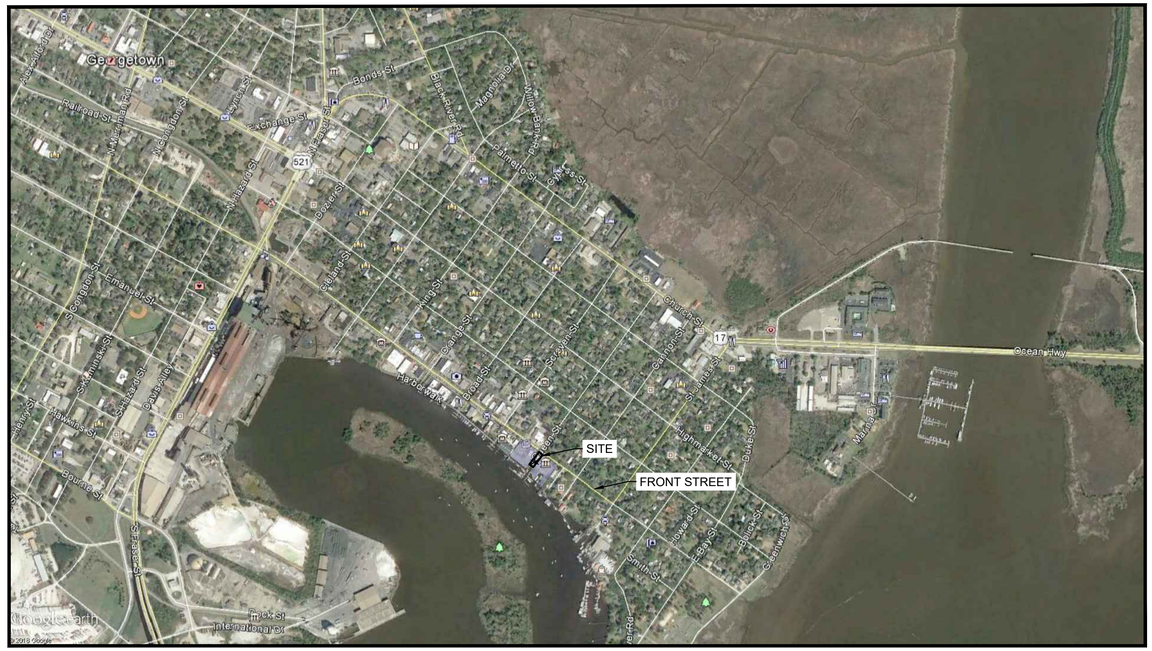
Stantec

Stantec Consulting Services Inc.
4969 Centre Pointe Drive, Suite 200
North Charleston, SC 29418
843.740.7700

City of Georgetown, SC
2377 Maybank Drive
Georgetown, SC 29442



VICINITY MAP
SCALE: NTS

Queen Street Storm Drainage Improvements

City of Georgetown, South Carolina

Stantec Project Number: 178420970

COG PROJECT NUMBER: 4014

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SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION
STANTEC CONSULTING SERVICES, INC.
No. C02310

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER
No. 22800
BRYAN D. KIZER
MARCH 27, 2020

This drawing is not to be used for construction purposes unless signed and sealed by the Engineer of Record and stamped "Approved For Construction." Use of this drawing for quantity take-offs and pricing is preliminary until all applicable permits have been obtained.

Revision	By	Appd.	YY.MM.DD
03 ADDENDUM #1	MW	BK	20.03.27
02 BID SET	MW	BK	20.03.04
01 SCDHEC PERMIT SUBMITTAL	MW	BK	19.10.21
Issued	By	Appd.	YY.MM.DD

File Name: 970_cover.dwg — Dwn. — Chkd. — Dsgn. — YY.MM.DD

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GENERAL NOTES:

1. CITY OF GEORGETOWN
   ORLANDO ARTEAGA, PE
   2377 MAYBANK DRIVE (29440)
   P.O. BOX 939
   GEORGETOWN, SC 29442
   (843) 545-4501

2. ENGINEER: STANTEC CONSULTING SERVICES, INC
   BRYAN KIZER, P.E.
   4969 CENTRE POINTE DR, SUITE 200
   NORTH CHARLESTON, SC 29418
   TEL: (843) 740-7700

3. BOUNDARY AND TOPOGRAPHIC INFORMATION TAKEN FROM "TOPOGRAPHIC SURVEY SHOWING EXISTING CONDITIONS ON VARIOUS LOTS AT THE INTERSECTION OF FRONT STREET AND QUEEN STREET" PREPARED FOR GEORGETOWN COMMUNICATIONS, INC. LOCATED IN THE CITY OF GEORGETOWN, GEORGETOWN COUNTY, SOUTH CAROLINA. DATED MARCH 5, 2018. REVISED JULY 8, 2019 TO SHOW ADDITIONAL TOPOGRAPHIC INFORMATION.

4. VERTICAL DATUM USED WAS NAVD 29.

6. WETLANDS, CRITICAL AREAS, OTHER INDICATED ENVIRONMENTALLY SENSITIVE AREAS AND UNDISTURBED BUFFERS SHALL NOT BE DISTURBED EXCEPT WHERE SPECIFICALLY INDICATED WITHIN THESE CONSTRUCTION DOCUMENTS AND/OR AS AUTHORIZED BY THE USACE AND SCDHEC-OCRM.

7. ALL PROPOSED CONSTRUCTION ACTIVITIES SHALL BE CONFINED TO RIGHT OF WAY.

8. ALL DRAINAGE EASEMENTS TO BE DEDICATED TO CITY OF GEORGETOWN.

9. CONTRACTOR IS TO VERIFY ALL INFORMATION CONTAINED HEREIN PRIOR TO CONSTRUCTION AND NOTIFY ENGINEER OR OWNER OF ANY DISCREPANCY PRIOR TO CONSTRUCTION.

10. ALL CONSTRUCTION, METHODS, MATERIALS, AND WORKMANSHIP SHALL CONFORM TO GEORGETOWN CITY OF GEORGETOWN PUBLIC SERVICES DEPARTMENT SPECIFICATIONS, LATEST EDITION. WHERE CONFLICT OCCURS BETWEEN CONSTRUCTION PLANS, SPECIFICATIONS, AND/OR FIELD CONDITIONS, CONTRACTOR IS TO CONTACT ENGINEER OR OWNER FOR CLARIFICATION PRIOR TO CONSTRUCTION.

11. CONTRACTOR TO COORDINATE WITH OWNER AND ENSURE ALL APPLICABLE CONSTRUCTION AND LAND DISTURBANCE PERMITS HAVE BEEN OBTAINED PRIOR TO COMMENCING ANY WORK.

12. CONTRACTOR TO NOTIFY CITY OF GEORGETOWN PUBLIC SERVICES DEPARTMENT A MINIMUM OF 48 HOURS BEFORE ANY WATER WORK IS TO BEGIN.

SAFETY AND TRAFFIC CONTROL:

1. DURING THE CONSTRUCTION AND MAINTENANCE OF THE THIS PROJECT, ALL SAFETY REGULATIONS SHALL BE ENFORCED. THE CONTRACTOR OR HIS REPRESENTATIVE SHALL BE RESPONSIBLE FOR THE CONTROL AND SAFETY OF THE TRAVELING PUBLIC AND THE SAFETY OF HIS PERSONNEL.
2. THE CONTRACTOR'S MAINTENANCE OF TRAFFIC CONTROL PLAN MUST BE SUBMITTED AND APPROVED BY THE SCDOT AND APPLICABLE LOCAL AGENCIES PRIOR TO COMMENCEMENT OF CONSTRUCTION WITHIN STATE RIGHT OF WAYS.
3. LABOR SAFETY REGULATIONS SHALL CONFORM TO THE PROVISIONS SET FORTH BY OSHA IN THE FEDERAL REGISTER OF THE DEPARTMENT OF TRANSPORTATION.
4. CONTRACTOR SHALL PROVIDE AND MAINTAIN HIS OWN SAFETY EQUIPMENT IN ACCORDANCE WITH HIS HEALTH AND SAFETY PROGRAM AND ALL OTHER APPLICABLE LEGAL AND HEALTH AND SAFETY REQUIREMENTS. THE CONTRACTOR IS ALSO RESPONSIBLE FOR PROVIDING IT'S EMPLOYEES AND SUB CONTRACTORS WITH ADEQUATE INFORMATION AND TRAINING TO ENSURE THAT ALL EMPLOYEES AND SUB CONTRACTORS AND SUB CONTRACTOR'S EMPLOYEES COMPLY WITH ALL APPLICABLE REQUIREMENTS. CONTRACTOR SHALL REMAIN IN COMPLIANCE WITH ALL OCCUPATION SAFETY AND HEALTH REGULATIONS AS WELL AS THE ENVIRONMENTAL PROTECTION LAWS. THE FOLLOWING IS NOT TO BE PERCEIVED AS THE ENTIRE SAFETY PROGRAM BUT JUST BASIC REQUIREMENTS.
5. ALL EXCAVATIONS BY THE CONTRACTOR SHALL CONFORM TO THE REQUIREMENTS OF THE DEPARTMENT OF LABOR'S OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION RULES AN REGULATIONS. PARTICULAR ATTENTION MUST BE PAID TO THE CONSTRUCTION STANDARDS FOR EXCAVATIONS, 29 CFR PART 1926, SUBPART P.
6. THE MINIMUM STANDARDS AS SET FORTH IN THE CURRENT EDITION OF "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) BE FOLLOWED IN THE DESIGN APPLICATION, INSTALLATION, MAINTENANCE AND REMOVAL OF ALL TRAFFIC CONTROL DEVICES, WARNING DEVICES AND BARRIERS NECESSARY TO PROTECT THE PUBLIC AND WORKMEN FROM HAZARDS WITHIN THE PROJECT LIMITS.
7. ALL TRAFFIC CONTROL MARKINGS AND DEVICES SHALL CONFORM TO THE PROVISIONS SET FORTH IN THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES PREPARED BY THE US DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION. ALL SOUTH CAROLINA AMENDMENTS SHALL APPLY.
8. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO COMPLY AND ENFORCE ALL APPLICABLE SAFETY REGULATION. THE ABOVE INFORMATION HAS BEEN PROVIDED FOR THE CONTRACTOR'S INFORMATION ONLY AND DOES NOT IMPLY THAT THE OWNER OR ENGINEER WILL INSPECT AND/OR ENFORCE SAFETY REGULATION.
9. CONTRACTOR SHALL CONFORM WITH THE SOUTH CAROLINA UNDERGROUND FACILITY DAMAGE PREVENTION ACT, TITLE 58 CHAPTER 36 OF THE SOUTH CAROLINA CODE OF LAW. CONTACT SOUTH CAROLINA 811 A MINIMUM OF 72 HOURS IN ADVANCE OF ANY EXCAVATION.
10. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ANY DAMAGE TO EXISTING FACILITIES, ABOVE OR BELOW GROUND, THAT MAY OCCUR AS A RESULT OF THE WORK PERFORMED BY THE CONTRACTOR CALLED FOR IN THIS CONTRACT.

CLEARING AND DEMOLITION:

1. THE CONTRACTOR SHALL CLEAR AND GRUB ONLY THOSE PORTIONS OF THE SITE NECESSARY FOR CONSTRUCTION. DISTURBED AREAS WILL BE SEEDED, MULCHED, SODDED OR PLANTED WITH OTHER APPROVED LANDSCAPE MATERIAL TO EXISTING OR BETTER CONDITION IMMEDIATELY FOLLOWING CONSTRUCTION.
2. ALL CONSTRUCTION DEBRIS AND OTHER WASTE MATERIALS SHALL BE DISPOSED OF OFF-SITE IN ACCORDANCE WITH APPLICABLE REGULATORY AGENCY REQUIREMENTS OR AS DIRECTED BY THE OWNER OR THE OWNER'S ENGINEER.
3. CONTRACTOR SHALL REPLACE ALL DRIVEWAYS TO EXISTING OR BETTER CONDITION USING MATERIALS INDICATED ON PLANS. CONTRACTOR SHALL PROVIDE CITY OF GEORGETOWN WITH AN EXISTING CONDITIONS VIDEO OF ALL OF THE DRIVEWAYS WITHIN PROJECT LIMITS PRIOR TO BEGINNING CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR REPAIRING ANY DAMAGES TO EXISTING DRIVEWAYS THAT ARE A RESULT OF THE CONSTRUCTION OF THIS PROJECT.
4. CONTRACTOR SHALL MAINTAIN WATER SERVICES, WITH MINIMAL SERVICE INTERRUPTION, DURING THE ABANDONMENT / DEMOLITION OF EXISTING WATER MAINS.
5. CONTRACTOR SHALL MAINTAIN ACCESS TO ALL PROPERTIES DURING THE DEMOLITION AND CONSTRUCTION OF ALL SITE IMPROVEMENTS SHOWN ON PLANS. INGRESS AND EGRESS SHALL BE MAINTAINED TO ALL PROPERTIES ALONG THE PROJECT AT ALL TIMES. ANY REQUIRED ACCESS INTERRUPTION SHALL BE COORDINATED WITH PROPERTY OWNERS. CONTRACTOR SHALL BACKFILL AND COVER UP EXCAVATED AREAS AS THEY ARE COMPLETED SO AS TO PROVIDE A MINIMUM OF ONE 12' WIDE TRAVEL LANE ALONG QUEEN ST. AND FRONT ST. THROUGHOUT THE CONSTRUCTION DURATION.

PAVING AND GRADING

1. ALL DELETERIOUS SUBSURFACE MATERIAL (I.E. MUCK, PEAR, BURIED DEBRIS) IS TO BE EXCAVATED IN ACCORDANCE WITH THESE PLANS OR AS DIRECTED BY THE OWNER, THE OWNER'S ENGINEER, OR OWNER'S SOIL TESTING COMPANY. DELETERIOUS MATERIAL IS TO BE STOCKPILED OR REMOVED FROM THE SITE AS DIRECTED BY THE OWNER OR THE OWNER'S ENGINEER. EXCAVATED AREAS TO BE BACKFILLED WITH APPROVED MATERIALS AND COMPACTED AS SHOWN ON THESE PLANS. CONTRACTOR IS RESPONSIBLE FOR ACQUIRING ANY PERMITS THAT ARE NECESSARY FOR REMOVING DELETERIOUS MATERIAL FROM THE SITE.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING EXCAVATIONS AGAINST COLLAPSE AND WILL PROVIDE BRACING SHEETING OR SHORING AS NECESSARY. DEWATERING METHODS SHALL BE USED AS REQUIRED TO KEEP TRENCHES DRY WHILE PIPE AND APPURTENANCES ARE BEING PLACED.
3. ALL NECESSARY FILL AND EMBANKMENT THAT IS PLACED DURING CONSTRUCTION SHALL CONSIST OF MATERIAL SPECIFIED BY THE OWNER'S SOIL TESTING COMPANY OR ENGINEER AND BE PLACED AND COMPACTED ACCORDING TO THESE PLANS OR THE REFERENCED SOILS REPORT. 4. PROPOSED SPOT ELEVATIONS REPRESENT FINISHED PAVEMENT OR GROUND SURFACE GRADE UNLESS OTHERWISE NOTED ON DRAWINGS.
5. UNLESS OTHERWISE NOTED, ALL GRADING, ROCKING AND PAVING TO CONFORM TO SCDOT STANDARD SPECIFICATIONS, LATEST EDITION.
6. CLEAR AND GRUB WITHIN WORK LIMITS ALL SURFACE VEGETATION, TREES, STUMPS, BRUSH, ROOTS, ETC. DO NOT DAMAGE OR REMOVE TREES EXCEPT AS APPROVED BY THE APPROPRIATE MUNICIPAL AUTHORITY OR AS SHOWN ON THE DRAWINGS. PROTECT ALL ROOTS.
7. STRIP WORK LIMITS, REMOVING ALL ORGANIC MATTER WHICH CANNOT BE COMPACTED INTO A STABLE MASS. ALL TREES, BRUSH AND DEBRIS ASSOCIATED WITH CLEARING, STRIPPING OR GRADING SHALL BE REMOVED AND DISPOSED OF OFF-SITE BY THE CONTRACTOR.
8. IMMEDIATELY FOLLOWING FINE GRADING OPERATIONS, COMPACT SUBGRADE TO 95% OF THE MAXIMUM DRY DENSITY PER AASHTO T-180.
9. ALL FILLS WITHIN PUBLIC RIGHT-OF-WAYS AND EASEMENTS SHALL BE ENGINEERED. ADDITIONALLY, ANY FILLS OUTSIDE OF PUBLIC RIGHT-OF-WAYS WHICH ARE OVER 2 FEET IN DEPTH SHALL BE ENGINEERED. ENGINEERED FILLS SHALL BE CONSTRUCTED IN 6" LIFTS. EACH LIFT SHALL BE COMPACTED TO 95 % OF THE MAXIMUM DRY DENSITY PER AASHTO T-180 TEST METHOD (MODIFIED PROCTOR).
10. UNLESS OTHERWISE SHOWN ON THE DRAWINGS, STRAIGHT GRADES SHALL BE RUN BETWEEN ALL FINISH GRADE ELEVATIONS AND/OR FINISH CONTOUR LINES SHOWN. FINISH PAVEMENT GRADES AT TRANSITION TO EXISTING PAVEMENT SHALL MATCH EXISTING PAVEMENT GRADES OR BE FEATHERED PAST JOINTS WITH EXISTING PAVEMENT AS REQUIRED TO PROVIDE A SMOOTH, FREE DRAINING SURFACE.
11. CRUSHED ROCK SHALL CONFORM TO THE REQUIREMENTS OF SECTION 02630 (BASE AGGREGATE) SCDOT STANDARD SPECIFICATIONS. COMPACT TO 95% OF THE MAXIMUM DRY DENSITY PER AASHTO T-180 TEST METHOD (MODIFIED PROCTOR). A.C. PAVEMENT SHALL CONFORM TO SECTION 00745 (ASPHALT CONCRETE PAVEMENT) SCDOT STANDARD SPECIFICATIONS FOR STANDARD DUTY MIX. A.C. PAVEMENT SHALL BE COMPACTED TO A MINIMUM OF 91% OF MAXIMUM DENSITY AS DETERMINED BY THE RICE STANDARD METHOD.
12. ALL EXISTING OR CONSTRUCTED MANHOLES, CLEANOUTS, MONUMENTS, GAS VALVES, WATER VALVES AND SIMILAR STRUCTURES SHALL BE ADJUSTED TO MATCH FINISH GRADE OF THE PAVEMENT, SIDEWALK, LANDSCAPED AREA WHEREIN THEY LIE.
13. IF WIND EROSION BECOMES SIGNIFICANT DURING CONSTRUCTION, THE CONTRACTOR SHALL STABILIZE THE AFFECTED AREA USING SPRINKLING, IRRIGATION OR OTHER ACCEPTABLE METHODS.
14. ENGINEERED FILL MATERIAL SHALL NOT CONTAIN ROCKS OR HARD LUMPS GREATER THAN 3 INCHES IN MAXIMUM DIMENSIONS AND SHALL BE FREE OF VEGETATION, ORGANIC MATTER, DEBRIS, RUBBLE AND OTHER UNSUITABLE MATERIALS.
15. IMPORTED SOILS FOR USE AS ENGINEERED FILL SHALL BE NON-EXCLUSIVE MATERIALS AND SHALL NOT CONTAIN ROCKS OR HARD LUMPS GREATER THAN 3 INCHES IN MAXIMUM DIMENSIONS AND SHALL BE FREE OF VEGETATION, ORGANIC MATTER, DEBRIS, RUBBLE, AND OTHER UNSUITABLE MATERIALS.
16. AGGREGATE BASE MATERIAL SHALL MEET THE FOLLOWING GRADATION REQUIREMENTS:

SIEVE SIZE (PER ASTM D422)	PERCENT PASSING BY WEIGHT
1 INCH	100
3/4	90–100
NO. 8	35–55
NO. 200	0–8

17. ALL AREAS TO RECEIVE FILL, AND AREAS OF STRUCTURES AND PAVEMENTS, SHALL BE STRIPPED OF VEGETATION, ORGANIC MATER, DEBRIS, RUBBLE, AND OTHER UNSUITABLE MATERIALS. STRIPPED SOILS SHALL NOT BE USED IN ENGINEERED FILL, BUT MAY BE USED IN LANDSCAPE AREAS.

· ENGINEERED FILL MATERIAL SHALL BE COMPACTED TO AT LEAST THE FOLLOWING PERCENTAGES OF MAXIMUM DRY DENSITY AND OPTIMUM MOISTURE CONTENT, PER ASTM D698 (STANDARD PROCTOR)

ENGINEERED FILL MATERIAL	MINIMUM PERCENT COMPACTION	MOISTURE CONTENT (RANGE)
NATIVE SOIL	90%	OPTIMUM TO OPTIMUM PLUS 3%
ENGINEERED FILL UNDER STRUCTURES AND BEHIND RETAINING WALLS	95%	OPTIMUM TO OPTIMUM PLUS 3%
ENGINEERED FILL UNDER PAVEMENTS	95%	OPTIMUM TO OPTIMUM PLUS 2%
FILL IN LANDSCAPE AREAS	95%	2 TO 5% ABOVE OPTIMUM

- AGGREGATE BASE COURSE SHALL BE COMPACTED TO AT LEAST THE FOLLOWING PERCENTAGES OF MAXIMUM DRY DENSITY AND OPTIMUM MOISTURE CONTENT, PER AASHTO T180 (MODIFIED PROCTOR)

ENGINEERED FILL MATERIAL	MINIMUM PERCENT COMPACTION	MOISTURE CONTENT (RANGE)
AGGREGATE BASE MATERIAL OR IMPORTED GRANULAR SOIL IN BUILDING AND PAVEMENT AREAS	100%	OPTIMUM PLUS OR MINUS 2%

- NOTE: MOISTURE CONTENT OF ENGINEERED FILL MATERIAL MAY REQUIRE ADJUSTMENT DURING CONSTRUCTION TO PREVENT SOIL PUMPING.

18. ENGINEERED FILL SHALL BE PLACED IN LIFTS NO GREATER THAN 6 INCHES THICK (LOOSE).
19. THE TOP 6 INCHES OF SOIL EXPOSED AT THE BOTTOM OF THE EXCAVATIONS SHALL BE COMPACTED, SCARIFIED AND COMPACTED AS ENGINEERED FILL PRIOR TO PLACEMENT OF ADDITIONAL FILL.
20. IF SOFT OR LOOSE SOIL IS PRESENT AT THE BASE OF EXCAVATIONS, IT SHALL BE EXCAVATED AND/OR COMPACTED AS ENGINEERED FILL OR AS RECOMMENDED BY THE ENGINEER'S FIELD REPRESENTATIVE.
21. IF SUBGRADE SOILS EXHIBIT PUMPING DURING COMPACTION, THE AREA SHALL BE ALLOWED TO DRY UNTIL THE SOLIDS BECOME WORKABLE WITHOUT PUMPING. THE MOISTURE CONTENT OF THE SOILS SHALL BE ADJUSTED TO PREVENT PUMPING.
22. UNLESS OTHERWISE SHOWN ON THE DRAWINGS, STRAIGHT GRADES SHALL BE RUN BETWEEN ALL FINISH GRADE ELEVATIONS AND/OR FINISH CONTOUR LINES SHOWN. FINISH PAVEMENT GRADES AT TRANSITION TO EXISTING PAVEMENT SHALL MATCH EXISTING PAVEMENT GRADES EXPOSURE TO THE ENVIRONMENT MAY REDUCE THE STRENGTH OF SOILS IN PAVED AREAS. IF THIS OCCURS, THE SOFTENED SOILS SHALL BE REMOVED AND REWORKED IMMEDIATELY PRIOR TO CONCRETE PLACEMENT. IF RAINFALL IS EXPECTED AT A TIME WHEN BEARING SOILS IN FOOTING AREAS ARE EXPOSED, A 2 TO 4 INCH THICK LAYER OF LEAN CONCRETE MAY BE PLACED IN SUCH AREA.
23. THE SITE SHALL BE GRADED TO TRANSPORT SURFACE RUNOFF AWAY FROM THE PAVED AREAS. WATER SHALL NOT BE ALLOWED TO ACCUMULATE (POND) ON PAVED AREAS.
24. BACKFILL AND FILL SHALL CONFORM TO THE GENERAL REQUIREMENTS FOR SOIL MATERIALS ABOVE AND SHALL BE CLASSIFIED AS GW, GP, GM, GC, SW, SP, SM, SC, ML, CL BY ASTM D2487 AND SHALL CONFORM TO THE FOLLOWING:
    1. SHALL BE CAPABLE OF BEING COMPACTED TO THE SPECIFIED DEGREE OF COMPACTION WHEN THE MOISTURE CONTENT IS WITHIN 3 PERCENTAGE POINTS OF THE OPTIMUM PERCENT MOISTURE.
    2. LIQUID LIMIT SHOULD NOT EXCEED 40 PERCENT WHEN TESTED IN ACCORDANCE WITH ASTM D4318.
    3. PLASTICITY INDEX SHOULD NOT BE GREATER THAN 30 PERCENT WHEN TESTED IN ACCORDANCE WITH ASTM D4318.
    4. NO MORE THAN 75 PERCENT BY WEIGHT SHALL BE FINER THAN NO. 200 SIEVE WHEN TESTED IN ACCORDANCE WITH ASTM D1140.
25. UNSUITABLE SOIL SHALL BE ANY SOIL MATERIALS DETERMINED BY THE INDEPENDENT GEOTECHNICAL LABORATORY AS NOT CONFORMING TO THE REQUIREMENTS DESCRIBED ABOVE FOR BACKFILL AND FILL. A MOISTURE CONTENT WHICH IS MORE THAN 3 PERCENTAGE POINTS FROM OPTIMUM SHALL NOT BE CONSIDERED UNSUITABLE IF SUCH MATERIALS WOULD OTHERWISE BE SUITABLE IF THE MOISTURE CONTENT WERE ADJUSTED. ADJUSTMENTS TO THE SOIL MOISTURE CONTENT BY DRYING, MIXING, ADDING WATER, OR OTHER MEANS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
26. MEASUREMENT OF UNSUITABLE MATERIAL: THE VOLUME OF UNSUITABLE MATERIAL EXCAVATION SHALL BE DETERMINED BY A LICENSED SURVEYOR BY THE AVERAGE END AREA METHOD. THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER A SCALED PLAN WITH SUFFICIENT ELEVATION POINTS TO ACCURATELY DEFINE THE VOLUME OF UNSUITABLE MATERIAL EXCAVATED. THE EXTENT OF UNSUITABLE MATERIAL EXCAVATION SHALL BE DETERMINED BY THE INDEPENDENT GEOTECHNICAL LABORATORY.
27. ALL PAINTED ARROWS AND OTHER SYMBOLS TO BE PER MUTCD AND SCDOT STANDARD SPECIFICATIONS.

DRAINAGE

1. ALL STORM DRAIN PIPE SHALL BE REINFORCED CONCRETE PIPE, TONGUE AND GROOVE CLASS III, UNLESS OTHERWISE NOTED ON PLANS. ALL DRAINAGE STRUCTURES SHALL BE IN ACCORDANCE WITH SCDOT STANDARDS, APPLICABLE GOVERNING AGENCY STANDARDS AND DETAILS INCORPORATED IN THIS PLAN.
2. PIPE LENGTHS SHOWN ARE APPROXIMATE AND CENTER TO CENTER ON DRAINAGE STRUCTURES. CONTRACTOR SHALL VERIFY ALL QUANTITIES PRIOR TO SUBMITTAL OF BID.
3. ALL DRAINAGE STRUCTURE GRATES AND COVERS IN RIGHT-OF-WAY SHALL BE PER SCDOT STANDARDS AND SPECIFICATIONS, LATEST EDITION, UNLESS OTHERWISE NOTED.
4. ALL STORM DRAIN PIPING SHALL BE SUBJECT TO A VISUAL INSPECTION BY THE OWNER'S ENGINEER AND MUNICIPALITY HAVING PRIOR TO THE PLACEMENT OF BACKFILL. CONTRACTOR TO NOTIFY THE ENGINEER 48 HOURS IN ADVANCE TO SCHEDULE INSPECTIONS.
5. THE CONTRACTOR SHALL MAINTAIN AND PROTECT FROM MUD, DIRT, DEBRIS, ETC THE STORM DRAINAGE SYSTEM UNTIL FINAL ACCEPTANCE OF THE PROJECT. THE CONTRACTOR MAY BE REQUIRED TO RECLEAN PIPES AND INLETS FOR THESE PURPOSES.
6. FOR CONSTRUCTION OF THE DROP INLET WALLS EITHER BRICK MASONRY OR CLASS 3000 CONCRETE MAY BE USED. FOR CONCRETE THE WALLS ARE TO BE 6" THICK WITH A REINFORCING STEEL AREA OF 0.20 SQ. INCH PER FT. FOR BRICK THE WALLS ARE TO BE 8" THICK.
7. THE BOTTOM SLAB OF THE BOX SHALL BE A MINIMUM OF 6 IN. THICK CLASS 3000 CONCRETE WITH A REINFORCING STEEL AREA OF 0.20 SQ. INCH PER FT. WIRE MESH MAY BE USED IN LIEU OF STEEL BARS PROVIDED A MINIMUM OF 0.20 SQ. IN. PER FT. IS MET.
8. MORTAR SHALL BE TYPE S OR M.
9. IF DESIRED THESE ITEMS MAY BE PRECAST PRIOR TO INSTALLATION IN LIEU OF BEING CAST IN PLACE. THE USE OF PRECAST UNITS WILL NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF OBTAINING SATISFACTORY INSTALLATIONS. REFER TO STANDARD DRAWINGS FOR PRECAST CONCRETE DRAINAGE BOX FOR ADDITIONAL DETAILS AND SPECIFICATIONS.
10. REINFORCING STEEL SHALL BE DEFORMED AND SHALL CONFORM TO AASHTO M 31, GRADE 60. WIRE MESH SHALL CONFORM TO AASHTO M 55 AND M 221.
11. IF STRUCTURE DEPTH EXCEEDS 4'-6", METAL STEPS ARE TO BE PLACED ON WALL. REFER TO STEP STANDARD DRAWING 719-16.
12. CASTING SHALL CONFORM TO AASHTO M 105, CLASS 35B AND THE ALTERNATE LOAD TEST OF AASHTO M 306. CASTINGS SHALL ALSO MEET THE LOADING REQUIREMENTS OF FEDERAL SPECIFICATION RR-F-621 (LATEST EDITION).
13. THE LONGEST DIMENSIONS OF THE OPENING IN THE IRON GRATE SHOULD BE ORIENTED IN THE DIRECTION OF FLOW IF PRACTICAL.
14. AS SHOWN BY THIS DRAWING THE FRAME IS SET LEVEL, BUT THE ENGINEER MAY SET SAME ON SLOPE AS REQUIRED BY LOCAL DRAINAGE CONDITIONS.
15. AFTER THE FRAME IS SET IN ITS FINAL POSITION, IT IS TO BE ENCASED WITH CONCRETE AS SHOWN BY DRAWING.
16. THE INSIDE OF THE OUTLET PIPE SHALL BE FLUSH WITH FLOOR OF BASIN, UNLESS OTHERWISE SHOWN ON PLANS (SUMP).
17. THE SOFFIT (INSIDE TOP OF PIPE) OF THE OUTLET PIPE SHOULD BE NO HIGHER THAN THE SOFFIT OF THE INLET PIPE, UNLESS OTHERWISE SHOWN ON PLANS.
18. SHOULD THE CONTRACTOR ENCOUNTER UNSUITABLE MATERIAL, THEN THE CONTRACTOR WILL ENGAGE AN INDEPENDENT GEOTECHNICAL ENGINEER TO VERIFY UNSUITABLE MATERIAL AND MAKE RECOMMENDATIONS ON THE REMOVAL AND THE PLACEMENT AND TYPE OF NEW BEDDING AND BACKFILL MATERIAL. THE RECOMMENDATIONS BY THE INDEPENDENT GEOTECHNICAL ENGINEER SHALL BE SUBMITTED TO THE OWNER AND CIVIL ENGINEER FOR CONCURRENCE PRIOR TO PROCEEDING WITH WORK.

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STANDARD EROSION CONTROL NOTES

1. IF NECESSARY, SLOPES WHICH EXCEED EIGHT (8) VERTICAL FEET SHOULD BE STABILIZED WITH SYNTHETIC OR VEGETATIVE MATS, IN ADDITION TO HYDROSEEDING. IT MAY BE NECESSARY TO INSTALL TEMPORARY SLOPE DRAINS DURING CONSTRUCTION. TEMPORARY BERMS MAY BE NEEDED UNTIL THE SLOPE IS BROUGHT TO GRADE.
2. STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICABLE IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED, BUT IN NO CASE MORE THAN FOURTEEN (14) DAYS AFTER WORK HAS CEASED, EXCEPT AS STATED BELOW.

   -WHERE STABILIZATION BY THE 14TH DAY IS PRECLUDED BY SNOW COVER OR FROZEN GROUND CONDITIONS STABILIZATION MEASURE MUST BE INITIATED AS SOON AS PRACTICABLE.
   -WHERE CONSTRUCTION ACTIVITY ON A PORTION OF THE SITE IS TEMPORARILY CEASED, AND EARTH-DISTURBING ACTIVITIES WILL BE RESUMED WITHIN 14 DAYS, TEMPORARY STABILIZATION MEASURES DO NOT HAVE TO BE INITIATED ON THAT PORTION OF THE SITE.
3. ALL SEDIMENT AND EROSION CONTROL DEVICES SHALL BE INSPECTED ONCE EVERY CALENDAR WEEK. IF PERIODIC INSPECTION OR OTHER INFORMATION INDICATES THAT A BMP HAS BEEN INAPPROPRIATELY OR INCORRECTLY INSTALLED, THE PERMITTEE MUST ADDRESS THE NECESSARY REPLACEMENT OR MODIFICATION REQUIRED TO CORRECT THE BMP WITHIN 48 HOURS OF IDENTIFICATION.
4. PROVIDE SILT FENCE AND/OR OTHER CONTROL DEVICES, AS MAY BE REQUIRED, TO CONTROL SOIL EROSION DURING UTILITY CONSTRUCTION. ALL DISTURBED AREAS SHALL BE CLEANED, GRADED, AND STABILIZED WITH GRASSING IMMEDIATELY AFTER THE UTILITY INSTALLATION. FILL, COVER, AND TEMPORARY SEEDING AT THE END OF EACH DAY ARE RECOMMENDED. IF WATER IS ENCOUNTERED WHILE TRENCHING, THE WATER SHOULD BE FILTERED TO REMOVE SEDIMENT BEFORE BEING PUMPED BACK INTO ANY WATERS OF THE STATE.
5. ALL EROSION CONTROL DEVICES SHALL BE PROPERLY MAINTAINED DURING ALL PHASES OF CONSTRUCTION UNTIL THE COMPLETION OF ALL CONSTRUCTION ACTIVITIES AND ALL DISTURBED AREAS HAVE BEEN STABILIZED. ADDITIONAL CONTROL DEVICES MAY BE REQUIRED DURING CONSTRUCTION IN ORDER TO CONTROL EROSION AND/OR OFFSITE SEDIMENTATION. ALL TEMPORARY CONTROL DEVICES SHALL BE REMOVED ONCE CONSTRUCTION IS COMPLETE AND THE SITE IS STABILIZED.
6. THE CONTRACTOR MUST TAKE NECESSARY ACTION TO MINIMIZE THE TRACKING OF MUD ONTO PAVED ROADWAY(S) FROM CONSTRUCTION AREAS AND THE GENERATION OF DUST. THE CONTRACTOR SHALL DAILY REMOVE MUD/SOIL FROM PAVEMENT, AS MAY BE REQUIRED.
7. RESIDENTIAL SUBDIVISIONS REQUIRE EROSION CONTROL FEATURES FOR INFRASTRUCTURE AS WELL AS FOR INDIVIDUAL LOT CONSTRUCTION. INDIVIDUAL PROPERTY OWNERS SHALL FOLLOW THESE PLANS DURING CONSTRUCTION OR OBTAIN APPROVAL OF AN INDIVIDUAL PLAN IN ACCORDANCE WITH S.C REG. 72-300 ET SEQ. AND SCR100000.
8. TEMPORARY DIVERSION BERMS AND/OR DITCHES WILL BE PROVIDED AS NEEDED DURING CONSTRUCTION TO PROTECT WORK AREAS FROM UPSLOPE RUNOFF AND/OR TO DIVERT SEDIMENT-LADEN WATER TO APPROPRIATE TRAPS OR STABLE OUTLETS.
9. ALL WATERS OF THE STATE (WOS), INCLUDING WETLANDS, ARE TO BE FLAGGED OR OTHERWISE CLEARLY MARKED IN THE FIELD. A DOUBLE ROW OF SILT FENCE IS TO BE INSTALLED IN ALL AREAS WHERE A 50-FOOT BUFFER CAN'T BE MAINTAINED BETWEEN THE DISTURBED AREA AND ALL WOS. A 10-FOOT BUFFER SHOULD BE MAINTAINED BETWEEN THE LAST ROW OF SILT FENCE AND ALL WOS.
10. LITTER, CONSTRUCTION DEBRIS, OILS, FUELS, AND BUILDING PRODUCTS WITH SIGNIFICANT POTENTIAL FOR IMPACT (SUCH AS STOCKPILES OF FRESHLY TREATED LUMBER) AND CONSTRUCTION CHEMICALS THAT COULD BE EXPOSED TO STORM WATER MUST BE PREVENTED FROM BECOMING A POLLUTANT SOURCE IN STORM WATER DISCHARGES.
11. A COPY OF THE SWPPP, INSPECTIONS RECORDS, AND RAINFALL DATA MUST BE RETAINED AT THE CONSTRUCTION SITE OR A NEARBY LOCATION EASILY ACCESSIBLE DURING NORMAL BUSINESS HOURS, FROM THE DATE OF COMMENCEMENT OF CONSTRUCTION ACTIVITIES TO THE DATE THAT FINAL STABILIZATION IS REACHED.
12. INITIATE STABILIZATION MEASURES ON ANY EXPOSED STEEP SLOPE (3H:1V OR GREATER) WHERE LAND-DISTURBING ACTIVITIES HAVE PERMANENTLY OR TEMPORARILY CEASED, AND WILL NOT RESUME FOR A PERIOD OF 7 CALENDAR DAYS.
13. MINIMIZE SOIL COMPACTION AND, UNLESS INFEASIBLE, PRESERVE TOPSOIL.
14. MINIMIZE THE DISCHARGE OF POLLUTANTS FROM EQUIPMENT AND VEHICLE WASHING, WHEEL WASH WATER, AND OTHER WASH WATERS. WASH WATERS MUST BE TREATED IN A SEDIMENT BASIN OR ALTERNATIVE CONTROL THAT PROVIDES EQUIVALENT OR BETTER TREATMENT PRIOR TO DISCHARGE;
15. MINIMIZE THE DISCHARGE OF POLLUTANTS FROM DEWATERING OF TRENCHES AND EXCAVATED AREAS. THESE DISCHARGES ARE TO BE ROUTED THROUGH APPROPRIATE BMPS (SEDIMENT BASIN, FILTER BAG, ETC.).
16. THE FOLLOWING DISCHARGES FROM SITES ARE PROHIBITED:

   -WASTEWATER FROM WASHOUT OF CONCRETE, UNLESS MANAGED BY AN APPROPRIATE CONTROL;
   -WASTEWATER FROM WASHOUT AND CLEANOUT OF STUCCO, PAINT, FORM RELEASE OILS, CURING COMPOUNDS AND OTHER CONSTRUCTION MATERIALS
   -FUELS, OILS, OR OTHER POLLUTANTS USED IN VEHICLE AND EQUIPMENT OPERATION AND MAINTENANCE; -SOAPS OR SOLVENTS USED IN VEHICLE AND EQUIPMENT WASHING.
17. AFTER CONSTRUCTION ACTIVITIES BEGIN, INSPECTIONS MUST BE CONDUCED AT A MINIMUM OF AT LEAST ONCE EVERY CALENDAR WEEK AND MUST BE CONDUCTED UNTIL FINAL STABILIZATION IS REACHED ON ALL AREAS OF THE CONSTRUCTION SITE.
18. IF EXISTING BMP'S NEED TO BE MODIFIED OR IF ADDITIONAL BMP'S ARE NECESSARY TO COMPLY WITH THE REQUIREMENTS OF THIS PERMIT AND/OR SC'S WATER QUALITY STANDARDS, IMPLEMENTATION MUST BE COMPLETED BEFORE THE NEXT STORM EVENT WHENEVER PRACTICABLE. IF IMPLEMENTATION BEFORE THE NEXT STORM EVENT IS IMPRACTICABLE, THE SITUATION MUST BE DOCUMENTED IN THE SWPPP AND ALTERNATIVE BMPS MUST BE IMPLEMENTED AS SOON AS REASONABLY POSSIBLE.
19. A PRE-CONSTRUCTION CONFERENCE MUST BE HELD FOR EACH CONSTRUCTION SITE WITH AN APPROVED ON-SITE SWPPP PRIOR TO THE IMPLEMENTATION OF CONSTRUCTION ACTIVITIES. FOR NON-LINEAR PROJECTS THAT DISTURB 10 ACRES OR MORE THIS CONFERENCE MUST BE HELD ON-SITE UNLESS THE DEPARTMENT HAS APPROVED OTHERWISE.

SURFACE WATER PROTECTION PLAN

1. SURFACE WATERS WILL BE PROTECTED WITH DOUBLE ROW OF SILT FENCE, IMMEDIATE PERMANENT STABILIZATION AND WEEKLY INSPECTIONS.

Stantec

4969 Centre Pointe Dr, Suite 200
North Charleston, SC 29418
843-740-7700

Legend

Notes

Revision	By	Appd.	YY.MM.DD

Issued	By	Appd.	YY.MM.DD
03 ADDENDUM #1	MW	BK	20.03.27
02 BID SET	MW	BK	20.03.04
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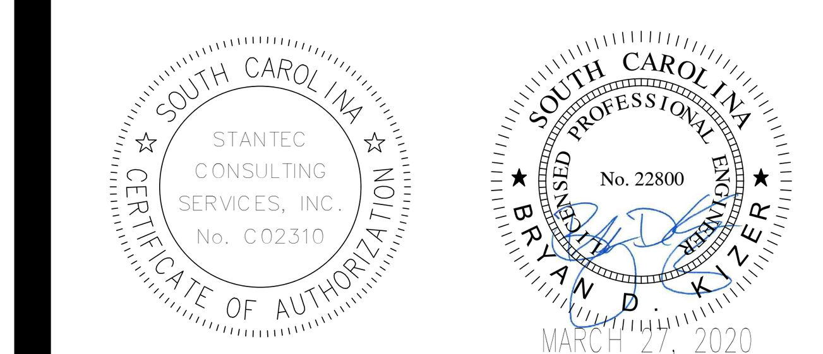
File Name:	Dwn.	Chkd.	Dsgn.	YY.MM.DD

Permit-Seal



Client/Project
The City of Georgetown, SC

Queen Street Storm Drainage Improvements

Georgetown County, SC

Title
STANDARD NOTES

Project No. 178420970
Scale

Drawing No. C2
Sheet 2 of 7
Revision 0

REFERENCES:

1. FINAL PLAT SHOWING REVISED LOT 4 ON FRONT STREET, DATED FEBRUARY 14, 2001, BY WENDELL C. POWERS, AND RECORDED IN PLAT SLIDE 378, PAGE 9.

2. PLAT SHOWING LOTS 40, 39, AND PART OF 38, DATED JULY 30, 1960, BY LEGARE' HAMILTON, AND RECORDED IN PLAT BOOK T, PAGE 54.

3. DEED RECORDED IN DEED BOOK 91, PAGE 406.

4. GEORGETOWN COUNTY TAX MAP 05-0029-114-00-00.

NOTES:

1. THIS PROPERTY IS LOCATED IN FLOOD ZONE AE-9, PER F.I.R.M. COMMUNITY PANEL 450087 0002, REVISED MARCH 16, 1989.

2. AREA WAS DETERMINED BY COORDINATE METHOD.

3. ALL PROPERTY CORNERS SET ARE 3/4" OPEN PIPE UNLESS OTHERWISE NOTED.

4. OWNER OF RECORD: GEORGETOWN COMMUNICATIONS INC.
P.O. BOX 2778
GEORGETOWN, SC 29442

5. ZONED: CC
BUILDING SETBACKS: FRONT = 0'
SIDE = 0'
REAR = 0'

6. THIS PROPERTY IS SUBJECT TO ALL EASEMENTS AND RESTRICTIONS OF RECORD. NO TITLE SEARCH PERFORMED BY THIS OFFICE.

7. THIS SURVEY WAS PREPARED FOR THE EXCLUSIVE USE OF THE PERSON(S) OR ENTITY APPEARING ON SAID SURVEY. THIS SURVEY DOES NOT EXTEND TO ANY UNNAMED PERSON(S) OR ENTITY WITHOUT AN EXPRESSED RECERTIFICATION BY PARKER LAND SURVEYING, LLC.

8. THIS SURVEY IS NULL AND VOID IF EMBOSSED SEAL AND SIGNATURE ARE ABSENT.

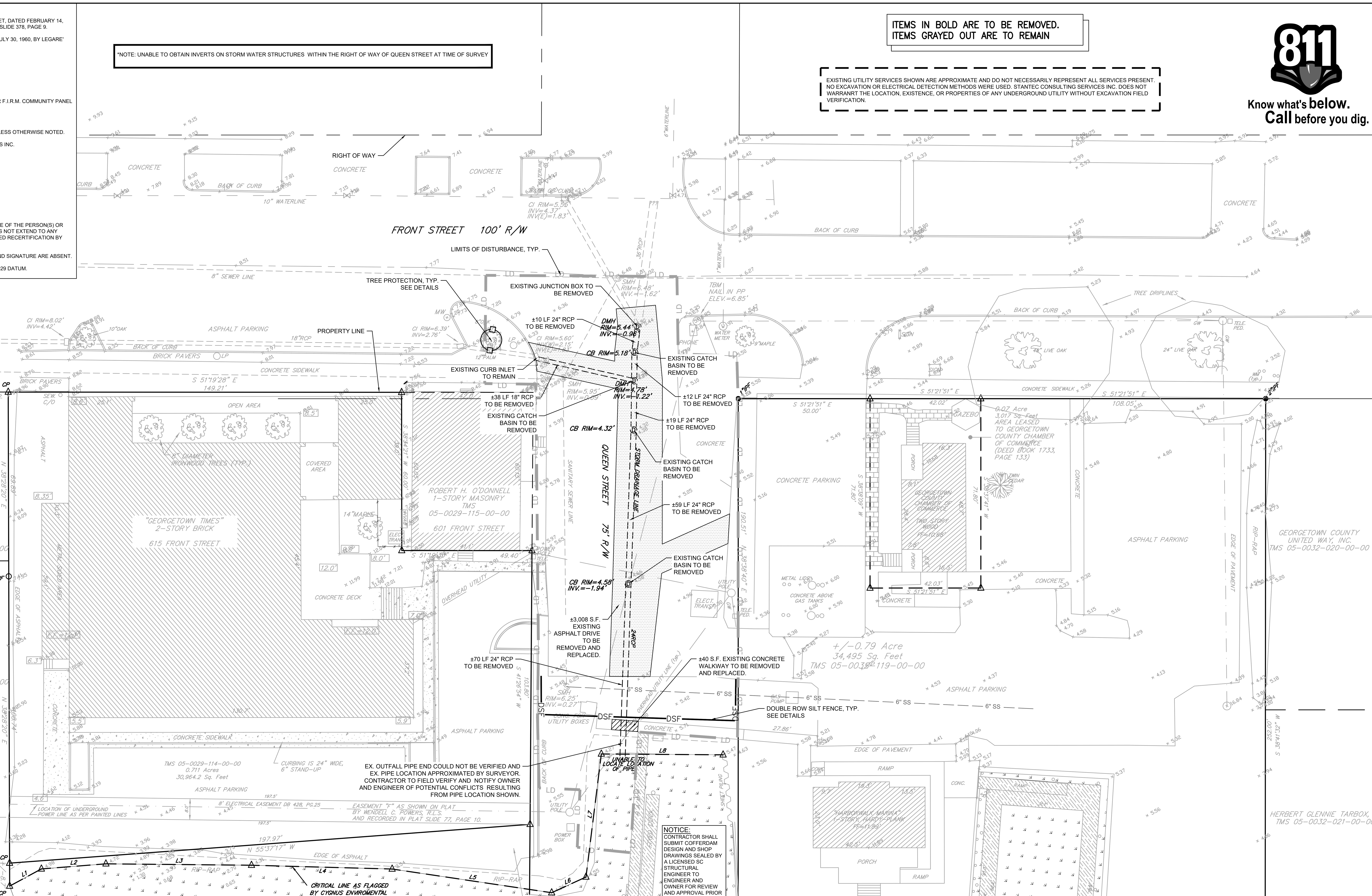
9. ELEVATIONS SHOWN HEREON ARE BASED ON NGVD 1929 DATUM.

*NOTE: UNABLE TO OBTAIN INVERTS ON STORM WATER STRUCTURES WITHIN THE RIGHT OF WAY OF QUEEN STREET AT TIME OF SURVEY

ITEMS IN BOLD ARE TO BE REMOVED.
ITEMS GRAYED OUT ARE TO REMAIN

EXISTING UTILITY SERVICES SHOWN ARE APPROXIMATE AND DO NOT NECESSARILY REPRESENT ALL SERVICES PRESENT. NO EXCAVATION OR ELECTRICAL DETECTION METHODS WERE USED. STANTEC CONSULTING SERVICES INC. DOES NOT WARRANT THE LOCATION, EXISTENCE, OR PROPERTIES OF ANY UNDERGROUND UTILITY WITHOUT EXCAVATION FIELD VERIFICATION.

811 Know what's below. Call before you dig.



LINE	BEARING	DISTANCE
L1	N 79°45'46" W	13.68'
L2	S 55°52'04" E	24.55'
L3	S 50°48'36" E	55.22'
L4	S 49°48'46" E	53.37'
L5	S 42°55'05" E	61.17'
L6	S 75°55'09" E	14.31'
L7	N 45°45'05" E	47.02'
L8	S 50°57'58" E	46.20'
L9	N 39°08'19" W	9.83'
L10	S 70°28'41" W	5.46'

DEMOLITION NOTES:

1. DEMOLITION SHALL COMPLY WITH ALL APPLICABLE ENVIRONMENTAL REQUIREMENTS FOR REMOVAL, HANDLING, AND DISPOSAL.
2. IF ANY HISTORICALLY SIGNIFICANT ARTICLES ARE FOUND DURING CONSTRUCTOIN, THE CONTRACTOR SHALL STOP WORK IN THE AREA DN NOTIFY THE OWNER AND LOCAL JURISDICTIONAL AGENCY FOR DIRECTION.
3. CONTRACTOR SHALL PROVIDE ALL REQUIRED TRAFFIC CONTROL FOR DEMOLITION ACTIVITIES.
4. PAVEMENT REMOVAL TO BE PERFORMED IN ACCORDANCE WITH SCDOT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.
5. ANY ASPHALT TO BE REMOVED IS TO BE SAWCUT, REMOVED AND DISPOSED OF IN LEGAL MANNER.
6. THE CONTRACTOR SHALL CLEAR ONLY THOSE PORTIONS OF THE SITE NECESSARY FOR CONSTRUCTION. DISTURBED AREAS WILL BE SEEDED, MULCHED, SODDED OR PLANTED WITH OTHER APPROVED LANDSCAPE MATERIAL IMMEDIATELY FOLLOWING CONSTRUCTION.
7. THE TOP 6" OF GROUND REMOVED DURING CLEARING SHALL BE STOCKPILED AT A SITE DESIGNATED BY THE OWNER OR THE OWNER'S ENGINEER TO BE USED FOR LANDSCAPING PURPOSES, UNLESS OTHERWISE DIRECTED BY THE OWNER OR THE OWNER'S ENGINEER. THE REMAINING EARTHWORK THAT RESULTS FROM CLEARING OR SITE EXCAVATION IS TO BE UTILIZED ON-SITE IF REQUIRED, PROVIDED THAT THE MATERIAL IS DEEMED SUITABLE FOR CONSTRUCTION BY THE OWNER'S SOILS TESTING COMPANY. EXCESS MATERIAL IS TO BE EITHER STOCKPILED ON THE SITE AS DIRECTED BY THE OWNER OR OWNER'S ENGINEER, OR REMOVED FROM THE SITE. THE CONTRACTOR IS RESPONSIBLE FOR ACQUIRING ANY PERMITS THAT ARE NECESSARY FOR REMOVING EXCESS EARTHWORK FROM THE SITE.
8. ALL CONSTRUCTION DEBRIS AND OTHER WASTE MATERIALS SHALL BE DISPOSED OF OFF-SITE IN ACCORDANCE WITH APPLICABLE REGULATORY AGENCY REQUIREMENTS OR AS DIRECTED BY THE OWNER OR THE OWNER'S ENGINEER.
9. ALL DEMOLITION AROUND PROTECTED TREES IS TO BE DONE BY HAND. CONTRACTOR SHALL NOT OPERATE HEAVY EQUIPMENT WITHIN THE TREE PROTECTION BARRIERS.

EXISTING UTILITIES & FACILITIES

1. THE LOCATION AND DESCRIPTIONS OF EXISTING UTILITIES SHOWN ON THE DRAWINGS ARE COMPILED FROM AVAILABLE RECORDS AND/OR FIELD SURVEYS. THE ENGINEER OR UTILITY COMPANIES DO NOT GUARANTEE THE ACCURACY OR THE COMPLETENESS OF SUCH RECORDS. CONTRACTOR SHALL FIELD VERIFY LOCATIONS OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.
2. CONTRACTOR SHALL FIELD VERIFY LOCATION AND DEPTH OF ALL EXISTING UTILITIES WHERE NEW FACILITIES CROSS. CONTRACTOR SHALL BE RESPONSIBLE FOR EXPOSING POTENTIAL UTILITY CONFLICTS FAR ENOUGH AHEAD OF CONSTRUCTION TO MAKE NECESSARY GRADE MODIFICATIONS WITHOUT DELAYING THE WORK. IF GRADE MODIFICATION IS NECESSARY, CONTRACTOR SHALL NOTIFY THE DESIGN ENGINEER, AND THE DESIGN ENGINEER SHALL OBTAIN APPROVAL FROM THE CITY ENGINEER PRIOR TO CONSTRUCTION. ALL UTILITY CROSSINGS SHALL BE POTHOLED AS NECESSARY PRIOR TO EXCAVATING OR BORING TO ALLOW THE CONTRACTOR TO PREVENT GRADE OR ALIGNMENT CONFLICTS.
3. ALL EXISTING FACILITIES SHALL BE MAINTAINED IN-PLACE BY THE CONTRACTOR UNLESS OTHERWISE SHOWN OR DIRECTED. CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO SUPPORT, MAINTAIN, OR OTHERWISE PROTECT EXISTING UTILITIES AND OTHER FACILITIES AT ALL TIMES DURING CONSTRUCTION. CONTRACTOR TO LEAVE EXISTING FACILITIES IN AN EQUAL OR BETTER-THAN-ORIGINAL CONDITION AND TO THE SATISFACTION OF THE CITY ENGINEER.
4. CONTRACTOR SHALL REMOVE ALL EXISTING SIGNS, MAILBOXES, FENCES, LANDSCAPING, ETC., AS REQUIRED TO AVOID DAMAGE DURING CONSTRUCTION AND REPLACE THEM TO EXISTING OR BETTER CONDITION.
5. TREE PROTECTION SHALL BE PLACED AT THE DRIPLINE OF EACH PROTECTED TREE. THE PROTECTIVE BARRIER MUST CONSIST OF ORANGE SAFETY FENCING, NOT LESS THAN 3' HIGH AND SUPPLEMENTED BY WOOD/ METAL POLES. BARRICADES MUST REMAIN IN PLACE THROUGHOUT CONSTRUCTION. APPROVAL OF BARRICADES WILL NEED TO OCCUR PRIOR TO THE ISSUANCE OF A BUILDING PERMIT AND FINAL APPROVAL OF THE SITE PLAN.
6. CONTRACTOR SHALL CONFIRM THAT ALL EXISTING MONITORING WELLS ON SITE HAVE BEEN ABANDONED BY SCDHEC. IF AN ACTIVE MONITORING WELL IS DISCOVERED, CONTRACTOR SHOULD IMMEDIATELY NOTIFY STEPHANIE BRINEY WITH THE SCDHEC UNDERGROUND STORAGE TANK MANAGEMENT DIVISION AT 803-898-0595 TO SCHEDULE ABANDONMENT.

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ORIGINAL SHEET - ARCH D

Stantec
4969 Centre Pointe Dr, Suite 200
North Charleston, SC 29418
843-740-7700

Legend

IPF=IRON PIPE FOUND
IRF=IRON REBAR FOUND
IRS=IRON REBAR SET
CP=CALCULATED POINT (NOT SET)
EB=ELECTRIC BOX
GW=GUY WITE
MW=MONITORING WELL
WM=WATER METER
DMH=DRAINAGE MANHOLE
SMH=SEWER MANHOLE

Notes

1. THE CONSTRUCTION OF A 70 ROOM HOTEL DUBBED THE NAME "THE GEORGE" IS PROPOSED TO REPLACE THE EXISTING GEORGETOWN TIMES BUILDING LOCATED AT 615 FRONT STREET. THE GEORGE HOTEL MAIN ENTRANCE DRIVE WILL BE LOCATED WITHIN THE QUEEN STREET 75' RW. CONTRACTOR IS TO COORDINATE THE QUEEN STORM DRAINAGE IMPROVEMENTS WITH THE CONSTRUCTION OF THE GEORGE HOTEL. ADJUSTMENTS TO THE PROPOSED STORM INLET RIM ELEVATIONS AND DRIVEWAY SURFACE REPLACEMENT ASSOCIATED WITH THE QUEEN STREET IMPROVEMENTS MAY BE REQUIRED.

Revision	By	Appd.	YY.MM.DD
03 ADDENDUM #1	MW	BK	20.03.27
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File Name: Dwn. Chkd. Dsgn. YY.MM.DD

Permit-Seal

SOUTH CAROLINA STANTEC CONSULTING SERVICES, INC. No. C02310 CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA PROFESSIONAL ENGINEER No. 22800 BRYAN D. KIZER LICENSED MARCH 27, 2020

Client/Project

The City of Georgetown, SC

Queen Street Storm Drainage Improvements

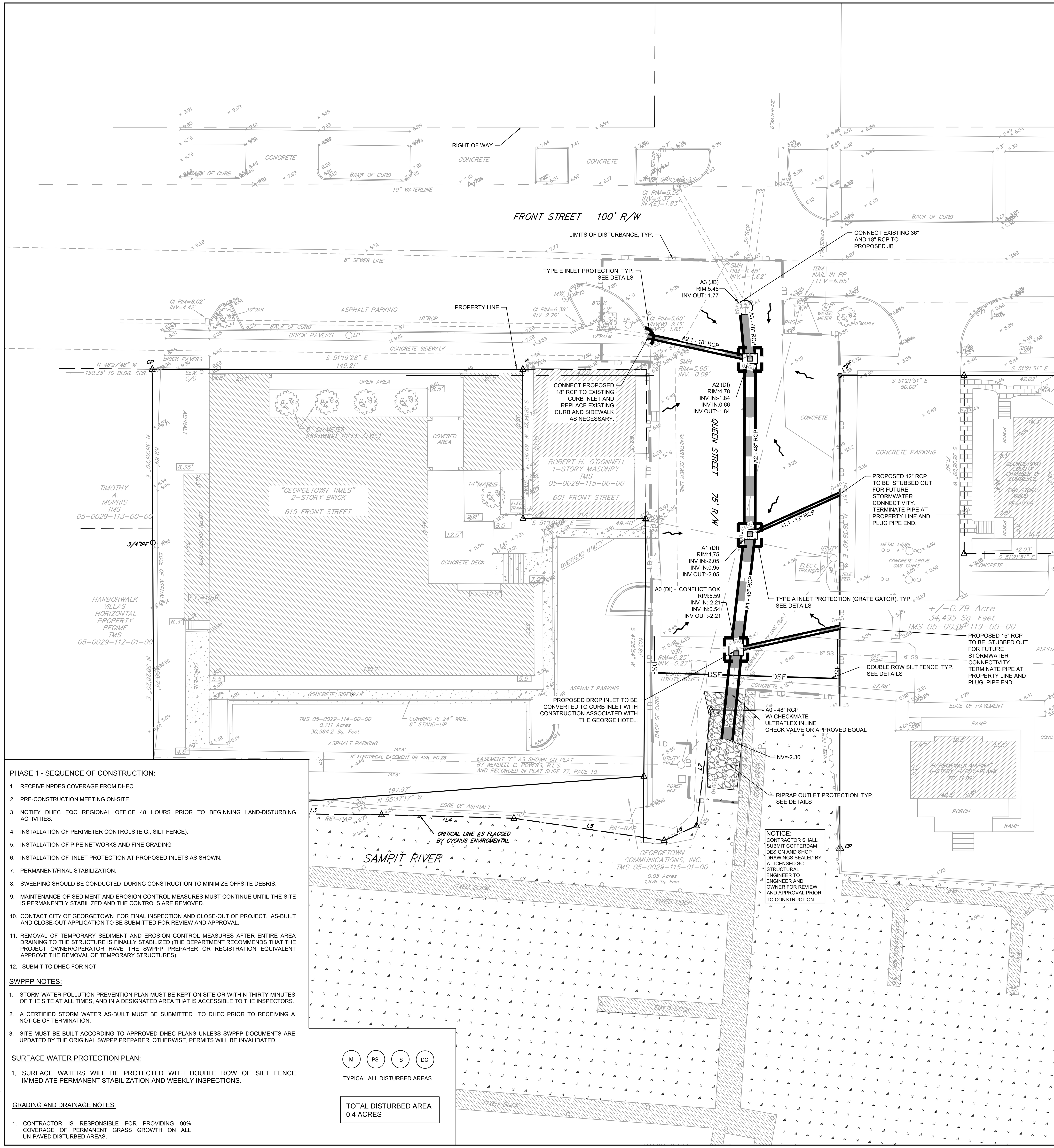
Georgetown County, SC

Title

EXISTING CONDITIONS & DEMOLITION PLAN

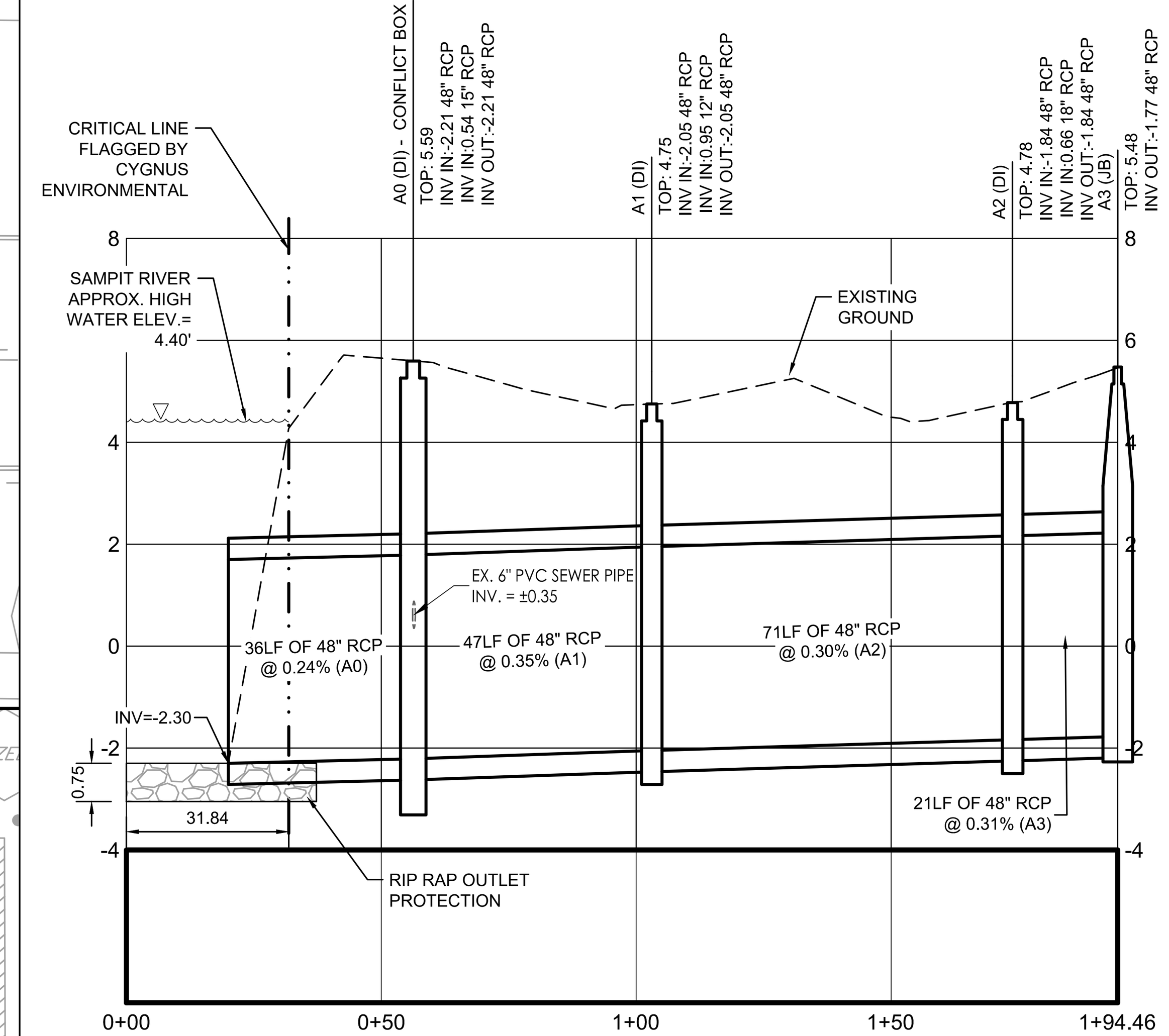
Project No. 178420970 Scale

Drawing No. C3 Sheet 3 of 7 Revision 0

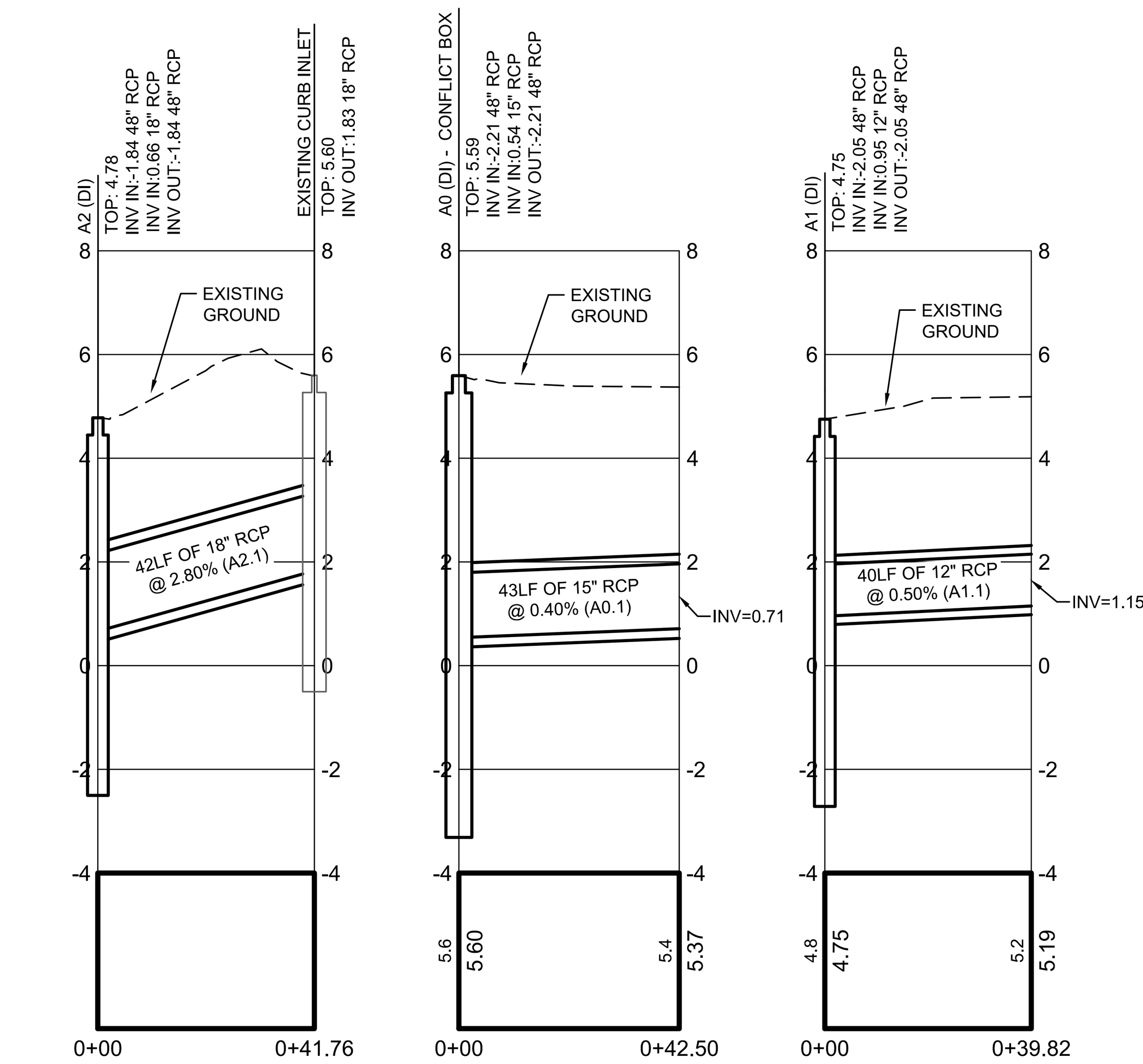


NOTICE:
CONTRACTOR SHALL SUBMIT COFFERDAM DESIGN AND SHOP DRAWINGS SEALED BY A LICENSED SC STRUCTURAL ENGINEER TO ENGINEER AND OWNER FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.

Know what's **below.**
Call before you dig.



A0 PROFILE
SCALE: H: 1"=30'
V: 1"=3'



A2.1 PROFILE
SCALE: H: 1"=30'
V: 1"=3'

A0.1 PROFILE
SCALE: H: 1"=30'
V: 1"=3'

A1.1 PROFILE
SCALE: H: 1"=30'
V: 1"=3'

STORM PIPE PROFILES

PHASE 1 - SEQUENCE OF CONSTRUCTION:

1. RECEIVE NPDES COVERAGE FROM DHEC
2. PRE-CONSTRUCTION MEETING ON-SITE.
3. NOTIFY DHEC EQC REGIONAL OFFICE 48 HOURS PRIOR TO BEGINNING LAND-DISTURBING ACTIVITIES.
4. INSTALLATION OF PERIMETER CONTROLS (E.G., SILT FENCE).
5. INSTALLATION OF PIPE NETWORKS AND FINE GRADING
6. INSTALLATION OF INLET PROTECTION AT PROPOSED INLETS AS SHOWN.
7. PERMANENT/FINAL STABILIZATION.
8. SWEEPING SHOULD BE CONDUCTED DURING CONSTRUCTION TO MINIMIZE OFFSITE DEBRIS.
9. MAINTENANCE OF SEDIMENT AND EROSION CONTROL MEASURES MUST CONTINUE UNTIL THE SITE IS PERMANENTLY STABILIZED AND THE CONTROLS ARE REMOVED.
10. CONTACT CITY OF GEORGETOWN FOR FINAL INSPECTION AND CLOSE-OUT OF PROJECT. AS-BUILT AND CLOSE-OUT APPLICATION TO BE SUBMITTED FOR REVIEW AND APPROVAL.
11. REMOVAL OF TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES AFTER ENTIRE AREA DRAINING TO THE STRUCTURE IS FINALLY STABILIZED (THE DEPARTMENT RECOMMENDS THAT THE PROJECT OWNER/OPERATOR HAVE THE SWPPP PREPARER OR REGISTRATION EQUIVALENT APPROVE THE REMOVAL OF TEMPORARY STRUCTURES).
12. SUBMIT TO DHEC FOR NOT.

SWPPP NOTES:

1. STORM WATER POLLUTION PREVENTION PLAN MUST BE KEPT ON SITE OR WITHIN THIRTY MINUTES OF THE SITE AT ALL TIMES, AND IN A DESIGNATED AREA THAT IS ACCESSIBLE TO THE INSPECTORS.
2. A CERTIFIED STORM WATER AS-BUILT MUST BE SUBMITTED TO DHEC PRIOR TO RECEIVING A NOTICE OF TERMINATION.
3. SITE MUST BE BUILT ACCORDING TO APPROVED DHEC PLANS UNLESS SWPPP DOCUMENTS ARE UPDATED BY THE ORIGINAL SWPPP PREPARER, OTHERWISE, PERMITS WILL BE INVALIDATED.

SURFACE WATER PROTECTION PLAN:

1. SURFACE WATERS WILL BE PROTECTED WITH DOUBLE ROW OF SILT FENCE, IMMEDIATE PERMANENT STABILIZATION AND WEEKLY INSPECTIONS.

GRADING AND DRAINAGE NOTES:

1. CONTRACTOR IS RESPONSIBLE FOR PROVIDING 90% COVERAGE OF PERMANENT GRASS GROWTH ON ALL UN-PAVED DISTURBED AREAS.

M PS TS DC
TYPICAL ALL DISTURBED AREAS

TOTAL DISTURBED AREA
0.4 ACRES

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ORIGINAL SHEET - ARCH D

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Legend

Symbol	Description
DC	DUST CONTROL
TS	TEMPORARY SEEDING
M	MULCH
PS	PERMANENT STABILIZATION (SEE LANDSCAPE PLAN)
	TYPE A INLET PROTECTION
	TYPE E INLET PROTECTION
LD	LIMITS OF DISTURBANCE/CLEARING LIMITS
DSF	DOUBLE ROW SILT FENCE
	STONE CONSTRUCTION ENTRANCE
	DIVERSION SWALE ARROW

Notes

1. THE CONSTRUCTION OF A 70 ROOM HOTEL DUBBED THE NAME "THE GEORGE" IS PROPOSED TO REPLACE THE EXISTING GEORGETOWN TIMES BUILDING LOCATED AT 615 FRONT STREET. THE GEORGE HOTEL MAIN ENTRANCE DRIVE WILL BE LOCATED WITHIN THE QUEEN STREET 75' RW. CONTRACTOR IS TO COORDINATE THE QUEEN STORM DRAINAGE IMPROVEMENTS WITH THE CONSTRUCTION OF THE GEORGE HOTEL. ADJUSTMENTS TO THE PROPOSED STORM INLET RIM ELEVATIONS AND DRIVEWAY SURFACE REPLACEMENT ASSOCIATED WITH THE QUEEN STREET IMPROVEMENTS MAY BE REQUIRED.

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SOUTH CAROLINA PROFESSIONAL ENGINEER No. 22800 LICENSED BRYAN D. KIZER
MARCH 27, 2020

Client/Project
The City of Georgetown, SC

Queen Street Storm Drainage Improvements

Georgetown County, SC

Title
EROSION CONTROL, DRAINAGE PLAN & PROFILES

Project No. 178420970
Scale

Drawing No. C4
Sheet 4 of 7
Revision 0

TEMPORARY VEGETATION SCHEDULE

SPECIES	RATE (LBS/AC)	OPTIMUM DATES TO PLANT	REMARKS
BROWNTOP MILLET (ALONE)	40	APRIL 20 - AUGUST 15	QUICK, DENSE COVER
BROWNTOP MILLET (MIX)*	10	APRIL 20 - AUGUST 15	QUICK, DENSE COVER
RYE GRAIN (ALONE)	56	FEBRUARY - MARCH, AUGUST 15 - NOVEMBER 20	QUICK COVER
RYE GRAIN (MIX)*	10	FEBRUARY - MARCH, AUGUST 15 - NOVEMBER 20	QUICK COVER
RYE GRASS (ALONE)	50	AUGUST 10 - OCTOBER 10	COMPETITIVE, DENSE
RYE GRASS (MIX)*	8	AUGUST 10 - OCTOBER 10	COMPETITIVE, DENSE

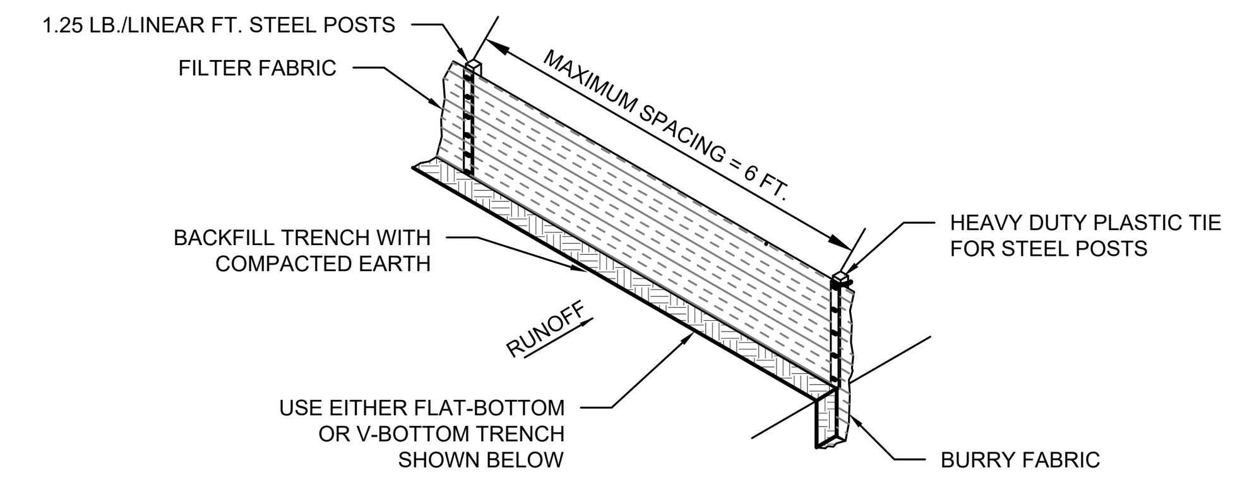
* FOR DETAILS ON MIXES CONSULT THE CLEMSON UNIVERSITY HOME AND GARDEN INFORMATION CENTER AT (888) 656-9988 OR AT HTTP://HGIC.CLEMSON.EDU.

PERMANENT VEGETATION SCHEDULE

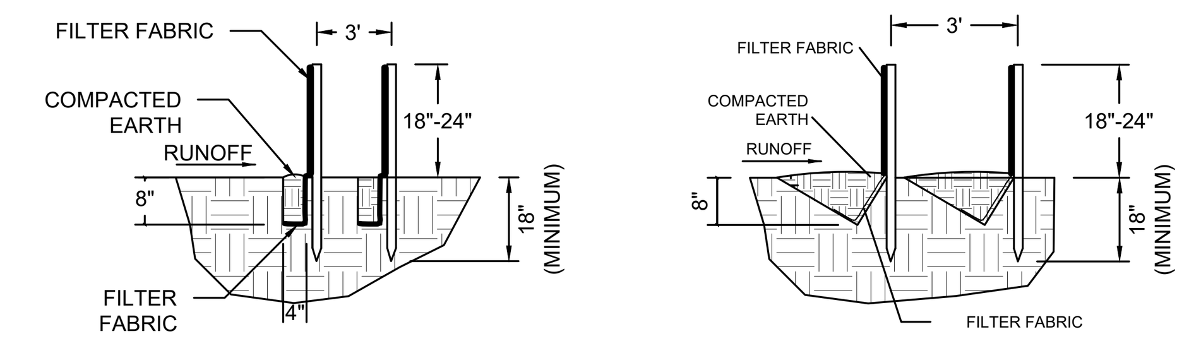
SPECIES	RATE (LBS/AC)	OPTIMUM DATES TO PLANT	REMARKS
BERMUDA GRASS (HULLED) (ALONE)	8-12	APRIL - JULY 15	QUICK COVER, SOD FORMING, PARTIAL WINTER KILL
BERMUDA GRASS (HULLED) (MIX)*	4-6	APRIL - JULY 15	QUICK COVER, SOD FORMING, PARTIAL WINTER KILL
FESCUE, TALL (KY31) ALONE	40	AUGUST 15 - OCTOBER	SELDOM SEEDED ALONE, NOT FOR DRY OR WET SITES
FESCUE, TALL (KY31) MIX*	20	AUGUST 15 - OCTOBER	SELDOM SEEDED ALONE, NOT FOR DRY OR WET SITES
ANNUAL RYE GRASS	15	AUGUST 15 - FEBRUARY	GOOD FOR SUPPRESSING WEEDS. DO NOT USE ITALIAN RYE GRASS.
CENTIPEDE	10	MARCH 1 - APRIL 15	REQUIRES LOW MAINTENANCE AND FEWER CUTS.

* FOR DETAILS ON MIXES CONSULT THE CLEMSON UNIVERSITY HOME AND GARDEN INFORMATION CENTER AT (888) 656-9988 OR AT HTTP://HGIC.CLEMSON.EDU.

SEEDING SCHEDULE

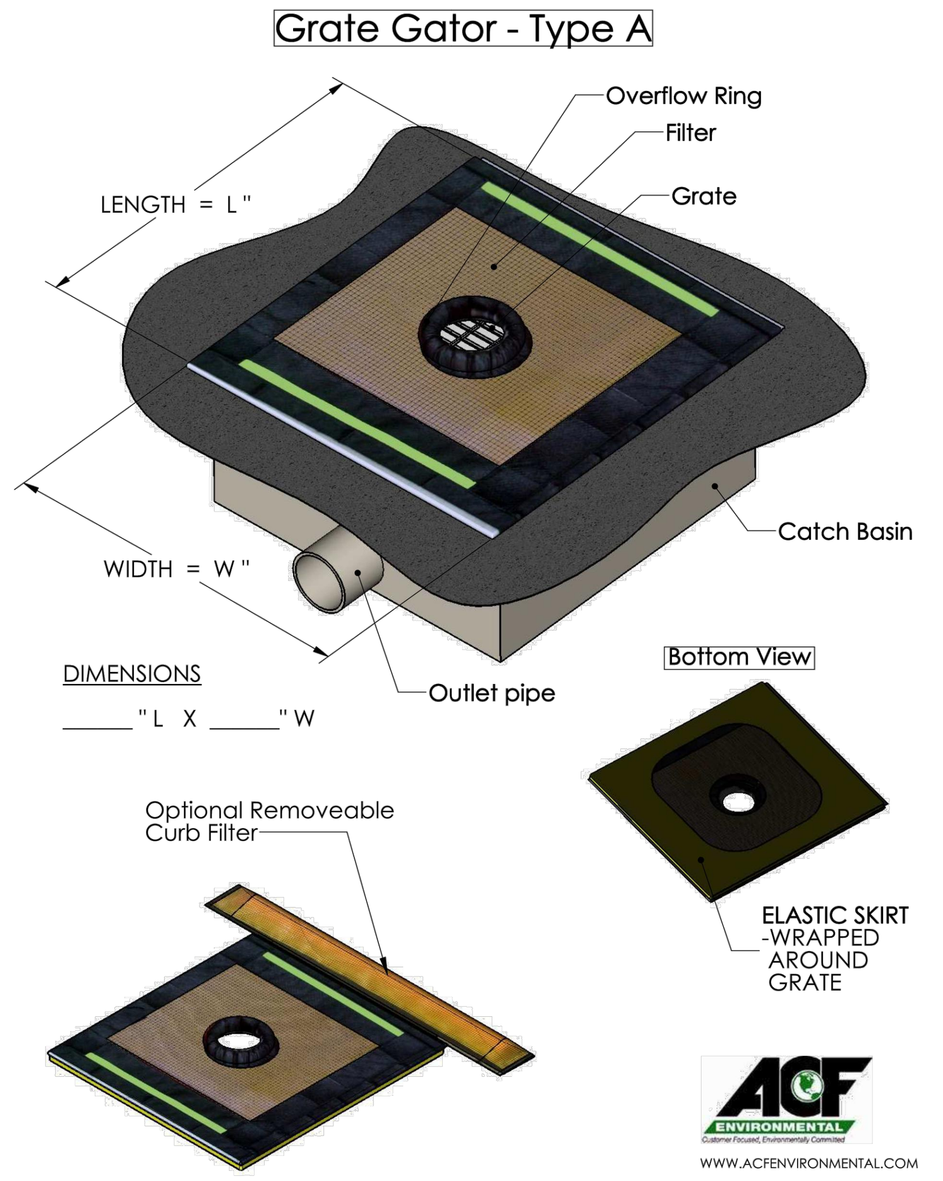


SILT FENCE INSTALLATION (SINGLE ROW)

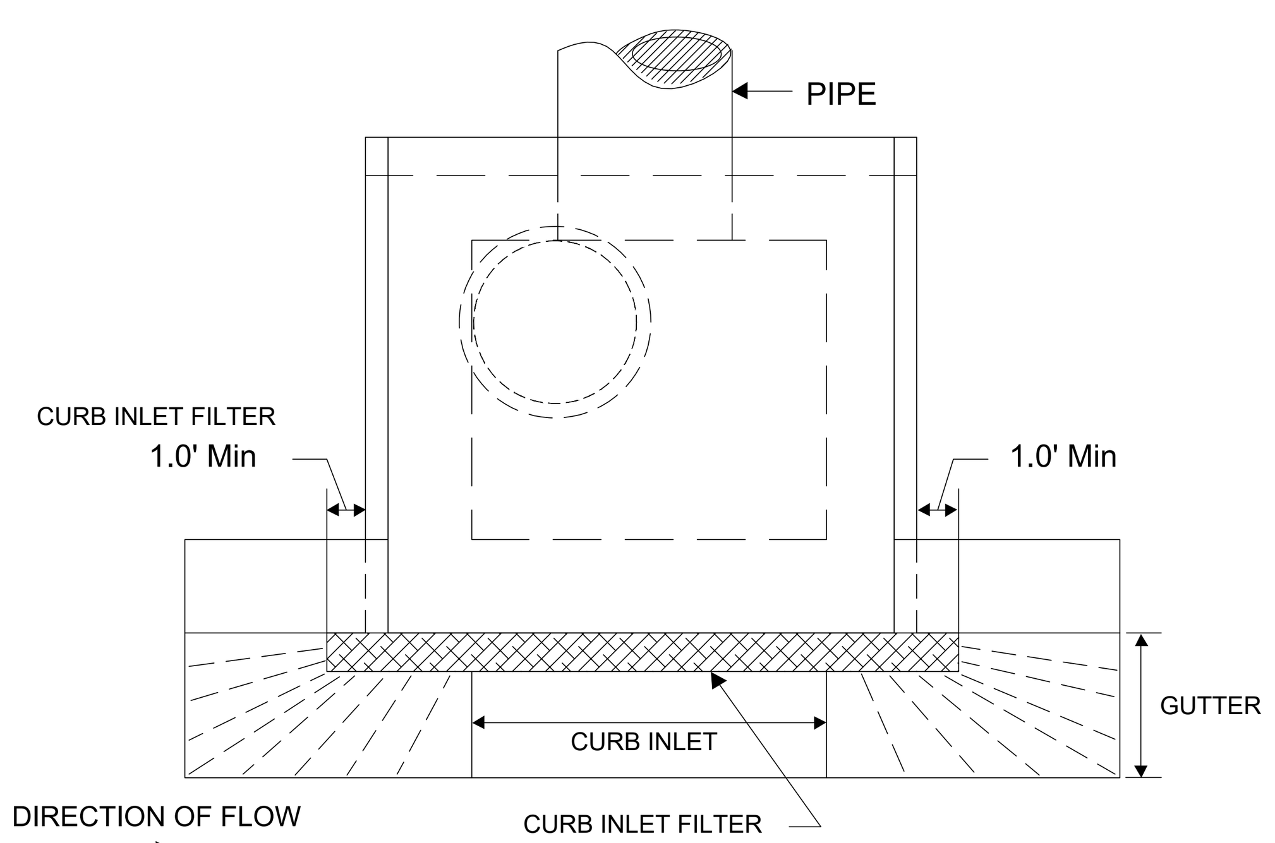


DOUBLE ROW SILT FENCE
N.T.S.

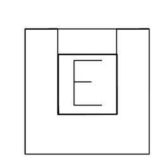
Know what's **below.**
Call before you dig.



TOP VIEW



PLAN SYMBOL



South Carolina Department of Health and Environmental Control
Type E
SURFACE COURSE CURB INLET FILTERS
STANDARD DRAWING NO. SC-10 PAGE 1 of 2
NOT TO SCALE — FEBRUARY 2014 DATE

SURFACE COURSE CURB INLET PROTECTION

GENEARL NOTES

1. Only use surface curb inlet filters that have a minimum height or diameter of 9–inches and have a minimum length that is 2–feet longer than the length of the curb opening.

2. Surface course inlets filters that are designed to completely block the inlet opening are prohibited. Acceptable inlet filters should allow for overflows to enter the catch basin.

3. Surface course inlet filters should be constructed with a synthetic material that will allow stormwater to freely flow through while trapping sediment and debris.

4. Straw, straw fiber, straw bales, pine needles and leaf mulch are not permissible filter materials.

5. Each filter should have aggregate compartments for stone, sand, and other weighted materials or mechanisms to hold the unit in place. Fill aggregate compartments to a level (at least 1/2 full) to hold the filter in place and create a seal between the filter and the road surface.

6. Use only Type E inlet filters appearing on SC DOT's Qualified Products Listing (QPL), Approval Sheet #58, or filters meeting the most current edition of the SC DOT Standard Specifications for Highway Construction.

INSPECTION AND MAINTENANCE

1. The key to functional inlet protection is weekly inspections, routine maintenance, and regular sediment removal.

2. Regular inspections of all inlet protection shall be conducted once every calendar week and, as recommended, within 24–hours after each rainfall event that produces 1/2–inch or more of precipitation.

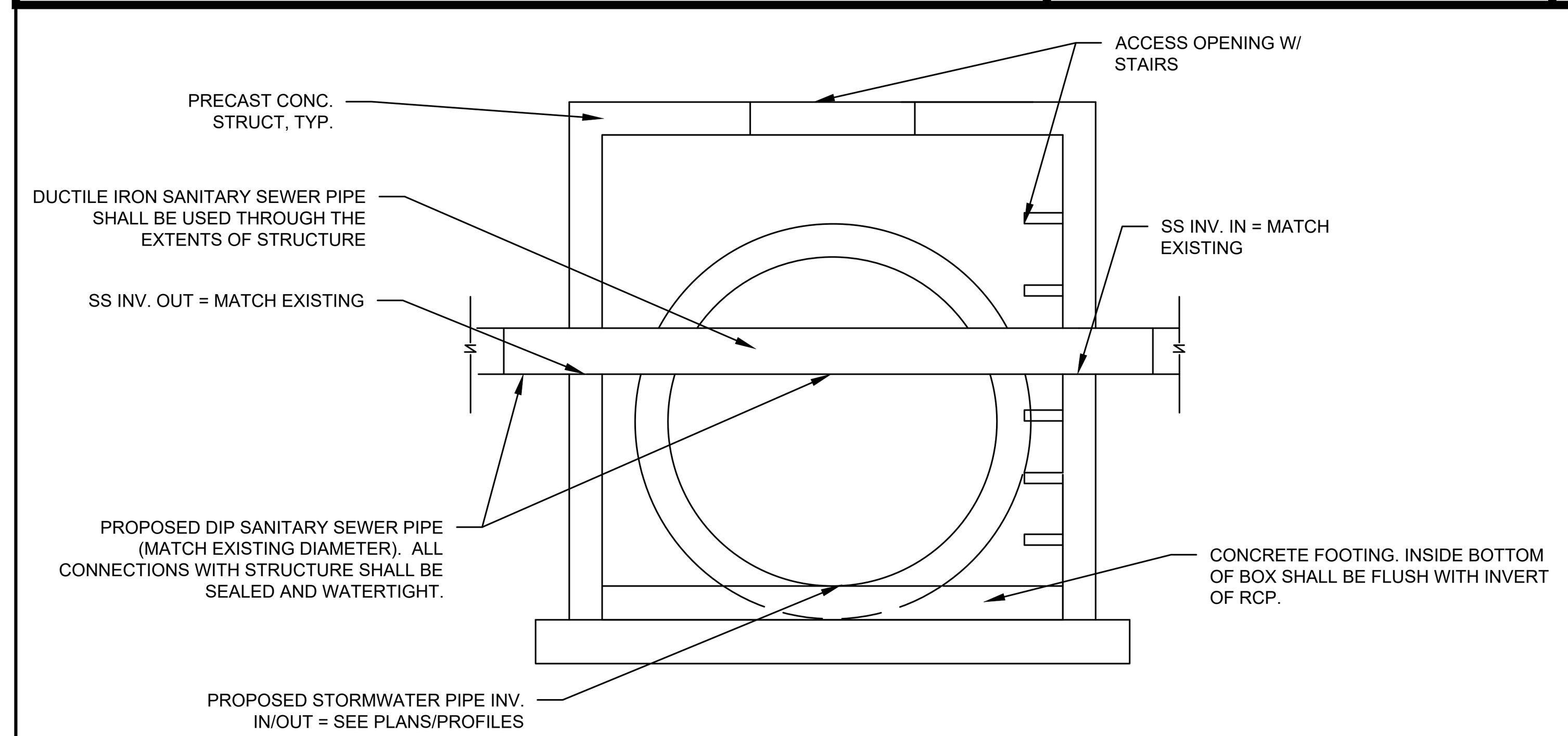
3. Attention to sediment accumulations in front of the inlet protection is extremely important. Accumulated sediment should be continually monitored and removed when necessary.

4. Remove accumulated sediment when silt and/or debris has built up around the filter preventing stormwater to flow through the filter.

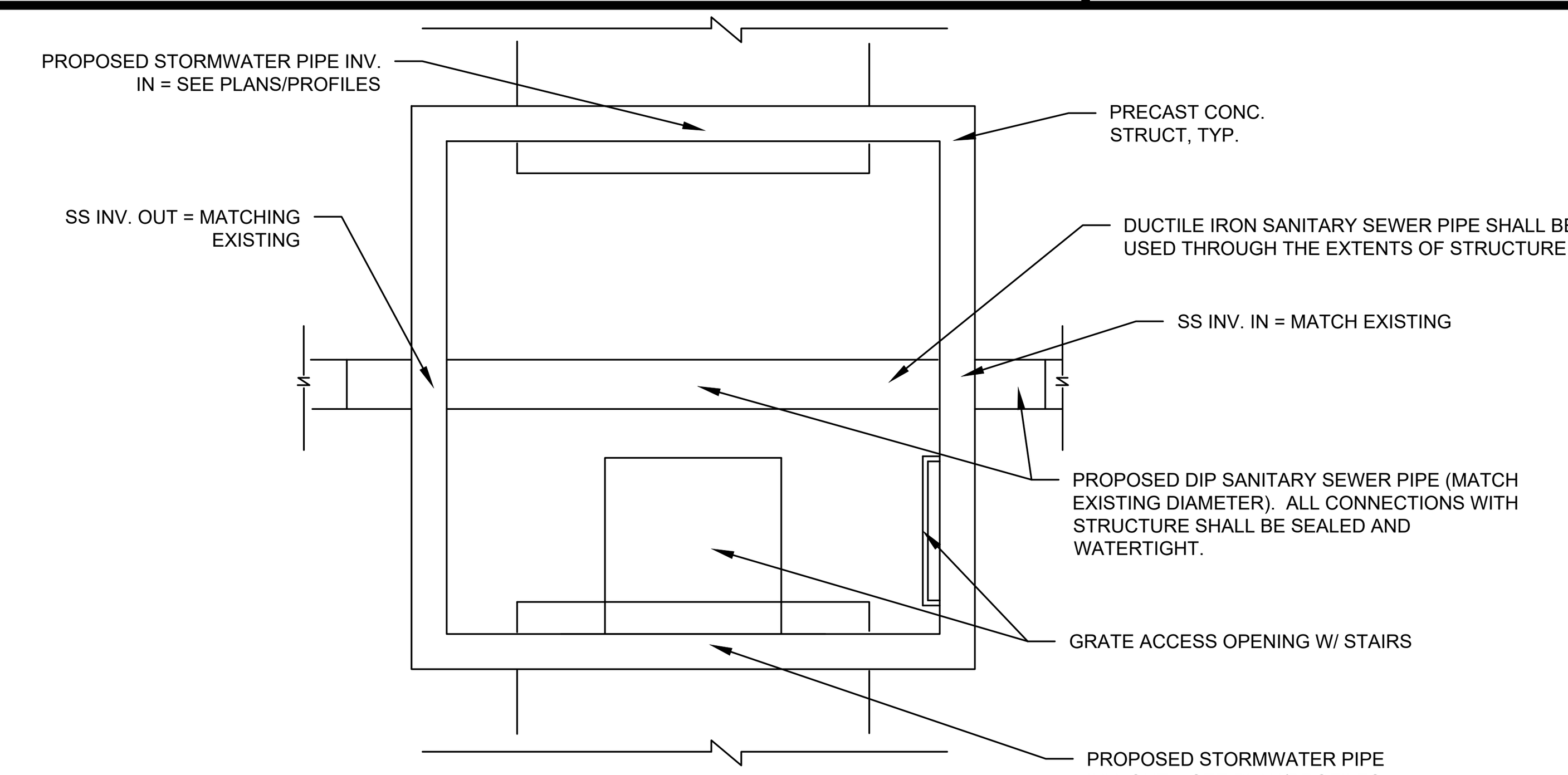
5. Removed sediment shall be placed in stockpile storage areas or spread thinly across disturbed area. Stabilize the removed sediment after it is relocated.

6. Inlet protection structures should be removed after the disturbed areas are permanently stabilized. Remove all construction material and sediment, and dispose of them properly. Grade the disturbed area to the elevation of the drop inlet structure crest. Stabilize all bare areas immediately.

South Carolina Department of Health and Environmental Control
Type E
SURFACE COURSE CURB INLET FILTERS
STANDARD DRAWING NO. SC-10 PAGE 2 of 2
GENERAL NOTES — FEBRUARY 2014 DATE



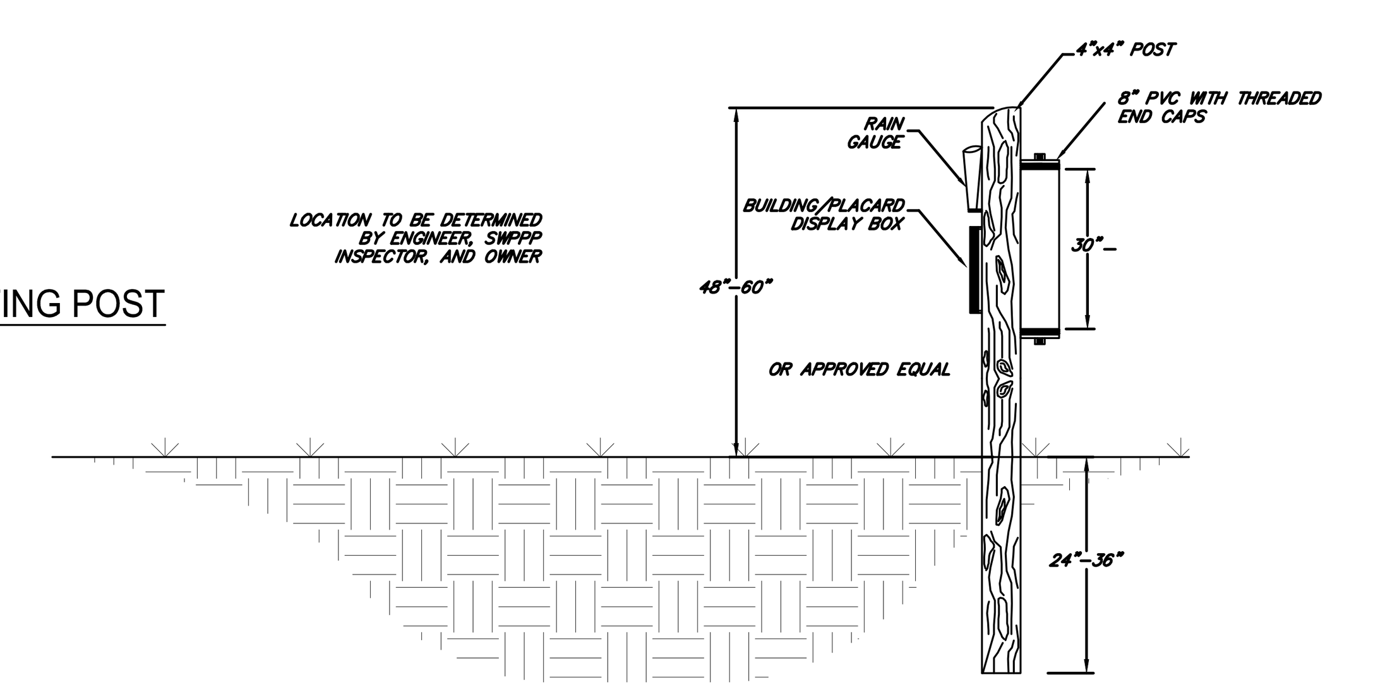
SIDE VIEW

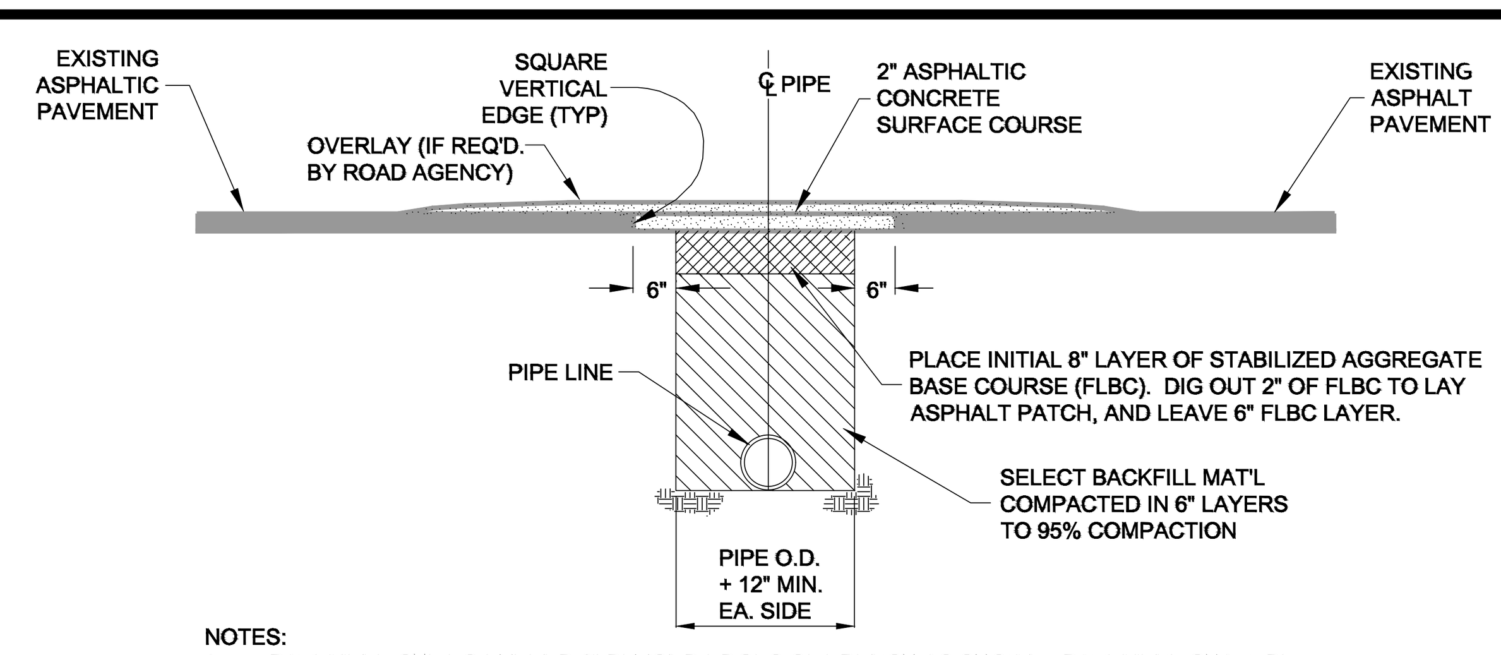


TOP VIEW

PROPOSED PRECAST CONCRETE UTILITY CONFLICT BOX
N.T.S.

SWPPP MOUNTING POST
N.T.S.

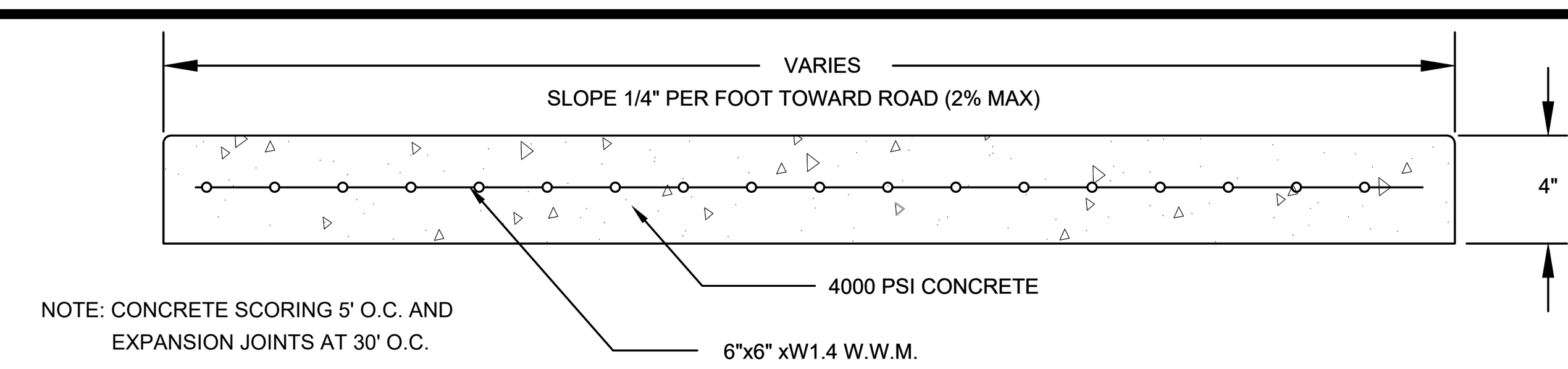




NOTES:

1. PAVEMENT CUT TO EXTEND 6" BEYOND EDGES OF TRENCH AS SHOWN. PAVEMENT SHALL BE CUT TO TRUE LINE AND REMOVED BEFORE TRENCH IS CUT. ALL PAVEMENT REPAIRS TO BE IN ACCORDANCE WITH ROAD AGENCY SPECS.
2. ROAD AGENCY MAY REQUIRE A CUT & PATCH OF TRENCH AREA AND AN OVERLAY OF ENTIRE APRON OR ENTRANCE FROM THE EDGE OF THE MAIN ROAD TO THE EDGE OF THE ROAD RIGHT-OF-WAY (SEE ENCROACHMENT PERMIT).
3. WHERE EXISTING PAVEMENT IS INSUFFICIENT THICKNESS TO DEVELOP TIGHT SEAL WITH NEW SURFACE, NEW PAVEMENT SHALL LAP EXISTING SURFACE WITH AT LEAST A 10' OVERLAP ON BOTH SIDES FOR SMOOTH TRANSITION OR AS PER SPEC'S. OF ROAD AGENCY.

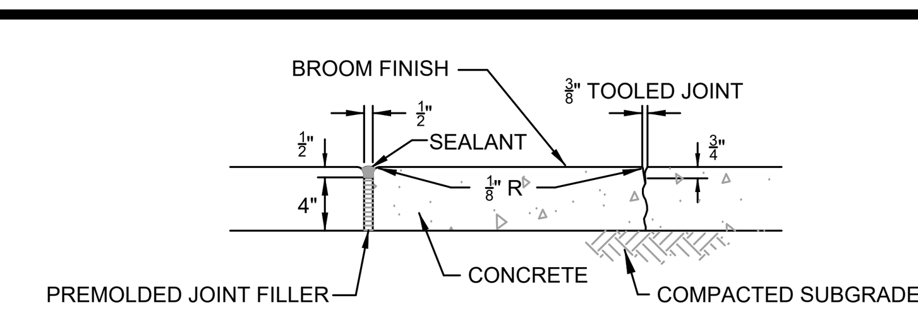
OPEN CUT REPAIR FOR LOW VOLUME ASPHALT PAVEMENT



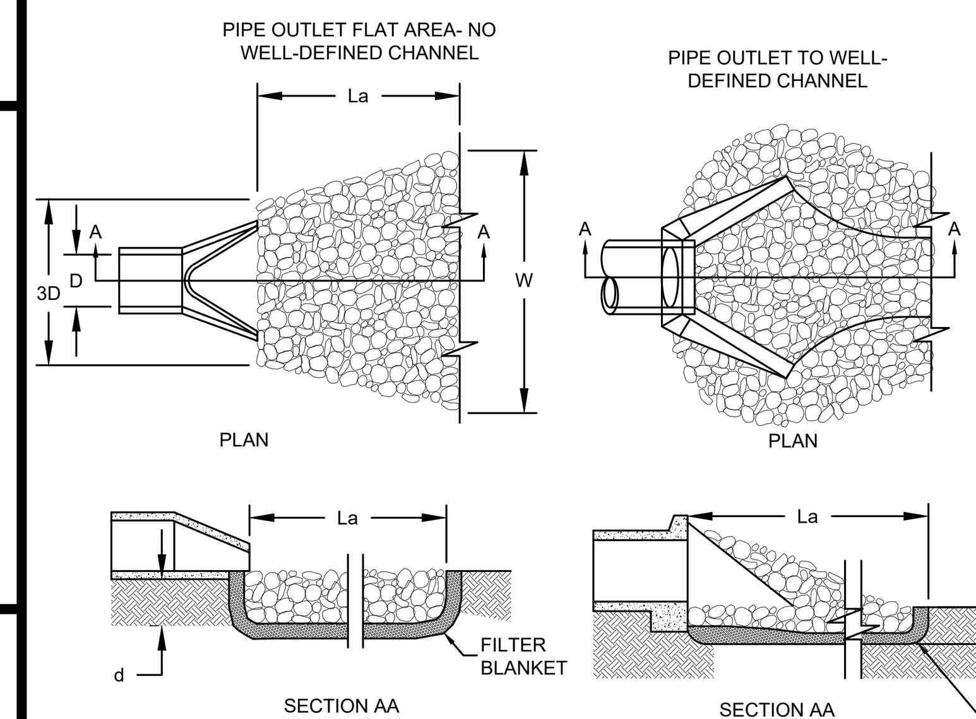
SIDEWALK DETAIL
N.T.S.

TOOLED JOINTS: 6' OC UNLESS SHOWN OTHERWISE ON PLAN ALL JOINTS AND EDGES SHALL BE TOOLED TO HAVE A ¼" RADIUS

EXPANSION JOINTS: WHERE PAVEMENTS ABUT ANY FIXED OBJECT SUCH AS WALLS, CURB, MANHOLES, ETC. AND AT INTERVALS NOT EXCEEDING 40 FEET



TYPICAl CONCRETE SIDEWALK JOINT DETAIL
N.T.S.



PIPE OUTLET	PIPE DIA.(in.)	# PIPES	3D (ft.)	La (ft.)	W (ft.)	AVG. ROCK DIA.(in.)	d (ft.)
AS SHOWN	48	1	12	20	12	6	0.75

NOTES:
1. La IS THE LENGTH OF THE RIPRAP APRON.
2. d=1.5 TIMES THE MAXIMUM STONE DIAMETER BUT NOT LESS THAN 6".
3. IN A WELL-DEFINED CHANNEL EXTEND THE APRON UP THE CHANNEL BANKS TO AN ELEVATION OF 6" ABOVE THE MAXIMUM TAILWATER DEPTH OR TO THE TOP OF THE BANK, WHICHEVER IS LESS.
4. A FILTER BLANKET OR FILTER FABRIC SHOULD BE INSTALLED BETWEEN THE RIPRAP AND SOIL FOUNDATION.

- PERIODICALLY CHECK ALL OUTLET PROTECTION, APRONS, PLUNGE POOLS, AND STRUCTURAL OUTLETS FOR DAMAGE.
- IMMEDIATELY MAKE ALL NEEDED REPAIRS TO PREVENT FURTHER DAMAGE.
- IF ANY EVIDENCE OF EROSION OR SCOURING IS APPARENT, MODIFY THE DESIGN AS NEEDED TO PROVIDE LONG TERM PROTECTION (KEEPING IN MIND FISH PASSAGE REQUIREMENTS IF APPLICABLE).
- INSPECT OUTLET STRUCTURES AFTER HEAVY RAINS TO SEE IF ANY EROSION HAS TAKEN PLACE AROUND OR BELOW THE STRUCTURE.

RIPRAP INSPECTION AND MAINTENANCE

OUTLET STABILIZATION STRUCTURE
N.T.S.

Stantec
4969 Centre Pointe Dr, Suite 200
North Charleston, SC 29418
843-740-7700

Legend

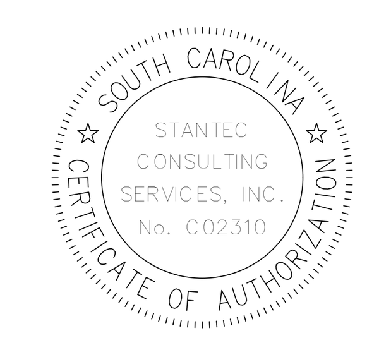
Notes

Revision	By	Appd.	YY.MM.DD

Issued	By	Appd.	YY.MM.DD
03 ADDENDUM #1	MW	BK	20.03.27
02 BID SET	MW	BK	20.03.04
01 SCDHEC PERMIT SUBMITTAL	MW	BK	19.10.21

File Name: Dwn. Chkd. Dsgn. YY.MM.DD

Permit-Seal



Client/Project
The City of Georgetown, SC
Queen Street Storm Drainage Improvements
Georgetown County, SC

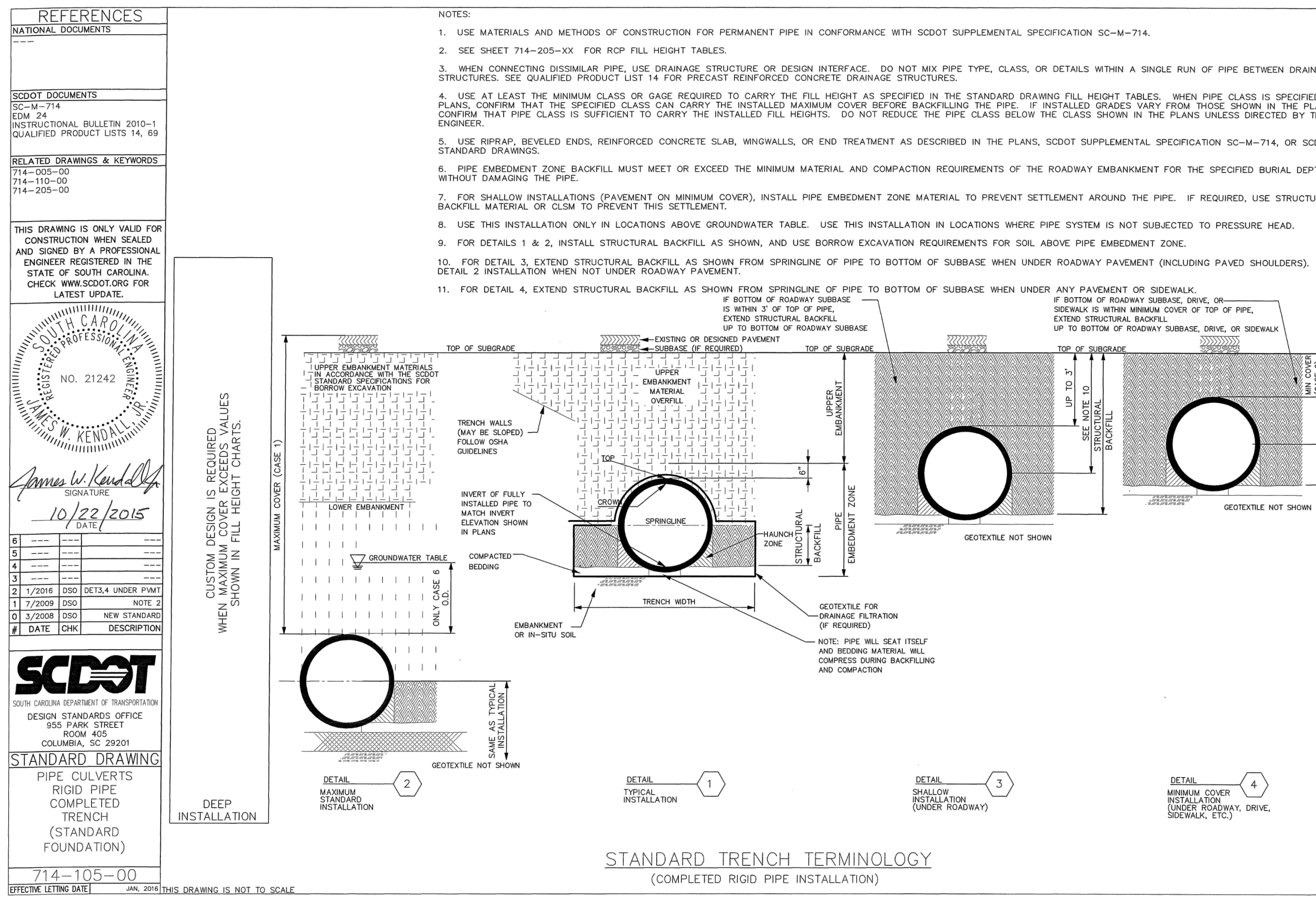
Title
EROSION CONTROL AND DRAINAGE DETAILS

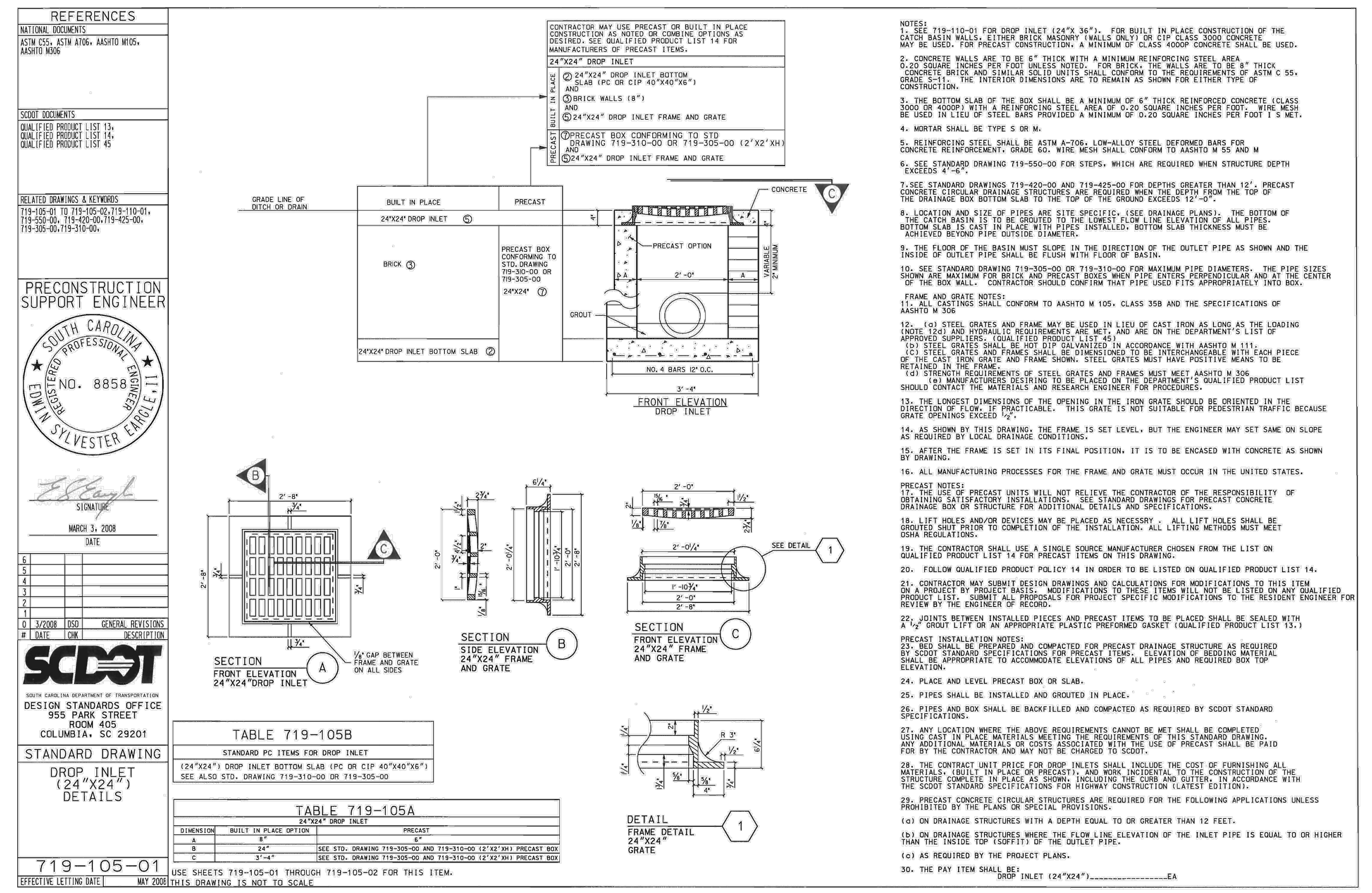
Project No. 178420970
Scale

Drawing No. C5
Sheet 5 of 7
Revision 0

811

Know what's **below.**
Call before you dig.



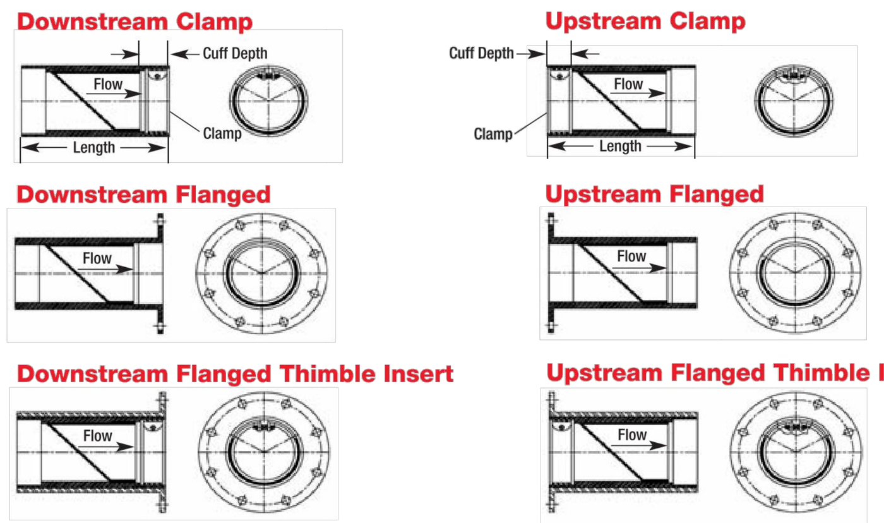


Tideflex Technologies

CheckMate® Configurations and Custom Designs

CHECKMATE® VALVE

Designed for Inline Service



CheckMates® can be made for any pipe I.D. Built to fit in sizes from 3" to 78".

Flange shape and bolt pattern can be customized. Flangeless thimble inserts are available.

CHECKMATE® VALVE

	NOMINAL PIPE SIZE I.D.		OVERALL LENGTH*		NUMBER OF CLAMPS	CUFF DEPTH		BACK PRESSURE RATING**		WEIGHT	
	Inches	Millimeters	Inches	Millimeters		Inches	Millimeters	Feet	Meters	lbs	Kg
Low Pressure	3	75	5.1	130	1	1.5	38	5	1.5	1.5	0.7
Low Pressure	4	100	7.9	201	1	1.5	38	5	1.5	1.5	0.7
Standard Pressure	3	75	5.1	130	1	1.5	38	85	26.0	3	1.4
Standard Pressure	4	100	7.9	201	1	1.5	38	85	26.0	3	1.5
Standard Pressure	5	125	9.5	241	1	1.5	38	83	25.3	4	2
Standard Pressure	6	150	11.0	279	1	2.0	51	83	25.3	9	4
Standard Pressure	7	175	12.8	325	1	2.0	51	79	24.1	11	5
Standard Pressure	8	200	15.2	386	1	2.0	51	79	24.1	13	6
Standard Pressure	9	225	15.4	391	1	2.0	51	75	22.9	17	8
Standard Pressure	10	250	16.1	409	1	2.0	51	71	21.6	20	10
Standard Pressure	12	300	19.8	503	1	2.0	51	68	20.1	37	17
Standard Pressure	14	350	25.8	655	1	4.0	102	64	20.0	110	50
Standard Pressure	16	400	28.6	726	1	4.0	102	60	18.3	133	52
Standard Pressure	18	450	31.0	787	1	4.0	102	56	17.1	143	65
Standard Pressure	20	500	42.1	1069	2	8.0	203	53	16.2	223	102
Standard Pressure	24	600	47.5	1207	2	8.0	203	45	13.7	304	137
Standard Pressure	30	750	54.9	1395	2	8.0	203	38	11.6	500	227
Standard Pressure	36	900	62.3	1582	2	8.0	203	30	9.1	828	376
Standard Pressure	42	1050	70.6	1793	2	8.0	203	26	7.9	1423	646
Standard Pressure	48	1200	79.0	2007	2	8.0	203	23	7.0	1801	817
Standard Pressure	54	1350	86.4	2195	2	8.0	203	17	5.2	2700	1225
Standard Pressure	60	1500	96.8	2459	2	9.0	229	15	4.6	3315	1504
Standard Pressure	72	1800	119.0	3023	3	12.0	305	13	4.0	6100	2767
Standard Pressure	78	1950	119.0	3023	3	12.0	305	13	4.0	7000	3176

*Shorter lengths available.

**Back pressure measured from pipe invert. Higher back pressure ratings available. Consult factory.

Elliptical Pipe CheckMate® *Arch Pipe CheckMate®* *Rectangular Pipe CheckMate®*

Elliptical, Arch and Rectangular Pipes

Elliptical, arch and rectangular pipes for drainage and flood prevention projects have become popular, particularly in high water table areas with shallow surface gradients. CheckMate® Inline Check Valves are the perfect solution for backflow prevention in elliptical, arch and rectangular pipes.

Rubber Flanged

Rubber Flanged CheckMate® Valves can be manufactured with an integral rubber upstream or downstream flange. The flanged CheckMate® gets inserted into the host pipe then can be bolted to a mating flange or anchored to a concrete headwall. The flange can be circular with standard drilling; or circular, square or rectangular with custom flange drilling. The valve is supplied with retaining rings for mounting.

Thimble Inserts

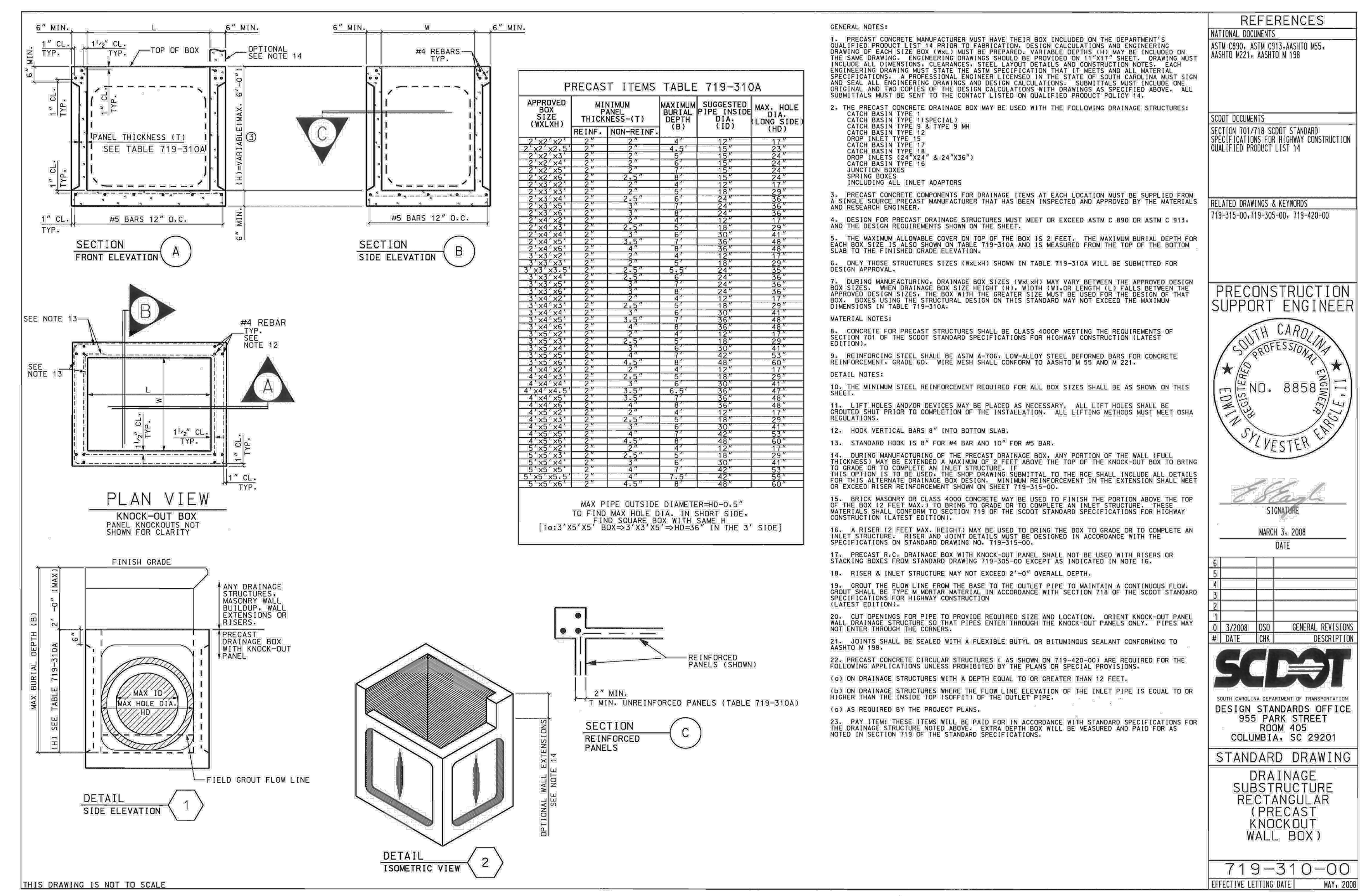
A CheckMate® Thimble Insert is a CheckMate® Valve that is factory-installed, clamped, and pinned into flanged or plain end pipe. The thimble insert assembly can either be inserted into the I.D. of the host pipe, or can be mounted to a mating flange or concrete headwall and extend beyond the pipe. Plain end thimble inserts are inserted into the host pipe and non-shrink grout is placed between the thimble insert O.D. and host pipe I.D. to form the seal.

Upstream Flanged CheckMate®

CheckMate® Thimble Insert

6 | www.tideflex.com/checkmate www.tideflex.com/checkmate | 7

CHECKMATE ULTRAFLEX INLINE CHECK VLAVES
N.T.S.



Stantec

4969 Centre Pointe Dr, Suite 200
North Charleston, SC 29418
843-740-7700

Legend

Notes

Revision	By	Appd.	YY.MM.DD

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03 ADDENDUM #1	MW	BK	20.03.27
02 BID SET	MW	BK	20.03.04
01 SCDHEC PERMIT SUBMITTAL	MW	BK	19.10.21

File Name:	Dwn.	Chkd.	Dsgn.	YY.MM.DD

Permit-Seal

SOUTH CAROLINA STANTEC CONSULTING SERVICES, INC. No. C02310 CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA PROFESSIONAL ENGINEER No. 22800 BRYAN D. KIZER MARCH 27, 2020

Client/Project

The City of Georgetown, SC

Queen Street Storm Drainage Improvements

Georgetown County, SC

Title

EROSION CONTROL AND DRAINAGE DETAILS

Project No.	Scale	
178420970		
Drawing No.	**Sheet**	**Revision**
C6	6 of 7	0

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2020/03/26 12:09 PM By: Wynne, Marshall
ORIGINAL SHEET - ARCH D

RIGHT SHOULDER CLOSURE (CASE I / CASE II) PRIMARY ROUTES

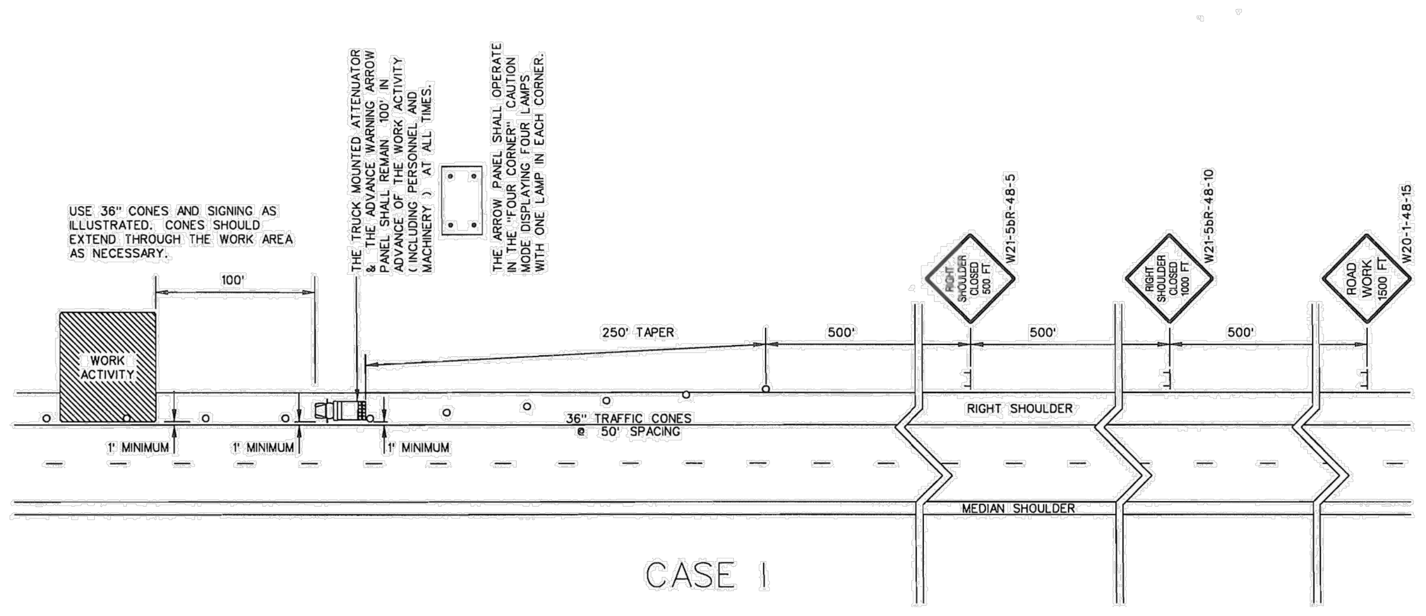
REFERENCES

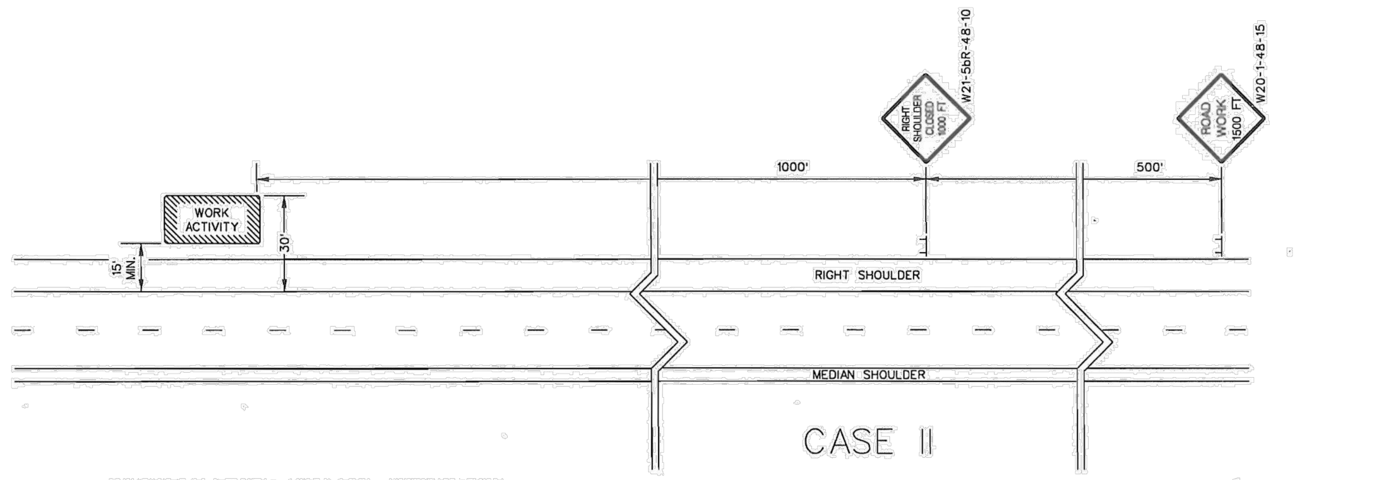
GENERAL NOTES

1. ALL SIGN LOCATIONS ARE TO BE MEASURED FROM THE WORK AREA. WORK LIMITS FOR THE PROJECT WILL BE DETERMINED BY THE ENGINEER AND AS INDICATED IN THE CONTRACT.
2. INSTALL ADVANCE WARNING SIGNS MOUNTED ON PORTABLE SIGN SUPPORTS NO LESS THAN 4 FEET FROM THE NEAR EDGE OF THE SIGN TO THE NEAR EDGE OF AN ADJACENT TRAVEL LANE ON ROADWAYS WITH EARTH SHOULDERS AND NO LESS THAN 6 FEET FROM THE NEAR EDGE OF THE SIGN TO THE NEAR EDGE OF AN ADJACENT TRAVEL LANE ON ROADWAYS WITH PAVED SHOULDERS. WHEN CURB & GUTTER IS PRESENT, INSTALL THE SIGN NO LESS THAN 2 FEET FROM THE NEAR EDGE OF THE SIGN TO THE FACE OF THE CURB.
3. SPACINGS INDICATED ARE FOR NORMAL CONDITIONS; ADJUSTMENTS MAY BE REQUIRED DUE TO HORIZONTAL AND/OR VERTICAL ALIGNMENTS OR OTHER SIGHT DISTANCE RESTRICTIONS.
4. ALL SIGNS MOUNTED ON PORTABLE SIGN SUPPORTS SHALL HAVE A MINIMUM MOUNTING HEIGHT OF 5 FEET FROM THE GROUND TO THE BOTTOM OF THE SIGN. ALL SIGNS MOUNTED ON GROUND MOUNTED U-CHANNEL POSTS OR SQUARE STEEL TUBE POSTS SHALL HAVE A MINIMUM MOUNTING HEIGHT OF 7 FEET FROM THE GRADE ELEVATION OF THE NEAR EDGE OF THE ADJACENT TRAVEL LANE TO THE BOTTOM OF THE SIGN UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT. MOUNT ALL SIGNS STRAIGHT AND LEVEL AND WITH THE FACE OF THE SIGNS PERPENDICULAR TO THE SURFACE OF THE ROADWAY.
5. REFLECTORIZE ORANGE ADVANCE WARNING SIGNS AND ANY ORANGE AREAS OF A MULTI-COLORED ADVANCE WARNING SIGN WITH A FLUORESCENT ORANGE COLORED PRISMATIC RETROREFLECTIVE SHEETING. REFLECTORIZE WHITE REGULATORY SIGNS AND ANY WHITE AREAS OF A MULTI-COLORED ADVANCE WARNING SIGN WITH A WHITE COLORED PRISMATIC RETROREFLECTIVE SHEETING.
6. ALL TRAFFIC CONTROL DEVICES SHALL COMPLY WITH ALL NCHRP REPORT 350 REQUIREMENTS AND SHALL REQUIRE APPROVAL BY THE DEPARTMENT. ONLY THOSE TRAFFIC CONTROL DEVICES INCLUDED ON THE "APPROVED PRODUCTS LIST FOR TRAFFIC CONTROL DEVICES IN WORK ZONES" ARE CONSIDERED ACCEPTABLE FOR USE. THIS LIST MAY BE ACCESSED ON THE DEPARTMENT'S WEB SITE AT: www.scdot.org .
7. THE CONTRACTOR SHALL PROVIDE AND UTILIZE ANY SPECIAL SIGN MOUNTING ASSEMBLIES AND HARDWARE THAT MAY BE NECESSARY FOR INSTALLING AND MOUNTING SIGNS IN AREAS OF CONCRETE MEDIAN BARRIER, BRIDGE PARAPET WALLS OR DOUBLEFACED GUARDRAIL.
8. THE PRIMARY TRAFFIC CONTROL DEVICES UTILIZED FOR DAYTIME SHOULDER CLOSURES ARE 36" CONES. THE PRIMARY TRAFFIC CONTROL DEVICES UTILIZED FOR NIGHTTIME SHOULDER CLOSURES ARE PORTABLE PLASTIC DRUMS. DURING DAYTIME SHOULDER CLOSURES, 42" OVERSIZED CONES MAY BE SUBSTITUTED FOR 36" CONES. DURING NIGHTTIME SHOULDER CLOSURES, 42" OVERSIZED CONES ARE PROHIBITED FOR USE. IF THIS TRAFFIC CONTROL SETUP EXTENDS INTO THE HOURS OF DARKNESS, REPLACE ALL CONES, 36" OR 42" OVERSIZED, WITH PORTABLE PLASTIC DRUMS.
9. THE 36" CONES UTILIZED DURING DAYLIGHT HOURS ARE NOT REQUIRED TO BE REFLECTORIZED. REFLECTORIZE ALL 42" OVERSIZED CONES UTILIZED DURING DAYTIME SHOULDER CLOSURES WITH TYPE III FLEXIBLE PRISMATIC RETROREFLECTIVE SHEETING UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT. REFLECTORIZE ALL PORTABLE PLASTIC DRUMS WITH TYPE III FLEXIBLE PRISMATIC RETROREFLECTIVE SHEETING UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT.
11. THE DEPARTMENT PROHIBITS CONDUCTING WORK ON PRIMARY AND SECONDARY ROUTES WITHIN 1' OF THE NEAR EDGE OF THE ADJACENT TRAVEL LANE UNDER A SHOULDER CLOSURE. ALL WORK THAT MAY REQUIRE THE PRESENCE OF EQUIPMENT, PERSONNEL, MATERIALS OR WORK VEHICLES WITHIN 1' OF THE NEAR EDGE OF THE ADJACENT TRAVEL LANE SHALL BE CONDUCTED UNDER A LANE CLOSURE.

    CASE I: WHENEVER ANY PORTION OF THE SHOULDER AREA WITHIN 15' BUT NOT CLOSER THAN 1' OF THE NEAR EDGE OF THE ADJACENT TRAVEL LANE MUST BE OCCUPIED BY EQUIPMENT, PERSONNEL, MATERIALS OR WORK VEHICLES TO CONDUCT THE WORK, INSTALL AND MAINTAIN THE SIGNING AND TRAFFIC CONTROL DEVICES AS ILLUSTRATED.

    CASE II: WHENEVER THE WORK IS CONDUCTED BEYOND 15' BUT WITHIN 30' OF THE NEAR EDGE OF THE ADJACENT TRAVEL LANE, INCLUDING THE PRESENCE OF EQUIPMENT, PERSONNEL, MATERIALS OR WORK VEHICLES, INSTALL AND MAINTAIN THE SIGNING AND TRAFFIC CONTROL AS ILLUSTRATED.
12. CONDUCT THE WORK IN SUCH A MANNER THAT WILL NOT REQUIRE ENCROACHMENT OF TRAFFIC CONTROL DEVICES, EQUIPMENT, PERSONNEL, MATERIALS OR ANY WORK RELATED VEHICLES WITHIN 1' OF THE NEAR EDGE OF THE ADJACENT TRAVEL LANE.
13. PLACE THE TRUCK MOUNTED ATTENUATOR AT A LOCATION 100' IN ADVANCE OF THE WORK ACTIVITY AND NO CLOSER THAN 1' FROM THE NEAR EDGE OF THE ADJACENT TRAVEL LANE.
14. FOR A CASE I SCENARIO IN THE RIGHT SHOULDER AREA, ADJUST THE TAPER AS NECESSARY TO FIT THE WIDTH OF THE SHOULDER WHILE MAINTAINING THE REQUIRED 250' TAPER LENGTH.
15. IF WORK IS BEING CONDUCTED SIMULTANEOUSLY AT TWO DIFFERENT LOCATIONS AT THE SAME TIME UNDER CASE I SHOULDER CLOSURES, SEPARATE THE TWO LOCATIONS BY NO LESS THAN 1 MILE FROM THE END OF THE FIRST CASE I CLOSURE THAT A MOTORIST WILL ENCOUNTER TO THE BEGINNING OF THE TAPER OF THE SECOND CASE I CLOSURE. A MINIMUM SEPARATION DISTANCE OF ONE-HALF MILE IS RECOMMENDED BETWEEN SHOULDER CLOSURES WHEN ONE OR BOTH SHOULDER CLOSURES IS A CASE II CLOSURE.
16. THE DEPARTMENT RESERVES THE RIGHT TO RESTRICT WORK OPERATIONS AND/OR WITHHOLD THE MONTHLY ESTIMATE IF THE TRAFFIC CONTROL IS NOT PROPERLY INSTALLED AND MAINTAINED AS DIRECTED BY THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, THE STANDARD DRAWINGS, THE PLANS AND/OR THE ENGINEER.
17. THIS TYPICAL TRAFFIC CONTROL SETUP APPLIES TO THE INSTALLATION OF SHOULDER CLOSURES IN THE RIGHT SHOULDER AREAS OF PRIMARY AND SECONDARY ROADWAYS.





PORTABLE TRUCK MOUNTED ATTENUATOR

1. UTILIZE A TRUCK MOUNTED ATTENUATOR ATTACHED TO THE REAR OF A TRUCK WITH A MINIMUM GROSS VEHICULAR WEIGHT (GVW) OF 15,000 POUNDS (ACTUAL WEIGHT). IF THE ADDITION OF SUPPLEMENTAL WEIGHT TO THE VEHICLE AS BALLAST IS NECESSARY, CONTAIN THE MATERIAL WITHIN A STRUCTURE CONSTRUCTED OF STEEL. CONSTRUCT THIS STEEL STRUCTURE TO HAVE A MINIMUM OF FOUR SIDES AND A BOTTOM. A TOP IS OPTIONAL. BOLT THIS STRUCTURE TO THE FRAME OF THE TRUCK. UTILIZE A SUFFICIENT NUMBER OF FASTENERS FOR ATTACHMENT OF THE STEEL STRUCTURE TO THE FRAME OF THE TRUCK TO ENSURE THE STRUCTURE WILL NOT SEPARATE FROM THE FRAME OF THE TRUCK DURING AN IMPACT UPON THE ATTACHED TRUCK MOUNTED ATTENUATOR. UTILIZE EITHER DRY LOOSE SAND OR STEEL REINFORCED CONCRETE FOR BALLAST MATERIAL WITHIN THE STEEL STRUCTURE TO ACHIEVE THE NECESSARY WEIGHT. THE BALLAST MATERIAL SHALL REMAIN CONTAINED WITHIN THE CONFINES OF THE STEEL STRUCTURE AND SHALL NOT PROTRUDE FROM THE STEEL STRUCTURE IN ANY MANNER.
2. LOCATE THE TRUCK MOUNTED ATTENUATOR 100 FEET IN ADVANCE OF THE WORK AREA UNLESS OTHERWISE SPECIFIED.
3. PROVIDE, INSTALL AND MAINTAIN THE TRUCK MOUNTED ATTENUATOR AS SPECIFIED BY THE STANDARD SPECIFICATIONS AND AS DIRECTED BY THE ENGINEER.

ADVANCE WARNING ARROW PANEL

ALL ADVANCE WARNING ARROW PANELS SHALL BE 48" x 96" WITH A MINIMUM LEGIBILITY DISTANCE OF 1 MILE. PLACEMENT OF AN ADVANCE WARNING ARROW PANEL MAY REQUIRE ADJUSTMENTS DUE TO HORIZONTAL AND/OR VERTICAL ALIGNMENT OR OTHER SIGHT DISTANCE RESTRICTIONS. THE PANEL FACE SHALL BE NONREFLECTIVE BLACK. ALL ADVANCE WARNING ARROW PANELS SHALL COMPLY WITH THE STANDARD SPECIFICATONS FOR HIGHWAY CONSTRUCTION, LATEST EDITION.

WHEN AN ADVANCE WARNING ARROW PANEL IS REQUIRED TO OPERATE IN THE CAUTION MODE, THE ADVANCE WARNING ARROW PANEL SHALL DISPLAY THE "FOUR CORNERS" CAUTION MODE, WITH ONE LAMP IN EACH CORNER. DISPLAY OF ANY OTHER TYPE OF CAUTION MODE OTHER THAN THE "FOUR CORNERS" CAUTION MODE SUCH AS THE "FLASHING BAR" OR THE "ALTERNATING DIAMOND" CAUTION MODES ARE UNACCEPTABLE AND PROHIBITED.

LEGEND

o 36" TRAFFIC CONES

WORK ZONE TRAFFIC CONTROL ENGINEER

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER NO. 24242 WILLIE E. McCONNELL, JR

SIGNATURE 8/2/12 DATE

#	DATE	CHK	DESCRIPTION
6			
5			
4			
3			
2			
1	8-12-11	JCS	GENERAL UPDATE
0	8-23-07	JCS	DRAWING NO. UPDATE

SCDOT

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
DESIGN STANDARDS OFFICE
955 PARK STREET
ROOM 405
COLUMBIA, SC 29201

STANDARD DRAWING

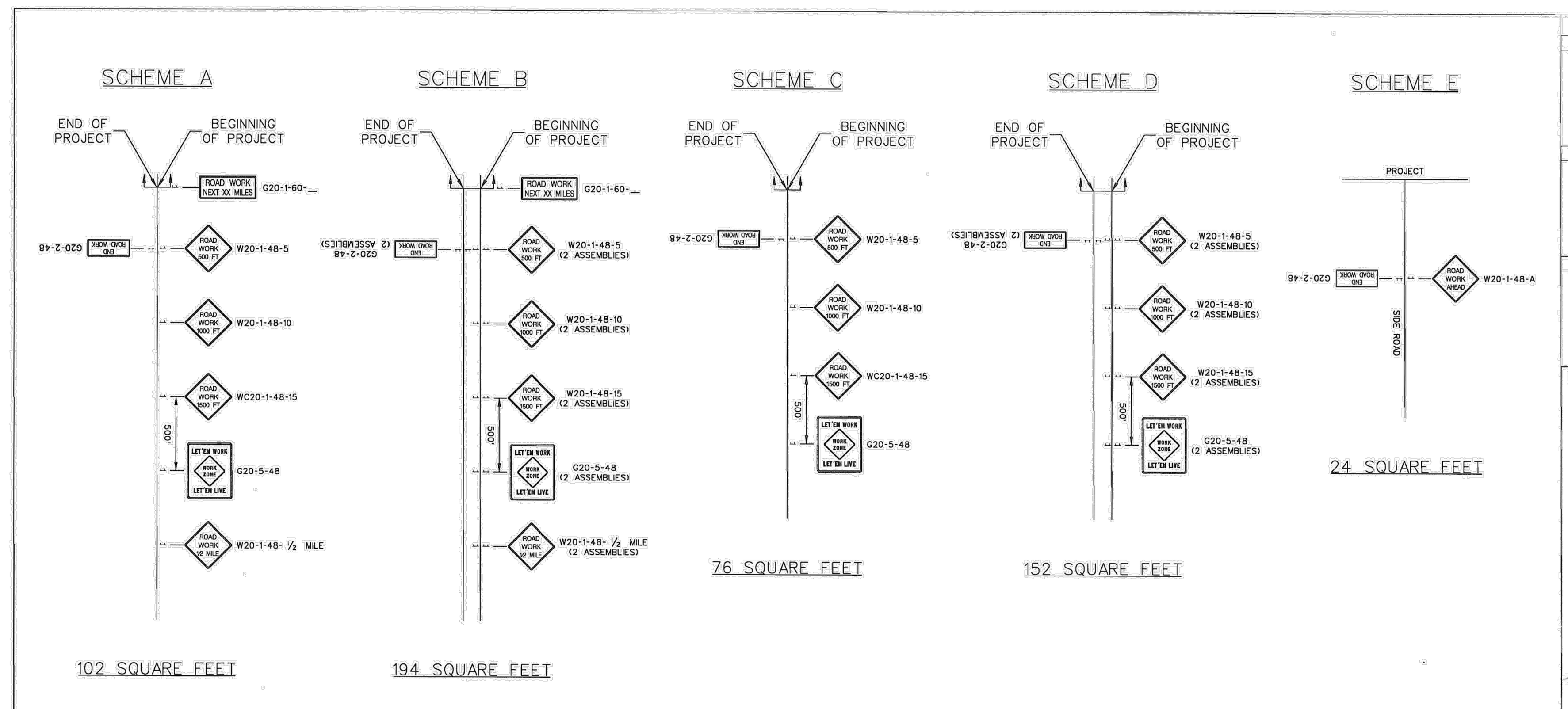
RIGHT SHOULDER CLOSURE (CASE I / CASE II) PRIMARY ROUTES

610-205-00

EFFECTIVE LETTING DATE JAN, 2013 THIS DRAWING IS NOT TO SCALE

Know what's below. Call before you dig.

CONSTRUCTION SIGNING PERMANENT PRIMARY ROUTES



GENERAL NOTES

1. ALL SIGN LOCATIONS ARE TO BE MEASURED FROM THE WORK AREA. THE WORK LIMITS FOR THE PROJECT WILL BE DETERMINED BY THE ENGINEER AND AS INDICATED IN THE CONTRACT.
2. INSTALL ALL PERMANENT CONSTRUCTION SIGNS ON APPROVED GROUND MOUNTED SIGN POSTS UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT. UTILIZE EITHER 3 PPF U-CHANNEL OR SQUARE STEEL TUBE POSTS FOR THESE INSTALLATIONS. INSTALL EACH PERMANENT CONSTRUCTION SIGN ASSEMBLY NO LESS THAN 2 FEET FROM THE NEAR EDGE OF A PAVED SHOULDER OR THE FACE OF A CURB OR 6-12 FEET FROM THE NEAR EDGE OF AN ADJACENT TRAVEL LANE WITHOUT THE PRESENCE OF A PAVED SHOULDER OR A CURB & GUTTER TO THE NEAREST EDGE OF THE SIGN ASSEMBLY. ALSO, MOUNT EACH PERMANENT CONSTRUCTION SIGN ASSEMBLY TO PROVIDE A MOUNTING HEIGHT OF NO LESS THAN 7 FEET OR NO GREATER THAN 8 FEET FROM THE BOTTOM EDGE OF THE PRIMARY SIGN TO THE GRADE ELEVATION OF THE NEAR EDGE OF THE ADJACENT TRAVEL LANE. HOWEVER, IF A SECONDARY SIGN IS MOUNTED BELOW THE PRIMARY SIGN, MOUNT THE SIGN ASSEMBLY TO PROVIDE A MOUNTING HEIGHT OF NO LESS THAN 6 FEET FROM THE BOTTOM EDGE OF THE SECONDARY SIGN TO THE GRADE ELEVATION OF THE NEAR EDGE OF THE ADJACENT TRAVEL LANE. PROVIDE AND UTILIZE SPECIAL SIGN MOUNTING DEVICES AND HARDWARE AS NECESSARY FOR INSTALLING PERMANENT CONSTRUCTION SIGN ASSEMBLIES IN AREAS WHERE CONCRETE MEDIAN BARRIER WALLS, BRIDGE PARAPET WALLS OR DOUBLEFACED GUARDRAIL ARE PRESENT.
3. MOUNT ALL FLAT SHEET PERMANENT CONSTRUCTION SIGNS STRAIGHT AND LEVEL AND WITH THE FACE OF THE SIGNS PERPENDICULAR TO THE SURFACE OF THE ROADWAY.
4. REFLECTORIZE ALL ORANGE PERMANENT CONSTRUCTION SIGNS AND ANY ORANGE AREAS OF MULTICOLORED PERMANENT CONSTRUCTION SIGNS WITH A FLUORESCENT ORANGE COLORED PRISMATIC RETROREFLECTIVE SHEETING. REFLECTORIZE ALL WHITE PERMANENT CONSTRUCTION SIGNS AND ANY WHITE AREAS OF MULTICOLORED PERMANENT CONSTRUCTION SIGNS WITH A WHITE COLORED PRISMATIC RETROREFLECTIVE SHEETING.
5. SPACINGS INDICATED ARE FOR NORMAL CONDITIONS; ADJUSTMENTS MAY BE REQUIRED DUE TO HORIZONTAL AND/OR VERTICAL ALIGNMENTS OR OTHER SIGHT DISTANCE RESTRICTIONS.
6. ALL TRAFFIC CONTROL DEVICES SHALL COMPLY WITH ALL NCHRP REPORT 350 REQUIREMENTS AND SHALL REQUIRE APPROVAL BY THE DEPARTMENT. ONLY THOSE TRAFFIC CONTROL DEVICES INCLUDED ON THE "APPROVED PRODUCTS LIST FOR TRAFFIC CONTROL DEVICES IN WORK ZONES" ARE CONSIDERED ACCEPTABLE FOR USE. THIS LIST MAY BE ACCESSED ON THE DEPARTMENT'S WEB SITE AT: www.scdot.org .
7. THE DEPARTMENT RESERVES THE RIGHT TO RESTRICT WORK OPERATIONS AND/OR WITHHOLD THE MONTHLY ESTIMATE IF THE TRAFFIC CONTROL IS NOT PROPERLY INSTALLED AND MAINTAINED AS DIRECTED BY THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, THE STANDARD DRAWINGS, THE PLANS AND/OR THE ENGINEER.

THIS DRAWING IS NOT TO SCALE

REFERENCES

WORK ZONE TRAFFIC CONTROL ENGINEER

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER NO. 24242 WILLIE E. McCONNELL, JR

SIGNATURE 8/2/12 DATE

#	DATE	CHK	DESCRIPTION
6			
5			
4			
3			
2			
1	1-9-12	JCS	GENERAL UPDATE
0	8-13-07	JCS	DRAWING NO. UPDATE

SCDOT

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
DESIGN STANDARDS OFFICE
955 PARK STREET
ROOM 405
COLUMBIA, SC 29201

STANDARD DRAWING

CONSTRUCTION SIGNING PERMANENT PRIMARY ROUTES

605-010-02

EFFECTIVE LETTING DATE JAN, 2013

FLAGGING OPERATIONS GENERAL NOTES

(ALL NOTES, SPECIFICATIONS AND REQUIREMENTS ON THIS STANDARD DRAWING APPLY TO ALL SUBSEQUENT STANDARD DRAWINGS REGARDING FLAGGING OPERATIONS UNLESS OTHERWISE NOTED)

FLAGGING OPERATIONS -

1. KEY FEATURES RELEVANT TO FLAGGING OPERATIONS:

    APPROACH TAPER - THIS IS A ONE-LANE TWO-WAY TAPER PLACED IN THE TRAVEL LANE WHERE THE WORK ACTIVITY TAKES PLACE. THIS TAPER PRECEDES THE BUFFER SPACE AND THE WORK ACTIVITY AREA. THE LENGTH OF THIS TAPER MAY VARY FROM 50 FEET TO 100 FEET. INSTALL AND MAINTAIN NO LESS THAN FIVE (5) TRAFFIC CONTROL DEVICES EQUALLY SPACED AT 10' TO 25' INTERVALS AS NECESSARY TO CORRESPOND WITH THE LENGTH OF THE TAPER.

    DOWNSTREAM TAPER - THIS TAPER, PLACED IN THE TRAVEL LANE WHERE THE WORK ACTIVITY TAKES PLACE, FOLLOWS THE WORK ACTIVITY AREA AND SERVES AS THE TERMINATION AREA FOR THE CLOSURE OF THE TRAVEL LANE. THE LENGTH OF THIS TAPER MAY VARY FROM 50 FEET TO 100 FEET. INSTALL AND MAINTAIN NO LESS THAN FIVE (5) TRAFFIC CONTROL DEVICES IN THIS TAPER.

    FLAGGER STATION - THIS IS THE SPECIFIC LOCATION OF THE FLAGGER.

    CLOSED LANE FLAGGER - THIS FLAGGER IS STATIONED ADJACENT TO THE FIRST TRAFFIC CONTROL DEVICE IN THE APPROACH TAPER WHO CONTROLS THE TRAFFIC THAT REQUIRES RELOCATION FROM THE TRAVEL LANE BEING CLOSED TO TRAFFIC.

    OPEN LANE FLAGGER - THIS FLAGGER IS STATIONED 100 FEET BEYOND THE LAST TRAFFIC CONTROL DEVICE IN THE DOWNSTREAM TAPER WHO CONTROLS THE TRAFFIC OPERATING IN THE TRAVEL LANE REMAINING OPEN TO TRAFFIC.

    BUFFER SPACE - THIS AREA IS LOCATED BETWEEN THE DOWNSTREAM END OF THE APPROACH TAPER AND THE NEAREST LIMITS OF THE WORK ACTIVITY AREA AND MAY PROVIDE SOME RECOVERY SPACE FOR AN ERRANT VEHICLE. THE PRESENCE OF PERSONNEL, TOOLS, MATERIALS, EQUIPMENT, WORK VEHICLES, ETC. WITHIN THE LIMITS OF THE BUFFER SPACE IS PROHIBITED. HOWEVER, WHEN THE MINIMUM DISTANCE REQUIREMENTS FOR THE BUFFER SPACE ARE UNAVAILABLE, A TRUCK MOUNTED ATTENUATOR MAY TEMPORARILY ENCROACH UPON THE BUFFER SPACE IN ACCORDANCE WITH THE REQUIREMENTS SPECIFIED IN THE SECTION BELOW ENTITLED, "BUFFER SPACE", WHEN APPROVED BY THE ENGINEER.

    WORK ACTIVITY AREA - PERSONNEL, MATERIALS, EQUIPMENT, WORK VEHICLES, ETC. ARE PRESENT WITHIN THIS AREA TO CONDUCT THE WORK.

    LIMITS of the WORK ACTIVITY AREA - THIS IS THE BOUNDARY OF THE WORK ACTIVITY AREA FIRST ENCOUNTERED, FROM EITHER DIRECTION, BY MOTORISTS PASSING BY THE WORK ACTIVITY AREA IN THE ADJACENT TRAVEL LANE OPEN TO TRAFFIC AND CONTROLLED BY THE FLAGGERS.

    APPROACH LANE - TRAFFIC APPROACHES AN INTERSECTION OR A SPECIFIC LOCATION IN THIS TRAVEL LANE.

    DEPARTURE LANE - TRAFFIC DEPARTS FROM AN INTERSECTION OR A SPECIFIC LOCATION IN THIS TRAVEL LANE.

    MAINLINE APPROACH - THIS IS AN APPROACH TO THE WORK ACTIVITY AREA ON THE ROADWAY WHERE THE WORK ACTIVITY AREA IS LOCATED.

    SIDE ROADS - THESE ROADS INTERSECT THE ROADWAY ON WHICH THE WORK ACTIVITY AREA IS LOCATED.

    LIMITS of the INTERSECTION - THE LIMITS OF OR THE PHYSICAL AREA WITHIN AN INTERSECTION IS DEFINED BY THE LOCATION OF STOP BARS WHEN PRESENT. WHEN STOP BARS ARE ABSENT, THE LIMITS OF OR THE PHYSICAL AREA WITHIN AN INTERSECTION IS DEFINED BY THE LOCATION POINTS WHERE THE CORNER RADII BETWEEN ADJACENT ROADWAY APPROACHES TIE TO THE EDGE OF PAVEMENT OR THE EDGE OF TRAVEL LANE ADJACENT TO THE EDGE OF PAVEMENT OF EACH ROADWAY.
2. INSTALL, CONDUCT AND MAINTAIN FLAGGING OPERATIONS IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS, THE STANDARD DRAWINGS, THE MUTCD AND THE "SOUTH CAROLINA FLAGGER'S HANDBOOK" UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT. INSTALL ALL SIGNS RELATIVE TO A FLAGGING OPERATION PRIOR TO INITIATION OF THE OPERATION AND REMOVE OR COVER ALL SIGNS IMMEDIATELY UPON TERMINATION OF THE OPERATION. EQUIP EACH FLAGGER WITH A 24" x 24" STOP/SLOW PADDLE MOUNTED ON A RIGID HANDLE WITH A MINIMUM LENGTH OF 7 FEET. THE DEPARTMENT PROHIBITS THE USE OF FLAGS EXCEPT DURING EMERGENCY SITUATIONS.
3. LANE CLOSURES FOR FLAGGING OPERATIONS ARE RESTRICTED TO A MAXIMUM DISTANCE OF 2 MILES UNLESS OTHERWISE APPROVED BY THE ENGINEER. THE WORK LIMITS WILL COMPLY WITH THE CONTRACT AND SHALL REQUIRE THE ENGINEER'S APPROVAL PRIOR TO BEGINNING THE WORK.
4. INSTALL AND MAINTAIN THE PROPER ARRAY OF ADVANCE WARNING SIGNS FOR EACH "MAINLINE APPROACH" WHEN A FLAGGING OPERATION IS IN PLACE AND ACTIVE. WHEN NECESSARY TO RELOCATE THE "FLAGGER STATION" WHILE ACTIVELY MAINTAINING THE FLAGGING OPERATION, INSTALL AN ADDITIONAL ARRAY OF ADVANCE WARNING SIGNS AT THE LOCATION RELATIVE TO THE NEW "FLAGGER STATION" AND REMOVE THE ORIGINAL ARRAY OF ADVANCE WARNING SIGNS IMMEDIATELY UPON COMPLETION OF THE RELOCATION OF THE FLAGGER TO THE NEW "FLAGGER STATION".
5. INSTALL ALL ADVANCE WARNING SIGNS IMMEDIATELY PRIOR TO INITIATING A FLAGGING OPERATION AND REMOVE OR COVER ALL SIGNS IMMEDIATELY UPON TERMINATION OF THE OPERATION.
6. MAINTAIN TWO-WAY RADIO COMMUNICATIONS BETWEEN ALL FLAGGERS.

NIGHTTIME FLAGGING OPERATIONS -

1. EACH FLAGGER SHALL WEAR SAFETY APPAREL IN COMPLIANCE WITH THE REQUIREMENTS OF ANSI/ ISEA 107 STANDARD PERFORMANCE FOR CLASS 3 RISK EXPOSURE, LATEST REVISION, WHEN CONDUCTING NIGHTTIME FLAGGING OPERATIONS.
2. ILLUMINATE EACH "FLAGGER STATION" WITH ANY COMBINATION OF PORTABLE LIGHTS, STANDARD ELECTRIC LIGHTS, EXISTING STREET LIGHTS, ETC. THAT WILL PROVIDE A MINIMUM ILLUMINATION LEVEL OF 108 Lx OR 10 fc WHEN CONDUCTING NIGHTTIME FLAGGING OPERATIONS.
3. SUPPLEMENT EACH ARRAY OF ADVANCE WARNING SIGNS ON EACH "MAINLINE APPROACH" WITH A TRAILER MOUNTED CHANGEABLE MESSAGE SIGN. THESE CHANGEABLE MESSAGE SIGNS ARE NOT REQUIRED ON THE "SIDE ROADS" INTERSECTING THE ROADWAY WHERE THE "WORK ACTIVITY AREA" IS LOCATED. ALSO, THESE CHANGEABLE MESSAGE SIGNS ARE NOT REQUIRED DURING DAYTIME FLAGGING OPERATIONS UNLESS OTHERWISE DIRECTED BY THE STANDARD DRAWINGS. INSTALL THE CHANGEABLE MESSAGE SIGNS IN ADVANCE OF THE ADVANCE WARNING SIGN ARRAYS. THE MESSAGE SHOULD BE "PREPARE TO STOP", "FLAGGER AHEAD". A TRUCK MOUNTED CHANGEABLE MESSAGE SIGN IS NOT AN ACCEPTABLE ALTERNATIVE TO A TRAILER MOUNTED CHANGEABLE MESSAGE SIGN DURING NIGHTTIME FLAGGING OPERATIONS.
4. UTILIZE PORTABLE PLASTIC DRUMS OR 42" OVERSIZED TRAFFIC CONES IN PLACE OF 36" STANDARD TRAFFIC CONES DURING NIGHTTIME FLAGGING OPERATIONS.

BUFFER SPACE -

1. THE MINIMUM DISTANCE REQUIREMENTS FOR THE "BUFFER SPACE" ARE BASED UPON THE LEGAL POSTED REGULATORY SPEED LIMIT OF THE ROADWAY PRIOR TO BEGINNING THE WORK.

SPEED LIMIT	DISTANCES
LOW SPEED ≤ 35 MPH	200 FEET
INTERMEDIATE SPEED 40 - 50 MPH	300 FEET
HIGH SPEED 55 MPH	400 FEET

2. THE PRESENCE OF PERSONNEL, TOOLS, MATERIALS, EQUIPMENT, WORK VEHICLES, ETC. WITHIN THE LIMITS OF THE "BUFFER SPACE" IS PROHIBITED. A TRUCK MOUNTED ATTENUATOR IS THE ONLY WORK VEHICLE THAT MAY TEMPORARILY ENCROACH UPON THE "BUFFER SPACE" IN ACCORDANCE WITH THE CONDITIONS SPECIFIED IN THE FOLLOWING NOTE WHEN APPROVED BY THE ENGINEER. SEE NOTE NO. 3.
3. WHEN THE MINIMUM DISTANCE REQUIREMENTS FOR THE "BUFFER SPACE" ARE UNAVAILABLE DUE TO FIELD CONDITIONS, IT MAY BE NECESSARY FOR A TRUCK MOUNTED ATTENUATOR TO TEMPORARILY ENCROACH UPON THE "BUFFER SPACE" WHEN APPROVED BY THE ENGINEER. A TRUCK MOUNTED ATTENUATOR IS THE ONLY VEHICLE PERMITTED TO TEMPORARILY ENCROACH UPON THE "BUFFER SPACE" AND THIS ENCROACHMENT IS ONLY PERMITTED WHEN ALL REASONABLE OPTIONS TO AVOID DOING SO HAVE BEEN EXHAUSTED. WHEN ENCROACHMENT UPON THE "BUFFER SPACE" IS APPROVED BY THE ENGINEER, MINIMIZE THE TIME DURATION OF THE ENCROACHMENT BY REMOVAL OF THE TRUCK MOUNTED ATTENUATOR FROM THE "BUFFER SPACE" AT THE FIRST OPPORTUNITY THE MINIMUM DISTANCE REQUIREMENTS FOR THE "BUFFER SPACE" BECOME AVAILABLE.

SIGNS AND TRAFFIC CONTROL DEVICES -

1. MEASURE THE ADVANCE WARNING SIGN LOCATIONS FOR EACH APPROACH FROM THE "FLAGGER STATION" LOCATED ON THAT APPROACH.
2. INSTALL THE ADVANCE WARNING SIGNS AS SPACING INTERVALS BASED UPON THE POSTED REGULATORY SPEED LIMIT OF THE ROADWAY PRIOR TO BEGINNING ANY WORK. THE ADVANCE WARNING SIGN SPACING INTERVALS INDICATED ARE FOR NORMAL CONDITIONS. ADJUSTMENTS TO THESE DISTANCES MAY BE NECESSARY DUE TO EXISTING SIGNS, INTERSECTING ROADWAYS, HORIZONTAL AND/OR VERTICAL ALIGNMENTS OR OTHER SIGHT DISTANCE RESTRICTIONS. SEE TABLE A.
3. INSTALL ADVANCE WARNING SIGNS MOUNTED ON PORTABLE SIGN SUPPORTS NO LESS THAN 4 FEET FROM THE NEAR EDGE OF THE SIGN TO THE NEAR EDGE OF AN ADJACENT TRAVEL LANE ON ROADWAYS WITH EARTH SHOULDERS AND NO LESS THAN 6 FEET FROM THE NEAR EDGE OF THE SIGN TO THE NEAR EDGE OF AN ADJACENT TRAVEL LANE ON ROADWAYS WITH PAVED SHOULDERS. WHEN CURB & GUTTER IS PRESENT, INSTALL THE SIGN NO LESS THAN 2 FEET FROM THE NEAR EDGE OF THE SIGN TO THE FACE OF THE CURB.
4. ALL SIGNS MOUNTED ON PORTABLE SIGN SUPPORTS SHALL HAVE A MINIMUM MOUNTING HEIGHT OF 5 FEET FROM THE GROUND TO THE BOTTOM OF THE SIGN. ALL SIGNS MOUNTED ON GROUND MOUNTED U-CHANNEL OR SQUARE STEEL TUBE POSTS SHALL HAVE A MINIMUM MOUNTING HEIGHT OF 7 FEET FROM THE GRADE ELEVATION OF THE NEAR EDGE OF THE ADJACENT TRAVEL LANE TO THE BOTTOM OF THE SIGN UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT. MOUNT ALL SIGNS STRAIGHT AND LEVEL AND WITH THE FACE OF THE SIGNS PERPENDICULAR TO THE SURFACE OF THE ROADWAY.
5. REFLECTORIZE ORANGE ADVANCE WARNING SIGNS AND ANY ORANGE AREAS OF A MULTI-COLORED ADVANCE WARNING SIGN WITH A FLUORESCENT ORANGE COLORED PRISMATIC RETROREFLECTIVE SHEETING. REFLECTORIZE WHITE REGULATORY SIGNS AND ANY WHITE AREAS OF A MULTI-COLORED ADVANCE WARNING SIGN WITH A WHITE COLORED PRISMATIC RETROREFLECTIVE SHEETING.
6. ALL TRAFFIC CONTROL DEVICES SHALL COMPLY WITH THE REQUIREMENTS OF NCHRP REPORT 350 OR THE AASHTO MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) AND SHALL REQUIRE APPROVAL BY THE DEPARTMENT. ONLY THOSE TRAFFIC CONTROL DEVICES INCLUDED ON THE "APPROVED PRODUCTS LIST FOR TRAFFIC CONTROL DEVICES IN WORK ZONES" ARE CONSIDERED ACCEPTABLE FOR USE. THIS LIST MAY BE ACCESSED ON THE DEPARTMENT'S WEB SITE AT: www.scdot.org .
7. REFLECTORIZATION OF 36" TRAFFIC CONES USED DURING DAYLIGHT HOURS IS NOT REQUIRED. IN THE EVENT A DAYTIME FLAGGING OPERATION EXTENDS INTO THE NIGHTTIME HOURS, REPLACE ALL 36" TRAFFIC CONES WITH EITHER PORTABLE PLASTIC DRUMS OR 42" OVERSIZED TRAFFIC CONES. REFLECTORIZE ALL PORTABLE PLASTIC DRUMS AND 42" OVERSIZED TRAFFIC CONES WITH TYPE III OR GREATER FLEXIBLE MICROPRISMATIC RETROREFLECTIVE SHEETING UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT.
8. DELINEATE THE TANGENT AREA OF THE LANE CLOSURE WITH THE NECESSARY TRAFFIC CONTROL DEVICES TO MINIMIZE ENCROACHMENT BY MOTORISTS INTO THE CLOSED TRAVEL LANE UNLESS OTHERWISE DIRECTED BY THE ENGINEER. ON ROADWAYS WITH POSTED REGULATORY SPEED LIMITS OF 35 MPH OR LESS, INSTALL THE TRAFFIC CONTROL DEVICES AT SPACING INTERVALS OF 25 FEET. ON ROADWAYS WITH POSTED REGULATORY SPEED LIMITS OF 40 MPH OR GREATER, INSTALL THE TRAFFIC CONTROL DEVICES AT SPACING INTERVALS OF 50 FEET. SEE TABLE B.

ADVANCE WARNING ARROW PANEL -

1. DURING FLAGGING OPERATIONS, AN ADVANCE WARNING ARROW PANEL SHALL OPERATE IN THE "FOUR CORNERS" CAUTION MODE WHEN LOCATED WITHIN OR IN BETWEEN THE LIMITS OF THE ADVANCE WARNING SIGN ARRAYS SPECIFIC TO A FLAGGING OPERATION. OPERATION OF AN ADVANCE WARNING ARROW PANEL IN AN ARROW, CHEVRON OR ANY OTHER TYPE OF CAUTION MODE OTHER THAN THE "FOUR CORNERS" CAUTION MODE WHEN LOCATED WITHIN OR IN BETWEEN THE LIMITS OF THE ADVANCE WARNING SIGN ARRAYS AS SPECIFIED HEREINBEFORE IS PROHIBITED.
2. ALL ADVANCE WARNING ARROW PANELS SHALL COMPLY WITH THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, LATEST EDITION. THE SPECIFIC LOCATION OF AN ADVANCE WARNING ARROW PANEL MAY REQUIRE ADJUSTMENTS DUE TO HORIZONTAL AND/OR VERTICAL ALIGNMENT OR OTHER SIGHT DISTANCE RESTRICTIONS.

TRUCK MOUNTED ATTENUATOR -

1. A TRUCK MOUNTED ATTENUATOR IS OPTIONAL. UTILIZATION OF A TRUCK MOUNTED ATTENUATOR SHOULD BE CONSIDERED WHEN THE MINIMUM DISTANCE REQUIREMENTS FOR THE "BUFFER SPACE" ARE UNAVAILABLE DUE TO FIELD CONDITIONS. HOWEVER, A TRAILER MOUNTED ADVANCE WARNING ARROW PANEL MAY BE UTILIZED IN PLACE OF A TRUCK MOUNTED ATTENUATOR DURING TRAFFIC CONTROL SETUPS FOR WORK ACTIVITIES SUCH AS ASPHALT CONCRETE PLACEMENT OPERATIONS WHEN APPROVED BY THE ENGINEER.
2. WHEN UTILIZING A TRUCK MOUNTED ATTENUATOR, ENSURE THE TRUCK HAS THE CORRECT GROSS VEHICULAR WEIGHT (GVW) REQUIRED FOR THE TYPE OF TRUCK MOUNTED ATTENUATOR BEING UTILIZED. A DIRECT TRUCK MOUNTED TRUCK MOUNTED ATTENUATOR, A UNIT MOUNTED AND ATTACHED TO BRACKETS OR SIMILAR DEVICES CONNECTED TO THE FRAME OF THE TRUCK, REQUIRES A TRUCK WITH A MINIMUM GVW OF 15,000 POUNDS (ACTUAL WEIGHT) UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT. A TRAILER TOWED TRUCK MOUNTED ATTENUATOR, A TRAILER TYPE UNIT TOWED FROM BEHIND AND ATTACHED TO THE FRAME OF THE TRUCK VIA A PINTLE HOOK / HITCH, REQUIRES A TRUCK WITH A MINIMUM GVW OF 10,000 POUNDS (ACTUAL WEIGHT) UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT. IF THE ADDITION OF SUPPLEMENTAL WEIGHT TO THE VEHICLE AS BALLAST IS NECESSARY, CONTAIN THE MATERIAL WITHIN A STRUCTURE CONSTRUCTED OF STEEL. CONSTRUCT THIS STEEL STRUCTURE TO HAVE A MINIMUM OF FOUR (4) SIDES AND A BOTTOM. A TOP IS OPTIONAL. BOLT THIS STRUCTURE TO THE FRAME OF THE TRUCK. UTILIZE A SUFFICIENT NUMBER OF FASTENERS FOR ATTACHMENT OF THE STEEL STRUCTURE TO THE FRAME OF THE TRUCK TO ENSURE THE STRUCTURE WILL NOT SEPARATE FROM THE FRAME OF THE TRUCK DURING AN IMPACT UPON THE TRUCK MOUNTED ATTENUATOR. UTILIZE EITHER DRY LOOSE SAND OR STEEL REINFORCED CONCRETE FOR BALLAST MATERIAL WITHIN THE STEEL STRUCTURE TO ACHIEVE THE NECESSARY WEIGHT. THE BALLAST MATERIAL SHALL REMAIN CONTAINED WITHIN THE CONFINES OF THE STEEL STRUCTURE IN ITS ENTIRETY AND SHALL NOT PROTRUDE FROM THE STEEL STRUCTURE IN ANY MANNER.
3. LOCATE THE TRUCK MOUNTED ATTENUATOR APPROXIMATELY 100 FEET IN ADVANCE OF THE "WORK ACTIVITY AREA" UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
4. PROVIDE, INSTALL AND MAINTAIN THE TRUCK MOUNTED ATTENUATOR AS SPECIFIED BY THE STANDARD SPECIFICATIONS AND AS DIRECTED BY THE ENGINEER.

GENERAL -

1. CONDUCT THE WORK IN SUCH A MANNER SO AS NOT TO ENCROACH ONTO THE ADJACENT TRAVEL LANE OPEN TO TRAFFIC. INSTALL, MAINTAIN AND ADJUST THE TRAFFIC CONTROL DEVICES AS NECESSARY TO ENSURE PROPER DELINEATION OF THE WORK AREA.
2. IF WORK IS BEING CONDUCTED AT TWO DIFFERENT LOCATIONS AT THE SAME TIME, SEPARATE THE TWO LOCATIONS BY NO LESS THAN 2 MILES FROM THE LAST TRAFFIC CONTROL DEVICE IN THE "DOWNSTREAM TAPER" OF THE FIRST LANE CLOSURE TO THE FIRST TRAFFIC CONTROL DEVICE IN THE "APPROACH TAPER" OF THE SECOND LANE CLOSURE ENCOUNTERED BY A MOTORIST UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
3. THE DEPARTMENT RESERVES THE RIGHT TO RESTRICT WORK OPERATIONS AND/OR WITHHOLD THE MONTHLY ESTIMATE IF THE TRAFFIC CONTROL IS NOT PROPERLY INSTALLED AND MAINTAINED AS DIRECTED BY THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, THE STANDARD DRAWINGS, THE PLANS AND/OR THE ENGINEER.

TABLE A

SIGN PLACEMENT INTERVALS	
SPEED LIMIT	✳
# ≤ 35 MPH LOW SPEED	200
# 40 - 50 MPH INTERMEDIATE SPEED	350
# 55 MPH HIGH SPEED	500

\# REGULATORY POSTED SPEED LIMIT PRIOR TO BEGINNING WORK

TABLE B

TRAFFIC CONTROL DEVICE SPACING INTERVALS WORK ACTIVITY / BUFFER SPACE AREAS	
SPEED LIMIT	SPACING INTERVALS
≤ 35 MPH	25 FEET
40 - 55 MPH	50 FEET

REFERENCES

WORK ZONE TRAFFIC CONTROL ENGINEER

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER NO. 24242 WILLIE E. McCONNELL, JR

SIGNATURE 7/27/15 DATE

#	DATE	CHK	DESCRIPTION
6			
5			
4			
3			
2			
1			
0	1-14-15	JCS	NEW DRAWING

SCDOT

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
DESIGN STANDARDS OFFICE
955 PARK STREET
ROOM 405
COLUMBIA, SC 29201

STANDARD DRAWING

FLAGGING OPERATIONS TWO-LANE TWO-WAY PRIMARY & SECONDARY ROUTES

610-005-00

EFFECTIVE LETTING DATE JAN 2016 THIS DRAWING IS NOT TO SCALE

Stantec

4969 Centre Pointe Dr, Suite 200
North Charleston, SC 29418
843-740-7700

Legend

Notes

Revision	By	Appd.	YY.MM.DD

Issued	By	Appd.	YY.MM.DD
03 ADDENDUM #1	MW	BK	20.03.27
02 BID SET	MW	BK	20.03.04
01 SCDHEC PERMIT SUBMITTAL	MW	BK	19.10.21

File Name: | Dwn. | Chkd. | Dsgn. | YY.MM.DD

Permit-Seal

SOUTH CAROLINA STANTEC CONSULTING SERVICES, INC. No. C02310 CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA PROFESSIONAL ENGINEER No. 22800 BRYAN D. KIZER MARCH 27, 2020

Client/Project

The City of Georgetown, SC

Queen Street Storm Drainage Improvements

Georgetown County, SC

Title

TRAFFIC CONTROL DETIALS

Project No. 178420970

Scale

Drawing No. C7

Sheet 7 of 7

Revision 0

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2020/03/26 12:09 PM By: Wynne, Marshall

ORIGINAL SHEET - ARCH D