

LAKES OF SANS SOUCI GRAVITY SEWER EXPANSION

PREPARED FOR:
BONITA SPRINGS UTILITIES
 11860 EAST TERRY STREET
 BONITA SPRINGS, FL. 34135
 (239) 390-4805 (239) 390-4905

UTILITY SERVICE PROVIDERS

WATER:
 BONITA SPRINGS UTILITIES
 11900 E. TERRY STREET
 BONITA SPRINGS, FL 34135
 PH (239) 992-0711

SEWER:
 BONITA SPRINGS UTILITIES
 11900 E. TERRY STREET
 BONITA SPRINGS, FL 34135
 PH (239) 992-0711

ELECTRIC:
 FLORIDA POWER AND LIGHT
 15834 WINKLER ROAD
 FORT MYERS, FL 33908
 PH (239) 415-1300

PHONE:
 CENTURY LINK
 2820 CARGO STREET
 FORT MYERS, FL 33901
 PH (239) 366-2114

FIRE PROTECTION:
 BONITA SPRINGS FIRE DISTRICT
 27490 OLD 41 ROAD
 BONITA SPRINGS, FL 34135
 PH (239) 992-3320

SOLID WASTE DISPOSAL:
 ONYX WASTE SERVICE
 17101 PINE RIDGE ROAD
 FORT MYERS BEACH, FL 33931
 (239) 334-1224

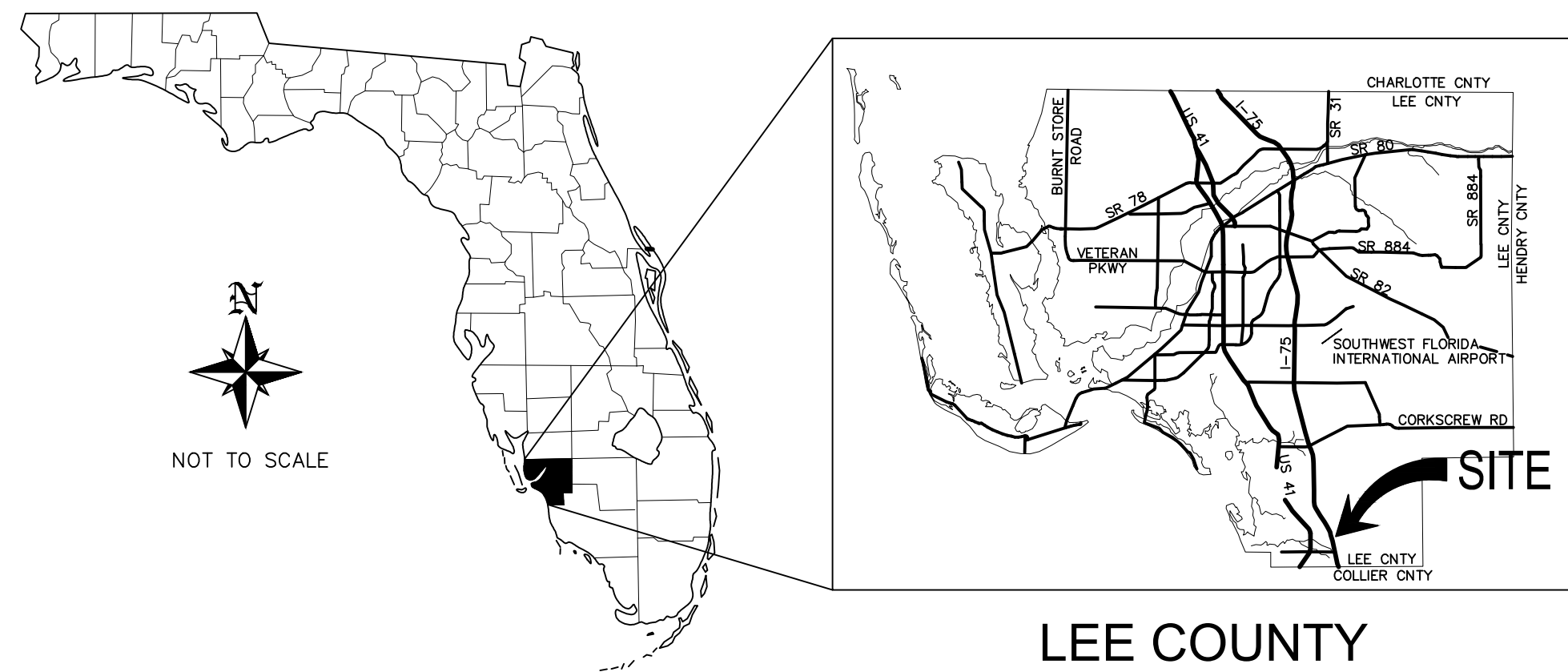
PROJECT CONTACTS

CIVIL ENGINEER:
 BANKS ENGINEERING
 D BRENT ADDISON, P.E. PROJECT MANAGER
 10511 SIX MILE CYPRESS PKWY.
 FORT MYERS FLORIDA 33966
 PHONE: (239) 939-5490

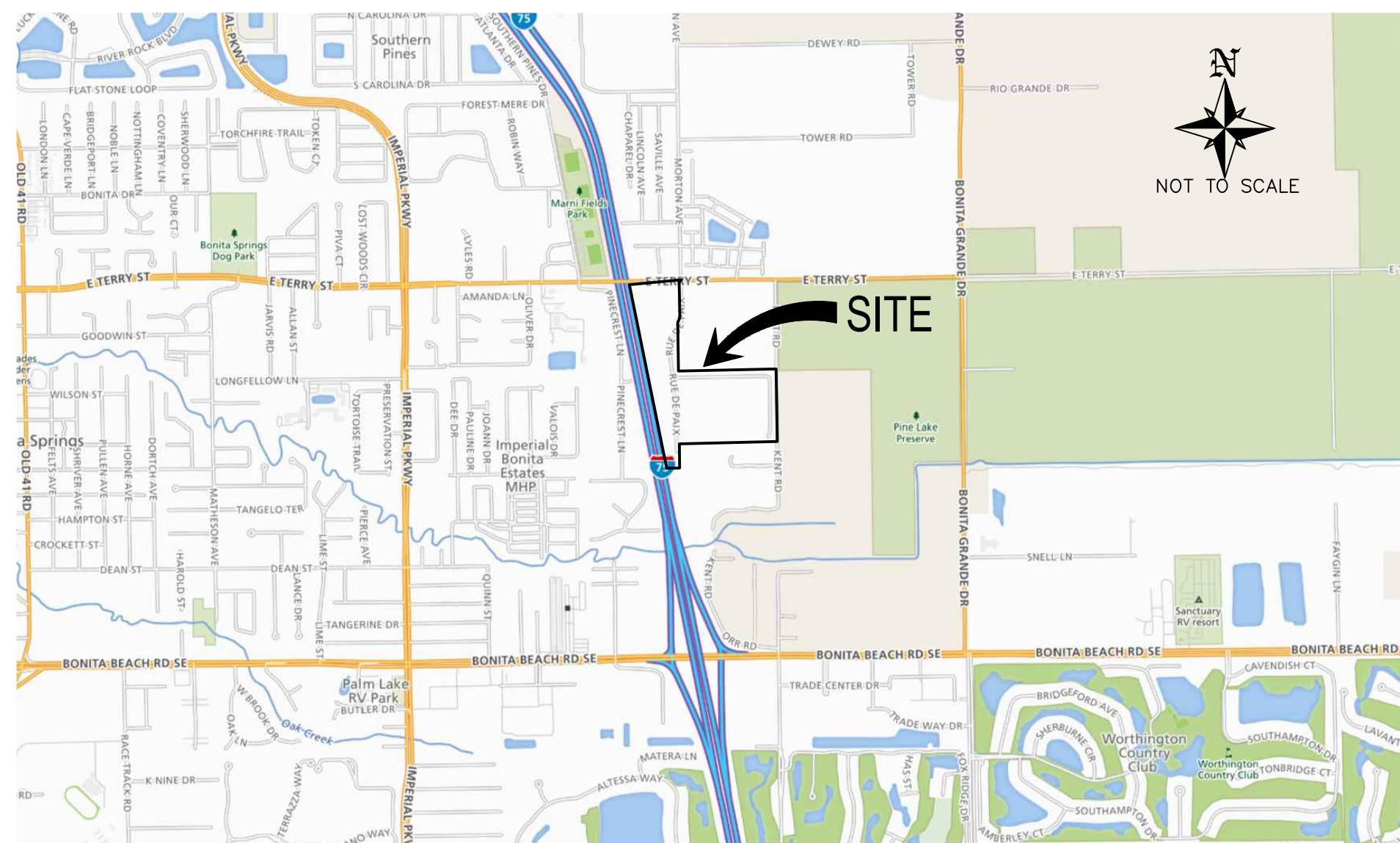
SURVEYOR:
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 10511 SIX MILE CYPRESS PKWY.
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Sheet List Table	
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GENERAL LOCATION MAP



LOCATION MAP

SECTION 31, TOWNSHIP 47 SOUTH, RANGE 26 EAST
 LEE COUNTY, FLORIDA

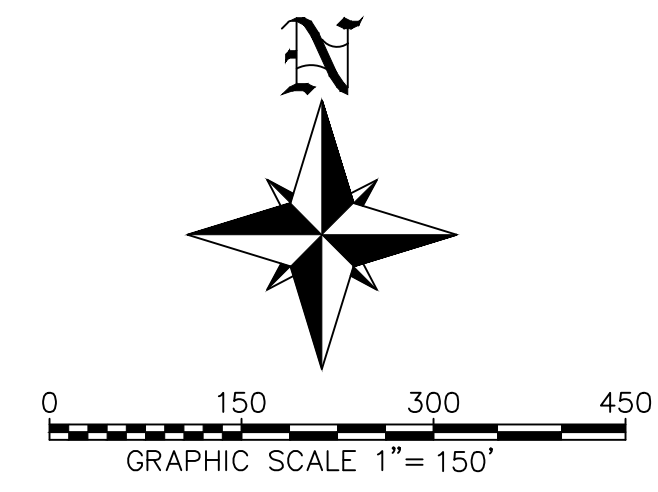
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D. BRENT ADDISON
 P.E. LIC. #70611

NO.	DATE	REVISION DESCRIPTION	BY
1	2/28/2022	REVISED PER BONITA SPRINGS UTILITY COMMENTS	DBA



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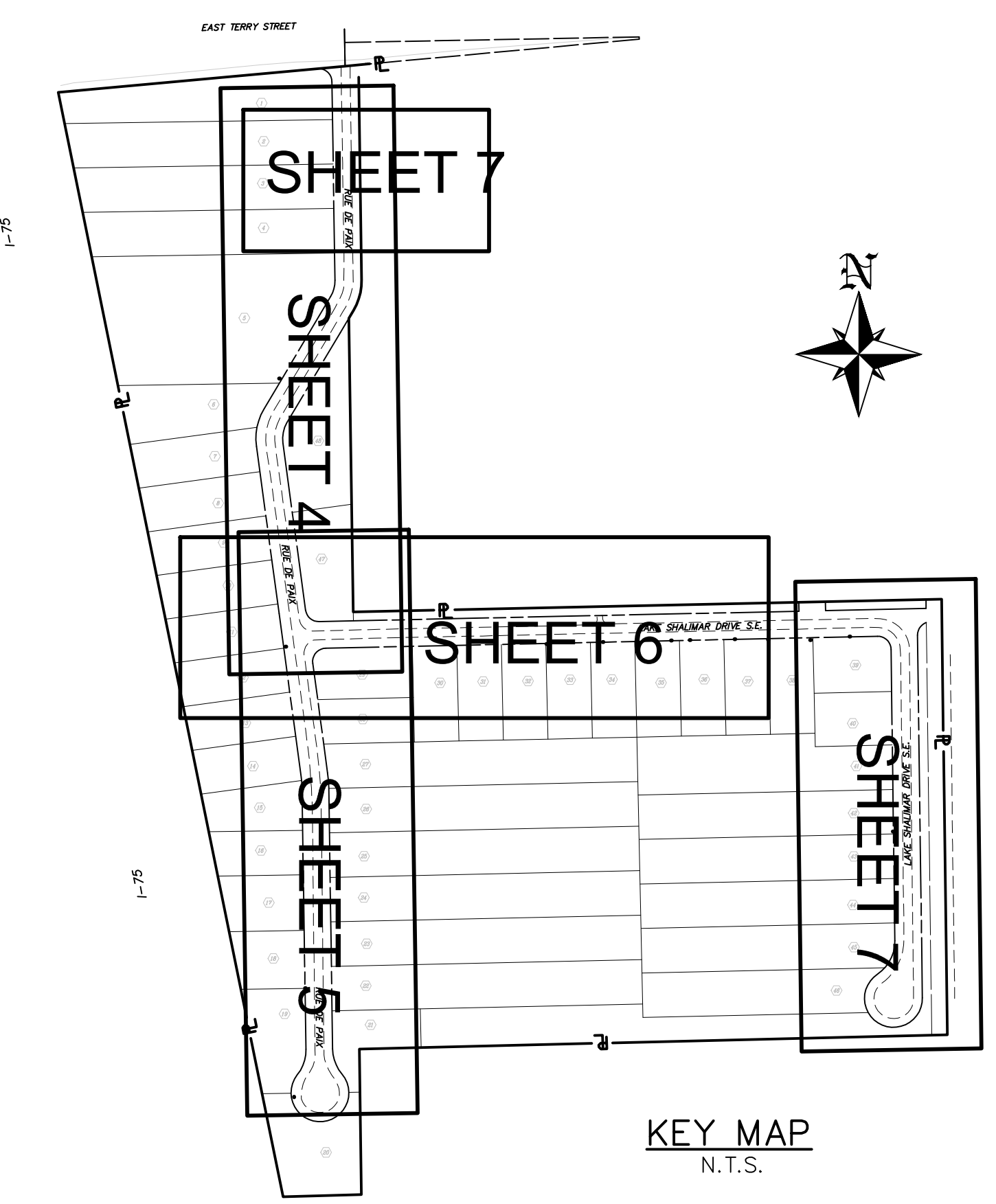
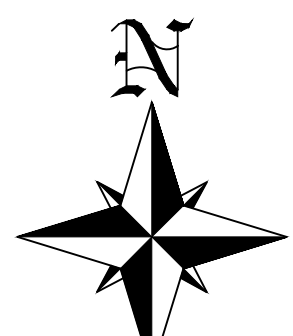
AERIAL-EXISTING CONDITIONS PLAN LAKES OF SANS SOUCI GRAVITY SEWER EXPANSION LEE COUNTY, FLORIDA									
DATE	PROJECT	DRAWING	DESIGN	DRAWN	CHECKED	SCALE	SHEET		
2/14/2020	8381SS	AERIAL	DBA	JLS	DBA	1"=150'	02		

EAST TERRY STREET

(WIDTH VARIES)

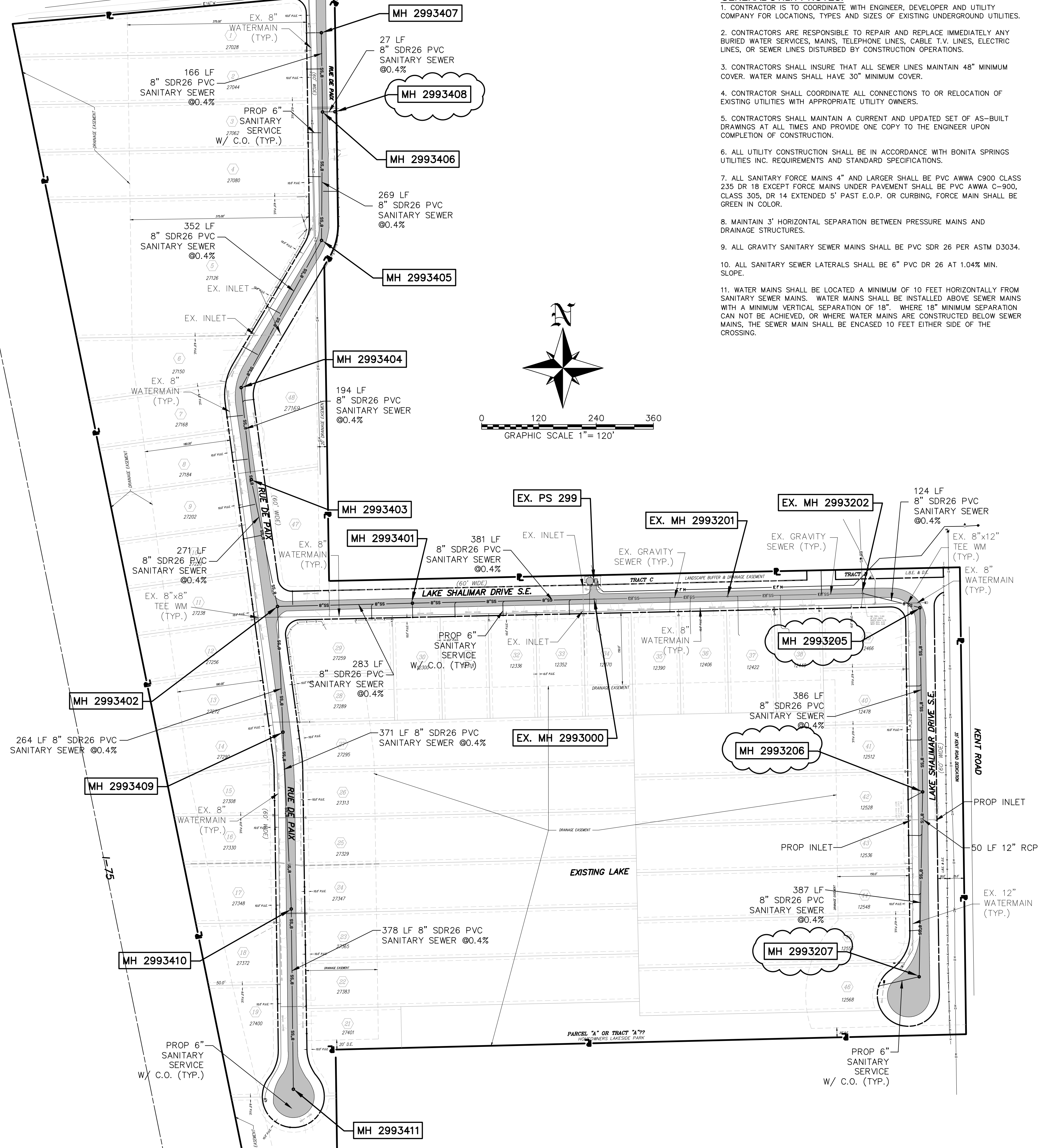
GENERAL UTILITY NOTES:

- CONTRACTOR IS TO COORDINATE WITH ENGINEER, DEVELOPER AND UTILITY COMPANY FOR LOCATIONS, TYPES AND SIZES OF EXISTING UNDERGROUND UTILITIES.
- CONTRACTORS ARE RESPONSIBLE TO REPAIR AND REPLACE IMMEDIATELY ANY BURIED WATER SERVICES, MAINS, TELEPHONE LINES, CABLE T.V. LINES, ELECTRIC LINES, OR SEWER LINES DISTURBED BY CONSTRUCTION OPERATIONS.
- CONTRACTORS SHALL INSURE THAT ALL SEWER LINES MAINTAIN 48" MINIMUM COVER. WATER MAINS SHALL HAVE 30" MINIMUM COVER.
- CONTRACTOR SHALL COORDINATE ALL CONNECTIONS TO OR RELOCATION OF EXISTING UTILITIES WITH APPROPRIATE UTILITY OWNERS.
- CONTRACTORS SHALL MAINTAIN A CURRENT AND UPDATED SET OF AS-BUILT DRAWINGS AT ALL TIMES AND PROVIDE ONE COPY TO THE ENGINEER UPON COMPLETION OF CONSTRUCTION.
- ALL UTILITY CONSTRUCTION SHALL BE IN ACCORDANCE WITH BONITA SPRINGS UTILITIES INC. REQUIREMENTS AND STANDARD SPECIFICATIONS.
- ALL SANITARY FORCE MAINS 4" AND LARGER SHALL BE PVC AWWA C900 CLASS 235 DR 18 EXCEPT FORCE MAINS UNDER PAVEMENT SHALL BE PVC AWWA C-900, CLASS 305, DR 14 EXTENDED 5' PAST E.O.P. OR CURBING, FORCE MAIN SHALL BE GREEN IN COLOR.
- MAINTAIN 3" HORIZONTAL SEPARATION BETWEEN PRESSURE MAINS AND DRAINAGE STRUCTURES.
- ALL GRAVITY SANITARY SEWER MAINS SHALL BE PVC SDR 26 PER ASTM D3034.
- ALL SANITARY SEWER LATERALS SHALL BE 6" PVC DR 26 AT 1.04% MIN. SLOPE.
- WATER MAINS SHALL BE LOCATED A MINIMUM OF 10 FEET HORIZONTALLY FROM SANITARY SEWER MAINS. WATER MAINS SHALL BE INSTALLED ABOVE SEWER MAINS WITH A MINIMUM VERTICAL SEPARATION OF 18" WHERE 18" MINIMUM SEPARATION CAN NOT BE ACHIEVED, OR WHERE WATER MAINS ARE CONSTRUCTED BELOW SEWER MAINS, THE SEWER MAIN SHALL BE ENCASED 10 FEET EITHER SIDE OF THE CROSSING.



KEY MAP
N.T.S.

- ALL FIELD LAYOUT SURVEYING FOR CONSTRUCTION AND LOCATING EASEMENTS, ROW, AND PROPERTY LINES FOR THIS PROJECT SHALL BE PROVIDED BY THE CONTRACTOR AT THEIR EXPENSE; UNDER THE DIRECTION OF A LICENSED PROFESSIONAL LAND SURVEYOR.
- BENCH MARK DATUM IS NATIONAL GEODETIC VERTICAL DATUM OF 1988 (NAVD 1988).
- EXISTING SUBSURFACE UTILITY HORIZONTAL ALIGNMENTS WERE ESTABLISHED THROUGH THE USE OF AVAILABLE RECORDS AND, THEREFORE, ARE SHOWN IN APPROXIMATE LOCATIONS. THE CONTRACTOR SHALL NOTIFY THE RESPECTIVE UTILITY COMPANIES NO LATER THAN 48 HOURS PRIOR TO COMMENCING WORK IN A SPECIFIC AREA. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE VERIFICATION OF ALL UTILITIES SIZE AND LOCATIONS WITHIN THE WORK AREA PRIOR TO BEGINNING WORK IN THE SPECIFIC AREA.
- CONTACT SUNSHINE STATE ONE CALL OF FLORIDA (SSOCOF) (811 or 1-800-432-4770) FOR ASSISTANCE IN FIELD LOCATING UNDERGROUND UTILITIES AT LEAST 48 HOURS BEFORE STARTING WORK IN A PROJECT AREA.
- BURIED PHONE LINES EXIST THROUGHOUT THE LIMITS OF WORK BUT MAY NOT BE IDENTIFIED ON THE DRAWINGS. PROCEED WITH CAUTION TO MAINTAIN THE PHONE SERVICES. DAMAGES TO, OR RELOCATION OF PHONE LINES DURING CONSTRUCTION SHALL BE REPORTED IMMEDIATELY TO AND/OR COORDINATED WITH CENTURYLINK TELEPHONE AND REPAIRED OR RELOCATED AT THE CONTRACTOR'S EXPENSE.
- WATER, SEWER, AND IRRIGATION SERVICES MAY EXIST WITHIN THE LIMITS OF WORK BUT MAY NOT BE IDENTIFIED ON THE DRAWINGS. PROCEED WITH CAUTION TO MAINTAIN THE WATER SERVICES. DAMAGES TO, OR RELOCATION OF WATER SERVICES DURING CONSTRUCTION SHALL BE REPORTED IMMEDIATELY TO AND/OR COORDINATED WITH POWER COMPANY AND REPAIRED OR RELOCATED AT THE CONTRACTOR'S EXPENSE. THE CONTRACTOR SHALL ARRANGE AND PAY FOR ALL UTILITY POLE BRACING REQUIRED BY HIS OPERATIONS.
- OVERHEAD AND UNDERGROUND ELECTRIC LINES EXIST THROUGHOUT THE LIMITS OF WORK BUT MAY NOT BE SHOWN ON THE DRAWINGS. PROCEED WITH CAUTION TO PROTECT THE ELECTRIC LINES AND POLES. DAMAGES TO, OR RELOCATION OF ELECTRIC LINES OR POLES SHALL BE REPORTED IMMEDIATELY TO AND/OR COORDINATED WITH POWER COMPANY AND REPAIRED OR RELOCATED AT THE CONTRACTOR'S EXPENSE. THE CONTRACTOR SHALL ARRANGE AND PAY FOR ALL UTILITY POLE BRACING REQUIRED BY HIS OPERATIONS.
- BURIED CABLE AND FIBER OPTIC LINES EXIST THROUGHOUT THE LIMITS OF WORK BUT MAY NOT BE SHOWN ON THE DRAWINGS. PROCEED WITH CAUTION TO PROTECT THE BURIED CABLE AND FIBER OPTIC LINES. DAMAGES TO OR RELOCATION OF CABLE AND FIBER OPTIC LINES SHALL BE REPORTED IMMEDIATELY TO AND/OR COORDINATED WITH THE CABLE COMPANY AND REPAIRED OR RELOCATED AT THE CONTRACTOR'S EXPENSE.
- DISRUPTION OR DAMAGE TO EXISTING UTILITY LINES SHALL BE REPORTED TO THE UTILITY OWNER, BONITA SPRINGS UTILITIES AND ENGINEER IMMEDIATELY.
- CONTRACTOR SHALL EXCAVATE TEST PITS FOR THE PURPOSE OF PROTECTING AND CONFIRMING LOCATION AND DEPTH OF EXISTING UTILITIES OR STRUCTURES IN ADVANCE OF CONSTRUCTION. TEST PITS SHALL BE DUG BY HAND AND BACKFILLED IMMEDIATELY AFTER THEIR PURPOSE HAS BEEN SATISFIED AND SHALL NOT REMAIN OPEN DURING NONWORKING HOURS.
- DISINFECTION AND SAMPLING WILL BE REQUIRED WHEREVER AN EXISTING WATER MAIN OR SERVICE IS DISTURBED DUE TO CONSTRUCTION ACTIVITY AT THE CONTRACTOR'S EXPENSE. BSU WITH ASSISTANCE FROM THE CONTRACTOR WILL NOTIFY THE AFFECTED PROPERTY OWNERS WITH A NOTICE TO BOIL WATER WHEREVER THE EXISTING WATER MAINS OR SERVICES ARE DISTURBED.
- CONTRACTOR SHALL MINIMIZE THE DISRUPTION OF SERVICE TO ANY EXISTING FIRE HYDRANTS. THE FIRE DEPARTMENT SHALL BE NOTIFIED A MINIMUM OF 72 HOURS IN ADVANCE OF ANY AND ALL WORK REQUIRING DISRUPTION.
- LOCATIONS AND ELEVATIONS OF EXISTING UTILITIES EXPOSED DURING CONSTRUCTION SHALL BE ACCURATELY RECORDED ON THE CONSTRUCTION DRAWINGS. THE ENGINEER SHALL BE IMMEDIATELY NOTIFIED OF ANY CONFLICTS WITH THE PROPOSED CONSTRUCTION.
- CONTRACTOR SHALL PROVIDE SUPPLEMENTAL PHYSICAL SUPPORT FOR EXISTING UTILITIES THAT ARE EXPOSED BY EXCAVATION AS DIRECTED BY THE ENGINEER. THERE SHALL BE NO VISIBLE DEFLECTION ON EXISTING UTILITIES AS THEY ARE UNDERMINED FOR TRENCHING.
- ANY AND ALL AREAS DISTURBED DURING CONSTRUCTION ACTIVITIES SHALL BE COMPLETELY RESTORED TO A CONDITION EQUAL TO OR BETTER THAN EXISTING PRIOR TO CONSTRUCTION.
- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO SHAPE THE PAVEMENT AT INTERSECTIONS, STREETS, AND DRIVEWAYS SO THAT POSITIVE DRAINAGE WILL BE MAINTAINED WITH NO PONDING OF WATER AS A RESULT OF THE NEW CONSTRUCTION.
- PROPERTY MARKERS, SURVEY MONUMENTS AND PERMANENT MARKERS SHALL BE PROTECTED BY THE CONTRACTOR. NOTIFY OWNER IF ANY MONUMENTS MIGHT BE DISTURBED. THE CONTRACTOR'S REGISTERED SURVEYOR SHALL REPLACE ANY MARKERS THAT ARE DISTURBED. ONLY AS APPROVED BY THE CITY SURVEYOR.
- EXISTING GRAVITY SEWER MAIN FLOW PATH SHALL BE MAINTAINED IN OPERATION AT ALL TIMES. BYPASS PUMPING AS REQUIRED BY THE CONTRACTOR'S ACTIVITIES SHALL BE AT THE CONTRACTOR'S EXPENSE.
- ALL EXISTING TRAFFIC SIGNS, ARE LIGHTS, AND SIGNALIZATION LOOPS WITHIN THE PROPOSED CONSTRUCTION LIMITS ARE TO BE PROTECTED BY THE CONTRACTOR. CAUTION SHOULD BE EXERCISED WHILE RELOCATING EXISTING SIGNS WHERE DIRECTED. IF THE SIGNS ARE DAMAGED BEYOND USE, SIGNS SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
- CONTRACTOR SHALL PROVIDE ALL DEWATERING EQUIPMENT NECESSARY TO KEEP ALL EXCAVATIONS DRY AND SHALL PROVIDE ALL SHORING, SHEETING, AND BRACING NECESSARY TO PROTECT WORKMEN, ADJACENT STRUCTURES, UTILITIES, EXISTING PAVEMENT, OR TO MINIMIZE TRENCH WIDTH.
- IF USED, INSTALL TEMPORARY STEEL SHEET PILING IN ACCORDANCE WITH FDOT STANDARD SPECIFICATIONS SECTIONS 455-8 AND 455-9. SUBMIT SHEETING CALCULATIONS SEALED BY FLORIDA LICENSED PROFESSIONAL ENGINEER A MINIMUM OF 7 DAYS PRIOR TO INSTALLATION.
- CONTRACTOR IS RESPONSIBLE FOR PUMPING ALL WELL POINT AND TRENCH SUMP DEWATERING FLOWS IN ACCORDANCE WITH THE CONTRACTOR OBTAINED DEWATERING PERMIT. THE CONTRACTOR SHALL BE KNOWLEDGEABLE OF THE DRAINAGE STORM WATER SYSTEM.
- PROTECT AND MAINTAIN DRAINAGE SYSTEMS. CLEAN DRAINAGE SYSTEMS AFFECTED BY THE WORK AT THE END OF CONSTRUCTION. FURNISH, INSTALL AND MAINTAIN SITE SPECIFIC EROSION AND SEDIMENT CONTROL PROCEDURES TO PROTECT BOTH EXISTING AND CONSTRUCTED FACILITIES, PROPERTY AND WATER BODIES IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, OWNER'S WATER USE PERMIT, AND APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS. OBTAIN NPDES PERMIT WHERE REQUIRED AS SPECIFIED IN SECTION 01066 NPDES REQUIREMENTS. KEEP A COPY OF ALL APPLICABLE PERMITS ON SITE.
- CONTRACTOR SHALL REPLACE ANY CATCH BASIN OR DITCH BOTTOM INLET WHICH IS DAMAGED DURING CONSTRUCTION WITH A CATCH BASIN OR DITCH BOTTOM INLET AS DETAILED IN THESE DRAWINGS. INLET AND PIPES DAMAGED FOR THE CONVENIENCE OF THE CONTRACTOR SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
- LOCATIONS OF PROPOSED SEWER, AND WATER LATERALS ARE BASED ON AVAILABLE INFORMATION AT TIME OF DESIGN. PROVIDE ENGINEER A MINIMUM OF SEVEN (7) DAYS NOTICE TO EVALUATE AND APPROVE REQUESTS FOR RELOCATING LATERALS.
- FURNISH AND MAINTAIN MAINTENANCE OF TRAFFIC EQUIPMENT AND LABOR (BARRICADES, SIGNS, FLAGMEN, ETC.) IN ACCORDANCE WITH THE CURRENT EDITION OF THE MANUAL ON THE UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND THE FLORIDA DEPARTMENT OF TRANSPORTATION ROADWAY AND TRAFFIC DESIGN STANDARDS UNTIL PAVING OVERLAY IS COMPLETED.
- TOP OF MANHOLE FRAME (RIM) ELEVATIONS ARE GIVEN FOR REFERENCE. INSTALL TOP OF MANHOLES FLUSH WITH FINAL ASPHALT SURFACE COURSE OVERLAY.
- EXCESS SOIL FROM EXCAVATION AND MILLED OR EXCAVATED ASPHALT SHALL BE THE PROPERTY OF THE CONTRACTOR. INCLUDE THE COST FOR DISPOSING OF THESE WASTE MATERIALS IN THE UNIT PRICE OF THE ITEM TO WHICH IT PERTAINS OR IS MOST CLOSELY ASSOCIATED. NO SEPARATE PAYMENT ITEM FOR THESE ACTIVITIES WILL BE PERMISSIBLE.
- REPLACE IN KIND SIDEWALKS, DRIVES, LAWNS, MAIL BOXES, SPRINKLERS, ETC., REMOVED OR DAMAGED DURING CONSTRUCTION OR THE STAGING OF MATERIAL OR DEWATERING.
- ROAD RESTORATION SHALL BE IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
- REMOVE PAVEMENT MARKING INCLUDING SOLID LINES, STOP BARS, ARROWS AND OTHER STRIPING AT SIGNALIZED INTERSECTIONS SHALL BE THERMOPLASTIC.
- ALL DIRT AND DEBRIS TRACKED ON TO CITY STREETS OUTSIDE OF CONSTRUCTION AREA MUST BE CLEANED UP AND BROOMED DAILY. IMPLEMENT DUST CONTROL IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
- THE GENERAL CIVIL (GC) DETAILS MAY INCLUDE WORK NOT APPLICABLE TO THE PROJECT. ALL GENERAL NOTES ARE APPLICABLE TO THE PROJECT.



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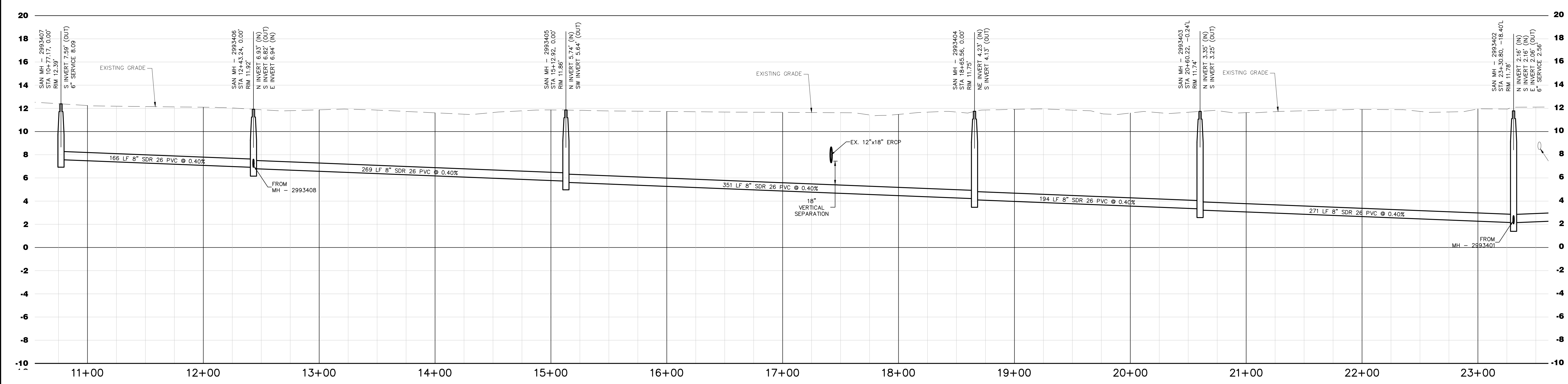
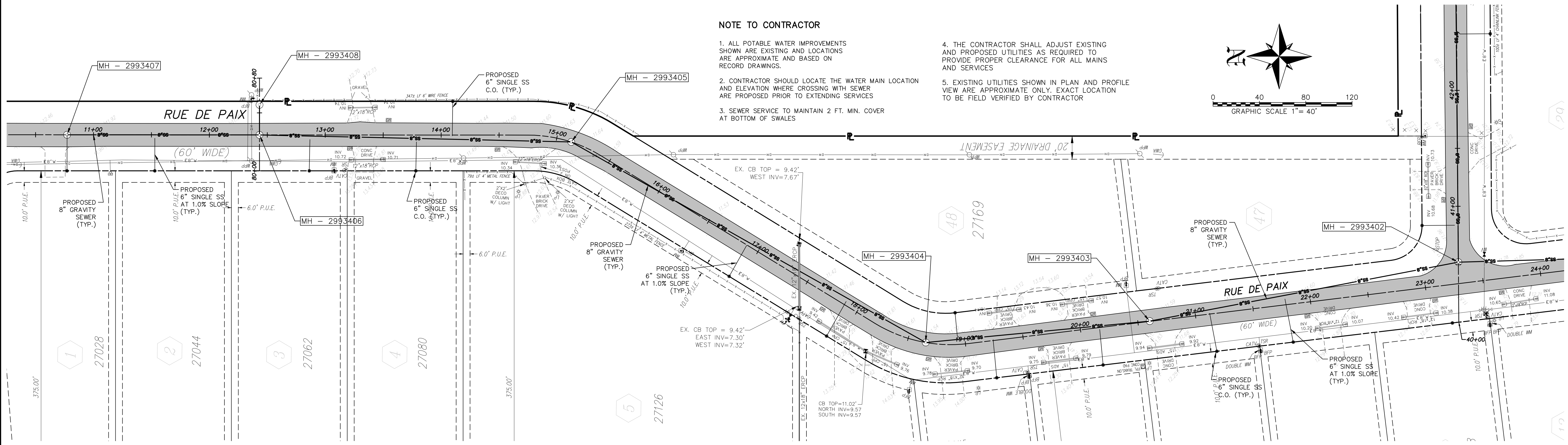
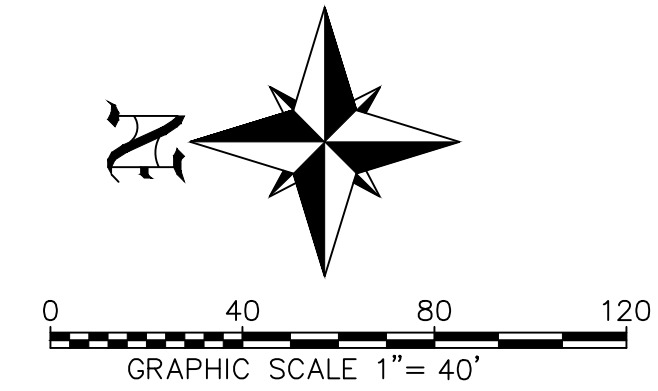
MASTER UTILITY PLAN							LAKES OF SANS SOUCI GRAVITY SEWER EXPANSION		LEE COUNTY, FLORIDA	
DATE	PROJECT	DRAWING	DESIGN	DRAWN	CHECKED	SCALE	SHEET			
2/14/2020	8381SS	MUP	DBA	JLS	DBA	1"=120'	03			

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LAKES OF SANS SOUCI GRAVITY SEWER EXPANSION

NOTE TO CONTRACTOR

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2. CONTRACTOR SHOULD LOCATE THE WATER MAIN LOCATION AND ELEVATION WHERE CROSSING WITH SEWER ARE PROPOSED PRIOR TO EXTENDING SERVICES
3. SEWER SERVICE TO MAINTAIN 2 FT. MIN. COVER AT BOTTOM OF SWALES
4. THE CONTRACTOR SHALL ADJUST EXISTING AND PROPOSED UTILITIES AS REQUIRED TO PROVIDE PROPER CLEARANCE FOR ALL MAINS AND SERVICES
5. EXISTING UTILITIES SHOWN IN PLAN AND PROFILE VIEW ARE APPROXIMATE ONLY. EXACT LOCATION TO BE FIELD VERIFIED BY CONTRACTOR



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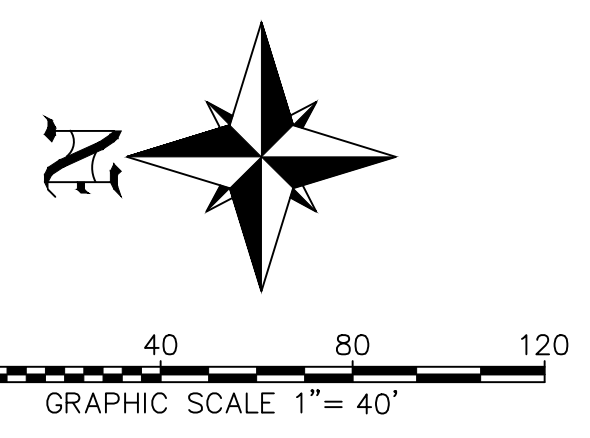
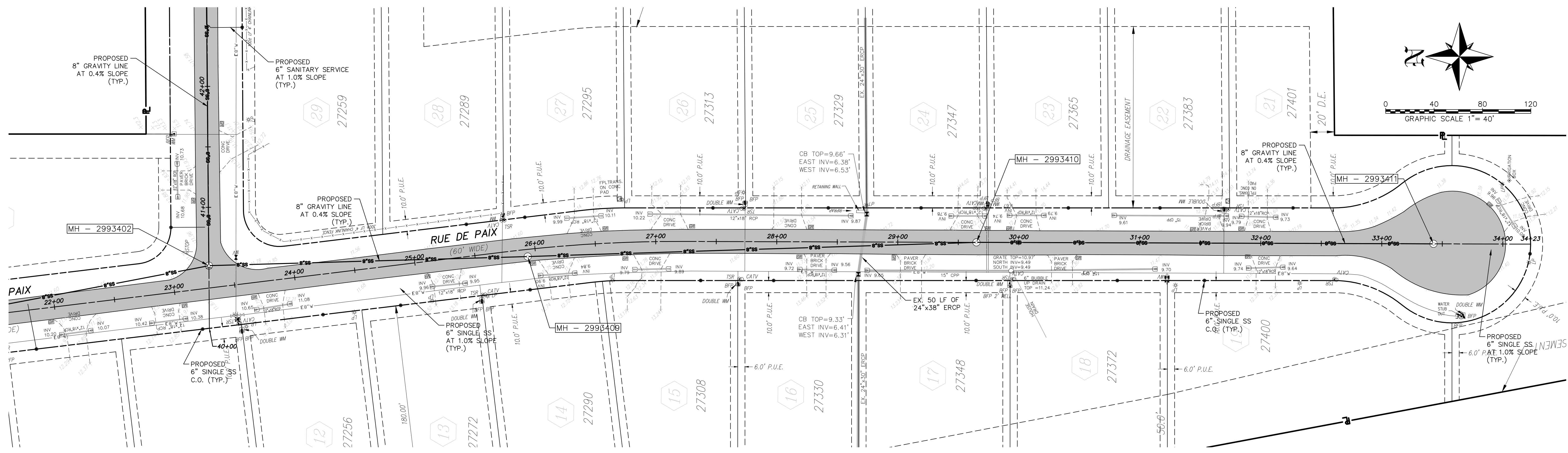
PLAN & PROFILE 1
LAKES OF SANS SOUCI GRAVITY SEWER EXPANSION
 LEE COUNTY, FLORIDA

DATE	PROJECT	DRAWING	DESIGN	DRAWN	CHECKED	SCALE	SHEET
2/14/2020	8381SS	P&P-1	DBA	JLS	DBA	(V) 1"=4' (H) 1"=40'	04

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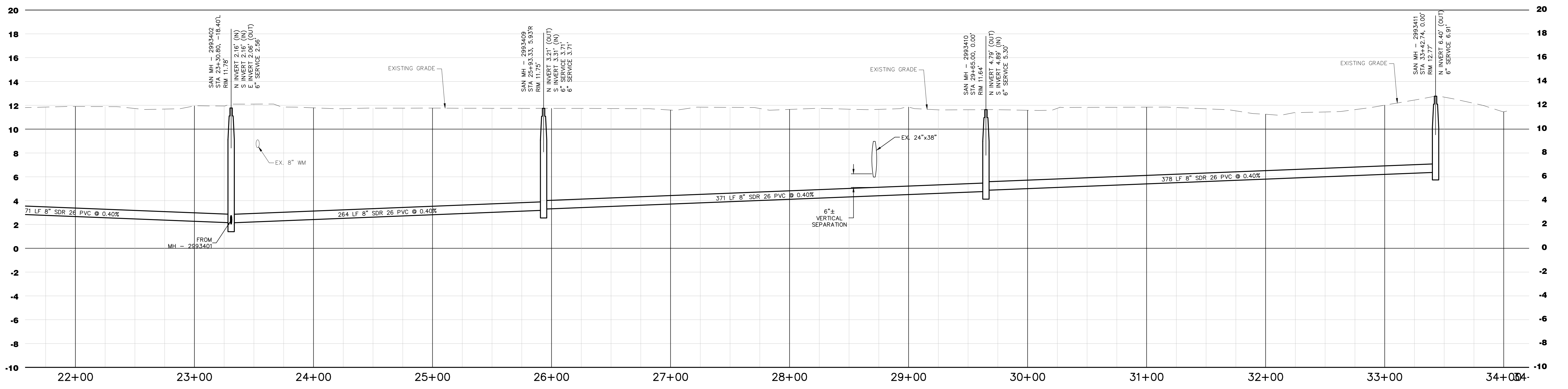
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PLAN & PROFILE 2
LAKES OF SANS SOUCI GRAVITY SEWER EXPANSION
 LEE COUNTY, FLORIDA

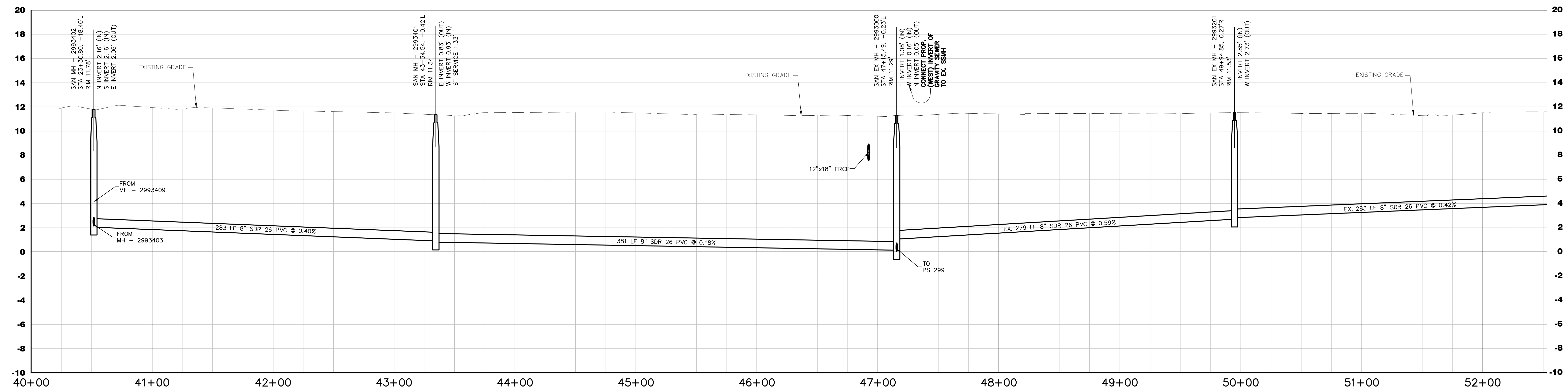
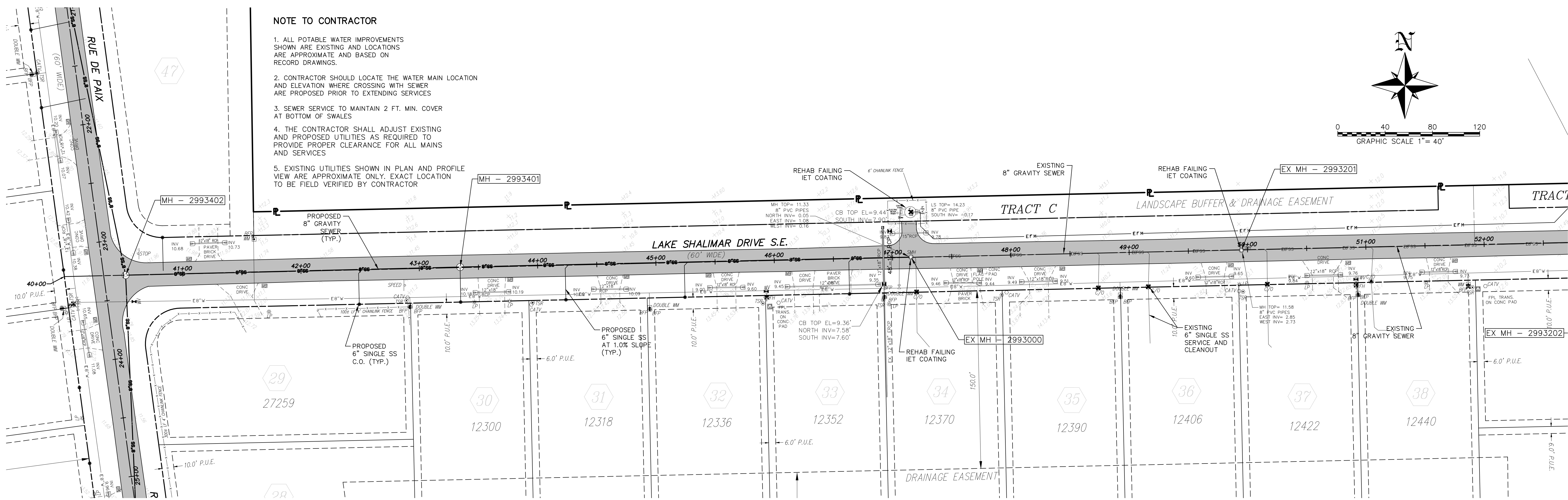
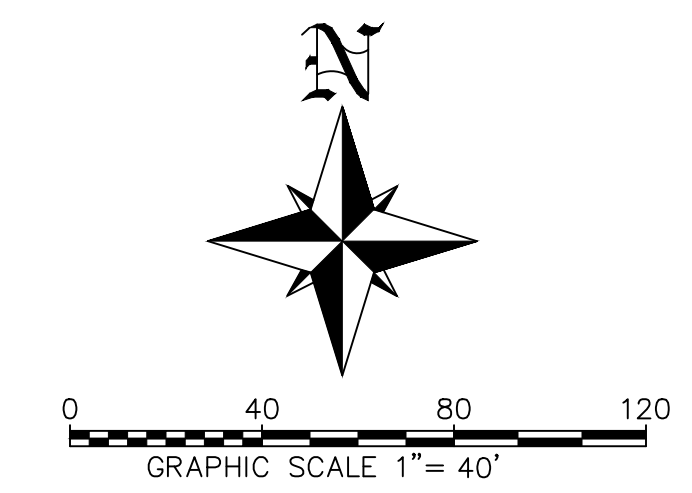
DATE	PROJECT	DRAWING	DESIGN	DRAWN	CHECKED	SCALE	SHEET
2/14/2020	8381SS	P&P-2	DBA	JLS	DBA	(V) 1"=4' (H) 1"=40'	05

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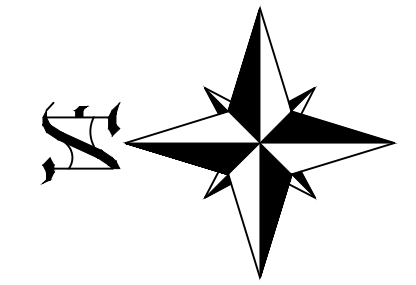
PLAN & PROFILE 3
LAKES OF SANS SOUCI GRAVITY SEWER EXPANSION
 LEE COUNTY, FLORIDA

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2/14/2020	8381SS	P&P-3	DBA	JLS	DBA	(V) (H) 1"=4' 1"=40'	06

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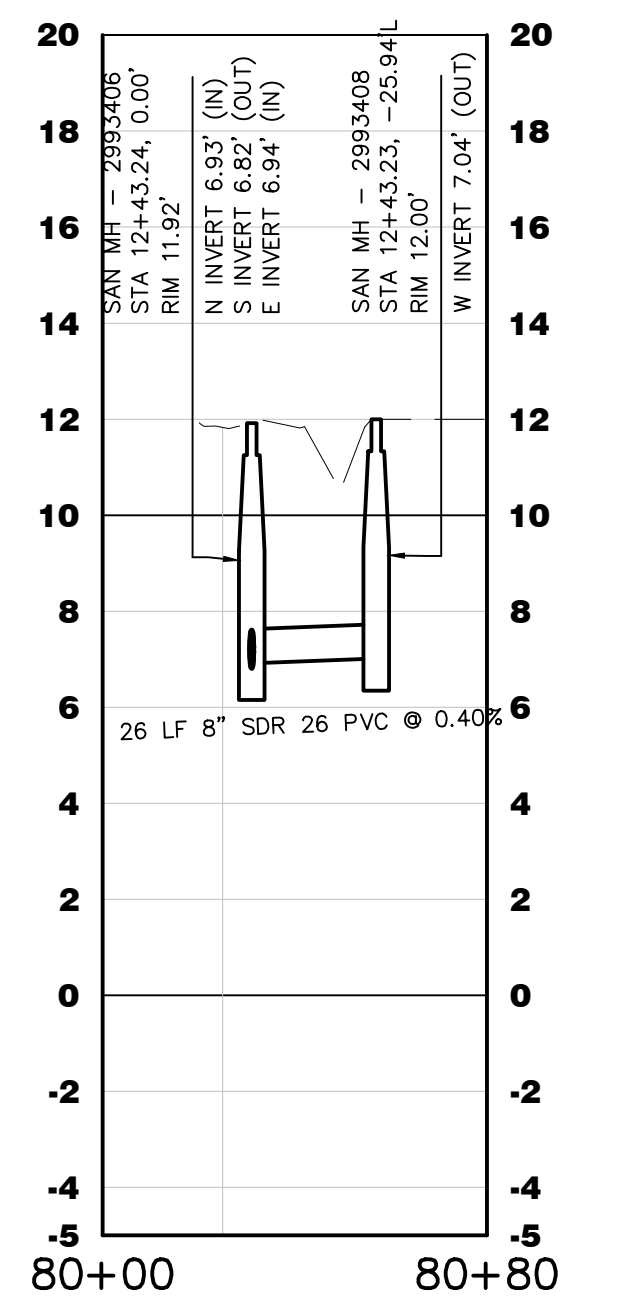
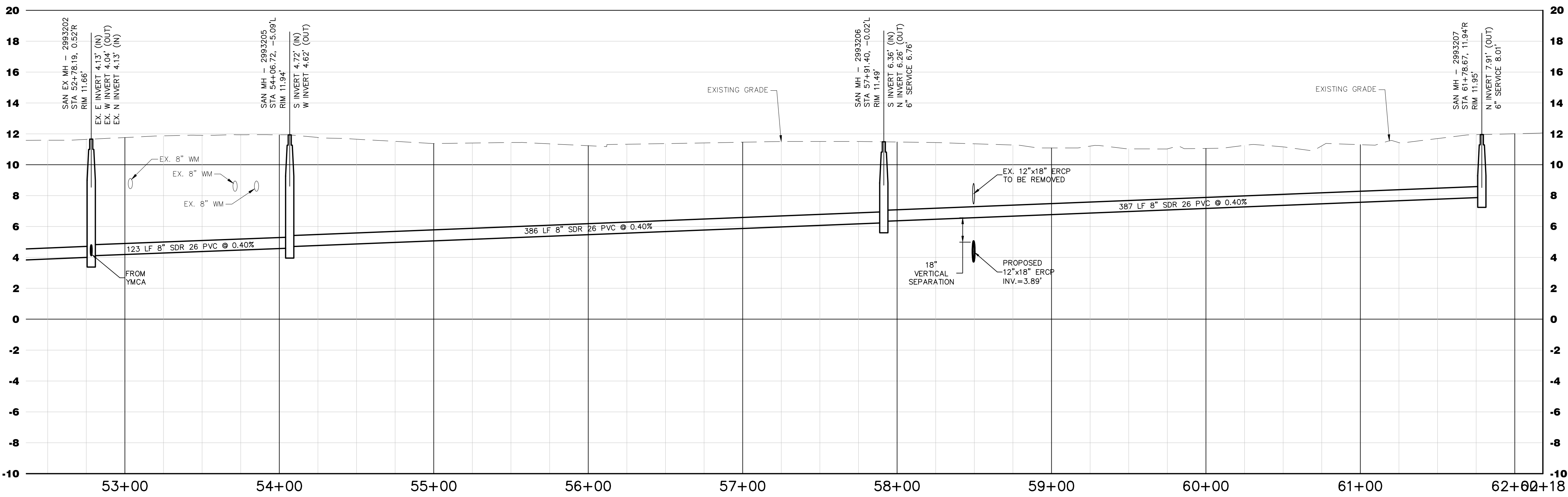
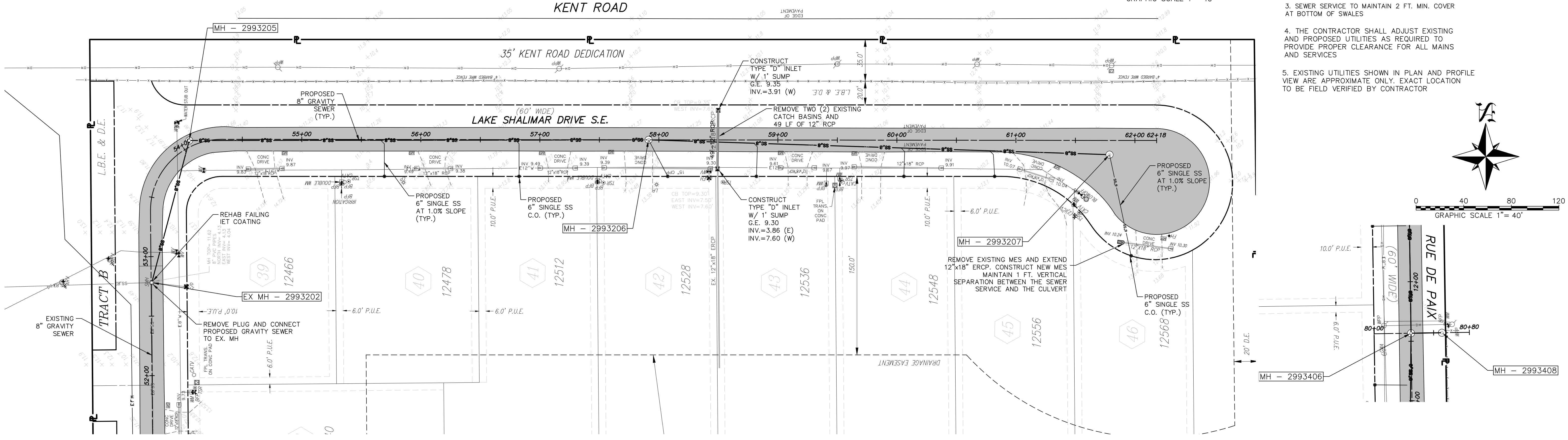
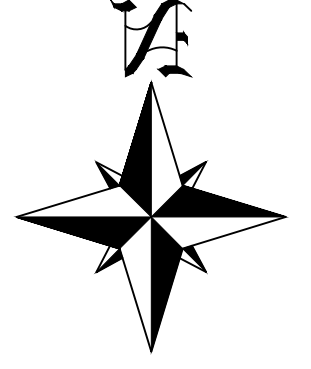
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LAKES OF SANS SOUCI GRAVITY SEWER EXPANSION



NOTE TO CONTRACTOR

1. ALL POTABLE WATER IMPROVEMENTS SHOWN ARE EXISTING AND LOCATIONS ARE APPROXIMATE AND BASED ON RECORD DRAWINGS.
2. CONTRACTOR SHOULD LOCATE THE WATER MAIN LOCATION AND ELEVATION WHERE CROSSING WITH SEWER ARE PROPOSED PRIOR TO EXTENDING SERVICES
3. SEWER SERVICE TO MAINTAIN 2 FT. MIN. COVER AT BOTTOM OF SWALES
4. THE CONTRACTOR SHALL ADJUST EXISTING AND PROPOSED UTILITIES AS REQUIRED TO PROVIDE PROPER CLEARANCE FOR ALL MAINS AND SERVICES
5. EXISTING UTILITIES SHOWN IN PLAN AND PROFILE VIEW ARE APPROXIMATE ONLY. EXACT LOCATION TO BE FIELD VERIFIED BY CONTRACTOR



PREPARED FOR:
BONITA SPRINGS UTILITIES
 11860 EAST TERRY STREET
 BONITA SPRINGS, FL. 34135
 (239) 390-4805
 (239) 390-4905

NO.	DATE	REVISION DESCRIPTION	BY

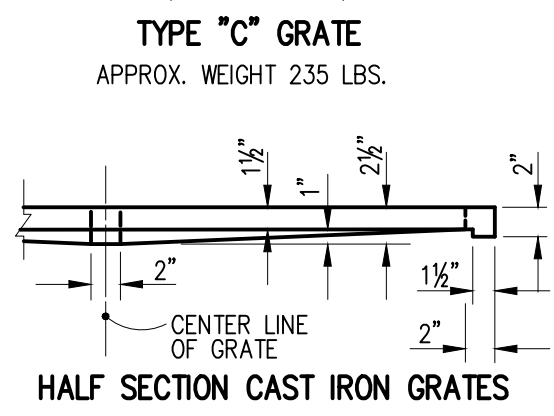
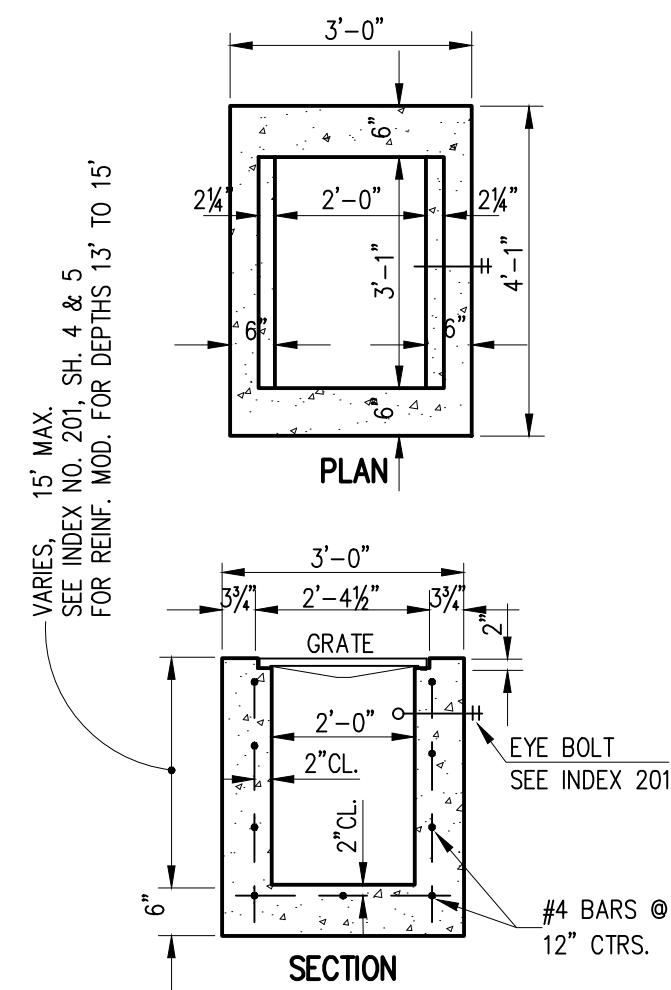
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 PHONE: (239) 939-5490 FAX: (239) 939-2523
 ENGINEERING LICENSE # EB 6469
 SURVEY LICENSE # LB 6690
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D. BRENT ADDISON
 P.E. LIC. #70611

PLAN & PROFILE 4							LAKES OF SANS SOUCI GRAVITY SEWER EXPANSION			LEE COUNTY, FLORIDA		
DATE	PROJECT	DRAWING	DESIGN	DRAWN	CHECKED	SCALE	SHEET					
2/14/2020	8381SS	P&P-4	DBA	JLS	DBA	(V) (H) 1"=4' 1"=40'	07					

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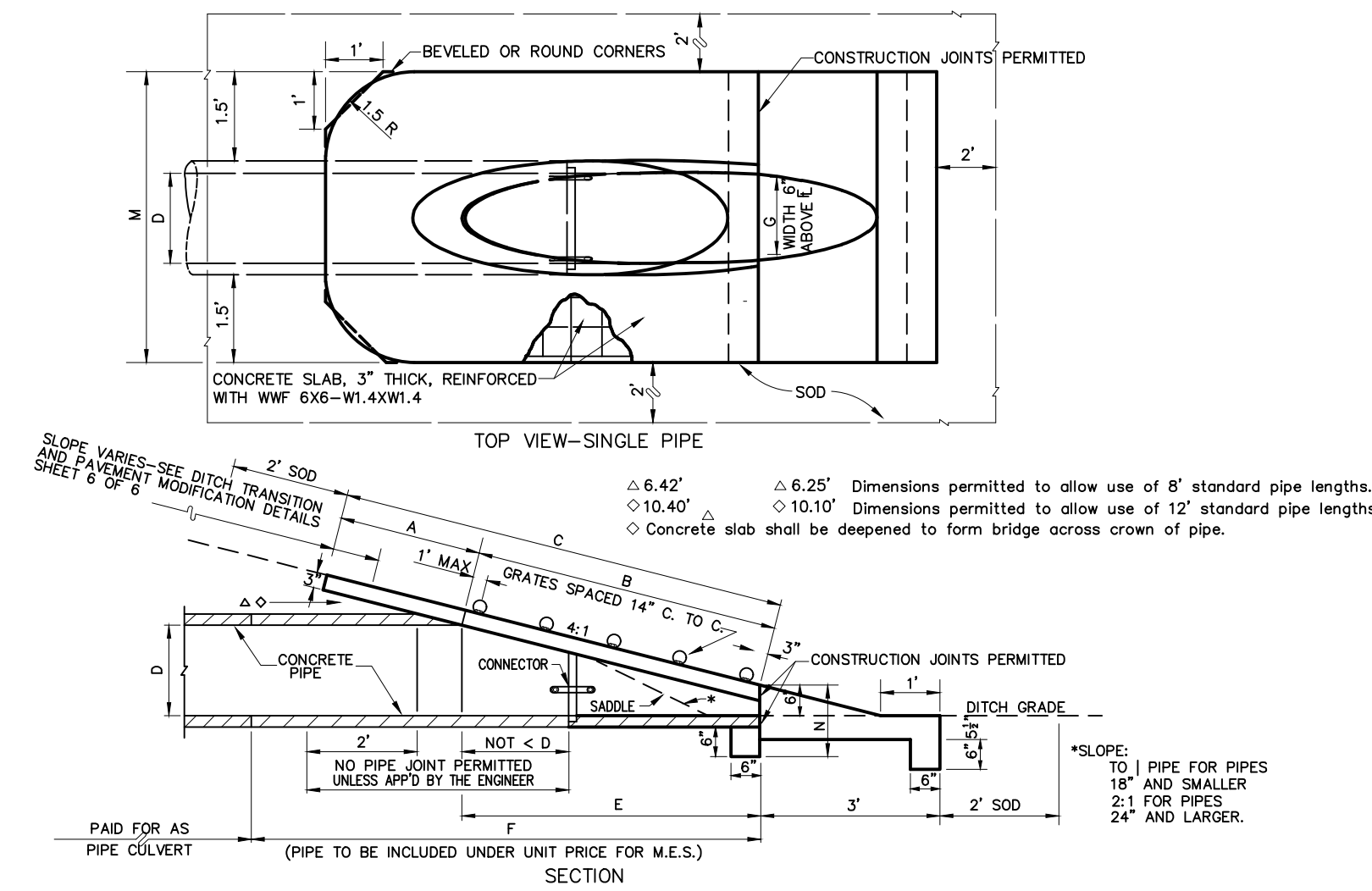
LAKES OF SANS SOUCI GRAVITY SEWER EXPANSION



MAXIMUM PIPE SIZE RECOMMENDED FOR EACH OF THE WALL SIZES:
 2'-0" WALL - 18" PIPE
 3'-1" WALL - 24" PIPE

TYPE "C" INLET DETAIL
N.T.S.

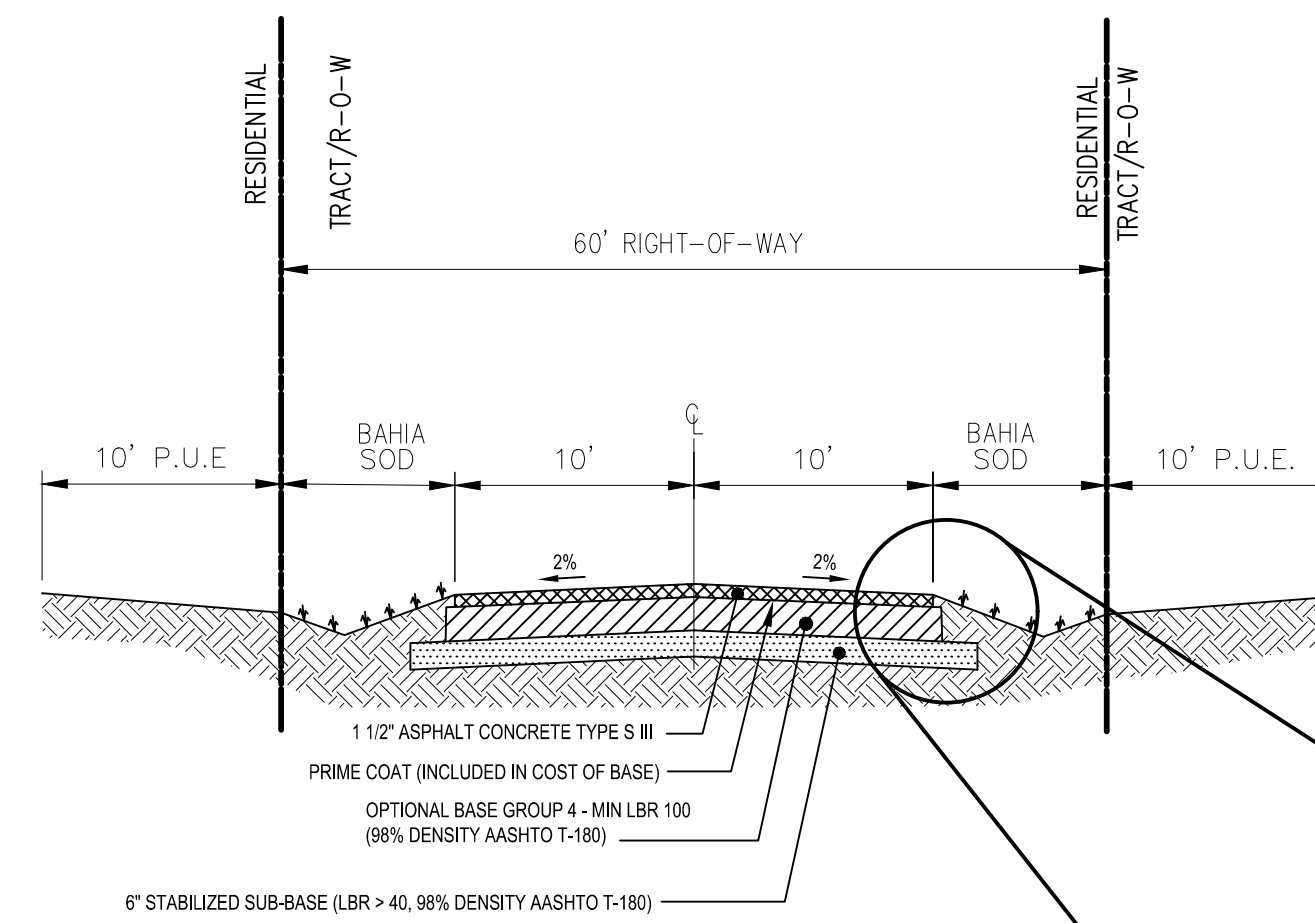
- NOTES:
- 6" WALL THICKNESS MUST BE USED FOR PRE-CAST INLETS IN ACCORDANCE WITH F.D.O.T. INDEX 201.
 - CONCRETE TO BE F.D.O.T. CLASS I OR EQUAL. (2,500 PSI MINIMUM STRENGTH)
 - CONSTRUCTION TO BE IN ACCORDANCE WITH F.D.O.T. SPECIFICATION SECTION 425.



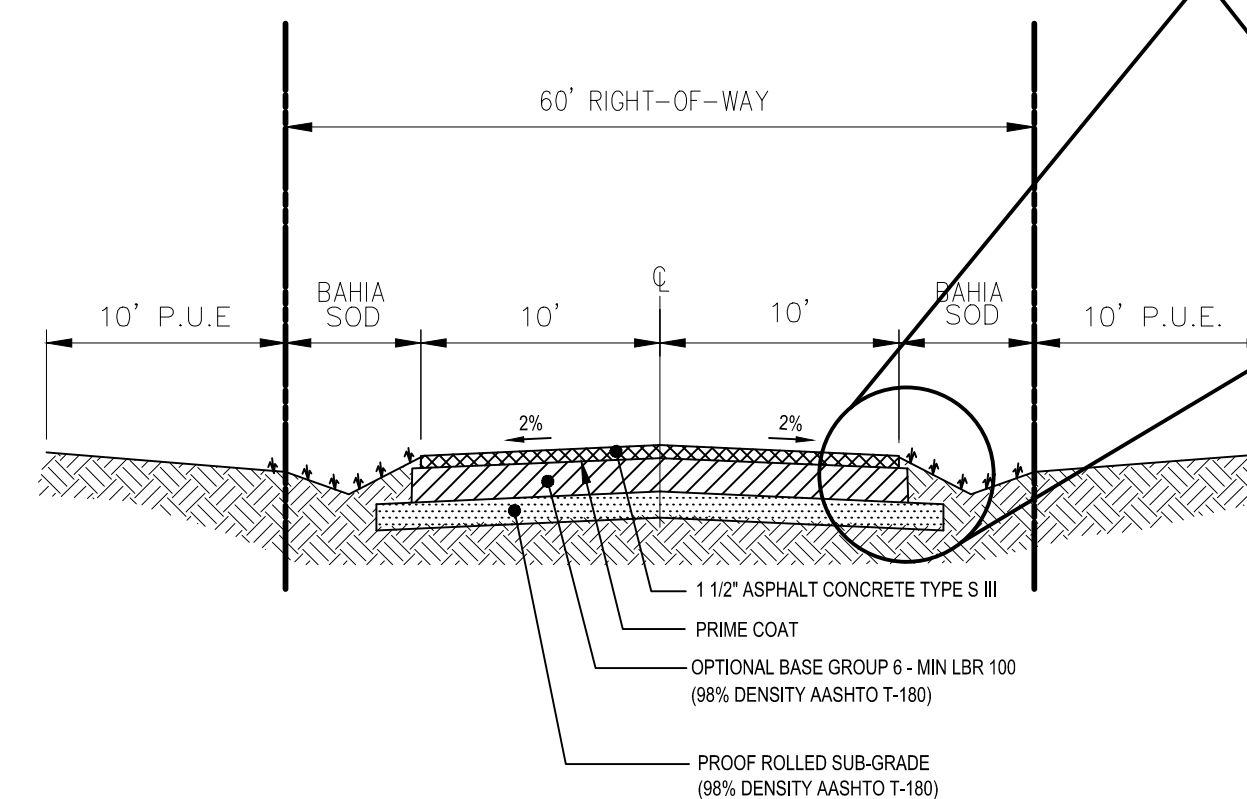
DIMENSIONS & QUANTITIES

D	X	A	B	C	E	F	G	M	N	Grate Pipe Size			
18"	2'-2"	2.27'	4.09'	6.36'	4.03'	8'	1.22'	4.63'	7.97'	9.79'	12.37'	1.19'	None
18"	2'-10"	2.36'	5.12'	7.48'	5.03'	9'	1.41'	4.92'	7.75'	10.58'	13.42'	1.21'	None
24"	3'-8"	2.53'	7.18'	9.71'	7.03'	11'	1.73'	5.58'	8.99'	12.33'	15.78'	1.28'	None
30"	4'-5"	2.70'	9.25'	11.95'	9.03'	13'	2.00'	6.08'	10.33'	14.50'	18.83'	1.29'	None
36"	5'-1"	2.87'	11.31'	14.18'	11.03'	15'	2.24'	6.67'	11.75'	16.83'	21.92'	1.33'	None
42"	6'-0"	3.05'	13.37'	16.42'	13.03'	17'	2.45'	7.25'	13.22'	19.25'	25.35'	1.38'	None
48"	6'-8"	3.22'	15.43'	18.65'	15.03'	19'	2.65'	7.83'	14.58'	21.33'	28.08'	1.42'	None
54"	7'-6"	3.39'	17.49'	20.88'	17.03'	21'	2.85'	8.40'	16.08'	23.75'	31.42'	1.46'	None
60"	8'-4"	3.56'	19.55'	23.11'	18.03'	23'	3.02'	8.98'	17.52'	26.00'	34.50'	1.50'	None

MITERED END SECTION
N.T.S.

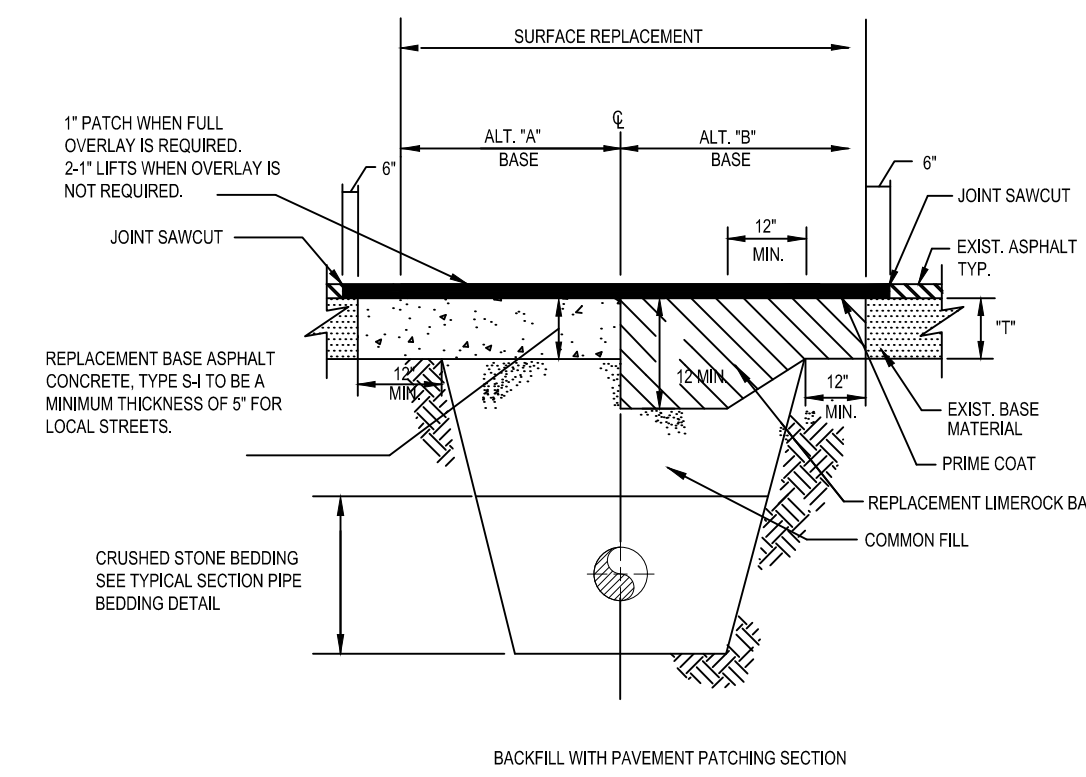


**OPTION NO. 1
2-LANE ROAD**



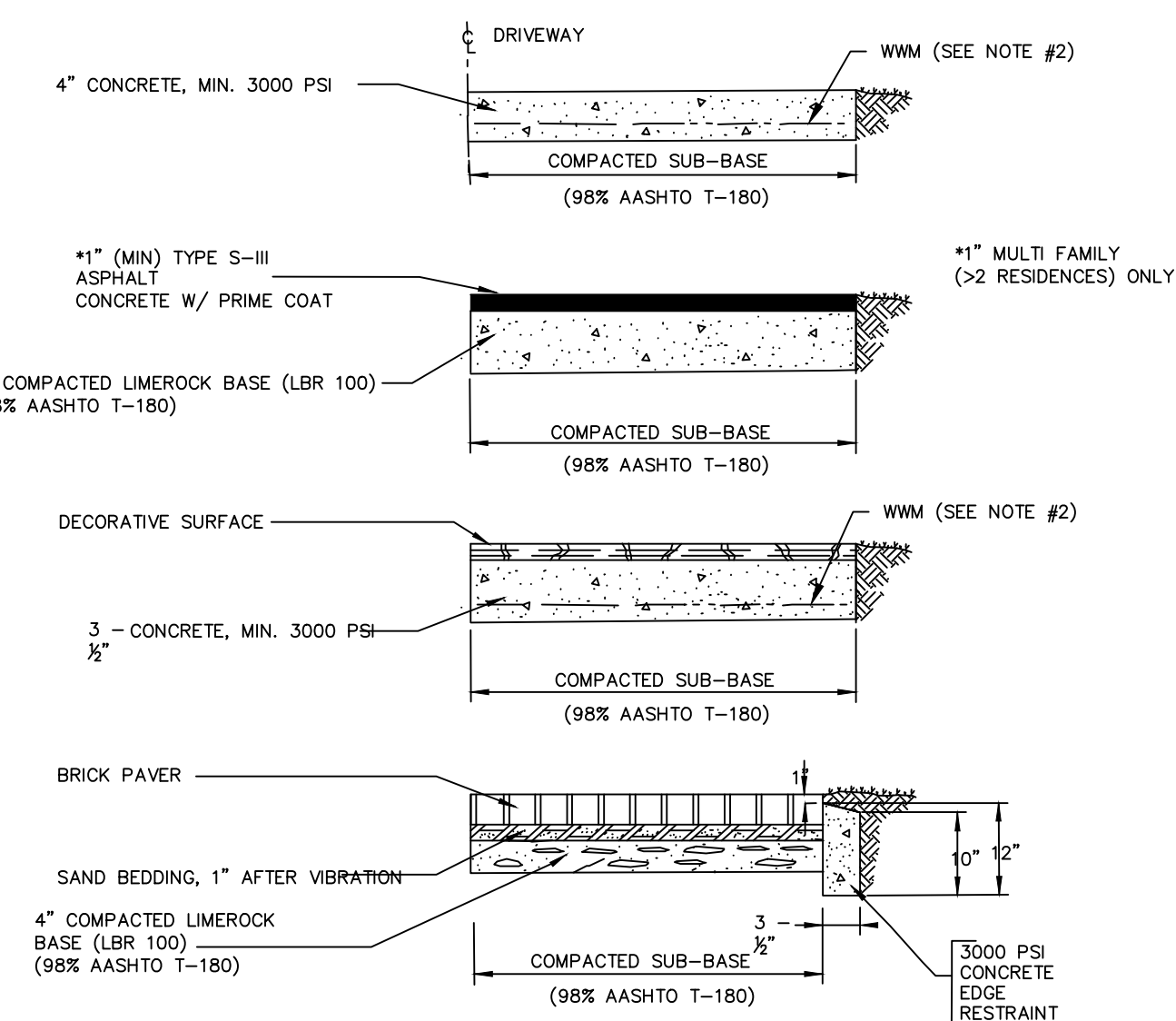
**OPTION NO. 2
2-LANE ROAD**

- NOTE:
- TOP OF SOD MUST BE 1" BELOW EDGE OF PAVEMENT. SOD BLOCKS SHALL BE PLACED WITH STAGGERED TRANSVERSE JOINTS.



BACKFILL WITH PAVEMENT PATCHING SECTION

- NOTES:
- ALTERNATES "A" AND "B" ARE CONTRACTOR OPTIONS.
 - LIMEROCK MATERIAL (MIN. LBR 100) FOR BASE SHALL BE COMPACTED TO AT LEAST 98% MAXIMUM DENSITY. (AASHTO T-180).
 - COMMON FILL SHALL BE COMPACTED TO AT LEAST 98% MAXIMUM DENSITY. (AASHTO T-180).
 - MINIMUM WIDTH OF STRUCTURAL REPAIR IS 4 FEET. ADDITIONAL REPAIR WIDTH MAY BE REQUIRED IF MORE BASE MATERIAL IS DAMAGED OR OTHERWISE FAILED.
 - ASPHALT BASE ALT. "A" COMPACTED LIFTS SHALL BE NO THICKER THAN 3".
 - FULL WIDTH OVERLAY SHALL BE ASPHALT CONCRETE TYPE S-III AND SHALL BE 1" THICK.
 - IF LESS THAN FULL WIDTH OVERLAY SHALL BE ASPHALT CONCRETE INSTALLED IN 2 LIFTS. 1ST LIFT 1-1/4" TYPE S-1. 2ND LIFT 3/4" TYPE S-III.
 - APPLY TACKCOAT TO ALL VERTICAL FACES OF ASPHALT.
 - SUBGRADE (MIN LBR 40) SHALL BE COMPACTED TO AT LEAST 98% MAXIMUM DENSITY. (AASHTO T-180).



TYPICAL SECTIONS

- NOTES:
- THICKNESSES SHOWN ARE MINIMUM VALUES. MATCH EXISTING PAVEMENT AND BASE.
 - CONCRETE REINFORCEMENT SHALL BE 6"x6" 10 GAUGE WELDED WIRE MESH (WWM) OR MICRO FIBER MESH.
 - COMPACT SUB BASE TO 98% AND LIMEROCK BASE TO 98% OF AASHTO T180
 - ASPHALT DRIVES REMOVED ON SINGLE FAMILY/DUPLEX RESIDENCES SHALL BE REPLACED W/ CONCRETE.

RESIDENTIAL DRIVEWAY DETAILS

DRIVEWAY DETAILS

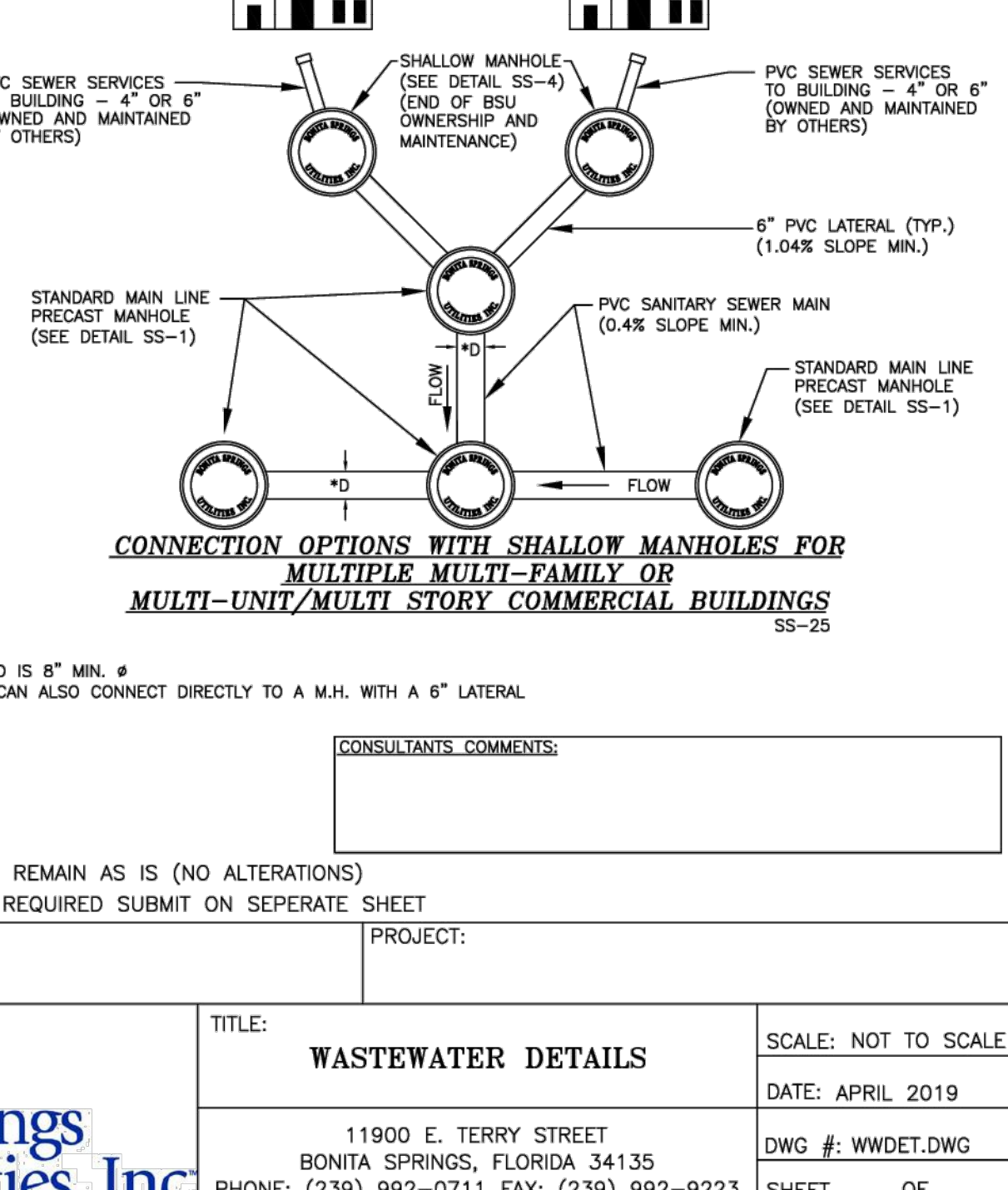
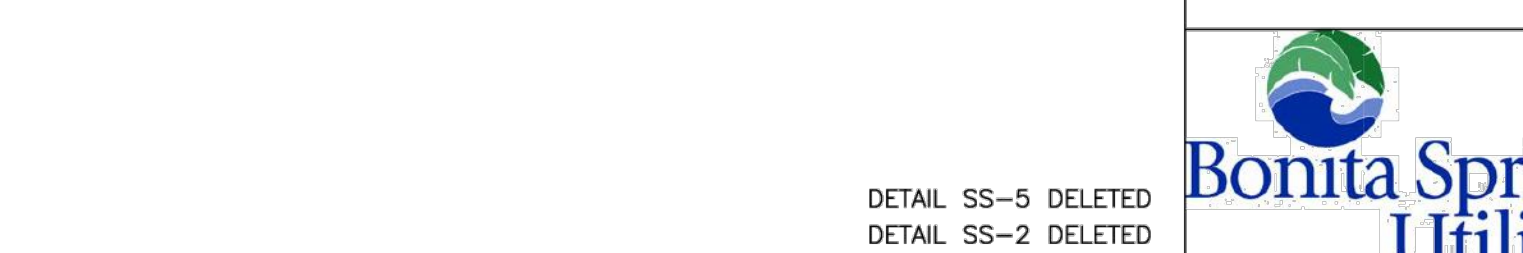
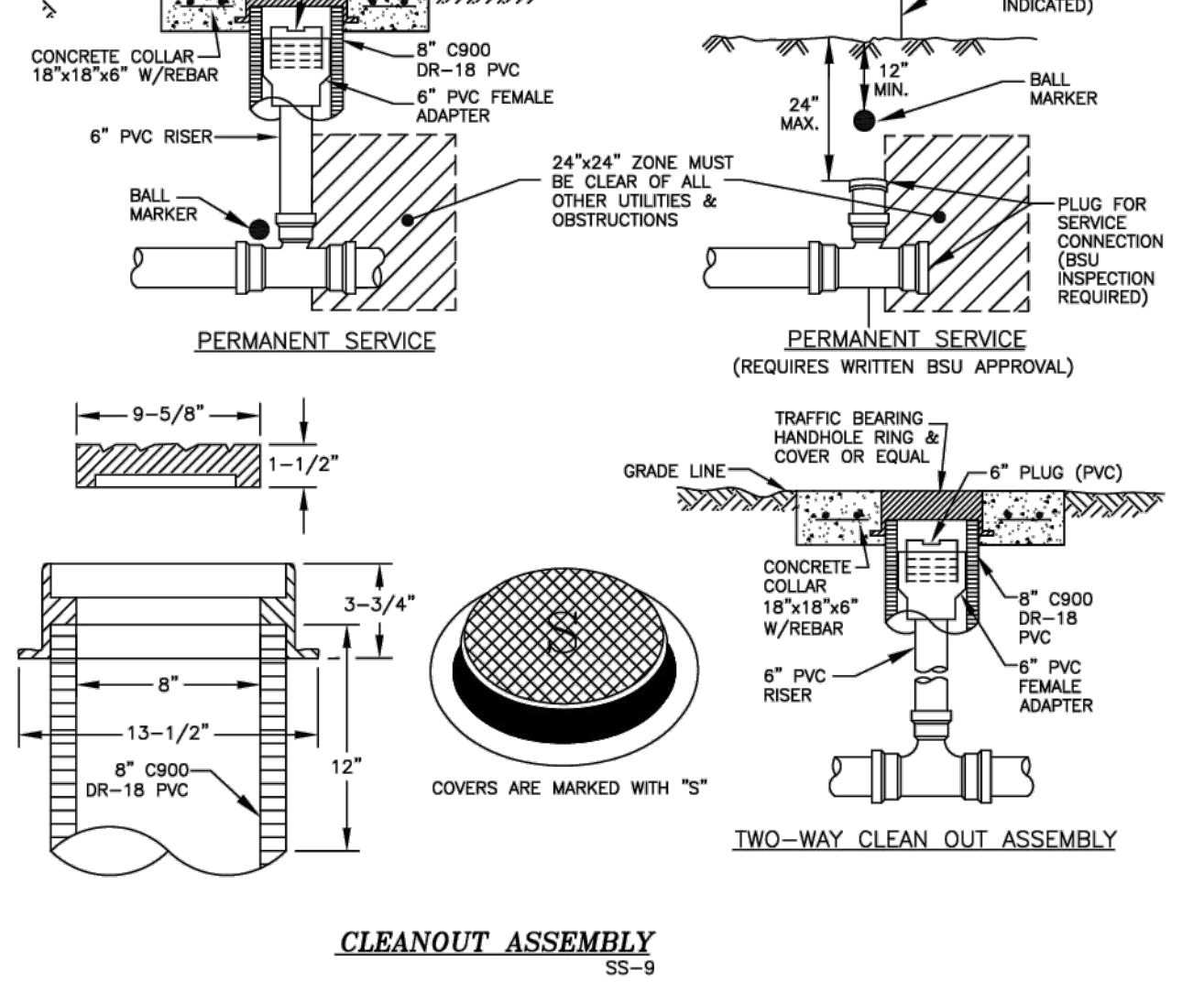
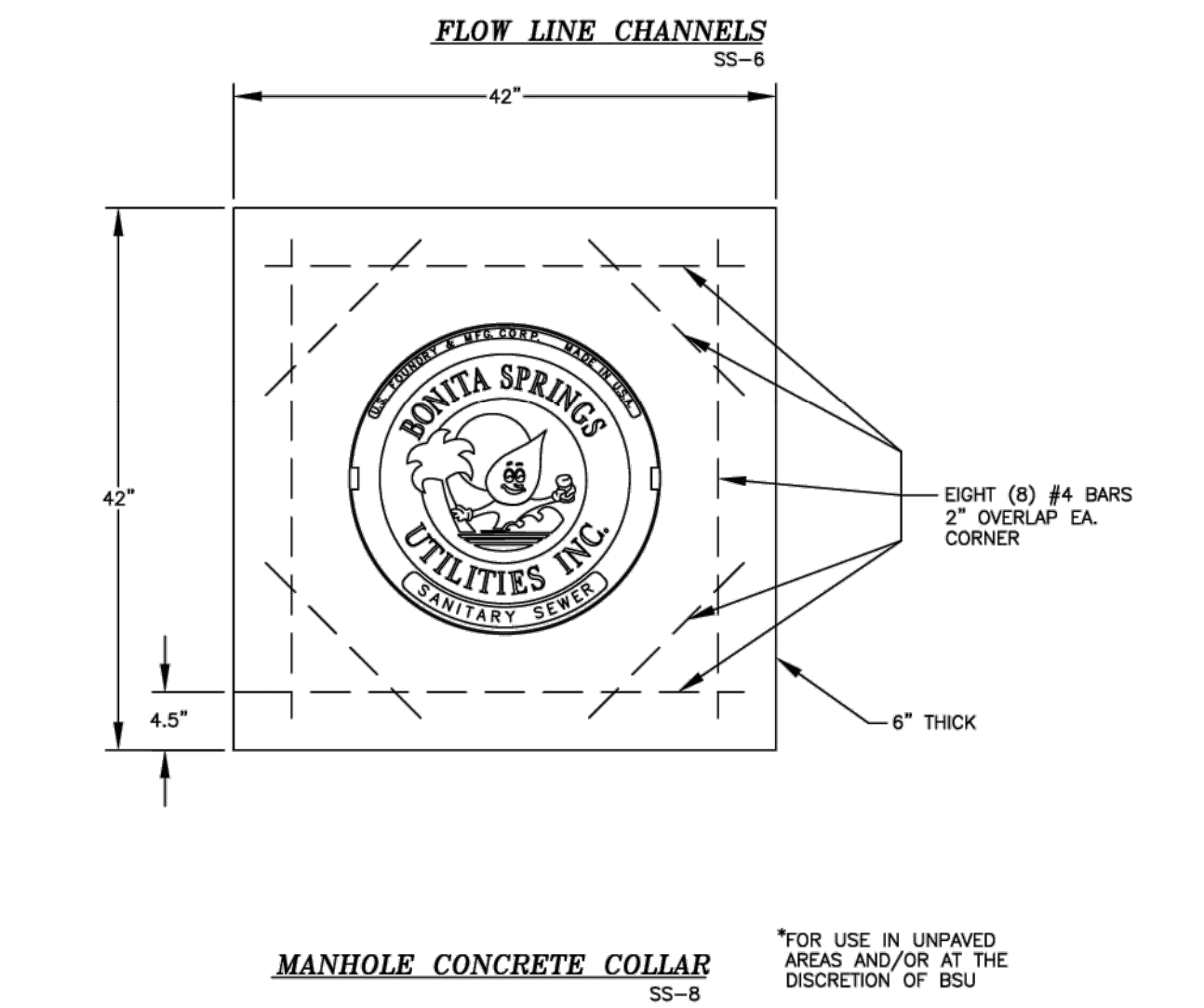
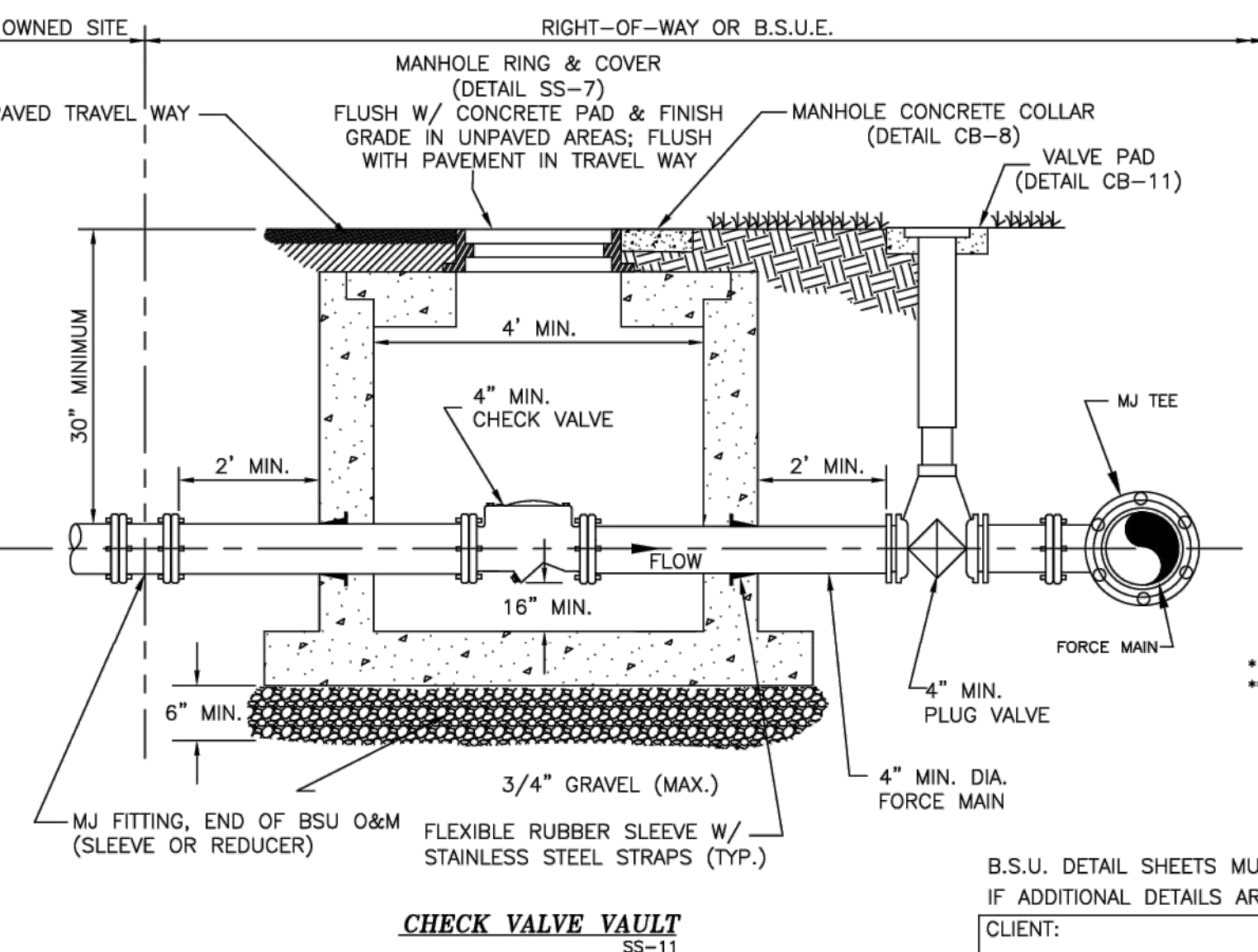
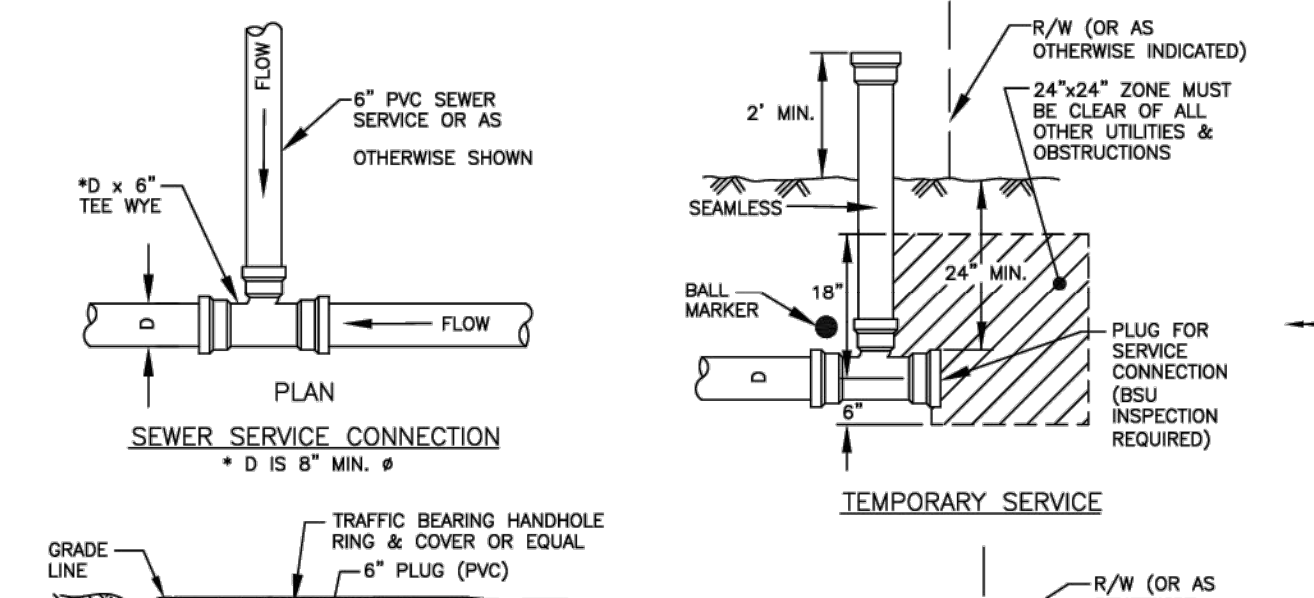
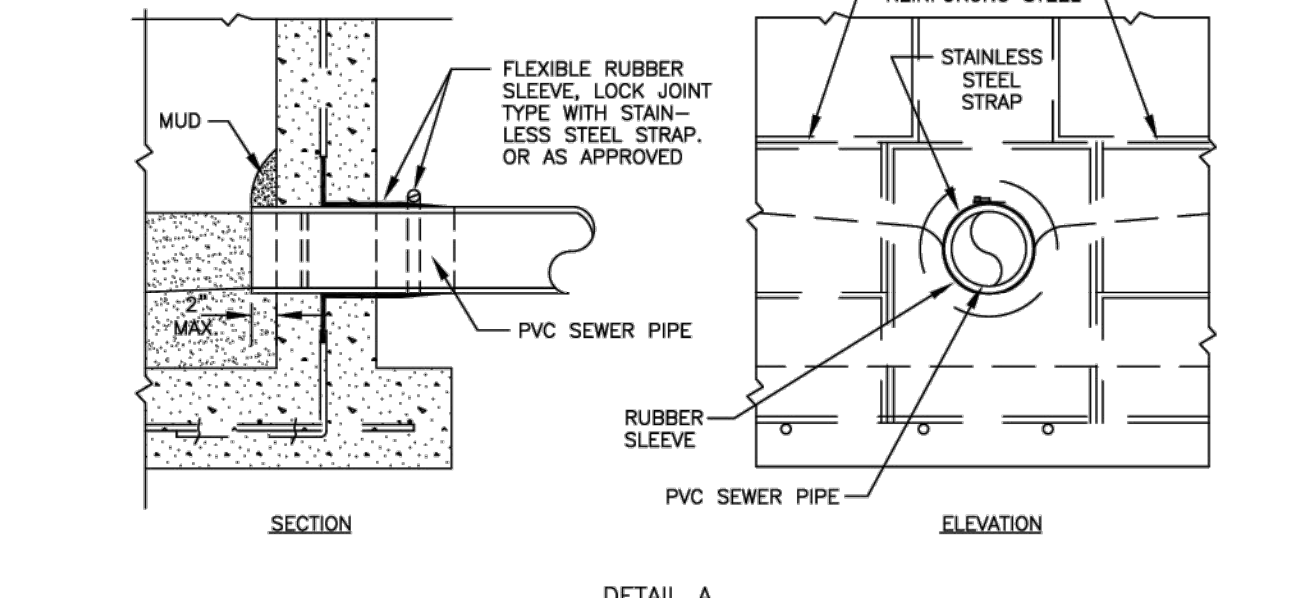
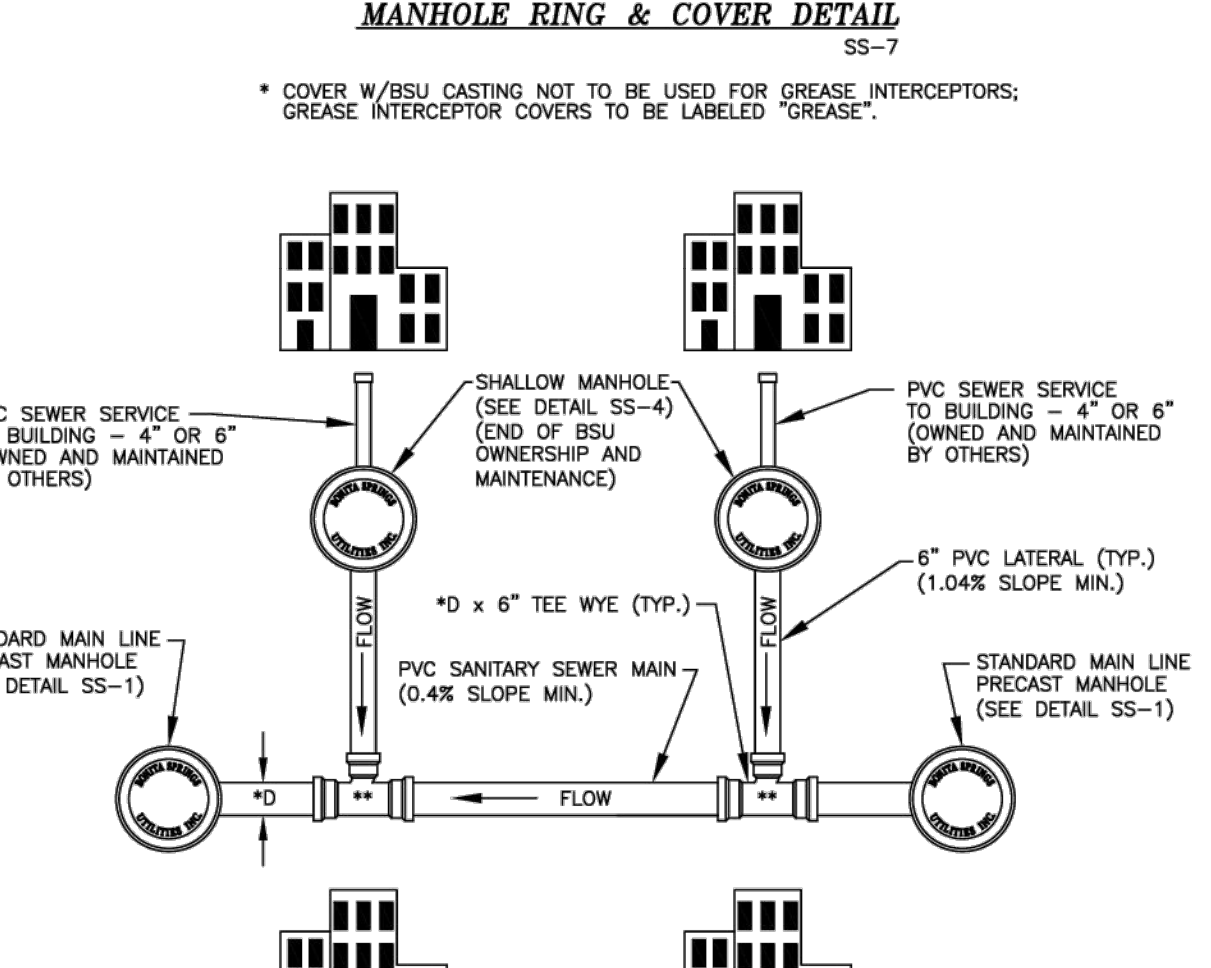
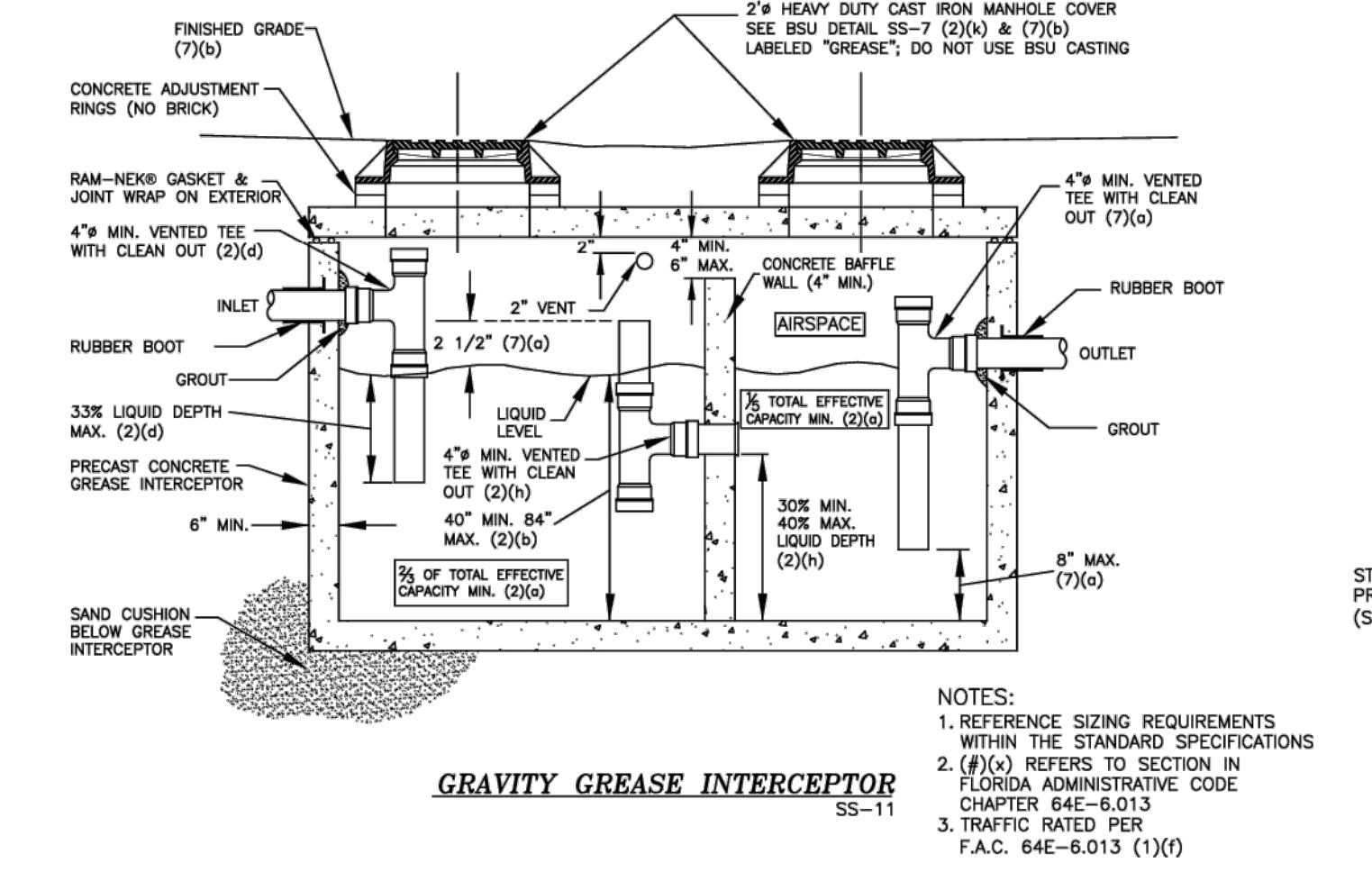
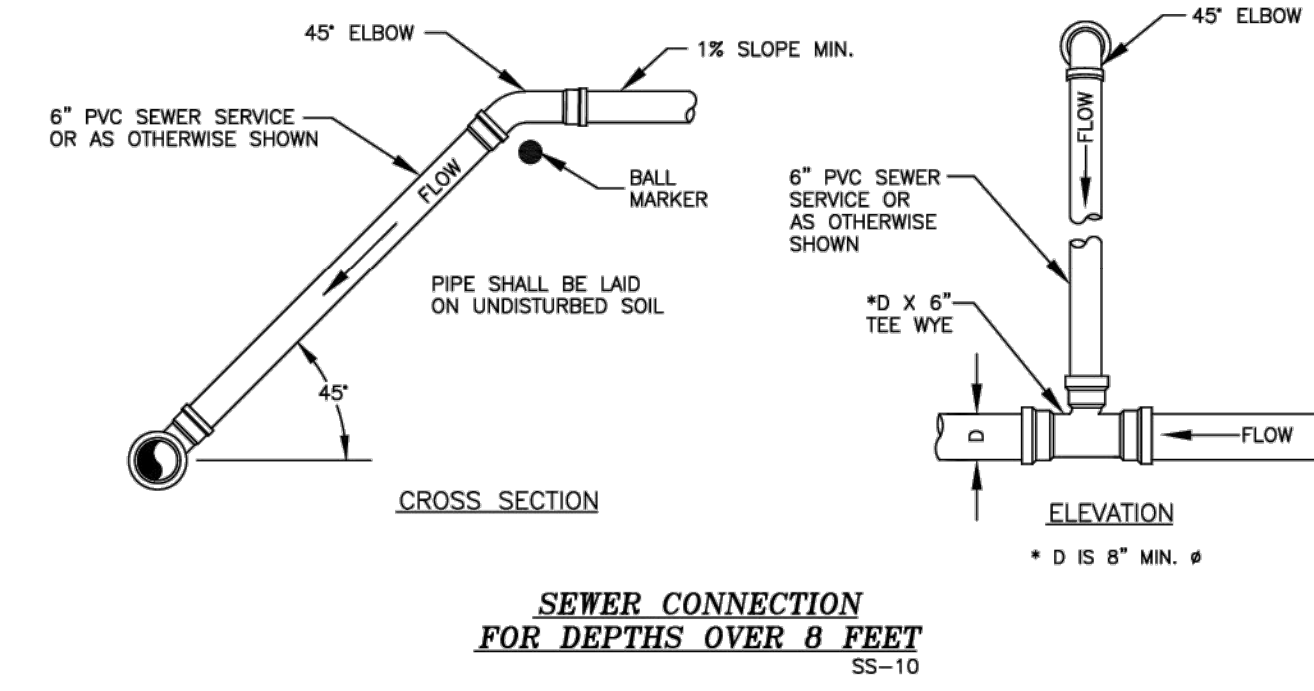
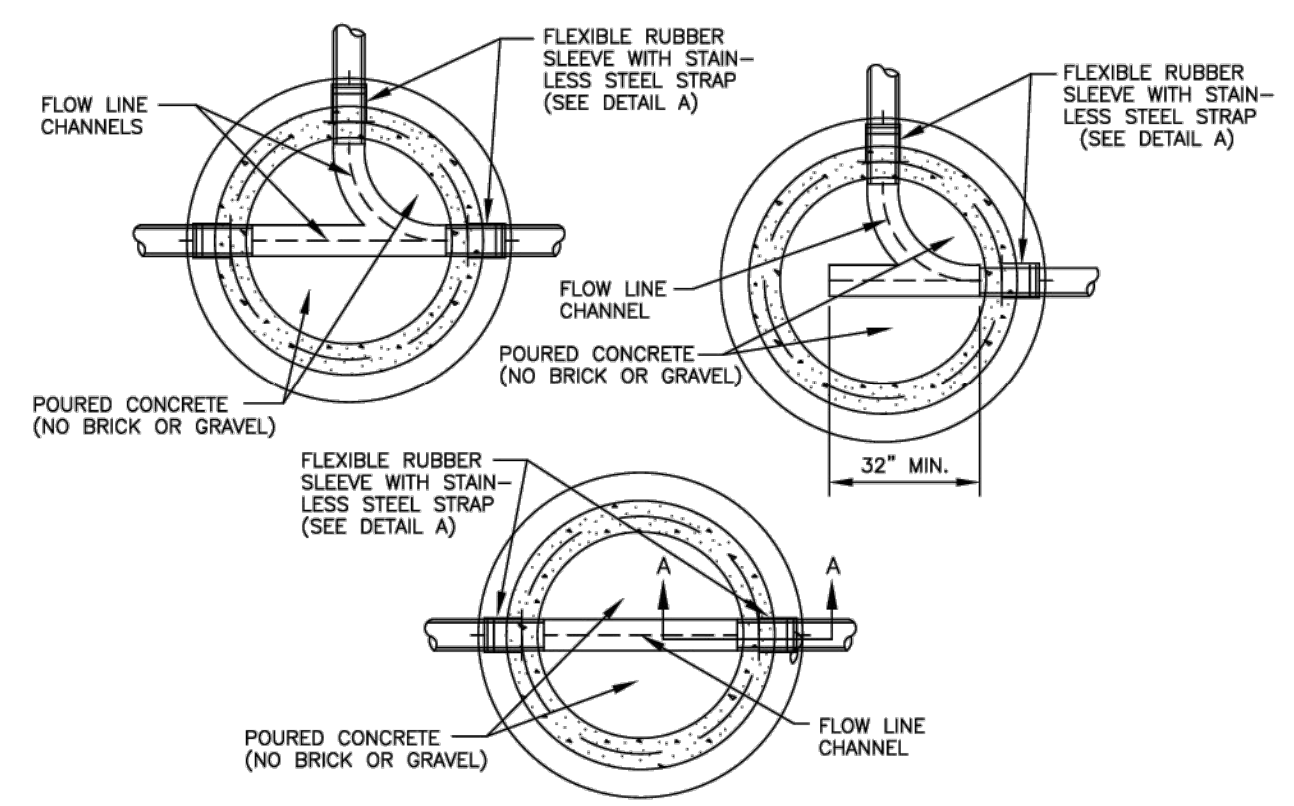
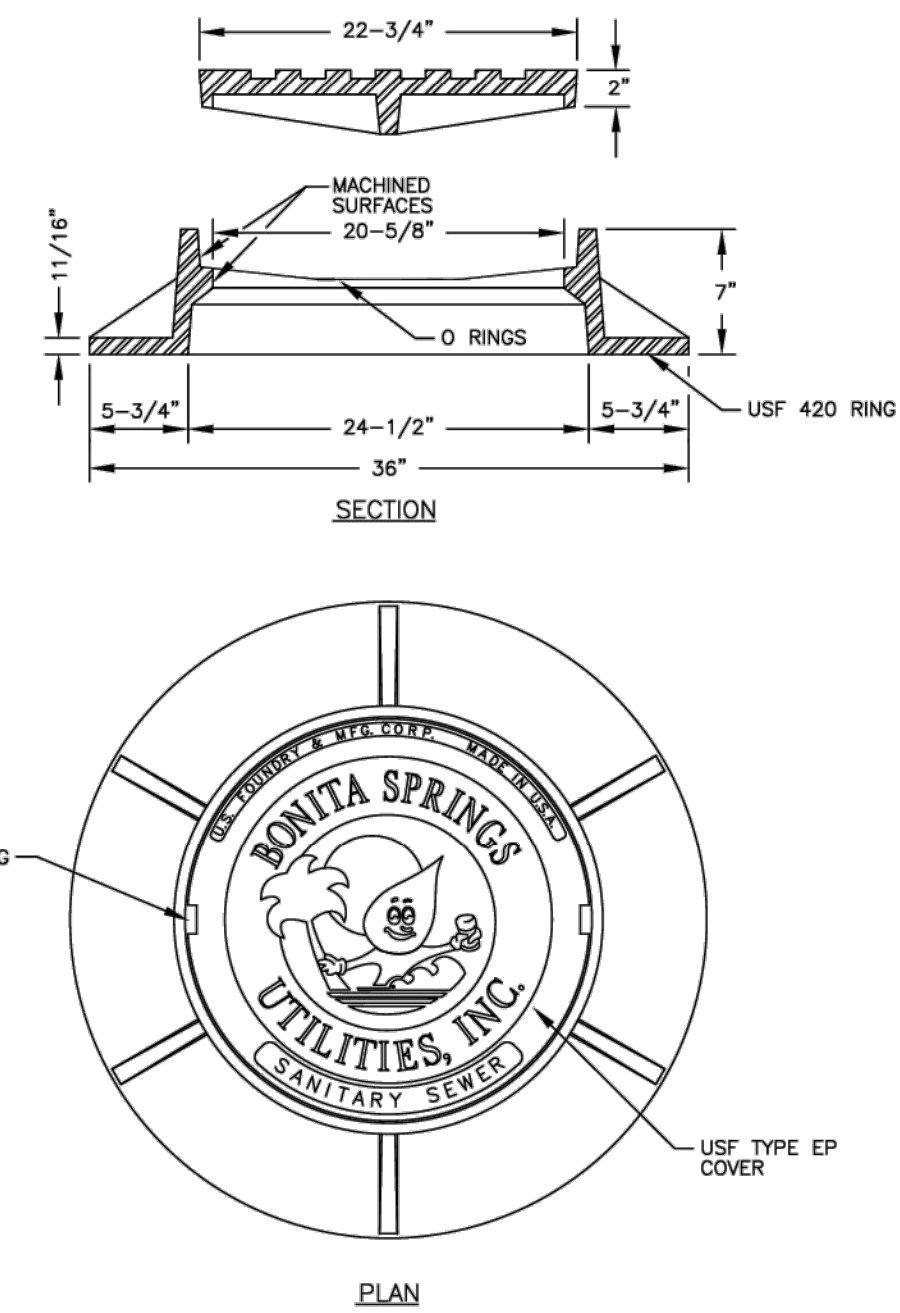
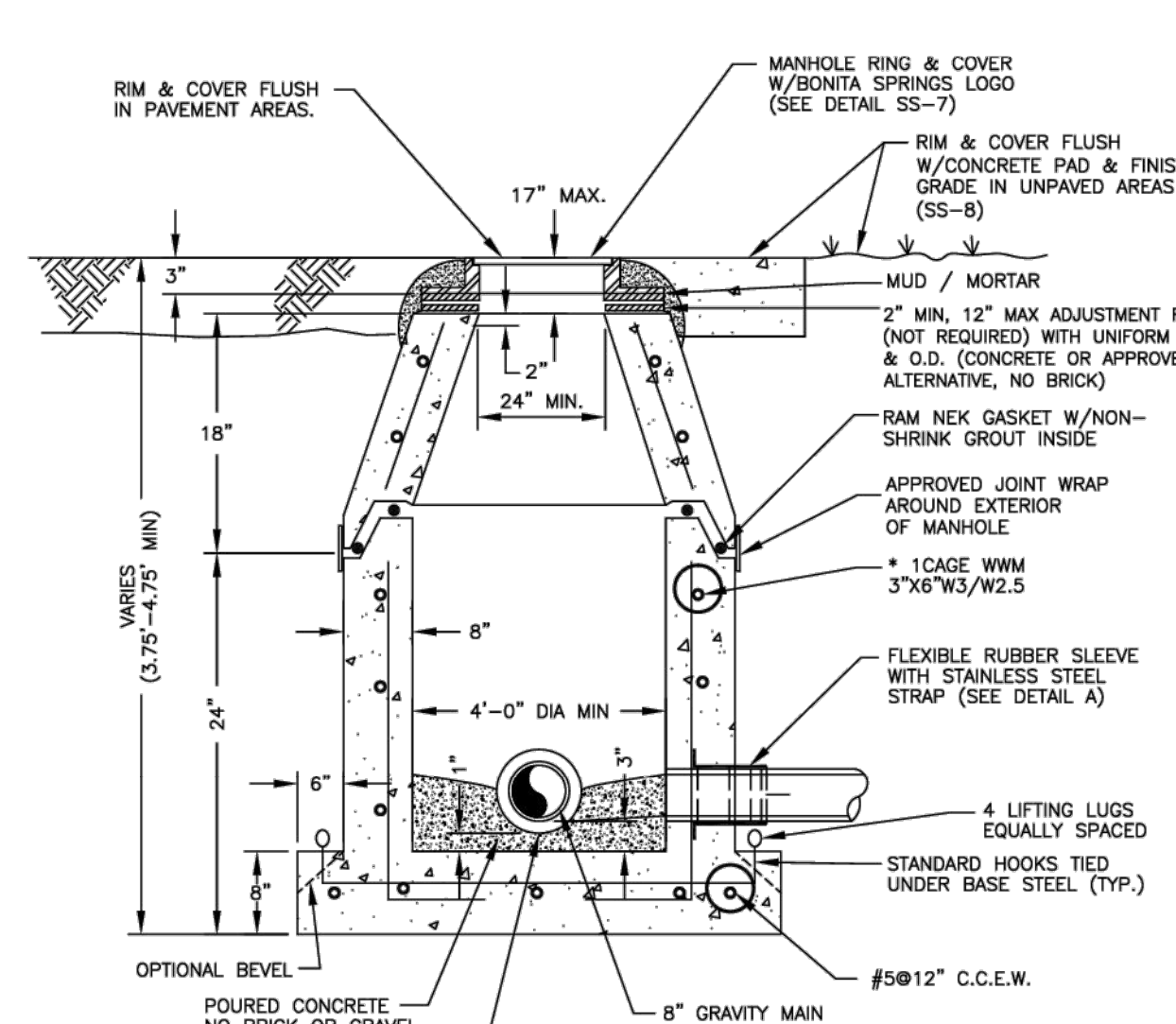
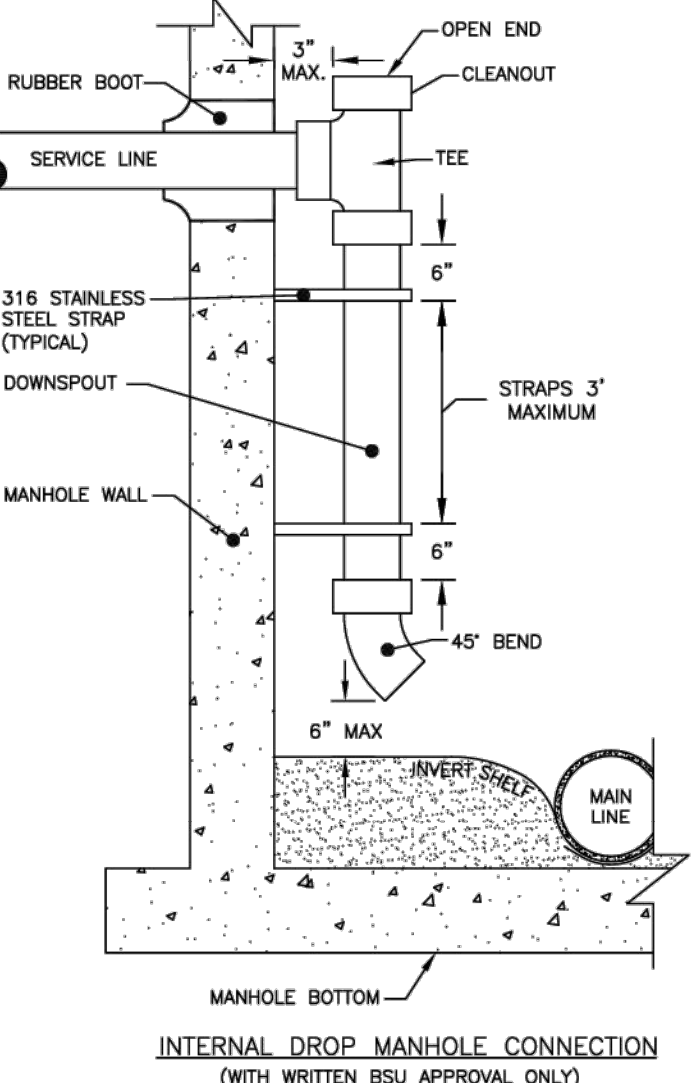
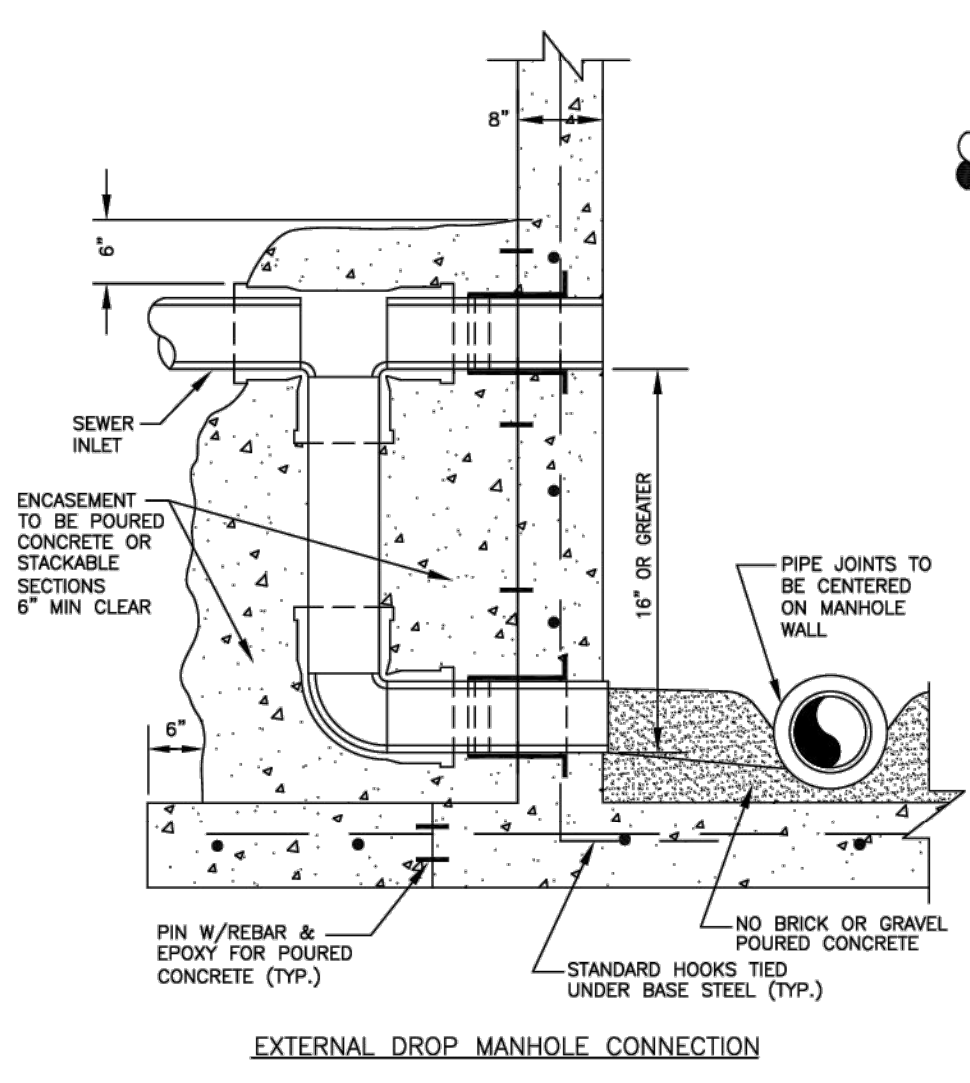
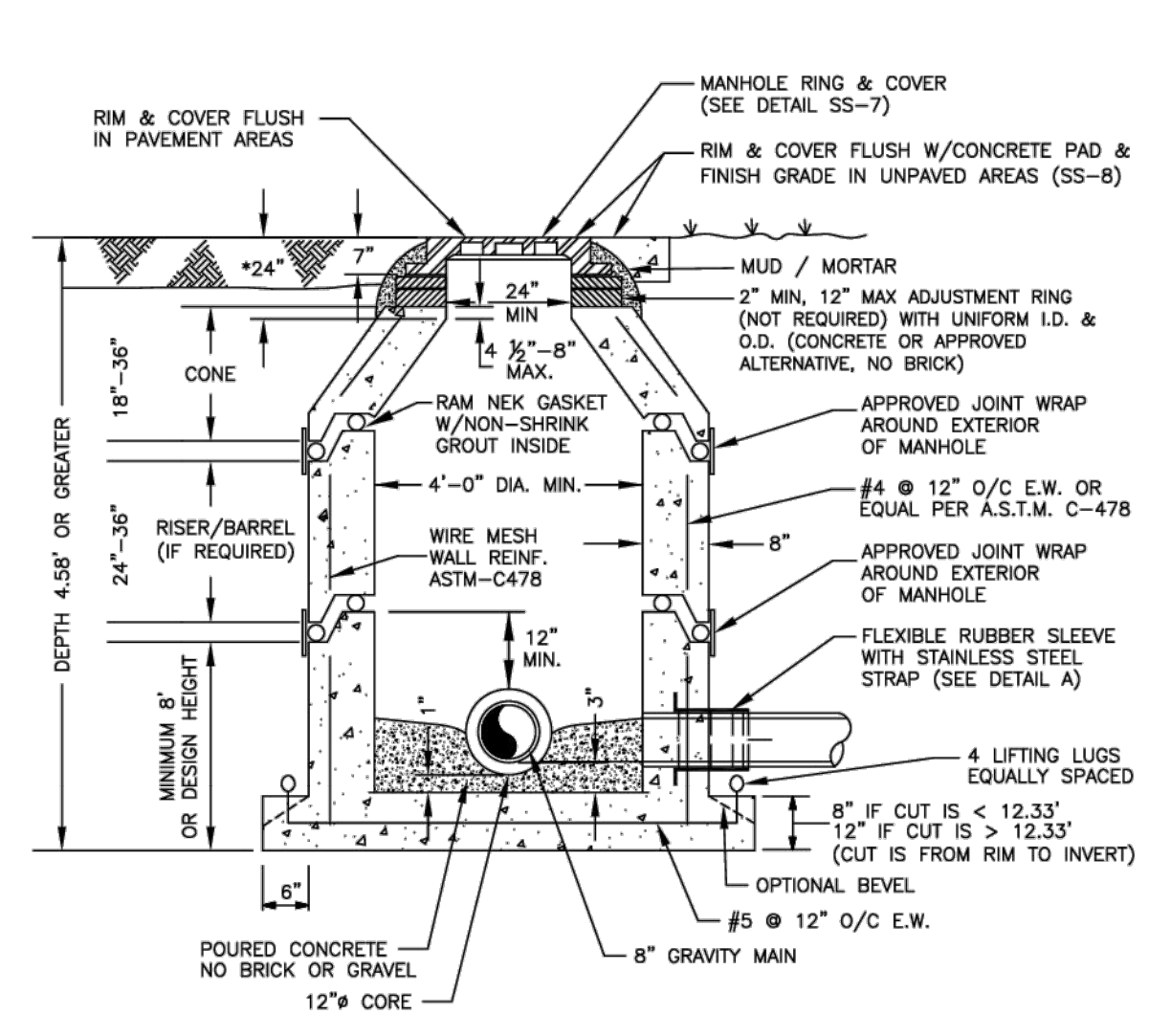
- DRIVEWAY RESTORATION**
- DRIVEWAYS DAMAGED DURING CONSTRUCTION SHALL BE RESTORED TO CONDITIONS WHICH MEET OR IMPROVE PRE-EXISTING CONDITIONS USING LIKE MATERIALS AND THICKNESS. WHERE PIPELINE CONSTRUCTION CROSSES DRIVEWAYS, THE DRIVEWAY MATERIAL SHALL BE REMOVED FROM THE EDGE OF STREET PAVEMENT TO BEYOND THE PIPELINE TRENCH.
 - DRIVEWAYS SHALL BE SAW CUT IN A STRAIGHT LINE.
 - CONCRETE DRIVEWAYS SHALL BE REMOVED AS DETAILED IN THE SPECIFICATIONS. PROVIDE EXPANSION JOINT FILLER BETWEEN NEW AND EXISTING DRIVEWAY. AFTER PLACING THE NEW CONCRETE, SAW CUT TO CONTROL CRACKING WITHIN 24 HOURS. SAW CUT FOR CONTROL JOINTS SHALL BE INSTALLED A MAXIMUM OF 10'-FT IN EITHER DIRECTION FOR A MAXIMUM 100 -SF AREA. SAW CUTS SHALL BE INSTALLED SUCH THAT NO MORE THAN A 2:1 LENGTH TO WIDTH RATIO IS PROVIDED. NUMBER OF SAW CUTS SHALL BE NO MORE THAN 4 TRANSVERSE JOINTS FOR TYPICAL RESIDENTIAL DRIVEWAYS UNLESS APPROVED BY THE CITY.
 - DRIVEWAY CONNECTIONS TO THE PAVEMENT SHALL BE RESTORED TO THE STANDARD DIMENSIONS SHOWN ON THE DRIVEWAY DETAILS.
 - ALL CONCRETE SHALL BE MINIMUM 3000 PSI IN 28 DAYS.
 - MINIMUM BASE SHALL BE AS SHOWN ON COMMERCIAL AND RESIDENTIAL DRIVEWAY DETAILS.
 - ASPHALT DRIVEWAYS AT SINGLE FAMILY/DUPLEX RESIDENTIAL SHALL BE REPLACED W/ CONCRETE.

PREPARED FOR:
BONITA SPRINGS UTILITIES
 11860 EAST TERRY STREET
 BONITA SPRINGS, FL 34135
 (239) 390-4805
 (239) 390-4905

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 ENGINEERING LICENSE # EB 6469
 SURVEY LICENSE # LB 6690
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MISC - DETAILS
LAKES OF SANS SOUCI GRAVITY SEWER EXPANSION
 LEE COUNTY, FLORIDA

DATE	PROJECT	DRAWING	DESIGN	DRAWN	CHECKED	SCALE	SHEET
2/14/2020	8381SS	MISC-DTLS	DBA	JLS	DBA	N.T.S.	08



TITLE: WASTEWATER DETAILS		SCALE: NOT TO SCALE
11900 E. TERRY STREET BONITA SPRINGS, FLORIDA 34135 PHONE: (239) 992-0711 FAX: (239) 992-9223		DATE: APRIL 2019
CLIENT:	PROJECT:	DWG #: WWD02.DWG
DATE: 2/14/2020	PROJECT: 8381SS	SHEET OF

PREPARED FOR:
BONITA SPRINGS UTILITIES
11860 EAST TERRY STREET
BONITA SPRINGS, FL. 34135
(239) 390-4805
(239) 390-4905

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WASTEWATER-BSU-DETAILS LAKES OF SANS SOUCI GRAVITY SEWER EXPANSION LEE COUNTY, FLORIDA						
DATE	PROJECT	DRAWING	DESIGN	DRAWN	CHECKED	SCALE
2/14/2020	8381SS	UTL-DTLS	DBA	JLS	DBA	N.T.S.
						SHEET 09

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LAKES OF SANS SOUCI GRAVITY SEWER EXPANSION

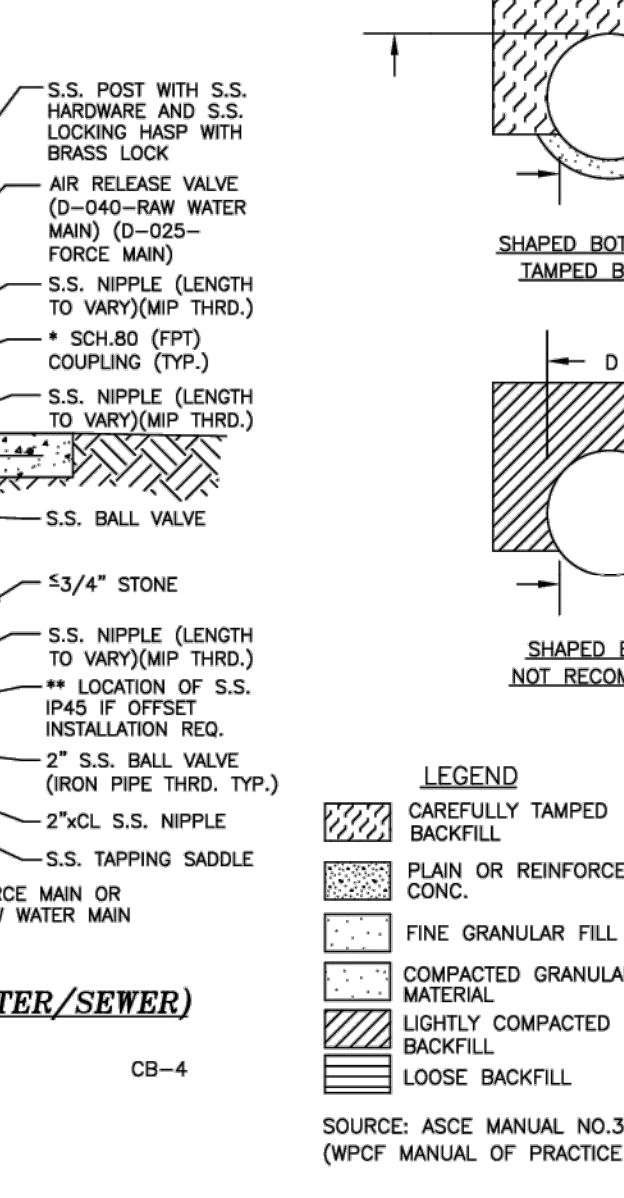
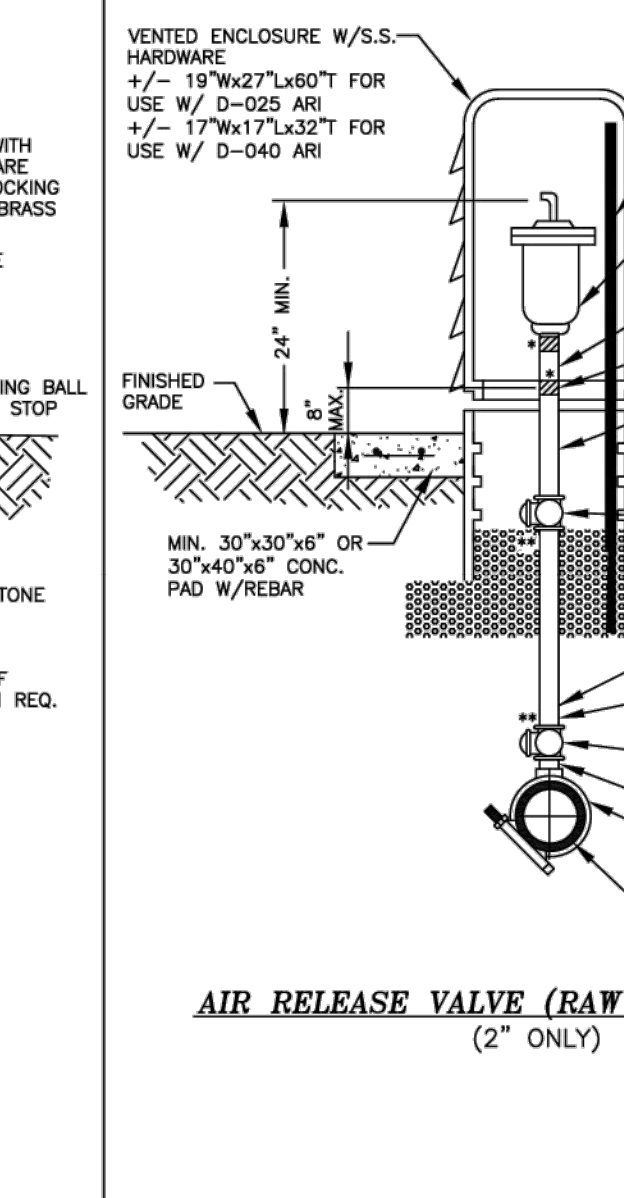
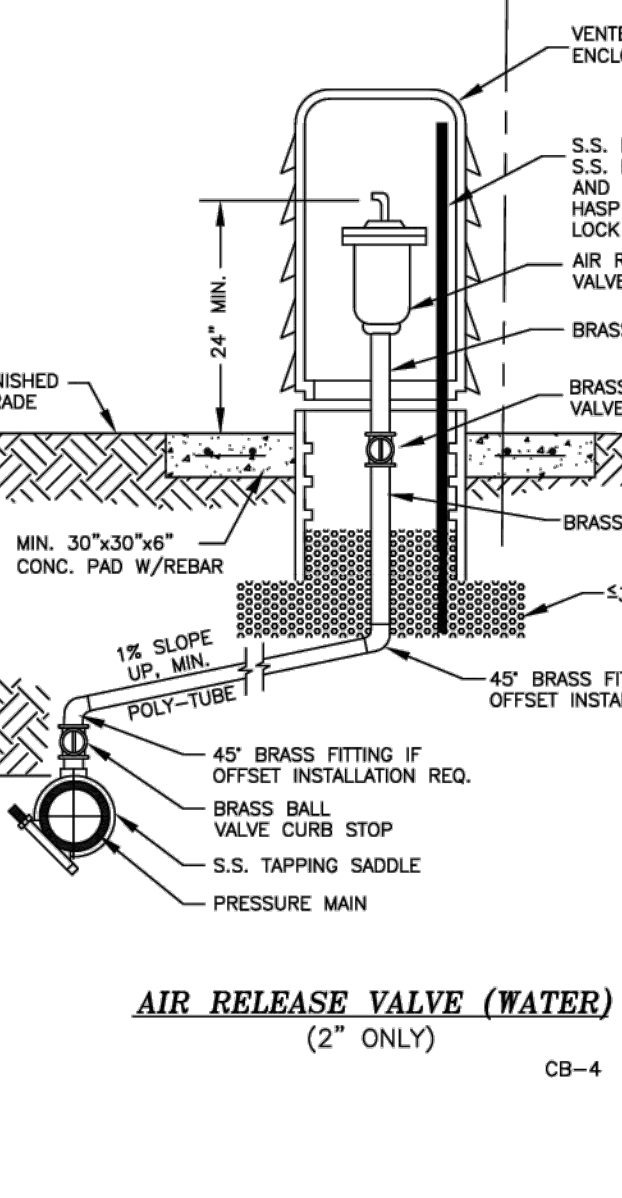
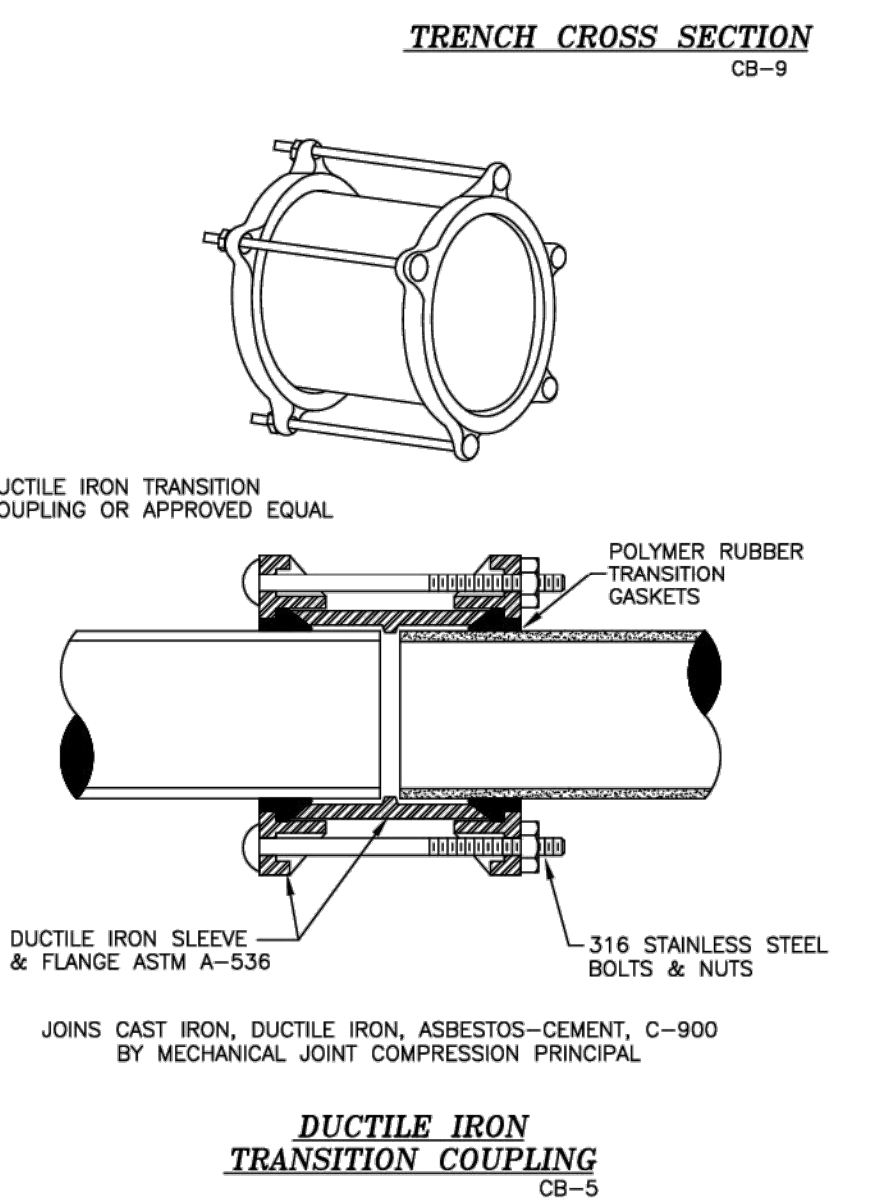
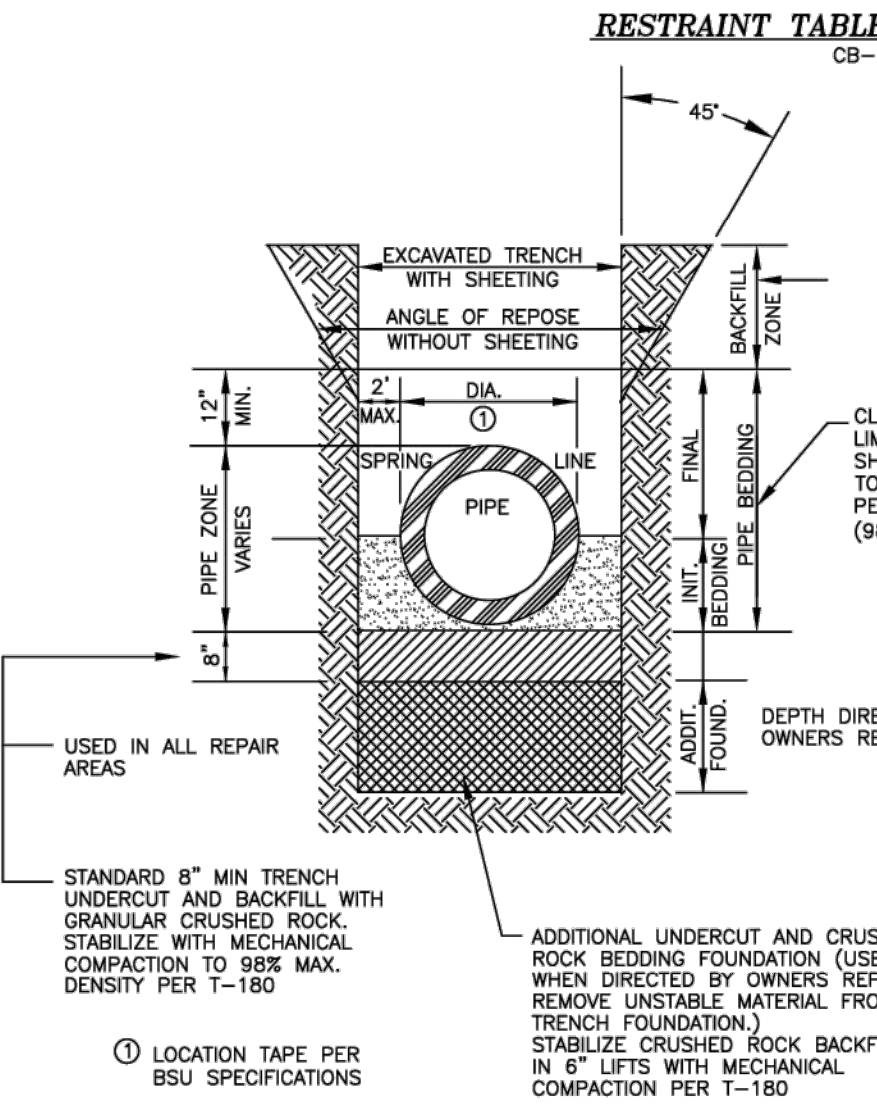
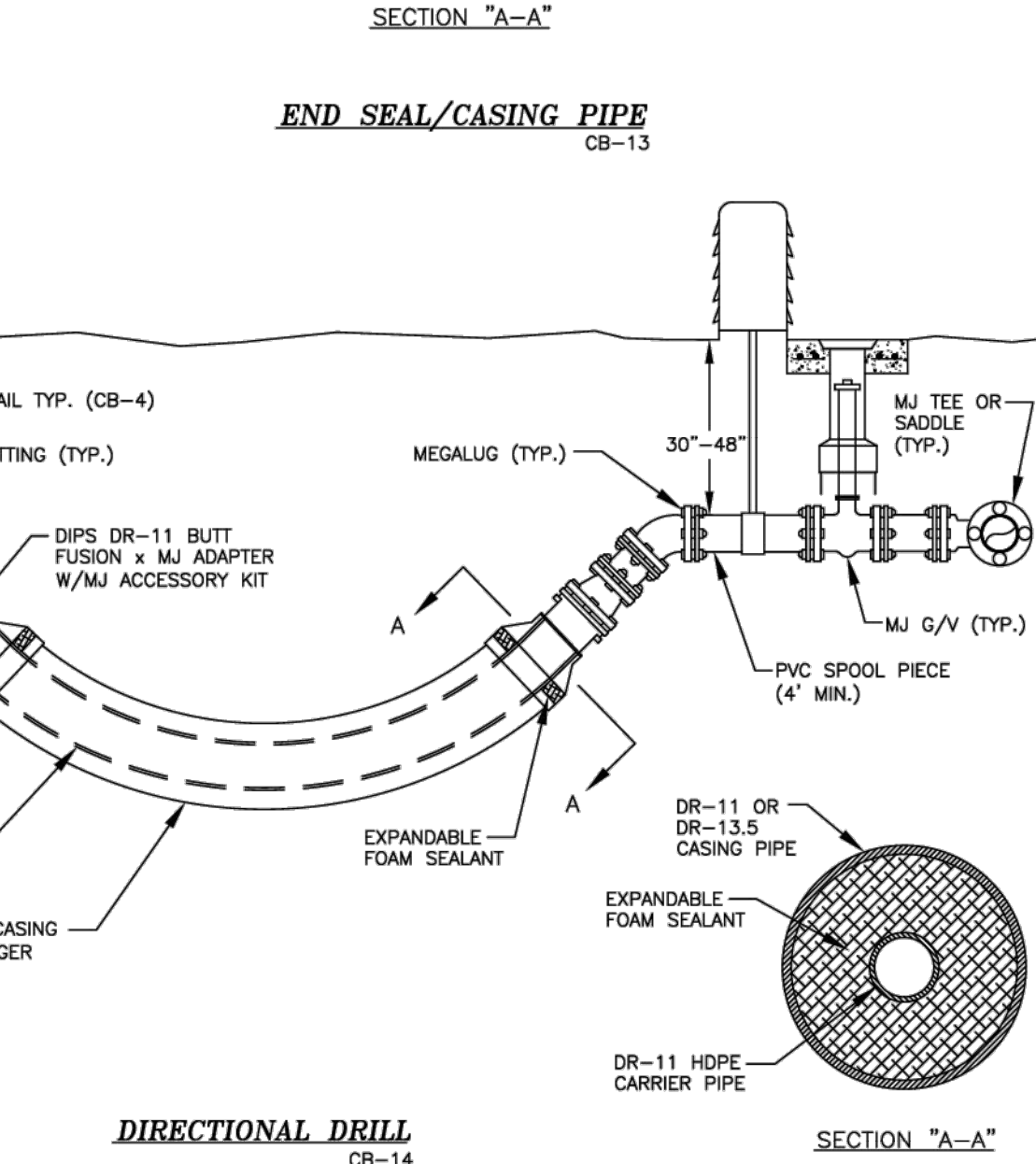
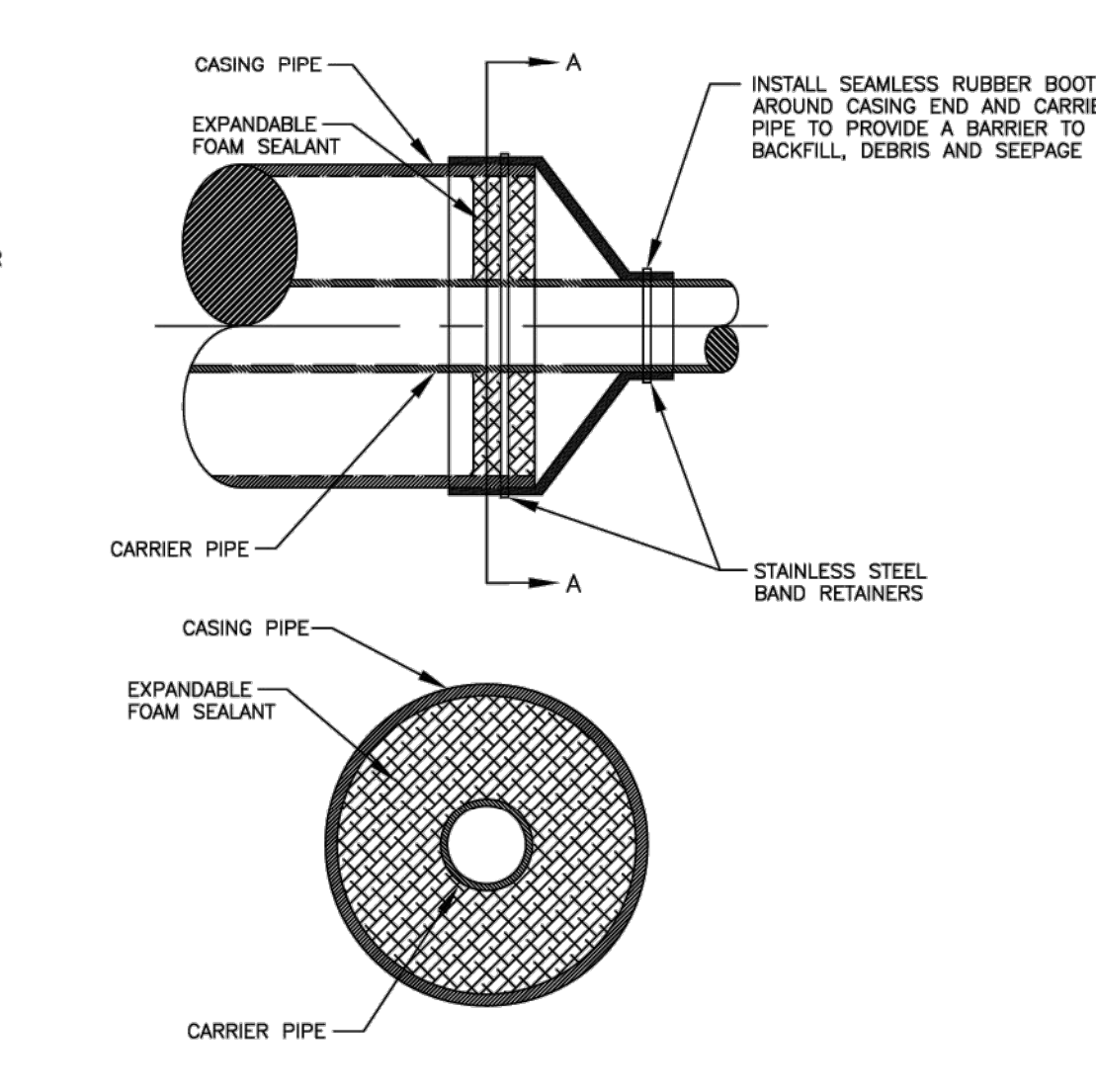
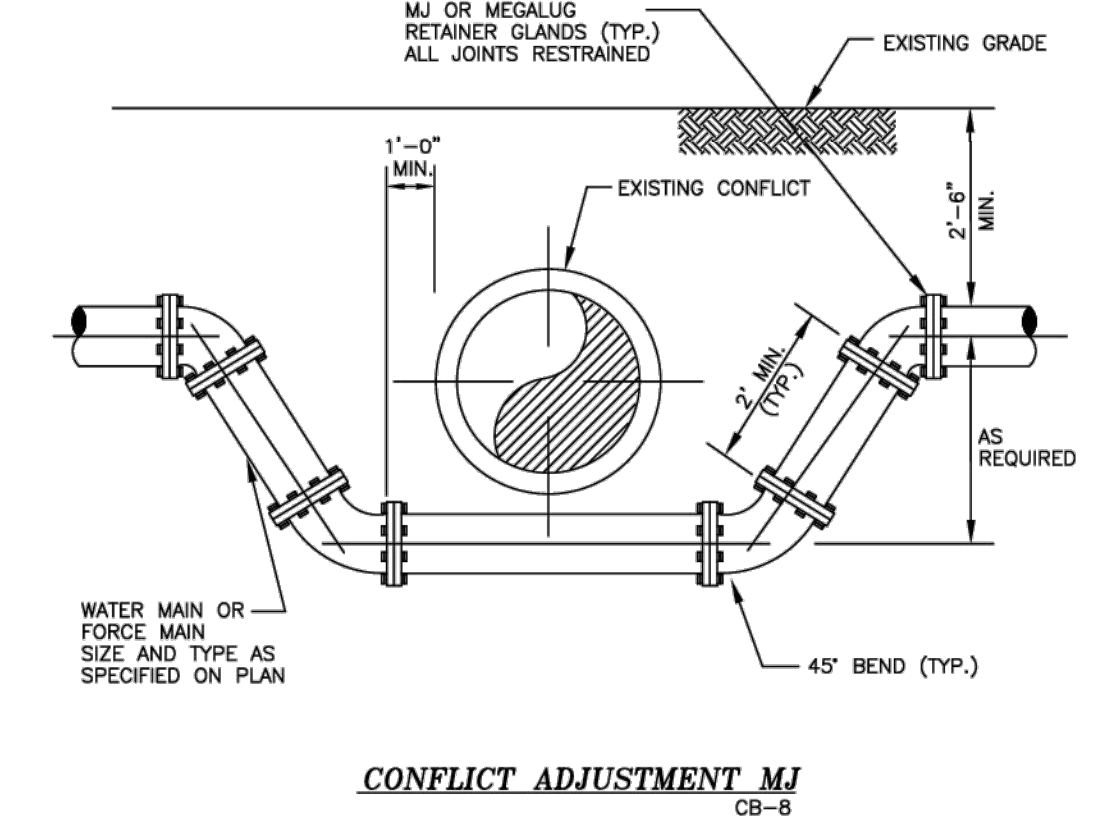
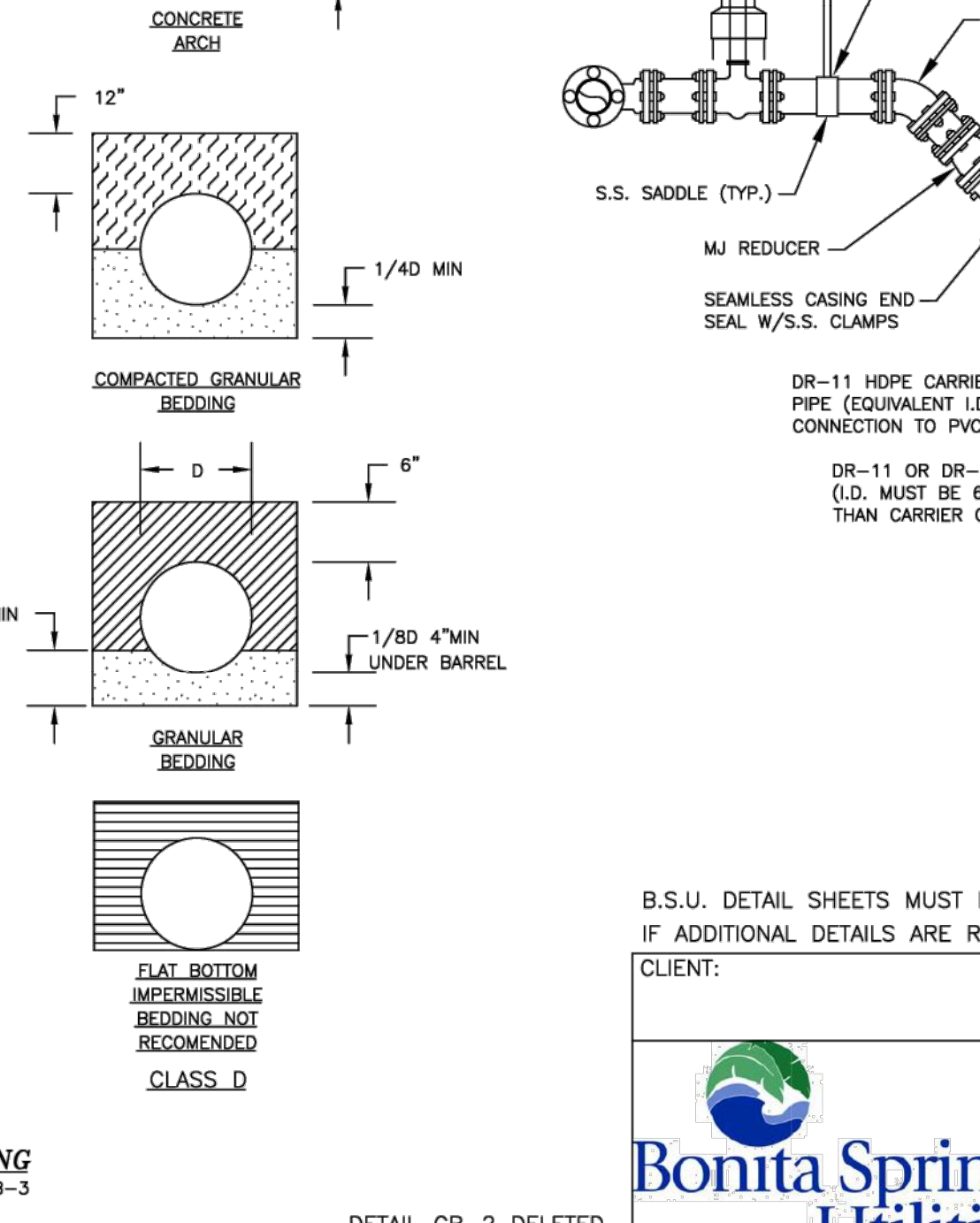
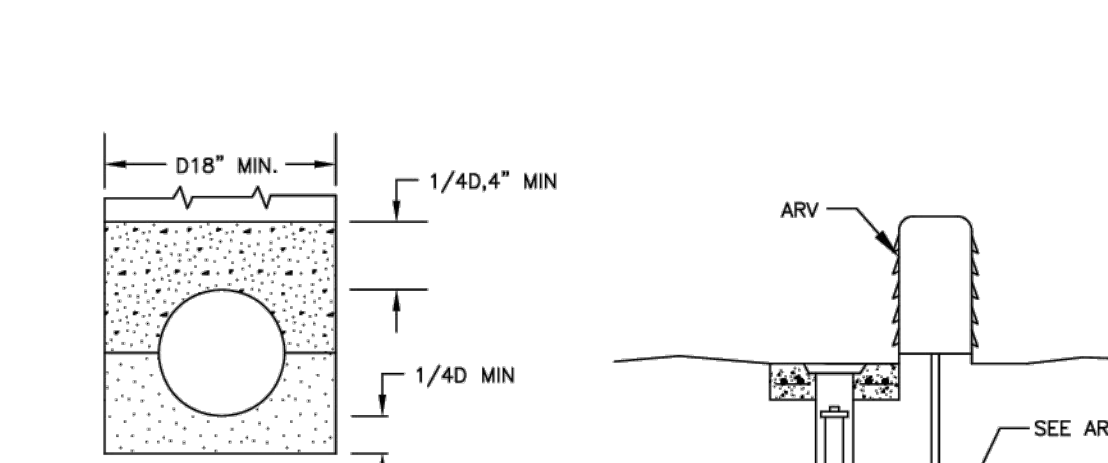
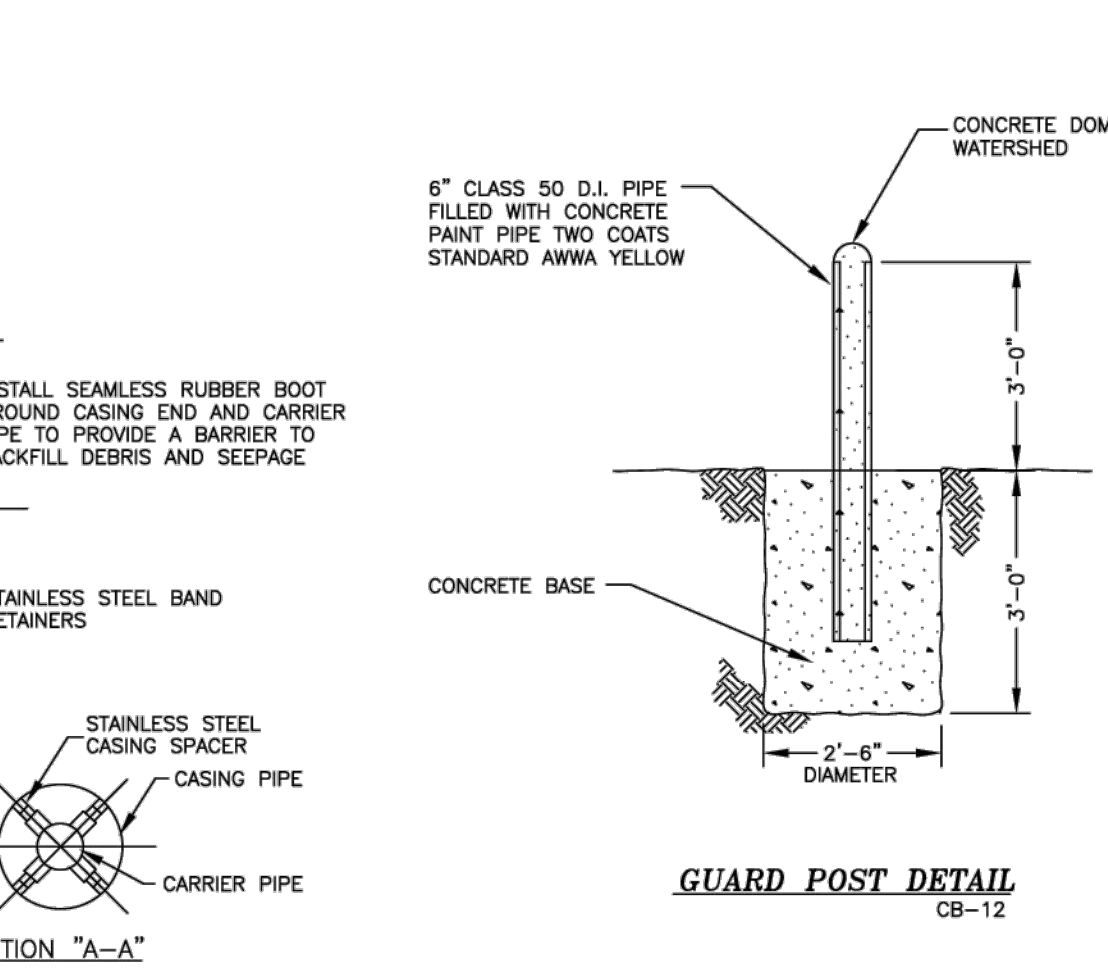
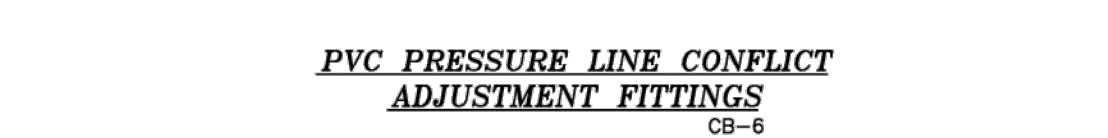
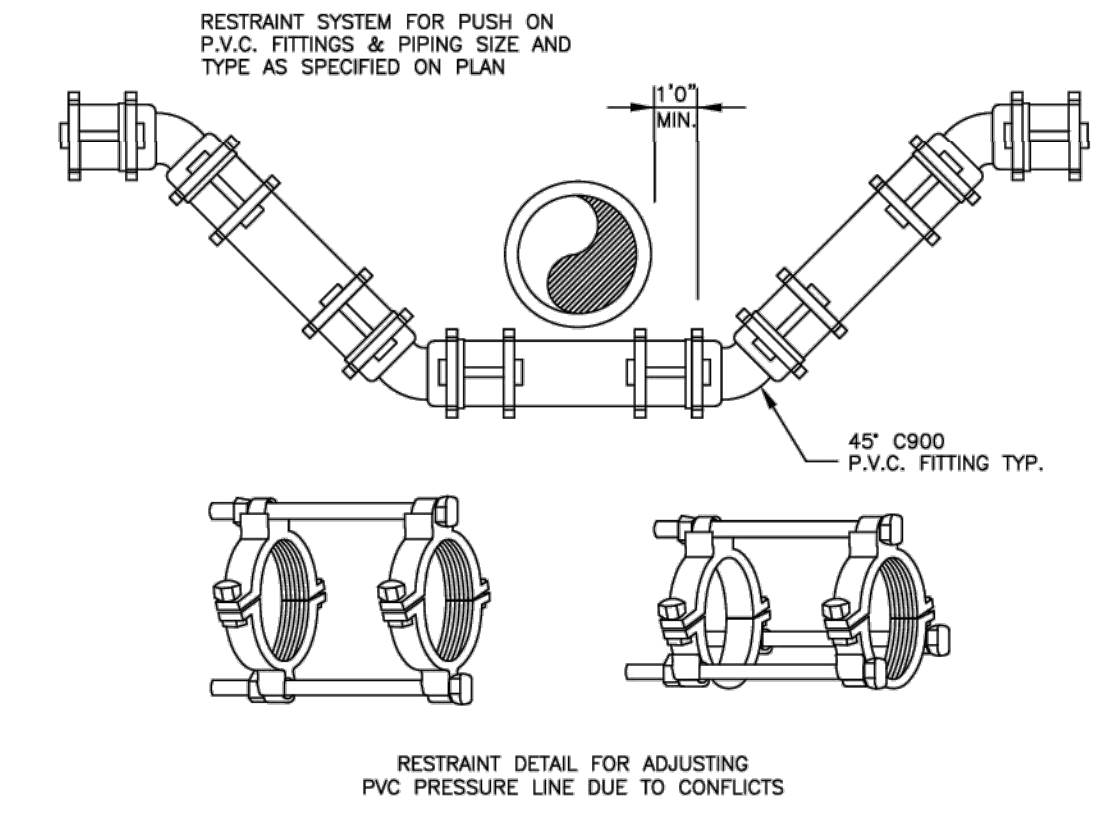
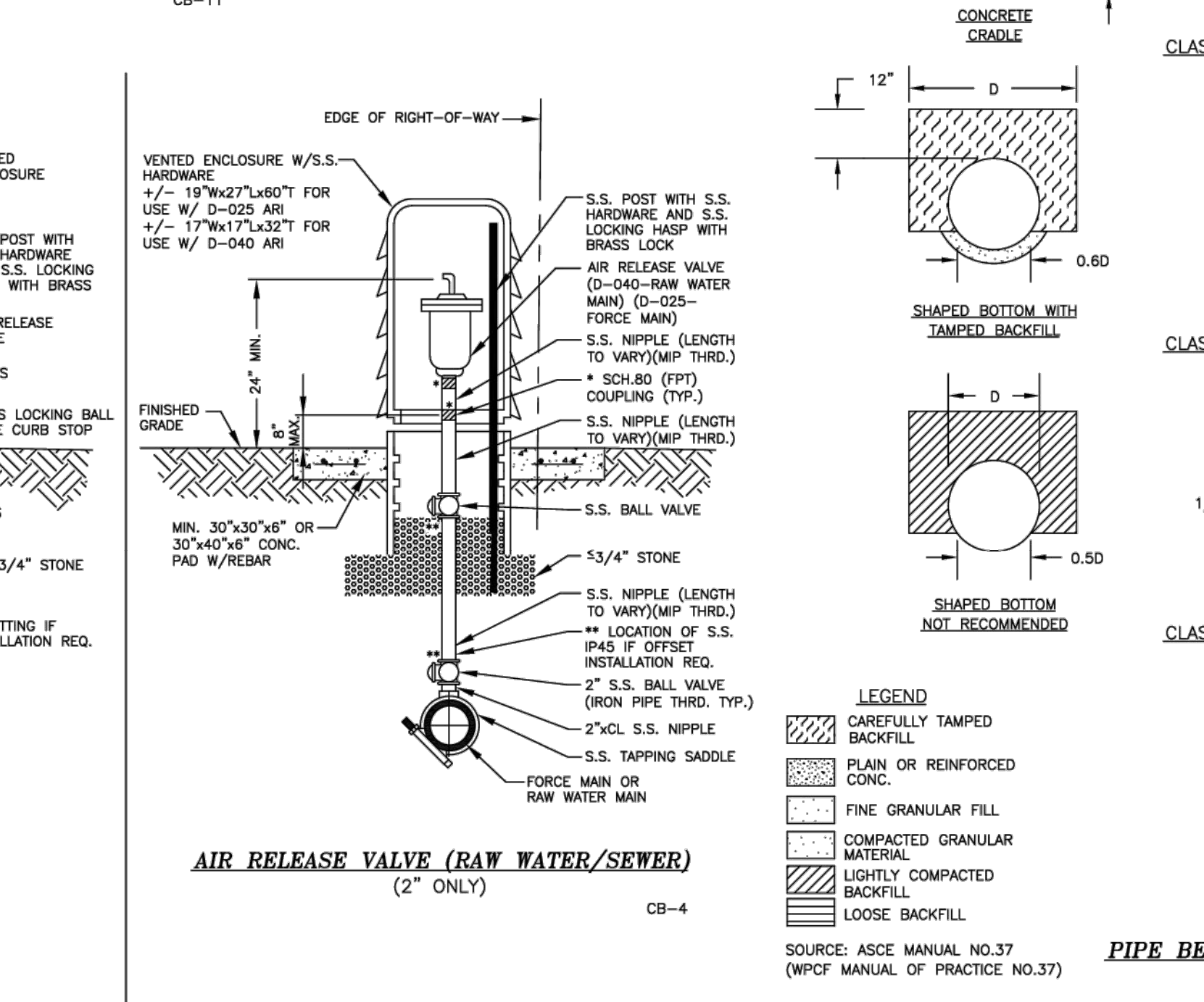
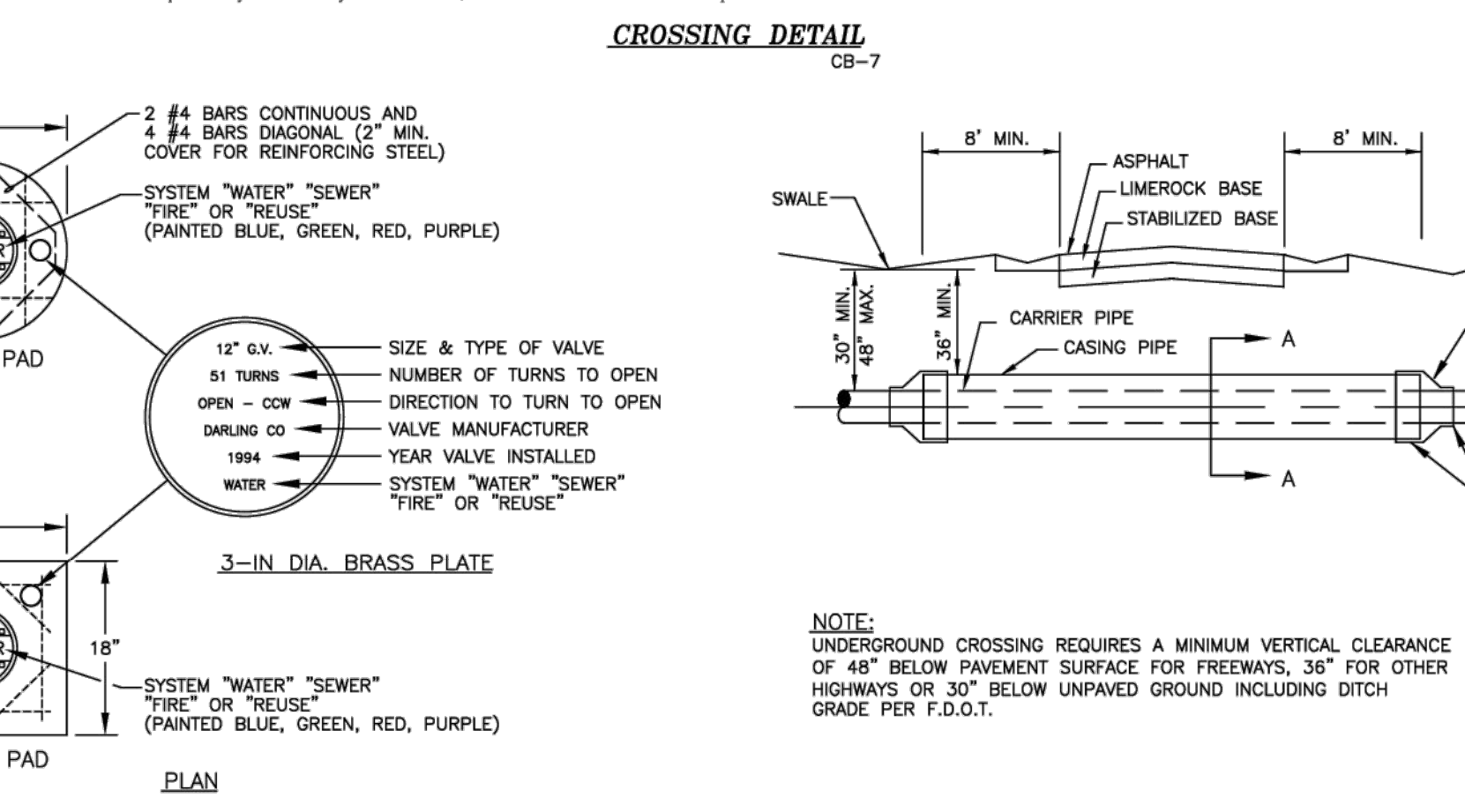
RESTRAINT TABLE														
PIPE SIZE	HORIZONTAL BENDS			VERTICAL OFFSETS			DEAD ENDS Lr (FT.)	TEES			REDUCERS (SEE NOTES)			
	90° BENDS Lr (FT.)	45° BENDS Lr (FT.)	22.5° BENDS Lr (FT.)	11.25° BENDS Lr (FT.)	45° BENDS Lr (FT.)	22.5° BENDS Lr (FT.)		RUN SIZE	BRANCH SIZE	Lr (FT.)		Lbr (FT.)		
4"	27	11	5	3	31	8	60	4"	4"	10	11	6 x 4	64	43
6"	37	15	7	4	43	11	84	6"	6"	10	34	8 x 6	60	46
8"	48	20	10	5	57	15	110	8"	8"	10	59	10 x 8	55	44
10"	57	24	11	6	68	17	131	10"	10"	10	80	12 x 10	46	38
12"	57	24	11	6	68	17	131	12"	12"	10	45	12 x 12	61	45
16"	78	24	12	6	55	19	106	16"	16"	10	79	16 x 16	103	63
20"	70	29	14	7	67	23	129	20"	20"	10	49	20 x 20	58	45
24"	81	33	16	8	78	27	150	24"	24"	10	15	24 x 24	128	82

NOTES:

- LENGTHS SHOWN ON THIS TABLE ARE TO BE INTERPRETED AS FOLLOWS:
 - Lr = RESTRAINED LENGTH FROM HIGH SIDE FITTING OF A VERT. BEND
 - Lb = RESTRAINED LENGTH FROM LOW SIDE FITTING OF VERT. BEND
 - Lr = RESTRAINED LENGTH ON BOTH SIDES FROM FITTING
 - Lm = MINIMUM LENGTH TO FIRST JOINT OF RUN ON BOTH SIDES
 - Lbr = RESTRAINED LENGTH REQUIRED ON BRANCH FROM FITTING
 - L(A) = LENGTH OF PIPE ON SMALL SIDE FREE OF FITTING
 - L(B) = RESTRAINED LENGTH ON LARGE SIDE OF REDUCER
- A SAFETY FACTOR = 2.5 IS USED FOR VERTICAL OFFSETS TO COMPENSATE FOR SATURATED SOIL CONDITIONS. A SAFETY FACTOR = 2.0 IS USED FOR ALL OTHER CASES.
- L(A) AND L(B) ABOVE ARE TWO OPTIONS FOR PROVIDING THE REQUIRED THRUST RESTRAINT FOR THE FITTING. EITHER L(A) LENGTH OF PIPE FREE OF FITTINGS (BENDS, TEES, REDUCERS OR VALVES) ON THE SMALL SIDE OF THE REDUCER WILL PROVIDE THE REQUIRED RESTRAINT OR L(B) LENGTH CAN BE RESTRAINED ON THE LARGE SIDE OF THE FITTING.
- THE FOLLOWING ARE ASSUMED:
 - 4" - 10" PIPE HAS 30" MIN. COVER
 - 12" - 24" PIPE HAS 36" MIN. COVER
 - 4" - 24" PIPE IS PVC
- VALVES SHALL BE RESTRAINED ON EITHER SIDE OF THE FITTING AS A MINIMUM. IN LINE VALVES SHALL HAVE NO FITTINGS WITHIN THE LENGTHS SHOWN ON THIS TABLE FOR THE SAME SIZE DEAD END. IN CASES WHERE THIS LENGTH CAN NOT BE PROVIDED FREE OF FITTINGS, ADDITIONAL RESTRAINT SHALL BE REQUIRED AS APPROVED BY ENGINEER.
- ALL DEAD END LINES, PERMANENT OR TEMPORARY, SHALL BE RESTRAINED PER THE ABOVE RESTRAINT TABLE.
- ALL VALVES SHALL BE RESTRAINED AS DEAD ENDS, IN BOTH FLOW DIRECTIONS, PER THIS TABLE.

LOCATION OF PUBLIC WATER SYSTEM MAINS IN ACCORDANCE WITH F.A.C. RULE 62-555.314			
Other Pipe	Horizontal Separation	Crossings (1)	Joint Spacing @ Crossings (Full Joint Centered)
Storm Sewer, Stormwater Force Main, Reclaimed Water (2)	Water Main 3 ft. minimum	Water Main 12 inches is the minimum, except for storm sewer, then 6 inches is the minimum and 12 inches is the preferred	Alternate 3 ft. minimum
Vacuum Sanitary Sewer	Water Main 10 ft. preferred 3 ft. minimum	Water Main 12 inches preferred 6 inches minimum	Alternate 3 ft. minimum
Gravity or Pressure Sanitary Sewer, Sanitary Sewer Force Main, Reclaimed Water (4)	Water Main 10 ft. preferred 6 ft. minimum (3)	Water Main 12 inches is the minimum, except for gravity sewer, then 6 inches is the minimum and 12 inches is the preferred	Alternate 6 ft. minimum
Sanitary Sewer Force Main, Reclaimed Water (4)	10 ft. minimum		

(1) Water main should cross above other pipes. When water main must be below other pipes, the minimum separation is 12 inches.
 (2) Reclaimed water regulated under Part III of Chapter 62-610, F.A.C.
 (3) 3 ft. for gravity sanitary sewer where the bottom of the water main is held at least 6 inches above the top of the gravity sanitary sewer.
 (4) Reclaimed water not regulated under Part III of Chapter 62-610, F.A.C.



CONSULTANTS' COMMENTS:

B.S.U. DETAIL SHEETS MUST REMAIN AS IS (NO ALTERATIONS) IF ADDITIONAL DETAILS ARE REQUIRED SUBMIT ON SEPARATE SHEET

CLIENT: PROJECT: TITLE: COMBINATION WATER/WASTEWATER DETAILS SCALE: NOT TO SCALE DATE: APRIL 2019

11900 E. TERRY STREET BONITA SPRINGS, FLORIDA 34135 PHONE: (239) 992-0711 FAX: (239) 992-9223 DWG #: COMBDET.DWG SHEET OF

Bonita Springs Utilities, Inc.

S:\MKT\BANKS\BANKS\WORKING\DWG\PLANS\10_COMBO-BSU-DETAILS.DWG 6/15/2023 3:50 PM JORNE SMOKEZ

PREPARED FOR: **BONITA SPRINGS UTILITIES**
 11860 EAST TERRY STREET
 BONITA SPRINGS, FL 34135
 (239) 390-4805
 (239) 390-4905

BANKS ENGINEERING
 Professional Engineers, Planners, & Land Surveyors
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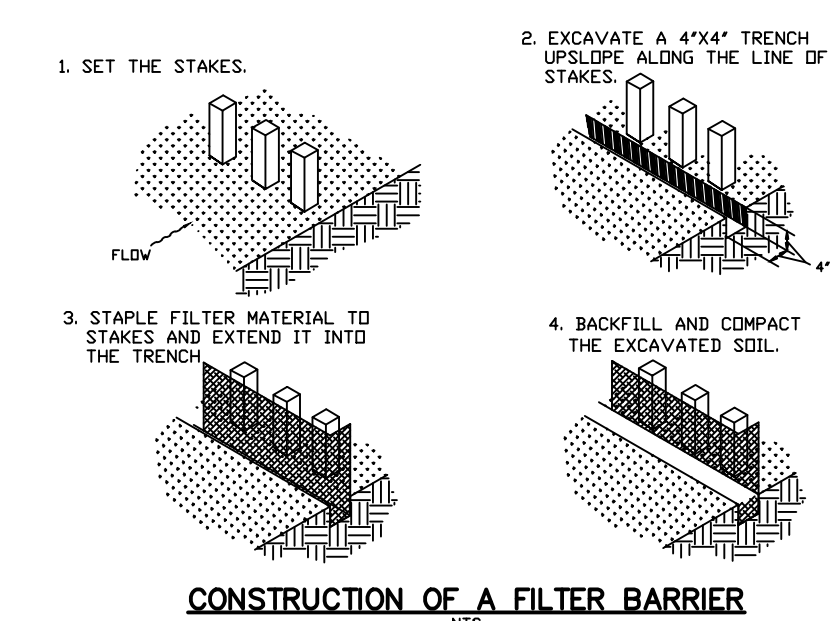
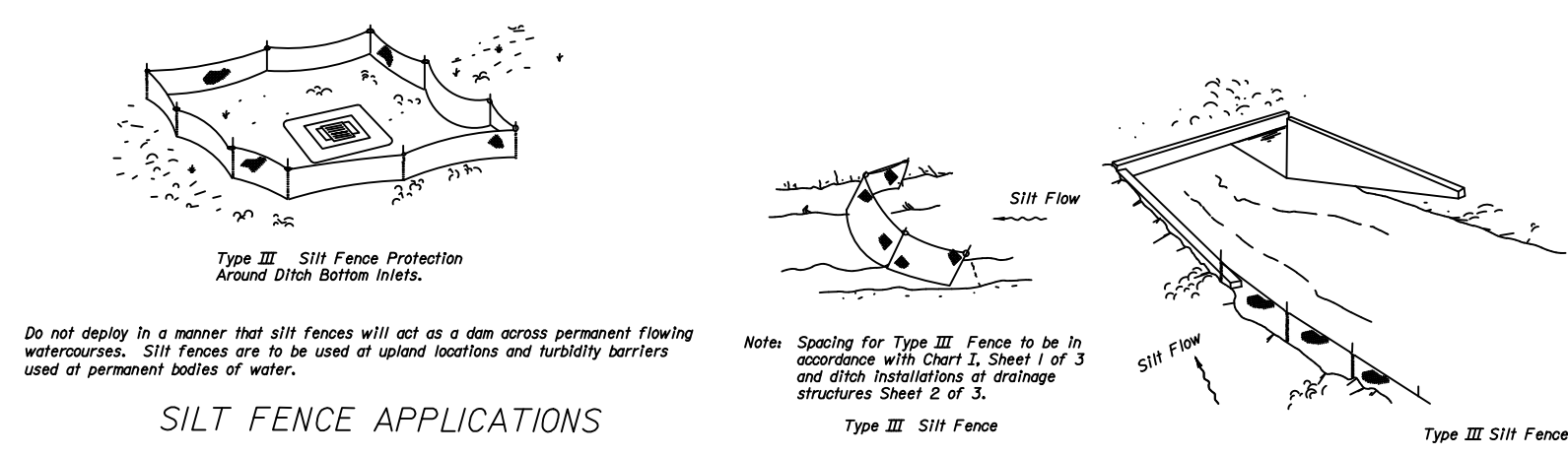
10511 SIX MILE CYPRESS PARKWAY
 FORT MYERS, FLORIDA 33966
 PHONE: (239) 939-5490 FAX: (239) 939-2523
 ENGINEERING LICENSE # EB 6469
 SURVEY LICENSE # LB 6690
 WWW.BANKSENG.COM

NO. DATE REVISION DESCRIPTION BY

COMBO-BSU-DETAILS
LAKES OF SANS SOUCI GRAVITY SEWER EXPANSION
 LEE COUNTY, FLORIDA

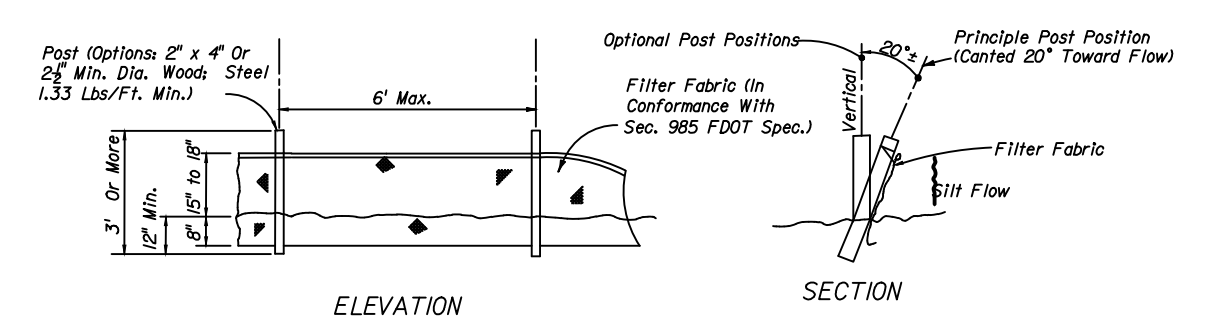
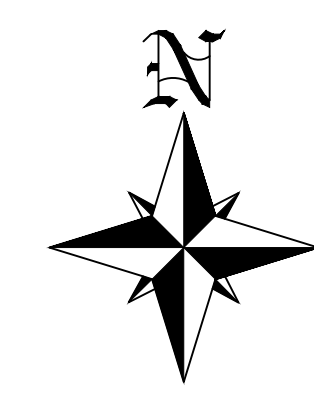
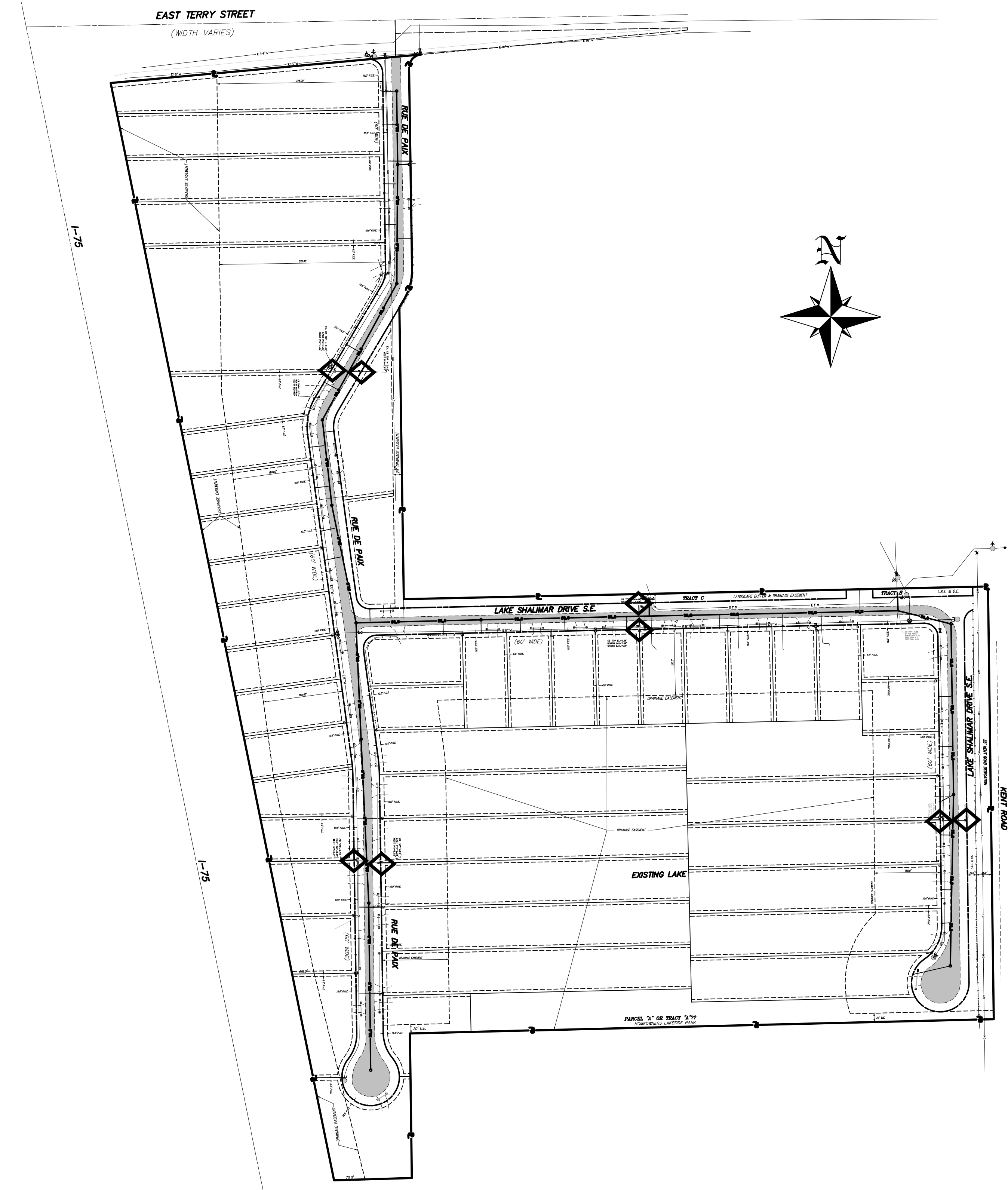
DATE	PROJECT	DRAWING	DESIGN	DRAWN	CHECKED	SCALE	SHEET
2/14/2020	8381SS	UTL-DTLS	DBA	JLS	DBA	N.T.S.	10

D. BRENT ADDISON
 P.E. LIC. #70611



GENERAL NOTES:

1. PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITY, APPROPRIATE EROSION CONTROL DEVICES SHALL BE INSTALLED TO CONTROL AND REDUCE SOIL EROSION AND SEDIMENT TRANSPORT TO OFF SITE AREAS. THE CONTRACTOR SHALL MAINTAIN THESE DEVICES THROUGHOUT THE DURATION OF CONSTRUCTION. ALL DEVICES SHALL REMAIN IN PLACE UNTIL THE SURROUNDING AREAS ARE ESTABLISHED.
2. THE FOLLOWING MINIMUM REQUIREMENTS ARE RECOMMENDED: (REFERENCE FLORIDA DEVELOPMENT MANUAL, FDER, PPS 6-301 TO 6-500).
 - A) BMP 1.01 - TEMPORARY GRAVEL CONSTRUCTION ENTRANCE
 - B) BMP 1.06 - SILT FENCE
 - C) BMP 1.08 - STORM INLET DRAIN PROTECTION
3. APPROPRIATE INLET PROTECTION TO PREVENT EROSION IS REQUIRED FOR ALL INLETS THROUGH OUT SITE CONSTRUCTION.
4. SILT FENCE SHALL BE INSTALLED ALONG THE PROPERTY LINE PRIOR TO THE COMMENCEMENT OF CONSTRUCTION ACTIVITIES.
5. THE ENTIRE SURFACE WATER MANAGEMENT SYSTEM SHALL BE OWNED AND MAINTAINED BY ROKTO DEVELOPMENTS PARKLANDS, INC., UNTIL SUCH TIME THAT THE PROPERTY IS SUBDIVIDED, AND WHEN SUBDIVIDED, A PROPERTY OWNERS ASSOCIATION WILL BE CREATED AND WILL ACCEPT MAINTENANCE OF THE DRAINAGE FACILITIES.



NOTE:

1. Silt Fence to be paid for under the contract unit price for Staked Silt Fence (LF).
2. Entire Fence shall conform to the detail for Type III fence except that bottom edge need not be buried.

TYPE III SILT FENCE

- PROJECT INFORMATION:**
1. ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988.
 2. THIS PROJECT PRESENTS NO ADVERSE IMPACTS ON LOCAL GROUND OR SURFACE WATERS.
 3. THIS PROJECT DOES NOT ADVERSELY EFFECT THE FLOOD PLAIN OR RIVERINE AREA.
 4. NO KNOWN ARCHAEOLOGICAL SITES EXIST WITHIN THE PROJECT AREA.
 5. THIS SITE CAN BE USED SAFELY FOR THE DEVELOPMENT AS SHOWN WITHOUT UNDUE DANGER FROM FLOOD OR ADVERSE SOIL AND / OR FOUNDATION CONDITIONS.
 6. THE SUBJECT PARCEL SHOWN HEREON IS NOT LOCATED IN A SPECIAL FLOOD HAZARD AREA ON THE NATIONAL FLOOD INSURANCE PROGRAM'S FLOOD INSURANCE RATE MAPS.

- LEGEND:**
- ◊ = STAKED SEDIMENT LOT AT INLETS OR STAKED SILT FENCE
 - — — — — = STAKED SILT FENCE

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BEST MANAGEMENT PRACTICE PLAN
LAKES OF SANS SOUCI GRAVITY SEWER EXPANSION
LEE COUNTY, FLORIDA

DATE	PROJECT	DRAWING	DESIGN	DRAWN	CHECKED	SCALE	SHEET
2/14/2020	8381SS	BMP	DBA	JLS	DBA	N.T.S.	11