

CLIENT: GEORGETOWN COUNTY

108 SCREVEN STREET

GEORGETOWN, SC 29442

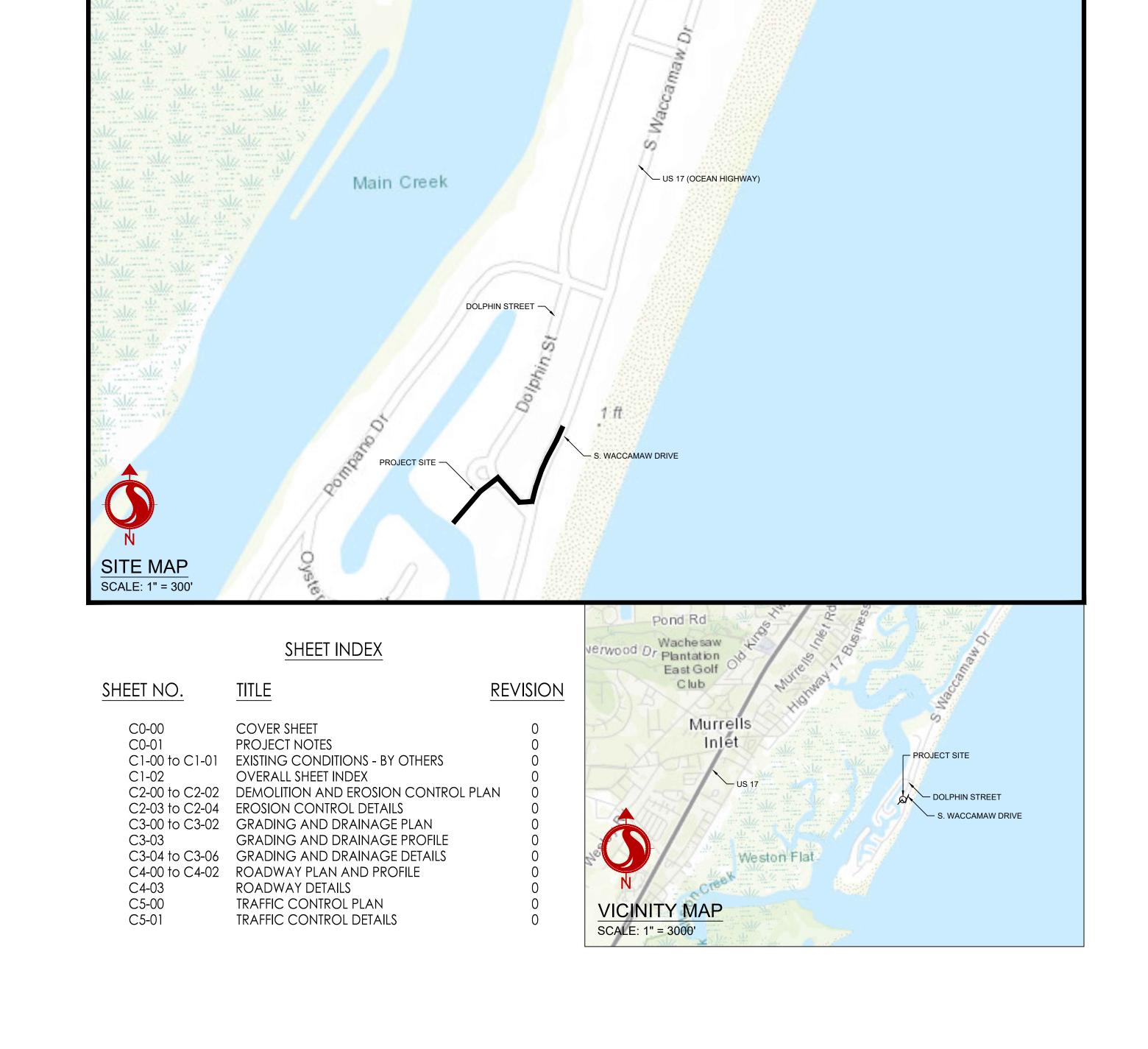
TRACY JONES | 843-545-3258

# GARDEN CITY DRAINAGE IMPROVEMENTS

SITE 5
GEORGETOWN COUNTY,
SOUTH CAROLINA



PROJECT NUMBER: 178420916



	PROJECT CONTA	CTS	
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		Ву	Appd	YYYY.MM.DE
BID SET PER GEORGETOWN COUNTY COMMENTS PER GEORGETOWN COUNTY COMMENTS		AB SGC SGC	BK BK BK	2020.03.26 2019.10.30 2019.01.22
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Permit/Seal  STANTEC CONSULTING SERVICES, INC. No. C02310  No. C02310  No. C02310	FO **	RIBI		MG * * * * * * * * * * * * * * * * * * *

(843) 545-3258 2. ENGINEER: STANTEC CONSULTING SERVICES, INC SHAUN CAVEY, P.E. 4969 CENTRE POINTE DR, SUITE 200 NORTH CHARLESTON, SC 29418

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. 3. 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:

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:

- 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
- 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.
- 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
- 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
- 9 THE CONTRACTOR SHALL EXERCISE EXTREME CALITION IN AREAS OF BURIED LITH THES 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

ENGINEER WILL INSPECT AND/OR ENFORCE SAFETY REGULATION.

- 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
- 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
- 1.1. THE CONTRACTOR, OR THE CONTRACTORS SUPPLIER, <u>MUST</u> INCLUDE WITH THE SHOP DRAWING SUBMITTAL A REFERENCE TO THE GOVERNING MUNICIPALITIES STANDARDS SHOWING COMPLIANCE WITH SAID MUNICIPALITIES
- 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, MATERIÁL, AND INVERT ELEVATIONS, IN COMPLIANCE WITH THE GEORGETOWN COUNTY REQUIREMENTS AND NPDES PERMIT

- 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
- 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 XCEPT 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.

FEATHERED PAST JOINTS WITH EXISTING PAVEMENT AS REQUIRED TO PROVIDE A SMOOTH, FREE DRAINING SURFACE.

- 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
- 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
- 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 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

16. AGGREGATE BASE MATERIAL SHALL MEET THE FOLLOWING GRADATION REQUIREMENTS

MINIMUM OF 91% OF MAXIMUM DÉNSITY AS DETERMINED BY THE RICE STANDARD METHOD.

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
- ENGINEERED FILL MATERIAL SHALL BE COMPACTED TO AT LEAST THE FOLLOWING PERCENTAGES OF MAXIMUM DRY DENSITY AND OPTIMUM

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

-	TI, I ER AASITIO 1180 (MODII IED I ROCTOR)		
	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 FILI
- 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
- 21. IF SUBGRADE SOILS EXHIBIT PUMPING DURING COMPACTION, THE AREA SHALL BE ALLOWED TO DRY UNTIL THE SOLIDS BECOME WORKABLE ITHOUT 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.

EXCAVATION SHALL BE DETERMINED BY THE INDEPENDENT GEOTECHNICAL LABORATORY.

- 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

### DRAINAGE NOTES:

- 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
- 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
- 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"
- 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 GEOTECHNICA ENGINEER SHALL BE SUBMITTED TO THE OWNER AND CIVIL ENGINEER FOR CONCURRENCE PRIOR TO PROCEEDING WITH WORK.

### **EROSION CONTROL NOTES:**

BETTER TREATMENT PRIOR TO DISCHARGE:

- 1 IF NECESSARY SLOPES WHICH EXCEED FIGHT (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
- 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
- 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.
- 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
- 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
- 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.
- 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

11 A COPY OF THE SWPPP, INSPECTIONS RECORDS, AND RAINFALL DATA MUST BE RETAINED AT THE CONSTRUCTION SITE OR A

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
- 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
- -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.



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PER GEORGETOWN COUNTY COMMENTS SGC BK 2019.10.30 PER GEORGETOWN COUNTY COMMENTS BK 2019.01.22 Appd YYYY.MM.DD

Permit/Seal



Client/Project Logo

File Name: C0 916 COVER

Client/Project

GEORGETOWN COUNTY

GARDEN CITY DRAINAGE IMPROVEMENTS

Scale

Drawing No.

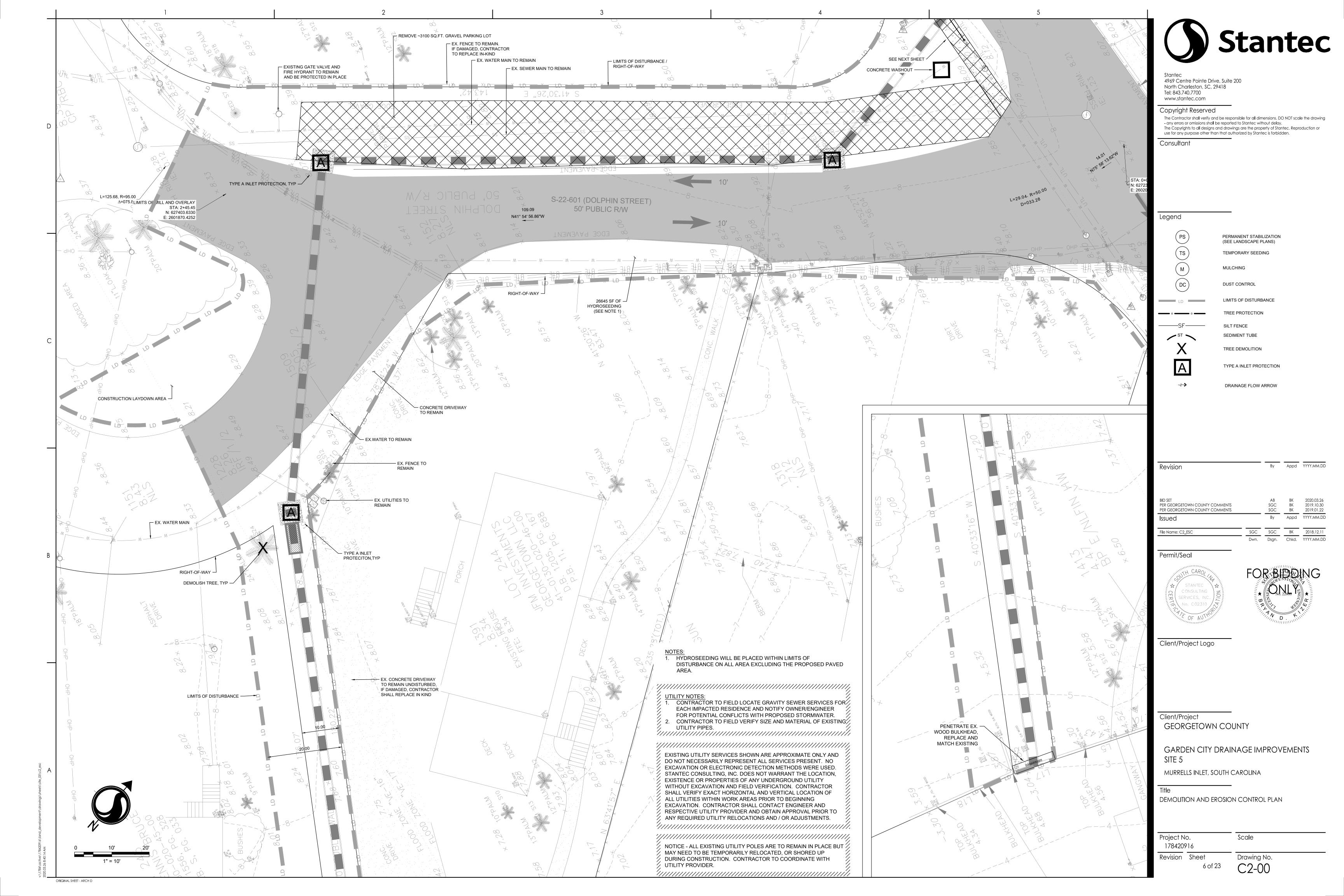
MURRELLS INLET, SOUTH CAROLINA

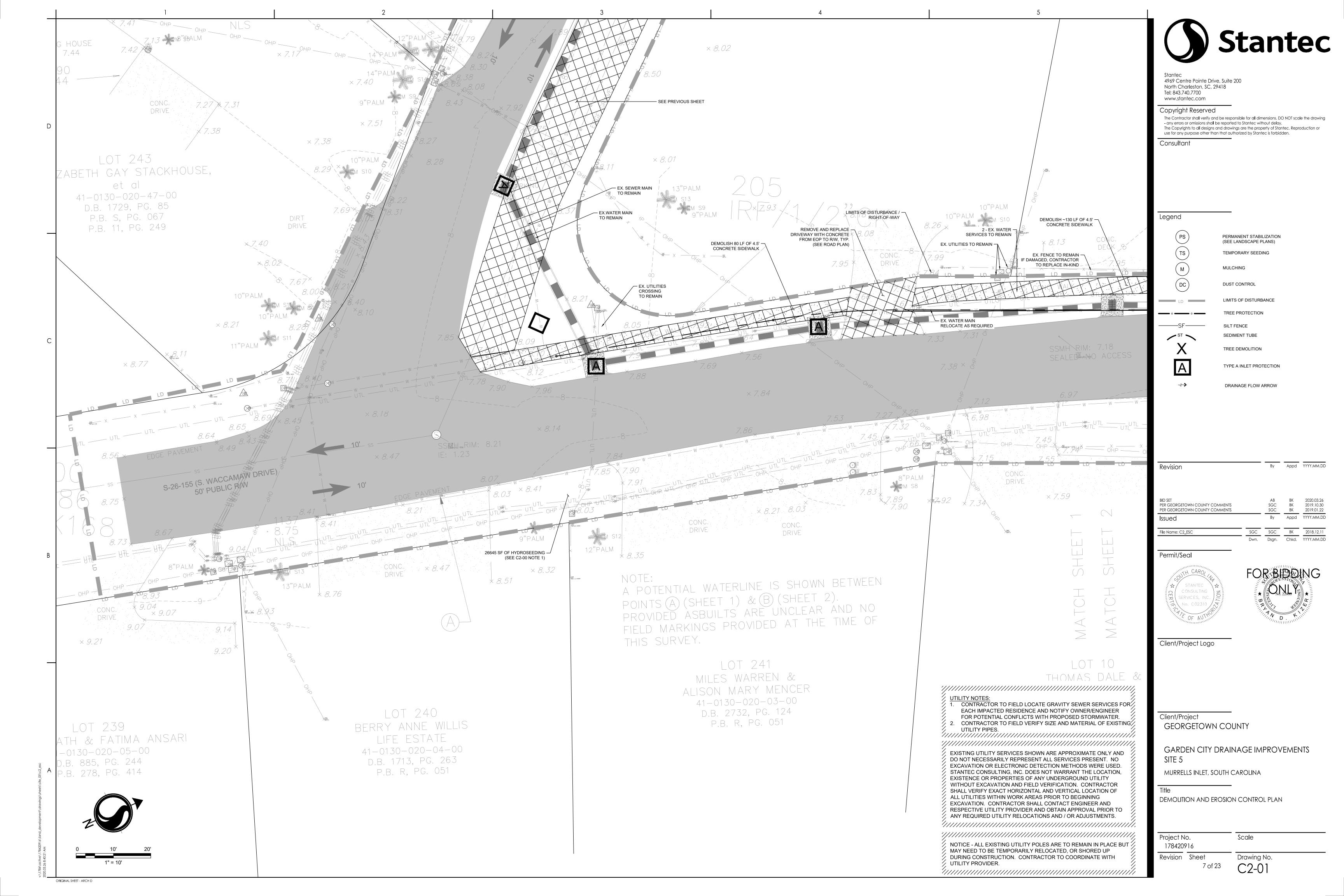
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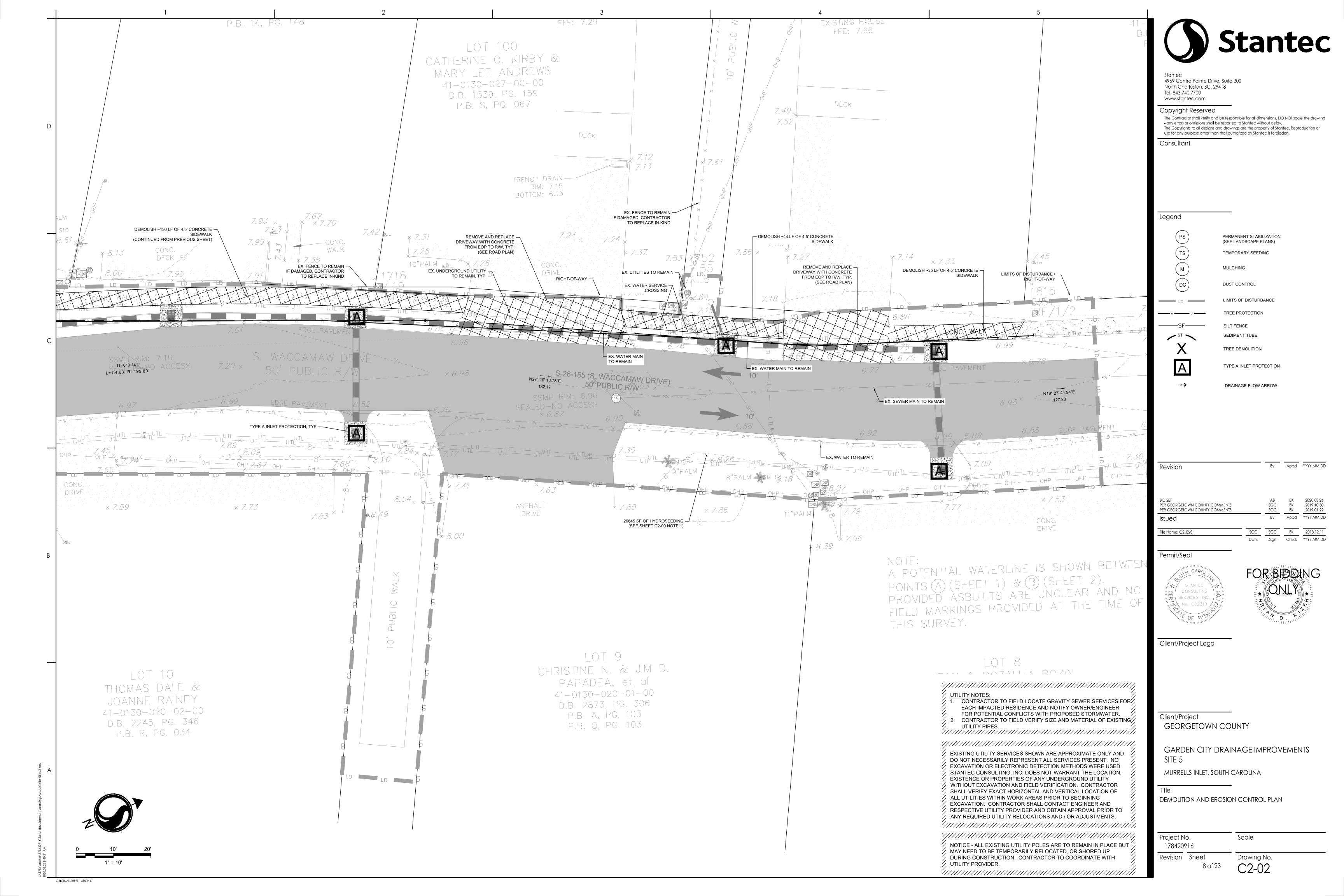
178420916 Revision Sheet

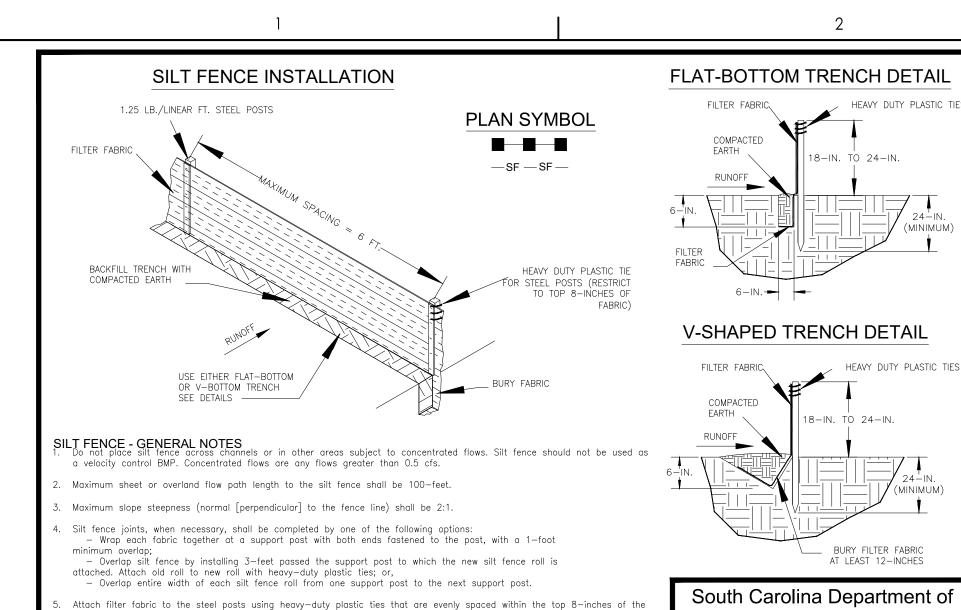
ORIGINAL SHEET - ARCH D











6. Install the silt fence perpendicular to the direction of the stormwater flow and place the silt fence the proper distance from

. Install Silt Fence Checks (Tie—Backs) every 50—100 feet, dependent on slope, along silt fence that is installed with slope

the toe of steep slopes to provide sediment storage and access for maintenance and cleanout.

and where concentrated flows are expected or are documented along the proposed/installed silt fence.

FLAT-BOTTOM TRENCH DETAIL SILT FENCE - POST REQUIREMENTS following physical characteristics. and a nominal "T" length of 1.48—inches. - Weigh 1.25 pounds per foot (± 8%)

MINIMUM)

HEAVY DUTY PLASTIC TIES

18-IN. TO 24-IN.

└── BURY FILTER FABRIC

Health and Environmental Contro

SILT FENCE

andard drawing no. SC-03 Page 1 of

NOT TO SCALE

AT LEAST 12-INCHES

Composed of a high strength steel with a minimum yield strength of - Include a standard "T" section with a nominal face width of 1.38—inches

Posts shall be equipped with projections to aid in fastening of filter fabric. 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.

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

. Post spacing shall be at a maximum of 6—feet on center.

### SILT FENCE - FABRIC REQUIREMENTS Silt fence must be composed of woven geotextile filter fabric that consists of the

- 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.

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.

12—inches of the fabric should be placed within excavated trench and toed in when the trench is backfilled. . Filter Fabric shall be purchased in continuous rolls and cut to the length of the barrier

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 reaular 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

4. Remove accumulated sediment when it reaches 1/3 the height of the silt

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 greas 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,

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

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

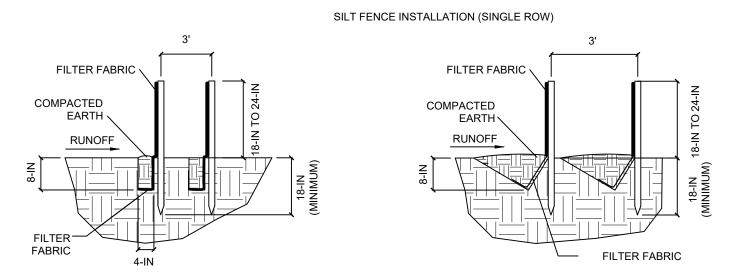
South Carolina Department of

Health and Environmental Control

SILT FENCE

GENERAL NOTES

SC-03 PAGE 2 of 2

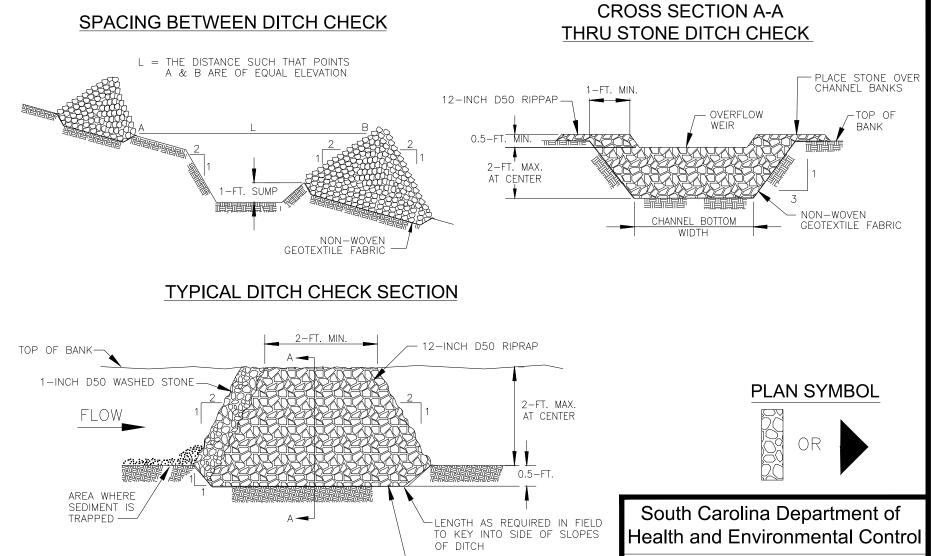


FLAT-BOTTOM TRENCH DETAIL (DOUBLE ROW)

V-SHAPED TRENCH DETAIL (DOUBLE ROW)

DOUBLE ROW SILT FENCE

1.25 LB./LINEAR FT. STEEL POSTS FILTER FABRIC HEAVY DUTY PLASTIC TIE BACKFILL TRENCH WITH FOR STEEL POSTS COMPACTED EARTH BURY FABRIC USE EITHER FLAT-BOTTOM OR V-BOTTOM TRENCH SHOWN BELOW



- NON-WOVEN GEOTEXTILE FABRIC

1.25 LB./LINEAR FT.

POST INSTALLATION DETAIL

48-IN. MIN.

OF 12-INCHES OF FILTER FABRIC-

BURY & TRENCH MINIMUM

8-IN. MIN.-

FILTER FABRIC BURIAL DETAIL

STEEL POSTS —

## **ROCK DITCH CHECK - GENERAL NOTES**

- Rock Ditch Checks should not be placed in Waters of the State or USGS blue—line streams (unless approved by Federal Authorities).
- 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.
- A non-woven geotextile fabric shall be installed over the soil surface where the rock ditch check is to be placed.
- 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.
- . Rock Ditch Checks should not exceed a height of 2—feet at the centerline of the channel.
- . Rock Ditch Checks should have a minimum top flow length of
- . 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.
- 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
- 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
- 8. After construction is completed and final stabilization is reached, the entirety of the rock ditch check should be

Health and Environmental Contro

ROCK DITCH CHECK

NDARD DRAWING NO. SC-04 PAGE 2 of 2 GENERAL NOTES FEBRUARY 2014

DATE

# SGC BK 2019.10.30 SGC BK 2019.01.22 PER GEORGETOWN COUNTY COMMENTS PER GEORGETOWN COUNTY COMMENTS Appd YYYY.MM.DD

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Client/Project Logo

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GARDEN CITY DRAINAGE IMPROVEMENTS

MURRELLS INLET, SOUTH CAROLINA

**EROSION CONTROL DETAILS** 

Project No. 178420916 Revision Sheet

Scale Drawing No. C2-03 9 of 23

- Composed of fibers consisting of long chain synthetic polymers of at least 85% by weight of polyolefins, polyesters, or
- 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
- . 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
- 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.
- minimum, the following physical characteristics. Composed of a high strength steel with a minimum yield strength of 50,000 psi.
- 1.38—inches and a nominal "T" length of 1.48—inches. Weigh 1.25 pounds per foot  $(\pm 8\%)$
- . Posts shall be equipped with projections to aid in fastening of filter
- 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.
- . 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
- 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
- 5. Removed sediment shall be placed in stockpile storage areas or spread thinly across disturbed area. Stabilize the removed sediment
- 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

FILTER FABIC INLET PROTECTION SC-07 PAGE 2 of 2 GENERAL NOTES FEBRUARY 2014

DATE

OBKROWNALSHIEET ARROHAD

ROCK DITCH CHECK SC-04 PAGE 1 of 2 NOT TO SCALE

ATTACH FILTER FABRIC TO

3-FT. MAX. SPACING

-18-IN. TO 24-IN.

POSTS WITH HEAVY DUTY PLASTIC TIES ALONG TOP 8-INCHES OF FABRIC .-

FOLD FABRIC TO OVERLAP

TO POSTS WITH HEAVY DUTY

1 FOOT AND SECURE

FILTER FABRIC INSTALLATION

DETAIL

PLAN SYMBOL

South Carolina Department of

Health and Environmental Control

Type A

SC-07 PAGE 1 of 2

FILTER FABIC INLET PROTECTION

NOT TO SCALE

STANDARD DRAWING NO.

as necessary to prevent erosion and bypassing.

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

South Carolina Department of

- BURY FABRIC

(SEE DETAIL)

TYPE A - FILTER FABRIC REQUIREMENTS Silt fence must be composed of woven geotextile filter fabric that consists of the following requirements: polyamides that are formed into a network such that the

filaments or yarns retain dimensional stability relative to each

and/or filtering properties; and, Have a minimum width of 36-inches.

5. 12—inches of the fabric should be placed within excavated trench and

5. Filter Fabric shall be installed at a minimum of 24-inches above the ground.

TYPE A - POST REQUIREMENTS Silt Fence posts must be 48—inch long steel posts that meet, at a

Include a standard "T" section with a nominal face width of

South Carolina Department of Health and Environmental Control Type A

Know what's below.

Call before you dig.

RIGHT-OF-WAY EDGE OF \ PAVEMENT ` REFER TO MATCH EXISTING EXISTING GRADES、 PLANS PLANS GRADES ` 12:1 MAX SIDESLOPE VARIES See plans SIDESLOPE VARIES 4:1 MAX

(SEE PLANS) VARIES ← (SEE ← PLANS) BOTT. WIDTH VARIES (SEE PLANS)

# GRASSED TRAPEZOIDAL DITCH DETAIL

SEQUENCE OF CONSTRUCTION:

RECEIVE NPDES COVERAGE FROM SCDHEC.

NOTIFY SCDOT, PRE-CONSTRUCTION MEETING.

NOTIFY DHEC EQC REGIONAL OFFICE 48 HOURS PRIOR TO BEGINNING LAND-DISTURBING ACTIVITIES.

INSTALLATION OF TREE PROTECTION, PERIMETER

POTHOLE UTILITY LOCATIONS AS SHOWN ON THE PLANS, LOCATE SEWER SERVICES FOR EACH RESIDENCE, AND NOTIFY OWNER/ENGINEER OF

INSTALLATION OF COFFERDAMS (AS REQUIRED) INSTALLATION OF NEW STORMWATER PIPES AND

STRUCTURES. CONSTRUCT DIVERSION SWALES AS NECESSARY TO REMOVAL OF TEMPORARY STRUCTURES).

CONVEY THE STORM WATER BEFORE THE FUNCTIONAL, INSTALLING SEDIMENT TUBES IF NECESSARY.

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

CONFLICTS.

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.

SILT FENCE, AND EROSION CONTROL MEASURES. 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

PROPOSED STORM DRAINAGE SYSTEM IS FULLY 15. SUBMIT TO DHEC FOR N.O.T. WITHIN 30 DAYS OF FINAL STABILIZATION.

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Permit/Seal



Client/Project Logo

Client/Project GEORGETOWN COUNTY

GARDEN CITY DRAINAGE IMPROVEMENTS

MURRELLS INLET, SOUTH CAROLINA

EROSION CONTROL DETAILS

Project No. 178420916

Drawing No.

Scale

PERMANENT 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.

TEMPORARY VEGETATION SCHEDULE

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

\* 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



EXISTING TREE TO REMAIN - 48" HIGH DENSITY ORANGE POLYETHELENE SAFETY FENCE

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 B. FOR PROTECTED TREES TEN INCHES (10") OR LESS D.B.H. (DIAMETER

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.

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

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

THE DRIP LINE, WHICHEVER IS GREATER

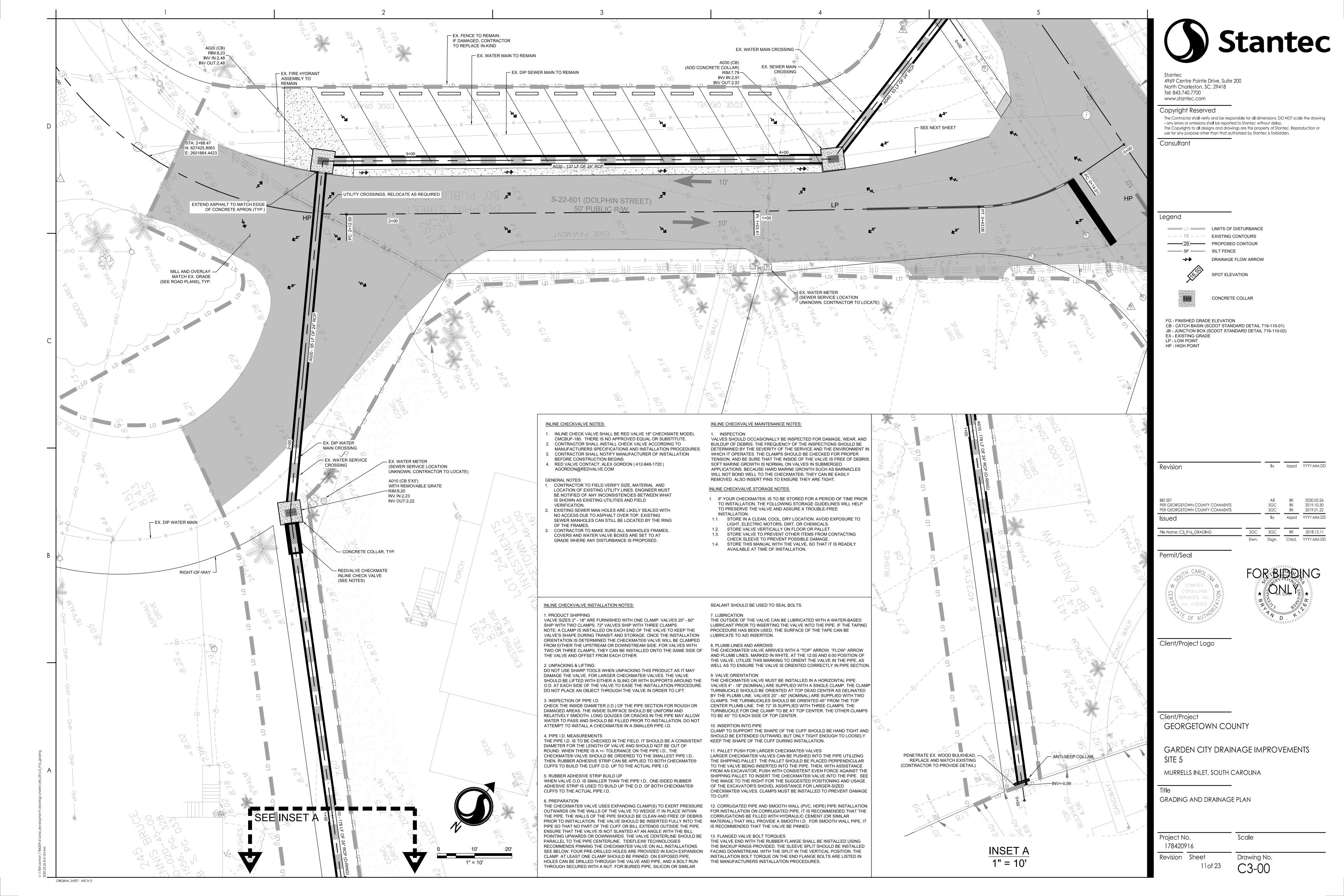
3. ALL GRADING AROUND PROTECTED TREES IS TO BE DONE BY HAND. CONTRACTOR SHALL NOT OPERATE HEAVY EQUIPMENT WITHIN THE TREE PROTECTION BARRIERS. 4. CONTRACTOR SHALL NOTIFY CITY OF NORTH CHARLESTON UPON INSTALLATION OF

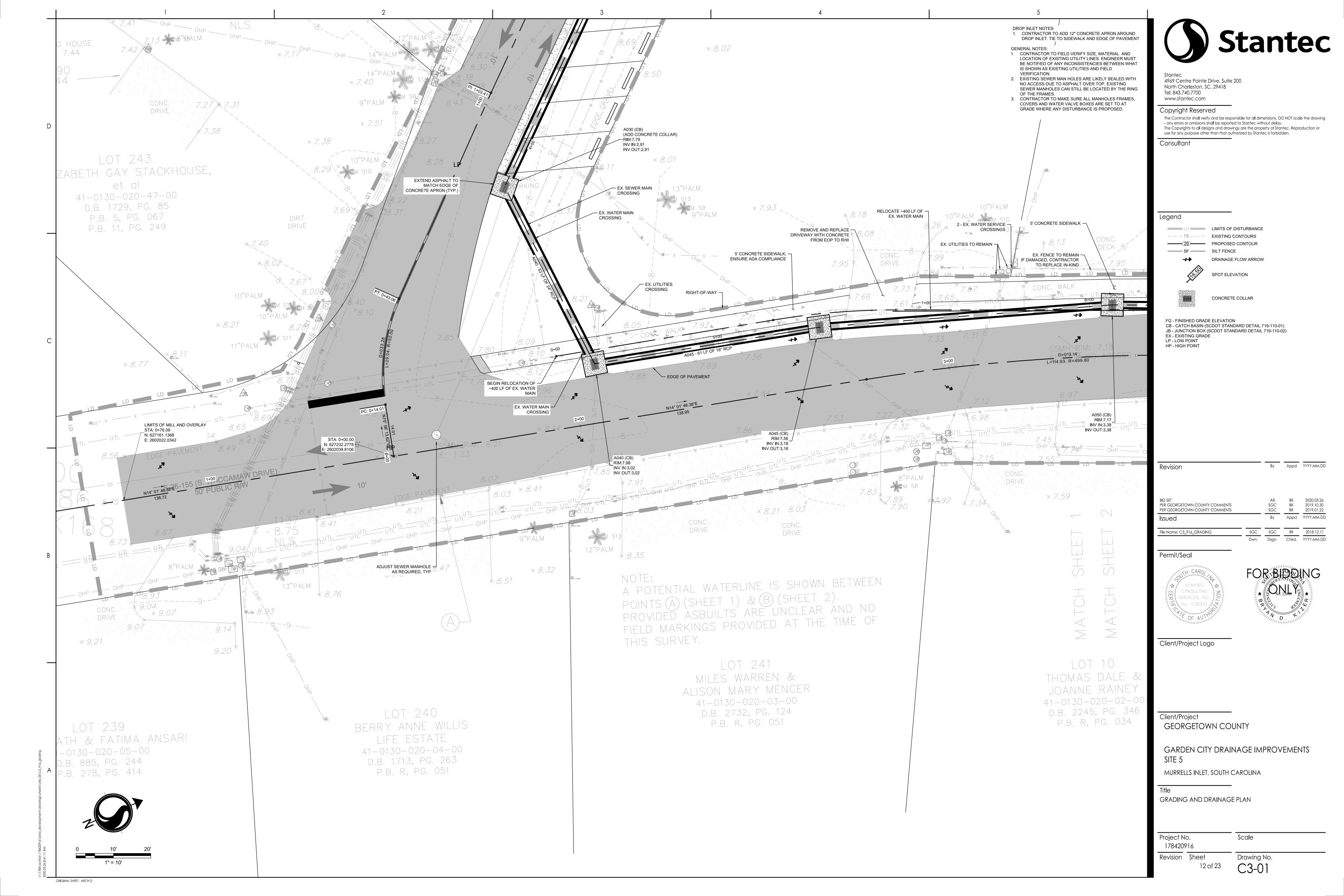
TREE PROTECTION FOR INSPECTION AND APPROVAL PRIOR TO LAND DISTURBANCE.

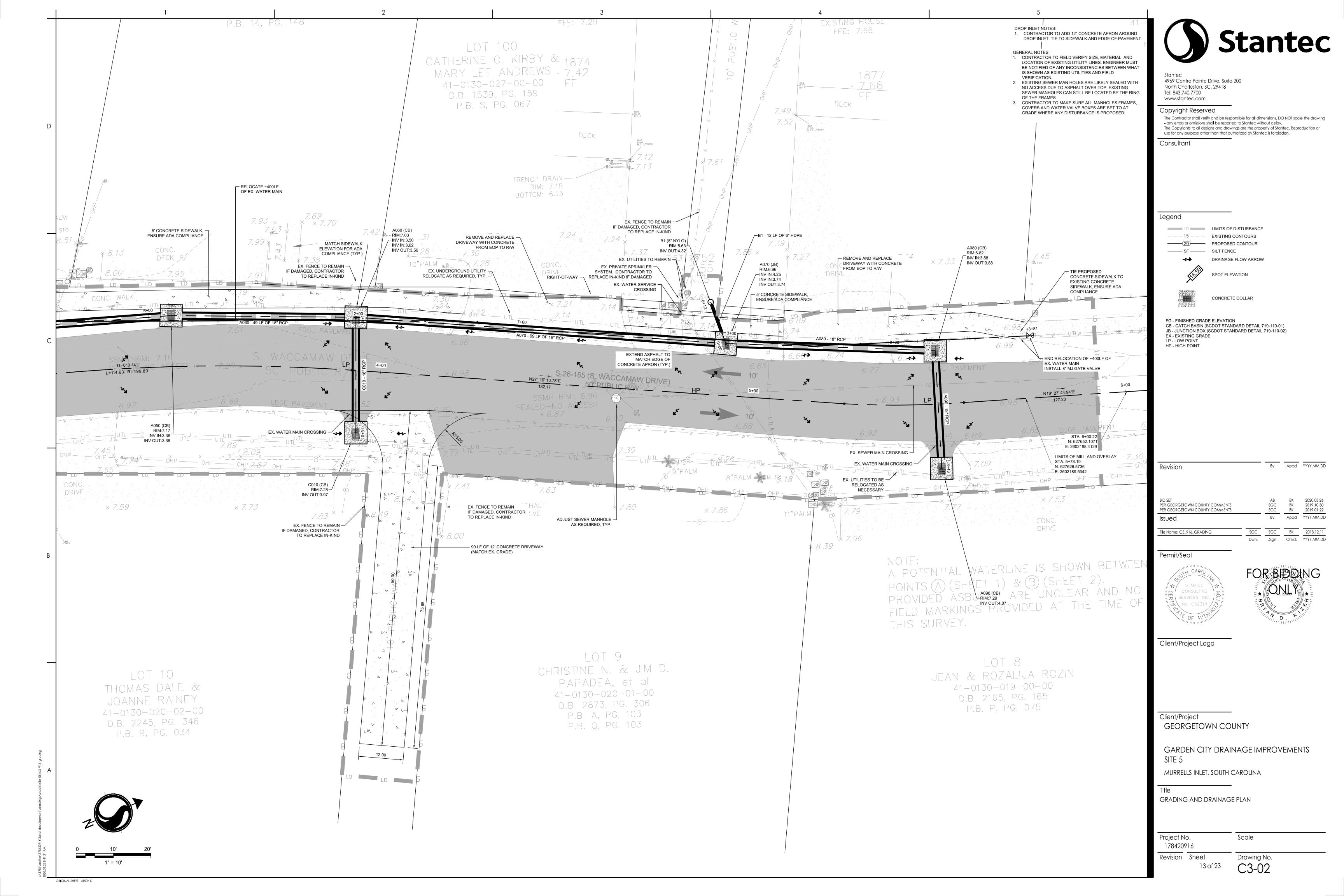
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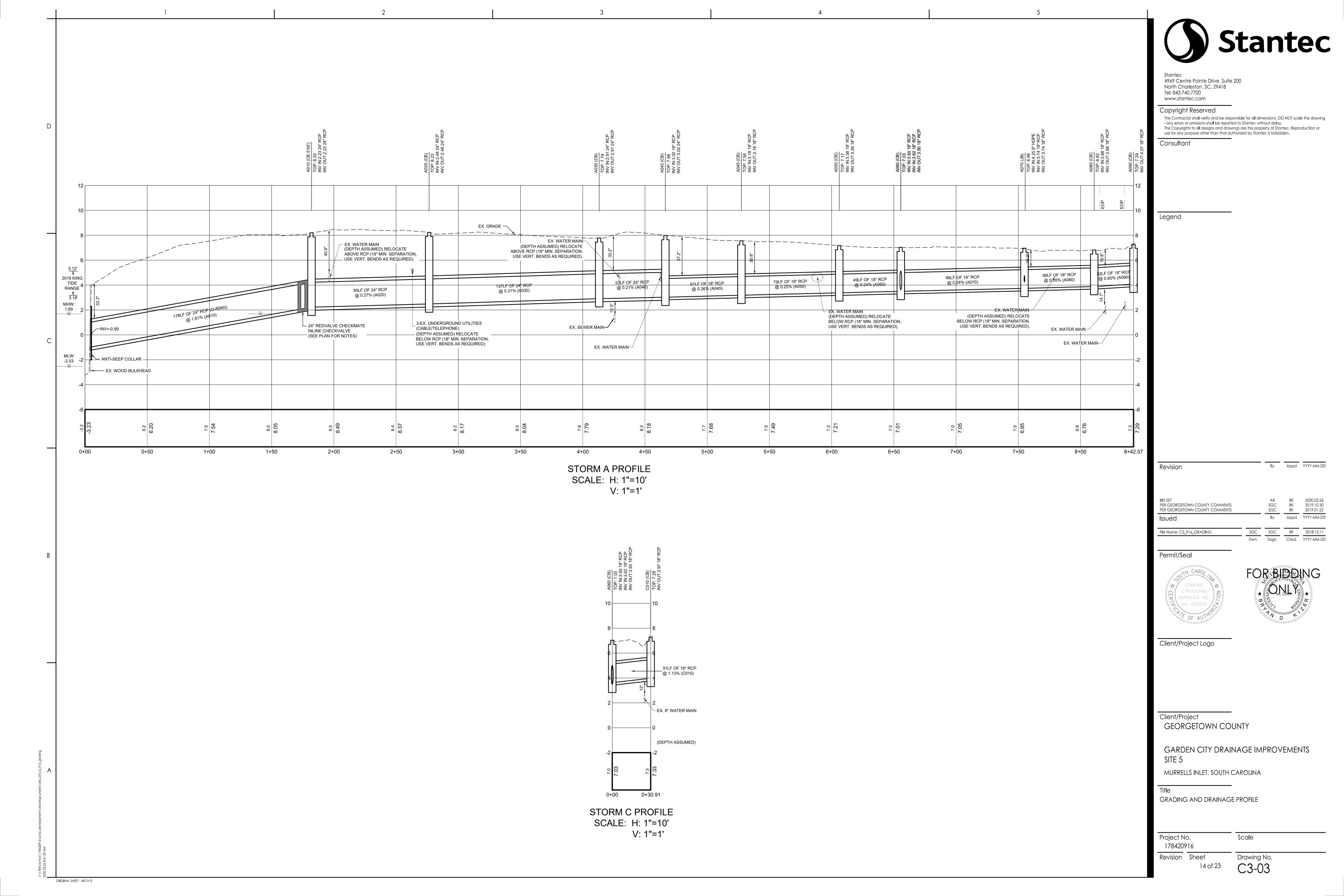
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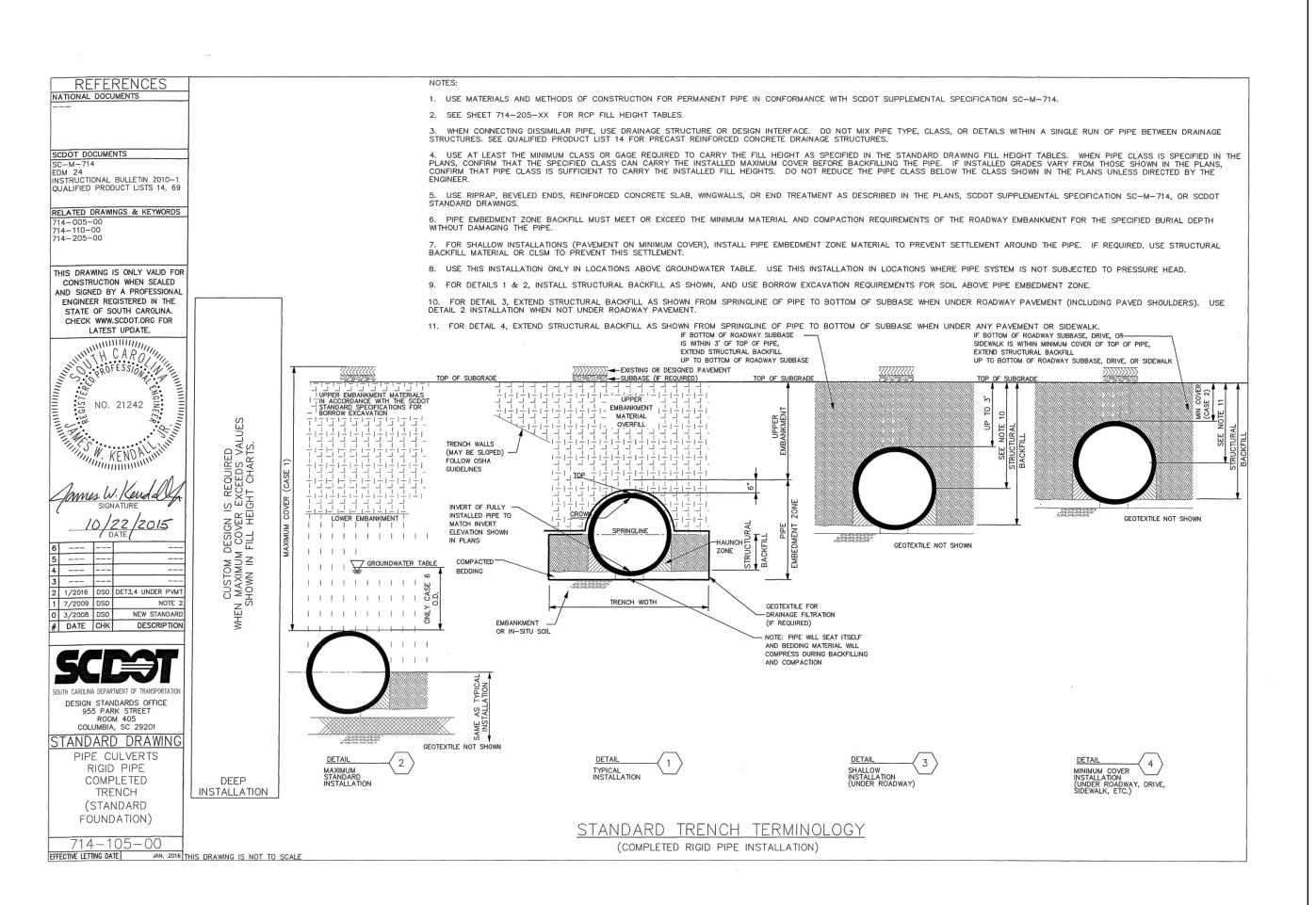
Revision Sheet

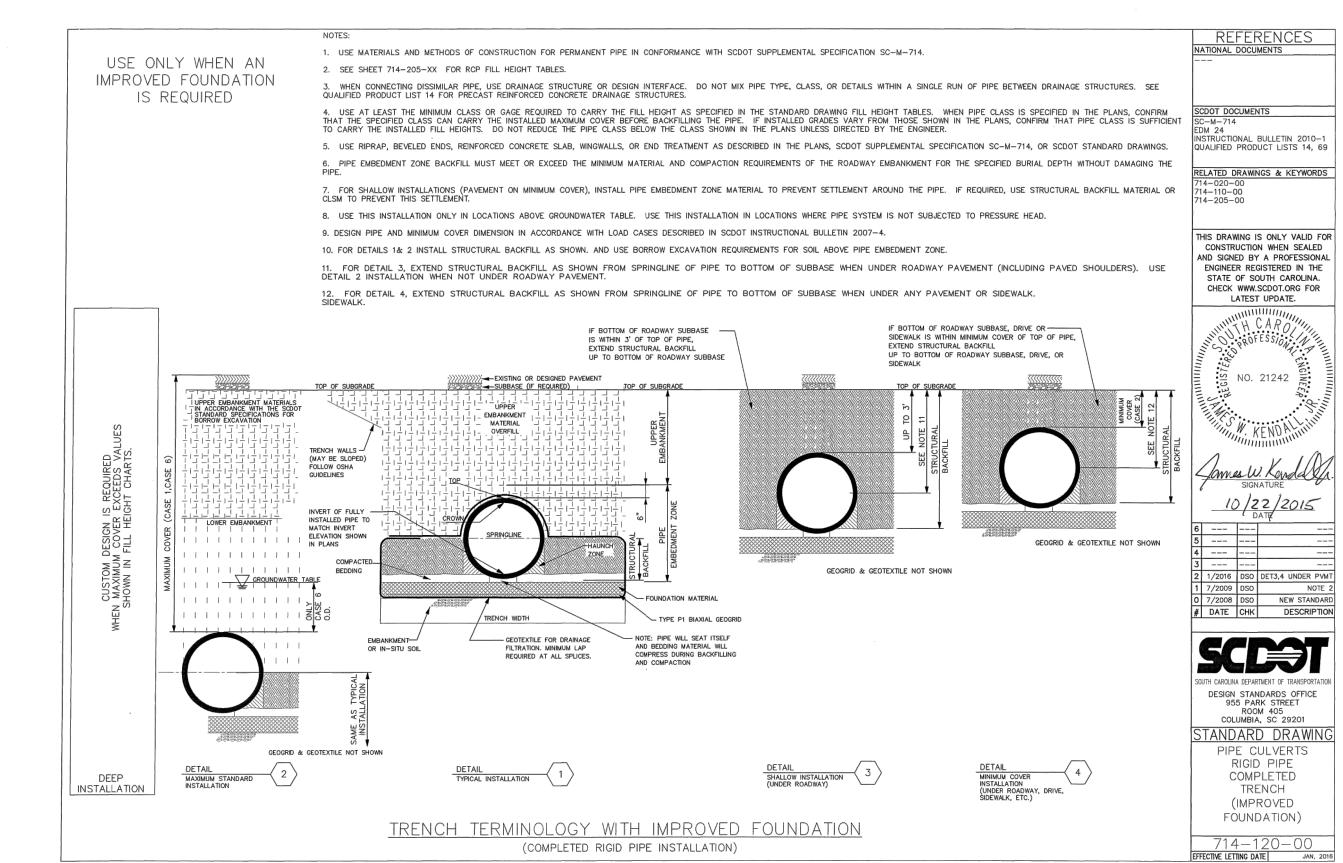


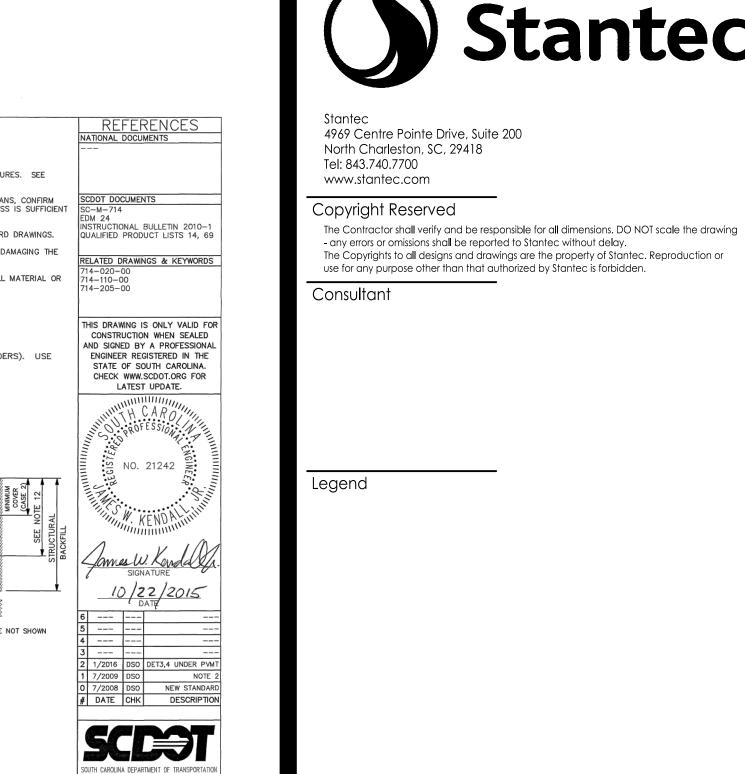


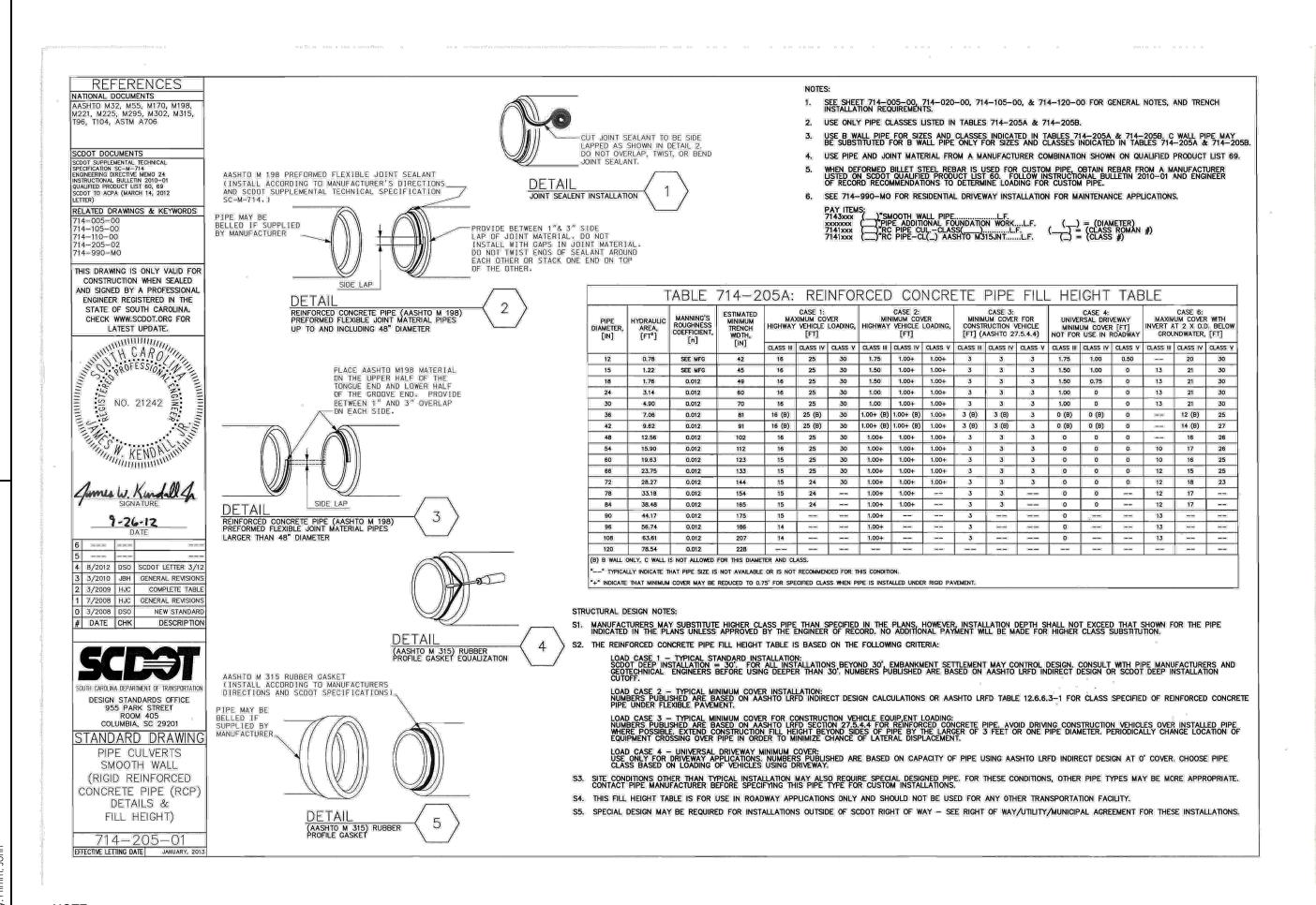


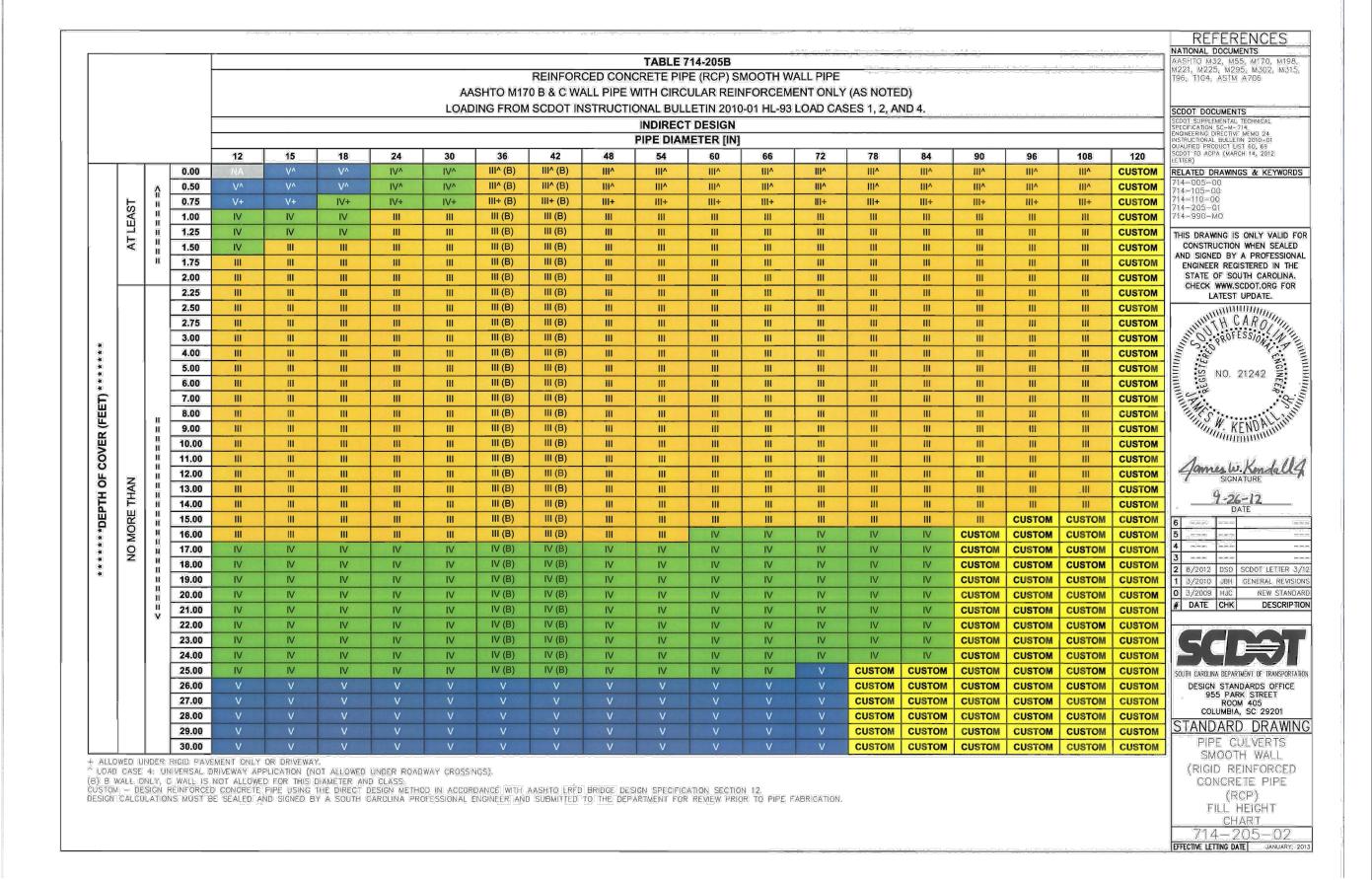












PER GEORGETOWN COUNTY COMMENTS
SGC BK 2019.10.30
PYYYY.MM.DD

FILE Name: C2\_ESC\_GRADING\_DETAILS

SGC SGC BK 2018.12.11
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FOR STANTEC CONSULTING SERVICES, INC.
No. C02310
No. C02310

Client/Project Logo

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Client/Project
GEORGETOWN COUNTY

GARDEN CITY DRAINAGE IMPROVEMENTS SITE 5

MURRELLS INLET, SOUTH CAROLINA

15 of 23

Title

GRADING DETAILS

Project No. 178420916

178420916

Revision Sheet

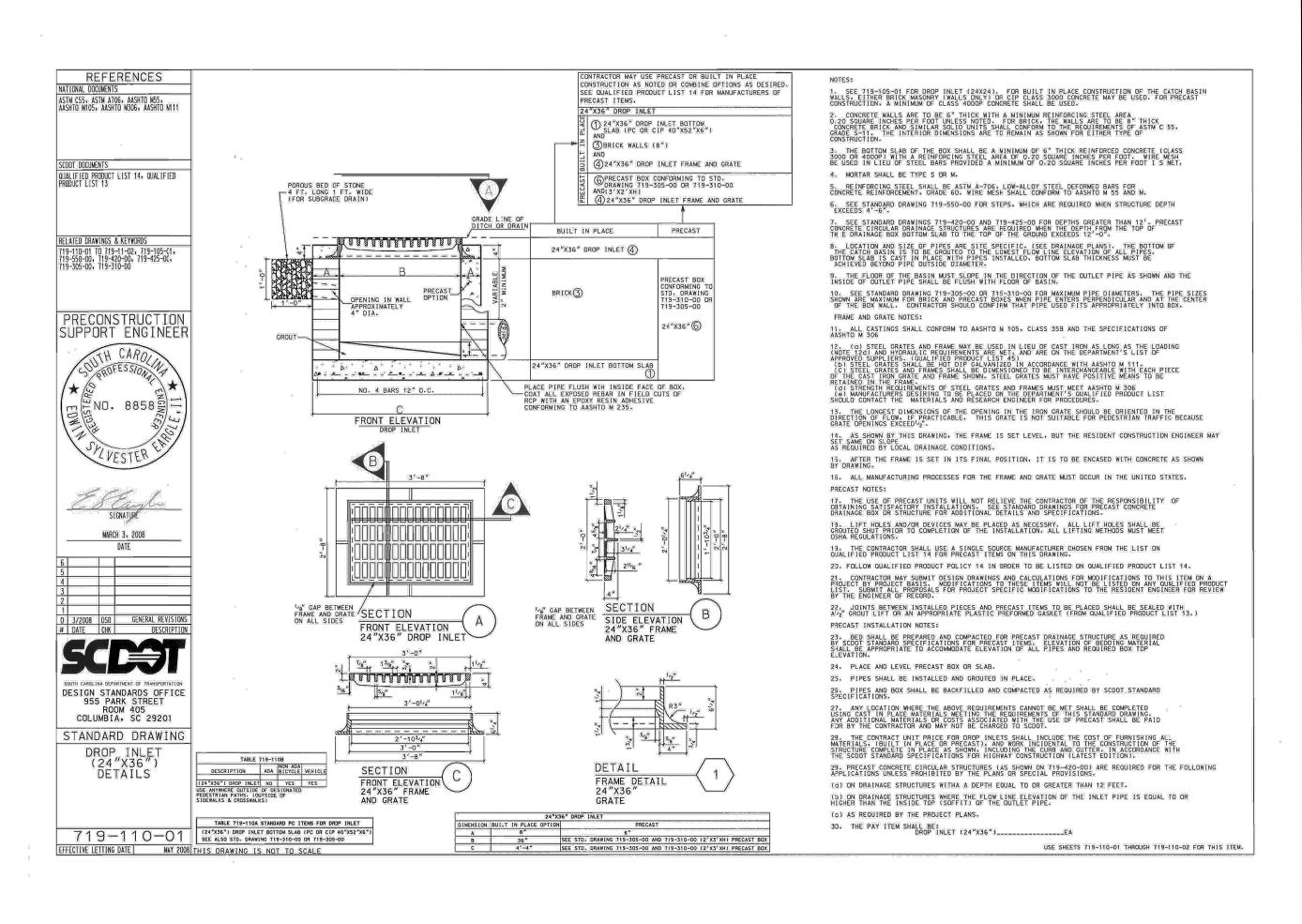
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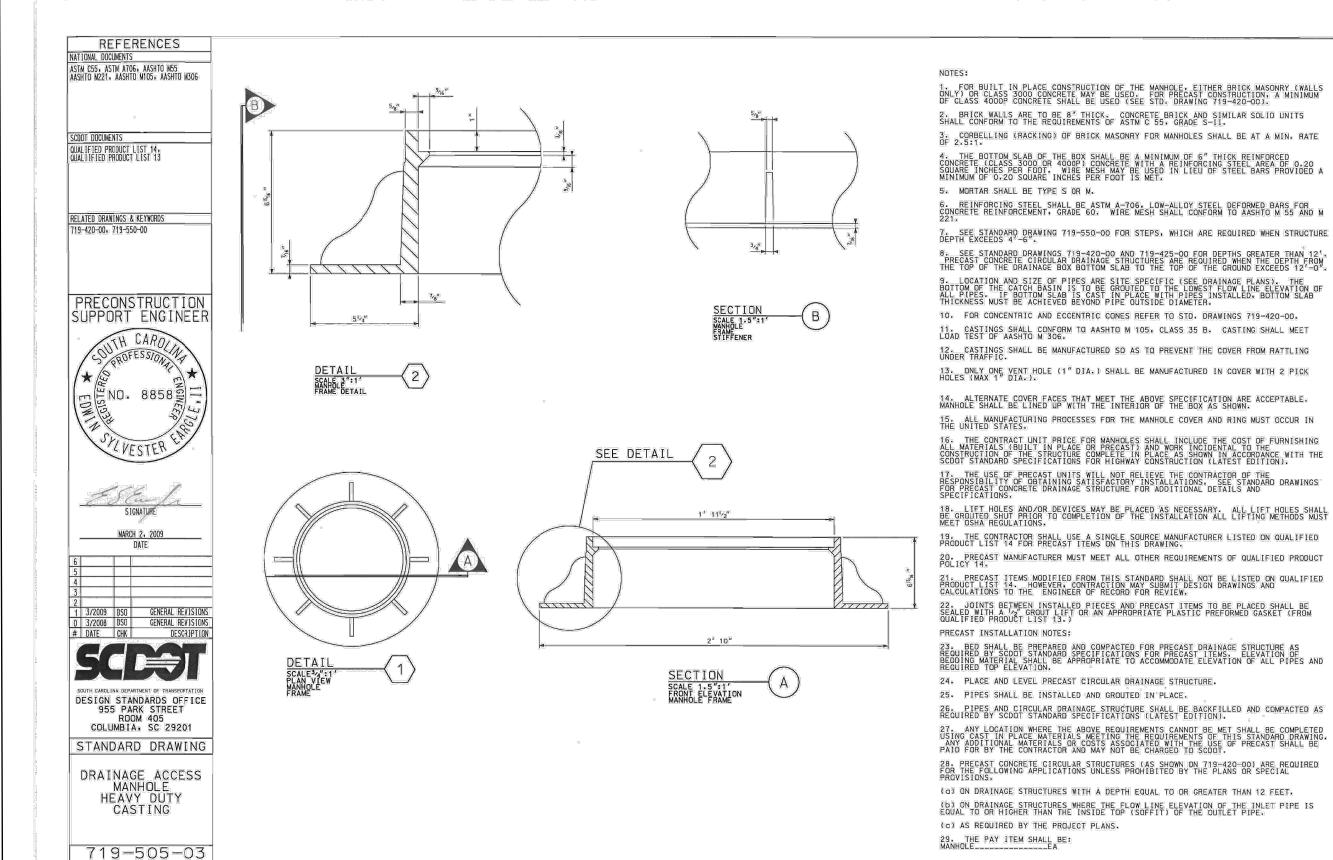
Scale

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).





EFFECTIVE LETTING DATE MAY, 2009

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> Client/Project GEORGETOWN COUNTY

GARDEN CITY DRAINAGE IMPROVEMENTS

MURRELLS INLET, SOUTH CAROLINA

**GRADING DETAILS** 

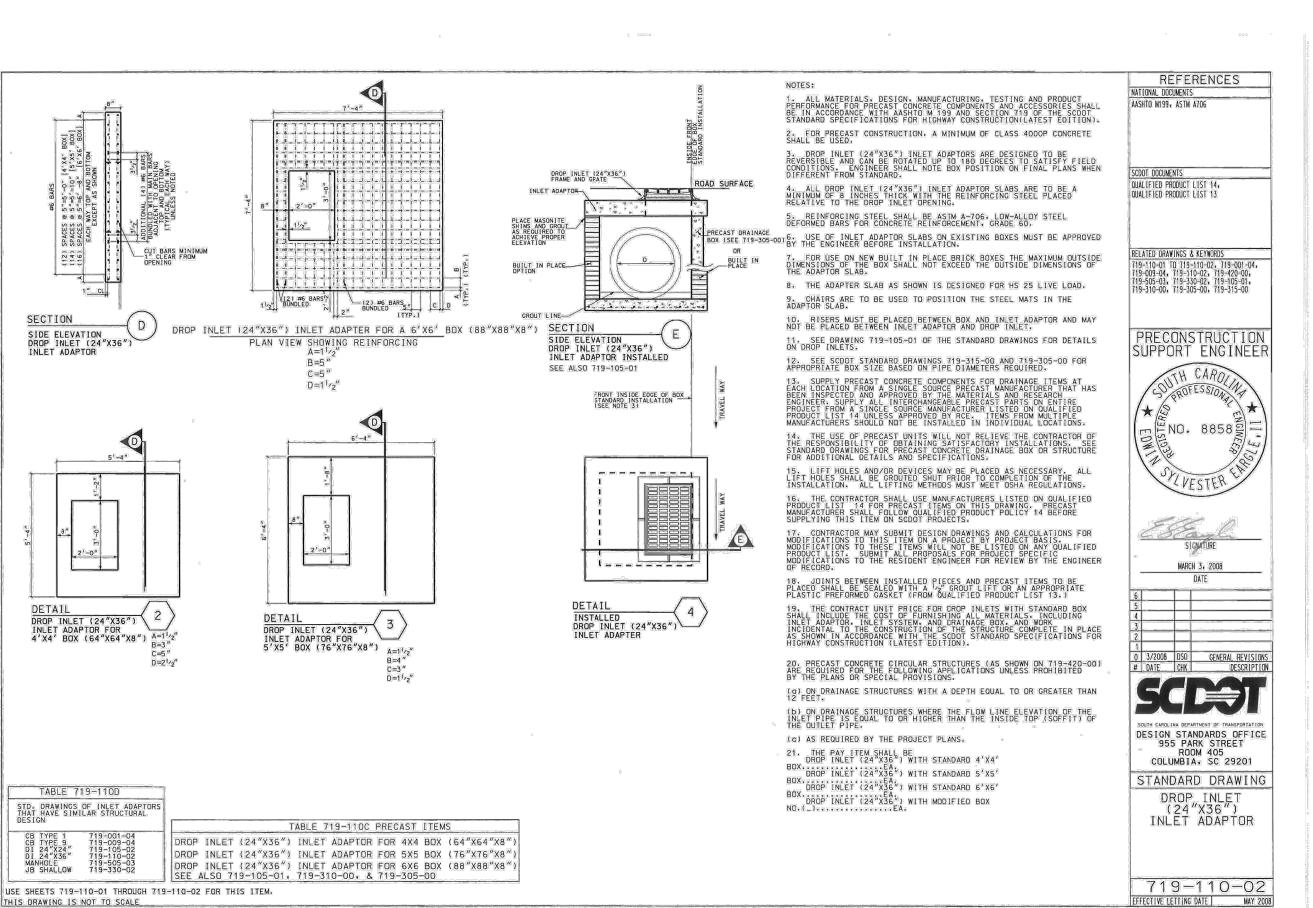
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Project No. 178420916

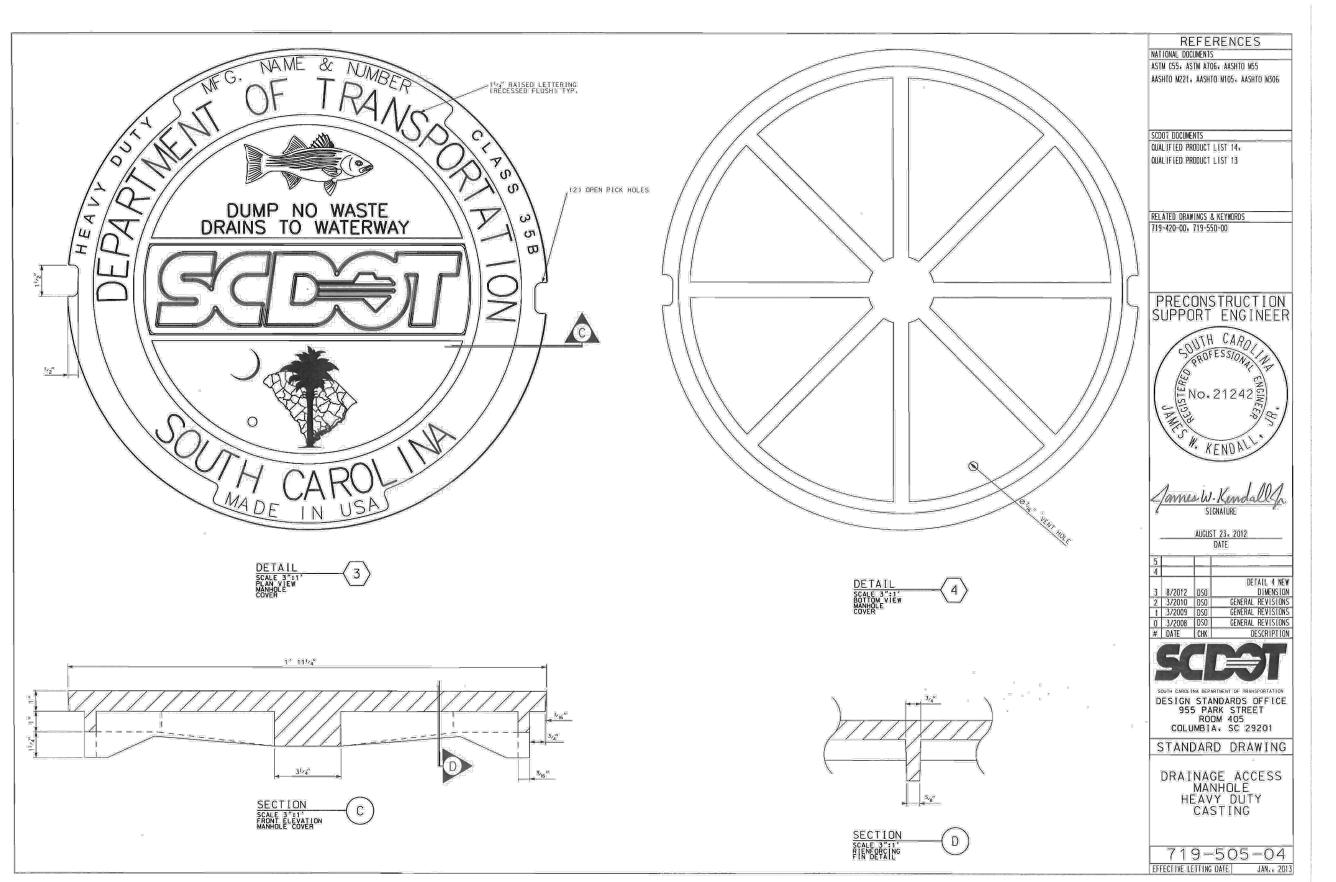
16 of 23

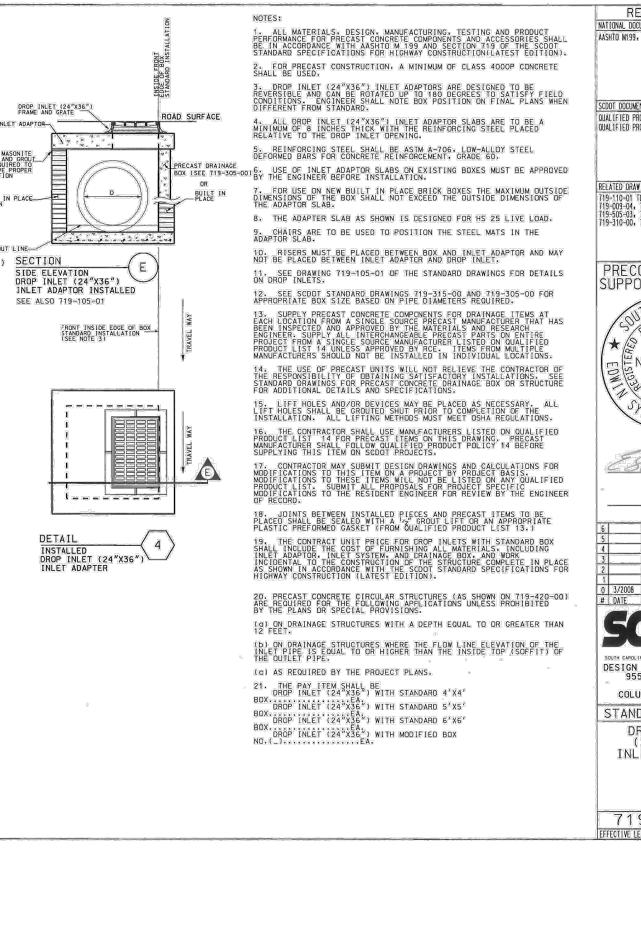
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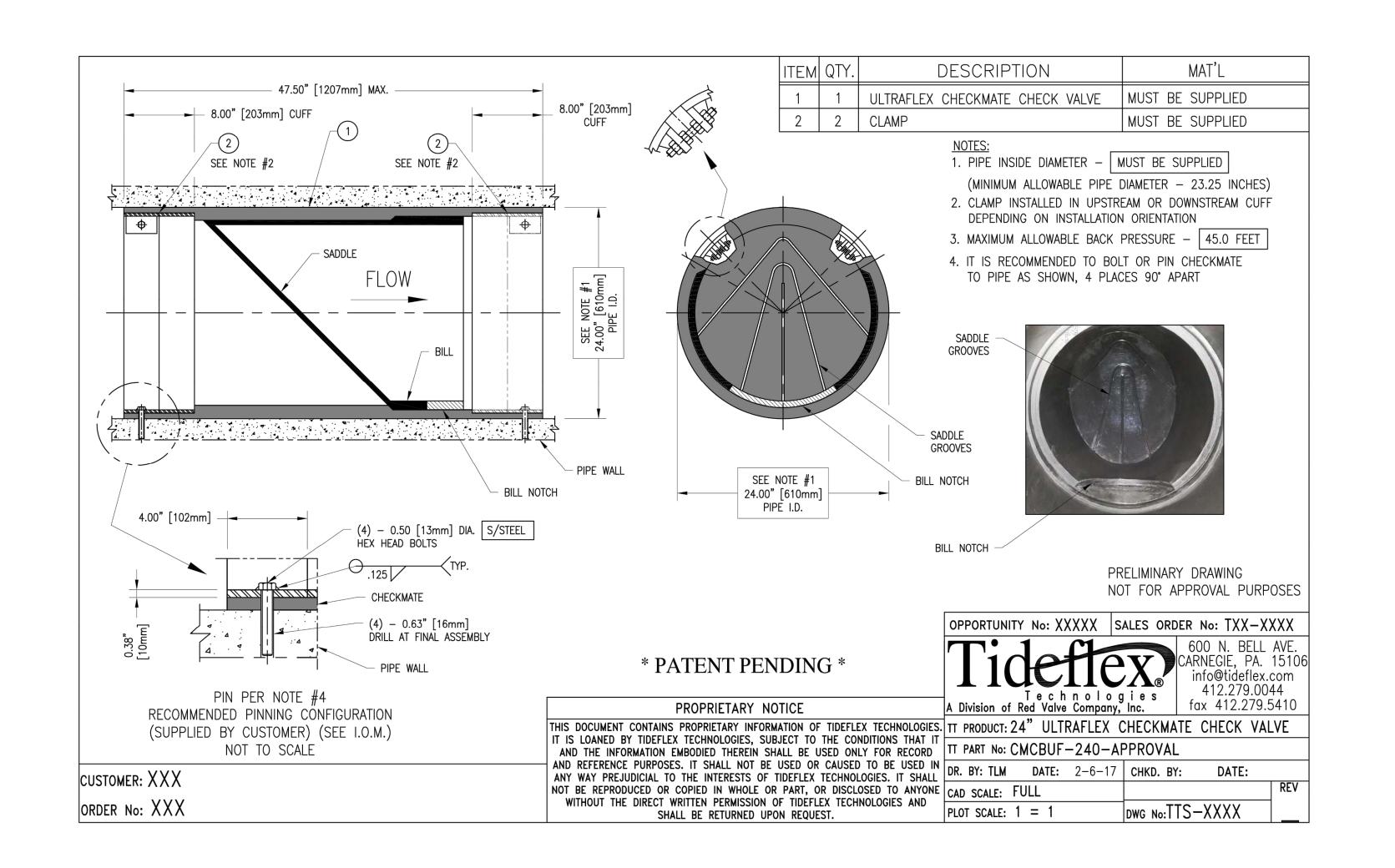
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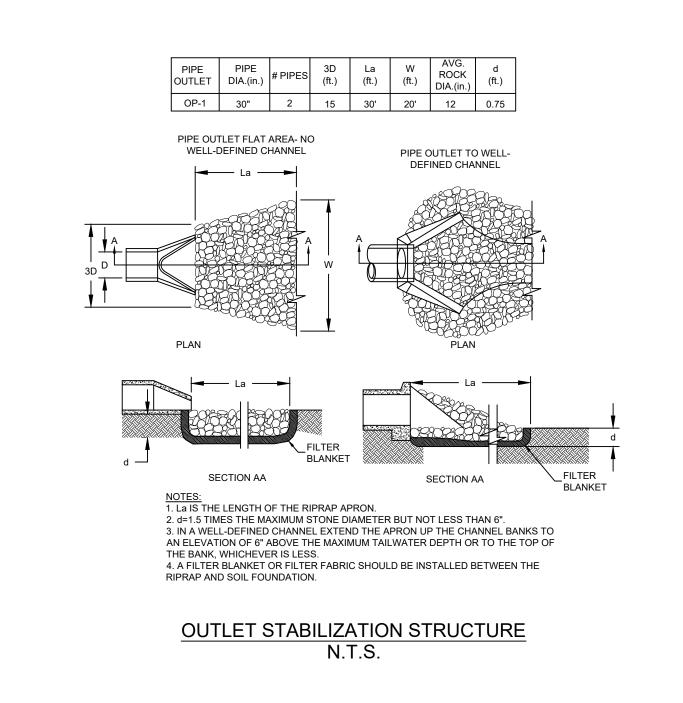


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 By
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Client/Project
GEORGETOWN COUNTY

GARDEN CITY DRAINAGE IMPROVEMENTS SITE 5

MURRELLS INLET, SOUTH CAROLINA

Title

Project No. 178420916

Drawing No. 17 of 23

Scale

UTILITY LINE

SEE TYPICAL TRENCH
DETAIL

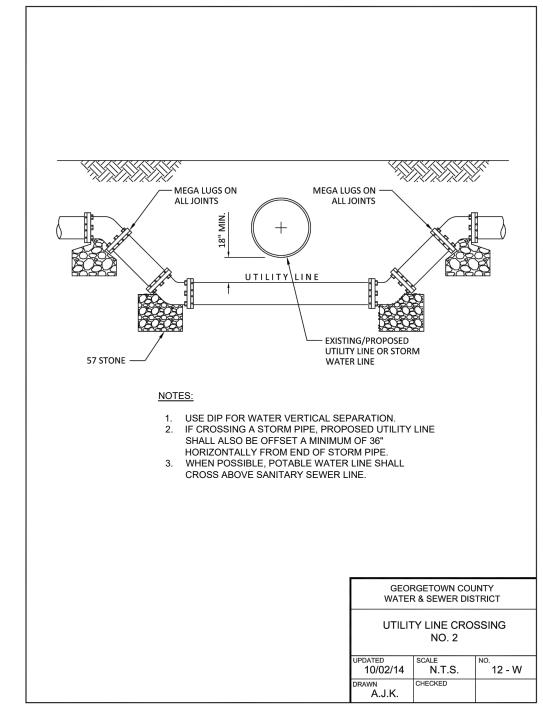
SUITABLE BACKFILL MATERIAL
COMPACTED 95% DRY
DENSITY IN 6" LIFTS

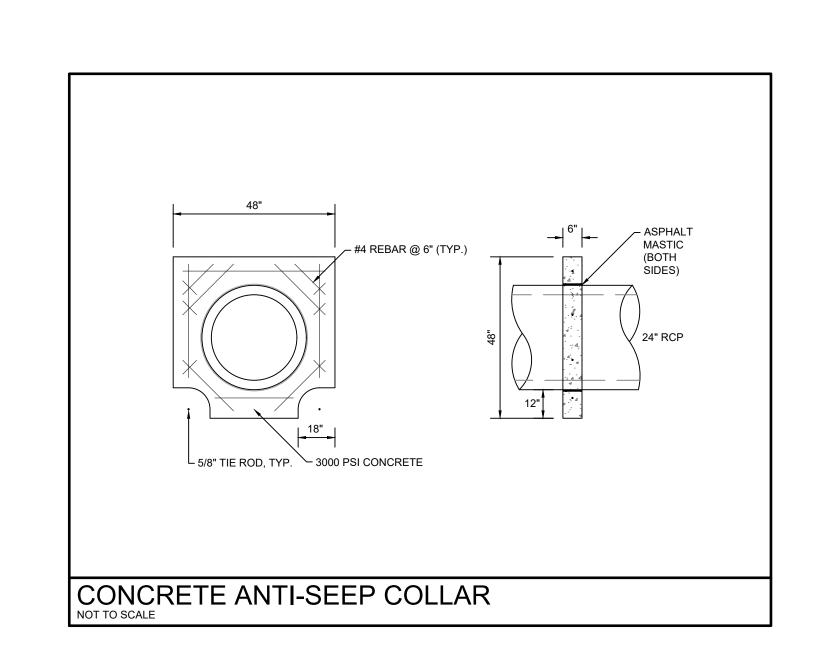
1. UTILITY LINES IN THIS DRAWING CONSIST OF WATER,
WASTEWATER, AND STORMWATER LINES.
2. WATER LINE AND WASTEWATER UTILITY LINE SHALL BE PVC
UNLESS VERTICAL SEPARATION DISTANCE BETWEEN LINES ARE
LESS THAN 8", THEN USE DENTREED TO ALLOW FOR THE
GREATEST DISTANCE BETWEEN PIPE JOINTS.
4. MATERIAL BETWEEN LINES SHALL BE COMPACTED TO PREVENT
SETTLING OF ABOVE PIPING.

GEORGETOWN COUNTY
WATER & SEWER DISTRICT

UTILITY LINE CROSSING
NO. 1

UPDATED
10/02/14 N.T.S.
DRAWN
A.J.K.
DRAWN
ORBECKED
N.S.
DRAWN





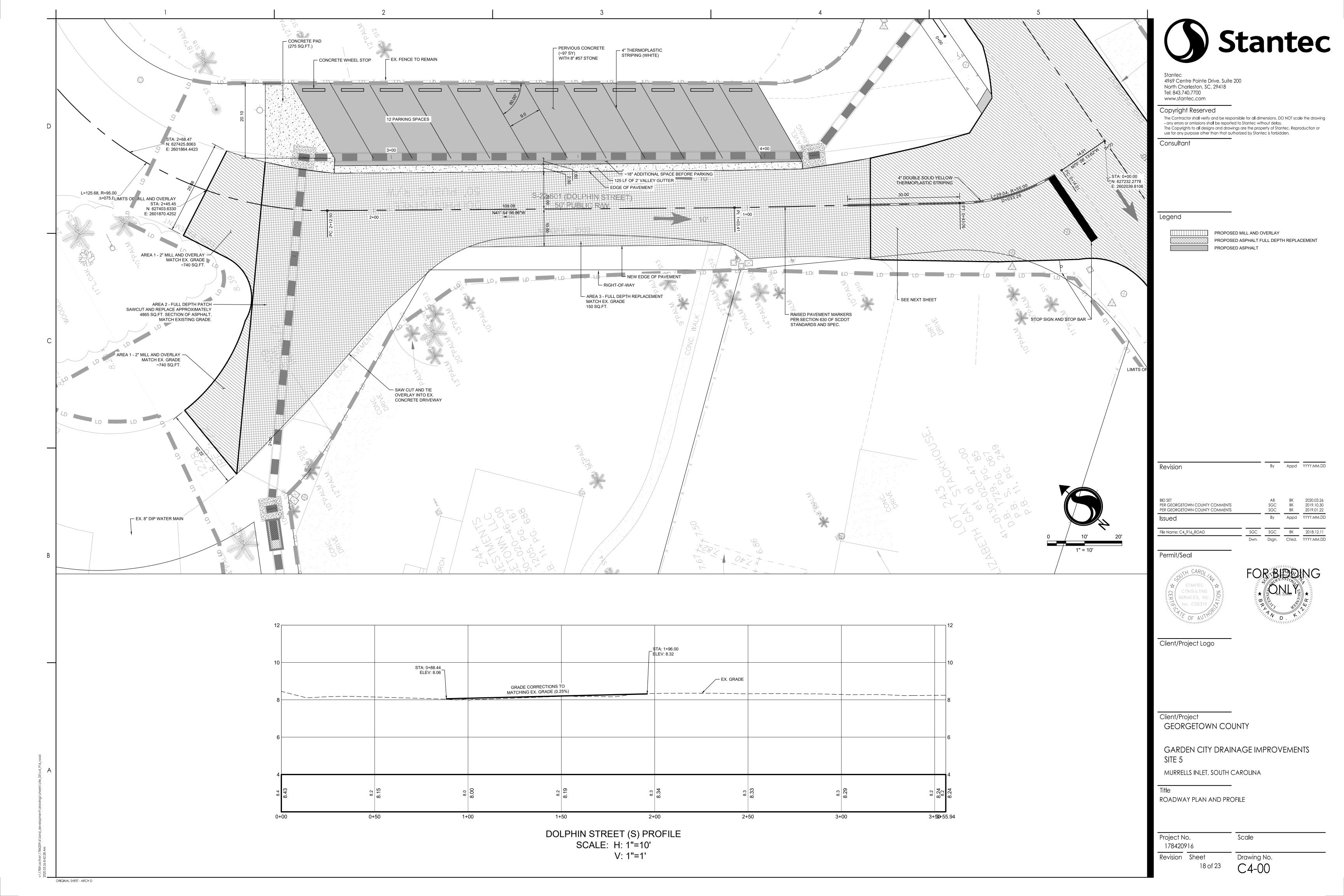
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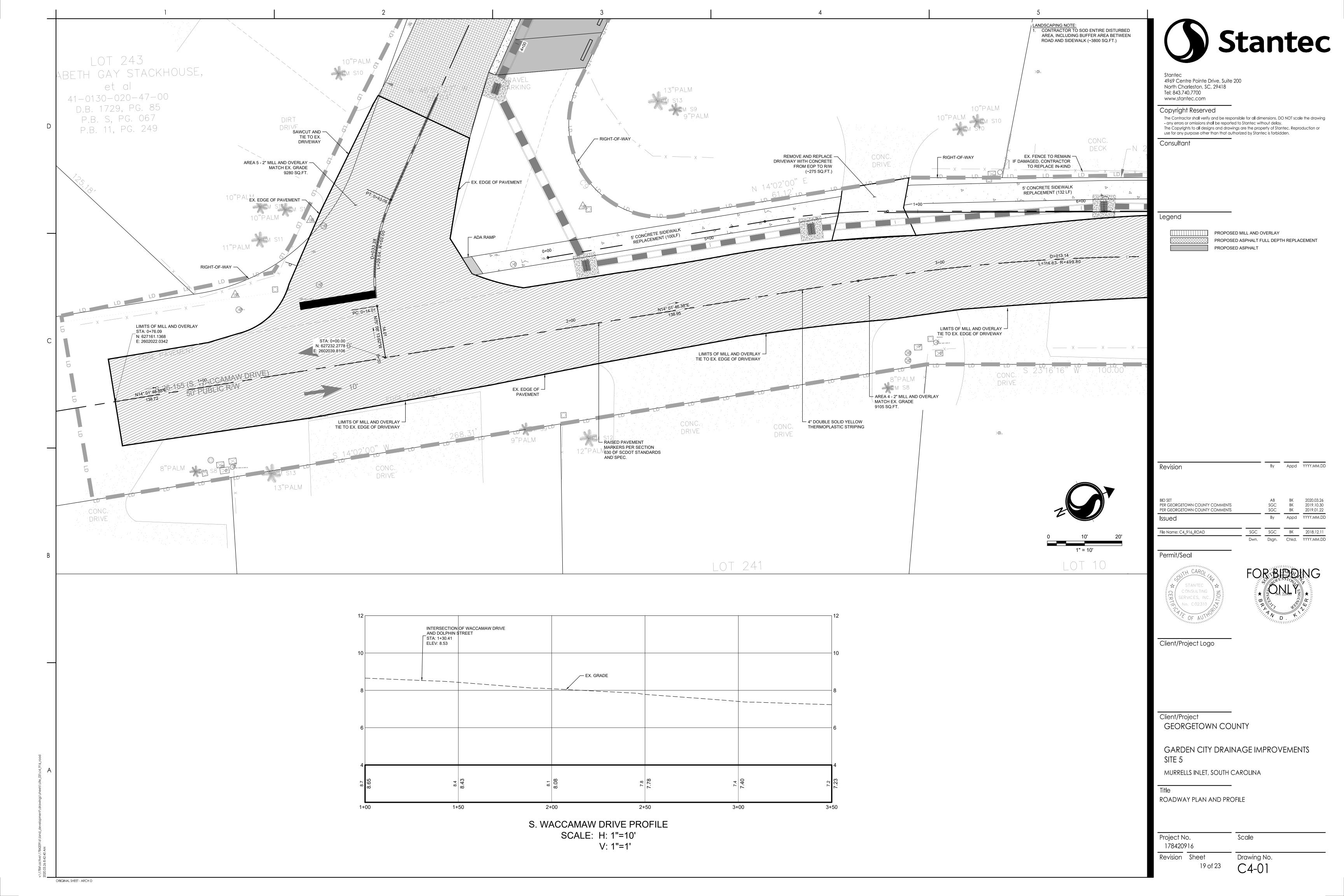
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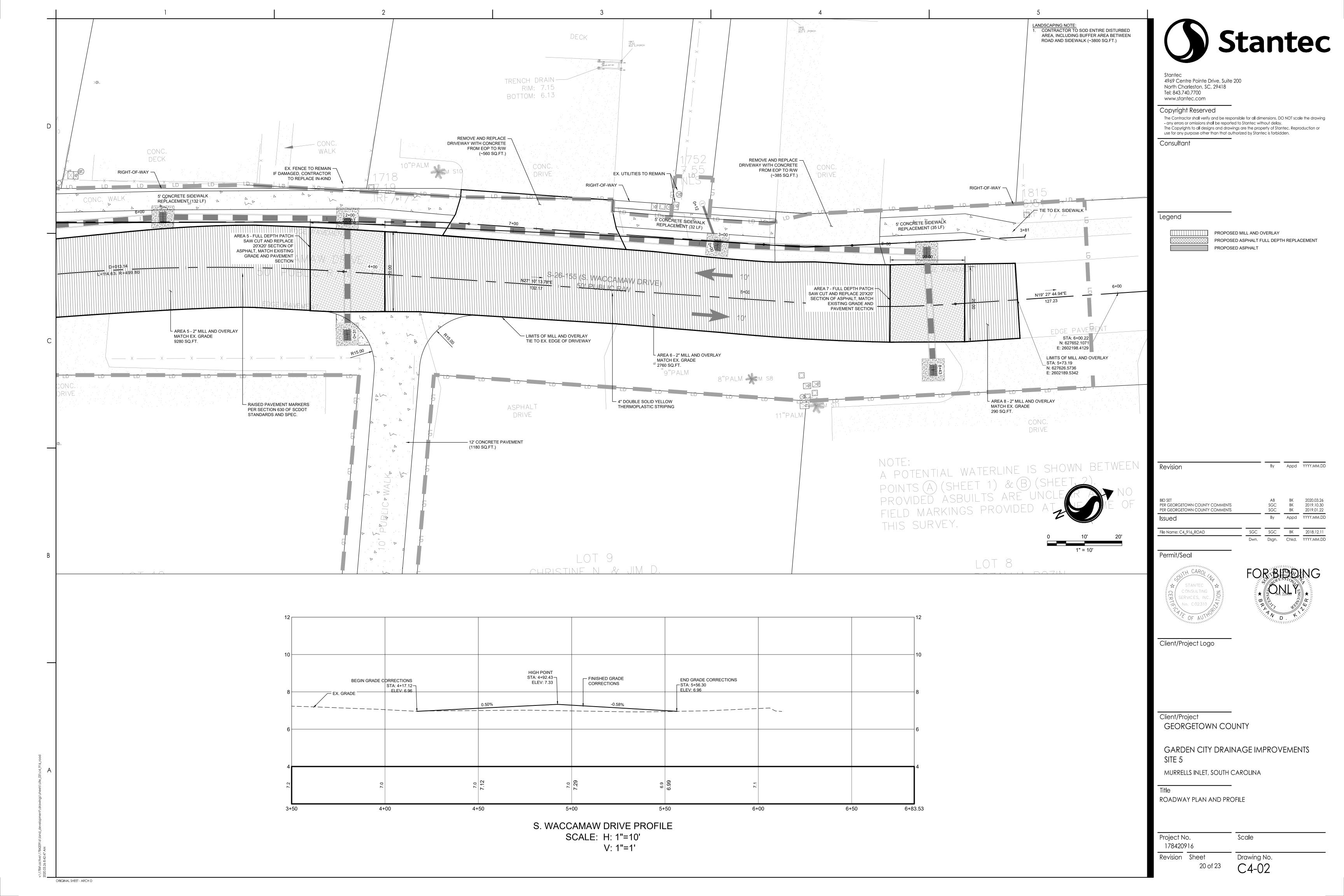
GRADING DETAILS

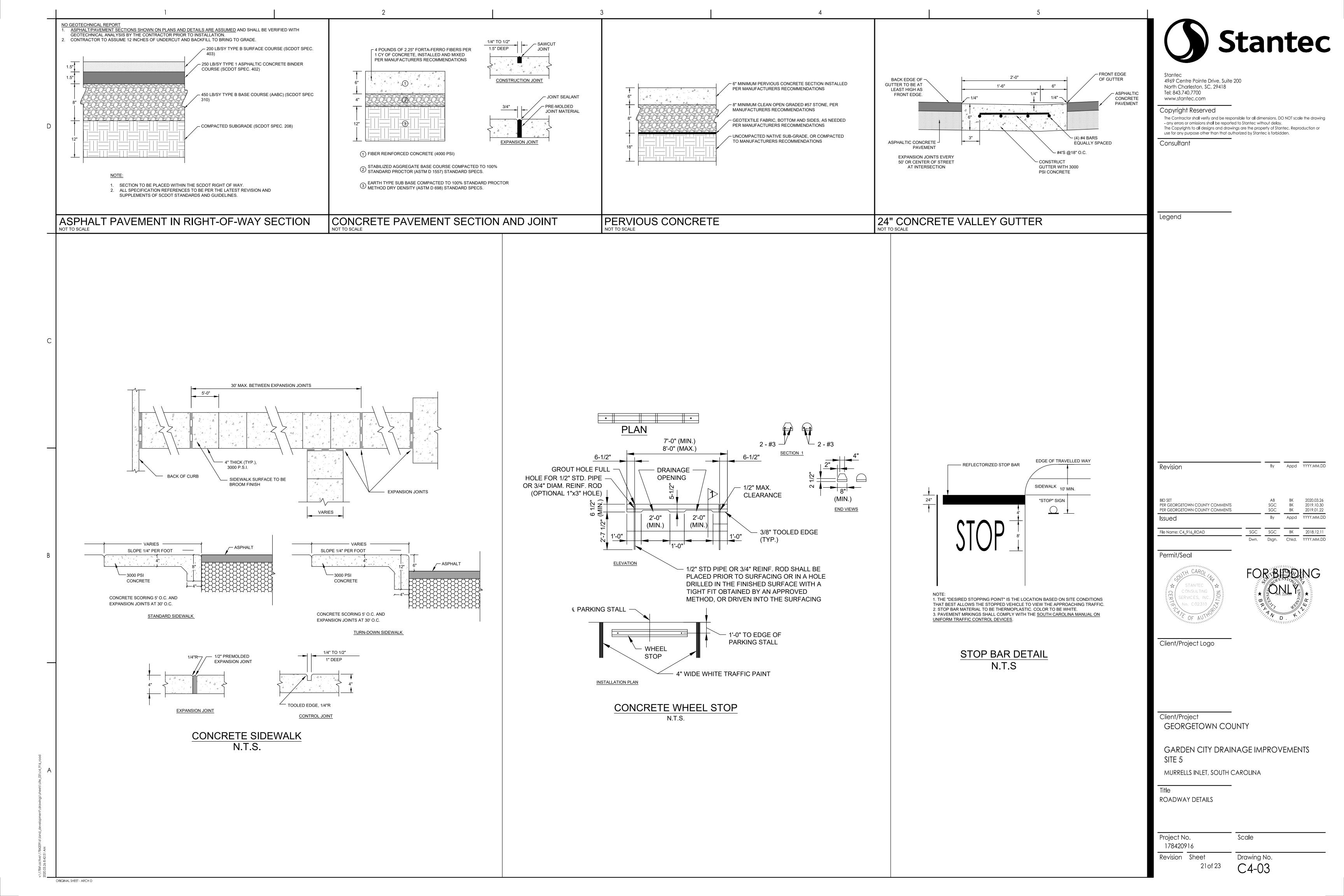
Revision Sheet

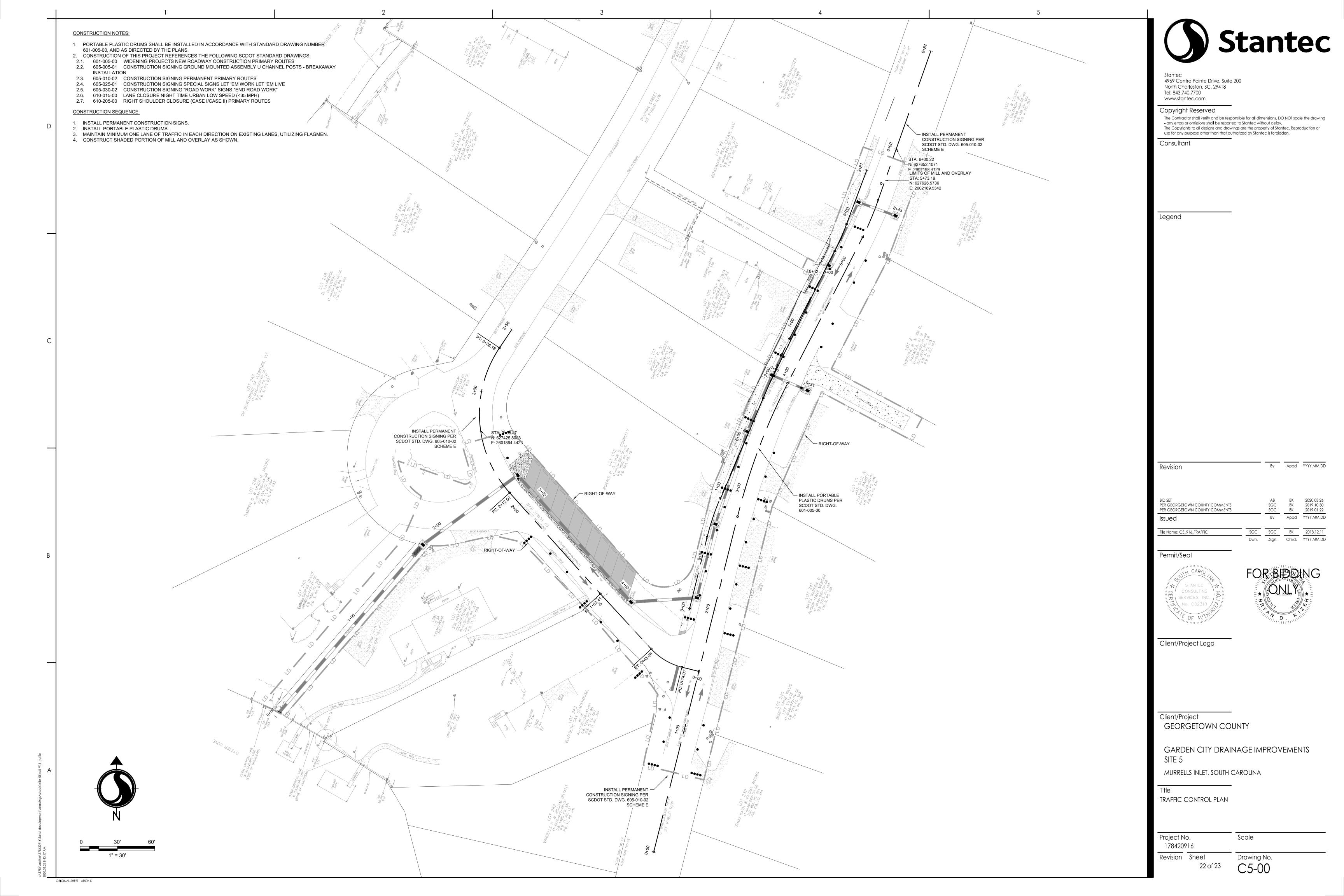
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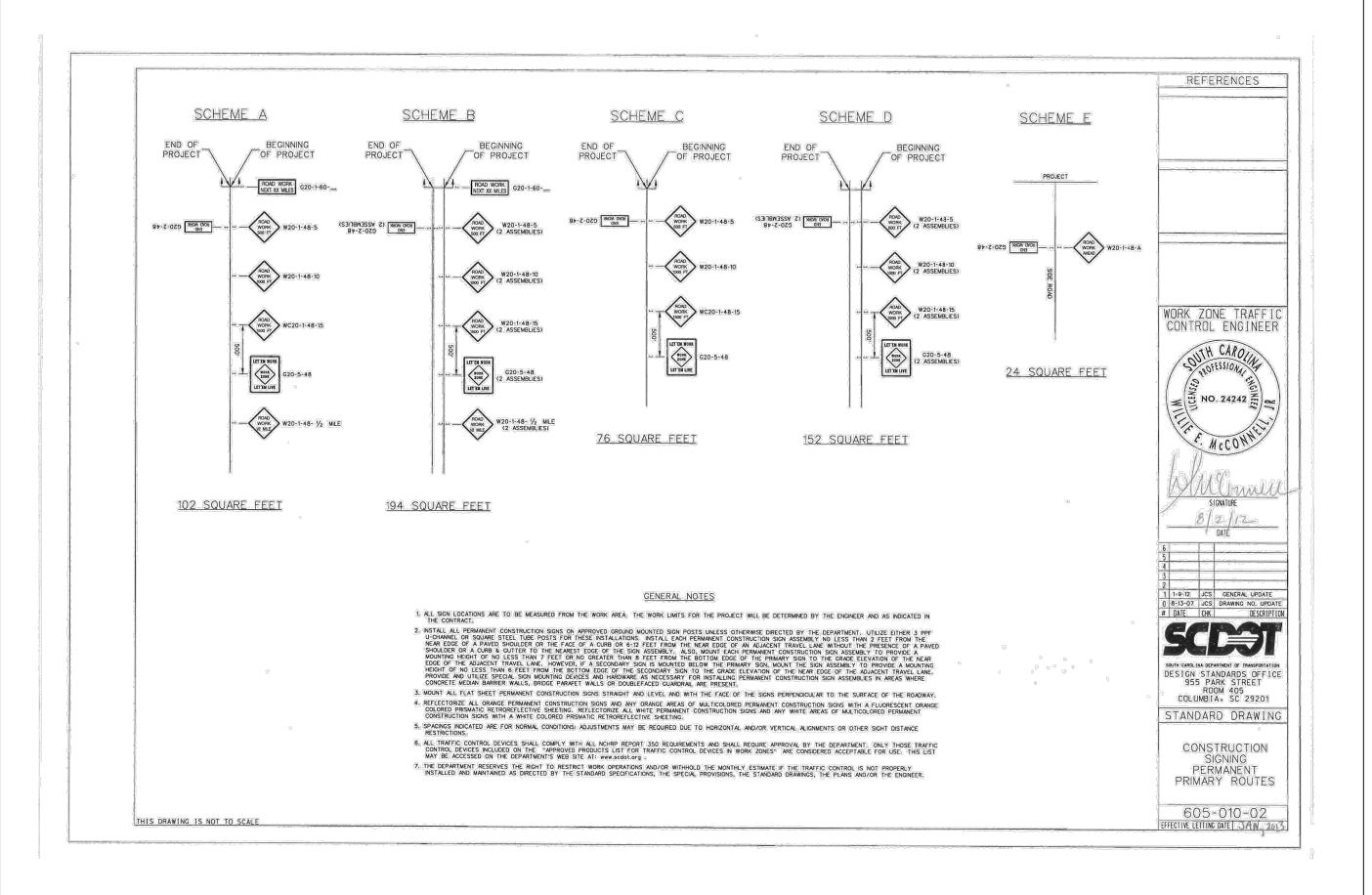


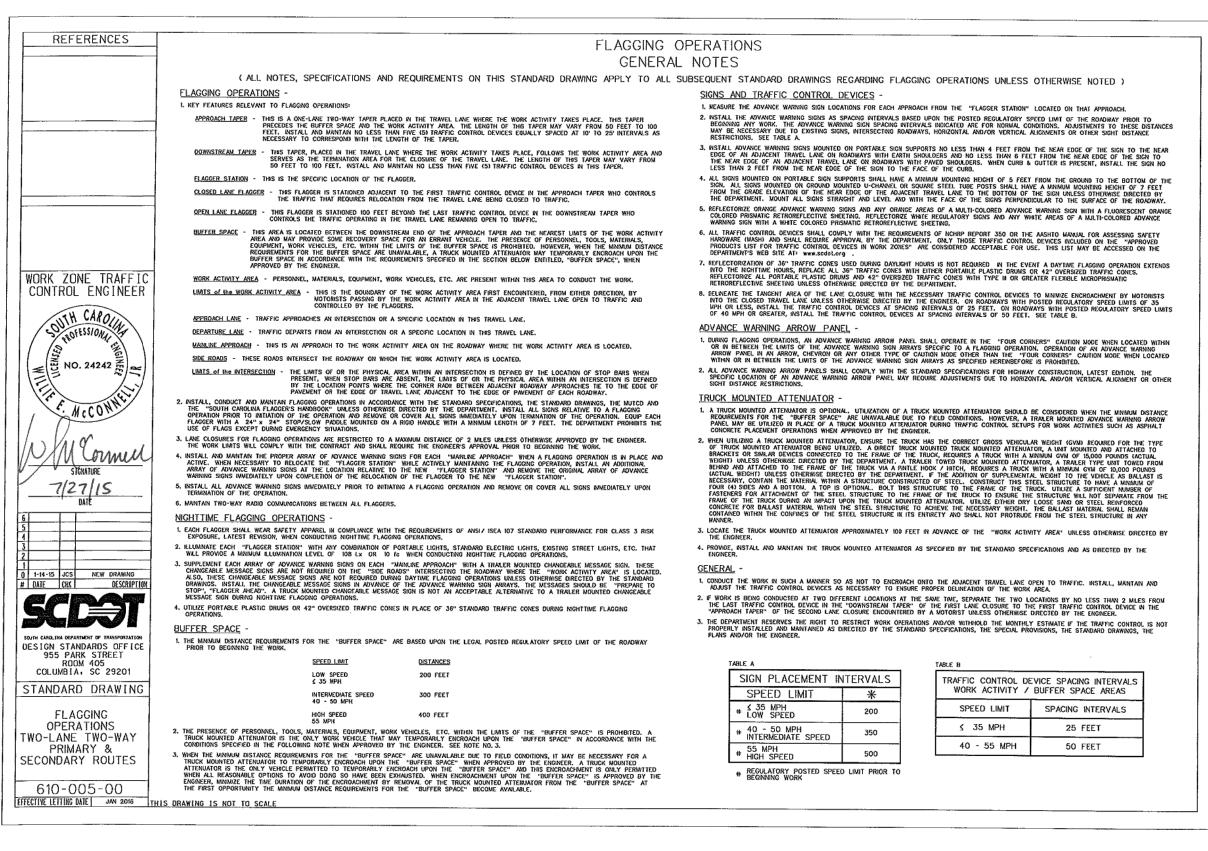


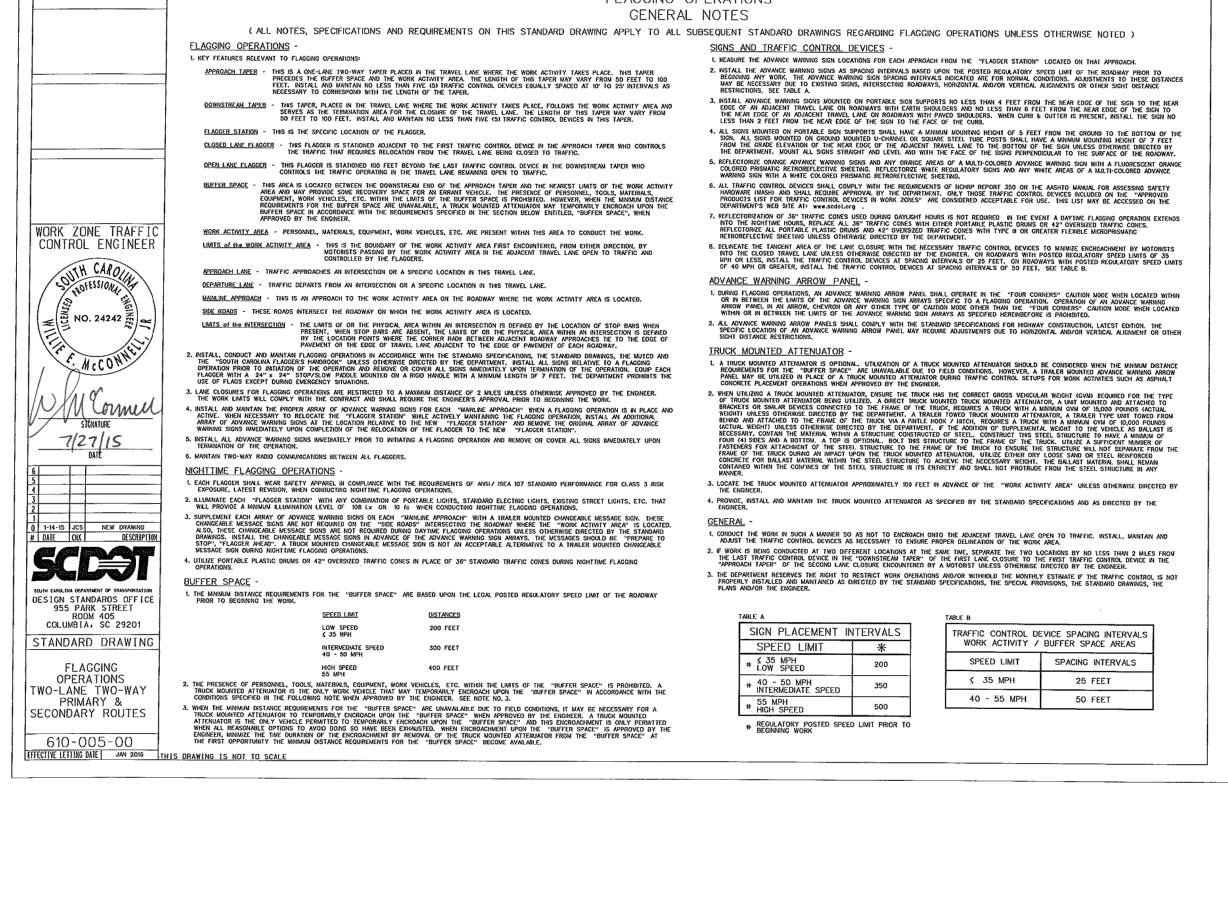


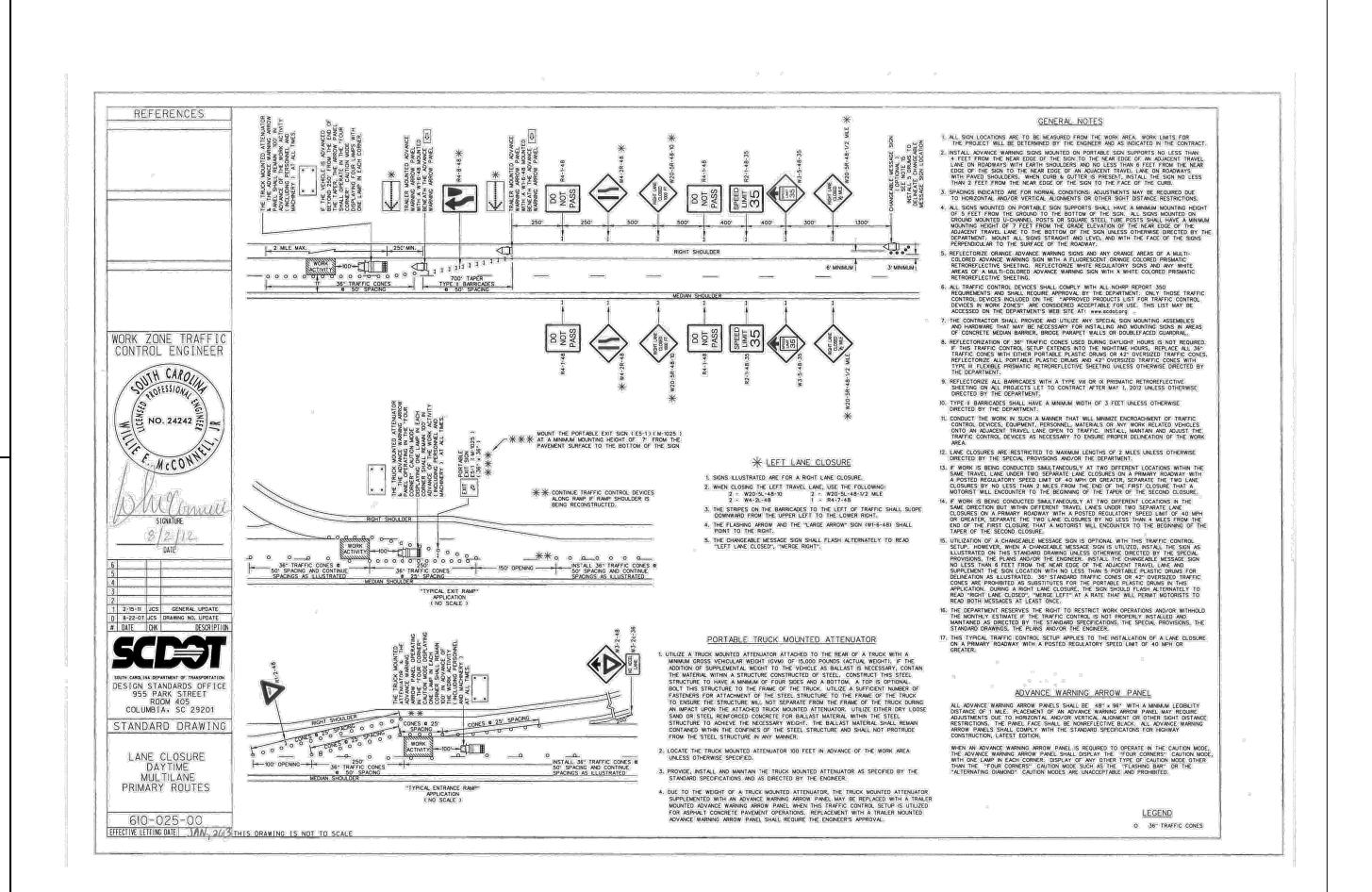


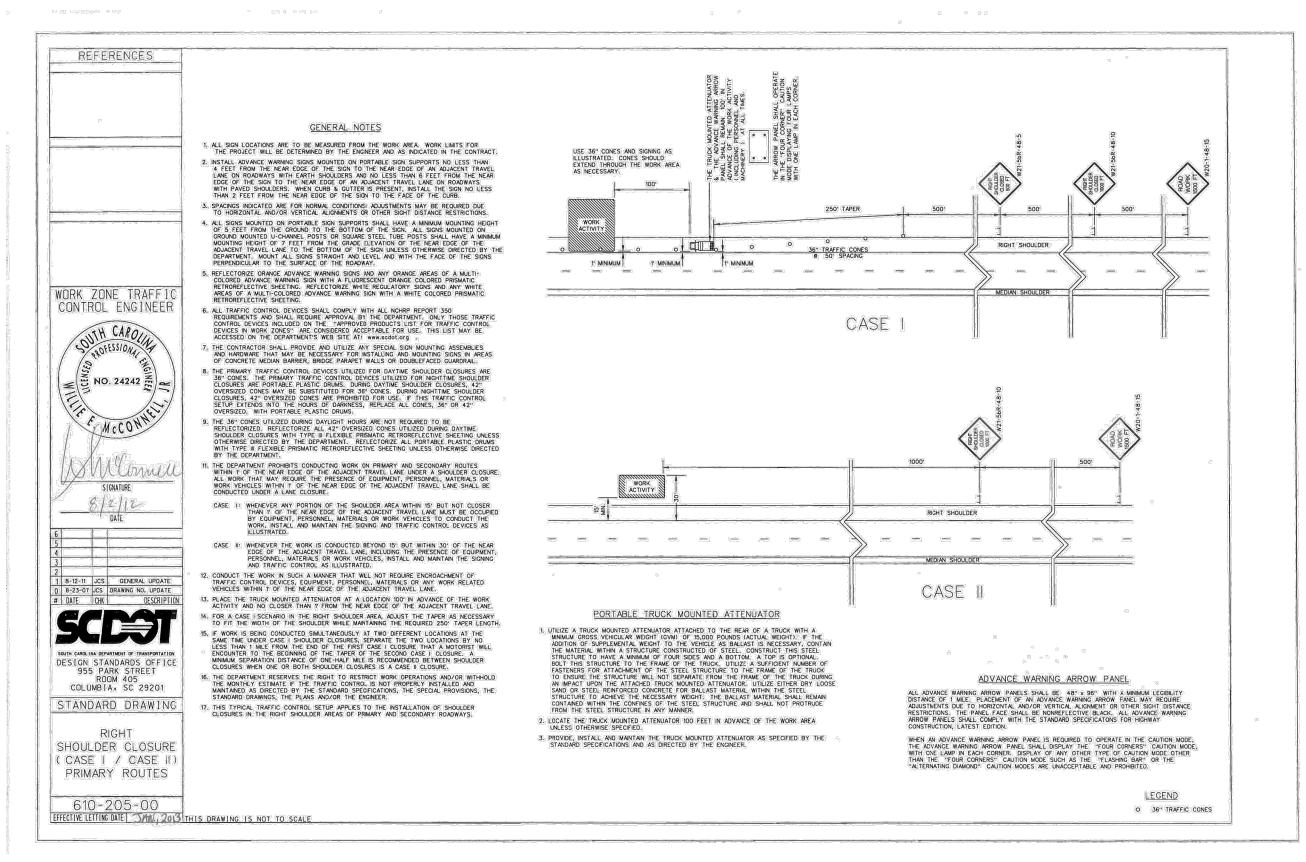














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File Name: C5\_916\_TRAFFIC



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GARDEN CITY DRAINAGE IMPROVEMENTS

MURRELLS INLET, SOUTH CAROLINA

Title

TRAFFIC CONTROL DETAILS

Project No. 178420916

Revision Sheet

Scale

Drawing No. C5-01

ORIGINAL SHEET - ARCH D

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