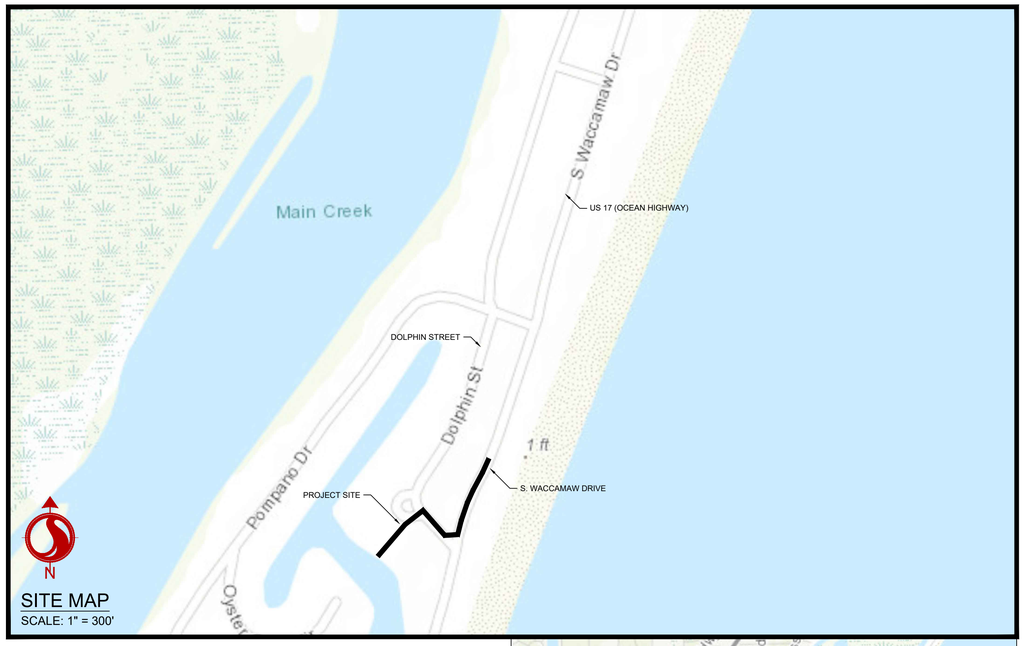
Stantec
STANTEC CONSULTING SERVICES INC.
4969 CENTRE POINTE DRIVE, SUITE 200
NORTH CHARLESTON, SC 29417
TEL 843.740.7700

CLIENT: GEORGETOWN COUNTY
108 SCREVEN STREET
GEORGETOWN, SC 29442
TRACY JONES | 843-545-3258

GARDEN CITY DRAINAGE IMPROVEMENTS

SITE 5
GEORGETOWN COUNTY, SOUTH CAROLINA



SITE MAP
SCALE: 1" = 300'

SHEET INDEX

SHEET NO.	TITLE	REVISION
C0-00	COVER SHEET	0
C0-01	PROJECT NOTES	0
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C1-02	OVERALL SHEET INDEX	0
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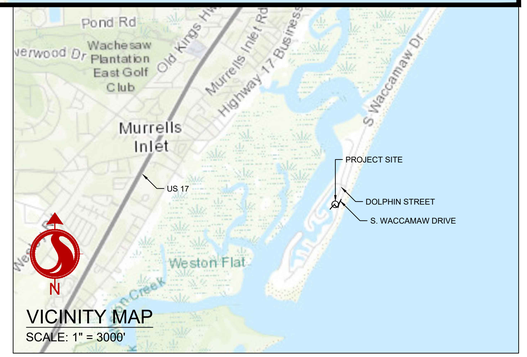
C3-04 to C3-06	GRADING AND DRAINAGE DETAILS	0
C4-00 to C4-02	ROADWAY PLAN AND PROFILE	0
C4-03	ROADWAY DETAILS	0
C5-00	TRAFFIC CONTROL PLAN	0
C5-01	TRAFFIC CONTROL DETAILS	0



VICINITY MAP
SCALE: 1" = 3000'

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

PROJECT NUMBER: 178420916

PROJECT CONTACTS			
SERVICE	MUNICIPALITY/UTILITY PROVIDER	CONTACT	PHONE
PLANNING & ZONING	GEORGETOWN COUNTY DEPARTMENT OF PLANNING	BOYD JOHNSON	(843) - 545-3158
STORMWATER	GEORGETOWN COUNTY STORMWATER DIVISION	TRACY JONES	(843) - 545-3524
WATER AND SEWER	GEORGETOWN COUNTY WATER AND SEWER DISTRICT	ERNIE FUNDERBURK	(843) - 907-1535
POWER	SANTEE COOPER	JIM POSTON	(843) - 347-3399
IRRIGATION	WACCAMAW MANAGEMENT	MIKE JACOBS	(843)-241-6234
ROAD	SCDOT	BENJI SMITH	(843)-661-4710 Ext. 201

Revision		By	Appd	YYYY.MM.DD
BID SET		AB	BK	2020.03.26
PER GEORGETOWN COUNTY COMMENTS		SGC	BK	2019.10.30
PER GEORGETOWN COUNTY COMMENTS		SGC	BK	2019.01.22
Issued		By	Appd	YYYY.MM.DD
File Name: C0_916_COVER		SGC	SGC	BK	2018.12.11
		Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

Permit/Seal

SOUTH CAROLINA STANTEC CONSULTING SERVICES, INC. No. C023110 CERTIFICATE OF AUTHORIZATION

FOR BIDDING ONLY

BRYAN D. KIZER PROFESSIONAL ENGINEER

GENERAL NOTES:

1. OWNER: GEORGETOWN COUNTY
TRACY JONES
108 SCREVEN STREET
GEORGETOWN, SC 29442
(843) 545-3258

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

3. BOUNDARY, TOPOGRAPHIC & EXISTING CONDITIONS INFORMATION TAKEN FROM "TOPOGRAPHIC SURVEY OF A PORTION OF INLET POINT GARDEN CITY BEACH SITE 5, PREPARED FOR GEORGETOWN COUNTY." BY COX SURVEYING, DATED NOVEMBER, 2018. VERTICAL DATUM USED WAS NAVD 88.

4. CRITICAL LINE FLAGGED BY CYGNUS ENVIRONMENTAL.

5. GEORGETOWN COUNTY WILL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY WETLAND IMPACT PERMITS.

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. GEORGETOWN COUNTY WILL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY EASEMENTS.

8. ALL DRAINAGE EASEMENTS TO BE DEDICATED TO GEORGETOWN COUNTY.

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, NOT OTHERWISE INDICATED IN THESE PLANS, SHALL CONFORM TO GEORGETOWN COUNTY 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 GEORGETOWN COUNTY WATER & SEWER A MINIMUM OF 48 HOURS BEFORE ANY WATER OR SEWER WORK IS TO BEGIN.

TRAFFIC NOTES:

1. LANE CLOSURES ARE REQUIRED FOR ALL WORK WITHIN ONE FOOT OF THE TRAVEL WAY. SHOULDER CLOSURES ARE REQUIRED FOR ALL WORK FROM ONE FOOT TO FIFTEEN FEET FROM THE TRAVEL WAY.

SAFETY NOTES:

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 PLAN MUST BE SUBMITTED AND APPROVED BY THE SCDOT AND APPLICABLE LOCAL AGENCIES PRIOR TO COMMENCEMENT OF CONSTRUCTION.

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. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION IN AREAS OF BURIED UTILITIES AND SHALL PROVIDE AT LEAST 48 HOURS NOTICE TO THE UTILITY COMPANIES PRIOR TO CONSTRUCTION TO OBTAIN FIELD LOCATIONS OF EXISTING UNDERGROUND UTILITIES.

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 IMMEDIATELY FOLLOWING CONSTRUCTION.

2. THE TOP 6" OF GROUND REMOVED DURING CLEARING AND GRUBBING SHALL BE STOCKPILED AT A SITE DESIGNATED BY THE OWNER OR THE OWNER'S ENGINEER, UNLESS OTHERWISE DIRECTED BY THE OWNER OR THE OWNER'S ENGINEER. THE REMAINING EARTHWORK THAT RESULTS FROM CLEARING AND GRUBBING 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 REMOVED FROM THE SITE. THE CONTRACTOR IS RESPONSIBLE FOR ACQUIRING ANY PERMITS THAT ARE NECESSARY FOR REMOVING EXCESS EARTHWORK FROM THE SITE.

3. 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.

SHOP DRAWING SUBMITTAL:

1. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE OWNER'S ENGINEER; 2 SETS OF HARD COPIES AND 1 ELECTRONIC FOR REVIEW.

1.1. THE CONTRACTOR, OR THE CONTRACTORS SUPPLIER, MUST INCLUDE WITH THE SHOP DRAWING SUBMITTAL A REFERENCE TO THE GOVERNING MUNICIPALITIES STANDARDS SHOWING COMPLIANCE WITH SAID MUNICIPALITIES REQUIREMENTS.

1.1.1. ie, SHOP DRAWING SUBMITTAL FOR A FIRE HYDRANT SHALL INCLUDE A REFERENCE TO "CHARLESTON WATER SYSTEM - MINIMUM STANDARDS FOR THE DESIGN AND CONSTRUCTION OF WATER AND SANITARY SEWER SYSTEM - SECTION 10.B.1.o". OR MORE SIMPLY "CWS - 10.B.1.o"

1.1.2. THIS SHALL BE COMPLETED FOR EVERY SUBMITTAL TO ASSURE AN EXPEDITED REVIEW OF SHOP DRAWINGS.

2. SHOP DRAWINGS WILL BE REVIEWED AND RETURNED TO THE CONTRACTOR WITHIN 15 BUSINESS DAYS FROM CONFIRMED RECEIPT BY THE OWNER OR THE OWNERS ENGINEER.

3. SHOP DRAWINGS NOT RECEIVED IN THE PROPER FORMAT WILL BE RETURNED TO THE CONTRACTOR FOR REVISIONS PRIOR TO REVIEW.

AS-BUILT NOTE:

THE CONTRACTOR SHALL PROVIDE AN AS-BUILT SURVEY OF THE SITE (TIED TO THE STATE PLANE COORDINATE SYSTEM), TO INCLUDE ALL STORM DRAINAGE LINES, BOTH EXISTING AND NEWLY INSTALLED. SURVEY SHALL ALSO INCLUDE THE PIPE SIZE, MATERIAL, AND INVERT ELEVATIONS, IN COMPLIANCE WITH THE GEORGETOWN COUNTY REQUIREMENTS AND NPDES PERMIT.

NO GEOTECHNICAL REPORT:

1. ASPHALT/PAVEMENT SECTIONS SHOWN ON PLANS AND DETAILS ARE ASSUMED AND SHALL BE VERIFIED WITH GEOTECHNICAL ANALYSIS BY THE CONTRACTOR PRIOR TO INSTALLATION.
2. CONTRACTOR TO ASSUME 12 INCHES OF UNDERCUT AND BACKFILL TO BRING TO GRADE.

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 AND SHALL BE APPROVED BY GEOTECHNICAL ENGINEER.

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 GEOTECHNICAL 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. 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:

24.1. 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.

24.2. LIQUID LIMIT SHOULD NOT EXCEED 40 PERCENT WHEN TESTED IN ACCORDANCE WITH ASTM D4318.

24.3. PLASTICITY INDEX SHOULD NOT BE GREATER THAN 30 PERCENT WHEN TESTED IN ACCORDANCE WITH ASTM D4318.

24.4. 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.

DRAINAGE NOTES:

1. ALL NEW STORM PIPES, BEDDING, TRENCHING, STORM BOXES, ETC. IN THE RIGHTS-OF-WAY AND/OR CITY OWNED AND MAINTAINED DRAINAGE EASEMENTS SHALL BE INSTALLED PER CURRENT SCDOT SPECIFICATIONS, LOCATED ON THE INTERNET AT http://www.scdot.org/doing/construction_standardspec.aspx. STANDARD SCDOT DETAIL DRAWINGS CAN BE LOCATED AT THE FOLLOWING WEBSITE, http://www.scdot.org/doing/sd_book.aspx.

2. ALL REINFORCED CONCRETE PIPE SHALL, AT A MINIMUM, BE ASTM C76, CLASS III.

3. REINFORCED CONCRETE PIPE INSTALLED UNDER PAVEMENT AND/OR PARALLEL TO THE EDGE OF PAVEMENT IN PUBLIC RIGHTS-OF-WAY SHALL HAVE O-RING JOINTS IN ACCORDANCE WITH ASTM C443 AND/OR AASHTO M315. THE JOINTS SHALL BE SECURELY WRAPPED WITH FILTER FABRIC 18" IN WIDTH.

4. SUBMERGED DRAINAGE SYSTEMS SHALL HAVE O-RING JOINTS IN ACCORDANCE WITH ASTM C C443 AND/OR AASHTO M315. THE JOINTS SHALL BE SECURELY WRAPPED WITH FILTER FABRIC 18" IN WIDTH.

5. WHERE TONGUE AND GROOVE STORM PIPE IS ALLOWED, REINFORCED CONCRETE PIPE SHALL BE PER ASTM C 76, CLASS III. JOINTS SHALL BE SEALED WITH RAMNECK OR EQUIVALENT PER AASHTO M198. THE JOINTS SHALL BE SECURELY WRAPPED WITH FILTER FABRIC 18" IN WIDTH.

6. ALL NEW STORM DRAINAGE LINES SHALL BE LAID UPGRADE AFTER CONFIRMATION OF EXISTING INVERT ELEVATION.

7. GEORGETOWN COUNTY MAINTAINS THE RIGHT TO ALLOW ALTERNATE PIPE INSTALLATIONS OR TYPE OF PIPE FOR ALL PROJECTS ON A CASE-BY-CASE BASIS FOR ANY PIPES TO BE INSTALLED IN AN EXISTING OR PROPOSED CITY ROAD RIGHT-OF-WAY AND-OR DRAINAGE EASEMENT.

8. PIPE LENGTHS SHOWN ARE APPROXIMATE AND CENTER TO CENTER ON DRAINAGE STRUCTURES OR TO END OF PIPE. CONTRACTOR SHALL VERIFY ALL QUANTITIES PRIOR TO SUBMITTAL OF BID.

9. ALL STORM DRAIN PIPING SHALL BE SUBJECT TO A VISUAL INSPECTION BY THE OWNER'S ENGINEER PRIOR TO THE PLACEMENT OF BACKFILL. CONTRACTOR TO NOTIFY THE ENGINEER 48 HOURS IN ADVANCE TO SCHEDULE INSPECTIONS.

10. 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.

11. 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.

12. 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.

13. MORTAR SHALL BE TYPE S OR M.

14. 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. SEE SCDOT STANDARD DRAWINGS FOR PRECAST CONCRETE DRAINAGE BOX FOR ADDITIONAL DETAILS AND SPECIFICATIONS.

15. 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.

16. IF STRUCTURE DEPTH EXCEEDS 4'-6", METAL STEPS ARE TO BE PLACED ON WALL. SEE STEP STANDARD DRAWING 719-16.

17. 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).

a. STEEL GRATES AND FRAME MAY BE USED IN LIEU OF CAST IRON AS LONG AS THE LOADING AND HYDRAULIC REQUIREMENTS ARE MET, AND ARE ON SCDOT LIST OF APPROVED SUPPLIERS.

b. STEEL GRATES SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH AASHTO M 111.

c. STEEL GRATES AND FRAMES SHALL BE DIMENSIONED TO BE INTERCHANGEABLE WITH EACH PIECE OF THE CAST IRON GRATE AND FRAME SHOWN. MUST HAVE A POSITIVE MEANS TO RETAIN THE GRATE IN THE FRAME.

d. STRENGTH REQUIREMENTS OF STEEL GRATES AND FRAMES MUST MEET FEDERAL SPECIFICATION RR-F-621 (LATEST EDITION).

18. THE LONGEST DIMENSIONS OF THE OPENING IN THE IRON GRATE SHOULD BE ORIENTED IN THE DIRECTION OF FLOW IF PRACTICAL.

19. AS SHOWN BY THIS DRAWING THE FRAME IS SET LEVEL, BUT THE ENGINEER MAY SET SAME ON SLOPE AS REQUIRED BY LOCAL DRAINAGE CONDITIONS.

20. AFTER THE FRAME IS SET IN ITS FINAL POSITION, IT IS TO BE ENCASED WITH CONCRETE AS SHOWN BY DRAWING.

21. THE INSIDE OF THE OUTLET PIPE SHALL BE FLUSH WITH FLOOR OF BASIN, UNLESS OTHERWISE SHOWN ON PLANS (SUMP).

22. 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.

23. 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.

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.

Stantec
Stantec
4969 Centre Pointe Drive, Suite 200
North Charleston, SC, 29418
Tel: 843.740.7700
www.stantec.com

Consultant

Legend

Revision	By	Appd	YYYY.MM.DD
BID SET	AB	BK	2020.03.26
PER GEORGETOWN COUNTY COMMENTS	SGC	BK	2019.10.30
PER GEORGETOWN COUNTY COMMENTS	SGC	BK	2019.01.22
Issued	By	Appd	YYYY.MM.DD

File Name: C0_916_COVER	SGC	SGC	BK	2018.12.11
	Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

Permit/Seal

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

FOR BIDDING ONLY

SOUTH CAROLINA
PROFESSIONAL ENGINEER
LICENSED
No. 22800
BRYAN D. KIZER

Client/Project Logo

Client/Project
GEORGETOWN COUNTY

GARDEN CITY DRAINAGE IMPROVEMENTS
SITE 5

MURRELLS INLET, SOUTH CAROLINA

Title
PROJECT NOTES

Project No. 178420916
Scale

Revision
Sheet 2 of 23
Drawing No. C0-01

ORIGINAL SHEET - ARCH D

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2020.05.07 6:58:45 AM

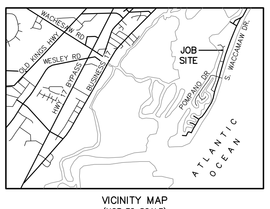
NO.	DATE	REVISION	BY
1	03/06/2019	ADDED TOPO ON A PORTION OF LOT 245	JJC

I HEREBY STATE THAT TO THE BEST OF MY PROFESSIONAL KNOWLEDGE, INFORMATION, AND BELIEF, THE SURVEY SHOWN HEREIN WAS MADE IN ACCORDANCE WITH THE REQUIREMENTS OF THE STANDARDS OF PRACTICE MANUAL FOR SURVEYING IN SOUTH CAROLINA, AND MEETS OR EXCEEDS THE REQUIREMENTS FOR A CLASS "B" SURVEY AS SPECIFIED THEREIN; ALSO THERE ARE NO VISIBLE ENCROACHMENTS OR PROJECTIONS OTHER THAN SHOWN.

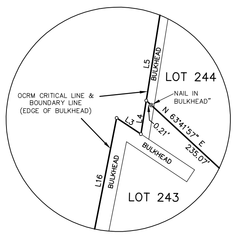
SOUTH CAROLINA — COX SURVEYORS & ASSOCIATES, LLC No. 4099 — CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA PROFESSIONAL LAND SURVEYOR — J. JASON COX — 26950

J. JASON COX
SOUTH CAROLINA PROFESSIONAL LAND SURVEYOR
LICENSE NO. 26950



VICINITY MAP
(NOT TO SCALE)



INSET "A"
NOT TO SCALE

CURVE TABLE					
CURVE	RADIUS	CHORD	DISTANCE	LENGTH	DELTA
C1	53.06'	N 14°44'19" W	54.02'	56.67'	61°11'46"
C2	1407.40'	N 32°42'38" E	54.63'	54.63'	2°13'27"
C3	1407.40'	N 29°58'18" E	79.91'	79.93'	3°15'14"
C4	1407.40'	N 26°43'03" E	79.93'	79.94'	3°15'16"
C5	1457.40'	N 26°34'16" E	74.99'	75.00'	2°56'55"
C6	1457.40'	N 29°31'10" E	74.99'	75.00'	2°56'55"
C7	1457.40'	N 32°39'47" E	64.06'	64.07'	2°31'08"
C8	38.00'	S 04°17'56" E	50.12'	54.74'	82°31'44"
C9	25.00'	N 75°47'57" E	45.94'	58.25'	133°30'09"
C10	72.00'	N 86°32'38" E	19.76'	19.82'	15°46'18"

LINE TABLE		
LINE	BEARING	LENGTH
L1	N 31°19'39" W	6.53'
L2	N 57°57'45" W	28.79'
L3	N 54°36'31" E	2.04'
L4	N 59°54'58" W	1.65'
L5	S 59°54'58" E	36.53'
L6	N 33°38'32" E	12.31'
L7	N 34°18'05" E	18.96'
L8	N 34°29'16" E	5.95'
L9	N 39°34'21" E	10.57'
L10	N 40°41'19" E	25.97'
L11	N 38°34'12" E	17.01'
L12	N 39°17'38" E	4.76'
L13	N 38°39'42" E	46.51'
L14	N 53°28'10" W	0.34'
L15	N 35°32'54" E	1.58'
L16	N 57°51'11" W	30.68'
L17	N 60°30'51" W	10.19'
L18	N 65°39'07" W	26.30'

NAD 83(2011)

LOT 247
CM DEVELOPERS OF FLORENCE, LLC
41-0130-020-43-00
D.B. 1614, PG. 141
P.B. S, PG. 033

LOT 246
DARREN G. & LINDA M. JACOBS
41-0130-020-44-00
D.B. 599, PG. 156
P.B. 13, PG. 604
P.B. S, PG. 033

LOT 248
D. LAWRENCE McINTOSH
41-0130-020-42-00
D.B. 78, PG. 1
P.B. S, PG. 016

LOT 245
EMMA DENNIS BRUCE
41-0130-020-45-00
D.B. 1556, PG. 328
P.B. S, PG. 033

LOT 244
JFM INVESTMENTS GEORGETOWN LLC
41-0130-020-46-00
D.B. 1205, PG. 167
P.B. 11, PG. 688

LOT 243
ELIZABETH GAY STACKHOUSE, et al
41-0130-020-47-00
D.B. 1729, PG. 85
P.B. S, PG. 067
P.B. 11, PG. 249

LOT 242
VARDELLE P. & WILLIAM BRYANT
41-0130-020-48-00
D.B. 1408, PG. 341
P.B. 11, PG. 137
P.B. 11, PG. 249

LOT 102
RONALD P. & LYNN D. CONNELLY
41-0130-029-00-00
D.B. 1820, PG. 319
P.B. 604, PG. 58

LOT 241
MILES WARREN & ALISON MARY MENCER
41-0130-020-03-00
D.B. 2732, PG. 124
P.B. R, PG. 051

LOT 238
PATRICIA M. BRUNKO
41-0130-020-06-00
D.B. 1104, PG. 336
P.B. R, PG. 051

LOT 239
SHOU KATH & FATIMA ANSARI
41-0130-020-05-00
D.B. 885, PG. 244
P.B. 278, PG. 414

LOT 240
BERRY ANNE WILLIS LIFE ESTATE
41-0130-020-04-00
D.B. 1713, PG. 263
P.B. R, PG. 051

LOT 10
THOMAS DALE & JOANNE RAINEY
41-0130-020-02-00
D.B. 2245, PG. 346
P.B. R, PG. 034

OYSTER COVE

DOLPHIN STREET
50' PUBLIC R/W

S. WACCAMAW DRIVE
50' PUBLIC R/W

OCRM CRITICAL LINE & BOUNDARY LINE (EDGE OF BULKHEAD)

EXISTING HOUSE
FFE: 8.34

EXISTING HOUSE
FFE: 7.44

FLOOD ZONE "VE-16"
FLOOD ZONE "VE-17"
FLOOD ZONE "VE-18"

NGS MON. LINA NO 2 1962
ELEV.: 7.87

OCRM MON. 4915 1988
N 626,945.73
E 2,601,994.96

N 627,070.42
E 2,601,973.57

REBAR/CAP
N 627,439.40
E 2,601,844.05
ELEV.: 8.39

SSMH RIM: 8.28
IE: 0.12

SSMH RIM: 8.21
IE: 1.23

SSMH RIM: 8.75
IE: 2.70

SSMH RIM: 7.18
SEALED-NO ACCESS

MATCH SHEET 1
MATCH SHEET 2

NOTE:
A POTENTIAL WATERLINE IS SHOWN BETWEEN POINTS Ⓐ (SHEET 1) & Ⓑ (SHEET 2). PROVIDED ASBUILTS ARE UNCLEAR AND NO FIELD MARKINGS PROVIDED AT THE TIME OF THIS SURVEY.

TIDAL INFORMATION
"8665 1852 G TIDAL"
ELEV.: 6.49' (NAVD 88)

	MLLW	NAVD 88
MHHW	4.77	2.08
MHW	4.38	1.69
MLW	0.16	−2.53
MLLW	0.00	−2.69

NOTES:
1. TAX MAP NO.: AS SHOWN.
2. IT IS MY OPINION THAT THE PROPERTY SHOWN ON THIS PLAT IS LOCATED IN FLOOD ZONES AS SHOWN HEREON PER FLOOD INSURANCE RATE MAP 45008S 0167 E DATED OCTOBER 16, 1992 & IS SUBJECT TO VERIFICATION BY THE COUNTY FLOODPLAIN MANAGER / FEMA OFFICER. FLOOD ZONE LINES SHOWN HEREON SCALED FROM FEMA FIRM MAPS. SAID LINES ARE APPROXIMATE.
3. ALL BEARINGS AND COORDINATES SHOWN ON THIS SURVEY ARE BASED ON SOUTH CAROLINA STATE PLANE COORDINATE SYSTEM NAD83(2011). DISTANCES AND COORDINATES SHOWN ARE GROUND LEVEL DISTANCES, NOT GRID DISTANCES. TO CONVERT GROUND LEVEL DISTANCES TO GRID DISTANCES, MULTIPLY BY COMBINED SCALE FACTOR OF 0.99979592. STATE PLANE COORDINATES OBTAINED FROM OCRM MON. "4915 1988"
4. A TITLE SEARCH WAS NOT PERFORMED BY THIS OFFICE ON THIS DATE.
5. THE PROPERTY PLATTED HEREON IS SUBJECT TO ALL EASEMENTS AND RESTRICTIONS OF RECORD.
6. REFERENCE: AS SHOWN.
7. SUBSURFACE AND ENVIRONMENTAL CONDITIONS WERE NOT EXAMINED OR CONSIDERED AN ELEMENT OF THIS SURVEY. NO STATEMENT IS MADE REGARDING THE EXISTENCE OF UNDERGROUND OR OVERHEAD CONTINGENCIES THAT MAY AFFECT THE USE OF THIS PARCEL.
8. THERE ARE NO HORIZONTAL CONTROL MONUMENTS ON THE UNITED STATES OR STATE AGENCY SURVEY SYSTEMS LOCATED WITHIN 2000 FEET OF THE SUBJECT PROPERTY.
9. THIS SURVEY IS VALID ONLY IF THE PRINT OF SAME HAS THE ORIGINAL SIGNATURE AND EMBOSSED SEAL OF THE LAND SURVEYOR.
10. CURRENT OWNERS: AS SHOWN
11. ALL ELEVATIONS BASED ON NAVD 88 DATUM PER NGS MONUMENT "LINA NO. 2 1962", ELEVATION: 7.87'

LEGEND

⊙	IRON PIPE FOUND
●	IRON REBAR FOUND
○	BOUNDARY POINT
△	CONTROL POINT
X 4.57	EXISTING ELEVATION
D.B.	DEED BOOK
P.B.	PLAT BOOK
PG.	PAGE
▤	ELECTRIC BOX
⌀	UTILITY POLE
⟵	GUY WIRE
▢	AIR CONDITIONER
⊛	CABLE PEDESTAL
⊠	TELEPHONE PEDESTAL
SCO	SEWER CLEAN-OUT
⊗	WATER VALVE
✱	IRRIGATION CONTROL VALVE
⧋	VALVE MARKER
⊠	WATER METER
⊹	FIRE HYDRANT
–OHP–	OVERHEAD UTILITY LINE
–UTL–	UNDERGROUND UTILITY LINE (APPROX.)
–UGP–	UNDERGROUND POWER (APPROX.)
–W–	WATER LINE (APPROX.)
–X–	FENCE

REFERENCE MAPS:
2) "MAP OF LOTS 3 THRU 8 AND 77 THRU 88, INLET POINT" DATED AUGUST 22, 1962 BY ROBERT L. BELLAMY, C.E. AND RECORDED AT HORRY COUNTY R.O.D. IN P.B. P, PG. 75.
3) "MAP OF LOTS 3 THRU 8 AND 78 THRU 88, INLET POINT" DATED AUGUST 22, 1962, LAST REVISED SEPTEMBER 4, 1963 BY ROBERT L. BELLAMY, C.E. AND RECORDED AT HORRY COUNTY R.O.D. IN P.B. O, PG. 103.
4) "MAP OF INLET POINT" DATED AUGUST 1965, LAST REVISED NOVEMBER 18, 1966 BY ROBERT L. BELLAMY, C.E. AND RECORDED AT HORRY COUNTY R.O.D. IN P.B. S, PG. 33.
5) "MAP OF INLET POINT" DATED AUGUST 1965, LAST REVISED MAY 19, 1970 BY ROBERT L. BELLAMY, C.E. AND RECORDED AT HORRY COUNTY R.O.D. IN P.B. S, PG. 16.
6) "MAP OF INLET POINT" DATED AUGUST 1965, LAST REVISED MAY 19, 1970 BY ROBERT L. BELLAMY, C.E. AND RECORDED AT HORRY COUNTY R.O.D. IN P.B. S, PG. 33.
7) "MAP OF INLET POINT" DATED AUGUST 1965, LAST REVISED MAY 19, 1970 BY ROBERT L. BELLAMY, C.E. AND RECORDED AT HORRY COUNTY R.O.D. IN P.B. S, PG. 67.
8) "MAP OF LOT NO. 10, INLET POINT" DATED APRIL 21, 1965 BY ROBERT L. BELLAMY, C.E. AND RECORDED AT HORRY COUNTY R.O.D. IN P.B. R, PG. 34.

SHEET 1 OF 2
TOPOGRAPHIC SURVEY OF
A PORTION OF
INLET POINT
GARDEN CITY BEACH
SITE 5
PREPARED FOR
GEORGETOWN COUNTY
GARDEN CITY BEACH
GEORGETOWN COUNTY SOUTH CAROLINA

20 0 10 20 40
SCALE: 1 INCH = 20 FEET

SURVEYED & MAPPED BY
COX SURVEYORS & ASSOCIATES
A LIMITED LIABILITY COMPANY
4325 DICK POND ROAD, SUITE A
MYRTLE BEACH, SC 29588 (843) 650-1500
www.coxsurveyors.com

DRAWN BY	VGB	FIELD DATE	11/2018
REVIEWED	JJC	PLAT DATE	11/12/2018
CREW CHIEF	CTB	FIELD BOOK	CS-1323

O:\Drawings-CSA\01300\01323 GCD Site 5 B\01323 GCD-5.dwg 3/6/2019 8:51 AM

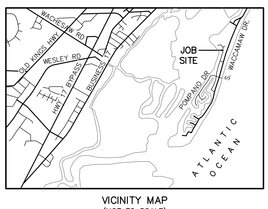
NO.	DATE	REVISION	BY
1	03/06/2019	ADDED TOPO ON A PORTION OF LOT 245	JJC

I HEREBY STATE THAT TO THE BEST OF MY PROFESSIONAL KNOWLEDGE, INFORMATION, AND BELIEF, THE SURVEY SHOWN HEREIN WAS MADE IN ACCORDANCE WITH THE REQUIREMENTS OF THE STANDARDS OF PRACTICE MANUAL FOR SURVEYING IN SOUTH CAROLINA, AND MEETS OR EXCEEDS THE REQUIREMENTS FOR A CLASS "B" SURVEY AS SPECIFIED THEREIN; ALSO THERE ARE NO VISIBLE ENCROACHMENTS OR PROJECTIONS OTHER THAN SHOWN.

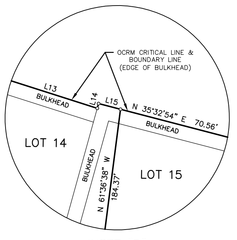
SOUTH CAROLINA — COX SURVEYORS & ASSOCIATES, LLC — No. 4099 — CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA — PROFESSIONAL SURVEYOR — J. JASON COX — 26950

J. JASON COX
SOUTH CAROLINA PROFESSIONAL LAND SURVEYOR
LICENSE NO. 26950



VICINITY MAP
(NOT TO SCALE)



INSET "B"
NOT TO SCALE

NOTE:
A POTENTIAL WATERLINE IS SHOWN BETWEEN POINTS Ⓐ (SHEET 1) & Ⓑ (SHEET 2). PROVIDED ASBUILTS ARE UNCLEAR AND NO FIELD MARKINGS PROVIDED AT THE TIME OF THIS SURVEY.

NOTES:
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4. A TITLE SEARCH WAS NOT PERFORMED BY THIS OFFICE ON THIS DATE.
5. THE PROPERTY PLATTED HEREON IS SUBJECT TO ALL EASEMENTS AND RESTRICTIONS OF RECORD.
6. REFERENCE: AS SHOWN.
7. SUBSURFACE AND ENVIRONMENTAL CONDITIONS WERE NOT EXAMINED OR CONSIDERED AN ELEMENT OF THIS SURVEY. NO STATEMENT IS MADE REGARDING THE EXISTENCE OF UNDERGROUND OR OVERHEAD CONTINGENCIES THAT MAY AFFECT THE USE OF THIS PARCEL.
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10. CURRENT OWNERS: AS SHOWN
11. ALL ELEVATIONS BASED ON NAVD 88 DATUM PER NGS MONUMENT "LINA NO. 2 1962", ELEVATION: 7.87'

LEGEND

⊛	IRON PIPE FOUND
●	IRON REBAR FOUND
○	BOUNDARY POINT
△	CONTROL POINT
X 4.57	EXISTING ELEVATION
D.B.	DEED BOOK
P.B.	PLAT BOOK
PG.	PAGE
▤	ELECTRIC BOX
⌀	UTILITY POLE
⟵	GUY WIRE
▢	AIR CONDITIONER
⊛	CABLE PEDESTAL
⊡	TELEPHONE PEDESTAL
⊙	SEWER CLEAN-OUT
⊗	WATER VALVE
⊛	IRRIGATION CONTROL VALVE
⧋	VALVE MARKER
⊠	WATER METER
⊹	FIRE HYDRANT
–OHP–	OVERHEAD UTILITY LINE
–UTL–	UNDERGROUND UTILITY LINE (APPROX.)
–UGP–	UNDERGROUND POWER (APPROX.)
–W–	WATER LINE (APPROX.)
–X–	FENCE

TIDAL INFORMATION
"866 1852 G TIDAL"
ELEV.: 6.49' (NAVD 88)

	MLLW	NAVD 88
MHHW	4.77	2.08
MHW	4.38	1.69
MLW	0.16	–2.53
MLLW	0.00	–2.69

REFERENCE MAPS:
2) "MAP OF LOTS 3 THRU 8 AND 77 THRU 88, INLET POINT" DATED AUGUST 22, 1962 BY ROBERT L. BELLAMY, C.E. AND RECORDED AT HORRY COUNTY R.O.D. IN P.B. P, PG. 75.
3) "MAP OF LOTS 3 THRU 8 AND 78 THRU 88, INLET POINT" DATED AUGUST 22, 1962, LAST REVISED SEPTEMBER 4, 1963 BY ROBERT L. BELLAMY, C.E. AND RECORDED AT HORRY COUNTY R.O.D. IN P.B. Q, PG. 103.
4) "MAP OF INLET POINT" DATED AUGUST 1965, LAST REVISED NOVEMBER 18, 1966 BY ROBERT L. BELLAMY, C.E. AND RECORDED AT HORRY COUNTY R.O.D. IN P.B. S, PG. 33.
5) "MAP OF INLET POINT" DATED AUGUST 1965, LAST REVISED MAY 19, 1970 BY ROBERT L. BELLAMY, C.E. AND RECORDED AT HORRY COUNTY R.O.D. IN P.B. S, PG. 16.
6) "MAP OF INLET POINT" DATED AUGUST 1965, LAST REVISED MAY 19, 1970 BY ROBERT L. BELLAMY, C.E. AND RECORDED AT HORRY COUNTY R.O.D. IN P.B. S, PG. 33.
7) "MAP OF INLET POINT" DATED AUGUST 1965, LAST REVISED MAY 19, 1970 BY ROBERT L. BELLAMY, C.E. AND RECORDED AT HORRY COUNTY R.O.D. IN P.B. S, PG. 67.
8) "MAP OF LOT NO. 10, INLET POINT" DATED APRIL 21, 1965 BY ROBERT L. BELLAMY, C.E. AND RECORDED AT HORRY COUNTY R.O.D. IN P.B. R, PG. 34.

SHEET 2 OF 2
TOPOGRAPHIC SURVEY OF
A PORTION OF
INLET POINT
GARDEN CITY BEACH
SITE 5
PREPARED FOR
GEORGETOWN COUNTY
GARDEN CITY BEACH
GEORGETOWN COUNTY SOUTH CAROLINA

20 0 10 20 40
SCALE: 1 INCH = 20 FEET

SURVEYED & MAPPED BY
COX SURVEYORS & ASSOCIATES
A LIMITED LIABILITY COMPANY
4325 DICK POND ROAD, SUITE A
MYRTLE BEACH, SC 29588 (843) 650-1500
www.coxsurveyors.com

DRAWN BY	VGB	FIELD DATE	11/2018
REVIEWED	JJC	PLAT DATE	11/12/2018
CREW CHIEF	CTB	FIELD BOOK	CS-1323

O:\Drawings-CSA\01300\01323 GCD Site 5 B\01323 GCD-5.dwg 3/6/2019 8:51 AM

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Legend

Revision	By	Appd	YYYY.MM.DD
BID SET	AB	BK	2020.03.26
PER GEORGETOWN COUNTY COMMENTS	SGC	BK	2019.10.30
PER GEORGETOWN COUNTY COMMENTS	SGC	BK	2019.01.22
Issued	**By**	**Appd**	**YYYY.MM.DD**
File Name: C3_916_GRADING	SGC	SGC	BK	2018.12.11
	Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

Permit/Seal

SOUTH CAROLINA STANTEC CONSULTING SERVICES, INC. No. C02316 CERTIFICATE OF AUTHORIZATION

FOR BIDDING ONLY

LICENSED PROFESSIONAL ENGINEER No. 22306 BRYAN D KLIZER

Client/Project Logo

Client/Project
GEORGETOWN COUNTY

GARDEN CITY DRAINAGE IMPROVEMENTS
SITE 5

MURRELLS INLET, SOUTH CAROLINA

Title
OVERALL SHEET INDEX

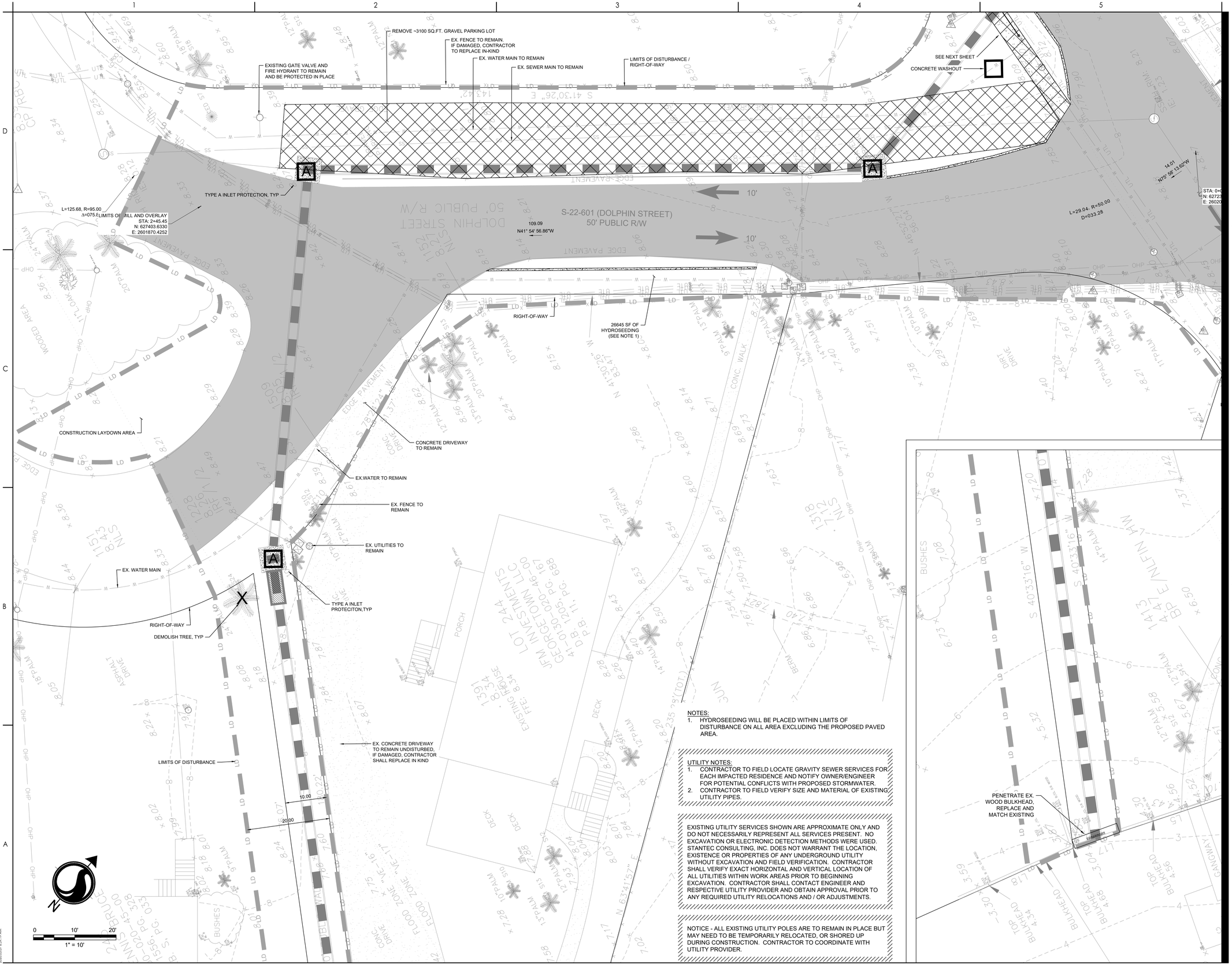
Project No.
178420916

Scale

Revision

Sheet
5 of 23

Drawing No.
C1-02



NOTES:
1. HYDROSEEDING WILL BE PLACED WITHIN LIMITS OF DISTURBANCE ON ALL AREA EXCLUDING THE PROPOSED PAVED AREA.

UTILITY NOTES:
1. CONTRACTOR TO FIELD LOCATE GRAVITY SEWER SERVICES FOR EACH IMPACTED RESIDENCE AND NOTIFY OWNER/ENGINEER FOR POTENTIAL CONFLICTS WITH PROPOSED STORMWATER.
2. CONTRACTOR TO FIELD VERIFY SIZE AND MATERIAL OF EXISTING UTILITY PIPES.

EXISTING UTILITY SERVICES SHOWN ARE APPROXIMATE ONLY AND DO NOT NECESSARILY REPRESENT ALL SERVICES PRESENT. NO EXCAVATION OR ELECTRONIC DETECTION METHODS WERE USED. STANTEC CONSULTING, INC. DOES NOT WARRANT THE LOCATION, EXISTENCE OR PROPERTIES OF ANY UNDERGROUND UTILITY WITHOUT EXCAVATION AND FIELD VERIFICATION. CONTRACTOR SHALL VERIFY EXACT HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITIES WITHIN WORK AREAS PRIOR TO BEGINNING EXCAVATION. CONTRACTOR SHALL CONTACT ENGINEER AND RESPECTIVE UTILITY PROVIDER AND OBTAIN APPROVAL PRIOR TO ANY REQUIRED UTILITY RELOCATIONS AND / OR ADJUSTMENTS.

NOTICE - ALL EXISTING UTILITY POLES ARE TO REMAIN IN PLACE BUT MAY NEED TO BE TEMPORARILY RELOCATED, OR SHORED UP DURING CONSTRUCTION. CONTRACTOR TO COORDINATE WITH UTILITY PROVIDER.

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Legend

PS	PERMANENT STABILIZATION (SEE LANDSCAPE PLANS)
TS	TEMPORARY SEEDING
M	MULCHING
DC	DUST CONTROL
LD	LIMITS OF DISTURBANCE
TREE PROTECTION	
SF	SILT FENCE
ST	SEDIMENT TUBE
X	TREE DEMOLITION
A	TYPE A INLET PROTECTION
	DRAINAGE FLOW ARROW

Revision

	By	Appd	YYYY.MM.DD
BID SET	AB	BK	2020.03.26
PER GEORGETOWN COUNTY COMMENTS	SGC	BK	2019.10.30
PER GEORGETOWN COUNTY COMMENTS	SGC	BK	2019.01.22

Issued

	By	Appd	YYYY.MM.DD
File Name: C2_ESC	SGC	BK	2018.12.11
	Dwn.	Dsgn.	Chkd. YYYY.MM.DD

Permit/Seal

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

FOR BIDDING ONLY

PROFESSIONAL ENGINEER — BRYAN D KIZER

Client/Project Logo

Client/Project
GEORGETOWN COUNTY

GARDEN CITY DRAINAGE IMPROVEMENTS SITE 5

MURRELLS INLET, SOUTH CAROLINA

Title
DEMOLITION AND EROSION CONTROL PLAN

Project No.
178420916

Scale

Revision

Sheet
6 of 23

Drawing No.
C2-00

SEE PREVIOUS SHEET

EX. SEWER MAIN TO REMAIN

EX.WATER MAIN TO REMAIN

EX. UTILITIES CROSSING TO REMAIN

DEMOLISH 80 LF OF 4.5' CONCRETE SIDEWALK

REMOVE AND REPLACE DRIVEWAY WITH CONCRETE FROM EOP TO R/W, TYP. (SEE ROAD PLAN)

LIMITS OF DISTURBANCE / RIGHT-OF-WAY

2 - EX. WATER SERVICES TO REMAIN

EX. UTILITIES TO REMAIN

DEMOLISH ~130 LF OF 4.5' CONCRETE SIDEWALK

EX. FENCE TO REMAIN IF DAMAGED, CONTRACTOR TO REPLACE IN-KIND

EX. WATER MAIN RELOCATE AS REQUIRED

26645 SF OF HYDROSEEDING (SEE C2-00 NOTE 1)

NOTE:
A POTENTIAL WATERLINE IS SHOWN BETWEEN POINTS Ⓐ (SHEET 1) & Ⓑ (SHEET 2). PROVIDED ASBUILTS ARE UNCLEAR AND NO FIELD MARKINGS PROVIDED AT THE TIME OF THIS SURVEY.

MATCH SHEET 1

MATCH SHEET 2

LOT 243
ZABETH GAY STACKHOUSE, et al
41-0130-020-47-00
D.B. 1729, PG. 85
P.B. S, PG. 067
P.B. 11, PG. 249

LOT 239
ATH & FATIMA ANSARI
-0130-020-05-00
D.B. 885, PG. 244
P.B. 278, PG. 414

LOT 240
BERRY ANNE WILLIS LIFE ESTATE
41-0130-020-04-00
D.B. 1713, PG. 263
P.B. R, PG. 051

LOT 241
MILES WARREN & ALISON MARY MENCER
41-0130-020-03-00
D.B. 2732, PG. 124
P.B. R, PG. 051

LOT 10
THOMAS DALE &

S-26-155 (S. WACCAMAW DRIVE)
50' PUBLIC R/W

SSMH RIM: 8.21
IE: 1.23

SSMH RIM: 7.18
SEALED - NO ACCESS

205
IRF 1/2" CM

CONC. DRIVE

DIRT DRIVE

EDGE PAVEMENT

UTILITY NOTES:
1. CONTRACTOR TO FIELD LOCATE GRAVITY SEWER SERVICES FOR EACH IMPACTED RESIDENCE AND NOTIFY OWNER/ENGINEER FOR POTENTIAL CONFLICTS WITH PROPOSED STORMWATER.
2. CONTRACTOR TO FIELD VERIFY SIZE AND MATERIAL OF EXISTING UTILITY PIPES.

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0 10' 20'
1" = 10'

ORIGINAL SHEET - ARCH D

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Legend

PS	PERMANENT STABILIZATION (SEE LANDSCAPE PLANS)
TS	TEMPORARY SEEDING
M	MULCHING
DC	DUST CONTROL
LD	LIMITS OF DISTURBANCE
TREE PROTECTION	TREE PROTECTION
SF	SILT FENCE
ST	SEDIMENT TUBE
X	TREE DEMOLITION
A	TYPE A INLET PROTECTION
	DRAINAGE FLOW ARROW

Revision	By	Appd	YYYY.MM.DD
BID SET	AB	BK	2020.03.26
PER GEORGETOWN COUNTY COMMENTS	SGC	BK	2019.10.30
PER GEORGETOWN COUNTY COMMENTS	SGC	BK	2019.01.22

Issued	By	Appd	YYYY.MM.DD
File Name: C2_ESC	SGC	SGC	BK	2018.12.11
	Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

Permit/Seal

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION STANTEC CONSULTING SERVICES, INC. No. C02316

PROFESSIONAL ENGINEER BRYAN D KLYZER No. 22306

FOR BIDDING ONLY

Client/Project Logo

Client/Project
GEORGETOWN COUNTY

GARDEN CITY DRAINAGE IMPROVEMENTS SITE 5

MURRELLS INLET, SOUTH CAROLINA

Title
DEMOLITION AND EROSION CONTROL PLAN

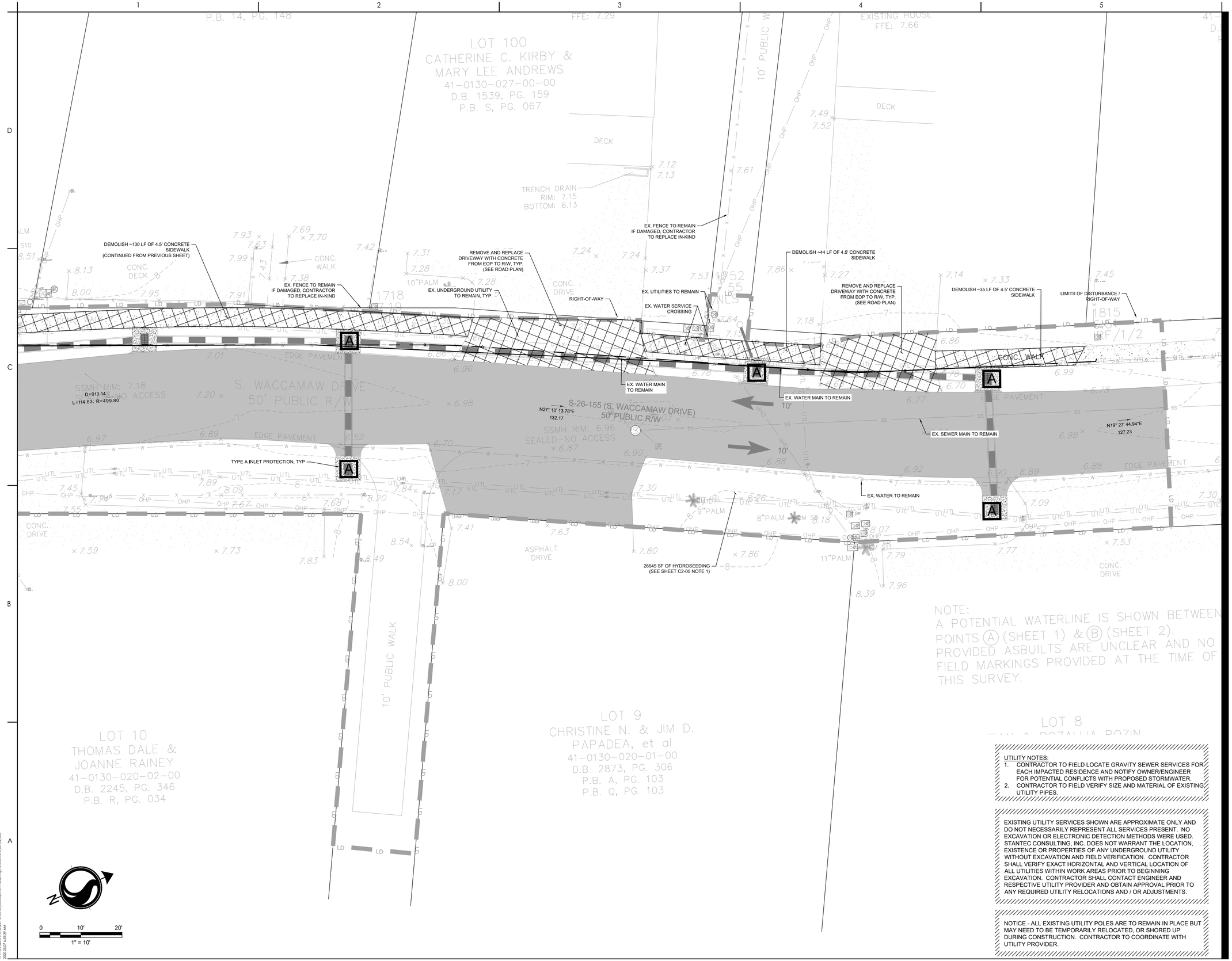
Project No. 178420916

Scale

Revision

Sheet 7 of 23

Drawing No. C2-01



UTILITY NOTES:
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Legend

- PS — PERMANENT STABILIZATION (SEE LANDSCAPE PLANS)
- TS — TEMPORARY SEEDING
- M — MULCHING
- DC — DUST CONTROL
- LD — LIMITS OF DISTURBANCE
- TREE PROTECTION
- SF — SILT FENCE
- ST — SEDIMENT TUBE
- X — TREE DEMOLITION
- A — TYPE A INLET PROTECTION
- DRAINAGE FLOW ARROW

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File Name: C2_ESC	SGC	SGC	BK	2018.12.11
	Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

Permit/Seal

SOUTH CAROLINA — STANTEC CONSULTING SERVICES, INC. — No. COA318 — CERTIFICATE OF AUTHORIZATION

FOR BIDDING ONLY

PROFESSIONAL ENGINEER — BRYAN D KITZER

Client/Project Logo

Client/Project
GEORGETOWN COUNTY

GARDEN CITY DRAINAGE IMPROVEMENTS
SITE 5

MURRELLS INLET, SOUTH CAROLINA

Title
DEMOLITION AND EROSION CONTROL PLAN

Project No.
178420916

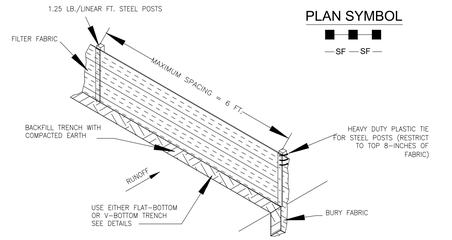
Scale

Revision

Sheet
8 of 23

Drawing No.
C2-02

SILT FENCE INSTALLATION



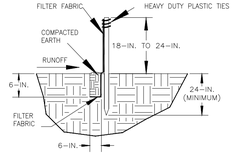
PLAN SYMBOL

—SF — SF —

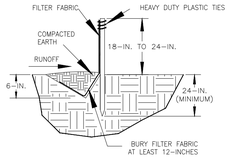
SILT FENCE - GENERAL NOTES

1. Do not place silt fence across channels or in other areas subject to concentrated flows. Silt fence should not be used as a velocity control BMP. Concentrated flows are any flows greater than 0.5 cfs.
2. Maximum sheet or overland flow path length to the silt fence shall be 100-feet.
3. Maximum slope steepness (normal [perpendicular] to the fence line) shall be 2:1.
4. Silt fence joints, when necessary, shall be completed by one of the following options:
   - Wrap each fabric together at a support post with both ends fastened to the post, with a 1-foot minimum overlap;
   - Overlap silt fence by installing 3-feet passed the support post to which the new silt fence roll is attached. Attach old roll to new roll with heavy-duty plastic ties; or,
   - Overlap entire width of each silt fence roll from one support post to the next support post.
5. Attach filter fabric to the steel posts using heavy-duty plastic ties that are evenly spaced within the top 8-inches of the fabric.
6. Install the silt fence perpendicular to the direction of the stormwater flow and place the silt fence the proper distance from the toe of steep slopes to provide sediment storage and access for maintenance and cleanout.
7. Install Silt Fence Checks (Tie-Backs) every 50-100 feet, dependent on slope, along silt fence that is installed with slope and where concentrated flows are expected or are documented along the proposed/installed silt fence.

FLAT-BOTTOM TRENCH DETAIL



V-SHAPED TRENCH DETAIL



South Carolina Department of Health and Environmental Control

SILT FENCE

STANDARD DRAWING NO. SC-03 Page 1 of 2

NOT TO SCALE — DATE FEBRUARY 2014

SILT FENCE - POST REQUIREMENTS

1. Silt Fence posts must be 48-inch long steel posts that meet, at a minimum, the following physical characteristics.
   - Composed of a high strength steel with a minimum yield strength of 50,000 psi.
   - Include a standard "T" section with a nominal face width of 1.38-inches and a nominal "T" length of 1.48-inches.
   - Weigh 1.25 pounds per foot (± 8%)
2. Posts shall be equipped with projections to aid in fastening of filter fabric.
3. Steel posts may need to have a metal soil stabilization plate welded near the bottom when installed along steep slopes or installed in loose soils. The plate should have a minimum cross section of 17-square inches and be composed of 15 gauge steel, at a minimum. The metal soil stabilization plate should be completely buried.
4. Install posts to a minimum of 24-inches. A minimum height of 1- to 2- inches above the fabric shall be maintained, and a maximum height of 3 feet shall be maintained above the ground.
5. Post spacing shall be at a maximum of 6-feet on center.

SILT FENCE - FABRIC REQUIREMENTS

1. Silt fence must be composed of woven geotextile filter fabric that consists of the following requirements:
   - Composed of fibers consisting of long chain synthetic polymers of at least 85% by weight of polyolefins, polyesters, or polyamides that are formed into a network such that the filaments or yarns retain dimensional stability relative to each other;
   - Free of any treatment or coating which might adversely alter its physical properties after installation;
   - Free of any defects or flaws that significantly affect its physical and/or filtering properties; and,
   - Have a minimum width of 36-inches.
2. Use only fabric appearing on SC DOT's Qualified Products Listing (QPL), Approval Sheet #34, meeting the requirements of the most current edition of the SC DOT Standard Specifications for Highway Construction.
3. 12-inches of the fabric should be placed within excavated trench and toed in when the trench is backfilled.
4. Filter Fabric shall be purchased in continuous rolls and cut to the length of the barrier to avoid joints.
5. Filter Fabric shall be installed at a minimum of 24-inches above the ground.

SILT FENCE - INSPECTION & MAINTENANCE

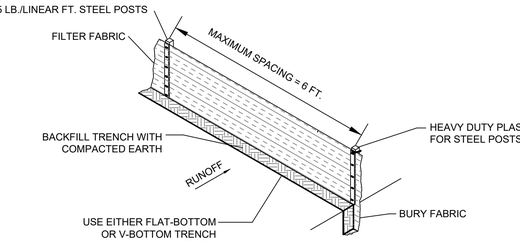
1. The key to functional silt fence is weekly inspections, routine maintenance, and regular sediment removal.
2. Regular inspections of silt fence shall be conducted once every calendar week and, as recommended, within 24-hours after each rainfall even that produces 1/2-inch or more of precipitation.
3. Attention to sediment accumulations along the silt fence is extremely important. Accumulated sediment should be continually monitored and removed when necessary.
4. Remove accumulated sediment when it reaches 1/3 the height of the silt fence.
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. Check for areas where stormwater runoff has eroded a channel beneath the silt fence, or where the fence has sagged or collapsed due to runoff overtopping the silt fence. Install checks/tie-backs and/or reinstall silt fence, as necessary.
7. Check for tears within the silt fence, areas where silt fence has begun to decompose, and for any other circumstance that may render the silt fence ineffective. Removed damaged silt fence and reinstall new silt fence immediately.
8. Silt fence should be removed within 30 days after final stabilization is achieved and once it is removed, the resulting disturbed area shall be permanently stabilized.

South Carolina Department of Health and Environmental Control

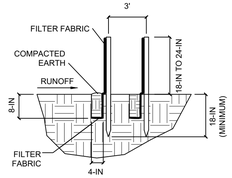
SILT FENCE

STANDARD DRAWING NO. SC-03 PAGE 2 of 2

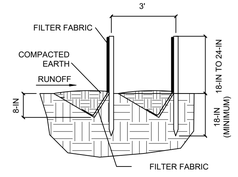
GENERAL NOTES — DATE FEBRUARY 2014



SILT FENCE INSTALLATION (SINGLE ROW)



FLAT-BOTTOM TRENCH DETAIL (DOUBLE ROW)

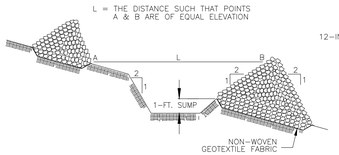


V-SHAPED TRENCH DETAIL (DOUBLE ROW)

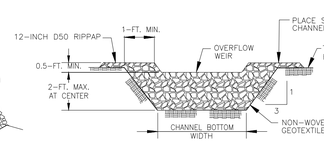
DOUBLE ROW SILT FENCE

N.T.S.

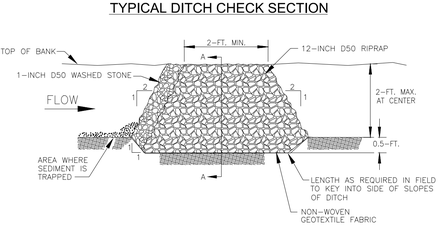
SPACING BETWEEN DITCH CHECK



CROSS SECTION A-A THRU STONE DITCH CHECK



TYPICAL DITCH CHECK SECTION



PLAN SYMBOL

OR

South Carolina Department of Health and Environmental Control

ROCK DITCH CHECK

STANDARD DRAWING NO. SC-04 PAGE 1 of 2

NOT TO SCALE — DATE FEBRUARY 2014

ROCK DITCH CHECK - GENERAL NOTES

1. Rock Ditch Checks should not be placed in Waters of the State or USGS blue-line streams (unless approved by Federal Authorities).
2. Rock Ditch Checks should be installed in steeply sloped channels where adequate vegetation cannot be established. This BMP measure should only be used in small open channels.
3. A non-woven geotextile fabric shall be installed over the soil surface where the rock ditch check is to be placed.
4. The body of the rock ditch check shall be composed of 12-inch D50 Riprap. The upstream face may be composed of 1-inch D50 washed stone.
5. Rock Ditch Checks should not exceed a height of 2-feet at the centerline of the channel.
6. Rock Ditch Checks should have a minimum top flow length of 2-feet.
7. Riprap should be placed over channel banks to prevent water from cutting around the ditch check.
8. The riprap should be placed by hand or mechanical placement (no dumping of rock to form dam) to achieve complete coverage of the channel. Doing so will also ensure that the center of the check is lower than the edges.
9. The maximum spacing between the dams should be such that the toe of the upstream check is at the same elevation as the top of the downstream check.

ROCK DITCH CHECK - INSPECTION & MAINTENANCE

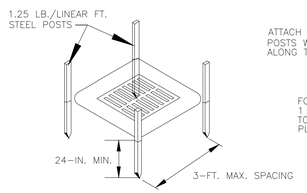
1. The key to functional rock ditch check is weekly inspections, routine maintenance, and regular sediment removal.
2. Regular inspections of rock ditch checks shall be conducted once every calendar week and, as recommended, within 24-hours after each rainfall even that produces 1/2-inch or more of precipitation.
3. Attention to sediment accumulations in front of the rock ditch check is extremely important. Accumulated sediment should be continually monitored and removed when necessary.
4. Remove accumulated sediment when it reaches 1/3 the height of the rock ditch check.
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. Inspect Rock Ditch Checks' edges for erosion and evidence of runoff bypassing the installed check. If evident repair promptly as necessary to prevent erosion and bypassing.
7. In the case of grass-lined ditches, channels, and swales, rock ditch checks should be removed when the grass has matured sufficiently to protect the ditch or swale unless the slope of the swale is greater than 4%.
8. After construction is completed and final stabilization is reached, the entirety of the rock ditch check should be removed if vegetation will be used for permanent erosion control measures. The area beneath the removed rock ditch check must be addressed with permanent stabilization measures.

South Carolina Department of Health and Environmental Control

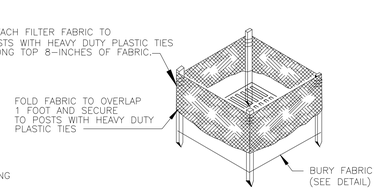
ROCK DITCH CHECK

STANDARD DRAWING NO. SC-04 PAGE 2 of 2

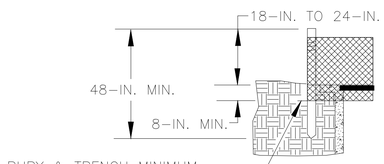
GENERAL NOTES — DATE FEBRUARY 2014



POST INSTALLATION DETAIL



FILTER FABRIC INSTALLATION DETAIL



FILTER FABRIC BURIAL DETAIL

PLAN SYMBOL

A

South Carolina Department of Health and Environmental Control

Type A

FILTER FABIC INLET PROTECTION

STANDARD DRAWING NO. SC-07 PAGE 1 of 2

NOT TO SCALE — DATE FEBRUARY 2014

TYPE A - FILTER FABRIC REQUIREMENTS

1. Silt fence must be composed of woven geotextile filter fabric that consists of the following requirements:
   - Composed of fibers consisting of long chain synthetic polymers of at least 85% by weight of polyolefins, polyesters, or polyamides that are formed into a network such that the filaments or yarns retain dimensional stability relative to each other;
   - Free of any treatment or coating which might adversely alter its physical properties after installation;
   - Free of any defects or flaws that significantly affect its physical and/or filtering properties; and,
   - Have a minimum width of 36-inches.
2. Use only fabric appearing on SC DOT's Qualified Products Listing (QPL), Approval Sheet #34, meeting the requirements of the most current edition of the SC DOT Standard Specifications for Highway Construction.
3. 12-inches of the fabric should be placed within excavated trench and toed in when the trench is backfilled.
4. Filter Fabric shall be purchased in continuous rolls and cut to the length of the barrier to avoid joints.
5. Filter Fabric shall be installed at a minimum of 24-inches above the ground.

TYPE A - POST REQUIREMENTS

1. Silt Fence posts must be 48-inch long steel posts that meet, at a minimum, the following physical characteristics.
   - Composed of a high strength steel with a minimum yield strength of 50,000 psi.
   - Include a standard "T" section with a nominal face width of 1.38-inches and a nominal "T" length of 1.48-inches.
   - Weigh 1.25 pounds per foot (± 8%)
2. Posts shall be equipped with projections to aid in fastening of filter fabric.
3. Install posts to a minimum of 24-inches. A minimum height of 1- to 2- inches above the fabric shall be maintained, and a maximum height of 3 feet shall be maintained above the ground.
4. Post spacing shall be at a maximum of 3-feet on center.

TYPE A - INSPECTION & MAINTENANCE

1. The key to functional inlet protection is weekly inspections, routine maintenance, and regular sediment removal.
2. Regular inspections of inlet protection shall be conducted once every calendar week and, as recommended, within 24-hours after each rainfall even that produces 1/2-inch or more of precipitation.
3. Attention to sediment accumulations along the filter fabric is extremely important. Accumulated sediment should be continually monitored and removed when necessary.
4. Remove accumulated sediment when it reaches 1/3 the height of the filter fabric. When a sump is installed in front of the fabric, sediment should be removed when it fills approximately 1/3 the depth of the sump.
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. Check for areas where stormwater runoff has eroded a channel beneath the filter fabric, or where the fabric has sagged or collapsed due to runoff overtopping the inlet protection.
7. Check for tears within the filter fabric, areas where fabric has begun to decompose, and for any other circumstance that may render the inlet protection ineffective. Removed damaged fabric and reinstall new filter fabric immediately.
8. Inlet protection structures should be removed after all 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 A

FILTER FABIC INLET PROTECTION

STANDARD DRAWING NO. SC-07 PAGE 2 of 2

GENERAL NOTES — DATE FEBRUARY 2014

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Legend

Revision	By	Appd	YYYY.MM.DD
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Permit/Seal

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

FOR BIDDING ONLY

LICENSED PROFESSIONAL ENGINEER — BRIAN D. KLYZER — No. 23300

Client/Project Logo

Client/Project
GEORGETOWN COUNTY

GARDEN CITY DRAINAGE IMPROVEMENTS
SITE 5

MURRELLS INLET, SOUTH CAROLINA

Title
EROSION CONTROL DETAILS

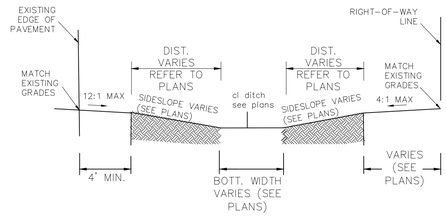
Project No. 178420916

Scale

Revision

Sheet 9 of 23

Drawing No. C2-03



GRASSED TRAPEZOIDAL DITCH DETAIL

N.T.S.

SEQUENCE OF CONSTRUCTION:

1. RECEIVE NPDES COVERAGE FROM SCDHEC.
2. NOTIFY SCDOT, PRE-CONSTRUCTION MEETING.
3. NOTIFY DHEC EQC REGIONAL OFFICE 48 HOURS PRIOR TO BEGINNING LAND-DISTURBING ACTIVITIES.
4. INSTALLATION OF TREE PROTECTION, PERIMETER SILT FENCE, AND EROSION CONTROL MEASURES.
5. POTHOLE UTILITY LOCATIONS AS SHOWN ON THE PLANS, LOCATE SEWER SERVICES FOR EACH RESIDENCE, AND NOTIFY OWNER/ENGINEER OF CONFLICTS.
6. INSTALLATION OF COFFERDAMS (AS REQUIRED)
7. INSTALLATION OF NEW STORMWATER PIPES AND STRUCTURES.
8. CONSTRUCT DIVERSION SWALES AS NECESSARY TO CONVEY THE STORM WATER BEFORE THE PROPOSED STORM DRAINAGE SYSTEM IS FULLY FUNCTIONAL, INSTALLING SEDIMENT TUBES IF NECESSARY.
9. INSTALL PERIMETER SILT FENCE WHERE SEDIMENT IS OBSERVED TO BE LEAVING CONSTRUCTION AREAS. MAINTAIN PERIMETER SILT FENCE, DIVERSIONS, AND SEDIMENT TUBES.
10. PERMANENT/FINAL STABILIZATION OF DITCHES/SWALES WITH SEEDING AND/OR SOD.
11. REPLACE DAMAGED OR DEMOLISHED HARDSCAPE AND LANDSCAPE IN-KIND AS REQUIRED.
12. MAINTENANCE OF SEDIMENT AND EROSION CONTROL MEASURES MUST CONTINUE UNTIL THE SITE IS PERMANENTLY STABILIZED AND THE CONTROLS ARE REMOVED.
13. CONTACT GEORGETOWN COUNTY FOR FINAL INSPECTION AND CLOSE-OUT OF PROJECT. AS-BUILT, VIDEO AND CLOSE-OUT APPLICATION TO BE SUBMITTED FOR REVIEW AND APPROVAL AS REQUIRED BY GEORGETOWN COUNTY.
14. REMOVAL OF TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES AFTER ENTIRE WORK AREA IS FINALLY STABILIZED (THE DEPARTMENT RECOMMENDS THAT THE PROJECT OWNER/OPERATOR HAVE THE SWPPP PREPARER OR REGISTRATION EQUIVALENT APPROVE THE REMOVAL OF TEMPORARY STRUCTURES).
15. SUBMIT TO DHEC FOR N.O.T. WITHIN 30 DAYS OF FINAL STABILIZATION.

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

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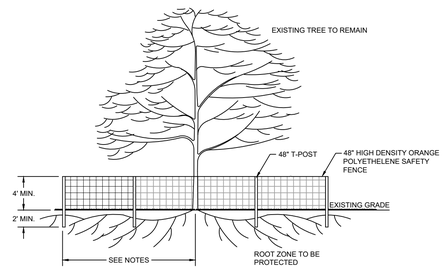

NOTES:

1. ALL TREE PROTECTION BARRICADES MUST HAVE TWO HORIZONTAL CROSS RAILS.

2. BARRICADES SHALL BE ERECTED AT A MINIMUM DISTANCE FROM THE BASE OF PROTECTED TREES AND GRAND TREES ACCORDING TO THE FOLLOWING STANDARDS.

A. FOR GRAND TREES THE BARRICADE SHALL BE PLACED AT THE DRIPLINE OF THE TREE.

B. FOR PROTECTED TREES TEN INCHES (10") OR LESS D.B.H. (DIAMETER BREAST HEIGHT). PROTECTIVE BARRICADES SHALL BE PLACED A MINIMUM DISTANCE OF TEN FEET (10') FROM THE BASE OF EACH PROTECTED TREE, OR TO THE EDGE OF THE DRIP LINE, WHICHEVER IS GREATER

C. FOR PROTECTED TREES GREATER THAN TEN INCHES (10") D.B.H., PROTECTIVE BARRICADES SHALL PROVIDE A DIAMETER OF PROTECTION AROUND THE TREE EQUAL TO THE DIAMETER BREAST HEIGHT OF THE TREE (i.e., A 24" DIAMETER TREE WOULD REQUIRE A 24 FOOT DIAMETER PROTECTIVE BARRICADE), OR TO THE EDGE OF THE DRIP LINE, WHICHEVER IS GREATER.

D. CONTRACTOR TO INSTALL SILT FENCING ON THE SIDE OF THE TREE ADJACENT TO THE ROADWAY.

3. ALL GRADING AROUND PROTECTED TREES IS TO BE DONE BY HAND. CONTRACTOR SHALL NOT OPERATE HEAVY EQUIPMENT WITHIN THE TREE PROTECTION BARRIERS.

4. CONTRACTOR SHALL NOTIFY CITY OF NORTH CHARLESTON UPON INSTALLATION OF TREE PROTECTION FOR INSPECTION AND APPROVAL PRIOR TO LAND DISTURBANCE.

TREE PROTECTION DETAIL

N.T.S.

Stantec
4969 Centre Pointe Drive, Suite 200
North Charleston, SC, 29418
Tel: 843.740.7700
www.stantec.com

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Legend

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	Dwn.	Dsgn.	Chkd. YYYY.MM.DD

Permit/Seal

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

FOR BIDDING ONLY

SOUTH CAROLINA PROFESSIONAL ENGINEER BRYAN D. KIZER 29306

Client/Project Logo

Client/Project
GEORGETOWN COUNTY

GARDEN CITY DRAINAGE IMPROVEMENTS SITE 5

MURRELLS INLET, SOUTH CAROLINA

Title
EROSION CONTROL DETAILS

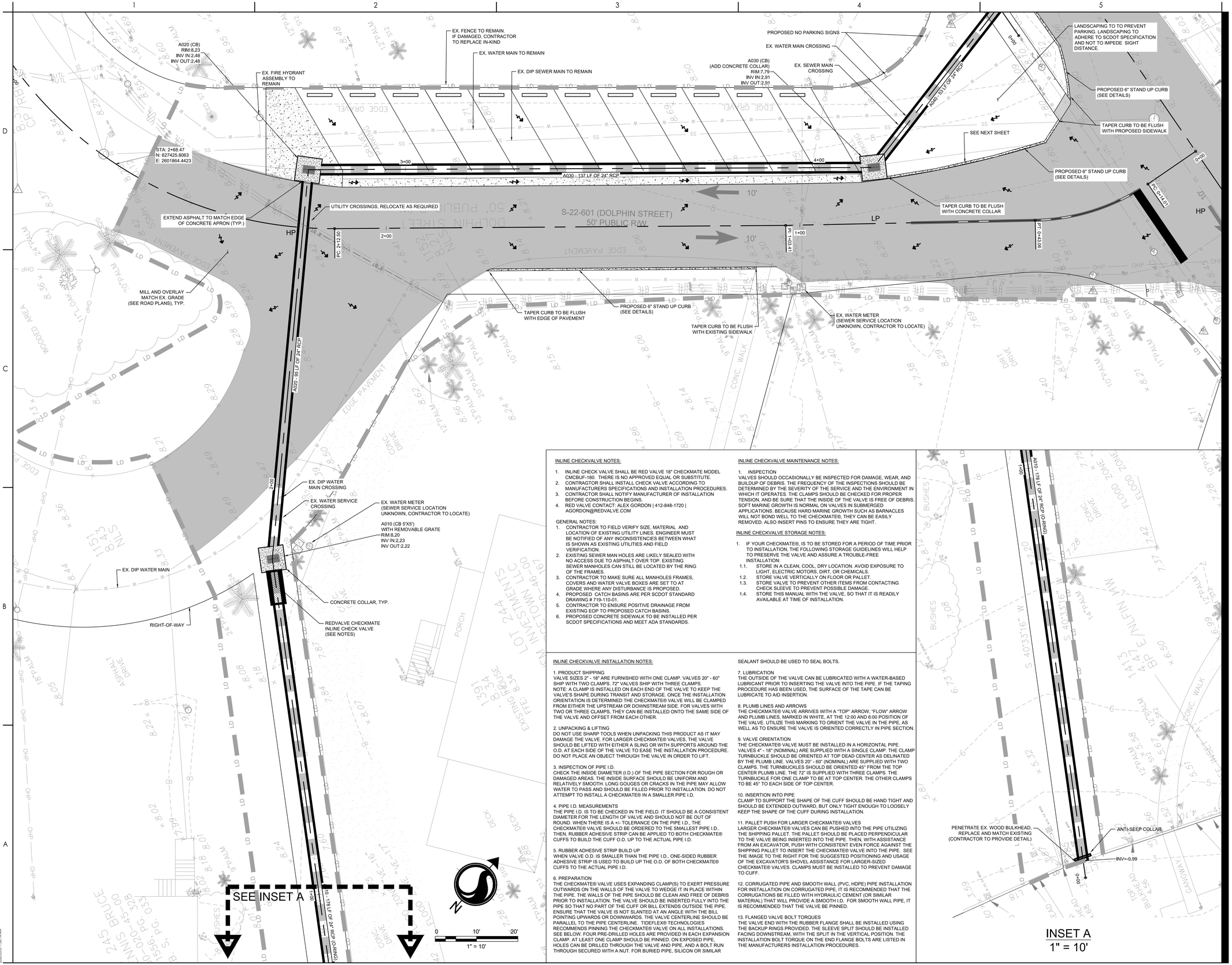
Project No. 178420916

Scale

Revision

Sheet 10 of 23

Drawing No. C2-04



INLINE CHECKVALVE NOTES:

1. INLINE CHECK VALVE SHALL BE RED VALVE 18" CHECKMATE MODEL CMCBUF-180. THERE IS NO APPROVED EQUAL OR SUBSTITUTE.
2. CONTRAGTOR SHALL INSTALL CHECK VALVE ACCORDING TO MANUFACTURERS SPECIFICATIONS AND INSTALLATION PROCEDURES.
3. CONTRACTOR SHALL NOTIFY MANUFACTURER OF INSTALLATION BEFORE CONSTRUCTION BEGINS.
4. RED VALVE CONTACT: ALEX GORDON | 412-848-1720 | AGORDON@REDVALVE.COM

GENERAL NOTES:

1. CONTRACTOR TO FIELD VERIFY SIZE, MATERIAL AND LOCATION OF EXISTING UTILITY LINES. ENGINEER MUST BE NOTIFIED OF ANY INCONSISTENCIES BETWEEN WHAT IS SHOWN AS EXISTING UTILITIES AND FIELD VERIFICATION.
2. EXISTING SEWER MAN HOLES ARE LIKELY SEALED WITH NO ACCESS DUE TO ASPHALT OVER TOP. EXISTING SEWER MANHOLES CAN STILL BE LOCATED BY THE RING OF THE FRAMES.
3. CONTRACTOR TO MAKE SURE ALL MANHOLES FRAMES, COVERS AND WATER VALVE BOXES ARE SET TO AT GRADE WHERE ANY DISTURBANCE IS PROPOSED.
4. PROPOSED CATCH BASINS ARE PER SCDOT STANDARD DRAWING # 719-110-01.
5. CONTRACTOR TO ENSURE POSITIVE DRAINAGE FROM EXISTING EOP TO PROPOSED CATCH BASINS.
6. PROPOSED CONCRETE SIDEWALK TO BE INSTALLED PER SCDOT SPECIFICATIONS AND MEET ADA STANDARDS.

INLINE CHECKVALVE MAINTENANCE NOTES:

1. INSPECTION
VALVES SHOULD OCCASIONALLY BE INSPECTED FOR DAMAGE, WEAR, AND BUILDUP OF DEBRIS. THE FREQUENCY OF THE INSPECTIONS SHOULD BE DETERMINED BY THE SEVERITY OF THE SERVICE AND THE ENVIRONMENT IN WHICH IT OPERATES. THE CLAMPS SHOULD BE CHECKED FOR PROPER TENSION, AND BE SURE THAT THE INSIDE OF THE VALVE IS FREE OF DEBRIS. SOFT MARINE GROWTH IS NORMAL ON VALVES IN SUBMERGED APPLICATIONS. BECAUSE HARD MARINE GROWTH SUCH AS BARNACLES WILL NOT BOND WELL TO THE CHECKMATE®, THEY CAN BE EASILY REMOVED. ALSO INSERT PINS TO ENSURE THEY ARE TIGHT.

INLINE CHECKVALVE STORAGE NOTES:

1. IF YOUR CHECKMATE®, IS TO BE STORED FOR A PERIOD OF TIME PRIOR TO INSTALLATION, THE FOLLOWING STORAGE GUIDELINES WILL HELP TO PRESERVE THE VALVE AND ASSURE A TROUBLE-FREE INSTALLATION:
   1.1. STORE IN A CLEAN, COOL, DRY LOCATION. AVOID EXPOSURE TO LIGHT, ELECTRIC MOTORS, DIRT, OR CHEMICALS.
   1.2. STORE VALVE VERTICALLY ON FLOOR OR PALLET.
   1.3. STORE VALVE TO PREVENT OTHER ITEMS FROM CONTACTING CHECK SLEEVE TO PREVENT POSSIBLE DAMAGE.
   1.4. STORE THIS MANUAL WITH THE VALVE, SO THAT IT IS READILY AVAILABLE AT TIME OF INSTALLATION.

INLINE CHECKVALVE INSTALLATION NOTES:

1. PRODUCT SHIPPING
VALVE SIZES 2" - 18" ARE FURNISHED WITH ONE CLAMP. VALVES 20" - 60" SHIP WITH TWO CLAMPS. 72" VALVES SHIP WITH THREE CLAMPS.
NOTE: A CLAMP IS INSTALLED ON EACH END OF THE VALVE TO KEEP THE VALVE'S SHAPE DURING TRANSIT AND STORAGE. ONCE THE INSTALLATION ORIENTATION IS DETERMINED THE CHECKMATE® VALVE WILL BE CLAMPED FROM EITHER THE UPSTREAM OR DOWNSTREAM SIDE. FOR VALVES WITH TWO OR THREE CLAMPS, THEY CAN BE INSTALLED ONTO THE SAME SIDE OF THE VALVE AND OFFSET FROM EACH OTHER.

2. UNPACKING & LIFTING
DO NOT USE SHARP TOOLS WHEN UNPACKING THIS PRODUCT AS IT MAY DAMAGE THE VALVE. FOR LARGER CHECKMATE® VALVES, THE VALVE SHOULD BE LIFTED WITH EITHER A SLING OR WITH SUPPORTS AROUND THE O.D. AT EACH SIDE OF THE VALVE TO EASE THE INSTALLATION PROCEDURE. DO NOT PLACE AN OBJECT THROUGH THE VALVE IN ORDER TO LIFT.

3. INSPECTION OF PIPE I.D.
CHECK THE INSIDE DIAMETER (I.D.) OF THE PIPE SECTION FOR ROUGH OR DAMAGED AREAS. THE INSIDE SURFACE SHOULD BE UNIFORM AND RELATIVELY SMOOTH. LONG GOUGES OR CRACKS IN THE PIPE MAY ALLOW WATER TO PASS AND SHOULD BE FILLED PRIOR TO INSTALLATION. DO NOT ATTEMPT TO INSTALL A CHECKMATE® IN A SMALLER PIPE I.D.

4. PIPE I.D. MEASUREMENTS
THE PIPE I.D. IS TO BE CHECKED IN THE FIELD. IT SHOULD BE A CONSISTENT DIAMETER FOR THE LENGTH OF VALVE AND SHOULD NOT BE OUT OF ROUND. WHEN THERE IS A +/- TOLERANCE ON THE PIPE I.D., THE CHECKMATE® VALVE SHOULD BE ORDERED TO THE SMALLEST PIPE I.D.. THEN, RUBBER ADHESIVE STRIP CAN BE APPLIED TO BOTH CHECKMATE® CUFFS TO BUILD THE CUFF O.D. UP TO THE ACTUAL PIPE I.D.

5. RUBBER ADHESIVE STRIP BUILD UP
WHEN VALVE O.D. IS SMALLER THAN THE PIPE I.D., ONE-SIDED RUBBER ADHESIVE STRIP IS USED TO BUILD UP THE O.D. OF BOTH CHECKMATE® CUFFS TO THE ACTUAL PIPE I.D.

6. PREPARATION
THE CHECKMATE® VALVE USES EXPANDING CLAMP(S) TO EXERT PRESSURE OUTWARDS ON THE WALLS OF THE VALVE TO WEDGE IT IN PLACE WITHIN THE PIPE. THE WALLS OF THE PIPE SHOULD BE CLEAN AND FREE OF DEBRIS PRIOR TO INSTALLATION. THE VALVE SHOULD BE INSERTED FULLY INTO THE PIPE SO THAT NO PART OF THE CUFF OR BILL EXTENDS OUTSIDE THE PIPE. ENSURE THAT THE VALVE IS NOT SLANTED AT AN ANGLE WITH THE BILL POINTING UPWARDS OR DOWNWARDS. THE VALVE CENTERLINE SHOULD BE PARALLEL TO THE PIPE CENTERLINE. TIDEFLEX® TECHNOLOGIES RECOMMENDS PINNING THE CHECKMATE® VALVE ON ALL INSTALLATIONS. SEE BELOW. FOUR PRE-DRILLED HOLES ARE PROVIDED IN EACH EXPANSION CLAMP. AT LEAST ONE CLAMP SHOULD BE PINNED. ON EXPOSED PIPE, HOLES CAN BE DRILLED THROUGH THE VALVE AND PIPE, AND A BOLT RUN THROUGH SECURED WITH A NUT. FOR BURIED PIPE, SILICON OR SIMILAR SEALANT SHOULD BE USED TO SEAL BOLTS.

7. LUBRICATION
THE OUTSIDE OF THE VALVE CAN BE LUBRICATED WITH A WATER-BASED LUBRICANT PRIOR TO INSERTING THE VALVE INTO THE PIPE. IF THE TAPING PROCEDURE HAS BEEN USED, THE SURFACE OF THE TAPE CAN BE LUBRICATE TO AID INSERTION.

8. PLUMB LINES AND ARROWS
THE CHECKMATE® VALVE ARRIVES WITH A "TOP" ARROW, "FLOW" ARROW AND PLUMB LINES, MARKED IN WHITE, AT THE 12:00 AND 6:00 POSITION OF THE VALVE. UTILIZE THIS MARKING TO ORIENT THE VALVE IN THE PIPE, AS WELL AS TO ENSURE THE VALVE IS ORIENTED CORRECTLY IN PIPE SECTION.

9. VALVE ORIENTATION
THE CHECKMATE® VALVE MUST BE INSTALLED IN A HORIZONTAL PIPE. VALVES 4" - 18" (NOMINAL) ARE SUPPLIED WITH A SINGLE CLAMP. THE CLAMP TURNBUCKLE SHOULD BE ORIENTED AT TOP DEAD CENTER AS DELINATED BY THE PLUMB LINE. VALVES 20" - 60" (NOMINAL) ARE SUPPLIED WITH TWO CLAMPS. THE TURNBUCKLES SHOULD BE ORIENTED 45° FROM THE TOP CENTER PLUMB LINE. THE 72" IS SUPPLIED WITH THREE CLAMPS. THE TURNBUCKLE FOR ONE CLAMP TO BE AT TOP CENTER. THE OTHER CLAMPS TO BE 45° TO EACH SIDE OF TOP CENTER.

10. INSERTION INTO PIPE
CLAMP TO SUPPORT THE SHAPE OF THE CUFF SHOULD BE HAND TIGHT AND SHOULD BE EXTENDED OUTWARD, BUT ONLY TIGHT ENOUGH TO LOOSELY KEEP THE SHAPE OF THE CUFF DURING INSTALLATION.

11. PALLET PUSH FOR LARGER CHECKMATE® VALVES
LARGER CHECKMATE® VALVES CAN BE PUSHED INTO THE PIPE UTILIZING THE SHIPPING PALLET. THE PALLET SHOULD BE PLACED PERPENDICULAR TO THE VALVE BEING INSERTED INTO THE PIPE. THEN, WITH ASSISTANCE FROM AN EXCAVATOR, PUSH WITH CONSISTENT EVEN FORCE AGAINST THE SHIPPING PALLET TO INSERT THE CHECKMATE® VALVE INTO THE PIPE. SEE THE IMAGE TO THE RIGHT FOR THE SUGGESTED POSITIONING AND USAGE OF THE EXCAVATOR'S SHOVEL ASSISTANCE FOR LARGER-SIZED CHECKMATE® VALVES. CLAMPS MUST BE INSTALLED TO PREVENT DAMAGE TO CUFF.

12. CORRUGATED PIPE AND SMOOTH WALL (PVC, HDPE) PIPE INSTALLATION
FOR INSTALLATION ON CORRUGATED PIPE, IT IS RECOMMENDED THAT THE CORRUGATIONS BE FILLED WITH HYDRAULIC CEMENT (OR SIMILAR MATERIAL) THAT WILL PROVIDE A SMOOTH I.D. FOR SMOOTH WALL PIPE, IT IS RECOMMENDED THAT THE VALVE BE PINNED.

13. FLANGED VALVE BOLT TORQUES
THE VALVE END WITH THE RUBBER FLANGE SHALL BE INSTALLED USING THE BACKUP RINGS PROVIDED. THE SLEEVE SPLIT SHOULD BE INSTALLED FACING DOWNSTREAM, WITH THE SPLIT IN THE VERTICAL POSITION. THE INSTALLATION BOLT TORQUE ON THE END FLANGE BOLTS ARE LISTED IN THE MANUFACTURERS INSTALLATION PROCEDURES.

Legend

- LIMITS OF DISTURBANCE
- EXISTING CONTOURS
- PROPOSED CONTOUR
- SILT FENCE
- DRAINAGE FLOW ARROW
- SPOT ELEVATION
- CONCRETE COLLAR

FG - FINISHED GRADE ELEVATION
CB - CATCH BASIN (SCDOT STANDARD DETAIL 719-110-01)
JB - JUNCTION BOX (SCDOT STANDARD DETAIL 719-110-02)
EX - EXISTING GRADE
LP - LOW POINT
HP - HIGH POINT

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4969 Centre Pointe Drive, Suite 200
North Charleston, SC, 29418
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	Dwn.	Dsgn.	Chkd. YYYY.MM.DD

Permit/Seal

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

FOR BIDDING ONLY
REGISTERED PROFESSIONAL ENGINEER BRYAN D KIZER No. 22306

Client/Project Logo

Client/Project
GEORGETOWN COUNTY

GARDEN CITY DRAINAGE IMPROVEMENTS
SITE 5
MURRELLS INLET, SOUTH CAROLINA

Title
GRADING AND DRAINAGE PLAN

Project No. 178420916
Scale
Revision
Sheet 11 of 23
Drawing No. C3-00

DROP INLET NOTES:
1. CONTRACTOR TO ADD 12" CONCRETE APRON AROUND DROP INLET. TIE TO SIDEWALK AND EDGE OF PAVEMENT

GENERAL NOTES:
1. CONTRACTOR TO FIELD VERIFY SIZE, MATERIAL AND LOCATION OF EXISTING UTILITY LINES. ENGINEER MUST BE NOTIFIED OF ANY INCONSISTENCIES BETWEEN WHAT IS SHOWN AS EXISTING UTILITIES AND FIELD VERIFICATION.
2. EXISTING SEWER MAN HOLES ARE LIKELY SEALED WITH NO ACCESS DUE TO ASPHALT OVER TOP. EXISTING SEWER MANHOLES CAN STILL BE LOCATED BY THE RING OF THE FRAMES.
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6. PROPOSED CONCRETE SIDEWALK TO BE INSTALLED PER SCDOT SPECIFICATIONS AND MEET ADA STANDARDS.

EXTEND ASPHALT TO MATCH EDGE OF CONCRETE APRON (TYP.)
TAPER CURB TO BE FLUSH WITH CONCRETE COLLAR
LANDSCAPING TO TO PREVENT PARKING. LANDSCAPING TO ADHERE TO SCDOT SPECIFICATION AND NOT TO IMPEDE SIGHT DISTANCE.
PROPOSED 6" STAND UP CURB (SEE DETAILS)
PT: 0+43.06
TAPER CURB TO BE FLUSH WITH PROPOSED SIDEWALK
PROPOSED 6" STAND UP CURB (SEE DETAILS)
PC: 0+14.01
D=33.29
L=29.13, R=50.00
N15° 56' 13.90"E
14.01
LIMITS OF MILL AND OVERLAY
STA: 0+76.09
N: 627161.1368
E: 2602022.0342
STA: 0+00.00
N: 627232.2778
E: 2602039.8106
1+00
N14° 01' 46.38"E
138.72
50' PUBLIC R/W
10'
PI: 1+03.41
1+00
4+00
A030 (CB)
(ADD CONCRETE COLLAR)
RIM:7.79
INV IN:2.91
INV OUT:2.91
EX. SEWER MAIN CROSSING
EX. WATER MAIN CROSSING
PROPOSED NO PARKING SIGNS
EX. UTILITIES CROSSING
A000 - 35 LF OF 24" RCP
RIGHT-OF-WAY
BEGIN RELOCATION OF ~400 LF OF EX. WATER MAIN
EDGE OF PAVEMENT
A045 - 61 LF OF 18" RCP
0+00
5+00
2+00
EX. WATER MAIN CROSSING
TAPER CURB TO BE FLUSH WITH CONCRETE COLLAR
A040 (CB)
RIM:7.98
INV IN:3.02
INV OUT:3.02
ADJUST SEWER MANHOLE AS REQUIRED, TYP
A045 (CB)
RIM:7.56
INV IN:3.18
INV OUT:3.18
RELOCATE ~400 LF OF EX. WATER MAIN
REMOVE AND REPLACE DRIVEWAY WITH CONCRETE FROM EOP TO R/W
5' CONCRETE SIDEWALK, ENSURE ADA COMPLIANCE
2 - EX. WATER SERVICE CROSSINGS
EX. UTILITIES TO REMAIN
5' CONCRETE SIDEWALK
EX. FENCE TO REMAIN IF DAMAGED, CONTRACTOR TO REPLACE IN-KIND
1+00
6+00
3+00
D=013.14
L=114.63, R=499.80
N14° 01' 46.38"E
138.95
A050 (CB)
RIM:7.17
INV IN:3.38
INV OUT:3.38
MATCH SHEET 1
MATCH SHEET 2

NOTE:
A POTENTIAL WATERLINE IS SHOWN BETWEEN POINTS Ⓐ (SHEET 1) & Ⓑ (SHEET 2). PROVIDED ASBUILTS ARE UNCLEAR AND NO FIELD MARKINGS PROVIDED AT THE TIME OF THIS SURVEY.

LOT 243
ZABETH GAY STACKHOUSE, et al
41-0130-020-47-00
D.B. 1729, PG. 85
P.B. S, PG. 067
P.B. 11, PG. 249

LOT 239
ATH & FATIMA ANSARI
-0130-020-05-00
D.B. 885, PG. 244
P.B. 278, PG. 414

LOT 240
BERRY ANNE WILLIS LIFE ESTATE
41-0130-020-04-00
D.B. 1713, PG. 263
P.B. R, PG. 051

LOT 241
MILES WARREN & ALISON MARY MENCER
41-0130-020-03-00
D.B. 2732, PG. 124
P.B. R, PG. 051

LOT 10
THOMAS DALE & JOANNE RAINEY
41-0130-020-02-00
D.B. 2245, PG. 346
P.B. R, PG. 034

0 10' 20'
1" = 10'

v:\178420\active\178420916\civil_development\drawings\sheets\site_05\c3_916_grading
2020.03.07 7:50:24 AM

ORIGINAL SHEET - ARCH D

Stantec

Stantec
4969 Centre Pointe Drive, Suite 200
North Charleston, SC, 29418
Tel: 843.740.7700
www.stantec.com

Consultant

Legend
- LD — LIMITS OF DISTURBANCE
- 15 — EXISTING CONTOURS
- 29 — PROPOSED CONTOUR
- SF — SILT FENCE
- DRAINAGE FLOW ARROW
- 15.98 — SPOT ELEVATION
- CONCRETE COLLAR

FG - FINISHED GRADE ELEVATION
CB - CATCH BASIN (SCDOT STANDARD DETAIL 719-110-01)
JB - JUNCTION BOX (SCDOT STANDARD DETAIL 719-110-02)
EX - EXISTING GRADE
LP - LOW POINT
HP - HIGH POINT

Revision	By	Appd	YYYY.MM.DD
BID SET	AB	BK	2020.03.26
PER GEORGETOWN COUNTY COMMENTS	SGC	BK	2019.10.30
PER GEORGETOWN COUNTY COMMENTS	SGC	BK	2019.01.22

Issued	By	Appd	YYYY.MM.DD
File Name: C3_916_GRADING	SGC	SGC	BK	2018.12.11
	Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

Permit/Seal
SOUTH CAROLINA — STANTEC CONSULTING SERVICES, INC. — No. C02316 — CERTIFICATE OF AUTHORIZATION
FOR BIDDING ONLY
PROFESSIONAL ENGINEER — BRYAN D. KITZER

Client/Project Logo

Client/Project
GEORGETOWN COUNTY

GARDEN CITY DRAINAGE IMPROVEMENTS SITE 5
MURRELLS INLET, SOUTH CAROLINA

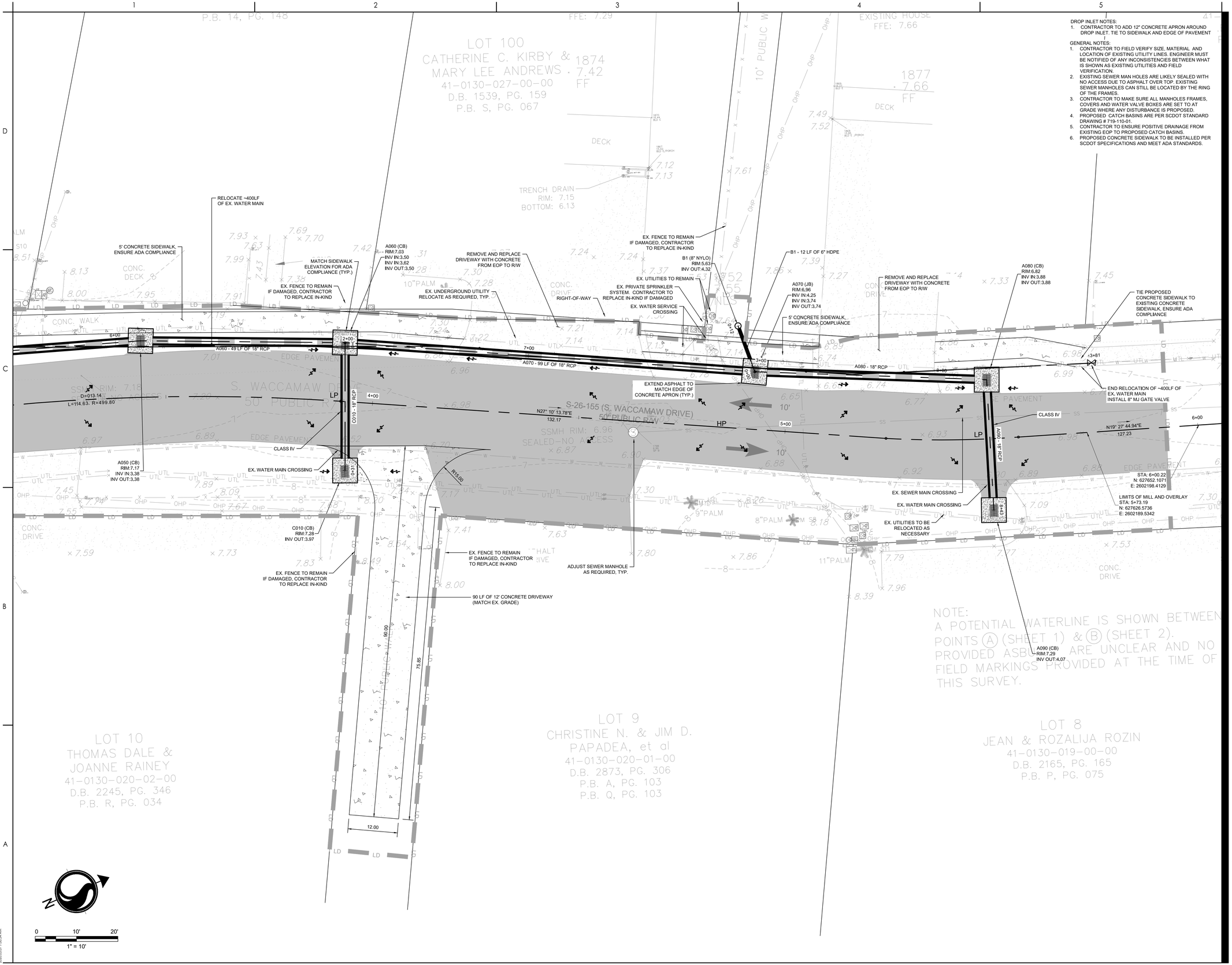
Title
GRADING AND DRAINAGE PLAN

Project No.
178420916

Scale

Revision
Sheet
12 of 23

Drawing No.
C3-01



DROP INLET NOTES:
1. CONTRACTOR TO ADD 12" CONCRETE APRON AROUND DROP INLET, TIE TO SIDEWALK AND EDGE OF PAVEMENT

GENERAL NOTES:
1. CONTRACTOR TO FIELD VERIFY SIZE, MATERIAL AND LOCATION OF EXISTING UTILITY LINES. ENGINEER MUST BE NOTIFIED OF ANY INCONSISTENCIES BETWEEN WHAT IS SHOWN AS EXISTING UTILITIES AND FIELD VERIFICATION.
2. EXISTING SEWER MAN HOLES ARE LIKELY SEALED WITH NO ACCESS DUE TO ASPHALT OVER TOP. EXISTING SEWER MANHOLES CAN STILL BE LOCATED BY THE RING OF THE FRAMES.
3. CONTRACTOR TO MAKE SURE ALL MANHOLES FRAMES, COVERS AND WATER VALVE BOXES ARE SET TO AT GRADE WHERE ANY DISTURBANCE IS PROPOSED.
4. PROPOSED CATCH BASINS ARE PER SCDOT STANDARD DRAWING # 719-110-01.
5. CONTRACTOR TO ENSURE POSITIVE DRAINAGE FROM EXISTING EOP TO PROPOSED CATCH BASINS.
6. PROPOSED CONCRETE SIDEWALK TO BE INSTALLED PER SCDOT SPECIFICATIONS AND MEET ADA STANDARDS.

Legend

- LIMITS OF DISTURBANCE
- EXISTING CONTOURS
- PROPOSED CONTOUR
- SILT FENCE
- DRAINAGE FLOW ARROW
- SPOT ELEVATION
- CONCRETE COLLAR

FG - FINISHED GRADE ELEVATION
CB - CATCH BASIN (SCDOT STANDARD DETAIL 719-110-01)
JB - JUNCTION BOX (SCDOT STANDARD DETAIL 719-110-02)
EX - EXISTING GRADE
LP - LOW POINT
HP - HIGH POINT

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4969 Centre Pointe Drive, Suite 200
North Charleston, SC, 29418
Tel: 843.740.7700
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Revision	By	Appd	YYYY.MM.DD
BID SET	AB	BK	2020.03.26
PER GEORGETOWN COUNTY COMMENTS	SGC	BK	2019.10.30
PER GEORGETOWN COUNTY COMMENTS	SGC	BK	2019.01.22
Issued	By	Appd	YYYY.MM.DD
File Name: C3_916_GRADING	SGC	SGC	BK	2018.12.11
	Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

Permit/Seal

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

FOR BIDDING ONLY

LICENSED PROFESSIONAL ENGINEER BRYAN D KIZER

Client/Project Logo

Client/Project
GEORGETOWN COUNTY

GARDEN CITY DRAINAGE IMPROVEMENTS
SITE 5

MURRELLS INLET, SOUTH CAROLINA

Title
GRADING AND DRAINAGE PLAN

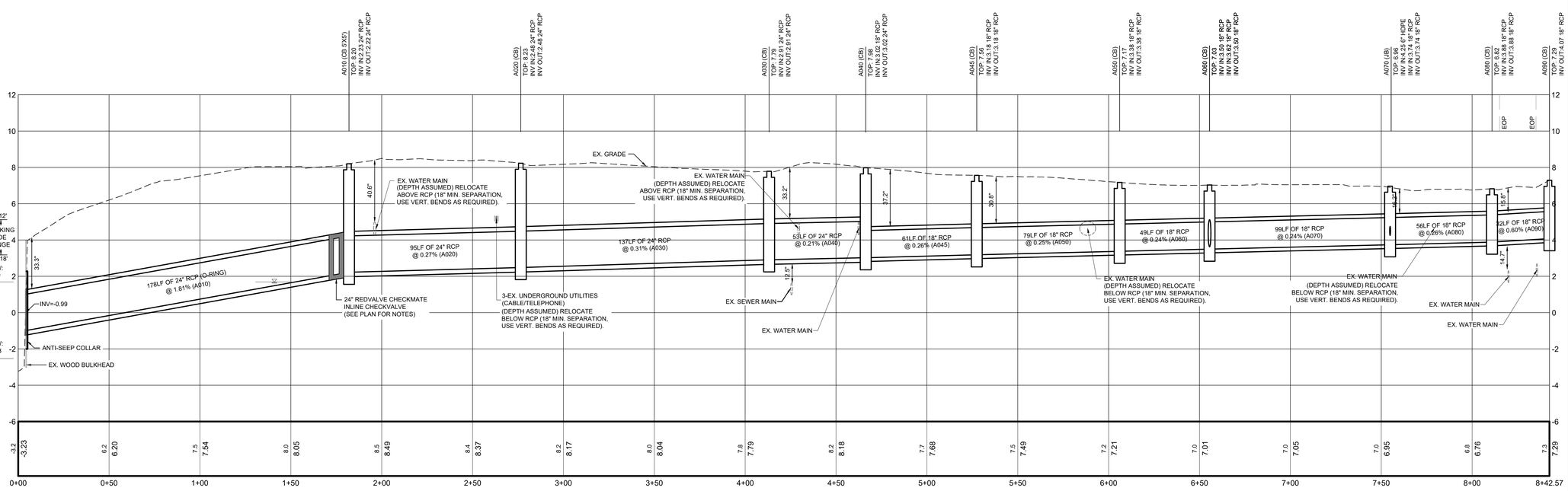
Project No.
178420916

Scale

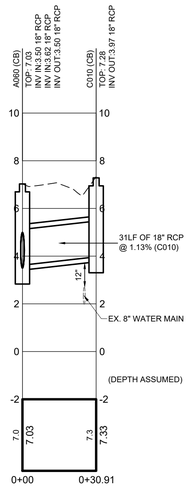
Revision

Sheet
13 of 23

Drawing No.
C3-02



STORM A PROFILE
SCALE: H: 1"=10'
V: 1"=1'



STORM C PROFILE
SCALE: H: 1"=10'
V: 1"=1'

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Legend

Revision	By	Appd	YYYY.MM.DD
BID SET	AB	BK	2020.03.26
PER GEORGETOWN COUNTY COMMENTS	SGC	BK	2019.10.30
PER GEORGETOWN COUNTY COMMENTS	SGC	BK	2019.01.22

Issued	By	Appd	YYYY.MM.DD
File Name: C3_916_GRADING	SGC Dwn.	SGC Dsgn.	BK Chkd. 2018.12.11

Permit/Seal

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

FOR BIDDING ONLY
LICENSED PROFESSIONAL ENGINEER SOUTH CAROLINA No. 25000 BRYAN D. KIZER

Client/Project Logo

Client/Project
GEORGETOWN COUNTY

GARDEN CITY DRAINAGE IMPROVEMENTS
SITE 5

MURRELLS INLET, SOUTH CAROLINA

Title
GRADING AND DRAINAGE PROFILE

Project No.
178420916

Scale

Revision

Sheet
14 of 23

Drawing No.
C3-03

ORIGINAL SHEET - ARCH D

REFERENCES
NATIONAL DOCUMENTS

SCDOT DOCUMENTS
SC-M-714
EDM 24
INSTRUCTIONAL BULLETIN 2010-1
QUALIFIED PRODUCT LISTS 14, 69
RELATED DRAWINGS & KEYWORDS
714-005-00
714-110-00
714-205-00

THIS DRAWING IS ONLY VALID FOR CONSTRUCTION WHEN SEALED AND SIGNED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF SOUTH CAROLINA. CHECK WWW.SCDOT.ORG FOR LATEST UPDATE.

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER NO. 21242 JAMES W. KENDALL, JR.

James W. Kendall Jr. SIGNATURE
10/22/2015 DATE

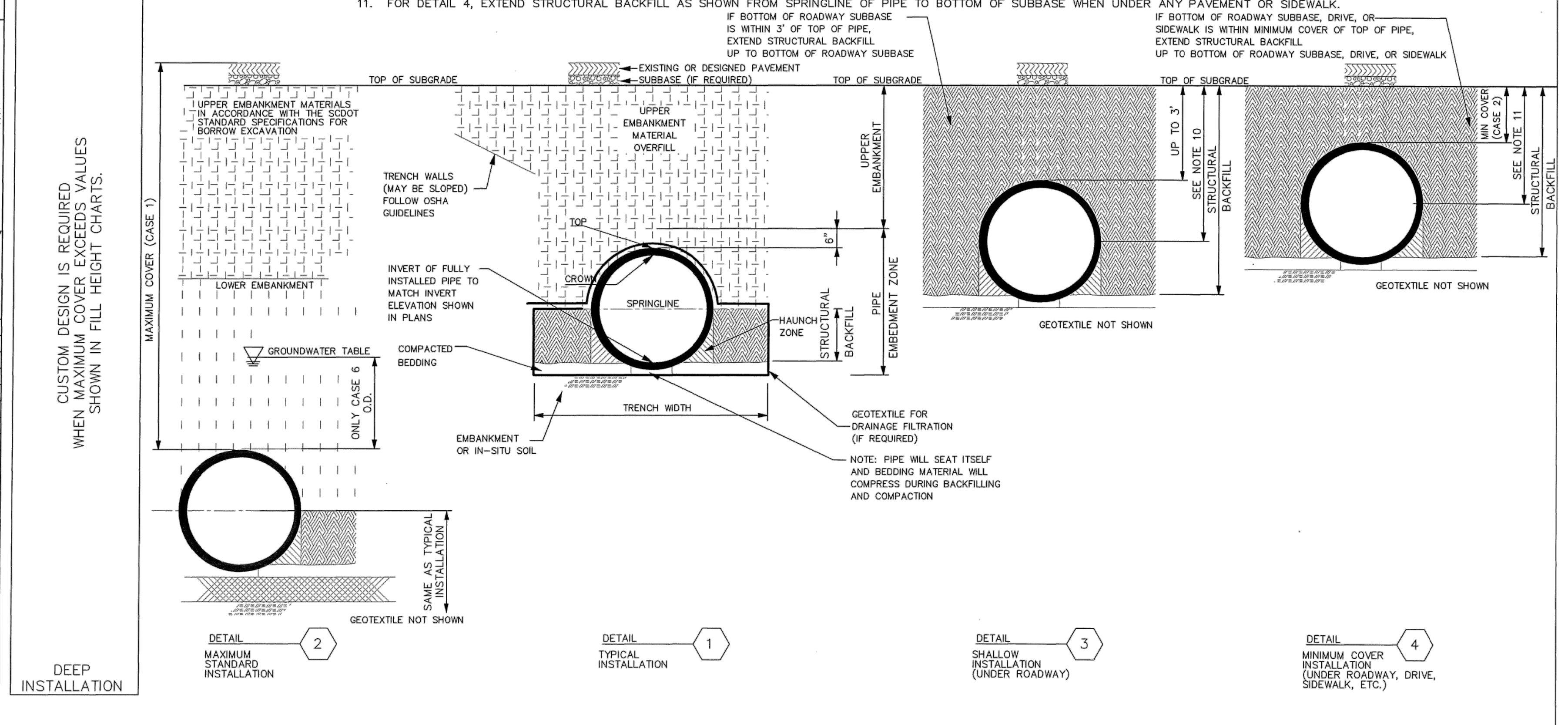
#	DATE	CHK	DESCRIPTION
6	---	---	---
5	---	---	---
4	---	---	---
3	---	---	---
2	1/2016	DSO	DET3,4 UNDER PVMT
1	7/2009	DSO	NOTE 2
0	3/2008	DSO	NEW STANDARD

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

STANDARD DRAWING
PIPE CULVERTS RIGID PIPE COMPLETED TRENCH (STANDARD FOUNDATION)
714-105-00
EFFECTIVE LETTING DATE JAN, 2016
THIS DRAWING IS NOT TO SCALE

NOTES:

1. USE MATERIALS AND METHODS OF CONSTRUCTION FOR PERMANENT PIPE IN CONFORMANCE WITH SCDOT SUPPLEMENTAL SPECIFICATION SC-M-714.
2. SEE SHEET 714-205-XX FOR RCP FILL HEIGHT TABLES.
3. WHEN CONNECTING DISSIMILAR PIPE, USE DRAINAGE STRUCTURE OR DESIGN INTERFACE. DO NOT MIX PIPE TYPE, CLASS, OR DETAILS WITHIN A SINGLE RUN OF PIPE BETWEEN DRAINAGE STRUCTURES. SEE QUALIFIED PRODUCT LIST 14 FOR PRECAST REINFORCED CONCRETE DRAINAGE STRUCTURES.
4. USE AT LEAST THE MINIMUM CLASS OR GAGE REQUIRED TO CARRY THE FILL HEIGHT AS SPECIFIED IN THE STANDARD DRAWING FILL HEIGHT TABLES. WHEN PIPE CLASS IS SPECIFIED IN THE PLANS, CONFIRM THAT THE SPECIFIED CLASS CAN CARRY THE INSTALLED MAXIMUM COVER BEFORE BACKFILLING THE PIPE. IF INSTALLED GRADES VARY FROM THOSE SHOWN IN THE PLANS, CONFIRM THAT PIPE CLASS IS SUFFICIENT TO CARRY THE INSTALLED FILL HEIGHTS. DO NOT REDUCE THE PIPE CLASS BELOW THE CLASS SHOWN IN THE PLANS UNLESS DIRECTED BY THE ENGINEER.
5. USE RIPRAP, BEVELED ENDS, REINFORCED CONCRETE SLAB, WINGWALLS, OR END TREATMENT AS DESCRIBED IN THE PLANS, SCDOT SUPPLEMENTAL SPECIFICATION SC-M-714, OR SCDOT STANDARD DRAWINGS.
6. PIPE EMBEDMENT ZONE BACKFILL MUST MEET OR EXCEED THE MINIMUM MATERIAL AND COMPACTION REQUIREMENTS OF THE ROADWAY EMBANKMENT FOR THE SPECIFIED BURIAL DEPTH WITHOUT DAMAGING THE PIPE.
7. FOR SHALLOW INSTALLATIONS (PAVEMENT ON MINIMUM COVER), INSTALL PIPE EMBEDMENT ZONE MATERIAL TO PREVENT SETTLEMENT AROUND THE PIPE. IF REQUIRED, USE STRUCTURAL BACKFILL MATERIAL OR CLSM TO PREVENT THIS SETTLEMENT.
8. USE THIS INSTALLATION ONLY IN LOCATIONS ABOVE GROUNDWATER TABLE. USE THIS INSTALLATION IN LOCATIONS WHERE PIPE SYSTEM IS NOT SUBJECTED TO PRESSURE HEAD.
9. FOR DETAILS 1 & 2, INSTALL STRUCTURAL BACKFILL AS SHOWN, AND USE BORROW EXCAVATION REQUIREMENTS FOR SOIL ABOVE PIPE EMBEDMENT ZONE.
10. FOR DETAIL 3, EXTEND STRUCTURAL BACKFILL AS SHOWN FROM SPRINGLINE OF PIPE TO BOTTOM OF SUBBASE WHEN UNDER ROADWAY PAVEMENT (INCLUDING PAVED SHOULDERS). USE DETAIL 2 INSTALLATION WHEN NOT UNDER ROADWAY PAVEMENT.
11. FOR DETAIL 4, EXTEND STRUCTURAL BACKFILL AS SHOWN FROM SPRINGLINE OF PIPE TO BOTTOM OF SUBBASE WHEN UNDER ANY PAVEMENT OR SIDEWALK.

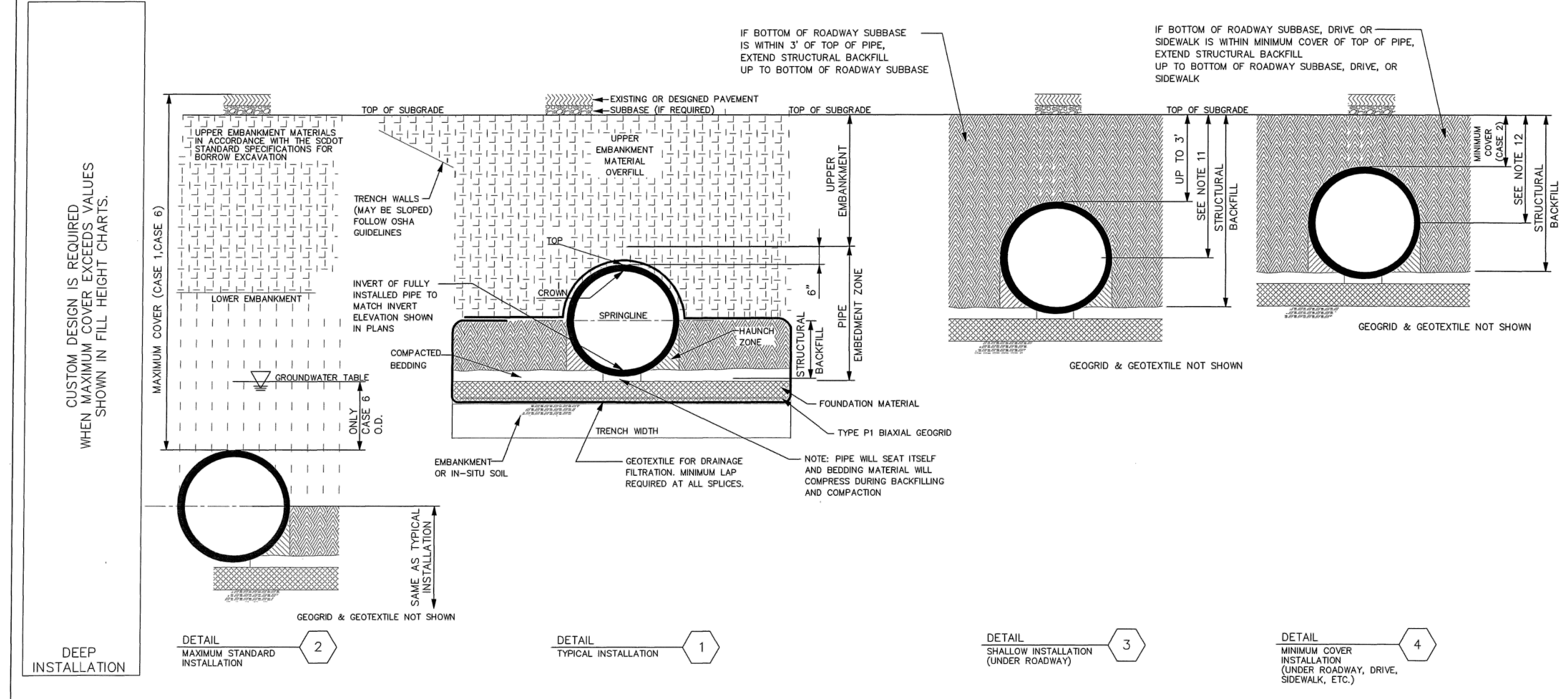


STANDARD TRENCH TERMINOLOGY
(COMPLETED RIGID PIPE INSTALLATION)

USE ONLY WHEN AN IMPROVED FOUNDATION IS REQUIRED

NOTES:

1. USE MATERIALS AND METHODS OF CONSTRUCTION FOR PERMANENT PIPE IN CONFORMANCE WITH SCDOT SUPPLEMENTAL SPECIFICATION SC-M-714.
2. SEE SHEET 714-205-XX FOR RCP FILL HEIGHT TABLES.
3. WHEN CONNECTING DISSIMILAR PIPE, USE DRAINAGE STRUCTURE OR DESIGN INTERFACE. DO NOT MIX PIPE TYPE, CLASS, OR DETAILS WITHIN A SINGLE RUN OF PIPE BETWEEN DRAINAGE STRUCTURES. SEE QUALIFIED PRODUCT LIST 14 FOR PRECAST REINFORCED CONCRETE DRAINAGE STRUCTURES.
4. USE AT LEAST THE MINIMUM CLASS OR GAGE REQUIRED TO CARRY THE FILL HEIGHT AS SPECIFIED IN THE STANDARD DRAWING FILL HEIGHT TABLES. WHEN PIPE CLASS IS SPECIFIED IN THE PLANS, CONFIRM THAT THE SPECIFIED CLASS CAN CARRY THE INSTALLED MAXIMUM COVER BEFORE BACKFILLING THE PIPE. IF INSTALLED GRADES VARY FROM THOSE SHOWN IN THE PLANS, CONFIRM THAT PIPE CLASS IS SUFFICIENT TO CARRY THE INSTALLED FILL HEIGHTS. DO NOT REDUCE THE PIPE CLASS BELOW THE CLASS SHOWN IN THE PLANS UNLESS DIRECTED BY THE ENGINEER.
5. USE RIPRAP, BEVELED ENDS, REINFORCED CONCRETE SLAB, WINGWALLS, OR END TREATMENT AS DESCRIBED IN THE PLANS, SCDOT SUPPLEMENTAL SPECIFICATION SC-M-714, OR SCDOT STANDARD DRAWINGS.
6. PIPE EMBEDMENT ZONE BACKFILL MUST MEET OR EXCEED THE MINIMUM MATERIAL AND COMPACTION REQUIREMENTS OF THE ROADWAY EMBANKMENT FOR THE SPECIFIED BURIAL DEPTH WITHOUT DAMAGING THE PIPE.
7. FOR SHALLOW INSTALLATIONS (PAVEMENT ON MINIMUM COVER), INSTALL PIPE EMBEDMENT ZONE MATERIAL TO PREVENT SETTLEMENT AROUND THE PIPE. IF REQUIRED, USE STRUCTURAL BACKFILL MATERIAL OR CLSM TO PREVENT THIS SETTLEMENT.
8. USE THIS INSTALLATION ONLY IN LOCATIONS ABOVE GROUNDWATER TABLE. USE THIS INSTALLATION IN LOCATIONS WHERE PIPE SYSTEM IS NOT SUBJECTED TO PRESSURE HEAD.
9. DESIGN PIPE AND MINIMUM COVER DIMENSION IN ACCORDANCE WITH LOAD CASES DESCRIBED IN SCDOT INSTRUCTIONAL BULLETIN 2007-4.
10. FOR DETAILS 1& 2 INSTALL STRUCTURAL BACKFILL AS SHOWN. AND USE BORROW EXCAVATION REQUIREMENTS FOR SOIL ABOVE PIPE EMBEDMENT ZONE.
11. FOR DETAIL 3, EXTEND STRUCTURAL BACKFILL AS SHOWN FROM SPRINGLINE OF PIPE TO BOTTOM OF SUBBASE WHEN UNDER ROADWAY PAVEMENT (INCLUDING PAVED SHOULDERS). USE DETAIL 2 INSTALLATION WHEN NOT UNDER ROADWAY PAVEMENT.
12. FOR DETAIL 4, EXTEND STRUCTURAL BACKFILL AS SHOWN FROM SPRINGLINE OF PIPE TO BOTTOM OF SUBBASE WHEN UNDER ANY PAVEMENT OR SIDEWALK.



TRENCH TERMINOLOGY WITH IMPROVED FOUNDATION
(COMPLETED RIGID PIPE INSTALLATION)

REFERENCES
NATIONAL DOCUMENTS

SCDOT DOCUMENTS
SC-M-714
EDM 24
INSTRUCTIONAL BULLETIN 2010-1
QUALIFIED PRODUCT LISTS 14, 69
RELATED DRAWINGS & KEYWORDS
714-020-00
714-110-00
714-205-00

THIS DRAWING IS ONLY VALID FOR CONSTRUCTION WHEN SEALED AND SIGNED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF SOUTH CAROLINA. CHECK WWW.SCDOT.ORG FOR LATEST UPDATE.

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER NO. 21242 JAMES W. KENDALL, JR.

James W. Kendall Jr. SIGNATURE
10/22/2015 DATE

#	DATE	CHK	DESCRIPTION
6	---	---	---
5	---	---	---
4	---	---	---
3	---	---	---
2	1/2016	DSO	DET3,4 UNDER PVMT
1	7/2009	DSO	NOTE 2
0	7/2008	DSO	NEW STANDARD

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

STANDARD DRAWING
PIPE CULVERTS RIGID PIPE COMPLETED TRENCH (IMPROVED FOUNDATION)
714-120-00
EFFECTIVE LETTING DATE JAN, 2016

REFERENCES
NATIONAL DOCUMENTS
AASHTO M32, M55, M170, M198, M221, M225, M295, M302, M315, T96, T104, ASTM A706
SCDOT DOCUMENTS
SCDOT SUPPLEMENTAL TECHNICAL SPECIFICATION SC-M-714
ENGINEERING DIRECTIVE MEMO 24
INSTRUCTIONAL BULLETIN 2010-01
QUALIFIED PRODUCT LIST 60, 69
SCDOT TO ACPA (MARCH 14, 2012 LETTER)
RELATED DRAWINGS & KEYWORDS
714-005-00
714-105-00
714-110-00
714-205-02
714-990-MO

THIS DRAWING IS ONLY VALID FOR CONSTRUCTION WHEN SEALED AND SIGNED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF SOUTH CAROLINA. CHECK WWW.SCDOT.ORG FOR LATEST UPDATE.

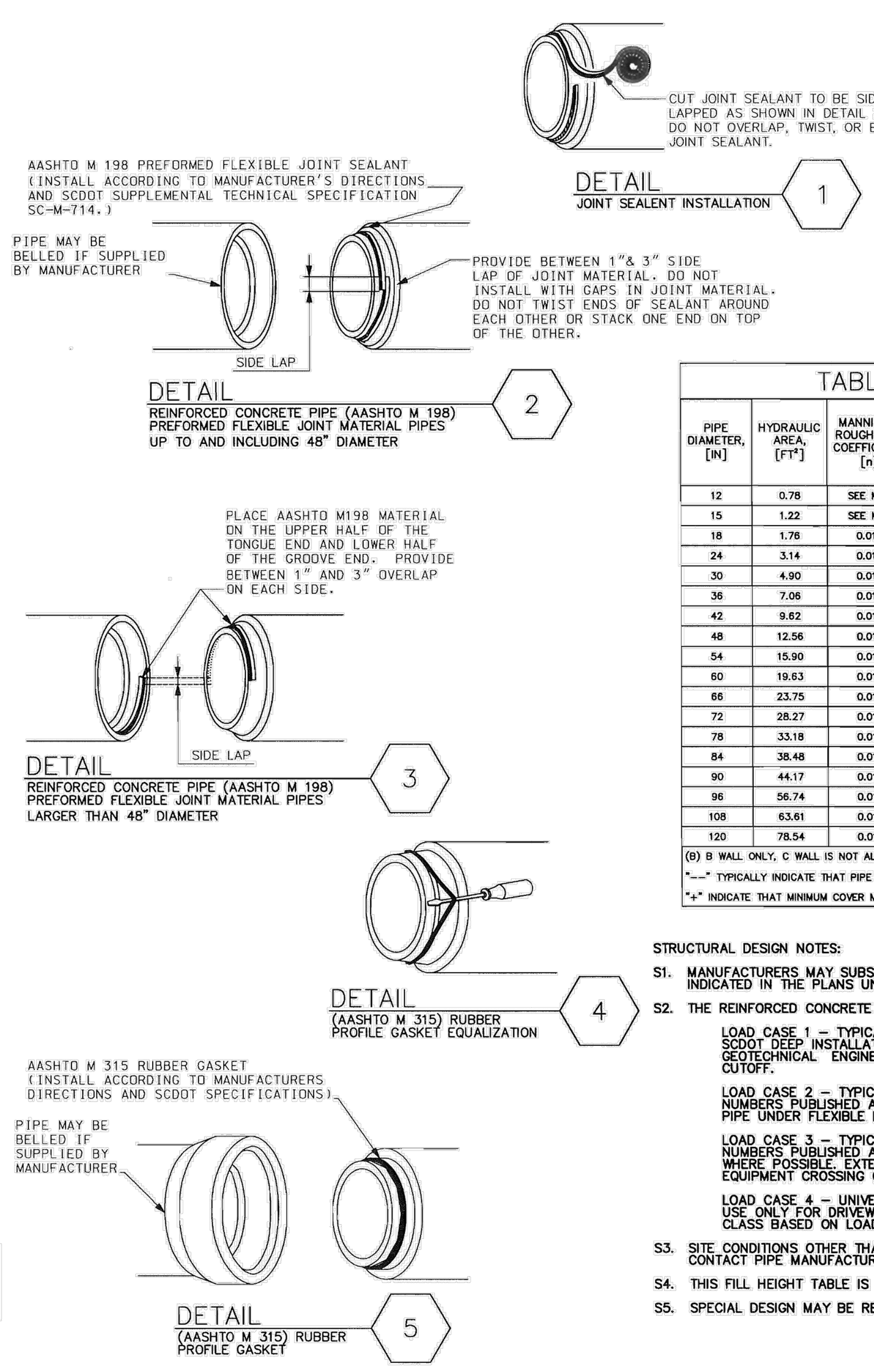
SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER NO. 21242 JAMES W. KENDALL, JR.

James W. Kendall Jr. SIGNATURE
9-26-12 DATE

#	DATE	CHK	DESCRIPTION
6	---	---	---
5	---	---	---
4	8/2012	DSO	SCDOT LETTER 3/12
3	3/2010	JBH	GENERAL REVISIONS
2	3/2009	HJC	COMPLETE TABLE
1	7/2008	HJC	GENERAL REVISIONS
0	3/2008	DSO	NEW STANDARD

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

STANDARD DRAWING
PIPE CULVERTS SMOOTH WALL (RIGID REINFORCED CONCRETE PIPE (RCP) DETAILS & FILL HEIGHT)
714-205-01
EFFECTIVE LETTING DATE JANUARY, 2013



NOTES:

1. SEE SHEET 714-005-00, 714-020-00, 714-105-00, & 714-120-00 FOR GENERAL NOTES, AND TRENCH INSTALLATION REQUIREMENTS.
2. USE ONLY PIPE CLASSES LISTED IN TABLES 714-205A & 714-205B.
3. USE B WALL PIPE FOR SIZES AND CLASSES INDICATED IN TABLES 714-205A & 714-205B. C WALL PIPE MAY BE SUBSTITUTED FOR B WALL PIPE ONLY FOR SIZES AND CLASSES INDICATED IN TABLES 714-205A & 714-205B.
4. USE PIPE AND JOINT MATERIAL FROM A MANUFACTURER COMBINATION SHOWN ON QUALIFIED PRODUCT LIST 69.
5. WHEN DEFORMED BILLET STEEL REBAR IS USED FOR CUSTOM PIPE, OBTAIN REBAR FROM A MANUFACTURER LISTED ON SCDOT QUALIFIED PRODUCT LIST 60. FOLLOW INSTRUCTIONAL BULLETIN 2010-01 AND ENGINEER OF RECORD RECOMMENDATIONS TO DETERMINE LOADING FOR CUSTOM PIPE.
6. SEE 714-990-MO FOR RESIDENTIAL DRIVEWAY INSTALLATION FOR MAINTENANCE APPLICATIONS.

PAY ITEMS;
7143xxx (__)"SMOOTH WALL PIPE..................L.F.
xxxxxxx (__)"PIPE ADDITIONAL FOUNDATION WORK....L.F.
7141xxx (__)"RC PIPE CUL.-CLASS(____)............L.F.
7141xxx (__)"RC PIPE-CL(_) AASHTO M315JNT.......L.F.

(__) = (DIAMETER)
(____) = (CLASS ROMAN #)
(_) = (CLASS #)

TABLE 714-205A: REINFORCED CONCRETE PIPE FILL HEIGHT TABLE

PIPE DIAMETER, [IN]	HYDRAULIC AREA, [FT²]	MANNING'S ROUGHNESS COEFFICIENT, [n]	ESTIMATED MINIMUM TRENCH WIDTH, [IN]	CASE 1: MAXIMUM COVER HIGHWAY VEHICLE LOADING, [FT]			CASE 2: MINIMUM COVER HIGHWAY VEHICLE LOADING, [FT]			CASE 3: MINIMUM COVER FOR CONSTRUCTION VEHICLE [FT] (AASHTO 27.5.4.4)			CASE 4: UNIVERSAL DRIVEWAY MINIMUM COVER [FT] NOT FOR USE IN ROADWAY			CASE 6: MAXIMUM COVER WITH INVERT AT 2 X O.D. BELOW GROUNDWATER, [FT]		
				CLASS III	CLASS IV	CLASS V	CLASS III	CLASS IV	CLASS V	CLASS III	CLASS IV	CLASS V	CLASS III	CLASS IV	CLASS V	CLASS III	CLASS IV	CLASS V
12	0.78	SEE MFG	42	16	25	30	1.75	1.00+	1.00+	3	3	3	1.75	1.00	0.50	--	20	30
15	1.22	SEE MFG	45	16	25	30	1.50	1.00+	1.00+	3	3	3	1.50	1.00	0	13	21	30
18	1.76	0.012	49	16	25	30	1.50	1.00+	1.00+	3	3	3	1.50	0.75	0	13	21	30
24	3.14	0.012	60	16	25	30	1.00	1.00+	1.00+	3	3	3	1.00	0	0	13	21	30
30	4.90	0.012	70	16	25	30	1.00	1.00+	1.00+	3	3	3	1.00	0	0	13	21	30
36	7.06	0.012	81	16 (B)	25 (B)	30	1.00+ (B)	1.00+ (B)	1.00+	3 (B)	3 (B)	3	0 (B)	0 (B)	0	--	12 (B)	25
42	9.62	0.012	91	16 (B)	25 (B)	30	1.00+ (B)	1.00+ (B)	1.00+	3 (B)	3 (B)	3	0 (B)	0 (B)	0	--	14 (B)	27
48	12.56	0.012	102	16	25	30	1.00+	1.00+	1.00+	3	3	3	0	0	0	--	16	26
54	15.90	0.012	112	16	25	30	1.00+	1.00+	1.00+	3	3	3	0	0	0	10	17	26
60	19.63	0.012	123	15	25	30	1.00+	1.00+	1.00+	3	3	3	0	0	0	10	16	25
66	23.75	0.012	133	15	25	30	1.00+	1.00+	1.00+	3	3	3	0	0	0	12	15	25
72	28.27	0.012	144	15	24	30	1.00+	1.00+	1.00+	3	3	3	0	0	0	12	18	23
78	33.18	0.012	154	15	24	--	1.00+	1.00+	--	3	3	--	0	0	--	12	17	--
84	38.48	0.012	165	15	24	--	1.00+	1.00+	--	3	3	--	0	0	--	12	17	--
90	44.17	0.012	175	15	--	--	1.00+	--	--	3	--	--	0	--	--	13	--	--
96	56.74	0.012	186	14	--	--	1.00+	--	--	3	--	--	0	--	--	13	--	--
108	63.61	0.012	207	14	--	--	1.00+	--	--	3	--	--	0	--	--	13	--	--
120	78.54	0.012	228	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

(B) B WALL ONLY, C WALL IS NOT ALLOWED FOR THIS DIAMETER AND CLASS.
"--" TYPICALLY INDICATE THAT PIPE SIZE IS NOT AVAILABLE OR IS NOT RECOMMENDED FOR THIS CONDITION.
"+" INDICATE THAT MINIMUM COVER MAY BE REDUCED TO 0.75' FOR SPECIFIED CLASS WHEN PIPE IS INSTALLED UNDER RIGID PAVEMENT.

STRUCTURAL DESIGN NOTES:

S1. MANUFACTURERS MAY SUBSTITUTE HIGHER CLASS PIPE THAN SPECIFIED IN THE PLANS, HOWEVER, INSTALLATION DEPTH SHALL NOT EXCEED THAT SHOWN FOR THE PIPE INDICATED IN THE PLANS UNLESS APPROVED BY THE ENGINEER OF RECORD. NO ADDITIONAL PAYMENT WILL BE MADE FOR HIGHER CLASS SUBSTITUTION.
S2. THE REINFORCED CONCRETE PIPE FILL HEIGHT TABLE IS BASED ON THE FOLLOWING CRITERIA:

LOAD CASE 1 – TYPICAL STANDARD INSTALLATION:
SCDOT DEEP INSTALLATION = 30'. FOR ALL INSTALLATIONS BEYOND 30', EMBANKMENT SETTLEMENT MAY CONTROL DESIGN. CONSULT WITH PIPE MANUFACTURERS AND GEOTECHNICAL ENGINEERS BEFORE USING DEEPER THAN 30'. NUMBERS PUBLISHED ARE BASED ON AASHTO LRFD INDIRECT DESIGN OR SCDOT DEEP INSTALLATION CUTOFF.

LOAD CASE 2 – TYPICAL MINIMUM COVER INSTALLATION:
NUMBERS PUBLISHED ARE BASED ON AASHTO LRFD INDIRECT DESIGN CALCULATIONS OR AASHTO LRFD TABLE 12.6.6.3-1 FOR CLASS SPECIFIED OF REINFORCED CONCRETE PIPE UNDER FLEXIBLE PAVEMENT.

LOAD CASE 3 – TYPICAL MINIMUM COVER FOR CONSTRUCTION VEHICLE EQUIP,ENT LOADING:
NUMBERS PUBLISHED ARE BASED ON AASHTO LRFD SECTION 27.5.4.4 FOR REINFORCED CONCRETE PIPE. AVOID DRIVING CONSTRUCTION VEHICLES OVER INSTALLED PIPE WHERE POSSIBLE. EXTEND CONSTRUCTION FILL HEIGHT BEYOND SIDES OF PIPE BY THE LARGER OF 3 FEET OR ONE PIPE DIAMETER. PERIODICALLY CHANGE LOCATION OF EQUIPMENT CROSSING OVER PIPE IN ORDER TO MINIMIZE CHANCE OF LATERAL DISPLACEMENT.

LOAD CASE 4 – UNIVERSAL DRIVEWAY MINIMUM COVER:
USE ONLY FOR DRIVEWAY APPLICATIONS. NUMBERS PUBLISHED ARE BASED ON CAPACITY OF PIPE USING AASHTO LRFD INDIRECT DESIGN AT 0' COVER. CHOOSE PIPE CLASS BASED ON LOADING OF VEHICLES USING DRIVEWAY.

S3. SITE CONDITIONS OTHER THAN TYPICAL INSTALLATION MAY ALSO REQUIRE SPECIAL DESIGNED PIPE. FOR THESE CONDITIONS, OTHER PIPE TYPES MAY BE MORE APPROPRIATE. CONTACT PIPE MANUFACTURER BEFORE SPECIFYING THIS PIPE TYPE FOR CUSTOM INSTALLATIONS.
S4. THIS FILL HEIGHT TABLE IS FOR USE IN ROADWAY APPLICATIONS ONLY AND SHOULD NOT BE USED FOR ANY OTHER TRANSPORTATION FACILITY.
S5. SPECIAL DESIGN MAY BE REQUIRED FOR INSTALLATIONS OUTSIDE OF SCDOT RIGHT OF WAY – SEE RIGHT OF WAY/UTILITY/MUNICIPAL AGREEMENT FOR THESE INSTALLATIONS.

NOTE:
1. CONTRACTOR SHALL NOT USE MASTIC AS A PIPE JOINT SEALANT.
2. ALL JOINT CONNECTIONS SHALL BE WATER TIGHT WITH "O-RING" GASKETS IN ACCORDANCE WITH ASTM C443 (AASHTO M315).

TABLE 714-205B
REINFORCED CONCRETE PIPE (RCP) SMOOTH WALL PIPE
AASHTO M170 B & C WALL PIPE WITH CIRCULAR REINFORCEMENT ONLY (AS NOTED)
LOADING FROM SCDOT INSTRUCTIONAL BULLETIN 2010-01 HL-93 LOAD CASES 1, 2, AND 4.
INDIRECT DESIGN
PIPE DIAMETER [IN]

*******DEPTH OF COVER (FEET)*******		12	15	18	24	30	36	42	48	54	60	66	72	78	84	90	96	108	120
AT LEAST ===>	0.00	NA	V^	V^	IV^	IV^	III^ (B)	III^ (B)	III^	III^	III^	III^	III^	III^	III^	III^	III^	III^	CUSTOM
	0.50	V^	V^	V^	IV^	IV^	III^ (B)	III^ (B)	III^	III^	III^	III^	III^	III^	III^	III^	III^	III^	CUSTOM
	0.75	V+	V+	IV+	IV+	IV+	III+ (B)	III+ (B)	III+	III+	III+	III+	III+	III+	III+	III+	III+	III+	CUSTOM
	1.00	IV	IV	IV	III	III	III (B)	III (B)	III	III	III	III	III	III	III	III	III	III	CUSTOM
	1.25	IV	IV	IV	III	III	III (B)	III (B)	III	III	III	III	III	III	III	III	III	III	CUSTOM
	1.50	IV	III	III	III	III	III (B)	III (B)	III	III	III	III	III	III	III	III	III	III	CUSTOM
	1.75	III	III	III	III	III	III (B)	III (B)	III	III	III	III	III	III	III	III	III	III	CUSTOM
	2.00	III	III	III	III	III	III (B)	III (B)	III	III	III	III	III	III	III	III	III	III	CUSTOM
NO MORE THAN <===	2.25	III	III	III	III	III	III (B)	III (B)	III	III	III	III	III	III	III	III	III	III	CUSTOM
	2.50	III	III	III	III	III	III (B)	III (B)	III	III	III	III	III	III	III	III	III	III	CUSTOM
	2.75	III	III	III	III	III	III (B)	III (B)	III	III	III	III	III	III	III	III	III	III	CUSTOM
	3.00	III	III	III	III	III	III (B)	III (B)	III	III	III	III	III	III	III	III	III	III	CUSTOM
	4.00	III	III	III	III	III	III (B)	III (B)	III	III	III	III	III	III	III	III	III	III	CUSTOM
	5.00	III	III	III	III	III	III (B)	III (B)	III	III	III	III	III	III	III	III	III	III	CUSTOM
	6.00	III	III	III	III	III	III (B)	III (B)	III	III	III	III	III	III	III	III	III	III	CUSTOM
	7.00	III	III	III	III	III	III (B)	III (B)	III	III	III	III	III	III	III	III	III	III	CUSTOM
	8.00	III	III	III	III	III	III (B)	III (B)	III	III	III	III	III	III	III	III	III	III	CUSTOM
	9.00	III	III	III	III	III	III (B)	III (B)	III	III	III	III	III	III	III	III	III	III	CUSTOM
	10.00	III	III	III	III	III	III (B)	III (B)	III	III	III	III	III	III	III	III	III	III	CUSTOM
	11.00	III	III	III	III	III	III (B)	III (B)	III	III	III	III	III	III	III	III	III	III	CUSTOM
	12.00	III	III	III	III	III	III (B)	III (B)	III	III	III	III	III	III	III	III	III	III	CUSTOM
	13.00	III	III	III	III	III	III (B)	III (B)	III	III	III	III	III	III	III	III	III	III	CUSTOM
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	15.00	III	III	III	III	III	III (B)	III (B)	III	III	III	III	III	III	III	III	CUSTOM	CUSTOM	CUSTOM
	16.00	III	III	III	III	III	III (B)	III (B)	III	III	IV	IV	IV	IV	IV	CUSTOM	CUSTOM	CUSTOM	CUSTOM
	17.00	IV	IV	IV	IV	IV	IV (B)	IV (B)	IV	IV	IV	IV	IV	IV	IV	CUSTOM	CUSTOM	CUSTOM	CUSTOM
	18.00	IV	IV	IV	IV	IV	IV (B)	IV (B)	IV	IV	IV	IV	IV	IV	IV	CUSTOM	CUSTOM	CUSTOM	CUSTOM
	19.00	IV	IV	IV	IV	IV	IV (B)	IV (B)	IV	IV	IV	IV	IV	IV	IV	CUSTOM	CUSTOM	CUSTOM	CUSTOM
	20.00	IV	IV	IV	IV	IV	IV (B)	IV (B)	IV	IV	IV	IV	IV	IV	IV	CUSTOM	CUSTOM	CUSTOM	CUSTOM
	21.00	IV	IV	IV	IV	IV	IV (B)	IV (B)	IV	IV	IV	IV	IV	IV	IV	CUSTOM	CUSTOM	CUSTOM	CUSTOM
	22.00	IV	IV	IV	IV	IV	IV (B)	IV (B)	IV	IV	IV	IV	IV	IV	IV	CUSTOM	CUSTOM	CUSTOM	CUSTOM
	23.00	IV	IV	IV	IV	IV	IV (B)	IV (B)	IV	IV	IV	IV	IV	IV	IV	CUSTOM	CUSTOM	CUSTOM	CUSTOM
	24.00	IV	IV	IV	IV	IV	IV (B)	IV (B)	IV	IV	IV	IV	IV	IV	IV	CUSTOM	CUSTOM	CUSTOM	CUSTOM
	25.00	IV	IV	IV	IV	IV	IV (B)	IV (B)	IV	IV	IV	IV	V	CUSTOM	CUSTOM	CUSTOM	CUSTOM	CUSTOM	CUSTOM
	26.00	V	V	V	V	V	V	V	V	V	V	V	V	CUSTOM	CUSTOM	CUSTOM	CUSTOM	CUSTOM	CUSTOM
	27.00	V	V	V	V	V	V	V	V	V	V	V	V	CUSTOM	CUSTOM	CUSTOM	CUSTOM	CUSTOM	CUSTOM
	28.00	V	V	V	V	V	V	V	V	V	V	V	V	CUSTOM	CUSTOM	CUSTOM	CUSTOM	CUSTOM	CUSTOM
	29.00	V	V	V	V	V	V	V	V	V	V	V	V	CUSTOM	CUSTOM	CUSTOM	CUSTOM	CUSTOM	CUSTOM
	30.00	V	V	V	V	V	V	V	V	V	V	V	V	CUSTOM	CUSTOM	CUSTOM	CUSTOM	CUSTOM	CUSTOM

\+ ALLOWED UNDER RIGID PAVEMENT ONLY OR DRIVEWAY.
^ LOAD CASE 4: UNIVERSAL DRIVEWAY APPLICATION (NOT ALLOWED UNDER ROADWAY CROSSINGS).
(B) B WALL ONLY, C WALL IS NOT ALLOWED FOR THIS DIAMETER AND CLASS.
CUSTOM – DESIGN REINFORCED CONCRETE PIPE USING THE DIRECT DESIGN METHOD IN ACCORDANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATION SECTION 12.
DESIGN CALCULATIONS MUST BE SEALED AND SIGNED BY A SOUTH CAROLINA PROFESSIONAL ENGINEER AND SUBMITTED TO THE DEPARTMENT FOR REVIEW PRIOR TO PIPE FABRICATION.

REFERENCES
NATIONAL DOCUMENTS
AASHTO M32, M55, M170, M198, M221, M225, M295, M302, M315, T96, T104, ASTM A706
SCDOT DOCUMENTS
SCDOT SUPPLEMENTAL TECHNICAL SPECIFICATION SC-M-714
ENGINEERING DIRECTIVE MEMO 24
INSTRUCTIONAL BULLETIN 2010-01
QUALIFIED PRODUCT LIST 60, 69
SCDOT TO ACPA (MARCH 14, 2012 LETTER)
RELATED DRAWINGS & KEYWORDS
714-005-00
714-105-00
714-110-00
714-205-01
714-990-MO

THIS DRAWING IS ONLY VALID FOR CONSTRUCTION WHEN SEALED AND SIGNED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF SOUTH CAROLINA. CHECK WWW.SCDOT.ORG FOR LATEST UPDATE.

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER NO. 21242 JAMES W. KENDALL, JR.

James W. Kendall Jr. SIGNATURE
9-26-12 DATE

#	DATE	CHK	DESCRIPTION
6	---	---	---
5	---	---	---
4	---	---	---
3	---	---	---
2	8/2012	DSO	SCDOT LETTER 3/12
1	3/2010	JBH	GENERAL REVISIONS
0	3/2009	HJC	NEW STANDARD

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

STANDARD DRAWING
PIPE CULVERTS SMOOTH WALL (RIGID REINFORCED CONCRETE PIPE (RCP) FILL HEIGHT CHART
714-205-02
EFFECTIVE LETTING DATE JANUARY, 2013

Stantec
Stantec
4969 Centre Pointe Drive, Suite 200
North Charleston, SC, 29418
Tel: 843.740.7700
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Legend

Revision | By | Appd | YYYY.MM.DD

Issued	By	Appd	YYYY.MM.DD
BID SET	AB	BK	2020.03.26
PER GEORGETOWN COUNTY COMMENTS	SGC	BK	2019.10.30
PER GEORGETOWN COUNTY COMMENTS	SGC	BK	2019.01.22

File Name: C2_ESC_GRADING_DETAILS	SGC	SGC	BK	2018.12.11
	Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

Permit/Seal

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

SOUTH CAROLINA PROFESSIONAL ENGINEER LICENSED No. 22860 BRYAN D. KIZER

FOR BIDDING ONLY

Client/Project Logo

Client/Project
GEORGETOWN COUNTY

GARDEN CITY DRAINAGE IMPROVEMENTS
SITE 5

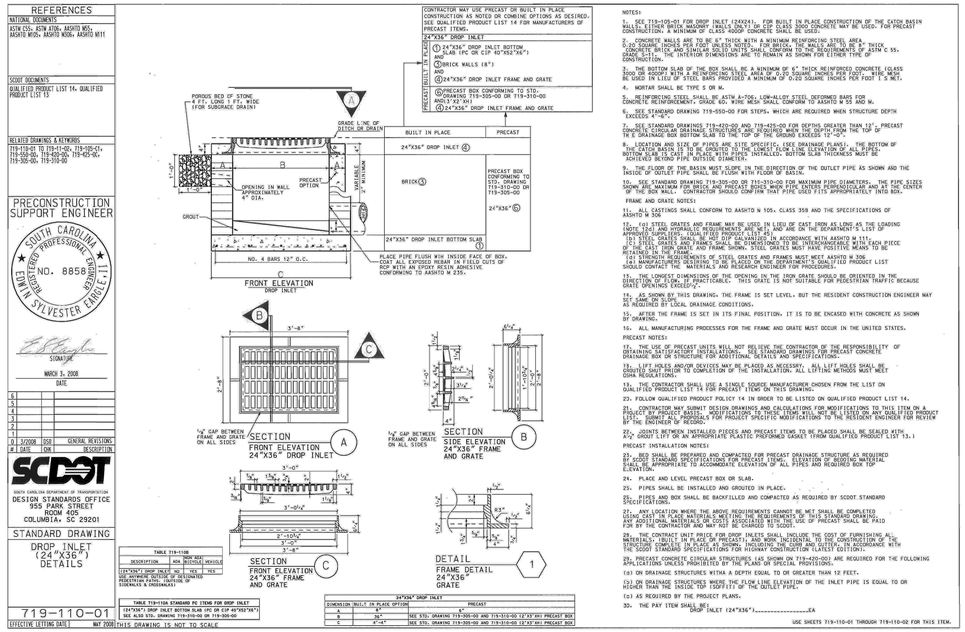
MURRELLS INLET, SOUTH CAROLINA

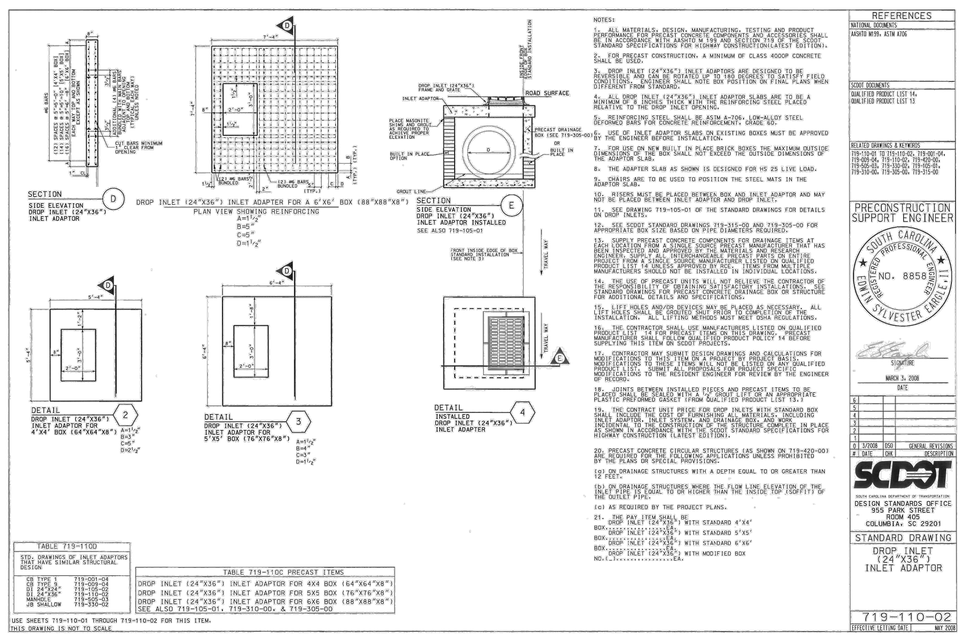
Title
GRADING DETAILS

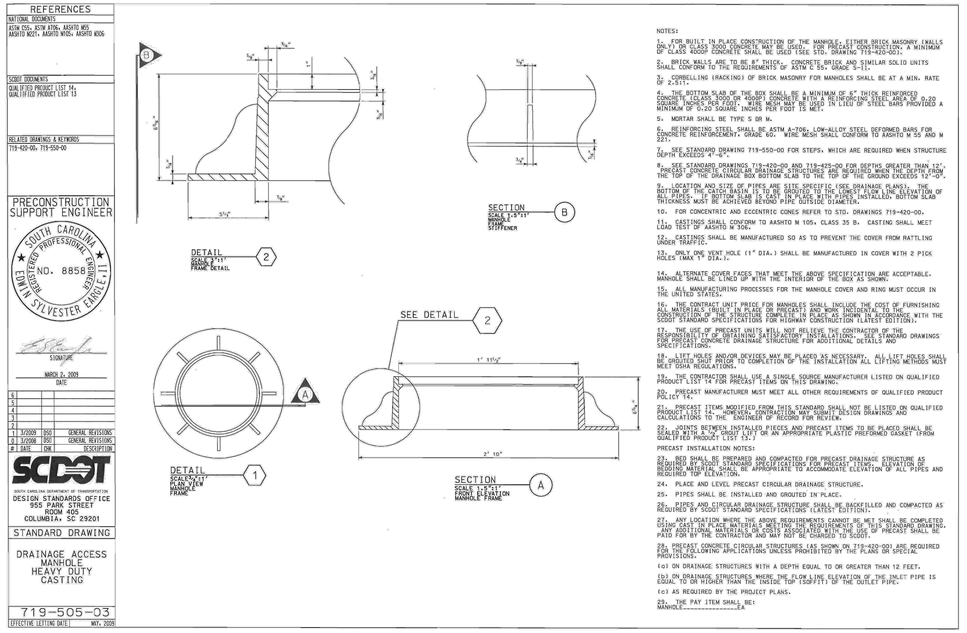
Project No. 178420916
Scale
Revision
Sheet 15 of 23
Drawing No. C3-04

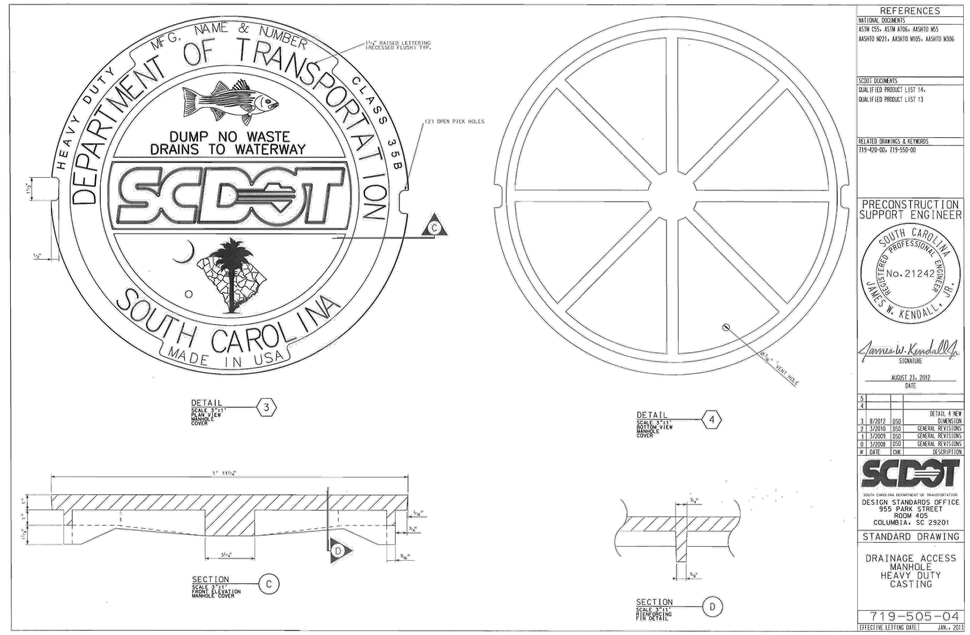
v:\1784\active\178420916\land_development\drawings\sheets\site_05\c2_esc_grading_details.dwg
2020/05/07 7:00 AM By: Nelson, Trey

ORIGINAL SHEET - ARCH D









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North Charleston, SC, 29418
Tel: 843.740.7700
www.stantec.com

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Revision	By	Appd	YYYY.MM.DD
BID SET	AB	BK	2020.03.26
PER GEORGETOWN COUNTY COMMENTS	SGC	BK	2019.10.30
PER GEORGETOWN COUNTY COMMENTS	SGC	BK	2019.01.22
Issued	**By**	**Appd**	**YYYY.MM.DD**
File Name: C2_ESC_GRADING_DETAILS	SGC	SGC	BK 2018.12.11
	Dwn.	Dsgn.	Chkd. YYYY.MM.DD

Permit/Seal

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

FOR BIDDING ONLY

LICENSED PROFESSIONAL ENGINEER BRYAN D. KIZER

Client/Project Logo

Client/Project
GEORGETOWN COUNTY

GARDEN CITY DRAINAGE IMPROVEMENTS SITE 5

MURRELLS INLET, SOUTH CAROLINA

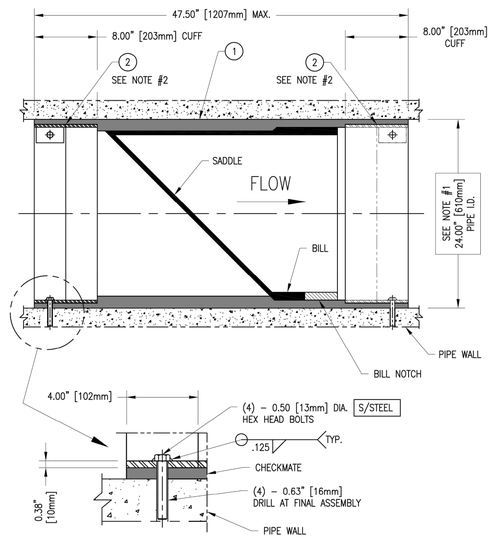
Title
GRADING DETAILS

Project No. 178420916

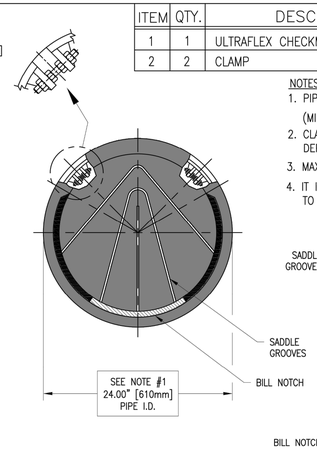
Scale

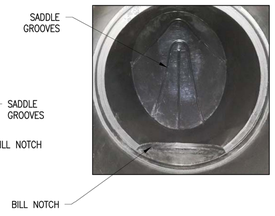
Revision Sheet 16 of 23

Drawing No. C3-05



PIN PER NOTE #4
RECOMMENDED PINNING CONFIGURATION
(SUPPLIED BY CUSTOMER) (SEE I.O.M.)
NOT TO SCALE





ITEM	QTY.	DESCRIPTION	MAT'L
1	1	ULTRAFLEX CHECKMATE CHECK VALVE	MUST BE SUPPLIED
2	2	CLAMP	MUST BE SUPPLIED

NOTES:
1. PIPE INSIDE DIAMETER – MUST BE SUPPLIED
   (MINIMUM ALLOWABLE PIPE DIAMETER – 23.25 INCHES)
2. CLAMP INSTALLED IN UPSTREAM OR DOWNSTREAM CUFF DEPENDING ON INSTALLATION ORIENTATION
3. MAXIMUM ALLOWABLE BACK PRESSURE – 45.0 FEET
4. IT IS RECOMMENDED TO BOLT OR PIN CHECKMATE TO PIPE AS SHOWN, 4 PLACES 90° APART

PRELIMINARY DRAWING
NOT FOR APPROVAL PURPOSES

* PATENT PENDING *

OPPORTUNITY No: XXXXX | SALES ORDER No: TXX–XXXX

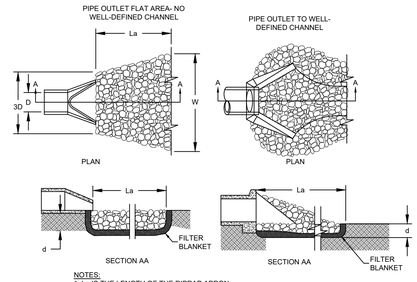
Tideflex® Technologies
A Division of Red Valve Company, Inc.

600 N. BELL AVE.
CARNEGIE, PA. 15106
info@tideflex.com
412.279.0044
fax 412.279.5410

TT PRODUCT: 24" ULTRAFLEX CHECKMATE CHECK VALVE
TT PART No: CMCBUF–240–APPROVAL
DR. BY: TLM DATE: 2–6–17 | CHKD. BY: DATE:
CAD SCALE: FULL
PLOT SCALE: 1 = 1 | DWG No: TTS–XXXX | REV —

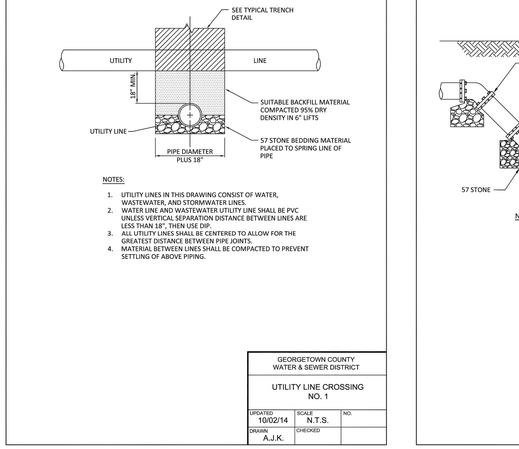
CUSTOMER: XXX
ORDER No: XXX

PIPE OUTLET	PIPE DIA.(in.)	# PIPES	3D (ft.)	La (ft.)	W (ft.)	AVG. ROCK DIA.(in.)	d (ft.)
OP-1	30"	2	15	30'	20'	12	0.75



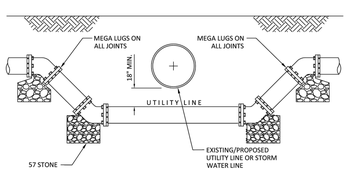
NOTES:
1. La IS THE LENGTH OF THE RIPRAP APRON.
2. d=1.5 TIMES THE MAXIMUM STONE DIAMETER BUT NOT LESS THAN 6".
3. IN A WELL-DEFINED CHANNEL EXTEND THE APRON UP THE CHANNEL BANKS TO AN ELEVATION OF 6" ABOVE THE MAXIMUM TAILWATER DEPTH OR TO THE TOP OF THE BANK, WHICHEVER IS LESS.
4. A FILTER BLANKET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

OUTLET STABILIZATION STRUCTURE
N.T.S.



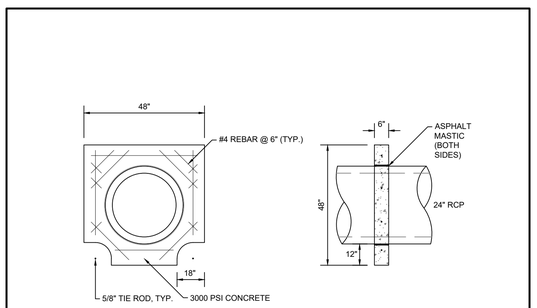
NOTES:
1. UTILITY LINES IN THIS DRAWING CONSIST OF WATER, WASTEWATER, AND STORMWATER LINES.
2. WATER LINE AND WASTEWATER UTILITY LINE SHALL BE PVC UNLESS VERTICAL SEPARATION DISTANCE BETWEEN LINES ARE LESS THAN 18", THEN USE DIP.
3. ALL UTILITY LINES SHALL BE CENTERED TO ALLOW FOR THE GREATEST DISTANCE BETWEEN PIPE JOINTS.
4. MATERIAL BETWEEN LINES SHALL BE COMPACTED TO PREVENT SETTLING OF ABOVE PIPING.

GEORGETOWN COUNTY WATER & SEWER DISTRICT		
UTILITY LINE CROSSING NO. 1		
UPDATED 10/02/14	SCALE N.T.S.	NO.
DRAWN A.J.K.	CHECKED	

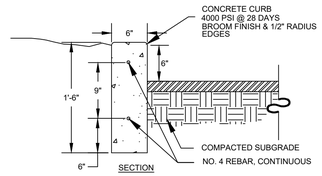


NOTES:
1. USE DIP FOR WATER VERTICAL SEPARATION.
2. IF CROSSING A STORM PIPE, PROPOSED UTILITY LINE SHALL ALSO BE OFFSET A MINIMUM OF 36" HORIZONTALLY FROM END OF STORM PIPE.
3. WHEN POSSIBLE, POTABLE WATER LINE SHALL CROSS ABOVE SANITARY SEWER LINE.

GEORGETOWN COUNTY WATER & SEWER DISTRICT		
UTILITY LINE CROSSING NO. 2		
UPDATED 10/02/14	SCALE N.T.S.	NO. 12 - W
DRAWN A.J.K.	CHECKED	



CONCRETE ANTI-SEEP COLLAR
NOT TO SCALE



6" VERTICAL CURB
N.T.S.

Stantec
4969 Centre Pointe Drive, Suite 200
North Charleston, SC, 29418
Tel: 843.740.7700
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Legend

Revision	By	Appd	YYYY.MM.DD
BID SET	AB	BK	2020.03.26
PER GEORGETOWN COUNTY COMMENTS	SGC	BK	2019.10.30
PER GEORGETOWN COUNTY COMMENTS	SGC	BK	2019.01.22
Issued	**By**	**Appd**	**YYYY.MM.DD**
File Name: C2_ESC_GRADING_DETAILS	SGC	SGC	BK 2018.12.11
	Dwn.	Dsgn.	Chkd. YYYY.MM.DD

Permit/Seal

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

FOR BIDDING ONLY

LICENSED PROFESSIONAL ENGINEER BRYAN D. KIZER No. 22009

Client/Project Logo

Client/Project
GEORGETOWN COUNTY

GARDEN CITY DRAINAGE IMPROVEMENTS SITE 5

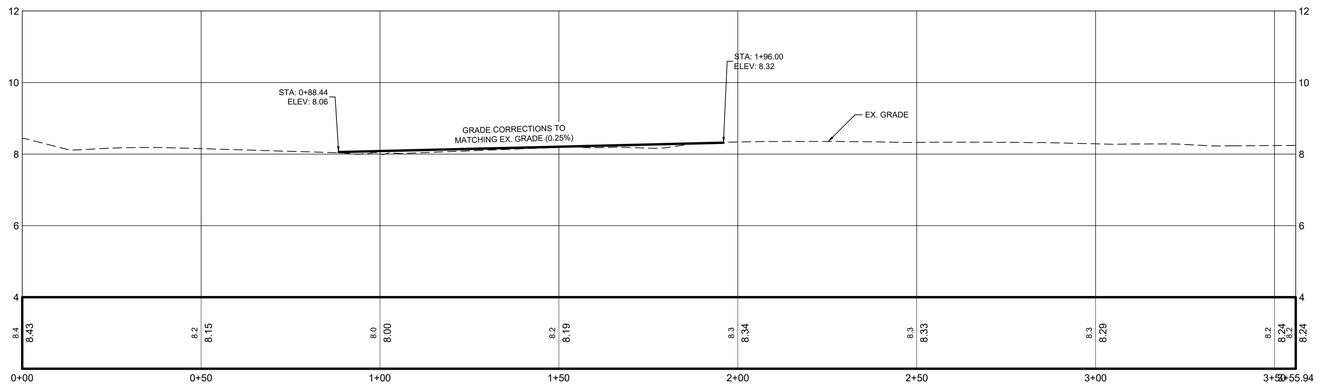
MURRELLS INLET, SOUTH CAROLINA

Title
GRADING DETAILS

Project No. 178420916
Scale

Revision
Sheet 17 of 23
Drawing No. C3-06

CONCRETE PAD (275 SQ.FT.)
CONCRETE WHEEL STOP
EX. FENCE TO REMAIN
PERVIOUS CONCRETE (~97 SY) WITH 8" #57 STONE
4" THERMOPLASTIC STRIPING (WHITE)
12 PARKING SPACES
20.10
60.00°
9.0
3+00
4+00
STA: 2+68.47
N: 627425.8063
E: 2601864.4423
28.9
L=125.68, R=95.00
Δ=075.6
LIMITS OF MILL AND OVERLAY
STA: 2+45.45
N: 627403.6330
E: 2601870.4252
~18' ADDITIONAL SPACE BEFORE PARKING
125 LF OF 2' VALLEY GUTTER
EDGE OF PAVEMENT
2.00
0.80
S-22-601 (DOLPHIN STREET)
50' PUBLIC R/W
109.09
N41° 54' 56.86"W
2+00
1+00
PC: 2+12.50
PT: 1+02.41
4" DOUBLE SOLID YELLOW THERMOPLASTIC STRIPING
30.00
L=29.04, R=50.00
D=033.28
PT: 0+43.61
PC: 0+14.01
N15° 56' 15.06"W
14.01
0+00
STA: 0+00.00
N: 627232.2778
E: 2602039.8106
AREA 1 - 2" MILL AND OVERLAY MATCH EX. GRADE ~740 SQ.FT.
AREA 2 - FULL DEPTH PATCH SAWCUT AND REPLACE APPROXIMATELY 4865 SQ.FT. SECTION OF ASPHALT, MATCH EXISTING GRADE.
AREA 1 - 2" MILL AND OVERLAY MATCH EX. GRADE ~740 SQ.FT.
NEW EDGE OF PAVEMENT
RIGHT-OF-WAY
AREA 3 - FULL DEPTH REPLACEMENT MATCH EX. GRADE 150 SQ.FT.
RAISED PAVEMENT MARKERS PER SECTION 630 OF SCDOT STANDARDS AND SPEC.
SEE NEXT SHEET
STOP SIGN AND STOP BAR
LIMITS OF
SAW CUT AND TIE OVERLAY INTO EX. CONCRETE DRIVEWAY
22.06
2+00
EX. 8" DIP WATER MAIN
0
10'
20'
1" = 10'



DOLPHIN STREET (S) PROFILE
SCALE: H: 1"=10'
V: 1"=1'

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Legend

- PROPOSED MILL AND OVERLAY
- PROPOSED ASPHALT FULL DEPTH REPLACEMENT
- PROPOSED ASPHALT

Revision	By	Appd	YYYY.MM.DD
BID SET	AB	BK	2020.03.26
PER GEORGETOWN COUNTY COMMENTS	SGC	BK	2019.10.30
PER GEORGETOWN COUNTY COMMENTS	SGC	BK	2019.01.22

Issued	By	Appd	YYYY.MM.DD
File Name: C4_916_ROAD	SGC	BK	2018.12.11
	Dwn.	Dsgn.	Chkd. YYYY.MM.DD

Permit/Seal

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

FOR BIDDING ONLY

LICENSED PROFESSIONAL ENGINEER
BRYAN D. KIZER

Client/Project Logo

Client/Project
GEORGETOWN COUNTY

GARDEN CITY DRAINAGE IMPROVEMENTS
SITE 5

MURRELLS INLET, SOUTH CAROLINA

Title
ROADWAY PLAN AND PROFILE

Project No.
178420916

Scale

Revision

Sheet
18 of 23

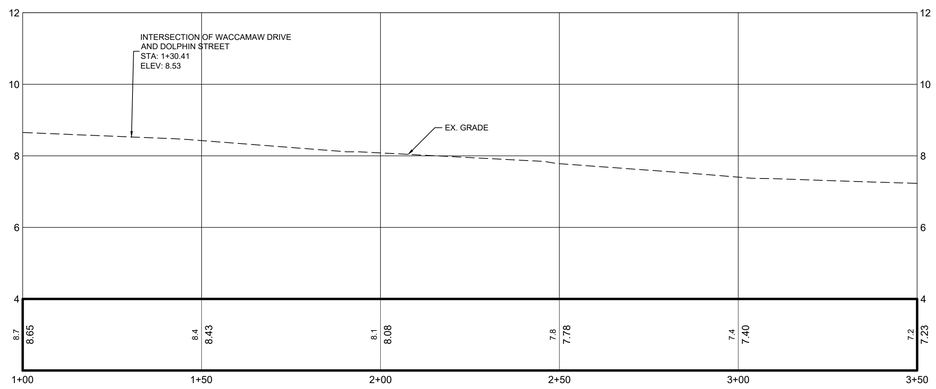
Drawing No.
C4-00

ORIGINAL SHEET - ARCH D

LANDSCAPING NOTE:
1. CONTRACTOR TO SOD ENTIRE DISTURBED AREA, INCLUDING BUFFER AREA BETWEEN ROAD AND SIDEWALK (~3800 SQ.FT.)

LOT 243
ABETH GAY STACKHOUSE,
et al
41-0130-020-47-00
D.B. 1729, PG. 85
P.B. S, PG. 067
P.B. 11, PG. 249

DIRT DRIVE
SAWCUT AND TIE TO EX. DRIVEWAY
AREA 5 - 2" MILL AND OVERLAY MATCH EX. GRADE 9280 SQ.FT.
EX. EDGE OF PAVEMENT
RIGHT-OF-WAY
ADA RAMP
REMOVE AND REPLACE DRIVEWAY WITH CONCRETE FROM EOP TO R/W (~275 SQ.FT.)
5' CONCRETE SIDEWALK REPLACEMENT (100LF)
5' CONCRETE SIDEWALK REPLACEMENT (132 LF)
EX. FENCE TO REMAIN IF DAMAGED, CONTRACTOR TO REPLACE IN-KIND
CONC. DRIVE
CONC. DECK
10"PALM
11"PALM
13"PALM
9"PALM
8"PALM
12"PALM
6"PALM
S10
S11
S13
S9
S8
S12
125.18'
N 14°02'00" E
61.12'
S 14°02'00" W
268.31'
S 23°16'16" W
100.00'
PT: 0+43.06
D=023.12
L=28.44 R=40.00
PC: 0+14.01
N14° 01' 46.38"E
138.90
D=013.14
L=114.63 R=499.80
0+00
1+00
2+00
3+00
4+00
5+00
6+00
LIMITS OF MILL AND OVERLAY
STA: 0+76.09
N: 627161.1368
E: 2602022.0342
STA: 0+00.00
N: 627232.2778
E: 2602039.8106
LIMITS OF MILL AND OVERLAY TIE TO EX. EDGE OF DRIVEWAY
EX. EDGE OF PAVEMENT
AREA 4 - 2" MILL AND OVERLAY MATCH EX. GRADE 9105 SQ.FT.
4" DOUBLE SOLID YELLOW THERMOPLASTIC STRIPING
RAISED PAVEMENT MARKERS PER SECTION 630 OF SCDOT STANDARDS AND SPEC.
EDGE PAVEMENT
S. 36-155 (S. WACCAMAW DRIVE)
50' PUBLIC R/W
10'
LOT 241
LOT 10



S. WACCAMAW DRIVE PROFILE
SCALE: H: 1"=10'
V: 1"=1'

0 10' 20'
1" = 10'

Legend
- PROPOSED MILL AND OVERLAY
- PROPOSED ASPHALT FULL DEPTH REPLACEMENT
- PROPOSED ASPHALT

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FOR BIDDING ONLY
LICENSED PROFESSIONAL ENGINEER BRYAN D. KIZER

Client/Project Logo

Client/Project
GEORGETOWN COUNTY

GARDEN CITY DRAINAGE IMPROVEMENTS
SITE 5
MURRELLS INLET, SOUTH CAROLINA

Title
ROADWAY PLAN AND PROFILE

Project No.
178420916

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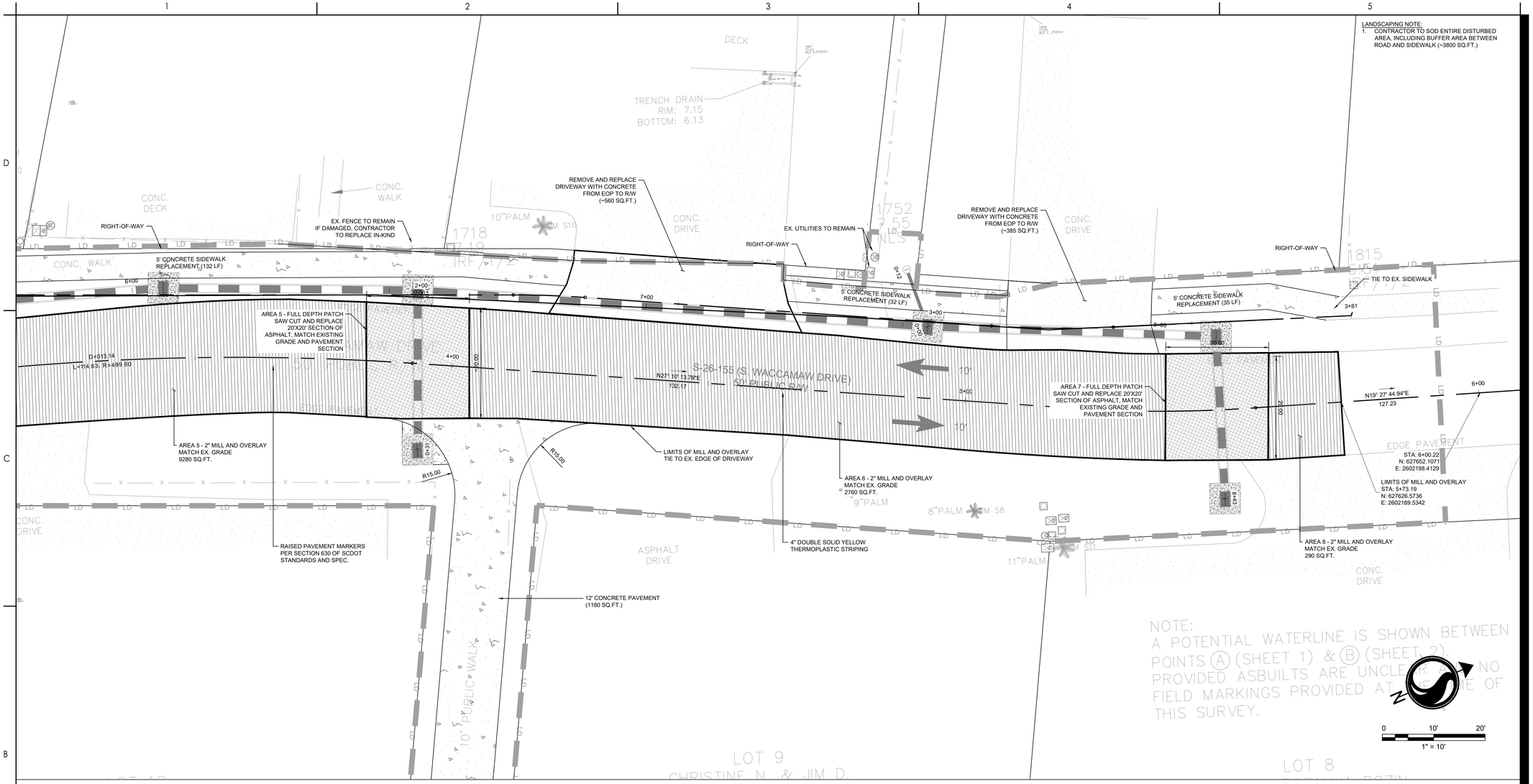
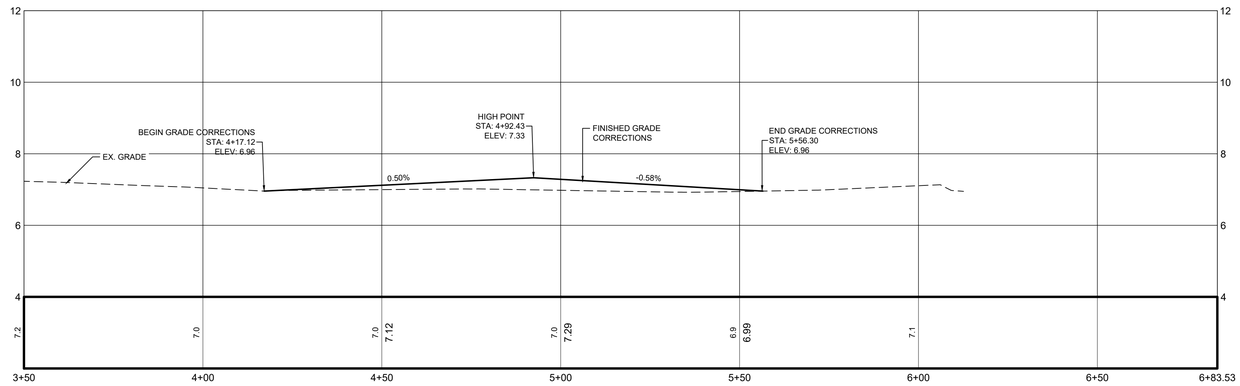
Drawing No.
C4-01





S. WACCAMAW DRIVE PROFILE
SCALE: H: 1"=10'
V: 1"=1'

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Legend
- PROPOSED MILL AND OVERLAY
- PROPOSED ASPHALT FULL DEPTH REPLACEMENT
- PROPOSED ASPHALT

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LICENSED PROFESSIONAL ENGINEER BRYAN D. KIZER

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GARDEN CITY DRAINAGE IMPROVEMENTS SITE 5

MURRELLS INLET, SOUTH CAROLINA

Title
ROADWAY PLAN AND PROFILE

Project No. 178420916
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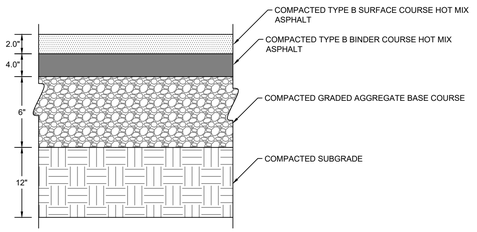
Revision
Sheet 20 of 23
Drawing No. C4-02

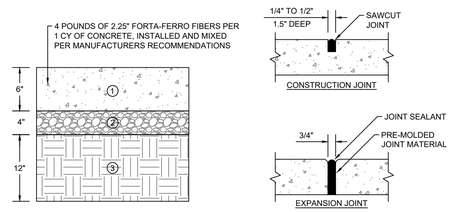
NO GEOTECHNICAL REPORT
1. ASPHALT/PAVEMENT SECTIONS SHOWN ON PLANS AND DETAILS ARE ASSUMED AND SHALL BE VERIFIED WITH GEOTECHNICAL ANALYSIS BY THE CONTRACTOR PRIOR TO INSTALLATION.
2. CONTRACTOR TO ASSUME 12 INCHES OF UNDERCUT AND BACKFILL TO BRING TO GRADE.



NOTE:

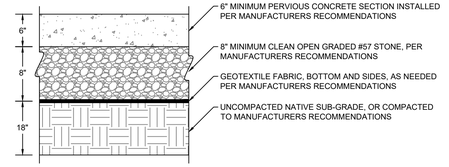
1. SECTION TO BE PLACED WITHIN THE SCDOT RIGHT OF WAY.
2. ALL SPECIFICATION REFERENCES TO BE PER THE LATEST REVISION AND SUPPLEMENTS OF SCDOT STANDARDS AND GUIDELINES.

ASPHALT PAVEMENT IN RIGHT-OF-WAY SECTION
NOT TO SCALE

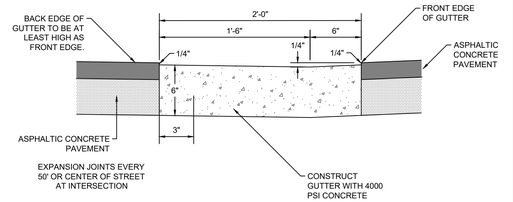


1. FIBER REINFORCED CONCRETE (4000 PSI)
2. STABILIZED AGGREGATE BASE COURSE COMPACTED TO 100% STANDARD PROCTOR (ASTM D 1557) STANDARD SPECS.
3. EARTH TYPE SUB BASE COMPACTED TO 100% STANDARD PROCTOR METHOD DRY DENSITY (ASTM D 698) STANDARD SPECS.

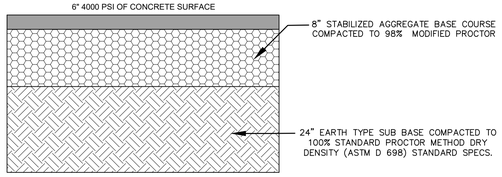
CONCRETE PAVEMENT SECTION AND JOINT
NOT TO SCALE



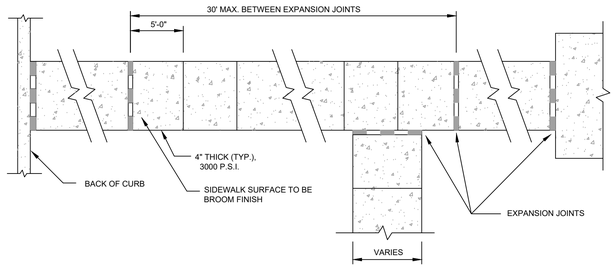
PERVIOUS CONCRETE
NOT TO SCALE



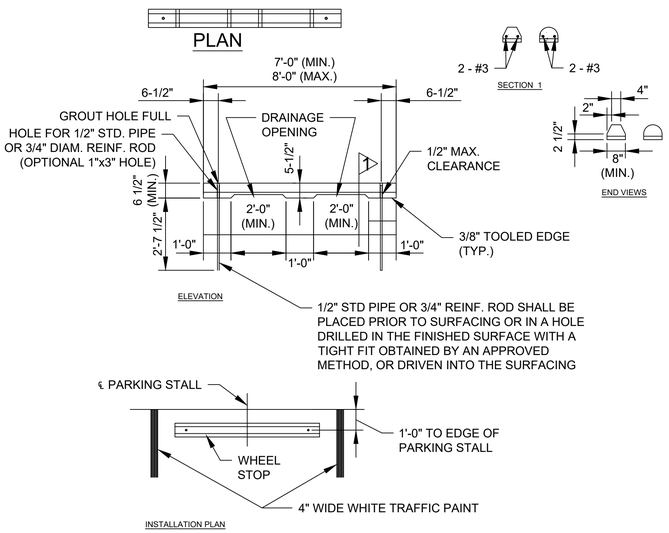
24" CONCRETE VALLEY GUTTER
NOT TO SCALE



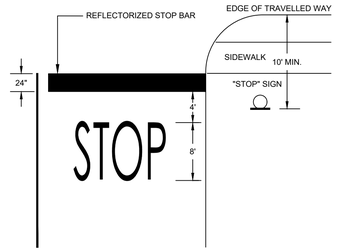
CONCRETE SECTION FOR DRIVEWAYS
N.T.S.



CONCRETE SIDEWALK
N.T.S.



CONCRETE WHEEL STOP
N.T.S.



NOTE:
1. THE "DESIRED STOPPING POINT" IS THE LOCATION BASED ON SITE CONDITIONS THAT BEST ALLOWS THE STOPPED VEHICLE TO VIEW THE APPROACHING TRAFFIC.
2. STOP BAR MATERIAL TO BE THERMOPLASTIC. COLOR TO BE WHITE.
3. PAVEMENT MRKINGS SHALL COMPLY WITH THE SOUTH CAROLINA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

STOP BAR DETAIL
N.T.S

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Issued	By	Appd	YYYY.MM.DD
File Name: C4_916_ROAD	SGC Dwn.	SGC Dsgn.	BK Chkd. 2018.12.11

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Client/Project
GEORGETOWN COUNTY

GARDEN CITY DRAINAGE IMPROVEMENTS SITE 5

MURRELLS INLET, SOUTH CAROLINA

Title
ROADWAY DETAILS

Project No. 178420916
Scale

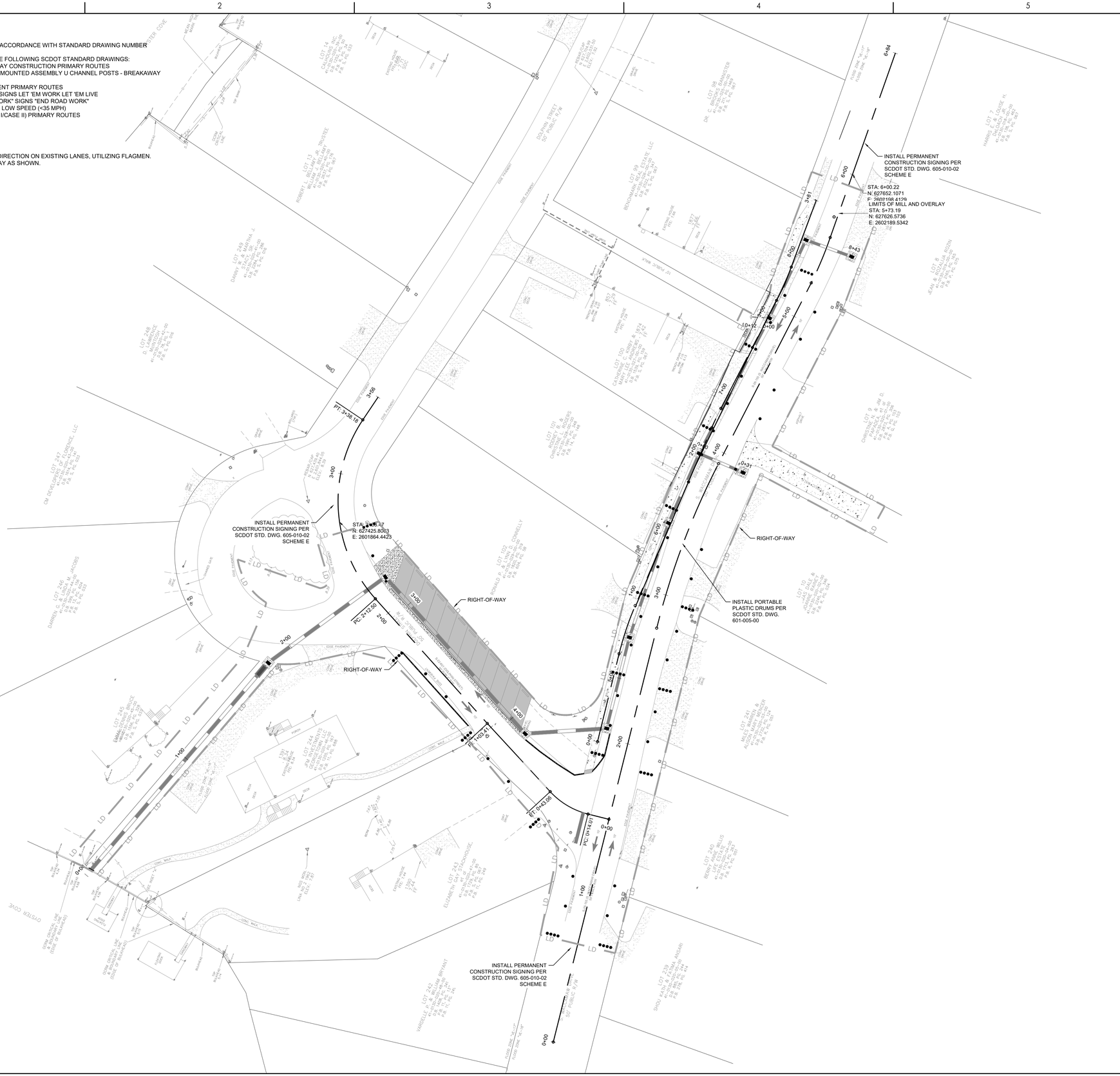
Revision
Sheet 21 of 23
Drawing No. C4-03

CONSTRUCTION NOTES:

1. PORTABLE PLASTIC DRUMS SHALL BE INSTALLED IN ACCORDANCE WITH STANDARD DRAWING NUMBER 601-005-00, AND AS DIRECTED BY THE PLANS.
2. CONSTRUCTION OF THIS PROJECT REFERENCES THE FOLLOWING SCDOT STANDARD DRAWINGS:
   - 2.1. 601-005-00 WIDENING PROJECTS NEW ROADWAY CONSTRUCTION PRIMARY ROUTES
   - 2.2. 605-005-01 CONSTRUCTION SIGNING GROUND MOUNTED ASSEMBLY U CHANNEL POSTS - BREAKAWAY INSTALLATION
   - 2.3. 605-010-02 CONSTRUCTION SIGNING PERMANENT PRIMARY ROUTES
   - 2.4. 605-025-01 CONSTRUCTION SIGNING SPECIAL SIGNS LET 'EM WORK LET 'EM LIVE
   - 2.5. 605-030-02 CONSTRUCTION SIGNING "ROAD WORK" SIGNS "END ROAD WORK"
   - 2.6. 610-015-00 LANE CLOSURE NIGHT TIME URBAN LOW SPEED (<35 MPH)
   - 2.7. 610-205-00 RIGHT SHOULDER CLOSURE (CASE I/CASE II) PRIMARY ROUTES

CONSTRUCTION SEQUENCE:

1. INSTALL PERMANENT CONSTRUCTION SIGNS.
2. INSTALL PORTABLE PLASTIC DRUMS.
3. MAINTAIN MINIMUM ONE LANE OF TRAFFIC IN EACH DIRECTION ON EXISTING LANES, UTILIZING FLAGMEN.
4. CONSTRUCT SHADED PORTION OF MILL AND OVERLAY AS SHOWN.



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PER GEORGETOWN COUNTY COMMENTS	SGC	BK	2019.01.22
Issued	**By**	**Appd**	**YYYY.MM.DD**
File Name: C5_916_TRAFFIC	SGC	SGC	BK	2018.12.11
	Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

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SOUTH CAROLINA — STANTEC CONSULTING SERVICES, INC. — No. C02316 — CERTIFICATE OF AUTHORIZATION

FOR BIDDING ONLY

PROFESSIONAL ENGINEER — LICENSED — No. 22306 — BRYAN D. KLIZER

Client/Project Logo

Client/Project
GEORGETOWN COUNTY

GARDEN CITY DRAINAGE IMPROVEMENTS
SITE 5

MURRELLS INLET, SOUTH CAROLINA

Title
TRAFFIC CONTROL PLAN

Project No.
178420916

Scale

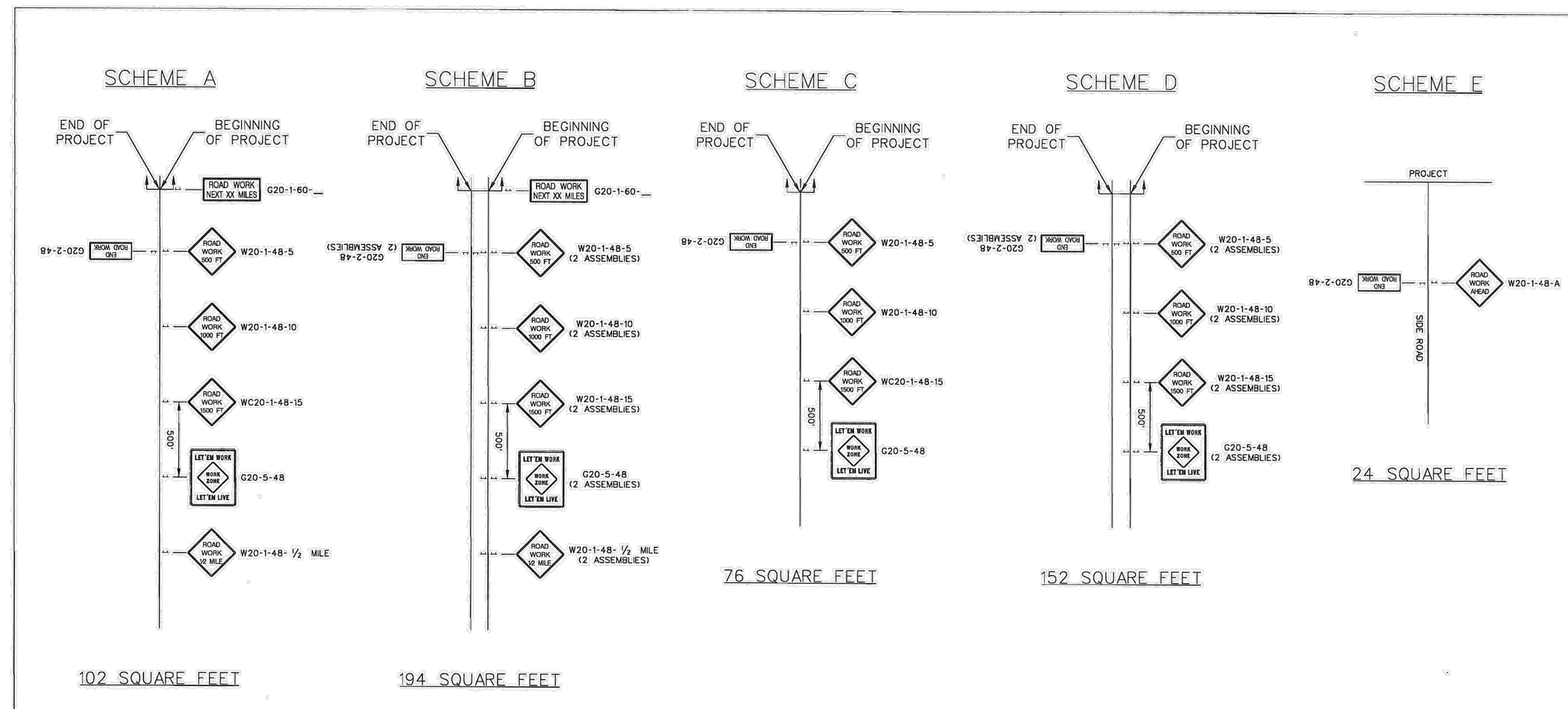
Revision

Sheet
22 of 23

Drawing No.
C5-00

1 2 3 4 5

D C B A



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 MESSAGES 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 (GVM) 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 GVM 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 GVM 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

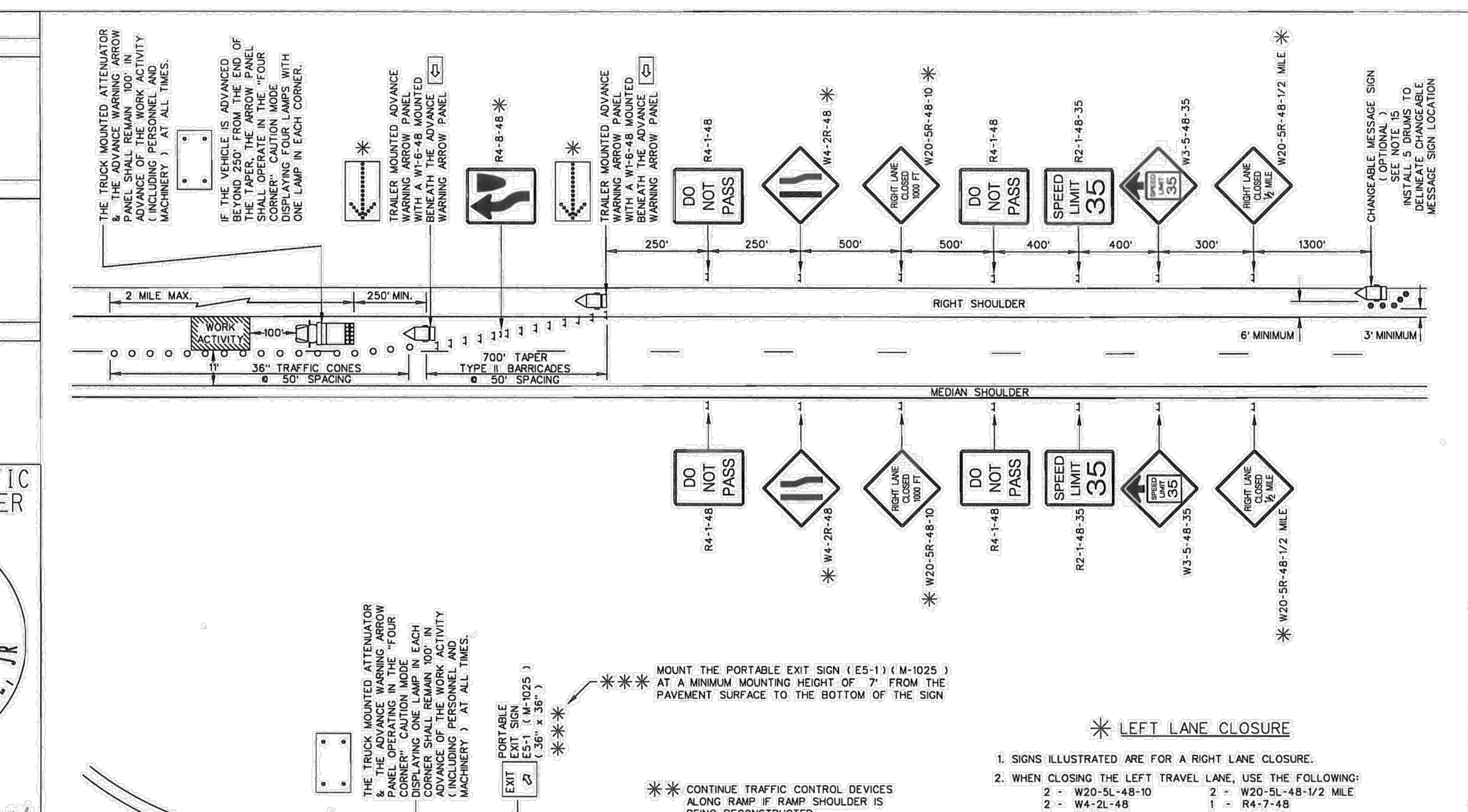
FLAGGING OPERATIONS TWO-LANE TWO-WAY PRIMARY & SECONDARY ROUTES

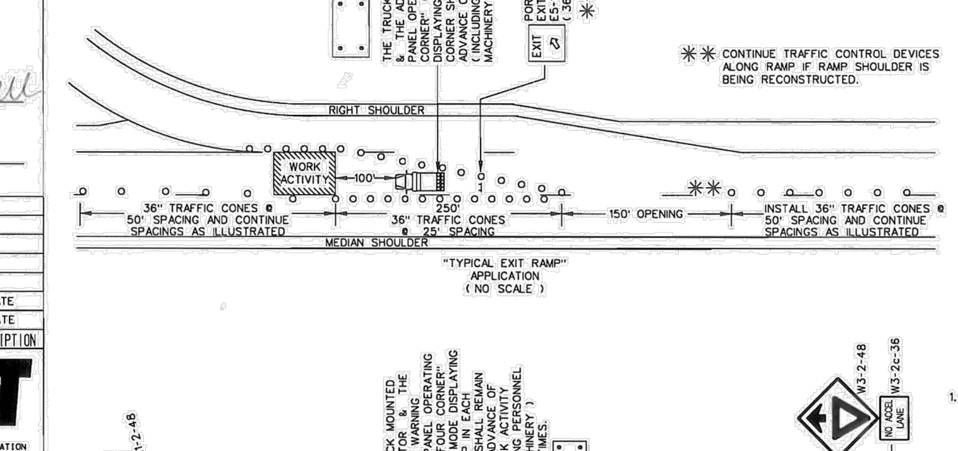
610-005-00

EFFECTIVE LETTING DATE JAN 2016

THIS DRAWING IS NOT TO SCALE

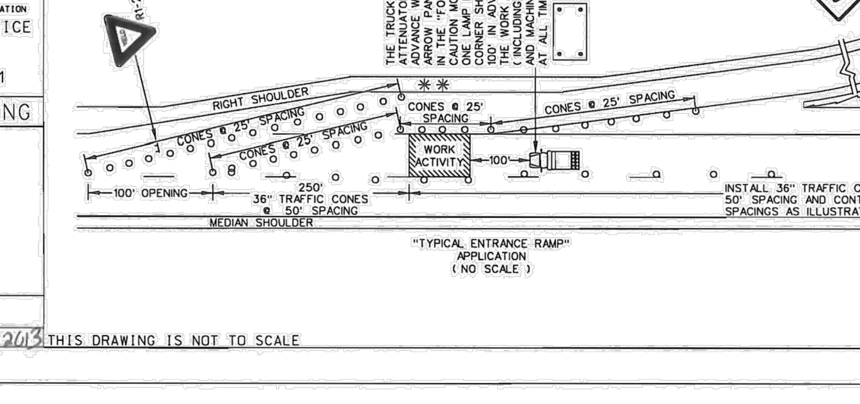
REFERENCES





✳ LEFT LANE CLOSURE

1. SIGNS ILLUSTRATED ARE FOR A RIGHT LANE CLOSURE.
2. WHEN CLOSING THE LEFT TRAVEL LANE, USE THE FOLLOWING:
   2 - W20-5L-48-10   2 - W20-5L-48-1/2 MILE
   2 - W4-2L-48   1 - R4-7-48
3. THE STRIPES ON THE BARRICADES TO THE LEFT OF TRAFFIC SHALL SLOPE DOWNWARD FROM THE UPPER LEFT TO THE LOWER RIGHT.
4. THE FLASHING ARROW AND THE "LARGE ARROW" SIGN (W1-6-48) SHALL POINT TO THE RIGHT.
5. THE CHANGEABLE MESSAGE SIGN SHALL FLASH ALTERNATELY TO READ "LEFT LANE CLOSED", "MERGE RIGHT".



PORTABLE TRUCK MOUNTED ATTENUATOR

1. UTILIZE A TRUCK MOUNTED ATTENUATOR ATTACHED TO THE REAR OF A TRUCK WITH A MINIMUM GROSS VEHICULAR WEIGHT (GVM) 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.
4. DUE TO THE WEIGHT OF A TRUCK MOUNTED ATTENUATOR, THE TRUCK MOUNTED ATTENUATOR SUPPLEMENTED WITH AN ADVANCE WARNING ARROW PANEL MAY BE REPLACED WITH A TRAILER MOUNTED ADVANCE WARNING ARROW PANEL WHEN THIS TRAFFIC CONTROL SETUP IS UTILIZED FOR ASPHALT CONCRETE PAVEMENT OPERATIONS. REPLACEMENT WITH A TRAILER MOUNTED ADVANCE WARNING ARROW PANEL SHALL REQUIRE THE ENGINEER'S APPROVAL.

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. REFLECTORIZATION OF 36" TRAFFIC CONES USED DURING DAYLIGHT HOURS IS NOT REQUIRED. IF THIS TRAFFIC CONTROL SETUP 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 FLEXIBLE PRISMATIC RETROREFLECTIVE SHEETING UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT.
9. REFLECTORIZE ALL BARRICADES WITH A TYPE VIII OR IX PRISMATIC RETROREFLECTIVE SHEETING ON ALL PROJECTS LET TO CONTRACT AFTER MAY 1, 2012 UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT.
10. TYPE II BARRICADES SHALL HAVE A MINIMUM WIDTH OF 3 FEET UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT.
11. CONDUCT THE WORK IN SUCH A MANNER THAT WILL MINIMIZE ENCROACHMENT OF TRAFFIC CONTROL DEVICES, EQUIPMENT, PERSONNEL, MATERIALS OR ANY WORK RELATED VEHICLES ONTO AN ADJACENT TRAVEL LANE OPEN TO TRAFFIC. INSTALL, MAINTAIN AND ADJUST THE TRAFFIC CONTROL DEVICES AS NECESSARY TO ENSURE PROPER DELINEATION OF THE WORK AREA.
12. LANE CLOSURES ARE RESTRICTED TO MAXIMUM LENGTHS OF 2 MILES UNLESS OTHERWISE DIRECTED BY THE SPECIAL PROVISIONS AND/OR THE DEPARTMENT.
13. IF WORK IS BEING CONDUCTED SIMULTANEOUSLY AT TWO DIFFERENT LOCATIONS WITHIN THE SAME TRAVEL LANE UNDER TWO SEPARATE LANE CLOSURES ON A PRIMARY ROADWAY WITH A POSTED REGULATORY SPEED LIMIT OF 40 MPH OR GREATER, SEPARATE THE TWO LANE CLOSURES BY NO LESS THAN 2 MILES FROM THE END OF THE FIRST CLOSURE THAT A MOTORIST WILL ENCOUNTER TO THE BEGINNING OF THE TAPER OF THE SECOND CLOSURE.
14. IF WORK IS BEING CONDUCTED SIMULTANEOUSLY AT TWO DIFFERENT LOCATIONS IN THE SAME DIRECTION BUT WITHIN DIFFERENT TRAVEL LANES UNDER TWO SEPARATE LANE CLOSURES ON A PRIMARY ROADWAY WITH A POSTED REGULATORY SPEED LIMIT OF 40 MPH OR GREATER, SEPARATE THE TWO LANE CLOSURES BY NO LESS THAN 4 MILES FROM THE END OF THE FIRST CLOSURE THAT A MOTORIST WILL ENCOUNTER TO THE BEGINNING OF THE TAPER OF THE SECOND CLOSURE.
15. UTILIZATION OF A CHANGEABLE MESSAGE SIGN IS OPTIONAL WITH THIS TRAFFIC CONTROL SETUP. HOWEVER, WHEN A CHANGEABLE MESSAGE SIGN IS UTILIZED, INSTALL THE SIGN AS ILLUSTRATED ON THIS STANDARD DRAWING UNLESS OTHERWISE DIRECTED BY THE SPECIAL PROVISIONS, THE PLANS AND/OR THE ENGINEER. INSTALL THE CHANGEABLE MESSAGE SIGN NO LESS THAN 6 FEET FROM THE NEAR EDGE OF THE ADJACENT TRAVEL LANE AND SUPPLEMENT THE SIGN LOCATION WITH NO LESS THAN 5 PORTABLE PLASTIC DRUMS FOR DELINEATION AS ILLUSTRATED. 36" STANDARD TRAFFIC CONES OR 42" OVERSIZED TRAFFIC CONES ARE PROHIBITED AS SUBSTITUTES FOR THE PORTABLE PLASTIC DRUMS IN THIS APPLICATION. DURING A RIGHT LANE CLOSURE, THE SIGN SHOULD FLASH ALTERNATELY TO READ "RIGHT LANE CLOSED", "MERGE LEFT" AT A RATE THAT WILL PERMIT MOTORISTS TO READ BOTH MESSAGES AT LEAST ONCE.
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 A LANE CLOSURE ON A PRIMARY ROADWAY WITH A POSTED REGULATORY SPEED LIMIT OF 40 MPH OR GREATER.

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	2-15-11	JCS	GENERAL UPDATE
0	8-22-07	JCS	DRAWING NO. UPDATE

SCDOT

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

STANDARD DRAWING

LANE CLOSURE DAYTIME MULTILANE PRIMARY ROUTES

610-025-00

EFFECTIVE LETTING DATE JAN. 2013

THIS DRAWING IS NOT TO SCALE

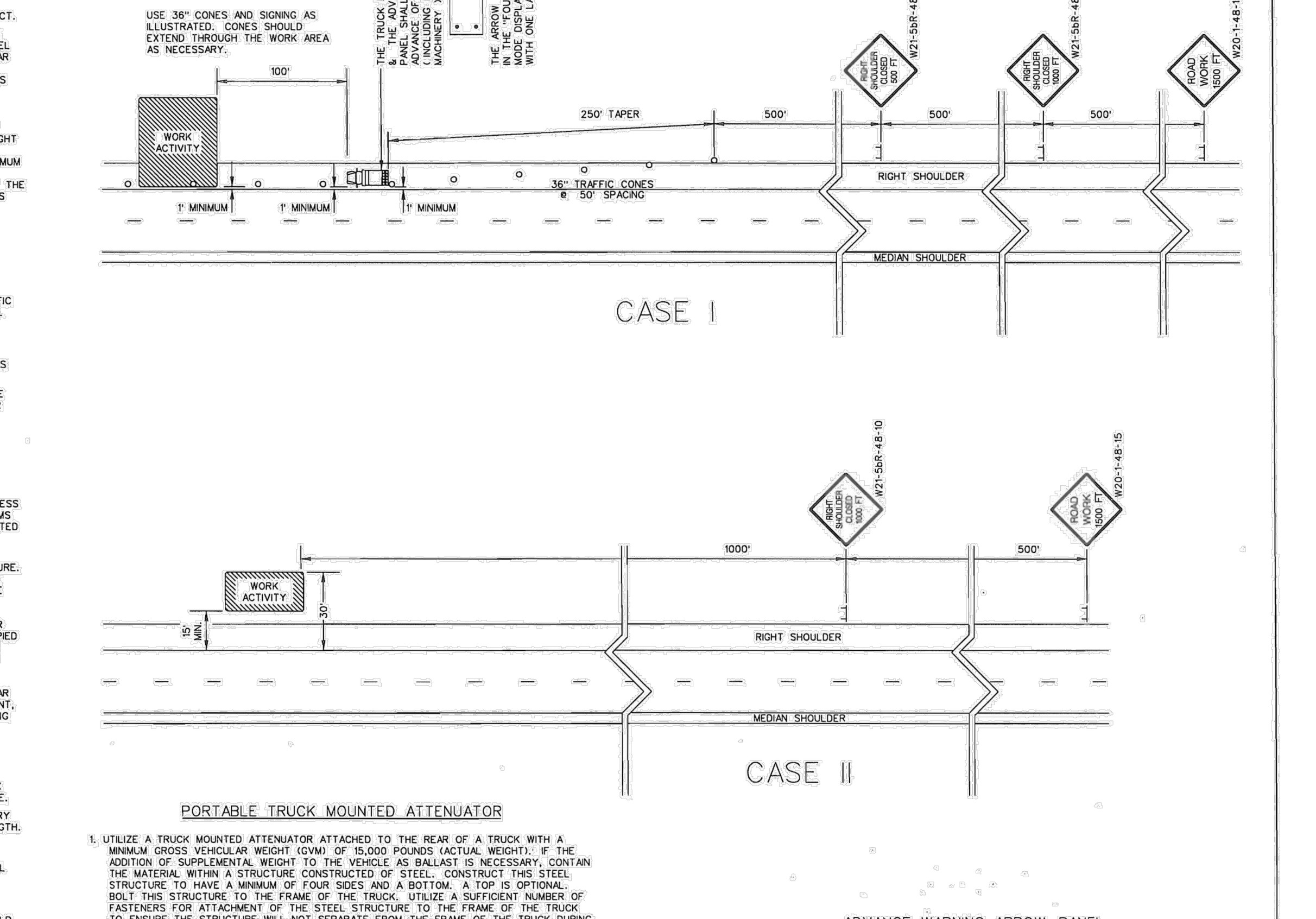
REFERENCES

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.
10. [illegible]
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 (GVM) 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

Stantec
4969 Centre Pointe Drive, Suite 200
North Charleston, SC, 29418
Tel: 843.740.7700
www.stantec.com

Consultant

Legend

Revision	By	Appd	YYYY.MM.DD
BID SET	AB	BK	2020.03.26
PER GEORGETOWN COUNTY COMMENTS	SGC	BK	2019.10.30
PER GEORGETOWN COUNTY COMMENTS	SGC	BK	2019.01.22
Issued	By	Appd	YYYY.MM.DD

File Name: C5_916_TRAFFIC	SGC	SGC	BK	2018.12.11
	Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

Permit/Seal

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

FOR BIDDING ONLY

SOUTH CAROLINA PROFESSIONAL ENGINEER No. 22800 LICENSED BRYAN D. KIZER

Client/Project Logo

Client/Project
GEORGETOWN COUNTY

GARDEN CITY DRAINAGE IMPROVEMENTS
SITE 5

MURRELLS INLET, SOUTH CAROLINA

Title
TRAFFIC CONTROL DETAILS

Project No. 178420916

Scale

Revision

Sheet 23 of 23

Drawing No. C5-01

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