VILLAGE F MASTER PD / SHOPPES AT LAKEVIEW CONSTRUCTION PLANS

DP-22-12-375 / SPR-18-14

Site Work Number: B23905815

8810 SEIDEL ROAD

WINTER GARDEN, FL 32825

PARCEL ID # 34-23-27-0000-00-004

PREPARED FOR: MONSTERS OF MIDWAY PROPERTIES, LLC 13352 BELLARIA CIR WINDERMERE, FL 34786

CONTACT: Corey Graham EMAIL: alisa@infrastructuresite.com

ENGINEER:

TANNATH DESIGN, INC. 2494 ROSE SPRING DRIVE ORLANDO, FL 32825 (407) 982-9878 CONTACT: Bryan Potts, P.E.

SURVEYOR: LANDSCAPE:

CADD SCAPES, INC. AMERICAN SURVEYING & MAPPING, INC. 221 CIRCLE DR. 2741 S. ELSTON DRIVE MAITLAND, FL 32751 DELTONA, FL 32738 (407) 426-7979 (407) 310-5567 CONTACT: Jason Bridgewater, RLA CONTACT: E. Glenn Turner, P.S.M.

OWNER:

MONSTERS OF MIDWAY

WINDERMERE, FL 34786-7401

PROPERTIES, LLC

13352 BELLARIA CIR

THAT PART OF SECTION 34, TOWNSHIP 23 SOUTH, RANGE 27 EAST, ORANGE COUNTY, FLORIDA, DESCRIBED AS FOLLOWS: COMMENCE AT THE SOUTHWEST CORNER OF SAID SECTION 34; THENCE RUN N00'01'58"W ALONG THE WEST LINE OF THE SOUTHWEST 1/4 OF SAID SECTION 34, A DISTANCE OF167.11 FEET; THENCE DEPARTING SAID WEST LINE RUN N84'58'24"E ALONG TIHE NORTH LINE OFLANDS DESCRIBED IN OFFICIAL RECORDS BOOK 5993, PAGE 1736, OF THE PUBLIC RECORDS OF ORANGE COUNTY, FLORIDA, A DISTANCE OF 620.20 FEET; TIHENCE DEPARTING SAID NORTH LINE RUN N02'31'41"W, 107.30 FEET TO THE POINT OF CURVAIJRE OF A CURVE CONCAVE EASTERLY HAVING ARADIUS OF 1260.00 FEET AND A CHORD BEARING OF N03'17' 40"E; THENCE NORTHERLY ALONG THEARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 11"38'43" FOR A DISTANCE OF 256.09 FEET TOTHE POINT OF BEGINNING; SAID POINT BEING ON A CURVE CONCAVING EASTIERLY HAVING A RADIUS OF 1260.00 FEET AND A CHORD BEARING OF N18'32'29"E; THENCE NORTHERLY ALONG THE ARC OFSAID CURVE THROUGH A CENTRAL ANGLE OF 18'50'54" FOR A DISTANCE OF 414.50 FEET TO TIHEPOINT OF REVERSE CURVATURE OF A CURVE CONCAVE WESTERLY HAVING A RADIUS OF 35.00 FEET AND A CHORD BEARING OF N20'08'38"W; THENCE NORTHERLY ALONG THE ARC OF SAID CURVETHROUGH A CENTRAL ANGLE OF 96'13'08" FOR A DISTANCE OF 58.78 FEET TO THE POIN' OFTANGENCY: THENCE N68'15'12"W. 141.40 FEET TO THE POINT OF CURVATURE OF A CURVE CONCAVESOUTHERLY HAVING A RADIUS OF 25.00 FEET AND A CHORD BEARING OF S73'45'41"W; THENCEWESTERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 75'58'15" FOR ADISTANCE OF 33.15 FEET TO THE POINT OF COMPOUND CURVATURE OF A CURVE CONCAVE SOUTIHEASTERLY HAVING A RADIUS OF 1206.52 FEET AND A CHORD BEARING OF S24'34'33"W;THENCE SOUTHWESTERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 22'24'01"FOR A DISTANCE OF 471.70 FEET TO A POINT ON A NON-TANGENT LINE; THENCE S76'37"28"E.249.31 FEET TO 2.44 ACRES



LOCATION SKETCH

	UTILITY/GOVERNING AGENCIES CONTACTS
SANITARY SEWER	ORANGE COUNTY UTILITIES 9150 CURRY FORD RD. ORLANDO, FL 32825 PHONE: (407) 254-9900
WATER	ORANGE COUNTY UTILITIES 9150 CURRY FORD RD. ORLANDO, FL 32825 PHONE: (407) 254-9900
STORM	SJRWMD 601 S. LAKE DESTINY RD. MAITLAND, FL 32751 PHONE: (407) 659-4800

1. POLE SIGNS AND BILLBOARDS SHALL BE PROHIBITED. ALL OTHER SIGNAGE SHALL COMPLY WITH APPROVED MASTER SIGN PLAN AND CHAPTER 31.5 OF THE ORANGE COUNTY CODE. AS MAY BE AMENDED

SHEET	NAME
CIVIL	
C-0.0	COVER SHEET
1 of 3	BOUNDARY & TOPOGRAPHICAL SURVEY
2 of 3	BOUNDARY & TOPOGRAPHICAL SURVEY
3 of 3	BOUNDARY & TOPOGRAPHICAL SURVEY
C-1.0	EROSION CONTROL & DEMO PLAN
C-2.0	SITE PLAN
C-3.0	GRADING PLAN
C-3.1	PAVING & DRAINAGE PLAN
C-4.0	UTILITY PLAN
C-4.1	FIRE PLAN
C-5.0	SECTIONS
C-6.0	PAVING DETAILS
C-7.0	DRAINAGE DETAILS
C-8.0	UTILITY DETAILS
C-8.1	UTILITY DETAILS
C-8.2	UTILITY DETAILS
L-1	LANDSCAPE PLAN
L-2	LANDSCAPE DETAILS
L-3	IRRIGATION PLAN
L-4	IRRIGATION DETAILS

SHEET INDEX OF DRAWINGS

CONSTRUCTION PLANS WERE PREPARED IN STANDARDS FOR DESIGN. CONSTRUCTION AND AND SPECIFICATIONS.

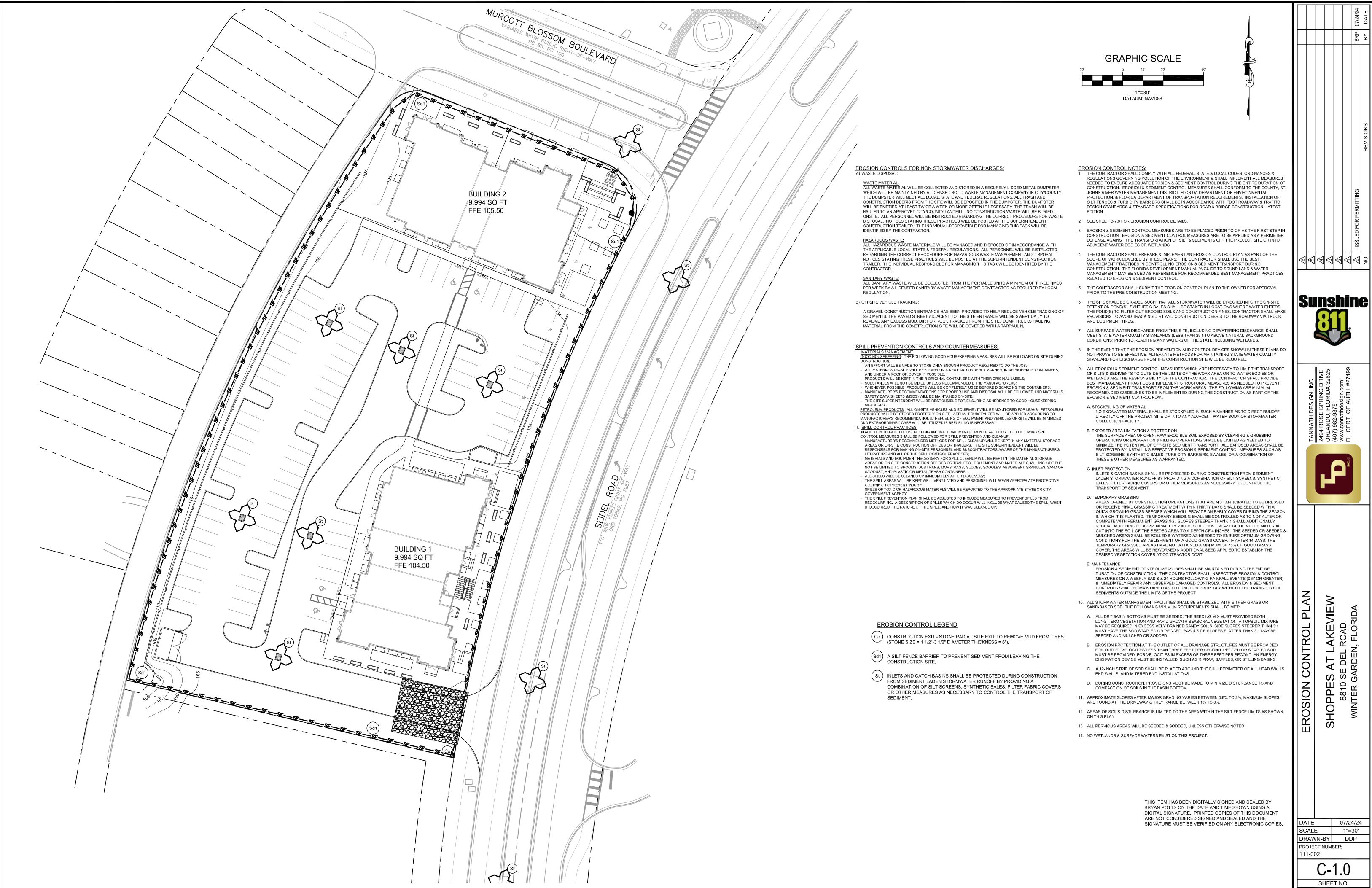
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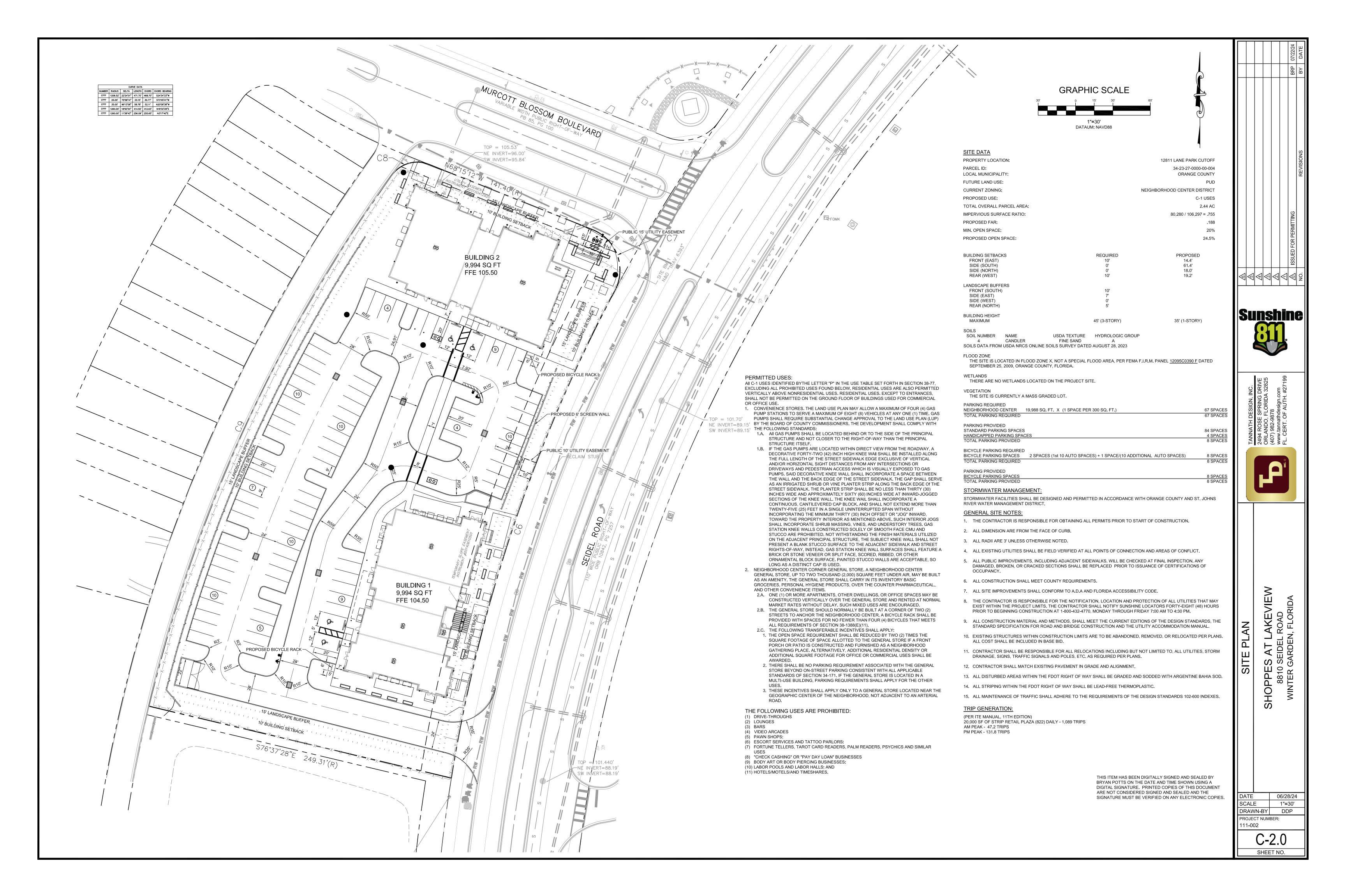
MAINTENANCE FOR STREETS AND HIGHWAYS, PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED FDOT GREEN BOOK AND THE OC REGULATIONS SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED

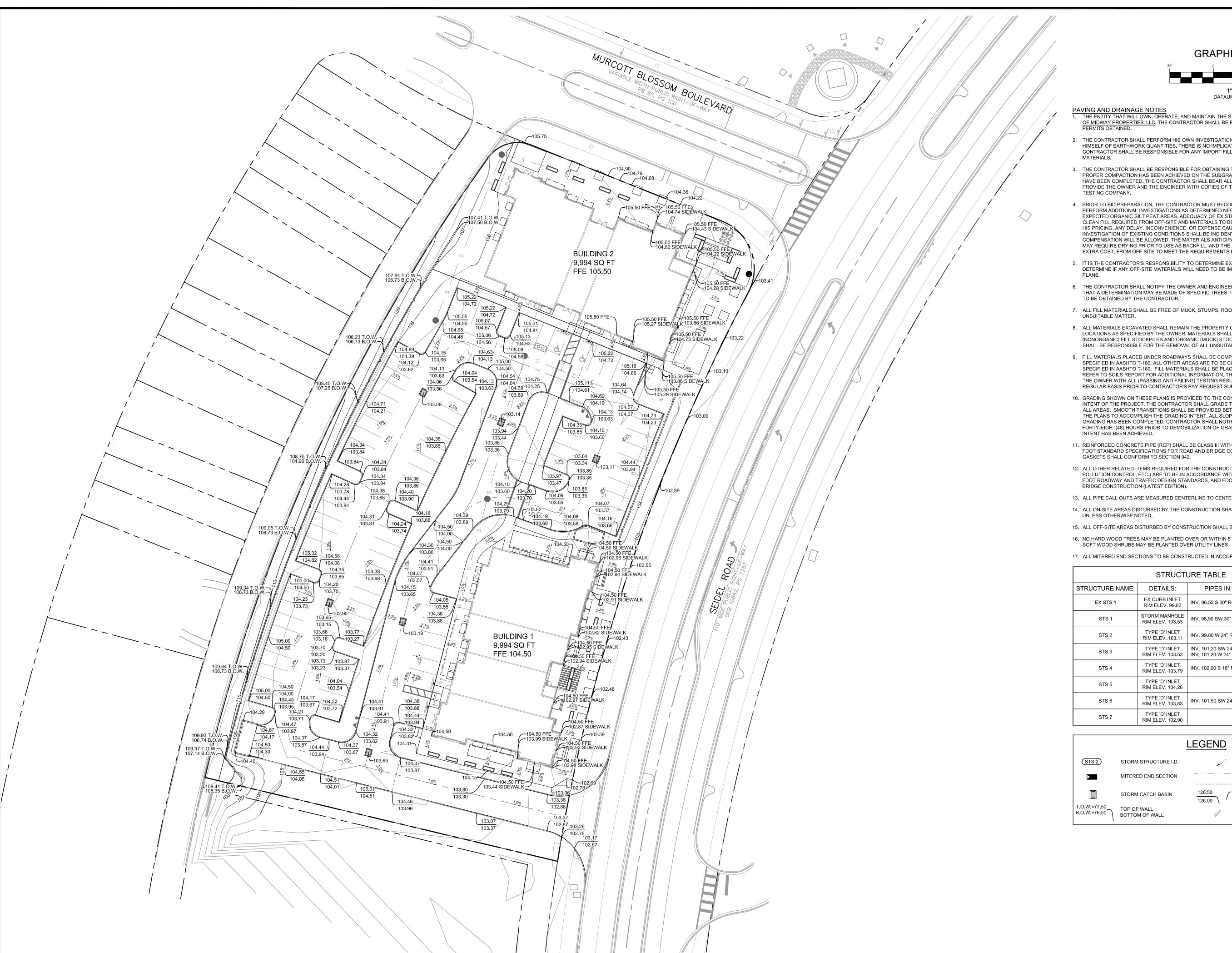
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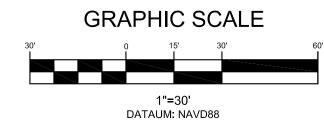
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SHOPPE 8810 WINTER G









THE ENTITY THAT WILL OWN, OPERATE, AND MAINTAIN THE STORM SEWER SHOWN ON THESE PLANS IS MONSTERS OF MIDWAY PROPERTIES, LLC. THE CONTRACTOR SHALL BE EXPECTED TO MEET ALL THE REQUIREMENTS OF THE

- 2. THE CONTRACTOR SHALL PERFORM HIS OWN INVESTIGATIONS AND CALCULATIONS AS NECESSARY TO ASSURE HIMSELF OF EARTHWORK QUANTITIES. THERE IS NO IMPLICATION THAT EARTHWORK BALANCES AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY IMPORT FILL NEEDED, OR FOR REMOVAL AND DISPOSAL OF EXCESS
- 3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING THE NECESSARY TESTING TO ASSURE THAT THE PROPER COMPACTION HAS BEEN ACHIEVED ON THE SUBGRADE, BASE, AND ALL OTHER PERTINENT AREAS THAT HAVE BEEN COMPLETED. THE CONTRACTOR SHALL BEAR ALL COSTS ASSOCIATED WITH TESTING AND SHALL PROVIDE THE OWNER AND THE ENGINEER WITH COPIES OF THE CERTIFICATION OF COMPACTION FROM THE
- 4. PRIOR TO BID PREPARATION, THE CONTRACTOR MUST BECOME FAMILIAR WITH THE OVERALL SITE CONDITIONS AND PERFORM ADDITIONAL INVESTIGATIONS AS DETERMINED NECESSARY TO UNDERSTAND THE LIMIT AND DEPTH OF EXPECTED ORGANIC SILT PEAT AREAS, ADEQUACY OF EXISTING MATERIALS AS FILL, DEWATERING REQUIREMENTS. CLEAN FILL REQUIRED FROM OFF-SITE AND MATERIALS TO BE DISPOSED OF OFF-SITE, ALL OF WHICH WILL AFFECT HIS PRICING. ANY DELAY, INCONVENIENCE, OR EXPENSE CAUSED TO THE CONTRACTOR DUE TO INADEQUATE INVESTIGATION OF EXISTING CONDITIONS SHALL BE INCIDENTAL TO THE CONTRACT, AND NO EXTRA COMPENSATION WILL BE ALLOWED. THE MATERIALS ANTICIPATED TO BE ENCOUNTERED DURING CONSTRUCTION MAY REQUIRE DRYING PRIOR TO USE AS BACKFILL, AND THE CONTRACTOR MAY HAVE TO IMPORT MATERIALS, AT NO EXTRA COST, FROM OFF-SITE TO MEET THE REQUIREMENTS FOR COMPACTION AND PROPER FILL.
- 5. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE EXISTING SITE CONDITIONS OF SOIL PRIOR TO N.T.P. TO DETERMINE IF ANY OFF-SITE MATERIALS WILL NEED TO BE IMPORTED TO ACHIEVE THE GRADES SPECIFIED ON THE
- 6. THE CONTRACTOR SHALL NOTIFY THE OWNER AND ENGINEER WHEN ALL WORK IS LAID OUT (SURVEY STAKED), SO THAT A DETERMINATION MAY BE MADE OF SPECIFIC TREES TO BE REMOVED. A TREE REMOVAL PERMIT IS REQUIRED
- 7. ALL FILL MATERIALS SHALL BE FREE OF MUCK, STUMPS, ROOTS, BRUSH, VEGETATIVE MATTER, RUBBISH, OR OTHER
- 8. ALL MATERIALS EXCAVATED SHALL REMAIN THE PROPERTY OF THE OWNER AND SHALL BE STOCKPILED AT ON-SITE LOCATIONS AS SPECIFIED BY THE OWNER. MATERIALS SHALL BE STOCKPILED SEPARATELY AS TO USEABLE (NONORGANIC) FILL STOCKPILES AND ORGANIC (MUCK) STOCKPILES IF MUCK IS ENCOUNTERED. CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL UNSUITABLE FILL MATERIALS FROM THE SITE.
- 9. FILL MATERIALS PLACED UNDER ROADWAYS SHALL BE COMPACTED TO AT LEAST 98% MAXIMUM DENSITY AS SPECIFIED IN AASHTO T-180. ALL OTHER AREAS ARE TO BE COMPACTED TO AT LEAST 95% MAXIMUM DENSITY AS SPECIFIED IN AASHTO T-180. FILL MATERIALS SHALL BE PLACED AND COMPACTED IN A MAXIMUM OF 12" LIFTS. REFER TO SOILS REPORT FOR ADDITIONAL INFORMATION. THE CONTRACTOR SHALL PROVIDE THE ENGINEER AND THE OWNER WITH ALL (PASSING AND FAILING) TESTING RESULTS. RESULTS SHALL BE PROVIDED ON A TIMELY AND REGULAR BASIS PRIOR TO CONTRACTOR'S PAY REQUEST SUBMITTAL.
- 10. GRADING SHOWN ON THESE PLANS IS PROVIDED TO THE CONTRACTOR TO EXPRESS THE GENERAL GRADING INTENT OF THE PROJECT. THE CONTRACTOR SHALL GRADE THE ENTIRE SITE TO PROVIDE POSITIVE DRAINAGE IN ALL AREAS. SMOOTH TRANSITIONS SHALL BE PROVIDED BETWEEN CONTOURS OR SPOT ELEVATIONS AS SHOWN ON THE PLANS TO ACCOMPLISH THE GRADING INTENT. ALL SLOPES SHALL BE STABILIZED IMMEDIATELY AFTER FINAL GRADING HAS BEEN COMPLETED. CONTRACTOR SHALL NOTIFY OWNER AND ENGINEER A MINIMUM OF FORTY-EIGHT(48) HOURS PRIOR TO DEMOBILIZATION OF GRADING EQUIPMENT TO DETERMINE THAT THE GRADING
- 11. REINFORCED CONCRETE PIPE (RCP) SHALL BE CLASS III WITH RUBBER GASKET JOINTS. RCP SHALL CONFORM TO FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (LATEST EDITION) SECTION 941. RUBBER
- 12. ALL OTHER RELATED ITEMS REQUIRED FOR THE CONSTRUCTION OF THE STORM SEWER (OUTFALL PROTECTION, POLLUTION CONTROL, ETC.) ARE TO BE IN ACCORDANCE WITH DETAILS SHOWN ON THE CONSTRUCTION PLANS, FDOT ROADWAY AND TRAFFIC DESIGN STANDARDS, AND FDOT STANDARD SPECIFICATIONS FOR ROADWAY AND
- 13. ALL PIPE CALL OUTS ARE MEASURED CENTERLINE TO CENTERLINE FOR MANHOLES AND INLETS.
- 14. ALL ON-SITE AREAS DISTURBED BY THE CONSTRUCTION SHALL BE STABILIZED WITH A SEED AND MULCH MIXTURI
- 15. ALL OFF-SITE AREAS DISTURBED BY CONSTRUCTION SHALL BE SODDED WITH BAHIA.
- 16. NO HARD WOOD TREES MAY BE PLANTED OVER OR WITHIN 5' OF UTILITY LINES OR STORM PIPES. ONLY SOD OR
- 17. ALL MITERED END SECTIONS TO BE CONSTRUCTED IN ACCORDANCE WITH FDOT INDEX 430-022.

	STRUCT	JRE TABLE	
STRUCTURE NAME:	DETAILS:	PIPES IN:	PIPES OUT:
EX STS 1	EX CURB INLET RIM ELEV. 99.82	INV. 96.52 S 30" RCP	
STS 1	STORM MANHOLE RIM ELEV. 103.53	INV. 98.90 SW 30" RCP	INV. 98.86 N 30" RCP
STS 2	TYPE 'D' INLET RIM ELEV. 103.11	INV. 99.80 W 24" RCP	INV. 99.73 NE 30" RCP
STS 3	TYPE 'D' INLET RIM ELEV. 103.53	INV. 101.20 SW 24" RCP INV. 101.20 W 24" RCP	INV. 100.15 E 24" RCP
STS 4	TYPE 'D' INLET RIM ELEV. 103.79	INV. 102.00 S 18" RCP	INV. 101.97 NE 24" RCP
STS 5	TYPE 'D' INLET RIM ELEV. 104.26		INV. 102.46 N 18" RCP
STS 6	TYPE 'D' INLET RIM ELEV. 103.83	INV. 101.50 SW 24" RCP	INV. 101.49 E 24" RCP
STS 7	TYPE 'D' INLET RIM ELEV. 102.90		INV. 97.93 NE 24" RCP

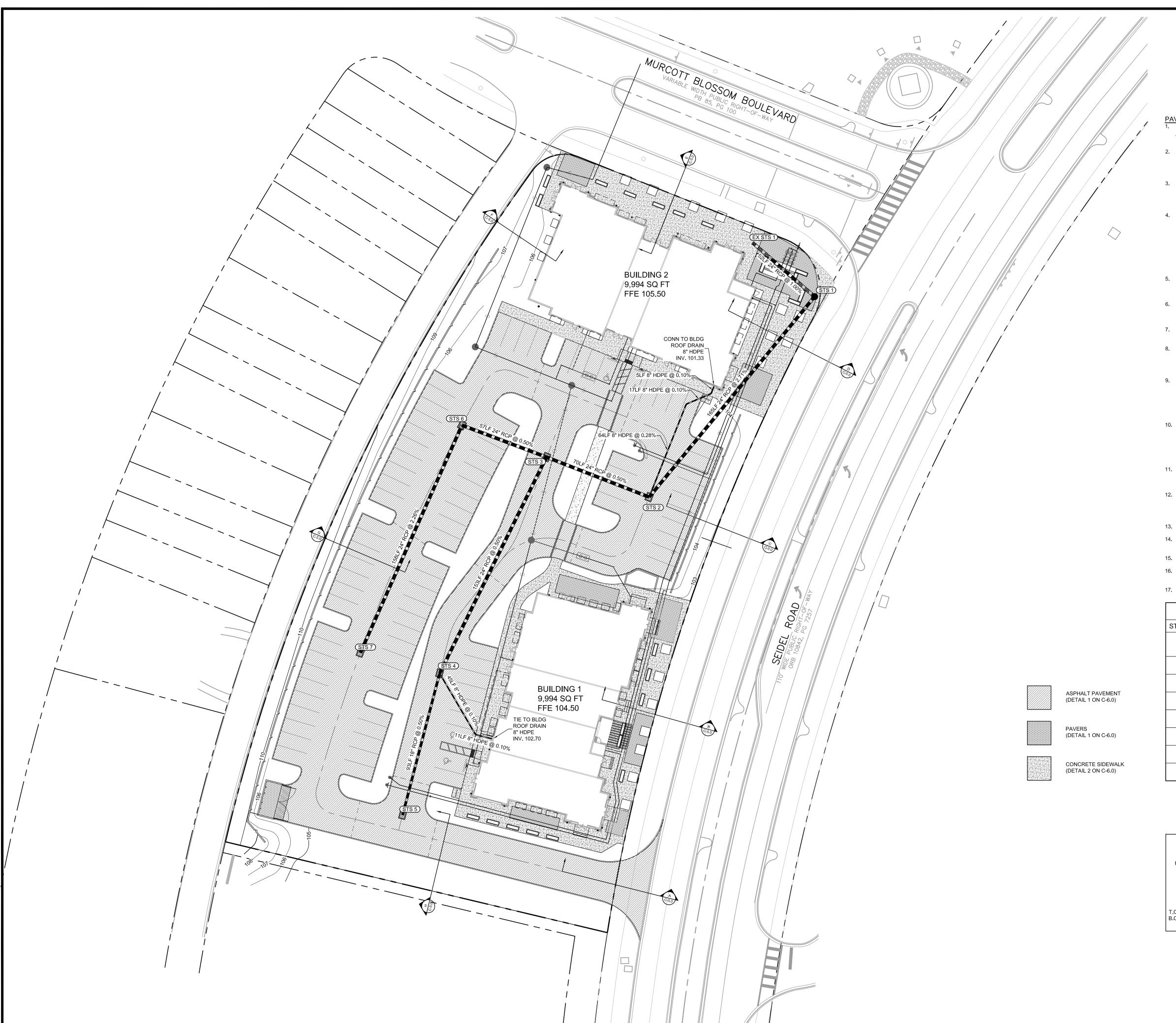
		LEGEND	
(STS 2)	STORM STRUCTURE I.D.		DRAINAGE SURFACE FLOW
	MITERED END SECTION		DRAINAGE FLOWLINE
_			DRAINAGE RIDGE
	STORM CATCH BASIN	$\frac{126.50}{126.00} $	PROPOSED GRADES
T.O.W.=77.50 B.O.W.=76.50	TOP OF WALL BOTTOM OF WALL	'J _{p'} o	EXISTING SPOT ELEV.

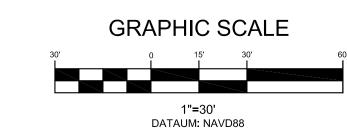
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DRAWN-BY PROJECT NUMBER: 11-002 C-3.0

SHEET NO.

||Sunshine





PAVING AND DRAINAGE NOTES

THE ENTITY THAT WILL OWN, OPERATE, AND MAINTAIN THE STORM SEWER SHOWN ON THESE PLANS IS MONSTERS OF MIDWAY PROPERTIES, LLC. THE CONTRACTOR SHALL BE EXPECTED TO MEET ALL THE REQUIREMENTS OF THE

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- 6. THE CONTRACTOR SHALL NOTIFY THE OWNER AND ENGINEER WHEN ALL WORK IS LAID OUT (SURVEY STAKED), SO THAT A DETERMINATION MAY BE MADE OF SPECIFIC TREES TO BE REMOVED. A TREE REMOVAL PERMIT IS REQUIRED TO BE OBTAINED BY THE CONTRACTOR.
- 7. ALL FILL MATERIALS SHALL BE FREE OF MUCK, STUMPS, ROOTS, BRUSH, VEGETATIVE MATTER, RUBBISH, OR OTHER UNSUITABLE MATTER.
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- 9. FILL MATERIALS PLACED UNDER ROADWAYS SHALL BE COMPACTED TO AT LEAST 98% MAXIMUM DENSITY AS SPECIFIED IN AASHTO T-180. ALL OTHER AREAS ARE TO BE COMPACTED TO AT LEAST 95% MAXIMUM DENSITY AS SPECIFIED IN AASHTO T-180. FILL MATERIALS SHALL BE PLACED AND COMPACTED IN A MAXIMUM OF 12" LIFTS. REFER TO SOILS REPORT FOR ADDITIONAL INFORMATION. THE CONTRACTOR SHALL PROVIDE THE ENGINEER AND THE OWNER WITH ALL (PASSING AND FAILING) TESTING RESULTS. RESULTS SHALL BE PROVIDED ON A TIMELY AND REGULAR BASIS PRIOR TO CONTRACTOR'S PAY REQUEST SUBMITTAL.
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- 11. REINFORCED CONCRETE PIPE (RCP) SHALL BE CLASS III WITH RUBBER GASKET JOINTS. RCP SHALL CONFORM TO FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (LATEST EDITION) SECTION 941. RUBBER GASKETS SHALL CONFORM TO SECTION 942.
- 12. ALL OTHER RELATED ITEMS REQUIRED FOR THE CONSTRUCTION OF THE STORM SEWER (OUTFALL PROTECTION, POLLUTION CONTROL, ETC.) ARE TO BE IN ACCORDANCE WITH DETAILS SHOWN ON THE CONSTRUCTION PLANS, FDOT ROADWAY AND TRAFFIC DESIGN STANDARDS, AND FDOT STANDARD SPECIFICATIONS FOR ROADWAY AND BRIDGE CONSTRUCTION (LATEST EDITION).
- 13. ALL PIPE CALL OUTS ARE MEASURED CENTERLINE TO CENTERLINE FOR MANHOLES AND INLETS.
- 14. ALL ON-SITE AREAS DISTURBED BY THE CONSTRUCTION SHALL BE STABILIZED WITH A SEED AND MULCH MIXTURE UNLESS OTHERWISE NOTED.
- 15. ALL OFF-SITE AREAS DISTURBED BY CONSTRUCTION SHALL BE SODDED WITH BAHIA.
- 16. NO HARD WOOD TREES MAY BE PLANTED OVER OR WITHIN 5' OF UTILITY LINES OR STORM PIPES. ONLY SOD OR SOFT WOOD SHRUBS MAY BE PLANTED OVER UTILITY LINES
- 17. ALL MITERED END SECTIONS TO BE CONSTRUCTED IN ACCORDANCE WITH FDOT INDEX 430-022.

	STRUCTURE TA	BLE	
STRUCTURE NAME:	DETAILS:	PIPES IN:	PIPES OUT:
EX STS 1	EX TYPE 'C' INLET ADJUST TOP TO SURFACE ELEVATION RIM ELEV. 104.26	INV. 94.58 SE 24" RCP	
STS 1	STORM MANHOLE RIM ELEV. 103.53	INV. 95.25 SW 24" RCP	INV. 95.10 NW 24" RCP
STS 2	TYPE 'D' INLET RIM ELEV. 103.11	INV. 99.80 W 24" RCP INV. 101.13 N 8" HDPE	INV. 99.73 NE 24" RCP
STS 3	TYPE 'D' INLET RIM ELEV. 103.53	INV. 101.20 SW 24" RCP INV. 101.20 W 24" RCP	INV. 100.15 E 24" RCP
STS 4	TYPE 'D' INLET RIM ELEV. 103.79	INV. 102.00 S 18" RCP INV. 102.65 SE 8" HDPE	INV. 101.97 NE 24" RCF
STS 5	TYPE 'D' INLET RIM ELEV. 104.26		INV. 102.46 N 18" RCP
STS 6	TYPE 'D' INLET RIM ELEV. 103.83	INV. 101.50 SW 24" RCP	INV. 101.49 E 24" RCP
STS 7	TYPE 'D' INLET RIM ELEV. 102.90		INV. 97.93 NE 24" RCP

		<u>LEGEND</u>	
(STS 2)	STORM STRUCTURE I.D.		DRAINAGE SURFACE FLOW
	MITERED END SECTION		DRAINAGE FLOWLINE
			DRAINAGE RIDGE
	STORM CATCH BASIN	$\frac{126.50}{126.00} $	PROPOSED GRADES
T.O.W.=77.50 B.O.W.=76.50	TOP OF WALL BOTTOM OF WALL	'J _{p'} o	EXISTING SPOT ELEV.

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY BRYAN POTTS ON THE DATE AND TIME SHOWN USING A DIGITAL SIGNATURE. PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

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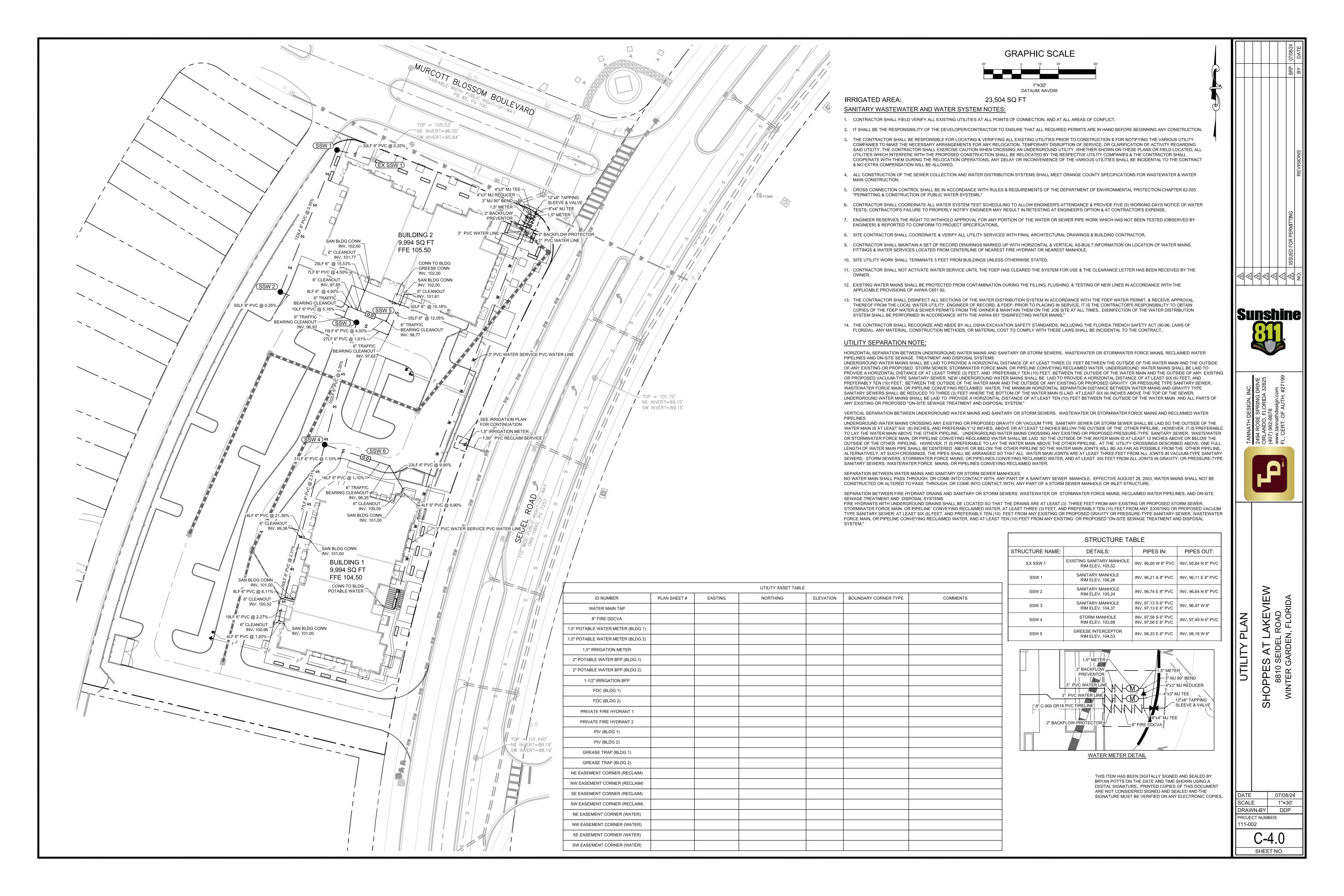
2494 ROSE SPRING DRIVE ORLANDO, FLORIDA 32825 (407) 982-9878 www.tannathdesign.com FL. CERT. OF AUTH. #27199

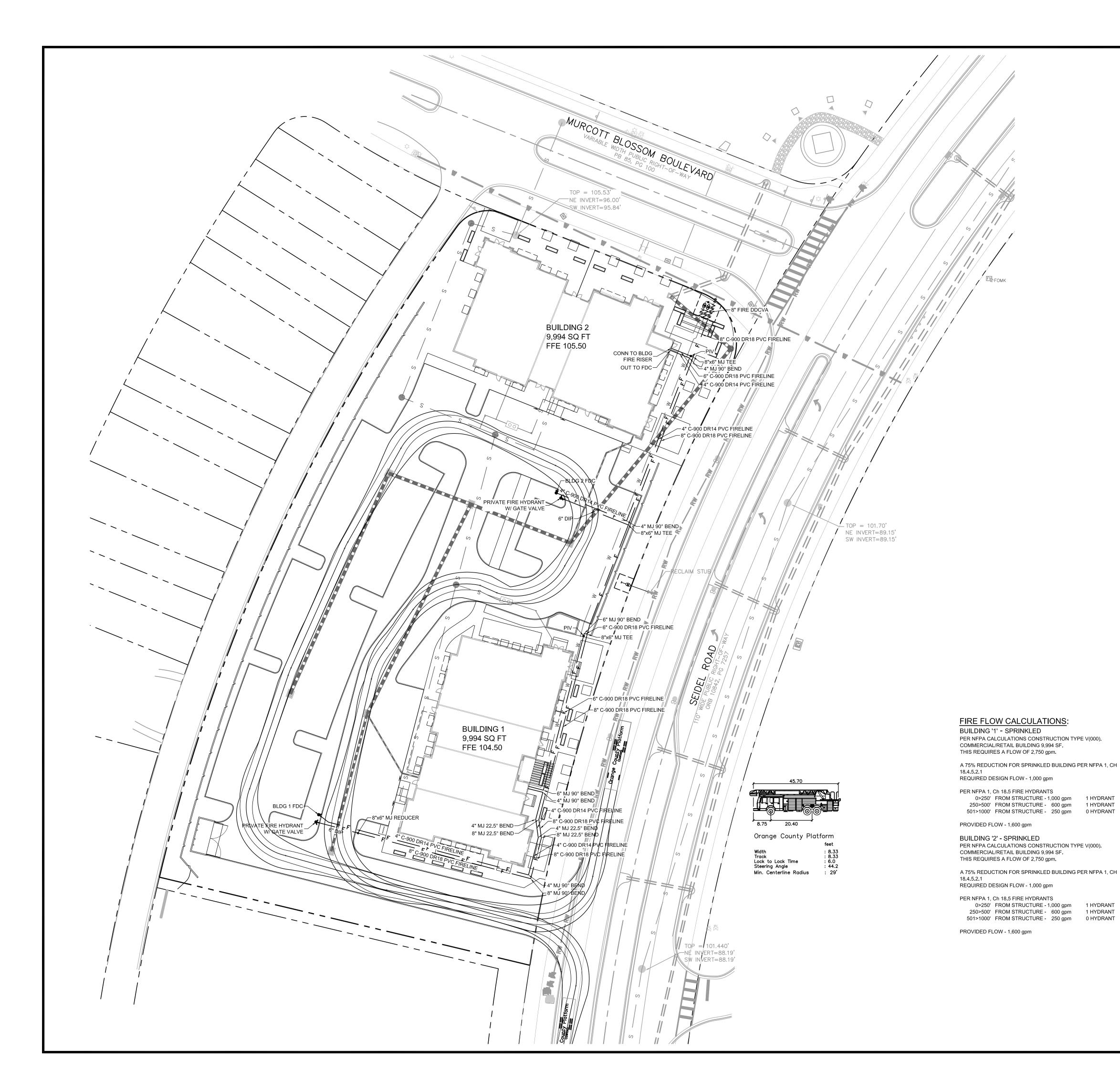


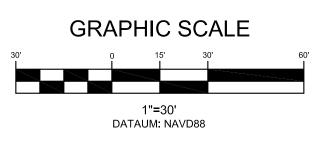
SHOPPES AT LAKEVIEW
8810 SEIDEL ROAD
WINTER GARDEN, FLORIDA

DATE 07/02/24
SCALE 1"=30'
DRAWN-BY DDP
PROJECT NUMBER:
111-002

SHEET NO.







SANITARY WASTEWATER AND WATER SYSTEM NOTES:

- 1. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITIES AT ALL POINTS OF CONNECTION, AND AT ALL AREAS OF CONFLICT.
- 2. IT SHALL BE THE RESPONSIBILITY OF THE DEVELOPER/CONTRACTOR TO ENSURE THAT ALL REQUIRED PERMITS ARE IN HAND BEFORE BEGINNING ANY CONSTRUCTION.
- 3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING & VERIFYING ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION & FOR NOTIFYING THE VARIOUS UTILITY COMPANIES TO MAKE THE NECESSARY ARRANGEMENTS FOR ANY RELOCATION, TEMPORARY DISRUPTION OF SERVICE, OR CLARIFICATION OF ACTIVITY REGARDING SAID UTILITY, THE CONTRACTOR SHALL EXERCISE CAUTION WHEN CROSSING AN UNDERGROUND UTILITY, WHETHER SHOWN ON THESE PLANS OR FIELD LOCATED. ALL UTILITIES WHICH INTERFERE WITH THE PROPOSED CONSTRUCTION SHALL BE RELOCATED BY THE RESPECTIVE UTILITY COMPANIES & THE CONTRACTOR SHALL COOPERATE WITH THEM DURING THE RELOCATION OPERATIONS. ANY DELAY OR INCONVENIENCE OF THE VARIOUS UTILITIES SHALL BE INCIDENTAL TO THE CONTRACT & NO EXTRA COMPENSATION WILL BE ALLOWED.
- 4. ALL CONSTRUCTION OF THE SEWER COLLECTION AND WATER DISTRIBUTION SYSTEMS SHALL MEET ORANGE COUNTY SPECIFICATIONS FOR WASTEWATER & WATER MAIN CONSTRUCTION.
- 5. CROSS CONNECTION CONTROL SHALL BE IN ACCORDANCE WITH RULES & REQUIREMENTS OF THE DEPARTMENT OF ENVIRONMENTAL PROTECTION-CHAPTER 62-555 "PERMITTING & CONSTRUCTION OF PUBLIC WATER SYSTEMS."
- 6. CONTRACTOR SHALL COORDINATE ALL WATER SYSTEM TEST SCHEDULING TO ALLOW ENGINEER'S ATTENDANCE & PROVIDE FIVE (5) WORKING DAYS NOTICE OF WATER TESTS. CONTRACTOR'S FAILURE TO PROPERLY NOTIFY ENGINEER MAY RESULT IN RETESTING AT ENGINEER'S OPTION & AT CONTRACTOR'S EXPENSE.
- 7. ENGINEER RESERVES THE RIGHT TO WITHHOLD APPROVAL FOR ANY PORTION OF THE WATER OR SEWER PIPE WORK WHICH HAS NOT BEEN TESTED (OBSERVED BY ENGINEER) & REPORTED TO CONFORM TO PROJECT SPECIFICATIONS.
- 8. SITE CONTRACTOR SHALL COORDINATE & VERIFY ALL UTILITY SERVICES WITH FINAL ARCHITECTURAL DRAWINGS & BUILDING CONTRACTOR.
- 9. CONTRACTOR SHALL MAINTAIN A SET OF RECORD DRAWINGS MARKED UP WITH HORIZONTAL & VERTICAL AS-BUILT INFORMATION ON LOCATION OF WATER MAINS, FITTINGS & WATER SERVICES LOCATED FROM CENTERLINE OF NEAREST FIRE HYDRANT OR NEAREST MANHOLE.
- 10. SITE UTILITY WORK SHALL TERMINATE 5 FEET FROM BUILDINGS UNLESS OTHERWISE STATED.

SHALL BE PERFORMED IN ACCORDANCE WITH THE AWWA 651 "DISINFECTING WATER MAINS."

- 11. CONTRACTOR SHALL NOT ACTIVATE WATER SERVICE UNTIL THE FDEP HAS CLEARED THE SYSTEM FOR USE & THE CLEARANCE LETTER HAS BEEN RECEIVED BY THE OWNER.
- 12. EXISTING WATER MAINS SHALL BE PROTECTED FROM CONTAMINATION DURING THE FILLING, FLUSHING, & TESTING OF NEW LINES IN ACCORDANCE WITH THE APPLICABLE PROVISIONS OF AWWA C651 92.
- 13. THE CONTRACTOR SHALL DISINFECT ALL SECTIONS OF THE WATER DISTRIBUTION SYSTEM IN ACCORDANCE WITH THE FDEP WATER PERMIT, & RECEIVE APPROVAL THEREOF FROM THE LOCAL WATER UTILITY, ENGINEER OF RECORD, & FDEP, PRIOR TO PLACING IN SERVICE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN COPIES OF THE FDEP WATER & SEWER PERMITS

FROM THE OWNER & MAINTAIN THEM ON THE JOB SITE AT ALL TIMES. DISINFECTION OF THE WATER DISTRIBUTION SYSTEM

14. THE CONTRACTOR SHALL RECOGNIZE AND ABIDE BY ALL OSHA EXCAVATION SAFETY STANDARDS, INCLUDING THE FLORIDA TRENCH SAFETY ACT (90-96, LAWS OF FLORIDA). ANY MATERIAL, CONSTRUCTION METHODS, OR MATERIAL COST TO COMPLY WITH THESE LAWS SHALL BE INCIDENTAL TO THE CONTRACT.

UTILITY SEPARATION NOTE:

HORIZONTAL SEPARATION BETWEEN UNDERGROUND WATER MAINS AND SANITARY OR STORM SEWERS, WASTEWATER OR STORMWATER FORCE MAINS, RECLAIMED WATER PIPELINES AND ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEMS 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. UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST THREE (3) FEET, AND PREFERABLY TEN (10) FEET, BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED VACUUM-TYPE SANITARY SEWER. NEW 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 SHALL 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. UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST TEN (10) FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND ALL PARTS OF ANY EXISTING OR PROPOSED "ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEM."

VERTICAL SEPARATION BETWEEN UNDERGROUND WATER MAINS AND SANITARY OR STORM SEWERS, WASTEWATER OR STORMWATER FORCE MAINS AND RECLAIMED WATER PIPELINES

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 12 INCHES, ABOVE OR AT LEAST 12 INCHES BELOW THE OUTSIDE OF THE OTHER PIPELINE. HOWEVER, IT IS PREFERABLE TO LAY THE WATER MAIN ABOVE THE OTHER PIPELINE. 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 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 ABOVE, ONE FULL LENGTH OF WATER MAIN PIPE SHALL BE CENTERED ABOVE OR BELOW THE OTHER PIPELINE SO THE WATER MAIN JOINTS WILL BE AS FAR AS POSSIBLE FROM THE OTHER PIPELINE. ALTERNATIVELY, AT SUCH CROSSINGS, THE PIPES SHALL BE ARRANGED SO THAT ALL WATER MAIN JOINTS ARE AT LEAST THREE FEET FROM ALL JOINTS IN VACUUM-TYPE SANITARY SEWERS, STORM SEWERS, STORMWATER FORCE MAINS, OR

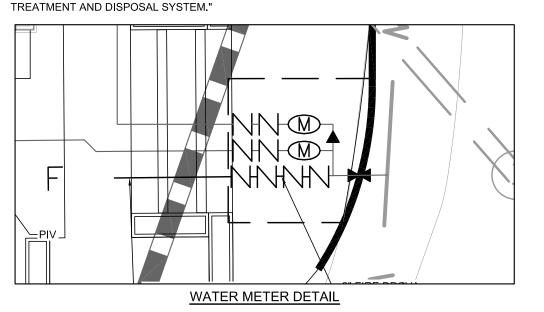
SEWERS, WASTEWATER FORCE MAINS, OR PIPELINES CONVEYING RECLAIMED WATER.

SEPARATION BETWEEN WATER MAINS AND SANITARY OR STORM SEWER MANHOLES

NO WATER MAIN SHALL PASS THROUGH, OR COME INTO CONTACT WITH, ANY PART OF A SANITARY SEWER MANHOLE. EFFECTIVE AUGUST 28, 2003, WATER MAINS SHALL NOT BE CONSTRUCTED OR ALTERED TO PASS THROUGH, OR COME INTO CONTACT WITH, ANY PART OF A STORM SEWER MANHOLE OR INLET STRUCTURE.

PIPELINES CONVEYING RECLAIMED WATER, AND AT LEAST SIX FEET FROM ALL JOINTS IN GRAVITY- OR PRESSURE-TYPE SANITARY

SEPARATION BETWEEN FIRE HYDRANT DRAINS AND SANITARY OR STORM SEWERS, WASTEWATER OR STORMWATER FORCE MAINS, RECLAIMED WATER PIPELINES, AND ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEMS
FIRE HYDRANTS WITH UNDERGROUND DRAINS SHALL BE LOCATED SO THAT THE DRAINS ARE AT LEAST (3) THREE 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, WASTEWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER, AND AT LEAST TEN (10) FEET FROM ANY EXISTING OR PROPOSED "ON-SITE SEWAGE"



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Sunshine 811

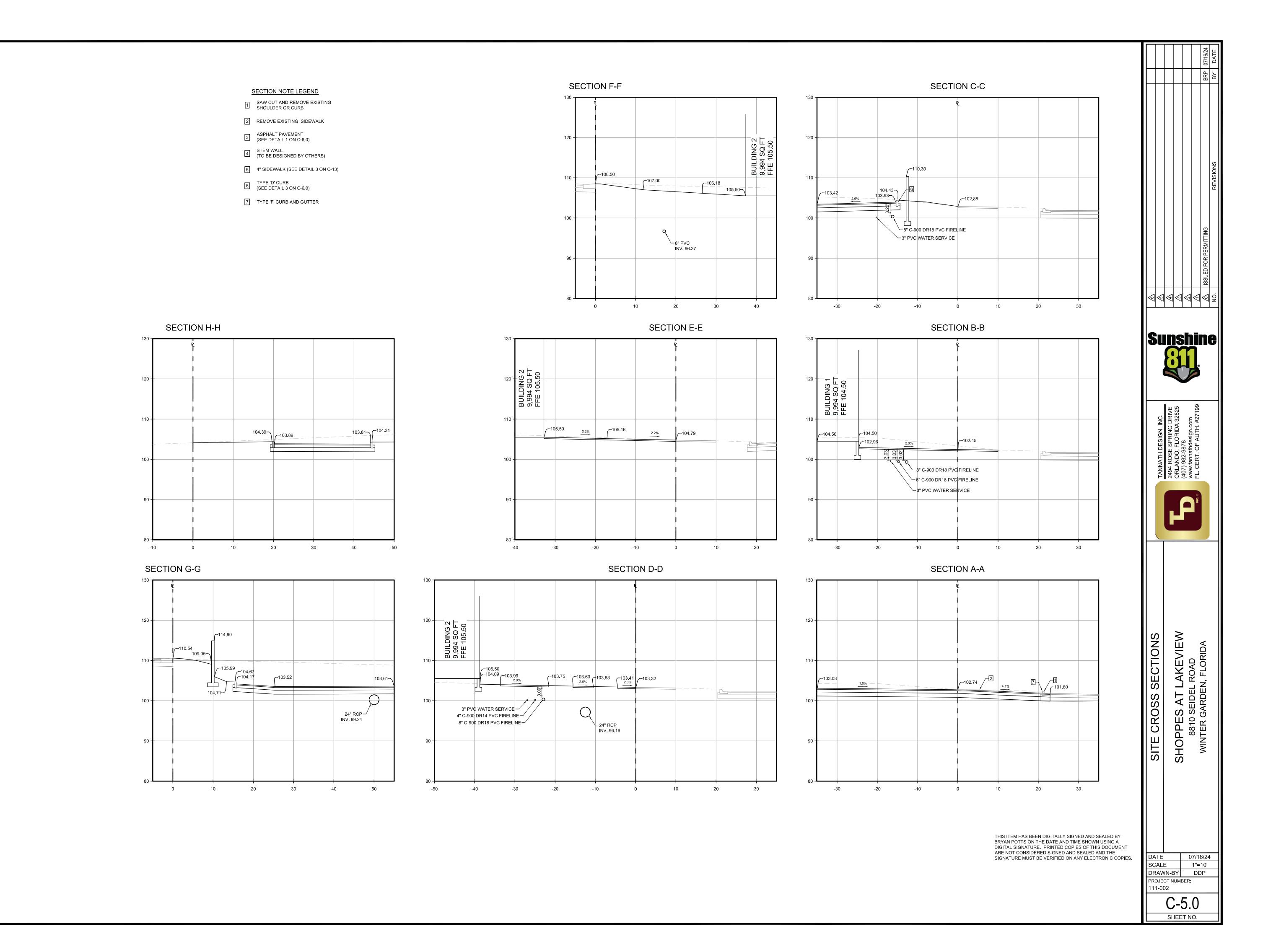
2494 ROSE SPRING DRIVE ORLANDO, FLORIDA 32825 (407) 982-9878 www.tannathdesign.com FL. CERT. OF AUTH. #27199

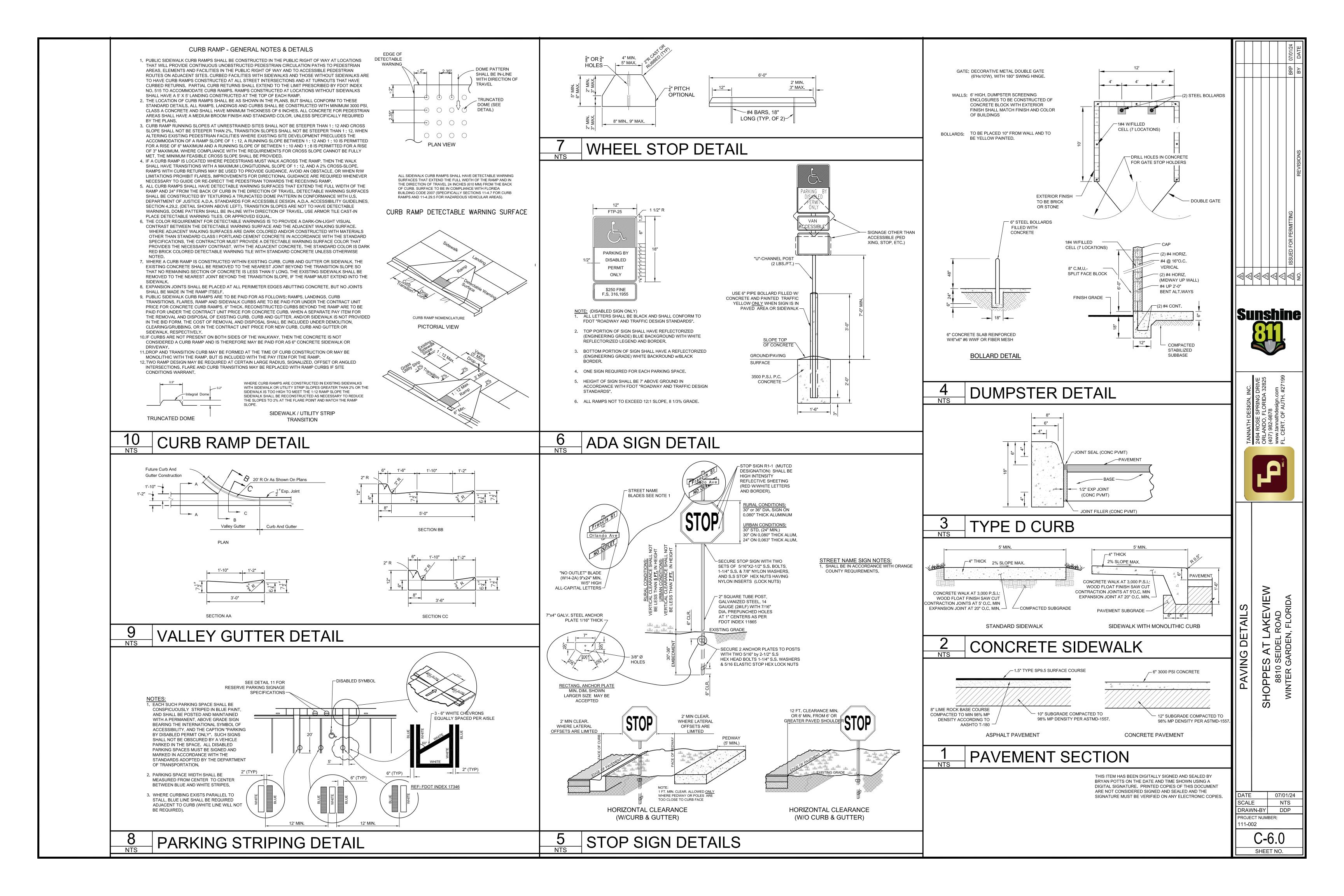


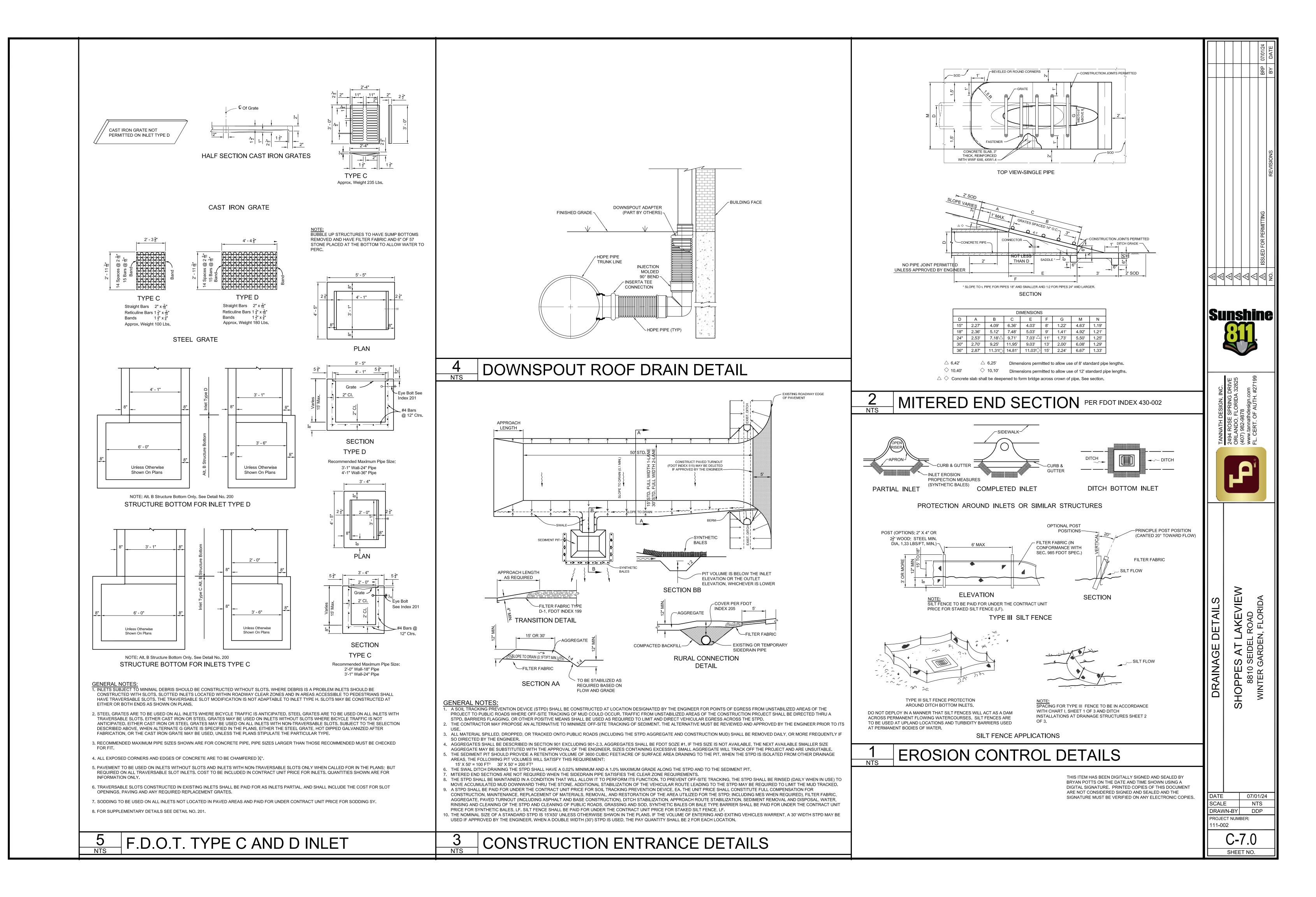
HOPPES AT LAKEVIEW 8810 SEIDEL ROAD WINTER GARDEN, FLORIDA

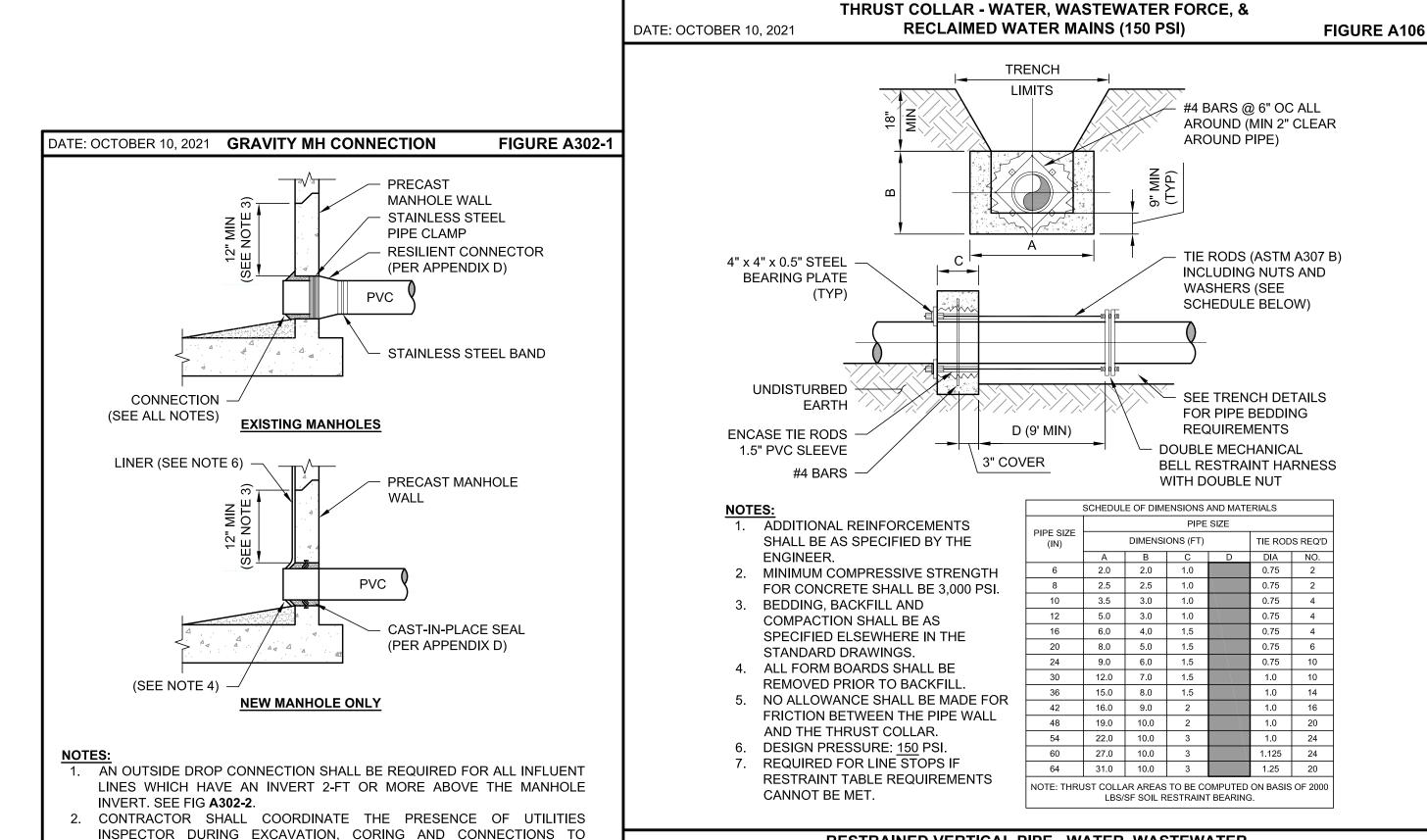
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PROJECT NUMBER:
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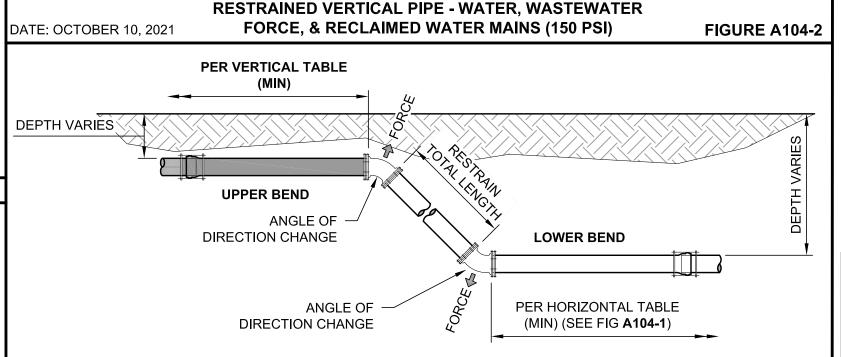
11-002 **C-4.1**SHEET NO.











MINIMUM LENGTH (FT) TO BE RESTRAINED ON EACH SIDE OF FITTING(S)

PROFILE VIEW

	TYPE	PVC AND DUCTILE IRON PIPE SIZE (IN)													
		4	6	8	12	16	20	24	30	36	42	48	54	60	64
(UPPER)	90° BEND	43	59	78	109	139	167	277	330	415	424	465	506	529	551
	45° BEND	18	25	32	45	58	69	115	137	172	176	193	210	219	229
_	22-1/2° BEND	9	12	16	22	28	34	56	66	83	85	93	101	106	110
VERTICAL	11-1/4° BEND	5	6	8	11	14	17	28	33	41	42	46	50	53	55
>	5 5/8° BEND OR MJ SLEEVE	3	3	4	6	7	9	14	17	21	21	23	25	26	28

- FITTINGS SHALL HAVE RESTRAINED JOINTS UNLESS OTHERWISE INDICATED.
- TABLE.
- LONGEST RESTRAINT DISTANCE.
- 4. ALL INLINE VALVES SHALL BE RESTRAINED.
- 14. FOR DIP PIPE, LONG RADIUS CURVES, EITHER HORIZONTAL OR VERTICAL, MAY BE INSTALLED WITH STANDARD PIPE BY DEFLECTIONS AT THE JOINTS. MAXIMUM DEFLECTIONS AT PIPE JOINTS, FITTINGS AND LAYING RADIUS FOR THE VARIOUS PIPE LENGTHS SHALL NOT EXCEED 75 PERCENT "THRUST RESTRAINT DESIGN FOR DUCTILE IRON PIPE" GUIDELINES PUBLISHED BY DIPRA, USING THE OF THE PIPE MANUFACTURER'S RECOMMENDATION.

FIGURE GN

15. FOR APPROVED PVC OR HDPE PIPE USED IN A HORIZONTAL DIRECTIONAL DRILL INSTALLATION, THE CURVATURE AND/OR DEFLECTION SHALL NOT EXCEED THE PARAMETERS ESTABLISHED IN THIS

EXISTING MANHOLES.

2310 & **3119**.

DATE: OCTOBER 10, 2021

FROM ALL JOINTS AND CORES.

EXCAVATIONS FOR STRUCTURES.

PROJECT BY CALLING (407) 254-9798.

AND APPENDIX D IN THIS MANUAL.

APPROPRIATE UTILITY REPRESENTATIVE.

TO IMPLEMENTATION BY CONTRACTOR.

WITH AN APPROVED BACKFLOW PREVENTER.

CLEARED BY FDEP AND OCU.

BE MADE ONLY WITH FITTINGS.

SHALL BEVEL MUD FROM EDGE OF PIPE TO WALL.

DISPATCH OPERATOR (407-836-2777) AND THE OCU INSPECTOR.

TABLE 4110-1 "UTILITIES" SCHEDULE OF NOTIFICATIONS IN THIS MANUAL.

SUPPORTED AND PROTECTED AGAINST DAMAGE DURING CONSTRUCTION.

METERS. ALL ADJUSTMENTS SHALL BE MADE TO CURRENT STANDARDS.

3. ALL PIPE CONNECTIONS SHALL HAVE A MINIMUM OF 12-IN SEPARATION

4. PIPE SHALL PROTRUDE INTO MANHOLE 2-IN TO 4-IN. THE CONTRACTOR

6. MANHOLE SHALL BE COATED OR LINED IN ACCORDANCE WITH SECTIONS

OUC GENERAL NOTES

1. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHEN EXCAVATING IN PROXIMITY OF INCLUDING, BUT NOT LIMITED TO; WATER MAINS, WASTEWATER FORCE MAINS, GRAVITY MAINS,

RECLAIMED WATER MAINS, ELECTRIC, GAS, CABLE TV, TELECOMMUNICATIONS, STORM WATER, FIBER OPTIC AND OTHER UNDERGROUND FACILITIES, MAIN LOCATIONS SHOWN ON PLANS MAY NOT

SHOULD A PIPE EMERGENCY OCCUR, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OCU

DIVISION AT LEAST 10 CALENDAR DAYS PRIOR TO COMMENCEMENT OF THE CONSTRUCTION

5. THE MATERIALS, PRODUCTS, AND CONSTRUCTION OF ALL UTILITIES CONNECTING TO THE OCU

THE CONTRACTOR SHALL NOTIFY THE OCU CONSTRUCTION INSPECTOR IN ACCORDANCE WITH

SYSTEM SHALL BE IN CONFORMANCE WITH THE STANDARDS, CONSTRUCTION SPECIFICATIONS,

ALL EXISTING UTILITIES INCLUDING BUT NOT LIMITED TO; WATER MAINS, FORCE MAINS, RECLAIMED

. THE CONTRACTOR SHALL ADJUST ALL EXISTING OCU MAINS AND FACILITIES IN CONFLICT WITH

3. ONLY OCU PERSONNEL SHALL OPERATE EXISTING OCU WATER, WASTEWATER, AND RECLAIMED WATER VALVES. THE CONTRACTOR IS RESPONSIBLE FOR OPERATING ANY NEWLY INSTALLED VALVE THAT HAS NOT BEEN CLEARED FOR USAGE BY FDEP AND OCU. THE CONTRACTOR SHALL COORDINATE VALVE OPERATION WITH THE OCU INSPECTOR. FOR OPERATION OF MAINS NOT OWNED BY OCU, IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE WITH THE

ONSTRUCTION ACTIVITIES SHALL NOT CAUSE INTERRUPTIONS IN WATER, WASTEWATER, OR

INTERRUPTIONS OF SERVICE WITH THE OCU INSPECTOR 7 WORKING DAYS IN ADVANCE AND

WRITTEN NOTICE SHALL BE GIVEN TO AFFECTED CUSTOMERS AT LEAST 4 WORKING DAYS IN

10. THE CONTRACTOR SHALL PROVIDE FOR BYPASSING AND / OR HAULING OF WASTEWATER DURING

APPROVED INTERRUPTIONS OF WASTEWATER FLOWS AND CONNECTIONS. THE CONTRACTOR

ENGINEER TO OCU DEVELOPMENT ENGINEERING AND TO THE INSPECTOR FOR APPROVAL PRIOR

DURING CONSTRUCTION, KEEP VALVES ON ALL WET TAPS CLOSED UNTIL CLEARED BY FDEP. DO

PREVENTER FOR MAKING TEMPORARY CONNECTIONS TO AN EXISTING POTABLE WATER SOURCE IN

ORDER TO CHLORINATE AND FLUSH NEW WATER MAINS WITH POTABLE WATER. ANY TEMPORARY

POTABLE WATER CONNECTIONS TO RECLAIMED WATER OR FORCE MAIN SHALL ALSO BE EQUIPPED

NOT CONNECT NEWLY CONSTRUCTED WATER MAINS TO ANY EXISTING WATER MAINS UNLESS

13. FOR PVC PIPE, NO JOINT DEFLECTION OR PIPE BENDING IS ALLOWED. ALIGNMENT CHANGE SHALL

SHALL SUBMIT A BYPASS OR HAUL PLAN, REVIEWED AND APPROVED BY A PROFESSIONAL

11. ALL VALVES INSTALLED AS PART OF THIS CONSTRUCTION PROJECT SHALL REMAIN CLOSED

12. THE CONTRACTOR SHALL PROVIDE A JUMPER ASSEMBLY WITH AN APPROVED BACKFLOW

RECLAIMED WATER SERVICE. THE CONTRACTOR SHALL COORDINATE PRE-APPROVED

WATER MAIN, SANITARY GRAVITY PIPES, STORM WATER PIPES, ELECTRIC, TELEPHONE, GAS, POLES

AND STAYS, CABLE TV AND OTHER UTILITY FACILITIES WITHIN THE LIMITS OF THE PROJECT WILL BE

NEW GRADE, NEW OR ALTERED ROADWAYS, SIDEWALKS, DRIVEWAYS, CURBS, OR STORM WATER

IMPROVEMENTS. OCU FACILITIES TO BE ADJUSTED INCLUDE, BUT ARE NOT LIMITED TO; PIPELINES,

PUMP STATIONS, VALVE BOXES, AIR RELEASE VALVES, FIRE HYDRANTS, MANHOLE COVERS, AND

BE EXACT. THE CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING EXISTING UTILITY LOCATIONS.

THE CONTRACTOR SHALL NOTIFY THE OCU CONSTRUCTION INSPECTION SECTION, FIELD SERVICES

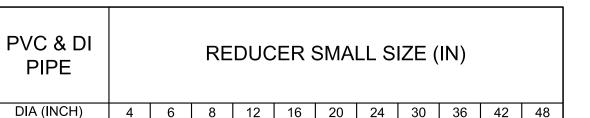
CONNECTIONS ON EXISTING MANHOLES, REFER TO SECTION 3113 FOR

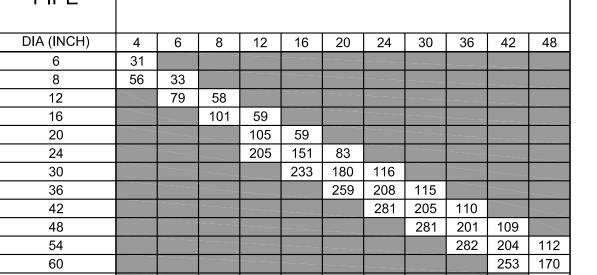
- 16. ALL DAMAGE TO ORANGE COUNTY INFRASTRUCTURE, PIPELINES, AND ASSETS SHALL BE REPAIRED IMMEDIATELY BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE WITH AN APPROVED METHOD BY THE COUNTY. IF THE REPAIR IS NOT PERFORMED IN A TIMELY MANNER, AS DETERMINED BY THE ORANGE COUNTY UTILITY INSPECTOR, ORANGE COUNTY MAY PERFORM REPAIRS AND THE CONTRACTOR WILL BE CHARGED FOR ALL EXPENSES ASSOCIATED WITH THE
- 17. THE CONTRACTOR SHALL BE LIABLE FOR ANY AND ALL SANITARY SEWER OVERFLOWS (SSO) ASSOCIATED WITH THE WORK, REGARDLESS OF FAULT, THE CONTRACTOR WILL BE ASSESSED PENALTIES FOR ANY AND EACH SSO AS SPECIFIED IN SECTION 3110, GENERAL CONSTRUCTION

- 2. INSTALL FULL LENGTH JOINTS WITH TOTAL LENGTH EQUAL TO OR GREATER THAN LENGTH SHOWN IN THE
- 3. WHERE TWO OR MORE FITTINGS ARE IN SERIES, SELECT FITTING RESTRAINT LENGTH THAT YIELDS THE
- WHERE INTERNAL RESTRAINED JOINTS ARE USED, THE ENTIRE BELL SHALL BE PAINTED RED. 6. LENGTHS SHOWN IN THE TABLE WERE CALCULATED IN ACCORDANCE WITH PROCEDURES OUTLINED IN
- ASSUMPTIONS SHOWN BELOW: WORKING PRESSURE: 150 PSI SOIL DESIGNATION: <u>SM (SAND SILT)</u>
- LAYING CONDITIONS: DEPTH OF COVER:
- SAFETY FACTOR: THE DESIGN ENGINEER SHALL INCREASE THE VALUES IN THE TABLE AS WARRANTED BY SITE-SPECIFIC PARAMETERS, SUCH AS SOIL DESIGNATIONS AND LAYING CONDITIONS.
- 8. IF 4-IN THRU 20-IN PIPE IS POLYETHYLENE ENCASED, USE 1.25 MULTIPLIER ON RESTRAINT LENGTH. 9. RESTRAINING REQUIREMENTS APPLY TO BOTH EXISTING AND PROPOSED MAINS.
- 90° BENDS ON VERTICAL PIPE ARE SUBJECT TO REVIEW AND APPROVAL OF UTILITIES.

FORCE, & RECLAIMED WATER MAINS (150 PSI) **FIGURE A104-3** DATE: OCTOBER 10, 2021 RESTRAINT LENGTH PER TABLE BELOW MINIMUM LENGTH (FEET) TO BE RESTRAINED ON LARGE SIDE OF REDUCER

RESTRAINED PIPE TABLE - WATER, WASTEWATER





BASED ON WORKING PRESSURE 150 PSI

DATE: OCTOBER 10, 2021

- 1. LENGTHS SHOWN IN THE TABLE WERE CALCULATED IN ACCORDANCE WITH THE PROCEDURES IN "THRUST RESTRAINT DESIGN FOR DUCTILE IRON PIPE", GUIDELINES PUBLISHED BY DIPRA AND AWWA M23 "PVC PIPE - DESIGN AND INSTALLATION.
- THE DESIGN ENGINEER SHALL INCREASE THE VALUES IN THE TABLE AS WARRANTED BY SITE-SPECIFIC PARAMETERS, SUCH AS SOIL DESIGNATED AND LAYING CONDITIONS. WHERE TWO OR MORE FITTINGS ARE IN SERIES, SELECT FITTING RESTRAINT LENGTH

RESTRAINED HORIZONTAL PIPE - WATER, WASTEWATER

FORCE, & RECLAIMED WATER MAINS (150 PSI)

THAT YIELDS THE LONGEST RESTRAINT DISTANCE. RESTRAINING REQUIREMENTS APPLY TO BOTH EXISTING AND PROPOSED MAINS.

PER HORIZONTAL TABLE (MIN) ANGLE OF **DIRECTION CHANGE PLAN VIEW**

MINIMUM LENGTH (FT) TO BE RESTRAINED ON EACH SIDE OF FITTING(S)

	TYPE	PVC AND DUCTILE IRON PIPE SIZE (IN)													
		4	6	8	12	16	20	24	30	36	42	48	54	60	64
HORIZONTAL	90° BEND	21	29	37	52	65	78	104	122	143	154	167	180	188	195
	45° BEND	9	12	16	22	27	33	43	51	60	64	70	75	78	81
	22-1/2° BEND	5	6	8	11	13	16	21	25	29	31	34	36	38	39
	11-1/4° BEND	2	3	4	6	7	8	11	12	15	16	17	18	19	20
ORIZ	5 5/8° BEND OR MJ SLEEVE	1	2	2	3	4	4	6	6	8	8	9	9	10	10
Ĭ	PLUG OR BRANCH OF TEE OR DEAD END	43	59	78	109	139	167	277	330	415	424	465	506	529	551
	VALVE OR LINE STOP	22	30	39	55	70	84	139	165	208	212	233	253	265	276
	HDPE CONNECTION	19	26	34	49	62	75	125	151	174	203	223			

- 1. FITTINGS SHALL HAVE RESTRAINED JOINTS UNLESS OTHERWISE INDICATED. 2. INSTALL FULL LENGTH JOINTS WITH TOTAL LENGTH EQUAL TO OR GREATER THAN LENGTH SHOWN IN THE
- 3. WHERE TWO OR MORE FITTINGS ARE IN SERIES, SELECT FITTING RESTRAINT LENGTH THAT YIELDS THE
- LONGEST RESTRAINT DISTANCE. 4. ALL INLINE VALVES SHALL BE RESTRAINED.
- 5. WHERE INTERNAL RESTRAINED JOINTS ARE USED, THE ENTIRE BELL SHALL BE PAINTED RED.

DEPTH OF COVER:

- 6. LENGTHS SHOWN IN THE TABLE WERE CALCULATED IN ACCORDANCE WITH PROCEDURES OUTLINED IN
- "THRUST RESTRAINT DESIGN FOR DUCTILE IRON PIPE" GUIDELINES PUBLISHED BY DIPRA, USING THE ASSUMPTIONS SHOWN BELOW: **WORKING PRESSURE: 150 PSI**
- SOIL DESIGNATION: SM (SAND SILT) LAYING CONDITIONS:
- SAFETY FACTOR: THE DESIGN ENGINEER SHALL INCREASE THE VALUES IN THE TABLE AS WARRANTED BY SITE-SPECIFIC
- PARAMETERS, SUCH AS SOIL DESIGNATIONS AND LAYING CONDITIONS. 90° BENDS ON VERTICAL PIPE ARE SUBJECT TO REVIEW AND APPROVAL OF UTILITIES.
- IF 4-IN THRU 20-IN PIPE IS POLYETHLYENE ENCASED, USE 1.25 MULTIPLIER ON RESTRAINT LENGTH. 9. RESTRAINING REQUIREMENTS APPLY TO BOTH EXISTING AND PROPOSED MAINS.

DATE: OCTOBER 10, 2021 **BEDDING & TRENCHING - TYPE B** FIGURE A102

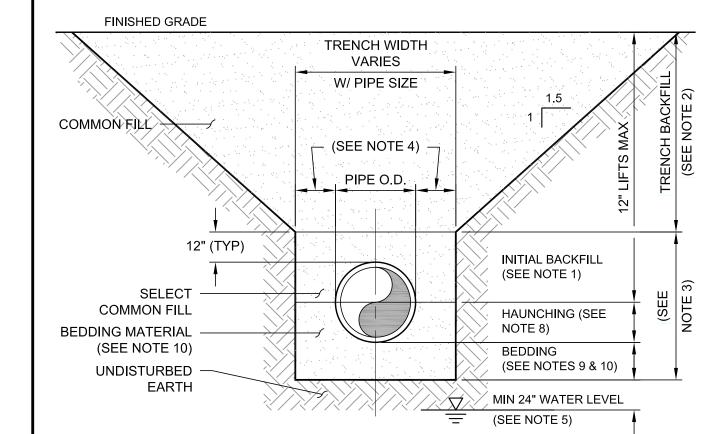
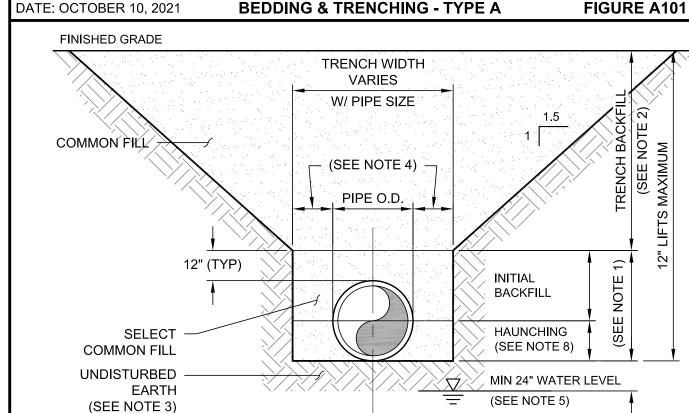


FIGURE A104-1

1. INITIAL BACKFILL: SELECT COMMON FILL COMPACTED TO MIN 95% (98% UNDER PAVEMENT OR FUTURE PAVEMENT) OF THE MAXIMUM DENSITY AS PER AASHTO T-180. TRENCH BACKFILL: COMMON FILL COMPACTED TO MIN 95% (98% UNDER PAVEMENT OR FUTURE

- PAVEMENT) OF THE MAXIMUM DENSITY AS PER AASHTO T-180. PIPE BEDDING UTILIZING SELECT COMMON FILL IN ACCORDANCE WITH "TYPE B" BEDDING AND TRENCHING DETAIL MAY BE REQUIRED AS DIRECTED BY UTILITIES.
- 15-IN MAX. (12-IN MIN.) FOR PIPE DIAMETER LESS THAN 24-IN AND 24-IN MAX (12-IN MIN) FOR PIPE DIAMETER 24-IN AND LARGER.
- WATER SHALL NOT BE PERMITTED IN THE TRENCH DURING CONSTRUCTION. DEWATERING AS REQUIRED.
- 6. ALL PIPE SHALL BE INSTALLED WITH BELL FACING UPSTREAM TO THE DIRECTION OF THE FLOW. FINAL RESTORATION IN IMPROVED AREAS SHALL BE IN COMPLIANCE WITH ALL APPLICABLE REGULATIONS OF GOVERNING AGENCIES. SURFACE RESTORATION WITHIN ORANGE COUNTY RIGHT-OF-WAY SHALL COMPLY WITH REQUIREMENTS OF R/W UTILIZATION REGULATIONS AND ROAD CONSTRUCTION SPECIFICATIONS.
- FOR GRAVITY SEWER, THE FIRST LIFT SHALL BE PLACED TO THE SPRING LINE OF THE PIPE AND COMPACTED BY HAND TAMP.
- BEDDING DEPTH SHALL BE 4-IN MINIMUM FOR PIPE DIAMETER UP TO 12-IN AND 6-IN MINIMUM FOR PIPE DIAMETER 16-IN AND LARGER.
- . DEPTH FOR REMOVAL OF UNSUITABLE MATERIAL SHALL GOVERN DEPTH OF REQUIRED BEDDING MATERIAL BELOW THE PIPE. UTILITIES SHALL DETERMINE REMOVAL OF UNSUITABLE MATERIAL TO REACH SUITABLE FOUNDATION IN THE FIELD.



- 1. INITIAL BACKFILL AND HAUNCHING: SELECT COMMON FILL COMPACTED TO MIN 95% (98% UNDER PAVEMENT OR FUTURE PAVEMENT) OF THE MAXIMUM DENSITY AS PER AASHTO T-180. 2. TRENCH BACKFILL: COMMON FILL COMPACTED TO MIN 95% (98% UNDER PAVEMENT OR FUTURE
- PAVEMENT) OF THE MAXIMUM DENSITY AS PER AASHTO T-180. 3. PIPE BEDDING UTILIZING SELECT COMMON FILL IN ACCORDANCE WITH "TYPE B" BEDDING AND TRENCHING DETAIL MAY BE REQUIRED AS DIRECTED BY UTILITIES.
- 4. 15-IN MAX. (12-IN MIN.) FOR PIPE DIAMETER LESS THAN 24-IN AND 24-IN MAX (12-IN MIN) FOR PIPE DIAMETER 24-IN AND LARGER. 5. WATER SHALL NOT BE PERMITTED IN THE TRENCH DURING CONSTRUCTION. DEWATERING AS
- ALL PIPE SHALL BE INSTALLED WITH BELL FACING UPSTREAM TO THE DIRECTION OF THE FLOW. FINAL RESTORATION IN IMPROVED AREAS SHALL BE IN COMPLIANCE WITH ALL APPLICABLE REGULATIONS OF GOVERNING AGENCIES. SURFACE RESTORATION WITHIN ORANGE COUNTY RIGHT-OF-WAY SHALL COMPLY WITH REQUIREMENTS OF RIGHT-OF-WAY UTILIZATION
- REGULATIONS AND ROAD CONSTRUCTION SPECIFICATIONS. 8. FOR GRAVITY SEWER, THE FIRST LIFT SHALL BE PLACED TO THE SPRING LINE OF THE PIPE AND COMPACTED BY HAND TAMP.
- 9. CONTRACTOR SHALL USE BEDDING AND TRENCHING TYPE B DETAIL FOR OVER EXCAVATION AND WHEN UNSUITABLE MATERIALS ARE ENCOUNTERED IN THE EXCAVATION.
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07/01/24 NTS RAWN-BY DDP ROJECT NUMBER: 11-002

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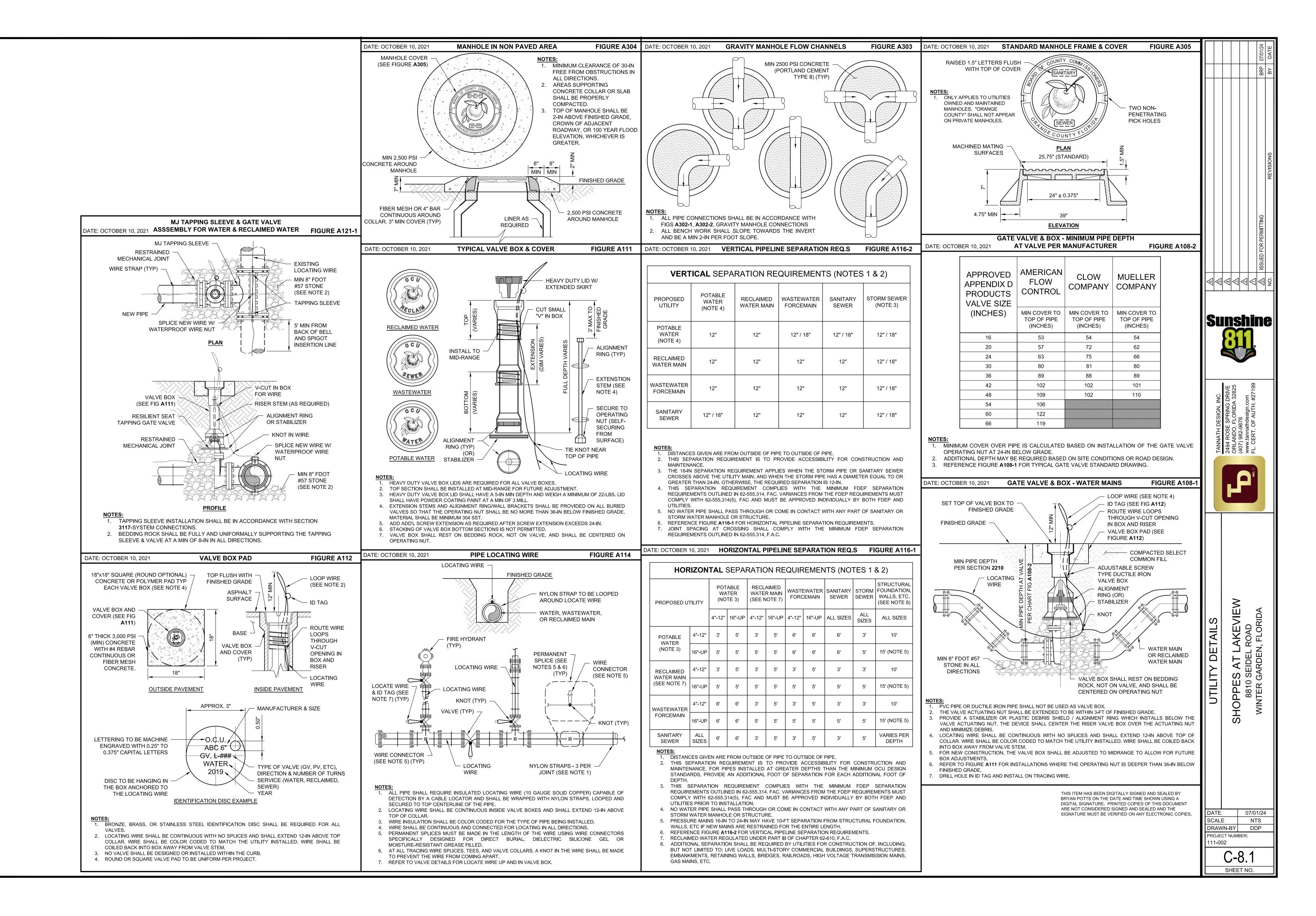
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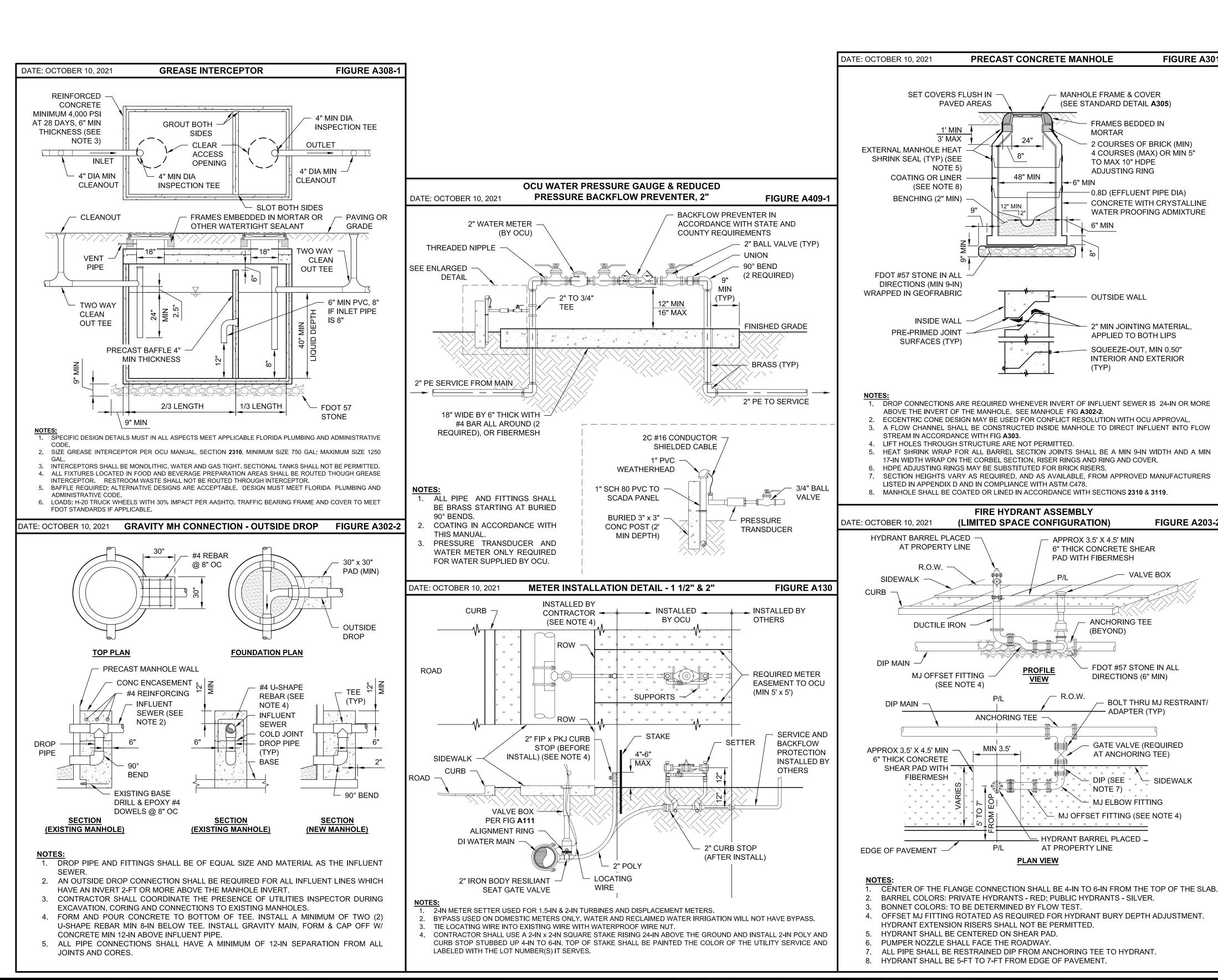


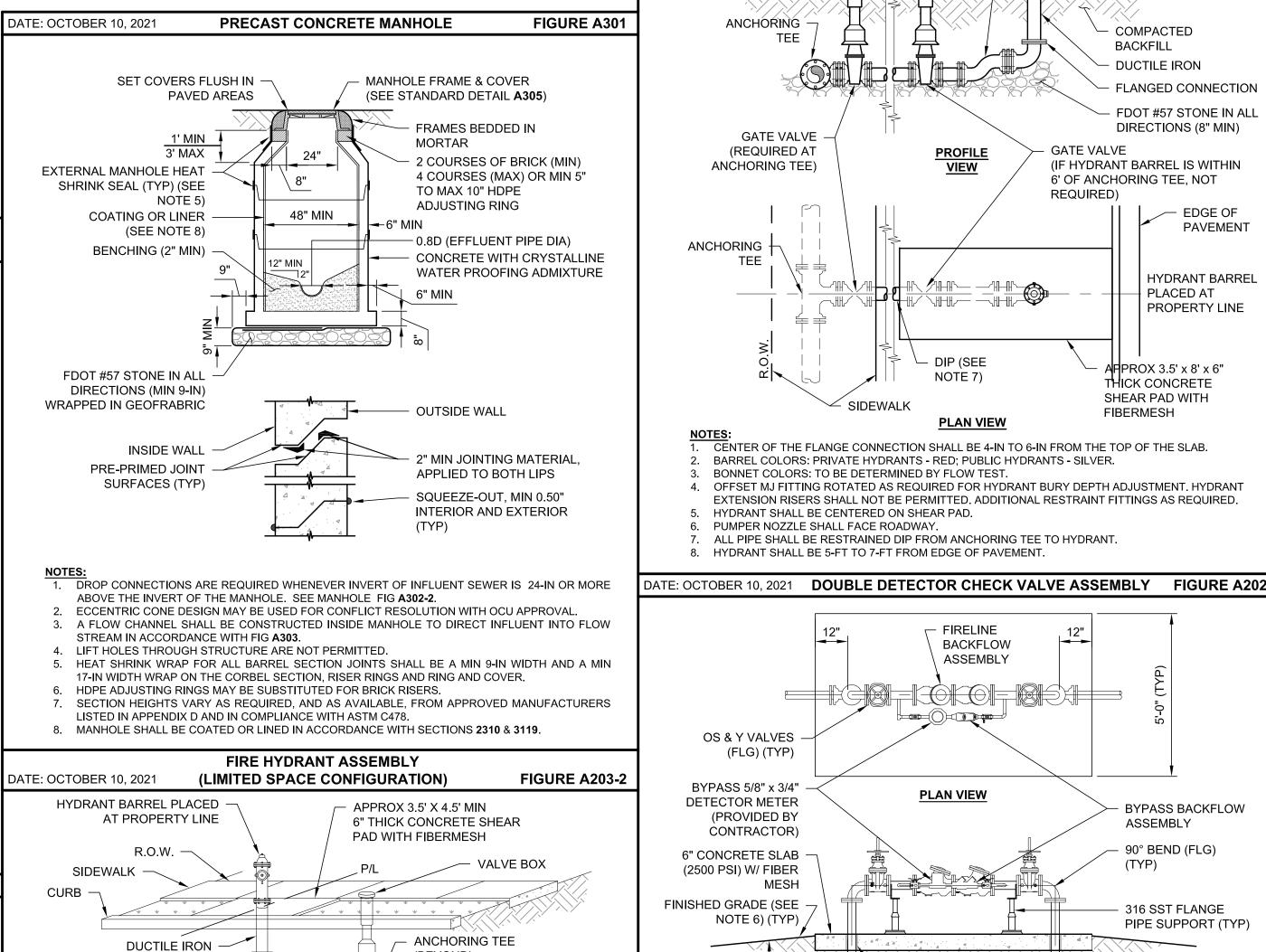
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OPPE 8810 INTER (9

S







(BEYOND)

MJ OFFSET FITTING

DIP MAIN -

SHEAR PAD WITH

FIBERMESH

(SEE NOTE 4)

ANCHORING TEE

MIN 3.5'

HYDRANT EXTENSION RISERS SHALL NOT BE PERMITTED.

FDOT #57 STONE IN ALL

- ADAPTER (TYP)

GATE VALVE (REQUIRED)

AT ANCHORING TEE)

DIP (SEE

- HYDRANT BARREL PLACED -

AT PROPERTY LINE

PLAN VIEW

NOTE 7)

✓ MJ ELBOW FITTING

MJ OFFSET FITTING (SEE NOTE 4)

- BOLT THRU MJ RESTRAINT/

<u>→</u> SIDEWALK

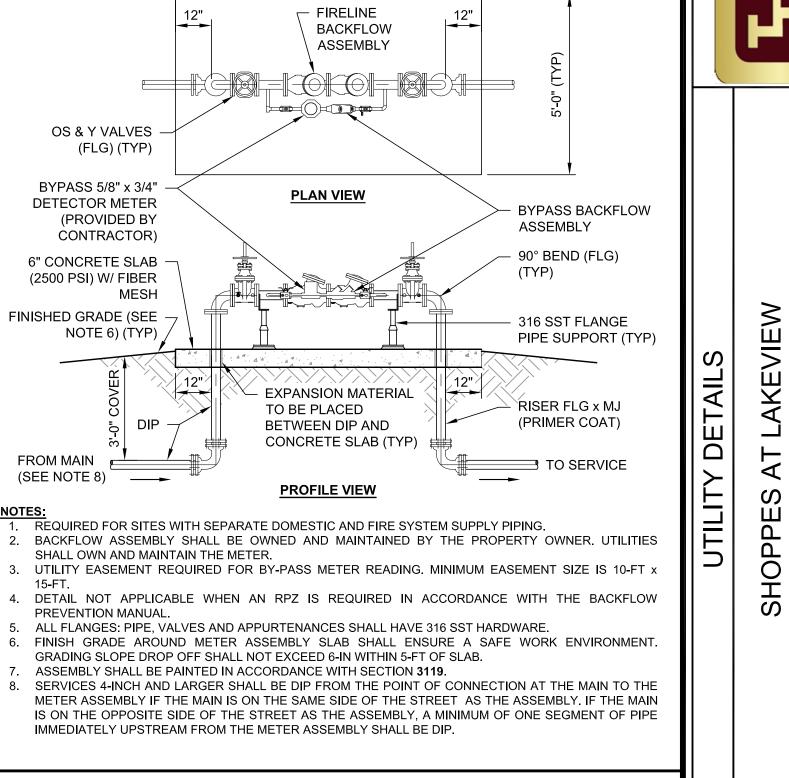
FROM MAIN 🛌

DIRECTIONS (6" MIN)

DATE: OCTOBER 10, 2021

VALVE BOX (TYP) ─

SIDEWALK



THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY BRYAN POTTS ON THE DATE AND TIME SHOWN USING A

DIGITAL SIGNATURE. PRINTED COPIES OF THIS DOCUMENT

SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

ARE NOT CONSIDERED SIGNED AND SEALED AND THE

FIRE HYDRANT ASSEMBLY (STANDARD CONFIGURATION)

EXPANSION FIBER MATERIAL BETWEEN

FIXED CONCRETE EDGES (TYP)

OFFSET MJ FITTING

(SEE NOTE 4)

FIGURE A203-1

EDGE OF PAVEMENT

___ EDGE OF

HYDRANT BARREL

PROPERTY LINE

PLACED AT

PAVEMENT

Sunshine

07/01/24

NTS

DDP

RAWN-BY

11-002

ROJECT NUMBER:

SHEET NO.

APPROX 3.5' x 8' x 6" THICK CONCRETE

SHEAR PAD WITH

FIBERMESH

5' TO 7' FROM EOP