EPLER COMMERCIAL PARK

PALM BAY, FLORIDA

DATE:

OCTOBER 5, 2022

PREPARED FOR:

EPLER PARK, LLC

CIVIL SITE DATA:

GENERAL STATEMENT

THIS PROJECT CONSISTS OF TYPICAL SITE AMENITIES TO ACCOMMODATE AN APPROXIMATELY 20,125 SQUARE FOOT COMMERCIAL MEDICAL OFFICE BUILDING AND TWO FUTURE COMMERCIAL UNITS ALONG THE PAM BAY ROAD RIGHT OF WAY. THE PROPOSED DEVELOPMENT SHALL BE OWNED AND OPERATED AS A COMMERCIAL CONDOMINIUM HAVING COMMON STORMWATER, DRIVES AND UTILITIES, BUT SEPARATELY OWNED STRUCTURES, SIGNAGE AND PARKING FACILITIES. A MINIMUM 30' LANDSCAPED GREENSPACE IS PROPOSED ALONG THE WEST AND EAST PROPERTY LINES TO BUFFER THE EXISTING SINGLE FAMILY RESIDENTIAL LOTS. IN ADDITION TO THE GREENSPACE BUFFERING TO THE RESIDENTIAL LOTS, A PERIMETER WALL OR CITY STAFF APPROVED ALTERNATIVE BUFFER IS PROPOSED ALONG WITH ENHANCED LANDSCAPING PROVIDED OR PRESERVED. PEDESTRIAN AND VEHICULAR ACCESSIBILITY TO THE SITE FROM ONLY THE PALM BAY ROAD RIGHT OF WAY.

SANITARY SEWER SHALL INCLUDE A PRIVATELY MAINTAINED ON-SITE GRAVITY SYSTEM, A PRIVATE ON-SITE LIFT STATION AND PRIVATE ON-SITE FORCEMAIN TYING INTO A PUBLIC FORCEMAIN TO THE NORTH OF THE PROPERTY REQUIRING OFFSITE UTILITY EXTENSION IN THE PALM BAY ROAD RIGHT OF WAY. PUBLIC WATER SHALL BE ACCESSED FROM THE EAST OF THE SITE ALONG THE WESLER AVE RIGHT OF WAY. STORMWATER SHALL BE PROVIDED VIA COMBINATION OF ATTENUATED DRY SWALES AND A LARGE WET POND OUTFALLING TO THE PALM BAY ROAD ROW COLLECTION DITCH.

CONTACT INFORMATION

DEVELOPER:
EPLER PARK, LLC
6300 N. WICKHAM ROAD, STE 130
MELBOURNE, FL 32940
TEL: (321) 431-6562
EMAIL: RICK.RENFRO@ME.COM

CIVIL ENGINEER:
TRAUGER CONSULTING ENGINEERS, INC.
2210 FRONT STREET STE. 204
MELBOURNE, FL 32901
TEL: 321-292-0745
E-MAIL:JIM@TRAUGERCONSULTING.COM

ARCHITECT:
DNA ARCHITECTS, LLC
415 SOUTH BABCOCK STREET
MELBOURNE, FL 32901
TEL: 321-727-9096
EMAIL: DNADAV@AOL.COM

SURVEYOR:
SMITH SURVEYING
1350 MALABAR ROAD S.E., SUITE 1
PALM BAY, FLORIDA 32907
TEL: 321-724-2940
EMAIL: SMITHSURVEYINGFL@GMAIL.COM

SITE DATA

TOTAL ACREAGE: ±6.18 ACRES
PARCEL ID : 28-37-19-00-501
TAX ACCOUNT NUMBER: 2829442
ZONING: RC - RESTRICTED COMMERCIAL
FUTURE LAND USE: COMMERCIAL
ADDRESSES:
⚠ FUTURE PHASE (UNIT 1) FUTURE RESTAURANT - 190 PALM BAY ROAD NE, PALM BAY, FL 32907
FUTURE PHASE (UNIT 2) FUTURE RESTAURANT - 198 PALM BAY ROAD NE, PALM BAY, FL 32907
NEW BUILDING (UNIT 3) MEDICAL BUILDING - 194 PALM BAY ROAD NE, PALM BAY, FL 32907

TOWNSHIP: 28S
RANGE: 37E
SECTION: 19

SITE CALCULATIONS

LOT COVERAGES - PROPOSED:

MAIN BUILDING	SF	ACRE	PERCENT
PROPOSED BUILDING:	20,128	0.46	7%
FUTURE UNIT 1 &2 IMPERVIOUS AREA:	65,902	1.51	24%
PROPOSED IMPERVIOUS (ASPHALT, CURBING AND CONCRETE):	78,009	1.79	42%
TOTAL PROPOSED IMPERVIOUS AREA:	176,146	4.04	65%
TOTAL WET POND AREA (@ NWL):	27,939	0.64	10%
TOTAL PROPOSED PERVIOUS AREA:	77,027	1.77	29%
TOTAL GROSS AREA:	269,050	6.18	100%

MAXIMUM ALLOWED FAR: 0.35
PROPOSED FAR (20,128 SF/ 186,550 SF): 0.11
MAXIMUM ALLOWED BUILDING HEIGHT: 25'
PROPOSED BUILDING HEIGHT: <25'

BUILDING SETBACKS:	MINIMUM	PROPOSED
FRONT	40'	426.74'
SIDE EAST	10'	99.14'
SIDE WEST	10'	99.20'
REAR	30'	229.45'

PARKING SETBACKS:	MINIMUM	PROPOSED
FRONT (ARTERIAL ROAD)	10'	493.74'
SIDE EAST	30'	30.00'
SIDE WEST	30'	30.14'
REAR	30'	161.78'

PARKING SPACE CALCULATIONS:

REQUIRED PARKING -MEDICAL OFFICE: 1 SPACE/ 300 SF X 20,128 = 67 SPACES
+ 1 SPACE/ EMPLOYEE = 40 SPACES
= 67 + 40 = 107 SPACES
PROVIDED PARKING = 152 SPACES INCLUDING 6 HANDICAP SPACES

ANTICIPATED PERMITS REQUIRED

BREVARD COUNTY RIGHT OF WAY/ STORMWATER
CITY OF PALM BAY
FDEP WATER/ SEWER/ NOI
SJRWMD ERP

VICINITY MAP:

N.T.S.

INDEX OF DRAWINGS:

LEGAL DESCRIPTION:

ALEGAL DESCRIPTION – per O.R.B. 3114, Page 2352:

The East One–Half of Lot 11, FLORIDA INDIAN RIVER LAND COMPANY, Section 19, Township 28 South, Range 37 East, Brevard County, Florida.

LESS AND EXCEPT:

Beginning at the Southeast corner of Lot 11, FLORIDA INDIAN RIVER LAND COMPANY SUBDIVISION of Section 19, Township 28 South, Range 37 East, as recorded in Plat Book 1, Page 164, Public Records of Brevard County, Florida; thence N89°27'19"W, 334.53 feet; thence N0°34'14"E, 390.55 feet; thence S89°27'19"E, 334.67 feet; thence S0°35'29"W, 390.55 feet to the Point of Beginning.

Contains 3.0 acres, more or less.

ALSO DESCRIBED AS FOLLOWS:

Part of the East 1/2 of Lot 11, FLORIDA INDIAN RIVER LAND COMPANY SUBDIVISION of Section 19, Township 28 South, Range 37 East, as recorded in Plat Book 1, Page 164, Publlic Records of Brevard County, Florida, being more particularly described as follows:

Commence at the Northwest corner of the Southwest 1/4 of Section 19, Township 28 South, Range 37 East, Brevard County, Florida; thence run S89°21'57"E along the North line of the said Southwest 1/4 of Section 19 a distance of 1,675.64 feet to the Northerly extension of the West line of the aforesaid East 1/2 of Lot 11; thence S0°41'09"W along said Northerly extension of the West line of the East 1/2 of Lot 11 a distance of 131.52 feet to the POINT OF BEGINNING of the herein described parcel, said point also being on the South Right–of–Way Line of Palm Bay Road as described in Official Records Book 2595, Page 1074, of the Public Records of Brevard County, Florida; thence S89°14'58"E along aforesaid South Right–of–Way Line a distance of 334.47 feet to a point on aforesaid East line of Lot 11, said point also being on the West line of Block 2095, FIRST REPLAT IN PORT MALABAR UNIT TWENTY ONE, as recorded in Plat Book 24, Page 5, Public Records of Brevard County, Florida; thence S0°40'52"W along said West line of Block 2095 and Block 2096 a distance of 803.97 feet to the North line of property as described in Official Records Book 3020, Page 3893 of the Public Records of Brevard County, Florida; thence N89°22'24"W along said North line of property as described in Official Records Book 3020, Page 3893 a distance of 334.53 feet to the West line of aforesaid East Half of Lot 11, said Line also being the East Line of Block 2104, of aforesaid FIRST REPLAT IN PORT MALABAR UNIT TWENTY ONE; thence N0°41'09"E along said West line of the East 1/2 of Lot 11 and along said East line of Block 2104 a distance of 804.69 feet to the Point of Beginning.

Contains 6.177 Acres (269,049 square feet) more or less.

LEGEND:

DESCRIPTION	
PROPERTY LINE	
BUILDING OR STRUCTURE	
CONCRETE SIDEWALK/CONCRETE DRIVE	
ASPHALT DRIVE	
PAVERS	
DEMOLITION	
SILT FENCE	SF SF
STORMWATER CONTOUR	
STORMWATER PIPE & INLET	
WATERMAIN & FIRE HYDRANT	W W
GRAVITY SANITARY SEWER & MANHOLE	SS SS
FENCE	
SPOT ELEVATION	11.80
SWALE OR FLOW DIRECTION	
DEMO TREE FOR REMOVAL	6"Pi.

- BID SET - NOT FOR CONSTRUCTION

NOTE: ⚠2

RIGHT-OF-WAY REVEIW AND APPROVAL DOES NOT CONSTITUTE COUNTY APPROVAL OR REVIEW OF ANY PRIVATE PARTY DEED RESTRICTIONS, COVENANTS, PRIVATE EASEMENTS, OR OTHER PRIVATE AGREEMENTS. ANY CHANGES TO THE APPROVED PLAN MUST BE COORDINATED THROUGH THE PUBLIC WORKS ENGINEERING PROGRAM. THE APPLICANT ASSUMES THE RISK THAT THE RIGHT-OF-WAY PERMIT MAY REQUIRE ADDITIONAL COUNTY REVIEWS INCLUDING ENGINEERING REVISIONS OR OTHER ACCEPTABLE COUNTY REVIEW PROCESSES SHOULD ANY ACTION TO ENFORCE ANY RESTRICTIONS REQUIRE REDESIGN OF THE PROJECT.

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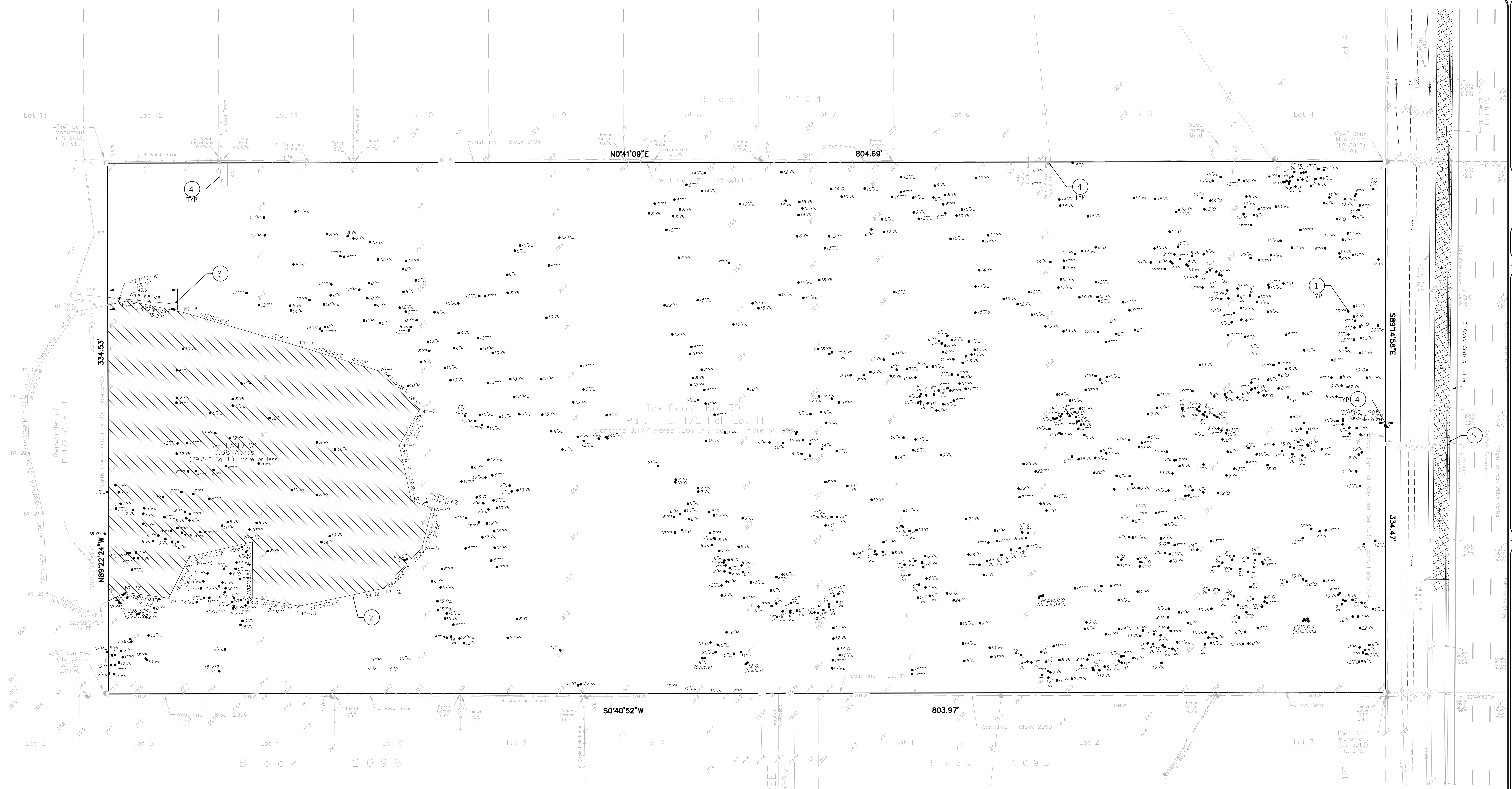
REV#	DATE	REVISION
1	11-15-22	PALM BAY COMMENTS
2	1-15-23	PALM BAY, SJRWMD AND BREVARD COUNTY COMMENTS

TRAUGER CONSULTING ENGINEERS
2210 Front Street, STE 204 Melbourne, FL 32901
email - jim@traugerconsulting.com direct - (321) 292-0745

EPLER COMMERCIAL PARK
PALM BAY, FL
COVER SHEET

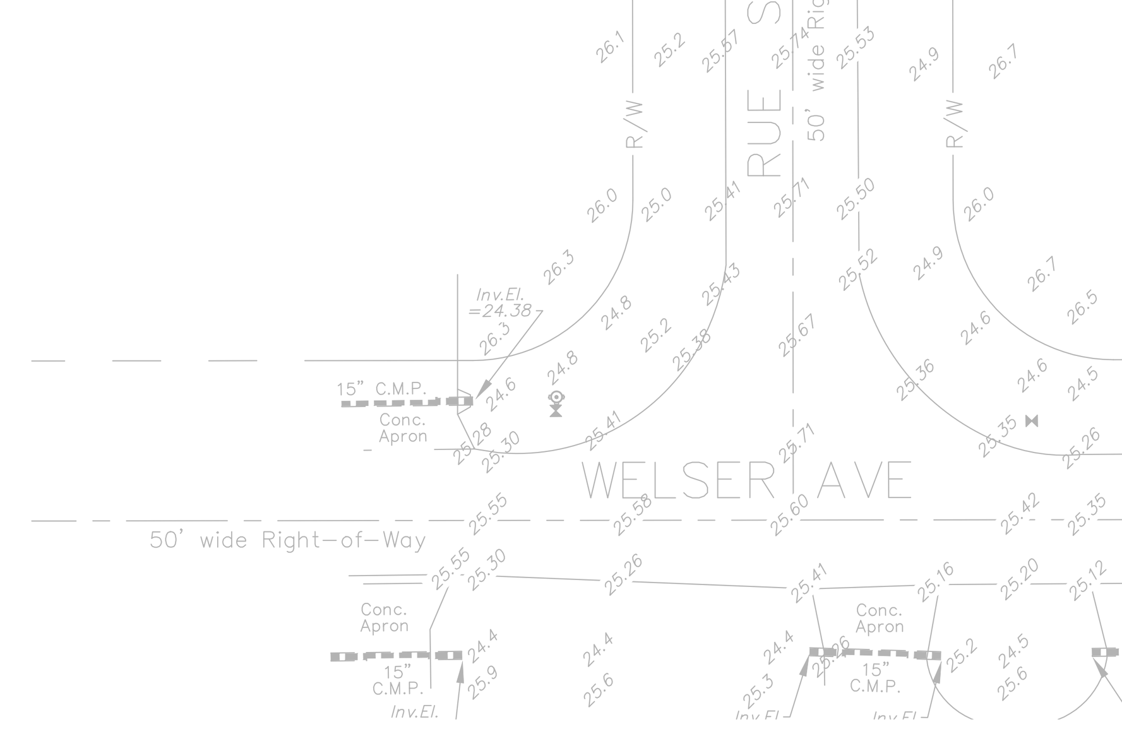
JAMES R. TRAUGER
FL P.E. #75612

DATE: 10-5-22
SECTION: 19
TOWNSHIP: 28S
RANGE: 37E
SCALE: NTS
DRAWING NO. C-1
PROJECT: 22-126



ON-SITE EXISTING CONDITIONS AND DEMOLITION PLAN

1"=30'



CIVIL NOTES:

1. REMOVE TREE AND ROOT SYSTEM ENTIRELY. SEE LANDSCAPE PLANS FOR TREE INVENTORY.
2. IMPACT ON-SITE WETLAND COMPLETELY. CONFIRM PERMITTING AND MITIGATION HAS BEEN OBTAINED PRIOR TO DISTURBANCES.
3. REMOVE EXISTING FENCING ON SITE.
4. PROTECT AND MAINTAIN EXISTING UTILITY.
5. SEE R.O.W. DEMOLITION ON NEXT SHEET.
6. CONTRACTOR TO CONTACT FLORIDA UTILITY OWNER FOR CONSTRUCTION COORDINATION AND POLE RELOCATION

KNOW WHAT'S BELOW ALWAYS CALL 811 BEFORE YOU DIG

It's fast, It's free, it's the law.

Call 811 two business days before digging

30' 0' 30' 60'

REV#	DATE	REVISION
2	1-15-23	PALM BAY, SJRWMD AND BREVARD COUNTY COMMENTS

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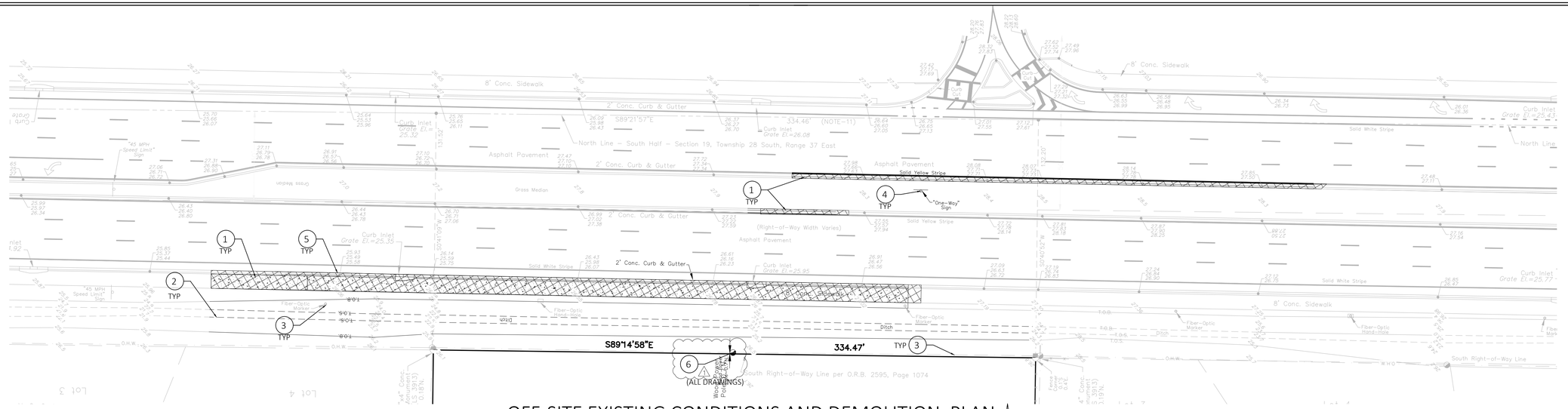
EPLER COMMERCIAL PARK

PALM BAY, FL

ON-SITE EXISTING CONDITIONS & DEMOLITION PLAN

JAMES R. TRAUGER
FL P.E. #75612

DATE:	10-5-22
SECTION:	19
TOWNSHIP:	28S
RANGE:	37E
SCALE:	1'=30'
DRAWING NO.	C-2A
PROJECT:	22-126



OFF-SITE EXISTING CONDITIONS AND DEMOLITION PLAN

1"=30'

GENERAL NOTES: (ALL DRAWINGS)

1. SEE TYPICAL DETAILS ON FOLLOWING SHEETS FOR ADDITIONAL CONSTRUCTION DETAIL INFORMATION.
2. CONTRACTOR SHALL BECOME FAMILIAR AND COMPLY WITH ALL PERMITS AND PERMIT CONDITIONS.
3. ALL AREAS DISTURBED OFF-SITE SHALL BE RESTORED TO EQUAL OR BETTER CONDITION THAN PRE-CONSTRUCTION WITH SAME TYPE OF SOD AS EXISTING.
4. CONTRACTOR SHALL COMPLY WITH ALL RECOMMENDATIONS OF GEOTECHNICAL REPORT FOR THIS SITE. CONTRACTOR SHALL OBTAIN FROM ENGINEER OF RECORD OR THE GEOTECHNICAL COMPANY.
5. SLOPE ALL SIDEWALKS TO FLOW AWAY FROM BUILDING WITH MAXIMUM 2% CROSS SLOPE.
6. PROVIDE CONSTANT SLOPE BETWEEN ALL SPOT ELEVATIONS.
7. UTILITY LENGTHS ARE APPROXIMATED BASED ON FIELD OBSERVATIONS, AS-BUILT DRAWINGS AND SURVEY. CONTRACTOR TO VERIFY EXACT LOCATION, SIZE, DEPTH AND MATERIAL OF EXISTING UTILITIES. PROVIDE ADDITIONAL PIPING AND FITTINGS AS NECESSARY. NOTIFY ENGINEER OF SIGNIFICANT INCREASES.
8. NOTIFY ENGINEER MINIMUM 72 HOURS PRIOR TO MAKING UTILITY CONNECTIONS OR BACK FILLING UTILITY TRENCHES FOR INSPECTION. IF NOT NOTIFIED, CONTRACTOR SHALL EXPOSE LINES PER ENGINEER'S REQUEST FOR INSPECTIONS.
9. ALL TRAFFIC SIGNS SHALL BE INSTALLED PER STANDARD FDOT INDEX NOS. 700-010 AND 700-101.
10. ALL RADII ARE 5' UNLESS IDENTIFIED OTHERWISE.
11. PROVIDE 36" LONG TRANSITION WITH CONSTANT SLOPE FROM TOP OF CURB TO GRADE AT TERMINATION POINT OF CURBS.
12. ALL DIMENSIONS ARE TO FACE OF CURB.
13. CONTRACTOR SHALL CLEAR AND GRUB ALL VEGETATION ON-SITE EXCEPT TREES SHOWN TO REMAIN ON THIS PLAN OR LANDSCAPE PLANS.
14. PROVIDE SILT FENCE ALONG ENTIRE PERIMETER OF PROJECT AREA EXCLUDING ENTRANCE DRIVEWAYS OR AS SHOWN ON DRAWING C-3.
15. ALL WASTE SHALL BE DISPOSED OF OFF-SITE IN A SAFE AND LEGAL MANNER UNLESS OWNER SPECIFICALLY REQUESTS OTHERWISE.
16. FOR DEMOLITION OF ALL ASPHALT AND CONCRETE MATERIALS, SAWCUT EDGES FOR SMOOTH STRAIGHT EDGE. ALSO SAWCUT ALL EXISTING PAVEMENT EDGES FOR SMOOTH STRAIGHT EDGE AT ALL TIE-IN POINTS WITH NEW PAVEMENT OR CONCRETE.
17. PROVIDE HANDICAP ACCESSIBLE CONNECTION WITH TRUNCATED DOMES AT TERMINATION POINT OF ALL SIDEWALKS ADJACENT TO DRIVING LANES WITHIN COUNTY OR CITY RIGHTS-OF-WAY PER FDOT STANDARD INDEX NO. 304. PROVIDE TRUNCATED DOMES IN BREVARD COUNTY RIGHT OF WAY PER THEIR DETAILS AND SPECIFICATIONS.
18. CONTRACTOR SHALL VERIFY ON-SITE PRIOR TO BIDDING WORK THE FULL EXTENT OF DEMOLITION REQUIRED BASED ON SITE PLAN CONSTRUCTION DRAWINGS. ALL ITEMS SHALL BE INCLUDED IN BASE BID.
19. REMOVE ALL ABOVE GROUND IMPROVEMENTS IN AREAS SHOWN FOR DEMOLITION UNLESS SPECIFICALLY IDENTIFIED OTHERWISE.
20. SEE ARCHITECTURAL DRAWINGS FOR BUILDING LAYOUTS AND MECHANICAL/PLUMBING DWGS FOR MODIFICATIONS TO BUILDING.
21. ALL SLOPES 4H:1V OR STEEPER SHALL BE SODDED. ALL SLOPES STEEPER THEN 3H:1V SHALL BE SODDED AND STAKED.
22. CONTRACTOR SHALL PROVIDE ALL FITTINGS REQUIRED TO INSTALL UTILITIES PER PLAN.
23. CONTACT UNDERGROUND UTILITIES LOCATE BEFORE COMMENCING ANY DIGGING A MINIMUM OF 48 HOURS IN ADVANCE AT 811.
24. ONLY A LICENSED CONTRACTOR REGISTERED IN THE STATE OF FLORIDA SHALL INSTALL/REMOVE THE SEPTIC TANK, PUMP TANK AND DRAINFIELD MOUND.
25. ONLY A LICENSED CONTRACTOR REGISTERED IN THE STATE OF FLORIDA SHALL INSTALL/REMOVE THE WELLS ONSITE.
26. SUBMIT PROPOSED JOINT PLAN TO ENGINEER A MINIMUM OF ONE WEEK PRIOR TO POURING CONCRETE PAVEMENT FOR APPROVAL OR MODIFICATIONS.
27. VERIFY THAT THE LANDSCAPE WORK IS COORDINATED WITH ALL UTILITIES AND STORMWATER SYSTEMS. A MINIMUM OF FIVE (5) FOOT HORIZONTAL SEPARATION BETWEEN TREES AND BURIED, AERIAL, OR GRADE-MOUNTED UTILITY SYSTEMS IS REQUIRED.
28. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO PUBLIC ROADWAYS, EASEMENTS, CURBS, SIDEWALKS, DRAINAGE SYSTEM, BENCHMARKS, OR UTILITIES AS A DIRECT RESULT OF CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR HAVING ALL BOUNDARY CORNERS AND BENCHMARKS DISTURBED OR DESTROYED DURING CONSTRUCTION REPLACED BY A FLORIDA LICENSED LAND SURVEYOR.
29. ALL EXCAVATIONS OF GREATER DEPTH THAN 5' SHALL COMPLY WITH THE CURRENT OSHA TRENCH SAFETY STANDARDS 29 C.F.R. s. 1926.650 SUBPART P. ANY EXCAVATION WITHIN THE CLEARZONE SHALL ALSO COMPLY WITH ALL WARNING AND/OR BARRIER REQUIREMENTS OF FDOT INDEX NO. 600.
30. STORM DRAIN CLEAN OUT SHALL MATCH SANITARY SEWER CLEAN OUT.
31. ENGINEER OF RECORD DOES NOT WARRANT THE ACCURACY OF THE RECORD SURVEY.
32. GRADING ADJACENT TO BUILDINGS SHALL BE 6" BELOW FINISHED FLOOR UNLESS IDENTIFIED OTHERWISE BY ARCHITECT OR ON GRADING PLANS.
33. PROVIDE TRUNCATED DOMES IN RIGHT-OF-WAYS ONLY AND TACTILE SURFACE PER FLORIDA BUILDING CODE REQUIREMENTS ON-SITE AND IN RIGHT OF WAY.
34. CONSTRUCTION WITHIN BREVARD COUNTY RIGHT-OF-WAY SHALL BE IN ACCORDANCE WITH BREVARD COUNTY DEVELOPMENT STANDARDS AND THE MOST RECENT REVISIONS OF FDOT DESIGN STANDARDS AND STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
35. ALL STORMWATER PIPE JOINTS SHALL BE WRAPPED WITH FILTER FABRIC TO PROHIBIT THE SEEPAGE OF SEDIMENT THROUGH THE JOINTS. REFER TO THE MOST RECENT FDOT INDEX FOR PIPE JOINT DETAIL AND SPECIFICATION.
36. OWNER TO COMPLETE MAINTENANCE INSPECTIONS QUARTERLY AND AFTER EACH RAIN EVENT TO ENSURE ALL BUBBLE UP STORM STRUCTURES AS WELL AS THE OVERFLOW STRUCTURE ARE NOT CLOGGED OR BLOCKED BY DEBRIS. IF THE SUMP IS FULL AND THERE APPEARS TO BE SILTATION OR DEBRIS CLOCKING FLOWS, MAINTENANCE WILL BE COMPLETED BY THE PROPERTY OWNER IN THE FORM OF DEBRIS REMOVAL AND VACUUM TRUCK SERVICE FOR SILT REMOVAL.
37. ALL DISTURBED AREAS SHALL HAVE GRASS/VEGETATION ESTABLISHED (80% GERMINATION) PRIOR TO THE FINAL INSPECTION FOR A CERTIFICATE OF OCCUPANCY.
38. NOTIFY LAND DEVELOPMENT DIVISION TO SET UP A PRE-SITE WORK MEETING. NOTIFY UTILITIES INSPECTOR OF THE PALM BAY UTILITIES DEPARTMENT AT 321-952-3410 AND NATALIE SHABER OF THE PUBLIC WORKS DEPARTMENT AT 321-952-3403, 72 HOURS PRIOR TO CONSTRUCTION START WITH THE CORRECT INFORMATION (NAMES AND PHONE NUMBERS OF CONTRACTOR, SUB-CONTRACTORS). A SEQUENCE OF WORK AND COORDINATION WITH CITY STAFF IS REQUIRED PRIOR TO THE START OF CONSTRUCTION.
39. PAVEMENT MARKINGS AND SIGNAGE AT THE DRIVEWAY ENTRANCE AND ONSITE ARE THE PERPETUAL MAINTENANCE RESPONSIBILITY OF THE OWNER AND/OR ASSIGNS.
40. PROVIDE AS-BUILT INFORMATION WHEN REQUESTING A CERTIFICATE OF OCCUPANCY AND ALLOW FIVE (5) DAYS FOR PROCESSING.
41. TESTING OF PAVED AREAS IS REQUIRED AND SHALL BE SPECIFIED ON THE PLANS WITH A DESCRIPTION OF IMPROVEMENTS AND THE TESTING METHODS TO BE USED.

GENERAL NOTES:

42. NOTIFY THE CITY OF PALM BAY RIGHT-OF-WAY USE SERVICES DIVISION AT 321-652-3403 A MINIMUM OF 72 HOURS PRIOR TO THE START OF ANY OFFSITE CONSTRUCTION ACTIVITIES IN THE PUBLIC RIGHT-OF-WAY SUCH AS PAVING, PLACING OF PIPE, ETC. THESE ACTIVITIES SHALL BE PERFORMED ONLY IN THE PRESENCE OF A PALM BAY PUBLIC WORKS DEPARTMENT INSPECTOR.
43. THE CONTRACTOR WILL NOTIFY RIGHT-OF-WAY USE SERVICES 72 HOURS PRIOR TO ANY OFFSITE CONSTRUCTION ACTIVITIES, INCLUDING EXCAVATION WORK. THE CONTRACTOR WILL PROVIDE RIGHT-OF-WAY USE SERVICES WITH A COPY OF ALL TEST RESULTS FROM PROPOSED IMPROVEMENTS, ALL CONCRETE TESTS AND ALL DENSITY ON COMPACTION RESULTS FROM PROPOSED IMPROVEMENTS, ALL CONCRETE TESTS AND ALL DENSITY AND COMPACTION RESULTS FROM THE PROJECT THAT ARE LOCATED IN THE PUBLIC ROAD ROW. ALL COORDINATION FOR RIGHT-OF-WAY USE SERVICES CAN BE ACCOMPLISHED USING THE FOLLOWING CONTACT INFORMATION: PUBLIC WORKS DEPARTMENT, RIGHT-OF-WAY USE SERVICES, 321-952-3403 OR FAX: 321-768-6401 OR EMAIL: PWPERMITTING@PALMBAYFLORIDA.ORG OR MAIL: PUBLIC WORKS DEPARTMENT/RIGHT-OF-WAY USE SERVICES, 1050 MALABAR ROAD SW, PALM BAY, FL 32907.
44. ⚠ THE CITY OF PALM BAY UTILITIES INSPECTOR MUST BE NOTIFIED 48 HOURS PRIOR TO ANY UTILITIES WORK OR ANY WORK OCCURRING WITHIN THE VICINITY OF EXISTING WATER AND SEWER UTILITIES.
45. SIGNS: MAXIMUM HEIGHT FOR ANY DETACHED SIGN SHALL BE TEN (10) FEET. ALL OTHER CRITERIA OF THE SIGN CODE SHALL BE MET.
46. FIRE DEPARTMENT ACCESS ROADS SHALL HAVE AN UNOBSTRUCTED WIDTH OF NOT LESS THAN 20 FT. THE DRIVING SURFACE SHALL BE MAINTAINED DURING ALL PHASES OF CONSTRUCTION AND (FFPC-1-18.2.3.5.2) MUST BE AN ALL-WEATHER DRIVING SURFACE CAPABLE OF SUPPORTING A (§ 33.28) SEVENTY THOUSAND (70,000) POUND EMERGENCY VEHICLES WITH MAXIMUM AXLE LOADS OF THIRTY-FIVE THOUSAND (35,000) POUNDS.
47. HYDRANTS OR ALTERNATIVE WATER SUPPLIES THAT ARE PROPOSED TO MEET THE REQUIRED FIRE FLOW SHALL BE INSTALLED AND OPERATIONAL PRIOR TO THE DELIVERY OF COMBUSTIBLE MATERIALS TO THE SITE.
48. FIRE DEPARTMENT ACCESS ROADS SHALL HAVE AN UNOBSTRUCTED VERTICAL CLEARANCE OF NOT LESS THAN 13 FT. 6 IN.
49. THE AHJ SHALL HAVE THE AUTHORITY TO REQUIRE FIRE DEPARTMENT ACCESS BE PROVIDED TO GATED SUBDIVISIONS OR DEVELOPMENTS THROUGH THE USE OF AN APPROVED DEVICE OR SYSTEM. ALL MOTORIZED GATES SHALL INCLUDE A CLICK TO ENTER SYSTEM OR A SIREN OPERATED SWITCH AND KNOX KEY SWITCH BACKUP. ALL MANUAL GATES SHALL HAVE A KNOX PADLOCK. ORDER KNOX PRODUCTS AT KNOXBOX.COM. INDICATE THE GATES SHALL HAVE A MINIMUM CLEAR WIDTH OF 14 FEET.
50. A CLEAR SPACE OF NOT LESS THAN 60 IN. (1524 MM) SHALL BE PROVIDED IN FRONT OF EACH HYDRANT CONNECTION HAVING A DIAMETER GREATER THAN 21/2 IN.
51. A 36 IN. (914 MM) CLEAR SPACE SHALL BE MAINTAINED AROUND THE CIRCUMFERENCE OF FIRE HYDRANTS EXCEPT AS OTHERWISE REQUIRED OR APPROVED.
52. THE CENTER OF A HOSE OUTLET SHALL BE NOT LESS THAN 18 IN. (457 MM) ABOVE FINAL GRADE.
53. FIRE HYDRANTS SHALL BE LOCATED NOT MORE THAN 12 FT (3.7 M) FROM THE FIRE DEPARTMENT ACCESS ROAD.
54. WATERMAINS ON THE DOWNSTREAM SIDE OF THE DOUBLE DETECTOR CHECK VALVE (DDC) WHERE THE PUBLIC MAIN ENTERS THE SITE MAY BE CONSIDERED PRIVATE WATER PER CITY OF PALM BAY UTILITIES. THE PRIVATE WATER MAIN MUST BE PERMITTED AND APPROVED THROUGH THE CITY OF PALM BAY BUILDING DEPARTMENT BEFORE ANY WORK CAN BE DONE, AND INSTALLATIONS SHALL BE INSPECTED BY THE FIRE PLANS EXAMINER. THE SCOPE OF THE PERMIT MUST ENCOMPASS THE COMPLETE WATER MAIN BEGINNING AT THE DOWNSTREAM SIDE OF THE DDC WHERE THE PUBLIC MAIN ABUTS THE SITE.
55. FIRE HYDRANT TESTING TO DETERMINE AVAILABLE WATER FOR FIRE FLOW SHALL BE TESTED TO THE REQUIREMENTS OF NFPA 24 AND WITNESSED BY THE FIRE PLANS EXAMINER.
56. THE FLOW TESTING OF ALL NEW FIRE HYDRANTS PUBLIC OR PRIVATE SHALL BE WITNESSED BY THE FIRE PLANS EXAMINER. PUBLIC HYDRANTS SHALL BE TESTED TO THE REQUIREMENTS OF THE CITY OF PALM BAY UTILITIES DEPARTMENT. PRIVATE FIRE HYDRANTS SHALL BE TESTED TO THE REQUIREMENTS OF NFPA 24.
57. ALL UTILITY DESIGN, CONSTRUCTION, MATERIALS, AND TESTING SHALL BE IN ACCORDANCE WITH THE LATEST REVISION OF THE PALM BAY UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS HANDBOOK AND THE STANDARD DETAIL DRAWINGS. CONTACT THE UTILITIES ENGINEERING DEPARTMENT AT 321-952-3410 FOR ACCESS TO THESE DOCUMENTS.
58. ANY BACKFLOW PREVENTION ASSEMBLY REQUIRED SHALL BE OF A MANUFACTURER APPROVED BY THE UTILITIES DEPARTMENT. THE "APPROVED BACKFLOW PREVENTION ASSEMBLY" SHALL MEAN AN ASSEMBLY THAT HAS BEEN MANUFACTURED IN FULL CONFORMANCE WITH THE STANDARDS ESTABLISHED BY THE AMERICAN WATER WORKS ASSOCIATION ENTITLED: AWWA C505-69 STANDARDS FOR REDUCED PRESSURE PRINCIPLE AND DOUBLE CHECK VALVE BACKFLOW PREVENTION ASSEMBLIES, OR LATER ADOPTED VERSION. BACKFLOW PREVENTION ASSEMBLIES MUST HAVE THE LABORATORY AND FIELD PERFORMANCE SPECIFICATIONS OF THE FOUNDATION FOR CROSS-CONNECTION CONTROL AND HYDRAULIC RESEARCH OF UNIVERSITY OF SOUTHERN CALIFORNIA, OR OTHER APPROVED TESTING LABORATORY. NOTE THAT THE BACKFLOW PREVENTER MUST BE THE SAME SIZE AS THE PROPOSED METER.
59. IT SHALL BE THE DUTY OF THE CONSUMER AT ANY PREMISES WHERE BACKFLOW PREVENTION ASSEMBLIES ARE INSTALLED TO HAVE CERTIFIED INSPECTIONS AND OPERATIONAL TESTS MADE UPON INSTALLATION AND AT LEAST ONCE PER YEAR AS SCHEDULED BY THE UTILITY DEPARTMENT. ANY CONTRACTOR HIRED BY THE CONSUMER SHALL BE A LICENSED PLUMBING, FIRE OR IRRIGATION CONTRACTOR REGISTERED WITH THE CITY OF PALM BAY.
60. IF THE PROJECT REQUIRES A FIRE LINE WITH A DDC AND BACKFLOW ASSEMBLY, IT SHALL BE INSTALLED AND TESTED BY A CERTIFIED CONTRACTOR. PLEASE CONTACT THE FIRE MARSHALL FOR SPECIFICATIONS.
61. THE CONTRACTOR SHALL NOT OPERATE ANY PUBLIC WATER OR SEWER VALVES UNLESS SPECIFICALLY AUTHORIZED BY THE UTILITIES INSPECTOR.
62. MAINTENANCE OF TRAFFIC PLANS REQUIRED FOR ALL RIGHT OF WAY WORKS APPROVED BY ENGINEER.
63. ALL POSTS AND HARDWARE FOR ANY SIGNS INSTALLED IN THE BREVARD COUNTY RIGHT OF WAY WILL ADHERE TO THE REQUIREMENTS SPELLED OUT IN EXHIBIT 26.
64. THE CONTRACTOR SHALL UTILIZE DITCHES, PIPES, AND/OR PUMPS AS NECESSARY TO MAINTAIN THE EXISTING DRAINAGE DURING ALL PHASES FOR CONSTRUCTION. EXISTING DRAINAGE SHALL NOT BE BLOCKED OR ADVERSELY AFFECTED DURING CONSTRUCTION.
65. IF ANY SIGNAGE IN THE BREVARD COUNTY RIGHT-OF-WAY IS REMOVED, IT SHALL BE REPLACED IN ACCORDANCE WITH B.C.L.D. EXHIBIT 26.
66. CONTRACTOR SHALL ENSURE ALL VALVES AND OTHER UTILITY CONNECTIONS ARE OUTSIDE OF THE SIDEWALK. REGARDLESS OF PRIVATE OR PUBLIC DEDICATION, THERE SHALL BE NO UTILITY CONNECTIONS WITHIN EXISTING OR PROPOSED SIDEWALKS.

CIVIL NOTES:

1. ⚠ REMOVE EXISTING SIDEWALK FROM JOINT TO JOINT, ASPHALT, AND CURBING TO EXTENT NECESSARY FOR SIDEWALK, NEW DRIVEWAY AND TURN LANE IMPROVEMENTS AS SHOWN IN THESE DRAWINGS. SAWCUT FOR SMOOTH STRAIGHT EDGE. REMOVE 12" OF EXISTING ASPHALT ALONG EDGE OF NEW PAVEMENT (INCLUDE STRIPING TO BE REMOVED) TO OFFSET THE PAVEMENT/BASE COURSE JOINT. CONTRACTOR TO HAVE MAINTENANCE OF TRAFFIC PLAN APPROVED BY BREVARD COUNTY ENGINEERING STAFF (WITH ANTICIPATED SCHEDULE) PRIOR TO CONSTRUCTION. CONTRACTOR SHALL FIELD VERIFY THAT THE SHOULDER BASE IS FULL DEPTH. IF NOT, THE EXISTING SHOULDER BASE AND PAVEMENT SHALL BE REMOVED AND REPLACED AT THE PAVEMENT CONNECTION TO MATCH THE EXISTING ROADWAY.
2. SEE RIGHT OF WAY GRADING AND DRAINAGE PLAN FOR EXISTING SWALE DISTURBANCES. SOD ALL DISTURBED AREAS.
3. PROTECT EXISTING UTILITY THROUGHOUT CONSTRUCTION. CONTRACTOR TO CONTACT UTILITY OWNER FOR CONSTRUCTION EFFORT COORDINATION AND RELOCATION AS NEEDED.
4. SALVAGE 'ONE-WAY ONLY' SIGN. SEE SITE PLAN FOR LOCATION.
5. REMOVE EXISTING CURB INLET FOR CONNECTION AS SOWN IN THESE DRAWINGS.
6. ⚠ CONTRACTOR TO COORDINATE RELOCATION OF POWER POLE AND ASSOCIATED UTILITIES WITH UTILITY OWNER.

SURVEYOR'S NOTES

SURVEYOR'S NOTES:

1. LANDS SHOWN HEREON WERE NOT ABSTRACTED FOR ADJOINING DEEDS, RIGHT-OF-WAY, RESERVATION, AGREEMENTS AND/OR EASEMENTS OF RECORD. SUCH INFORMATION, IF DESIRED, SHOULD BE OBTAINED AND CONFIRMED BY OTHERS THROUGH APPROPRIATE TITLE VERIFICATION.
2. ADJOINERS SHOWN HAVE NOT BEEN SURVEYED.
3. DRAWINGS ARE NOT TO BE RELIED UPON FOR SCALE PURPOSES.
4. ALL MEASUREMENTS ARE IN FEET AND DECIMAL PARTS THEREOF AND ARE IN ACCORDANCE WITH THE STANDARDS OF THE UNITED STATES (CHAPTER 5J17-6.003(1)(B) F.A.C.)
5. PURSUANT TO FLORIDA LAW (F.A.C. 5J17-6. 003(17)) THIS SURVEY IS BASED ON A CLOSED TRAVERSE.
6. USE ONLY PROPERTY CORNERS FOR CONSTRUCTION OF FENCES AND OTHER IMPROVEMENTS.
7. ONLY OPEN AND NOTORIOUS EVIDENCE OF EASEMENTS AND RIGHT-OF-WAYS ARE LOCATED AND SHOWN HEREON. THE SURVEYOR HAS NOT LOCATED ANY UNDERGROUND UTILITIES OR FOUNDATIONS WHICH MAY ENCROACH.
8. LEGAL DESCRIPTION AS SHOWN WAS PROVIDED BY CLIENT.
9. ELEVATIONS BASED ON 50.00' ASSUMED AT _____N/A_____
10. ELEVATIONS BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (PARENT B.M. 21-020 (CPB), ELEVATION 25.27'.) AND ARE EXPRESSED IN FEET AND DECIMAL THEREOF.
11. BEARINGS BASED ON STATE PLANE GRID BEARING OF S89°21'57"E ALONG THE SOUTH RIGHT OF WAY LINE OF PALM BAY ROAD AS SHOWN HEREIN.
12. PLOT PLANS ARE NOT TO BE USED FOR CONSTRUCTION LAYOUT PURPOSES.
13. LOT DIMENSIONS AND BEARINGS ARE RECORD AND MEASURED UNLESS OTHERWISE NOTED.
14. SEPTIC TANKS AND WELLS IF SHOWN ARE APPROXIMATE LOCATIONS AND SHOULD BE FIELD VERIFIED BY CONTRACTOR FOR CORRECT POSITION AND SEPARATION.
15. NORTH ARROW AS SHOWN DOES NOT REPRESENT TRUE NORTH OR GRID NORTH, IT IS FOR APPROXIMATE POSITION ONLY.
16. ALL RIGHT-OF-WAYS, ALLEYS, DIRT ROADS, AND ASPHALT ROADS IF SHOWN ARE "OPEN TO TRAVEL" BOTH BY FOOT AND VEHICLE UNLESS OTHERWISE NOTED BY (CLOSED TO TRAVEL).
17. SETBACKS AS SHOWN ON PLOT PLANS WERE PROVIDED BY CONTRACTOR.
18. HORIZONTAL FEATURE ACCURACY: TOPOGRAPHIC LAND FEATURES (SIGNS, INLETS, VALVES, MAILBOXES, POWER POLES, DRIVEWAYS, CULVERTS, AND SIMILAR FEATURES) HAVE A HORIZONTAL FEATURE ACCURACY OF PLUS OR MINUS 0.25 FEET.
19. VERTICAL FEATURE ACCURACY: ELEVATIONS ON THE SITE (GROUND, PAVEMENT, INLETS, ETC.) HAVE A VERTICAL FEATURE ACCURACY OF PLUS OR MINUS 0.10 FEET.
20. THIS SURVEY IS FOR THE SOLE BENEFIT OF THE PARTIES NAMED HEREON AND FOR THE SPECIFIC PURPOSE NOTED, AND SHOULD NOT BE RELIED UPON BY ANY OTHER ENTITY, AND IS NOT TRANSFERABLE UNDER ANY CIRCUMSTANCES.
21. THE EXPECTED USE OF THE LAND IS RESIDENTIAL. THE MINIMUM RELATIVE DISTANCE ACCURACY FOR THIS TYPE OF BOUNDARY SURVEY IS 1 FOOT IN 7,500 FEET WHICH WAS MET IN THE CASE OF THIS SURVEY.

SURVEYORS LEGEND

LEGEND:

N.V.W. = NO VISIBLE WELL
P.C.P. = PERMANENT CONTROL POINT
P.O.C. = POINT OF COMMENCEMENT
P.O.B. = POINT OF BEGINNING
P.T. = POINT OF TANGENCY
P.R.M. = PERMANENT REFERENCE MONUMENT
R.P. = RADIUS POINT
P.C. = POINT OF CURVATURE
P.C.C. = POINT OF COMPOUND CURVATURE
P.R.C. = POINT OF REVERSE CURVATURE
D = DELTA (CENTRAL ANGLE)
R = RADIUS
A = ARC
T = TANGENT
(R) = RECORD
(M) = MEASURED
(C) = CALCULATED
(D) = DEED
NO I.D. = NO IDENTIFICATION
C.B.S. = CONCRETE BLOCK & STUCCO
F.P.& L. = FLORIDA POWER AND LIGHT
RES. = RESIDENCE
PROP. = PROPOSED
TX = TRANSFORMER
CONC. = CONCRETE (TYP.) = TYPICAL
APPROX. = APPROXIMATE
E.O.P. = EDGE OF PAVEMENT
T.O.S. = APPROX. TOE OF SLOPE
E.O.W. = APPROX. EDGE OF WATER
T.O.B. = APPROX. TOP OF BANK
N.T.S. = NOT TO SCALE
O/S = OFFSET
L.F.E. = LOWEST FLOOR ELEVATIION
G.F.E. = GARAGE FLOOR ELEVATION
F.F.E. = FINISHED FLOOR ELEVATION
O.R.B. = OFFICAL RECORDS BOOK
P.B. = PLAT BOOK PG. = PAGE
D.B. = DEED BOOK
B.S.L = BUILDING SETBACK LINE
P.V.C. = POLYVINYLCHLORIDE
C.M.P. = CORRUGATED METAL PIPE
R.C.P. = REINFORCED CONCRETE PIPE
C.P.P. = CORRUGATED PLASTIC PIPE
INV. = INVERT

(W) = WATER METER ● = WELL
(E) = ELECTRIC METER/HANDHOLE
(SS) = SANITARY SEWER MANHOLE
(ST) = STORM SEWER MANHOLE
(SB) = SOUTHERN BELL MANHOLE/HANDHOLE
= UNDER MAIN ROOF
= SOUTHERN BELL RISER
= CABLE TELEVISION RISER
(G) = GAS VALVE
(R) = RECLAIM WATER METER
(GS) = GAS SERVICE
= WATER VALVE IN 2'x 2' CONC.
= WATER VALVE
(FH) = FIRE HYDRANT
= POWER POLE
= LIGHT POLE
= GUY ANCHOR
-x-x- = FENCE
= OVERHEAD WIRE (O.H.W.)
S/T = APPROXIMATE SEPTIC TANK
= CLEAN OUT
= IRON MARKER FOUND - SEE DESCRIPTION
= 1/2" IRON ROD WITH PLASTIC CAP MARKED "K.A. SMITH LB 7426" SET
= 4"x 4" CONC. MONUMENT FOUND - SEE DESCRIPTION
= 4"x 4" CONC. MONUMENT MARKED "K.A. SMITH LB 7426" SET
= NAIL & DISK FOUND - SEE DESCRIPTION
= NAIL & DISK MARKED "K.A. SMITH LB 7426" SET
= HUB & TACK SET

811 KNOW WHAT'S BELOW ALWAYS CALL 811 BEFORE YOU DIG
It's fast, It's free, it's the law.
Call 811 two business days before digging

30' 0' 30' 60'

REV#	DATE	REVISION
2	1-15-23	PALM BAY, SJRWMD AND BREVARD COUNTY COMMENTS

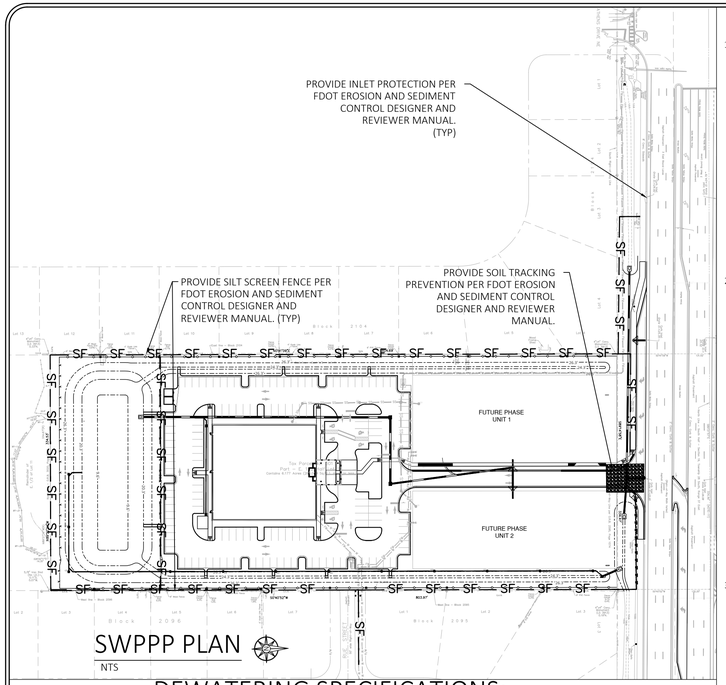
TRAUGER CONSULTING ENGINEERS
2210 Front Street, STE 204 Melbourne, FL 32901
email - jim@traugerconsulting.com direct - (321) 292-0745

EPLER COMMERCIAL PARK
PALM BAY, FL

OFF-SITE EXISTING CONDITIONS AND DEMOLITION PLAN

JAMES R. TRAUGER
FL P.E. #75612

DATE: 10-5-22
SECTION: 19
TOWNSHIP: 28S
RANGE: 37E
SCALE: 1'=30'
DRAWING NO. C-2B
PROJECT: 22-126



SWPPP PLAN

NTS

DEWATERING SPECIFICATIONS:

1. MAINTAIN ADEQUATE SUPERVISION AND CONTROL TO ENSURE THAT STABILITY OF EXCAVATED AND CONSTRUCTED SLOPES ARE NOT ADVERSELY AFFECTED BY WATER, EROSION IS CONTROLLED, AND FLOODING OF EXCAVATION OR DAMAGE TO STRUCTURES DOES NOT OCCUR.
2. THE DEWATERING PLAN SHALL COMPLY WITH THE REQUIREMENTS OF THE ST. JOHNS WATER MANAGEMENT DISTRICT FOR CONSUMPTIVE USE OF GROUNDWATER. PERMITTING, IF REQUIRED, SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
3. PROVIDE AN ADEQUATE SYSTEM TO LOWER AND CONTROL GROUNDWATER IN ORDER TO PERMIT EXCAVATION, CONSTRUCTION OF STRUCTURES, AND PLACEMENT OF FILL MATERIALS UNDER DRY CONDITIONS. INSTALL SUFFICIENT DEWATERING EQUIPMENT TO DRAIN WATER-BEARING STRATA ABOVE AND BELOW BOTTOM OF STRUCTURE FOUNDATIONS, DRAINS, SEWERS, AND OTHER EXCAVATIONS.
4. REDUCE HYDROSTATIC HEAD IN WATER-BEARING STRATA BELOW STRUCTURE FOUNDATIONS, DRAINS, SEWERS AND OTHER EXCAVATIONS TO EXTENT THAT WATER LEVEL AND PIEZOMETRIC WATER LEVELS IN CONSTRUCTION AREAS ARE BELOW PREVAILING EXCAVATION SURFACE.
5. PRIOR TO EXCAVATION BELOW GROUNDWATER LEVEL, PLACE SYSTEM INTO OPERATION TO LOWER WATER LEVELS AS REQUIRED AND THEN OPERATE IT CONTINUOUSLY 24 HOURS A DAY, 7 DAYS A WEEK UNTIL DRAINS, SEWERS AND STRUCTURES HAVE BEEN CONSTRUCTED, INCLUDING PLACEMENT OF FILL MATERIALS, AND UNTIL DEWATERING IS NO LONGER REQUIRED.
6. DISPOSE OF WATER REMOVED FROM EXCAVATIONS IN A MANNER TO AVOID ENDANGERING PUBLIC HEALTH, PROPERTY, AND PORTIONS OF WORK UNDER CONSTRUCTION OR COMPLETED. DISPOSE OF WATER IN A MANNER TO AVOID INCONVENIENCE TO OTHERS. PROVIDE SUMPS, SEDIMENTATION TANKS, AND OTHER FLOW CONTROL DEVICES AS REQUIRED BY GOVERNING AUTHORITIES.
7. PROVIDE STANDBY EQUIPMENT ON SITE, INSTALLED AND AVAILABLE, FOR IMMEDIATE OPERATION IF REQUIRED TO MAINTAIN DEWATERING ON A CONTINUOUS BASIS IN EVENT ANY PART OF SYSTEM BECOMES INADEQUATE OR FAILS. IF DEWATERING REQUIREMENTS ARE NOT SATISFIED DUE TO INADEQUACY OR FAILURE OF DEWATERING SYSTEM, PERFORM SUCH WORK AS MAY BE REQUIRED TO RESTORE DAMAGED STRUCTURES AND FOUNDATION SOILS AT NO ADDITIONAL EXPENSE.

CONTRACTOR RESPONSIBILITIES FOR NPDES (SWPPP)

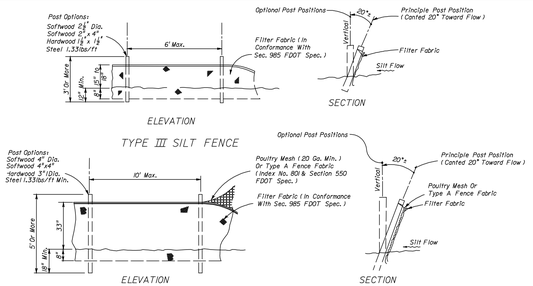
1. General Notes:
   A. Contractor shall comply with all requirements herein and all water management district, FDEP, EPA, Corps of Engineers, and Municipal/County with jurisdiction requirements. This proposed project involves construction of the site improvements shown on these plans. The stormwater pollution prevention plan is comprised of this drawing, plus the permit and all required reports, related documents and supplemental plans. Construction activities will generally include excavation, filling, earthwork, utility installation, stormwater management system installation, paved parking construction, final grading and stabilization and/or landscaping. Potential pollution sources include soils erosion and siltation, temporary dewatering and discharges from construction equipment: i.e. petroleum products and silt, etc. Contractor shall implement the site controls and Best Management Practices (BMPs) as required by the SWPPP to minimize or eliminate the potential for off-site discharge of pollutants. It should be noted that the measures identified on this plan are only suggested BMPs. The Contractor shall provide additional Controls and BMPs to be implemented as dictated by conditions, permitting agency or owner and shall conform to Federal, State and Local requirements or manual of practice, ass applicable.
   B. Contractor shall maintain a record of construction work and provide inspection reports with the following date:
      1. Dates when site work begins, when erosion control measures begin, when grading activities begin, when major grading activities occur, when stormwater facilities are constructed, when construction activities temporarily or permanently cease on a portion of the site, and when final stabilization is complete.
      2. Reporting Inspector's Name, qualifications, daily rainfall, any changes necessary to SWPPP, and dates of inspections.
      3. Pictures of any problem areas that occur including date and time. Provide pictures of the same areas repaired including date and time.
   C. Prior to final payment, Contractor shall provide a copy of the report to the Owner and Civil Engineer certifying the project. Contractor shall execute NPDES certification form and provide copies to Owner and Engineer for close out purposes.
2. Site Description:
   A. Description of construction activity and the intended sequence of activities. The following construction sequencing description is provided as general guidance and is not intended as directive toward means and methods. It shall be the Contractors responsibility to complete the project in conformance with all Federal, State and Local standards and requirements.
   First, Mobilization during which time sediment and erosion control measures shall be installed as soon as practicable. This will likely be followed by demolition as necessary during which measures will be taken to minimize dust and impacts to surrounding properties. Excavation and Temporary Construction Dewatering will occur as necessary during which the Contractor is responsible to complete work in accordance with the approved plans for the project. The Contractor is also responsible for obtaining any required temporary dewatering permits if necessary. Stabilization of disturbed areas shall occur via seed and mulch, sod or other means as soon as practicable. Drainage System Installation/Utility Construction/ Final Paving/Building Construction and Landscaping will occur to finish out the project. During these activities care will be taken to ensure all previously installed control measures and BMPs are in good working order, dewatering permits if necessary will be the responsibility of the Contractor, efforts should be made to minimize or eliminate offsite discharge. Concrete trucks and asphalt equipment are to be cleaned on-site in and approved and contained location. Immediately upon completion of roadways and hard surfaces for the project, adjacent disturbed areas shall be sodded or otherwise stabilized to prevent erosion. At least 2' of sod is required along the back of curb for all subdivision streets and new roadways.
   B. Estimate of the Total Area of the Site and the Total Area Expected to Be Disturbed.
   The entire 6.18 acres are expected to be disturbed by grading, except for the areas identified for tree preservation on the Existing Conditions and Demo Plan.
   C. An Estimate of the Runoff Coefficient of the Site Before, During and After Construction Using "C" Values from the Rational Method.
   "C" can be approximated as 0.15 (pre-development) and 0.60(post-development),
   D. Soils Description
   EauGallie Sand as classified by the Soil Conservation Service Handbook.
   E. Off-site Receiving Water(s)
   City of Palm Bay Collection System Port Malabar 38/40 Stormwater Improvement
3. Description of Standard Site Controls and Best Management Practices:
   A. Erosion and Sediment Controls.
      1) Stabilization practices: Disturbed portions of the site where construction activity has been permanently stopped shall be permanently stabilized as shown on the plans. They shall be seeded/mulched, sodded, and/or vegetated no later than 14 days after the last construction activity occurring the areas. All denuded areas that will be in active shall be stabilized temporarily by means approved by the appropriate jurisdictional agency. Excavated materials can be stockpiled for use as a backfill and stabilization but shall be protected from erosion, sedimentation and runoff through implementation of BMPs. Unsuitable materials will be promptly removed from the site and legally disposed of.
      2) Structural Practices: The Contractor shall install and maintain water quality control devices at all nearby stormwater management ponds, ditches, and swales. Included in the plans are siltation fences and turbidity barriers. Contractor shall install additional water quality control measures as appropriate to assure adequate protection of receiving water bodies.
   B. Stormwater Management: The Contractor is responsible for the installation of BMP's during the construction process to control pollutants in stormwater discharges that will occur during construction and after construction operations have be completed. The entire project is designed to improve stormwater management. The Contractor shall control turbid runoff from the project site by using temporary grading and installing erosion control measures. Velocity dissipation devices shall be placed at discharge locations and along the length of any outfall channel for the purpose of providing a non-erosive velocity flow from the structure to a water course to protect the channel.
   C. Other Controls: Wind erosion shall be controlled by employing BMPs. Contractor shall ensure compliance with applicable State and/or local waste disposal, sanitary sewer or septic system regulations. Rubbish, trash, garbage, litter, or other such materials shall be deposited into sealed containers. Materials shall be prevented from leaving the premises through the action of wind or stormwater discharge into drainage ditches or waters of the state. All wash water shall be detained and properly treated or disposed. All guidelines and regulations set forth in the St. Johns River Water Management District and Florida Department of Environmental Protection.
4. Maintenance:
   A. The Contractor shall provide routine maintenance of vegetation, permanent and temporary erosion and sediment control features for the duration of the project.
   B. The Contractor shall grade the site to the elevations indicated on the Construction Plans and shall re-grade washouts where they occur after each rainfall until new landscaping is established.
   C. All drainage structures shall be de-silted as required during construction and at the end of construction to provide positive drainage and minimize transport of silt to the master drainage system and receiving water body.
   D. All accumulations of silt greater than six inches shall be removed by the contractor and properly disposed.
5. Inspections:
   A. All Controls and BMPs including permanent erosion control devices will be inspected by the Contractor at a minimum on a weekly basis. In areas of ongoing construction activity, turbidity and erosion control measures will be inspected on a daily basis. Additional inspections shall be conducted after all severe weather including but not limited to within 24 hours after the end of a storm event of 0.50 inches or more. If any deficiencies in erosion control are discovered, corrective actions shall be taken immediately by the contractor. .
   B. Inspection areas shall include but are not limited to:
      1. All disturbed areas of the construction site that have not received final stabilization.
      2. Areas used for storage of materials that are exposed to precipitation.
      3. Examination of the site for evidence of, or the potential for pollutants entering the receiving waters.
      4. Stormwater management system and erosion and sediment control measures identified in the plan to provide reasonable assurance that they are operating as designed.
      5. Locations where vehicles enter or exit the site for evidence of off-site sediment tracking. If the action of vehicles traveling over the gravel construction entrances is not sufficient to remove the majority of dirt or mud, then the tires must be washed before the vehicles enter a public road. If washing is used, provisions must be made to intercept the wash water and trap the sediment before it is carried of the site.
      6. All points of discharge into the master stormwater management system to determine whether erosion control and stormwater management measures are effectively preventing water quality degradation in the receiving water body.
   C. When remedial action is required for compliance, the plan will be revised as necessary and additional structural measures installed immediately as warranted.
      1. Product Specific Practices (these practices will be followed for contaminant spill prevention):
         - Concrete Trucks: Concrete trucks will not be allowed to wash out or discharge surplus concrete or drum wash water on the site.
         - Fertilizers: Fertilizers used will be applied only in the minimum amounts recommended by the manufacturer. Once applied, fertilizer will be worked into the soil to limit exposure to stormwater. The contents of any partially used bags of fertilizer will be transferred to a sealable plastic bin to avoid spills.
         - Petroleum Products: All on-site vehicles will be monitored for leaks and receive regular preventive maintenance to reduce the chance of leakage. Petroleum products will be stored in tightly sealed containers, which are clearly labeled.
      2. Spill Control Practices (these additional practices will be followed for spill cleanup):
         - Manufacturers' recommended methods for spill cleanup will be clearly posted and site personnel will be made aware of the procedures and the location of the information and cleanup supplies.
         - Materials and equipment necessary for spill cleanup will be kept on-site.
         - All spills will be cleaned up immediately after discovery and reported to the appropriate state or local government agency if necessary.
         - The spill prevention plan will be modified to include measures to prevent a reoccurrence, how to clean up if another occurs, and a description of what spilled, what caused it, and what the cleanup measures are.
6. Non-Stormwater Discharges:
   No non-stormwater discharges are anticipated with the possible exception of dewatering. the contractor whom shall obtain a dewatering permit if necessary and follow all state requirements as enforced by the water management district with authority.
7. Inventory for Pollution Prevention Plan:
   The materials or substances listed below are expected to be present on-site during construction:
   - Concrete;
   - Fertilizers; and
   - Petroleum based products.
8. Spill Prevention:
   A. Material Management Practices will be used to reduce the risk of spills or other accidental exposure of materials and substances to stormwater runoff.
      1. Good housekeeping practices will be followed on-site during the construction project.
         - An effort will be made to store only enough product required to do the job;
         - All materials stored on-site will be stored in a neat, orderly manner in their appropriate containers and, if possible, under a roof;
         - Products will be kept in their original containers with the original manufactures' label;
         - Substances will not be mixed unless recommended by the manufacturer;
         - Manufacturers' recommendations for proper use and disposal will be followed;
         - Whenever possible, all of a product will be used up before disposing of the container.
      2. Hazardous products handling practices are used to reduce the risks associated with hazardous materials.
         - Products will be kept in original containers unless they are not resealable;
         - Original labels and material safety data will be retained; they contain important product information;
         - If surplus product must be disposed of, manufacturers' or local and state recommended methods for proper disposal will be followed.

EROSION AND SEDIMENTATION CONTROL REQUIREMENTS

1. THE LAND-DISTURBING ACTIVITY SHALL CONFORM TO EXISTING TOPOGRAPHY AND SOIL TYPE SO AS TO CREATE THE LOWEST PRACTICAL EROSION POTENTIAL.
2. LAND-DISTURBING ACTIVITIES SHALL BE CONDUCTED IN A MANNER MINIMIZING EROSION.
3. THE DISTURBED AREA AND THE DURATION OF EXPOSURE TO EROSIVE ELEMENTS SHALL BE KEPT TO A PRACTICABLE MINIMUM.
4. EROSION CONTROL MUST BE STRICTLY MAINTAINED DURING CUT AND FILL OPERATIONS.
5. DISTURBED SOIL SHALL BE STABILIZED AS QUICKLY AS PRACTICABLE.
6. WHENEVER FEASIBLE, NATURAL VEGETATION SHALL BE RETAINED, PROTECTED AND SUPPLEMENTED.
7. TEMPORARY VEGETATION OR MULCHING SHALL BE EMPLOYED TO PROTECT EXPOSED CRITICAL AREAS DURING DEVELOPMENT.
8. PERMANENT VEGETATION AND STRUCTURAL EROSION CONTROL MEASURES SHALL BE INSTALLED AS SOON AS PRACTICABLE.
9. ADEQUATE PROVISIONS MUST BE PROVIDED TO MINIMIZE DAMAGE FROM SURFACE WATER TO THE CUT FACE OF EXCAVATIONS OR THE SLOPING SURFACE OF FILLS.
10. TO THE EXTENT NECESSARY, SEDIMENT IN RUNOFF WATER MUST BE TRAPPED BY THE USE OF DEBRIS BASINS, SEDIMENT BASINS, SILT TRAPS OR SIMILAR MEASURES UNTIL THE DISTURBED AREA IS STABILIZED.
11. CUTS AND FILLS MUST BE CONSTRUCTED IN SUCH A MANNER THAT EROSION AND RUNOFF FROM THE SITE DOES NOT ENDANGER ADJOINING PROPERTY.
12. FILLS MAY NOT ENCROACH UPON NATURAL WATERCOURSES OR CONSTRUCTED CHANNELS IN A MANNER SO AS TO ADVERSELY AFFECT OTHER PROPERTY OWNERS WITHOUT ADEQUATE PROVISIONS FOR AN EQUIVALENT ALTERNATE SYSTEM WITH A POSITIVE OUTFALL.
13. ALL R.O.W.'S, WATERWAYS, STREETS AND SIDEWALKS SHALL BE BUFFERED BY A TWENTY (20) FOOT WIDE STRIP OF GRASS OR OTHER SUITABLE MEANS.
14. GRADING EQUIPMENT MUST CROSS FLOWING STREAMS BY MEANS OF BRIDGES OR CULVERTS EXCEPT WHEN SUCH METHODS ARE NOT FEASIBLE AND PROVIDED IN ANY CASE, THAT SUCH CROSSINGS ARE KEPT TO A MINIMUM AND SEDIMENTATION CONTROL DEVICES ARE PROVIDED.

DEWATERING PLAN:

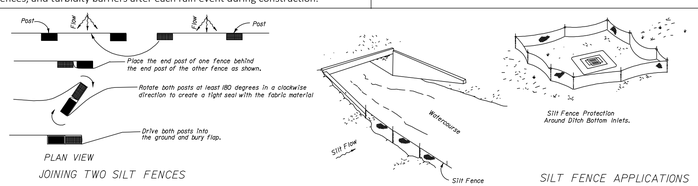
1. Final grade and sod entire banks of swale immediately. Use swale for settling basin during dewatering for wet pond. Stake sod in areas washouts occur. Water sod as needed to maintain health of sod. Install silt screen fence around wet pond after sodding.
2. Construct Structures and all piping between retention ponds upon final grading. Install all controls, turbidity barriers and inlet protection around new structures and MES's to prevent siltation of piping/structures.
3. All of this work shall be completed per SJRWMD, City of Palm Bay, Brevard County and FDEP permit conditions.
4. Inspect and repair any inlets, silt fences, and turbidity barriers after each rain event during construction.

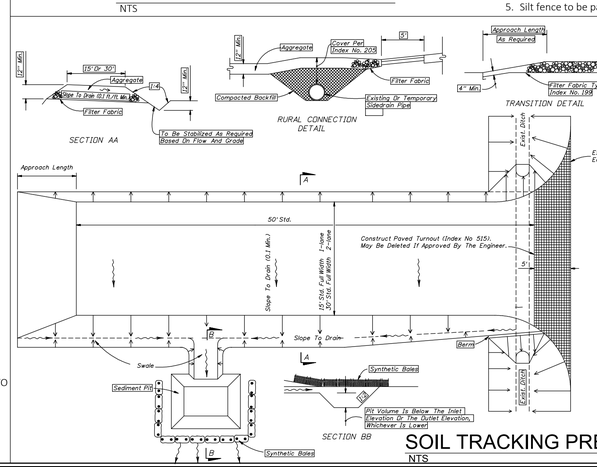


Notes:
1. Type III silt fence to be used at most locations. Where used in ditches, the spacing for type III silt fence shall be in accordance with applicable State requirements.
2. Type IV silt fence to be used where large sediment loads are anticipated. Suggested use is where fill slope is 1:2 or steeper and length of slope exceeds 25 feet. Avoid use where the detained water may back into travel lanes or off the right of way.
3. Do not construct silt fences across permanent flowing watercourses. Silt fences are to be at upland locations and turbidity barriers used at permanent bodies of water.
4. Where used as slope protection, silt fence is to be constructed on 0% longitudinal grade to avoid channelizing runoff along the length of the fence.
5. Silt fence to be paid for under the contract unit price for staked silt fence, (lf).

FDOT SILT FENCE DETAIL

NTS

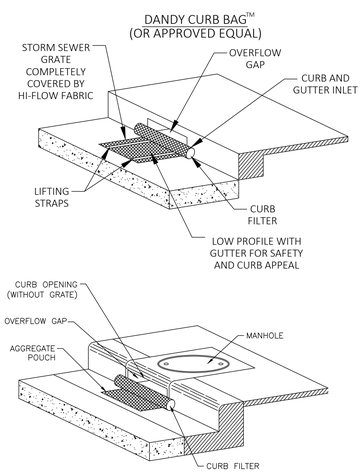




Notes:
1. A soil tracking prevention device (STPD) shall be constructed at locations designated by the engineer for points of egress from unstabilized areas of the project to public roads where off-site tracking of mud could occur. Traffic from unstabilized areas of the construction project shall be directed thru a STPD. Barriers, flagging, or other positive means shall be used as required to limit and direct vehicular egress across the STPD.
2. The contractor may propose an alternative technique to minimize off-site tracking of sediment. The alternative must be reviewed and approved by the engineer prior to its use.
3. All materials spilled, dropped, or tracked onto the public roads (including the STPD aggregate and construction mud) shall be removed daily, or more frequently if so directed by the engineer.
4. Aggregates shall be as described in section 901 excluding 901-2.3. Aggregates shall be FDOT Size #1. If this size is not available, the next available smaller size aggregate may be substituted with the approval of the engineer. Sizes containing excessive small aggregate will track off the project and are unsuitable.
5. The sediment pit should provide a retention volume of 3600 cubic feet/acre of surface area draining to the pit.
   Pit Volumes will Satisfy this Requirement:
   15'x50'=100 FT 30'x50'=200 FT
   As an option to the sediment pit, the width of the swale bottom can be increased to obtain the volume. When the sediment pit or swale volume has been reduced to one half, it shall be cleaned. when a swale is used, synthetic bales or silt fence shall be placed along the entire length.
6. The swale ditch draining the stpd shall have a 0.02% minimum and a 1.0% maximum grade along the STPD and to the sediment pit.
7. Mitered end sections are not required when the side drain pipe satisfies the clear zone requirements.
8. The STPD shall be maintained in a condition that will allow it to perform its function. To prevent off-site tracking, the STPD shall be rinsed (daily when in use) to move accumulated mud downward thru the stone. Additional stabilization of the vehicular route leading to the STPD may be required to limit the mud tracked.
9. A STPD shall be paid for under the contract unit price for soil tracking prevention device, ea. the unit price shall constitute full compensation for construction, maintenance, replacement of materials, removal, and restoration of the area utilized for the STPD; including but not limited to excavation, grading, temporary pipe (including MES when required), filter fabric, aggregate, paved turnout (including asphalt and base construction), ditch stabilization, approach route stabilization, sediment removal and disposal, water rinsing and cleaning of the STPD and cleaning of public roads, grassing and sod. synthetic bale or bale type barrier shall be paid for under the contract unit price for synthetic bales, lf. silt fence shall be paid for under the contract unit price for staked silt fence, fl.
10. The normal size of a standard STPD is 15'x50' unless otherwise shown in the plans. if the volume of entering and existing vehicles warrant, a 30' width STPD may be used if approved by the engineer. When a double width (30') STPD is used, the pay quantity shall be 2 for each location.

SOIL TRACKING PREVENTION DEVICE

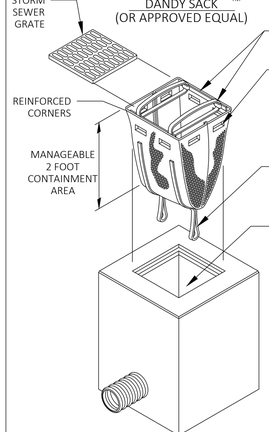
NTS



Mechanical Properties	Test Method	Units	MARV
Grab Tensile Strength	ASTM D 4632	kN (lbs)	1.62 (365) X 0.89 (200)
Grab Tensile Elongation	ASTM D 4632	%	24 X 10
Puncture Strength	ASTM D 4833	kN (lbs)	0.40 (90)
Mullen Burst Strength	ASTM D 3786	kPa (psi)	3097 (450)
Trapezoid Tear Strength	ASTM D 4533	kN (lbs)	0.51 (115) X 0.33 (75)
UV Resistance	ASTM D 4355	%	90
Apparent Opening Size	ASTM D 4751	Mm (US Std Sieve)	0.425 (40)
Flow Rate	ASTM D 4491	1/min/m²(gal/min/ft²)	5907 (145)
Permitivity	ASTM D 4491	Sec⁻¹	2.1

CURB INLET SEDIMENT CONTROL

NTS

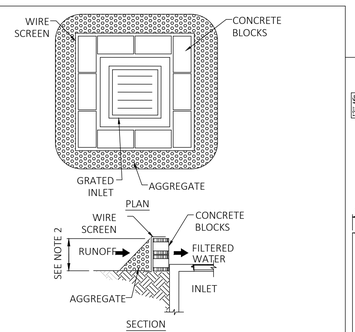


Notes:
1. For temporary use to capture larger diameter sediments. Not to be utilized as the only sediment containment system.
2. Geotextile will be a woven polypropylene fabric that meets or exceeds requirements in the specifications table.
3. An oil adsorbent pad or pillow can be purchased when oil spills are a concern.
4. Inspect per regulatory requirements.

REGULAR FLOW Mechanical Properties	Test Method	Units	MARV
Grab Tensile Strength	ASTM D 4632	kN (lbs)	1.78 (400) x 1.40 (315)
Grab Tensile Elongation	ASTM D 4632	%	15 x 15
Puncture Strength	ASTM D 4833	kN (lbs)	0.67 (150)
Mullen Burst Strength	ASTM D 3786	kPa (psi)	5506 (800)
Trapezoid Tear Strength	ASTM D 4533	kN (lbs)	0.67 (150) x 0.75 (165)
UV Resistance	ASTM D 4355	%	90
Apparent Opening Size	ASTM D 4751	Mm (US Std Sieve)	0.425 (40)
Flow Rate	ASTM D 4491	1/min/m²(gal/min/ft²)	2852 (70)
Permitivity	ASTM D 4491	Sec⁻¹	0.90
HI-FLOW Mechanical Properties	Test Method	Units	MARV
Grab Tensile Strength	ASTM D 4632	kN (lbs)	1.62 (365) X 0.89 (200)
Grab Tensile Elongation	ASTM D 4632	%	24 X 10
Puncture Strength	ASTM D 4833	kN (lbs)	0.40 (90)
Mullen Burst Strength	ASTM D 3786	kPa (psi)	3097 (450)
Trapezoid Tear Strength	ASTM D 4533	kN (lbs)	0.51 (115) X 0.33 (75)
UV Resistance	ASTM D 4355	%	90
Apparent Opening Size	ASTM D 4751	Mm (US Std Sieve)	0.425 (40)
Flow Rate	ASTM D 4491	1/min/m²(gal/min/ft²)	5907 (145)
Permitivity	ASTM D 4491	Sec⁻¹	2.1

INLET INSERT

NTS



1. PLACE CONCRETE BLOCKS IN A SINGLE ROW AROUND PERIMETER OF INLET ON THEIR SIDES, WITH ENDS OF ADJACENT BLOCKS ABUTTING.
2. HEIGHT OF BARRIER VARIES. USE STACKS OF 4-INCH, 8-INCH, OR 12" BLOCKS. MIN. HEIGHT OF BARRIER 12" AND MAX. HEIGHT OF 24"
3. PLACE HARDWARE CLOTH/WIRE MESH W/ MAX. 1/2" OPENINGS OVER VERTICAL FACE OF CONCRETE BLOCKS.
4. THE AGGREGATE SHALL BE ANY NON-ERODIBLE MATERIAL SUCH AS LOOSE ROCK, BROKEN CONCRETE THAT WILL SLOW THE FLOW OF THE WATER AND ALLOW IT TO FILTER THROUGH AND OVER THE MATERIAL BEFORE ENTERING THE INLET.

BLOCK AND AGGREGATE INLET SEDIMENT DEVICE

NTS

REV#	DATE	REVISION

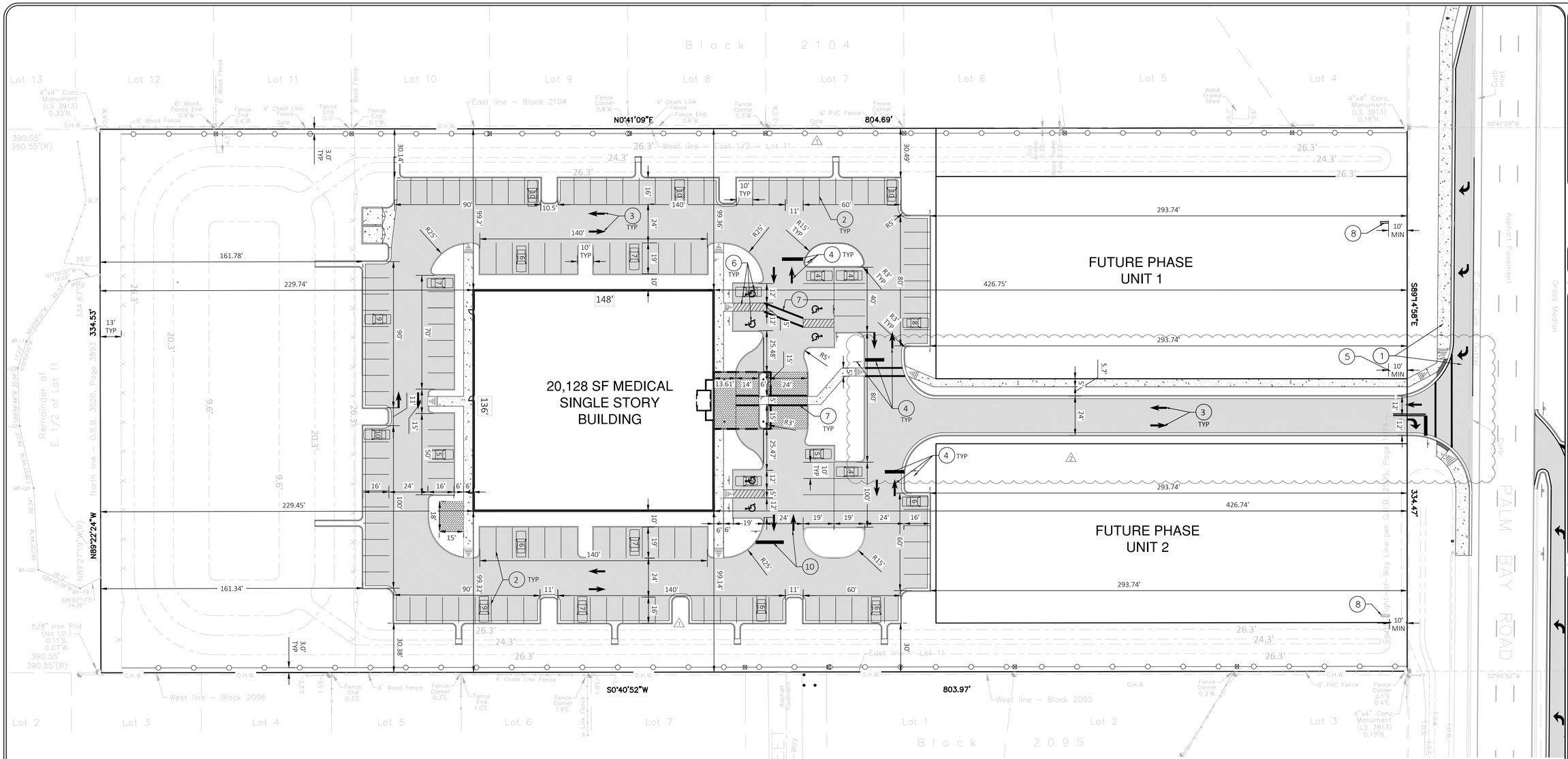
TRAUGER CONSULTING ENGINEERS
2210 Front Street, STE 204 Melbourne, FL 32901
email - jim@traugerconsulting.com direct - (321) 292-0745

EPLER COMMERCIAL PARK
PALM BAY, FL

STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

JAMES R. TRAUGER
FL P.E. #75612

DATE: 10-5-22
SECTION: 19
TOWNSHIP: 28S
RANGE: 37E
SCALE: NTS
DRAWING NO. C-3
PROJECT: 22-126



CIVIL SITE NOTES:

1. SEE SHEET C-4B FOR OFFSITE IMPROVEMENTS.
2. PROVIDE 4" WIDE WHITE PAINTED STRIPE ONSITE PER CITY OF PALM BAY REQUIREMENTS.
3. PROVIDE PAINTED WHITE DIRECTIONAL ARROWS ONSITE PER FDOT INDEX NO. 711-001.
4. PROVIDE WHITE PAINTED 24" STOP BAR PER FDOT INDEX NO. 711-001 AND PROVIDE STOP SIGN PER MUTCD R1-1 AND PALM BAY REQUIREMENTS. SEE TYPICAL DETAILS.
5. ⚠ SITE SIGN LOCATION PERMITTED BY OTHERS. CONTRACTOR SHALL COORDINATE WITH ELECTRICAL DRAWINGS FOR POWER/COMMUNICATIONS CONDUIT SPECIFICATIONS AND LOCATION. MAXIMUM HEIGHT FOR ANY DETACHED SIGN SHALL BE TEN (10) FEET.
6. PROVIDE HANDICAP PARKING SPACE AND STRIPING PER PALM BAY REQUIREMENTS. INCLUDE HANDICAP PARKING SIGNAGE PER PALM BAY REQUIREMENTS. SEE TYPICAL DETAILS.
7. PROVIDE WHITE PAINTED 12" WIDE PARALLEL CROSS WALK STRIPING PER PALM BAY REQUIREMENTS AND FDOT INDEX NO. 711-001.
8. ⚠ FUTURE DEVELOPMENT APPROXIMATE SIGN LOCATIONS. MAXIMUM HEIGHT FOR ANY DETACHED SIGN SHALL BE TEN (10) FEET.

ON-SITE DIMENSION AND STRIPING PLAN

1"=30'

KNOW WHAT'S BELOW ALWAYS CALL 811 BEFORE YOU DIG

It's fast, It's free, it's the law.

Call 811 two business days before digging

30' 0' 30' 60'

REV#	DATE	REVISION
1	11-15-22	PALM BAY COMMENTS
2	1-15-23	PALM BAY, SJRWMD AND BREVARD COUNTY COMMENTS

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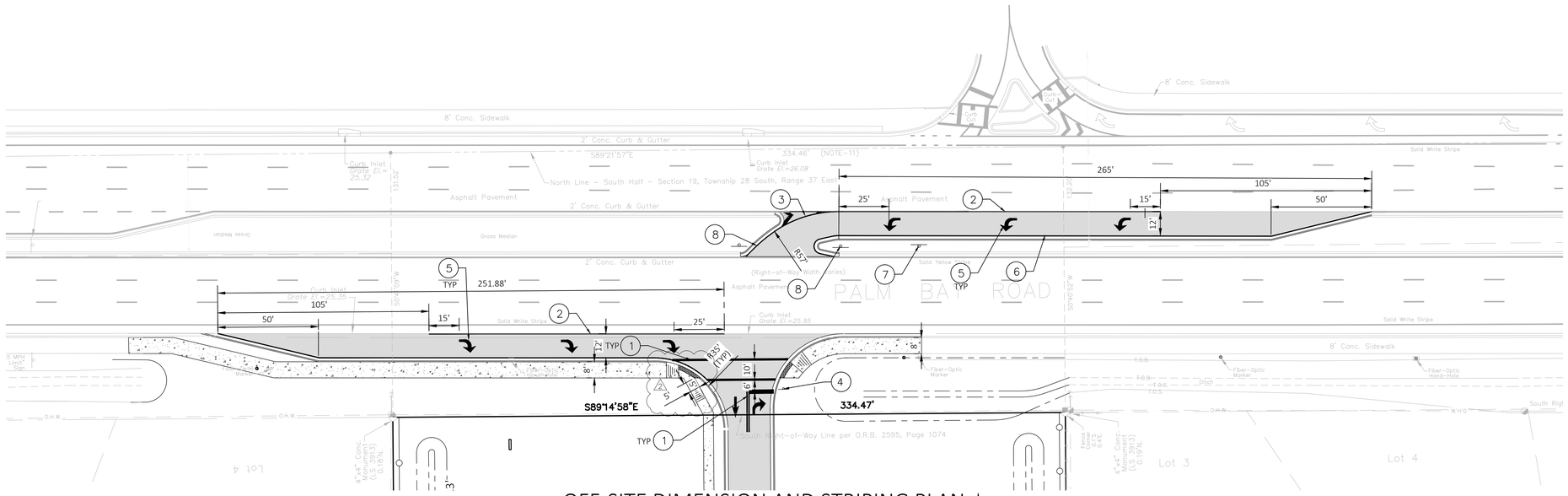
EPLER COMMERCIAL PARK

PALM BAY, FL

ON-SITE DIMENSION AND STRIPING PLAN

JAMES R. TRAUGER
FL P.E. #73612

DATE: 10-5-22
SECTION: 19
TOWNSHIP: 28S
RANGE: 37E
SCALE: 1'=30'
DRAWING NO. C-4A
PROJECT: 22-126



OFF-SITE DIMENSION AND STRIPING PLAN

1"=30'

CIVIL SITE NOTES:

1. PROVIDE THERMOPLASTIC WHITE 24" STOP BAR, THERMOPLASTIC DIRECTIONAL ARROWS, THERMOPLASTIC 6" DOUBLE YELLOW CENTERLINE, THERMOPLASTIC WHITE 12" WIDE PARALLEL CROSS WALK STRIPING, 2' LARGER THAN THE WALKWAY IT IS CONNECTING TO AND 4' SEPARATION FROM THE STOP BAR (MEASURED FROM OUTSIDE OF STRIPE) AS CALLED OUT IN 2022-23 FDOT INDEX NO. 711-001, SHEET 9 OF 13. ENSURE STOP BAR IS PERPENDICULAR TO DRIVE. (2)
2. PROVIDE 6" WIDE WHITE THERMOPLASTIC STRIPE PER FDOT INDEX NO. 711-001.
3. PROVIDE 18" WHITE CHEVRON STRIPING SPACED 10' CENTER TO CENTER PER FDOT INDEX NO. 17346.
4. PROVIDE 36" STOP SIGN PER MUTCD R1-1 AND BREVARD COUNTY REQUIREMENTS. SEE TYPICAL BREVARD COUNTY DETAIL (BREVARD COUNTY EXHIBIT 26). (2)
5. PROVIDE THERMOPLASTIC WHITE DIRECTIONAL ARROWS PER FDOT INDEX NO. 711-001.
6. PROVIDE 6" WIDE YELLOW THERMOPLASTIC STRIPE PER FDOT INDEX NO. 711-001. SEE FDOT INDEX NO. 301. (2)
7. RELOCATED 'ONE-WAY' SIGN.
8. PROVIDE 'ONE WAY' AND ' DO NOT ENTER' SIGN PER MUTCD R6-1R AND MUTCD R5-1.

KNOW WHAT'S BELOW ALWAYS CALL 811 BEFORE YOU DIG

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30' 0' 30' 60'

REV#	DATE	REVISION
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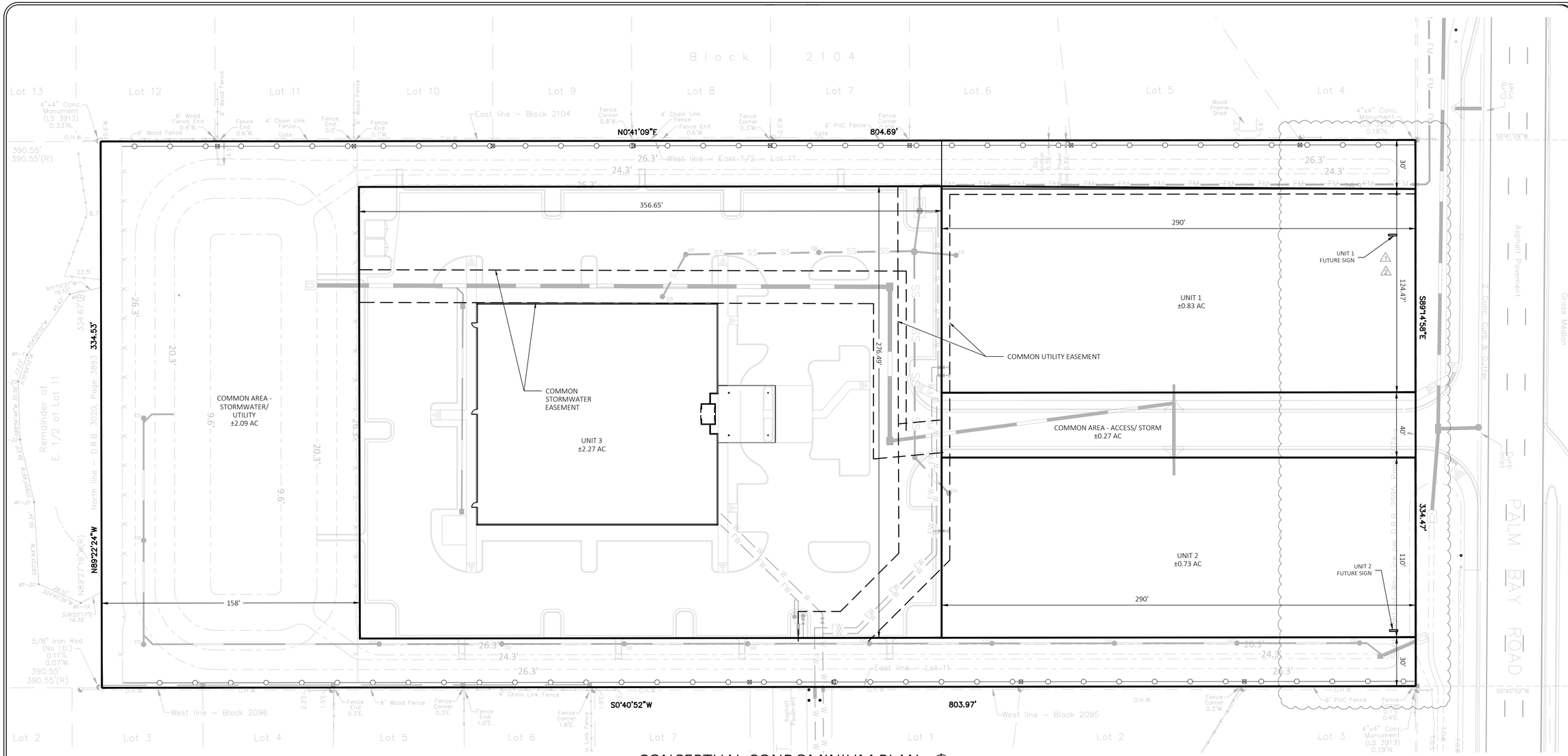
EPLER COMMERCIAL PARK

PALM BAY, FL

OFF-SITE DIMENSION AND STRIPING PLAN

JAMES R. TRAUGER
FL P.E. #75612

DATE: 10-5-22
SECTION: 19
TOWNSHIP: 28S
RANGE: 37E
SCALE: 1'=30'
DRAWING NO. C-4B
PROJECT: 22-126



CONCEPTUAL CONDOMINIUM PLAN

1"=30'

Florida Statute Chapter 718-Condominiums:

718.104 - Creation of condominiums; contents of declaration.—Every condominium created in this state shall be created pursuant to this chapter.
(1) A condominium may be created on land owned in fee simple or held under a lease complying with the provisions of s. 718.401.
(2) A condominium is created by recording a declaration in the public records of the county where the land is located, executed and acknowledged with the requirements for a deed. All persons who have record title to the interest in the land being submitted to condominium ownership, or their lawfully authorized agents, must join in the execution of the declaration. Upon the recording of the declaration, or an amendment adding a phase to the condominium under s. 718.403(6), all units described in the declaration or phase amendment as being located in or on the land then being submitted to condominium ownership shall come into existence, regardless of the state of completion of planned improvements in which the units may be located or any other requirement or description that a declaration may provide. Upon recording the declaration of condominium pursuant to this section, the developer shall file the recording information with the division within 120 calendar days on a form prescribed by the division.
(3) All persons who have any record interest in any mortgage encumbering the interest in the land being submitted to condominium ownership must either join in the execution of the declaration or execute, with the requirements for deed, and record, a consent to the declaration or an agreement subordinating their mortgage interest to the declaration.
(4) The declaration must contain or provide for the following matters:
(a) A statement submitting the property to condominium ownership.
(b) The name by which the condominium property is to be identified, which shall include the word "condominium" or be followed by the words "a condominium."
(c) The legal description of the land and, if a leasehold estate is submitted to condominium, an identification of the lease.
(d) An identification of each unit by letter, name, or number, or combination thereof, so that no unit bears the same designation as any other unit.
(e) A survey of the land which meets the standards of practice established by the Board of Professional Surveyors and Mappers, pursuant to s. 472.027, and a graphic description of the improvements in which units are located and a plot plan thereof that, together with the declaration, are in sufficient detail to identify the common elements and each unit and their relative locations and approximate dimensions. Failure of the survey to meet the standards of practice does not invalidate an otherwise validly created condominium. The survey, graphic description, and plot plan may be in the form of exhibits consisting of building plans, floor plans, maps, surveys, or sketches. If the construction of the condominium is not substantially completed, there shall be a statement to that effect, and, upon substantial completion of construction, the developer or the association shall amend the declaration to include the certificate described below. The amendment may be accomplished by referring to the recording data of a survey of the condominium that complies with the certificate. A certificate of a surveyor and mapper authorized to practice in this state shall be included in or attached to the declaration or the survey or graphic description as recorded under s. 718.105 that the construction of the improvements is substantially complete so that the material, together with the provisions of the declaration describing the condominium property, is an accurate representation of the location and dimensions of the improvements and so that the identification, location, and dimensions of the common elements and of each unit can be determined from these materials. Completed units within each substantially completed building in a condominium development may be conveyed to purchasers, notwithstanding that other buildings in the condominium are not substantially completed, provided that all planned improvements, including, but not limited to, landscaping, utility services and access to the unit, and common-element facilities serving such building, as set forth in the declaration, are first completed and the declaration of condominium is first recorded and provided that as to the units being conveyed there is a certificate of a surveyor and mapper as required above, including certification that all planned improvements, including, but not limited to, landscaping, utility services and access to the unit, and common-element facilities serving the building in which the units to be conveyed are located have been substantially completed, and such certificate is recorded with the original declaration or as an amendment to such declaration. This section does not, however, operate to require development of improvements and amenities declared to be included in future phases pursuant to s. 718.403 before conveying a unit as provided in this paragraph. For the purposes of this section, a "certificate of a surveyor and mapper" means certification by a surveyor and mapper in the form provided in this paragraph and may include, along with certification by a surveyor and mapper, when appropriate, certification by an architect or engineer authorized to practice in this state. Notwithstanding the requirements of substantial completion provided in this section, this paragraph does not prohibit or impair the validity of a mortgage encumbering units together with an undivided interest in the common elements as described in a declaration of condominium recorded before the recording of a certificate of a surveyor and mapper as provided in this paragraph.
(f) The undivided share of ownership of the common elements and common surplus of the condominium that is appurtenant to each unit stated as a percentage or a fraction of the whole. In the declaration of condominium for residential condominiums created after April 1, 1992, the ownership share of the common elements assigned to each residential unit shall be based either upon the total square footage of each residential unit in uniform relationship to the total square footage of each other residential unit in the condominium or on an equal fractional basis.
(g) The percentage or fractional shares of liability for common expenses of the condominium, which, for all residential units, must be the same as the undivided shares of ownership of the common elements and common surplus appurtenant to each unit as provided for in paragraph (f).
(h) If a developer reserves the right, in a declaration recorded on or after July 1, 2000, to create a multicondominium, the declaration must state, or provide a specific formula for determining, the fractional or percentage shares of liability for the common expenses of the association and of ownership of the common surplus of the association to be allocated to the units in each condominium to be operated by the association. If a declaration recorded on or after July 1, 2000, for a condominium operated by a multicondominium association as originally recorded fails to so provide, the share of liability for the common expenses of the association and of ownership of the common surplus of the association allocated to each unit in each condominium operated by the association shall be a fraction of the whole, the numerator of which is the number "one" and the denominator of which is the total number of units in all condominiums operated by the association.

(i) The name of the association, which must be a corporation for profit or a corporation not for profit.
(j) Unit owners' membership and voting rights in the association.
(k) The document or documents creating the association, which may be attached as an exhibit.
(l) A copy of the bylaws, which shall be attached as an exhibit. Defects or omissions in the bylaws shall not affect the validity of the condominium or title to the condominium parcels.
(m) Other desired provisions not inconsistent with this chapter.
(n) The creation of a nonexclusive easement for ingress and egress over streets, walks, and other rights-of-way serving the units of a condominium, as part of the common elements necessary to

provide reasonable access to the public ways, or a dedication of the streets, walks, and other rights-of-way to the public. All easements for ingress and egress shall not be encumbered by any leasehold

or lien other than those on the condominium parcels, unless:
1. Any such lien is subordinate to the rights of unit owners, or
2. The holder of any encumbrance or leasehold of any easement has executed and recorded an agreement that the use-rights of each unit owner will not be terminated as long as the unit owner has not been evicted because of a default under the encumbrance or lease, and the use-rights of any mortgagee of a unit who has acquired title to a unit may not be terminated.
(a) If timeshare estates will or may be created with respect to any unit in the condominium, a statement in conspicuous type declaring that timeshare estates will or may be created with respect to units in the condominium. In addition, the degree, quantity, nature, and extent of the timeshare estates that will or may be created shall be defined and described in detail in the declaration, with a specific statement as to the minimum duration of the recurring periods of rights of use, possession, or occupancy that may be created with respect to any unit.
(5) The declaration as originally recorded or as amended under the procedures provided therein may include covenants and restrictions concerning the use, occupancy, and transfer of the units permitted by law with reference to real property. However, the rule against perpetuities shall not defeat a right given any person or entity by the declaration for the purpose of allowing unit owners to retain reasonable control over the use, occupancy, and transfer of units.
(6) A person who joins in, or consents to the execution of, a declaration subjects his or her interest in the condominium property to the provisions of the declaration.
(7) All provisions of the declaration are enforceable equitable servitudes, run with the land, and are effective until the condominium is terminated.

30' 0' 30' 60'

REV#	DATE	REVISION
1	11-15-22	PALM BAY COMMENTS
2	1-15-23	PALM BAY, SJRWMD AND BREVARD COUNTY COMMENTS

TRAUGER
CONSULTING ENGINEERS
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email - jim@traugerconsulting.com direct - (321) 292-0745

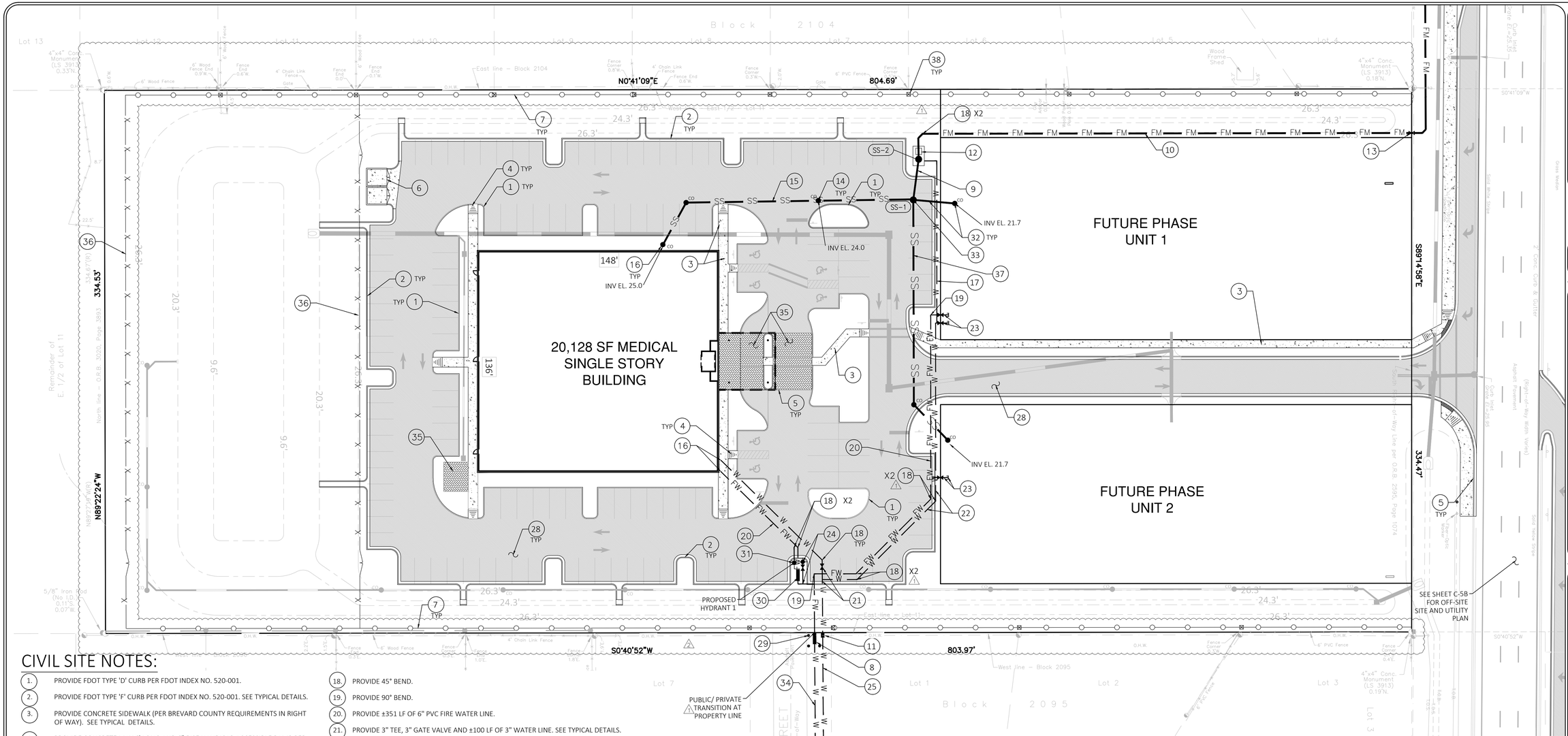
EPLER COMMERCIAL PARK
PALM BAY, FL
CONCEPTUAL
CONDOMINIUM PLAN

JAMES R. TRAUGER
FL P.E. #75412

DATE:	10-5-22
SECTION:	19
TOWNSHIP:	28S
RANGE:	37E
SCALE:	1'=30'

DRAWING NO.
C-4C

PROJECT: 22-126



CIVIL SITE NOTES:

1. PROVIDE FDOT TYPE 'D' CURB PER FDOT INDEX NO. 520-001.
2. PROVIDE FDOT TYPE 'F' CURB PER FDOT INDEX NO. 520-001. SEE TYPICAL DETAILS.
3. PROVIDE CONCRETE SIDEWALK (PER BREVARD COUNTY REQUIREMENTS IN RIGHT OF WAY). SEE TYPICAL DETAILS.
4. PROVIDE CONCRETE MAX 6' LONG AND 6" RISE HANDICAP ACCESSIBLE RAMP PER PALM BAY AND FLORIDA BUILDING CODE REQUIREMENTS. SEE TYPICAL DETAILS.
5. PROVIDE FLUSH RIBBON CURB AT PAVER/ASPHALT TRANSITIONS. SEE TYPICAL DETAILS.
6. PROVIDE DOUBLE DUMPSTER ENCLOSURE PER PALM BAY REQUIREMENTS. SEE TYPICAL DETAIL.
7. PROVIDE 8' TALL PERIMETER WALL OR ALTERNATIVE BUFFER AS APPROVED BY CITY OF PALM BAY GROWTH MANAGEMENT STAFF. STRUCTURAL DRAWINGS BY OTHERS.
8. ⚠1 PROVIDE 6" ABOVE GROUND COMMERCIAL BACKFLOW PREVENTER AT PROPERTY LINE (POINT OF PUBLIC ACCEPTANCE). SEE TYPICAL DETAILS.
9. PROVIDE ±26 LF OF 8" SDR 35 PVC SANITARY SEWER PIPE TO THE PROPOSED LIFT STATION AT MINIMUM 0.4% SLOPE PER PALM BAY REQUIREMENTS. SEE TYPICAL DETAILS.
10. PROVIDE ±320 LF OF 4" FORCEMAIN ON SITE FROM LIFT STATION TO ROW INCLUDING BENDS AS NEEDED. VALVE AT ROW IS PUBLIC ACCEPTANCE POINT.
11. PROVIDE 3" ABOVE GROUND COMMERCIAL BACKFLOW PREVENTER AND METER AT PROPERTY LINE (POINT OF PUBLIC ACCEPTANCE). SEE TYPICAL DETAIL. ⚠1
12. PROVIDE LIFT STATION COMPLETE WITH 3"'X4" INCREASER OUTSIDE OF VALVE VAULT. SEE DETAIL ON SHEET C-5B.
13. PROVIDE PRIVATE ISOLATION VALVE AT PROPERTY LINE (POINT OF PUBLIC ACCEPTANCE). SEE OFF-SITE UTILITY DRAWINGS FOR CONTINUATION.
14. PROVIDE SANITARY CLEANOUT SPACED EVERY 75' ON CENTER MAXIMUM OR AT ALL CHANGES OF DIRECTION. SEE TYPICAL DETAIL. CLEANOUTS IN PAVEMENT OR VEHICULAR ACCESSIBLE AREAS SHALL BE TRAFFIC BEARING.
15. PROVIDE ±170 LF OF 6" PVC SANITARY SEWER LINE AT MINIMUM 1% CONSTANT SLOPE.
16. SEE PLUMBING/ARCHITECTURAL DRAWINGS FOR CONTINUATION.
17. PROVIDE ¾" SERVICE SADDLE AND ±100 LF OF ¾" PVC WATER LINE. SEE TYPICAL DETAILS.
18. PROVIDE 45° BEND.
19. PROVIDE 90° BEND.
20. PROVIDE ±351 LF OF 6" PVC FIRE WATER LINE.
21. PROVIDE 3" TEE, 3" GATE VALVE AND ±100 LF OF 3" WATER LINE. SEE TYPICAL DETAILS.
22. PROVIDE ±307 LF OF 3" PVC WATER LINE.
23. PROVIDE 3"X3" TEE, ±10 LF OF 3" PVC WATER SERVICE LINE WITH BLOW OFF AND VALVE FOR FUTURE USE TIE IN. SEE TYPICAL DETAIL.
24. PROVIDE 6" TEE, ±14 LF 6" PVC FIRE WATER LINE AND PRIVATE FIRE HYDRANT ASSEMBLY. SEE TYPICAL DETAILS.
25. PROVIDE ±135 LF OF 4" SERVICE LINE AND 4'X3" REDUCER PRIOR TO THE METER.
26. PROVIDE 6"x6" CUT-IN TEE CONNECTION AND GATE VALVE. SEE TYPICAL DETAILS.CONTRACTOR SHALL CONFIRM CONNECTION SIZE AND MATERIAL PRIOR TO ORDERING MATERIALS.
27. PROVIDE 6"X4"WET TAP AND VALVE. SEE TYPICAL DETAIL. CONTRACTOR SHALL CONFIRM CONNECTION SIZE AND MATERIAL PRIOR TO ORDERING MATERIALS.
28. PROVIDE ASPHALTIC PAVEMENT PATCH TO EXTENT NECESSARY FOR UTILITY CONNECTION PER CITY OF PALM BAY REQUIREMENTS. SEE TYPICAL DETAIL.
29. PROVIDE CONCRETE FILLED BOLLARDS (3) AROUND BACKFLOW PREVENTER. SEE TYPICAL DETAIL.
30. PROVIDE ±100 LF OF 4" PVC FIRE WATER LINE AND 4" DOUBLE DETECTOR CHECK VALVE. SEE TYPICAL DETAIL.
31. PROVIDE 4" TEE AND FIRE DEPARTMENT CONNECTION ASSEMBLY. SEE TYPICAL DETAILS.
32. PROVIDE ±26 LF OF 6" PVC SANITARY SEWER SERVICE AT A 1% CONSTANT SLOPE AND END WITH CLEANOUT FOR FUTURE CONNECTION. SEE TYPICAL DETAIL.
33. PROVIDE SANITARY SEWER MANHOLE PER COPB REQUIREMENTS. SEE SANITARY SEWER STRUCTURE TABLE FOR ELEVATIONS.
34. PROVIDE ±135 LF OF PUBLIC 6" PVC WATER LINE PER CITY OF PALM BAY REQUIREMENTS.
35. PROVIDE PAVERS PER OWNER SPECIFICATION. SEE TYPICAL DETAIL.
36. PROVIDE 4' TALL COMMERCIAL GRADE COATED CHAIN LINK FENCE WITH DOUBLE LOCKABLE GATES AS SHOWN IN PLAN VIEW. INSTALLATION PER MANUFACTURER.
37. PROVIDE ±160 LF OF 6" PVC SANITARY SEWER LINE AT MINIMUM 1% CONSTANT SLOPE.
38. PROVIDE WEEP HOLE (MINIMUM 6") IN WALL AT ADJACENT PROPERTY CORNERS AT ELEVATION 26.3' ⚠2

SITE AND UTILITY PLAN

1"=30'

SANITARY SEWER STRUCTURE TABLE:

NO.	TYPE	FDOT INDEX NO.	RIM ELEVATION	N INVERT ELEVATION	S INVERT ELEVATION	E INVERT ELEVATION	W INVERT ELEVATION	COMMENTS
SS-1	J-8	232	27.00	21.20	23.30	20.10	20.00	-
SS-2	WETWELL	-	28.00	-	-	19.60	-	SEE LIFT STATION DETAIL

FIRE FLOW CALCULATIONS

CONSTRUCTION TYPE: IIB
COMMERCIAL BUILDING: ±20,128 SF
FIRE FLOW RATE, PER FFPC TABLE 18.4.5.1.2 = 3,000 GPM
SPRINKLER REDUCTION = 3,000 GPM X .25 = 750 GPM
PROPOSED HYDRANT 1 - < 500' =1,000 GPM

30' 0' 30' 60'

KNOW WHAT'S BELOW ALWAYS CALL 811 BEFORE YOU DIG
It's fast, It's free, it's the law.
Call 811 two business days before digging

REV#	DATE	REVISION
1	11-15-22	PALM BAY COMMENTS
2	1-15-23	PALM BAY, SJRWMD AND BREVARD COUNTY COMMENTS

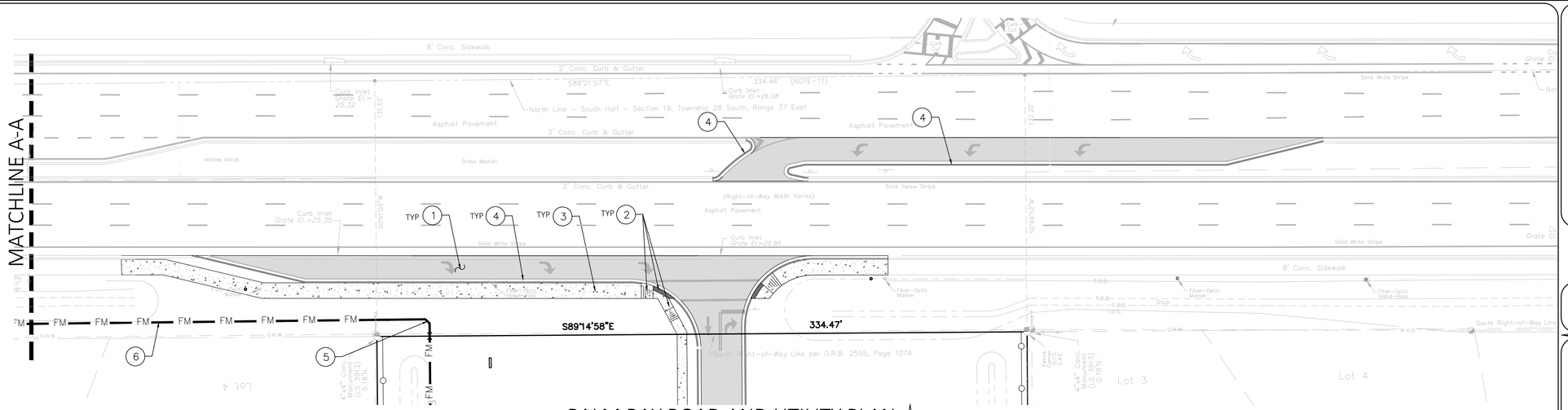
TRAUGER
CONSULTING ENGINEERS
2210 Front Street, STE 204 Melbourne, FL 32901
email - jim@traugerconsulting.com direct - (321) 292-0745

EPLER COMMERCIAL PARK
PALM BAY, FL

SITE & UTILITY PLAN

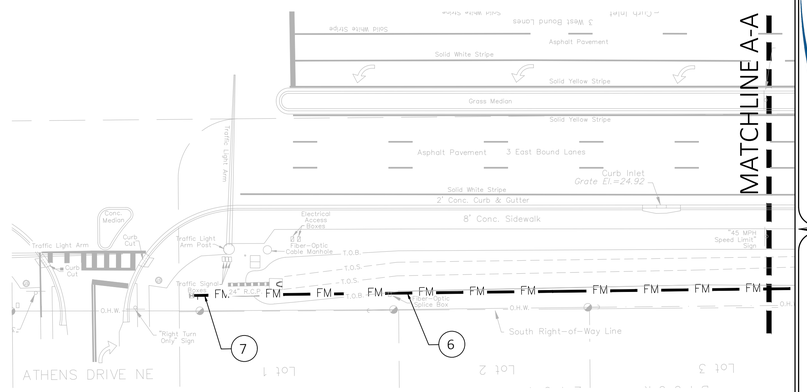
JAMES R. TRAUGER
FL P.E. #75612

DATE: 10-5-22
SECTION: 19
TOWNSHIP: 28S
RANGE: 37E
SCALE: 1"=30'
DRAWING NO. C-5A
PROJECT: 22-126



PALM BAY ROAD AND UTILITY PLAN

1"=30'



OFF-SITE UTILITY PLAN

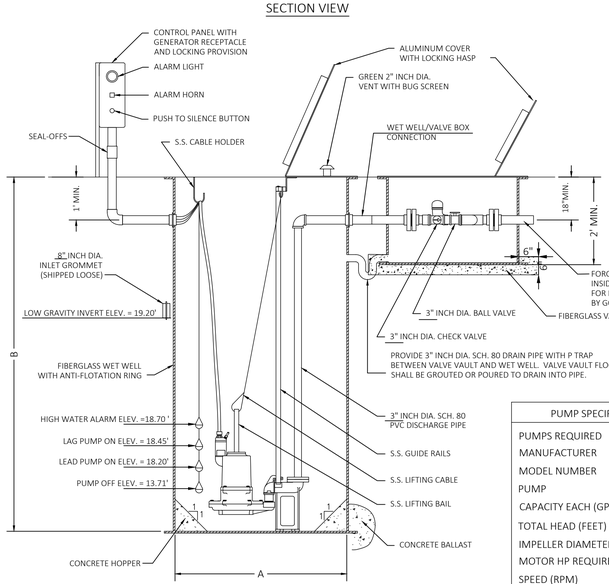
1"=30'

CIVIL SITE NOTES:

1. PROVIDE ROW ASPHALTIC PAVEMENT PER BREVARD COUNTY REQUIREMENTS. SEE TYPICAL DETAIL.
2. PROVIDE CONCRETE MAX 6' LONG AND 6" RISE HANDICAP ACCESSIBLE RAMP PER BREVARD COUNTY AND FLORIDA BUILDING CODE REQUIREMENTS. SEE TYPICAL DETAILS. NOTE THAT TRUNCATED DOMES/DETECTABLE WARNINGS IN THE COUNTY RIGHT-OF-WAY SHALL BE EMBEDDED PER B.C.L.D. EXHIBIT 15. "BOLT DOWN" TRUNCATED DOMES/DETECTABLE WARNINGS ARE NOT ALLOWED. (2)
3. PROVIDE RAISED CONCRETE SIDEWALK PER BREVARD COUNTY REQUIREMENTS. SEE TYPICAL DETAIL.
4. PROVIDE FDOT TYPE 'F' CURB & GUTTER PER FDOT INDEX 520-001.
5. PROVIDE 45° BEND.
6. PROVIDE ±455 LF OF 4" PVC PUBLIC FORCEMAIN AND BENDS AS NECESSARY PER BREVARD COUNTY AND CITY OF PALM BAY REQUIREMENTS. CARE IS TO BE TAKEN TO AVOID EXISTING UTILITIES. RIGHT OF WAY TO BE RESTORED WITH LIKE SOD ON OCCUPIED LOTS.
7. PROVIDE FORCEMAIN CONNECTION TO EXISTING STUB OUT WITH A TEE LEADING TO A PLUG VALVE AND CAP. SEE TYPICAL DETAILS. CONTRACTOR SHALL CONFIRM CONNECTION SIZE AND MATERIAL PRIOR TO ORDERING MATERIALS. (1)

BREVARD COUNTY PERMIT AND PRECONSTRUCTION MEETING IS REQUIRED PRIOR TO WORK IN PALM BAY ROAD.

ALL UTILITIES IN ROW SHALL HAVE A MINIMUM OF 32" OF COVER BELOW ALL SWALE CROSSINGS. (2)



FIBERGLASS LIFT STATION WETWELL AND VALVE BOX LAYOUT

NTS

FIBERGLASS WETWELL NOTES:

1. MATERIALS
1.1 RESIN - THE RESINS USED SHALL BE A COMMERCIAL GRADE UNSATURATED POLYESTER RESIN.
1.2 REINFORCING MATERIALS - THE REINFORCING MATERIALS SHALL BE COMMERCIAL GRADE "E" TYPE GLASS IN THE FORM OF MAT, CHOPPED ROVING OR ROVING FABRIC, HAVING A COUPLING AGENT THAT WILL PROVIDE A SUITABLE BOND BETWEEN THE GLASS REINFORCEMENT AND THE RESIN.

1.3 FILLERS AND ADDITIVES - FILLERS OF ANY TYPE SHALL NOT BE UTILIZED. ADDITIVES, SUCH AS THIXOTROPIC AGENTS, CATALYSTS, PROMOTERS, ETC., MAY BE ADDED AS REQUIRED BY THE SPECIFIC MANUFACTURING PROCESS TO BE USED TO MEET THE REQUIREMENTS OF THIS SPECIFICATION. THE RESULTING REINFORCED-PLASTIC MATERIAL MUST MEET THE REQUIREMENT OF THIS SPECIFICATION.

2. REQUIREMENTS
2.1 WORKMANSHIP
2.1.1 EXTERIOR SURFACE - THE EXTERIOR SURFACE SHALL BE RELATIVELY SMOOTH WITH NO SHARP PROJECTIONS. HAND-WORK FINISH SHALL BE UTILIZED TO ENSURE THAT ENOUGH RESIN IS PRESENT TO ELIMINATE EXPOSED FIBERS. THE EXTERIOR SURFACE SHALL BE FREE OF DELAMINATION, EXPOSED FIBERS AND BLISTERS LARGER THAN 0.5 IN. IN DIAMETER.

2.1.2 INTERIOR SURFACE - THE INTERIOR SURFACE SHALL BE RESIN RICH WITH NO EXPOSED FIBERS. THE SURFACE SHALL BE FREE OF CRAZING, DELAMINATION, BLISTERS LARGER THAN 0.5 IN. IN DIAMETER, AND WRINKLES OF 0.125 IN. OR GREATER IN DEPTH.

2.2 WALL STIFFNESS - THE BASIN/WETWELL SHALL HAVE A PIPE STIFFNESS AS SHOWN BELOW (PER 1984 ASTM STANDARD NO. D3753, TABLE 1):

BASIN/WETWELL DEPTH (IN. FT.)	PIPE STIFFNESS
3-6	.72
6.5-12	1.26
12.5-20	2.01

2.3 MATERIAL PROPERTIES - THE FOLLOWING PROPERTIES SHALL BE ESTABLISHED FOR EACH TYPE OF CONSTRUCTION USED IN THE BASIN/WETWELL.
2.3.1 MATERIAL COMPOSITION - THE WALL AND BOTTOM LAMINATES SHALL HAVE A GLASS CONTENT OF 30% ±5% GLASS CONTENT (BY WEIGHT AND RESIN CONTENT OF 70% ±5%.

2.3.2 FLEXURAL MODULUS - THE FLEXURAL MODULUS OF THE BASIN/WETWELL WALL IN THE HOOP AND AXIAL DIRECTION SHALL BE A MINIMUM OF 800,000 PSI.

2.3.3 HARDNESS - THE MINIMUM BARCOL HARDNESS SHALL NOT BE LESS THAN 90% OF THE RESIN MANUFACTURERS MINIMUM VALUE FOR THE CURED RESIN.

2.3.4 THICKNESS - THE BASIN/WETWELL WALL THICKNESS SHALL BE ADEQUATE TO MAINTAIN STRUCTURAL INTEGRITY SHEN INSTALLED IN THE FOLLOWING CONDITIONS:

1) SOIL MODULUS OF 700 PSI.
2) SOIL DENSITY OF 120 LBS. PER CU. FT.
3) LUSCHER'S SAFETY FACTOR OF 2.

3. PACKAGING AND MARKING
3.1 INSTALLATION INSTRUCTIONS SHALL BE FURNISHED WITH EACH BASIN/WETWELL.

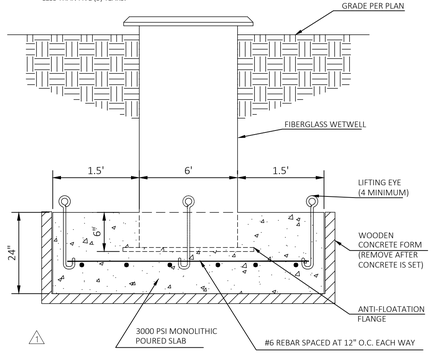
4. WORKMANSHIP AND EXPERIENCE
4.1 ALL WORKMANSHIP AND MATERIALS THROUGHOUT SHALL BE OF THE HIGHEST QUALITY. THE BASIN(S)/WETWELL(S) SHALL BE THE PRODUCT OF A SUPPLIER WHO HAS BEEN ACTIVELY ENGAGED IN RESEARCH, DEVELOPMENT AND HAS SUPPLIED PROVEN FIELD INSTALLATIONS OF FIBERGLASS BASINS/WETWELLS FOR NOT LESS THAN FIVE (5) YEARS.

5. PRE-BID QUALIFICATIONS
5.1 THESE SPECIFICATIONS DESCRIBE FRP BASIN(S)/WETWELL(S) AS SUPPLIED BY STEELE PLASTICS. INC., CONWAY, ARKANSAS. FRP BASIN(S)/WETWELL(S) OF OTHER SUPPLIERS OF EQUAL DESIGN AND MATERIALS MAY BE OFFERED. TO RECEIVE CONSIDERATION ON ANY ALTERNATE, THE FOLLOWING MUST BE SUBMITTED TO THE ENGINEER AT LEAST FOURTEEN (14) DAYS BEFORE THE SCHEDULED LETTING TO ALLOW SUFFICIENT TIME FOR ISSUANCE OF ADDENDA:

5.1.1 COMPLETE DRAWINGS
5.1.2 COMPLETE SPECIFICATIONS SHEETS:
5.1.3.1 POLYESTER RESIN (RESIN MANUFACTURER'S LITERATURE)
5.1.3.2 REINFORCEMENT MATERIAL (GLASS MANUFACTURER'S LITERATURE)
5.1.4 SAMPLE LAMINATE TEST RESULTS SHOWING PIPE STIFFNESS, FLEXURAL STRENGTH AND MODULUS, DESIGN SOIL MODULUS, DESIGN SOIL DENSITY, SAFETY FACTOR USED, AND ACTUAL PROPOSED WALL THICKNESS FOR THE PARTICULAR DIAMETER AND DEPTH OF ALL INDIVIDUAL BASIN(S)/WETWELL(S) IN THIS CONTRACT.
5.1.5 COMPLETE INSTALLATION INSTRUCTIONS FOR THE BASIN(S)/WETWELL(S) IN THIS CONTRACT.

PUMP SPECIFICATIONS	
PUMPS REQUIRED	2
MANUFACTURER	SULZER
MODEL NUMBER	XFP–80E CB1
PUMP	IMPELLER (1 VANE)
CAPACITY EACH (GPM)	100
TOTAL HEAD (FEET)	121
IMPELLER DIAMETER	160 MM
MOTOR HP REQUIRED	16.8
SPEED (RPM)	3600
ELECTRICAL	230/ 460 V, 3 PH
TOP ELEVATION	28.00
TANK	
A = 6' DIAMETER	
B = 12.8' HEIGHT	
C = MANUF. RECOMMENDATION	

(1)



FIBERGLASS LIFT STATION INSTALATION DETAIL

NTS

REV#	DATE	REVISION
1	11-15-22	PALM BAY COMMENTS
2	1-15-23	PALM BAY, SJRWMD AND BREVARD COUNTY COMMENTS

TRAUGER
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EPLER COMMERCIAL PARK
PALM BAY, FL

PALM BAY ROAD SITE AND UTILITY PLAN

JAMES R. TRAUGER
FL P.E. #75612

KNOW WHAT'S BELOW ALWAYS CALL 811 BEFORE YOU DIG
It's fast, It's free, it's the law.
Call 811 two business days before digging

30' 0' 30' 60'

DATE: 10-5-22
SECTION: 19
TOWNSHIP: 28S
RANGE: 37E
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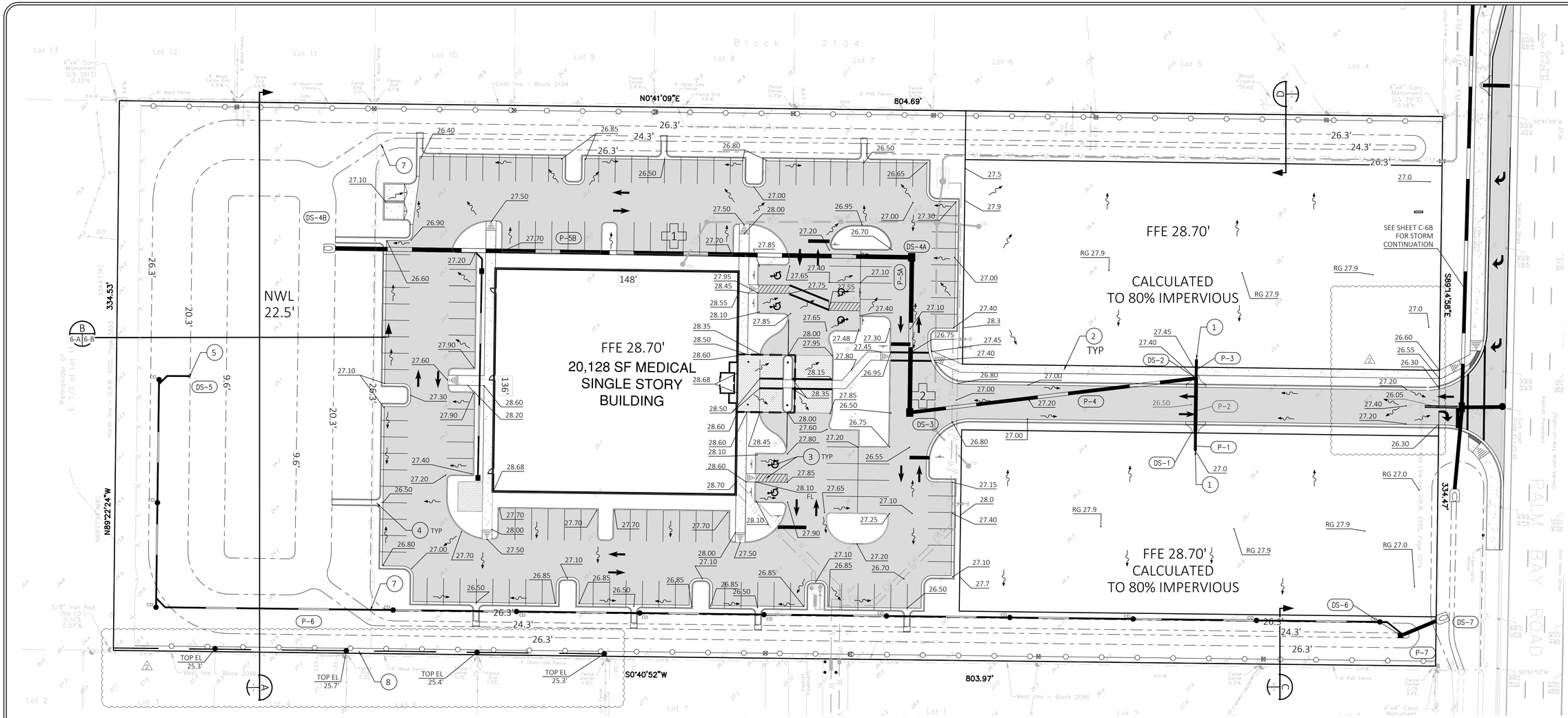
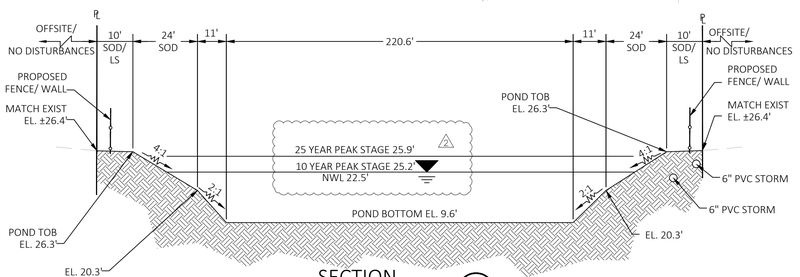
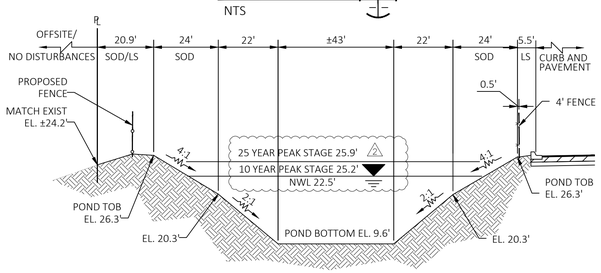
DRAWING NO. C-5B
PROJECT: 22-126



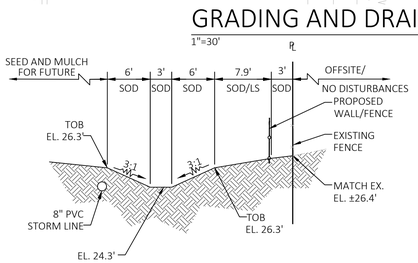


SECTION A
NTS

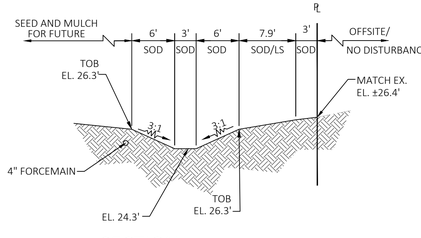


SECTION B
NTS

GRADING AND DRAINAGE PLAN
1"=30'



SECTION C
NTS



SECTION D
NTS

DRAINAGE STRUCTURE TABLE:

NO.	TYPE	FDOT INDEX NO.	RIM ELEVATION	N INVERT ELEVATION	S INVERT ELEVATION	E INVERT ELEVATION	W INVERT ELEVATION	COMMENTS
DS-1	4	210	26.30	-	-	20.50	20.50	RIM EL. IS @ EDGE OF PAVEMENT
DS-2	4	210	26.30	-	20.30	20.30	-	RIM EL. IS @ EDGE OF PAVEMENT
DS-3	F	233	26.40	19.45	-	-	19.45	-
DS-4A	F	233	26.40	18.70	18.70	-	-	-
DS-4B	MES	201	-	17.30	-	-	-	-
DS-5	TEE	-	-	22.50	-	-	-	REMOTE ORIFICE; SEE DETAIL
DS-6	F	233	25.80	22.30	-	-	22.30	OUTFALL STRUCTURE
DS-7	MES	201	- (2)	-	22.20	-	-	-

STORM DRAIN STRUCTURE NOTES:

1. ALL STRUCTURES SHALL BE MINIMUM 6" DEEPER THAN LOWEST PIPE INVERT.
2. ALL GRATES SHALL BE GALVANIZED STEEL WITH H-20 LOADING.

CIVIL PAVING AND GRADING NOTES:

1. PROVIDE CAP AT PIPE TERMINATION POINT FOR FUTURE TIE IN.
2. CROSS SECTIONAL SLOPE OF CROSS WALKS/ SIDEWALKS SHALL NOT EXCEED 2% AT ANY POINT. LONGITUDINAL SLOPE OF CROSSWALK/ SIDEWALKS SHALL NOT EXCEED 5% SLOPE PER FLORIDA ACCESSIBILITY CODE, CITY OF PALM BAY AND BREVARD COUNTY REQUIREMENTS. ENSURE 2' FLAT RECOVERY AREA IN GREEN SPACE ADJACENT TO SIDEWALK. SEE TYPICAL DETAIL.
3. SLOPE OF HANDICAP PARKING SPACE AND ACCESS PATH SHALL NOT EXCEED 2% SLOPE IN ANY DIRECTION PER FLORIDA ACCESSIBILITY CODE AND CITY OF PALM BAY REQUIREMENTS.
4. PROVIDE FLUME. SEE TYPICAL DETAILS.
5. PROVIDE REMOTE ORIFICE; SEE DETAIL.
6. PROVIDE OVERFLOW STRUCTURE; SEE DETAIL.
7. PROVIDE STAKED SOD OR OTHER APPROVED STABILIZATION METHOD AT THE SWALE CONNECTION TO THE WET POND.
8. PROVIDE 300 LF OF 6" SOCK DRAIN, 8" YARD DRAIN/ BASIN & TEE AT PROPERTY CORNERS AS SHOWN IN PLAN VIEW. PIPE TERMINATION SHALL BE ON SITE.

DRAINAGE PIPE TABLE:

PIPE NO.	SIZE	LENGTH	UPSTREAM STRUCTURE	DOWNSTREAM STRUCTURE	COMMENTS
P-1	18"	14'	DS-1	-	-
P-2	24"	29'	DS-1	DS-2	-
P-3	18"	24'	DS-2	-	-
P-4	24"	176'	DS-3	DS-2	-
P-5A	30"	152'	DS-3	DS-4A	-
P-5B	30"	269'	DS-4A	DS-4B	-
P-6	6"	942'	DS-6	DS-5	-
P-7	24"	35'	DS-7	DS-6	RCP (2)

DRAINAGE PIPE NOTES:

1. ADS N-12 PIPING IS AN ACCEPTABLE ALTERNATIVE TO RCP PIPING ON-SITE WITH WATERTIGHT JOINTS AND A MINIMUM 2' OF COVER PROVIDED.

30' 0' 30' 60'

REV#	DATE	REVISION
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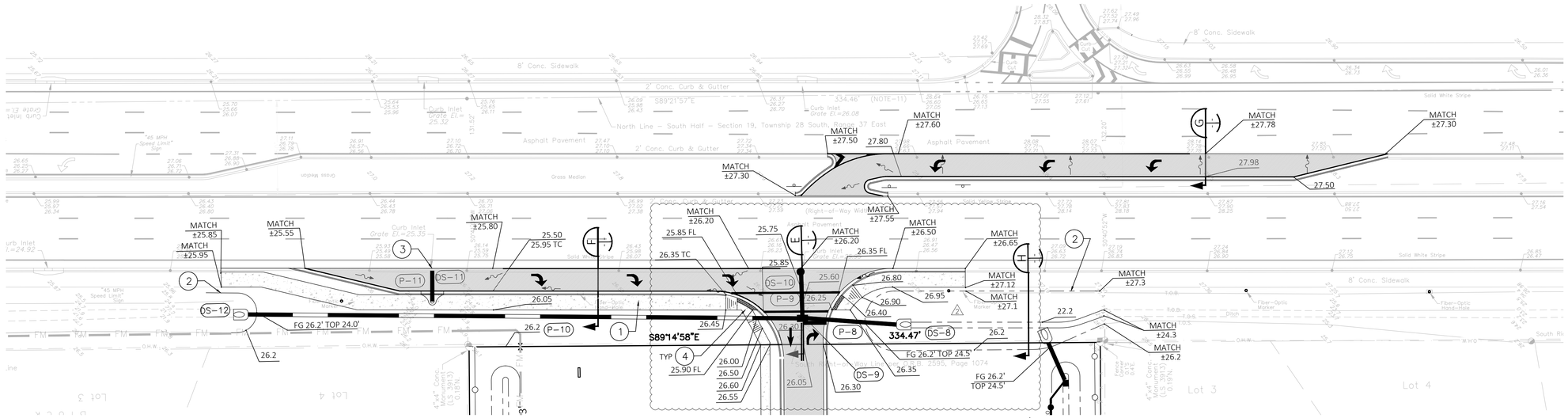
EPLER COMMERCIAL PARK
PALM BAY, FL

GRADING AND DRAINAGE PLAN

JAMES R. TRAUGER
FL P.E. #75612

DATE: 10-5-22
SECTION: 19
TOWNSHIP: 28S
RANGE: 37E
SCALE: 1"=30'
DRAWING NO. C-6A
PROJECT: 22-126



OFFSITE GRADING AND DRAINAGE PLAN

1"=30'

CIVIL SITE NOTES:

1. PROVIDE RAISED CONCRETE SIDEWALK PER BREVARD COUNTY REQUIREMENTS. SEE TYPICAL DETAIL.
2. RE-GRADE SWALE WITH CONSTANT SLOPE BETWEEN INVERTS AND SPOT ELEVATIONS SHOWN. SOD ALL DISTURBED AREAS.
3. CONNECT TO EXISTING PIPE WITH WATERTIGHT SEAL. CONTRACTOR TO VERIFY SIZE AND MATERIAL OF EXISTING PIPE PRIOR TO ORDERING MATERIALS.
4. WHERE SIDEWALKS TURN OR INTERSECT ALL SLOPES ARE CONSIDERED CROSS-SLOPES AND SHALL NOT EXCEED 2%. LANDINGS AND CHANGES IN DIRECTION SHALL BE LEVEL WITH MAXIMUM SLOPE OF 2% IN ALL DIRECTIONS AND SHALL BE 60-INCH BY 60-INCHES MINIMUM FOR MANEUVERABILITY AND RAMPS SHALL HAVE LANDINGS AT THE TOP AND BOTTOM OF EACH RAMP RUN, PER 2020 FLORIDA BUILDING CODE - ACCESSIBILITY, SECTION 405.7.

DRAINAGE STRUCTURE TABLE:

NO.	TYPE	FDOT INDEX NO.	RIM ELEVATION	N INVERT ELEVATION	S INVERT ELEVATION	E INVERT ELEVATION	W INVERT ELEVATION	COMMENTS
DS-8	MES	201	-	-	-	-	22.10	-
DS-9	F	233	25.50	22.00	-	22.00	22.00	-
DS-10	J-8 MH	201	26.60	20.00	20.00	-	-	-
DS-11	4	210	25.20	20.00	-	-	-	-
DS-12	MES	201	-	-	-	21.70	-	-

STORM DRAIN STRUCTURE NOTES:

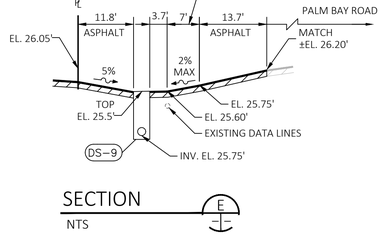
1. ALL STRUCTURES SHALL BE MINIMUM 6" DEEPER THAN LOWEST PIPE INVERT.
2. ALL GRATES SHALL BE GALVANIZED STEEL WITH H-20 LOADING.

DRAINAGE PIPE TABLE:

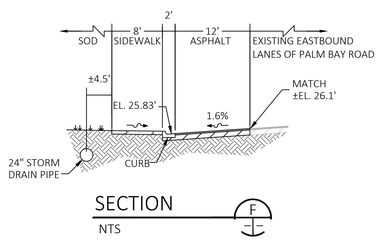
PIPE NO.	SIZE	LENGTH	UPSTREAM STRUCTURE	DOWNSTREAM STRUCTURE	COMMENTS
P-8	24"	52'	DS-9	DS-8	RCP
P-9	24"	23'	DS-10	DS-9	RCP
P-10	24"	340'	DS-9	DS-11	RCP
P-11	24"	13'	DS-12	EXISTING	RCP

DRAINAGE PIPE NOTES:

1. ENSURE THE MINIMUM PIPE COVER (OUTFALL PIPE AND CULVERT) IS 1.0-FOOT FROM FINISHED GRADE TO OUTSIDE CROWN OF PIPE PER BREVARD COUNTY STORMWATER CRITERIA, SECTION 62-3751, EXHIBIT A, 4.6. FOR ALL PIPE IN BREVARD COUNTY RIGHT OF WAY (PALM BAY ROAD)



SECTION E
NTS



SECTION F
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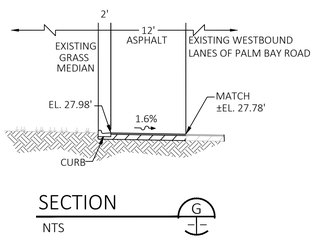

SECTION G
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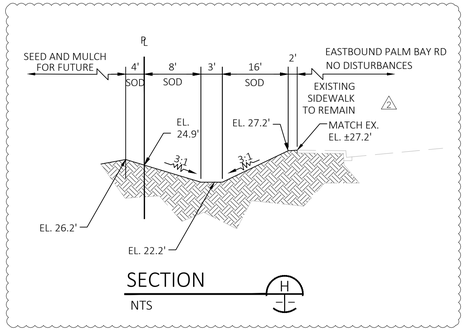

SECTION H
NTS

ELEVATIONS/ BENCHMARKS ARE IN NAVD88 DATUM

KNOW WHAT'S BELOW ALWAYS CALL 811 BEFORE YOU DIG

It's fast, It's free, it's the law.

Call 811 two business days before digging

30' 0' 30' 30'

REV#	DATE	REVISION
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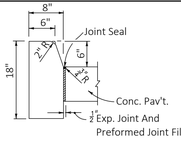
EPLER COMMERCIAL PARK
PALM BAY, FL

OFFSITE GRADING AND DRAINAGE PLAN

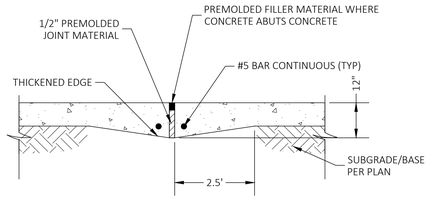
JAMES R. TRAUGER
FL P.E. #75612

DATE: 10-5-22
SECTION: 19
TOWNSHIP: 28S
RANGE: 37E
SCALE: 1"=30'
DRAWING NO. C-6B
PROJECT: 22-126

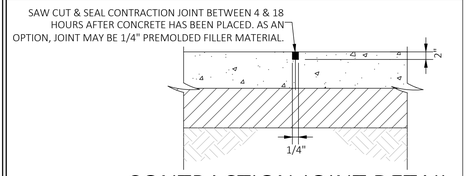


Notes:
1. For use adjacent to concrete or flexible pavement, concrete shown. Expansion joint, preformed joint filler and joint seal are required between curbs and concrete pavement only.
2. FDOT details are provided for reference info only. See most current corresponding index number in latest edition of the roadway and traffic design standards manual for complete detail information and specifications.

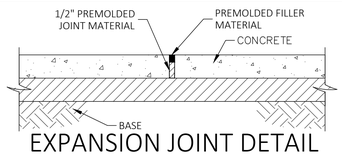
FDOT TYPE 'D' CURB DETAIL
NTS



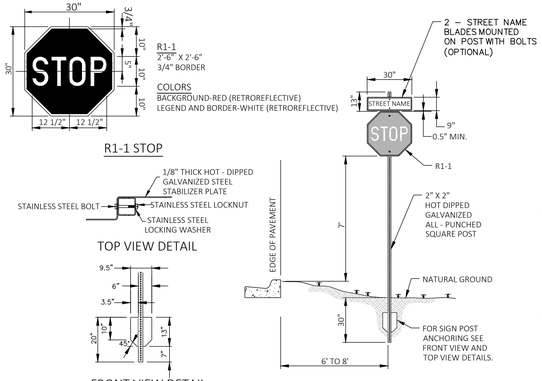
EXPANSION JOINT WITH THICKENED EDGE DETAIL
NTS



CONTRACTION JOINT DETAIL
NTS



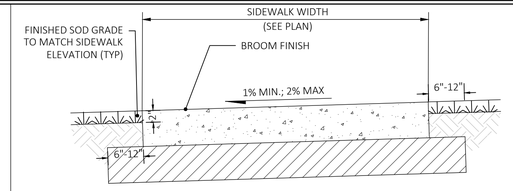
EXPANSION JOINT DETAIL
NTS



TRAFFIC SIGN SPECIFICATION SHEET

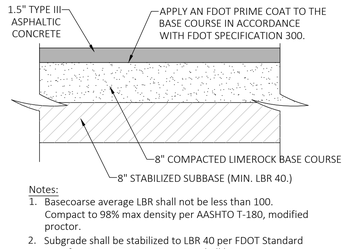
1. Sign reflective specification: 3M High Intensity or equivalent.
2. Mounting Specifications: Shall be mounted on 2" square all-punched galvanized post of the appropriate length. (minimum 12').
3. Mounting Hardware: Cherry-Mate Aluminum Rivets #BALM8BP34 shall be used to attache street name sign blanks to post. two sets of rivets per sign blank. Street sign blanks shall be riveted together at each end by using a 3/16" small flange AVEX rivet. all other signs shall be attached to post using 5/16" X 2 1/2" stainless steel bolts with 5/16" stainless steel locknuts.
4. Galvanized Anchor Plate: A formed anchor plate (see detail) shall be mounted on post by using 5/16" X 2 1/2" stainless bolt, washer and 5/16" lock nut. Top of plate shall be mounted approximately 20" from the bottom of post.
5. Note: When erecting stop sign and street name signs on the same post a 14' post post is required.
6. Maximum lateral distance measured from the near edge of the road pavement to sign post shall be 8', and the minimum lateral distance shall be 6'.
7. Height Requirements: Sign Erections shall be such that the bottom of the sign is 7' above road surface.
8. Exception: (Combined Mounting) where two or more signs are mounted on sign post, the clearance may be reduced to 6'. Example: Stop sign and street name combination.
9. 24" stop signs shall only be used within a subdivision area. Streets existing subdivision or major thoroughfares stop signs shall be 30".
10. All sign installations shall be approved by City of Palm Bay Engineering Inspectors.

SIGN INSTALLATION DETAIL
NTS (ON–SITE)



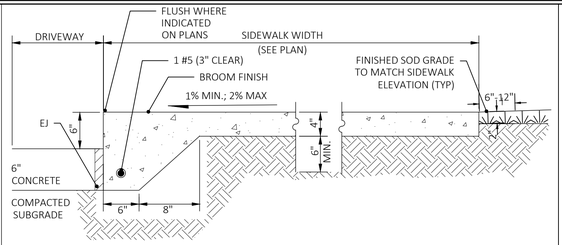
Notes:
1. Concrete sidewalk shall be min. 6" thick in Right of Way (4" thick on-site outside of driveway crossings), 3000 psi (minimum) FDOT Class I fiber-reinforced concrete having a light broom finish and cured with FDOT 925-2 curing compound applied at a rate of 1 gal/200 sf.
2. Construct sidewalk on 6" thick Type B stabilization compacted to a min. of 95% of max. density in accordance with AASHTO T-180. The subgrade shall project a min. of 6" outside the edge of the sidewalk on both sides.
3. Provide expansion joints at connection points of other impervious surfaces and locations including but not limited to at the P.C. and P.T. curves, junctions with existing and new sidewalks, and where new sidewalks abuts curbs, driveways, pavement, etc. Expansion joints shall be located on 25 foot centers.
4. Provide contraction joints at locations per FDOT Index No. 310 for entire length of sidewalk. Construct joints per this index and FDOT requirements .
5. Construct buffers at front and back of sidewalk two feet wide with maximum slope of ¾" per foot.
6. The finished grade of the soil adjacent to the sidewalk shall be held below the top of the sidewalk to allow proper drainage after installation of the sod.
7. Proposed sidewalk in FDOT right-of-way shall match existing FDOT sidewalk width, joint spacing, subgrade depth, and surface finish. Provide per FDOT Index No. 310 or most current corresponding index number in latest edition of the roadway and traffic design standards manual for complete detail information and specifications. Include expansion joint where new sidewalk abuts existing sidewalk.

SIDEWALK DETAIL
NTS (ON–SITE)



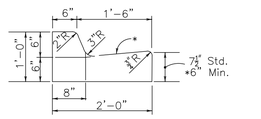
Notes:
1. Basecoarse average LBR shall not be less than 100. Compact to 98% max density per AASHTO T-180, modified proctor.
2. Subgrade shall be stabilized to LBR 40 per FDOT Standard Specifications 160-2. Compaction shall be same as Base Course.
3. Contractor shall contact geotechnical engineer to complete soils investigation prior to construction and obtain their pavement design recommendations.

PARKING LOT AND DRIVEWAY PAVEMENT SECTION
NTS



Notes:
1. Concrete sidewalk shall be min. 6" thick in Right of Way (4" thick on-site outside of driveway crossings), 3000 psi (minimum) FDOT Class I fiber-reinforced concrete having a light broom finish and cured with FDOT 925-2 curing compound applied at a rate of 1 gal/200 sf.
2. Construct sidewalk on 6" thick Type B stabilization compacted to a min. of 95% of max. density in accordance with AASHTO T-180. The subgrade shall project a min. of 6" outside the edge of the sidewalk on both sides.
3. Provide expansion joints at connection points of other impervious surfaces and locations including but not limited to at the P.C. and P.T. curves, junctions with existing and new sidewalks, and where new sidewalks abuts curbs, driveways, pavement, etc. Expansion joints shall be located on 25 foot centers.
4. Provide contraction joints at locations per FDOT Index No. 310 for entire length of sidewalk. Construct joints per this index and FDOT requirements .
5. Construct buffers at front and back of sidewalk two feet wide with maximum slope of ¾" per foot.
6. The finished grade of the soil adjacent to the sidewalk shall be held below the top of the sidewalk to allow proper drainage after installation of the sod.
7. Proposed sidewalk in FDOT right-of-way shall match existing FDOT sidewalk width, joint spacing, subgrade depth, and surface finish. Provide per FDOT Index No. 310 or most current corresponding index number in latest edition of the roadway and traffic design standards manual for complete detail information and specifications. Include expansion joint where new sidewalk abuts existing sidewalk.

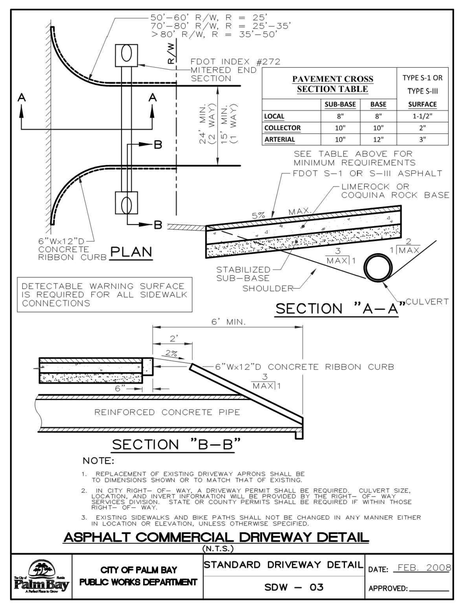
RAISED SIDEWALK DETAIL
NTS



* WHEN USED ON HIGH SIDE OF ROADWAYS, THE CROSS SLOPE OF THE GUTTER SHALL MATCH THE CROSS SLOPE OF THE ADJACENT PAVEMENT. THE THICKNESS OF THE LIP SHALL BE 6", UNLESS OTHERWISE SHOWN ON PLANS.

NOTE:
FOR USE ADJACENT TO CONCRETE OR FLEXIBLE PAVEMENT, CONCRETE SHOWN. FOR DETAILS DEPICTING USAGE ADJACENT TO FLEXIBLE PAVEMENT, SEE DIAGRAM RIGHT. EXPANSION JOINT, PREFORMED JOINT FILLER AND JOINT SEAL ARE REQUIRED BETWEEN CURB & GUTTER AND CONCRETE PAVEMENT ONLY.

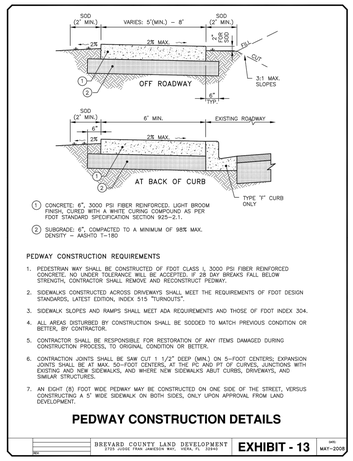
TYPICAL FDOT TYPE 'F' CURB AND GUTTER DETAIL
NTS



NOTE:
1. REPLACEMENT OF EXISTING DRIVEWAY APRONS SHALL BE TO DIMENSIONS SHOWN OR TO MATCH THAT OF EXISTING.
2. IN CITY RIGHT–OF–WAY, A DRIVEWAY PERMIT SHALL BE REQUIRED. CULVERT SIZE, LOCATION, AND INVERT INFORMATION WILL BE PROVIDED BY THE RIGHT–OF–WAY SERVICES DIVISION. STATE OR COUNTY PERMITS SHALL BE REQUIRED IF WITHIN THOSE RIGHT–OF–WAY.
3. EXISTING SIDEWALKS AND BIKE PATHS SHALL NOT BE CHANGED IN ANY MANNER EITHER IN LOCATION OR ELEVATION, UNLESS OTHERWISE SPECIFIED.

ASPHALT COMMERCIAL DRIVEWAY DETAIL
(N.T.S.)

CITY OF PALM BAY PUBLIC WORKS DEPARTMENT	STANDARD DRIVEWAY DETAIL	DATE: FEB. 2008
	SDW – 03	APPROVED:



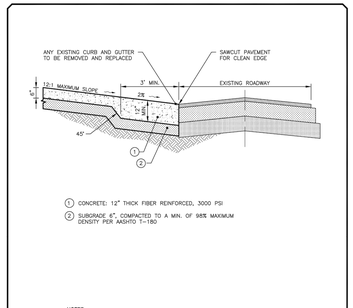
1. CONCRETE: 6", 3000 PSI FIBER REINFORCED, LIGHT BROOM FINISH, CURED WITH A WHITE CURING COMPOUND AS PER FDOT STANDARD SPECIFICATION SECTION 925–21.
2. SUBGRADE: 6", COMPACTED TO A MINIMUM OF 98% MAX. DENSITY – AASHTO T–180

PEDWAY CONSTRUCTION REQUIREMENTS

1. PEDESTRIAN WAY SHALL BE CONSTRUCTED OF FDOT CLASS I, 3000 PSI FIBER REINFORCED CONCRETE. NO UNDER TOLERANCE WILL BE ACCEPTED. IF 7 DAY BREAKS FALL BELOW STRENGTH, CONTRACTOR SHALL REMOVE AND RECONSTRUCT PEDWAY.
2. SIDEWALKS CONSTRUCTED ACROSS DRIVEWAYS SHALL MEET THE REQUIREMENTS OF FDOT DESIGN STANDARDS, LATEST EDITION, INDEX 515 "TURNOUTS".
3. SIDEWALK SLOPES AND RAMPS SHALL MEET ADA REQUIREMENTS AND THOSE OF FDOT INDEX 304.
4. ALL AREAS DISTURBED BY CONSTRUCTION SHALL BE SODDED TO MATCH PREVIOUS CONDITION OR BETTER, BY CONTRACTOR.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORATION OF ANY ITEMS DAMAGED DURING CONSTRUCTION PROCESS, TO ORIGINAL CONDITION OR BETTER.
6. CONTRACTION JOINTS SHALL BE SAW CUT 1 1/2" DEEP (MIN.) ON 5–FOOT CENTERS; EXPANSION JOINTS SHALL BE AT MAX. 50–FOOT CENTERS, AT THE PC AND PT OF CURVES, JUNCTIONS WITH EXISTING AND NEW SIDEWALKS, AND WHERE NEW SIDEWALKS ABUT CURBS, DRIVEWAYS, AND SIMILAR STRUCTURES.
7. AN EIGHT (8) FOOT WIDE PEDWAY MAY BE CONSTRUCTED ON ONE SIDE OF THE STREET, VERSUS CONSTRUCTING A 5' WIDE SIDEWALK ON BOTH SIDES, ONLY UPON APPROVAL FROM LAND DEVELOPMENT.

PEDWAY CONSTRUCTION DETAILS

BREVARD COUNTY LAND DEVELOPMENT 2725 JUDGE FRAN JAMESON WAY, VIERA, FL 32940 — **EXHIBIT - 13** — MAY–2008

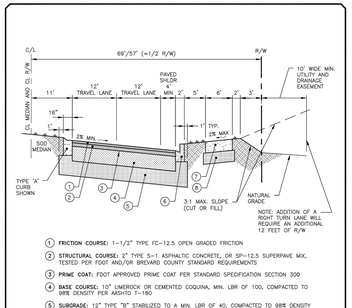


1. CONCRETE: 12" THICK FIBER REINFORCED, 3000 PSI
2. SUBGRADE 6", COMPACTED TO A MIN. OF 98% MAXIMUM DENSITY PER AASHTO T–180

NOTES:
1. ALL PEDWAY TO ROADWAY INTERSECTIONS SHALL HAVE THREE (3) LINEAR FEET (LF) OF THICKENING FULL WIDTH OF PEDWAY.
2. COMMERCIAL DRIVEWAYS SHALL HAVE PEDWAY THICKENING.

⚠ PEDWAY THICKENED EDGE DETAIL

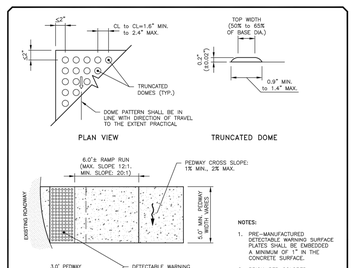
BREVARD COUNTY LAND DEVELOPMENT 2725 JUDGE FRAN JAMESON WAY, VIERA, FL 32940 — **EXHIBIT - 14** — MAY–2008



1. **FRICTION COURSE:** 1–1/2" TYPE FC–12.5 OPEN GRADED FRICTION
2. **STRUCTURAL COURSE:** 2" TYPE S–1 ASPHALTIC CONCRETE, OR SP–12.5 SUPERPAVE MIX, TESTED PER FDOT AND/OR BREVARD COUNTY STANDARD REQUIREMENTS
3. **PRIME COAT:** FDOT APPROVED PRIME COAT PER STANDARD SPECIFICATION SECTION 300
4. **BASE COURSE:** 10" LIMEROCK OR CEMENTED COQUINA, MIN. LBR OF 100, COMPACTED TO 98% DENSITY PER AASHTO T–180
5. **SUBGRADE:** 12" TYPE "B" STABILIZED TO A MIN. LBR OF 40, COMPACTED TO 98% DENSITY PER AASHTO T–180
6. **CURB AND GUTTER:** FDOT TYPE "F" CURB AND GUTTER SHALL BE 3000 PSI MIN. AND CONSTRUCTED IN ACCORDANCE WITH FDOT INDEX 300
7. **PEDWAY:** 6" THICK FDOT CLASS 1, 3000 PSI FIBER REINFORCED CONCRETE WITH LIGHT BROOM FINISH. CROSS SLOPE SHALL BE BETWEEN 1.0% MIN. AND 2.0% MAX.
8. **PEDWAY SUBGRADE:** 6" TYPE "B" STABILIZED TO A MIN. LBR OF 40, COMPACTED TO 98% DENSITY PER AASHTO T–180

ARTERIAL (MAJOR AND MINOR) URBAN - HALF CROSS SECTION

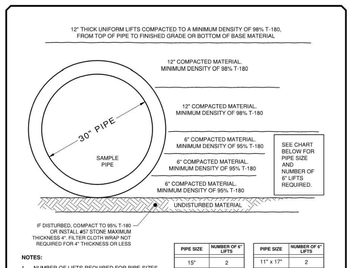
BREVARD COUNTY LAND DEVELOPMENT 2725 JUDGE FRAN JAMESON WAY, VIERA, FL 32940 — **EXHIBIT - 4** — MAY–2008



NOTES:
1. PRE–MANUFACTURED DETECTABLE WARNING SURFACE PLATES SHALL BE EMBEDDED A MINIMUM OF 1" IN THE CONCRETE SURFACE.
2. BRICK–RED COLORED DETECTABLE WARNING SURFACE TRUNCATED DOMES SHALL BE IN ACCORDANCE WITH INDEX 304 OF THE LATEST EDITION OF THE FDOT DESIGN STANDARDS AND PER ADA ACCESSIBILITY GUIDELINES, SECTION 4.29.2.
3. THE ALIGNMENT OF THE TRUNCATED DOMES MUST BE IN THE DIRECTION OF TRAVEL.

⚠ HANDICAP RAMP DETECTABLE WARNING DETAIL

BREVARD COUNTY LAND DEVELOPMENT 2725 JUDGE FRAN JAMESON WAY, VIERA, FL 32940 — **EXHIBIT - 15** — MAY–2008



PIPE SIZE	NUMBER OF 6" LIFTS
15"	2
18"	2
24"	2
30"	3
36"	4
42"	5
48"	5
54"	6
60"	6
66"	7
72"	7

PIPE SIZE	NUMBER OF 6" LIFTS
11" x 17"	2
14" x 23"	2
19" x 30"	2
24" x 38"	2
29" x 45"	4
34" x 53"	4
38" x 60"	4
43" x 68"	5
48" x 76"	5
58" x 91"	6

NOTES:
1. NUMBER OF LIFTS REQUIRED FOR PIPE SIZES IN EXCESS OF THOSE SHOWN IN CHART SHALL BE APPROVED BY THE ENGINEER OF RECORD AND BREVARD COUNTY ENGINEERING, IN WRITING, PRIOR TO INSTALLATION.
2. THESE REQUIREMENTS APPLY TO ALL STORMWATER PIPE INSTALLATIONS IN SUBDIVISIONS, PUBLIC OR PRIVATE, DRAINAGE EASEMENTS, PUBLIC OR PRIVATE, ALL COUNTY RIGHTS-OF-WAY, AND FOR ANY OTHER STORMWATER PIPE INSTALLATIONS THAT WILL BECOME COUNTY MAINTAINED INFRASTRUCTURE.
3. BACKFILL AROUND STORMWATER STRUCTURES SHALL BE COMPACTED IN 12" LIFTS TO A MINIMUM DENSITY OF 98% T–180.

STORMWATER PIPE INSTALLATION BACKFILL REQUIREMENTS

BREVARD COUNTY LAND DEVELOPMENT 2725 JUDGE FRAN JAMESON WAY, VIERA, FL 32940 — **EXHIBIT - 27** — DATE: OCT-2014

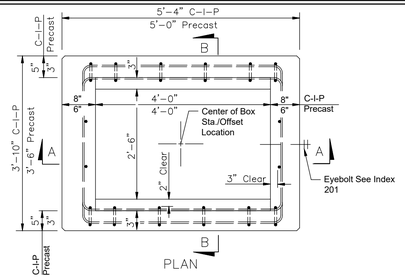
REV#	DATE	REVISION
2	1-15-23	PALM BAY, SJRWMD AND BREVARD COUNTY COMMENTS

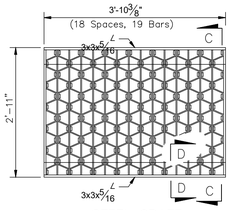
TRAUGER
CONSULTING ENGINEERS
2210 Front Street, STE 204 Melbourne, FL 32901
email - jim@traugerconsulting.com direct - (321) 292-0745

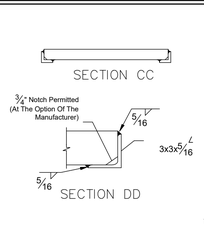
EPLER COMMERCIAL PARK
PALM BAY, FL
DETAILS

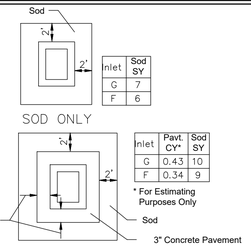
JAMES R. TRAUGER
FL P.E. #75612

DATE:	10-5-22
SECTION:	19
TOWNSHIP:	28S
RANGE:	37E
SCALE:	NTS
DRAWING NO.	C-7
PROJECT:	22-126









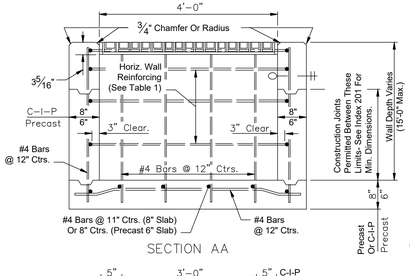
Inlet	Sod SY
G	7
F	6

Inlet	Pavt. CY*	Sod SY
G	0.43	10
F	0.34	9

* For Estimating Purposes Only

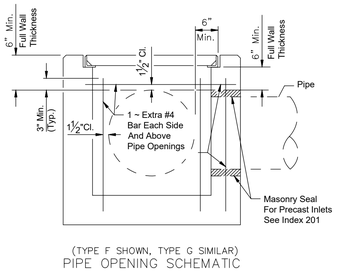
Notes:
1. Pavement and/or sod to be used only where called for in the plans.
2. Cost of paving to be included in cost of inlet.

PAVEMENT AND SODDING



HORIZONTAL WALL REINF. SCHEDULES
TYPE F INLET (TABLE 1)

WALL DEPTH	SCHEDULE	AREA (in²/ft)	MAX. SPACING	
			BARS	WWF
0' – 4'	A12	0.20	12"	8"
4' – 7'	A6	0.20	6"	5"
7' – 12'	B5.5	0.24	5½"	5"
12' – 15'	Special 1	0.267	5"	4"

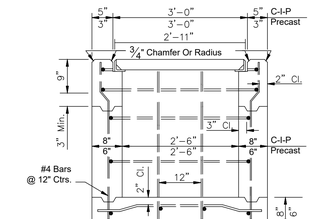


GENERAL NOTES

1. These inlets are designed for use in ditches, medians, pavement areas, or other areas subject to heavy wheel loads, minimal debris, and bicycle traffic. This inlet may be placed in areas subject to occasional pedestrian traffic such as landscaped areas and pavement areas where pedestrians can walk around the inlet. When inlet is placed in areas subject to bicycle traffic, install filler bar when clearance or gap is greater than 1" as shown in Index 218 Inset B.
2. When Alternate G grate is specified in plans, the grate is to be hot dip galvanized after fabrication.
3. These inlets may be used with Alternate B structure bottoms, Index 200. The inlet and bottom combinations are to be paid for under the contract unit price for inlets (DT Bot) (Type F (or G)) (J Bot. Depth), Ea.
4. All exposed edges and corners shall be 3/4" chamfer or tooled to 1/4" radius.
5. For supplemental details, see Index 201.
6. All reinforcing is Grade 60 bars with 2" min. cover unless otherwise noted. Bars to be cut or bent for 1½" clearance around pipe opening. Provide one additional #4 bar above and at each side of pipe opening, as shown.
7. All dimensions are for both precast and cast-in-place inlets unless otherwise noted.

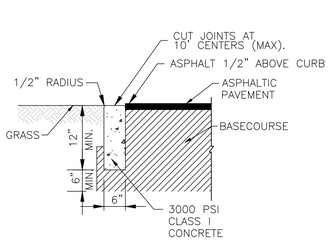
RECOMMENDED MAXIMUM PIPE SIZES	
INLET INSIDE WIDTH	PIPE SIZE
2'–6" (Type F)	18"
4'–0" (Type F)	30"
4'–10" / 5'–0" (Type G)	42"

Note: Recommended sizes are for concrete pipe. Sizes for other types of pipe must be verified for fit in accordance with Index No. 201. For larger pipe sizes see Note 3.

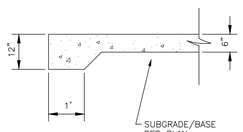


Notes:
1. FDOT details are provided for reference info only. See most current corresponding Index Number 272 in latest edition of the roadway and traffic design standards manual for complete detail information and specifications.

FDOT TYPE F INLET DETAIL
NTS



RIBBON CURB DETAIL
NTS



TYPICAL THICKENED EDGE DETAIL
NTS

STREET NAME SIGN NOTES:

1. SIGNS IN PUBLIC R.O.W. SHALL BE GREEN WITH 5/8" WHITE BORDER AND WHITE LETTERS AND NUMBERS.
2. SIGNS IN PRIVATE R.O.W. SHALL BE WHITE WITH 5/8" BLACK BORDER AND BLACK LETTERS AND NUMBERS.
3. STREET NAME BLADES SHALL BE RIVETED TOGETHER AT EACH CORNER WITH 3/16" SMALL FLANGE AVEX RIVETS. ATTACH BLADES TO POST WITH CHERRY-MATE ALUMINUM RIVETS, # BALM6BP34, OR 5/16" X 2-1/2" S.S. BOLTS, 1-1/4" X 5/16" S.S. FENDER WASHERS, W/ S.S. STOP HEX NUT HAVING NYLON INSERTS (LOCK NUTS).
4. ALL POSTS AND HARDWARE FOR ANY SIGNS INSTALLED ON THE SITE OR IN THE BREVARD COUNTY RIGHT OF WAY WILL ADHERE TO THE REQUIREMENTS INCLUDED IN THIS EXHIBIT.

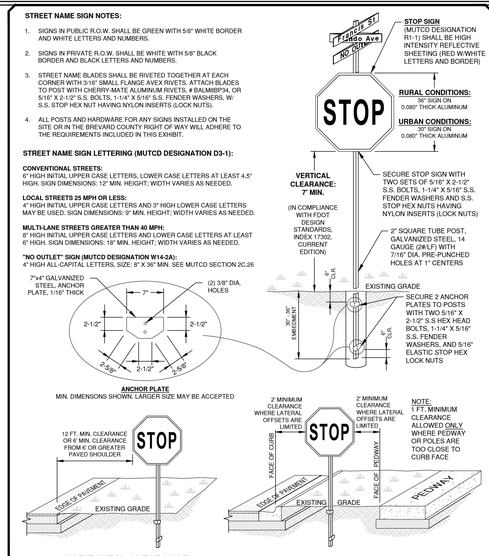
STREET NAME SIGN LETTERING (MUTCD DESIGNATION D3-1):

CONVENTIONAL STREETS:
6" HIGH INITIAL UPPER CASE LETTERS, LOWER CASE LETTERS AT LEAST 4.5" HIGH. SIGN DIMENSIONS: 12" MIN. HEIGHT; WIDTH VARIES AS NEEDED.

LOCAL STREETS 25 MPH OR LESS:
4" HIGH INITIAL UPPER CASE LETTERS AND 3" HIGH LOWER CASE LETTERS MAY BE USED. SIGN DIMENSIONS: 9" MIN. HEIGHT; WIDTH VARIES AS NEEDED.

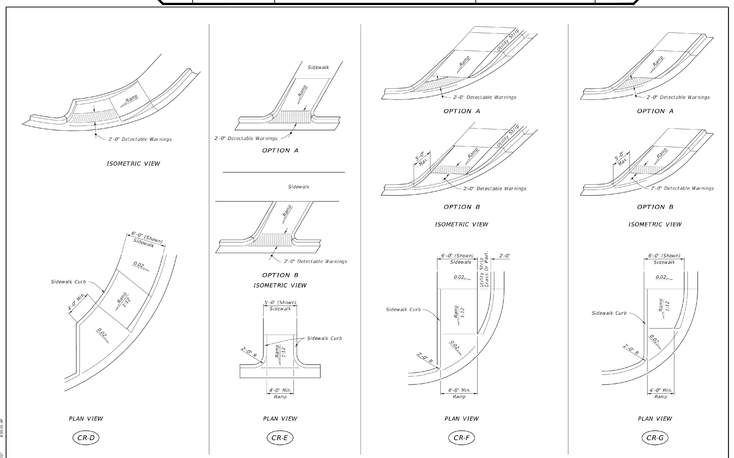
MULTI-LANE STREETS GREATER THAN 40 MPH:
8" HIGH INITIAL UPPER CASE LETTERS AND LOWER CASE LETTERS AT LEAST 6" HIGH. SIGN DIMENSIONS: 18" MIN. HEIGHT; WIDTH VARIES AS NEEDED.

"NO OUTLET" SIGN (MUTCD DESIGNATION W14-2A):
4" HIGH ALL-CAPITAL LETTERS, SIZE: 9" X 36" MIN. SEE MUTCD SECTION 2C.26



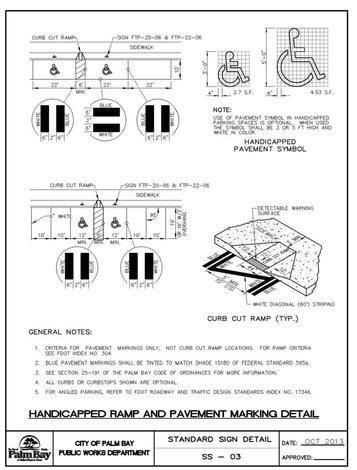
STOP SIGN AND STREET MARKER DETAILS

	BREVARD COUNTY LAND DEVELOPMENT 2725 JUDGE FRAN JAMIESON WAY. VIERA, FL 32940	EXHIBIT - 26	DATE: OCT-2014



SIDEWALK CURB RAMPS CR-D, CR-E, CR-F & CR-G

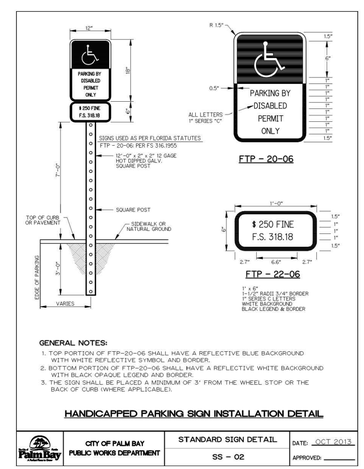
LAST REVISION 11/01/21	DESCRIPTION:	FDOT FY 2022-23 STANDARD PLANS	DETECTABLE WARNINGS AND SIDEWALK CURB RAMPS	INDEX 522-002	SHEET 4 of 7



GENERAL NOTES:
1. CRITERIA FOR PAVEMENT MARKINGS ONLY. NOT CURB CUT RAMP LOCATIONS. FOR RAMP CRITERIA SEE FDOT INDEX NO. 304.
2. BLUE PAVEMENT MARKINGS SHALL BE TINTED TO MATCH SHADE 15180 OF FEDERAL STANDARD 595a.
3. SEE SECTION 25-191 OF THE PALM BAY CODE OF ORDINANCES FOR MORE INFORMATION.
4. ALL CURBS OR CURBSTOPS SHOWN ARE OPTIONAL.
5. FOR ANGLED PARKING, REFER TO FDOT ROADWAY AND TRAFFIC DESIGN STANDARDS INDEX NO. 17346.

HANDICAPP RAMP AND PAVEMENT MARKING DETAIL

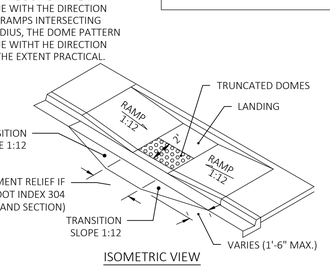
CITY OF PALM BAY PUBLIC WORKS DEPARTMENT	STANDARD SIGN DETAIL	DATE: OCT 2013	
	SS – 03	APPROVED:	

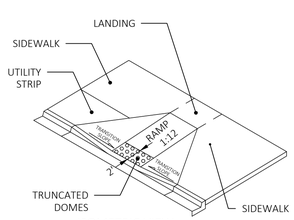


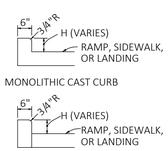
GENERAL NOTES:
1. TOP PORTION OF FTP–20–06 SHALL HAVE A REFLECTIVE BLUE BACKGROUND WITH WHITE REFLECTIVE SYMBOL AND BORDER.
2. BOTTOM PORTION OF FTP–20–06 SHALL HAVE A REFLECTIVE WHITE BACKGROUND WITH BLACK OPAQUE LEGEND AND BORDER.
3. THE SIGN SHALL BE PLACED A MINIMUM OF 3' FROM THE WHEEL STOP OR THE BACK OF CURB (WHERE APPLICABLE).

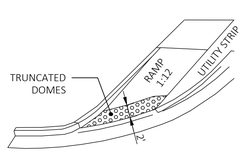
HANDICAPPED PARKING SIGN INSTALLATION DETAIL

CITY OF PALM BAY PUBLIC WORKS DEPARTMENT	STANDARD SIGN DETAIL	DATE: OCT 2013	
	SS – 02	APPROVED:	









Notes:
1. FDOT details are provided for reference info only. See most current corresponding index number in latest edition of the roadway and traffic design standards manual for complete detail information and specifications. Reference FDOT Design Standards Indexes 522-001 and 522-002 for sidewalk, ramps and detectable warnings (truncated domes).
2. Cross Slopes and Grades:
   A. Sidewalk, ramp, and landing slopes (i.e. 0.02, 0.05, and 1:12) shown in this index are maximums. Steeper slopes are not permitted unless otherwise detailed in the Plans.
   B. Landings must have slopes less than or equal to 0.02 in any direction.
   C. Install ramp slopes along a single linear plane (i.e. no warps or varying slope)
3. Grade Breaks:
   A. Grade breaks at the top and bottom of ramps must be parallel to each other and perpendicular to the direction of the ramp slope.
4. Existing Curb, Curb and Gutter and/or Sidewalk:
   A. Remove any existing curb or curb and gutter to the nearest joint beyond the curb transition or to the extent that no remaining section of curb or curb and gutter is less than 5 feet long. Remove any existing sidewalk to the nearest joint beyond the transition slope or to the extent that no remaining section of sidewalk is less than 5 feet long.
   B. Refer to Index 522-001 for Concrete Sidewalk details.
5. Detectable Warnings:
   A. Install detectable warnings in accordance with Specification Section 527.
   B. Place detectable warnings across the full width of the ramp or landing, to a depth of 2 feet measured perpendicular to the curb line and no greater than 5 feet from the back of the curb or edge of pavement.
   C. If detectable warnings are shown in the Plans on slopes greater than 5%, align the truncated domes with the centerline of the ramp; otherwise, the truncated domes are not required to be aligned.
6. Detectable Warnings - Acceptance Criteria:
   A. Color and texture shall be complete and uniform (brick red in Brevard County).
   B. 90% of individual truncated domes shall be in accordance with the Americans with Disabilities Act Standards for Transportation Facilities, Section 705.
   C. There shall be no more than 4 non-compliant domes in any one square foot.
   D. Non-compliant domes shall not be adjacent to other non-compliant domes.
   E. Surfaces shall not deviate more than 0.10" from a true plane.
7. Refer to the site construction plans for location of detectable warnings.

HANDICAP RAMP DETAIL
NTS

REV#	DATE	REVISION

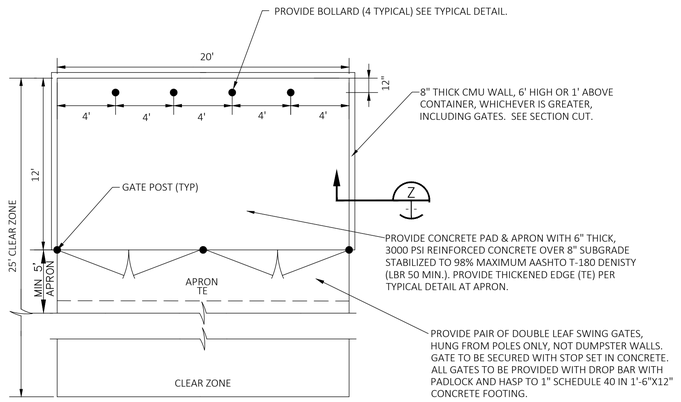
TRAUGER CONSULTING ENGINEERS
2210 Front Street, STE 204 Melbourne, FL 32901
email - jim@traugerconsulting.com direct - (321) 292-0745

EPLER COMMERCIAL PARK
PALM BAY, FL

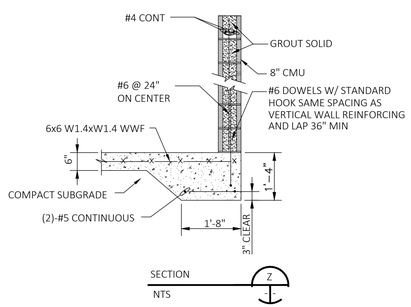
DETAILS

JAMES R. TRAUGER
FL P.E. #73612

DATE:	10-5-22
SECTION:	19
TOWNSHIP:	28S
RANGE:	37E
SCALE:	NTS
DRAWING NO.	C-8
PROJECT:	22-126



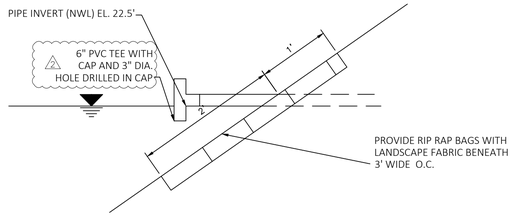
NOTE: PAINT DUMPSTER ENCLOSURE WALLS. COLOR PER ARCHITECT OR OWNER DIRECTION.



NTS

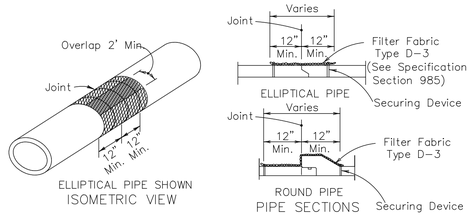
TYPICAL DOUBLE DUMPSTER DETAIL

NTS



REMOTE ORIFICE DETAIL

NTS



Cost of filter fabric jacket to be included in cost of pipe culverts.

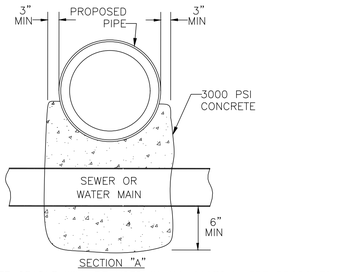
FOR ALL PIPE TYPES – CONCRETE PIPE SHOWN

Notes:

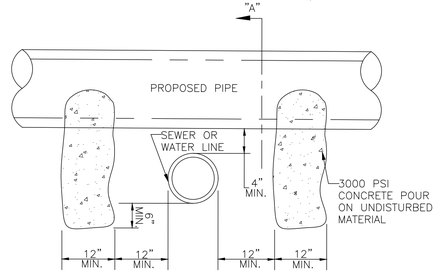
1. FDOT details are provided for reference info only. See most current corresponding Index Number 430-001 in latest edition of the roadway and traffic design standards manual for complete detail information and specifications.

FILTER FABRIC JACKET DETAIL

NTS



CONCRETE CRADLE WILL BE USED IN ALL CASES WHERE PROPOSED PIPE OVERLAY IS WITHIN 18" OF EXISTING WATER/SEWER MAIN.

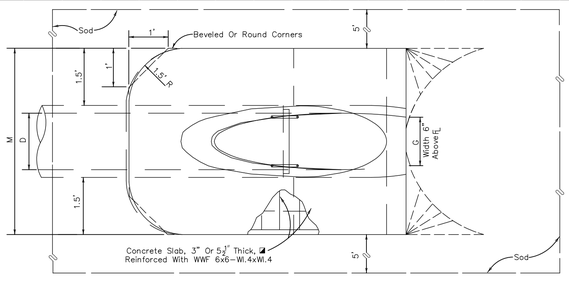


TYPICAL CONCRETE CRADLE DETAIL

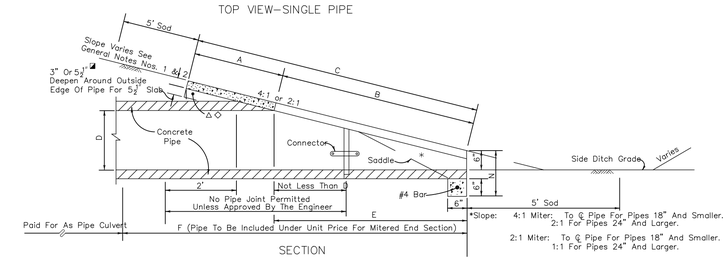
NTS

DIMENSIONS AND QUANTITIES

	D	X	A	B	C	E	F	G	M Single Pipe	M Double Pipe	M Triple Pipe	M Quad. Pipe	N	5½" CONCRETE SLAB (CY) Single Pipe	5½" CONCRETE SLAB (CY) Double Pipe	5½" CONCRETE SLAB (CY) Triple Pipe	5½" CONCRETE SLAB (CY) Quad. Pipe	SODDING (SQ. YDS.) Single Pipe	SODDING (SQ. YDS.) Double Pipe	SODDING (SQ. YDS.) Triple Pipe	SODDING (SQ. YDS.) Quad. Pipe
2:1 Slope	15"	2'-7"	1.92'	2.18'	4.10'	2.06'	5'	1.22'	4.63'	7.21'	9.79'	12.37'	1.19'	0.38	0.58	0.77	0.96	21	24	27	30
	18"	2'-10"	1.97'	2.74'	4.71'	2.56'	6'	1.41'	4.92'	7.75'	10.58'	13.42'	1.21'	0.44	0.65	0.87	1.09	22	25	28	31
	24"	3'-5"	2.06'	3.85'	5.91'	3.56'	7'	1.73'	5.50'	8.92'	12.33'	15.75'	1.25'	0.54	0.83	1.12	1.42	24	28	32	35
	30"	4'-3"	2.15'	4.95'	7.10'	4.56'	8'	2.00'	6.08'	10.33'	14.58'	18.83'	1.29'	0.66	1.09	1.50	1.91	26	31	35	40
	36"	5'-1"	2.25'	6.08'	8.33'	5.56'	9'	2.24'	6.67'	11.75'	16.83'	21.92'	1.33'	0.81	1.38	1.95	2.51	28	34	39	45
	42"	6'-0"	2.34'	7.21'	9.55'	6.56'	10'	2.45'	7.25'	13.25'	19.25'	25.25'	1.38'	0.97	1.70	2.45	3.19	30	37	43	50
	48"	6'-9"	2.43'	8.33'	10.76'	7.56'	11'	2.65'	7.83'	14.58'	21.33'	28.08'	1.42'	1.13	2.04	2.93	3.84	32	39	47	54
	54"	7'-8"	2.52'	9.44'	11.96'	8.56'	12'	2.83'	8.42'	16.08'	23.75'	31.42'	1.46'	1.31	2.44	3.58	4.72	34	42	51	59
	60"	8'-6"	2.62'	10.56'	13.18'	9.56'	14'	3.00'	9.00'	17.50'	26.00'	34.50'	1.50'	1.51	2.89	4.28	5.68	36	45	55	64
	66"	9'-5"	2.71'	11.68'	14.39'	10.56'	15'	3.18'	9.58'	18.75'	27.92'	37.08'	1.54'	1.68	3.25	4.84	6.43	38	48	58	68
	72"	10'-0"	2.80'	12.80'	15.60'	11.56'	16'	3.30'	10.16'	20.16'	30.16'	40.16'	1.58'	1.89	3.74	5.59	7.45	40	51	62	73
4:1 Slope	15"	2'-7"	2.27'	4.09'	6.36'	4.03'	8'	1.22'	4.63'	7.21'	9.79'	12.37'	1.19'	0.57	0.87	1.15	1.44	23	26	29	32
	18"	2'-10"	2.36'	5.12'	7.48'	5.03'	9'	1.41'	4.92'	7.75'	10.58'	13.42'	1.21'	0.66	0.99	1.31	1.65	25	28	31	35
	24"	3'-5"	2.53'	7.18'Δ	9.71'	7.03'Δ	11'	1.73'	5.50'	8.92'	12.33'	15.76'	1.25'	0.85	1.30	1.75	2.20	28	32	36	40
	30"	4'-3"	2.70'	9.25'	11.95'	9.03'	13'	2.00'	6.08'	10.33'	14.58'	18.83'	1.29'	1.10	1.74	2.39	3.05	31	36	41	46
	36"	5'-1"	2.87'	11.31'Δ	14.18'	11.03'Δ	15'	2.24'	6.67'	11.75'	16.83'	21.92'	1.33'	1.32	2.21	3.08	3.96	34	40	46	52
	42"	6'-0"	3.05'	13.37'	16.42'	13.03'	17'	2.45'	7.25'	13.25'	19.25'	25.25'	1.38'	1.58	2.76	3.91	5.09	38	44	51	58
	48"	6'-9"	3.22'	15.43'	18.65'	15.03'	19'	2.65'	7.83'	14.58'	21.33'	28.08'	1.42'	1.85	3.30	4.73	6.17	41	48	56	63
	54"	7'-8"	3.39'	17.49'	20.88'	17.03'	21'	2.83'	8.42'	16.08'	23.75'	31.42'	1.46'	2.14	3.95	5.77	7.58	44	52	61	69
	60"	8'-6"	3.56'	19.55'	23.11'	19.03'	23'	3.00'	9.00'	17.50'	26.00'	34.50'	1.50'	2.45	4.66	6.87	9.07	47	56	66	75
	66"	9'-2"	3.73'	21.62'	25.35'	21.03'	25'	3.18'	9.58'	18.75'	27.92'	37.08'	1.54'	2.88	5.54	8.18	10.84	49	59	69	80
	72"	10'-0"	3.91'	22.68'	26.59'	23.03'	27'	3.30'	10.16'	20.16'	30.16'	40.16'	1.58'	3.18	6.27	9.36	12.45	52	63	74	85

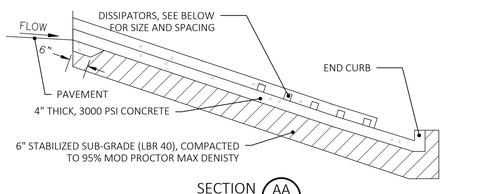


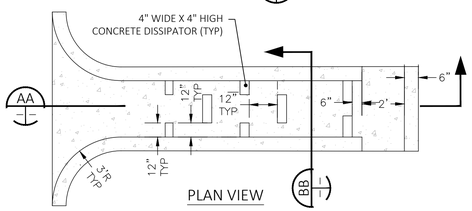
TOP VIEW–SINGLE PIPE

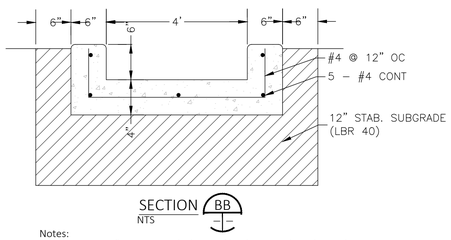


TYPICAL MITERED END SECTION DETAIL

NTS





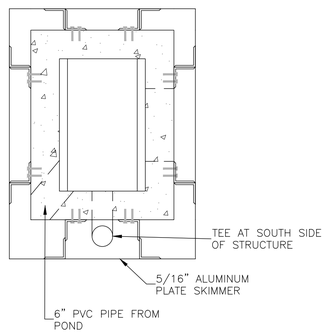


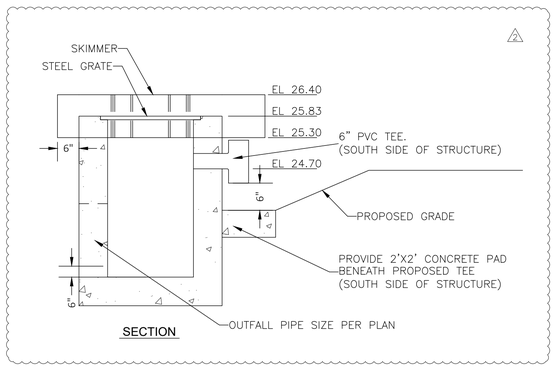
Notes:

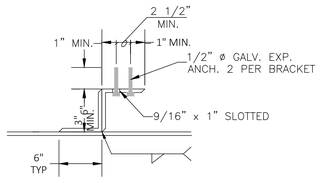
1. Construct flume to match slopes of bank per grading plan and section cuts.

CONCRETE FLUME DETAIL

NTS







TYPICAL OVERFLOW STRUCTURE DETAIL

NTS

REV#	DATE	REVISION
2	1-15-23	PALM BAY, SJRWMD AND BREVARD COUNTY COMMENTS

TRAUGER CONSULTING ENGINEERS
2210 Front Street, STE 204 Melbourne, FL 32901
email - jim@traugerconsulting.com direct - (321) 292-0745

EPLER COMMERCIAL PARK

PALM BAY, FL

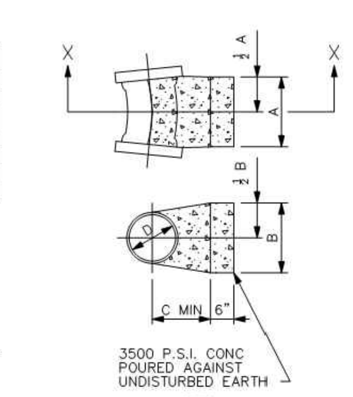
DETAILS

JAMES R. TRAUGER
FL P.E. #75612

DATE: 10-5-22
SECTION: 19
TOWNSHIP: 28S
RANGE: 37E
SCALE: NTS
DRAWING NO. C-9
PROJECT: 22-126

DIA OF WATER MAIN	THRUST BLOCK		
D	A	B	C
6"	1'-0"	1'-0"	1'-0"
8"	1'-3"	1'-3"	1'-0"
10" & 12"	1'-6"	1'-6"	1'-3"
14" & 16"	2'-0"	2'-0"	1'-6"
18" & 20"	3'-1"	2'-0"	1'-9"
24"	3'-0"	3'-0"	2'-0"

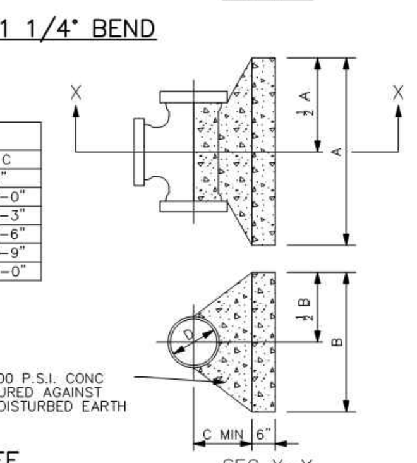
NOTE:
THESE TABLES ARE BASED ON SOIL BEARING OF 1500 P.S.F. IN MUCK, PEET OR OTHER UNSUITABLE SOILS HAVING A SOIL BEARING LESS THAN 1500 P.S.F., THE CONTRACTOR SHALL PROVIDE SUITABLE ADDITIONAL BLOCKING, ENCASEMENTS OR RESTRAINTS, BLOCKING IN BORE PIT EXCAVATIONS SHALL BE AGAINST UNDISTURBED SOIL OR SHALL BE PROVIDED WITH RESTRAINTS AS REQUIRED.



THRUST BLOCK AT 11 1/4° BEND

DIA OF WATER MAIN	THRUST BLOCK		
D	A	B	C
6"	2'-0"	1'-6"	9"
8"	2'-6"	2'-0"	1'-0"
10" & 12"	4'-0"	3'-0"	1'-3"
14" & 16"	5'-0"	4'-0"	1'-6"
18" & 20"	8'-0"	4'-0"	1'-9"
24"	9'-0"	5'-0"	2'-0"

NOTE:
WHEN DIMENSION "A" IS 6'-0" OR GREATER, USE #4 BARS AT 12" CENTERS EACH WAY.



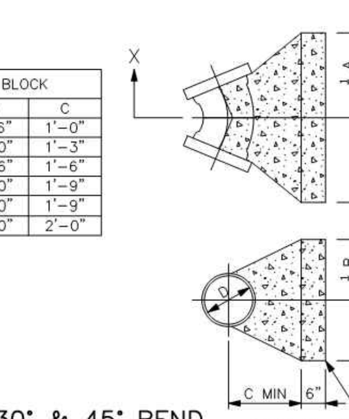
THRUST BLOCK AT TEE

* THE USE OF THRUST BLOCKS SHALL ONLY BY ALLOWED BY WRITTEN REQUEST AND APPROVAL OF THE UTILITIES ENGINEER.

CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL | THRUST BLOCK DETAIL | DWN.BY: M.K.L. | DATE: 1-1-08 | REV. E.K.R. 8-28-13 | DWG. NO. FIG 5A

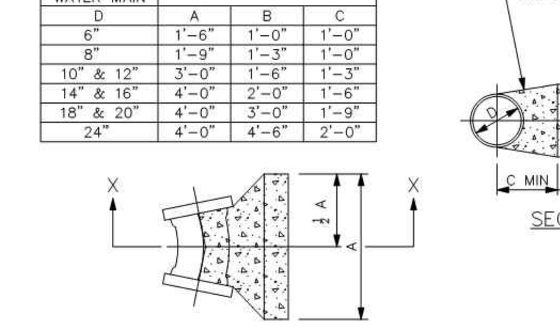
DIA OF WATER MAIN	THRUST BLOCK		
D	A	B	C
6"	2'-0"	1'-6"	1'-0"
8"	2'-0"	2'-0"	1'-3"
10" & 12"	3'-6"	2'-6"	1'-6"
14" & 16"	5'-6"	3'-0"	1'-9"
18" & 20"	6'-6"	4'-0"	1'-9"
24"	7'-0"	5'-0"	2'-0"

NOTE:
WHEN DIMENSION "A" IS 6'-0" OR GREATER, USE #4 BARS AT 12" CENTERS EACH WAY.



THRUST BLOCK AT 30° & 45° BEND

DIA OF WATER MAIN	THRUST BLOCK		
D	A	B	C
6"	1'-6"	1'-0"	1'-0"
8"	1'-9"	1'-3"	1'-0"
10" & 12"	3'-0"	1'-6"	1'-3"
14" & 16"	4'-0"	2'-0"	1'-6"
18" & 20"	4'-0"	3'-0"	1'-9"
24"	4'-0"	4'-6"	2'-0"



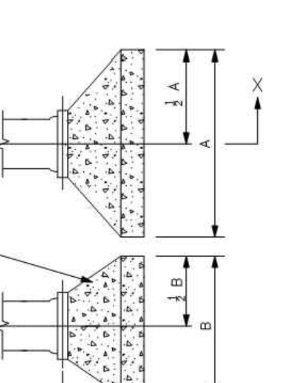
THRUST BLOCK AT 22 1/2° BEND

* THE USE OF THRUST BLOCKS SHALL ONLY BY ALLOWED BY WRITTEN REQUEST AND APPROVAL OF THE UTILITIES ENGINEER.

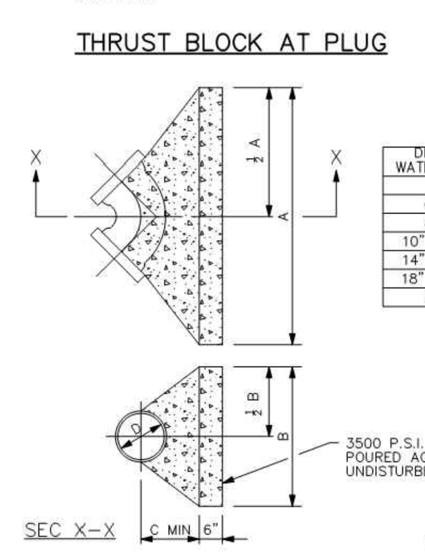
CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL | THRUST BLOCK DETAIL | DWN.BY: M.K.L. | DATE: 1-1-08 | REV. E.K.R. 8-28-13 | DWG. NO. FIG 5B

DIA OF WATER MAIN	THRUST BLOCK		
D	A	B	C
6"	2'-0"	1'-6"	9"
8"	2'-6"	2'-0"	1'-0"
10" & 12"	4'-0"	3'-0"	1'-3"
14" & 16"	5'-0"	4'-0"	1'-6"
18" & 20"	8'-0"	4'-0"	1'-9"
24"	9'-0"	5'-0"	2'-0"

NOTE:
WHEN DIMENSION "A" IS 6'-0" OR GREATER, USE #4 BARS AT 12" CENTERS EACH WAY.



THRUST BLOCK AT PLUG



DIA OF WATER MAIN	THRUST BLOCK		
D	A	B	C
6"	2'-9"	1'-6"	9"
8"	3'-0"	2'-6"	1'-0"
10" & 12"	5'-6"	3'-0"	1'-3"
14" & 16"	6'-0"	5'-0"	1'-6"
18" & 20"	9'-0"	5'-0"	1'-9"
24"	11'-0"	6'-0"	2'-0"

NOTE:
WHEN DIMENSION "A" IS 6'-0" OR GREATER, USE #4 BARS AT 12" CENTERS EACH WAY.

THRUST BLOCK AT 60° & 90° BEND

* THE USE OF THRUST BLOCKS SHALL ONLY BY ALLOWED BY WRITTEN REQUEST AND APPROVAL OF THE UTILITIES ENGINEER.

CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL | THRUST BLOCK DETAIL | DWN.BY: M.K.L. | DATE: 1-1-08 | REV. E.K.R. 8-28-13 | DWG. NO. FIG 5C

THRUST RESTRAINTS FOR DUCTILE IRON PIPE
MINIMUM LENGTH (FT) TO BE RESTRAINED ON EACH SIDE OF FITTING(S)

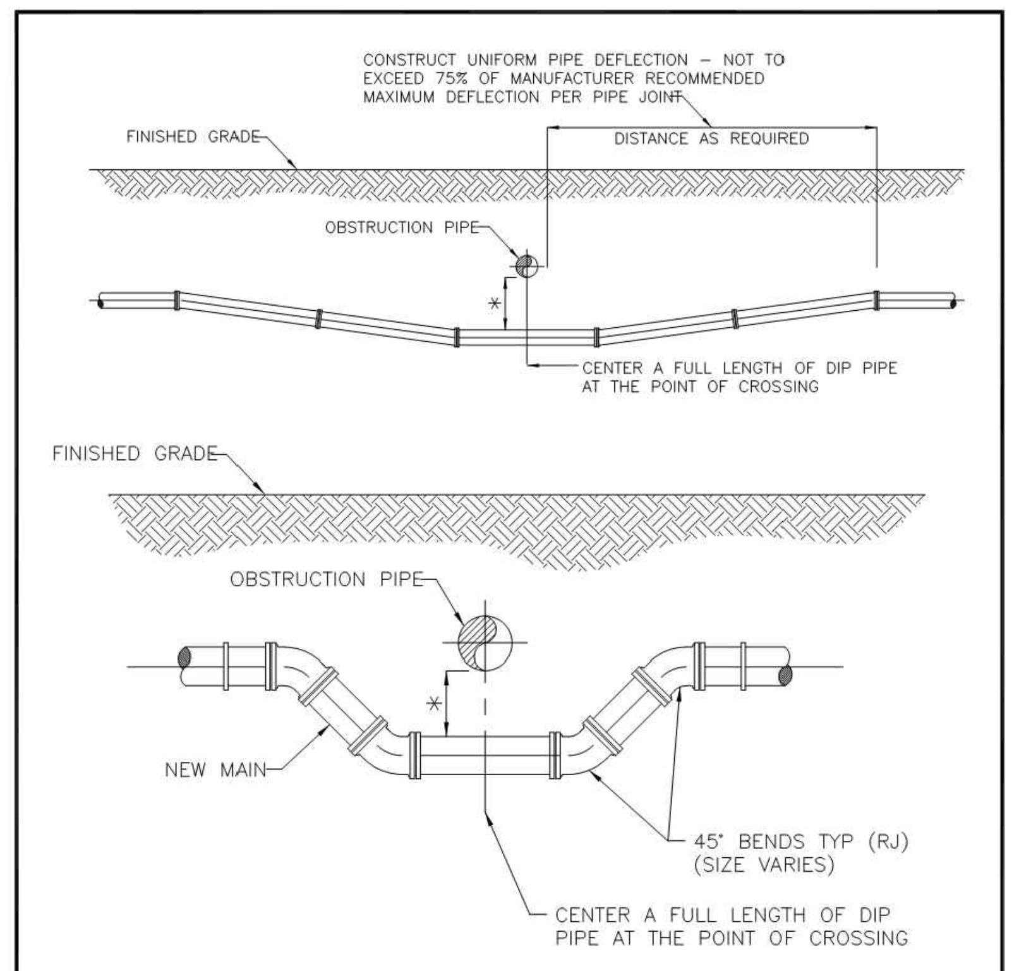
FITTINGS	PIPE SIZE								
	4"	6"	8"	10"	12"	16"	20"	24"	30"
90° BEND	43(54)	61(76)	79(97)	95(117)	110(137)	140(173)	168(207)	194(239)	229(282)
45° BEND	18(22)	25(31)	33(40)	39(49)	46(57)	58(72)	69(86)	80(99)	95(117)
22.5° BEND	9(11)	12(15)	16(19)	19(23)	22(27)	28(34)	33(41)	39(47)	46(56)
11.25° BEND	4(5)	6(7)	8(10)	9(12)	11(13)	14(17)	17(20)	19(24)	23(28)
TEE BRANCH	43(61)	70(99)	96(137)	121(172)	145(207)	190(272)	233(333)	275(393)	330(475)
DEAD END	67(96)	95(136)	123(176)	149(212)	174(248)	221(316)	266(380)	310(443)	370(528)

THRUST RESTRAINTS FOR PVC AND PE PIPE
MINIMUM LENGTH (FT) TO BE RESTRAINED ON EACH SIDE OF FITTING(S)

FITTINGS	PIPE SIZE								
	4"	6"	8"	10"	12"	16"	20"	24"	30"
90° BEND	58	82	107	128	149	189	227	262	309
45° BEND	24	34	45	53	62	78	93	108	128
22.5° BEND	12	16	22	26	30	38	45	53	62
11.25° BEND	5	8	11	12	15	19	23	26	31
TEE BRANCH	58	95	130	163	196	257	315	371	448
DEAD END	90	128	166	201	235	298	359	419	500

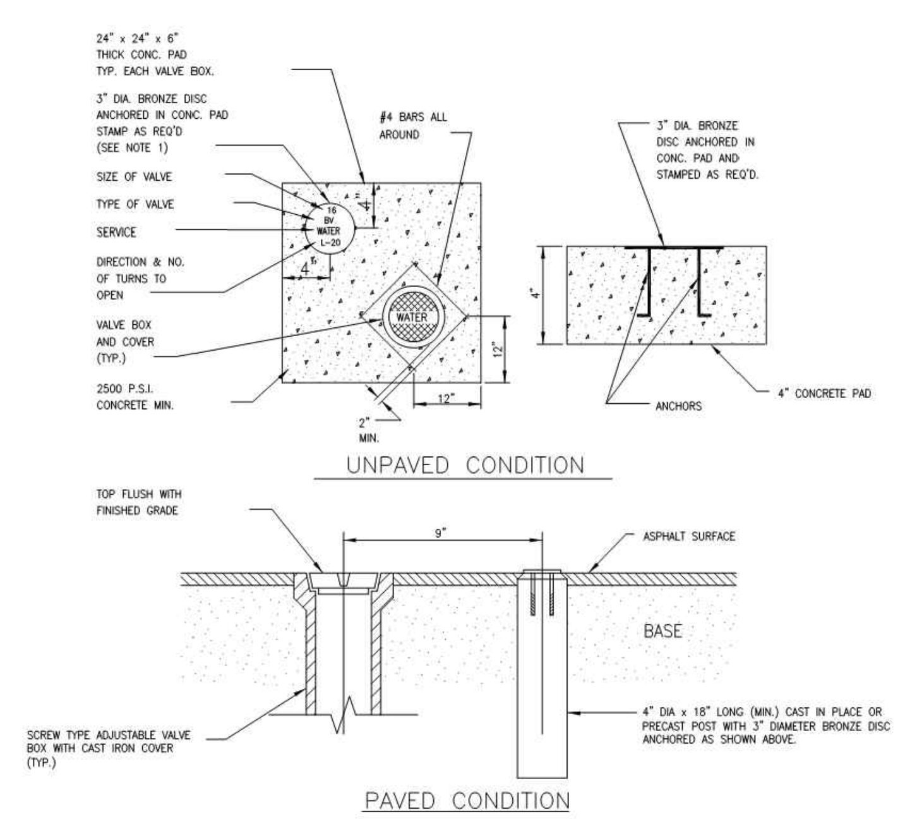
NOTES:
1 FITTINGS SHALL BE RESTRAINED JOINTS UNLESS OTHERWISE INDICATED
2 INSTALL FULL LENGTH JOINTS WITH TOTAL LENGTH EQUAL TO OR GREATER THAN SHOWN IN THE TABLE.
3 WHERE TWO OR MORE FITTINGS ARE TOGETHER, USE FITTING WHICH YIELDS GREATEST LENGTH OF RESTRAINED PIPE.
4 IN LINE VALVES AND THROUGH RUN OF TEES OUTSIDE LIMITS OF RESTRAINED JOINTS FROM OTHER FITTINGS NEED NOT BE RESTRAINED UNLESS OTHERWISE INDICATED
5 LENGTHS SHOWN IN THE TABLE WILL HAVE BEEN CALCULATED IN ACCORDANCE WITH THE PROCEDURE OUTLINED IN "THRUST RESTRAINT DESIGN FOR DUCTILE IRON PIPE" AS PUBLISHED BY DIPRA, WITH THE FOLLOWING ASSUMPTIONS,
WORKING PRESSURE 70 P.S.I.
SOIL DESIGNATION 2000 P.S.F.
LAYING CONDITION TYPE 2 SAFETY FACTOR 1.5
6 FOR PIPE ENCASED IN POLYETHYLENE, INCREASE THE GIVEN VALUES BY A FACTOR OF 1.2, OR USE VALUES IN PARENTHESIS.

CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL | RESTRAINED JOINT TABLE | DWN.BY: M.K.L. | DATE: 1-1-08 | REV. E.K.R. 2-4-10 | DWG. NO. FIG 6



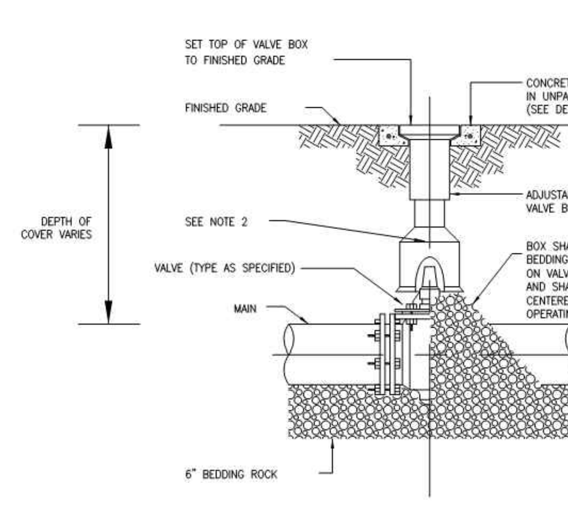
* PIPE CROSSING CONFLICTS WILL BE RESOLVED IN ACCORDANCE WITH THE SEPARATIONS REQUIREMENTS NOTED IN FAC62–555–314(1) AND OR THE FDEP PERMIT. FDEP IS THE SOLE MITIGATION AUTHORITY FOR CONFLICT RESOLUTION AND THE CONTRACTOR WILL SUBMIT REQUEST FOR PIPE SEPARATION MITIGATION THROUGH THE PROJECT ENGINEER TO FDEP. ONLY THE FDEP WRITTEN MITIGATION WILL BE REFLECTED IN THE UTILITY AS–BUILT DRAWINGS. (REF SECT02660)

CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL | DEFLECTION OF PIPE DETAIL AT UTILITY CROSSING BY JOINT DEFLECTION | DWN.BY: M.K.L. | DATE: 1-1-08 | REV. | DWG. NO. FIG 13



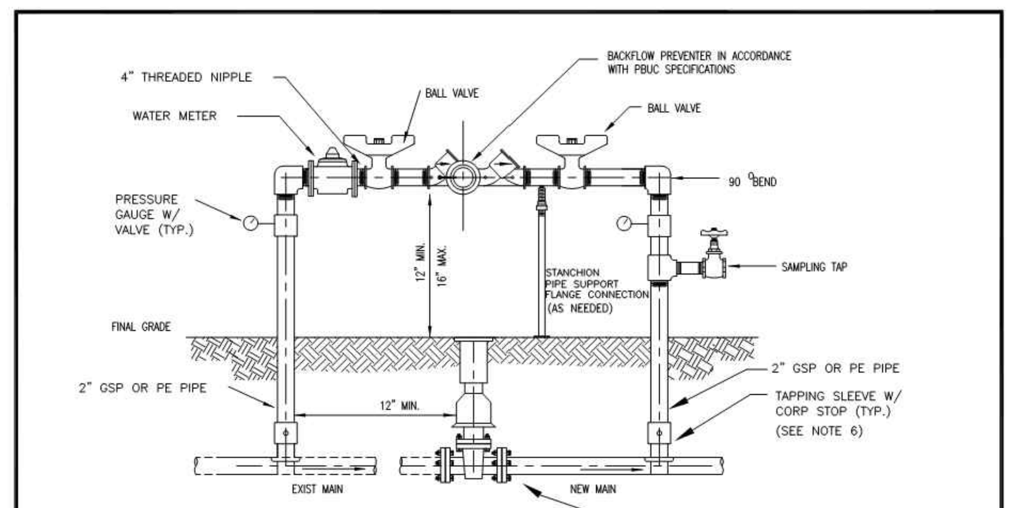
NOTES:
1. BRONZE IDENTIFICATION DISC SHALL BE REQUIRED FOR ALL VALVES AND SHALL BE IMBEDDED WITH ANCHORS IN FRESH CONCRETE. IF THE CONCRETE IS PREVIOUSLY CURED, THE IDENTIFICATION DISC SHALL BE DRILLED, EPOXY APPLIED, AND BOLTED TO THE EXISTING CONCRETE WITHOUT MARRING THE IDENTIFICATION INFORMATION.
2. VALVE COVERS SHALL BE ROUND AND MARKED "WATER", "RECLAIMED WATER", OR "SEWER".
3. VALVE COVERS SHALL BE PAINTED BLUE FOR WATER, GREEN FOR SEWER, OR WHITE FOR FIRE HYDRANT VALVES.
4. CONCRETE COLLAR TO BE USED IN UNPAVED AREAS ONLY
5. VALVES SHALL NOT BE LOCATED IN STREET CURBS.

CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL | VALVE BOX COLLAR DETAILS WITH ID DISK | DWN.BY: M.K.L. | DATE: 1-1-08 | REV. E.K.R. 9-19-11 | DWG. NO. FIG 10A



NOTES:
1. AWWA C–900 DR 18 PVC EXTENSIONS ARE ALLOWED FOR VALVES LESS THAN 16" OR LESS THAN 6' DEEP. ALL OTHER VALVES SHALL REQUIRE AN ADJUSTABLE SEALED VALVE BOX.
2. THE VALVE ACTUATING NUT SHALL BE EXTENDED TO BE WITHIN 36" OF FINISHED GRADE.
3. VALVES THAT ARE 16" OR GREATER SHALL BE SIDE–ACTUATED.
4. BEDDING MATERIAL SHALL BE NO.57 AGGREGATE, PER FDOT STANDARDS.

CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL | GATE/PLUG VALVE AND BOX DETAIL | DWN.BY: M.K.L. | DATE: 1-1-08 | REV. E.K.R. 9-19-11 | DWG. NO. FIG 10B

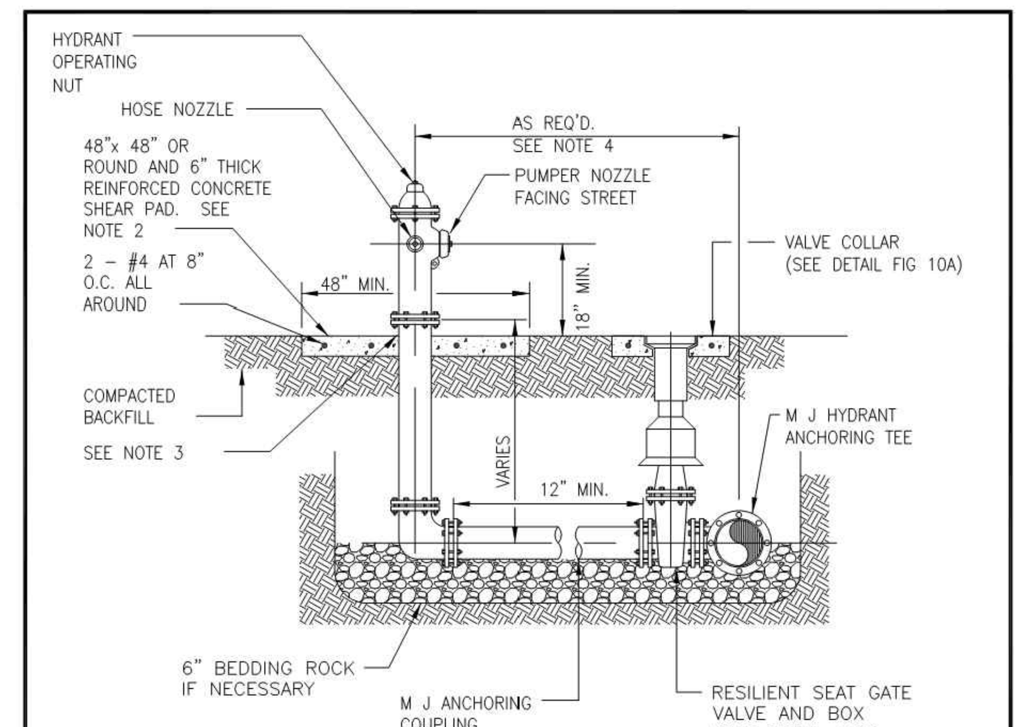


PROFILE
N.T.S

TIE IN VALVE SHALL BE LOCKED IN THE CLOSED POSITION & OPERATED BY THE CITY OR OTHER AUTHORIZED PERSONNEL ONLY. IF NO VALVE IS PROVIDED, MAINTAIN PHYSICAL SEPERATION UNTIL D.E.P. LETTER OF CLEARANCE IS RECEIVED.

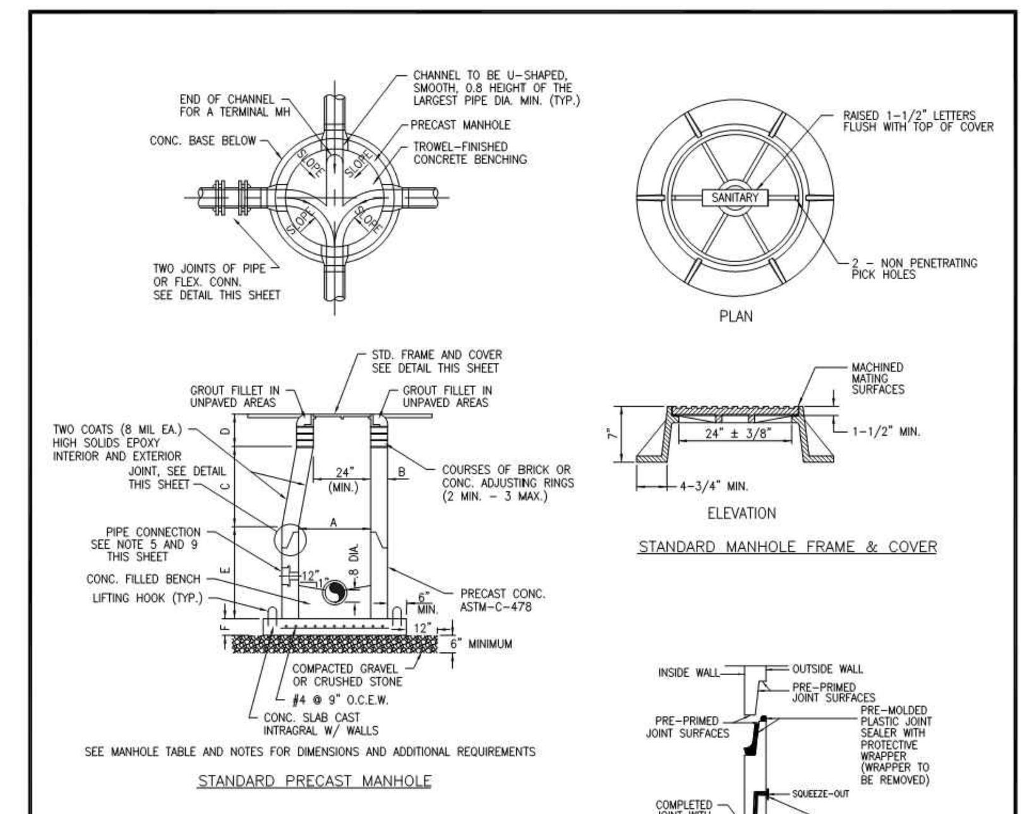
NOTES:
1. A TEMPORARY JUMPER CONNECTION IS REQUIRED AT ALL CONNECTIONS BETWEEN EXISTING ACTIVE WATER MAINS AND PROPOSED NEW WATER MAIN IMPROVEMENTS.
2. THE DETAIL LEFT IS TO BE USED FOR FILLING ANY NEW WATER MAIN OF ANY SIZE FROM EXISTING ACTIVE WATER MAINS AND FOR FLUSHING OF NEW MAINS UP TO 8" DIAMETER (2.5 FPS MINIMUM VELOCITY). AND FOR PULLING BACTERIOLOGICAL SAMPLES FROM ANY NEW WATER MAIN OF ANY SIZE. THE JUMPER CONNECTION SHALL BE MAINTAINED UNTIL AFTER FILLING, FLUSHING, TESTING, AND DISINFECTION OF THE NEW MAIN HAS BEEN SUCCESSFULLY COMPLETED AND CLEARANCE FOR USE FROM THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (FDEP) AND OTHER PERTINENT AGENCIES HAS BEEN RECEIVED. ADEQUATE THRUST BLOCKING AND/OR RESTRAINTS SHALL BE PROVIDED TEMPORARILY AS REQUIRED. PIPE FITTINGS USED FOR CONNECTING THE NEW PIPE TO THE EXISTING PIPE SHALL BE DISINFECTED PRIOR TO INSTALLATION IN ACCORDANCE WITH AWWA C651. THIS TAPPING SLEEVE AND THE EXTERIOR OF THE MAIN TO BE TAPPED SHALL BE DISINFECTED BY SPRAYING OR SWABBING PER SECTION NO. OF AWWA C651.
3. FLUSHING OF 10" DIAMETER AND LARGER WATER MAINS MAY BE DONE THROUGH THE TIE–IN VALVE UNDER VERY CONTROLLED CONDITIONS. THE FOLLOWING PROCEDURES SHALL BE FOLLOWED.
3.1. THE TIE–IN VALVES SHALL BE OPERATED AND PRESSURE TESTED IN THE PRESENCE OF THE UTILITY COMPANY AND ENGINEER TO VERIFY WATER TIGHTNESS PRIOR TO THE TIE–IN. VALVES WHICH ARE NOT WATERTIGHT SHALL BE REPLACED OR A NEW VALVE INSTALLED IMMEDIATELY ADJACENT TO THE LEAKING VALVE.
3.2. THE TEMPORARY JUMPER CONNECTION SHALL BE CONSTRUCTED AS DETAILED. THE JUMPER CONNECTION SHALL BE USED TO FILL THE NEW WATER MAIN AND FOR PROVIDING WATER FOR BACTERIOLOGICAL SAMPLING OF THE NEW MAIN AS REQUIRED BY THE F.D.E.P. PERMIT.
-- THE FLUSHING SHALL NOT BE ATTEMPTED DURING PEAK DEMAND HOURS OF THE EXISTING WATER MAINS.
-- ALL DOWNSTREAM VALVES IN THE NEW SYSTEM MUST BE OPEN PRIOR TO OPENING THE TIE–IN VALVE.
-- PROVIDE FOR AND MONITOR THE PRESSURE AT THE TIE–IN POINT. THE PRESSURE IN THE EXISTING MAIN MUST NOT DROP BELOW 35 PSI.
-- TIE–IN VALVE SHALL BE OPENED A FEW TURNS ONLY, ENSURING A PRESSURE DROP ACROSS THE VALVE IS ALWAYS GREATER THAN 10 PSI.
3.3. THE TIE–IN VALVE SHALL BE LOCKED CLOSED BY THE UTILITY COMPANY UNTIL FLUSHING BEGINS.
3.4. THE TIE–IN VALVE SHALL BE OPENED ONLY FOR FLUSHING OF THE NEW MAIN. THE PROCEDURE SHALL BE DIRECTED BY THE UTILITY COMPANY AND OBSERVED BY THE ENGINEER.
3.5. AFTER FLUSHING, THE TIE–IN VALVE SHALL BE CLOSED AND LOCKED IN THE CLOSED POSITION BY THE UTILITY COMPANY.
4. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION DEMONSTRATING THAT THE DOUBLE CHECK BACKFLOW PREVENTION DEVICE HAS BEEN TESTED AND IS IN GOOD WORKING ORDER AT THE TIME OF INSTALLATION.
5. EXCEPT AS REQUIRED TO FLUSH LINES GREATER THAN 8" IN DIAMETER, THE TIE–IN VALVE SHALL REMAIN CLOSED AND SHALL BE LOCKED IN THE CLOSED POSITION BY THE UTILITY COMPANY. THE TIE–IN VALVE SHALL REMAIN LOCKED CLOSED UNTIL THE NEW SYSTEM HAS BEEN CLEARED FOR USE BY F.D.E.P. AND ALL OTHER PERTINENT AGENCIES.
6. UPON RECEIPT OF CLEARANCE FOR USE FROM F.D.E.P. AND ALL OTHER PERTINENT AGENCIES. THE CONTRACTOR SHALL REMOVE THE TEMPORARY JUMPER CONNECTION. THE CORPORATION STOPS ARE TO BE CLOSED AND PLUGGED WITH 2" BRASS PLUGS.
7. ALL INSTALLATION AND MAINTENANCE OF THE TEMPORARY JUMPER CONNECTION AND ASSOCIATED BACKFLOW PREVENTION DEVICE, FITTINGS, VALVE, ETC, SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
8. USE AT POINTS OF FILLING. ALL OTHER LOCATIONS PROPOSED FOR CONNECTION TO EXISTING MAINS MUST REMAIN ISOLATED UNTIL F.D.E.P. LETTER IS OBTAINED.

CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL | TEMPORARY JUMPER CONNECTION DETAIL | DWN.BY: M.K.L. | DATE: 1-1-08 | REV. E.K.R. 12-17-13 | DWG. NO. W-1



NOTES:
1. FIRE HYDRANT SHALL BE SUPPLIED WITHOUT A WEEP HOLE, OR WITH A PERMANENTLY PLUGGED WEEP HOLE.
2. THE BUILDER MAY INSTALL THE SHEAR PAD RECESSED UP TO 4 INCHES BELOW FINISHED GRADE AND SOD THE RECESSED SECTION.
3. CLEARANCE BETWEEN BOTTOM OF BOLTS AND TOP OF SHEAR PAD SHALL BE A 6" MINIMUM.
4. IF THE HYDRANT IS LOCATED IN THE BOTTOM OF A ROADSIDE SWALE, MOVE THE HYDRANT TO BACKSLOPE OF THE SWALE.
5. CLEARANCE OF SEVEN AND ONE HALF FEET IN FRONT OF AND TO THE SIDES OF FIRE HYDRANTS AND APPLIANCES SHALL BE MAINTAINED. CLEARANCE OF FOUR FEET TO THE REAR OF FIRE HYDRANTS SHALL BE MAINTAINED.
6. FIRE HYDRANTS IN RESIDENTIAL SUBDIVISION/DEVELOPMENTS SHALL BE INSTALLED, WITH INTERMEDIATE HYDRANTS SPACED AT INTERVALS NOT TO EXCEED 1,000 FEET APART. FIRE HYDRANTS SHALL BE LOCATED NOT FURTHER THAN 15 FEET NOR LESS THAN 3 FEET FROM AN IMPROVED SURFACE. City Ord. Sec. 33.28. THE MINUMIM MEASUREMENT STARTS FROM THE OUTSIDE EDGE OF THE CURB.

CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL | FIRE HYDRANT ASSEMBLY DETAIL | DWN.BY: M.K.L. | DATE: 1-1-08 | REV. E.K.R. 2-3-11 | DWG. NO. W-3



SEE MANHOLE TABLE AND NOTES FOR DIMENSIONS AND ADDITIONAL REQUIREMENTS

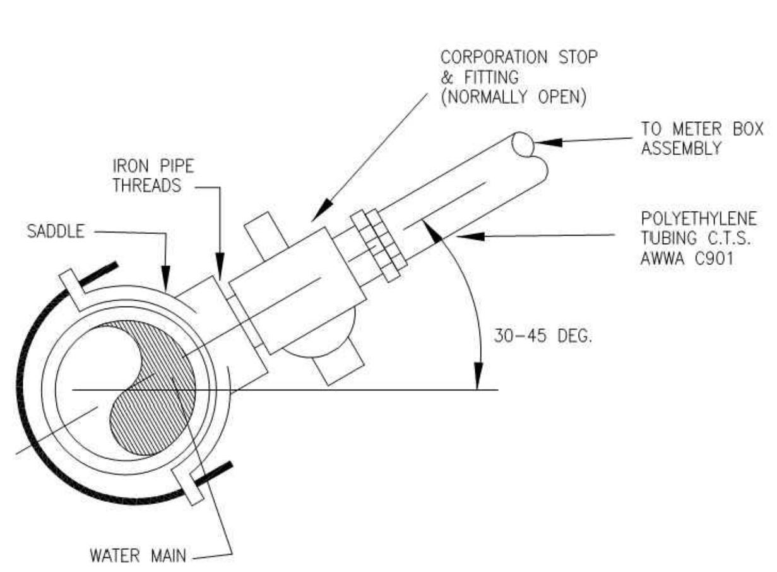
STANDARD PRECAST MANHOLE

NOTES:
1. PRECAST CONCRETE SHALL BE TYPE 2 CEMENT 4000 PSI AT 28 DAYS.
2. LIFT HOLES NOT PERMITTED THROUGH PRECAST SECTIONS.
3. ALL OPENINGS AND SEAMS SHALL BE SEALED WITH WATERPROOF, NON–SHRINKING GROUT.
4. FLOW CHANNEL TYPICAL INSIDE MANHOLES. SEE DETAIL THIS SHEET.
5. FLEXIBLE CONNECTIONS SHALL BE USED TO CONNECT PIPES (INLETS AND OUTLETS) TO MANHOLES.
6. NO SERVICE LATERALS SHALL BE PERMITTED DIRECTLY INTO MANHOLES. EXCEPT DROP END MANHOLE (MAX (2) LATERALS)
7. PLACE TWO HALF MOON SHAPED PLYWOOD (3/8" THK. MIN.) IN BOTTOM OF MANHOLE AFTER PIPES HAVE BEEN CONNECTED TO KEEP DEBRIS FROM ENTERING SEWER DURING CONSTRUCTION.
8. APPROVED EXTERIOR MANHOLE JOINT SEAL REQUIRED BETWEEN ALL PRECAST SECTIONS. TO BE INSTALLED PER MANUFACTURES SPECIFICATIONS.
9. AN OUTSIDE DROP CONNECTION SHALL BE REQUIRED FOR ALL INFLUENT WHICH HAVE AN INVERT OF 2FT OR MORE ABOVE THE MANHOLE INVERT. REFER TO DETAIL S–2 FOR DROP CONNECTION DETAIL.
10. FRAME WEIGHT SHALL EQUAL 220 LBS AND COVER WEIGHT SHALL EQUAL 170 LBS.
11. NEW MANHOLES RECEIVING THE FORCE MAIN FLOWS SHALL BE POLY LINED. EXISTING MANHOLES RECEIVING THE FORCE MAIN FLOWS SHALL BE FIBERGLASS LINED.
12. AN OUTSIDE DROP CONNECTION SHALL BE REQUIRED FOR ALL INFLUENT WHICH HAVE AN INVERT OF 2FT OR MORE ABOVE THE MANHOLE INVERT.
13. TWO COAST OF ALTERNATING COLORED EPOXY SHALL BE APPLIED. THE FINAL INTERIOR COLOR OF MANHOLE SHALL BE GRAY. THE FINAL EXTERIOR COLOR SHALL BE BLACK OR GRAY.

M.H. DEPTH	A	B	C	D	E	F
6' – 12'	48"	6"	24"	24"	AS REQ'D.	8"
12' – 18'	60"	8"	30"	30"	AS REQ'D.	10"
18' & DEEPER	72"	12"	36"	36"	AS REQ'D.	14"

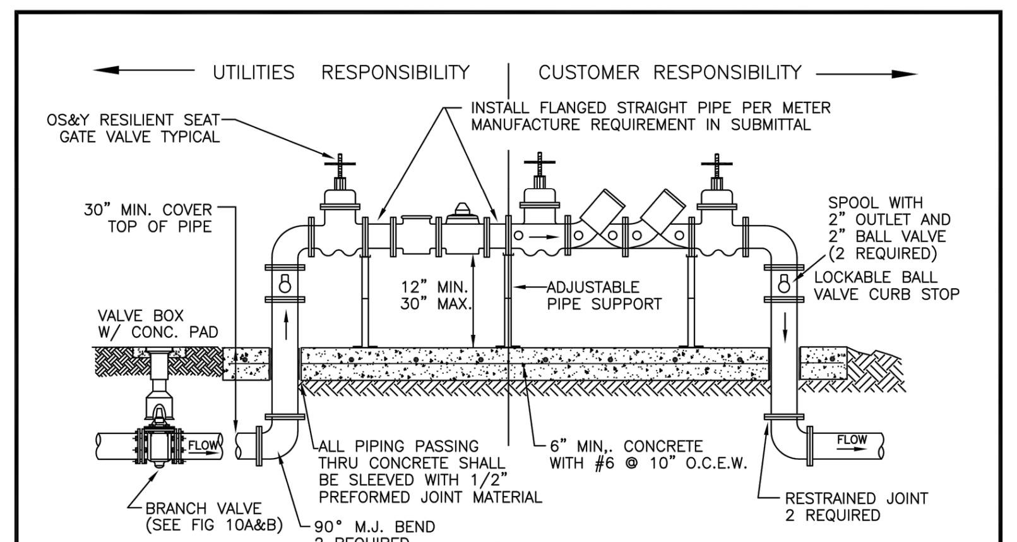
DIMENSION SCHEDULE

CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL | GRAVITY SEWER MANHOLE DETAILS | DWN.BY: M.K.L. | DATE: 1-1-08 | REV. E.K.R. 8-15-13 | DWG. NO. S-1A

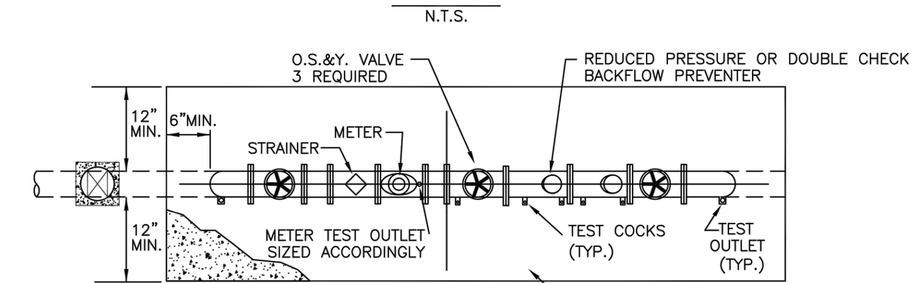


NOTES:
1. ALL MATERIALS MUST CONFORM TO THE CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS HANDBOOK SPECIFICATIONS

CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL | TYPICAL MAIN CONNECTION | DWN.BY: M.K.L. | DATE: 1-1-08 | REV. E.K.R. 1-29-10 | DWG. NO. W-6A



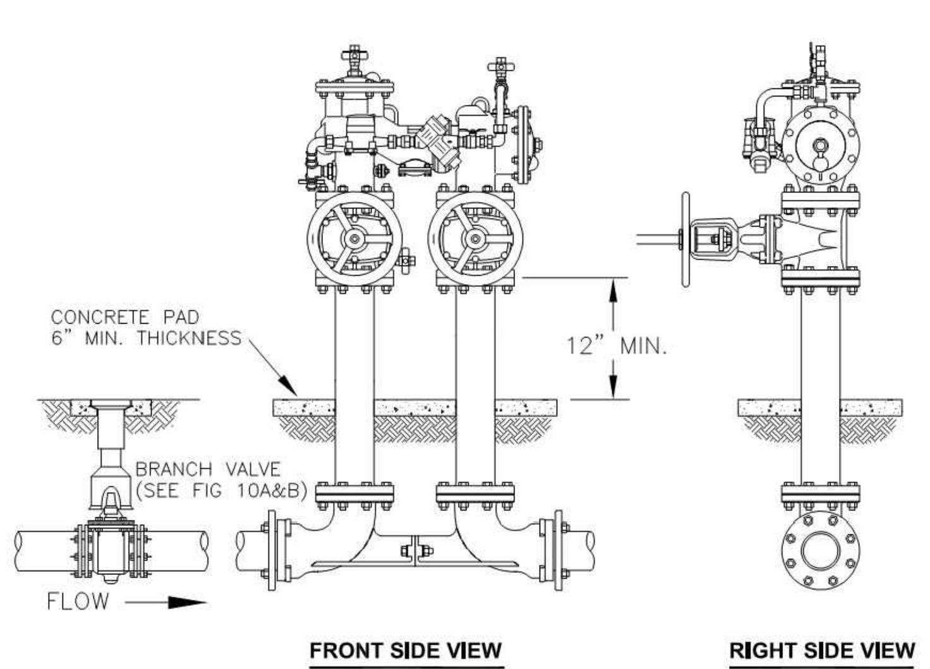
PROFILE
N.T.S.



PLAN
N.T.S

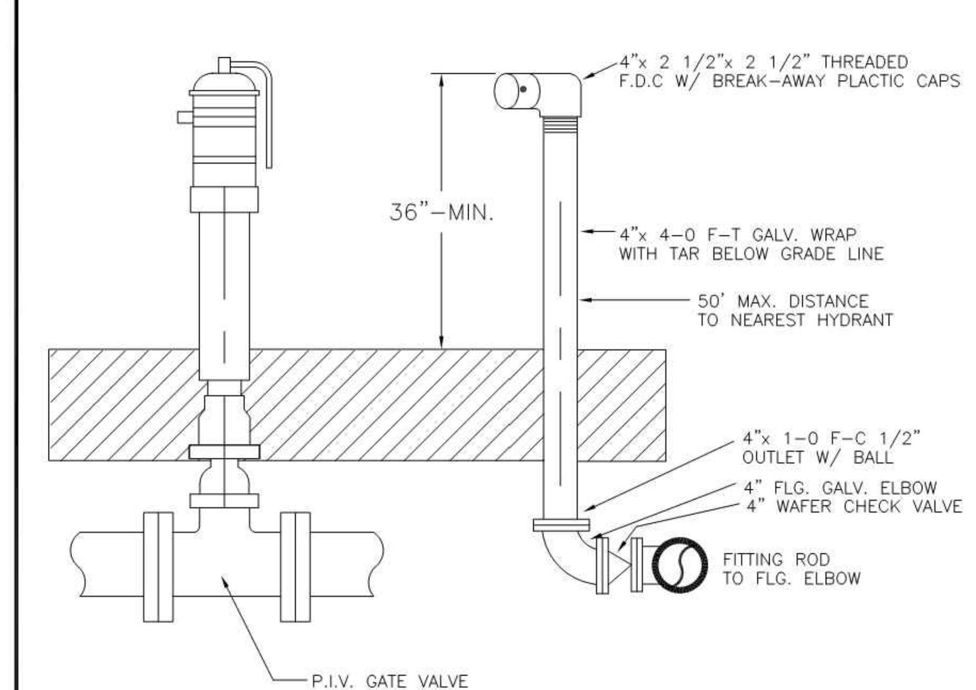
NOTE:
1. ALL PIPES SHOWN SHALL BE FLANGED DUCTILE IRON.
2. DEVICES ARE TO BE INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURES INSTRUCTIONS
3. 24" MIN. CLEARANCE MUST BE MAINTAINED AROUND ASSEMBLY.
4. ALL PIPE AND FITTINGS SHALL BE PAINTED.
5. ALL BACKFLOW PREVENTION DEVICES MUST BE TESTED ON SITE AND CERTIFICATIONS MUST BE SUBMITTED TO PALM BAY UTILITY BEFORE WATER SERVICE TO SITE CAN BE ESTABLISHED

CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL | 3" AND LARGER COMBINATION MASTER METER AND BACKFLOW PREVENTER | DWN.BY: M.K.L. | DATE: 1-1-08 | REV. | DWG. NO. W-11



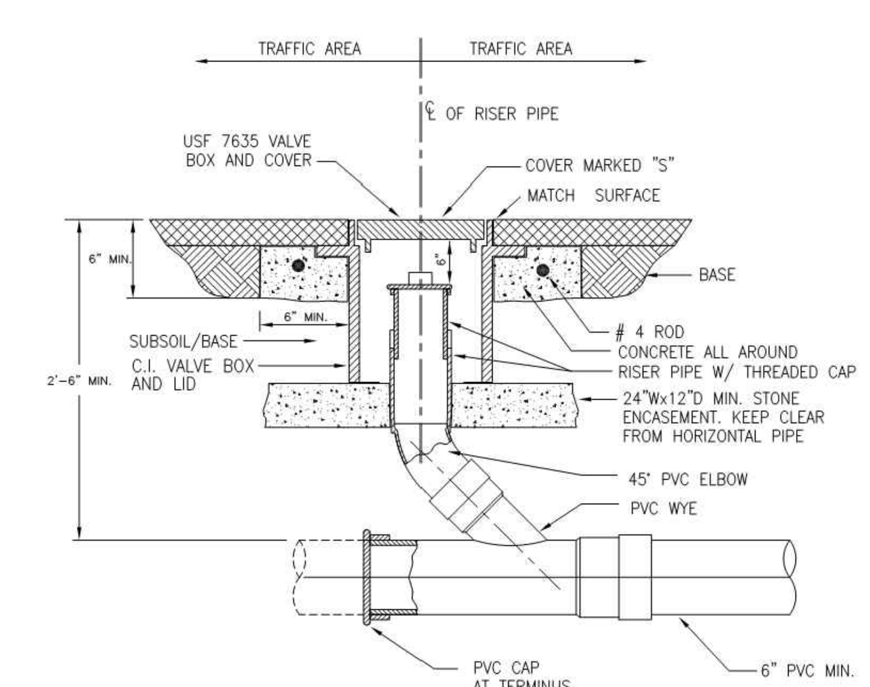
NOTE:
1. ALL PIPES SHOWN SHALL BE FLANGED DUCTILE IRON.
2. DEVICES ARE TO BE INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURES INSTRUCTIONS.
3. 24" MIN. CLEARANCE MUST BE MAINTAINED AROUND ASSEMBLY.
4. ALL PIPE AND FITTINGS SHALL BE PAINTED.
5. ALL BACK FLOW PREVENTION DEVICES MUST BE TESTED ON SITE AND CERTIFICATIONS MUST BE SUBMITTED TO PALM BAY UTILITY BEFORE WATER SERVICE TO SITE CAN BE ESTABLISHED.

CITY OF PALM BAY, UTILITY CORPORATION POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL | DOUBLE CHECK VALVE BACKFLOW PREVENTER WITH DETECTOR ASSEMBLY FOR FIRE LINES | DWN.BY: M.K.L. | DATE: 1-1-08 | REV. | DWG. NO. W-13



1. CLEARANCE OF SEVEN AND ONE HALF FEET IN FRONT OF AND TO THE SIDES OF FIRE HYDRANTS AND APPLIANCES SHALL BE MAINTAINED. CLEARANCE OF FOUR FEET TO THE REAR OF FIRE HYDRANTS SHALL BE MAINTAINED.

CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL | PIV GATE VALVE AND TWIN HOSE CONNECTOR DETAIL | DWN.BY: M.K.L. | DATE: 1-1-08 | REV. | DWG. NO. W-14



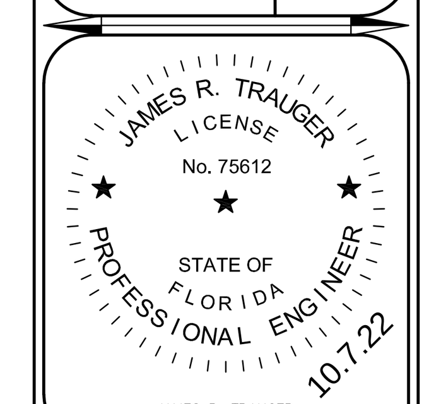
CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL | PARKING LOT/PAVED AREA SEWER CLEAN OUT DETAIL | DWN.BY: M.K.L. | DATE: 1-1-08 | REV. | DWG. NO. S-13

REVISION | DATE | REV#

TRAUGER CONSULTING ENGINEERS
2210 Front Street, STE 204 Melbourne, FL 32901
email - jim@traugerconsulting.com direct - (321) 292-0745

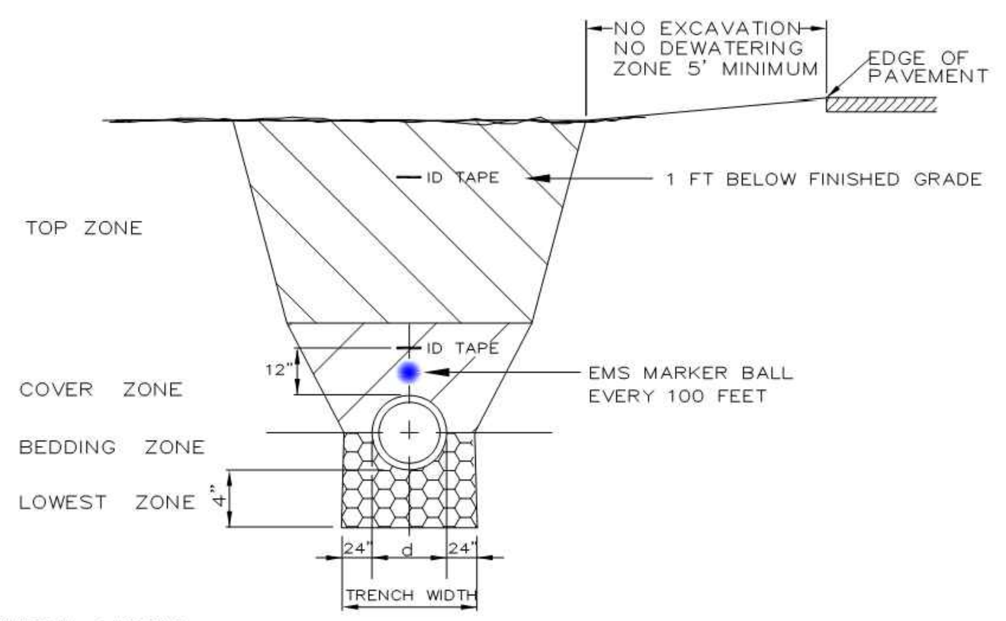
EPLER PARK
PALM BAY, FL

DETAILS



JAMES R. TRAUGER
FL P.E. #75612

DATE: 10-5-22
SECTION: 19
TOWNSHIP: 28S
RANGE: 37E
SCALE:
DRAWING NO. C-10
PROJECT: 22-126



GENERAL NOTES:

1. WHEN PERFORMING TRENCH EXCAVATION IN EXCESS OF FIVE (5) FEET IN DEPTH, COMPLY WITH THE OCCUPATIONAL SAFETY AND HELATH ADMINISTRATION'S (OSHA) TRENCH SAFETY STANDARDS, 29 C.F.R., S. 1926.650, SUBPART P, AND ALL SUBSEQUENT REVISIONS OR UPDATES ADOPTED BY THE DEPARTMENT OF LABOR AND EMPLOYMENT SECURITY. ENSURE THAT TRENCH BOXES ARE WIDE ENOUGH TO ACCOMODATE COMPACTION AND DENSITY TESTING.

2. PERFORM ALL EXCAVATIONS IN STREAM BEDS TO A DEPTH AT LEASE FOUR (4) FEET BELOW THE PERMANENT BED OF THE STREAM, UNLESS A FIRM FOOTING CAN BE ESTABLISHED ON SOLID ROCK BEFORE SUCH DEPTH IS REACHED, AND EXCAVATE TO SUCH ADDITIONAL DEPTH AS MAY BE NECESSAY TO ELIMINATE ANY DANGER OF UNDERMINING.

3. EXCAVATE TRENCHES FOR WATER MAIN/FORCE MAIN/REUSE/GRAVITY SEWER TO THE ELEVATION OF THE BOTTOM OF THE PIPE AND TO A WIDTH AS NOTED IN DETAILS. REMOVE SOIL NOT MEETING THE CLASSIFICATION SPECIFIED AS SUITABLE BACKFILLL MATERIAL TO A DEPTH OF FOUR (4) INCHES BELOW BOTTOM OF THE PIPE ELEVATION. REMOVE ROCK, BOULDERS OR OTHER HARD LUMPY OR UNYIELDING MATERIALS TO A DEPTH OF TWELVE (12) INCHES BELOW THE BOTTOM OF THE PIPE ELEVATION. REMOVE MUCK OR OTHER SOFT MATERIALS TO A DEPTH NECESSAY TO ESTABLISH A FIRM FOUNDATION. WHERE THE SOILS PERMIT, ENSURE THAT THE TRENCH SIDES ARE VERTICAL UP TO AT LEASE THE MID-POINT OF THE PIPE.

CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL	EXCAVATION AND BACKFILL FOR UTILITIES PIPE PAGE 1	DWN.BY: M.K.L. REV. E.K.R. 10-26-10	DATE: 1-1-08 DWG. NO. FIG 1

(CONT. FROM SHEET 1)

GENERAL NOTES:

4. PROVIDE NORMAL DEWATERING EQUIPMENT INCLUDING, BUT NOT LIMITED TO SURFACE PUMPS, SUMP PUMPS, WELLPOINTS AND HEADER PIPE AND TRENCHING/DIGGING MACHINERY.

5. BACKFILL TO THE ORIGINAL GROUND SURFACE OR SUBGRADE SURFACE OF OPENINGS MADE FOR STRUCTURES, WITH A SUFFICIENT ALLOWANCE FOR SETTLEMENT. DO NOT ALLOW HEAVY CONSTRUCTION EQUIPMENT TO CROSS OVER CULVERT OR STORM SEWER PIPES UNTIL PLACING AND COMPACTING BACKFILL MATERIAL TO THE FINISHED EARTHWORK GRADE OR TO AN ELEVATION AT LEASE (4) FEET ABOVE THE CROWN OF THE PIPE.

6. PLACE THE MATERIAL IN HORIZONTAL LAYERS NOT EXCEEDING SIX (6) INCHES COMPACTED THINKNESS, IN DEPTH ABOVE WATER LEVEL, BEHIND ABUTMENTS, WINGWALLS AND END BENTS, UNDER THE HAUNCHES OF THE PIPES AND AROUND BOX CULVERTS AND ALL STRUCTURES INCLUDING PIPE CULVERTS. THE CONTRACTOR MAY ELECT TO PLACE MATERIAL IN THICKER LIFTS OF NO MORE THAN 12 INCHES COMPACTED THICKNESS OUTSIDE THE SOIL ENVELOPE IF HE/SHE CAN DEMONSTRATE WITH THE SUCCESSFULL TEST SECTION THAT DENSITY CAN BE ACHIEVED.

7. MATERIAL:
A) LOWEST ZONE: BACKFILL AREAS UNDERCUT BELOW THE BEDDING ZONE OF A PIPE WITH COURSE SAND, OR OTHER SUITABLE GRANULAR MATERIAL, OBTAINED FROM THE GRADING OPERATIONS ON THE PROJECT, OR A COMMERCIAL MATERIAL IF NO SUITABLE MATERIAL IS AVAILABLE.
(12) INCHES BELOW THE BOTTOM OF THE PIPE ELEVATION. REMOVE MUCK OR OTHER SOFT MATERIALS TO A DEPTH NECESSAY TO ESTABLISH A FIRM FOUNDATION. WHERE THE SOILS PERMIT, ENSURE THAT THE TRENCH SIDES ARE VERTICAL UP TO AT LEASE THE MID-POINT OF THE PIPE.
A) LOWEST ZONE: BACKFILL AREAS UNDERCUT BELOW THE BEDDING ZONE OF A PIPE WITH COURSE SAND, OR OTHER SUITABLE GRANULAR MATERIAL, OBTAINED FROM THE GRADING OPERATIONS ON THE PROJECT, OR A COMMERCIAL MATERIAL IF NO SUITABLE MATERIAL IS AVAILABLE.
B) SOIL ENVELOPE: IN BOTH THE BEDDING ZONE AND THE COVER ZONE OF THE PIPE, BACKFILL WITH MATERIALS CLASSIFIED AS A-1, A-2, OR A-3. MATERIAL CLASSIFIED AS A-4 MAY BE USED IF THE PIPE IS CONCRETE PIPE.
C) TOP ZONE: BACKFILL THE AREA OF THE TRENCH ABOVE THE SOIL ENVELOPE OF THE PIPE WITH MATERIALS CLASSIFIED AS A-1 OR A-3. WHEN PIPE IS UNDER ROADWAY, BACKFILL TO BOTTOM OF ROADWAY SUBGRADE. SUBGRADE AND MATERIAL SHALL BE IN ACCORDANCE WITH PLANS.

8. COMPACTION:
A) LOWEST ZONE: COMPACT THE SOIL IN THE LOWEST ZONE TO APPROXIMATELY MATCH THE DENSITY OF THE SOIL IN WHICH THE TRENCH WAS CUT.
B) BEDDING ZONE: IF THE TRENCH WAS NOT UNDERCUT BELOW THE BOTTOM OF THE PIPE, LOOSEN THE SOIL IN THE BOTTOM OF THE TRENCH IMMEDIATELY BELOW THE APPROXIMATE MIDDLE THIRD OF THE OUTSIDE DIAMETER OF THE PIPE. IF THE TRENCH WAS UNDERCUT, PLACE THE BEDDING MATERIAL AND LEAVE IT IN A LOOSE CONDITION BELOW THE MIDDLE THIRD OF THE OUTSIDE DIAMETER OF THE PIPE. COMPACT THE MATERIAL TO 100% MAXIMUM DENSITY PER AASHTO T-99 METHOD C. PLACE THE MATERIAL IN LIFTS NO GREATER THAN SIX (6) INCHES (COMPACTED THICKNESS).

(CONT. ON SHEET 3)

CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL	EXCAVATION AND BACKFILL FOR UTILITIES PIPE PAGE 2	DWN.BY: M.K.L. REV.	DATE: 1-1-08 DWG. NO. FIG 1

(CONT. FROM SHEET 2)

C) COVER ZONE: BEFORE PLACING THE COVER ZONE MATERIAL, LAY PIPE ACCORDING TO ALIGNMENT AND GRADES GIVEN. DO NOT ALLOW DEPARTURE FROM ALIGNMENT OR GRADE TO EXCEED 1/16 PER FOOT OF NOMINAL PIPE LENGTH. TAKE UP AND RELAY ANY PIPE THAT IS NOT TRUE TO ALIGNMENT OR WHICH SHOWS SELTTLEMENT AFTER LAYING. EXCAVATE FOR PIPE BELLS BEFORE LAYING PIPE. PLACE THE MATERIAL IN SIX (6) INCH LAYERS (COMPACTED THICKNESS), EVENLY DEPOSITED ON BOTH SIDES OF THE PIPE, AND COMPACT WITH MECHANICAL TAMPERS SUITABLE FOR THIS PURPOSE. HAND TAMP MATERIAL BELOW THE PIPE HAUNCH THAT CANNOT BE REACHED BY MECHANICAL TAMPERS. COMPACT THE MATERIAL TO 98% MAXIMUM DENSITY PER AASHTO T-99 METHOD C.

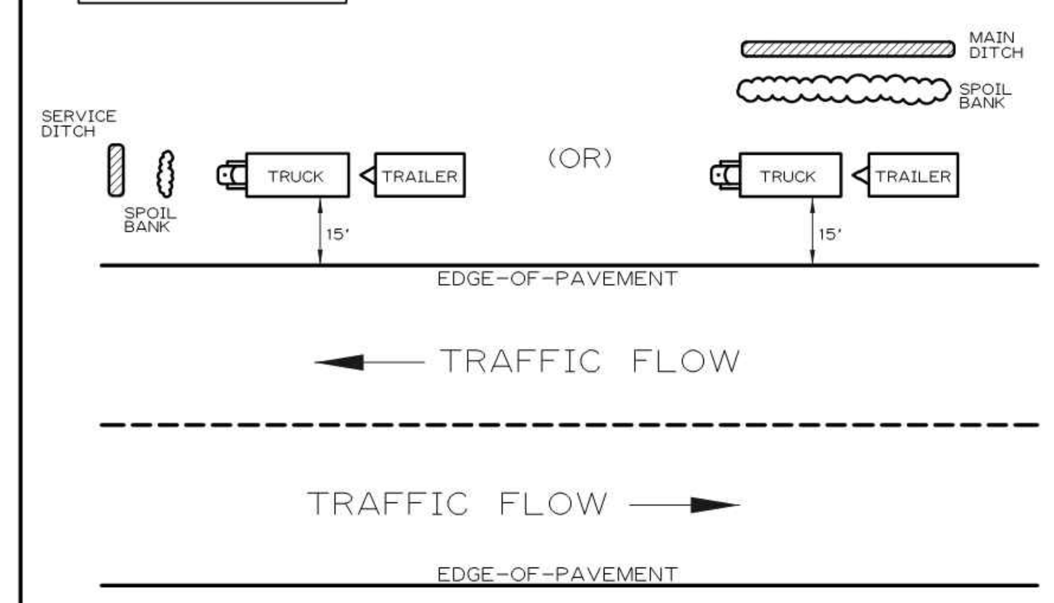
D) TOP ZONE: PLACE THE MATERIAL IN LAYERS NOT TO EXCEED 12 INCHES IN COMPACTED THICKNESS. COMPACT THE MATERIAL TO 95% MAXIMUM DENSITY PER AASHTO T-99 METHOD C FOR GREATER THAN 12 INCHES OUTSIDE OF ROADWAY, 98% FOR AREAS LESS THAN 12 INCHES TO THE EDGE OF PAVEMENT AND UNDER THE ROADWAY.

9. BACKFILL UNDER WET CONDITIONS: WHERE WET CONDITIONS ARE SUCH THAT DEWATERING BY NORMAL PUMPING METHODS WOULD NOT BE EFFECTIVE, THE USE OF COURSE AGGREGATE BELOW THE ELEVATION AT WHICH MECHANICAL TAMPERS WOULD BE EFFECTIVE WOULD BE ACCEPTABLE. USE COARSE AGGREGATE AS SPECIFIED IN FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE COSNTRUCTION SECTION 901 FOR AGGREGATE SIZE NUMBER 89, 8, 78, 7, 68, 6, OR 57. PLACE THE COURSE AGGREGATE SUCH THAT IT WILL BE STABLE AND FIRM. FULLY WRAP THE AGGREGATE WITH A LAYER OF TYPE D-4 FILTER FABRIC, AS SPECIFIC ON FDOT DESIGN STANDARDS INDEX NO. 199. DO NOT PLACE COARSE AGGREGATE WITHIN FOUR (4) FEET OF THE ENDS OF THE TRENCH OR DITCH. USE NORMALLY ACCEPTED BACKFILL MATERIAL AT THE ENDS.

CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL	EXCAVATION AND BACKFILL FOR UTILITIES PIPE PAGE 3	DWN.BY: M.K.L. REV. E.K.R. 1-28-10	DATE: 1-1-08 DWG. NO. FIG 1

SITUATION SUMMARY	
LANES OF TRAFFIC	2
SIDES OF WORK	1
LANES CLOSED	0
OFF PAV'T	+15'

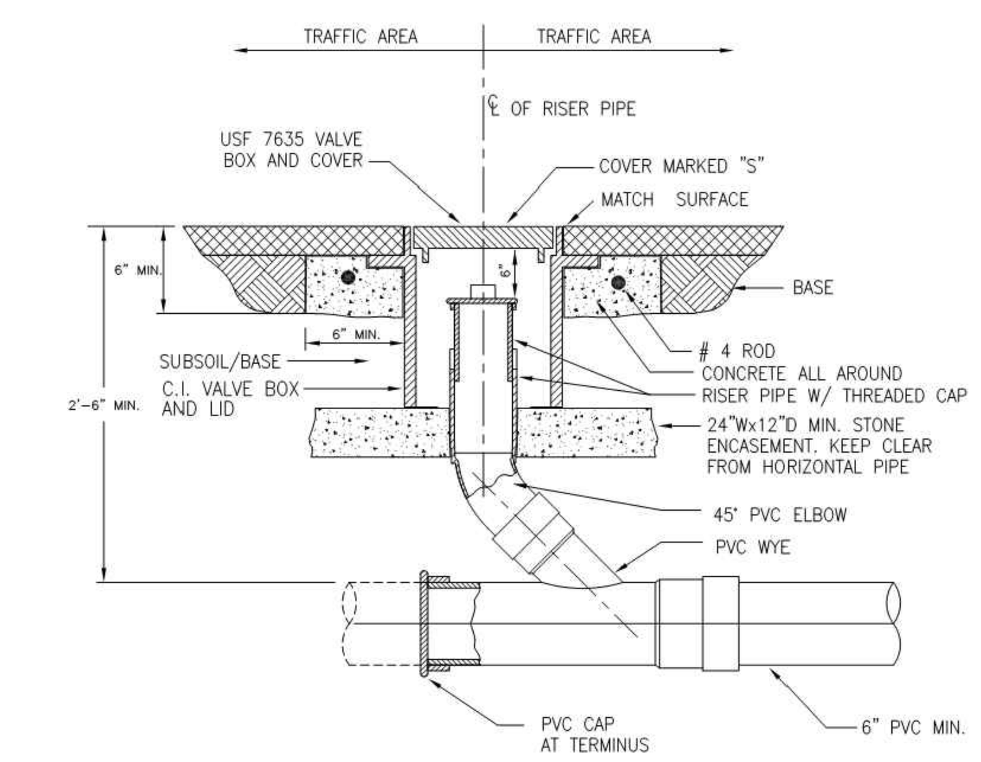
SAFETY NOTICE:
IF THE PROPOSED WORK ZONE SITE CONDITIONS MEET OR EXCEED THE EXAMPLE SHOWN, A MOT PLAN IS NOT REQUIRED. IF THE WORK ZONE IS CLOSER THEN 15' TO THE EDGE-OF-PAVEMENT, REFER TO GENERAL NOTE 3.



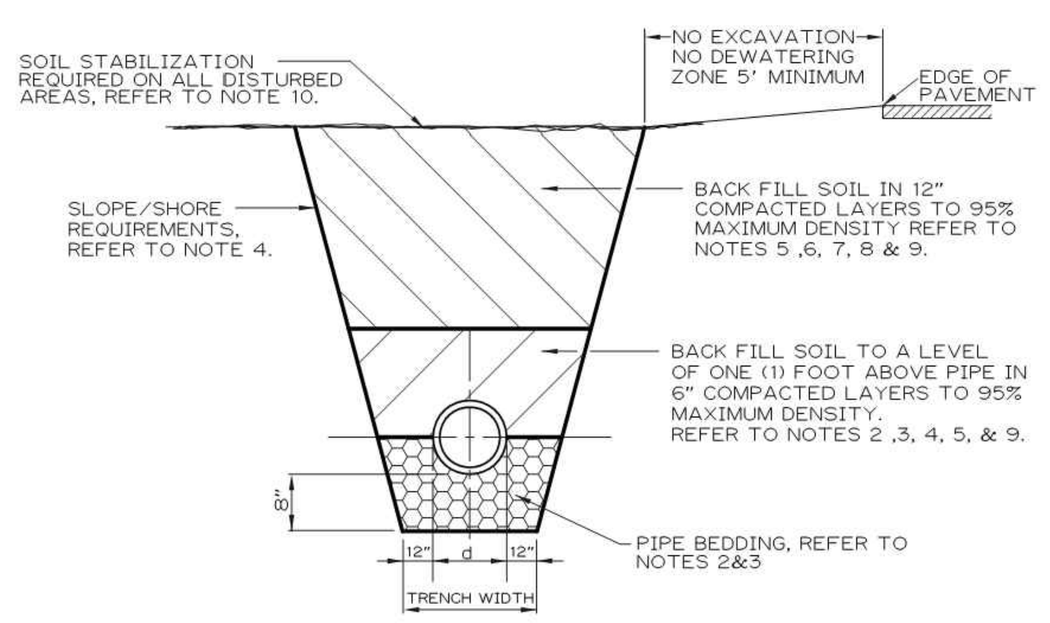
GENERAL NOTES:
1. TWO LANES, TWO WAY TRAFFIC, ONE SIDE OPERATION, NO LANE CLOSURE. WORK AREA MORE THAN 15' OFF PAVEMENT.
2. WORK AREA PROTECTION IS NOT NECESSARY WHEN VEHICLES, EQUIPMENT, WORKERS AND THEIR ACTIVITIES ARE MORE THAN 15' FROM THE EDGE-OF- PAVEMENT. TRUCK FLASHER LIGHTS SHALL BE USED.
3. FOR ANY WORK CLOSER THAN 15' TO THE EDGE-OF-PAVEMENT OR ON THE PAVEMENT, REFER TO THE FLORIDA DEPARTMENT OF TRANSPORTATION "ROADWAY AND TRAFFIC DESIGN STANDARDS" INDEX 600 (MOST CURRENT EDITION). THE APPLICABLE INDEX 600 STANDARD SHALL BE USED IN ALL CASES.

MAINTENANCE OF TRAFFIC
(N.T.S.)

Palm Bay	CITY OF PALM BAY PUBLIC WORKS DEPARTMENT	STANDARD MAINTENANCE OF TRAFFIC SMOT - 01	DATE: AUG 2007 APPROVED:



CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL	PARKING LOT/PAVED AREA SEWER CLEAN OUT DETAIL	DWN.BY: M.K.L. REV.	DATE: 1-1-08 DWG. NO. S-13



GENERAL NOTES:
1. A 30" MINIMUM COVER SHALL BE MAINTAINED WITHIN THE RIGHTS OF WAY AND 24" WITHIN P.U. & D. EASEMENTS.
2. THE MINIMUM TRENCH WIDTH SHALL BE 24" + d AT THE BED LEVEL.
3. UTILITY OR PIPE INSTALLATION SHALL BE PLACED ON 8" MINIMUM COMPACTED SOIL BACK FILL, IF THE EXPOSED MATERIAL IS UNSUITABLE OR DISTURBED. THE PIPE BED BACK FILL SOIL SHALL BE COMPACTED TO 95% MAXIMUM DENSITY, AS PER AASHTO T180 D METHOD. 3/4" ROCK GRAVEL, NUMBER 57 STONE, NATURAL SAND, IMPORTED QUARRY WASTE OR A MIXTURE THEREOF MAY BE USED AS THE ALTERNATIVE TO COMPACT SOIL. SAMPLES OF THE MATERIAL SHALL BE SUBMITTED SUFFICIENTLY IN ADVANCE OF THE INTENDED USE TO ENABLE INSPECTION, TESTING AND APPROVAL OR REJECTION THEREOF. DO NOT PLACE COARSE AGGREGATE WITHIN FOUR (4) FEET OF THE ENDS OF THE TRENCH. USE NORMALLY ACCEPTED BACKFILL MATERIAL AT THE ENDS.

(CONT. ON SHEET 2)

TRENCH DETAIL
(N.T.S.)

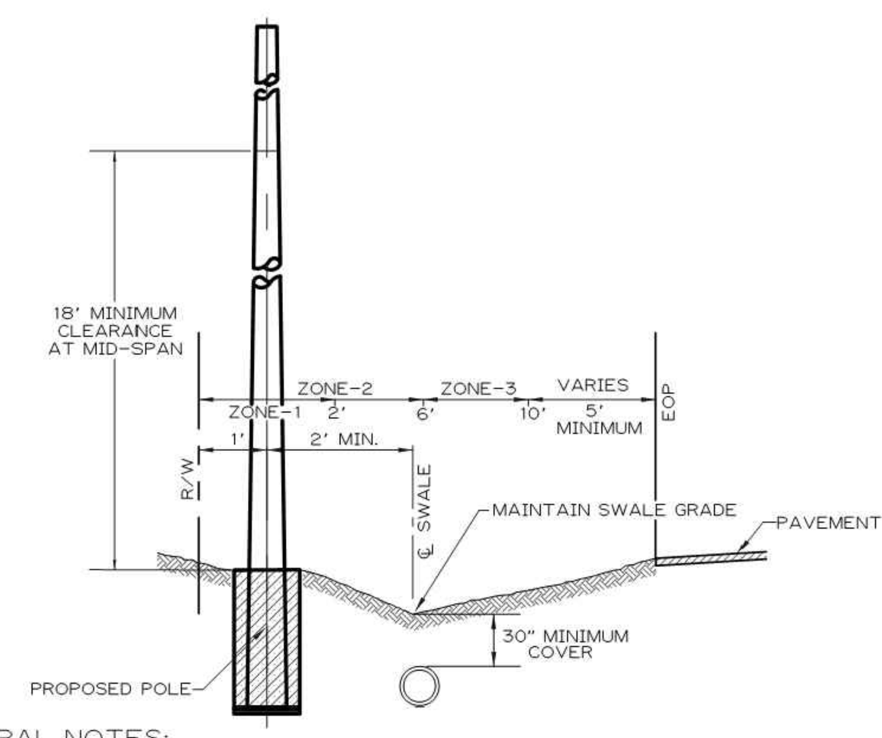
Palm Bay	CITY OF PALM BAY PUBLIC WORKS DEPARTMENT	STANDARD RIGHT OF WAY DETAIL SRW - 01 (1 OF 2)	DATE: AUG 2006 APPROVED:

(CONT. FROM SHEET 1)

GENERAL NOTES:

4. USE OF A SLOPE TRENCH WALL, TRENCH BOX, SHEETING OR SHORING SHALL MEET FLORIDA DEPARTMENT OF TRANSPORTATION AND OCCUPATIONAL SAFETY HEALTH ACT GUIDELINES.
5. CONSTRUCTION SHALL BE ACCOMPLISHED ONLY IN A DRY TRENCH. NO DEWATERING WITHIN 5' OF THE EDGE OF PAVEMENT.
6. BACKFILL SOILS SHALL BE COMPACTED IN 12" LAYERS (MAX.) TO 95% MAXIMUM DENSITY, AS PER AASHTO T180 D METHOD. COMPACTION SHALL BE ACCOMPLISHED BY SUITABLE EQUIPMENT SPECIFICALLY DESIGNED FOR THIS PURPOSE.
7. IN PLACE DENSITY TESTING SHALL BE IN ACCORDANCE WITH AASHTO-T 310-06.
8. DENSITY TEST SHALL BE ACCEPTED ON STABILIZED, NON-YIELDING SURFACES ONLY.
9. FLOWABLE BACKFILL MAY BE USED AS AN ALTERNATIVE TO COMPACTED SOIL. REFER TO THE FLORIDA DEPARTMENT OF TRANSPORTATION 2000 EDITION OF STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION, SECTION 121- FLOWABLE FILL, SUBSECTIONS 121-1 THROUGH 121-6, OR MOST CURRENT EDITION FOR THIS APPLICATION.
10. DISTURBED SURFACE AREAS SHALL BE STABILIZED BY THE USE OF MATCHING SOD IN FRONT OF DEVELOPED AREAS OR THE USE OF SEED AND MULCH IN ACCORDANCE WITH FDOT INDEX 105. SEED GERMINATION SHALL BE 80% OR GREATER. IF THE SLOPE EXCEEDS 3 TO 1 THEN SOD SHALL BE USED.
11. OTHER CONDITIONS MAY APPLY REFER TO THE PALM BAY CODE OF ORDINANCES FOR ADDITIONAL DETAILS.

Palm Bay	CITY OF PALM BAY PUBLIC WORKS DEPARTMENT	STANDARD RIGHT OF WAY DETAIL SRW - 01 (2 OF 2)	DATE: AUG 2006 APPROVED:



GENERAL NOTES:
1. ELECTRIC, TELECOMMUNICATIONS, AND CATV CABLE PLANT IMPROVEMENTS SHALL BE LOCATED IN:
ZONE 1 - AERIAL IMPROVEMENTS
ZONE 2 - UNDERGROUND IMPROVEMENTS
2. WATER, SEWER AND NATURAL GAS IMPROVEMENTS SHALL BE LOCATED IN ZONE 3
3. AERIAL IMPROVEMENTS SHALL HAVE A MINIMUM CLEARANCE OF EIGHTEEN (18) FEET ABOVE EXISTING GRADE, AT MID-SPAN.
4. UNDERGROUND IMPROVEMENTS SHALL BE A MINIMUM OF THIRTY (30) INCHES BELOW THE EXISTING GRADE.
5. UNDERGROUND IMPROVEMENTS SHALL HAVE A MINIMUM SEPARATION OF TWELVE (12) INCHES FROM OTHER STRUCTURES.
6. EXCAVATION SHALL NOT BE PERMITTED WITHIN FIVE (5) FEET OF THE EDGE OF PAVEMENT.
7. OTHER CONDITIONS MAY APPLY, REFER TO THE PALM BAY CODE OF ORDINANCES FOR ADDITIONAL DETAILS.

UTILITY LOCATION DETAIL
(N.T.S.)

Palm Bay	CITY OF PALM BAY PUBLIC WORKS DEPARTMENT	STANDARD RIGHT OF WAY DETAIL SRW - 02	DATE: AUG 2007 APPROVED:

LOCATION OF PUBLIC WATER SYSTEM MAINS IN ACCORDANCE WITH F.A.C. RULE 62-555.314

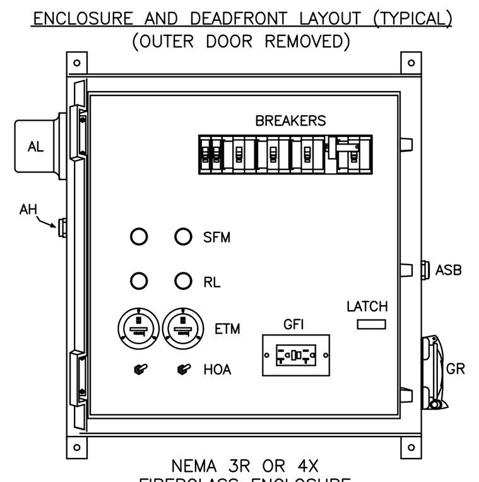
OTHER PIPE	HORIZONTAL SEPARATION	CROSSINGS (1)	JOINT SPACING @ CROSSINGS (FULL JOINT CENTERED)
STORM SEWER, STORMWATER FORCE MAIN, RECLAIMED WATER (2)	WATER MAIN 3 FT. MINIMUM	Water Main 12 INCHES IS THE MINIMUM, EXCEPT FOR STORM SEWER, THEN 6 INCHES IS THE MINIMUM AND 12 INCHES IS PREFERRED	ALTERNATE 3 FT. MINIMUM WATER MAIN
VACUUM SANITARY SEWER	WATER MAIN 10 FT. PREFERRED 3 FT. MINIMUM	Water Main 12 INCHES PREFERRED 6 INCHES MINIMUM	ALTERNATE 3 FT. MINIMUM WATER MAIN
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 PREFERRED	ALTERNATE 6 FT. MINIMUM WATER MAIN
ON-SITE SEWAGE TREATMENT & DISPOSAL SYSTEM	10 FT. MINIMUM	–	–

(1) WATER MAIN SHOULD CROSS ABOVE OTHER PIPE. WHEN WATER MAIN MUST BE BELOW OTHER PIPE, THE MINIMUM SEPARATION IS 12 INCHES.
(2) RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 63-610, F.A.C.
(3) 3 FEET FOR GRAVITY SANITARY SEWER WHERE THE BOTTOM OF THE WATER MAIN IS LAID 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.

ELECTRICAL

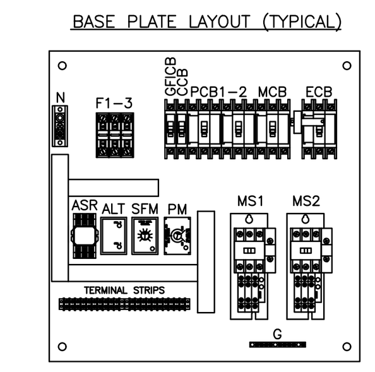
CONTRACTOR TO VERIFY INCOMING POWER PRIOR TO MATERIAL ORDER

ENCLOSURE AND DEADFRONT LAYOUT (TYPICAL)
(OUTER DOOR REMOVED)

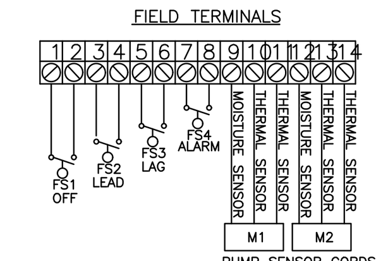


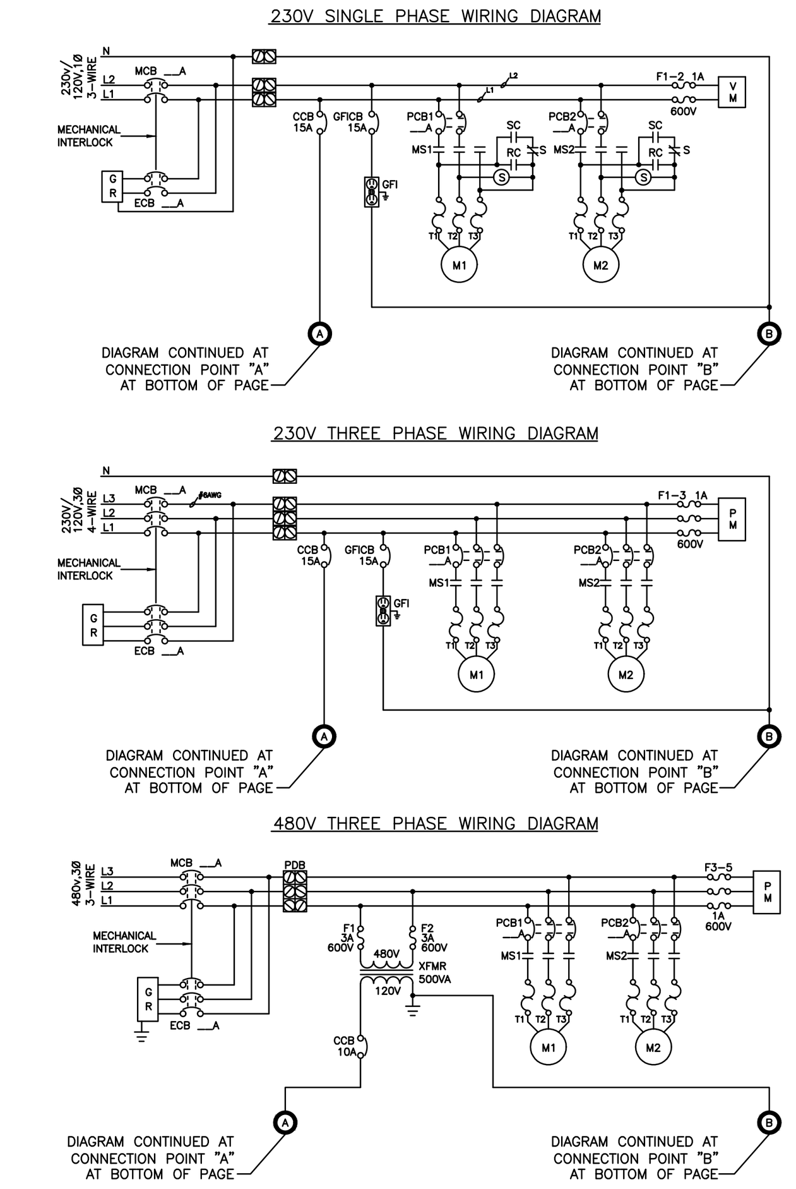
NEMA 3R OR 4X FIBERGLASS ENCLOSURE

BASE PLATE LAYOUT (TYPICAL)



FIELD TERMINALS

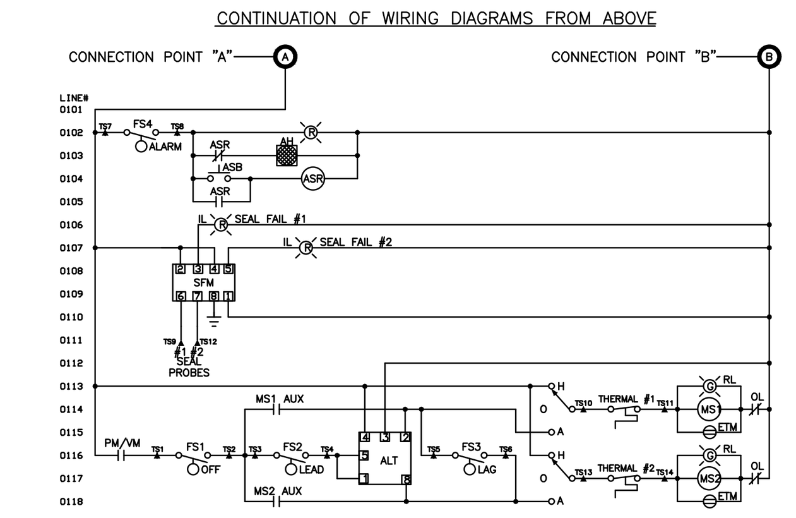




LEGEND

ABBR.	DESCRIPTION
ENC	ENCLOSURE, F.G., NEMA 4X
MCB	MAIN CIRCUIT BREAKER
ECB	EMERGENCY CIRCUIT BREAKER
N	NEUTRAL BLOCK
PDB	POWER DISTRIBUTION BLOCK
PCB1,2	PUMP CIRCUIT BREAKER
CCB	CONTROL CIRCUIT BREAKER
GFICB	GFI CIRCUIT BREAKER
MS1,2	MOTOR STARTER
OL	OVERLOAD HEATER
S	START RELAY
SC	START CAPACITOR
RC	RUN CAPACITOR
GR	GENERATOR RECEPTACLE
F_	FUSE, 1A 600V
VM	VOLTAGE MONITOR
PM	PHASE MONITOR
XFMR	TRANSFORMER
GFI	GFI RECEPTACLE
AL	ALARM LIGHT
AH	ALARM HORN
ASB	ALARM SILENCE BUTTON
ASR	ALARM SILENCE RELAY
SFM	SEAL FAIL MODULE
IL	INDICATING LIGHT, RED
ALT	ALTERNATOR
HOA	HAND OFF AUTO SWITCH
RL	RUN LIGHT, GREEN
ETM	ELAPSED TIME METER

CONTINUATION OF WIRING DIAGRAMS FROM ABOVE



ALL PANELS SHALL CONFORM TO FLORIDA DEP 17-604.400
1) GENERATOR RECEPTACLE WITH INTERLOCK FOR EMERGENCY POWER CONNECTION.
2) SURGE PROTECTOR SHALL BE SHIPPED WITH PANEL AND MOUNTED EXTERNAL TO THE CONTROL PANEL BY CONTRACTOR.
3) PHASE OR VOLTAGE MONITOR SHALL BE PROVIDED IN CONTROL PANEL.
4) ALL PANELS, WET WELL, VALVE BOX, AND ACCESS DOORS SHALL HAVE LOCKABLE MECHANISMS. CONTRACTOR TO PROVIDE KEYED LOCKS.
5) POST UNOBSTRUCTED SIGN MADE OF DURABLE WEATHER RESISTANT MATERIAL WITH THE FOLLOWING:
PUBLIC NOTICE: IN CASE OF EMERGENCY CONTACT:
6) THE CONTROL PANEL SHALL BE SUITABLY INSTALLED TO PREVENT SETTLING OR TIPPING.
7) ELECTRICAL CONTRACTOR TO PROVIDE SERVICE DISCONNECT WITH LIGHTNING ARRESTOR MOUNTED PER LOCAL CODES.
8) FLOAT SWITCHES SHALL BE UL LISTED.

PANEL MANUFACTURER SHALL BE UL 508 AND UL 698A LISTED.

UL LISTED ENCLOSED INDUSTRIAL CONTROL PANEL

FIBERGLASS LIFT STATION MANUFACTURER DETAIL
NTS

REVISION | DATE | REV#

TRAUGER CONSULTING ENGINEERS
2210 Front Street, STE 204 Melbourne, FL 32901
email - jim@traugerconsulting.com direct - (321) 292-0745

EPLER PARK
PALM BAY, FL

DETAILS

JAMES R. TRAUGER LICENSE No. 75612 STATE OF FLORIDA PROFESSIONAL ENGINEER 10.7.22
JAMES R. TRAUGER FL P.E. #75612

DATE: 10-5-22
SECTION: 19
TOWNSHIP: 28S
RANGE: 37E
SCALE:
DRAWING NO. C-11
PROJECT: 22-126

BREVARD COUNTY PUBLIC WORKS ENGINEERING STANDARD DEVELOPMENT NOTES

GENERAL

1. ALL CONSTRUCTION SHALL CONFORM TO FDOT DESIGN STANDARDS (LATEST EDITION), FDOT STANDARD SPECIFICATIONS FOR ROAD & BRIDGE CONSTRUCTION (LATEST EDITION), BREVARD COUNTY UTILITY SERVICES CRITERIA FOR WATER AND SANITARY SEWER SYSTEMS, AND BREVARD COUNTY CODE OF ORDINANCES.
2. ISSUANCE OF CERTIFICATE OF COMPLETION: UPON COMPLETION OF CONSTRUCTION OF THE PROJECT AND PRIOR TO SCHEDULING OF THE FINAL INSPECTION, THE APPLICANT OR THEIR AUTHORIZED REPRESENTATIVE, SHALL PROVIDE THE FOLLOWING DOCUMENTATION TO BREVARD COUNTY PUBLIC WORKS ENGINEERING:
   a. A CERTIFICATE OF COMPLETION - REQUEST FOR FINAL INSPECTION FORM. THE FORM MUST BE FROM A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF FLORIDA WITH THEIR SEAL AFFIXED. THE FORM CERTIFIES THAT THE IMPROVEMENTS HAVE BEEN CONSTRUCTED IN CONFORMANCE WITH THE APPROVED CONSTRUCTION PLANS AND SPECIFICATIONS.
   b. A COMPLETE SET OF TESTING REPORTS FOR ALL TESTS PERFORMED ON THE PROJECT WITHIN THE COUNTY RIGHT-O- WAY AND/OR FOR ALL SUBDIVISION CONSTRUCTION REGARDLESS OF PUBLIC OR PRIVATE.
   c. THREE SETS OF AS-BUILT DRAWINGS MEETING THE REQUIREMENTS OF SECTION 61G17, F.A.C., AND SIGNED AND SEALED BY A SURVEYOR LICENSED IN THE STATE OF FLORIDA. AT A MINIMUM, ALL AS-BUILT DRAWINGS MUST INCLUDE:
      i. ROAD/PAVEMENT ELEVATIONS; ROADWAY CROSS SLOPES; PAVEMENT WIDTH; PAVEMENT SPOT ELEVATIONS NECESSARY TO CONFIRM STORMWATER DRAINAGE PATTERNS AT INTERSECTIONS AND SIDEWALKS; CURB SLOPES;
      ii. STORMWATER PIPE SIZES AND INVERT ELEVATIONS; LOCATION OF OUTFALL STRUCTURE(S) WITH AS-BUILT ELEVATIONS FOR ALL CONTROL STRUCTURE & SKIMMER ELEVATIONS SHOWN ON THE APPROVED PLANS; TOP OF BANK, GRADE BREAKS, BOTTOM ELEVATIONS FOR ALL STORMWATER PONDS OR BERM AREAS;
      iii. ANY OTHER ADDITIONAL AS-BUILT DATA THAT IS APPLICABLE TO THE PROJECT TO ENSURE COMPLETION IN ACCORDANCE WITH THE APPROVED CONSTRUCTION PLANS.
   d. PIPE INSPECTION VIDEO PER FDOT REQUIREMENTS. (IF APPLICABLE PER NOTE 4 OF DRAINAGE NOTES)
   e. IF A MUNICIPALITY IS ACCEPTING A PUBLIC WATER AND/OR SEWER SYSTEM, THERE MUST BE DOCUMENTATION INDICATING MUNICIPAL ACCEPTANCE OF THE CONSTRUCTION OF THE WATER AND/OR SEWER SYSTEM.
   f. PUBLIC WORKS ENGINEERING WILL NOT SIGN OFF ON A TEMPORARY CERTIFICATE OF OCCUPANCY (TCO) FROM THE BREVARD COUNTY BUILDING DEPARTMENT UNTIL THE AS-BUILT DRAWINGS AND OTHER DOCUMENTATION LISTED ABOVE HAVE BEEN SUBMITTED AND REVIEWED BY PUBLIC WORKS ENGINEERING.
   g. PROJECTS CONNECTED TO THE BREVARD COUNTY WATER, SANITARY SEWER, AND/OR RECLAIMED WATER SYSTEMS MUST OBTAIN FINAL APPROVAL FOR THE PROJECT DIRECTLY FROM BREVARD COUNTY UTILITY SERVICES AS OUTLINED IN THE BREVARD COUNTY CRITERIA FOR WATER AND SANITARY SEWERAGE SYSTEMS.
3. UPON APPROVAL OF FINAL INSPECTION, AN ENGINEER'S CERTIFIED COST ESTIMATE WILL BE REQUIRED ALONG WITH A 2-YEAR MAINTENANCE BOND FOR ALL IMPROVEMENTS WITHIN THE COUNTY RIGHT-OF-WAY AS REQUIRED BY CHAPTER 86 OF THE BREVARD COUNTY CODE OF ORDINANCES. THE MAINTENANCE BOND SHALL BE 25% OF THE ENGINEER'S CERTIFIED COST ESTIMATE.
4. THE CONTRACTOR IS RESPONSIBLE FOR ALL DAMAGE TO THE COUNTY INFRASTRUCTURE DURING CONSTRUCTION. THIS INCLUDES, BUT IS NOT LIMITED TO, THE STRUCTURAL INTEGRITY OF THE ROADWAY ASPHALT, BASE, AND STABILIZED SUB-BASE, SIDEWALKS, STORMWATER DRAINAGE SYSTEM, DRAINAGE STRUCTURES, CURBS, GROUND COVER, WATER SYSTEMS, SANITARY SEWER SYSTEMS, AND RECLAIMED WATER SYSTEMS. ALL REPAIRS SHALL BE COMPLETED IN ACCORDANCE WITH FDOT AND BREVARD COUNTY STANDARDS. ALL REPAIRS SHALL BE COMPLETED PRIOR TO THE FINAL INSPECTION OF THE PROJECT. SIDEWALK PATCHING WILL NOT BE ACCEPTABLE.
5. A VISUAL OR MECHANICAL INTERIOR INSPECTION OF EXISTING CULVERTS WILL BE REQUIRED PRIOR TO THE FINAL INSPECTION.
6. ALL DISTURBED AREAS WITHIN THE COUNTY RIGHT-OF-WAY SHALL BE SODDED. SEED & MULCH IS NOT ACCEPTABLE. SOD SHALL MATCH EXISTING SOD TYPE. BAHIA SOD SHALL BE USED IN AREAS ADJACENT TO VACANT PROPERTY. DISTURBED AREAS OUTSIDE THE CONSTRUCTION LIMITS WILL BE SODDED AT THE CONTRACTOR'S EXPENSE.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL SURVEY MONUMENTATION. ANY SURVEY MONUMENTATION DISTURBED OR DESTROYED DURING CONSTRUCTION SHALL BE REPLACED BY A FLORIDA LICENSED SURVEYOR PRIOR TO ISSUANCE OF A CERTIFICATE OF COMPLETION FOR THE PROJECT.
8. REGARDLESS OF PRIVATE OR PUBLIC DEDICATION, THERE SHALL BE NO UTILITY CONNECTIONS OR METER BOXES WITHIN PROPOSED OR EXISTING SIDEWALKS OR DRIVEWAY AREAS.
9. ALL DIRECTIONAL BORES SHALL BE IN ACCORDANCE WITH FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION SECTION 555, DIRECTIONAL BORES AND THE FDOT UTILITIES ACCOMMODATION MANUAL.
10. ALL DIRECTIONAL BORES MUST EXTEND A MINIMUM OF EIGHT(8) FEET PAST THE EDGE OF PAVEMENT OF ANY ROADWAY OR COMMERCIAL DRIVEWAY. FOR RESIDENTIAL DRIVEWAYS AND SIDEWALKS, THE BORE MUST EXTEND THREE (3) FEET PAST THE EDGE ON EITHER SIDE.
11. THE CONTRACTOR SHALL CONTROL DUST GENERATED BY THIS PROJECT AT ALL TIMES, SHALL PROVIDE STREET SWEEPING AS REQUIRED, AND PREVENT SEDIMENT FROM ENTERING INTO THE EXISTING DRAINAGE SYSTEM AT ALL TIMES.
12. THE CONTRACTOR SHALL NOT EXCEED NOISE LEVELS AS SPECIFIED IN BREVARD COUNTY CODE OF ORDINANCES SECTION 62-2271.
13. ALL STRIPING AND PAVEMENT MARKINGS IN THE COUNTY RIGHT-OF-WAY SHALL BE THERMOPLASTIC AND SHALL NOT BE APPLIED UNTIL A MINIMUM OF 30 DAYS AFTER THE PLACEMENT OF THE FINAL ASPHALT SURFACE. IN THE INTERIM, STRIPING SHALL BE PAINT AND ANY REQUIRED RPM'S INSTALLED PER THE PLANS. DO NOT STRIPE ACROSS MANHOLE LIDS OR DRAINAGE GRATES.
14. REFLECTIVE PAVEMENT MARKINGS (RPM'S) SHALL BE INSTALLED IN ALL LOCATIONS AS REQUIRED BY FDOT DESIGN STANDARD,(LATEST EDITION)
15. ANY PAVEMENT MARKINGS AND RPM'S THAT ARE DESTROYED, DAMAGED, OR DIMINISHED BY CONSTRUCTION ACTIVITIES FOR UP TO 500 FEET IN EITHER DIRECTION BEYOND THE LIMITS OF CONSTRUCTION SHALL BE REPLACED OR REFURBISHED BY THE CONTRACTOR.
16. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF THE COUNTY RIGHT-OF-WAY FOR THE DURATION OF CONSTRUCTION. AT A MINIMUM, THE CONTRACTOR SHALL MOW THE RIGHT-OF-WAY ON AN AS NEEDED BASIS AND MAINTAIN THE DRAINAGE CONVEYANCE SYSTEM. ADDITIONAL MAINTENANCE MAY BE REQUIRED ON A CASE BY CASE BASIS.

TRAFFIC CONTROL

1. MOT PLAN REVIEW: A PROJECT-SPECIFIC MAINTENANCE OF TRAFFIC (MOT) PLAN OR ROADWAY CLOSURE MOT/DETOUR PLAN MUST BE SUBMITTED TO BREVARD COUNTY TRAFFIC OPERATIONS (321-633-2077) FOR APPROVAL A MINIMUM OF TWO (2) WEEKS PRIOR TO START OF CONSTRUCTION. THE MOT PLAN SHALL BE IN ACCORDANCE WITH MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND FDOT STANDARD INDEX 600 SERIES,(LATEST EDITIONS). PORTABLE CHANGEABLE MESSAGE SIGNS (PCMS OR VMS) MAY BE REQUIRED TO SUPPLEMENT THE STANDARD MOT SIGNAGE.
2. ROAD CLOSURES: THE CONTRACTOR SHALL NOTIFY BREVARD COUNTY TRAFFIC OPERATIONS (321-633-2077) A MINIMUM OF TWO (2) WEEKS IN ADVANCE OF THE PROPOSED START DATE OF CONSTRUCTION WITHIN THE RIGHT-OF-WAY, FOR EACH PHASE OF CONSTRUCTION, IF APPLICABLE. CONSTRUCTION SHALL NOT BEGIN UNTIL THE MOT PLAN IS APPROVED AND NOTIFICATIONS HAVE BEEN SENT TO AFFECTED AGENCIES. CERTAIN LOCATIONS MAY REQUIRE WORK IN THE RIGHT-OF-WAY TO BE PERFORMED AT NIGHT ONLY.
3. LANE CLOSURES: THE CONTRACTOR SHALL NOTIFY BREVARD COUNTY TRAFFIC OPERATIONS (321-633-2077) A MINIMUM OF ONE (1) WEEK IN ADVANCE OF THE PROPOSED START DATE OF CONSTRUCTION WITHIN THE RIGHT-OF-WAY. CONSTRUCTION SHALL NOT BEGIN UNTIL THE MOT PLAN IS APPROVED AND NOTIFICATIONS HAVE BEEN SENT TO AFFECTED AGENCIES. NO LANE CLOSURES WILL BE PERMITTED DURING PEAK HOUR TRAFFIC VOLUMES.
4. ALL TRAFFIC CONTROL DEVICES SHALL MEET THE REQUIREMENTS OF THE MUTCD FOR STREETS AND HIGHWAYS, FDOT STANDARDS (LATEST EDITIONS), AND BREVARD COUNTY LAND DEVELOPMENT EXHIBIT #26.

DRAINAGE - ROADWAYS

1. ALL DRAINAGE SYSTEM CONSTRUCTION SHALL CONFORM TO FDOT STANDARD SPECIFICATIONS AND FDOT DESIGN STANDARDS,(LATEST EDITIONS).
2. ALL RETICULINE STEEL GRATES SHALL BE HOT DIPPED GALVANIZED AND HAVE A TRAFFIC BEARING H-20 LOAD RATING.
3. ALL GRATES UTILIZED WITHIN THE COUNTY RIGHT-OF-WAY SHALL BE TRAFFIC BEARING H-20 LOADING.
4. ALL STORMWATER PIPING WITHIN THE ROAD RIGHT-OF-WAY, REGARDLESS OF PUBLIC OR PRIVATE, OR STORMWATER PIPING THAT CONVEYS STORMWATER UNDER THE ROADWAY BETWEEN STORMWATER TREATMENT PONDS, SHALL BE INSPECTED PER SECTIONS 430-4.8, 430-4.8.1, AND 430-4.8.2 OF THE FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION,(LATEST EDITION). A COPY OF THE PIPE VIDEO SHALL BE PROVIDED TO THE COUNTY AS PART OF THE SUBMITTAL OF THE CERTIFICATION OF COMPLETION REQUEST FOR FINAL INSPECTION. THE COUNTY SHALL BE NOTIFIED ONE WEEK PRIOR TO THE START OF THE PIPE VIDEO INSPECTION PROCESS.
5. ALL OPEN CUTS SHALL CONFORM TO LAND DEVELOPMENT EXHIBIT #25. FOR ALL OPEN CUTS, THE FLOWABLE FILL AND TEMPORARY ASPHALT SHALL BE INSTALLED WITHIN TWO (2) DAYS OF THE EXCAVATION (UNLESS OTHERWISE APPROVED IN WRITING BY BREVARD COUNTY PUBLIC WORKS ENGINEERING). PERMANENT ASPHALT INCLUDING MILLING AND RESURFACING, IF NEEDED, SHALL BE COMPLETED WITHIN THIRTY (30) DAYS OF EXCAVATION.
6. THE CONTRACTOR SHALL REMOVE THE SHOULDER OF THE ROADWAY TO A POINT WHERE THE BASE MATERIAL OF THE EXISTING ROADWAY MEETS THE MINIMUM THICKNESS OF THE PROPOSED ROADWAY/COMMERCIAL DRIVEWAY CONNECTION.

CONCRETE PAVING AND SIDEWALK

1. ALL DRIVEWAYS SHALL BE CONSTRUCTED PER FDOT INDEX 515 AND/OR BREVARD COUNTY STANDARD EXHIBITS UNLESS OTHERWISE NOTED.
2. ALL CONCRETE SHALL MEET FDOT DESIGN MIX AND SPECIFICATIONS. CURING METHOD SHALL BE IN ACCORDANCE WITH THE FDOT SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION,(LATEST EDITION).
3. ALL SIDEWALKS WITHIN THE COUNTY RIGHT-OF-WAY OR WITHIN A PUBLIC SIDEWALK EASEMENT SHALL BE CONSTRUCTED OF 6-INCH THICK, 3000-PSI CONCRETE WITH FIBER MESH REINFORCEMENT. CONCRETE SIDEWALKS (OR PEDWAYS) AND CONCRETE DRIVEWAY APRONS SHALL BE CONSTRUCTED OVER SOILS COMPACTED TO 98% DENSITY, OF AASHTO T -180. SHOULD EXISTING SOILS BE FOUND UNSUITABLE FOR COMPACTION, ADDITIONAL COMPATIBLE MATERIALS SHALL BE BROUGHT TO THE SITE FOR USE AS SUBGRADE. ALTERNATE METHODS OF COMPACTION MAY BE REQUIRED TO AVOID DAMAGE TO SURROUNDING PROPERTIES.
4. CONSTRUCT SIDEWALK JOINTS PURSUANT TO FDOT INDEX 310 (LATEST EDITION). EXPANSION JOINTS SHALL BE EVERY 50 FEET, AND BETWEEN NEW AND OLD CONCRETE.
5. TWO BY FOUR FORM BOARDS SHALL NOT BE USED FOR SIDEWALK/DRIVEWAY CONSTRUCTION. FORM BOARDS SHALL MATCH PROPOSED CONCRETE THICKNESS. SLIP FORMS SHALL NOT BE USED FOR SIDEWALK CONSTRUCTION. FIXED FORMWORK SHALL BE REQUIRED PER FDOT INDEX 300.
6. THE CONTRACTOR SHALL PROVIDE A 3-FOOT CURB TRANSITION AT ALL CURB TERMINATIONS.
7. ALL SIDEWALK AND ACCESS RAMP CONSTRUCTION SHALL COMPLY WITH THE DEPARTMENT OF JUSTICE 2010 ADA STANDARDS FOR ACCESSIBLE DESIGN, FDOT DESIGN STANDARDS (LATEST EDITION), AND BREVARD COUNTY DEVELOPMENT REQUIREMENTS.

ASPHALT PAVING AND TESTING

THE FOLLOWING TESTING REQUIREMENTS APPLY TO:

a. ALL PUBLIC AND PRIVATE SUBDIVISION PROJECTS PERMITTED THROUGH BREVARD COUNTY PLANNING AND DEVELOPMENT;
b. ALL SITE PLAN PROJECTS PERMITTED THROUGH BREVARD COUNTY PLANNING AND DEVELOPMENT REQUIRING WORK IN THE COUNTY RIGHT-OF-WAY;
c. ALL PROJECTS PERMITTED THROUGH BREVARD COUNTY PUBLIC WORKS FOR WORK WITHIN THE COUNTY RIGHT-OF-WAY.

SECTIONS WITHIN THE FDOT STANDARD SPECIFICATIONS LIMITING TESTING REQUIREMENTS BASED ON LOT SIZE, SUB-LOT SIZE, TONNAGE, MINIMUM THICKNESS, OR SPREAD RATE WILL NOT APPLY TO THE PROJECTS LISTED ABOVE. AT A MINIMUM, ONE SET OF TESTS WILL BE REQUIRED FOR ALL PAVING PROJECTS LARGER THAN 50 TONS TOTAL AND ADDITIONAL TESTING MAY BE REQUIRED ON A CASE BY CASE EVALUATION OF THE PROJECT. TESTING REQUIREMENTS AT THE ASPHALT PLANT WILL NOT APPLY.

FOR S-TYPE ASPHALT AS SPECIFIED IN THE 2000-2004 FDOT STANDARD SPECIFICATION:

1. THE CONTRACTOR SHALL PROVIDE A DESIGN MIX SIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF FLORIDA AND APPROVED BY THE ENGINEER OF RECORD FOR THE PROJECT TO PUBLIC WORKS ENGINEERING FIVE BUSINESS DAYS PRIOR TO PAVING. THE MIX DESIGN SHALL MEET FDOT MINIMUM REQUIREMENTS AS OUTLINED IN SECTION 331-4 (2000). DESIGN MIXES BY FDOT CERTIFIED MIX DESIGNERS WILL NOT BE ACCEPTED.
2. THE CONTRACTOR SHALL PROVIDE EXTRACTION/GRADATION TESTS IN ACCORDANCE WITH SECTION 331-4.4.2 (2000).
3. THE CONTRACTOR SHALL PROVIDE MARSHALL STABILITY TESTING IN ACCORDANCE WITH SECTION 331-5.5.1 (2000).
4. PAVEMENT SURFACE SHALL MEET ALL REQUIREMENTS SPECIFIED IN SECTION 330-13 (2000).
5. THE CONTRACTOR SHALL PROVIDE SURFACE TOLERANCE TESTING FOR ROADWAYS WITH DESIGN SPEEDS OF 35 MPH OR GREATER IN ACCORDANCE WITH SECTION 330-13.3 (2000).
6. QUALITY CONTROL CORE BORINGS SHALL BE OBTAINED FOR THICKNESS PER SECTION 330-2.2 ROADWAY, (2004) AND DENSITY PER SECTION 330-11, TABLE 330-3 (2000).
7. ASPHALT TEST RESULTS FOR EACH CORE TAKEN ARE REVIEWED ON AN INDIVIDUAL BASIS FOR THICKNESS AND DENSITY. THICKNESS AND DENSITY AVERAGES WILL NOT BE ACCEPTED. NO UNDER TOLERANCE FOR THE THICKNESS OF EACH ASPHALT CORE WILL BE ALLOWED.

FOR SUPERPAVE (SP) ASPHALT AS SPECIFIED IN THE 2010 FDOT STANDARD SPECIFICATION:

1. THE CONTRACTOR SHALL PROVIDE AN FDOT APPROVED DESIGN MIX, APPROVED BY THE ENGINEER OF RECORD FOR THE PROJECT, TO PUBLIC WORKS ENGINEERING FIVE BUSINESS DAYS PRIOR TO PAVING. THE MIX DESIGN SHALL MEET FDOT MINIMUM REQUIREMENTS AS OUTLINED IN SECTION 334-2 & 334-3 (2010). DESIGN MIXES BY FDOT CERTIFIED MIX DESIGNERS THAT ARE NOT FDOT APPROVED WILL NOT BE ACCEPTED.
2. THE CONTRACTOR SHALL PROVIDE GRADATION AND BINDER CONTENT TESTING IN ACCORDANCE WITH SECTION 334-5. (2010) HOWEVER, THE SAMPLE(S) MAY BE TAKEN AT THE PROJECT LOCATION IN LIEU OF AT THE ASPHALT PLANT AS SPECIFIED. RESULTS MUST BE PROVIDED TO THE COUNTY WITHIN ONE WEEK AFTER THE COMPLETION OF PAVING.
3. THE CONTRACTOR SHALL PROVIDE QUALITY CONTROL, DENSITY, AND THICKNESS TESTING IN ACCORDANCE WITH SECTIONS 334-3, 334-4, 334-5, AND 334-5.2.3 (2010).
4. ASPHALT TESTING RESULTS FOR EACH CORE TAKEN ARE REVIEWED ON AN INDIVIDUAL BASIS FOR THICKNESS AND DENSITY. THICKNESS AND DENSITY AVERAGES, AS NOTED IN TABLE 334-5, NOTE 2, OF SECTION 334-5 (2010) WILL NOT BE ACCEPTED. NO UNDER TOLERANCE FOR THE THICKNESS OF EACH ASPHALT CORE WILL BE ALLOWED.
5. PAVEMENT SURFACE SHALL MEET ALL REQUIREMENTS SPECIFIED IN SECTION 330-12 (2010).
6. THE CONTRACTOR SHALL PROVIDE QUALITY CONTROL SURFACE TOLERANCE TESTING FOR ROADWAYS WITH DESIGN SPEEDS OF 35 MPH OR GREATER IN ACCORDANCE WITH 330-12 (2010).

FOR FRICTION COURSE FC-5 AS SPECIFIED IN THE 2010 FDOT STANDARD SPECIFICATION:

1. THE CONTRACTOR SHALL PROVIDE PROVIDE AN FDOT APPROVED DESIGN MIX, APPROVED BY THE ENGINEER OF RECORD FOR THE PROJECT, TO PUBLIC WORKS ENGINEERING FIVE BUSINESS DAYS PRIOR TO PAVING. THE MIX DESIGN SHALL MEET FDOT MINIMUM REQUIREMENTS AS OUTLINED IN SECTION 337-4 (2010). DESIGN MIXES BY FDOT CERTIFIED MIX DESIGNERS THAT ARE NOT FDOT APPROVED WILL NOT BE ACCEPTED.
2. THE CONTRACTOR SHALL PROVIDE GRADATION AND BINDER CONTENT TESTING IN ACCORDANCE WITH SECTION 337-5 & 337-6 (2010). THE SAMPLE(S) MAY BE TAKEN AT THE PROJECT LOCATION IN LIEU OF AT THE ASPHALT PLANT AS SPECIFIED. RESULTS MUST BE PROVIDED TO THE COUNTY WITHIN ONE WEEK AFTER THE COMPLETION OF PAVING.
3. PAVEMENT SURFACE SHALL MEET ALL REQUIREMENTS SPECIFIED IN SECTION 330-12 (2010).
4. QUALITY CONTROL CORE BORINGS SHALL BE OBTAINED FOR THICKNESS TESTING USING SECTION 334-5.2.3 (2010).
5. THE CONTRACTOR SHALL PROVIDE QUALITY CONTROL SURFACE TOLERANCE TESTING FOR ROADWAYS WITH DESIGN SPEEDS OF 35 MPH OR GREATER IN ACCORDANCE WITH SECTION 330-12 (2010).

FOR SUPERPAVE FRICTION COURSES FC-9.5 & FC-12.5 AS SPECIFIED IN THE 2010 FDOT STANDARD SPECIFICATIONS:

1. THE CONTRACTOR SHALL PROVIDE AN FDOT APPROVED DESIGN MIX, APPROVED BY THE ENGINEER OF RECORD FOR THE PROJECT, TO PUBLIC WORKS ENGINEERING FIVE BUSINESS DAYS PRIOR TO PAVING. THE MIX DESIGN SHALL MEET FDOT MINIMUM REQUIREMENTS AS OUTLINED IN SECTION 337-4 (2010). DESIGN MIXES BY FDOT CERTIFIED MIX DESIGNERS THAT ARE NOT FDOT APPROVED WILL NOT BE ACCEPTED.
2. THE CONTRACTOR SHALL PROVIDE GRADATION AND BINDER CONTENT TESTING IN ACCORDANCE WITH SECTION 337-5 & 337-6 (2010). THE SAMPLE(S) MAY BE TAKEN AT THE PROJECT LOCATION IN LIEU OF AT THE ASPHALT PLANT, AS SPECIFIED. RESULTS MUST BE PROVIDED TO THE COUNTY WITHIN ONE WEEK AFTER THE COMPLETION OF PAVING.
3. THE CONTRACTOR SHALL PROVIDE QUALITY CONTROL, DENSITY, AND THICKNESS TESTING IN ACCORDANCE WITH SECTIONS 337-1, 337-3, 337-4, 337-6, 337-8, AND 334-5.2.3 (2010).
4. ASPHALT TESTING RESULTS FOR EACH CORE TAKEN ARE REVIEWED ON AN INDIVIDUAL BASIS FOR THICKNESS AND DENSITY. THICKNESS AND DENSITY AVERAGES, AS NOTED IN TABLE 334-5, NOTE 2, OF SECTION 334-5 (2010) WILL NOT ACCEPTED. NO UNDER TOLERANCE FOR THE THICKNESS OF EACH ASPHALT CORE WILL BE ALLOWED.
5. PAVEMENT SURFACE SHALL MEET ALL REQUIREMENTS SPECIFIED IN SECTION 330-12 (2010).
6. THE CONTRACTOR SHALL PROVIDE QUALITY CONTROL SURFACE TOLERANCE TESTING FOR ROADWAYS WITH DESIGN SPEEDS OF 35 MPH OR GREATER IN ACCORDANCE WITH 330-12 (2010).

CONCRETE BOX CULVERT NOTES

1. ALL CONSTRUCTION SHALL COMPLY WITH FDOT DESIGN STANDARDS (LATEST EDITION), FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (LATEST EDITION), AND BREVARD COUNTY STANDARDS.
2. PRIOR TO START OF CONSTRUCTION, THE SITE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING STRUCTURAL ENGINEERING DRAWINGS (SIGNED & SEALED BY A PROFESSIONAL ENGINEER LICENSED & REGISTERED IN THE STATE OF FLORIDA) FOR ALL COMPONENTS OF THE CONCRETE BOX CULVERTS, INCLUDING WINGWALLS, TOE SLAB & CUTOFF WALLS, AND HEADWALLS. THE DRAWINGS SHALL INCLUDE QUANTITIES TABULATIONS FOR CLASS IV CONCRETE (CUBIC YARDS), AND REINFORCING STEEL (POUNDS). THE DESIGN MUST BE BASED ON FDOT'S LOAD & RESISTANCE FACTOR DESIGN (LRFD) PROGRAM. SEPARATE DRAWINGS ARE REQUIRED FOR ALL WINGWALLS, TOE SLABS & CUTOFF WALLS, AND HEADWALLS, WHICH MUST BE CAST-IN-PLACE PER FDOT SPECIFICATIONS.
3. ALL BOX CULVERT MATERIALS THAT ARE TO BE INSTALLED UNDER ROADWAYS AND/OR DRIVEWAYS ARE TO BE DELIVERED TO SITE (AND PASS INITIAL INSPECTIONS) PRIOR TO START OF DEMOLITION OF EXISTING SYSTEM.
4. CONCRETE (PRECAST OR CAST-IN-PLACE) REQUIREMENTS: CLASS IV (5500 PSI).
5. REINFORCING STEEL REQUIREMENTS: ASTM A615 GRADE 60 DEFORMED BAR UNLESS OTHERWISE NOTED, WITH A MINIMUM CLEARANCE OF 3" (THREE INCHES), UNLESS OTHERWISE SHOWN. EQUAL AREA SUBSTITUTION OF WELDED WIRE (WWR) REINFORCEMENT IS PERMITTED.
6. REFER TO FDOT INDEX 292 FOR PRECAST CONCRETE BOX CULVERT SLAB & WALL THICKNESSES, REINFORCEMENT AREAS, GENERAL NOTES (SHEET 2 OF 14), AND WELDED WIRE REINFORCEMENT BENDING DIAGRAMS (SHEET 14 OF 14).
7. REFER TO FDOT INDEX 289 FOR CONCRETE BOX CULVERT DETAILS RELATED TO LRFD.
8. REFER TO FDOT INDEX 291 FOR SUPPLEMENTAL DETAILS FOR PRECAST CONCRETE BOX CULVERTS.
9. IF REQUIRED, BY-PASS PUMPING AND/OR PIPING SHALL BE APPROVED BY BREVARD COUNTY PUBLIC WORKS PRIOR TO THE START OF CONSTRUCTION.

REVISION | DATE | REV#

TRAUGER CONSULTING ENGINEERS
2210 Front Street, STE 204 Melbourne, FL 32901
email - jim@traugerconsulting.com direct - (321) 292-0745

EPLER PARK
PALM BAY, FL

BREVARD COUNTY PUBLIC WORKS
ENGINEERING STANDARD DEVELOPMENT NOTES

JAMES R. TRAUGER LICENSE No. 75612 STATE OF FLORIDA PROFESSIONAL ENGINEER
JAMES R. TRAUGER FL P.E. #75612
10.7.22

DATE: 10-5-22
SECTION: 19
TOWNSHIP: 28S
RANGE: 37E
SCALE:
DRAWING NO. C-12
PROJECT: 22-126

PROJECT NAME.DWG
DESIGNED/DRAWN BY: JB
CHECKED BY: RBS

DATE:	REVISION:	BY:
1.	FOR DISTRIBUTION 10-10-12	
2.		
3.		
4.		

PREPARED BY: PUBLIC WORKS DEPARTMENT
ENGINEERING PROGRAM
BREVARD COUNTY BOARD OF COUNTY COMMISSIONERS
2725 JUDGE FRAN JAMIESON WAY, RM. 204, BLDG. A, VIERA, FL 32940
Ph. (321) 637-5437, Fx. (321) 633-2083

DATE: OCTOBER 2012

APPROVED BY:
RICHARD B. SZPYRKA, P.E.
ENGINEERING PROGRAM MANAGER

BREVARD COUNTY PUBLIC WORKS ENGINEERING STANDARD DEVELOPMENT NOTES

GENERAL SPECIFICATION NOTES:

1. PROJECT REPRESENTATIVE REFERRED TO IN THE FOLLOWING SPECIFICATIONS INCLUDE OWNER OR DESIGNATED REPRESENTATIVE, ENGINEER OR MUNICIPALITY OF JURISDICTION FOR SPECIFIED WORK.
2. CONTRACTOR SHALL BECOME FAMILIAR WITH AND ADHERE TO ALL PROJECT SITE PERMITS AND THEIR CONDITIONS AND POST ON-SITE DURING ENTIRE CONSTRUCTION PROJECT UNTIL FINAL CLEARANCE. PERMIT AGENCIES WITH JURISDICTION FOR THIS PROJECT INCLUDE:
   -FDEP
   -CITY OF PALM BAY
   -SJRWMD ERP
   -BREVARD COUNTY RIGHT OF WAY

SITE CLEARING

1. PROTECTION OF EXISTING TREES AND VEGETATION: PROTECT EXISTING TREES AND OTHER VEGETATION INDICATED TO REMAIN IN PLACE AGAINST UNNECESSARY CUTTING, BREAKING OR SKINNING OF ROOTS, SKINNING OR BRUISING OF BARK, SMOTHERING OF TREES BY STOCKPILING CONSTRUCTION MATERIALS OR EXCAVATED MATERIALS WITHIN DRIP LINE, EXCESS FOOT OR VEHICULAR TRAFFIC, OR PARKING OF VEHICLES WITHIN DRIP LINE. PROVIDE TEMPORARY GUARDS AT THE DRIP LINE TO PROTECT TREES AND VEGETATION TO BE LEFT STANDING.
2. REMOVE ALL TREES, SHRUBS, GRASS, AND OTHER VEGETATION, IMPROVEMENTS, OR OBSTRUCTIONS, AS REQUIRED, TO PERMIT INSTALLATION OF NEW CONSTRUCTION. REMOVE SIMILAR ITEMS ELSEWHERE ON SITE OR PREMISES AS SPECIFICALLY INDICATED.
3. CUT MINOR ROOTS AND BRANCHES OF TREES INDICATED TO REMAIN IN A CLEAN AND CAREFUL MANNER WHERE SUCH ROOTS AND BRANCHES DO NOT OBSTRUCT INSTALLATION OF NEW CONSTRUCTION.
4. TOPSOIL IS DEFINED AS FRIABLE CLAY LOAM SURFACE SOIL. SATISFACTORY TOPSOIL IS REASONABLY FREE OF SUBSOIL, CLAY LUMPS, STONES, AND OTHER OBJECTS OVER 2 INCHES IN DIAMETER, AND WEEDS, ROOTS, AND OTHER OBJECTIONABLE MATERIAL.
5. STRIP TOPSOIL TO WHATEVER DEPTHS ENCOUNTERED IN A MANNER TO PREVENT INTERMINGLING WITH UNDERLYING SUBSOIL OR OTHER OBJECTIONABLE MATERIAL. REMOVE HEAVY GROWTHS OF VEGETATION AND ROOTS FROM AREAS BEFORE STRIPPING.
6. STOCKPILE TOPSOIL IN STORAGE PILES IN AREAS INDICATED OR DIRECTED. CONSTRUCT STORAGE PILES TO PROVIDE FREE DRAINAGE OF SURFACE WATER. COVER STORAGE PILES, IF REQUIRED, TO PREVENT WIND EROSION. TRANSPORT WASTE MATERIALS AND UNSUITABLE TOPSOIL MATERIALS OFF OWNER'S PROPERTY AND DISPOSE OF LEGALLY.
7. TRAFFIC: CONDUCT SITE CLEARING OPERATIONS TO ENSURE MINIMUM INTERFERENCE WITH ROADS AND OTHER ADJACENT FACILITIES. DO NOT CLOSE OR OBSTRUCT STREETS, WALKS OR OTHER OCCUPIED OR USED FACILITIES WITHOUT PERMISSION FROM AUTHORITIES HAVING JURISDICTION.
8. PROTECTION OF EXISTING IMPROVEMENTS: PROVIDE PROTECTION NECESSARY TO PREVENT DAMAGE TO EXISTING IMPROVEMENTS INDICATED TO REMAIN IN PLACE. PROTECT IMPROVEMENTS ON ADJOINING PROPERTIES. RESTORE DAMAGED IMPROVEMENTS TO THEIR ORIGINAL CONDITION, AS ACCEPTABLE TO PARTIES HAVING JURISDICTION.
9. AS AN INITIAL EFFORT ON THE CONSTRUCTION SITE THE CONTRACTOR SHALL LOCATE AND FLAG ALL TREES INDICATED TO REMAIN. CONTACT ENGINEER PRIOR TO CLEARING. THE PROJECT SHALL ANTICIPATE THE REMOVAL OF UP TO 10% MORE TREES THAN INDICATED ON THE PLANS PER DIRECTION. AS PART OF THIS INSPECTION, TREES REQUIRING SPECIAL PRUNING SHALL BE IDENTIFIED.
10. WATER TREES AND OTHER VEGETATION TO REMAIN WITHIN LIMITS OF CONTRACT WORK AS REQUIRED TO MAINTAIN THEIR HEALTH DURING COURSE OF CONSTRUCTION OPERATIONS.
11. PROVIDE PROTECTION FOR ROOTS OVER 1" DIAMETER CUT DURING CONSTRUCTION OPERATIONS. TEMPORARILY COVER EXPOSED ROOTS WITH WET BURLAP TO PREVENT ROOTS FROM DRYING OUT; COVER WITH EARTH AS SOON AS POSSIBLE.
12. REPLACE TREES WHICH CANNOT BE REPAIRED AND RESTORED TO FULL-GROWTH STATUS, IN A MANNER ACCEPTABLE TO THE PROJECT REPRESENTATIVE.
13. COMPLETELY REMOVE STUMPS, ROOTS, AND OTHER DEBRIS UNLESS SPECIFICALLY IDENTIFIED TO REMAIN.
14. USE ONLY HAND METHODS FOR GRUBBING INSIDE DRIP LINE OF TREES INDICATED TO BE LEFT STANDING.
15. PLACE FILL MATERIAL IN HORIZONTAL LAYERS NOT EXCEEDING 6" LOOSE DEPTH, AND THOROUGHLY COMPACT TO A DENSITY EQUAL TO ADJACENT ORIGINAL GROUND.

EARTHWORK

1. SUBGRADE EXCAVATION, BACKFILL, AND PREPARATION SHALL BE DONE IN ACCORDANCE WITH THE GEOTECHNICAL ENGINEERING REPORT FOR THIS SITE AS IDENTIFIED ON DWG. C-1, UNLESS NOTED OTHERWISE IN THE CONTRACT DRAWINGS.
2. PROVIDE APPROVED BORROW SOIL MATERIALS FROM OFF-SITE WHEN SUFFICIENT APPROVED SOIL MATERIALS ARE NOT AVAILABLE FROM ON-SITE EXCAVATIONS.
   a. SATISFACTORY SOIL MATERIALS: ASTM D 2487 SOIL CLASSIFICATION GROUPS GW, GP, GM, SW, SP, AND SM; FREE OF ROCK OR GRAVEL LARGER THAN 2 INCHES IN ANY DIMENSION, DEBRIS, WASTE, FROZEN MATERIALS, VEGETATION AND OTHER DELETERIOUS MATTER.
   b. UNSATISFACTORY SOIL MATERIALS: ASTM D 2487 SOIL CLASSIFICATION GROUPS GC, SC, ML, MH, CL, CH, OL, OH, AND PT.
3. BACKFILL AND FILL MATERIALS: SATISFACTORY SOIL MATERIALS AS IDENTIFIED ABOVE.
4. SUBBASE AND BASE MATERIAL: NATURALLY OR ARTIFICIALLY GRADED MIXTURE OF NATURAL OR CRUSHED GRAVEL, CRUSHED STONE, AND NATURAL OR CRUSHED SAND, ASTM D 2940, MEETING THE REQUIREMENTS OF SECTION 911 OF THE FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
5. DRAINAGE FILL MATERIAL: WASHED EVENLY GRADED MIXTURE OF UNCRUSHED OR CRUSHED GRAVEL OR CRUSHED STONE, ASTM D 448, COARSE AGGREGATE GRADING SIZE 57, WITH 100 PERCENT PASSING A 1-1/2 INCH SIEVE AND 0 TO 5 PERCENT PASSING A NO. 50 SIEVE.
6. ENGINEERED FILL: BASE MATERIALS AS IDENTIFIED ABOVE.
7. BEDDING MATERIAL: SUBBASE OR BASE MATERIALS AS IDENTIFIED ABOVE.
8. FILTER FABRIC: MANUFACTURER'S STANDARD NONWOVEN PERVIOUS GEOTEXTILE FABRIC OF POLYPROPELENE, NYLON OR POLYESTER FIBERS, OR A COMBINATION IN ACCORDANCE WITH ASTM D 4759.
   a. GRAB TENSILE STRENGTH (ASTM D 4652): 100 LB
   b. APPARENT OPENING SIZE (ASTM D 4751): #100 U.S. STANDARD SIEVE.
   c. PERMEABILITY (ASTM D 4491): 150 GALLONS PER MINUTE PER SQ. FT.
9. COMPLY WITH LOCAL CODES, ORDINANCES, AND REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION TO MAINTAIN STABLE EXCAVATIONS. CONTRACTOR SHALL COMPLY WITH THE TRENCH SAFETY ACT.
10. EXCAVATION FOR STRUCTURES: EXCAVATE TO INDICATED ELEVATIONS AND DIMENSIONS WITHIN A TOLERANCE OF PLUS OR MINUS 0.10 FOOT. EXTEND EXCAVATIONS A SUFFICIENT DISTANCE FROM STRUCTURES FOR PLACING AND REMOVING CONCRETE FORMWORK, INSTALLING SERVICES AND OTHER CONSTRUCTION, AND FOR INSPECTIONS.
11. EXCAVATIONS FOR FOOTINGS AND FOUNDATIONS: DO NOT DISTURB BOTTOM OF EXCAVATION. EXCAVATE BY HAND TO FINAL GRADE JUST BEFORE PLACING CONCRETE REINFORCEMENT. TRIM BOTTOMS TO REQUIRED LINES AND GRADES TO LEAVE SOLID BASE TO RECEIVE OTHER WORK.
12. EXCAVATION FOR UNDERGROUND STRUCTURES AND MECHANICAL OR ELECTRICAL APPURTENANCES: EXCAVATE TO ELEVATIONS AND DIMENSIONS INDICATED WITHIN A TOLERANCE OF PLUS OR MINUS 0.10 FOOT. DO NOT DISTURB BOTTOM OF EXCAVATIONS INTENDED FOR BEARING SURFACE.
13. EXCAVATE TRENCHES TO UNIFORM WIDTHS TO PROVIDE A WORKING CLEARANCE ON EACH SIDE OF PIPE OR CONDUIT. EXCAVATE TRENCH WALLS VERTICALLY FROM TRENCH BOTTOM TO 12 INCHES HIGHER THAN TOP OF PIPE OR CONDUIT, UNLESS OTHERWISE INDICATED.
14. TRENCH BOTTOMS: EXCAVATE AND SHAPE TRENCH BOTTOMS TO PROVIDE UNIFORM BEARING AND SUPPORT OF PIPES AND CONDUIT. SHAPE SUBGRADE TO PROVIDE CONTINUOUS SUPPORT FOR BELLS, JOINTS, AND BARRELS OF PIPES AND FOR JOINTS, FITTINGS, AND BODIES OF CONDUITS. REMOVE STONES AND SHARP OBJECTS TO AVOID POINT LOADING.
   a. FOR PIPES OR CONDUIT LESS THAN 6 INCHES IN NOMINAL DIAMETER AND FLAT-BOTTOMED, MULTIPLE-DUCT CONDUIT UNITS, HAND-EXCAVATE TRENCH BOTTOMS AND SUPPORT PIPE AND CONDUIT ON AN UNDISTURBED SUBGRADE.
   b. FOR PIPES AND CONDUIT 6 INCHES OR LARGER IN NOMINAL DIAMETER, SHAPE BOTTOM OF TRENCH TO SUPPORT BOTTOM 90 DEGREES OF PIPE CIRCUMFERENCE. FILL DEPRESSIONS WITH TAMPED SAND BACKFILL.
   c. WHERE ENCOUNTERING ROCK OR ANOTHER UNYIELDING BEARING SURFACE, CARRY TRENCH EXCAVATION 6 INCHES BELOW INVERT ELEVATION TO RECEIVE BEDDING COURSE.
15. RECONSTRUCT SUBGRADES DAMAGED BY RAIN, ACCUMULATED WATER, OR CONSTRUCTION ACTIVITIES.
16. STOCKPILE EXCAVATED MATERIALS ACCEPTABLE FOR BACKFILL AND FILL SOIL MATERIALS, INCLUDING ACCEPTABLE BORROW MATERIALS. STOCKPILE SOIL MATERIALS WITHOUT INTERMIXING. PLACE, GRADE, AND SHAPE STOCKPILES TO DRAIN SURFACE WATER. COVER TO PREVENT WIND-BLOWN DUST IF DIRECTED BY PROJECT REPRESENTATIVE.
17. CONTRACTOR SHALL PROVIDE DETECTABLE WARNING TAPE MADE FROM ACID AND ALKALI RESISTANT POLYETHYLENE FILM TO MARK AND IDENTIFY UNDERGROUND UTILITIES. TAPE SHALL BE 6 INCHES WIDE AND 4 MILS THICK, CONTINUOUSLY INSCRIBED WITH A DESCRIPTION OF THE UTILITY, WITH A METALLIC CORE ENCASED IN A PROTECTIVE JACKET FOR CORROSION PROTECTION, DETECTABLE BY METAL DETECTOR WHEN TAPE IS BURIED UP TO 2'-6" DEEP OVER NON FERROUS PIPE. PROVIDE TAPE COLORS TO MATCH UTILITIES AS FOLLOWS:
   RED: —— ELECTRIC
   YELLOW: —— GAS, OIL, STEAM AND DANGEROUS MATERIALS
   ORANGE: —— TELEPHONE AND OTHER COMMUNICATIONS
   BLUE: —— WATER SYSTEMS
   GREEN: —— SEWER SYSTEMS
18. UTILITY TRENCH BACKFILL: PLACE AND COMPACT INITIAL BACKFILL OF SATISFACTORY SOIL MATERIAL OR SUBBASE MATERIAL, FREE OF PARTICLES LARGER THAN 1 INCH, TO A HEIGHT OF 12 INCHES OVER THE UTILITY PIPE OR CONDUIT.
19. CAREFULLY COMPACT MATERIAL UNDER PIPE HAUNCHES AND BRING BACKFILL EVENLY UP ON BOTH SIDES AND ALONG THE FULL LENGTH OF UTILITY PIPING OR CONDUIT TO AVOID DAMAGE OR DISPLACEMENT OF UTILITY SYSTEM.
20. PLACE AND COMPACT FINAL BACKFILL OF SATISFACTORY SOIL MATERIAL TO FINAL SUBGRADE.
21. REMOVE VEGETATION, TOPSOIL, DEBRIS, WET, AND UNSATISFACTORY SOIL MATERIALS, OBSTRUCTIONS, AND DELETERIOUS MATERIALS FROM GROUND SURFACE PRIOR TO PLACING FILLS.
22. WHEN SUBGRADE OR EXISTING GROUND SURFACE TO RECEIVE FILL HAS A DENSITY LESS THAN THAT REQUIRED FOR FILL, BREAK UP GROUND SURFACE TO DEPTH REQUIRED, PULVERIZE, MOISTURE-CONDITION OR AERATE SOIL AND RECOMPACT TO REQUIRED DENSITY.

EARTHWORK CONT.

23. PLACE FILL MATERIAL IN LAYERS TO REQUIRED ELEVATIONS FOR EACH LOCATION LISTED BELOW.
   a. UNDER GRASS, USE SATISFACTORY EXCAVATED OR BORROW SOIL MATERIAL.
   b. UNDER WALKS AND PAVEMENTS, USE SUBBASE OR BASE MATERIAL, OR SATISFACTORY EXCAVATED OR BORROW SOIL MATERIAL.
   c. UNDER BUILDING SLABS, USE SATISFACTORY FILL MATERIAL.
   d. UNDER FOOTINGS AND FOUNDATIONS, USE ENGINEERED FILL.
24. UNIFORMLY MOISTEN OR AERATE SUBGRADE AND EACH SUBSEQUENT FILL OR BACKFILL LAYER BEFORE COMPACTION TO WITHIN 2 PERCENT OF OPTIMUM MOISTURE CONTENT.
   a. DO NOT PLACE BACKFILL OR FILL MATERIAL ON SURFACES THAT ARE MUDDY OR CONTAIN ICE.
   b. REMOVE AND REPLACE, OR SCARIFY AND AIR-DRY SATISFACTORY SOIL MATERIAL THAT IS TOO WET TO COMPACT TO SPECIFIED DENSITY.
   c. STOCKPILE OR SPREAD AND DRY REMOVED WET SATISFACTORY SOIL MATERIAL.
25. PLACE BACKFILL AND FILL MATERIALS IN LAYERS NOT MORE THAN 8 INCHES IN LOOSE DEPTH FOR MATERIAL COMPACTED BY HEAVY COMPACTION EQUIPMENT, AND NOT MORE THAN 4 INCHES IN LOOSE DEPTH FOR MATERIAL COMPACTED BY HAND-OPERATED TAMPERS.
26. PERCENTAGE OF MAXIMUM DRY DENSITY REQUIREMENTS: COMPACT SOIL TO NOT LESS THAN THE FOLLOWING PERCENTAGES OF MAXIMUM DRY DENSITY ACCORDING TO ASTM D 1557 UNLESS PLAN SPECIFICALLY NOTE OTHERWISE:
   a. UNDER BUILDING SLABS AND PAVEMENTS, COMPACT THE TOP 12 INCHES BELOW SUBGRADE AND EACH LAYER OF BACKFILL OR FILL MATERIAL AT 95 PERCENT MAXIMUM DRY DENSITY.
   b. UNDER WALKWAYS, COMPACT THE TOP 6 INCHES BELOW SUBGRADE AND EACH LAYER OF BACKFILL OR FILL MATERIAL AT 95 PERCENT MAXIMUM DRY DENSITY.
   c. UNDER LAWN OR UNPAVED AREAS, COMPACT THE TOP 6 INCHES BELOW SUBGRADE AND EACH LAYER OF BACKFILL OR FILL MATERIAL AT 90 PERCENT MAXIMUM DRY DENSITY.
27. SITE GRADING: SLOPE GRADES TO DIRECT WATER AWAY FROM BUILDING AND TO PREVENT PONDING. FINISH SUBGRADES TO REQUIRED ELEVATIONS WITHIN THE FOLLOWING TOLERANCES:
   a. LAWN OR UNPAVED AREAS: PLUS OR MINUS 0.10 FOOT. WALKS: PLUS OR MINUS 0.10 FOOT. PAVEMENTS: PLUS OR MINUS 1/2 INCH.
28. UNDER PAVEMENTS AND WALKS, CONSTRUCT SUBBASE COURSE AND BASE COURSE MATERIAL IN ACCORDANCE WITH SECTIONS 160 AND 200 OF THE FDOT STANDARD SPECIFICATIONS.
29. COMPACT SUBBASE AND BASE COURSES AT OPTIMUM MOISTURE CONTENT TO REQUIRED GRADES, LINES, CROSS SECTIONS AND THICKNESS TO NOT LESS THAN 95 PERCENT OF ASTM D 4254 RELATIVE DENSITY. SHAPE SUBBASE AND BASE TO REQUIRED CROWN ELEVATIONS AND CROSS-SLOPE GRADES.
   a. WHEN THICKNESS OF COMPACTED SUBBASE OR BASE COURSE IS 6 INCHES OR LESS, PLACE MATERIALS IN A SINGLE LAYER.
30. PAVEMENT SHOULDERS: PLACE SHOULDERS ALONG EDGES OF SUBBASE AND BASE COURSE TO PREVENT LATERAL MOVEMENT. CONSTRUCT SHOULDERS OF ACCEPTABLE MATERIALS AND COMPACT SIMULTANEOUSLY WITH EACH SUBBASE AND BASE LAYER.
31. UNDER SLABS-ON-GRADE, PLACE ENGINEERED FILL ON PREPARED SUBGRADE.
32. TESTING AGENCY SERVICES: ALLOW TESTING AGENCY TO INSPECT AND TEST EACH SUBGRADE AND EACH FILL OR BACKFILL LAYER. DO NOT PROCEED UNTIL TEST RESULTS FOR PREVIOUSLY COMPLETED WORK VERIFY COMPLIANCE WITH REQUIREMENTS.
33. PERFORM FIELD IN-PLACE DENSITY TESTS ACCORDING TO ASTM D 1556 (SAND CONE METHOD). FIELD IN-PLACE DENSITY TESTS MAY ALSO BE PERFORMED BY THE NUCLEAR METHOD ACCORDING TO ASTM D 2922, PROVIDED THAT CALIBRATION CURVES ARE PERIODICALLY CHECKED AND ADJUSTED TO CORRELATE TO TESTS PERFORMED USING ASTM D 1556. WITH EACH DENSITY CALIBRATION CHECK, CHECK THE CALIBRATION CURVES FURNISHED WITH THE MOISTURE GAGES ACCORDING TO ASTM D 3017. WHEN FIELD IN-PLACE DENSITY TESTS ARE PERFORMED USING NUCLEAR METHODS, MAKE CALIBRATION CHECKS OF BOTH DENSITY AND MOISTURE GAGES AT BEGINNING OF WORK, ON EACH DIFFERENT TYPE OF MATERIAL ENCOUNTERED, AND AT INTERVALS AS DIRECTED BY THE PROJECT REPRESENTATIVE.
34. FOOTING SUBGRADE: AT FOOTING SUBGRADES, PERFORM AT LEAST ONE TEST OF EACH SOIL STRATUM TO VERIFY DESIGN BEARING CAPACITIES. SUBSEQUENT VERIFICATION AND APPROVAL OF OTHER FOOTING SUBGRADES MAY BE BASED ON A VISUAL COMPARISON OF EACH SUBGRADE WITH RELATED TESTED STRATA WHEN ACCEPTABLE TO THE PROJECT REPRESENTATIVE.
35. PAVED AND BUILDING SLAB AREAS: AT SUBGRADE AND AT EACH COMPACTED FILL AND BACKFILL LAYER, PERFORM AT LEAST ONE FIELD IN-PLACE DENSITY TEST FOR EVERY 2,000 SQ. FT. OR LESS OF PAVED AREA OR BUILDING SLAB, BUT IN NO CASE FEWER THAN TWO TESTS.
36. TRENCH BACKFILL: IN EACH COMPACTED INITIAL AND FINAL BACKFILL LAYER, PERFORM AT LEAST ONE FIELD IN-PLACE DENSITY TEST FOR EACH 300 FEET OR LESS OF UTILITY TRENCH, BUT NO FEWER THAN TWO TESTS.
37. WHEN TESTING AGENCY REPORTS THAT SUBGRADES, FILLS, OR BACKFILLS ARE BELOW SPECIFIED DENSITY, SCARIFY AND MOISTEN OR AERATE, OR REMOVE AND REPLACE SOIL TO THE DEPTH REQUIRED, RECOMPACT AND RETEST UNTIL REQUIRED DENSITY IS OBTAINED.
38. EXISTING UTILITIES: DO NOT INTERRUPT UTILITIES SERVING FACILITIES OCCUPIED BY OWNER OR OTHERS UNLESS PERMITTED IN WRITING BY PROJECT REPRESENTATIVE AND THEN ONLY AFTER ARRANGING TO PROVIDE TEMPORARY UTILITY SERVICES ACCORDING TO REQUIREMENTS INDICATED:
   a. NOTIFY ENGINEER NOT LESS THAN TWO DAYS IN ADVANCE OF PROPOSED UTILITY INTERRUPTIONS.
   b. DO NOT PROCEED WITH UTILITY INTERRUPTIONS WITHOUT ENGINEER WRITTEN PERMISSION.
   c. CONTACT UTILTY-LOCATOR SERVICE FOR AREA WHERE PROJECT IS LOCATED BEFORE EXCAVATING.
39. DEMOLISH AND COMPLETELY REMOVE FROM SITE EXISTING UNDERGROUND UTILITIES INDICATED TO BE REMOVED. COORDINATE WITH UTILITY COMPANIES TO SHUT OFF SERVICES IF LINES ARE ACTIVE.
40. EXPLOSIVES: DO NOT USE EXPLOSIVES.
41. AREA OF BUILDINGS PLUS A MARGIN OF 10' ON ALL SIDES SHALL BE CLEARED AND GRUBBED TO REMOVE AND DISPOSE OF ANY SURFACE VEGETATION, ROOTS, AND DEBRIS UNLESS PLANS SPECIFICALLY NOTE OTHERWISE.
42. RECONSTRUCT SUBGRADES DAMAGED BY FREEZING TEMPERATURES, FROST, RAIN, ACCUMULATED WATER, OR CONSTRUCTION ACTIVITIES, AS DIRECTED BY ARCHITECT.

EROSION AND SEDIMENTATION CONTROL REQUIREMENTS

1. THE LAND-DISTURBING ACTIVITY SHALL CONFORM TO EXISTING TOPOGRAPHY AND SOIL TYPE SO AS TO CREATE THE LOWEST PRACTICAL EROSION POTENTIAL.
2. LAND-DISTURBING ACTIVITIES SHALL BE CONDUCTED IN A MANNER MINIMIZING EROSION.
3. THE DISTURBED AREA AND THE DURATION OF EXPOSURE TO EROSIVE ELEMENTS SHALL BE KEPT TO A PRACTICABLE MINIMUM.
4. EROSION CONTROL MUST BE STRICTLY MAINTAINED DURING CUT AND FILL OPERATIONS.
5. DISTURBED SOIL SHALL BE STABILIZED AS QUICKLY AS PRACTICABLE.
6. WHENEVER FEASIBLE, NATURAL VEGETATION SHALL BE RETAINED, PROTECTED AND SUPPLEMENTED.
7. TEMPORARY VEGETATION OR MULCHING SHALL BE EMPLOYED TO PROTECT EXPOSED CRITICAL AREAS DURING DEVELOPMENT.
8. PERMANENT VEGETATION AND STRUCTURAL EROSION CONTROL MEASURES SHALL BE INSTALLED AS SOON AS PRACTICABLE.
9. ADEQUATE PROVISIONS MUST BE PROVIDED TO MINIMIZE DAMAGE FROM SURFACE WATER TO THE CUT FACE OF EXCAVATIONS OR THE SLOPING SURFACE OF FILLS.
10. TO THE EXTENT NECESSARY, SEDIMENT IN RUNOFF WATER MUST BE TRAPPED BY THE USE OF DEBRIS BASINS, SEDIMENT BASINS, SILT TRAPS OR SIMILAR MEASURES UNTIL THE DISTURBED AREA IS STABILIZED.
11. CUTS AND FILLS MUST BE CONSTRUCTED IN SUCH A MANNER THAT EROSION AND RUNOFF FROM THE SITE DOES NOT ENDANGER ADJOINING PROPERTY.
12. FILLS MAY NOT ENCROACH UPON NATURAL WATERCOURSES OR CONSTRUCTED CHANNELS IN A MANNER SO AS TO ADVERSELY AFFECT OTHER PROPERTY OWNERS WITHOUT ADEQUATE PROVISIONS FOR AN EQUIVALENT ALTERNATE SYSTEM WITH A POSITIVE OUTFALL.
13. ALL R.O.W.'S, WATERWAYS, STREETS AND SIDEWALKS SHALL BE BUFFERED BY A TWENTY (20) FOOT WIDE STRIP OF GRASS OR OTHER SUITABLE MEANS.
14. GRADING EQUIPMENT MUST CROSS FLOWING STREAMS BY MEANS OF BRIDGES OR CULVERTS EXCEPT WHEN SUCH METHODS ARE NOT FEASIBLE AND PROVIDED IN ANY CASE, THAT SUCH CROSSINGS ARE KEPT TO A MINIMUM AND SEDIMENTATION CONTROL DEVICES ARE PROVIDED.

TERMITE CONTROL

1. ENGAGE A LICENSED PROFESSIONAL PEST CONTROL OPERATOR FOR APPLICATION OF SOIL TREATMENT SOLUTION.
2. DO NOT APPLY SOIL TREATMENT SOLUTION UNTIL EXCAVATING, FILLING AND GRADING OPERATIONS ARE COMPLETED, EXCEPT AS OTHERWISE REQUIRED IN CONSTRUCTION OPERATIONS. TO ENSURE PENETRATION, DO NOT APPLY SOIL TREATMENT TO FROZEN OR EXCESSIVELY WET SOILS OR DURING INCLEMENT WEATHER. COMPLY WITH HANDLING AND APPLICATION INSTRUCTIONS OF TERMITICIDE MANUFACTURER.
3. FURNISH WRITTEN WARRANTY CERTIFYING THAT APPLIED SOIL POISONING TREATMENT WILL PREVENT INFESTATION OF SUBTERRANEAN TERMITES AND, THAT IF SUBTERRANEAN TERMITE ACTIVITY IS DISCOVERED DURING WARRANTY PERIOD, THE CONTRACTOR WILL RE-TREAT SOIL AND REPAIR OR REPLACE DAMAGE CAUSED BY TERMITE INFESTATION. PROVIDE WARRANTY FOR A PERIOD OF FIVE (5) YEARS FROM DATE OF TREATMENT, SIGNED BY APPLICATOR AND CONTRACTOR.
4. USE EMULSIBLE CONCENTRATE INSECTICIDE FOR DILUTION WITH WATER, SPECIALLY FORMULATED TO PREVENT TERMITE INFESTATION. PROVIDE A WORKING SOLUTION OF THE CHEMICAL ELEMENTS AND CONCENTRATIONS PER MANUFACTURER RECOMMENDATIONS. PROVIDE ENGINEER WITH COPY OF SOLUTION, MANUFACTURER, AND ALL MANUFACTURER DIRECTIONS.
5. REMOVE FOREIGN MATTER WHICH COULD DECREASE EFFECTIVENESS OF TREATMENT ON AREAS TO BE TREATED. LOOSEN, RAKE, AND LEVEL SOIL TO BE TREATED, EXCEPT PREVIOUSLY COMPACTED AREAS UNDER SLABS AND FOUNDATIONS. TERMITICIDE MAY BE APPLIED BEFORE PLACEMENT OF COMPACTED FILL UNDER SLABS, IF RECOMMENDED BY TERMITICIDE MANUFACTURER.
6. APPLY SOIL TREATMENT SOLUTION AT RATES SPECIFIED BY TERMITICIDE MANUFACTURER.
7. ALLOW NOT LESS THAN 12 HOURS FOR DRYING AFTER APPLICATION, BEFORE BEGINNING CONCRETE PLACEMENT OR OTHER CONSTRUCTION ACTIVITIES.
8. POST SIGNS IN AREAS OF APPLICATION WARNING WORKERS THAT SOIL TREATMENT HAS BEEN APPLIED. REMOVE SIGNS WHEN AREAS ARE COVERED BY OTHER CONSTRUCTION.
9. REAPPLY SOIL TREATMENT SOLUTION TO AREAS DISTURBED BY SUBSEQUENT EXCAVATION, MODIFICATIONS, OR OTHER CONSTRUCTION ACTIVITIES FOLLOWING APPLICATION.

WATER DISTRIBUTION AND SERVICE PIPING

1. ALL VERTICAL AND HORIZONTAL SPACING BETWEEN WATER DISTRIBUTION SYSTEMS AND SEWAGE COLLECTION SYSTEMS AND/OR STORM SEWER SYSTEMS ARE TO COMPLY WITH THE LATEST FDEP STANDARDS.
2. CODE COMPLIANCE: COMPLY WITH APPLICABLE PORTIONS OF NATIONAL STANDARD PLUMBING CODE, LOCAL PLUMBING CODES LOCAL MUNICIPALITY WITH JURISDICTION CONSTRUCTION STANDARDS AND DETAILS, THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION, AND NFPA 24.
3. DUCTILE IRON PIPE: DUCTILE IRON PIPE SHALL BE CEMENT-MORTAR LINED, CLASS 150, MECHANICAL OR PUSH-ON JOINT AND SHALL MEET ALL THE REQUIREMENTS OF THE FOLLOWING: ANSI/AWWA C-104/A-21.4; ANSI/AWWA C-111/A-21.11 (FOR RUBBER GASKET JOINTS); ANSI/AWWA C-150/A-21.50 (FOR THICKNESS DESIGN); AND ANSI/AWWA C-151/A-21.51 (FOR D.I.P. MOLDS).
4. LINING: ALL DUCTILE IRON PIPE AND FITTINGS SHALL BE CEMENT-MORTAR LINED AND SEAL COATED IN CONFORMANCE WITH ANSI A-21.4
5. POLYVINYL CHLORIDE (PVC) PIPE: AWWA C900; CLASSES 150 AND 200; WITH BELL END AND ELASTOMERIC GASKET, WITH PLAIN END FOR CAST-IRON OR DUCTILE-IRON FITTINGS.
   a. PIPE MARKING: NSF 14, "NSF-PVC CTO ONLY."
   b. GASKETS: ASTM F 477; ELASTOMERIC SEAL.
6. JOINTS: PIPE JOINTS SHALL BE MECHANICAL OR PUSH-ON JOINTS, EXCEPT WHERE SPECIFICALLY SHOWN OR DETAILED OTHERWISE.
7. PIPE FITTINGS: ALL FITTINGS 4" IN DIAMETER AND LARGER SHALL BE DUCTILE IRON WITH MECHANICAL OR PUSH-ON JOINTS AND SHALL CONFORM TO ANSI A-21.10 (AWWA C-110) FOR SHORT BODY FITTINGS WITH A 250 PSI PRESSURE RATING FOR FITTINGS UP TO 12" IN DIAMETER.
8. MECHANICAL JOINT FITTINGS: MECHANICAL JOINT DUCTILE IRON FITTINGS SHALL CONFORM TO ANSI/AWWA C-110/A-21.10 AND ANSI/AWWA C-111/A-21.11 AND SHALL BE OF A CLASS AT LEAST EQUAL TO THAT OF THE ADJACENT PIPE. MORTAR LINING AND SEAL COAT FOR FITTINGS SHALL BE SAME THICKNESS SPECIFIED FOR PIPE.
9. GASKETS: THE RUBBER-RING GASKETS SHALL BE SUITABLE FOR THE SPECIFIED PIP SIZES AND PRESSURE AND SHALL CONFORM TO APPLICABLE PARTS OF THE LATEST FEDERAL SPECIFICATION WW-F-421, AND SHALL BE FURNISHED WITH THE PIPE.
10. JOINT LUBRICANT: THE JOINT LUBRICANT FOR PUSH-ON JOINT PIPE SHALL HAVE BEEN TESTED AND APPROVED FOR POTABLE WATER SERVICE. NO LUBRICANT SHALL BE USED THAT WILL HARBOR BACTERIA OR DAMAGE THE GASKETS.
11. POLYVINYL CHLORIDE(PVC) PRESSURE PIPE UNDER 4" SHALL BE MINIMUM PRESSURE CLASS OF 200 PSI SCHEDULE 40 CONFORMING TO ASTM D-1785 OR SDR 21 CONFORMING TO ASTM D-2241 WITH CEMENT-SOLVENT WELDED JOINTS OR PUSH ON ELASTOMERIC JOINTS. MARK PIPE WITH "NSF-PW" ACCORDING TO NSF14.
12. CONTROL VALVES: PROVIDE VALVES AND FLOW CONTROL DEVICES AS INDICATED. ALL VALVES SHALL BE FURNISHED WITH MECHANICAL JOINT ENDS.
   a. MINIMUM WORKING PRESSURE, 200 PSI UNLESS OTHERWISE INDICATED.
   b. GATE VALVES (4" AND LARGER): RESILIENT SEAT TYPE WITH NON-RISING STEM, CAST IRON BODY AND BRONZE FITTINGS CONFORMING TO AWWA C-500. GATE VALVES LOCATED ON FIRE PROTECTION MAINS MUST BE FM APPROVED.
   c. VALVE BOXES: SHALL BE OF CAST IRON WITH ADJUSTABLE TOP. THE SIZE SHALL BE LARGE ENOUGH FOR OPERATION OF THE VALVE ON WHICH IT IS USED WITH A MINIMUM SHAFT DIAMETER OF 5-1/4". THE COVER SHALL HAVE THE WORD "WATER" CAST ON IT.
   d. GATE VALVES (SMALLER THAN 4"): SHALL BE NON-RISING STEM, HANDWHEEL OPERATED, WEDGE DISCS, ALL BRONZE WITH FLANGED ENDS, CONFORMING TO FED. SPEC. WW-V-54, CLASS B, TYPE 1. FOR BELOW GROUND INSTALLATION, VALVES SHALL BE FURNISHED WITH MECHANICAL JOINT ENDS OR IRON PIPE THREAD AND 2" SQUARE OPERATING NUT.
13. WATER SERVICE PIPING: EXTEND WATER SERVICE PIPING OF SIZE AND IN LOCATIONS INDICATED TO WATER SERVICE ENTRANCE AT BUILDINGS. PROVIDE SLEEVE IN FOUNDATION WALL FOR WATER SERVICE ENTRY; MAKE ENTRY WATERTIGHT.
14. POLYVINYL CHLORIDE (PVC) PIPE AND FITTINGS: INSTALL IN ACCORDANCE WITH UNI-BELL HANDBOOK OF PVC PIPE.
15. DUCTILE IRON PIPE: INSTALL IN ACCORDANCE WITH AWWA C-600.
16. CONTROL VALVES: INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
17. INTERIOR INSPECTION: INSPECT CONDUIT TO DETERMINE WHETHER LINE PLACEMENT OR OTHER DAMAGE HAS OCCURRED.
18. IF THE INSPECTION INDICATES POOR ALIGNMENT, DEBRIS, DISPLACED PIPE, INFILTRATION OR OTHER DEFECTS, CORRECT SUCH DEFECTS TO SATISFACTION OF ENGINEER AND PERMITTING AGENCIES HAVING JURISDICTION.
19. CLEANING CONDUIT: CLEAR INTERIOR OF CONDUIT OF DIRT AND OTHER SUPERFLUOUS MATERIAL AS WORK PROGRESSES. MAINTAIN SWAB OR DRAG IN LINE AND PULL PAST EACH JOINT AS IT IS COMPLETED.
20. PLACE PLUGS IN END OF UNCOMPLETED CONDUIT AT END OF DAY OR WHENEVER WORK STOPS.
21. DISINFECTION: AT COMPLETION OF WATER SERVICE LINE INSTALLATION, FLUSH AND DISINFECT IN CONFORMANCE WITH AWWA C-651, TO THE SATISFACTION OF LOCAL AUTHORITIES HAVING JURISDICTION.
22. HYDROSTATIC AND LEAKAGE TEST: ALL SITE WATER DISTRIBUTION PIPING SHALL BE TESTED AFTER INSTALLATION. DUCTILE IRON PIPE SHALL BE TESTED IN ACCORDANCE WITH THE APPLICABLE PORTIONS OF AWWA STANDARD C-600, AND PVC PIPE SHALL BE TESTED IN ACCORDANCE WITH THE APPLICABLE PORTIONS OF AWWA STANDARD C-603. ACCEPTABLE LEAKAGE MUST BE LESS THAN THE NUMBER OF GALLONS PER HOUR AS DETERMINED BY THE FORMULAS IN AWWA C-600 AND C-605.
23. THE POTABLE WATER LINES SHALL BE TESTED TO 150 PSI TEST PRESSURE AND THE FIRE LINE SHALL BE TESTED TO 200 PSI TEST PRESSURE, BOTH FOR TWO (2) HOURS DURATION. ALL GAUGES AND APPURTENANCES NECESSARY SHALL BE FURNISHED BY THE CONTRACTOR. ALL LEAKS SHALL BE REPAIRED BY REMOVING AND REPLACING DEFECTIVE PIPE AND JOINTS WITH PIPE AND JOINTS FREE OF DEFECTS, AFTER WHICH THE LINES SHALL BE RETESTED. SUCH REPAIR AND RETESTING SHALL BE DONE UNTIL THE LINES PASS THE SPECIFIED TEST.
24. ALL VALVES SHALL BE HYDROSTATICALLY TESTED WITH THE LINE IN WHICH THEY ARE INSTALLED.
25. PERFORM OPERATION TESTING OF HYDRANTS AND VALVES BY OPENING AND CLOSING UNDER WATER PRESSURE TO ENSURE PROPER OPERATION.

DEWATERING

1. MAINTAIN ADEQUATE SUPERVISION AND CONTROL TO ENSURE THAT STABILITY OF EXCAVATED AND CONSTRUCTED SLOPES ARE NOT ADVERSELY AFFECTED BY WATER, EROSION IS CONTROLLED, AND FLOODING OF EXCAVATION OR DAMAGE TO STRUCTURES DOES NOT OCCUR.
2. THE DEWATERING PLAN SHALL COMPLY WITH THE REQUIREMENTS OF THE ST. JOHNS WATER MANAGEMENT DISTRICT FOR CONSUMPTIVE USE OF GROUNDWATER. PERMITTING, IF REQUIRED, SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
3. PROVIDE AN ADEQUATE SYSTEM TO LOWER AND CONTROL GROUNDWATER IN ORDER TO PERMIT EXCAVATION, CONSTRUCTION OF STRUCTURES, AND PLACEMENT OF FILL MATERIALS UNDER DRY CONDITIONS. INSTALL SUFFICIENT DEWATERING EQUIPMENT TO DRAIN WATER-BEARING STRATA ABOVE AND BELOW BOTTOM OF STRUCTURE FOUNDATIONS, DRAINS, SEWERS, AND OTHER EXCAVATIONS.
4. REDUCE HYDROSTATIC HEAD IN WATER-BEARING STRATA BELOW STRUCTURE FOUNDATIONS, DRAINS, SEWERS AND OTHER EXCAVATIONS TO EXTENT THAT WATER LEVEL AND PIEZOMETRIC WATER LEVELS IN CONSTRUCTION AREAS ARE BELOW PREVAILING EXCAVATION SURFACE.
5. PRIOR TO EXCAVATION BELOW GROUNDWATER LEVEL, PLACE SYSTEM INTO OPERATION TO LOWER WATER LEVELS AS REQUIRED AND THEN OPERATE IT CONTINUOUSLY 24 HOURS A DAY, 7 DAYS A WEEK UNTIL DRAINS, SEWERS AND STRUCTURES HAVE BEEN CONSTRUCTED, INCLUDING PLACEMENT OF FILL MATERIALS, AND UNTIL DEWATERING IS NO LONGER REQUIRED.
6. DISPOSE OF WATER REMOVED FROM EXCAVATIONS IN A MANNER TO AVOID ENDANGERING PUBLIC HEALTH, PROPERTY, AND PORTIONS OF WORK UNDER CONSTRUCTION OR COMPLETED. DISPOSE OF WATER IN A MANNER TO AVOID INCONVENIENCE TO OTHERS. PROVIDE SUMPS, SEDIMENTATION TANKS, AND OTHER FLOW CONTROL DEVICES AS REQUIRED BY GOVERNING AUTHORITIES.
7. PROVIDE STANDBY EQUIPMENT ON SITE, INSTALLED AND AVAILABLE, FOR IMMEDIATE OPERATION IF REQUIRED TO MAINTAIN DEWATERING ON A CONTINUOUS BASIS IN EVENT ANY PART OF SYSTEM BECOMES INADEQUATE OR FAILS. IF DEWATERING REQUIREMENTS ARE NOT SATISFIED DUE TO INADEQUACY OR FAILURE OF DEWATERING SYSTEM, PERFORM SUCH WORK AS MAY BE REQUIRED TO RESTORE DAMAGED STRUCTURES AND FOUNDATION SOILS AT NO ADDITIONAL EXPENSE.

CONCRETE

1. ALL CONCRETE STRENGTHS SHALL BE AS FOLLOWS WITH BROOM FINISH UNLESS IDENTIFIED OTHERWISE:
   FOUNDATIONS & SLABS ON GRADE________________________3000 PSI
   MASONRY GROUT AND UNREINFORCED CONCRETE______________3000 PSI
2. ALL REINFORCING STEEL SHALL BE DEFORMED BARS CONFORMING TO ASTM A615 GRADE 60 (FY=60 KSI).
3. ALL WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185 AND SHALL BE LAPPED ONE FULL MESH PANEL PLUS 2 IN. AT SIDES AND ENDS AND BE WIRED TOGETHER. FIBER MESH MAY BE SUBSTITUTED PER DIRECTION OF ENGINEER AT REQUEST OF CONTRACTOR.
4. CALCIUM CHLORIDE SHALL NOT BE USED IN ANY FORM.
5. ADDITION OF WATER TO CONCRETE AT THE JOB SITE SHALL BE PROHIBITED.
6. ALL CONCRETE WORK SHALL COMPLY WITH PROVISIONS OF ACI 318, 315, AND 301, LATEST EDITIONS, UNLESS OTHERWISE NOTED.
7. REINFORCING FOR CONTINUOUS FOUNDATIONS AND BEAMS SHALL BE CONTINUOUS AT CORNERS AND INTERSECTIONS. PROVIDE SPLICE BARS AND/OR HOOK ENDS FOR CONTINUOUS REINFORCING.
8. MINIMUM CONCRETE PROTECTION FOR REINFORCING BARS:
   STRUCTURAL ELEMENT — MIN CLEAR COVER
   FOOTINGS, (CAST AGAINST & PERMANENTLY EXPOSED TO EARTH)__________________________3 INCHES
   SLABS (IN CONTACT WITH EARTH)___________________2 INCHES

FDEP WATER SPECIFICATIONS

1. ALL PIPE, PIPE FITTINGS, PIPE JOINT PACKING AND JOINTING MATERIALS, VALVES, FIRE HYDRANTS, AND METERS INSTALLED UNDER THIS PROJECT WILL CONFORM TO APPLICABLE AMERICAN WATER WORKS ASSOCIATION (AWWA) STANDARDS. [FAC 62-555.320(21)(B), RSWW 8.0, AND AWWA STANDARDS AS INCORPORATED INTO FAC 62-555.330; EXCEPTIONS ALLOWED UNDER FAC 62-555.320(21)(C)]
2. ALL PUBLIC WATER SYSTEM COMPONENTS, EXCLUDING FIRE HYDRANTS, THAT WILL BE INSTALLED UNDER THIS PROJECT AND THAT WILL COME INTO CONTACT WITH DRINKING WATER WILL CONFORM TO NSF INTERNATIONAL STANDARD 61 AS ADOPTED IN RULE 62-555.335, F.A.C., OR OTHER APPLICABLE STANDARDS, REGULATIONS, OR REQUIREMENTS REFERENCED IN PARAGRAPH 62-555.320(3)(B), F.A.C. [FAC 62-555.320(3)(B); EXCEPTIONS ALLOWED UNDER FAC 62-555.320(3)(D)]
3. ALL PIPE AND PIPE FITTINGS INSTALLED UNDER THIS PROJECT WILL CONTAIN NO MORE THAN 8.0% LEAD, AND ANY SOLDER OR FLUX USED IN THIS PROJECT WILL CONTAIN NO MORE THAN 0.2% LEAD. [FAC 62-555.322]
4. ALL PIPE AND PIPE FITTINGS INSTALLED UNDER THIS PROJECT WILL BE COLOR CODED OR MARKED IN ACCORDANCE WITH SUBPARAGRAPH 62-555.320(21)(B)3, F.A.C., USING BLUE AS A PREDOMINANT COLOR. (UNDERGROUND PLASTIC PIPE WILL BE SOLID-WALL BLUE PIPE, WILL HAVE A CO-EXTRUDED BLUE EXTERNAL SKIN, OR WILL BE WHITE OR BLACK PIPE WITH BLUE STRIPES INCORPORATED INTO, OR APPLIED TO, THE PIPE WALL; AND UNDERGROUND METAL OR CONCRETE PIPE WILL HAVE BLUE STRIPES APPLIED TO THE PIPE WALL. PIPE STRIPED DURING MANUFACTURING OF THE PIPE WILL HAVE CONTINUOUS STRIPES THAT RUN PARALLEL TO THE AXIS OF THE PIPE, THAT ARE LOCATED AT NO GREATER THAN 90-DEGREE INTERVALS AROUND THE PIPE, AND THAT WILL REMAIN INTACT DURING AND AFTER INSTALLATION OF THE PIPE. IF TAPE OR PAINT IS USED TO STRIPE PIPE DURING INSTALLATION OF THE PIPE, THE TAPE OR PAINT WILL BE APPLIED IN A CONTINUOUS LINE THAT RUNS PARALLEL TO THE AXIS OF THE PIPE AND THAT IS LOCATED ALONG THE TOP OF THE PIPE; FOR PIPE WITH AN INTERNAL DIAMETER OF 24 INCHES OR GREATER, TAPE OR PAINT WILL BE APPLIED IN CONTINUOUS LINES ALONG EACH SIDE OF THE PIPE AS WELL AS ALONG THE TOP OF THE PIPE. ABOVEGROUND PIPE WILL BE PAINTED BLUE OR WILL BE COLOR CODED OR MARKED LIKE UNDERGROUND PIPE.) [FAC 62-555.320(21)(B)3]
5. ALL FIRE HYDRANTS THAT WILL BE INSTALLED UNDER THIS PROJECT AND THAT WILL HAVE UNPLUGGED, UNDERGROUND DRAINS WILL BE LOCATED AT LEAST THREE FEET FROM ANY EXISTING OR PROPOSED STORM SEWER, STORMWATER FORCE MAIN, PIPELINE CONVEYING RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C., OR VACUUM-TYPE SANITARY SEWER; AT LEAST SIX FEET FROM ANY EXISTING OR PROPOSED GRAVITY- OR PRESSURE-TYPE SANITARY SEWER, WASTEWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-10, F.A.C.; AND AT LEAST TEN FEET FROM ANY EXISTING OR PROPOSED "ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEM." [FAC 62-555.314(4)]
6. NEW OR ALTERED CHAMBERS, PITS, OR MANHOLES THAT CONTAIN VALVES, BLOW-OFFS, METERS, OR OTHER SUCH WATER DISTRIBUTION SYSTEM APPURTENANCES AND THAT ARE INCLUDED IN THIS PROJECT WILL NOT BE CONNECTED DIRECTLY TO ANY SANITARY OR STORM SEWER, AND BLOW-OFFS OR AIR RELIEF VALVES INSTALLED UNDER THIS PROJECT WILL NOT BE CONNECTED DIRECTLY TO ANY SANITARY OR STORM SEWER. [FAC 62-555.320(21)(B) AND RSWW 8.4.3]
7. NEW OR ALTERED WATER MAINS INCLUDED IN THIS PROJECT WILL BE INSTALLED IN ACCORDANCE WITH APPLICABLE AWWA STANDARDS OR IN ACCORDANCE WITH MANUFACTURERS' RECOMMENDED PROCEDURES. [FAC 62-555.320(21)(B), RSWW 8.5.1, AND AWWA STANDARDS AS INCORPORATED INTO FAC 62-555.330]
8. A CONTINUOUS AND UNIFORM BEDDING WILL BE PROVIDED IN TRENCHES FOR UNDERGROUND PIPE INSTALLED UNDER THIS PROJECT; BACKFILL MATERIAL WILL BE TAMPED IN LAYERS AROUND UNDERGROUND PIPE INSTALLED UNDER THIS PROJECT AND TO A SUFFICIENT HEIGHT ABOVE THE PIPE TO ADEQUATELY SUPPORT AND PROTECT THE PIPE; AND UNSUITABLY SIZED STONES (AS DESCRIBED IN APPLICABLE AWWA STANDARDS OR MANUFACTURERS' RECOMMENDED INSTALLATION PROCEDURES) FOUND IN TRENCHES WILL BE REMOVED FOR A DEPTH OF AT LEAST SIX INCHES BELOW THE BOTTOM OF UNDERGROUND PIPE INSTALLED UNDER THIS PROJECT. [FAC 62-555.320(21)(B), RSWW 8.5.2]
9. NEW OR ALTERED WATER MAINS THAT ARE INCLUDED IN THIS PROJECT AND THAT WILL BE CONSTRUCTED OF ASBESTOS-CEMENT OR POLYVINYL CHLORIDE PIPE WILL BE PRESSURE AND LEAKAGE TESTED IN ACCORDANCE WITH AWWA STANDARD C603 OR C605, RESPECTIVELY, AS INCORPORATED INTO RULE 62-555.330, F.A.C., AND ALL OTHER NEW OR ALTERED WATER MAINS INCLUDED IN THIS PROJECT WILL BE PRESSURE AND LEAKAGE TESTED IN ACCORDANCE WITH AWWA STANDARD C600 AS INCORPORATED INTO RULE 62-555.330. [FAC 62-555.320(21)(B)1 AND AWWA STANDARDS AS INCORPORATED INTO FAC 62-555.330]
10. NEW OR ALTERED WATER MAINS, INCLUDING FIRE HYDRANT LEADS AND INCLUDING SERVICE LINES THAT WILL BE UNDER THE CONTROL OF A PUBLIC WATER SYSTEM AND THAT HAVE AN INSIDE DIAMETER OF THREE INCHES OR GREATER, WILL BE DISINFECTED AND BACTERIOLOGICALLY EVALUATED IN ACCORDANCE WITH RULE 62-555.340, F.A.C. [FAC 62-555.320(21)(B)2 AND FAC 62-555.340]
11. NEW OR ALTERED WATER MAINS THAT ARE INCLUDED IN THIS PROJECT AND THAT WILL BE INSTALLED IN AREAS WHERE THERE ARE KNOWN AGGRESSIVE SOIL CONDITIONS WILL BE PROTECTED THROUGH USE OF CORROSION-RESISTANT WATER MAIN MATERIALS, THROUGH ENCASEMENT OF THE WATER MAINS IN POLYETHYLENE, OR THROUGH PROVISION OF CATHODIC PROTECTION. [FAC 62-555.320(21)(B) AND RSWW 8.5.7.D]
12. NEW OR RELOCATED, UNDERGROUND WATER MAINS INCLUDED IN THIS PROJECT WILL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST THREE FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED VACUUM-TYPE SANITARY SEWER, STORM SEWER, STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.; A HORIZONTAL DISTANCE OF AT LEAST SIX FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED GRAVITY-TYPE SANITARY SEWER (OR A HORIZONTAL DISTANCE OF AT LEAST THREE FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED GRAVITY-TYPE SANITARY SEWER IF THE BOTTOM OF THE WATER MAIN WILL BE LAID AT LEAST SIX INCHES ABOVE THE TOP OF THE SEWER); A HORIZONTAL DISTANCE OF AT LEAST SIX FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED PRESSURE-TYPE SANITARY SEWER, WASTEWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.; AND A HORIZONTAL DISTANCE OF AT LEAST TEN FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND ALL PARTS OF ANY EXISTING OR PROPOSED "ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEM." [FAC 62-555.314(1); EXCEPTIONS ALLOWED UNDER FAC 62-555.314(5)]
13. NEW OR RELOCATED, UNDERGROUND WATER MAINS THAT ARE INCLUDED IN THIS PROJECT AND THAT WILL CROSS ANY EXISTING OR PROPOSED GRAVITY- OR VACUUM-TYPE SANITARY SEWER OR STORM SEWER WILL BE LAID SO THE OUTSIDE OF THE WATER MAIN IS AT LEAST SIX INCHES ABOVE THE OTHER PIPELINE OR AT LEAST 12 INCHES BELOW THE OTHER PIPELINE; AND NEW OR RELOCATED, UNDERGROUND WATER MAINS THAT ARE INCLUDED IN THIS PROJECT AND THAT WILL CROSS ANY EXISTING OR PROPOSED PRESSURE-TYPE SANITARY SEWER, WASTEWATER OR STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER WILL BE LAID SO THE OUTSIDE OF THE WATER MAIN IS AT LEAST 12 INCHES ABOVE OR BELOW THE OTHER PIPELINE. [FAC 62-555.314(2); EXCEPTIONS ALLOWED UNDER FAC 62-555.314(5)]
14. AT THE UTILITY CROSSINGS DESCRIBED IN PART II.C.1.W ABOVE, ONE FULL LENGTH OF WATER MAIN PIPE WILL BE CENTERED ABOVE OR BELOW THE OTHER PIPELINE SO THE WATER MAIN JOINTS WILL BE AS FAR AS POSSIBLE FROM THE OTHER PIPELINE OR THE PIPES WILL 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 PIPELINES CONVEYING RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C., AND AT LEAST SIX FEET FROM ALL JOINTS IN GRAVITY- OR PRESSURE-TYPE SANITARY SEWERS, WASTEWATER FORCE MAINS, OR PIPELINES CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C. [FAC 62-555.314(2); EXCEPTIONS ALLOWED UNDER FAC 62-555.314(5)]
15. NEW OR ALTERED WATER MAINS THAT ARE INCLUDED IN THIS PROJECT AND THAT WILL CROSS UNDER SURFACE WATER COURSES GREATER THAN 15 FEET IN WIDTH WILL HAVE FLEXIBLE OR RESTRAINED, WATERTIGHT PIPE JOINTS AND WILL INCLUDE VALVES AT BOTH ENDS OF THE WATER CROSSING SO THE UNDERWATER MAIN CAN BE ISOLATED FOR TESTING AND REPAIR; THE AFOREMENTIONED ISOLATION VALVES WILL BE EASILY ACCESSIBLE AND WILL NOT BE SUBJECT TO FLOODING; THE ISOLATION VALVE CLOSEST TO THE WATER SUPPLY SOURCE WILL BE IN A MANHOLE; AND PERMANENT TAPS WILL BE PROVIDED ON EACH SIDE OF THE ISOLATION VALVE WITHIN THE MANHOLE TO ALLOW FOR INSERTION OF A SMALL METER TO DETERMINE LEAKAGE FROM THE UNDERWATER MAIN AND TO ALLOW FOR SAMPLING OF WATER FROM THE UNDERWATER MAIN. [FAC 62-555.320(21)(B) AND RSWW 8.7.2]
16. THIS PROJECT IS BEING DESIGNED TO INCLUDE PROPER BACKFLOW PROTECTION AT THOSE NEW OR ALTERED SERVICE CONNECTIONS WHERE BACKFLOW PROTECTION IS REQUIRED OR RECOMMENDED UNDER RULE 62-555.360, F.A.C., OR IN RECOMMENDED PRACTICE FOR BACKFLOW PREVENTION AND CROSS-CONNECTION CONTROL, AWWA MANUAL M14, AS INCORPORATED INTO RULE 62-555.330, F.A.C.; OR THE PUBLIC WATER SYSTEM THAT WILL OWN THIS PROJECT AFTER IT IS PLACED INTO OPERATION HAS A CROSS-CONNECTION CONTROL PROGRAM REQUIRING WATER CUSTOMERS TO INSTALL PROPER BACKFLOW PROTECTION AT THOSE SERVICE CONNECTIONS WHERE BACKFLOW PROTECTION IS REQUIRED OR RECOMMENDED UNDER RULE 62-555.360, F.A.C., OR IN AWWA MANUAL M14. [FAC 62-555.360 AND AWWA MANUAL M14 AS INCORPORATED INTO FAC 62-555.330]
17. NEITHER STEAM CONDENSATE, COOLING WATER FROM ENGINE JACKETS, NOR WATER USED IN CONJUNCTION WITH HEAT EXCHANGERS WILL BE RETURNED TO THE NEW OR ALTERED WATER MAINS INCLUDED IN THIS PROJECT. [FAC 62-555.320(21)(B) AND RSWW 8.8.2]

ASPHALT CONCRETE PAVEMENT

1. REFERENCE TO STANDARD SPECIFICATIONS REFERS TO FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 2010.
2. ASPHALT CONCRETE PAVEMENT SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION 330 OF THE STANDARD SPECIFICATIONS.
3. THE JOB MIX FORMULA SHALL BE DETERMINED BY AND SHALL CONFORM TO REQUIREMENTS OF ASTM T-17.
4. APPLY PRIME AND TACK COATS WHEN AMBIENT TEMPERATURE IS ABOVE 50 DEG F (10 DEG C) AND WHEN TEMPERATURE HAS NOT BEEN BELOW 35 DEG F (1 DEG C) FOR 12 HOURS IMMEDIATELY PRIOR TO APPLICATION. DO NOT APPLY WHEN BASE IS WET OR CONTAINS AN EXCESS OF MOISTURE.
5. CONSTRUCT HOT-MIXED ASPHALT SURFACE COURSE WHEN ATMOSPHERIC TEMPERATURE IS ABOVE 40 DEG F (4 DEG C) AND WHEN BASE IS DRY. BASE COURSE MAY BE PLACED WHEN AIR TEMPERATURE IS ABOVE 30 DEG F (MINUS 1 DEG C) AND RISING.
6. PRIME COAT SHALL BE IN ACCORDANCE WITH SECTION 330 OF THE STANDARD SPECIFICATIONS APPLIED AT A RATE OF 0.35 TO 0.40 GALLONS PER SQUARE YARD.
7. SUBGRADE STABILIZING MATERIAL: FDOT SECTION 914.
8. BASE COURSE: THE BASE COURSE SHALL BE CONSTRUCTED OF THE FOLLOWING MATERIALS:
   a. LIMEROCK BASE COURSE: FDOT SECTION 911. LIMEROCK SHALL HAVE A MINIMUM LBR OF 100% AND SHALL BE MINED FROM AN FDOT APPROVED SOURCE.
9. PRIME AND TACK COATS: FDOT SECTION 300.
10. LANE MARKINGS:
   a. PAINT: FDOT SECTION 971, CODE T-1 OR T-2, COLOR AS INDICATED ON THE DRAWINGS.
   b. THERMOPLASTIC: FDOT SECTION 971, COLOR AS INDICATED ON THE DRAWINGS.
11. CONSTRUCTION OF BASE COURSE: FDOT SECTION 200, FOR LIMEROCK
12. PLACE LIMEROCK IN MAXIMUM 6" LIFTS AND COMPACT EACH LIFT TO A MINIMUM DRY DENSITY OF 98% OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY. (AASHTO T-180)
13. PERFORM COMPACTION TESTING FOR LIMEROCK THE FULL DEPTH AT A FREQUENCY OF ONE TEST PER 10,000 SQUARE FOOT, OR AT A MINIMUM OF TWO TEST LOCATIONS, WHICHEVER IS GREATER.
14. CONSTRUCTION OF WEARING COURSE: FDOT SECTION 330.
15. PAVEMENT MARKINGS: FDOT SECTIONS 710 AND 711.

FDEP SEPARATION NOTES:

1. 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.
   a. NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST THREE 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 REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.
   b. NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST THREE FEET, AND PREFERABLY TEN FEET, BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED VACUUM-TYPE SANITARY SEWER.
   c. NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST SIX FEET, AND PREFERABLY TEN 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 NOT REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C. THE MINIMUM HORIZONTAL SEPARATION DISTANCE BETWEEN WATER MAINS AND GRAVITY-TYPE SANITARY SEWERS SHALL BE REDUCED TO THREE FEET WHERE THE BOTTOM OF THE WATER MAIN IS LAID AT LEAST SIX INCHES ABOVE THE TOP OF THE SEWER.
   d. NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST TEN FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND ALL PARTS OF ANY EXISTING OR PROPOSED "ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEM" AS DEFINED IN SECTION 381.0065(2), F.S., AND RULE 64E-6.002, F.A.C.(2)
2. VERTICAL SEPARATION BETWEEN UNDERGROUND WATER MAINS AND SANITARY OR STORM SEWERS, WASTEWATER OR STORMWATER FORCE MAINS, AND RECLAIMED WATER PIPELINES.
   a. 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 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.
   b. 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 12 INCHES ABOVE OR BELOW THE OUTSIDE OF THE OTHER PIPELINE. HOWEVER, IT IS PREFERABLE TO LAY THE WATER MAIN ABOVE THE OTHER PIPELINE.
   c. AT THE UTILITY CROSSINGS DESCRIBED IN PARAGRAPHS (A) AND (B) 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 PIPELINES CONVEYING RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C., AND AT LEAST SIX FEET FROM ALL JOINTS IN GRAVITY- OR PRESSURE-TYPE SANITARY SEWERS, WASTEWATER FORCE MAINS, OR PIPELINES CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.(3)
3. SEPARATION BETWEEN WATER MAINS AND SANITARY OR STORM SEWER MANHOLES
   a. NO WATER MAIN SHALL PASS THROUGH, OR COME INTO CONTACT WITH, ANY PART OF A SANITARY SEWER MANHOLE.
   b. 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. WHERE IT IS NOT TECHNICALLY FEASIBLE OR ECONOMICALLY SENSIBLE TO COMPLY WITH THIS REQUIREMENT (I.E., WHERE THERE IS A CONFLICT IN THE ROUTING OF A WATER MAIN AND A STORM SEWER AND WHERE ALTERNATIVE ROUTING OF THE WATER MAIN OR THE STORM SEWER IS NOT TECHNICALLY FEASIBLE OR IS NOT ECONOMICALLY SENSIBLE), THE DEPARTMENT SHALL ALLOW EXCEPTIONS TO THIS REQUIREMENT (I.E., THE DEPARTMENT SHALL ALLOW CONSTRUCTION OF CONFLICT MANHOLES), BUT SUPPLIERS OF WATER OR PERSONS PROPOSING TO CONSTRUCT CONFLICT MANHOLES MUST FIRST OBTAIN A SPECIFIC PERMIT FROM THE DEPARTMENT IN ACCORDANCE WITH PART V OF THIS CHAPTER AND MUST PROVIDE IN THE PRELIMINARY DESIGN REPORT OR DRAWINGS, SPECIFICATIONS, AND DESIGN DATA ACCOMPANYING THEIR PERMIT APPLICATION THE FOLLOWING INFORMATION:
      1. TECHNICAL OR ECONOMIC JUSTIFICATION FOR EACH CONFLICT MANHOLE.
      2. A STATEMENT IDENTIFYING THE PARTY RESPONSIBLE FOR MAINTAINING EACH CONFLICT MANHOLE.
      3. ASSURANCE OF COMPLIANCE WITH THE DESIGN AND CONSTRUCTION REQUIREMENTS IN SUB-SUBPARAGRAPHS a. THROUGH d. BELOW.
         a. EACH WATER MAIN PASSING THROUGH A CONFLICT MANHOLE SHALL HAVE A FLEXIBLE, WATERTIGHT JOINT ON EACH SIDE OF THE MANHOLE TO ACCOMMODATE DIFFERENTIAL SETTLING BETWEEN THE MAIN AND THE MANHOLE.
         b. WITHIN EACH CONFLICT MANHOLE, THE WATER MAIN PASSING THROUGH THE MANHOLE SHALL BE INSTALLED IN A WATERTIGHT CASING PIPE HAVING HIGH IMPACT STRENGTH (I.E., HAVING AN IMPACT STRENGTH AT LEAST EQUAL TO THAT OF 0.25-INCH-THICK DUCTILE IRON PIPE).
         c. EACH CONFLICT MANHOLE SHALL HAVE AN ACCESS OPENING, AND SHALL BE SIZED, TO ALLOW FOR EASY CLEANING OF THE MANHOLE.
         d. GRATINGS SHALL BE INSTALLED AT ALL STORM SEWER INLETS UPSTREAM OF EACH CONFLICT MANHOLE TO PREVENT LARGE OBJECTS FROM ENTERING THE MANHOLE.
4. 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. NEW OR RELOCATED FIRE HYDRANTS WITH UNDERGROUND DRAINS SHALL BE LOCATED SO THAT THE DRAINS ARE AT LEAST THREE FEET FROM ANY EXISTING OR PROPOSED STORM SEWER, STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.; AT LEAST THREE FEET, AND PREFERABLY TEN FEET, FROM ANY EXISTING OR PROPOSED VACUUM-TYPE SANITARY SEWER; AT LEAST SIX FEET, AND PREFERABLY TEN FEET, FROM ANY EXISTING OR PROPOSED GRAVITY- OR PRESSURE-TYPE SANITARY SEWER, WASTEWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.; AND AT LEAST TEN FEET FROM ANY EXISTING OR PROPOSED "ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEM" AS DEFINED IN SECTION 381.0065(2), F.S., AND RULE 64E-6.002, F.A.C. 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.
   a. NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST THREE 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 REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.
   b. NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST THREE FEET, AND PREFERABLY TEN FEET, BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED VACUUM-TYPE SANITARY SEWER.
   c. NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST SIX FEET, AND PREFERABLY TEN 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 NOT REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C. THE MINIMUM HORIZONTAL SEPARATION DISTANCE BETWEEN WATER MAINS AND GRAVITY-TYPE SANITARY SEWERS SHALL BE REDUCED TO THREE FEET WHERE THE BOTTOM OF THE WATER MAIN IS LAID AT LEAST SIX INCHES ABOVE THE TOP OF THE SEWER.
   d. NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST TEN FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND ALL PARTS OF ANY EXISTING OR PROPOSED "ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEM" AS DEFINED IN SECTION 381.0065(2), F.S., AND RULE 64E-6.002, F.A.C.(2)
5. THE CONTRACTOR IS TO CONTACT THE ENGINEER TO RESOLVE ALL SEPARATION PROBLEMS ENCOUNTERED IN THE FIELD. NOTE: MOST STRINGENT LOCAL, STATE AND FEDERAL RULES TO APPLY.

REV#	DATE	REVISION

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EPLER PARK
PALM BAY, FL

SPECIFICATIONS

JAMES R. TRAUGER LICENSE No. 75612 STATE OF FLORIDA PROFESSIONAL ENGINEER 10.7.22

JAMES R. TRAUGER
FL P.E. #75612

DATE: 10-5-22
SECTION: 19
TOWNSHIP: 28S
RANGE: 37E
SCALE:
DRAWING NO. C-13
PROJECT: 22-126

SEWAGE COLLECTION SYSTEM

1. ALL VERTICAL AND HORIZONTAL SPACING BETWEEN SEWAGE COLLECTION SYSTEMS AND WATER DISTRIBUTION SYSTEMS AND/OR STORM SEWER SYSTEMS ARE TO COMPLY WITH THE LATEST FDEP STANDARDS.
2. ADHERE TO MANUFACTURER'S RECOMMENDATIONS ON THE INSTALLATION OF PVC, CPEP, AND RCP STORM SEWERS.
3. GENERAL: ALL PVC SEWER SHALL BE INSTALLED IN ACCORDANCE WITH UNI-BELL, UNI-B-5.
4. PIPE PREPARATION AND HANDLING: INSPECT ALL PIPE AND FITTINGS PRIOR TO LOWERING INTO TRENCH TO ENSURE NOT CRACKED, BROKEN, OR OTHERWISE DEFECTIVE MATERIALS ARE BEING USED. CLEAN ENDS OF PIPE THOROUGHLY. REMOVE FOREIGN MATTER AND DIRT FROM INSIDE OF PIPE AND KEEP CLEAN DURING AND AFTER LAYING. REMOVE ALL DAMAGED PIPE FROM THE JOB SITE.
5. GRAVITY SEWER PIPE: ALL SEWER LINES BETWEEN MANHOLES SHALL BE ABSOLUTELY STRAIGHT AND TRUE. NO CURVATURE SHALL BE TOLERATED. DO NOT DEVIATE FROM LINE OR GRADE, AS ESTABLISHED BY THE ENGINEER, MORE THAN 1/2" FOR LINE AND 1/4" FOR GRADE, PROVIDED THAT SUCH VARIATION DOES NOT RESULT IN A LEVEL OR REVERSE SLOPING INVERT.
6. LAYING AND JOINTING PIPE: PIPE LAYING SHALL PROCEED UPGRADE WITH SPIGOT ENDS POINTING IN DIRECTION OF FLOW. AFTER A SECTION OF PIPE HAS BEEN LOWERED INTO THE PREPARED TRENCH, CLEAN THE END OF THE PIPE TO BE JOINED, THE INSIDE OF THE JOINT, AND THE RUBBER RING IMMEDIATELY BEFORE JOINING THE PIPE. MAKE ASSEMBLY OF THE JOINT IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE MANUFACTURER OF THE TYPE OF JOINT USED. PROVIDE ALL SPECIAL TOOLS AND APPLIANCES REQUIRED FOR THE JOINTING ASSEMBLY.
7. TAKE THE NECESSARY PRECAUTIONS REQUIRED TO PREVENT EXCAVATED OR OTHER FOREIGN MATERIAL FROM GETTING INTO THE PIPE DURING THE LAYING OPERATION. AT ALL TIMES, WHEN LAYING OPERATIONS ARE NOT IN PROGRESS, AT THE CLOSE OF THE DAY'S WORK, OR WHENEVER THE WORKERS ARE ABSENT FROM THE JOB, CLOSE AND BLOCK THE OPEN END OF THE LAST LAID SECTION OF PIPE TO PREVENT ENTRY OF FOREIGN MATERIAL OR CREEP OF THE GASKETED JOINTS.
8. PLUG OR CLOSE OFF PIPES WHICH ARE STUBBED OFF FOR MANHOLE CONSTRUCTION OR FOR CONSTRUCTION BY OTHERS, WITH TEMPORARY PLUGS.
9. WHERE NONREINFORCED PIPE IS CONNECTED TO MANHOLES OR CONCRETE STRUCTURES, MAKE CONNECTION SO THAT THE STANDARD PIPE JOINT IS LOCATED NOT MORE THAN 3' FROM THE OUTSIDE EDGE OF THE STRUCTURE.
10. WHEN CUTTING AND/OR MACHINING THE PIPE IS NECESSARY, USE ONLY TOOLS AND METHODS RECOMMENDED BY THE PIPE MANUFACTURER.
11. UNDERGROUND STRUCTURES:
    a. ROCK BASE: PRIOR TO SETTING PRECAST CONCRETE BASE SECTION, REMOVE WATER FROM THE EXCAVATION. PLACE A MINIMUM OF 6" OF ROCK BASE AND THOROUGHLY COMPACT WITH A MECHANICAL VIBRATING OR POWER TAMPER.
    b. MANHOLE JOINT SEALS: CAREFULLY INSPECT PRECAST MANHOLE SECTIONS TO BE JOINED. SECTIONS WITH CHIPS OR CRACKS IN THE TONGUE SHALL NOT BE USED. JOINT SEALS SHALL BE INSTALLED IN STRICT CONFORMANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. ONLY PIPE PRIMER FURNISHED BY THE JOINT SEAL MANUFACTURER WILL BE APPROVED.
    c. PRECAST CONCRETE MANHOLES: PLACE PRECAST CONCRETE SECTIONS AS SHOWN ON THE DRAWINGS. WHERE MANHOLES OCCUR IN PAVEMENTS, SET TIPS OF FRAMES AND COVERS FLUSH WITH FINISH SURFACE. ELSEWHERE, SET TOPS 3" ABOVE FINISH SURFACE, UNLESS OTHERWISE INDICATED.
    d. MANHOLE INVERT: CONSTRUCT MANHOLE INVERTS IN CONFORMANCE WITH DETAILS SHOWN ON THE DRAWINGS, AND WITH SMOOTH TRANSITIONS TO ENSURE AN UNOBSTRUCTED FLOW THROUGH MANHOLE. REMOVE ALL SHARP EDGES OR ROUGH SECTIONS WHICH TEND TO OBSTRUCT FLOW. WHERE A FULL SECTIONS OF PIPE IS LAID THROUGH A MANHOLE, BREAK OUT THE TOP SECTION AS INDICATED AND COVER EXPOSED EDGE OF PIPE COMPLETELY WITH MORTAR. TROWEL ALL MORTAR SURFACES SMOOTH.
    e. PROVIDE RUBBER JOINT GASKET COMPLYING WITH ASTM C-443.
    f. APPLY BITUMINOUS MASTIC COATING AT JOINTS OF SECTIONS.
12. PRIOR TO FINAL ACCEPTANCE, THE SEWER COLLECTION SYSTEM SHALL BE THOROUGHLY CLEANED AND VISUALLY INSPECTED IN THE PRESENCE OF THE ENGINEER AND LOCAL AUTHORITIES HAVING JURISDICTION.
13. FOLLOWING VISUAL INSPECTION, THE SEWER SYSTEM INCLUDING SERVICE LINES SHALL BE TESTED IN THE PRESENCE OF THE ENGINEER AND LOCAL AUTHORITIES HAVING JURISDICTION.
14. ACCEPTABLE METHODS OF TESTING SHALL BE LOW PRESSURE AIR EXFILTRATION OR WATER EXFILTRATION IN ACCORDANCE WITH THE LOCAL AUTHORITY REQUIREMENTS.
15. THE CONTRACTOR SHALL FURNISH ALL NECESSARY TOOLS, SUPPLIES, LABOR AND EQUIPMENT FOR TESTING.
16. LOW PRESSURE AIR EXFILTRATION TESTING SHALL BE IN ACCORDANCE WITH UNI-BELL, UNI-B-6.
17. WATER EXFILTRATION TESTING SHALL BE IN ACCORDANCE WITH UNI-BELL, UNI-B-5.
18. VISUAL INSPECTION AND TESTING SHALL BE PERFORMED ON THE SAME DAY. NOTIFY ENGINEER AND PERMIT AGENCY OF JURISDICTION MINIMUM 72 HOURS OF WEEKDAYS NOTICE.

FDEP WASTEWATER SPECIFICATIONS

1. APPROPRIATE DEFLECTION TESTS ARE SPECIFIED FOR ALL FLEXIBLE PIPE. TESTING IS REQUIRED AFTER THE FINAL BACKFILL HAS BEEN IN PLACE AT LEAST 30 DAYS TO PERMIT STABILIZATION OF THE SOIL-PIPE SYSTEM. TESTING REQUIREMENTS SPECIFY: 1) NO PIPE SHALL EXCEED A DEFLECTION OF 5%; 2) USING A RIGID BALL OR MANDREL FOR THE DEFLECTION TEST WITH A DIAMETER NOT LESS THAN 95% OF THE BASE INSIDE DIAMETER OR AVERAGE INSIDE DIAMETER OF THE PIPE, DEPENDING ON WHICH IS SPECIFIED IN THE ASTM SPECIFICATION, INCLUDING THE APPENDIX, TO WHICH THE PIPE IS MANUFACTURED; AND 3) PERFORMING THE TEST WITHOUT MECHANICAL PULLING DEVICES. [RSWF 33.85]
2. LEAKAGE TESTS ARE SPECIFIED REQUIRING THAT: 1) THE LEAKAGE EXFILTRATION OR INFILTRATION DOES NOT EXCEED 200 GALLONS PER INCH OF PIPE DIAMETER PER MILE PER DAY FOR ANY SECTION OF THE SYSTEM; 2) EXFILTRATION OR INFILTRATION TESTS BE PERFORMED WITH A MINIMUM POSITIVE HEAD OF 2 FEET; AND 3) AIR TESTS, AS A MINIMUM, CONFORM TO THE TEST PROCEDURE DESCRIBED IN ASTM C-828 FOR CLAY PIPE, ASTM C 924 FOR CONCRETE PIPE, ASTM F-1417 FOR PLASTIC PIPE, AND FOR OTHER MATERIALS APPROPRIATE TEST PROCEDURES. [RSWF 33.93, 33.94, AND 33.95]
3. DESIGN REQUIRES DROP PIPES TO BE PROVIDED FOR SEWERS ENTERING MANHOLES AT ELEVATIONS OF 24 INCHES OR MORE ABOVE THE MANHOLE INVERT. WHERE THE DIFFERENCE IN ELEVATION BETWEEN THE INCOMING SEWER AND THE MANHOLE INVERT IS LESS THAN 24 INCHES, THE INVERT IS DESIGNED WITH A FILLET TO PREVENT SOLIDS DEPOSITION. INSIDE DROP CONNECTIONS (WHEN NECESSARY) ARE DESIGNED TO BE SECURED TO THE INTERIOR WALL OF THE MANHOLE AND PROVIDE ACCESS FOR CLEANING. DESIGN REQUIRES THE ENTIRE OUTSIDE DROP CONNECTION BE ENCASED IN CONCRETE. [RSWF 34.2]
4. DESIGN REQUIRES THAT A BENCH BE PROVIDED ON EACH SIDE OF ANY MANHOLE CHANNEL WHEN THE PIPE DIAMETER(S) ARE LESS THAN THE MANHOLE DIAMETER AND THAT NO LATERAL SEWER, SERVICE CONNECTION, OR DROP MANHOLE PIPE DISCHARGES ONTO THE SURFACE OF THE BENCH. [RSWF 34.5]
5. DESIGN REQUIRES: 1) MANHOLE LIFT HOLES AND GRADE ADJUSTMENT RINGS BE SEALED WITH NON-SHRINKING MORTAR OR OTHER APPROPRIATE MATERIAL; 2) INLET AND OUTLET PIPES BE JOINED TO THE MANHOLE WITH A GASKETED FLEXIBLE WATERTIGHT CONNECTION OR ANOTHER WATERTIGHT CONNECTION ARRANGEMENT THAT ALLOWS DIFFERENTIAL SETTLEMENT OF THE PIPE AND MANHOLE WALL; AND 3) WATERTIGHT MANHOLE COVERS BE USED WHEREVER THE MANHOLE TOPS MAY BE FLOODED BY STREET RUNOFF OR HIGH WATER. [RSWF 34.6]
6. MANHOLE INSPECTION AND TESTING FOR WATERTIGHTNESS OR DAMAGE PRIOR TO PLACING INTO SERVICE ARE SPECIFIED. AIR TESTING, IF SPECIFIED FOR CONCRETE SEWER MANHOLES, CONFORMS TO THE TEST PROCEDURES DESCRIBED IN ASTM C-1244. [RSWF 34.7]
7. THE DESIGN REQUIRES 1) ELECTRICAL SYSTEMS AND COMPONENTS (E.G., MOTORS, LIGHTS, CABLES, CONDUITS, SWITCH BOXES, CONTROL CIRCUITS, ETC.) IN RAW WASTEWATER WET WELLS, OR IN ENCLOSED OR PARTIALLY ENCLOSED SPACES WHERE HAZARDOUS CONCENTRATIONS OF FLAMMABLE GASES OR VAPORS MAY BE PRESENT, COMPLY WITH THE NATIONAL ELECTRICAL CODE REQUIREMENTS FOR CLASS I GROUP D, DIVISION 1 LOCATIONS; 2) ELECTRICAL EQUIPMENT LOCATED IN WET WELLS BE SUITABLE FOR USE UNDER CORROSIVE CONDITIONS; 3) EACH FLEXIBLE CABLE BE PROVIDED WITH A WATERTIGHT SEAL AND SEPARATE STRAIN RELIEF; 4) A FUSED DISCONNECT SWITCH LOCATED ABOVE GROUND BE PROVIDED FOR THE MAIN POWER FEED FOR ALL PUMP STATIONS; 5) ELECTRICAL EQUIPMENT EXPOSED TO WEATHER TO MEET THE REQUIREMENTS OF WEATHERPROOF EQUIPMENT NEMA 3R OR 4; 6) A 110 VOLT POWER RECEPTACLE TO FACILITATE MAINTENANCE BE PROVIDED INSIDE THE CONTROL PANEL FOR PUMP STATIONS THAT HAVE CONTROL PANELS OUTDOORS; AND 7) GROUND FAULT INTERRUPTION PROTECTION BE PROVIDED FOR ALL OUTDOOR OUTLETS. [RSWF 42.35]
8. THE DESIGN REQUIRES WET WELL FLOORS HAVE A MINIMUM SLOPE OF 1 TO 1 TO THE HOPPER BOTTOM AND THE HORIZONTAL AREA OF HOPPER BOTTOMS BE NO GREATER THAN NECESSARY FOR PROPER INSTALLATION AND FUNCTION OF THE INLET. [RSWF 42.63]
9. THE DESIGN REQUIRES PUMP STATIONS BE ENCLOSED WITH A FENCE OR OTHERWISE DESIGNED WITH APPROPRIATE FEATURES TO DISCOURAGE THE ENTRY OF ANIMALS AND UNAUTHORIZED PERSONS. POSTING OF AN UNOBSTRUCTED SIGN MADE OF DURABLE WEATHER RESISTANT MATERIAL AT A LOCATION VISIBLE TO THE PUBLIC WITH A TELEPHONE NUMBER FOR A POINT OF CONTACT IN CASE OF EMERGENCY IS SPECIFIED. [62-604.400(2)(D), F.A.C.].
10. IN SUBMERSIBLE PUMP STATIONS, THE DESIGN REQUIRES: 1) PUMP MOTOR POWER CORDS BE FLEXIBLE AND SERVICEABLE UNDER CONDITIONS OF EXTRA HARD USAGE AND TO MEET THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE STANDARDS FOR FLEXIBLE CORDS IN WASTEWATER PUMP STATIONS; 2) GROUND FAULT INTERRUPTION PROTECTION BE USED TO DE ENERGIZE THE CIRCUIT IN THE EVENT OF ANY FAILURE IN THE ELECTRICAL INTEGRITY OF THE CABLE; AND 3) POWER CORD TERMINAL FITTINGS BE CORROSION-RESISTANT AND CONSTRUCTED IN A MANNER TO PREVENT THE ENTRY OF MOISTURE INTO THE CABLE, PROVIDED WITH STRAIN RELIEF APPURTENANCES, AND DESIGNED TO FACILITATE FIELD CONNECTING. [RSWF 44.33]
11. THE DESIGN REQUIRES: 1) EMERGENCY STANDBY SYSTEMS TO HAVE SUFFICIENT CAPACITY TO START UP AND MAINTAIN THE TOTAL RATED RUNNING CAPACITY OF THE STATION, INCLUDING LIGHTING, VENTILATION, AND OTHER AUXILIARY EQUIPMENT NECESSARY FOR SAFETY AND PROPER OPERATION; 2) SPECIAL SEQUENCING CONTROLS BE PROVIDED TO START PUMP MOTORS UNLESS THE GENERATING EQUIPMENT HAS CAPACITY TO START ALL PUMPS SIMULTANEOUSLY WITH AUXILIARY EQUIPMENT OPERATING; 3) A RISER FROM THE FORCE MAIN WITH RAPID CONNECTION CAPABILITIES AND APPROPRIATE VALVING BE PROVIDED FOR ALL PUMP STATIONS TO HOOK UP PORTABLE PUMPS; AND 4) ALL PUMP STATION RELIABILITY DESIGN FEATURES BE COMPATIBLE WITH THE AVAILABLE TEMPORARY SERVICE POWER GENERATING AND PUMPING EQUIPMENT OF THE AUTHORITY RESPONSIBLE FOR OPERATION AND MAINTENANCE OF THE COLLECTION/TRANSMISSION SYSTEM. [62-604.400(2)(A)3., F.A.C., AND RSWF 46.431]
12. THE DESIGN PROVIDES FOR EMERGENCY EQUIPMENT TO BE PROTECTED FROM OPERATION CONDITIONS THAT WOULD RESULT IN DAMAGE TO THE EQUIPMENT AND FROM DAMAGE AT THE RESTORATION OF REGULAR ELECTRICAL POWER. [RSWF 46.411, 46.417, AND 46.432]
13. FOR PERMANENTLY-INSTALLED OR PORTABLE ENGINE-DRIVEN PUMPS ARE USED, THE DESIGN INCLUDES PROVISIONS FOR MANUAL START-UP. [RSWF 46.422]
14. WHERE INDEPENDENT SUBSTATIONS ARE USED FOR EMERGENCY POWER, EACH SEPARATE SUBSTATION AND ITS ASSOCIATED TRANSMISSION LINES IS DESIGNED TO BE CAPABLE OF STARTING AND OPERATING THE PUMP STATION AT ITS RATED CAPACITY. [RSWF 46.44]

REV#	DATE	REVISION

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EPLER PARK
PALM BAY, FL

SPECIFICATIONS

JAMES R. TRAUGER LICENSE No. 75612 STATE OF FLORIDA PROFESSIONAL ENGINEER 10.7.22

JAMES R. TRAUGER
FL P.E. #75612

DATE:	10-5-22
SECTION:	19
TOWNSHIP:	28S
RANGE:	37E
SCALE:	

DRAWING NO.
C-14

PROJECT: 22-126