REFERENCES

WORK ZONE TRAFFIC CONTROL ENGINEER

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

SIGNATURE

DATE

E			
D			
C			
B			
A			
DATE	INITIAL	DRAWING NO. UPDATE	
6	09	04	REVISION

SCDOT

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

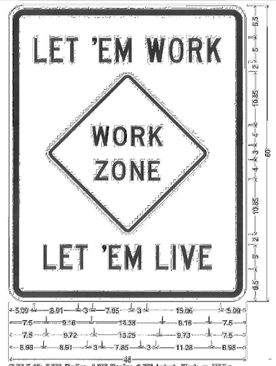
STANDARD DRAWING

CONSTRUCTION SIGNING
SPECIAL SIGNS
LET 'EM WORK
LET 'EM LIVE

605-025-01

EFFECTIVE LETTING DATE JANUARY 2010 THIS DRAWING IS NOT TO SCALE

SCDOT
TRAFFIC ENGINEERING



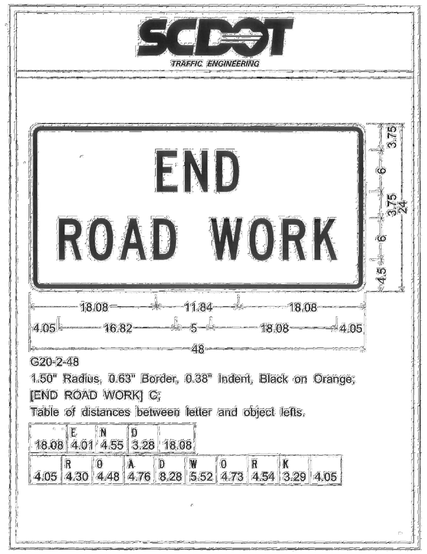
G20-5-48; 2.00" Radius, 1.25" Border, 0.75" Indent, Black on White;
[LET 'EM WORK] C;
[LET 'EM LIVE] C;
G3.00" across sides 1.50" Radius, 0.63" Border, 0.38" Indent, Black on Orange;
[WORK ZONE] D;
Table of distances between letter and object lefts.

5.00	L	3.94	E	5.07	T	5.53	1.27	E	3.91	W	9.05	O	3.94	R
3.79	K	2.75	6.00											
9.16	W	4.25	O	3.75	R	3.63	K	2.75	9.16					
9.72	Z	3.94	O	3.75	N	3.63	E	2.43	9.73					
5.98	L	3.94	E	5.07	T	5.53	1.26	E	3.95	W	6.24	L	3.94	I
1.85	V	3.89	E	2.53	6.36									

GENERAL NOTE:

ELECTRONIC LAYOUTS ARE AVAILABLE FROM THE DIRECTOR OF TRAFFIC ENGINEERING.

SCDOT
TRAFFIC ENGINEERING



G20-2-48
1.50" Radius, 0.63" Border, 0.38" Indent, Black on Orange;
[END ROAD WORK] C;
Table of distances between letter and object lefts.

	E	N	D	
18.08	4.01	4.55	3.28	18.08

	R	O	A	D	W	O	R	K		
4.05	4.30	4.48	4.76	8.28	5.52	4.73	4.54	3.29	4.05	

GENERAL NOTE:

ELECTRONIC LAYOUTS ARE AVAILABLE FROM THE DIRECTOR OF TRAFFIC ENGINEERING.

THIS DRAWING IS NOT TO SCALE

REFERENCES

WORK ZONE TRAFFIC CONTROL ENGINEER

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

SIGNATURE

DATE

E			
D			
C			
B			
A			
DATE	INITIAL	DRAWING NO. UPDATE	
6	09	04	REVISION

SCDOT

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

STANDARD DRAWING

CONSTRUCTION SIGNING
"ROAD WORK"
SIGNS
"END ROAD WORK"

605-030-02

EFFECTIVE LETTING DATE JANUARY 2010 THIS DRAWING IS NOT TO SCALE

REFERENCES

WORK ZONE TRAFFIC CONTROL ENGINEER

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

SIGNATURE

4/8/2013
DATE

6	4-5-13	JCS	DMA UPDATE (OPTIONAL)
5	9-1-10	JCS	TMA UPDATE
4	1-5-10	JCS	SGDI BARRIER UPDATE
3	5-28-09	JCS	TC DEVICES NOTE REV.
2	8-8-08	JCS	TC DEVICES UPDATE
1	2-27-08	JCS	FLAGGER STATION REV.
0	8-20-07	JCS	DRAWING NO. UPDATE
#	DATE	CKL	DESCRIPTION

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 JANUARY 2013 THIS DRAWING IS NOT TO SCALE

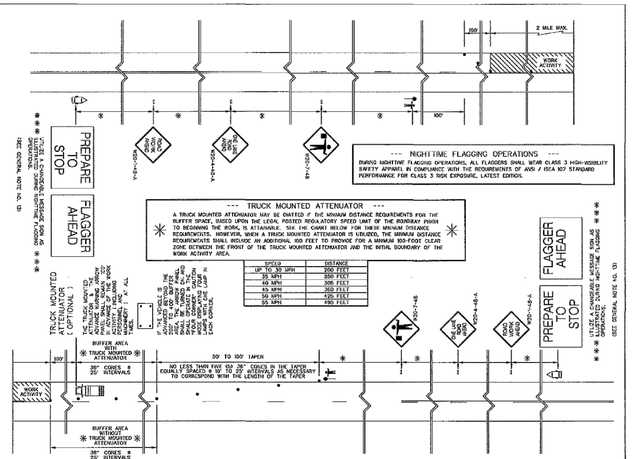
GENERAL NOTES

1. ALL SIGN LOCATIONS ARE TO BE MEASURED FROM THE WORK AREA. WORK AREA LIMITS FOR THE PROJECT WILL BE DETERMINED BY THE ENGINEER AND AS INDICATED IN THE CONTRACT.
2. WHEN ADVANCE WARNING SIGNS MOUNTED ON PORTABLE SIGN SUPPORTS NO LESS THAN 1.8 METERS (6 FEET) AND NO MORE THAN 2.1 METERS (7 FEET) FROM THE GROUND ON THE RIGHT LANE OF ROADWAY 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 REAR 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 1.5 FEET FROM THE GROUND TO THE BOTTOM OF THE SIGN. ALL SIGNS MOUNTED ON GROUND MOUNTED U-CHANNEL POSTS OR SIGNAL SHALL HAVE A MINIMUM MOUNTING HEIGHT OF 7 FEET FROM THE GRADE ELEVATION OF THE NEAR EDGE OF THE ROADWAY TO THE BOTTOM OF THE SIGN. ALL SIGNS SHALL BE MOUNTED UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT. MOUNT ALL SIGNS TOWARD THE ROADWAY 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" WILL BE ACCEPTED FOR USE ON DEPARTMENT PROJECTS. 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. IF THE 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.
8. LANE CLOSURES ARE RESTRICTED TO A MAXIMUM DISTANCE OF 2 MILES UNLESS OTHERWISE DIRECTED BY THE SPECIAL PROVISIONS, THE PLANS AND/OR THE DIRECTOR OF TRAFFIC ENGINEERING.
9. INSTALL, CONDUCT AND MAINTAIN FLAGGING OPERATIONS IN ACCORDANCE WITH THIS STANDARD DRAWING AND THE LATEST EDITIONS OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT. ERECT 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" SIGN-SLOW PADDLE MOUNTED ON A ROUND HANDLE WITH A MINIMUM LENGTH OF 1.8 METERS. THE DEPARTMENT PROHIBITS THE USE OF FLAGS EXCEPT DURING EMERGENCY SITUATIONS.
10. INSTALL AND MAINTAIN THE PROPER ARRAY OF ADVANCE WARNING SIGNS FOR EACH APPROACH WHEN A FLAGGING OPERATION IS IN PLACE AND ACTIVE. WHEN NECESSARY TO RELOCATE THE FLAGGER STATION WHILE ACTIVELY UMPIRING THE FLAGGING OPERATION, INSTALL AN ADDITIONAL ARRAY OF ADVANCE WARNING SIGNS AT THE NEW LOCATION FOR THE FLAGGER STATION AND COMPLETE THE RELOCATION OF THE FLAGGER STATION PRIOR TO REMOVING THE ORIGINAL ARRAY OF ADVANCE WARNING SIGNS.
11. DURING NIGHTTIME FLAGGING OPERATIONS, ILLUMINATE EACH FLAGGER STATION WITH ANY COMBINATION OF PORTABLE LIGHTS, STANDARD ELECTRIC LIGHTS, EXISTING STREET LIGHTS, ETC., THAT PROVIDE A MINIMUM ILLUMINATION LEVEL OF 108 Lx (10 fc).
12. DURING NIGHTTIME FLAGGING OPERATIONS, FLAGGERS SHALL WEAR CLASS 3 HIGH-VISIBILITY APPAREL THAT MEET THE REQUIREMENTS OF ANSI/ISEA 107, STANDARD PERFORMANCE FOR CLASS 3 RISK EXPOSURE, LATEST REVISION, AND A FLUORESCENT HARDHAT.
13. DURING NIGHTTIME FLAGGING OPERATIONS, SUPPLEMENT EACH ARRAY OF ADVANCE WARNING SIGNS WITH A CHANGEABLE MESSAGE SIGN. WHEN NECESSARY, INSTALL THE CHANGEABLE MESSAGE SIGNS AND ANY REQUIRED DURING DAYTIME FLAGGING OPERATIONS. INSTALL THE CHANGEABLE MESSAGE SIGNS IN ADVANCE OF THE THE ADVANCE WARNING SIGN ARRAYS. THE MESSAGES SHOULD BE "PREPARE TO STOP", "FLAGGER AHEAD". A VEHICLE MOUNTED CHANGEABLE MESSAGE SIGN IS NOT AN ACCEPTABLE ALTERNATIVE TO A TRAILER MOUNTED CHANGEABLE MESSAGE SIGN DURING FLAGGING OPERATIONS.
14. CONDUCT THE WORK IN SUCH A MANNER SO AS NOT TO ENCROACH ONTO THE ADJACENT TRAVEL LANE. IF FORCED TO ENCROACH ONTO THE ADJACENT TRAVEL LANE, THE TRAFFIC CONTROL DEVICES AS REQUIRED TO ENSURE THE SAFE MOVEMENT OF VEHICLES.
15. IF WORK IS OCCURRING CONCURRENT AT TWO DIFFERENT LOCATIONS AT THE SAME TIME, THE TWO LOCATIONS ARE TO BE SEPARATED BY NO LESS THAN 2 MILES FROM THE END OF THE FIRST LANE CLOSURE TO THE BEGINNING OF THE TAPER OF THE SECOND LANE CLOSURE.
16. THE DEPARTMENT RESERVES THE RIGHT TO RESTRICT WORK OPERATIONS AND/OR WITHHOLD PAYMENT FOR ANY OF THE WORK ZONE TRAFFIC CONTROL DEVICES NOT INSTALLED AND MAINTAINED AS DIRECTED BY THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, THE STANDARD DRAWINGS, THE PLANS AND/OR THE ENGINEER.

ADVANCE WARNING ARROW PANEL

DURING FLAGGING OPERATIONS, AN ADVANCE WARNING ARROW PANEL SHALL OPERATE IN THE "FOUR CORNERS" CAUTION MODE ONLY. DISPLAY OF AN ARROW OR CHEVRON OPERATING MODE OR ANY OTHER TYPE OF CAUTION MODE OTHER THAN THE "FOUR CORNERS" IS PROHIBITED DURING FLAGGING OPERATIONS.

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 SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, LATEST EDITION.



PORTABLE TRUCK MOUNTED ATTENUATOR

1. UTILIZE A TRUCK MOUNTED ATTENUATOR ATTACHED TO THE REAR OF A TRUCK WITH A MINIMUM GROSS WEIGHT OF WEIGHT RATING OF 15,000 POUNDS (VICTIMS WEIGHTS, 4" 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. WHEN UTILIZING A TRUCK MOUNTED ATTENUATOR, LOCATE THE TRUCK MOUNTED ATTENUATOR APPROXIMATELY 100 FEET IN ADVANCE OF THE WORK AREA UNLESS OTHERWISE DIRECTED BY THE ECC.
3. PROVIDE, INSTALL AND MAINTAIN THE TRUCK MOUNTED ATTENUATOR AS SPECIFIED BY THE STANDARD SPECIFICATIONS AND AS DIRECTED BY THE ENGINEER.
4. A TRAILER MOUNTED ADVANCE WARNING ARROW PANEL MAY BE UTILIZED IN ADVANCE OF THE WORK AREA WHEN THIS TRAFFIC CONTROL SETUP IS UTILIZED FOR ASPHALT CONCRETE PLACEMENT OPERATIONS.

TRAFFIC CONTROL DEVICES NOTE

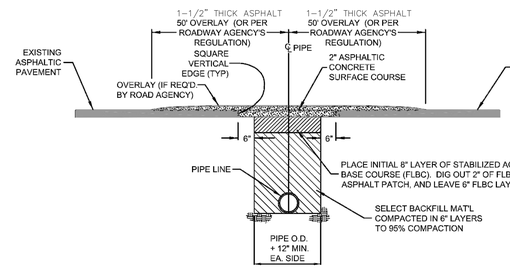
THE CONTRACTOR SHALL DELINEATE THE TANGENT AREA OF THE LANE CLOSURE UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

THE CONTRACTOR SHALL DELINEATE THE TANGENT AREA OF THE LANE CLOSURE WITH TEMPORARY PAVEMENT MARKINGS. IF THE TRACK DEVIATION DIFFERENCE IS GREATER THAN 3 INCHES WITHIN 100 FEET OF THE CLOSED TRAVEL LANE, USE TRACKS OVERRANGE DIRECTED BY THE ENGINEER.

THE CONTRACTOR SHALL DELINEATE THE TANGENT AREA OF THE LANE CLOSURE WITH TEMPORARY PORTABLE PLASTIC DRUMS OR OVERSIZED CONES DURING NIGHTTIME FLAGGING OPERATIONS.

SIGN PLACEMENT INTERVALS			
ROAD TYPE	*	*	*
(≤ 35 MPH) (LOW SPEED)	200	200	200
40 - 50 MPH (INTERMEDIATE SPEED)	350	350	350
55 MPH (HIGH SPEED)	500	500	500

* REGULATORY POSTED SPEED LIMIT PRIOR TO BEGINNING WORK



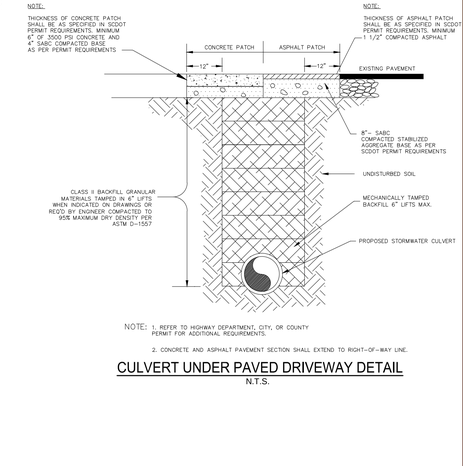
NOTES:

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

OPEN CUT REPAIR FOR LOW VOLUME ASPHALT PAVEMENT

NOTE:
THICKNESS OF CONCRETE PATCH SHALL BE AS SPECIFIED IN SCDOT PERMIT REQUIREMENTS. MINIMUM 6" OF 3500 PSI CONCRETE AND 4" SABC COMPACTED BASE AS PER PERMIT REQUIREMENTS

NOTE:
THICKNESS OF ASPHALT PATCH SHALL BE AS SPECIFIED IN SCDOT PERMIT REQUIREMENTS. MINIMUM 1 1/2" COMPACTED ASPHALT



NOTE: 1. REFER TO HIGHWAY DEPARTMENT, CITY, OR COUNTY PERMIT FOR ADDITIONAL REQUIREMENTS.
2. CONCRETE AND ASPHALT PAVEMENT SECTION SHALL EXTEND TO RIGHT-OF-WAY LINE.

CULVERT UNDER PAVED DRIVEWAY DETAIL

N.T.S.

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

V:\178420615\active\178420615\utilities\land\Drawings\Sheets\revised\phase_2\20615-details_p2.dwg
2017/12/04 10:03 AM By: Pollock, John

ORIGINAL SHEET - ARCH D

Stantec

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

Copyright Reserved

The Contractor shall verify and be responsible for all dimensions. DO NOT scale the drawing - any errors or omissions shall be reported to Stantec without delay.
The Copyrights to all designs and drawings are the property of Stantec. Reproduction or use for any purpose other than that authorized by Stantec is forbidden.

Consultants

Legend

Notes

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

APPROVED FOR CONSTRUCTION

Revision	By	Appd.	YY.MM.DD
4. Revised per SCDOT Comments	JTP	BDK	17.12.04
3. Revised per SCDOT Comments	JTP	BDK	17.08.02
2. Issued for Permit Review	JTP	BDK	17.05.30
1. Issued for Internal Review	JTP	BDK	16.06.01

Issued	By	Appd.	YY.MM.DD

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

Permit-Seal

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

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER No. 32297 JOHN T. POLLOCK
12/4/17

Client/Project

Georgetown County

Hagley West Drainage Improvements
Phase 2
Georgetown, SC

Title

ROADWAY & TRAFFIC CONTROL DETAILS

Project No.	Scale	
178420615		
Drawing No.	**Sheet**	**Revision**
C34	34 of 34	0