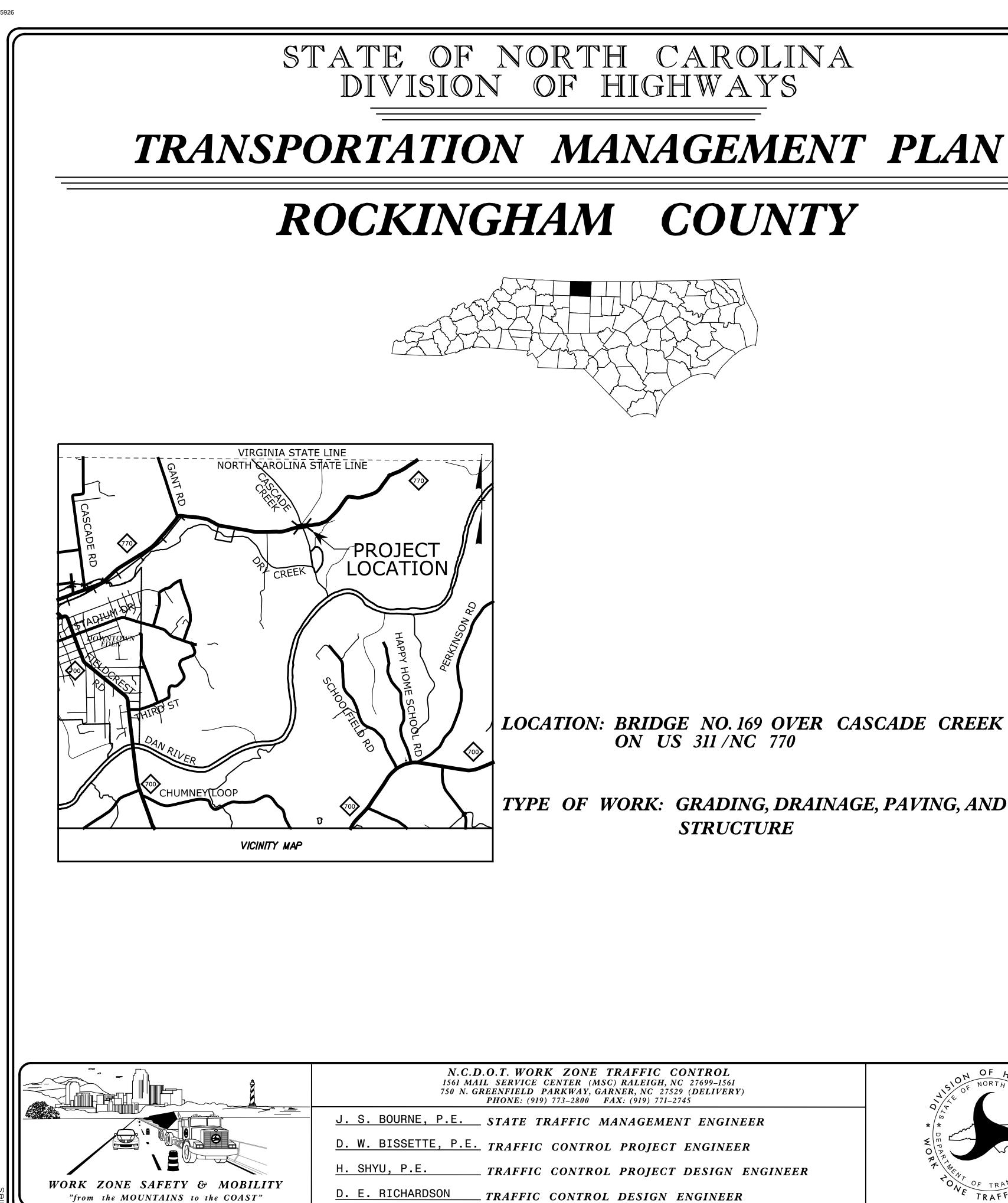
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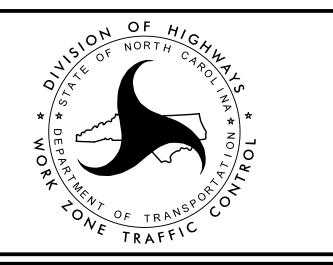
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LOCATION: BRIDGE NO. 169 OVER CASCADE CREEK

TYPE OF WORK: GRADING, DRAINAGE, PAVING, AND





I	NDEX OF SHEETS	SHEET NO. TMP-1
SHEET NO.	TITLE	
TMP - 1		
TMP-1A	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, LEGEND, AND TEMPORARY PAVEMENT MARKING SCHEDULE	23
TMP-1B	TRANSPORTATION OPERATIONS PLAN: (MANAGEMENT STRATEGIES AND GENERAL NOTES)	
TMP-2	TEMPORARY SHORING DATA	
TMP-3	PHASING	
TMP - 4	PHASE I	
TMP-5	PHASE II	
TMP-6	PHASE III	
	DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	IP PROJECT:
SEP ENGINEERIN CONSTRUCTI	& Fax:919-789-9591	

ROADWAY STANDARD DRAWINGS

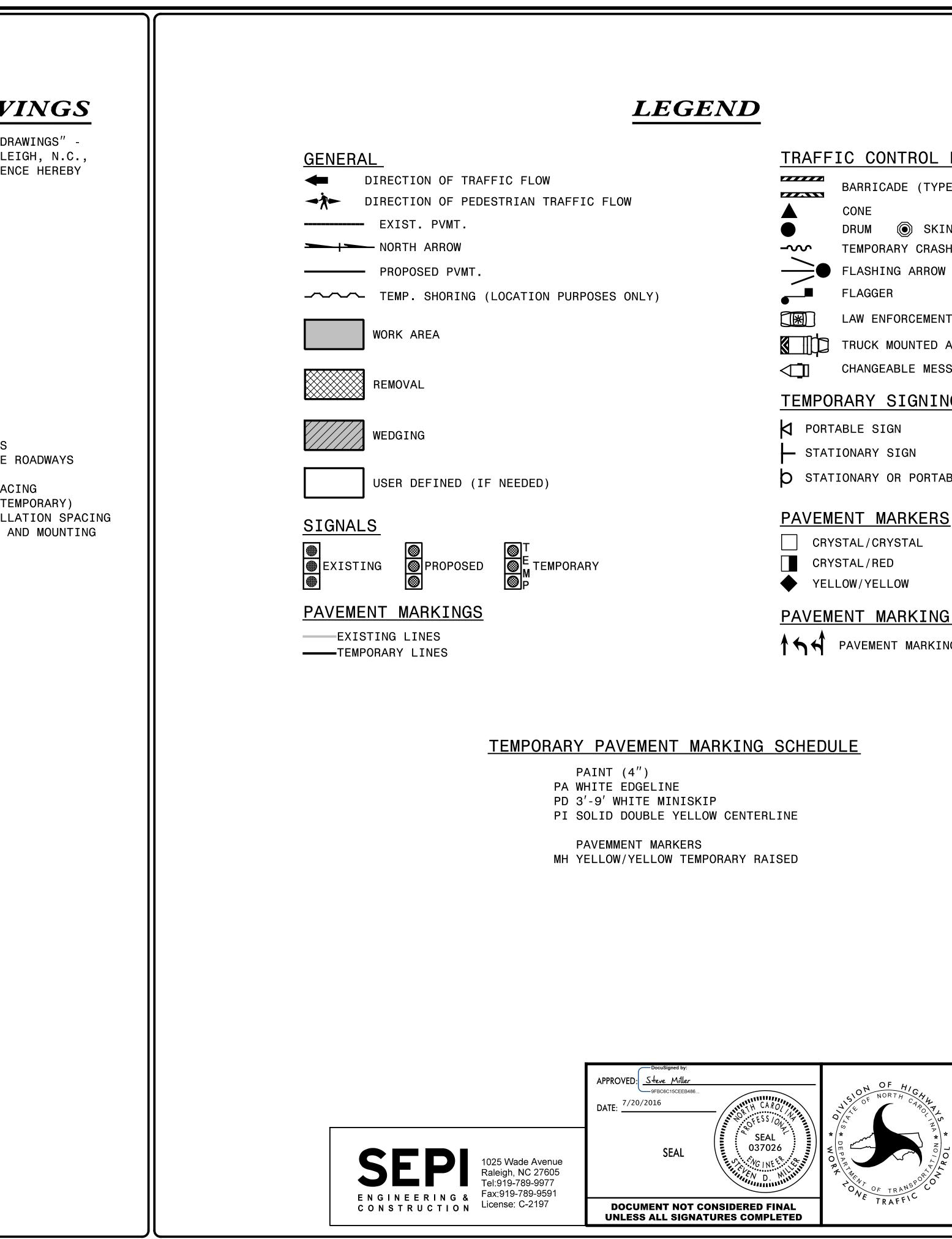
THE FOLLOWING ROADWAY STANDARDS AS SHOWN IN "ROADWAY STANDARD DRAWINGS" -PROJECT SERVICES UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2012 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.

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TITLE

1101.01	WORK ZONE ADVANCE WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
1101.03	TEMPORARY ROAD CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1101.05	WORK ZONE VEHICLE ACCESSES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1130.01	DRUM
1135.01	CONES
1145.01	BARRICADES - TYPE III
1150.01	FLAGGING DEVICES
1180.01	SKINNY - DRUM
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO LANE AND MULTILANE
1205.12	PAVEMENT MARKINGS - BRIDGES
1250.01	RAISED PAVEMENT MARKERS - INSTALLATION SPAC
1251.01	RAISED PAVEMENT MARKERS - (PERMANENT AND TE
1261.01	GUARDRAIL AND BARRIER DELINEATORS - INSTALL
1261.02	GUARDRAIL AND BARRIER DELINEATORS - TYPES A
1262.01	GUARDRAIL END DELINEATION
1264.01	OBJECT MARKERS - TYPES
1264.02	OBJECT MARKERS - INSTALLATION



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B-5343	TMP-1A

TRAFFIC CONTROL DEVICES

	BARRICADE (TYPE III)
	CONE
	DRUM 🔘 SKINNY DRUM 🎯 TUBULAR MARKER
	TEMPORARY CRASH CUSHION
\rightarrow	FLASHING ARROW BOARD
<u> </u>	FLAGGER
	LAW ENFORCEMENT
	TRUCK MOUNTED ATTENUATOR (TMA)
	CHANGEABLE MESSAGE SIGN
<u>TEMPO</u>	RARY SIGNING
DORT	ABLE SIGN
STAT	IONARY SIGN
þ stat	IONARY OR PORTABLE SIGN
PAVEM	ENT MARKERS
CRY	STAL/CRYSTAL
CRY	STAL/RED
YEL	LOW/YELLOW
PAVEM	ENT MARKING SYMBOLS
144	PAVEMENT MARKING SYMBOLS

ROADWAY STANDARD DRAWINGS & LEGEND

	•	TRAFFIC WIL			UGH THE U	JSE OF
- DF	IVEWAY ACCE	SS WILL BE M	AINTAINED	THROUGHOUT	THE PRO	JECT.
		GENE	RAL	NOTI	ES	
DRA MEE OF	WINGS, STAN T FIELD CON DEVICES. M	REQUIRED WHE DARD DETAILS DITIONS OR RE ODIFICATION MEMOVAL OF DEV	, AND ROAD ESULT IN D MAY INCLUD	WAY DETAIL OUPLICATE O DE: MOVING,	S ARE NOT R UNDESIF SUPPLEME	F ATTAINA RED OVERI ENTING,
THE		GENERAL NOTES ON PROJECT EX E ENGINEER.				
TIM	E RESTRICTI	ONS				
A)	DO NOT CLO	SE OR NARROW	TRAVEL LA	NES AS FOL	LOWS:	
	ROAD NAME US 311/NC	770	7	Y AND TIME MONDAY THR 2:00 A.M. T 4:00 P.M. T	OUGH SUNE 0 9:00 A.	DAY . M .
B)	DO NOT CLO EVENTS AS	SE OR NARROW FOLLOWS:	TRAVEL LA	NES DURING	HOLIDAYS	3 AND SPI
	ROAD NAME US 311/NC	770				
	HOLIDAY					
		UNEXPECTED (VOLUMES, AS				JALLY HI
	TO 6:00	YEAR'S, BETW P.M. JANUAR Y, SUNDAY, OF	Y 2ND. IF	NEW YEAR'S	DAY IS	ON A FRI
	3. FOR EAS P.M. MO	TER, BETWEEN NDAY.	THE HOURS	6 OF 7:00 A	.M. THURS	SDAY AND
		ORIAL DAY, BE M. TUESDAY.	ETWEEN THE	HOURS OF	7:00 A.M.	FRIDAY
	DAY BEF	EPENDENCE DA ORE INDEPENDE DENCE DAY.				
	MONDAY INDEPEN	PENDENCE DAY THEN BETWEEN DENCE DAY ANI DENCE DAY.	THE HOURS	6 OF 7:00 A	.M. THE T	THURSDAY
		OR DAY, BETWA M. TUESDAY.	EEN THE HC	OURS OF 7:0	O A.M. FF	IDAY ANI
		NKSGIVING DAY P.M. MONDAY	-	I THE HOURS	OF 7:00	A.M. TU
	BEFORE	ISTMAS, BETWA THE WEEK OF (AFTER THE WA	CHRISTMAS	DAY AND 6:		

7/18/201 6:\Tran

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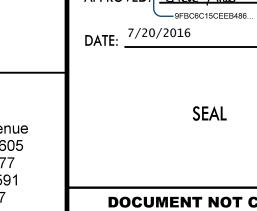
E TO	LAN	NE AND SHOULDER CLOSURE REQUIREMENTS	TRA	FFIC
PING	C)	REMOVE LANE CLOSURE DEVICES FROM THE LANE WHEN WORK IS NOT BEING PERFORMED BEHIND THE LANE CLOSURE OR WHEN A LANE CLOSURE IS NO LONGER NEEDED OR AS DIRECTED BY THE ENGINEER.	(L	NOT : TRAI
F			SIG	NING
OR	D)	WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 15 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN SHOULDER USING ROADWAY STANDARD DRAWING NO. 1101.04 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL OR A LANE CLOSURE IS INSTALLED.	K)	INS DAY
	E)	WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO AN UNDIVIDED FACILITY AND WITHIN 5 FT OF AN	L)	ENSI TRAI
		OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.	M)	INS (W8 THE
		WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO A DIVIDED FACILITY AND WITHIN 10 FT OF AN OPEN	TRA	FFIC
AL		TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.	N)	WHEI IN \ LIM EDGI
	F)	WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN A LANE OF TRAVEL OF AN UNDIVIDED OR DIVIDED FACILITY, CLOSE THE LANE ACCORDING TO THE TRAFFIC CONTROL PLANS, ROADWAY STANDARD DRAWINGS,		ROAI (SK
		OR AS DIRECTED BY THE ENGINEER. CONDUCT THE WORK SO THAT ALL PERSONNEL AND/OR EQUIPMENT REMAIN WITHIN THE CLOSED TRAVEL LANE.		EMEN
ST	G)	DO NOT WORK SIMULTANEOUSLY WITHIN 15 FT ON BOTH SIDES OF AN OPEN TRAVELWAY, RAMP, OR LOOP WITHIN THE SAME LOCATION UNLESS	0)	INS ⁻ MARI
Y, WING		PROTECTED WITH GUARDRAIL OR BARRIER.		ROAI US (
00	PAV	/EMENT EDGE DROP OFF REQUIREMENTS	P)	PLA PLA
)	H)	BACKFILL AT A 6:1 SLOPE UP TO THE EDGE AND ELEVATION OF EXISTING PAVEMENT IN AREAS ADJACENT TO AN OPENED TRAVEL LANE THAT HAS AN EDGE OF PAVEMENT DROP-OFF AS FOLLOWS:		INI ENG
		BACKFILL DROP-OFFS THAT EXCEED 2 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS OF 45 MPH OR GREATER.	Q)	TIE LIN
		BACKFILL DROP-OFFS THAT EXCEED 3 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS LESS THAN 45 MPH.	R)	REM(MARI
			MIS	
FORE		BACKFILL WITH SUITABLE COMPACTED MATERIAL, AS APPROVED BY THE ENGINEER, AT NO EXPENSE TO THE DEPARTMENT.	S)	IN
	I)	DO NOT EXCEED A DIFFERENCE OF 2 INCHES IN ELEVATION BETWEEN OPEN LANES OF TRAFFIC FOR NOMINAL LIFTS OF 1.5 INCHES. INSTALL		THE BY ^{··} (W8
AY		ADVANCE WARNING "UNEVEN LANES" SIGNS (W8-11) 350 FEET IN ADVANCE AND A MINIMUM OF EVERY HALF MILE THROUGHOUT THE UNEVEN AREA.		ÀND TO I

ING

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PATTERN ALTERATIONS

TIFY THE ENGINEER TWENTY ONE (21) CALENDAR DAYS PRIOR TO ANY AFFIC PATTERN ALTERATION.

STALL ADVANCE WORK ZONE WARNING SIGNS NO MORE THAN THREE (3) YS PRIOR TO THE BEGINNING OF CONSTRUCTION.

SURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY AFFIC PATTERN.

STALL BLACK ON ORANGE "DIP" SIGNS (W8-2) AND/OR "BUMP" SIGNS 8-1) 350 FEET IN ADVANCE OF THE UNEVEN AREA, OR AS DIRECTED BY ENGINEER.

CONTROL DEVICES

EN LANE CLOSURES ARE NOT IN EFFECT SPACE CHANNELIZING DEVICES WORK AREAS NO GREATER IN FEET THAN TWICE THE POSTED SPEED MIT (MPH) EXCEPT, 10 FT ON-CENTER IN RADII, AND 3 FT OFF THE GE OF AN OPEN TRAVELWAY. REFER TO STANDARD SPECIFICATIONS FOR ADS AND STRUCTURES SECTIONS 1130 (DRUMS), 1135 (CONES), AND 1180 KINNY DRUMS) FOR ADDITIONAL REQUIREMENTS.

NT MARKINGS AND MARKERS

STALL TEMPORARY PAVEMENT MARKINGS AND TEMPORARY PAVEMENT RKERS ON INTERIM LAYERS OF PAVEMENT AS FOLLOWS:

AD NAME MARKING MARKER 311/NC 770 PAINT TEMPORARY RAISED

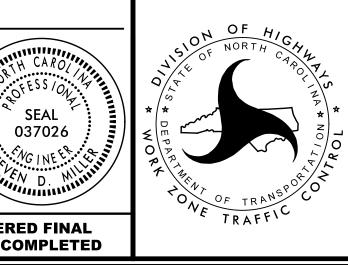
ACE ONE APPLICATION OF PAINT FOR TEMPORARY TRAFFIC PATTERNS. ACE A SECOND APPLICATION OF PAINT SIX (6) MONTHS AFTER THE ITIAL APPLICATION AND EVERY SIX MONTHS AS DIRECTED BY THE GINEER.

PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING NES.

MOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND RKERS BY THE END OF EACH DAY'S OPERATION.

LANEOUS

THE EVENT A TIE-IN CANNOT BE MADE IN ONE DAY'S TIME, BRING E TIE-IN AREA TO AN APPROPRIATE ROADWAY ELEVATION AS DETERMINED THE ENGINEER. PLACE BLACK ON ORANGE "LOOSE GRAVEL" SIGNS 8-7) AND BLACK ON ORANGE "PAVEMENT ENDS" SIGNS (W8-3) 350 FEET 700 FEET RESPECTIVELY IN ADVANCE OF THE UNEVEN AREAS. USE DRUMS DELINEATE THE EDGE OF ROADWAY ALONG UNPAVED AREAS.



TRANSPORTATION **OPERATIONS** PLAN

FOR TEMPORARY SHORING AND POSITIVE PROTECTION FOR TEMPORARY SHORING, SEE PLANS AND TEMPORARY SHORING PROVISION.

DESIGN TEMPORARY SHORING FROM STATION 15+95± -L- TO STATION 16+30± -L-, 31 FT. RT FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION: UNIT WEIGHT OF SOIL ABOVE WATER TABLE, γ =120 PCF UNIT WEIGHT OF SOIL BELOW WATER TABLE, γ' =60 PCF FRICTION ANGLE, ϕ =30 COHESION. c=0 PSF GROUNDWATER ELEVATION = 479 FT. \pm

BEFORE BEGINNING TEMPORARY SHORING DESIGN OR CONSTRUCTION, SURVEY EXISTING GROUND ELEVATIONS IN THE VICINITY OF SHORING LOCATIONS TO DETERMINE ACTUAL SHORING HEIGHTS.

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF THE TEMPORARY SHORING FROM STATION 15+95± -L- TO STATION 16+30± -L-, 31 FT. RT. THE INFORMATION PROVIDED FOR DESIGN WAS ASSUMED AND MAY NOT BE APPLICABLE TO THE ACTUAL SITE CONDITIONS ENCOUNTERED DURING CONSTRUCTION.

AT THE CONTRACTOR'S OPTION, USE STANDARD TEMPORARY SHORING FOR TEMPORARY SHORING FROM STATION 15+95± -L- TO STATION 16+30± -L-, 31 FT. RT. SEE STANDARD DETAIL NO. 1801.01 FOR STANDARD TEMPORARY SHORING.

DRIVEN PILING FOR TEMPORARY SHORING FROM STATION 15+95± -L- TO STATION 16+30± -L-, 31 FT. RT. MAY NOT PENETRATE BELOW ELEVATION 479 FT. DUE TO OBSTRUCTIONS, VERY DENSE OR HARD SOIL, BOULDERS, OR WEATHERED OR HARD ROCK.

THE TEMPORARY SHORING NOTES SHOWN ON THIS SHEET WERE PROVIDED THROUGH A SEALED DOCUMENT FROM THE NCDOT GEOTECHNICAL ENGINEERING UNIT. THE DOCUMENT WAS PROVIDED ON MAY 5, 2016 AND SEALED BY A PROFESSIONAL ENGINEER, DAVID L TEAGUE, LICENSE # 027869.

TEMPORARY SHORING NO. 1 (SEE TMP-4, QUANTITY=385 SF)

TEMPORARY SHORING NO. 2 (SEE TMP-4, QUANTITY=275 SF)

FOR TEMPORARY SHORING AND POSITIVE PROTECTION FOR TEMPORARY SHORING, SEE PLANS AND TEMPORARY SHORING PROVISION.

DESIGN TEMPORARY SHORING FROM STATION 16+90± -L- TO STATION 17+15± -L-, 31 FT. RT FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

UNIT WEIGHT OF SOIL ABOVE WATER TABLE, γ =120 PCF UNIT WEIGHT OF SOIL BELOW WATER TABLE, γ' =60 PCF FRICTION ANGLE, ϕ =30 COHESION, c=0 PSF GROUNDWATER ELEVATION = 479 FT. \pm

BEFORE BEGINNING TEMPORARY SHORING DESIGN OR CONSTRUCTION, SURVEY EXISTING GROUND ELEVATIONS IN THE VICINITY OF SHORING LOCATIONS TO DETERMINE ACTUAL SHORING HEIGHTS.

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF THE TEMPORARY SHORING FROM STATION 16+90± -L- TO STATION 17+15± -L-, 31 FT. RT. THE INFORMATION PROVIDED FOR DESIGN WAS ASSUMED AND MAY NOT BE APPLICABLE TO THE ACTUAL SITE CONDITIONS ENCOUNTERED DURING CONSTRUCTION.

AT THE CONTRACTOR'S OPTION, USE STANDARD TEMPORARY SHORING FOR TEMPORARY SHORING FROM STATION 16+90± -L- TO STATION 17+15± -L-, 31 FT. RT. SEE STANDARD DETAIL NO. 1801.01 FOR STANDARD TEMPORARY SHORING.

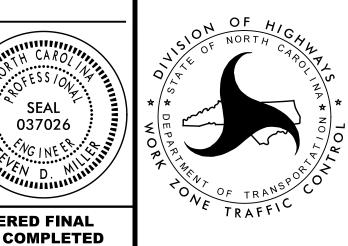
DRIVEN PILING FOR TEMPORARY SHORING FROM STATION 16+90± -L- TO STATION 17+15± -L-. 31 FT. RT. MAY NOT PENETRATE BELOW ELEVATION 479 FT. DUE TO OBSTRUCTIONS, VERY DENSE OR HARD SOIL, BOULDERS, OR WEATHERED OR HARD ROCK.



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3 TMP-2	B-5343



TEMPORARY SHORING DATA

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PHASING

PHASE I

- STEP 1: USING ROADWAY STANDARD DRAWING (RSD) 1101.01 SHEET 3 OF 3, INSTALL ADVANCE WARNING SIGNS ON US 311/NC 770.
- STEP 2: USING RSD 1101.02 SHEET 1 OF 15 WHERE NECESSARY, BEGIN CONSTRUCTION FROM -L- 12+09± TO -L- 21+32±.
- STEP 3: USING RSD 1101.02 SHEET 1 OF 15 WHERE NECESSARY, PLACE TRAFFIC CONTROL DEVICES AS SHOWN ON TMP-4 AND CONSTRUCT THE TEMPORARY SHORING FROM -L- STA. 15+95± TO 16+30± AND FROM -L- STA. 16+90± TO 17+15±. CONSTRUCT THE TEMPORARY DETOUR FROM -L- STA. 12+24± TO -L- 21+18±.
- STEP 4: USING RSD 1101.02 SHEET 1 OF 15, PERFORM THE FOLLOWING IN A CONTINUOUS MANNER:
 - A) USE WEDGING TO CONSTRUCT A TIE-IN FROM THE EXISTING ROADWAY TO THE TEMPORARY DETOUR FROM -L- STA. 12+09± TO -L- STA. 14+15± AND -L- STA. 19+35± TO -L- STA. 21+32± AS SHOWN ON TMP-5.
 - B) PLACE TRAFFIC CONTROL DEVICES AND TEMPORARY PAVEMENT MARKINGS AS SHOWN ON TMP-5.
 - C) SHIFT TRAFFIC TO THE TEMPORARY DETOUR PATTERN BY THE END OF THE WORK DAY.

PHASE II

- STEP 1: WITH TRAFFIC ON THE TEMPORARY DETOUR, USE RSD 1101.02 SHEET 1 OF 15 TO CONSTRUCT -L- FROM STATION 12+09± TO 21+32± AS SHOWN ON TMP-5 UP TO BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE. ENSURE THAT RUNOFF DRAINS AND THAT PONDING IS PREVENTED.
- STEP 2: USING RSD 1101.02 SHEET 1 OF 15, PERFORM THE FOLLOWING IN A CONTINUOUS MANNER:
 - A) USE WEDGING TO CONSTRUCT A TIE-IN TO THE FINAL ALIGNMENT FROM -L- STA. 12+09± TO 14+15± AND -L- STA. 19+25± TO -L- STA. 21+32± AS SHOWN ON TMP-6.
 - B) PLACE TRAFFIC CONTROL DEVICES AND TEMPORARY PAVEMENT MARKINGS AS SHOWN ON TMP-6.
 - C) SHIFT TRAFFIC TO THE FINAL ALIGNMENT BY THE END OF THE WORK DAY.

PHASE III

- STEP 1: USING RSD 1101.02 SHEET 1 OF 15 REMOVE TEMPORARY DETOUR AS SHOWN ON TMP-6. PLACE THE FINAL LAYER OF SURFACE COURSE AND FINAL PAVEMENT MARKINGS.
- STEP 2: REMOVE ALL WORK ZONE TRAFFIC CONTROL DEVICES.

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