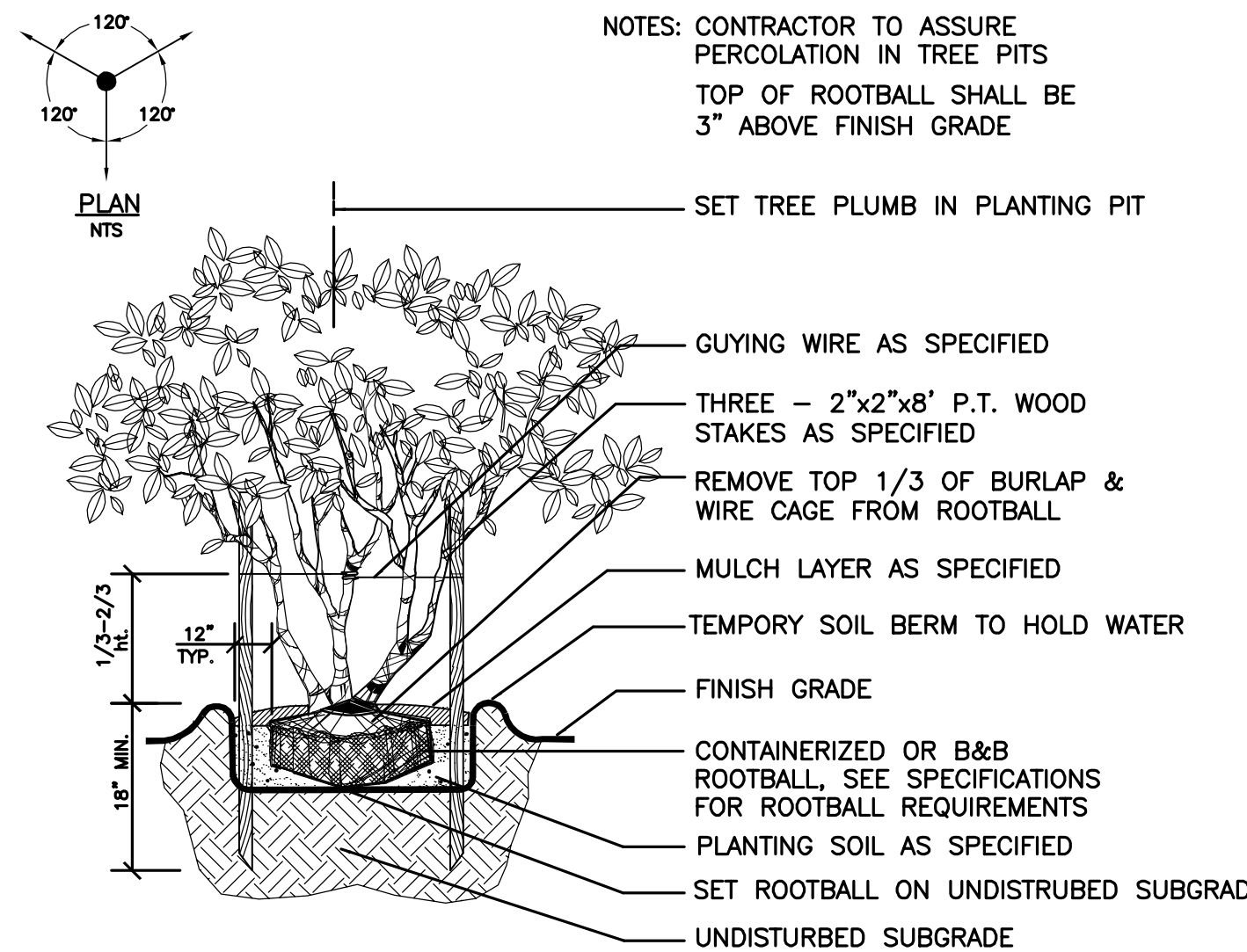
- 6.1 Final Cleanup. Upon final completion of work and before inspection and acceptance, all aspects of the project site shall be thoroughly and completely cleaned of debris, stains, materials, defacements, and temporary facilities. Likewise, any repairs, which are the obligation of this contractor, shall be completed.

- 6.2 Initial Inspection and Acceptance. Inspection shall be made by the owner or owner's representative within (10) ten days of written notification from the contractor that installation is complete. If all work and materials meet specifications project will be accepted as is. Materials and work not in compliance with specifications shall be rejected by owners representative and replaced by the contractor within (15) fifteen days of notification by owner's representative. Notification will graphically depict all rejected material on plans. Upon replacement of all rejected work and materials by the contractor the owner's representative shall conduct a final inspection within ten (10) days of written notification from the contractor that all rejected work has been replaced according to specifications. Approval will be granted upon the acceptance of all replaced material noted on plans. After final acceptance, the landscape contractor will not be responsible for damage to work resulting from: neglect by owner, damage by others; abnormal weather conditions such as floods, excessive wind, severe freezing or abnormal rains; or other activities clearly beyond the landscape contractor's control.

PART 7 GUARANTEE

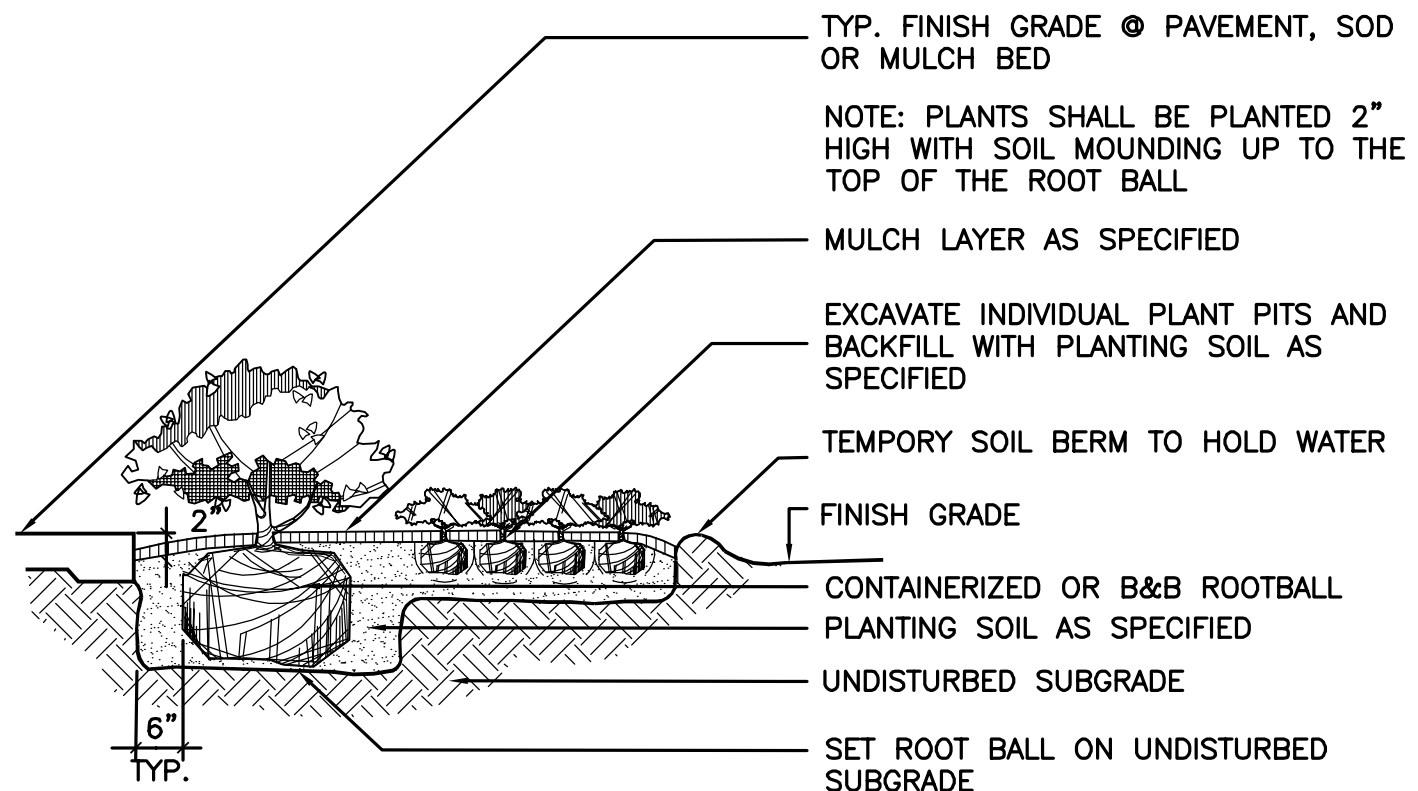
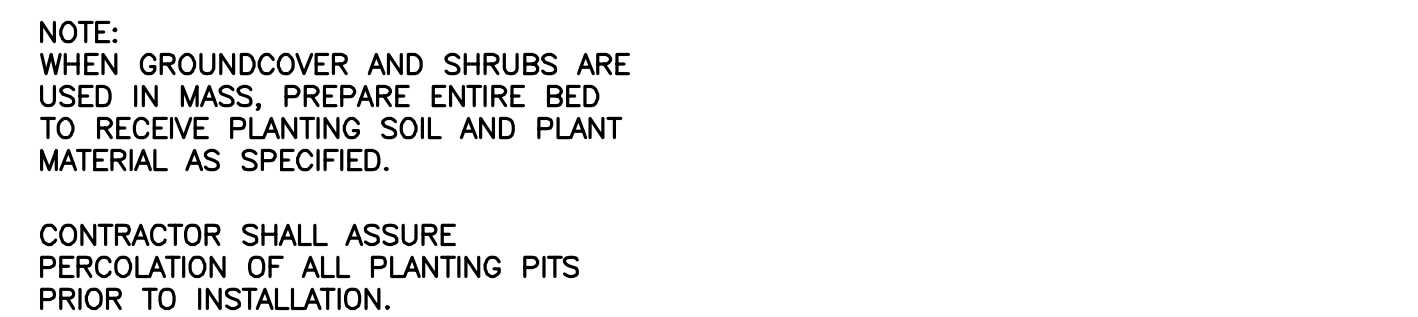
- 7.1 Guarantee. All plant materials and trees installed by the contractor shall be guaranteed for 365 days from the date of final inspection and acceptance. The contractor shall replace at no additional cost to the owner, all plant materials which die and/or which are not healthy and in a good growing condition during the guarantee period. Replacement of such material shall occur within ten (10) days from owner's written notification to the contractor. The 365 day guarantee period for replaced plant materials shall commence on the date of acceptance of the replaced item or items of plant material. The contractor shall not be required to replace, repair, or restore any portion of the work that is damaged, defaced, disturbed, and/or destroyed by others after final acceptance.

NOTE: IT IS THE CONTRACTORS RESPONSIBILITY TO VERIFY WITH THE LANDSCAPE ARCHITECT THAT THEY ARE USING THE MOST CURRENT PLAN SET FOR BIDDING AND INSTALLATION. FAILURE TO VERIFY CURRENT PLAN SET COULD RESULT IN CORRECTIVE WORK, INCLUDING DESIGN REVISIONS AND PERMITTING FEES TO BE PERFORMED AT THE CONTRACTORS EXPENSE.



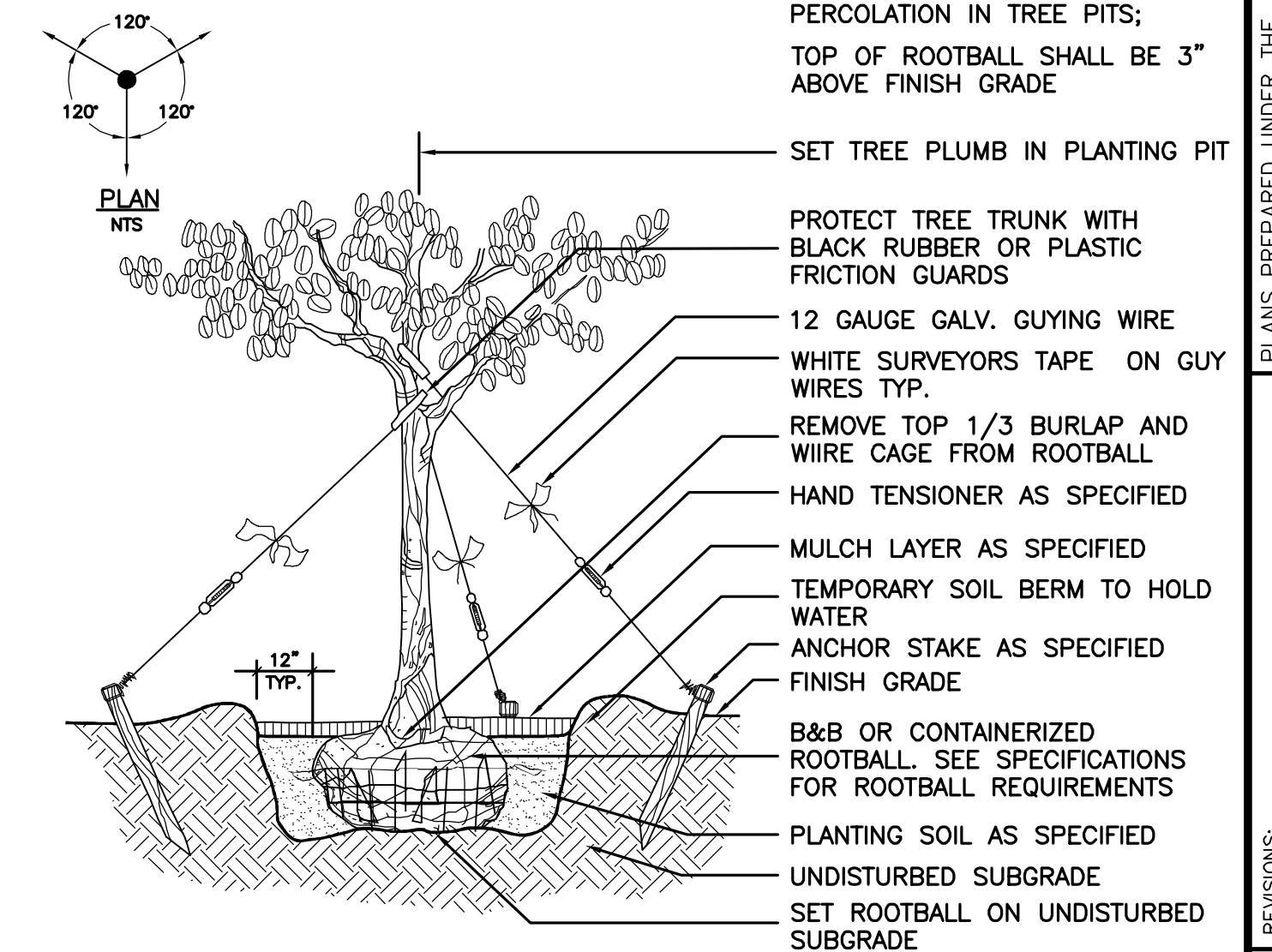
MULTI-TRUNK TREE PLANTING DETAIL

SCALE: NTS



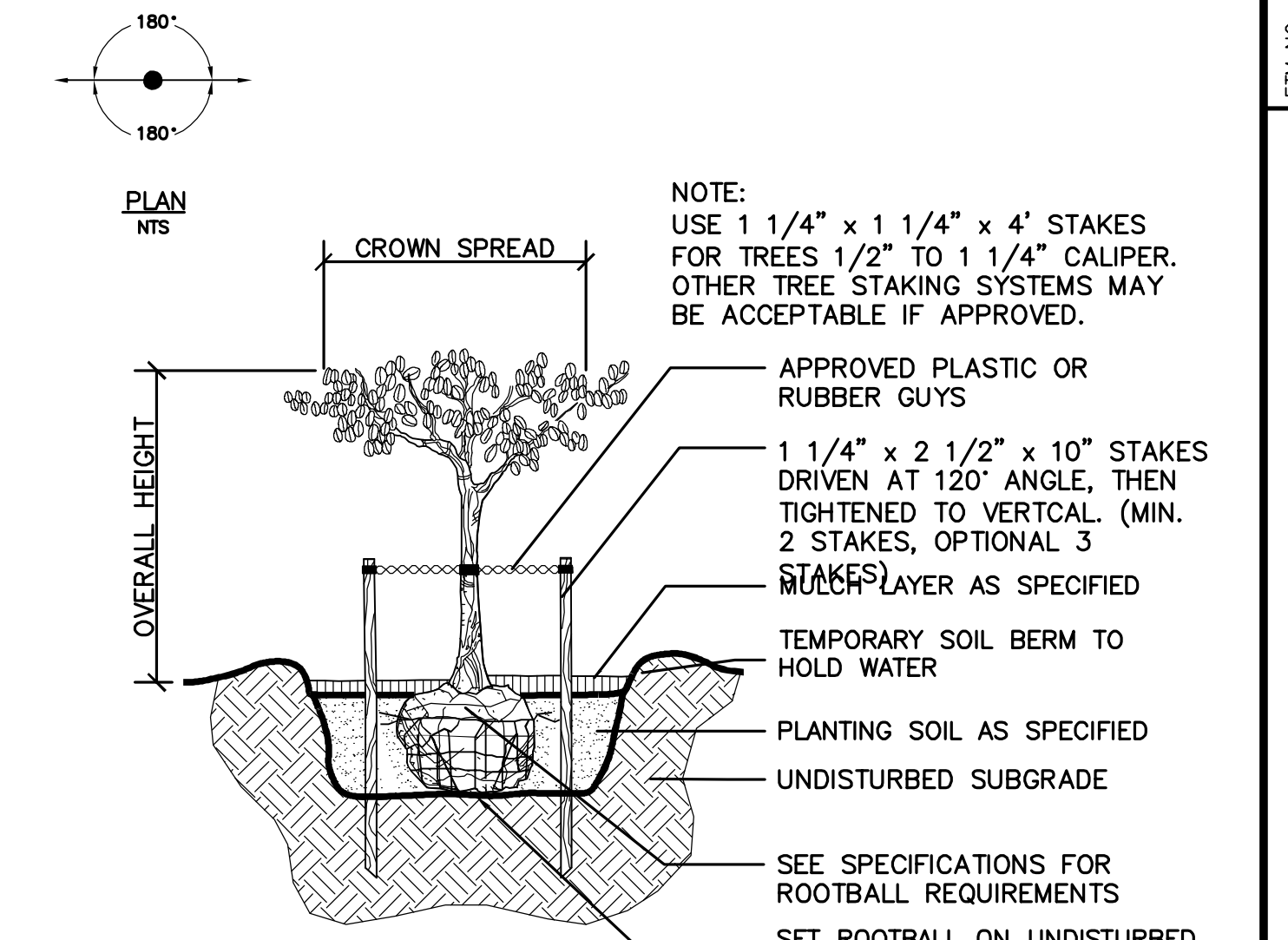
SHRUB AND GROUNDCOVER PLANTING DETAIL

SCALE: NTS



LARGE TREE PLANTING DETAIL (4" CALIPER AND LARGER)

SCALE: NTS



SMALL TREE PLANTING DETAIL (1" TO 3-1/2" CALIPER)

SCALE: NTS

PLANS PREPARED UNDER THE DIRECTION OF:

EM NO. 19-227

DESIGNED BY: [Signature]

CHECKED BY: [Signature]

DATE: NOVEMBER, 2019

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ETM
 VISION • EXPERIENCE • RESULTS

LS-3 LANDSCAPE SPECIFICATIONS AND DETAILS

OAKLEAF CORNER OUTPARCEL 3

OAKLEAF 31 DEVELOPMENT CORP.

DRAWING NUMBER

LS-03

PLOTTED: November 26, 2019 - 3:08 PM. BY: Kyle Veazey

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