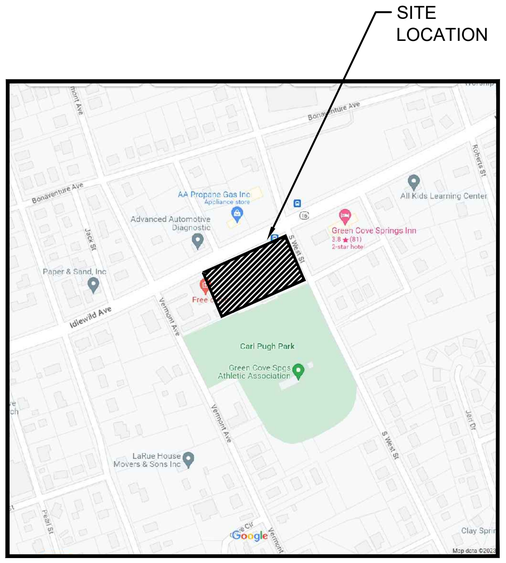
CLAY COUNTY FIRE STATION 20

FOR

CLAY COUNTY FIRE RESCUE

AT

1305 FL-16, GREEN COVE SPRINGS, FL



VICINITY MAP

N

INDEX OF DRAWINGS

GEEN COVE SPRINGS UTILITY AUTHORITY STANDARD SHEETS

1	STANDARD WATER SERVICE DETAILS
2	STANDARD SEWER SYSTEM DETAILS
3	GRAVITY SEWER SERVICE DETAILS
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5	STANDARD RECLAMED WATER SYSTEM SPECIFICATIONS & DETAILS
6	STANDARD WATER AND SEWER SYSTEM TECHNICAL SPECIFICATIONS

GENERAL PROJECT INFORMATION

GENERAL	
Parcel ID #	38-06-26-017150-000-00 38-06-26-017143-000-00
Property Use Code	COUNTY IMP (8600)
Unit Type	COMERCIAL
FIRM – Community – Panel	12019C0277E
Flood Zones (Show in Plans)	ZONE X
Base Flood Elev. (Show in Plans)	NA
Vertical Datum Used for Project	N.A.V.D.-1988
UtilityAvailability Number	NA
NON-SUBDIVISION	
New Impervious Area (bldg)	19,120 SF
Total Impervious Area	58,797 SF

ARCHITECT

DASHER HURST ARCHITECTS
1022 PARK STREET, SUITE 208
JACKSONVILLE, FLORIDA 32204
PHONE: 904.425.1190
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ENGINEER:

GOODSON, BERGEN AND ASSOCIATES
Consulting Engineers
EDWARD GOODSON/ JEFFREY E. BERGEN, P.E.
11555 CENTRAL PARKWAY, SUITE 103
JACKSONVILLE, FLORIDA 32224
(OFFICE) (904) 519-7770
(FAX) (904) 519-7776

APPLICANT/ DEVELOPER:

CLAY COUNTY BD OF COUNTY COMM
5105 SWEAT RD
GREEN COVE SPRINGS,
FL 32043

LANDSCAPE ARCHITECT:

MEG GAFFNEY-COOKE RLA, LEED AP
BLUE LEAF LANDSCAPE
904-517-1225
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GBA PROJECT NUMBER 190173
GBA ENGINEERING BUSINESS 32987
NOVEMBER 10, 2023
FL REG # 63060

100% DOCUMENTS

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FL. PE #63060
JEFFREY E. BERGEN LICENSE No. 63060 STATE OF FLORIDA PROFESSIONAL ENGINEER
Jeffrey Bergen P.E. FL #63060

JEFFREY E. BERGEN, PE
THIS ITEM HAS BEEN ELECTRONICALLY SIGNED AND SEALED BY JEFFREY E. BERGEN, PE ON
12/5/2023
USING A SHA AUTHENTICATION CODE. PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SHA AUTHENTICATION CODE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

CLAY COUNTY
CLAY CO FIRE STATION 20
1305 FL-16, GREEN COVE SPRINGS, FL

GOODSON BERGEN & ASSOCIATES
11555 CENTRAL PARKWAY, SUITE 103
JACKSONVILLE, FLORIDA 32224

C0.0
SHEET

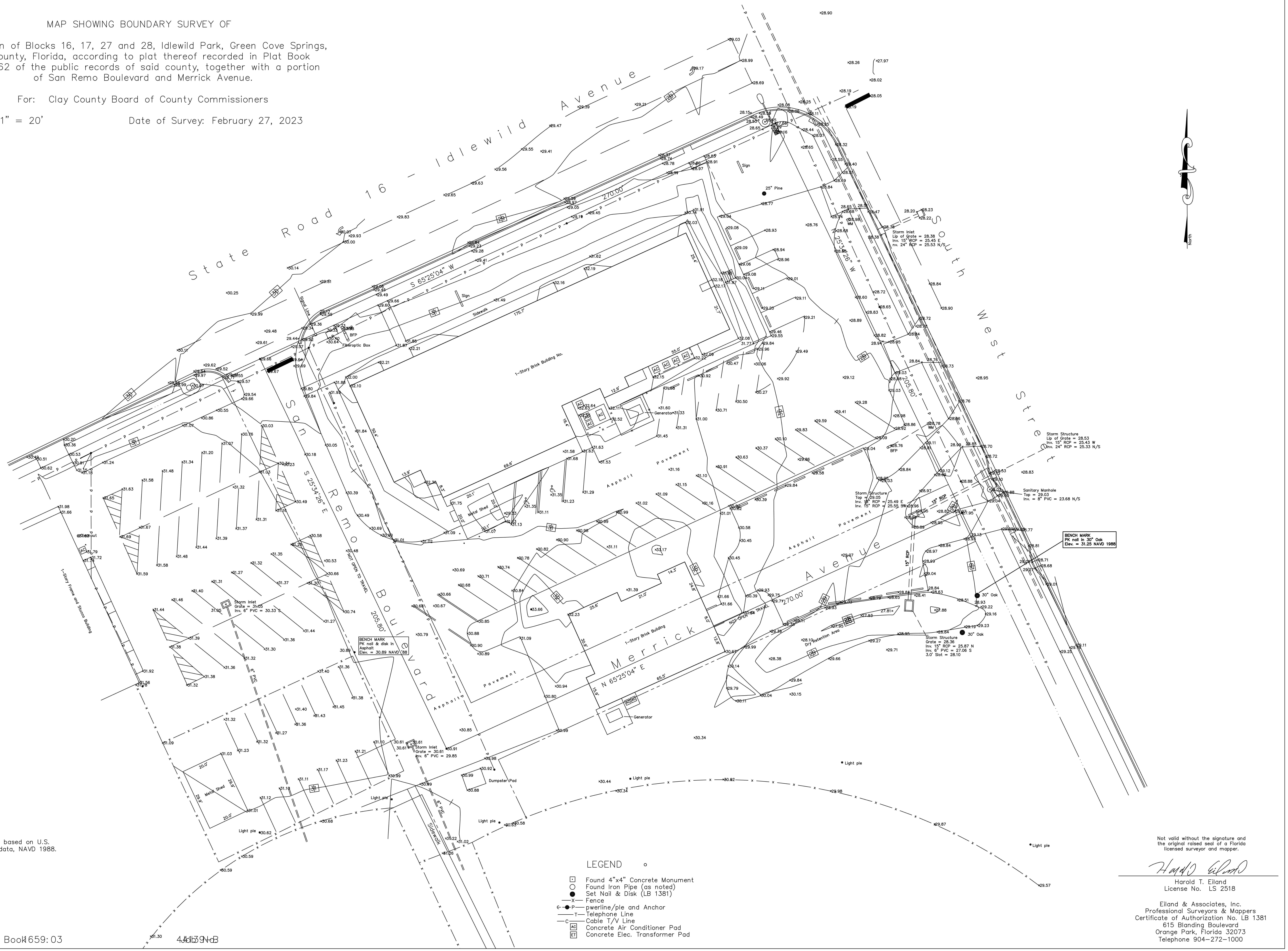
MAP SHOWING BOUNDARY SURVEY OF

A portion of Blocks 16, 17, 27 and 28, Idlewild Park, Green Cove Springs, Clay County, Florida, according to plat thereof recorded in Plat Book 2, page 62 of the public records of said county, together with a portion of San Remo Boulevard and Merrick Avenue.

For: Clay County Board of County Commissioners

Scale 1" = 20'

Date of Survey: February 27, 2023



Note:
Elevations shown hereon are based on U.S. Coast and Geodetic Survey data, NAVD 1988.

LEGEND

- Found 4"x4" Concrete Monument
- Found Iron Pipe (as noted)
- Set Nail & Disk (LB 1381)
- —x— Fence
- —P— pwerline/ple and Anchor
- —T— Telephone Line
- —C— Cable T/V Line
- AC Concrete Air Conditioner Pad
- ET Concrete Elec. Transformer Pad

Not valid without the signature and the original raised seal of a Florida licensed surveyor and mapper.

Harold T. Eiland
License No. LS 2518

Eiland & Associates, Inc.
Professional Surveyors & Mappers
Certificate of Authorization No. LB 1381
615 Blanding Boulevard
Orange Park, Florida 32073
Telephone 904-272-1000

FF No. 47:217 Field Book 659:03 Job No. 4413-B

GENERAL NOTES:

1. TOPOGRAPHIC BOUNDARY SURVEY, INCLUDING PROPERTY LINES, LEGAL DESCRIPTION, EXISTING UTILITIES, SITE TOPOGRAPHY WITH SPOT ELEVATIONS, OUTSTANDING PHYSICAL FEATURES AND EXISTING STRUCTURE LOCATIONS WAS PROVIDED BY OTHERS AND THE FOLLOWING SURVEYOR:
   EILAND & ASSOCIATES, INC.
   PROFESSIONAL SURVEYORS & MAPPERS
   615 BLANDING BOULEVARD ORANGE PARK,
   FLORIDA 32073 TELEPHONE 904-272-1000
2. GOODSON BERGEN AND ASSOCIATES CONSULTING ENGINEERS, AND ITS ASSOCIATES WILL NOT BE HELD RESPONSIBLE FOR THE ACCURACY OF SURVEY OR FOR DESIGN ERRORS OR OMISSIONS RESULTING FROM SURVEY INACCURACIES.
3. ALL PHASES OF SITE WORK FOR THIS PROJECT SHALL MEET OR EXCEED COUNTY SITE WORK SPECIFICATIONS.
4. THE CONTRACTOR WILL BE HELD SOLELY RESPONSIBLE FOR AND SHALL TAKE ALL PRECAUTIONS NECESSARY TO AVOID PROPERTY DAMAGE TO ADJACENT PROPERTIES DURING THE CONSTRUCTION PHASES OF THIS PROJECT. IT IS RECOMMENDED THAT THE CONTRACTOR PHOTO/VIDEO THE EXISTING CONDITIONS PRIOR TO COMMENCEMENT OF CONSTRUCTION.
5. THE CONTRACTOR SHALL PROVIDE AND COORDINATE ANY AND ALL PEDESTRIAN AND VEHICULAR MAINTENANCE OF TRAFFIC AS NEEDED FOR CONSTRUCTION FOLLOWING FDOT AND COUNTY MOT GUIDELINES.
6. WARRANTY / DISCLAIMER THE DESIGNS REPRESENTED IN THESE PLANS ARE IN ACCORDANCE WITH ESTABLISHED PRACTICES OF CIVIL ENGINEERING FOR THE DESIGN FUNCTIONS. NEITHER THE ENGINEER NOR ITS PERSONNEL CAN OR DO WARRANT THESE DESIGNS OR PLANS AS CONSTRUCTED EXCEPT IN THE SPECIFIC CASES WHERE THE ENGINEER INSPECTS AND CONTROLS THE PHYSICAL CONSTRUCTION ON A TEMPORARY BASIS AT THE SITE.
7. FOR BOUNDARY, ROADWAY AND BUILDING GEOMETRY INFORMATION SEE ENGINEERING SITE PLAN. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THAT THE BUILDING DIMENSIONS SHOWN ON THE ENGINEERING PLAN AGREES WITH THE DIMENSIONS SHOWN ON THE ARCHITECTURAL PLAN. IF ANY DIMENSIONS DO NOT AGREE, THE ARCHITECT, ENGINEER AND OWNER SHALL BE NOTIFIED AND THE DIMENSIONS ADJUSTED PRIOR TO COMMENCING WITH CONSTRUCTION.
8. ALL CONSTRUCTION WITHIN COUNTY OF RIGHT-OF-WAY SHALL BE COORDINATED WITH THE COUNTY. THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES PRIOR TO CONSTRUCTION FOR VERIFICATION AND LOCATION OF ALL UTILITIES.
9. CONTRACTOR SHALL FURNISH SHOP DRAWINGS TO ENGINEER INDICATING MATERIALS AND MANNER OF INSTALLATION FOR ALL COMPONENTS OF THE PROJECT PRIOR TO PURCHASE OF MATERIALS AND CONSTRUCTION.
10. THESE ENGINEERING DRAWINGS MAY NOT SHOW ALL OF THE COUNTY, GCSU AUTHORITY, OR FDOT STANDARD DETAILS REQUIRED TO COMPLETE CONSTRUCTION OF THIS PROJECT.
11.
12. ALL CONTRACTORS SHALL FURNISH CERTIFIED "AS-BUILTS" , SEE AS-BUILT REQUIREMENTS ON SHEET C2.0
13. ALL WORK SHALL BE PERFORMED IN A SAFE MANNER. ALL SAFETY RULES AND GUIDELINES OF OSHA SHALL BE FOLLOWED. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ANY INJURIES OF HIS EMPLOYEES, AND ANY DAMAGE TO PRIVATE PROPERTY OR PERSONS DURING THE COURSE OF THIS PROJECT. ALL COSTS ASSOCIATED WITH COMPLYING WITH OSHA REGULATIONS AND THE FLORIDA TRENCH SAFETY ACT MUST BE INCLUDED IN THE CONTRACTORS BID.
14. ALL IMPROVEMENTS SHOWN ARE TO BE WARRANTED BY THE CONTRACTOR TO THE DEVELOPER FOR A PERIOD OF ONE YEAR FROM DATE OF ACCEPTANCE BY THE OWNER, UNLESS OTHERWISE SPECIFIED.
15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND INSURANCE REQUIRED FOR THE PROJECT.
16. THE CONTRACTOR SHALL COORDINATE THE WORK WITHIN COUNTY RIGHT-OF-WAY WITH THE PROPER AGENCIES FOR MAINTENANCE OF TRAFFIC AND METHOD OF CONSTRUCTION AND REPAIR.
17. THESE PLANS DO NOT STAND BY THEMSELVES. BID DOCUMENTS, UTILITY COMPANY WATER AND SEWER STANDARDS DETAILS & MATERIALS, COUNTY, GCSU AUTHORITY, AND FDOT STANDARD SPECIFICATIONS & DETAILS AND ANY OTHER STANDARDS, LISTED OR REFERENCES, ARE INCLUDED IN THE PROJECT DOCUMENTS.
18. THE CONTRACTOR SHALL NOTIFY COUNTY AT A MINIMUM OF 48 HOURS PRIOR TO STARTING CONSTRUCTION.
19. THE CONTRACTOR SHALL OBTAIN A RIGHT OF WAY PERMIT FROM THE PUBLIC WORKS DEPT.. FOR CURBING, SIDEWALK, DRIVEWAY APRONS, AND ANY UTILITY WORK. THE CONTRACTOR MUST HAVE A SURETY BOND ON FILE IN THE PUBLIC WORKS DEPT. BEFORE THE WATER AND SEWER TAP TICKETS AND RIGHT OF WAY PERMIT CAN BE OBTAINED.
20. THE CONTRACTOR SHALL CORRECT ALL IMPACTS FROM CONSTRUCTION (INCLUDING DRAINAGE) TO THE NEIGHBORING PROPERTIES (INCLUDING PUBLIC RIGHT OF WAYS AND EASEMENTS) TO THE SATISFACTION OF COUNTY PRIOR TO ISSUANCE OF CERTIFICATE OF OCCUPANCY.
21. THE CONTRACTOR SHALL REPAIR ANY BROKEN SIDEWALKS, CURBS ETC., ADJACENT TO PROPERTY, WHICH OCCUR DURING CONSTRUCTION. THE REPAIRS MUST BE MADE BEFORE ISSUANCE OF CERTIFICATE OF OCCUPANCY.
22. ALL SURVEYING SHALL BE PERFORMED BY STATE OF FLORIDA REGISTERED SURVEYORS.
23. IF UNSUITABLE MATERIAL IS FOUND WITHIN THE LIMITS OF THE ROAD OR IF MATERIAL IS HAULED IN FOR ROADWAY FILL AT A DEPTH GRATER THAN ONE-FOOT (1') THEN THE ENTIRE ROADWAY SHALL BE UNDERDRAINED IN ACCORDANCE WITH THE GEOTECHNICAL REPORT AND INSTALLED PER THE APPROVED COUNTY DETAIL.
24. ALL STORM SEWER PIPES SHALL BE CUT FLUSH WITH THE INTERIOR WALL OF ANY TYPE MANHOLE OR CURB AND DITCH BOTTOM INLETS.
25. COMPACTION DENSITY TESTS FOR ALL WATER AND SEWER CROSSINGS WILL START THREE FEET (3') ABOVE THE PIPE.
26. COMPACTION DENSITY TEST FOR ALL STORM SEWER PIPE SHALL START AT THE SPRING LINE OF THE PIPE.
27. IF THE APPROVED DESIGN REQUIRES THE INLET OR STORM RUN BE SURCHARGED, ALL INLETS SHALL BE INSPECTED BEFORE BEING EXPOSED TO THE SYSTEM.
28. TEST CYLINDERS SHALL BE RUN FOR ALL CONCRETE STRUCTURES. THERE WILL BE THREE (3) TESTS PER EACH DAY POUR WITH A ONE (1) SEVEN (7) DAYBREAK AND TWO (2) TWENTY-EIGHT (28) DAYS BREAKS.
29. THE ASPHALT SHALL BE CORED FOR THICKNESS AND WILL BE GIVEN A ONE-QUARTER INCH (1/4") TOLERANCE. IF HOWEVER THE COUNTY REPRESENTATIVE IS PRESENT AT POUR AND FEELS COMFORTABLE WITH THE REQUIREMENTS THEN THEY MAY WAVE THIS POLICY FOR OFFSITE PAVEMENT ONLY.
30. LIMEROCK BERING RATIOS FOR (LBR) SUBGRADE AT FORTY (40) AND LIMEROCK OR ALTERNATIVE BASE COURSE AT ONE HUNDRED (100) THERE WILL BE NO UNDER TOLERANCE. ALSO SEE GEOTHECNICAL REPORT , IF APPLICABLE.
31. ALL MATERIAL USED FOR BACKFILL SHALL BE A3 FREE DRAINING SAND.
32. THERE ARE TO BE NO OPENED TRENCHES AT DAY'S END.
33. ALL DIRT AND DEBRIS TRACKED OUT OF THE PROJECT SHALL BE CLEANED DAILY AND TO THE DISCRETION OF GBA, OR COUNTY ENGINEERING DEPARTMENT.
34. ANY EROSION PROBLEMS ENCOUNTERED DURING OR AFTER CONSTRUCTION WHICH IS DUE TO LACK OF COMPACTION OR LACK OF ESTABLISHING A PERMANENT GRASS COVER BY THE CONTRACTOR, SHALL BE CORRECTED AND THE MATERIAL REPLACED IN A TIMELY MANNER AT THE CONTRACTORS EXPENSE. ANY SUCH EROSION WHICH DETRIMENTALLY EFFECTS THE WETLANDS, OR PROTECTED UPLANDS, SHALL BE DEALT WITH AND CORRECTED AT THE CONTRACTORS EXPENSE IN A TIMELY MANNER.
35. ALL PERFORATED DRAINAGE PIPES SHALL BE WRAPPED IN FILTER FABRIC.
36. SLOPES GREATER THAN OR EQUAL TO 4:1 SHALL BE SODDED AND IRRIGATED UNTIL A PERMANENT STRAND OF GRASS IS ESTABLISHED. (SOD JOINTS SHALL BE STAGGERED).
37. THE CONTRACTOR SHALL OBTAIN ALL THE PERMITS NECESSARY TO COMPLETE CONSTRUCTION. ALL WORK SHALL BE DONE IN ACCORDANCE W/ PERMIT CONDITIONS.
38. CONTRACTOR SHALL COORDINATE ALL CONSTRUCTION, INSPECTIONS AND COORDINATE WITH THE COUNTY PLANNING AND ZONING DEPARTMENT.
39. CONTRACTOR SHALL CONTACT COUNTY PUBLIC WORKS PRIOR TO CONSTRUCTING ANY OFFSITE ELEMENTS.
40. THE CONTRACTOR SHALL SUBMIT MAINTENANCE OF TRAFFIC PLANS TO COUNTY PUBLIC WORKS PRIOR TO THE START OF CONSTRUCTION.
41. GROUTING CAN NOT BEGIN UNTIL REPLACEMENT DRAINAGE PIPE IS INSTALLED AND VERIFIED TO BE FUNCTIONING BY COUNTY/COUNTY.
42. CONTRACTOR SHALL REPAIR ALL DAMAGED PAVEMENT AS NECESSARY TO CONSTRUCT ALL IMPROVEMENTS AT THE CONTRACTORS EXPENSE.
43. ALL LANDSCAPE ISLANDS SHALL BE GRADED TO DISCHARGE WATER, AND SHALL BE FILLED W/ CLEAN, FREE DRAINING SANDY SOIL.
44. ALL DISTURBED EARTH SHALL BE SODDED OR PLANTED LANDSCAPE, SEE LANDSCAPE PLANS FOR DETAIL, IF APPLICABLE.
45. ALL SPOT ELEVATIONS AT CURBING ARE EDGE OF PAVEMENT ELEVATIONS (EP) UNLESS (TC) WHICH IS TOP OF CURBING OR CONCRETE.
46. ALL PIPE LENGTHS ARE FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE.
47. COORDINATE WITH BUILDING / ROOF PLANS AND CONNECT ALL ROOF DRAIN DOWNSPOUTS, UNLESS OTHERWISE NOTED.
48. SIDEWALKS SHALL NOT EXCEED 5% LONGITUDINAL SLOPE OR 2% CROSS SLOPE UNLESS OTHERWISE NOTED.
49. UNLESS OTHERWISE USE NOTED, A 2' WIDE FLAT SHOULDER SHALL BE ALONE ALL SIDEWALK EDGES.
50. PROPERTY LINE AND RIGHT-OF-WAY MONUMENTS SHALL NOT BE DISTURBED BY CONSTRUCTION. IF DISTURBED, THEY SHALL BE RESET TO THEIR ORIGINAL LOCATIONS AT THE CONTRACTOR'S EXPENSE BY A REGISTERED LAND SURVEYOR.
51. PROOF ROLL BUILDING AND ALL PARKING AREAS. NOTIFY OWNER INC. OF ANY UNACCEPTABLE AREAS. (SEE GEOTECH REPORT)
52. BUILDING DIMENSIONS SHOWN ON THE CIVIL ENGINEERING PLANS ARE FOR REFERENCE PURPOSES ONLY, CONTRACTOR SHALL USE THE ARCHITECTURAL AND STRUCTURAL PLANS FOR EXACT BUILDING DIMENSIONS.
53. ALL SITE DIMENSIONS ARE REFERENCED TO THE FACE OF CURBS OR EDGE OF PAVING UNLESS OTHERWISE NOTED.
54. ALL SIDEWALKS, CURB AND GUTTER, STREET PAVING, CURB CUTS, DRIVEWAY APPROACHES, HANDICAP RAMPS, ETC. CONSTRUCTED OUTSIDE THE PROPERTY LINE IN THE RIGHT-OF-WAY SHALL CONFORM TO ALL MUNICIPAL AND/OR STATE SPECIFICATIONS AND REQUIREMENTS.
55. ALL DISTURBANCE INCURRED TO ANY ADJOINING PROPERTY DUE TO CONSTRUCTION OR DEMOLITION SHALL BE RESTORED TO THE PREVIOUS CONDITION OR BETTER, AND TO THE SATISFACTION OF THE COUNTY OR STATE AUTHORITY
56. THE CONTRACTOR SHALL PROVIDE S&S AS-BUILT RECORDS OF ALL CONSTRUCTION (INCLUDING UNDERGROUND UTILITIES) TO OWNER INC. AT THE END OF CONSTRUCTION.
57. ALL CURBING SHALL BE IN ACCORDANCE WITH DETAILS.
58. CONTRACTOR SHALL VERIFY EXISTING ELEVATIONS AT CONNECTION POINTS PRIOR TO CONSTRUCTION AND NOTIFY ENGINEER OF ANY DISCREPANCIES.
59. SEE GEOTECHNICAL REPORT FOR SITE PREPARATION REQUIREMENTS, IF APPLICABLE
60. THE CONTRACTOR SHALL COORDINATE THE GRADING AND DRAINAGE CONSTRUCTION WITH ALL OTHER CONSTRUCTION.
61. CONTRACTOR SHALL FURNISH SHOP DRAWINGS TO THE ENGINEER FOR APPROVAL PRIOR TO BEGINNING CONSTRUCTION.
62. ALL CONSTRUCTION AND MATERIALS SHALL CONFORM WITH ALL COUNTY / FDOT STANDARDS
63. THE CONTRACTOR SHALL STAKE THE PROPOSED AND EXISTING STORM SEWER SYSTEM, WATER SYSTEM, RE-USE SYSTEM AND THE SANITARY SEWER SYSTEM AND SHALL NOTIFY THE ENGINEER OF ANY CONFLICTS PRIOR TO INSTALLATION OF ANY PIPE.
64. THE EXISTING UTILITY FACILITIES AND LOCATIONS SHOWN ON THE DRAWINGS ARE TAKEN FROM READILY AVAILABLE INFORMATION. THE ACTUAL LOCATIONS OF THE UTILITY FACILITIES MAY VARY SOMEWHAT FROM THE LOCATIONS SHOWN AND THERE MAY BE UTILITY FACILITIES EXISTING THAT ARE NOT SHOWN OR INDICATED ON THE DRAWINGS. THE SITE UTILITY CONTRACTOR SHALL CONTACT ALL AGENCIES WITH UTILITY FACILITIES IN THE VICINITY OF THE WORK AND SHALL LOCATE ALL UNDERGROUND FACILITIES BEFORE BEGINNING WORK. THE CONTRACTOR SHALL PROTECT ALL UTILITY FACILITIES AND REPAIR ANY DAMAGES RESULTING FROM THEIR WORK IN CONFORMANCE WITH THE CONTRACT DOCUMENTS AND SPECIFICATIONS AND RELOCATE IF REQUIRED AT NO COST TO THE OWNER.
65. ALL UNDERGROUND UTILITIES SHALL BE INSTALLED PRIOR TO PREPARATION OF SUBGRADE FOR PAVEMENT.
66. PAVEMENT SUBGRADE SHALL HAVE ALL UNSUITABLE MATERIAL REMOVED TO A DEPTH OF 3.0 FEET BELOW SUBGRADE AND 2.5 FEET BEYOND BACK OF CURB. BACKFILL WITH SUITABLE MATERIAL PER THE GEOTECHNICAL REPORT.
67. ANY UNSUITABLE MATERIAL ENCOUNTERED AND EXCESS SUITABLE FILL MATERIAL SHALL BE REMOVED FROM THE SITE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL UNSUITABLE MATERIAL AND REPLACEMENT WITH STRUCTURAL FILL. SEE GEOTECHNICAL REPORT.
68. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SUBGRADE, LIMEROCK AND ASPHALT TESTING AS REQUIRED BY FDOT SPECIFICATIONS UNLESS OTHERWISE NOTED.
69. STORMWATER COLLECTION SYSTEM DESIGN IS BASED ON THE 5-YEAR RETURN FREQUENCY STORM (RATIONAL METHOD).
70. ALL RCP PIPE SHALL MEET THE REQUIREMENTS OF ASTM C-76 AND SHALL BE CLASS III, WALL B.
71. ALL PIPE LENGTHS ARE APPROXIMATE AND MEASURED TO THE CENTER OF STRUCTURE OR MITERED END SECTION. ACTUAL LENGTHS MAY VARY.
72. DO NOT SCALE THESE DRAWINGS. USE DIMENSIONS ONLY. (SCALE FOR APPROXIMATE INFORMATION ONLY).
73. A QUALIFIED SOILS LABORATORY SHALL BE ON SITE DURING EXCAVATING TO DETERMINE THE SUITABILITY OF THE EXISTING SUB-GRADE AND EXISTING ON-SITE MATERIAL PRIOR TO BEGINNING ANY FILLING OPERATION.
74. GRADING CONTRACTOR SHALL TAKE ALL AVAILABLE PRECAUTIONS TO CONTROL DUST. CONTRACTOR SHALL CONTROL DUST BY SPRINKLING, OR BY OTHER METHODS AS DIRECTED BY ENGINEER AND/OR OWNER'S REPRESENTATIVE AT NO ADDITIONAL COST TO THE OWNER.
75. CONTRACTOR TO COORDINATE ALL WORK WITH OTHER UTILITY INSTALLATIONS NOT COVERED IN THESE PLANS (ELECTRIC, TELEPHONE, GAS, CABLE, ETC.) AND ALLOW FOR THEIR OPERATIONS AND CONSTRUCTION TO BE PERFORMED.
76. CUT AND FILL SLOPES ARE NOT TO EXCEED 4H:1V UNLESS OTHERWISE NOTED.
77. CONTRACTOR SHALL REPAIR OR REPLACE IN-KIND ANY DAMAGE THAT OCCURS AS RESULT OF HIS WORK.
78. ALL SOILS / DENSITY TEST REPORTS TO BE SUBMITTED TO PROJECT MANAGER.
79. FOR ALL TRENCH EXCAVATIONS WHICH EXCEED FIVE FEET (UTILITIES AND STORM), THE FOLLOWING MUST BE ADHERED TO:
   A. CONTRACTOR MUST FOLLOW OSHA STANDARD 29 CFR, SECTION 1926.650 SUBPART P, WHICH IS NOW A PART OF LAWS OF FLORIDA CHAPTER 90-96.
   B. THE CONTRACTOR SHALL PROVIDE WRITTEN ASSURANCE OF COMPLIANCE WITH THIS LAW.
   C. A SEPARATE PRICE ITEM SHALL BE INCLUDED IN THEIR BASE BID IDENTIFYING THE COST OF COMPLIANCE
   D. A TRENCH SAFETY SYSTEM SHALL BE DESIGNED BY THE CONTRACTOR.
79. THE CONTRACTOR SHALL COORDINATE CONNECTION WITH SITE PIPING AND BUILDING PIPING.
80. ALL AREAS SHOWN TO BE FILLED SHALL BE CLEARED AND GRUBBED IN ACCORDANCE WITH COUNTY STANDARDS AND SHALL BE FILLED WITH CLEAN STRUCTURAL FILL COMPACTED AND TESTED IN ACCORDANCE WITH THE GEOTECHNICAL REPORT.
81. ALL DEBRIS RESULTING FROM ALL ACTIVITIES SHALL BE DISPOSED OF OFF-SITE BY THE CONTRACTOR.
82. ALL EXISTING TREES TO REMAIN SHALL BE PROTECTED AND PRESERVED.
83. BURNING OF TREES, BRUSH AND OTHER MATERIAL SHALL BE APPROVED, PERMITTED AND COORDINATED WITH THE COUNTY FIRE MARSHAL BY THE CONTRACTOR.
84. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE ENGINEER AND THE COUNTY, IF REQUIRED, ON ALL MATERIALS, FOR REVIEW AND APPROVAL, PRIOR TO PURCHASE OR FABRICATION OF ANY UTILITY PIPE OR STRUCTURE.
85. ALL DRAINAGE STRUCTURES SHALL BE CONSTRUCTED TO CONFORM TO FDOT / COUNTY REQUIREMENTS AND SHALL BE CONSTRUCTED TO CONFORM TO CURBING, PROPERTY LINES AND LOW POINTS AS SHOWN ON PLANS.
86. CONTRACTOR SHALL ENSURE THAT ALL DRAINAGE STRUCTURES, PIPES, ETC. ARE CLEAN AND FUNCTIONING PROPERLY AT TIME OF ACCEPTANCE.
87. ALL DRAINAGE PIPE JOINTS (EXCEPT FOR PVC) ARE TO BE FILTER-WRAPPED IN ACCORDANCE WITH FDOT STANDARDS.
88. ALL INVERTS IN DRAINAGE STRUCTURES TO BE PRECAST OR BRICK WITH LAYER OF MORTAR BETWEEN EACH LAYER OF BRICK, OR REDDI-MIX CONCRETE WITH #57 STONE.
89. THE CONTRACTOR SHALL RESTORE ALL CULVERTS, HEADWALLS AND STORM DRAIN INLETS REMOVED OR DISTURBED BY THE CONSTRUCTION OPERATION. THE COST OF THESE ITEMS SHALL BE INCLUDED IN THE PRICE BID FOR FURNISHING AND INSTALLING ANY NEW ITEM CAUSING SUCH DAMAGE.
90. A MINIMUM OF ONE ROW OF SOD SHALL BE INSTALLED ALONG ALL EDGES OF PAVEMENT. SEE LANDSCAPE PLANS FOR LANDSCAPE DETAIL. ALL DISTURBED AREAS WHICH ARE NOT SODDED SHALL RECEIVE GRASS SEED, FERTILIZER, AND MULCH. SEE LANDSCAPE PLANS FOR OTHER REQUIREMENTS. ALL WORK IN THE COUNTY RIGHT-OF-WAY SHALL CONFORM TO FDOT GRASSING STANDARDS.
91. SHOULD THE SURFACE OR SUBSURFACE CONDITIONS DIFFER FROM WHAT IS SHOWN ON THESE PLANS, THE CONTRACTOR SHOULD IMMEDIATELY CONTACT THE ENGINEER.
92. THE CONTRACTOR MUST COORDINATE WITH OWNERS GEOTECHNICAL ENGINEER REGARDING INSTALLATION OF UNDERDRAIN.
93. CORRUGATED POLYETHYLENE PIPE (CPP), SHALL BE PER AASHTO M252 OR 294 WITH SMOOTH INNER LINING TYPE S WITH BELL AND SPIGOT, SILT-TIGHT, RUBBER-GASKETED JOINTS.
94. ALL CONCRETE PAVEMENT WORK SHALL BE IN ACCORDANCE WITH THE MOST CURRENT "AMERICAN CONCRETE INSTITUTE (ACI)"/ FDOT GUIDLINES / SPECIFICATIONS.

PAVEMENTS AND ROADWAY NOTES:

1. ALL WORK PERFORMED WITHIN THE COUNTY RIGHT-OF-WAY SHALL CONFORM TO THE MOST CURRENT EDITION OF THE COUNTY STANDARDS AND SPECIFICATIONS
2. (SHOULD A CONFLICT ARISE BETWEEN THE DETAILS SHOWN IN THE PLANS AND THE COUNTY STANDARDS THE ENGINEER/APPLICANT SHALL IMMEDIATELY CONFER WITH THE COUNTY'S ENGINEER IN ORDER TO RESOLVE THE DISCREPANCY.)
3. ALL TRAFFIC STRIPING AND MARKINGS ARE TO BE LEAD-FREE, NON-SOLVENT BASED THERMOPLASTIC.
4. REMOVAL OF EXISTING STRIPING SHALL BE ACCOMPLISHED USING THE " HYDRO-BLAST" METHOD. IF THIS PROCESS DAMAGES/SCARS PAVEMENT, THEN THE PAVEMENT SHALL BE MILLED AND RESURFACED PER COUNTY/FDOT STANDARDS.
5. ALL DIRECTIONAL ARROWS SHALL BE PLACED AS ONE SEGMENT.
6. ALIGNMENT OF PROPOSED PAVEMENT MARKINGS SHALL MATCH EXISTING PAVEMENT MARKINGS AT PAVEMENT MARKING LIMITS OF CONSTRUCTION.
7. ALL CURB AND GUTTER AND SIDEWALK WILL BE REMOVED AND REPLACED JOINT TO JOINT.
8. ALL BROKEN/CRACKED DRIVEWAYS MUST BE FULLY REMOVED AND REPLACED.
9. ALL DISTURBED AREA WITH THE COUNTY'S RIGHT-OF-WAY WILL BE RESTORED TO ORIGINAL OR BETTER CONDITION BY GRADING AND SODDING THE AREA DISTURBED
10. BURNING OF ANY MATERIAL OR DEBRIS IS PROHIBITED IN ANY RIGHT-OF-WAY.
11. ALL LANES MUST BE OPENED FOR TRAFFIC DURING AN EVACUATION NOTICE OF A HURRICANE OR OTHER CATASTROPHIC EVENT AND SHALL REMAIN OPEN FOR THE DURATION OF THE EVACUATION OR EVENT.

BEFORE YOU DIG !
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811 Know what's below. Call before you dig.
1-800-432-4770

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CLAY COUNTY
CLAY CO FIRE STATION 20
1305 FL-16, GREEN COVE SPRINGS, FL

REVISIONS

#	DATE	DESCRIPTION

JEFFREY E. BERGEN, PE
THIS ITEM HAS BEEN ELECTRONICALLY SIGNED AND SEALED BY JEFFREY E. BERGEN, PE ON
12/5/2023
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JEFFREY E. BERGEN LICENSE No. 63060 STATE OF FLORIDA PROFESSIONAL ENGINEER
Jeffrey Bergen P.E. FL 63060

DATE: 11/10/2023

GENERAL NOTES

PROJECT NO.: 23002

C1.0
100% DOCUMENTS

SANITARY SEWER NOTES:

1. THE CONTRACTOR SHALL OBTAIN ALL PERMITS TO COMPLETE THE CONSTRUCTION.
2. CONTRACTOR SHALL COORDINATE THE CONSTRUCTION OF SEWER FACILITIES WITH ALL OTHER CONSTRUCTION.
3. CONTRACTOR SHALL FURNISH SHOP DRAWINGS TO THE ENGINEER FOR APPROVAL BEFORE ORDERING MATERIALS AND BEGINNING CONSTRUCTION.
4. ALL GRAVITY SEWER CONSTRUCTION SHALL CONFORM TO THE LATEST UTILITY AND COUNTY STANDARDS AND SPECIFICATIONS.
5. THE EXISTING UTILITY FACILITIES AND LOCATIONS SHOWN ON THE DRAWINGS ARE TAKEN FROM READILY AVAILABLE INFORMATION. THE ACTUAL LOCATIONS OF THE UTILITY FACILITIES MAY VARY SOMEWHAT FROM THE LOCATIONS SHOWN AND THERE MAY BE UTILITY FACILITIES EXISTING THAT ARE NOT SHOWN OR INDICATED ON THE DRAWINGS. THE SITE UTILITY CONTRACTOR SHALL CONTACT ALL AGENCIES WITH UTILITY FACILITIES IN THE VICINITY OF THE WORK AND SHALL LOCATE ALL UNDERGROUND FACILITIES BEFORE BEGINNING WORK. THE CONTRACTOR SHALL PROTECT ALL UTILITY FACILITIES AND REPAIR ANY DAMAGES RESULTING FROM THEIR WORK IN CONFORMANCE WITH THE CONTRACT DOCUMENTS AND SPECIFICATIONS AND RELOCATE IF REQUIRED AT NO COST TO THE OWNER.
6. THE CONTRACTOR SHALL STAKE THE SANITARY SEWER SYSTEM AND THE STORM SEWER SYSTEM AND SHALL NOTIFY THE ENGINEER OF ANY CONFLICTS PRIOR TO INSTALLATION OF ANY PIPE.
7. MANHOLES SHALL BE IN CONFORMANCE WITH CCUA UTILITY STANDARDS
8. GRAVITY SEWER MAINS SHALL BE 8 INCH PVC UNLESS OTHERWISE INDICATED ON THE PLANS. MINIMUM SLOPE SHALL BE 0.4% FOR 8" PVC.
9. TYPE B BEDDING SHALL BE USED FOR THIS PROJECT UNLESS INDICATED OTHERWISE ON THE DRAWINGS.
10. BACKFILLING SHALL BE MADE WITH CLEAN BACKFILL WHICH SHALL BE THOROUGHLY COMPACTED IN 6" LIFTS. COMPACTION SHALL BE A MINIMUM OF 95% MAX DENSITY AT +/- 2% OF THE MODIFIED PROCTOR OPTIMUM MOISTURE CONTENT.
11. UNSUITABLE MATERIALS UNDER SEWER PIPE SHALL BE REMOVED TO A DEPTH OF 18" BELOW THE BOTTOM OF PIPE AND REPLACED WITH SELECTED BACKFILL PROPERLY COMPACTED IN 6" LIFTS. THE MATERIAL SHOULD EXHIBIT MOISTURE CONTENTS WITHIN +/- 2 PERCENT OF THE MODIFIED PROCTOR OPTIMUM MOISTURE CONTENT (ASTM D1557) DURING THE COMPACTION OPERATIONS. COMPACTION SHOULD CONTINUE UNTIL DENSITIES OF AT LEAST 95 PERCENT OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY (ASTM D1557) HAVE BEEN ACHIEVED.
12. CONTRACTOR SHALL NOTIFY THE UTILITY COMPANY A MINIMUM OF TWO DAYS PRIOR TO CONNECTION OF FORCE MAIN TO THE EXISTING LINE. ALL NEW WORK MUST BE INSPECTED BY THE ENGINEER OR OTHER AUTHORIZED INSPECTOR. NO TESTS SHALL BE SCHEDULED FOR WEEKENDS. ANY CHANGE FROM THE TECHNICAL REQUIREMENTS MUST BE REVIEWED AND APPROVED BY THE ENGINEER AND OWNER.
13. ALL SEWER CONSTRUCTION SHALL BE ACCOMPLISHED BY AN UNDERGROUND UTILITY CONTRACTOR LICENSED UNDER CHAPTER 489 F.S.
14. ALL PIPE LENGTHS ARE HORIZONTAL DISTANCES AND ARE APPROXIMATE.
15. ALL SANITARY SEWER LATERALS SHALL TERMINATE APPROXIMATELY 5 FEET OUTSIDE THE R-O-W LINE UNLESS OTHERWISE NOTED. THE END OF THESE SERVICE LINES SHALL BE TIGHTLY PLUGGED OR CAPPED AND MARKED UNTIL SUCH TIME AS CONNECTION IS MADE INSIDE THE BUILDING.
16. THE CONTRACTOR SHALL PERFORM A TELEVISION INSPECTION OF THE SEWER SYSTEM. TWO FULL REPORTS, INCLUDING VIDEO TAPE, SHALL INDICATE CONDITIONS OF THE PIPE, LOCATION, TYPE OF PIPE, DIAMETER, LOCATION OF SERVICES, TYPE OF JOINT, DISTANCE BETWEEN MANHOLES AND ANY IRREGULARITIES IN THE PIPELINE. THE TELEVISION INSPECTION SHALL INCLUDE A DEFLECTION TEST WITH A 5% MANDREL. THE SEWER LINES SHALL BE LAMPED AS PART OF THE FINAL INSPECTION.
17. THE CONTRACTOR SHALL COORDINATE THE LOCATION, SIZE AND INVERT ELEVATIONS OF SANITARY SEWER SERVICES WITH THE APPROVED PLUMBING PLANS FOR THE BUILDING.
18. CONTRACTOR SHALL PROVIDE, TO THE ENGINEER, A SCHEDULE OF INVERT ELEVATIONS OF ALL SANITARY MANHOLES PRIOR TO THE PLACEMENT OF THE LIMEROCK BASE COURSE. THIS SCHEDULE IS TO BE PROVIDED BY THE REGISTERED LAND SURVEYOR SUBMITTING THE "AS-BUILT" DRAWINGS FOR THIS PROJECT.
19. ALL SEWER MAINS SHALL BE PVC (ASTM-3034) SDR-26 UNLESS OTHERWISE NOTED.
20. NO "TEES" SHALL BE USED ON THE SEWER COLLECTION PIPING SYSTEM FOR CHANGE IN HORIZONTAL DIRECTION.

STANDARD WATER AND SEWER DESIGN NOTES

1. MAXIMUM DISTANCE FROM THE NEAREST FIRE HYDRANT TO THE MOST REMOTE EXTERIOR POINT OF ANY BUILDING SHALL BE 500 FEET. THE DISTANCE SHALL BE MEASURED ON A ROADWAY SURFACE MEETING THE FIRE DEPARTMENT ACCESS REQUIREMENTS OF 602.6.
2. THE CONTRACTOR SHALL INSTALL ANY ADDITIONAL AIR RELEASE VALVES AT CHANGES IN ELEVATION OF 2 FEET DUE TO ACTUAL FIELD CONDITIONS OR CONFLICTS NOT IDENTIFIED ON THESE DESIGN PLANS.
3. AUTOMATIC SPRINKLER / FIRE MAIN SERVICES (WHERE APPLICABLE):
   A. A METERED DETECTOR CHECK BACKFLOW PREVENTER IS REQUIRED ON ALL A.S. SERVICES AND FIRE MAIN CONNECTIONS INSTALLED FOR ONSITE FIRE PROTECTION.

WATER NOTES:

1. THE CONTRACTOR SHALL OBTAIN ALL PERMITS TO COMPLETE THE CONSTRUCTION.
2. CONTRACTOR SHALL COORDINATE THE CONSTRUCTION OF WATER FACILITIES WITH ALL OTHER CONSTRUCTION.
3. CONTRACTOR SHALL FURNISH SHOP DRAWINGS TO THE ENGINEER FOR APPROVAL PRIOR TO ORDERING MATERIALS AND BEGINNING CONSTRUCTION.
4. ALL WORKMANSHIP AND MATERIALS SHALL CONFORM TO LATEST CC COUNTY UTILITY AUTHORITY AND COUNTY STANDARDS AND SPECIFICATIONS AND APPLICABLE AWWA STANDARDS.
5. THE EXISTING UTILITY FACILITIES AND LOCATIONS SHOWN ON THE DRAWINGS ARE TAKEN FROM READILY AVAILABLE INFORMATION. THE ACTUAL LOCATIONS OF THE UTILITY FACILITIES MAY VARY SOMEWHAT FROM THE LOCATIONS SHOWN AND THERE MAY BE UTILITY FACILITIES EXISTING THAT ARE NOT SHOWN OR INDICATED ON THE DRAWINGS. THE SITE UTILITY CONTRACTOR SHALL CONTACT ALL AGENCIES WITH UTILITY FACILITIES IN THE VICINITY OF THE WORK AND SHALL LOCATE ALL UNDERGROUND FACILITIES BEFORE BEGINNING WORK. THE CONTRACTOR SHALL PROTECT ALL UTILITY FACILITIES AND REPAIR ANY DAMAGES RESULTING FROM THEIR WORK. IN CONFORMANCE WITH THE CONTRACT DOCUMENTS AND SPECIFICATIONS AND RELOCATE IF REQUIRED AT NO COST TO THE OWNER.
6. WATER LINES SHALL HAVE A MINIMUM OF 36" COVER FROM FINISHED GRADE. MAXIMUM COVER SHALL BE 60".
7. WATER LINES ARE DESIGNED TO FINISHED GRADE AND SHALL BE PROTECTED UNTIL FINISH WORK IS COMPLETE.
8. ALL WATER MAINS 4" AND LARGER SHALL BE AWWA C900, DR18 PVC. UTILITY COMPANY OWNED WATER MAINS 2" OR 3" IN SIZE SHALL BE HDPE. WATER MAINS 2" IN SIZE SHALL BE SCH. 40 CPVC PIPE WITH SOLVENT JOINTS. WATER SERVICES 2" AND SMALLER SHALL BE POLYETHYLENE, NON JOINT PIPE. ALL WATER PIPES SHALL BE NSF-PW APPROVED AND COMPLY WITH UTILITY AUTHORITY STANDARDS.
9. RESTRAINED JOINTS ARE REQUIRED WHERE WATER MAINS ARE TERMINATED AND AT ALL BENDS, IN ACCORDANCE WITH THE UTILITY AUTHORITY STANDARD DETAILS AND SPECIFICATIONS.
10. ALL GATE VALVES SHALL BE NON-RISING STEM TYPE AND SHALL BE SUITABLE FOR 250 PSI NON-SHOCK WORKING PRESSURE. GATE VALVES SHALL BE MECHANICAL JOINT, IRON BODY, RESILIENT SEAT, BY A UTILITY AUTHORITY APPROVED MANUFACTURER. VALVE BOXES WITH SCREW EXTENSIONS SHALL BE PROVIDED FOR EACH BURIED GATE VALVE. BOXES SHALL BE OF CAST IRON CONSTRUCTION, 3/8" MINIMUM WALL THICKNESS AND SHALL BE NON-TACKY TAR ENAMEL COATED. THE WORD "WATER" SHALL BE CAST IN COVER. ALL GATE VALVES INSTALLED SHALL OPEN BY TURNING TO THE LEFT (COUNTERCLOCKWISE) WHEN VIEWED FROM THE STEM.
11. CLASS B, TYPE I BEDDING SHALL BE USED FOR THIS PROJECT UNLESS INDICATED OTHERWISE ON THE DRAWINGS OR DIRECTED BY THE ENGINEER.
12. UNSUITABLE MATERIALS UNDER WATER PIPE SHALL BE REMOVED TO A DEPTH OF 18" BELOW BOTTOM OF PIPE AND REPLACED WITH SELECTED BACKFILL PROPERLY COMPACTED IN 6" LIFTS. THE MATERIAL SHOULD EXHIBIT MOISTURE CONTENTS WITHIN +/- 2 PERCENT OF THE MODIFIED PROCTOR OPTIMUM MOISTURE CONTENT (ASTM D1557) DURING THE COMPACTION OPERATIONS. COMPACTION SHOULD CONTINUE UNTIL DENSITIES OF AT LEAST 95 PERCENT OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY (ASTM D 1557) HAVE BEEN ACHIEVED.
13. BACKFILLING SHALL BE MADE WITH CLEAN BACKFILL WHICH SHALL BE THOROUGHLY COMPACTED IN 6" LIFTS. COMPACTION SHALL BE A MINIMUM OF 95% OF MAX. DENSITY AT +/- 2.0% OF THE MODIFIED PROCTOR.
14. WHERE WATER MAINS ARE LAID UNDER DITCHES, CULVERTS, PIPELINES, OR OBSTRUCTIONS WITHOUT FITTINGS, THE MAXIMUM DEFLECTION OF ANY JOINT SHALL NOT EXCEED 50% OF THE MAXIMUM RECOMMENDED BY THE PIPE MANUFACTURER.
15. NO CONNECTION TO EXISTING POTABLE WATER SYSTEM WILL BE ALLOWED UNTIL ALL PROPOSED WATER LINES HAVE BEEN FLUSHED, PRESSURE TESTED, DISINFECTED, AND CLEARED FOR SERVICE BY THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION.
16. CONTRACTOR SHALL NOTIFY UTILITY COMPANY A MINIMUM OF TWO DAYS PRIOR TO CONNECTION OF WATER MAINS TO EXISTING LINES. ALL NEW WORK MUST BE INSPECTED BY THE ENGINEER. NO TESTS SHALL BE SCHEDULED FOR WEEKENDS. ANY CHANGE FROM THE TECHNICAL REQUIREMENTS MUST BE REVIEWED AND APPROVED BY THE ENGINEER AND OWNER.
17. HYDROSTATIC AND LEAKAGE TESTING OF THE WATER MAINS INSTALLED SHALL BE PERFORMED IN ACCORDANCE WITH AWWA STANDARD SPECIFICATIONS C600, SECTION A. A REPRESENTATIVE OF THE UTILITY COMPANY OR THE ENGINEER MUST BE PRESENT DURING THE TESTS. PRESSURE TESTS SHALL BE CONDUCTED AT 150 PSI FOR 2 HOURS FOR WATER MAINS AND 200 PSI FOR 2 HOURS FOR FIRE MAINS. PRESSURE TEST AFTER LIME ROCK IS INSTALLED.
18. THE CONTRACTOR SHALL COORDINATE ALL WATER MAIN FLUSHING WITH THE UTILITY AUTHORITY. FLUSHING AND DISINFECTION PROCEDURES SHALL COMPLY WITH AWWA C-651 FOR MAIN DISINFECTION.
19. UPON COMPLETION OF WATER MAIN FLUSHING, BACTERIOLOGICAL SAMPLES SHALL BE TAKEN. SAMPLES SHALL BE TAKEN FOR 2 CONSECUTIVE DAYS.
20. SAMPLE POINTS FOR BACTERIOLOGICAL SAMPLING SHALL BE LOCATED AS FOLLOWS:
    1. EVERY 1000 FEET AND/OR EVERY DEAD END ON A WATER MAIN.
    2. POINT OF TIE-IN TO EXISTING WATER SYSTEM.
    3. WATER MAIN STUBS MORE THAN 40 FEET IN LENGTH.
21. FIRE HYDRANTS SHALL MEET UTILITY AUTHORITIES STANDARDS.
22. THE SITE UTILITY CONTRACTOR SHALL MAKE APPLICATION TO UTILITY COMPANY FOR THE PROJECT WATER METER AND SHALL PAY FOR ALL METER FEES.
23. ALL NEW OR RELOCATED WATER MAINS:
    A. SHALL 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; A HORIZONTAL DISTANCE OF 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".
    B. 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 TWELVE INCHES BELOW THE OTHER PIPELINE AND WATER MAINS THAT WILL CROSS ANY EXISTING OR PROPOSED PRESSURE-TYPE SANITARY SEWER, WASTEWATER OR STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIM WATER SHALL BE LAID SO THE OUTSIDE OF THE WATER MAIN SHALL BE AT LEAST TWELVE INCHES ABOVE OR BELOW THE OTHER PIPELINE.
    C. AT THE UTILITY CROSSINGS DESCRIBED IN 23(A) AND 23(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 OR 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 PIPES 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.
24. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING WATER FOR CONSTRUCTION USE DURING ENTIRE COURSE OF PROJECT.
25. PRESSURE PIPE AND FITTINGS REQUIRING RESTRAINT SHALL BE BRACED WITH RESTRAINED JOINTS PER UTILITY AUTHORITIES STANDARDS AND AWWA STANDARD C509.
26. THE CONTRACTOR SHALL COORDINATE ALL CONNECTIONS WITH SITE PIPING AND BUILDING PIPING.
27. ALL WATER AND SEWER CONSTRUCTION WITHIN COUNTY SHALL BE ACCOMPLISHED BY AN UNDERGROUND UTILITY CONTRACTOR LICENSED UNDER THE PROVISIONS OF CHAPTER 489 FLORIDA STATUTES.
28. IF DEWATERING CAPACOUNTY REQUIRES A CONSUMPTIVE USE PERMIT IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN THE PERMIT THROUGH THE ST. JOHNS RIVER WATER MANAGEMENT DISTRICT.
29. IF SOLVENT CONTAMINATION IS FOUND IN THE PIPE TRENCH, WORK SHALL BE STOPPED AND THE PROPER AUTHORITIES NOTIFIED. WITH APPROVAL OF THE PERMITTING AGENCY, DUCTILE IRON PIPE, FITTINGS, AND SOLVENT RESISTANT GASKET MATERIAL SUCH AS FLUOROCARBON SHALL BE USED IN THE CONTAMINATED AREA. THE DUCTILE IRON PIPE SHALL EXTEND AT LEAST 100 FEET BEYOND ANY SOLVENT NOTED. ANY CONTAMINATED SOIL THAT IS EXCAVATED SHALL BE PLACED ON AN IMPERMEABLE MAT AND COVERED WITH A WATERPROOF COVERING. THE PROPER AUTHORITIES WILL BE NOTIFIED AND THE CONTAMINATED SOIL HELD FOR PROPER DISPOSAL.

AS-BUILT REQUIREMENTS:

CONTRACTOR SHALL PROVIDE COMPLETE AS-BUILT INFORMATION TO THE PROJECT ENGINEER IN ACCORDANCE WITH THE FOLLOWING REQUIREMENTS:

1. AS-BUILT DRAWINGS SHALL BE PREPARED IN AUTOCAD FORMAT BY A REGISTERED LAND SURVEYOR AND ELECTRONICALLY SIGNED & SEALED PDF OF THE PROJECT SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL. SIGNED AND SEALED PRINTS SHALL BE PROVIDED TO THE ENGINEER AS REQUESTED.
2. AS-BUILT DRAWINGS SHALL BE IN ACCORDANCE WITH ALL AUTHORITIES HAVING JURISDICTION. CONTRACTOR SHALL COORDINATE AS-BUILT SUBMITTALS AND APPROVALS WITH JURISDICTIONAL AGENCIES UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER.
3. PROVIDE BUILDING LOCATIONS, FINISH FLOOR ELEVATIONS, PAVEMENT GRADES AND ALL UNDERGROUND FACILITIES.
4. PROVIDE PERIMETER DIMENSIONS AT TOP OF BANK AND AT BOTTOM OF POND/STORMWATER STORAGE SYSTEM.
5. PROVIDE ELEVATIONS AT TOP OF BANK AND BOTTOM OF POND/TOP OF TANK AND BOTTOM OF TANK (IF APPLICABLE).
6. PROVIDE SPECIAL DETAIL DRAWINGS WHERE INSTALLATIONS WERE NOT AS SHOWN ON CONTRACT DRAWINGS DUE TO FIELD CONDITIONS OR WHERE REQUIRED FOR CLARITY.
7. PROVIDE LOCATION, ELEVATION AND DESCRIPTION OF BENCHMARK(S).
8. LOCATE AND PROVIDE ELEVATIONS OF ALL STRUCTURES. LOCATION OF ALL STRUCTURES SHALL BE FROM TWO (2) DIRECTIONS.
9. LOCATE ALL PIPES AND PROVIDE SIZE, ELEVATION, INVERT ELEVATIONS, LENGTH AND TYPE.
10. PROVIDE DIMENSIONS AND ELEVATIONS OF THE POND OUTFALL STRUCTURE(S).
11. WATER AS-BUILTS SHALL INDICATE THE LOCATION OF BACTERIOLOGICAL SAMPLE POINTS. SAMPLE POINTS SHALL BE INDICATED IN RED OR PINK.
12. THE AS-BUILTS SHALL INCLUDE A DETAIL OF EVERY CROSSING OF THE NEW WATER MAIN WITH GRAVITY SEWERS, FORCE MAINS AND STORM PIPES CLEARLY SHOWN & INDICATING THE VERTICAL CLEARANCES AT EACH CROSSING. DETAILS SHALL BE FURNISHED FOR PARALLEL RUNS WHERE THE HORIZONTAL SEPARATION IS LESS THAN 10 FEET.
13. THE CENTERING OF UNCUT LENGTHS OF PIPE AT POINTS OF CROSSING SHALL BE DOCUMENTED ON THE AS-BUILTS AND ALL MITIGATING CONSTRUCTION MEASURES CLEARLY DEPICTED IN CASES WHERE A MINIMUM OF 18" OF VERTICAL CLEARANCE BETWEEN THE WATER AND SEWER (INCLUDING STORM) LINES IS NOT POSSIBLE.
14. THE ABOVE NOTED AS-BUILD REQUIREMENTS SHALL BE IN ADDITION TO ANY GCSU STANDARD AS-BUILD REQUIREMENTS.

MAINTENANCE OF TRAFFIC REQUIREMENTS:

1. ANY MODIFICATION OF THIS MAINTENANCE OF TRAFFIC PLAN SHALL BE SUBMITTED TO THE CITY TRAFFIC ENGINEERING DIVISION FOR REVIEW AND APPROVAL PRIOR TO IMPLEMENTATION.
2. THE PROJECT WORK HOURS SHALL BE BETWEEN 7:00 AM AND 7:00 PM ON RESIDENTIAL STREETS AND 9:00 AM AND 4:00 PM ON COLLECTOR OR ARTERIAL STREETS.
3. NO LANE CLOSURES ARE ALLOWED FROM 7:00 AM TO 9:00 AM AND 4:00 PM TO 7:00 PM MONDAY THROUGH FRIDAY.
4. CONTRACTOR MUST MAINTAIN EXISTING SIGNAGE. IF SIGNS ARE DAMAGED DUE TO HIS ACTIVITY, THE CONTRACTOR IS REQUIRED TO REPLACE THEM IMMEDIATELY IN ACCORDANCE WITH CURRENT CITY STANDARD SPECIFICATION IMMEDIATELY.
5. THIRTY FOOT RADII ARE REQUIRED AT ALL INTERSECTIONS WHERE THE ROADWAY IS REBUILT.
6. ACCESS TO ALL STREETS AND DRIVEWAYS TO BE MAINTAINED AT ALL TIMES.
7. IF SIDEWALKS ARE DISTURBED AND HAVE TO BE REPLACED, HANDICAP RAMPS ARE TO BE INSTALLED.
8. THE CONTRACTOR SHALL CONFINE HIS WORK AREA TO NO MORE THAN ONE BLOCK AT A TIME.
9. THE ROADWAY SHALL BE RESTORED TO AT LEAST A LIME ROCK SURFACE BEFORE IT IS REOPENED TO TRAFFIC, AND BEFORE THE CONTRACTOR MOVES ON TO THE NEXT CONSTRUCTION ZONE.
10. DUST CONTROL MEASURES SHALL BE IMPLEMENTED ON ALL UNPAVED SURFACES UNTIL PAVED.
11. WHERE CONSTRUCTION PHASING IS NOT SHOWN ON PLANS, OR IF THE CONTRACTOR WANTS TO ALTER THE SPACING SHOWN, CONTRACTOR IS TO SUBMIT PHASING PLAN WITH A PROPOSED CONSTRUCTION SCHEDULE TO TRAFFIC ENGINEERING PRIOR TO CONSTRUCTION.
12. CONTRACTOR SHALL NOTIFY THE TRAFFIC ENGINEERING OFFICE A MINIMUM OF 5 WORKING DAYS PRIOR TO IMPLEMENTATION OF THE M.O.T.
13. TRAFFIC SIGNAL VEHICLE LOOPS SHALL BE RESTORED TO PROPER OPERATION WITHIN 36 HOURS OF BEING DESTROYED OR DAMAGED. CONTACT MASON BOYD AT 255-7549 A MINIMUM OF 48 HOURS PRIOR TO WORKING NEAR A SIGNALIZED INTERSECTION.

SIGN SPACING

ROAD TYPE	DISTANCE BETWEEN SIGNS**		
	A	B	C
URBAN (low speed)	30 (100)	30 (100)	30 (100)
URBAN (high speed)	100 (350)	100 (350)	100
(350)			
RURAL	150 (500)	150 (500)	150
(500)			
Expressway/Freeway	300 (1,000)	450 (1,500)	0
(2,640)			

* SPEED CATEGORY TO BE DETERMINED BY HIGHWAY AGENCY
** DISTANCES ARE SHOWN IN METERS (FEET), THE COLUMN HEADING A, B, AND C ARE THE DIMENSIONS SHOWN IN FIGURES 6H-1 THROUGH 6H-46 OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). THE A DIMENSION IS THE DISTANCE FROM THE TRANSITION OR POINT OF RESTRICTION TO THE FIRST SIGN. THE B DIMENSION IS THE DISTANCE BETWEEN THE FIRST AND SECOND SIGNS. THE C DIMENSION IS THE DISTANCE BETWEEN THE SECOND AND THIRD SIGNS. (THE THIRD SIGN IS THE FIRST ONE IN THE THREE-SIGN SERIES ENCOUNTERED BY A DRIVER APPROACHING A TEMPORARY TRAFFIC CONTROL ZONE).
NOTE: LONGITUDINAL DIMENSIONS ARE TO BE ADJUSTED TO FIT FIELD CONDITIONS. SEE FDOT INDEX No. 600

TAPER LENGTH CRITERIA

TYPE OF TAPER	TAPER LENGTH (L)*
MERGING TAPER	AT LEAST L
SHIFTING TAPER	AT LEAST 0.5L
SHOULDER TAPER	AT LEAST 0.33L
ONE LANE, TWO WAY TRAFFIC TAPER	100 FT. MAXIMUM
DOWNSTREAM TAPER	100 FT PER LANE

*FORMULAS FOR L ARE AS FOLLOWS

FOR SPEED LIMITS OF 40 MPH OR LESS: $L=\frac{WS^2}{60}$

FOR SPEED LIMITS OF 45 MPH OR GREATER: $L=WS$

WHERE: L = TAPER LENGTH IN FEET
W = WIDTH OF OFFSET IN FEET
S = POSTED SPEED LIMIT

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MEP ENGINEER
POWELL & HINKLE ENGINEERING, P.A.
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ORANGE PARK, FL 32073

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CLAY COUNTY
UTILITY CO FIRE STATION 20
1305 FL-16, GREEN COVE SPRINGS, FL

REVISIONS

#	DATE	DESCRIPTION

JEFFREY E. BERGEN, PE
THIS ITEM HAS BEEN ELECTRONICALLY SIGNED AND SEALED BY JEFFREY E. BERGEN, PE ON
12/5/2023
USING A SHA AUTHENTICATION CODE. PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SHA AUTHENTICATION CODE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

JEFFREY E. BERGEN LICENSE No. 63060 STATE OF FLORIDA PROFESSIONAL ENGINEER

DATE: 11/10/2023

GENERAL NOTES

PROJECT NO.: 23002

C2.0
100% DOCUMENTS

DEMOLITION NOTES:

1. ALL WORK TO BE ACCOMPLISHED IN STRICT ACCORDANCE WITH ALL LOCAL ORDINANCES, CITY, COUNTY OR STATE.
2. WITHIN THE WORK AREA, THE INTENT IS TO HAVE A CLEAN, CLEAR SITE, FREE OF ALL EXISTING ITEMS NOTED TO BE REMOVED IN ORDER TO PERMIT THE CONSTRUCTION OF THE NEW PROJECT.
3. REMOVE AND DISPOSE OF ANY SIDEWALKS, FENCES, WALLS, DEBRIS AND RUBBISH REQUIRING REMOVAL FROM THE WORK AREA IN AN APPROVED OFF SITE LANDFILL.
4. THE CONTRACTOR SHALL SECURE ALL PERMITS FOR CLEARING, DEMOLITION, AND DISPOSAL OF THE DEMOLITION MATERIAL TO BE REMOVED FROM THE SITE. THE CONTRACTOR SHALL POST BONDS AND PAY PERMIT FEES AS REQUIRED. BUILDING DEMOLITION CONTRACTOR SHALL BE RESPONSIBLE FOR PERMITS AND DISPOSAL OF BUILDING DEMOLITION DEBRIS.
5. THE DETAILED PLANS MAY NOT REFLECT ALL UTILITIES ON THE SITE OR SURROUNDING STREETS AND PROPERTIES. THE CONTRACTOR SHALL VERIFY LOCATIONS AND EXISTENCE OF UTILITY SERVICES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CALL "SUNSHINE" AT 1-800-432-4770, 48 HOURS PRIOR TO CONSTRUCTION.
6. THE CONTRACTOR TO REMOVE ALL UTILITIES TO EXISTING STRUCTURES WHETHER SHOWN OR NOT OR ARRANGE FOR THE APPROPRIATE UTILITY COMPANY TO CUT AND CAP SERVICE PIPING AT THE PROPERTY LINE OR MAIN (AS REQUIRED). ALL SERVICES MAY NOT BE SHOWN ON THIS PLAN.
7. SEE LANDSCAPE PLANS FOR ALL TREE REMOVAL AND PROTECTION REQUIREMENTS, IF APPLICABLE.
8. FOR ALL ITEMS NOTED TO BE REMOVED - REMOVE NOT ONLY THE ABOVE GROUND ELEMENTS, BUT ALL UNDERGROUND ELEMENTS AS WELL INCLUDING BUT NOT NECESSARILY LIMITED TO: FOUNDATIONS, GRAVEL FILLS, TREE ROOTS, OLD PIPES, ETC.
9. BACK FILL ALL EXCAVATIONS RESULTING FROM THE DEMOLITION WORK TO MEET THE REQUIREMENTS FOR FILL OUTLINED IN THE GEOTECHNICAL REPORT, OR PER FDOT SPECIFICATIONS.
10. THE CONTRACTOR SHALL PROTECT ALL IRON PINS, MONUMENTS AND PROPERTY CORNERS DURING CONSTRUCTION. ANY CONTRACTOR DISTURBED PINS, MONUMENTS, ETC. SHALL BE RESET BY A LICENSED LAND SURVEYOR AT THE EXPENSE OF THE CONTRACTOR.
11. THE CONTRACTOR SHALL RESTORE ANY UTILITY STRUCTURE, PIPES, PAVEMENT, CURBS, SIDEWALKS OR LANDSCAPED AREAS DISTURBED DURING DEMOLITION TO THEIR ORIGINAL CONDITION TO THE SATISFACTION THE ENGINEER.
12. ALL BUILDINGS, FOUNDATION WALLS AND FOOTINGS INDICATED ON THIS PLAN TO BE REMOVED FROM SITE. CONTRACTOR SHALL SECURE ANY PERMITS AND PAY ALL FEES AND PERFORM CLEARING AND GRUBBING AND DEBRIS REMOVAL IN ACCORDANCE WITH GEOTECHNICAL REPORT PRIOR TO COMMENCEMENT OF GRADING OPERATIONS.
13. ASBESTOS AND ANY OTHER HAZARDOUS MATERIAL SHALL BE REMOVED BY THE GENERAL CONTRACTOR USING A LICENSED HAZARDOUS MATERIAL CONTRACTOR.
14. SEE SURVEY FOR EXISTING SITE LEGEND.
15. SITE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING THE SILT FENCE IN ITS DESIGNED POSITION, OR AS NEEDED PER SEDIMENTATION/ TURBIDITY CONTROL UPRIGHT AND WORKING PROPERLY TO STOP EROSION DURING THE DURATION OF THE PROJECT.
16. ALL ELECTRIC DEMOLITION/ WORK SHALL BE PERFORMED BY LICENSED ELECTRICAL CONTRACTORS.
17. CONTRACT TO CONFIRM ALL TREES TO BE IMPACTED WITH LANDSCAPE PLANS PRIOR TO DEMOLITION.
18. CONTRACTOR SHALL COORDINATE ALL ELECTRICAL SYSTEM DEMOLITIONS WITH THE AUTHORITY / ELECTRIC ENGINEER / ELECTRICIAN TO CONFIRM ALL POWER IS OFF AND PROPERLY TERMINATED PRIOR TO ANY ELECTRICAL DEMOLITION.
19. CONTRACTOR SHALL COMPLETELY AND PROPERLY PROTECT ALL TREES , STRUCTURES, ELEMENTS TO REMAIN TO WHATEVER LEVEL NECESSARY PRIOR TO COMMENCEMENT OF DEMOLITION.
20. ALL PAVEMENT DEMOLITION LINES SHALL BE SAW CUT.
21. EXISTING LIGHTING ELEMENTS AND ALL "SALVAGABLE" DEMOLITION FEATURES SHALL BE CONFIRMED WITH THE OWNER FOR DISPOSAL / STORAGE PRIOR COMENCEMENT OF DEMOLITION.
22. PEDESTRIAN FENCING / BARRIERS SHALL BE INSTALLED WHERE NEEDED.
23. COURSES OF SILT FENCE SHALL BE PROVIDE AS NEEDED TO CONTROL STORMWATER SEDIMENT MIGRATION.
24. DETAIL AND INFORMATION SHOWN ON THE PLANS ARE A MINIMUM LEVEL NEEDED . IT IS THE CONTRACTORS RESPONSIBILITY TO INSTALL AND MANAGE TO THE NEEDED ON THE SITE CONTROLLING SEDIMENTATION MIGRATION / TURBID RUNOFF THROUGH THE CONSTRUCTION PROGRESS
25. ALL TURBIDITY / SEDIMENTATION CONTROLS SHALL AT A MINIMUM BE IN ACCORDANCE WITH F.D.E.P STORMWATER EROSION AND SEDIMENTATION CONTROLS GUIDELINES / STANDARDS.
26. DEMOLITION SHALL BE PHASES AS IS SHOWN ON THE PLANS.

GENERAL LEGEND

DRAINAGE PLAN LEGEND

- DRAINAGE FLOW
- DRAINAGE DIVIDE
- LIMITS OF DRAINAGE AREA
- PROPERTY LINE
- IMPERVIOUS AREA
- PRE-DA1 — PRE DEVELOPMENT DRAINAGE AREA
- POST-DA1 — POST DEVELOPMENT DRAINAGE AREA
- TIME OF CONCENTRATION PASS
- SA-X — SUB AREA-X

PAVEMENT LEGEND

- HD — HEAVY DUTY (HD) CONCRETE PAVEMENT (RIGHT OF WAY)
- SD — SUPER DUTY (SD) CONCRETE PAVEMENT (ON SITE)
- STANDARD DUTY (STD) ASPHALT PAVEMENT
- HEAVY DUTY (HD) ASPHALT PAVEMENT
- CONCRETE SIDEWALK
- (8) — # OF PARKING STALLS
- TRUNCATED DOMES DETECTABLE WARNING SURFACE (ADA COMPLIANT)
- CT — CURB TRANSITION

DEMOLITION LEGEND

- GENERAL PAVEMENT, BUILDING, CURBING AND VERTICAL/SURFACE IMPROVEMENT DEMOLITION, SOIL DISTURBANCE
- SF — SILT FENCE
- TB — TURBIDITY BARRIER
- TREE PROTECTION BARRICADE
- LOC — LOC — LOC — LIMITS OF CONSTRUCTION
- TREE TO BE REMOVED
- TREE TO BE PROTECTED
- INLET SEDIMENT PROTECTION
- SIDEWALK CLOSED / SIDEWALK DETOUR BARRICADE / SIGN. SEE INDEX 102-660 (FDOT STANDARDS) ON MAINTENANCE OF TRAFFIC SHEET

SIGN LEGEND

TAG	SIGN	
1	STOP	R1-1 (36"x36")
2	PARKING BY SHERIFF PERMIT ONLY	(12"x18")
	$250 FINE	(12"x4")
3	DO NOT ENTER	R5-1 (30")
4	NO PARKING FIRE LANE BY ORDER OF THE FIRE DEPARTMENT	(12"X18")
5	TRAFFIC PATTERN ONLY	(12"x18")
6	TRAFFIC PATTERN ONLY	(12"x18")
A		INDICATES SIGNS TO BE MOUNTED BACK TO BACK

DRAINAGE LEGEND

- EXISTING SPOT ELEVATION
- 64.0 — GROUND ELEVATION
- 64.57 — PAVEMENT SPOT ELEVATION
- 63.35 / 62.85 — TOP OF CURB OR SIDEWALK/ EDGE OF PAVEMENT
- 50.30 (ME) — APPROX. ELEVATION - MATCH EXISTING

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CLAY COUNTY FIRE STATION 20

1305 FL-16, GREEN COVE SPRINGS, FL

REVISIONS

#	DATE	DESCRIPTION

JEFFREY E. BERGEN, PE
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JEFFREY E. BERGEN LICENSE No. 63060 STATE OF FLORIDA PROFESSIONAL ENGINEER

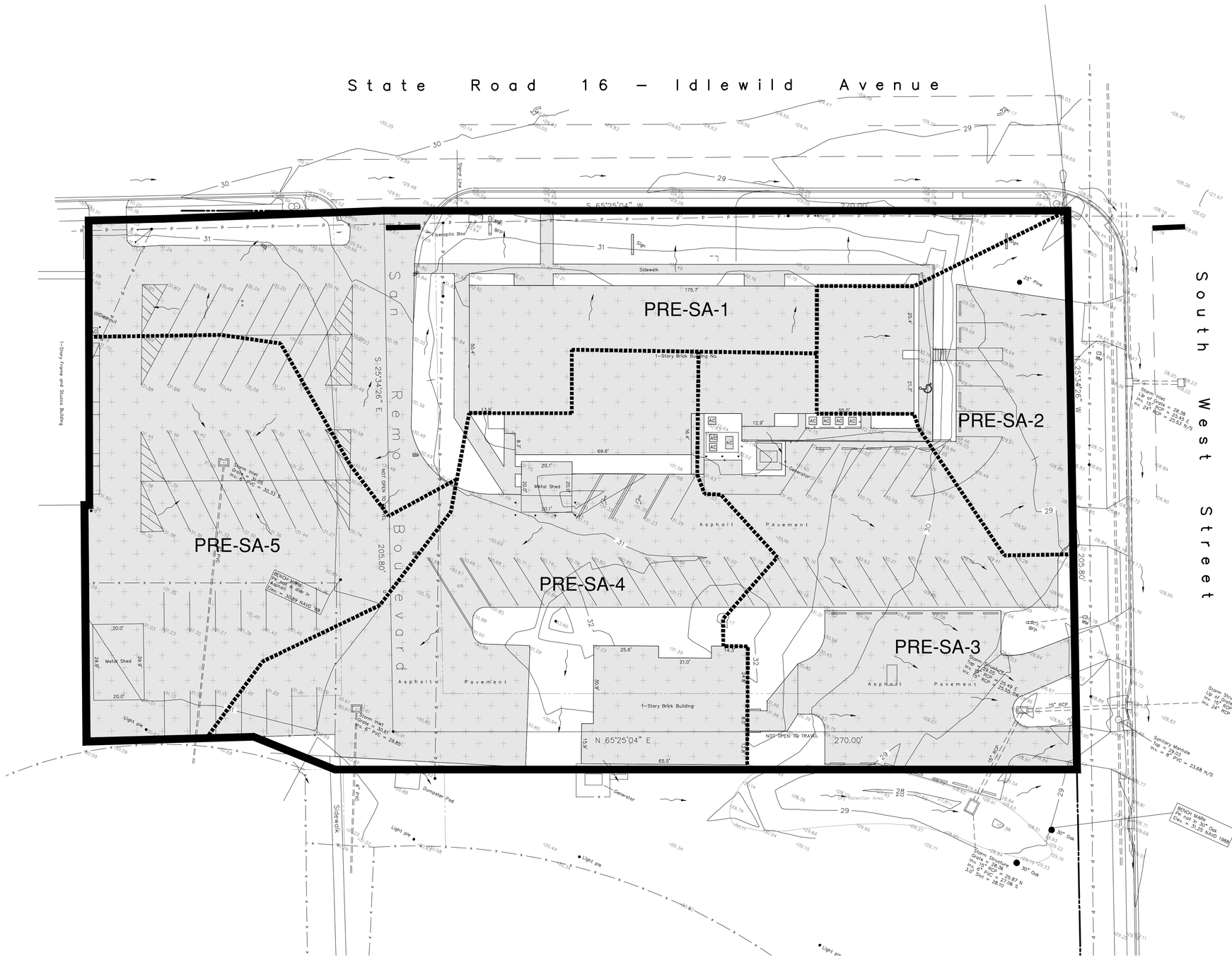
DATE: 11/10/2023

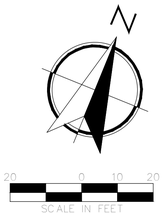
DEMOLITION NOTES & LEGEND

PROJECT NO.: 23002

C3.0

100% DOCUMENTS





* REGADLESS OF WHERE DRAINAGE FLOW OF PRE-DA1 LEAVES PROJECT BOUNDARY, ALL FLOW IS ULTIMATELY SENT SOUTH IN THE SOUTH WEST STREET DRAINAGE SYSTEM

PRE DEVELOPMENT DRAINAGE AREAS

	AREA (SF)	AREA (AC)	IMP AREA (SF)	IMP AREA (AC)	PERVIOUS AREA (SF)	PERVIOUS AREA (AC)
PRE-SA-1	21,495.36	0.49	13,671.95	0.31	7,823.41	0.18
PRE-SA-2	8,490.86	0.19	6,787.96	0.16	1,702.70	0.04
PRE-SA-3	17,404.18	0.40	14,114.75	0.32	3,289.43	0.08
PRE-SA-4	21,910.15	0.50	17,739.21	0.41	4,170.94	0.10
PRE-SA-5	15,360.06	0.35	15,356.41	0.35	3.65	0.00
TOTAL AREA	84,660.41	1.94	67,670.28	1.55	16,990.13	0.39

LEGEND

- DRAINAGE FLOW
- DRAINAGE DIVIDE
- LIMITS OF DRAINAGE AREA
- IMPERVIOUS AREA
- PRE-DA1 — PRE DEVELOPMENT DRAINAGE AREA
- TIME OF CONCENTRATION PASS

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Jeffrey Bergen P.E. FL 63060

DATE: 11/10/2023

PRE DEVELOPMENT DRAINAGE PLAN

PROJECT NO.: 23002

C4.0

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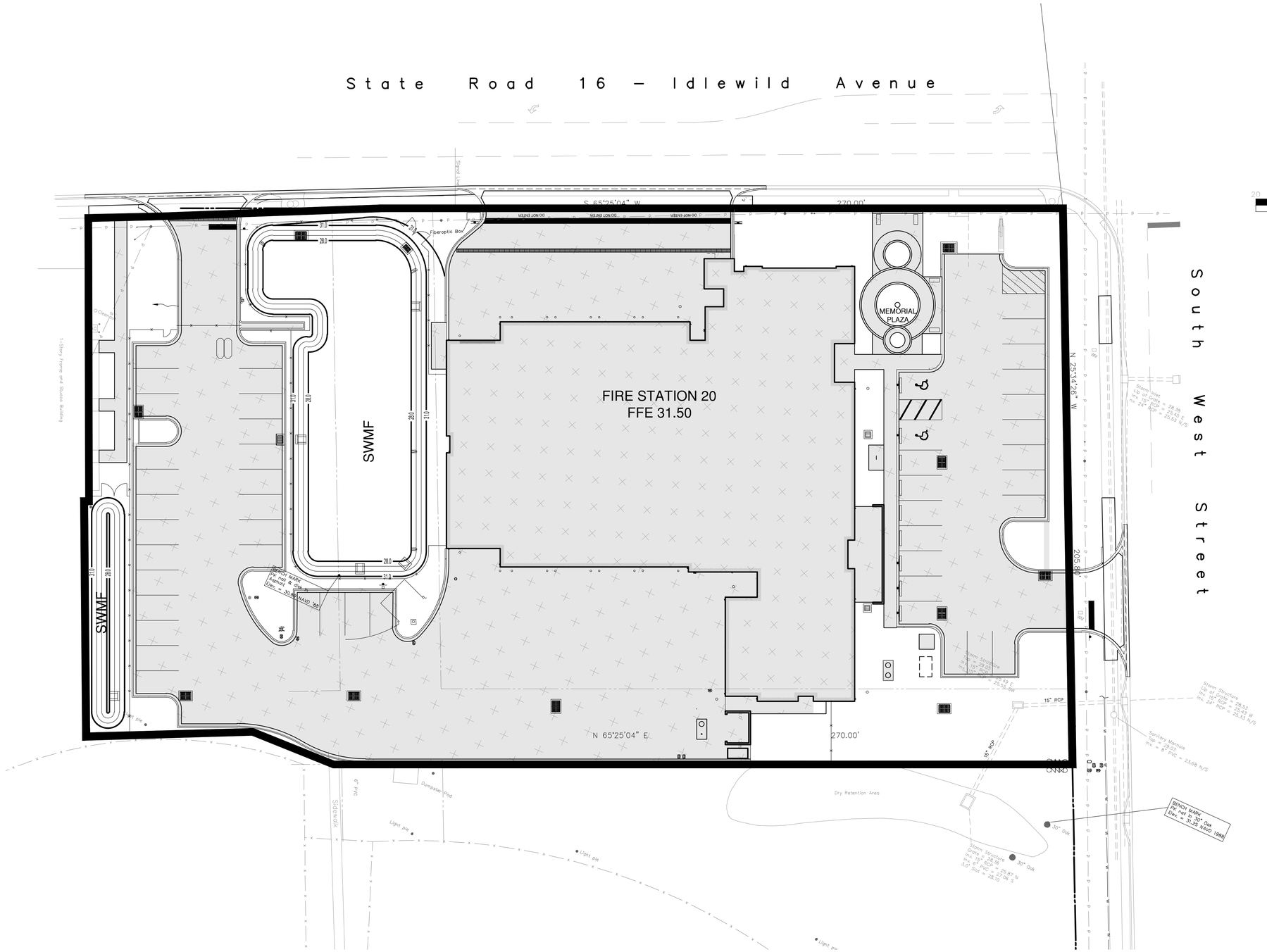

POST DEVELOPMENT DRAINAGE AREA (POST-DA1)						
	AREA (SF)	AREA (AC)	IMP AREA (SF)	IMP AREA (AC)	PERVIOUS AREA (SF)	PERVIOUS AREA (AC)
POST-DA1	84,660	1.94	58,797.42	1.35	25,862.99	0.59

LEGEND

- DRAINAGE FLOW
- DRAINAGE DIVIDE
- LIMITS OF DRAINAGE AREA
- IMPERVIOUS AREA
- POST-DA1 — PRE DEVELOPMENT DRAINAGE AREA
- TIME OF CONCENTRATION PASS

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Jeffrey Bergen, P.E. FL 63060

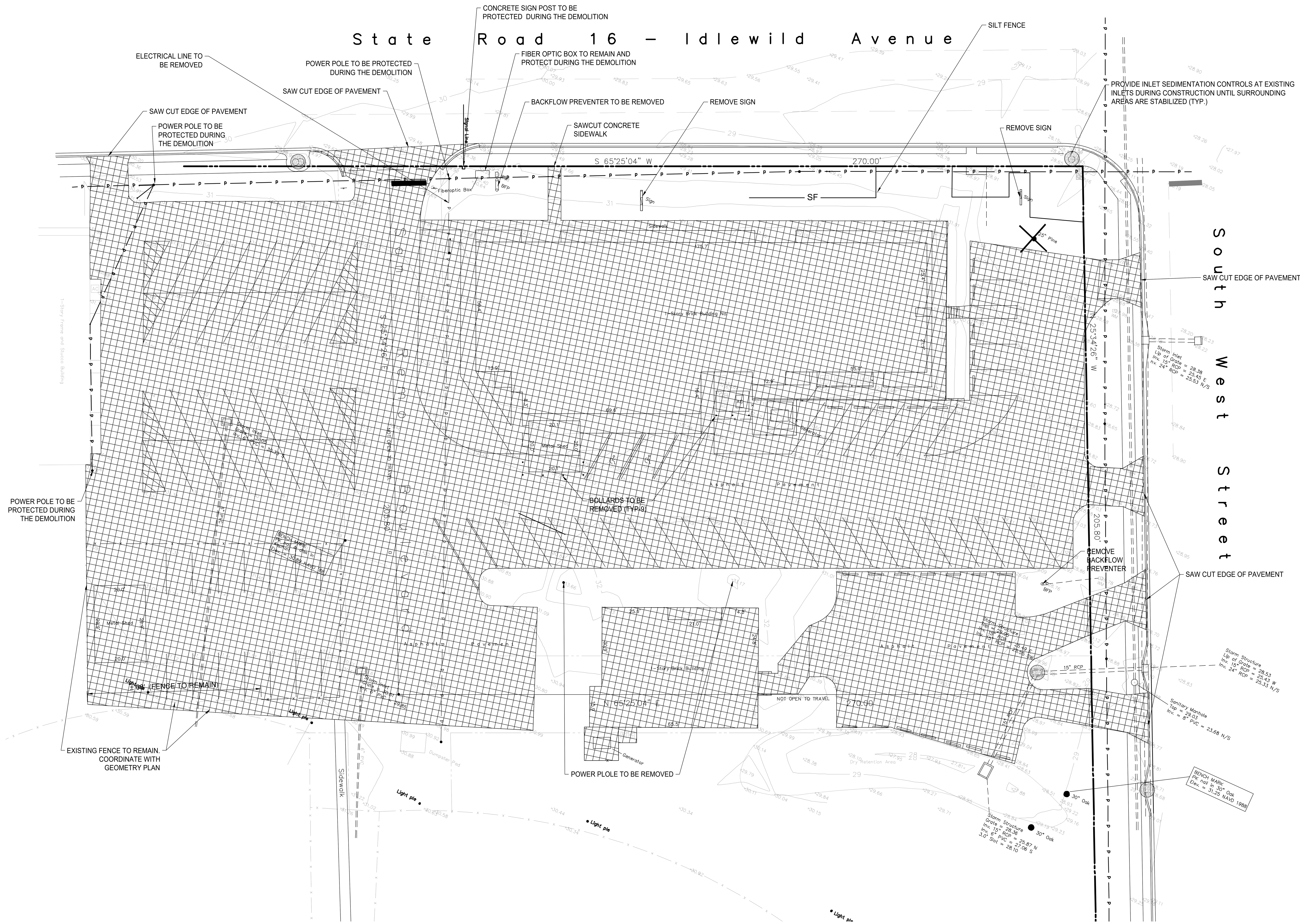
DATE: 11/10/2023

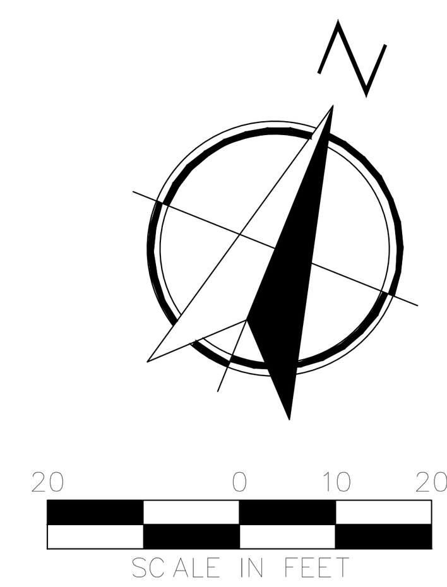
POST DEVELOPMENT DRAINAGE PLAN

PROJECT NO.: 23002

C5.0

100% DOCUMENTS





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LEGEND

(crosshatch)	GENERAL PAVEMENT, BUILDING, CURBING AND VERTICAL/SURFACE IMPROVEMENT DEMOLITION, SOIL DISTURBANCE
—— SF ——	SILT FENCE
(X)	TREE TO BE REMOVED

NOTES:

1. CONFIRM ALL TREES IMPACT WITH LANDSCAPE PLANS PRIOR TO DEMOLITION.
2. SEE ADDITIONAL DEMOLITION NOTES AND LEGEND ON SHEET C3.0

REVISIONS

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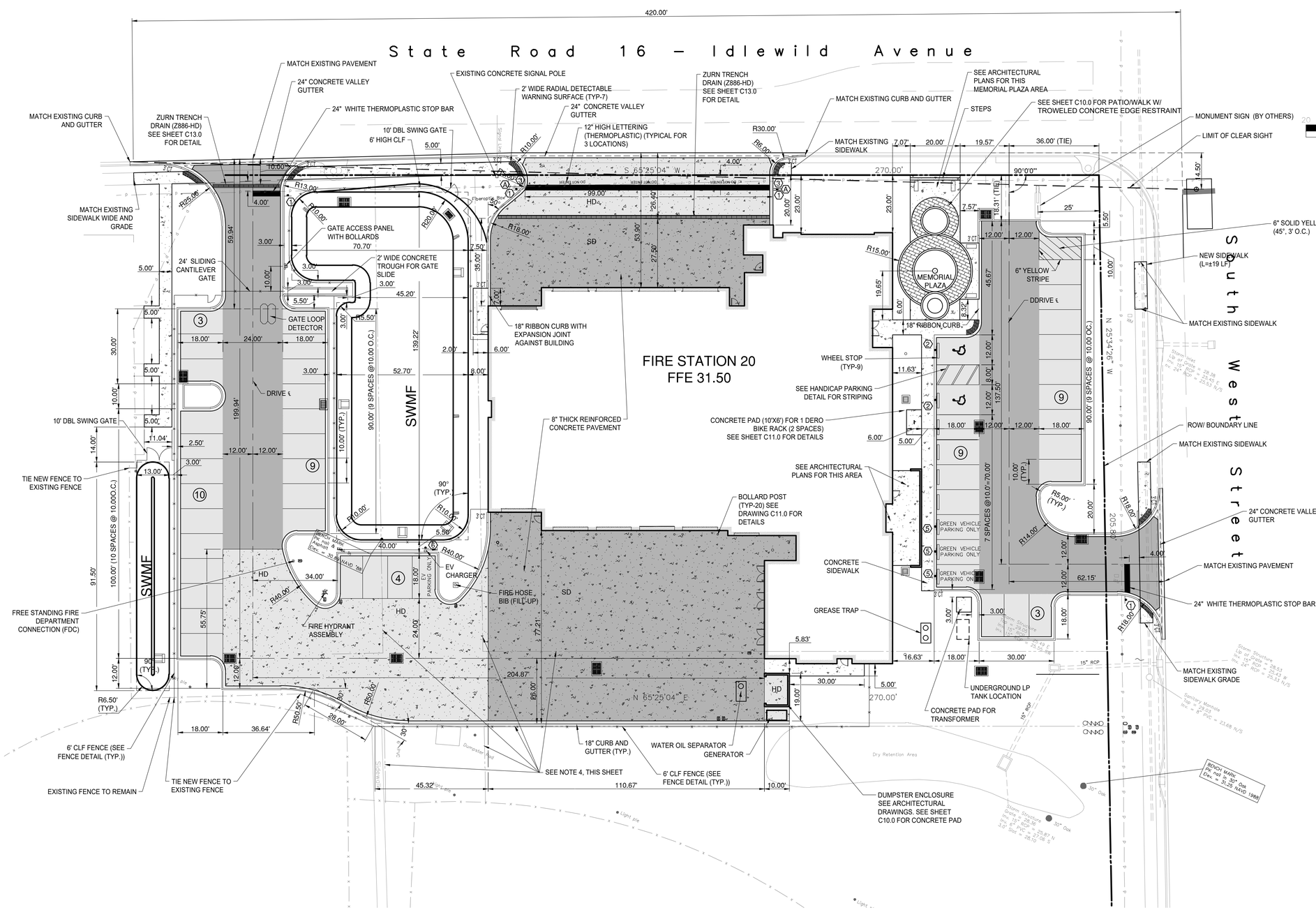
DATE: 11/10/2023

DEMOLITION PLAN

PROJECT NO.: 23002

C6.0

100% DOCUMENTS



LEGEND

- HD — HEAVY DUTY (HD) CONCRETE PAVEMENT
- SD — SUPER DUTY (SD) CONCRETE PAVEMENT
- STANDARD DUTY (STD) ASPHALT PAVEMENT
- HEAVY DUTY (HD) ASPHALT PAVEMENT
- 4 — CONCRETE SIDEWALK
- (10) — # OF PARKING STALLS
- TRUNCATED DOMES DETECTABLE WARNING SURFACE (ADA COMPLIANT)
- CT — CURB TRANSITION
- BENCHMARK LOCATION
- SIDEWALK RAMP (SLIP RESISTANT) (ADA COMPLIANT)
- EV — ELECTRIC VEHICLE

SIGN LEGEND

TAG	SIGN	
1	STOP	R1-1 (36"x36")
2	PARKING BY PERMIT ONLY / $350 FINE	(12"x18") (12"x4")
3	DO NOT ENTER	R5-1 (30")
5	LOW EMITTING, FUEL EFFICIENT VEHICLE PARKING ONLY	(18"x12")
6	ELECTRIC VEHICLE PARKING ONLY	(18"x12")
A	INDICATES SIGNS TO BE MOUNTED BACK TO BACK	

PARKING SUMMARY

STANDARD (10'X18') (PUBLIC)..... =19
HC PARKING (12'X18')..... = 2
STANDARD (10'X18') (SECURED).... = 26
TOTAL VEHICLE PARKING..... =47

BICYCLE PARKING..... =2

GEOMETRY NOTES:

1. ALL CURB RADII ARE 5' UNLESS NOTED OTHERWISE.
2. ALL SIDEWALK RADII ARE 5' UNLESS NOTED OTHERWISE.
3. REFER TO ARCHITECTURAL PLAN FOR EXACT BUILDING DIMENSIONS
4. THE EXISTING SHOWN "RIGHT OF WAYS" LINES ARE UNDERSTOOD TO BE CLOSED , THUS DO NOT APPLY. IT IS UNDERSTOOD CLAY COUNTY OWNS ALL ADJACENT PROPERTY SOUTH OF THIS IMPROVEMENT AREA, THUSTHERE IS NO SOUTHTHERLY BOUNDARY LINE SHOWN.

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DATE: 11/10/2023

GEOMETRY AND PAVING PLAN

PROJECT NO.: 23002

C7.0

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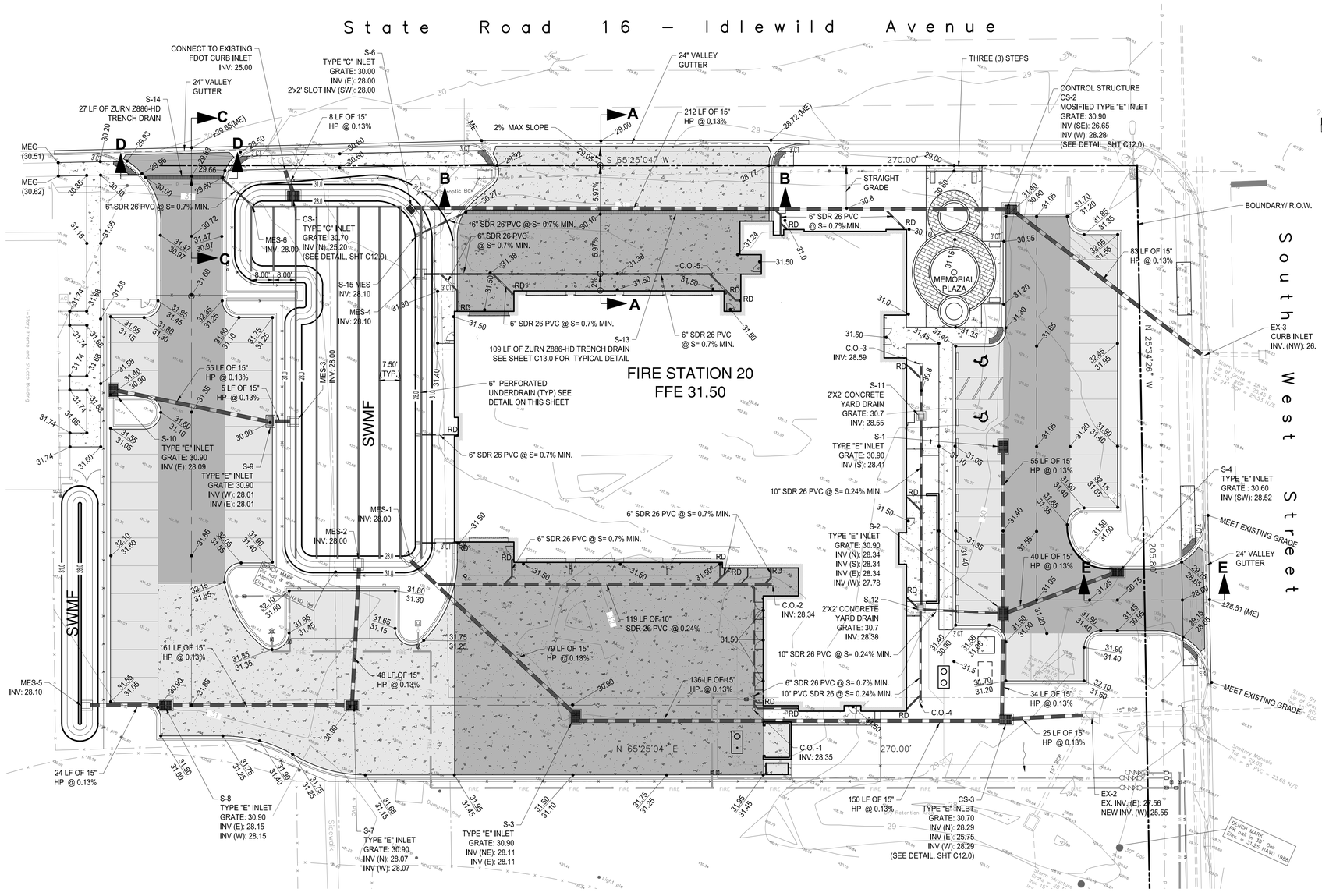

SCALE IN FEET

DRAINAGE LEGEND

× 65.46	EXISTING SPOT ELEVATION
65.0 •	GROUND ELEVATION
65.35 •	PAVEMENT SPOT ELEVATION
65.20 / 64.70 •	TOP OF CURB OR SIDEWALK/ EDGE OF PAVEMENT
65.40 / 65.3 •	TOP OF PAVEMENT OR SIDEWALK/ GROUND ELEVATION
51.00 (ME) •	APPROX. ELEVATION - MATCH EXISTING
	DRAINAGE FLOW

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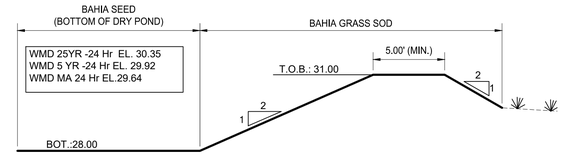
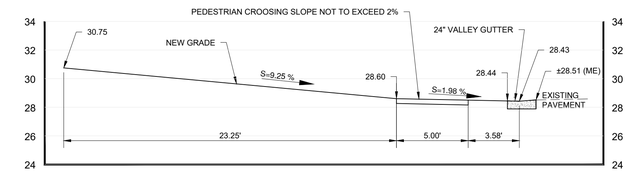
NOTES:

1. UNLESS OTHERWISE NOTED, INSTALL CONCRETE SPLASH BLOCKS AT ALL ROOF DRAIN DOWNSPOUTS
2. COORDINATE ALL EARTHWORK ACTIVITIES WITH GEOTHECNICAL AND ENVIROMENTAL REPORTS
3. ALL DISTURBED AREAS SHALL BE SODDED WITH BAHIA SOD, UNLESS OTHERWISE NOTED ON THE LANDSCAPE PLAN.
4. ALL SIDEWALKS HAVE A MINIMUM 2' WIDE SHOULDER WITH SLOPE MATCHING SIDEWALK CROSS SLOPE.
5. ALL CLEANOUTS IN VEHICLE USE AREAS SHALL HAVE H20 RATED COVERS.



POND TYPICAL SECTION
SCALE=1:5



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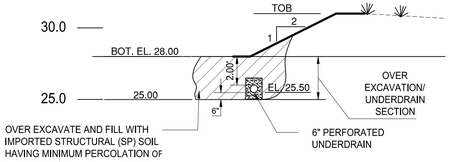

POND WITH UNDERDRAIN TYPICAL SECTION
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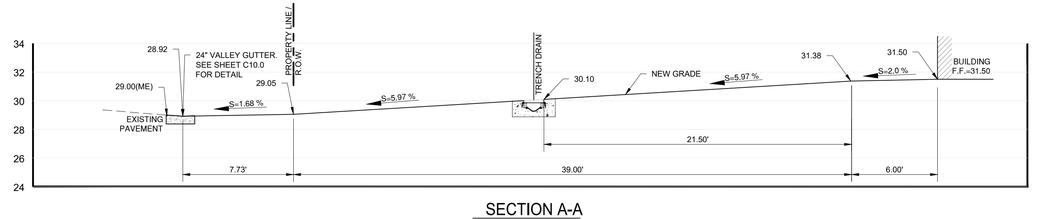

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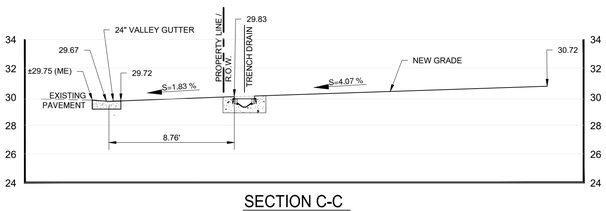
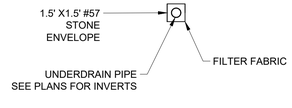
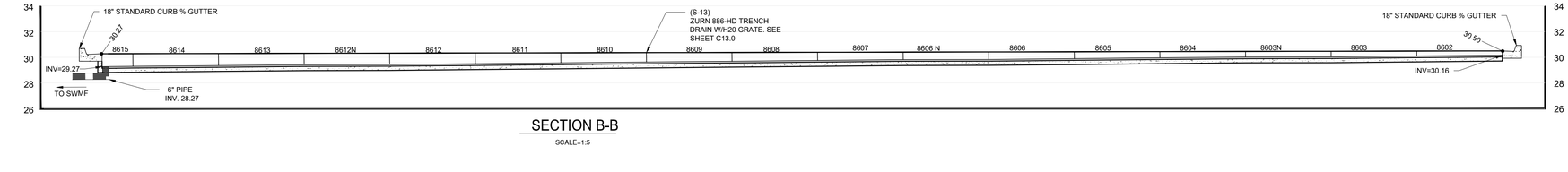


SECTION C-C
SCALE=1:5



TYPICAL UNDERDRAIN DETAIL
NTS



SECTION B-B
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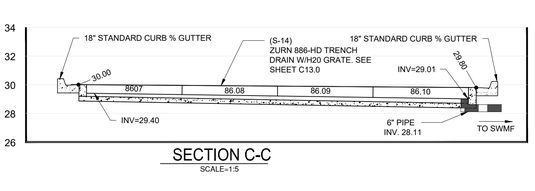

SECTION C-C
SCALE=1:5

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PHONE: 904.425.1190
FL LICENSE NUMBER AA26002165
W.W.W. DASHERHURST.COM

STRUCTURAL ENGINEER
G.M. HILL ENGINEERING, INC.
9700 PHILIPS HWY, SUITE 101
JACKSONVILLE, FL 32256

MEP ENGINEER
POWELL & HINKLE ENGINEERING, P.A.
1409 KINGSLEY AVENUE, BLDG 12A
ORANGE PARK, FL 32073

CIVIL ENGINEER
GOODSON BERGEN & ASSOC
11555 CENTRAL PARKWAY, SUITE 103
JACKSONVILLE, FL 32224

CLAY COUNTY
CLAY CO FIRE STATION 20

1305 FL-16, GREEN COVE SPRINGS, FL

REVISIONS

#	DATE	DESCRIPTION

JEFFREY E. BERGEN LICENSE No. 63060 STATE OF FLORIDA PROFESSIONAL ENGINEER
Jeffrey Bergen, P.E. FL 63060

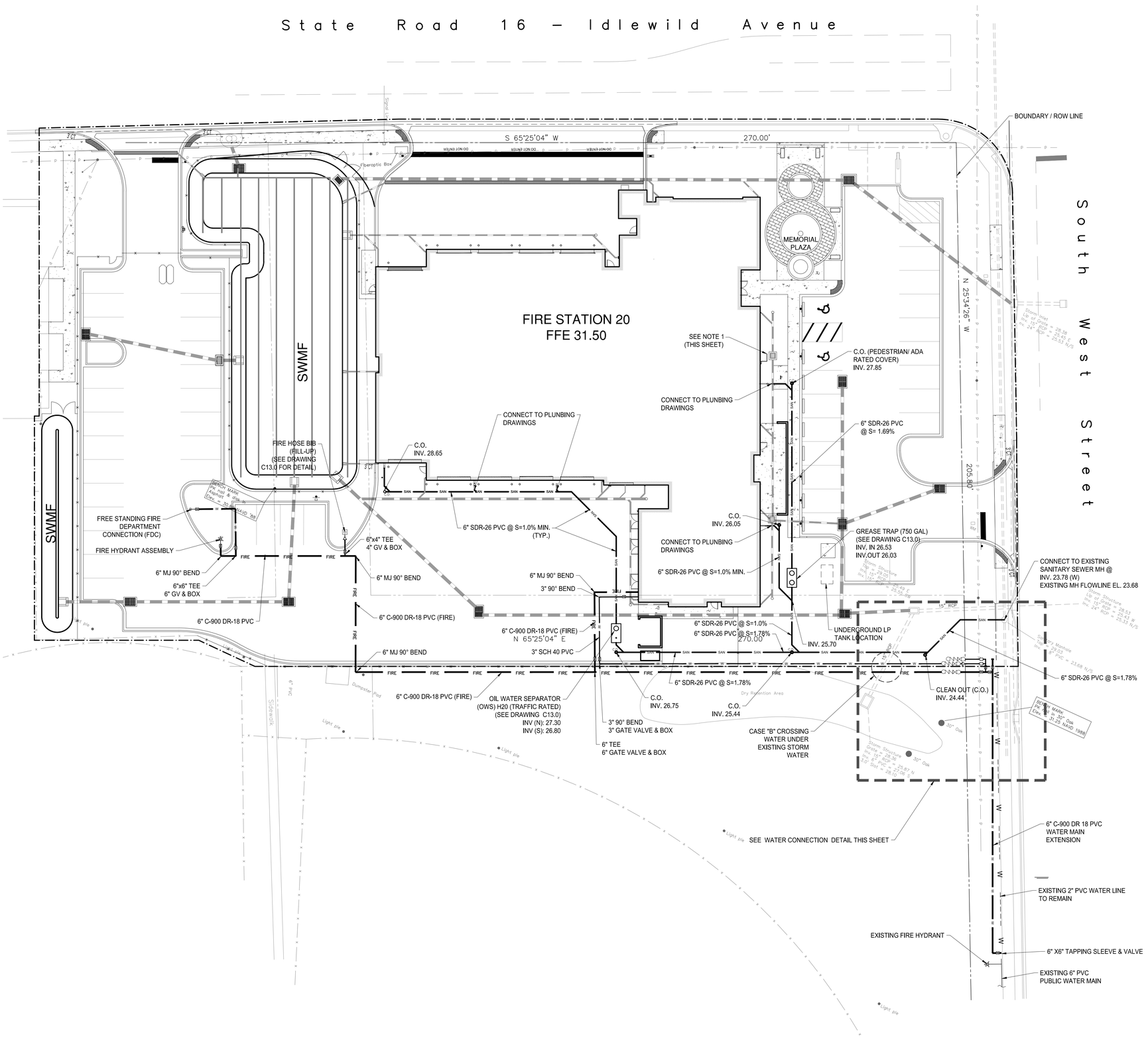
DATE: 11/10/2023

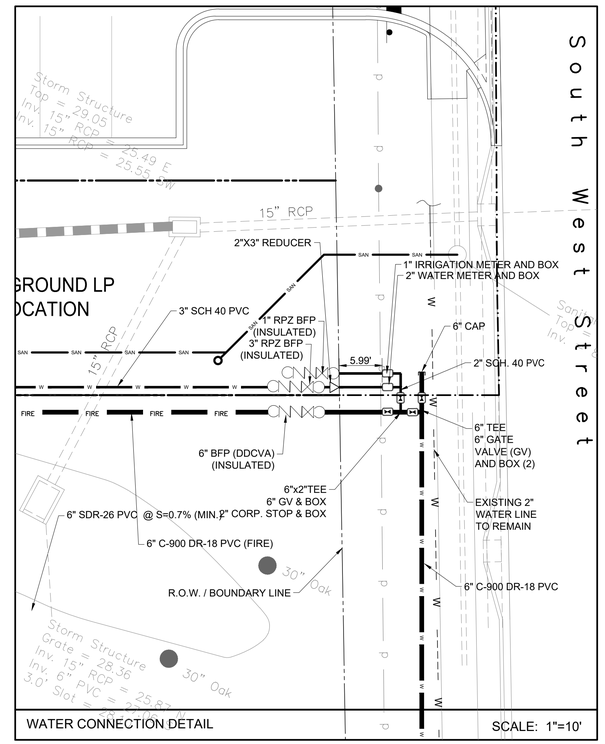
GRADING AND DRAINAGE

PROJECT NO.: 23002

C8.0

100% DOCUMENTS





WATER CONNECTION DETAIL SCALE: 1"=10'

NOTES :

1. GAS SUPPLY DESIGN TO BUILDING TO BE PROVIDED BY GAS UTILITY / OTHERS.
2. ALL SANITARY SEWER "WYE'S" SHALL BE SWEEPING WYE'S, NOT "T-WYE'S".

GBA
Goodson Bergen and Associates
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DASHER HURST ARCHITECTS
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#	DATE	DESCRIPTION

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12/5/2023
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JEFFREY E. BERGEN LICENSE No. 63060 STATE OF FLORIDA PROFESSIONAL ENGINEER
Jeffrey E. Bergen, P.E. FL #63060

DATE: 11/10/2023

UTILITY PLAN

PROJECT NO.: 23002

C9.0

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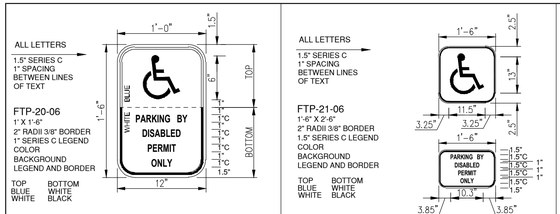
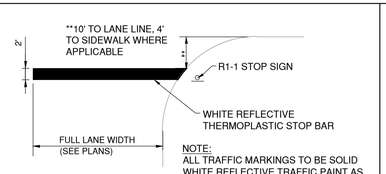
BEFORE YOU DIG !
CALL SUNSHINE STATE ONE CALL OF FLORIDA
AT LEAST TWO FULL BUSINESS DAYS BEFORE DIGGING OR DISTURBING EARTH
1-800-432-4770
811 Know what's below. Call before you dig.

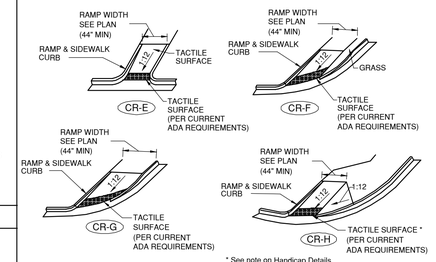


SPECIAL SIGN DETAIL (FDOT INDEX 700-102)



NOTE:
ALL TRAFFIC MARKINGS TO BE SOLID WHITE REFLECTIVE TRAFFIC PAINT AS PER DIMENSIONS BELOW. (UNLESS OTHERWISE NOTED)

STOP BAR DETAIL

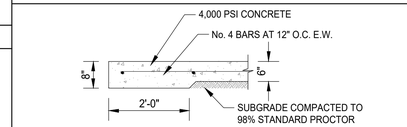


GENERAL NOTES:

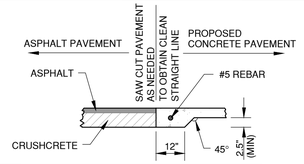
1. CURB CUT RAMPS ARE TO BE CONSTRUCTED ON ALL CURBED FACILITIES, BUT ONLY AT THOSE LOCATIONS WHERE A MARKED CROSSWALK ADJOINS A SIDEWALK; THE CROSSWALK & SIDEWALK EACH CAN BE EITHER EXISTING TO REMAIN OR NEW MARKINGS & CONSTRUCTION.
2. RAMP LOCATIONS ARE TO BE COORDINATED WITH & IN CONFORMANCE WITH CROSSWALK MARKING DETAILS AS SHOWN IN THE PLANS.
3. IF A CURB RAMP IS LOCATED WHERE PEDESTRIANS MUST WALK ACROSS THE RAMP, THEN IT SHALL HAVE FLARED SIDES; THE MAXIMUM SLOPE OF THE FLARE SHALL BE 12:1.
4. RAMPS TO BE CONSTRUCTED AT ALL LOCATIONS SHOWN ON PLANS EVEN WHEN SIDEWALK IS NOT CONSTRUCTED CONCURRENTLY.
5. BASIS OF PAYMENT: CONTRACT UNIT PRICE ESTABLISHED IN THE PROPOSAL FOR CURB & GUTTER.
6. THIS STANDARD IS NOT INTENDED TO BE ABSOLUTE. FINAL DETERMINATIONS TO BE MADE IN THE FIELD.
7. MIAMI CURB WITHIN LIMITS OF WHEEL CHAIR RAMP TO BE "LOW CURB" TO ACCOMMODATE 12:1 MAXIMUM RATE FROM GUTTER TO END OF TRANSITION. MIAMI TYPE CURB & GUTTER DETAILS SIMILAR, CURB TRANSITION LENGTH SHALL BE 3'-0".
8. SIDEWALK WIDTH TO MEET REQUIREMENTS OF THE GOVERNING STANDARDS, REGULATIONS AND SPECIFICATIONS, BUT NOT LESS THAN 4'-0".
9. ALL NEW CONCRETE RAMP SURFACES TO RECEIVE TRUNCATED DOMES.
10. DIAGONAL RAMPS ARE TO BE USED AT RADIUS LESS THAN 50'

DETECTABLE WARNING NOTE:
WHERE SHOWN ON PLANS, A CURB RAMP SHALL HAVE A DETECTABLE WARNING COMPLYING WITH 4.29.2 (F.A.C.B.C.). THE DETECTABLE WARNING SHALL EXTEND THE FULL WIDTH AND 2' OF THE CURB RAMP AND SHALL BE CAST-IN-PLACE TACTILE MATS BY ADA SOLUTIONS (TYP). CURB RAMPS SHALL BE STABLE, FIRM, SLIP-RESISTANT, AND SHALL COMPLY WITH 4.5 F.A.C.B.C. RAMP STANDARD WIDTH IS 5'. NO RAMP IN ANY CASE SHALL HAVE A WIDTH LESS THAN 44 INCHES.

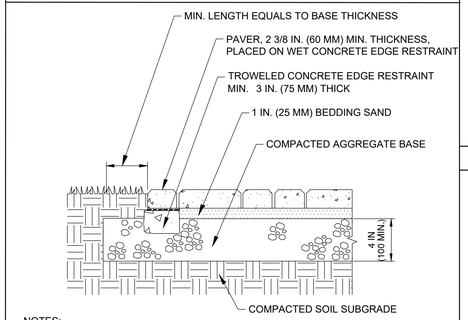
RAMP DETAILS



DUMPSTER PAD PAVEMENT SECTION



ASPHALT PAVEMENT TO CONCRETE PAVEMENT JOINT DETAIL



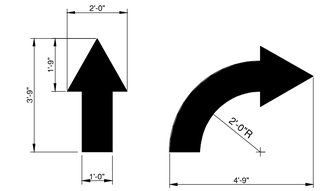
NOTES:

1. USE 5:1 (AGGRGATE: CEMENT) MIX FOR CONCRETE EDGE.
2. RECOMMENDED FOR ONLY NON-FREEZE THAW AREAS OVER WELL DRAINING SOILS.
3. CONSTRUCTION OF THIS DETAIL CAN BE USED ONLY ON RESIDENTIAL DRIVEWAYS IN NON-FREEZE THAW AREAS.
4. THICKNESS OF AGGREGATE BASE WILL VARY SUBGRADE CONDITIONS AND CLIMATE. COLDER CLIMATES MAY REQUIRED THICKER BASES,

PATIO/WALK W/ TROWELED CONCRETE EDGE RESTRAINT

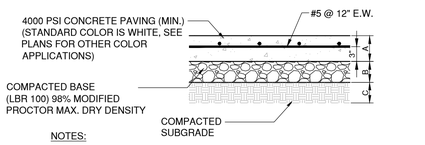
NOTES:

1. ARROWS REVERSED FOR LEFT TURN APPLICATION.
2. ALL TRAFFIC FLOW ARROWS TO BE SOLID WHITE REFLECTIVE TRAFFIC PAINT AS PER DIMENSIONS BELOW.
3. THERMOPLASTIC PAINT IN ALL PUBLIC RIGHTS-OF-WAY.



TYPICAL PAVEMENT MARKINGS

CONCRETE SECTION	A	B	C
HEAVY DUTY (NON-REINFORCED)	7"	SEE NOTE 1	SEE NOTE 1
SUPER DUTY (SD) (REINFORCED)	8"	SEE NOTE 1	SEE NOTE 1
DUMPSTERPAD (SEE NOTE 5)	6"	SEE NOTE 1	SEE NOTE 1



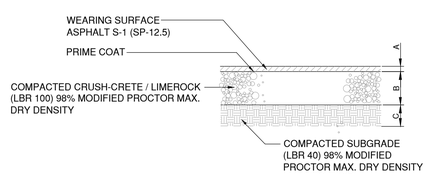
NOTES:

1. COMPACTED BASE/SUBGRADE SHOULD BE AS SPECIFIED IN GEOTECHNICAL REPORT.
2. SEE PORTLAND CEMENT PERVIOUS CONCRETE SPECS BY FCPA. SEE FDOT AND AMERICAN CONCRETE INSTITUTE (ACI) FOR ALL OTHER CONCRETE REQUIREMENTS.
3. SEE GEOTECHNICAL REPORT FOR ADDITIONAL INFORMATION.
4. STANDARD DUTY WILL NOT HAVE STEEL REINFORCING.
5. UNLESS NOTED OTHERWISE BY ARCHITECT.

CONCRETE PAVEMENT SECTION

DIMENSION & TYPE

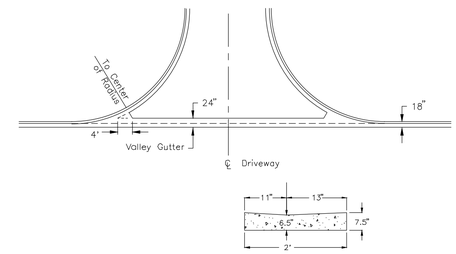
ASPHALT SECTION	A	B	C
HEAVY DUTY (HD)	2.5"	8"	SEE NOTE 1
STANDARD DUTY (STD)	1.5"	6"	SEE NOTE 1



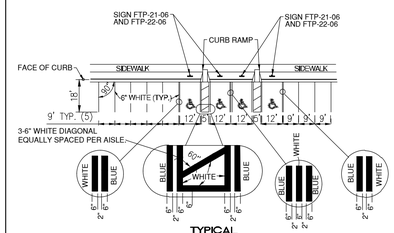
NOTES:

1. COMPACTED SUBGRADE SHOULD BE AS SPECIFIED IN SOILS REPORT.
2. CONTRACTOR SHALL REVIEW GEOTECHNICAL REPORT FOR PAVEMENT SECTION RECOMMENDATIONS AND CONSTRUCT MOST STRINGENT SECTION BASED ON THE REPORT AND THIS DETAIL.
3. CONTRACTOR SHALL PROVIDE SEPARATE PRICE TO DO ALL ASPHALT AREAS WITH CONCRETE SECTION AS SHOWN IN DETAIL ABOVE.

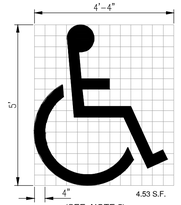
ASPHALT PAVEMENT SECTION



TYPICAL CONCRETE VALLEY (MIN. 3500 PSI CONC.)



TYPICAL
PAVEMENT MARKING FOR PARKING



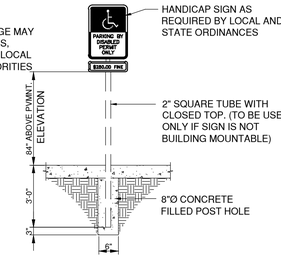
UNIVERSAL SYMBOL OF ACCESSIBILITY

NOTES:

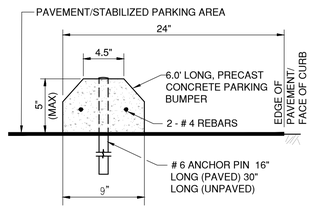
1. DIMENSIONS ARE TO THE CENTERLINE OF MARKINGS.
2. AN ACCESS AISLE IS REQUIRED FOR EACH ACCESSIBLE SPACE WHEN ANGLE PARKING IS USED.
3. CRITERIA FOR PAVEMENT MARKINGS ONLY. NOT PUBLIC SIDEWALK CURB RAMP LOCATIONS. FOR RAMP LOCATIONS REFER TO PLANS.
4. MOUNT FTP-22-06 SIGN BELOW THE FTP-21-06 SIGN.
5. USE OF THE PAVMENT SYMBOL IN ACCESSIBLE PARKING SPACES IS OPTIONAL. WHEN PAVEMENT SYMBOL IS USED, THE SYMBOL IS EITHER 3'-0" OR 5'-0" HIGH AND WHITE IN COLOR.

HANDICAP SPACE DETAIL

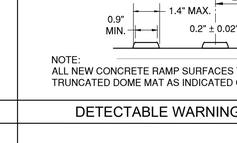
NOTE:
ADDITIONAL SIGNAGE MAY BE REQUIRED (FINES, ETC.) CHECK WITH LOCAL GOVERNING AUTHORITIES



HANDICAP PARKING SIGN DETAIL

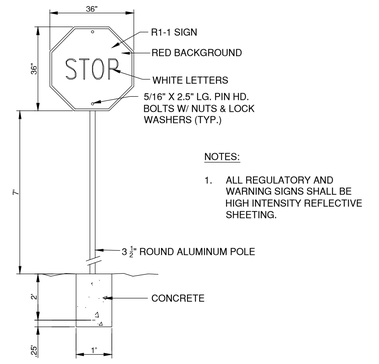


CONCRETE WHEELSTOP DETAIL

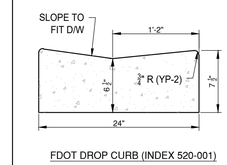


NOTE:
ALL NEW CONCRETE RAMP SURFACES TO RECEIVE TRUNCATED DOME MAT AS INDICATED ON GEOMETRY PLAN.

STOP SIGN DETAIL



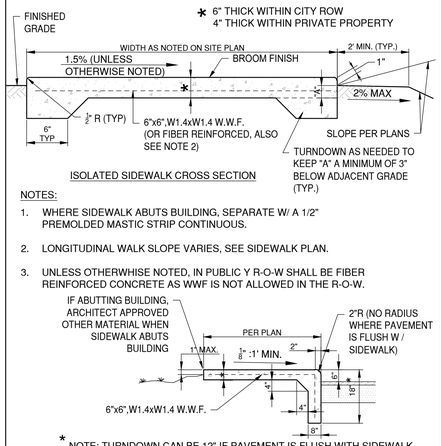
STOP BAR DETAIL



NOTES:

1. EARTHWORK SHALL BE PLACED TO TOP OF CURB ON BACKSIDE OF CURB WHERE APPLICABLE.
2. CONCRETE STRENGTH SHALL BE IN ACCORDANCE WITH FDOT STANDARDS

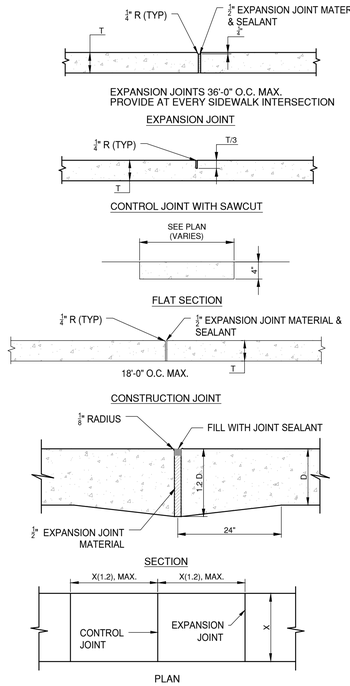
STANDARD CURB TEMPLATES



NOTES:

1. SIDEWALKS SHALL BE CONSTRUCTED OF PORTLAND CEMENT CONCRETE, CLASS NON-STRESS (NS), AND ALL METHODS OF CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDING TO THE LATEST EDITION OF THE AMERICAN CONCRETE INSTITUTE STANDARD SPECIFICATIONS.
2. EXPANSION JOINTS SHALL ALSO BE APPLIED AT ALL SIDEWALK INTERSECTIONS.
3. SEE PLANS FOR LOCATION OF DETECTABLE WARNINGS.
4. CONCRETE FOR SIDEWALKS SHALL BE 3,000 PSI MINIMUM, 5" MAX. SLUMP.
5. CONCRETE WITHIN CITY ROW SHALL BE 6" THICK, 3000 PSI W/ FIBER MESH (NO REBAR ALLOWED)
6. ALL BASES FOR SIDEWALK SHALL BE 8" COMPACTED SUBGRADE, 95% MAX. DENSITY (AASHTO T-180).

CONCRETE SIDEWALK DETAILS



JOINT DETAILS SECTION

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and Associates
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1305 FL-16, GREEN COVE SPRINGS, FL

REVISIONS

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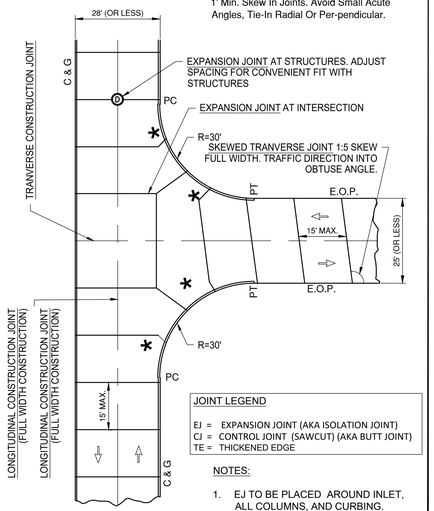
JEFFREY E. BERGEN
LICENSE
No. 63060
STATE OF FLORIDA
PROFESSIONAL ENGINEER

DATE: 11/10/2023

CONSTRUCTION DETAILS

PROJECT NO.: 23002

C10.0
100% DOCUMENTS



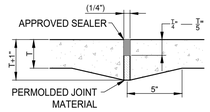
* Note:
1' Min. Skew In Joints. Avoid Small Acute Angles, Tie-In Radial Or Per-pendicular.

JOINT LEGEND

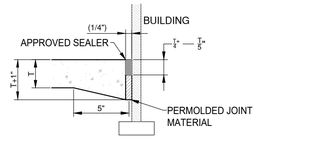
EJ = EXPANSION JOINT (AKA ISOLATION JOINT)
CJ = CONTROL JOINT (SAWCUT) (AKA BUTT JOINT)
TE = THICKENED EDGE

NOTES:

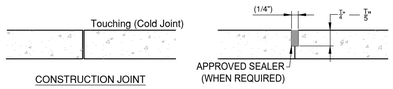
1. EJ TO BE PLACED AROUND INLET, ALL COLUMNS, AND CURBING.
2. ALL JOINTS SHALL BE SEALED.
3. ALL CONCRETE WORK SHALL BE PERFORMED IN ACCORDANCE WITH ACI STANDARDS AND SPECIFICATIONS.
4. CONCRETE SHALL BE 5.5" THICK, 4,000 PSI



EXPANSION JOINT



CONCRETE APRON-BULDING INTERFACE EXPANSION JOINT



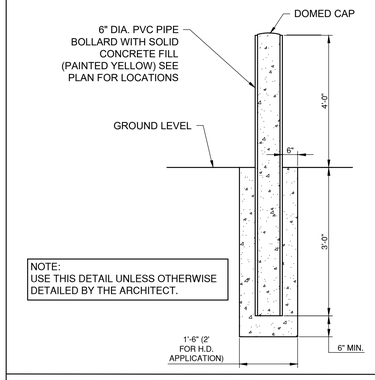
CONSTRUCTION JOINT

CONTRACTION JOINT

NOTE

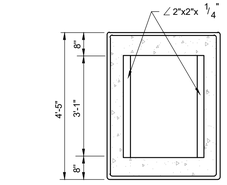
ALL CONCRETE WORK SHALL BE PERFORMED IN ACCORDANCE WITH ACI STANDARDS AND SPECIFICATIONS.

RIGID PAVEMENT JOINT DETAILS

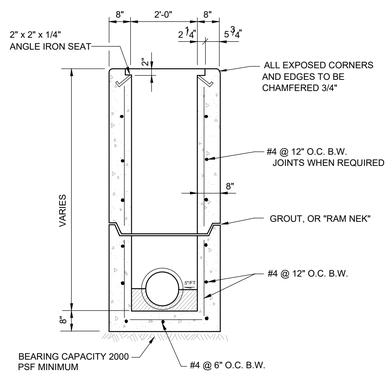


NOTE:
USE THIS DETAIL UNLESS OTHERWISE DETAILED BY THE ARCHITECT.

BOLLARD DETAIL



PLAN

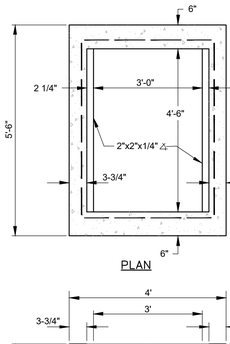


SECTION

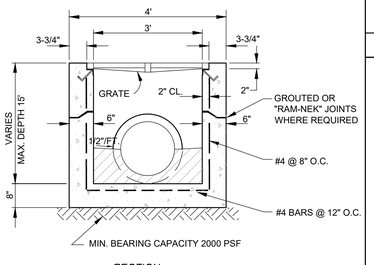
NOTES:

1. USE H20 TRAFFIC BEARING GRATE.
2. PIPES MUST NOT BE IN CONSTRUCTION JOINTS.
3. PIPES SHALL BE FLUSH WITH INSIDE WALL STRUCTURE.
4. DIMENSIONS MAY VARY SLIGHTLY BUT H-20 LOADING MUST BE MET.
5. CONCRETE DESIGN STRENGTH 4,000 P.S.I.

TYPE 'C' INLET DETAIL



PLAN



SECTION

NOTES:

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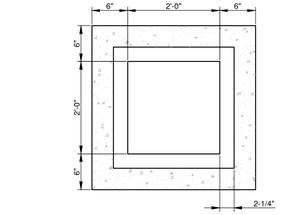
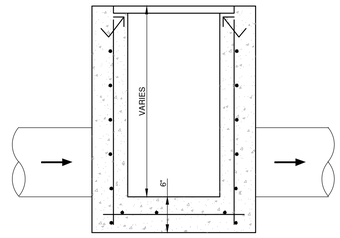
2. PIPES MUST NOT BE IN CONSTRUCTION JOINTS.
3. PIPES SHALL BE FLUSH WITH INSIDE WALL STRUCTURE.
4. DIMENSIONS MAY VARY SLIGHTLY BUT H-20 LOADING MUST BE MET.
5. CONCRETE DESIGN STRENGTH 4,000 P.S.I.

TYPE 'E' INLET DETAIL



PLAN

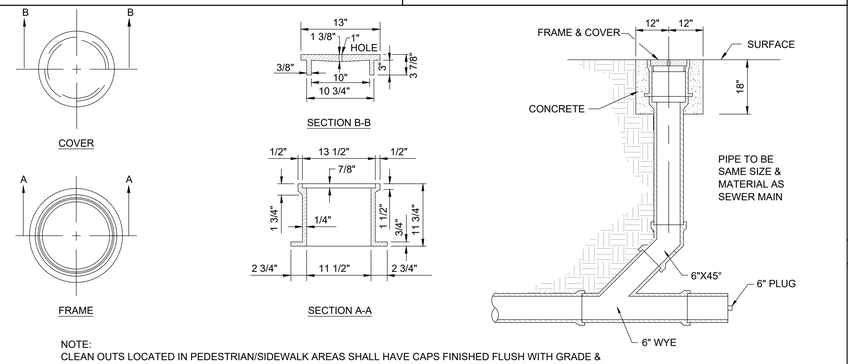


SECTION

NOTES:

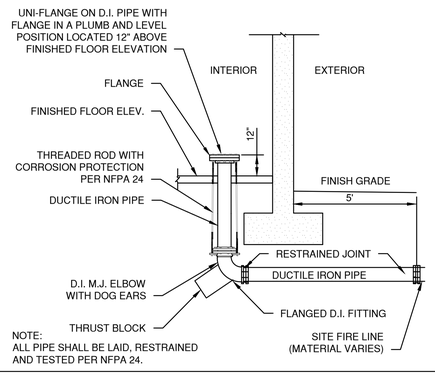
1. USE H-15 TRAFFIC BEARING GRATE, USF 6217 OR EQUAL.
2. PIPES MUST NOT BE IN CONSTRUCTION JOINTS.
3. PIPES SHALL BE FLUSH WITH INSIDE WALL STRUCTURE.
4. DIMENSIONS MAY VARY SLIGHTLY BUT H-15 LOADING MUST BE MET.
5. CONCRETE DESIGN STRENGTH 4,000 P.S.I.
6. PRECAST IN ACCORDANCE WITH LATEST EDITIONS OF ASTM C 478.

CONCRETE YARD DRAIN DETAIL



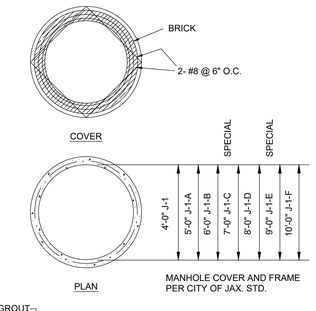
NOTE:
CLEAN OUTS LOCATED IN PEDESTRIAN/SIDEWALK AREAS SHALL HAVE CAPS FINISHED FLUSH WITH GRADE & BE ADA RATED. CLEANOUTS IN VEHICLE TRAFFIC AREAS SHALL BE FLUSHED WITH GRADE AND H-20 RATED.

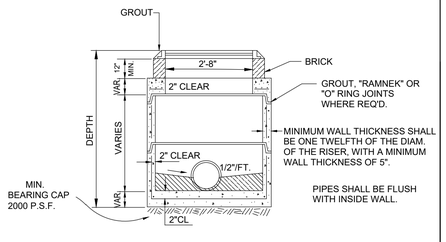
CLEANOUT DETAIL



NOTE:
ALL PIPE SHALL BE LAID, RESTRAINED AND TESTED PER NFPA 24.

SPRINKLER RISER DETAIL



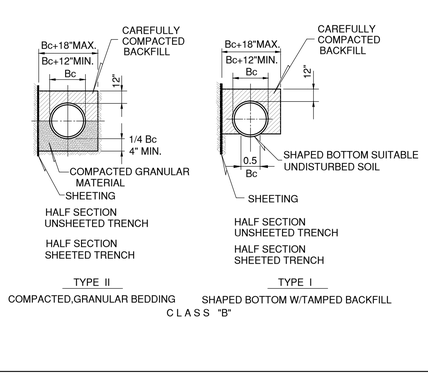


SECTION

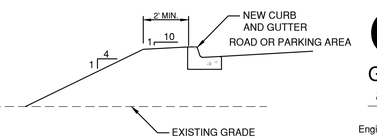
NOTES:

1. USE H20 TRAFFIC BEARING GRATE.
2. PIPES MUST NOT BE IN CONSTRUCTION JOINTS.
3. PIPES SHALL BE FLUSH WITH INSIDE WALL STRUCTURE.
4. DIMENSIONS MAY VARY SLIGHTLY BUT H-20 LOADING MUST BE MET.
5. CONCRETE DESIGN STRENGTH 4,000 P.S.I.
6. PRECAST IN ACCORDANCE WITH LATEST EDITIONS OF ASTM C 478.

STORM SEWER MANHOLE DETAIL

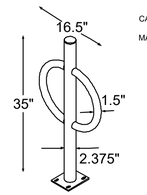


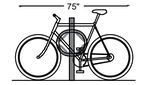
BEDDING DETAIL



TYPICAL GRADING CONNECTION DETAIL

BIKE HITCH
Submittal Sheet





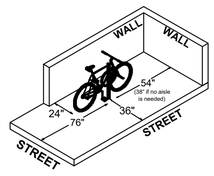
CAPACITY 2 Bikes

MATERIALS
- ☐ Standard — *Centerbeam: 2" schedule 40 pipe (2.375" OD) Ring: 1.5" OD 11 gauge tube*
- ☐ Lightweight — **Powder coat or galvanized only, Surface mount only. Centerbeam: 2" schedule 10 pipe (2.375" OD) Ring: 1.5" OD 11 gauge tube*

FINISHES
- ☐ Galvanized — *An after fabrication hot dipped galvanized finish is our standard option.*
- ☐ Powder Coat — *Our powder coat finish assures a high level of adhesion and durability by following these steps: 1. Sandblast 2. Epoxy primer electrostatically applied 3. Final thick TGIC polyester powder coat*
- ☐ PVC Dip (plastisol) — *Other colors available by special order (minimum orders apply)*
- ☐ Stainless — *Stainless Steel: 304 grade stainless steel material finished in either a high polished shine or a satin finish.*

MOUNT OPTIONS
- ☐ **In-ground** — *In ground mount is embedded into concrete base. Specify in ground mount for this option.*
- ☐ Surface — *Foot Mount has a 5"x6"x.25" foot with four anchors per foot. Specify foot mount for this option.*

BIKE HITCH
Space use and Setbacks



Wall Setbacks:
For racks set parallel to a wall:
Minimum:12"
Recommended: 24"

For racks set perpendicular to a wall
Minimum:35" (Centerline Measurement)
Recommended: 38" (54" is aisle is needed between bike and wall)

Distance Between Racks:
For racks set facing one another:
Minimum: 24"
Recommended: 38"

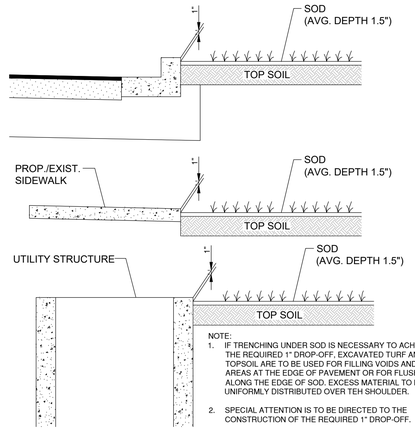
For racks set end to end:
Minimum:90"
Recommended: 111"

Street Setbacks:
Minimum: 36"

DERO +PLANET BIKE

www.dero.com | 1-888-337-6729

DERO 2-SPACE BIKE RACK



NOTE:
1. IF TRENCHING UNDER SOD IS NECESSARY TO ACHIEVE THE REQUIRED 1" DROP-OFF, EXCAVATED TURF AND TOPSOIL ARE TO BE USED FOR FILLING VOIDS AND LOW AREAS AT THE EDGE OF PAVEMENT OR FOR FLUSHING ALONG THE EDGE OF SOD. EXCESS MATERIAL TO BE UNIFORMLY DISTRIBUTED OVER TEH SHOULDER.
2. SPECIAL ATTENTION IS TO BE DIRECTED TO THE CONSTRUCTION OF THE REQUIRED 1" DROP-OFF.

SOD DETAILS

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Goodson Bergen and Associates
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POWELL & HINKLE ENGINEERING, P.A.
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CIVIL ENGINEER
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JACKSONVILLE, FL 32224

CLAY COUNTY
CO FIRE STATION 20
1305 FL-16, GREEN COVE SPRINGS, FL

REVISIONS

#	DATE	DESCRIPTION

JEFFREY E. BERGEN, PE
THIS ITEM HAS BEEN ELECTRONICALLY SIGNED AND SEALED BY JEFFREY E. BERGEN, PE ON
12/5/2023
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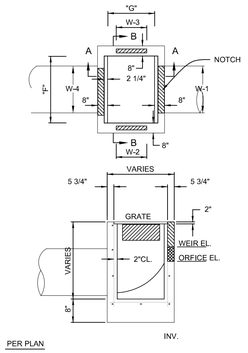
JEFFREY E. BERGEN LICENSE No. 63060 STATE OF FLORIDA PROFESSIONAL ENGINEER

DATE: 11/10/2023

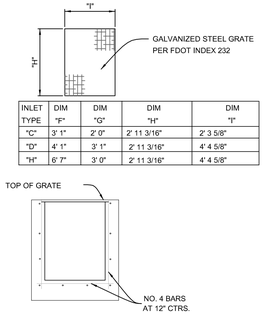
CONSTRUCTION DETAILS

PROJECT NO.: 23002

C11.0
100% DOCUMENTS

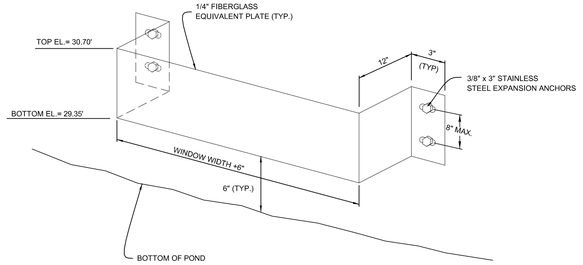


SECTION A-A



INLET TYPE	DIM "F"	DIM "G"	DIM "H"	DIM "I"
"C"	3' 1"	2' 0"	2' 11 3/16"	2' 3 5/8"
"D"	4' 1"	3' 1"	2' 11 3/16"	4' 4 5/8"
"H"	6' 7"	3' 0"	2' 11 3/16"	4' 4 5/8"

SECTION B-B



FLAT PLATE SKIMMER DETAILS FOR CONTROL STRUCTURES

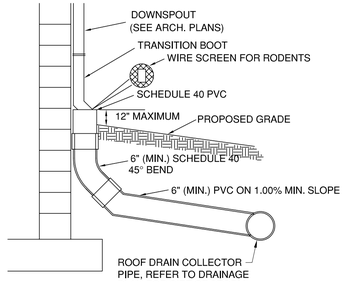
ALL STRUCTURES SHALL HAVE A BENCHMARK PLACED BY A LICENSED PSM & RECORDED WITH THE RECORD DATA.

Structure	FDOT Inlet Type	Grate Elev. (FT)	Notch Elev. (FT)	Notch Width (IN)	Orifice Elev.(FT)	Orifice Dia. (IN)	Weir Elev. (FT)	Weir 1 (W-1) Window Width (IN)	Weir 2 (W-2) Window Width (IN)	Weir 3 (W-3) Window Width (IN)	Weir 4 (W-4) Window Width (IN)	Pipe Size (IN)	Pipe Inv. (FT)	Skimmer Required?
CS-1	C	30.70	N/A	N/A	N/A	N/A	29.85	N/A	N/A	N/A	14.5	15	25.20	YES

CS-1
OUTLET CONTROL STRUCTURE DETAIL

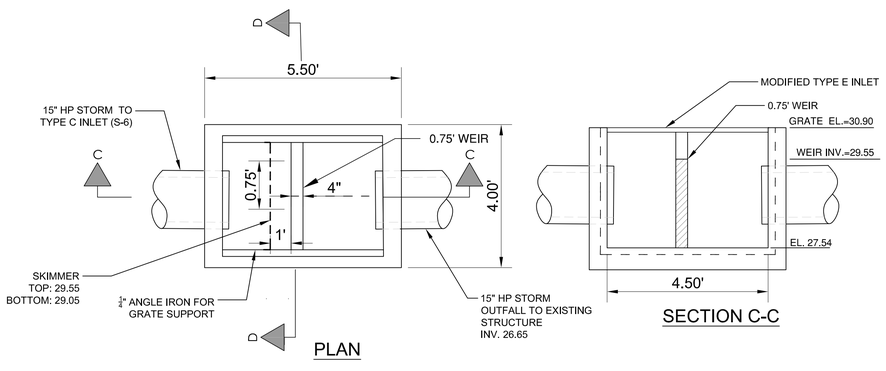
NOTES:

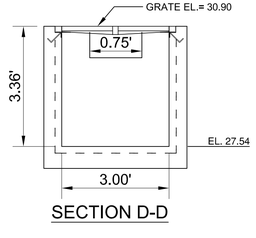
1. EACH GRATE SHALL HAVE A MIN. WEIGHT OF 240 LBS.
2. PRECAST IN ACCORDANCE WITH LATEST EDITIONS OF ASTM C76 AND C478.
3. 6"MIN. CLEARANCE FROM O.D. OF PIPE TO INSIDE WALL OF INLET.
4. GROUT OR "RAM-NEK" JOINTS WHERE REQUIRED.
5. CONCRETE 4000 P.S.I.



NOTE:
ALL DOWNSPOUT COLLECTOR PIPE SHALL BE SCHEDULE 40 PVC UNLESS OTHERWISE NOTED.

DOWNSPOUT DETAIL



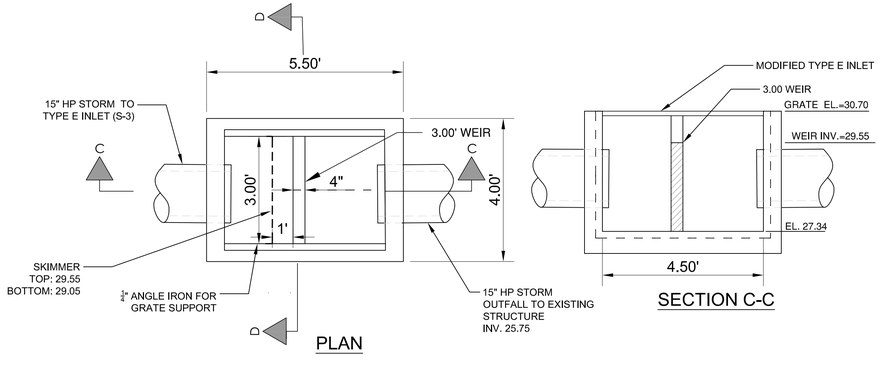


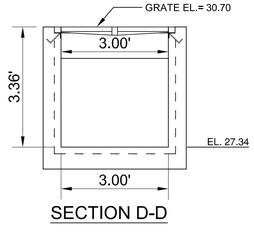
CS-2
MODIFIED TYPE "E" CONTROL STRUCTURE

SCALE=1:3

NOTES:

1. EACH GRATE SHALL HAVE A MIN. WEIGHT OF 240 LBS.
2. PRECAST IN ACCORDANCE WITH LATEST EDITIONS OF ASTM C76 AND C478.
3. 6"MIN. CLEARANCE FROM O.D. OF PIPE TO INSIDE WALL OF INLET.
4. GROUT OR "RAM-NEK" JOINTS WHERE REQUIRED.
5. CONCRETE 4000 P.S.I.





CS-3
MODIFIED TYPE "E" CONTROL STRUCTURE

SCALE=1:3

NOTES:

1. EACH GRATE SHALL HAVE A MIN. WEIGHT OF 240 LBS.
2. PRECAST IN ACCORDANCE WITH LATEST EDITIONS OF ASTM C76 AND C478.
3. 6"MIN. CLEARANCE FROM O.D. OF PIPE TO INSIDE WALL OF INLET.
4. GROUT OR "RAM-NEK" JOINTS WHERE REQUIRED.
5. CONCRETE 4000 P.S.I.

GBA
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CLAY COUNTY FIRE STATION 20

1305 FL-16, GREEN COVE SPRINGS, FL

REVISIONS

#	DATE	DESCRIPTION

JEFFREY E. BERGEN, PE
THIS ITEM HAS BEEN ELECTRONICALLY SIGNED AND SEALED BY JEFFREY E. BERGEN, PE ON
12/5/2023

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JEFFREY E. BERGEN LICENSE No. 63060 STATE OF FLORIDA PROFESSIONAL ENGINEER
Jeffrey Bergen, P.E. FL 63060

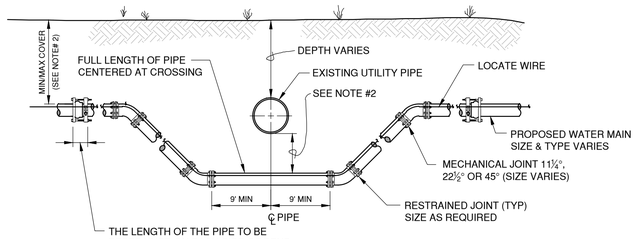
DATE: 11/10/2023

CONSTRUCTION DETAILS

PROJECT NO.: 23002

C12.0

100% DOCUMENTS

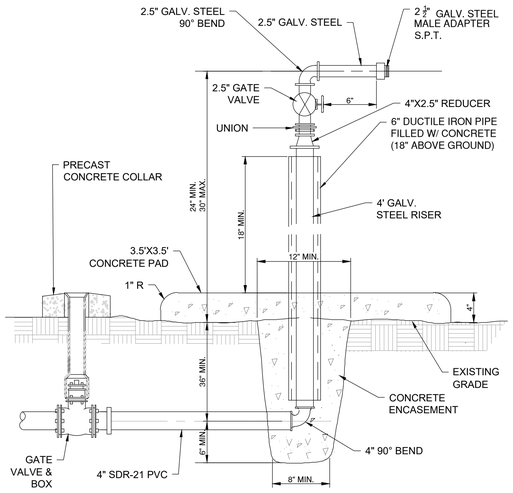


CASE "B" CROSSING

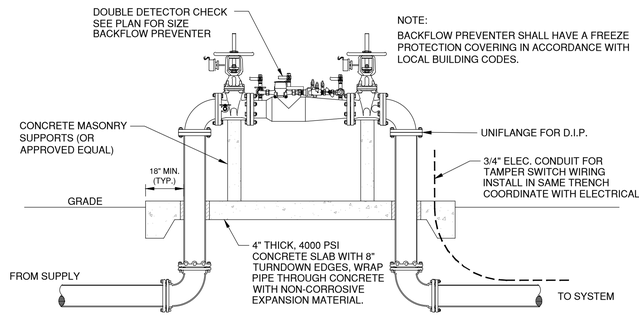
NOTES:

1. THE SOILS BETWEEN THE NEW MAIN AND THE CONFLICT PIPE SHALL BE COMPACTED TO 98% OF THE MAXIMUM DENSITY AS DETERMINED BY THE LABORATORY MODIFIED PROCTOR TEST, ASTM D 1557
2. SEE CITY OF GREEN COVE SPRINGS STANDARD WATER AND SEWER SYSTEM TECHNICALSPECIFICATION

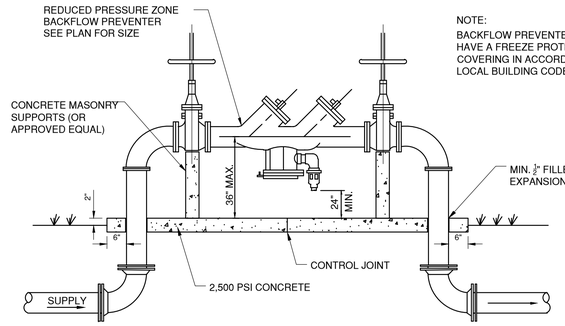
ADJUSTMENT UNDER EXISTING UTILITIES
MECHANICAL RESTRAINTS



FIRE HOSE BIBB DETAIL



DOUBLE DETECTOR CHECK BACKFLOW PREVENTER DETAIL (INSULATED)



BACKFLOW PREVENTER INSTALLATION DETAIL (INSULATED)

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JACKSONVILLE, FL 32224

CLAY COUNTY
CLAY CO FIRE STATION 20
1305 FL-16, GREEN COVE SPRINGS, FL

REVISIONS

#	DATE	DESCRIPTION

JEFFREY E. BERGEN, PE
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DATE: 11/10/2023

CONSTRUCTION DETAILS

PROJECT NO.: 23002

C13.0
100% DOCUMENTS

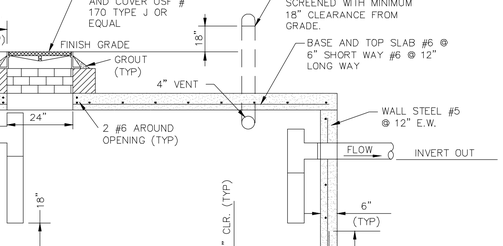
ZURN

Z886-HD
6-3/4 [171] WIDE REVEAL TRENCH DRAIN SYSTEM WITH HEAVY-DUTY FRAME ASSEMBLY

SPECIFICATION SHEET TAG _____

Dimensional Data (inches and [mm]) are Subject to Manufacturing Tolerances and Change Without Notice

SPECIFYING ENGINEER IS RESPONSIBLE FOR CONCRETE ENCASEMENT AND REINFORCING BASED UPON APPLICATION AND LOCAL CODES



NOTE: + Actual Channel length is 81 1/4 [2064] to allow for overlap.

ENGINEERING SPECIFICATION: Zurn Z886-HD
Channels are 80" [2032 mm] long, 6-3/4" [171 mm] wide reveal and have a 4" [102 mm] throat. Modular channel sections are made of 0% water absorbent High Density Polyethylene (HDPE). Channels have a positive mechanical connection between channel sections that will not separate during the installation and mechanically lock into the concrete surround every 10" [254 mm]. Channels weigh less than 2.31 lbs [1.05kg] per linear foot, have a smooth, 1-1/2" [38 mm] radiused self cleaning bottom with a Manning's coefficient of .009 and .75% or neutral 0% built in slope. Channels have rebar clips standard to secure trench in its final location. Channels provided with standard DGC grates that lock down to frame. Zurn 5.375" [137 mm] wide reveal Ductile Iron Slotted Grate conforming to ASTM specification A536-84, Grade 80-55-06. Ductile Iron grate is rated class C per the DIN EN1433 top load classifications. Supplied in 20" [508 mm] nominal lengths with 1/2" [13 mm] wide slots, and 3/4" [19 mm] bearing depth. Grate has an open area of 28.1 sq. in per ft. [59,463 sq. mm per meter]. The .105" [2.67 mm] thick Heavy-Duty Carbon Steel Frame Assembly conforms to ASTM specification A36 with 10 - 4" [102 mm] long concrete anchors per 80" [2032 mm]. Grate lockdown bars are to be integral to the frame. Frame supplied with powder coated finish. All welds must be performed by a certified welder per ASTM standard AWS D1.1. Frames produced in the U.S.A.

PREFIX OPTIONS (Check/specify appropriate options)
____ Z Six-foot, Eight-inch High Density Polyethylene (HDPE)*

SUFFIX OPTIONS (Check/specify appropriate options)

Outlet Adapters Add/Each
____ -E1 Closed End Cap
____ -E2 2 [51] No-Hub End Outlet
____ -E3 3 [76] No-Hub End Outlet
____ -E4 4 [102] No-Hub End Outlet
____ -E6 6 [152] No-Hub End Outlet
____ -U2 2 [51] No-Hub Bottom Outlet
____ -U3 3 [76] No-Hub Bottom Outlet
____ -U4 4 [102] No-Hub Bottom Outlet
____ -U6 6 [152] No-Hub Bottom Outlet

Frame Options
____ -CSF Black Acid Resistant Coated Top Frame
____ -LD Light Duty Grates on Heavy Duty Frame
____ -SW Sidewall Extension - 9 [229] High
____ -SW2 Sidewall Extension - 18 [457] High

Grate Options (Load Classifications are per DIN EN1433)
____ -BDC Black Acid Resistant Epoxy Coated Ductile Grate - Class C
____ -BDE Black Acid Resistant Epoxy Coated Ductile Grate - Class E
____ -BG Galvanized Ductile Iron Bar Grate - Class C
____ -DBG Ductile Iron Cast Bar Grate - Class C
____ -DC Ductile Iron Solid Cover - Class C
____ -DGC Ductile Iron Slotted Grate - Class C *
____ -DGE Ductile Iron Slotted Grate - Class E
____ -GDC Galvanized Ductile Iron Slotted Grate - Class C
____ -GDE Galvanized Ductile Iron Slotted Grate - Class E
____ -GHPDE Galvanized Heel-Proof Ductile Grate - Class E
____ -HPDE Heel-Proof Ductile Slotted Grate - Class E
____ -RFGC Reinforced Slotted Galvanized Grate - Class C
____ -RFSC Reinforced Slotted Stainless Steel Grate - Class C
____ -RPGC Reinforced Perforated Galvanized Grate - Class C
____ -RPGRC Reinforced Perforated Galvanized Reverse Punch Grate - Class C
____ -RPSC Reinforced Perforated Stainless Steel Grate - Class C
____ -RPSRC Reinforced Perforated Stainless Steel Reverse Punch Grate - Class C

Miscellaneous Options
____ -IC Joint Connector
____ -VP Vandal-Proof Lockdown

Decorative Grate Options (Load Classifications are per DIN EN1433)
____ -SBG Stainless Steel Bar Grate - Class E

MADE in the U.S.A.
____ -BDE-USA Black Acid Resistant Epoxy Coated Ductile Grate - Class E
____ -DGC-USA Ductile Iron Slotted Grate - Class C
____ -DGE-USA Ductile Iron Slotted Grate - Class E
____ -GDC-USA Galvanized Ductile Slotted Grate - Class C
____ -GDE-USA Galvanized Ductile Slotted Grate - Class E
____ -GHPDE-USA Galvanized Heel-Proof Ductile Grate - Class E
____ -HPDE-USA Heel-Proof Ductile Slotted Grate - Class E
____ -PPC Plastic Perforated Grate - Class C

Miscellaneous Options
____ -DB Bottom Dome Strainer

Trench No.	'A' Shallow	'A' Inv.	'B' Deep	'B' Inv.	Flow (cfs)	Flow (gpm)	Flow (lps)
8601	3.50 [89]		4.10 [104]		0.21	93	6
8602	4.10 [104]		4.70 [119]		0.27	122	8
8603	4.70 [119]		5.30 [135]		0.34	152	10
8603N	5.30 [135]		5.30 [135]		-	-	-
8604	5.30 [135]		5.90 [150]		0.41	183	12
8605	5.90 [150]		6.50 [165]		0.48	214	13
8606	6.50 [165]		7.10 [180]		0.55	245	15
8606N	7.10 [180]		7.10 [180]		-	-	-
8607	7.10 [180]		7.70 [196]		0.62	276	17
8608	7.70 [196]		8.30 [211]		0.69	308	19
8609	8.30 [211]		8.90 [226]		0.76	339	21
8610	8.90 [226]		9.50 [241]		0.83	371	23
8611	9.50 [241]		10.10 [257]		0.90	403	25
8612	10.10 [257]		10.70 [272]		0.97	435	27
8612N	10.70 [272]		10.70 [272]		-	-	-
8613	10.70 [272]		11.30 [287]		1.04	467	29
8614	11.30 [287]		11.90 [302]		1.11	498	31
8615	11.90 [302]		12.50 [318]		1.18	530	33

* Regularly furnished unless otherwise specified.

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In Canada | Zurn Industries Limited
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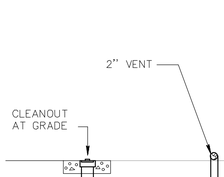
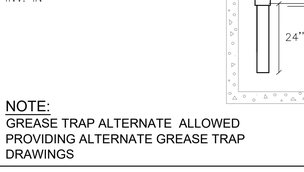
www.zurn.com

Rev. F
Date: 1/26/2017
C.N. No. 138162
Prod. | Dwg. No. Z886-HD

SEE ZURN 886-HD SPECIFICATIONS AND DETAILS



TRENCH DRAIN



AMERICAN FIRE SUPPLY — Fire Department Connections

Free Standing FDC Inlet

Designed to provide supplemental water to a building's fire protection system. Typically, these units are installed free-standing outside of a building.

250 GPM per inlet

U/L Listed and FM Approved (2-way only)

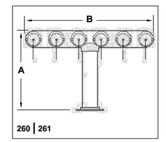
- **Our Free Standing FDCs come furnished with body, plate, 18" sleeve, and plugs & chains.**
- **4" 2-Way units have single swing clapper, all other units utilize individual drop clappers on each inlet.**
- **All 2-Way and 3-Way units use clappered bodies, 4-Way and larger use schedule 40 steel bodies with clappered snoots.**

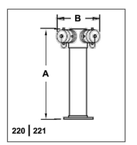
220RBSA

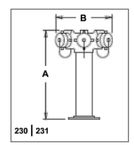
Part #	Type	Size & Configuration	A	B
220	2-Way	4" F NPT x 2½" x 2½"	24"	8½"
221	2-Way	6" F NPT x 2½" x 2½"	24"	12½"
230	3-Way	4" F NPT x 2½" x 2½" x 2½"	24"	14½"
231	3-Way	6" F NPT x 2½" x 2½" x 2½"	24"	14½"
240	4-Way	6" F NPT x 2½" x 2½" x 2½" x 2½"	28"	30"
250	4-Way	6" F NPT x 2½" x 2½" x 2½" x 2½" (Square)	33"	11"
260	6-Way	6" F NPT x 2½" x 2½" x 2½" x 2½" x 2½" x 2½"	28"	44"
261	6-Way	8" F NPT x 2½" x 2½" x 2½" x 2½" x 2½" x 2½"	30"	44"

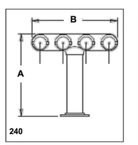
Specify Finish:
- ☐ **-RB** Rough Brass
- ☐ **-AL** Rough Brass w/ Red Plate
- ☐ **-PB** Polished Brass
- ☐ **-PC** Polished Chrome

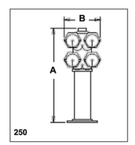
Specify Plate Lettering:
- ☐ **-A** Auto Spkr
- ☐ **-S** Standpipe
- ☐ **-SA** Standpipe & Auto Spkr
- ☐ **-DS** Dry Standpipe











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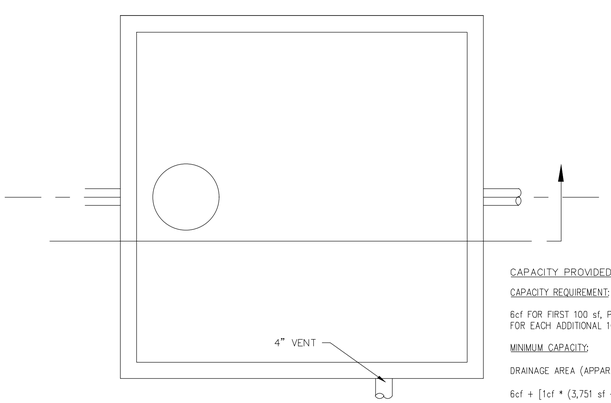
www.americanfiresupply.com | sales@americanfiresupply.com



CAPACITY PROVIDED: 500 gal.

CAPACITY REQUIREMENT:

6cf FOR FIRST 100 sf, PLUS 1cf FOR EACH ADDITIONAL 100sf.

MINIMUM CAPACITY:

DRAINAGE AREA (APPARATUS BAY) = 3,751 sf

6cf + [1cf * (3,751 sf – 100sf)/100sf] = 42.5 cf

Say 43 cf = 322 gal.

COMPLIES WITH ASTM C 913-79, PRECAST CONCRETE WATER AND WASTEWATER STRUCTURES AND ASTM C 890-78, MIN. STRUCTURAL DESIGN LOADING FOR MONOLITHIC OR SECTIONAL PRECAST CONCRETE WATER AND WASTEWATER STRUCTURES.

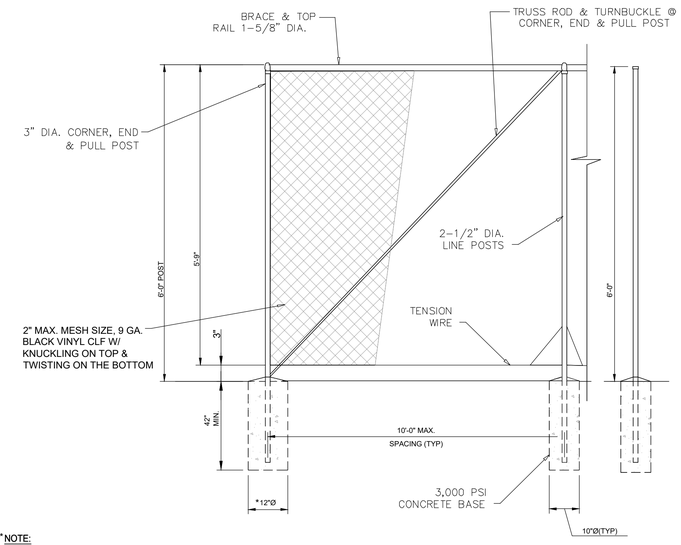
NOTE: PROVIDE LIFTING EYES AS REQUIRED.

OIL/WATER SEPARATOR DETAILS

NOTE:
GREASE INTERCEPTOR CONSTRUCTION AND INSTALLATION SHALL BE IN ACCORDANCE WITH ALL GOVERNING CODES & AUTHORITIES.

NOTE:
GREASE TRAP ALTERNATE ALLOWED PROVIDING ALTERNATE GREASE TRAP DRAWINGS

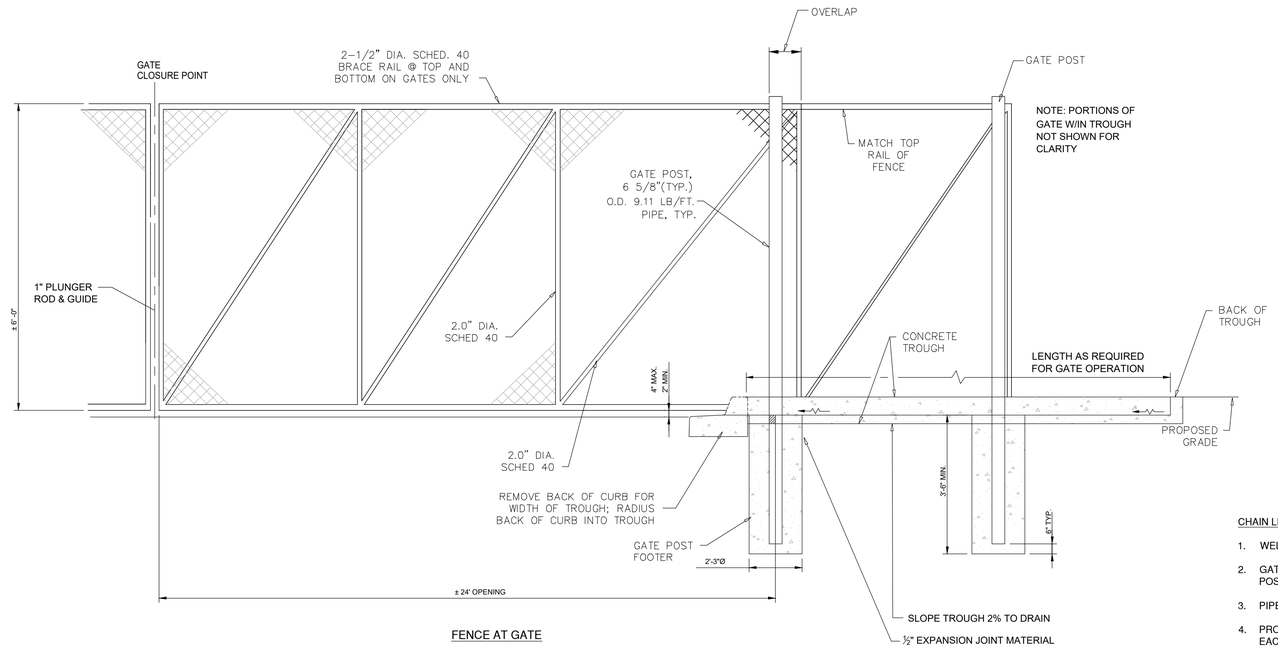
GREASE TRAP DETAIL



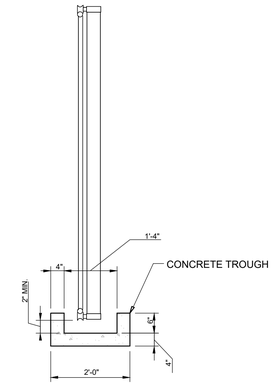
*NOTE:

1). 12" DIA. CONCRETE FOOTING @ CORNER, END, & PULL POSTS, 16" ON GATE POSTS. ALL OTHERS SHALL BE 10".
2). USE 3/8"ø EYE HOOK ANCHORED INTO CONCRETE FOOTING IN ADDITION TO THE BOTTOM RAIL CONNECTION.

STANDARD FENCE SECTION



FENCE AT GATE



FENCE GATE / CONCRETE TROUGH SECTION

CHAIN LINK FENCE GENERAL NOTES:

1. WELD ALL PIPE CONNECTIONS ON GATES ONLY.
2. GATE FABRIC TO MATCH FENCE FABRIC. PROVIDE MATCHING POST CAPS WHERE REQUIRED.
3. PIPE SIZE AND SCHEDULE ARE MINIMUM REQUIREMENTS.
4. PROVIDE EMBEDDED METAL SLEEVE AND HOLD OPEN FOR EACH LEAF OF GATE.

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CLAY COUNTY
CLAY CO FIRE STATION 20
1305 FL-16, GREEN COVE SPRINGS, FL

REVISIONS

#	DATE	DESCRIPTION

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JEFFREY E. BERGEN LICENSE No. 63060 STATE OF FLORIDA PROFESSIONAL ENGINEER
Jeffrey E. Bergen P.E. FL #63060

DATE: 11/10/2023

CHAIN LINK FENCE DETAILS

PROJECT NO.: 23002

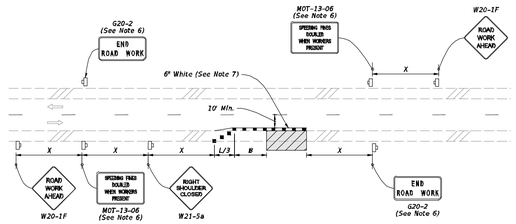
C14.0
100% DOCUMENTS

NOTE:

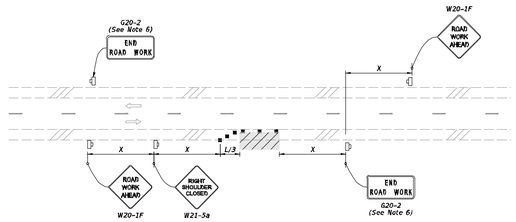
1. This Index applies to Two-Lane, Two-Way and Multilane Roadways, including Medians of divided roadways, with work on the shoulder.
2. L = Taper Length
   X = Work Zone Sign Spacing
   B = Buffer Length
   See Index 102-600 for "L", "X", "B", and channelizing device spacing values.
3. Where work activities are between 2' and 15' from the edge of traveled way, the Engineer may omit signs and channelizing devices for work operations 60 minutes or less.
4. When four or more work vehicles enter the through traffic lanes in a one hour period (excluding establishing and terminating the work area), use a flagger or lane closure to accommodate work vehicle ingress and egress.
5. For work less than 2' from the traveled way and work zone speed is greater than 45 MPH, use a lane closure.
6. The "Speeding Fines Doubled When Workers Present" signs (MOT-13-06) and "End Road Work" Signs (G20-2) along with the associated work zone sign spacing distances may be omitted when the work operation is in place for 24 hours or less.
7. Temporary pavement markings may be omitted when the work operation is in place for 3 days or less.
8. Omit "Shoulder Closed" signs (W21-5a) along with associated work zone sign spacing distances for work on the median.
9. When there is no paved shoulder, the "Worker" sign (W21-1) may be used instead of the "Shoulder Closed" sign (W21-5a).

SYMBOLS:

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

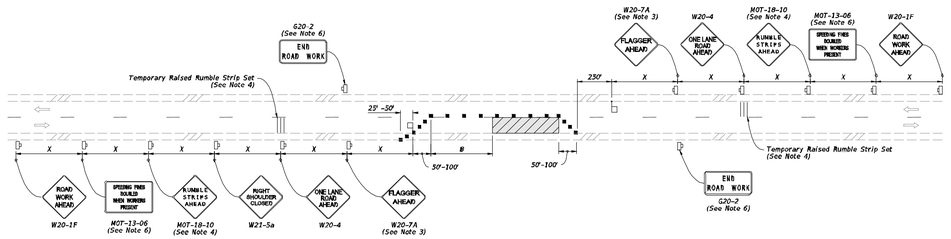


TWO-LANE ROADWAY
SHOULDER WORK LESS THAN 2' FROM THE TRAVELED WAY
WITH WORK ZONE SPEED OF 45 MPH OR LESS



TWO-LANE ROADWAY
SHOULDER WORK BETWEEN 2' AND 15' FROM THE TRAVELED WAY

LAST REVISION 11/01/21	REVISION	DESCRIPTION:	FDOT	FY 2023-24 STANDARD PLANS	TWO-LANE AND MULTILANE, WORK ON SHOULDER	INDEX 102-602	SHEET 1 of 2



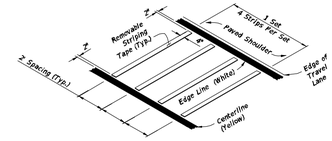
NOTES:

1. This Index applies to Two-Lane, Two-Way Roadways with work within the traveled way.
2. L = Taper Length
   B = Buffer Length
   X = Work Zone Sign Spacing
   See Index 102-600 for "L", "B", "X" and channelizing device spacing values.
3. Optionally, use "Flagger Ahead" sign with symbol (W20-7) instead of "Flagger Ahead" sign with text (W20-7A).
4. Use temporary raised rumble strips when the existing posted speed is 35 mph or greater and the work duration is greater than 60 minutes. If temporary raised rumble strips are not used, omit "Rumble Strips Ahead" signs (MOT-18-10) and associated work zone sign spacing.
5. Additional one-way control may be provided by the following means:
   a. Flag-carrying vehicle
   b. Official vehicle
   c. Pilot vehicles
   d. Traffic signals

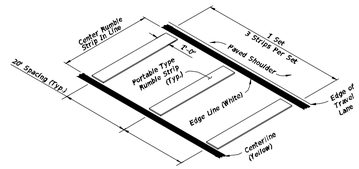
   When flaggers are the sole means of one-way control, the flaggers must be in sight of each other or in direct communication at all times.
6. The "Speeding Fines Doubled When Workers Present" signs (MOT-13-06) and "End Road Work" signs (G20-2), along with associated work zone sign spacing, may be omitted when the work operation will be in place for 24 hours or less.
7. Automated Flagger Assistance Devices (AFADs) may be used in accordance with Specification Sections 102, 990 and the APL vendor drawings.
8. Railroad Crossings:
   a. If an active railroad crossing is located closer to the Work Area than the queue length plus 300 feet, extend the Buffer Space as shown on Sheet 2.
   b. If the queuing of vehicles across an active railroad crossing cannot be avoided, provide a uniformed traffic control officer or flagger at the highway-rail grade crossing to prevent vehicles from stopping within the highway-rail grade crossing, even if automatic train warning devices are in place.

SYMBOLS:

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



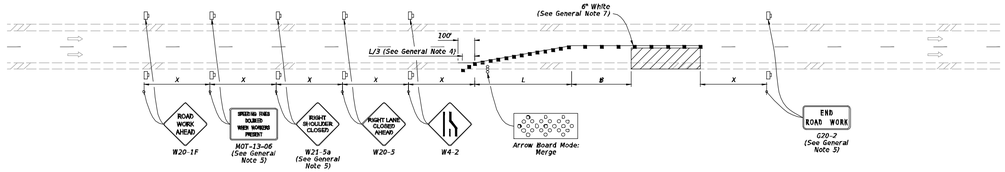
OPTION - 1
REMOVABLE STRIPING TYPE



OPTION - 2
PORTABLE TYPE

RUMBLE STRIP SETS

LAST REVISION 11/01/21	REVISION	DESCRIPTION:	FDOT	FY 2023-24 STANDARD PLANS	TWO-LANE, TWO-WAY WORK WITHIN THE TRAVEL WAY	INDEX 102-603	SHEET 1 of 2



SINGLE LANE CLOSURE

SYMBOLS:

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

GENERAL NOTE:

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

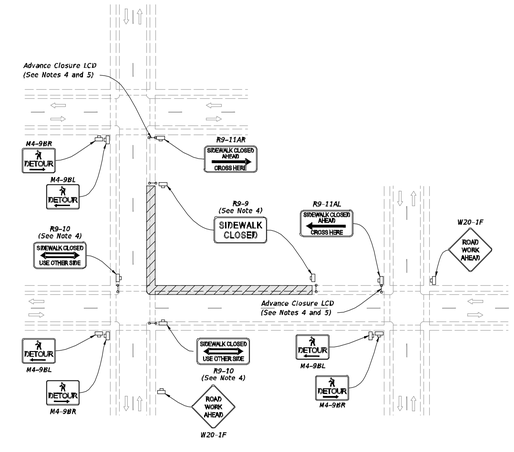
LAST REVISION 11/01/21	REVISION	DESCRIPTION:	FDOT	FY 2023-24 STANDARD PLANS	MULTILANE ROADWAY, LANE CLOSURES	INDEX 102-613	SHEET 1 of 5

NOTES:

1. Cover or deactivate pedestrian traffic signal display(s) controlling closed crosswalks.
2. Place pedestrian LCDs across the full width of the closed sidewalk.
3. For post mounted signs located near or adjacent to a sidewalk, maintain a minimum 7' clearance from the bottom of the sign panel to the surface of the sidewalk.
4. "Sidewalk Closed" signs (R9-XX) may be mounted on pedestrian LCDs in accordance with the manufacturer's instructions.
5. Omit the Advance Closure LCD if it blocks access to other pedestrian facilities (e.g., transit stops, residences, or business entrances).

SYMBOLS:

- Work Area
- Work Zone Sign
- Pedestrian Longitudinal Channelizing Device (LCD)
- Lane Identification and Direction of Traffic



PEDESTRIAN DETOUR

LAST REVISION 11/01/20	REVISION	DESCRIPTION:	FDOT	FY 2023-24 STANDARD PLANS	SIDEWALK CLOSURE	INDEX 102-660	SHEET 1 of 2

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CLAY COUNTY
FIRE STATION 20
1305 FL-16, GREEN COVE SPRINGS, FL

REVISIONS

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DATE: 11/10/2023

MAINTENANCE OF TRAFFIC PLAN

PROJECT NO.: 23002

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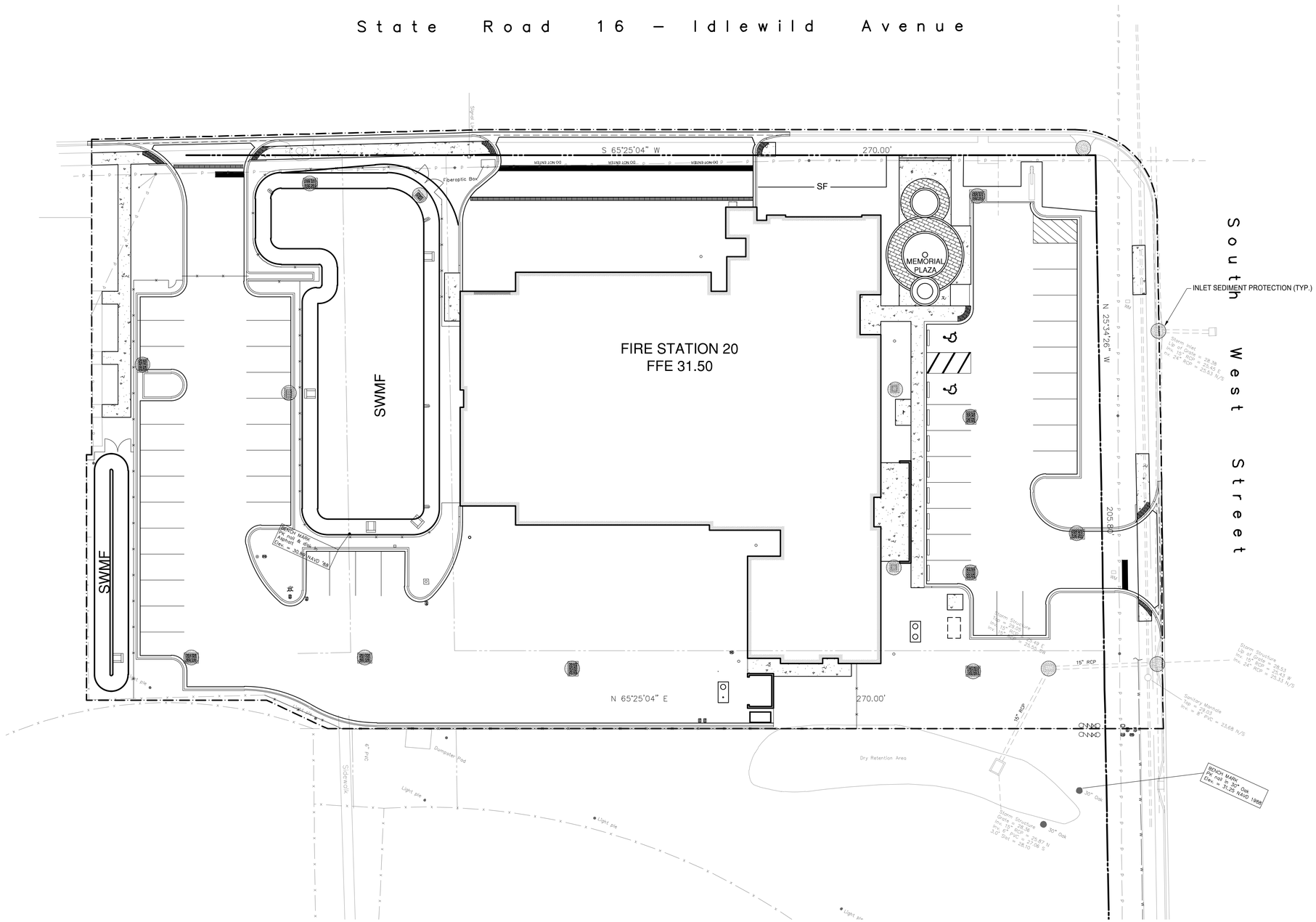

LEGEND

TB	TURBIDITY BARRIER
SF	SILT FENCE
	INLET SEDIMENT PROTECTION

NOTES :

1. PROPOSED INLETS SHALL RECEIVE INLET PROTECTION AFTER INSTALLATION AND MAINTAINED UNTIL HE SITE IS STABILIZED TO ELIMINATE TURBID RUNOFF.
2. SILT FENCING AND OTHER SEDIMENT CONTROLS SHALL BE PLACED IN AREAS WHERE OFFSITE DISCHARGE OF SEDIMENT MAY OCCUR. THE CONTRACTOR MAY ADJUST AND LIMIT THE LOCATION OF SILT FENCING TO ONLY THOSE AREAS IN WHICH THESE CONDITIONS MAY OCCUR IN ACCORDANCE WITH THEIR OWN SWPPP, AS PREPARED IN THEIR NPDES PERMIT APPLICATION.

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CLAY COUNTY
CO FIRE STATION 20
1305 FL-16, GREEN COVE SPRINGS, FL

REVISIONS

#	DATE	DESCRIPTION

JEFFREY E. BERGEN LICENSE No. 63060 STATE OF FLORIDA PROFESSIONAL ENGINEER
Jeffrey Bergen, P.E. FL #63060

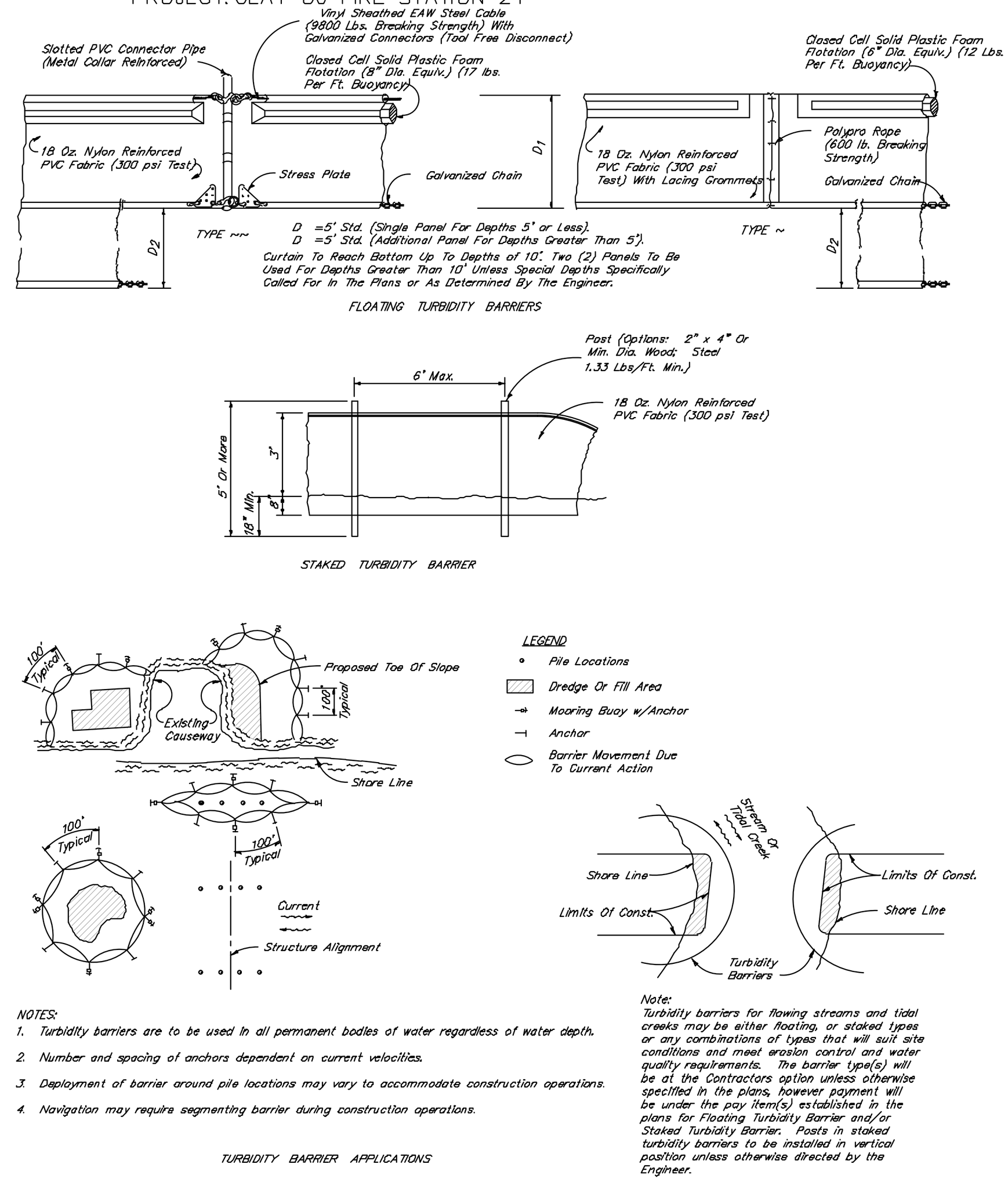
DATE: 11/10/2023

STORMWATER POLLUTION PREVENTION PLAN

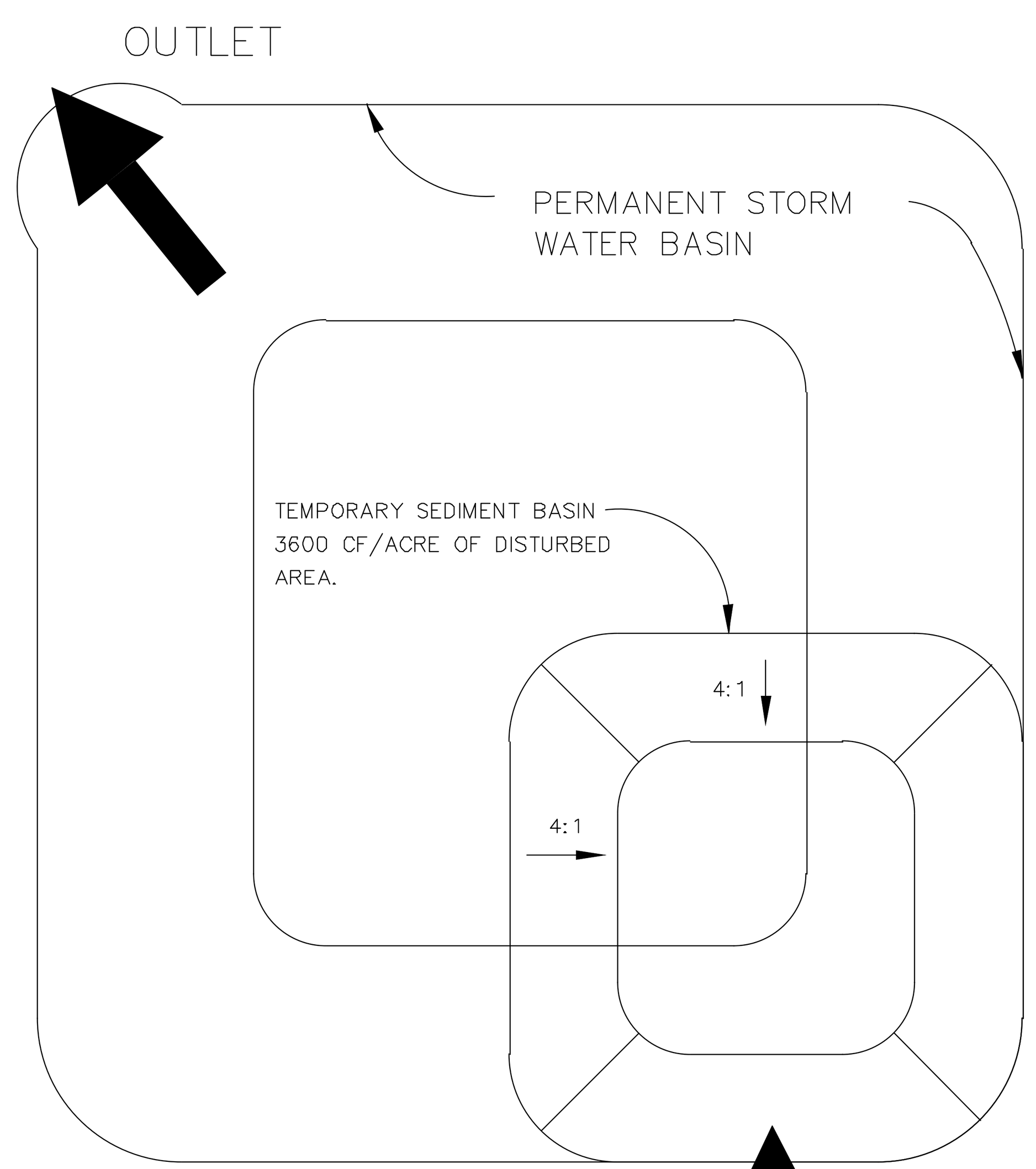
PROJECT NO.: 23002

C16.0

100% DOCUMENTS



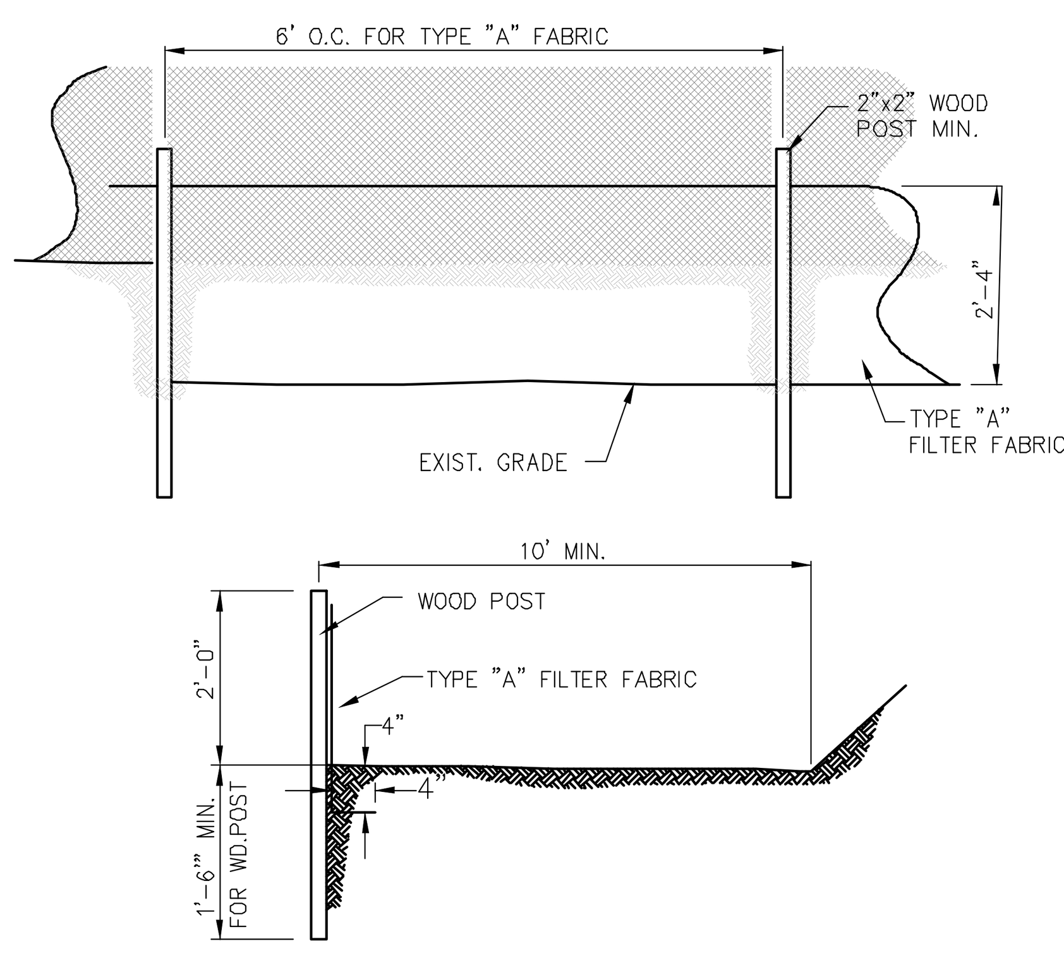
TURBIDITY BARRIERS



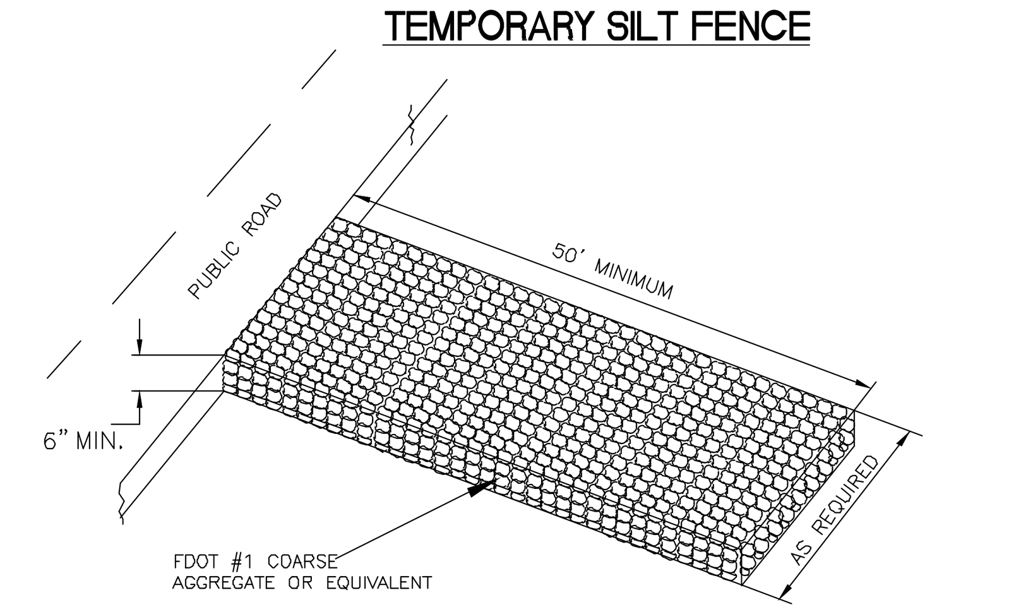
NOTE: THIS REPRESENTS THE OPTIMUM LOCATION OF THE TEMPORARY SEDIMENT BASIN. OTHER ON-SITE LOCATIONS MAY ALSO BE APPROPRIATE.

TEMPORARY SEDIMENT BASIN

N.T.S.

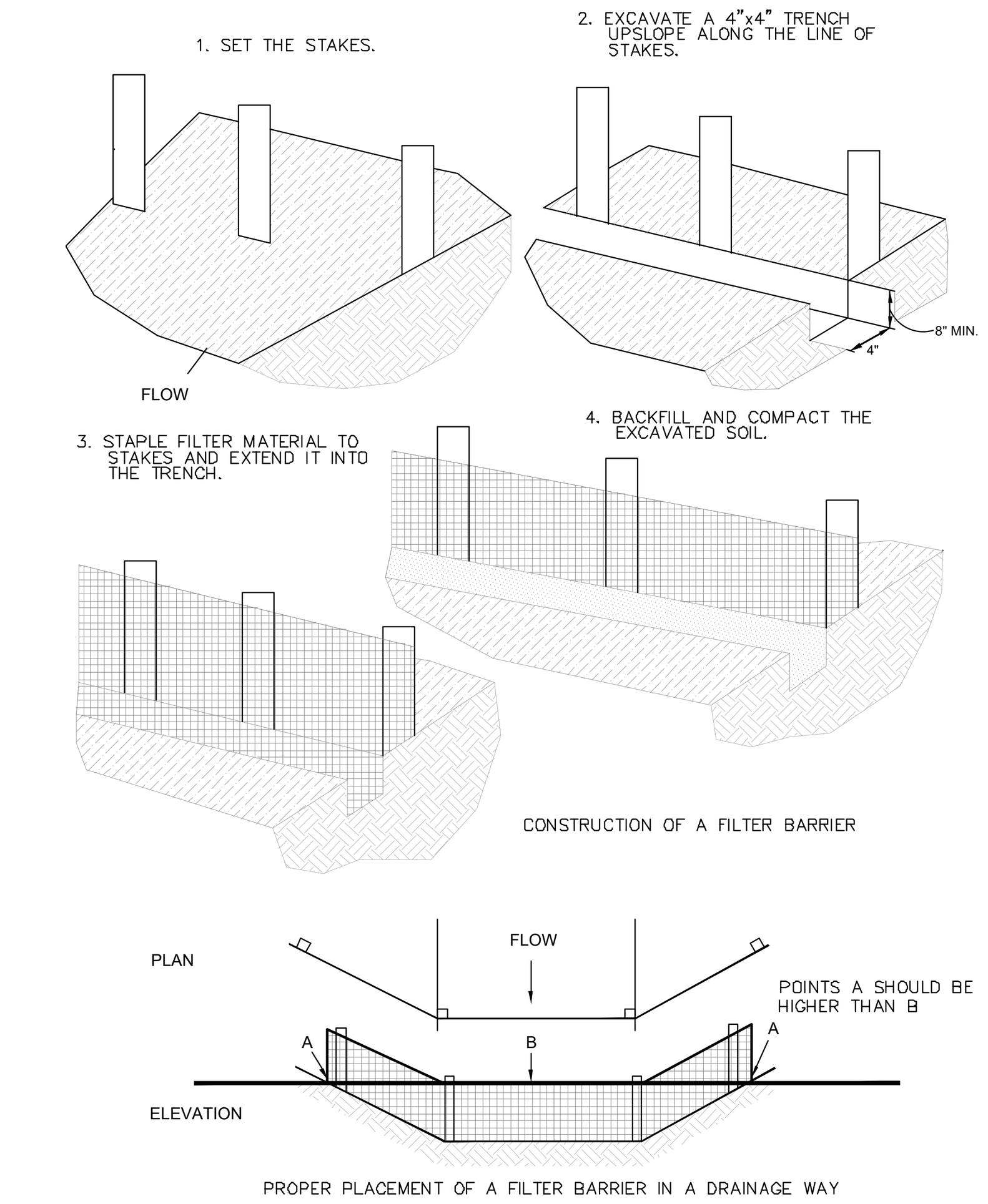


TEMPORARY SILT FENCE

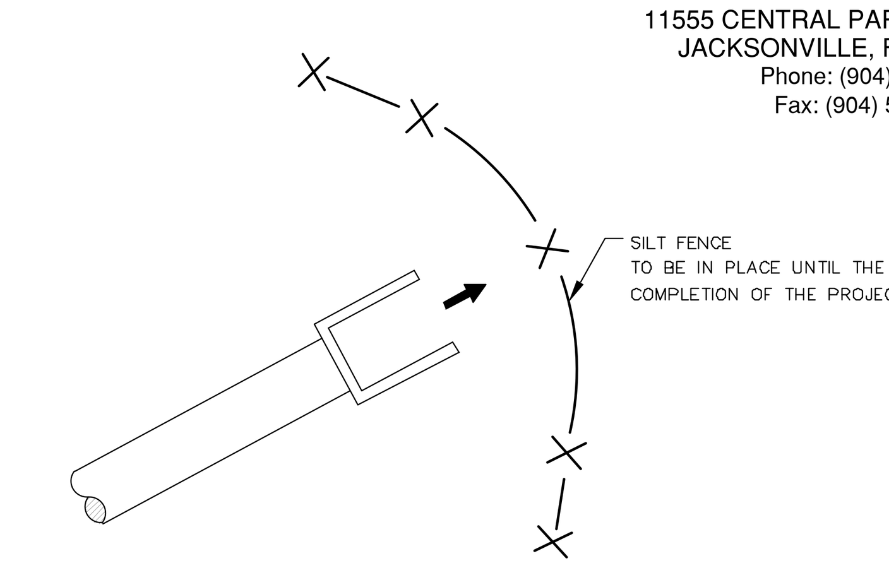


STABILIZED CONSTRUCTION ENTRANCE

N.T.S.

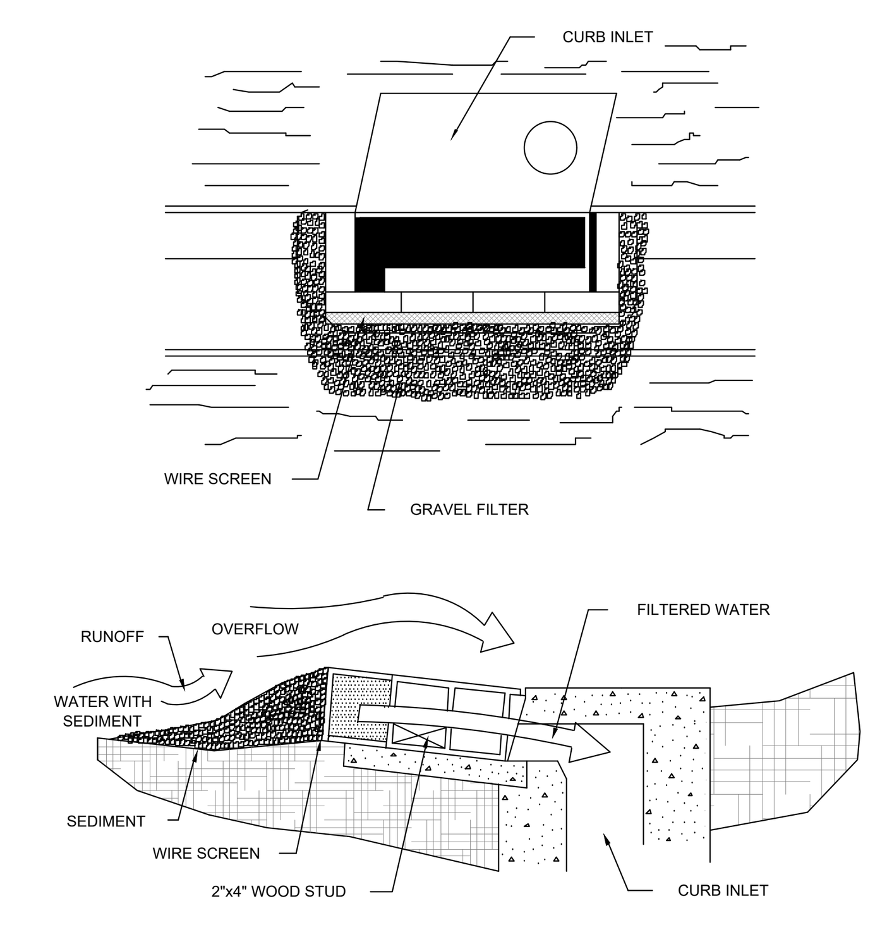


FILTER BARRIER CONSTRUCTION DETAIL



OUTLET PROTECTION

N.T.S.



SPECIFIC APPLICATION

THIS METHOD OF INLET PROTECTION IS APPLICABLE AT CURB INLETS WHERE AN OVERFLOW CAPABILITY IS NECESSARY TO PREVENT EXCESSIVE PONDING IN FRONT OF THE STRUCTURE.

BLOCK + GRAVEL CURB INLET SEDIMENT FILTER

N.T.S.

Site Conditions	Seeding Mixtures	Seeding Rate Per Acre	Seeding Rate Per 1000 Ft^2	Seeding Dates N. Fla.	Comments
High Maintenance Lawns					
General Use	1. Bahiagrass	40-60 lbs	1 lb	2/15-8/31	Use 50% scarified seed.
	2. Bahiagrass	40-60 lbs	1 lb	2/15-8/15	Use 50% scarified Bahia seed.
	Bermudagrass (hulled)	8-12 lbs	4 oz		
	3. Bahiagrass with one of the following:	20-30 lbs	.5 lb		Use 50% scarified Bahia seed.
	Southern White Clover	3 lbs	1.2 oz	9/1-1/1	Innoculate legumes.
	Annual White Sweetclover	8 lbs	3 oz	9/1-1/1	
	Crimson Clover	12 lbs	4.5 oz	9/1-1/1	
	Arrowleaf Clover	8 lbs	3 oz	9/1-1/1	
	Alyce Clover	8 lbs	3 oz	2/15-7/15	
	Hairy Indigo	4 lbs	1.5 oz	2/15-7/15	
	Aschynamene	12 lbs	4.5 oz	2/15-7/15	
Slopes	1. Sericea lespedeza	a. 40-50 lbs	1.2 lbs	1/1-7/15	For scarified seed.
		b. 75 lbs	1.7 lbs	7/15-1/1	For unhulled seed.
	2. Serica lespedeza with one of the following:				Use seeding rate specified above.
	Bahiagrass	15 lbs	7 oz	2/15-8/15	
	Tall Fescue	20 lbs	8 oz	10/1-11/15	Best adapted to N. Florida
	Weeping Lovegrass	3 lbs	1.2 oz	2/15-8/15	
Droughty Areas	1. Weeping Lovegrass	5 lbs	2 oz	2/15-8/15	Gives quick summer cover.
	2. Weeping Lovegrass with one of the following:				
	a. Bahiagrass (50% scarified seed)	5 lbs	2 oz	2/15-8/15	
	b. Bermudagrass (Hulled)	30-40 lbs	12 oz	2/15-8/15	
	c. Hairy panicum	8-12 lbs	4 oz	2/15-8/15	
	d. Serica lespedeza	8-12 lbs	4 oz	2/15-8/15	Use seeding rate and dates specified above.

SEEDING MIXTURES, RATES AND DATES

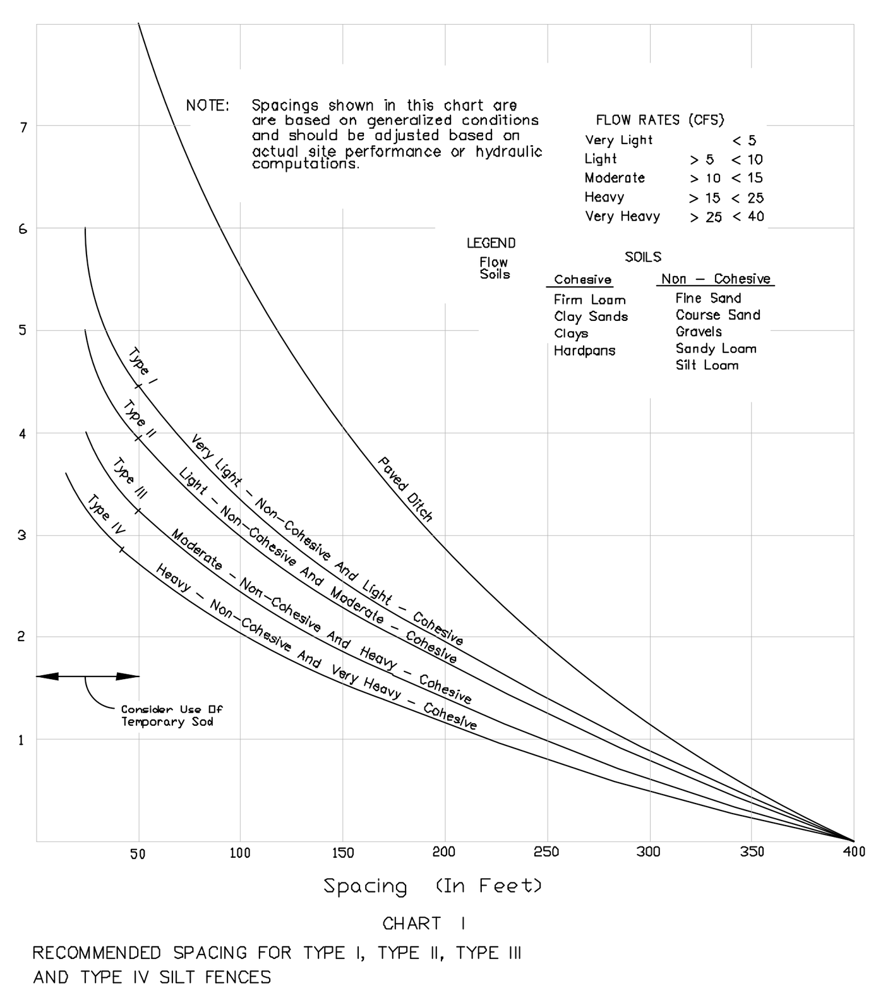
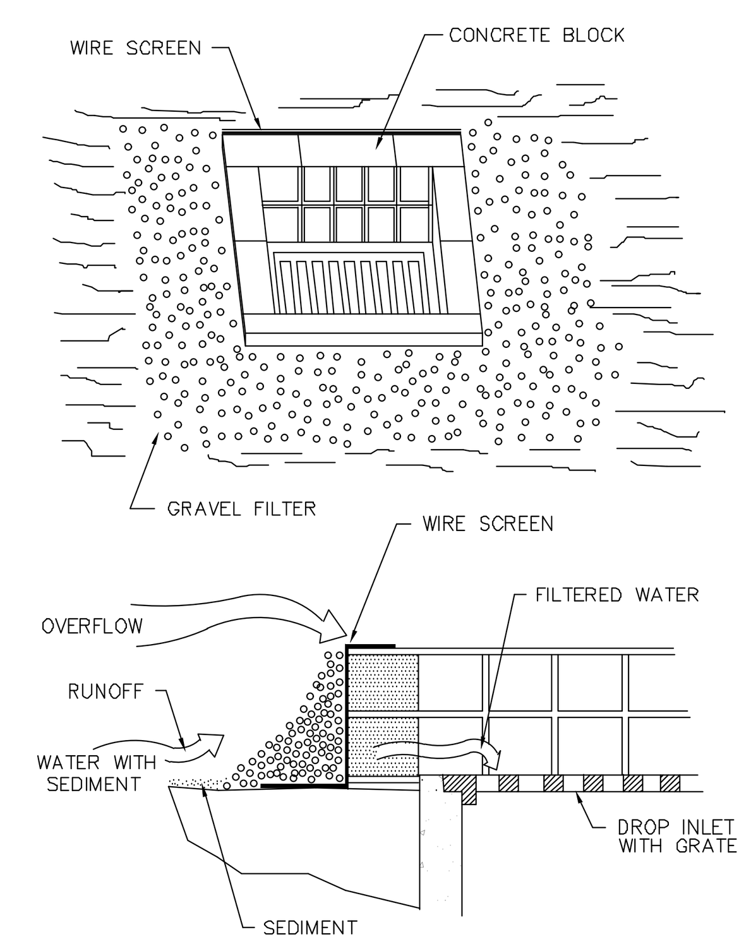


CHART I
RECOMMENDED SPACING FOR TYPE I, TYPE II, TYPE III AND TYPE IV SILT FENCES

SPACING RECOMMENDATION FOR SILT FENCES

N.T.S.

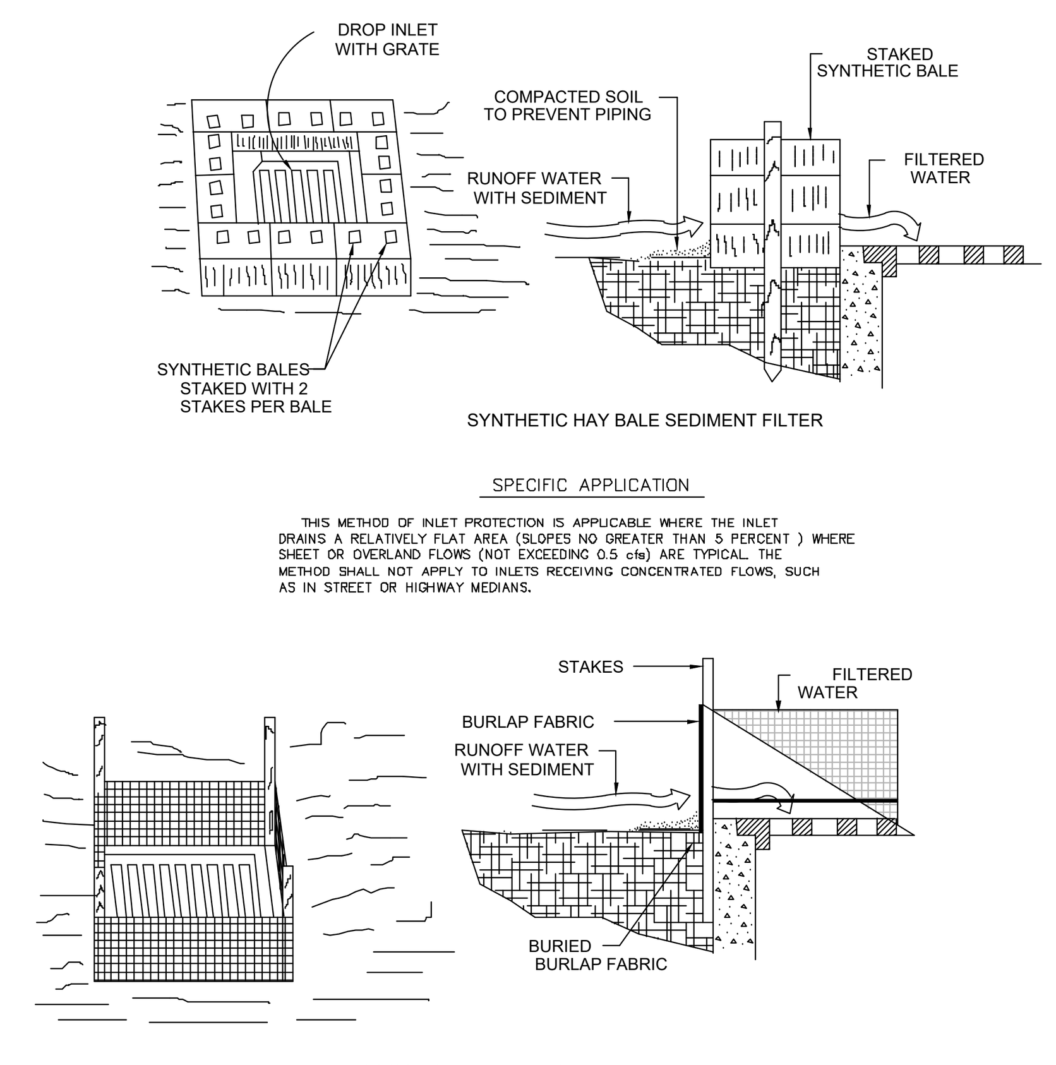


SPECIFIC APPLICATION

THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE HEAVY FLOWS ARE EXPECTED AND WHERE AN OVERFLOW CAPACITY IS NECESSARY TO PREVENT EXCESSIVE PONDING AROUND THE STRUCTURE.

BLOCK + GRAVEL DROP INLET SEDIMENT FILTER

N.T.S.



SPECIFIC APPLICATION

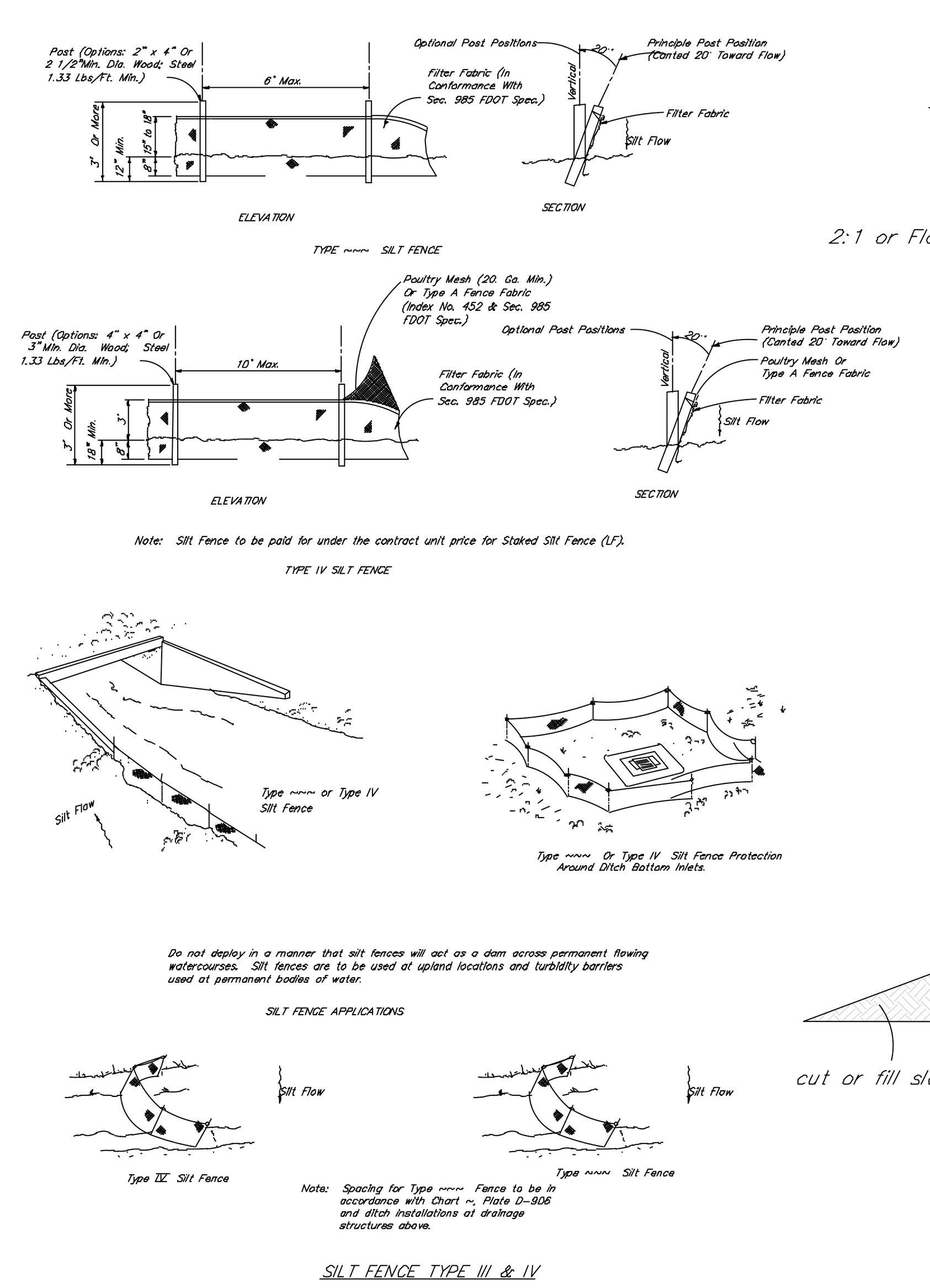
THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE THE INLET DRAINS A RELATIVELY FLAT AREA (SLOPES NO GREATER THAN 5 PERCENT) WHERE SHEET OR OVERLAND FLOWS (NOT EXCEEDING 0.5 cfs) ARE TYPICAL. THE METHOD SHALL NOT APPLY TO INLETS RECEIVING CONCENTRATED FLOWS, SUCH AS IN STREET OR HIGHWAY MEDIANS.

SPECIFIC APPLICATION

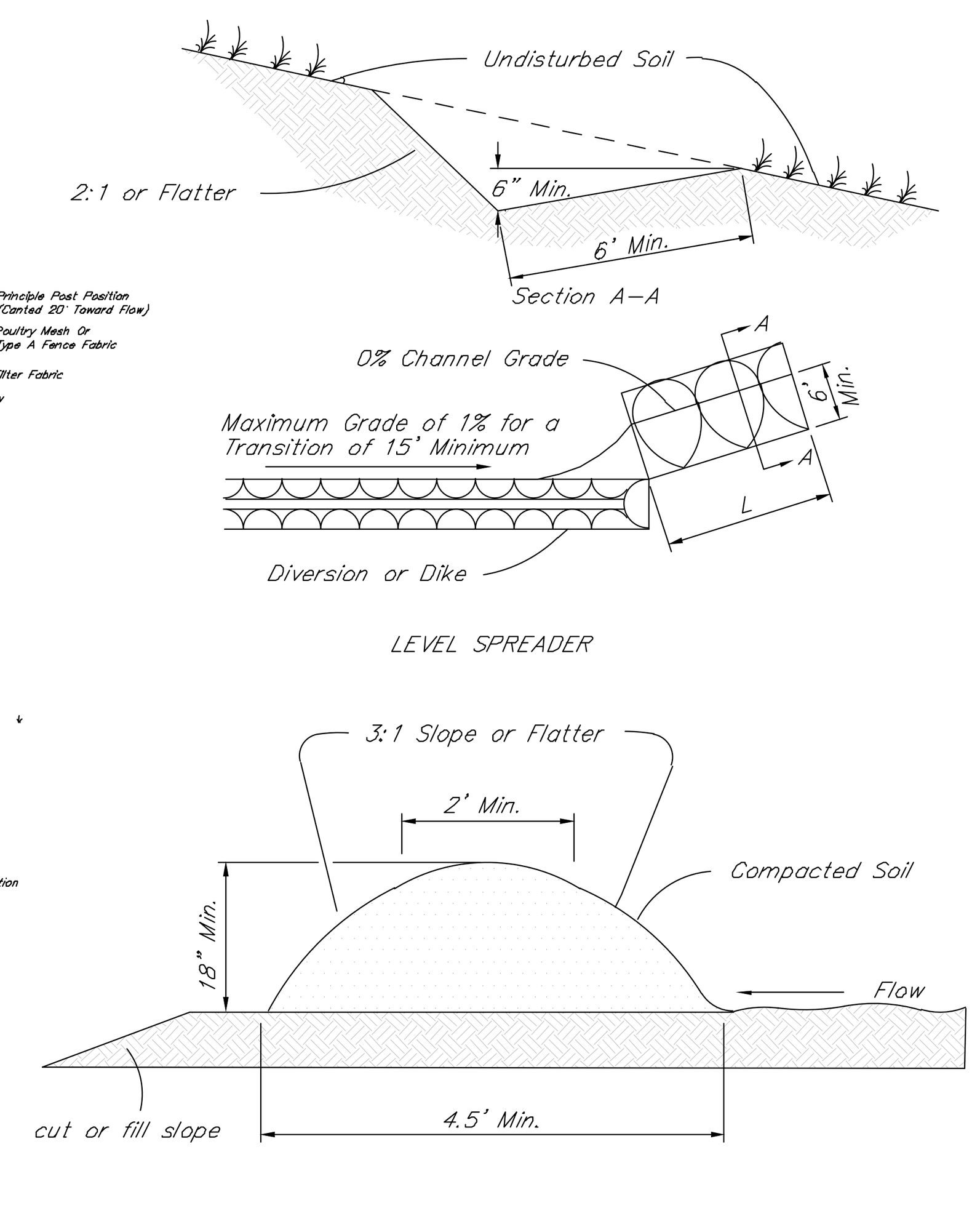
THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE THE INLET DRAINS A RELATIVELY FLAT AREA (SLOPES NO GREATER THAN 5 PERCENT) WHERE SHEET OR OVERLAND FLOWS (NOT EXCEEDING 0.5 cfs) ARE TYPICAL. THE METHOD SHALL NOT APPLY TO INLETS RECEIVING CONCENTRATED FLOWS, SUCH AS IN STREET OR HIGHWAY MEDIANS.

DROP INLET SEDIMENT TRAP

N.T.S.



SILT FENCE TYPE III & IV



DIVERSION DIKE

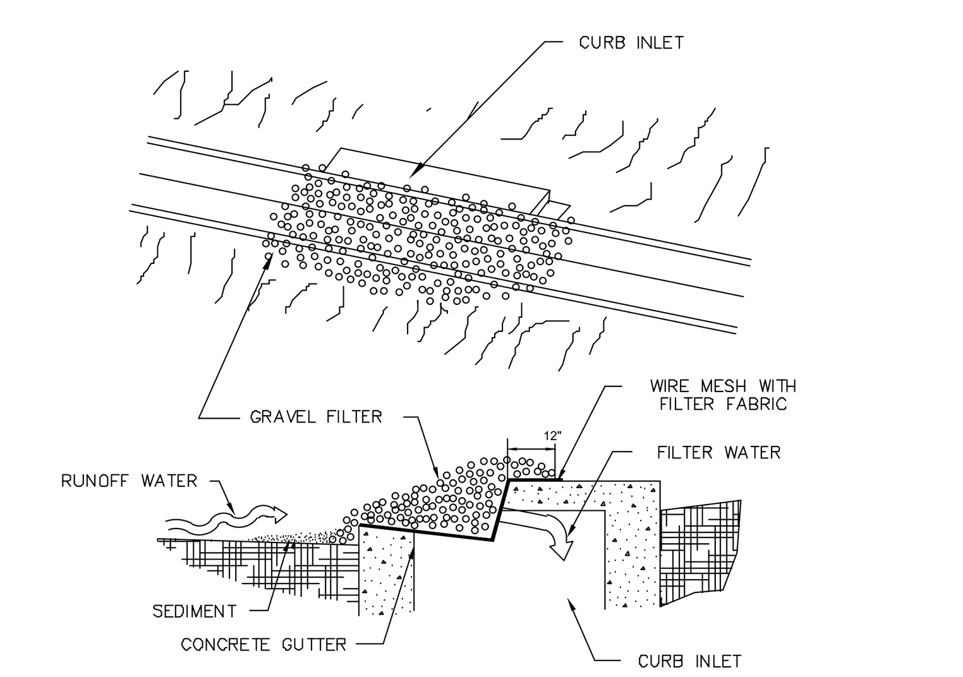
Common Name (Botanical Name)	Seeding Rate Acre	Seeding Rate 1000 ft2	Planting Dates N. FLA.	Comments
OATS (Avena saliva)	3 Bu (125 lbs)	3 lbs	September-February	Will not tolerate flooding, high water table soils.
RYE (Secale cereale)	3 Bu (170 lbs)	4 lbs	September-February	Tolerates cold and drought.
WHEAT (Triticum sp)	3 Bu (120 lbs)	3 lbs	September-February	
ANNUAL RYEGRASS (Lolium multiflorum)	60 lbs	1.5 lbs	September-February	Volunteers may return.
CRIMSON CLOVER (Trifolium incarnatum)	25 lbs	9 oz	September-November	Annual winter legume. Inoculate seed at 5 times recommended rate. Does poorly on deep dry sands, will not tolerate flooding.
RED CLOVER (Trifolium pratense)	15 lbs	6 oz	September-December	Annual winter legume. Inoculate seed at 5 times recommended rate. Grows best on moist soils, will not tolerate flooding. Easily hurt by drought.
WHITE CLOVER (Trifolium repens)	6 lbs	2.5 oz	September-December	Annual winter legume. Inoculate seed at 5 times recommended rate. Grows best on moist-wet soils, tolerates some flooding.
ANNUAL SWEETCLOVER (Melilotus altissima)	15 lbs	6 oz	September-December	Annual winter legume. Inoculate seed at 3-5 times recommended rate. Grows well on both flatwoods and upland soils. Will not tolerate flooding.
ARROWLEAF CLOVER (Trifolium vesiculosum)	15 lbs	6 oz	September-December	Annual winter legume. Inoculate seed at 3-5 times recommended rate. Grows on soil too wet for crimson, tolerates some flooding. Use scarified seed.
LUAINE CLOVER (Lupinus sp.)	60 lbs	1.5 lbs	September-December	Annual winter legume. Inoculate seed at 3 times recommended rate. Susceptible to freeze damage at time of emergence. Use scarified seed.
ALFALFA (Medicago sativa)	22 lbs	8 oz	September-December	Short lived perennial. Some drought resistance. Grows best on well-drained, fertile soils. Will not tolerate wet soils.
AUSTRIAN WINTER PEAS	45 lbs	1 lb	September-December	Grows best on well-drained soils with high clay content.
HAIRY VETCH (Vicia villosa)	25 lbs	9 oz	September-December	Grows best on well-drained, loamy soils.
ALYCECLOVER (Alysicarpus vaginalis)	15 lbs	6 oz	April-July	Warm season annual legume. Grows best on well-drained sandy soils.
COMMON LESPEDEZA (Lespideza striata)	30 lbs	11 oz	March-July	Warm season annual. Needs inoculation on eroded soils. Grows best on sandy loans. Fairly drought resistant.
HAIRY INDIGO (Indigofera hirsuta)	8 lbs (120 ls)	3 oz	March-July	
JOINT VETCH (Aeschynomera americana)	8 lbs	3 oz	March-August	Warm season annual legume. Most suitable of summer legumes for use in low, wet areas.
MILLET (Setaria sp)	30 lbs	11 oz	March-August	Warm season annual. Does not tolerate flooding. Grows best in fertile, moist soils. Pearl and Browntop are good varieties to use.
SESBANIA (Sesban macrocarpa)	30 lbs	11 oz	March-July	Warm season annual legume. Does well under extremely wet conditions.
SORGHAM SUNDANGRASS HYBRID	30 lbs	11 oz	March-July	Warm season annual. Rapid grower. Tolerates dryer soils than millet. Grows best on well-drained soils. Can also use Sudangrass alone.
WEEPING LOVEGRASS (Eragrostis curvula)	5 lbs	2 oz	March-August	Short-lived perennial, 2-3 years. Tolerates hot, dry slopes and acid, infertile soils.

Usually mixtures of the above plant materials are better than a single plant alone. Each of the legumes discussed above can be grown in mixture with annual ryegrass and/or the small grains. In a two-crop mixture cut the seeding rate of each crop to one-half of the recommended planting rate when grown alone. Similarly three plant types in a mixture requires approximately one-third of the normal seeding rate for each plant. In a three plant mixture containing a single legume, the legume should be planted at one-half of the pure stand seeding rate.

TEMPORARY SEEDING PLANT MATERIALS

NOTES:

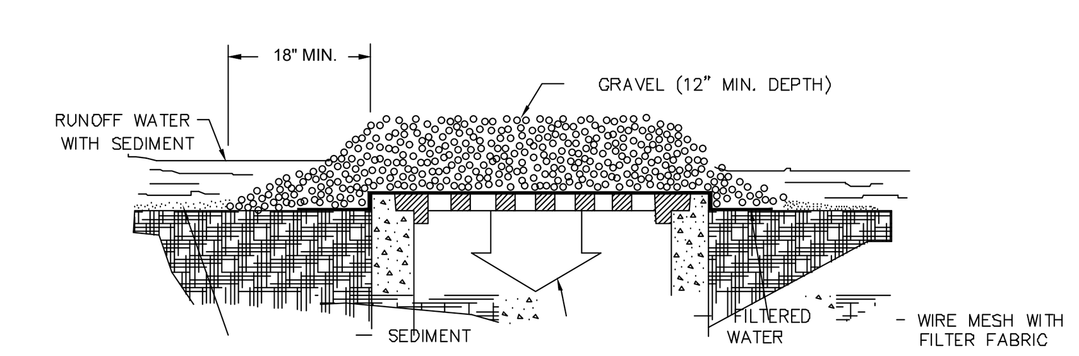
1. DETAIL AND INFORMATION SHOWN ON THE PLANS ARE A MINIMUM LEVEL NEEDED . IT IS THE CONTRACTORS RESPONSIBILITY TO INSTALL AND MANAGE TO THE NEEDED ON THE SITE CONTROLLING SEDIMENTATION MIGRATION / TURBID RUNOFF THROUGH THE CONSTRUCTION PROGRESS
2. ALL TURBIDITY / SEDIMENTATION CONTROLS SHALL AT A MINIMUM BE IN ACCORDANCE WITH F.D.E.P STORMWATER EROSION AND SEDIMENTATION CONTROLS GUIDELINES / STANDARDS.



SPECIFIC APPLICATION

THIS METHOD OF INLET PROTECTION IS APPLICABLE AT CURB INLETS WHERE PONDING IN FRONT OF THE STRUCTURE IS NOT LIKELY TO CAUSE INCONVENIENCE OR DAMAGE TO ADJACENT STRUCTURES AND UNPROTECTED AREAS

GRAVEL CURB INLET SEDIMENT FILTER



SPECIFIC APPLICATION

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

GRAVEL AND WIRE MESH DROP INLET SEDIMENT FILTER

GRAVEL INLET SEDIMENT TRAP

N.T.S.

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MEP ENGINEER
POWELL & HINKLE ENGINEERING, P.A.
1409 KINGSLEY AVENUE, BLDG 12A
ORANGE PARK, FL 32073

CIVIL ENGINEER
GOODSON BERGEN & ASSOC
11555 CENTRAL PARKWAY, SUITE 103
JACKSONVILLE, FL 32224

CLAY COUNTY
CLAY CO FIRE STATION 20
1305 FL-16, GREEN COVE SPRINGS, FL

REVISIONS

#	DATE	DESCRIPTION

JEFFREY E. BERGEN, PE
THIS ITEM HAS BEEN ELECTRONICALLY SIGNED AND SEALED BY JEFFREY E. BERGEN, PE ON
12/5/2023
USING A SHA AUTHENTICATION CODE. PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SHA AUTHENTICATION CODE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

JEFFREY E. BERGEN LICENSE No. 63060 STATE OF FLORIDA PROFESSIONAL ENGINEER
Jeffrey Bergen P.E. FL 63060

DATE: 11/10/2023

EROSION AND SEDIMENT CONTROL DETAILS

PROJECT NO.: 23002

C17.0

100% DOCUMENTS

OWNER'S REQUIREMENTS

Site Description

Erosion and Sediment Control Notes:

Project name and location
CLAY CO FIRE STATION 20
5105 SWEAT RD, GREEN COVE SPRINGS,
FL 32043

Owner Name and Address
CLAY COUNTY BD OF COUNTY COMM
5105 SWEAT RD
GREEN COVE SPRINGS,
FL 32043

Description:
NEW FIRE STATION BUILDING WITH ASSOCIATED
PARKING, STORMWATER TREATMENT FACILITY
AND UTILITIES

Latitude & Longitude:
Lat: 29° 59' 14" N
Long: 81° 41' 30" W

Soil disturbing activities will include:
EARTHWORK , BUILDING PAD, PARKING AREA
AND ASSOCIATED INFRASTRUCTURE

Runoff Curve Numbers:
1. Pre-Construction = -
2. During-Construction = -
3. Post-Construction = -

Soils

Soil Group : Leon Fine Sand & Ortega-Urban Land Complex

Site Maps:
1. See Demo and Paving & Drainage Plans for grades, areas of soil disturbance and stormwater discharge points.
2. See attached SWPPP for location of temp. stabilization practices and silt fences.
3. See SWPPP details and notes for requirements for temporary and permanent stabilization.

Site Area:
1. Total area of site =2.15 acres
2. Total area to be disturbed = 2 acres

Name of receiving waters:
St. Johns River

1. Anticipated start date of constructioN: August 2023
2. Anticipated end of construction: August 2024

Controls

This plan utilizes best management practices to control erosion and turbidity caused by storm water run off. An erosion and turbidity plan has been prepared to instruct the contractor on placement of these controls. It is the contractors responsibility to install and maintain the controls per plan as well as ensuring the plan is providing the proper protection as required by federal, state and local laws. Refer to "Contractors Responsibility" for a verbal description of the controls that may be implemented.

Storm Water Management

Silt fence shall be installed downstream of all soil disturbance areas. Temporary settling basins will be installed as needed to provide additional turbid runoff controls. A stormwater treatment pond (dry) will be constructed to provide permanent stormwater runoff treatment / controls. These are no single point discharges created by this project.

Timing of Controls / Measures

Refer to "Contractors Requirements" for the timing of control/measures.

Certification of Compliance with Federal, State and Local Regulations

In accordance with federal, state and local laws related to storm water management and erosion and turbidity controls, the following permits have been obtained (to be filled in prior to commencement of construction).

D.E.R. Dredge/Fill Permit #_____

C.O.E. Dredge/Fill Permit #_____

S.J.R.W.M.D. M.S.S.W. Permit #_____

N.P.D.E.S. Permit #_____

Pollution Prevention Plan Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signed:_____
Owner/Operator

Date _____

CONTRACTOR'S REQUIREMENTS

General

The contractor shall at a minimum implement the contractor's requirements outlined below and those measures shown on the Erosion and Turbidity Control Plan. In addition the contractor shall undertake additional measures required to be in compliance with applicable permit conditions and state water quality standards. Depending on the nature of materials and methods of construction the contractor may be required to add flocculants to the retention system prior to placing the system into operation.

Sequence of Major Activities

The order of activities will be as follows:

1. Install stabilized construction entrance
2. Install silt fences and hay bales as required
3. Clear and grub for diversion swales/dikes and sediment basin
4. Construct sedimentation basin
5. Continue clearing and grubbing
6. Stock pile top soil if required
7. Perform preliminary grading on site as required
8. Stabilize denuded areas and stockpiles as soon as practicable
9. Install utilities, storm sewer, curbs & gutter.
10. Apply base to project
11. Complete grading and install permanent seeding/sod and planting
12. Complete final paving
13. Remove accumulated sediment from basins
14. When all construction activity is complete and the site is stabilized, remove any temporary diversion swales/dikes and reseed/sod as required

Timing of Controls / Measures

As indicated in the Sequence of Major Activities, the silt fences and hay bales, stabilized construction entrance and sediment basin will be constructed prior to clearing or grading of any other portions of the site. Stabilization measures shall be initiated as soon as practical in portions of the site where construction activities have temporarily or permanently ceased. Once construction activity ceases permanently in an area, that area will be stabilized permanently in accordance with the plans. After the entire site is stabilized, the accumulated sediment will be removed from the sediment traps and the earth dike/swales will be regraded/removed and stabilized in accordance with the Erosion & Turbidity Control Plan.

Controls

It is the contractors responsibility to implement the Erosion and Turbidity Controls as shown on the Erosion and Turbidity Control Plan. It is also the contractors responsibility to ensure these controls are properly installed, maintained and functioning properly to prevent turbid or polluted water from leaving the project site. The contractor will adjust the Erosion and Turbidity Controls shown on the Erosion and Turbidity Control Plan and add additional control measures, as required, to ensure the site meets all federal, state and local erosion and turbidity control requirements. The following best management practices will be implemented by the contractor as required by the Erosion and Turbidity Control Plan and as required to meet the erosion and turbidity requirements imposed on the project site by the regulatory agencies.

Erosion and Sediment Controls
Stabilization Practices

1. Hay Bale Barrier: Hay bale barriers can be used below disturbed areas subject to sheet and rill erosion with the following limitations:
   A. Where the maximum slope behind the barrier is 33 percent.
   B. In minor swales or ditch lines where the maximum contributing drainage area is no greater than 2 acres.
   C. Where effectiveness is required for less than 3 months.
   D. Every effort should be made to limit the use of straw bale barriers constructed in live streams or in swales where there is the possibility of a washout. If necessary, measures shall be taken to properly anchor bales to insure against washout.

2. Filter Fabric Barrier: Filter fabric barriers can be used below disturbed areas subject to sheet and rill erosion with the following limitations:
   E. Where the maximum slope behind the barrier is 33 percent.
   F. In minor swales or ditch lines where the maximum contributing drainage area is no greater than 2 acres.

3. Brush Barrier with Filter Fabric: Brush barrier may be used below disturbed areas subject to sheet and rill erosion where enough residue material is available on site.

4. Level Spreader: A level spreader may be used where sediment-free storm runoff is intercepted and diverted away from the graded areas onto undisturbed stabilized areas. This practice applies only in those situations where the spreader can be constructed on undisturbed soil and the area below the level lip is stabilized. The water should not be allowed to reconcentrate after release.

5. Stockpiling Material: No excavated material shall be stockpiled in such a manner as to direct runoff directly off the project site into any adjacent water body or storm water collection facility.

6. Exposed Area Limitation: The surface area of open, raw erodible soil exposed by clearing and grubbing operations or excavation and filling operations shall not exceed 10 acres. This requirement may be waived for large projects with an Erosion Control Plan which demonstrates that opening of additional areas will not significantly affect off-site deposit of sediments.

7. Inlet Protection: Inlets and catch basins which discharge directly off-site shall be protected from sediment-laden storm runoff until the completion of all construction operations that may contribute sediment to the inlet.

8. Temporary Seeding: Areas opened by construction operations and that are not anticipated to be re-excavated or dressed and receive final grassing treatment within 30 days shall be seeded with a quick growing grass species which will provide an early cover during the season in which it is planted and will not later compete with the permanent grassing.

Controls (Cont.)

9. Temporary Seeding and Mulching: Slopes steeper than 6:1 that fall within the category established in Paragraph 8 above shall additionally receive mulching of approximately 2 inches loose measure of mulch material cut into the soil of the seeded area adequate to prevent movement of seed and mulch.

10. Temporary Grassing: The seeded or seeded and mulched area(s) shall be rolled and watered or hydromulched or other suitable methods if required to assure optimum growing conditions for the establishment of a good grass cover. Temporary grassing shall be the same mix & amount required for permanent grassing in the contract specifications.

11. Temporary regressing: If, after 14 days from seeding, the temporary grassed areas have not attained a minimum of 85 percent uniform good grass cover, the area will be reworked and additional seed applied sufficient to establish the desired vegetative cover.

12. Maintenance: All features of the project designed and constructed to prevent erosion and sediment shall be maintained during the life of the construction so as to function as they were originally designed and constructed.

13. Permanent Erosion Control: The erosion control facilities of the project should be designed to minimize the impact on the offsite facilities.

14. Permanent Seeding: All areas which have been disturbed by construction will, as a minimum, be seeded. The seeding mix must provide both long-term vegetation and rapid growth seasonal vegetation. Slopes steeper than 4:1 shall be seeded and mulched or sodded.

Structural Practices

1. Temporary Diversion Dike: Temporary diversion dikes may be used to divert runoff through a sediment-trapping facility.

2. Temporary Sediment Trap: A sediment trap shall be installed in an drainageway at a storm drain inlet or at other points of discharge form a disturbed area.

The following sediment traps may be constructed either independently or in conjunction with a temporary diversion dike:
A. Block & Gravel Sediment Filter - This protection is applicable where heavy flows and/or where an overflow capacity is necessary to prevent excessive ponding around the structure.
B. Gravel Sediment Trap - This protection is applicable where heavy concentrated flows are expected, but not where ponding around the structure might cause excessive inconvenience or damage to adjacent structures & unprotected areas.
C. Drop Inlet Sediment Trap - This protection is applicable where the inlet drains a relatively flat area (S < 5%) and where sheet or overland flows (Q < 0.5 CFS) are typical. This method shall not apply to inlets receiving concentrated flows such as in street or highway medians.

3. Outlet Protection: Applicable to the outlets of all pipes and paved channel sections where the flow could cause erosion & sediment problem to the receiving water body. Silt fences & hay bales are to be installed immediately downstream of the discharging structure as shown on the Outlet Protection Detail.

4. Sediment Basin: Will be constructed at the common drainage locations that serve an area with 10 or more disturbed acres at one time, the proposed storm water ponds (or temporary ponds) will be constructed for use as sediment basins. These sediment basins must provide a minimum of 3,600 cubic feet of storage per acre drained until final stabilization of the site.

Note:
The N/A cubic feet of storage area per acre drained does not apply to flows from offsite areas and flows from onsite areas that are either undisturbed or have undergone final stabilization where such flows are diverted around both the disturbed area and the sediment basin. Any temporary sediment basins constructed must be backfilled and compacted in accordance with the specifications for structural fill. All sediment collected in permanent or temporary sediment traps must be removed upon final stabilization.

Other Controls

Waste Disposal

All waste materials except land clearing debris shall be collected and stored in a securely lidded metal dumpster. The dumpster will meet all local and state solid waste management regulations. The dumpster will be emptied as needed and the trash will be hauled to a state approved landfill. All personnel will be instructed regarding the correct procedure for waste disposal. Notices stating these practices will be posted at the construction site by the construction Superintendent, the individual who manages the day-to-day site operations, will be responsible for seeing that these procedures are followed.

Hazardous Waste

All hazardous waste materials will be disposed of in the manner specified by local or state regulation or by the manufacturer. Site personnel will be instructed in these practices and the site Superintendent, the individual who manages the day-to-day site operations, will be responsible for seeing that these procedures are followed.

Sanitary Waste

All Sanitary Waste will be collected from the portable units as needed to prevent possible spillage. The waste will be collected and deposed of in accordance with state and local waste disposal regulations for sanitary sewer or septic systems.

Offsite Vehicle Tracking

A stabilized construction entrance will be provided to help reduce vehicle tracking of sediments. The paved street adjacent to the site entrance will be swept daily to remove any excess mud, dirt or rock tracked from the site. Dump trucks hauling material from the construction site will be covered with a tarpaulin.

Inventory for Pollution Prevention Plan

The materials or substances listed below are expected to be present onsite during construction:

☐ Concrete	☐ Fertilizer	☐ Wood
☐ Asphalt	☐ Petroleum Based Products	☐ Masonry Blocks
☐ Tar	☐ Cleaning Solvents	☐ Roofing Materials
☐ Detergents	☐ Paint	☐ Metal Studs
☐ _____	☐ _____	☐ _____

Spill Prevention

Material Management Practices

The following are the material management practices that will be used to reduce the risk of spills or other accidental exposure of materials and substances to storm water runoff:

Good Housekeeping

The following good housekeeping practices will be followed onsite during the construction project:

1. An effort will be made to store only enough product required to do the job.
2. All materials stores onsite will be stored in a neat, orderly manner in their appropriate containers and, if possible, under a roof or other enclosure.
3. Products will be kept in their original containers with the original manufacturer's label.
4. Substances will not be mixed with one another unless recommended by the manufacturer.
5. Whenever possible, all of a product will be used up before disposing of the container.
6. Manufacturer's recommendations for proper use and disposal will be followed.
7. The site Superintendent will inspect daily to ensure materials onsite receive proper use and disposal.

Hazardous Products

These practices are used to reduce the risks associated with hazardous materials.

1. Products will be kept in original containers unless they are not resealable.
2. Original labels and material safety data will be retained, they contain important product information.
3. If surplus product must be disposed of, manufacturer's or local and state recommended methods for proper disposal will be followed.

Product Specific Practices

The following product specific practices will be followed onsite:

Petroleum Products

All onsite 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. Any asphalt substances used onsite will be applied according to the manufacturer's recommendations.

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 storm water. Storage will be in a covered area. The contents of any partially used bags of fertilizer will be transferred to a sealable plastic bin to avoid spills.

Paints

All containers will be tightly sealed and stored when not required for use. Excess paint will not be discharged to the storm sewer system but will be properly disposed of according to manufacturers' instructions or state and local regulations.

Concrete Trucks

Washing of vehicles should be conducted using practices that will prevent direct, untreated discharges of wastewater and hazardous wastes to surface and ground waters. A designated area must be created specifically for washing vehicles that will be laid with filter fabric, crushed stone (DOT gravel #2 and up) and covered with lined berm.

Spill Control Practices

In addition to the good housekeeping and material management practices discussed in the previous sections of this plan, the following practices will be followed for spill prevention and cleanup:

Manufacturers' recommended methods for spill cleanup will be clearly posted on site 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 in the material storage area onsite. Equipment and materials will include but not be limited to brooms, dust pans, mops, rags, gloves, goggles, liquid absorbent (i.e. kitty litter or equal), sand, sawdust, and plastic and metal trash containers specifically for this purpose.

All spills will be cleaned up immediately after discovery.

The spill area will be kept well ventilated and personnel will wear appropriate protective clothing to prevent injury from contact with a hazardous substance.

Spill of toxic or hazardous material will be reported to the appropriate state or local government agency, regardless of the size of the spill.

The spill prevention plan will be adjusted to include measures to prevent this type of spill from reoccurring and how to clean up the spill if there is another one. A description of the spill, what caused it, and the cleanup measures will also be included.

Spill Prevention (Cont.)

The site Superintendent responsible for the day-to-day site operations, will be the spill prevention and cleanup coordinator. He/she will designate at least one other site personnel who will receive spill prevention and cleanup training. These individuals will each become responsible for a particular phase of prevention and cleanup. The names of responsible spill personnel will be posted in the material storage area and if applicable, in the office trailer onsite.

Maintenance / Inspection Procedures

Erosion and Sediment Control Inspection and Maintenance Practices

The following are inspection and maintenance practices that will be used to maintain erosion and sediment controls.

1. No more than 10 acres of the site will be denuded at one time without written permission from the engineer.
2. All control measures will be inspected by the Superintendent, the person responsible for the day-to-day site operation or someone appointed by the Superintendent, at least once a week and following any storm event of 0.25 inches or greater.
3. All turbidity control measures will be maintained in good working order; if a repair is necessary, it will be initiated within 24 hour of _____.
4. Built up sediment will be removed from silt fence when it has reached one-third the height of the fence.
5. Silt fence will be inspected for depth of sediment, tears, to see if the fabric is securely attached to the fence posts, and to see that the fence posts are firmly in the ground.
6. Diversion dikes/swales will be inspected and any breaches promptly repaired.
7. The sediment basins will be inspected for the depth of sediment, and built up sediment will be removed when it reaches 10 percent of the design capacity or at the end of the job, whichever comes first.
8. Temporary and permanent seeding and planting will be inspected for bare spots, washouts, and healthy growth.
9. A maintenance inspection report will be made after each inspection. A copy of the report form to be completed by the inspector is attached. The reports will be kept on site during construction and available upon request to the Owner, Engineer or any federal, state or local agency approving sediment and erosion plans, or storm water management plans. The reports shall be made and retained as part of the storm water pollution prevention plan for at least three years form the date that the site is finally stabilized and the Notice of Termination is submitted. The reports shall identify any incidents of non-compliance.
10. The site Superintendent will select up to three individuals who will be responsible for inspections, maintenance and repair activities, and filling out the inspection and maintenance report.
11. Personnel selected for inspection and maintenance responsibilities will receive training from the site Superintendent. They will be trained in all the inspection and maintenance practices necessary for keeping the erosion and sediment controls used onsite in good working order.

Non-Storm Water Discharges

It is expected that the following non-storm water discharges will occur from the site during the construction period:

1. Water from water line flushing.
2. Pavement wash waters (where no spills or leaks of toxic or hazardous materials have occurred).
3. Uncontaminated groundwater (from dewatering excavation).

All non-storm water discharges will be directed to the sediment basin prior to discharge.

Contractor's Certification

"I certify under penalty of law that I understand, and comply with the terms and conditions of the State of Florida generic permit for stormwater discharge for large and small construction activities and this stormwater pollution prevention plan prepared thereunder."

RESPONSIBLE FOR / DUTIES	BUSINESS NAME AND ADDRESS OF CONTRACTOR AND ALL SUBS	DATE	SIGNATURE
General Contractor			
Sub-Contractor			
Sub-Contractor			
Sub-Contractor			
Sub-Contractor			
Sub-Contractor			

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Goodson Bergen and Associates
CONSULTING ENGINEERS
Engineering License Number: CA32987
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JACKSONVILLE, FLORIDA 32204
PHONE: 904.425.1190
FL LICENSE NUMBER AA26002165
W.W.W. DASHERHURST.COM

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MEP ENGINEER
POWELL & HINKLE ENGINEERING, P.A.
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ORANGE PARK, FL 32073

CIVIL ENGINEER
GOODSON BERGEN & ASSOC
11555 CENTRAL PARKWAY, SUITE 103
JACKSONVILLE, FL 32224

CLAY COUNTY
CLAY CO FIRE STATION 20
1305 FL-16, GREEN COVE SPRINGS, FL

REVISIONS

#	DATE	DESCRIPTION

JEFFREY E. BERGEN, PE
THIS ITEM HAS BEEN ELECTRONICALLY SIGNED AND SEALED BY JEFFREY E. BERGEN, PE ON
12/5/2023

USING A SHA AUTHENTICATION CODE. PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SHA AUTHENTICATION CODE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

DATE: 11/10/2023

NPDES DETAIL SHEET #1

PROJECT NO.: 23002

C18.0
100% DOCUMENTS

PROJECT: CLAY CO FIRE STATION 20

STORM WATER POLLUTION PREVENTION PLAN

INSPECTION AND MAINTENANCE REPORT FORM

TO BE COMPLETED EVERY 7 DAYS AND WITHIN 24 HOURS OF A RAINFALL EVENT OF 0.25 INCHES OR MORE

INSPECTOR: _____ DATE: _____

INSPECTOR'S QUALIFICATIONS:

_____

_____

_____

_____

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

STABILIZATION MEASURES

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

STABILIZATION REQUIRED:

_____

_____

_____

_____

TO BE PERFORMED BY: _____ ON OR BEFORE: _____

PROJECT: CLAY CO FIRE STATION 20

STORM WATER POLLUTION PREVENTION PLAN

INSPECTION AND MAINTENANCE REPORT FORM

STRUCTURAL CONTROLS

DATE: _____

EARTH DIKES/SWALES

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

MAINTENANCE REQUIRED FOR EARTH DIKE/SWALE:

_____

_____

_____

_____

TO BE PERFORMED BY: _____ ON OR BEFORE: _____

CATCH BASIN/CURB INLET/OUTFALL TURBIDITY CONTROLS

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

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

_____

_____

_____

_____

TO BE PERFORMED BY: _____ ON OR BEFORE: _____

PROJECT: CLAY CO FIRE STATION 20

STORM WATER POLLUTION PREVENTION PLAN

INSPECTION AND MAINTENANCE REPORT FORM

SEDIMENT BASIN

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

MAINTENANCE REQUIRED FOR SEDIMENT BASIN:

_____

_____

_____

TO BE PERFORMED BY: _____ ON OR BEFORE: _____

OTHER CONTROLS

STABILIZED CONSTRUCTION ENTRANCE

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

MAINTENANCE REQUIRED FOR STABILIZED CONSTRUCTION ENTRANCE:

_____

_____

_____

TO BE PERFORMED BY: _____ ON OR BEFORE: _____

PROJECT: CLAY CO FIRE STATION 20

STORM WATER POLLUTION PREVENTION PLAN

INSPECTION AND MAINTENANCE REPORT FORM

CHANGES REQUIRED TO THE POLLUTION PREVENTION PLAN:

_____

_____

_____

_____

_____

_____

_____

_____

REASONS FOR CHANGES:

_____

_____

_____

_____

_____

_____

_____

_____

_____

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

SIGNATURE: _____

DATE: _____

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REVISIONS

#	DATE	DESCRIPTION

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JEFFREY E. BERGEN LICENSE No. 63060 STATE OF FLORIDA PROFESSIONAL ENGINEER

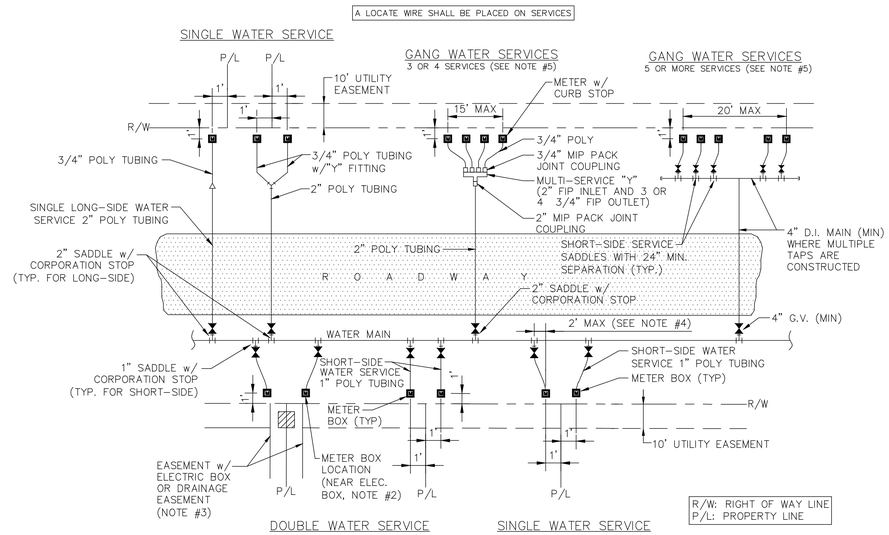
DATE: 11/10/2023

NPDES DETAIL SHEET #2

PROJECT NO.: 23002

C19.0

100% DOCUMENTS



NOTES

1. THE SKETCHES ABOVE INDICATE TYPICAL WATER SERVICE AND METER BOX LOCATIONS. ACTUAL LOCATIONS OF BOXES MAY VARY SLIGHTLY ACCORDING TO FIELD CONDITIONS ENCOUNTERED. TYPICALLY, THE METER BOX SHALL BE LOCATED 1.0' OFF OF THE R/W LINE.

2. UNLESS SPECIFIED OTHERWISE BY THE CITY OF GREEN COVE SPRINGS, THE METER BOX SHALL BE LOCATED 1.0' OFF OF THE R/W LINE, AND 1.0' FOOT INSIDE OF THE PROLONGATION OF ONE OF THE SIDE PROPERTY LINES. IF A CONFLICT EXISTS WITH OTHER UTILITIES, THE METER BOX MAY BE ADJUSTED TO FOUR FEET (MAX.) INSIDE PROPERTY LINES (IN LIEU OF 1.0' FEET). UNLESS APPROVED OTHERWISE BY THE CITY, THE WATER METER BOX SHALL BE LOCATED IN NON-TRAFFIC AREAS (NOT IN SIDEWALKS OR DRIVEWAYS). IF AN UNAPPROVED METER BOX IS IDENTIFIED BY THE CITY, THEN THE CONTRACTOR OR CUSTOMER SHALL BE RESPONSIBLE FOR THE COST OF RELOCATING ANY METER BOX WHICH IS LOCATED IN THE SIDEWALK OR DRIVEWAY OR THE COST TO PROVIDE THE CORRECT METER BOX. THE CITY SHALL APPROVE ALL DEVIATIONS TO THE ABOVE PRIOR TO CONSTRUCTION.

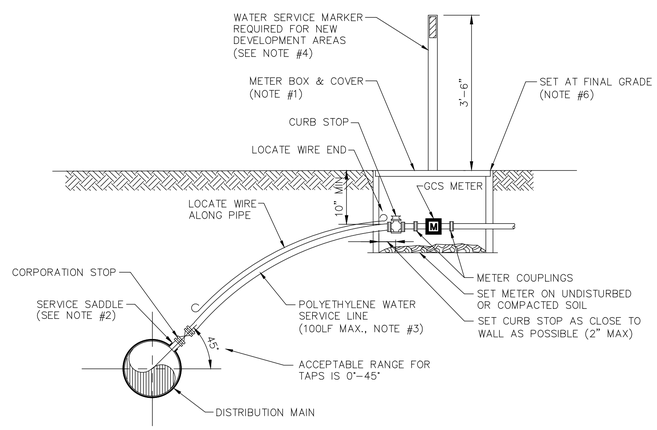
3. IF DRAINAGE OR OTHER EASEMENT IS LOCATED BETWEEN LOTS, METER BOXES SHALL BE LOCATED AT THE EASEMENT LINE BUT OUTSIDE THE EASEMENT AREA.

4. FOR SINGLE SERVICES, THE HORIZONTAL DISTANCE (PERPENDICULAR TO THE MAIN) BETWEEN THE SERVICE'S SADDLE AND THE METER BOX SHALL BE 2 FEET MAXIMUM. FOR DOUBLE 3/4"SERVICES, THE 2"POLY MAIN SHALL BE LOCATED CENTERED BETWEEN THE TWO METER BOXES. LOCATE WIRE IS REQUIRED ON ALL SERVICES. THE WIRE SHALL RUN FROM THE METER BOX TO THE MAIN (WITH NO CONNECTION TO MAIN WIRE WITH THE LAST 24 INCHES STRIPPED OF INSULATION/BARE WIRE AS GROUND). ALL EXCEPTIONS TO THIS REQUIREMENT MUST BE APPROVED BY THE CITY OF GREEN COVE SPRINGS. THIS WILL ASSIST IN LOCATING EXISTING SERVICE LINES IN THE FUTURE.

5. GANG WATER SERVICES: FOR 3 OR 4 SERVICES IN ONE AREA, A DUCTICLE IRON PIPE (D.I.P.) WATER MAIN EXTENSION W/LOCATE WIRE MAY BE UTILIZED ON EITHER SHORT-SIDE OR LONG-SIDE SERVICES WHERE SHOWN ON THE DRAWINGS. LOCATE WIRE SHALL EXTEND FROM ONE METER BOX TO CURB STOP AT WATER MAIN. FOR 5 OR MORE SERVICES IN ONE AREA, A WATER MAIN EXTENSION W/LOCATE WIRE MAY BE UTILIZED ON EITHER SHORT-SIDE OR LONG-SIDE SERVICES WHERE SHOWN ON THE DRAWINGS (TAPS STAGGERED AND AT 2 FEET ON CENTER (MIN). FOR WATER SUPPLY HEADERS WHERE 5 OR MORE TAPS ARE CONSTRUCTED, THE HEADER PIPE SHALL BE 4" AT A MINIMUM. EXAMPLE: CONSTRUCT A 4" MAIN D.I. CROSSING THE STREET FOR 5 RESIDENTIAL CUSTOMERS, UTILIZING 4" G.V., 4" PIPE, 4"X1" SADDLES AND 1" CURB STOPS (NO GLUED TEE FITTINGS). THE 4" OR LARGER D.I.P. WATER MAIN MUST BE SIZED AND DESIGNED BY THE ENGINEER.

6. ALL COMMERCIAL WATER SERVICES SHALL BE 2" POLYETHYLENE PIPING CONNECTED TO 2" CURB STOP IN METER BOX, UNLESS OTHERWISE APPROVED BY THE CITY.

WATER SERVICE INSTALLATIONS 2" AND SMALLER METER



NOTES

1. SEE CITY OF GREEN COVE SPRINGS APPROVED MATERIALS MANUAL AND SYSTEM DETAILS FOR REQUIREMENTS.

2. SINGLE BAND SADDLES MAYBE UTILIZED ON NEW 1" WATER SERVICES WHICH ARE INSTALLED ON A DRY 10" SIZE OR SMALLER WATER MAIN (NEW WATER MAIN CONSTRUCTION). FOR WET TAPS OR WATER MAINS 12" SIZE AND LARGER, A DOUBLE BAND SADDLE IS REQUIRED.

3. NO OPEN CUT UNDER ROADWAY PAVING ALLOWED UNLESS THE ROADWAY IS BEING RECONSTRUCTED OR IF DIRECTED OTHERWISE BY CITY OF GREEN COVE SPRINGS. CONSTRUCT POLY LINE WITH 36" (MIN.) COVER UNDER ROADWAYS. THE POLY WATER SERVICE LINE SHALL BE SAME SIZE AS THE METER (3/4" MINIMUM) AND BE INSTALLED PERPENDICULAR TO THE MAIN AND NOT EXCEED 100LF UNLESS OTHERWISE APPROVED BY CITY OF GREEN COVE SPRINGS.

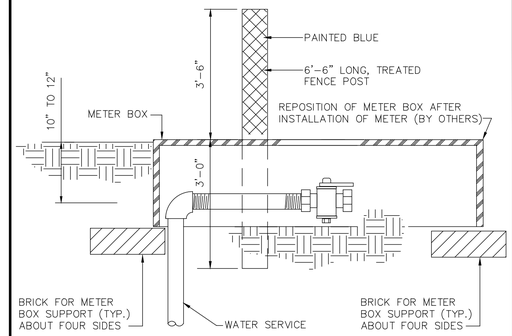
4. INSTALL PVC PLUG IN ALL CURB STOPS IF WATER SERVICE IS "NOT IN USE" (I.E.: IF NO METER IS INSTALLED). IN ADDITION, INSTALL A 6', 6" P.T. FENCE POST (TOP PAINTED BLUE) 12" OFF SIDE OF METER BOX. THE REMOVAL OR TRANSFER OF A WATER SERVICE SHALL INCLUDE BRASS METER COUPLINGS (HEX ON BARREL TYPE).

5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR OR REPLACEMENT OF THE BOXES, METERS OR ELECTRONIC DEVICES IF DAMAGED BY THE CONTRACTOR DURING THE CONSTRUCTION PERIOD.

6. METER BOX AND TOP SHALL BE CLEAR OF ALL DEBRIS TO ALLOW FULL ACCESS TO BOX (I.E., NO DIRT, TRASH OR OTHER DEBRIS PLACED ON TOP OF BOX).

7. LOCATE WIRING REQUIRED ON ALL LONG AND SHORT SERVICES.

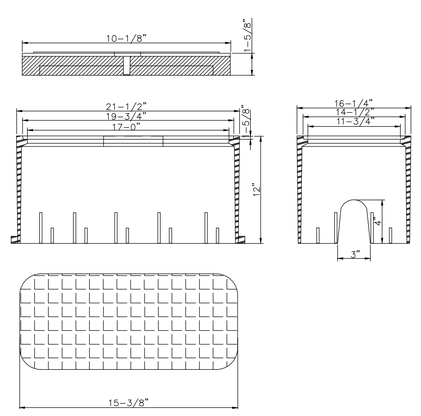
WATER SERVICE DETAIL– 2" AND SMALLER METER



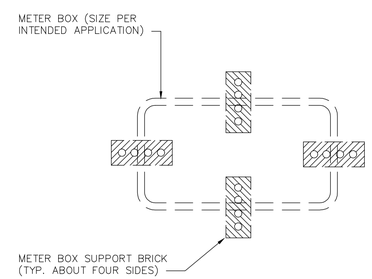
WATER SERVICE MARKER POST

NOTE:
ALL SERVICES ARE TO BE CLEARLY MARKED BY A TREATED 6'-6" LONG MARKER POST PAINTED BLUE. ALL SERVICES ARE TO BE EXTENDED ABOVE GRADE UNTIL COMPLETION OF ALL GRADING ACTIVITIES. ONCE FINAL ROAD GRADING IS COMPLETE, LOWER SERVICES BY CUTTING OFF RISER 10" TO 12" BELOW FINAL GRADE AND INSTALL 90° BEND, NIPPLE AND LW BALL VALVE AT THAT ELEVATION. SET METER BOX OVER ENTIRE HORIZONTAL SECTION OF SERVICE LINE FROM LAST 90° BEND TO THE END OF THE CURB STOP. BOX TO BE REPOSITIONED WHEN THE METER IS INSTALLED. MARKER POST TO BE INSTALLED ADJACENT TO AND LOCATED AT THE MID SECTION OF THE METER BOX.

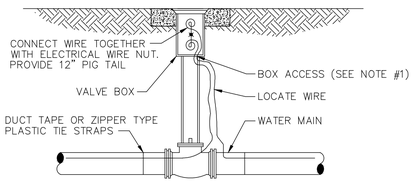
NOTE:
MIN. WALL THIKNESS: .25"
DOUBLE WALL BODY w/STRUCTURAL SUPPORT RIBS
w/MIN. THINCKNESS: 3/16"
1" BOTTOM FLANGE
BOX IS INJECTED MOLDED STRUCTURAL FOAM RECYCLED POLYPROPYLENE MATERIAL



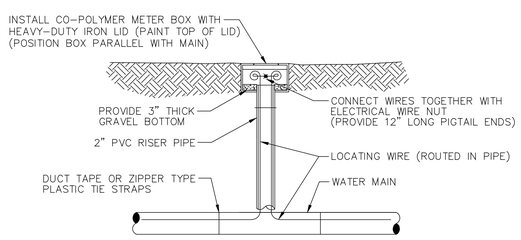
METER BOX & SOLID BLUE LID



METER BOX SUPPORT DETAIL



LOCATE WIRE BOX UTILIZING VALVE BOX

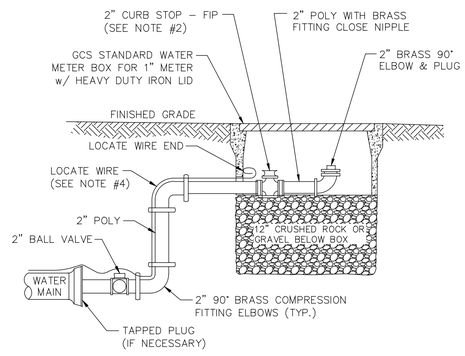


LOCATE WIRE BOX UTILIZING METER BOX

NOTES

1. LOCATE WIRE SHALL ENTER THE VALVE BOX THROUGH A "V" CUT IN THE 6" PVC RISER PIPE.

LOCATE WIRE BOX



NOTES

1. PIPE SHALL BE POLYETHYLENE. FITTINGS SHALL BE BRASS.
2. THE 2" CURB STOP SHALL BE ALL BRONZE. FITTINGS SHALL BE BRASS.
3. CANNOT BE PLACED UNDER CONCRETE OR PAVEMENT.
4. PLACE 2 FEET PAST LAST WATER MAIN SERVICE CONNECTION.

FLUSHING VALVE BELOW GRADE

NO	DATE	BY	REVISION DESCRIPTION
1	FEB.2016	SS	GENERAL UPDATES

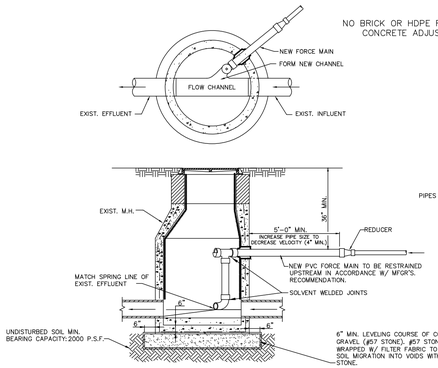
DESG
DRWN
CHKD
APRV
DATE

PROJECT:

STANDARD WATER SERVICE DETAILS

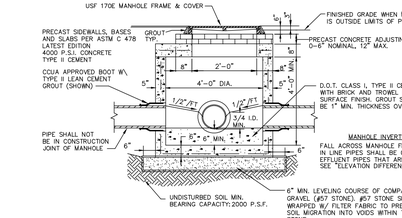
CITY OF
GREEN COVE SPRINGS
321 WALNUT STREET
GREEN COVE SPRINGS, FLORIDA 32043

ACAD FILE NAME
SERVICES.DWG
SHEET NO.
1 OF 1



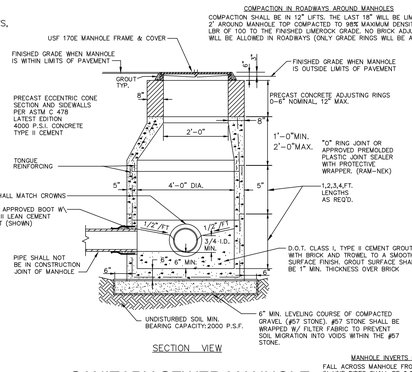
TYP. FORCE MAIN CONNECTION TO MANHOLE

NOTE:
1. THIS MANHOLE AND THE NEXT TWO MANHOLES DOWNSTREAM (AS REQUIRED BY UTILITY) ARE TO HAVE POLYETHYLENE LINER AS MANUFACTURED BY STANDARD PRECAST CO. (AGRU SURE GRIP) OR APPROVED EQUAL.
2. IF CONNECTION IS BEING MADE TO AN EXISTING MANHOLE, THAT MANHOLE AND THE NEXT TWO MANHOLES DOWNSTREAM (AS REQUIRED BY UTILITY), SHALL BE LINED WITH "SPECTRASHIELD" OR APPROVED EQUAL.
3. SIZE OF DROP PIPE CONNECTION TO MANHOLE SHALL BE DESIGNED BY THE PROJECT ENGINEER. MINIMUM SIZE SIZE SHALL BE 4". CONNECTION AND DROP PIPE SHALL BE SIZED TO REDUCE THE VELOCITY AND PREVENT "SPLASHOVER" WITHIN THE MANHOLE. 5'-0" MINIMUM DISTANCE FROM MANHOLE TO REDUCER MAY BE INCREASED TO ASSIST IN THIS VELOCITY REDUCTION.



SECTION VIEW

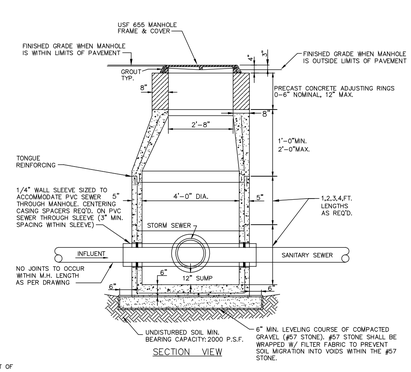
SHALLOW SANITARY SEWER MANHOLE



SECTION VIEW

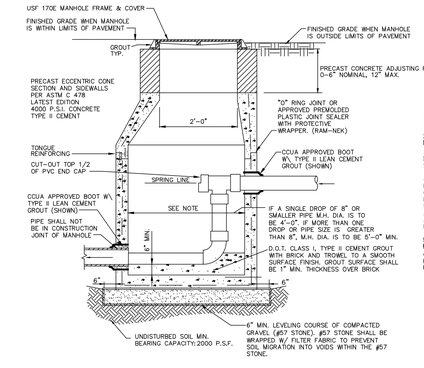
SANITARY SEWER MANHOLE

MANHOLE INVERTS DESIGN CRITERIA
FALL ACROSS MANHOLE FROM INFLUENT TO EFFLUENT OF IN LINE PIPES SHALL BE 0.05 FT. MIN. INFLUENT TO EFFLUENT PIPES THAT ARE AT AN ANGLE SHALL BE 0.10 SEE "ELEVATION DIFFERENCE ACROSS MANHOLE" THIS SHEET.



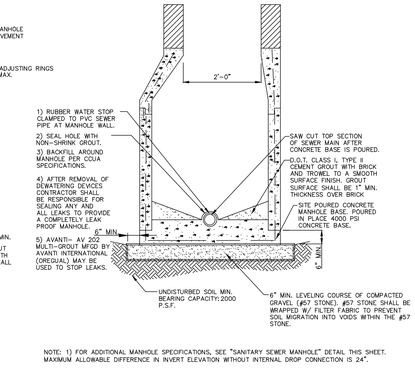
SECTION VIEW

STORM CONFLICT MANHOLE



NOTE: FOR ADDITIONAL MANHOLE SPECIFICATIONS, SEE "SANITARY SEWER MANHOLE" DETAIL THIS SHEET. MAXIMUM ALLOWABLE DIFFERENCE IN INVERT ELEVATION WITHOUT INTERNAL DROP CONNECTION IS 24". SEE "ELEVATION DIFFERENCE ACROSS MANHOLE" THIS SHEET.

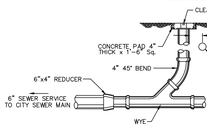
TYPICAL GRAVITY SEWER DROP PIPE CONNECTION TO MANHOLE



NOTE: 1) FOR ADDITIONAL MANHOLE SPECIFICATIONS, SEE "SANITARY SEWER MANHOLE" DETAIL THIS SHEET. MAXIMUM ALLOWABLE DIFFERENCE IN INVERT ELEVATION WITHOUT INTERNAL DROP CONNECTION IS 24".

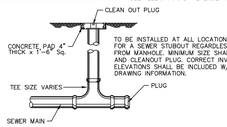
SADDLE MANHOLE DETAIL

THIS DETAIL IS ONLY TO BE USED WITH SPECIFIC APPROVAL BY CITY OF GCS.



CLEANOUT DETAIL

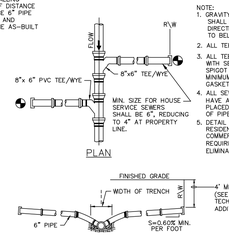
N.T.S.



STANDARD STUBOUT

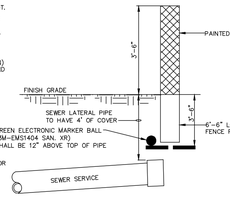
SURVEY ACCESSIBLE CLEANOUT

N.T.S.

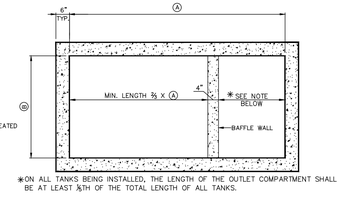


NOTE:
1. GRAVITY SEWER AND SERVICE PIPE SHALL BE INSTALLED WITH THE DIRECTION OF FLOW FROM SPIGOT TO BELL.
2. ALL TEE-WYES SHALL BE BELL-SPIGOT.
3. ALL TEE-WYES SHALL BE COMPATIBLE WITH SEWER PIPE BELLS BEING USED. SPIGOT END OF TEE-WYE SHALL BE A MINIMUM OF 2" BEYOND THE BELL GASKET WHEN "HOMED UP".
4. ALL SEWER SERVICE PIPES SHALL HAVE AN ELECTRONIC MARKER (GREEN) PLACED ON TOP OF PIPE AT EACH END OF PIPE.
5. DETAIL SHOWN IS FOR RESIDENTIAL CONNECTION. COMMERCIAL OR OTHER USE REQUIRING A 6" LATERAL CAN ELIMINATE THE 6"X4" REDUCER.

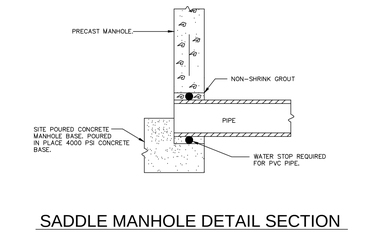
4" MIN. DEPTH TO TOP OF PIPE (SEE WATER AND SEWER SYSTEM TECHNICAL SPECIFICATION SHEET FOR ADDITIONAL INFORMATION.)



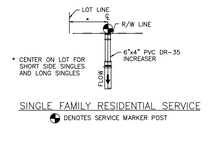
SEWER SERVICE MARKER POST



✱ON ALL TANKS BEING INSTALLED, THE LENGTH OF THE OUTLET COMPARTMENT SHALL BE AT LEAST ⅓TH OF THE TOTAL LENGTH OF ALL TANKS.



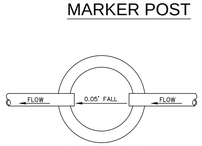
SADDLE MANHOLE DETAIL SECTION



SINGLE FAMILY RESIDENTIAL SERVICE

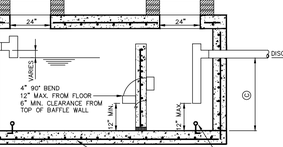
DENOTES SERVICE MARKER POST

STANDARD SINGLE SEWER SERVICE LATERALS



STRAIGHT THROUGH FLOW AND UP TO 30° OR LESS FLOW

ELEVATION DIFFERENCE ACROSS MANHOLE

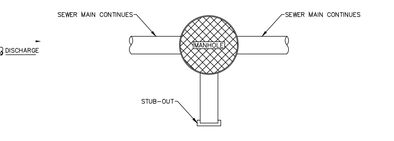


CAPACITY IN GALLONS		
DIM	1,000 MIN	1,250
A	7'-0"	10'-0"
B	5'-0"	4'-0"
C	4'-0"	4'-3"
D	5'-0"	5'-0"

COMPLIES WITH A.S.T.M. C-913, PRECAST CONCRETE WATER AND WASTEWATER STRUCTURES AND A.S.T.M. C-890, MINIMUM STRUCTURAL DESIGN LOADING FOR MONOLITHIC OR SECTIONAL PRECAST CONCRETE WATER AND WASTEWATER STRUCTURES

NOTES:
1. GREASE TRAP SHALL BE SIZED BY THE PROJECT ENGINEER USING THE ANTICIPATED PEAK FLOW OF WATER ENTERING THE GREASE TRAP IN ACCORDANCE WITH THE 2003 STATE OF FLORIDA BUILDING CODE — PLUMBING.
2. ROUND-UP TO MATCH THE CLOSEST CAPACITY IN GALLONS PER THE CHART.

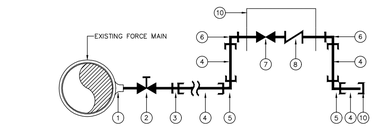
GREASE INTERCEPTOR DETAIL



PROCEDURES FOR CONNECTING TO A GRAVITY STUB

NOTE: BEFORE CONNECTING TO ANY GRAVITY STUB, EXCAVATE AND SHOOT THE ELEVATION OF THE STUB INVERT AND THE ELEVATION OF THE INVERT OF THE SAME PIPE COMING OUT OF THE IMMEDIATE DOWNSTREAM MANHOLE. MEASURE THE DISTANCE FROM THE MANHOLE TO THE STUB, CALCULATE THE PIPE GRADE. IF THE GRADE ON THE PIPE IS LESS THAN PLAN DESIGN THEN CONTACT THE C.G.C.S. PUBLIC WORKS DEPARTMENT AND THE PROJECT ENGINEER BEFORE PROCEEDING FURTHER. THE PROJECT ENGINEER AND THE C.G.C.S. PUBLIC WORKS DEPARTMENT WILL MAKE THE DECISION ON HOW TO RESOLVE THE DISCREPANCY BEFORE THE CONTRACTOR CAN PROCEED FURTHER.

NO WORK WILL BE ALLOWED ON A GRAVITY LINE UPSTREAM OF THE CONNECTION POINT TO THE C.G.C.S. SYSTEM WITHOUT PRIOR APPROVAL OF THE C.G.C.S. PUBLIC WORKS DEPARTMENT..



MATERIAL LIST

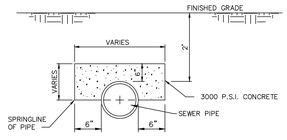
1. STAINLESS STEEL TAPPING SADDLE
2. 2" H.D. BRONZE BALL VALVE CORP STOP (FULL OPENING)
3. 2" SCH.80 FEMALE ADAPTER (S x FIPT)
4. 2" SCH.80 PIPE
5. 2", 90° SCH.80 BEND (S x S)
6. 2", 90° SCH.80 BEND (S x T)
7. 2" BRONZE BALL VALVE W/ LOCKING WING (SEE TABLE ON WATER SHEET)
8. 2" TRU-UNION PVC BALL CHECK VALVE
9. RUSSELL C.I. VALVE BOX W/ "SEWER" ON LID
10. 2" SCH.40 CAP (S)

NOTE: ENGINEER TO VERIFY THAT THE SIZE OF SERVICE IS ADEQUATE AND IS TO ADJUST ACCORDING TO HIS FINDING.

2" SEWAGE FORCE MAIN MANIFOLD SERVICE CONNECTION DETAIL FOR MEDIUM TO HIGH PRESSURE CONNECTION SYSTEMS

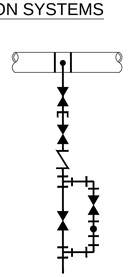
MANHOLE FRAME AND COVER SHALL BE USF CO. MOD. NO. 170E

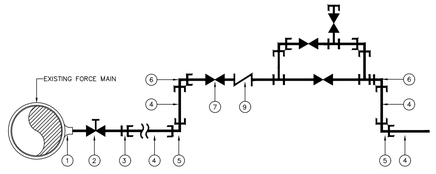
SANITARY SEWER MANHOLE FRAME & COVER



REQUIRED WHERE TOP OF SEWER PIPE IS WITHIN 2' OF FINISHED GRADE UNLESS ALTERNATE DETAIL IS APPROVED BY THE CLAY COUNTY UTILITY AUTHORITY.

CONCRETE CAP FOR SEWER PIPES





MATERIAL LIST

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4. 2" SCH.80 PIPE
5. 2", 90° SCH.80 BEND (S x S)
6. 2", 90° SCH.80 BEND (S x T)
7. (3) 2" BRONZE BALL VALVE, CURB STOP W/ LOCKING WING (SEE TABLE ON WATER SHEET)
8. 2" TRU-UNION PVC BALL CHECK VALVE
9. RUSSELL C.I. VALVE BOX W/ "SEWER" ON LID
10. 2" SCH.40 CAP (S)
11. 2" TEE W/ 2 X 1/2" BUSHING
12. 1/2" STAINLESS STEEL NIPPLE W/ BALL VALVE & PLUG

NOTE: ENGINEER TO VERIFY THAT THE SIZE OF SERVICE IS ADEQUATE AND IS TO ADJUST ACCORDING TO HIS FINDING.

" SEWAGE FORCE MAIN MANIFOLD SERVICE CONNECTION / WITH PRESSURE GAUGE FITTING / FOR LOW PRESSURE RECEIVING SYSTEMS FOR CREATING ARTIFICIAL HEAD PRESSURE

SINGLE SERVICE

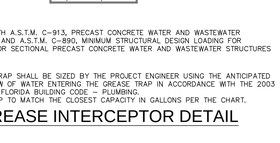
DENOTES SERVICE MARKER POST

GRINDER PUMP STATION FORCE MAIN CONNECTION TO SINGLE GRAVITY SERVICE

NOTE:
FACILITIES WITH FLOOR DRAINS AND WITHOUT A GREASE TRAP SHALL INSTALL THIS MODEL FLOOR DRAIN AND ONLY WITH PRIOR APPROVAL FROM THE CLAY COUNTY UTILITY AUTHORITY.

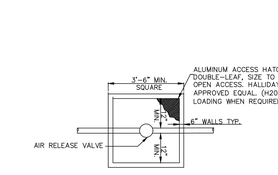
FLOOR DRAIN WITH STRAINER DETAIL

TAPPING OR CUTTING IN SERVICE LATERAL TO EXISTING SEWER MAIN



SANITARY SEWAGE FORCE MAIN AIR RELEASE VALVE VAULT

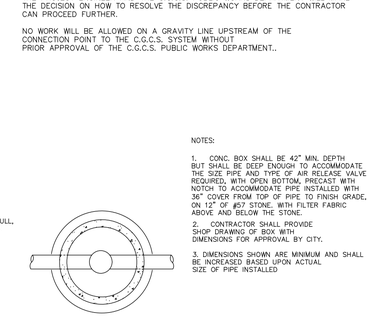
TO BE USED ON ALL PIPES 12" OR LARGER



SANITARY SEWAGE FORCE MAIN AIR RELEASE VALVE VAULT

TO BE USED ON ALL PIPES 10" OR SMALLER

NOTES:
1. CONC. BOX SHALL BE 42" MIN. DEPTH BUT SHALL BE DEEP ENOUGH TO ACCOMMODATE THE SIZE PIPE AND TYPE OF AIR RELEASE VALVE REQUIRED, WITH OPEN BOTTOM. PRECAST WITH NOTCH TO ACCOMMODATE PIPE INSTALLED WITH 36" COVER FROM TOP OF PIPE TO FINISH GRADE, ON 12" OF #57 STONE. WITH FILTER FABRIC ABOVE AND BELOW THE STONE.
2. CONTRACTOR SHALL PROVIDE SHOP DRAWING OF BOX WITH DIMENSIONS FOR APPROVAL BY CITY.
3. DIMENSIONS SHOWN ARE MINIMUM AND SHALL BE INCREASED BASED UPON ACTUAL SIZE OF PIPE INSTALLED



FOR PIPE 10" OR SMALLER A 4' DIAMETER, NOTCHED MANHOLE CAN BE USED FOR AIR RELEASE VALVE.

SET MANHOLE ON MIN. OF 4 SOLID CONCRETE BLOCKS SPACED EVENLY AROUND THE MANHOLE W/ A MIN. OF 12"#57 STONE WITH FILTER FABRIC ABOVE AND BELOW THE STONE.

SANITARY SEWAGE FORCE MAIN AIR RELEASE VALVE VAULT

TO BE USED ON ALL PIPES 10" OR SMALLER

DESG	DRWN	CHKD	APRV	DATE

NO	DATE	BY	REVISION DESCRIPTION
1	FEB 2016	SS	GENERAL UPDATE

PROJECT:

SEWER SYSTEM DETAILS

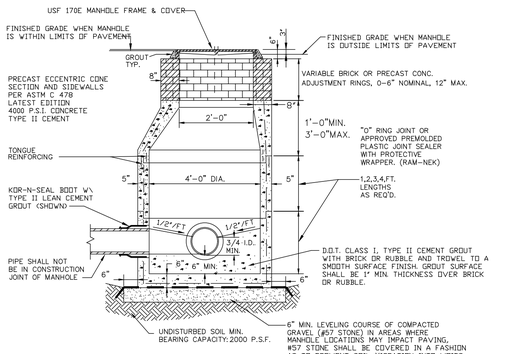
STANDARD SEWER DETAILS

CITY OF GREEN COVE SPRINGS
321 WALNUT STREET
GREEN COVE SPRINGS, FLORIDA 32043

ACAD FILE NAME
SEWSTAND.DWG
SHEET NO.
OF

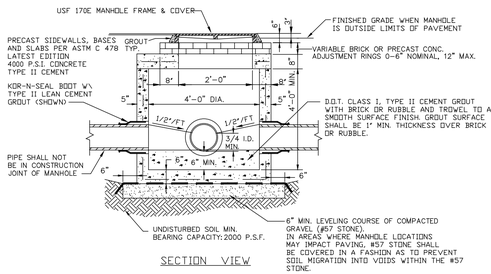
COMPACTION IN ROADWAYS AROUND MANHOLES

COMPACTION SHALL BE IN 12" LIFTS. THE LAST 18" WILL BE LIMEROCK. 2' AROUND MANHOLE TOP COMPACTED TO 98% MAXIMUM DENSITY WITH LBR OF 100 TO THE FINISHED LIMEROCK GRADE. NO BRICK ADJUSTMENTS WILL BE ALLOWED IN ROADWAYS (ONLY GRADE RINGS WILL BE ACCEPTED).



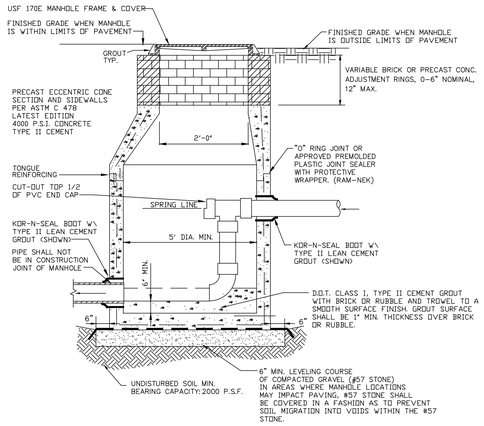
SECTION VIEW

SANITARY SEWER MANHOLE



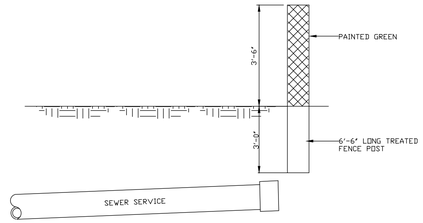
SECTION VIEW

SHALLOW SANITARY SEWER MANHOLE

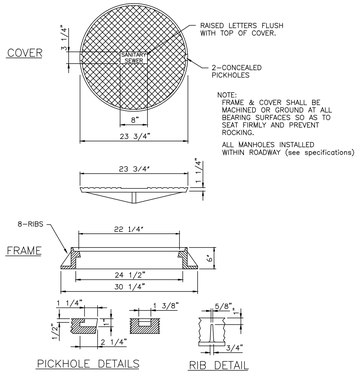


NOTE: FOR ADDITIONAL MANHOLE SPECIFICATIONS, SEE "SANITARY SEWER MANHOLE" DETAIL THIS SHEET.
MAXIMUM ALLOWABLE DIFFERENCE IN INVERT ELEVATION WITHOUT INTERNAL DROP CONNECTION IS 24".

TYPICAL GRAVITY SEWER DROP PIPE CONNECTION TO MANHOLE

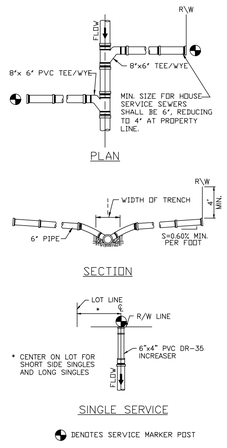


SEWER SERVICE MARKER POST



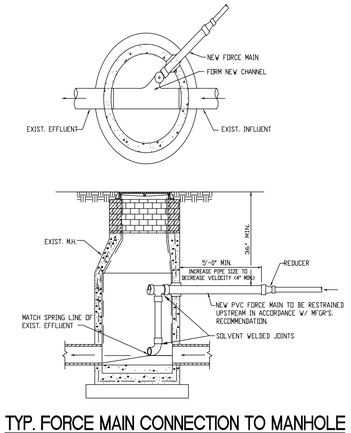
MANHOLE FRAME AND COVER SHALL BE USF CO. MOD. NO. 170E

SANITARY SEWER MANHOLE FRAME + COVER



DENOTES SERVICE MARKER POST

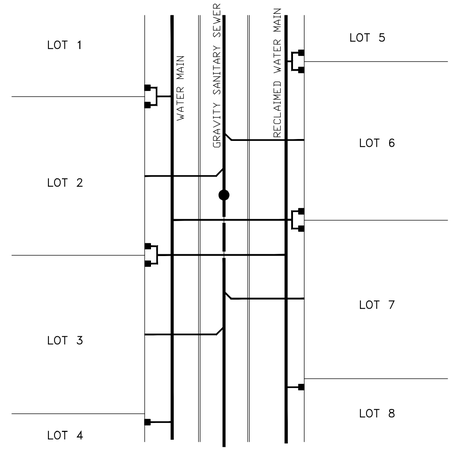
STANDARD SINGLE SEWER SERVICE LATERALS



TYP. FORCE MAIN CONNECTION TO MANHOLE

NOTE: 1. THIS MANHOLE AND THE NEXT TWO MANHOLES DOWNSTREAM (AS REQUIRED BY UTILITY) ARE TO HAVE POLYETHYLENE LINER AS MANUFACTURED BY TAYLOR PRECAST CO. OR APPROVED EQUAL.

2. SIZE OF DROP PIPE CONNECTION TO MANHOLE SHALL BE DESIGNED BY THE PROJECT ENGINEER. MINIMUM SIZE SIZE SHALL BE 4". CONNECTION AND DROP PIPE SHALL BE SIZED TO REDUCE THE VELOCITY AND PREVENT "SPLASHOVER" WITHIN THE MANHOLE. 5'-0" MINIMUM DISTANCE FROM MANHOLE TO REDUCER MAY BE INCREASED TO ASSIST IN THIS VELOCITY REDUCTION.



TYPICAL WATER AND SEWER SERVICE LOCATION PLAN

1.) ALL WATER AND REUSE DOUBLE SERVICES ON PROPERTY LINE.
2.) ANY SINGLE WATER OR REUSE SERVICE LINES ON LOT LINE.
3.) ALL SEWER SERVICES ARE TO CENTER OF LOTS.

NO	DATE	BY	REVISION DESCRIPTION
1	FEB.2016	SS	GENERAL UPDATES

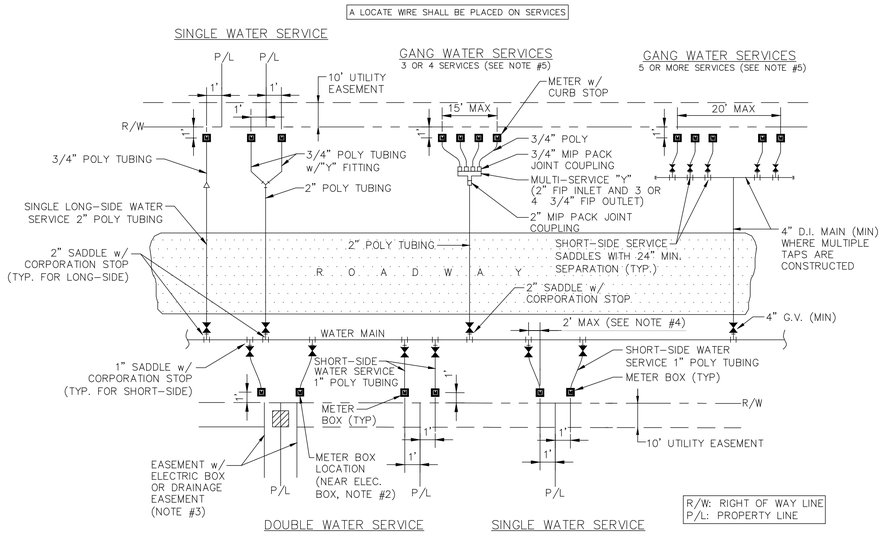
DRWN
CHKD
APPRV
DATE

GRAVITY SEWER SERVICE DETAILS

CITY OF
GREEN COVE SPRINGS
321 WALNUT STREET
GREEN COVE SPRINGS, FLORIDA 32043

ACAD FILE NAME
SERVICES.DWG
SHEET NO.

1 OF 1



NOTES

1. THE SKETCHES ABOVE INDICATE TYPICAL RECLAIMED WATER SERVICE AND METER BOX LOCATIONS. ACTUAL LOCATIONS OF BOXES MAY VARY SLIGHTLY ACCORDING TO FIELD CONDITIONS ENCOUNTERED. TYPICALLY, THE METER BOX SHALL BE LOCATED 1.0' OFF OF THE R/W LINE.

2. UNLESS SPECIFIED OTHERWISE BY THE CITY OF GREEN COVE SPRINGS, THE METER BOX SHALL BE LOCATED 1.0' OFF OF THE R/W LINE, AND 1.0' FOOT INSIDE OF THE PROLONGATION OF ONE OF THE SIDE PROPERTY LINES. IF A CONFLICT EXISTS WITH OTHER UTILITIES, THE METER BOX MAY BE ADJUSTED TO FOUR FEET (MAX.) INSIDE PROPERTY LINES (IN LIEU OF 1.0' FEET). UNLESS APPROVED OTHERWISE BY THE CITY, THE RECLAIMED WATER METER BOX SHALL BE LOCATED IN NON-TRAFFIC AREAS (NOT IN SIDEWALKS OR DRIVEWAYS). IF AN UNAPPROVED METER BOX IS IDENTIFIED BY THE CITY, THEN THE CONTRACTOR OR CUSTOMER SHALL BE RESPONSIBLE FOR THE COST OF RELOCATING ANY METER BOX WHICH IS LOCATED IN THE SIDEWALK OR DRIVEWAY OR THE COST TO PROVIDE THE CORRECT METER BOX. THE CITY SHALL APPROVE ALL DEVIATIONS TO THE ABOVE PRIOR TO CONSTRUCTION.

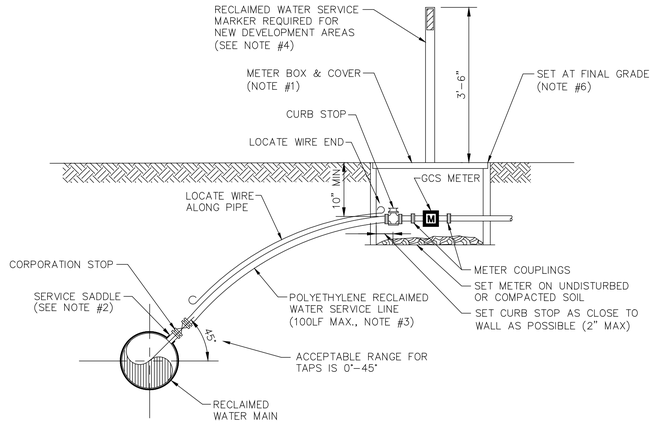
3. IF DRAINAGE OR OTHER EASEMENT IS LOCATED BETWEEN LOTS, METER BOXES SHALL BE LOCATED AT THE EASEMENT LINE BUT OUTSIDE THE EASEMENT AREA.

4. FOR SINGLE SERVICES, THE HORIZONTAL DISTANCE (PERPENDICULAR TO THE MAIN) BETWEEN THE SERVICE'S SADDLE AND THE METER BOX SHALL BE 2 FEET MAXIMUM. FOR DOUBLE 3/4"SERVICES, THE 2"POLY MAIN SHALL BE LOCATED CENTERED BETWEEN THE TWO METER BOXES. LOCATE WIRE IS REQUIRED ON ALL SERVICES. THE WIRE SHALL RUN FROM THE METER BOX TO THE MAIN (WITH NO CONNECTION TO MAIN WIRE WITH THE LAST 24 INCHES STRIPPED OF INSULATION/BARE WIRE AS GROUND). ALL EXCEPTIONS TO THIS REQUIREMENT MUST BE APPROVED BY THE CITY OF GREEN COVE SPRINGS. THIS WILL ASSIST IN LOCATING EXISTING SERVICE LINES IN THE FUTURE.

5. GANG RECLAIMED WATER SERVICES: FOR 3 OR 4 SERVICES IN ONE AREA, A DUCTILE IRON PIPE (D.I.P.) RECLAIMED WATER MAIN EXTENSION W/LOCATE WIRE MAY BE UTILIZED ON EITHER SHORT-SIDE OR LONG-SIDE SERVICES WHERE SHOWN ON THE DRAWINGS. LOCATE WIRE SHALL EXTEND FROM ONE METER BOX TO CURB STOP AT RECLAIMED WATER MAIN. FOR 5 OR MORE SERVICES IN ONE AREA, A RECLAIMED WATER MAIN EXTENSION W/LOCATE WIRE MAY BE UTILIZED ON EITHER SHORT-SIDE OR LONG-SIDE SERVICES WHERE SHOWN ON THE DRAWINGS (TAPS STAGGERED AND AT 2 FEET ON CENTER (MIN). FOR WATER SUPPLY HEADERS WHERE 5 OR MORE TAPS ARE CONSTRUCTED, THE HEADER PIPE SHALL BE 4" AT A MINIMUM. EXAMPLE: CONSTRUCT A 4" MAIN D.I. CROSSING THE STREET FOR 5 RESIDENTIAL CUSTOMERS, UTILIZING 4" G.V., 4" PIPE, 4"X1" SADDLES AND 1" CURB STOPS (NO GLUED TEE FITTINGS). THE 4" OR LARGER D.I.P. RECLAIMED WATER MAIN MUST BE SIZED AND DESIGNED BY THE ENGINEER.

6. ALL COMMERCIAL WATER SERVICES SHALL BE 2" POLYETHYLENE PIPING CONNECTED TO 2" CURB STOP IN METER BOX, UNLESS OTHERWISE APPROVED BY THE CITY.

RECLAIMED WATER SERVICE INSTALLATIONS 2" AND SMALLER METER



NOTES

1. SEE CITY OF GREEN COVE SPRINGS APPROVED MATERIALS MANUAL AND SYSTEM DETAILS FOR REQUIREMENTS.

2. SINGLE BAND SADDLES MAYBE UTILIZED ON NEW 1" RECLAIMED WATER SERVICES WHICH ARE INSTALLED ON A DRY 10" SIZE OR SMALLER RECLAIMED WATER MAIN (NEW RECLAIMED WATER MAIN CONSTRUCTION). FOR WET TAPS OR RECLAIMED WATER MAINS 12" SIZE AND LARGER, A DOUBLE BAND SADDLE IS REQUIRED.

3. NO OPEN CUT UNDER ROADWAY PAVING ALLOWED UNLESS THE ROADWAY IS BEING RECONSTRUCTED OR IF DIRECTED OTHERWISE BY CITY OF GREEN COVE SPRINGS. CONSTRUCT POLY LINE WITH 36" (MIN.) COVER UNDER ROADWAYS. THE POLY RECLAIMED WATER SERVICE LINE SHALL BE SAME SIZE AS THE METER (3/4" MINIMUM) AND BE INSTALLED PERPENDICULAR TO THE MAIN AND NOT EXCEED 100LF UNLESS OTHERWISE APPROVED BY CITY OF GREEN COVE SPRINGS.

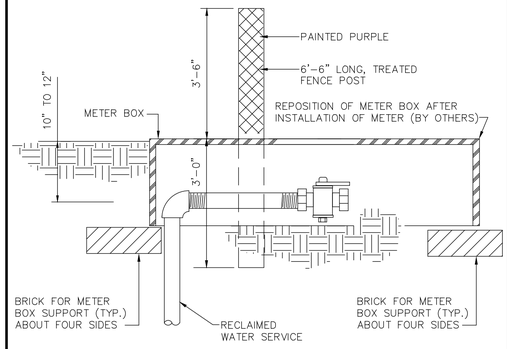
4. INSTALL PVC PLUG IN ALL CURB STOPS IF RECLAIMED WATER SERVICE IS "NOT IN USE" (I.E.: IF NO METER IS INSTALLED). IN ADDITION, INSTALL A 6', 6" P.T. FENCE POST (TOP PAINTED PURPLE) 12" OFF SIDE OF METER BOX. THE REMOVAL OR TRANSFER OF A RECLAIMED WATER SERVICE SHALL INCLUDE BRASS METER COUPLINGS (HEX ON BARREL TYPE).

5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR OR REPLACEMENT OF THE BOXES, METERS OR ELECTRONIC DEVICES IF DAMAGED BY THE CONTRACTOR DURING THE CONSTRUCTION PERIOD.

6. METER BOX AND TOP SHALL BE CLEAR OF ALL DEBRIS TO ALLOW FULL ACCESS TO BOX (I.E., NO DIRT, TRASH OR OTHER DEBRIS PLACED ON TOP OF BOX).

7. LOCATE WIRING REQUIRED ON ALL LONG AND SHORT SERVICES.

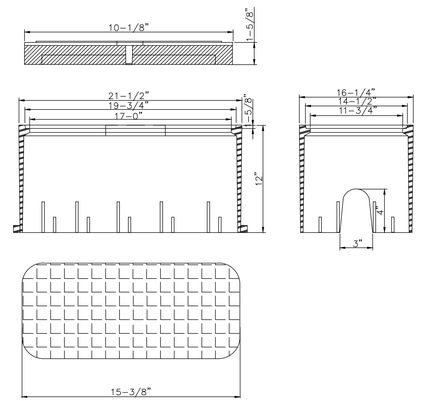
RECLAIMED WATER SERVICE DETAIL 2" AND SMALLER METER



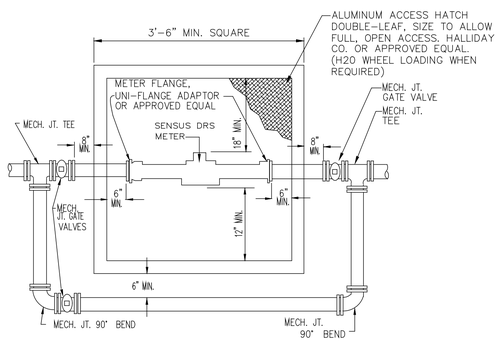
RECLAIMED WATER SERVICE MARKER POST

NOTE:
ALL SERVICES ARE TO BE CLEARLY MARKED BY A TREATED 6'-6" LONG MARKER POST PAINTED PURPLE. ALL SERVICES ARE TO BE EXTENDED ABOVE GRADE UNTIL COMPLETION OF ALL GRADING ACTIVITIES. ONCE FINAL ROAD GRADING IS COMPLETE, LOWER SERVICES BY CUTTING OFF RISER 10" TO 12" BELOW FINAL GRADE AND INSTALL 90° BEND, NIPPLE AND LW BALL VALVE AT THAT ELEVATION. SET METER BOX OVER ENTIRE HORIZONTAL SECTION OF SERVICE LINE FROM LAST 90° BEND TO THE END OF THE CURB STOP. BOX TO BE REPOSITIONED WHEN THE METER IS INSTALLED. MARKER POST TO BE INSTALLED ADJACENT TO AND LOCATED AT THE MID SECTION OF THE METER BOX.

NOTE:
MIN. WALL THIKNESS: .25"
DOUBLE WALL BODY w/STRUCTURAL SUPPORT RIBS
w/MIN. THINCKNESS: 3⁄16"
1" BOTTOM FLANGE
BOX IS INJECTED MOLDED STRUCTURAL FOAM RECYCLED POLYPROPYLENE MATERIAL

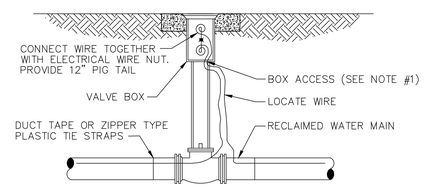


PURPLE METER BOX & SOLID PURPLE LID

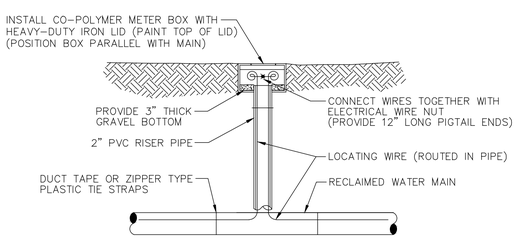


NOTES:
1. ALL PIPE TO BE D.I.
2. ALL VALVES & FITTINGS TO BE DUCTILE IRON.
3. MIMINUM LENGTH OF 8 DIAMETERS OF STRAIGHT PIPE TO BE INSTALLED ON INLET SIDE OF METER.
4. ALL PIPE AND FITTINGS TO BE SAME SIZE AS METER.
5. CONC. BOX SHALL BE 42" DEEP WITH OPEN BOTTOM, PRECAST WITH NOTCH TO ACCOMODATE PIPE INSTALLED 36" DEEP, INSTALLED ON 12" OF #57 STONE
6. CONTRACTOR SHALL PROVIDE SHOP DRAWING OF BOX WITH DIMENSIONS FOR APPROVAL BY C.C.U.A.
7. DIMENSIONS SHOWN ARE MINIMUM AND SHALL BE INCREASED BASED UPON ACTUAL SIZE OF METER PROVIDED.

METER VAULT 3" AND LARGER METERS



LOCATE WIRE BOX UTILIZING VALVE BOX

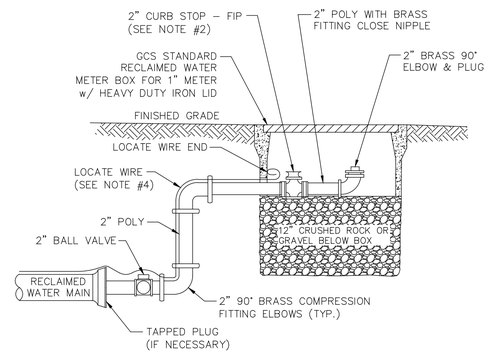


LOCATE WIRE BOX UTILIZING METER BOX

NOTES

1. LOCATE WIRE SHALL ENTER THE VALVE BOX THROUGH A "V" CUT IN THE 6" PVC RISER PIPE.

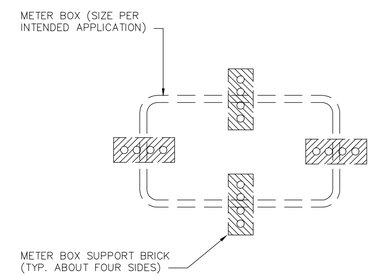
LOCATE WIRE BOX



NOTES

1. PIPE SHALL BE POLYETHYLENE. FITTINGS SHALL BE BRASS.
2. THE 2" CURB STOP SHALL BE ALL BRONZE. FITTINGS SHALL BE BRASS.
3. CANNOT BE PLACED UNDER CONCRETE OR PAVEMENT.
4. PLACE 2 FEET PAST LAST RECLAIMED WATER MAIN SERVICE CONNECTION.

FLUSHING VALVE BELOW GRADE



METER BOX SUPPORT DETAIL

NO	DATE	BY	REVISION DESCRIPTION
1	FEB.2016	SS	GENERAL UPDATES

DESG
DRWN
CHKD
APRV
DATE

PROJECT:
STANDARD RECLAIMED WATER SYSTEM DETAILS

CITY OF GREEN COVE SPRINGS
321 WALNUT STREET
GREEN COVE SPRINGS, FLORIDA 32043

ACAD FILE NAME
REUSE.DWG
SHEET NO.
1 OF 2

OUTLINE SPECIFICATIONS FOR CONSTRUCTION OF RECLAIMED WATER DISTRIBUTION SYSTEM

01. INTENTION. It is the declared and acknowledged intention to secure a new reclaimed water distribution system, complete, in accordance with the plans and specifications, and contract documents. All new work shall be in accordance with Green Cove Springs Details and Specifications and Approved Materials Manual.

02. GENERAL. All materials shall be new and unused. Materials shall be warranted by the Contractor as to materials, workmanship and accuracy of As-Built drawings for a period of two years from the date of completion of the work or beneficial use of the facilities. Workmanship shall be of good quality; i.e., mains shall be laid in a uniform alignment, fittings shall be properly restrained, trenches shall be properly excavated and backfilled, valve boxes shall be adjusted to finished grade.

03. SURVEYS. The Utility Contractor shall provide all surveys necessary for the layout and construction of the work of his contract.

04. EARTHWORK. Earthwork shall include all excavation, fill and backfill (hand/machine), compaction and rough grading of materials encountered. No unsuitable materials clay, muck, or peat removed from pipe trenches are to be used for backfill. All fill or backfill shall be either sand or sandy clay, free of roots, trash or other debris. All backfill alongside of and to a height twenty-four inches above all pipe shall be free of clay or organic material, compacted by either hand or machine operation carefully to 98%. All other backfill shall be compacted by either hand or machine operation carefully to 95% (outside of paving), 98% (under paving) of its optimum moisture content as determined by ASTM D698, latest.

05. JOINT RESTRAINT. All fittings shall be properly and adequately restrained against lateral movement at all reclaimed water main tees, crosses, valves, bends and fire hydrants. Restrainers shall be Uni-Flange Series 1300, 1350, 1390 or approved equal installed per manufacturer's recommendations and GCS Details and Specifications.

06. DUCTILE IRON PIPE. Ductile iron pipe shall conform to ANSI Specification A21.50 (AWWA C150) latest, "Thickness Design of Ductile Iron Pipe", Table 50.5, laying condition Type 2, internal operating pressure 250 p.s.i. for an 8-foot depth of cover, Class 51 minimum and shall be ANSI A21.51 (AWWA C151), latest centrifugally cast pipe. Laying lengths shall be 20 feet or less, each length clearly marked with pressure rating, thickness class, height of pipe without lining, length, and manufacturer. Ductile iron pipe for reclaimed water service shall be furnished with cement lining per AWWA C110, C115 and C151. The pipe shall have design values of 60,000 PSI minimum tensile strength, and 42,000 P.S.I. minimum yield strength. Ductile iron pipe for reclaimed water service shall be used only with prior approval of the city of GCS. All ductile iron piping shall be wrapped with purple tape and stamped "Reclaimed Water" on at least two sides @ 12" o.c. along pipe barrel.

07. DUCTILE IRON FITTINGS shall be C153 cement lined and suitable for the type and class of pipe to which connected. Gaskets shall be suitable for reclaimed water service. Minimum working pressure shall be 150 P.S.I.

08. POLYVINYL CHLORIDE PIPE. Polyvinyl chloride pipe for reclaimed water mains 4 inch in diameter and larger, shall be P.V.C. C-900, DR-18, conforming to ASTM D-1784, D-2241, D-3139 and F-477, latest, and shall bear the seal of the National Sanitation Foundation. Pipe shall be purple color and marked on at least 2 sides with the word "RECLAIMED WATER" and at every 12" along the barrel of the pipe. Couplings shall be rubber gasketed, push-on type conforming to ASTM D-2122.

09. STEEL CASING PIPE. Steel casing pipe shall be of size indicated on the Drawings and shall conform to ASTM A139, with a minimum yield strength of 35,000 p.s.i.

10. POLYVINYL CHLORIDE (PVC 1120, SCHEDULE 40) PIPE shall conform to the requirements of ASTM D 1785. Fittings and threaded nipples shall be Sch. 80 PVC. All piping smaller than 4" shall be Sch. 80 PVC, shall be purple in color and stamped "Reclaimed Water".

11. GATE VALVES AND BOXES. Gate valves shall be non-rising stem type and shall be suitable for a 200 p.s.i. non-shock working pressure Gate valves shall be mechanical joint, flanged or screwed. Gate valves shall have a 2" operating nut and open left. Gate valves shall have joints suitable for the type of main on which installed. Valves 2" & 3" shall be bronze (distribution mains only). Gate valves 4" and larger shall be iron body, bronze fitted with resilient seat. Valves shall be of domestic (American) manufacture and shall be A.F.C., M&H, Mueller or approved equal. Valves 16" and larger shall be AWWA C-509, M&H Valve Co. Valve boxes with screw extensions shall be provided for all gate valves. Boxes shall be of cast iron construction, 7/32" minimum wall thickness and shall be nontacky tar enamel coated. The word "RECLAIMED WATER" shall be cast in the cover. Other gate valves 2" and smaller shall be heavy-duty bronze, wheel operated gate valves. Box covers to be primed and painted purple.

12. RECLAIMED WATER METER BOXES. Reclaimed water meter boxes for 5/8"x3/4", 3/4"and 1" meters shall be DFW D1200 w/ purple lids. Meter boxes for flushing hydrants and 1" meters shall be Russell D-112, 1 1/2" and 2" meter boxes shall be DFW D1500. Developer shall be responsible for installation of meter boxes on all reclaimed water services as part of the reclaimed water main installation. All curb stops shall be adjusted to the proper elevation and shall be accessible for the installation of the reclaimed water meter. The contractor shall be required to open all boxes for the City's inspector at the final inspection. A treated 6' – 6" long treated fence post marker shall be installed at the side of and centered on the meter box and painted purple for identification. The box lid shall be painted purple.

13. CURB STOPS. Curb stops shall be cast bronze, no lead, inverted key stop roundway, with check, lock wing type, for locking in the closed position. Curb stops shall be Ford Ball Valve or Mueller, with F.I.P.T.

14. CORP STOPS. Corp stops shall be cast bronze, no lead, inverted key stop roundway, with check. Corp stops shall be Ford Ball Valve or Mueller with F.I.P.T.

15. PRESSURE REDUCING VALVES (when and where required) The pressure reducing valve shall maintain a constant delivery pressure as part of the service to each residential irrigation system. Pressure reducing valves shall conform with the standard requirements of the ASSE (Std. 1003) and WPOA Uniform Plumbing Code. Approved model: Watts Series U5B or equal.

16. INSTALLATION. The minimum cover over top of reclaimed water main shall be 36" minimum. All lines and appurtenances shall be thoroughly cleaned of all foreign matter before being lowered into the trench and shall be kept clean during laying operations by means of plugs or other approved methods. All pipe shall be checked for defects before being lowered into the trench. Defective pipe shall not be used. Pipe found to be defective, after installation, shall be removed and replaced with sound pipe at no additional expense to the Owner. The full length of each section of pipe shall rest solidly upon the pipe bed, with recesses excavated to accommodate the bells and joints. All pipe that has the grade or joint disturbed after laying shall be taken up and reinstalled. The pipe shall not be laid in water, or, when trench or weather conditions are unsuitable for the work. All joints shall be cleaned of all foreign matter before making the joint. Fittings at bends in the pipe shall be properly restrained with joint restrainers adequately sized to prevent movement and dislocating or blowing off when the line is under pressure. Service laterals shall terminate at the point noted in the details.

17. SEPARATION OF RECLAIMED WATER MAINS. Maximum separation of reclaimed water lines and potable water lines shall be practiced. A minimum horizontal separation of six feet, center-to-center, or five feet, outside-to-outside, shall be maintained between reclaimed water mains and either potable water mains or sewage collection lines. Reclaimed water lines crossing under water mains shall be laid to provide a minimum vertical separation of 18 inches between the invert of the upper pipe and the crown of the lower pipe. Where the minimum separation cannot be maintained, the crossing shall be arranged such that the reclaimed water main pipe joints and water main joints are equidistant from the point of crossing with no less than ten feet between joints. Alternatively, the reclaimed water main shall be placed in a sleeve to obtain the equivalent of the required ten feet separation. Where there is no alternative to reclaimed water pipes crossing over a water main, the criteria for minimum separation between lines and joints shall be required.

18. PIPE FLUSHING. All reclaimed water system piping shall be flushed with clean water utilizing full pipe diameter flushing for all piping up to and including 8" diameter.

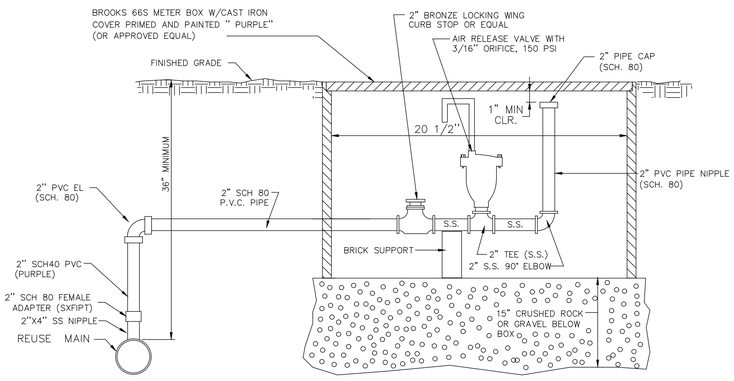
19. TESTS. After the pipe is laid, the joints completed, and the trench backfilled, the newly laid pipe and appurtenances shall be subjected to a Hydrostatic and Leakage test of 150 pounds per square inch for a period of at least two hours. During this period, all joints shall be inspected to determine water tightness of the system. Any leaks detected shall be corrected. Tests shall be in accordance with the City of Green Cove Springs requirements and specifications. Curb and limerock may be installed after construction of the reclaimed water mains, however, limerock priming cannot proceed until such time as the C.C.U.A. inspector approves the reclaimed water distribution system pressure test. This will be strictly enforced. If the reclaimed water system is damaged during any of the operations prior to paving, a follow up test may be required by the City of Green Cove Springs.

20. CURB MARKING. After installation, reclaimed water main valves and service lateral locations shall be scribed in the face of the concrete curb with the appropriate marking (RW-reclaimed service, RV-reclaimed main valve, etc.). Markings shall be a minimum of 3" high.

FINAL INSPECTION PROCEDURES

PRIOR TO FINAL INSPECTION, THE FOLLOWING MUST BE COMPLETED:

1. Pressure test and flushing report.
2. The Engineer of Record Certification to FDEP. This can be done w/ preliminary as-builts.
3. Water services must be lowered and meter boxes installed, valve boxes must be set on all gate valves.
4. As-built drawings shall have been updated to accommodate the C.G.C.S. comments and the final elevation of the manhole tops must be included.
5. All valves, locate wire boxes, sewer, water and reclaimed services shall be scribed in curb and painted the correct color.
6. As-builts, must be accepted and approved by the City of Green Cove Springs Public Works.



AIR RELEASE VALVE DETAIL
NTS

NO	DATE	BY	REVISION DESCRIPTION
1	FEB.2016	SS	GENERAL UPDATES

DESG
DRWN
CHKD
APRV
DATE

PROJECT:
STANDARD RECLAIMED WATER SYSTEM SPECIFICATIONS & DETAILS

CITY OF GREEN COVE SPRINGS
321 WALNUT STREET
GREEN COVE SPRINGS, FLORIDA 32043

ACAD FILE NAME
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2 OF 2

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OUTLINE SPECIFICATIONS FOR CONSTRUCTION OF SEWAGE COLLECTION SYSTEM

01. INTENTION. It is the declared and acknowledged intention to secure a new sewerage system, complete, in accordance with the plans, specifications, and contract documents. All new work shall be in accordance with the City of Green Cove Springs Specifications and Details and with C.G.C.S. Approved Materials Manual and C.G.C.S. Public Works Department Details and Specifications and any other Government Regulatory Agency. All work shall conform to the above whether or not specifically called out or noted on the plans.

02. GENERAL. All materials shall be of those listed in the C.G.C.S. Approved Materials Manual. The installation shall be warranted by the Contractor as to materials, workmanship and accuracy of the As-built drawings for a period of two years from the date of completion of the work or beneficial use of the facilities. Workmanship shall be of good quality; i.e., sewers shall be laid true to line and grade, fittings shall be properly installed and restrained, trenches shall be properly excavated and backfilled, manholes shall be installed at locations and to elevations shown on the plans.

02.1 CONTRACTOR LICENSE AND APPROVAL. Utility reserves the right to approve or deny approval of contractor prior to construction of any on-site or off-site utility facilities. Contractor must hold a State Of Florida Under Ground Utility contractors license, that named contracting company being the one doing the work on project, and demonstrate acceptable experience in the field of utility construction.

03. SURVEYS. The Utility Contractor shall provide all surveys necessary for the layout and construction of the work of his contract.

04. EARTHWORK. Earthwork shall include all excavation, fill and backfill (hand/machine), compaction and rough grading of materials encountered. No unsuitable materials clay, muck, or peat removed from pipe trenches are to be used for backfill. All fill or backfill shall be either sand or sandy clay, free of roots, trash or other debris. All backfill alongside of and to a height twenty-four inches above all pipe shall be free of clay or organic material, compacted in lifts, the first of which shall be to the spring line of the pipe by either hand or machine operation carefully to 98%. All other backfill shall be compacted by either hand or machine operation carefully to 95% (outside of paving), 98% (under paving) of its optimum moisture content as determined by ASTM D698, latest. Copies of compaction density test reports from a licensed testing agency shall be made available to C.G.C.S. if requested.

05. MANHOLES. Manhole bases, sections and cones shall conform to the requirements of ASTM C478, Specifications for Precast Reinforced Concrete Manhole Sections. Cement shall conform to the requirements of ASTM C150, Specification for Portland Cement, Type II. Concrete shall meet the minimum requirements for Class "A" Concrete Work. Minimum wall thickness shall be 1/12 the inside diameter in inches plus one (1) inch. Bases for manholes shall be cast integrally with the bottom manhole section. Joint contact surfaces shall be formed with machined castings; they shall be exactly parallel with a 2 degree slope and nominal 1/16 inch clearance with the tongue equipped with a proper recess for the installation of an O-ring rubber gasket, conforming to ASTM C443, Joints for circular Concrete sewer and Culvert pipe using Rubber gasket, or RAM-NEK premolded Plastic Joint Sealer with joints Manhole adjustment materials shall be Precast concrete adjustment rings only as manufactured by Taylor Precast Co. (or equal). Precast manhole walls shall not be coated, unless otherwise noted. Cement grout for manhole bottoms shall be a stiff rich mix of Type II Portland Cement and sharp plaster sand. Calcium chloride may be added (maximum of 2%) to aid in obtaining a faster set. At permanent pump station locations, the first upstream manhole from the station shall be lined with a polyethylene liner as manufactured and installed by Taylor Precast Co. or approved equal.

05.1 CAST IRON MANHOLE FRAMES AND COVERS. Cast iron manhole frames and covers shall be as detailed on drawings. Castings shall meet the requirements of ASTM A48, Specifications for Gray Iron Castings, Class No. 30, or Grade 65-45-12, Ductile Iron meeting the requirements of ASTM A536, Standard Specification for Ductile Iron Castings. In either case, manhole frame and cover shall be designed to withstand an HS20-44 loading defined in the AASHTO Specifications. Frames and covers shall be machined or ground at touching surfaces so as to seat firmly and prevent rocking.

05.2 FLEXIBLE MANHOLE CONNECTOR. All connections between sewer pipe and pre-cast concrete manholes shall be accomplished by a Flexible Connector, "Kor-N-Seal", as manufactured by National Pollution Control Systems, Inc. or approved equal.

05.3 FLOW CHANNELS. Flow channels in manhole base shall be formed of D.O.T. Class I, Type II cement grout with brick or rubble and trowel to a smooth surface finish. Grout surface shall be 1" min. thickness over brick or rubble. While the manholes are under construction, cut off pipes at inside face of the manhole and construct the invert to the shape and sizes of pipe indicated. All invert(s) shall provide a constant smooth flow path from pipe to effluent pipe through manhole. Changes in direction of the sewer and entering branch or branches shall be laid out in smooth curves of the longest possible radius which is tangent to the center lines of adjoining pipelines.

05.4 DROP INLETS. Where shown on the drawings, drop inlets to the manholes shall be constructed as shown on the drawings and specified herein.

06. POLYVINYL CHLORIDE PIPE. Polyvinyl Chloride Sewer Pipe shall conform to the requirements of ASTM D-3034, SDR 26. The PVC compound conforming to ASTM D-1784. Pipe shall be clearly marked in 5 Ft. intervals or less, indicating manufacturers name, nominal size, cell classification and legend. Joints shall be push-on rubber gasketed, conforming to ASTM D-3034. Pipe and fittings shall be installed in accordance with recommended practice ASTM D-2321. Maximum depth of gravity sewer without prior approval shall be 15 feet. Sewers over 15' in depth shall be DR-18 P.V.C. pipe and shall have C.G.C.S. approval prior to design or installation of said sewer.

07. PIPE BETWEEN MANHOLES. All piping installed between manholes shall be the same material and class. No dissimilar pipe material will be allowed anywhere within a single run of pipe.

08. SANITARY SERVICE LATERALS. Sanitary service laterals shall be Polyvinyl Chloride Pipe conforming to the requirements of ASTM D-3034, SDR 26 where cover over top of pipe is 36 inches or greater. Where cover over top of pipe is less than 36 inches, specific construction conditions shall be directed by the City of Green Cove Springs. All sanitary service laterals shall be a minimum of 4'-0" deep at the right-of-way line to top of pipe. Any sanitary service lateral which must be more than 5'-0" deep shall not be installed prior to obtaining permission from the field inspector or C.G.C.S. Public Works Department. All sanitary service laterals shall be 6-inch diameter from the main to the right-of-way line with a minimum slope of 0.60% (0.6 feet per hundred feet). In single family residential developments, services shall reduce to 4" in size and terminate at the property line with a cleanout constructed of a PVC wye and bend with a maximum angle of 45 degrees (see Standard Sewer System Cleanout Detail) utilizing the proper fittings for the type of pipe specified.

09. FORCE MAINS. Force mains shall be C900 DR-18 PVC and conform to the requirements of ASTM D-1784, D-2241, D-3139 and F-477. Pipe shall be color coded and marked "FORCE MAIN" on at least two sides and at every 12' along the barrel of the pipe. Ductile iron pipe for force main service shall be polylined. Ductile iron pipe is not to be used without prior approval of the Clay County Utility Authority. Fittings shall be C110 gray iron and shall be polylined. Force mains less than 3" shall be SCH.80 PVC. All force mains shall be installed with tracer wire per C.G.C.S. standard location wire details.

09.1 LIFT STATION VALVES. Plug valves shall be Dezurik, Clow or M&H. with full port opening. Check valves shall be M&H, Mueller or American Darling.

09.2 FORCE MAIN VALVE. Gate valve, resilient seated, same as specified in Water Distribution System Specifications Section 12 below. Except valve bodies shall be gray iron. Valve box shall have the word "SEWER" cast into the cover.

09.3 FORCE MAIN JOINT RESTRAINT. All fittings shall be properly and adequately restrained against lateral movement at all force main tees, crosses, valves and bends. Restrainers shall be Uni-Flange Series 1300, 1350, 1390 or approved equal installed per manufacturer's recommendations and C.G.C.S. standard details and specifications.

09.4 FORCE MAIN PIPE FLUSHING. All force main piping shall be flushed clean with water utilizing full pipe diameter flushing for all piping up to and including 8" diameter.

10. INSTALLATION. All sewer lines, manholes, and appurtenances shall be constructed to the dimensions and elevations indicated on the drawings. Trenches shall be excavated to a width approximately twelve inches greater than the outside diameter of the pipe. Machine excavation shall be to a depth one-fourth pipe diameter above proposed pipe grade; the remaining depth shall be hand excavated and shaped to give full support to the lower one-fourth of each pipe. Each section of pipe shall be inspected for defects prior to being lowered into the trench. The inside of each bell and the outside of each spigot shall be thoroughly cleaned of all foreign matter, prior to making the joint. All sewer lines shall be constructed with the spigot ends pointing in the direction of the flow. Both the bell and the spigot of each joint shall be lubricated with the lubricant recommended by the pipe manufacturer. All sewer lines shall be cleaned of foreign matter as construction progresses, and shall be in a clean condition upon completion of construction operations. Pipe materials shall remain the same on runs between manholes and / or other structures.

11. INSPECTIONS. Each section of the completed sewer system shall be inspected for proper alignment. Inspection shall consist of "lamping" from manhole to manhole. Any section of the sewer system which does not display true, concentric alignment shall be reinstalled at no additional expense to the Owner. A written log of inspection shall be kept indicating location of defects, potential problems, in sewer, dips and depth of water, service locations, and other irregularities in the pipe lines. A video tape in VCR format shall be made of the television inspection and submitted to the Engineer and the City of GCS. Copies of compaction density test reports from a licensed testing agency shall be made available to City of GCS if requested.

11.1 Television inspection will be required on all new gravity sewers constructed. This service shall be provided by the Contractor as a part of this Contract. The newly constructed sewers shall be televised in the presence of the Inspector of the City of GCS. A full report as to the condition of pipe, type, depth, location of services, length, type, joint and distance between manholes, etc. shall be furnished to the City of GCS inspector prior to the final acceptance of the system. Any pipe found to be cracked, leaking or otherwise defective shall be removed and replaced with new pipe at no additional costs to the Owner. Deflection testing with 7.5% mandrel also required. Any section not passing the mandrel test shall be corrected. Sewer mains shall be televised after curb and lime rock are in place but prior to paving. Curb and limerock shall be installed, finish graded prior to televising the gravity sewer. Limerock priming and paving operations shall not take place until the City of GCS inspector has reviewed the television tape and approves the gravity sewer system. This will be strictly enforced. All gravity sewers must be flushed no sooner than 4 hours prior to any television inspection. Force main lines shall be pressure tested and approved prior to paving, but not prior to subgrade mixing operation and limerock installation, finish graded and compacted. Sewer services shall be viewed by a camera capable of viewing into service lateral connections. Adequate water must be placed within the upstream manhole to flow through the downstream manhole before inspecting with the camera. All work must be accomplished in the presence of the City of GCS inspector and a 48 hour notice must be provided. Contractor shall provide City of GCS with a 48 hr. notice of intent to televise and inspect sewer work. City of GCS inspector shall report to job site at the time specified by contractor at the time of the call-in. City of GCS inspectors will wait at the job site no more than one hour for the televising to begin before leaving the site. Contractor shall reschedule televising giving City of GCS 48 hrs. notice if the above occurs.

11.2 TEST, INFILTRATION: After completion, the sewers or sections thereof, shall be tested and gauged for infiltration. To check the amount of infiltration, the Contractor, at no added compensation over the contract price for the sewers, shall furnish, and install and maintain a V-notch sharp crested weir in a wood frame on the main sewers as directed by the Engineer. Maximum allowable infiltration shall be 50 gallons per mile, per inch of dia. of sewer per 24 hour day at any time.

11.3 TEST, EXFILTRATION: In areas where ground water is not encountered in sewer construction, or it is desired to run exfiltration tests, the Contractor shall furnish and install all necessary materials, equipments, shall supply water, etc., and shall run exfiltration tests to determine acceptance of the sewer. The maximum allowable exfiltration shall be 50 gallons per mile per inch of diameter of sewer per 24 hour day at any time based on two foot minimum internal head.

OUTLINE SPECIFICATIONS FOR CONSTRUCTION OF WATER DISTRIBUTION SYSTEM

01. INTENTION. It is the declared and acknowledged intention to secure a new water distribution system, complete, in accordance with the plans and specifications, and contract documents. All new work shall be in accordance with C.G.C.S. Specifications and Details and Approved Materials Manual and C.G.C.S. Public Works Department Details and Specifications and any other Government Regulatory Agency. All work shall conform to the above whether or not specifically called out or noted on the plans.

02.1 CONTRACTOR LICENSE AND APPROVAL. Utility reserves the right to approve or deny approval of contractor prior to construction of any on-site or off-site utility facilities. Contractor must hold a State Of Florida Under Ground Utility contractors license, that named contracting company being the one doing the work on project, and demonstrate acceptable experience in the field of utility construction.

02. GENERAL. All materials shall be of those listed in the C.G.C.S. Approved Materials Manual. Materials shall be warranted by the Contractor as to materials, workmanship and accuracy of As-built drawings for a period of two years from the date of completion of the work or beneficial use of the facilities. Workmanship shall be of good quality; i.e., mains shall be laid in a uniform alignment, fittings shall be properly restrained, trenches shall be properly excavated and backfilled, fire hydrants and valve boxes shall be adjusted to finished grade. All water mains shall be installed with tracer wire per C.G.C.S. standard location wire details.

03. SURVEYS. The Utility Contractor shall provide all surveys necessary for the layout and construction of the work of his contract.

04. EARTHWORK. Earthwork shall include all excavation, fill and backfill (hand/machine), compaction and rough grading of materials encountered. No unsuitable materials clay, muck, or peat removed from pipe trenches are to be used for backfill. All fill or backfill shall be either sand or sandy clay, free of roots, trash or other debris. All backfill alongside of and to a height twenty-four inches above all pipe shall be free of clay or organic material, compacted by either hand or machine operation carefully to 98%. All other backfill shall be compacted by either hand or machine operation carefully to 95% (outside of paving), 98% (under paving) of its optimum moisture content as determined by ASTM D698, latest. Copies of compaction density test reports from a licensed testing agency shall be made available to C.G.C.S. if requested.

05. JOINT RESTRAINT. All fittings shall be properly and adequately restrained against lateral movement at all water main tees, crosses, valves bends and fire hydrants. Restrainers shall be Uni-Flange Series 1300, 1350, 1390 or approved equal installed per manufacturer's recommendations and C.G.C.S. Details and Specifications.

06. DUCTILE IRON PIPE. Ductile iron pipe shall conform to ANSI Specification A21.50 (AWWA C150) latest, "Thickness Design of Ductile Iron Pipe", Table 50.5, laying condition Type 2, internal operating pressure of 250 p.s.i. for an 8-foot depth of cover, Class 51 minimum and shall be ANSI A21.51 (AWWA C151), latest centrifugally cast pipe. Laying lengths shall each length clearly marked with pressure rating, thickness be 20 feet or less, class, height of pipe without lining, length, and manufacturer. Ductile iron pipe for water service shall be furnished with cement lining per AWWA C110, C115 and C151. The pipe shall have design values of 60,000 P.S.I. minimum tensile strength, and 42,000 P.S.I. minimum yield strength. Ductile iron pipe for water or service lines shall be used in any easement, right-of-way, between lots, and any instance where a building foundation or other permanent appurtenance is within 10' of the water main or a service line larger than 3".

07. DUCTILE IRON FITTINGS shall be C153 cement lined and suitable for the type and class of pipe to which connected. Gaskets shall be suitable for potable, domestic water service. Minimum working pressure shall be 150 P.S.I.

08. POLYVINYL CHLORIDE PIPE. Polyvinyl chloride pipe for water mains 4 inch in diameter and larger, shall be P.V.C. C900, DR-18, conforming to ASTM D-1784, D-2241, D-3139 and F-477, latest, and shall bear the seal of the National Sanitation Foundation. Pipe shall be color coded and marked on at least 2 sides with the word "WATER" and at every 12' along the barrel of the pipe. Couplings shall be rubber gasketed, push-on type conforming to ASTM D-2122. DR-18 shall be used for fire mains.

09. STEEL CASING PIPE. Steel casing pipe shall be of size indicated on the Drawings and shall conform to ASTM A139, with a minimum yield strength of 35,000 p.s.i.

10. POLYETHYLENE PIPE shall be SDR 9, AWWA C901, ASTM D2737, PE 3408, colored blue, NSF Seal, with Type 316 stainless steel inserts. Fittings shall be suitable for type of installation required. All piping smaller than 4" shall be Polyethylene.

11. GATE VALVES AND BOXES. Gate valves shall be non-rising stem type and shall be suitable for a 200 p.s.i. non-shock working pressure Gate valves shall be mechanical joint, flanged or screwed. Gate valves shall have a 2" operating nut and open left. Gate valves shall have joints suitable for the type of main on which installed. Valves 2" & 3" shall be iron body, bronze fitted (distribution mains only). Valves 4" and larger shall be iron body, bronze fitted with resilient seat. Valves shall be of domestic (American) manufacture and shall be A.F.C., M&H, Mueller or approved equal. Valves 16" and larger shall be AWWA C-509, M&H Valve Co. Valve boxes with screw extensions shall be provided for all gate valves. Boxes shall be of cast iron construction, 7/32" minimum wall thickness and shall be nontacky tar enamel coated. The word "WATER" shall be cast in the cover. Other ball valves 2" and smaller shall be Ford Ball Valve or Mueller with F.I.P.T.

12. WATER METER BOXES. Meter boxes for flushing hydrants and 3/4" meters shall be DFW Plastics, Inc., model DFW36C-12-3T. Meter boxes for 1" meters shall be DFW Plastics, Inc., model DFW37C-12-3T. Meter boxes for 1-1/2" and 2" meters shall be DFW Plastics, Inc., model DFW1730C-12-3T. Developer shall be responsible for installation of meter boxes on all water services as part of the water main installation. All curb stops shall be adjusted to the proper elevation and shall be accessible for the installation of the water meter. The contractor shall be required to open all boxes for the C.G.C.S. inspector at the final inspection. A treated 6"-6" fence post marker shall be painted blue for identification.

13. CURB STOPS. Curb stops shall be cast bronze, inverted key stop, roundway, with check, lock wing type, for locking in the closed position. Curb stops shall be Ford Ball Valve or Mueller.

14. CORP STOPS. Corp stops shall be cast bronze, inverted key stop, roundway, with check, lock wing type, for locking in the closed position. Corp stops shall be Ford Ball Valve or Mueller.

15. FIRE HYDRANTS. Fire hydrants shall be traffic type, 150 pound working pressure, AWWA Standard C502, latest revisions, with two 2 1/2" nozzles, one 4 1/2" nozzle and 5 1/4" main valve. Fire hydrant shall be compression type with breakable coupling and bolts. Pipe connection shall be mechanical joint. American Flow Control, AFC B-84-B, painted red w/white bonnets and with 1 1/2" penta nuts, opening left.

16. INSTALLATION. The minimum cover over top of potable water main shall be 36" minimum. All water lines and appurtenances shall be thoroughly cleaned of all foreign matter before being lowered into the trench and shall be kept clean during laying operations by means of plugs or other approved methods. All pipe shall be checked for defects before being lowered into the trench. Defective pipe shall not be used. Pipe found to be defective, after installation, shall be removed and replaced with sound pipe at no additional expense to the Owner. The full length of each section of pipe shall rest solidly upon the pipe bed, with recesses excavated to accommodate the bells and joints. All pipe that has the grade or joint disturbed after laying shall be taken up and reinstalled. The pipe shall not be laid in water, or, when trench or weather conditions are unsuitable for the work. All joints shall be cleaned of all foreign matter before making the joint. Fittings at bends in the pipe shall be properly restrained with joint restrainers adequately sized to prevent movement and dislocating or blowing off when the line is under pressure. Service laterals shall terminate at the point noted in the details.

17. TESTS. After the pipe is laid, the joints completed, and the trench backfilled, the newly laid pipe and appurtenances shall be subjected to a Hydrostatic and Leakage test of 150 pounds per square inch for a period of at least two hours. During this period, all joints shall be inspected to determine water tightness of the system. Any leaks detected shall be corrected. Tests shall be in accordance with the C.G.C.S.'s requirements and specifications. Water main lines shall be pressure tested and approved prior to paving, but not prior to subgrade mixing operation and limerock installation, finish graded and compacted. If C.G.C.S. inspector detects the water main has been damaged during priming or paving he shall require the contractor to repair the water main and retest the water main.

18. STERILIZATION. After completion of construction and testing, the water system shall be sterilized with chlorine in accordance with AWWA Standard C651 latest, and State of Florida Department of Environmental Protection requirements before water is used for domestic purpose. The amount of chlorine applied shall be sufficient to provide a dosage of 50 parts per million or more. The chlorine solution shall remain in the system for a period of at least 8 hours, during which time every valve in the system shall remain opened and closed several times to assure contact with every surface of the system. After completion of sterilization procedures, the system shall be flushed using chlorinated water from a domestic water source having a chlorine residual of at least 1 part per million. The contractor shall obtain all bacteriological clearances as required by the Florida Department of Environmental Protection. After bacteriological clearances, the pressure in the main shall not drop below 20 P.S.I. Clearance report to be submitted to the Engineer. The contractor should be aware that there is a timing maximum related to bacteriological clearance of the main, completion of as-built drawings and Engineer / C.G.C.S. completion of Certificate of Completion. In any project where the bacteriological clearances are greater than 30 days old at the time of submittal of Certificate of Completion to F.D.E.P., the contractor may be required to pull more samples and obtain more bacteriological clearances. Prior to introducing the chlorine solution, the lines shall be thoroughly flushed with clean water utilizing full pipe diameter flushing for pipe up to and including 8" diameter. Contractor shall be responsible for dechlorination of the disinfectant water prior to any discharge to any ditch or surface waters.

19. BACTERIOLOGICAL SAMPLING. Contractor shall assure the project construction is completely finished prior to any bacteriological sampling and testing.

GENERAL NOTES

1. AS-BUILT DRAWINGS AND ASSOCIATED COSTS. All cost records pertaining to the cost of water, reclaim and sewer facilities donated to the utility shall be provided to the Utility by applicant. Prior to acceptance of any extension to the Utility's system that is completed by a licensed underground utility contractor, the Utility will require that the applicant's contractor provide the Utility, to retain for its permanent records, all field as-built data. During the daily progress of the work, the contractor's job superintendent shall record on his field set of drawings all work installed. All manholes, gravity sewers, force mains, laterals, valves, fittings, fire hydrants, etc. shall be located in two directions. One location shall be referenced perpendicular to the right-of-way lines and or property lines (preferably both) or existing permanent utility structures are acceptable (i.e. manholes, catch basins, fire hydrants, head/end walls, etc.). No power/utility poles may be used for reference. Elevations of manhole inverts and center of cover shall be shown to the nearest hundredth of a foot. Size, type, class and slope of sewer main shall be shown (i.e. 8" PVC, SDR-35). The top elevation of each manhole may be determined by measuring from a surveyed pipe invert to the final adjusted manhole top. Size, type and class of water mains, valves, fittings, fire hydrants, etc. shall be shown (i.e., 8" D.I.P., 6" gate valve). All locations where the top of the water main is less than 36" deep or more than 50" deep shall be noted on the as-builts. Water as-builts, sewer as-builts and reclaim water as-builts shall be on separate sheets. ASBUILTS SHALL BE IN NAD 1983 FL EAST-FOOT-STATE PLANE COORDINATES AND REFERENCE THE BM USED FOR THE PROJECT.

Each page of the as-built drawings shall bear the name, date and original signature of the general contractor responsible for the Work and the name, date, original signature and seal of the registered land surveyor or registered professional engineer who provided the horizontal and vertical dimensions and elevations on the as-built drawing. The signatures shall certify that the as-built drawings do, in fact, reflect the true as-built conditions as located under the direct supervision of the registered surveyor and/or professional engineer. The as-builts shall be at the contractor's expense. A copy of the AutoCAD® ASBUILT DATA SHALL BE FURNISHED ON COMPACT DISK (CD) PLUS (2) SIGNED FULL SIZE PRINTED SET PLUS (1) MYLAR SET by either the design engineer or the applicant's contractor.

2. CONSTRUCTION WARRANTY AND WARRANTY SECURITY PERIOD. Developer shall warranty Utility against defects in material and workmanship for the portion of the onsite system to be owned by the Utility. Developer shall secure from its Contractor a written and fully assignable warranty that the system installed will be and remain free from all defects, latent or otherwise with respect to workmanship, materials, installation, and accuracy of his as-built drawings in accordance with the Utility approved plans and specifications for a period of two years from the date of the system acceptance by the Utility and immediately assign the same and the right to enforce the same to Utility on or before the date of the Utility's acceptance of the system for ownership and maintenance.

3. CLEAN-UP. All surplus materials of construction shall be removed from the site and disposed of by the Contractor as part of his contract with the owner.

4. RESTORATION. New Sanitary Sewer and Water Main Construction in earthen areas shall be seeded and mulched in accordance with Section 570 of Standard Specifications of the Florida Dept. of Transportation (latest edition). In locations where existing grassed (sodded) areas are disturbed, sod shall be replaced to preconstruction condition and to limits of construction or where directed by the engineer.

5. PERMITS. The Contractor shall be responsible for obtaining all permits required for performing work under this contract, except that the F.D.E.P. permits, and wetland permits, if required, will be secured by the owner or developer.

6. PIPE BEDDING. In the event unsuitable or unstable bedding material is encountered at or below the limits of the excavation required for installation, such material shall be removed and replaced with suitable compacted backfill material specified by the design engineer and approved by the C.G.C.S so as to provide a stable trench bedding surface suitable for proper pipe installation.

6-A. Pipe Bedding (Rock Bedding Material) Rock material used for pipe bedding shall be #57 stone or crushed concrete (crush-crete) in a #57 size. Rock bedding material shall be completely wrapped in a heavy filter fabric material, overlapped a minimum of one foot, rock bedding shall be installed to the correct grade and compacted to a density which will prevent any settlement, either by mechanical tamping equipment or by compressing the rock using the bottom of the backhoe bucket. The compaction shall be approved by C.G.C.S. inspector. The contractor shall be required to have submittal approved by design engineer and C.G.C.S. prior to use of such rock bedding material.

7. DEWATERING. The contractor shall at all time during construction provide ample means and equipment with which to promptly remove and dispose of all water entering the trench and structure excavations and shall keep said excavations acceptably dry until the piping and / or structures to be built therein are completed. All water pumped or drained from the work area shall be disposed of in a manner as to not damage sewer, water, electrical or any other piping, structures or property. Pipe shall be laid in water and no water shall be allowed to rise above the bottom of any pipe while it is being jointed, except as may be approved in writing by the C.G.C.S.

8. HYDROSTATIC TESTING. After all pressure pipes (water mains, services, and force mains) are laid, the joints completed, and the trench backfilled, the newly laid pipe and appurtenances shall be subjected to a hydrostatic test of 150 P.S.I. for a period of at least two hours. The engineer and the C.G.C.S. Public Works shall be notified 48 hours before a test is to be performed. Test shall be as set forth in AWWA standard C600. Any leaks detected shall be corrected and the section of pipeline retested. The two hour test period shall begin when all joints have been determined to be water tight. Leakage shall be limited to that allowance set forth in Section 4 of AWWA Standard C600-87. Hydrostatic and leakage test and blow-down (zeroing of gage) must occur before sampling for bacteriological test. The maximum allowable pressure loss is 5 P.S.I. regardless of the length of pipe.

9. REPORTS. Reports of hydrostatic and leakage tests and sterilization of the newly completed systems shall be submitted to the C.G.C.S. prior to requesting acceptance of the system.

10. DENSITY TESTING. In-place density tests are required at intervals not to exceed 150' along pipelines for every other lift. A minimum of one test between manholes is required for every other lift regardless of the distance between sanitary sewer manholes.

11. CONCRETE. All Portland Cement concrete shall be of Type II Portland Cement, 2,500 P.S.I. minimum, ready mixed. All concrete shall be placed before the initial set has taken place. Stale or retempered concrete shall not be used.

12. GATE VALVES AND BOXES. Gate valves shall have a 2" operating nut and open left. Gate valves shall have joints suitable for the type main on which installed. Valves 2" and 3" shall be iron body, bronze fitted. Valves 4" and larger shall be iron body, bronze fitted with resilient seat. The word "WATER" on water boxes and "SEWER" on force main boxes shall be cast in the covers.

13. SEPARATION OF WATER AND SEWER MAINS. Horizontal and vertical separation between potable water system mains and or appurtenances and sanitary or storm sewers, wastewater or storm water force mains, and reclaimed water mains shall be in accordance with Rule 62-555.314 FAC.

(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, storm water force main, reclaimed water main regulated under Part III of Chapter 62-610, F.A.C, or proposed vacuum-type sanitary sewer.

(b) 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.

(c) 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.

(d) New or relocated, underground water mains crossing any existing or proposed pressure-type sanitary sewer, wastewater or storm water 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.

(e) At the utility crossings described in paragraphs (c) and (d) 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, storm water 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.

14. NEW CONNECTION TO EXISTING MAIN. New connection to existing main in service shall be accomplished by the "wet tap" method utilizing full circle stainless steel tapping sleeve and mechanical joint tapping valve. Tapping sleeve shall be rated at 200 P.S.I., non-shock working pressure conforming to AWWA Standard C110, latest revision. Stainless steel tapping sleeves shall be from those listed in C.G.C.S. approved material manual. Tapping valve shall be mechanical joint one end and standard flanged joint on other end. Valve shall conform to Section 12. of these specifications.

15. JOBSITE SAFETY. While on the job site, the contractor shall at all times observe all Federal, State and local safety rules, regulations and laws. This includes, but not limited to, confined spaces and excavation protection systems as per O.S.H.A. standards.

GENERAL NOTES

16. CLOSE OUT / COMPLETION. Minimum items required for Close Out / Completion for submittal to the City of Green Cove Springs will include:
(a.) Construction Warranty from Developer in the form of a Bond, Letter of Credit or Cashier's Check for a two-year period.
(b.) Warranty Certificate for a two-year warranty from the contractor to the Developer and assignment of same to the City of Green Cove Springs (C.G.C.S.).
(c.) Developer's Affidavit certifying there is no outstanding debt against utility assets to be deeded to C.G.C.S.
(d.) Value of Acceptance Report showing value of assets to be deeded to the C.G.C.S.
(e.) Bill of Sale to C.G.C.S.
(f.) Bacteriological Test(s)
(g.) Pressure Test(s)
(h.) Television Reports and Tapes
(i.) Density Reports
(j.) PROPER Final As-Built Drawings and disks

17. C.G.C.S. Shop Drawing and Submittal Process. A signed acknowledgment by the Contractor and the Material Supplier, on the "Shop Drawings and C.G.C.S.'s Approved Materials List Form", that all materials will be in accordance with C.G.S.S.'s Specifications, C.G.C.S.'s Details and C.G.C.S.'s Approved Materials Manual, is the only submittal C.G.C.S. will require for each item of materials with the following exception: any alternate materials requested by the Engineer; any materials not listed in the C.G.C.S. Materials Manual; and materials associated with pumping stations and plant installations. Those exceptions shall have an individual shop drawing submitted for C.G.C.S.'s review and approval prior to any installation of said materials.

This is C.G.C.S.'s procedure and it does not preclude the design engineer from requiring additional submittals and shop drawings as he deems necessary for the project.

18. PUMP STATIONS (TEMPORARY OR PERMANENT). All pump stations shall be constructed in accordance with C.G.C.S. standards, rules and regulations and be approved by C.G.C.S. All work and materials shall meet the requirements of C.G.C.S. Standard Pump Station Details and Specifications or the plans, details and specifications for that specific pump station. A driveway shall be provided from the street (roadway) to within 2 feet of the pump station wetwell, minimum 10 feet wide x 5 inches thick 3,000 P.S.I. concrete. Submersible pump stations shall be fenced completely about the perimeter of the pump station site (location of the pump station site as noted on the plans), including gates and all other items required to make a completely fenced installation. The entire pump station site within the fenced area shall be covered with #57 stone, 6 inch thick minimum, placed over 8 mil visqueen.

19. Information shown on the Drawings as to the location of existing utilities has been prepared from the most reliable data available to the Engineer. The Contractor shall be responsible for requesting underground utility locates and shall assist the utility companies, by every means possible to determine said locations and the locations of recent additions to the systems not shown. Extreme caution shall be exercised to eliminate any possibility of any damage to utilities resulting from Contractor's activities. The locations of all overhead utilities shall also be verified by the Contractor. The Engineer shall be notified of any conflict that may occur. The Contractor shall be responsible for determining which poles will need shoring during excavation and shall provide such shoring and support as required.

20. C.G.C.S. details and specifications (latest available copy) shall be included in all plans submitted for work within the C.G.C.S. utility system. No person shall modify, change, omit, replace any of those details and specifications without the express written consent of C.G.C.S.. In any instance where the design engineer has included his written specifications or details in the plans then the more stringent of the two shall govern.

21. All materials to be used for any project within C.G.C.S.'s utility system shall conform to those materials listed in the C.G.C.S. approved material manual in effect at the time final plans for that project are approved by C.G.C.S.

22. Under no circumstance shall any trees be planted within a C.G.C.S. utility easement without;
a.) C.G.C.S. approving landscape and irrigation plans.
b.) C.G.C.S. being notified prior to the planting of trees and giving approval.
c.) C.G.C.S. inspecting the installation of root barrier material (required at all trees which are closer than 10' to any C.G.C.S. utility line) as shown in C.G.C.S. approved material manual and C.G.C.S. roadway cross section details, whether or not shown on the plans.

23. At all Jack & Bore locations a C.G.C.S. inspector shall inspect the casing spacers to verify they are the correct size and have been installed correctly on the pipe prior to the pipe being installed into the pipe casing. The pipe casing shall be clean and free of all dirt, and shall be cleaned with a Vac-Con if necessary. A C.G.C.S. inspector shall be present at all time during this work.

FINAL INSPECTION PROCEDURES

PRIOR TO FINAL INSPECTION, THE CONTRACTOR shall PROVIDE THE FOLLOWING:
1. The sewer line T.V. report and tape
2. The pressure test and bacteriological clearance analysis report.
3. The engineer of record certification to D.E.P. This can be done with completed as-builts.
4. Completed as-builts showing at least the following:
a.) Location of valves, mains, services, manholes and locate wire boxes.
b.) Elevation of sewer lines in the manhole, and stub-outs.
5. All services and valves to be plainly marked with a treated fence post, and electronic locate marker when needed.
6. Pump station start-up report with draw down data for each pump and with both pumps in operation. All electrical components to be completely installed and in proper working condition.

PRIOR TO FINAL ACCEPTANCE FOR OWNERSHIP, THE FOLLOWING MUST BE COMPLETED:
1. All manhole rings and covers have to be adjusted to finish grade.
2. Water services must be lowered and meter boxes installed, valve boxes must be set on all gate valves.
3. As-built drawings shall have been updated to accommodate the C.G.C.S. comments and the final elevation of the manhole tops must be included.
4. All valves, locate wire boxes, sewer, water and reclaimed services shall be scribed in curb and painted the correct color.
5. As-builts, must be accepted and approved by the City of Green Cove Springs Public Works.

PRIOR TO FINAL ACCEPTANCE FOR OWNERSHIP, THE FOLLOWING MUST BE COMPLETED:
1. A preliminary inspection must be coordinated by the underground utility contractor and held a minimum of fifteen (15) working days prior to the final inspection/start-up. The preliminary inspection will compare the approved design drawings to the actual site installation, noting any deficiencies.
2. The following must be represented at the preliminary and final inspection:
a.) The C.G.C.S.'s inspection and distribution and collection departments
b.) The project's developer and/or general contractor
c.) The underground utility contractor
d.) All subcontractors associated with the lift station (electrical, pump manufacturer, control panel manufacturer, etc.)

NO	DATE	BY	REVISION DESCRIPTION
1	FEB. 2016	SS	GENERAL UPDATE

DESG
DRWN
CHKD
APRV
DATE

STANDARD WATER AND SEWER SYSTEM
TECHNICAL SPECIFICATIONS

PROJECT:

CITY OF
GREEN COVE SPRINGS
321 WALNUT STREET
GREEN COVE SPRINGS, FLORIDA 32043

ACAD FILE NAME
SPECIF_D.DWG
SHEET NO.
1 OF 1

M:\CAD Files\Green Cove Springs\89905191\Standard Utility Details\11-01-2017\SPECIF_D.dwg, 11/7/2017 11:57:22 AM

DocuSign

Certificate Of Completion

Envelope Id: 8BADA3FF04B24275ACD53925504E98CA
Subject: Complete with DocuSign: CC FS 20.pdf
Source Envelope:
Document Pages: 27
Certificate Pages: 1
AutoNav: Enabled
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Signatures: 20
Initials: 0

Status: Completed

Envelope Originator:
Jeffrey Bergen P.E. FL 63060
10175 Fortune Parkway
Suite 403
Jacksonville, FL 32256
jbergen@gbacivil.com
IP Address: 162.230.50.97

Record Tracking

Status: Original
12/5/2023 1:19:16 PM

Holder: Jeffrey Bergen P.E. FL 63060
jbergen@gbacivil.com

Location: DocuSign

Signer Events	Signature	Timestamp
Jeffrey Bergen P.E. FL 63060 jbergen@gbacivil.com Vice President Goodson, Bergen & Associates, Inc. Security Level: Email, Account Authentication (None)	 Signature Adoption: Pre-selected Style Using IP Address: 162.230.50.97	Sent: 12/5/2023 1:20:47 PM Viewed: 12/5/2023 1:20:58 PM Signed: 12/5/2023 1:24:02 PM Freeform Signing

Electronic Record and Signature Disclosure:
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In Person Signer Events	Signature	Timestamp

Editor Delivery Events	Status	Timestamp

Agent Delivery Events	Status	Timestamp

Intermediary Delivery Events	Status	Timestamp

Certified Delivery Events	Status	Timestamp

Carbon Copy Events	Status	Timestamp

Witness Events	Signature	Timestamp

Notary Events	Signature	Timestamp

Envelope Summary Events	Status	Timestamps
Envelope Sent	Hashed/Encrypted	12/5/2023 1:20:47 PM
Certified Delivered	Security Checked	12/5/2023 1:20:58 PM
Signing Complete	Security Checked	12/5/2023 1:24:02 PM
Completed	Security Checked	12/5/2023 1:24:02 PM

Payment Events	Status	Timestamps