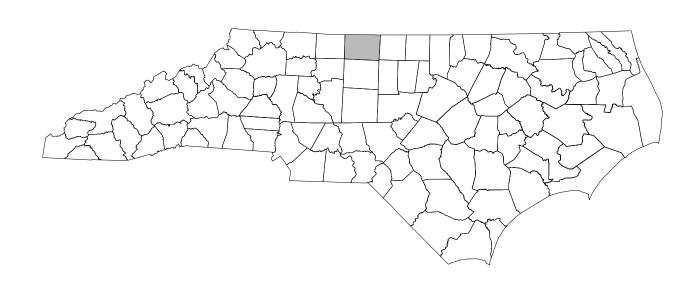
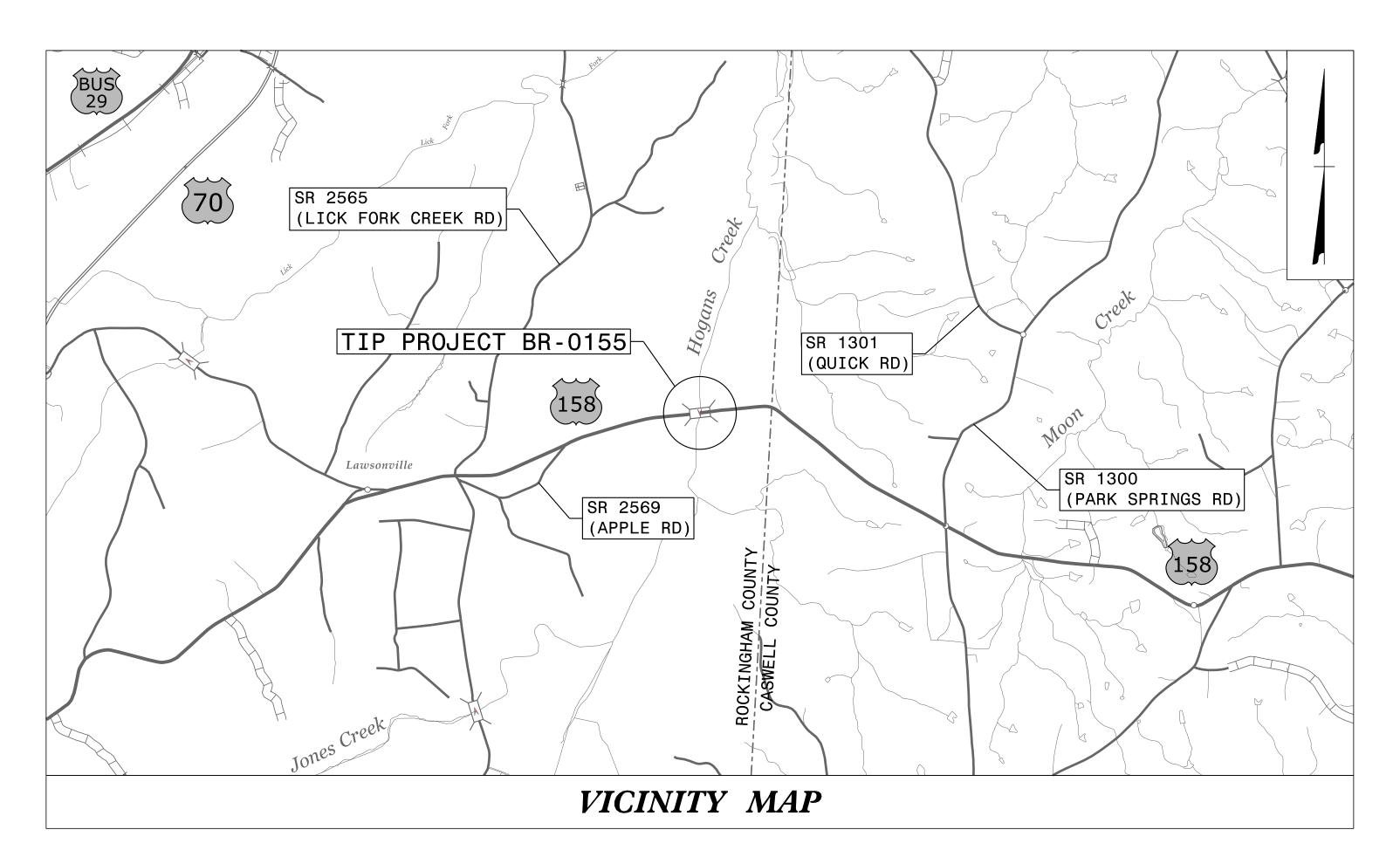
# STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

# TRANSPORTATION MANAGEMENT PLAN ROCKINGHAM COUNTY



# LOCATION: REPLACEMENT OF BRIDGE NO. 780163 ON US 158 OVER HOGANS CREEK



WORK ZONE SAFETY & MOBILITY
"from the MOUNTAINS to the COAST"

PLANS PREPARED BY:

JERRY P. PAGE, PE

PROJECT ENGINEER

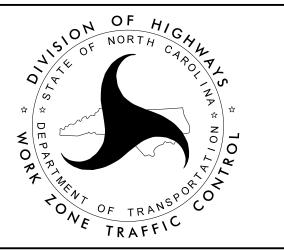
BENJAMIN A. WHITE, PE

PROJECT DESIGN ENGINEER

NCDOT CONTACTS:

SUZANA MATTA, PE

NCDOT PROJECT ENGINEER



# INDEX OF SHEETS

SHEET NO. TITLE

TMP-1 TITLE SHEET, VICINITY MAP AND INDEX

OF SHEETS

TMP-1A LIST OF APPLICABLE ROADWAY STANDARD

DRAWINGS AND LEGEND

TMP-1B TRANSPORTATION OPERATIONS PLAN

TMP-2 TEMPORARY SHORING NOTES

TMP-2A PORTABLE CONCRETE BARRIER AT TEMPORARY SHORING LOCATIONS

TMP-3 PHASING NOTES

TMP-4

TMP - 7

TMP-5 PHASE I CUT SECTIONS

TMP-6 PHASE II DETAIL

PHASE II CUT SECTIONS

PHASE I DETAIL

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



DATE: \_
Avenue

APPROVED:

SEAL

SEAL 044594

TMP-1

THE FOLLOWING ROADWAY STANDARDS AS SHOWN IN "ROADWAY STANDARD DRAWINGS" -N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2024 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
1101.01 1101.02 1101.04 1101.11 1110.01 1110.02 1130.01 1150.01 1160.01 1170.01 1205.01 1205.02	WORK ZONE ADVANCE WARNING SIGNS TEMPORARY LANE CLOSURES TEMPORARY SHOULDER CLOSURES TRAFFIC CONTROL DESIGN TABLES STATIONARY WORK ZONE SIGNS PORTABLE WORK ZONE SIGNS DRUMS FLAGGING DEVICES TEMPORARY CRASH CUSHION PORTABLE CONCRETE BARRIER PAVEMENT MARKINGS - LINE TYPES AND OFFSETS PAVEMENT MARKINGS - TWO LANE AND MULTILANE ROADWAYS PAVEMENT MARKINGS - BRIDGES
1203.12	I VA FIMITIAL MINIMOS - DILIDORO

ROJ. REFERENCE NO.	SHEET NO.
BR-0155	TMP-1A

# **LEGEND**

#### **GENERAL**

DIRECTION OF TRAFFIC FLOW DIRECTION OF PEDESTRIAN TRAFFIC FLOW

----- EXIST. PVMT.

NORTH ARROW

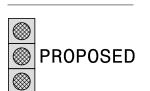
PROPOSED PVMT.

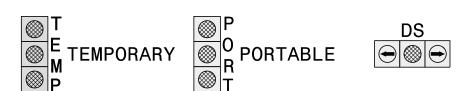
TEMP. SHORING (LOCATION PURPOSES ONLY)

WORK AREA

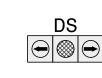
REMOVAL

## SIGNALS









## PAVEMENT MARKINGS

——EXISTING LINES ——TEMPORARY LINES

# TRAFFIC CONTROL DEVICES

BARRICADE (TYPE III)

DRUM SKINNY DRUM O TUBULAR MARKER

TEMPORARY CRASH CUSHION

FLASHING ARROW BOARD FLAGGER

LAW ENFORCEMENT

TRUCK MOUNTED ATTENUATOR (TMA)

CHANGEABLE MESSAGE SIGN

## TEMPORARY SIGNING

O PORTABLE SIGN

── STATIONARY SIGN

STATIONARY OR PORTABLE SIGN

# PAVEMENT MARKERS

CRYSTAL/CRYSTAL

CRYSTAL/RED

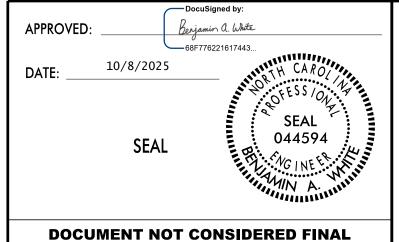
◆ YELLOW/YELLOW

#### PAVEMENT MARKING SYMBOLS

PAVEMENT MARKING SYMBOLS

### TEMPORARY PAVEMENT MARKING

SYMBOL **DESCRIPTION** PAINT WHITE EDGELINE (4") PAINT 3 FT. - 9 FT./SP WHITE MINISKIP (4") PAINT WHITE STOPBAR (24")



**UNLESS ALL SIGNATURES COMPLETED** 



ROADWAY STANDARD DRAWINGS & LEGEND CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSIONS IN THE DETAIL DRAWINGS, STANDARD DETAILS, AND ROADWAY DETAILS ARE NOT ATTAINABLE TO MEET FIELD CONDITIONS OR RESULT IN DUPLICATE OR UNDESIRED OVERLAPPING OF DEVICES. MODIFICATION MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING, OR REMOVAL OF DEVICES AS DIRECTED BY THE ENGINEER.

THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT EXCEPT WHEN OTHERWISE NOTED IN THE PLAN OR DIRECTED BY THE ENGINEER.

#### LANE AND SHOULDER CLOSURE REQUIREMENTS

- 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.
- 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.
- WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 5 FT OF AN OPEN TRAVEL LANE ON AN UNDIVIDED FACILITY, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 10 FT OF AN OPEN TRAVEL LANE ON A DIVIDED FACILITY, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

- 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, OR AS DIRECTED BY THE ENGINEER. CONDUCT THE WORK SO THAT ALL PERSONNEL AND/OR EQUIPMENT REMAIN WITHIN THE CLOSED TRAVEL LANE.
- DO NOT WORK SIMULTANEOUSLY WITHIN 15 FT ON BOTH SIDES OF AN OPEN TRAVELWAY, RAMP, OR LOOP WITHIN THE SAME LOCATION UNLESS PROTECTED WITH GUARDRAIL OR BARRIER.

#### PAVEMENT EDGE DROP OFF REQUIREMENTS

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:

BACKFILL DROP-OFFS THAT EXCEED 2 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS OF 45 MPH OR GREATER.

BACKFILL DROP-OFFS THAT EXCEED 3 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS LESS THAN 45 MPH.

BACKFILL WITH SUITABLE COMPACTED MATERIAL, AS APPROVED BY THE ENGINEER, AT NO EXPENSE TO THE DEPARTMENT.

#### TRAFFIC PATTERN ALTERATIONS

NOTIFY THE ENGINEER THIRTY (30) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION.

#### SIGNING

- INSTALL ADVANCE WORK ZONE WARNING SIGNS WHEN WORK IS WITHIN 40 FT FROM THE EDGE OF TRAVEL LANE AND NO MORE THAN THREE (3) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.
- ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

#### TRAFFIC BARRIER

J) INSTALL TEMPORARY BARRIER ACCORDING TO THE TRANSPORTATION MANAGEMENT PLANS A MAXIMUM OF TWO (2) WEEKS PRIOR TO BEGINNING WORK IN ANY LOCATION. ONCE TEMPORARY BARRIER IS INSTALLED AT ANY LOCATION PROCEED IN A CONTINUOUS MANNER TO COMPLETE THE PROPOSED WORK IN THAT LOCATION UNLESS OTHERWISE STATED IN THE TRANSPORTATION MANAGEMENT PLANS OR AS DIRECTED BY THE ENGINEER.

DO NOT PLACE BARRIER DIRECTLY ON ANY SURFACE OTHER THAN ASPHALT OR CONCRETE.

ONCE TEMPORARY BARRIER IS INSTALLED AT ANY LOCATION AND NO WORK IS PERFORMED BEHIND THE TEMPORARY BARRIER FOR A PERIOD LONGER THAN TWO (2) MONTHS, REMOVE / RESET TEMPORARY BARRIER AT NO COST TO THE DEPARTMENT UNLESS OTHERWISE STATED IN THE TRANSPORTATION MANAGEMENT PLANS, TEMPORARY BARRIER IS PROTECTING A HAZARD. OR AS DIRECTED BY THE ENGINEER.

INSTALL TEMPORARY BARRIER WITH THE TRAFFIC FLOW BEGINNING WITH THE UPSTREAM SIDE OF TRAFFIC. REMOVE TEMPORARY BARRIER AGAINST THE TRAFFIC FLOW BEGINNING WITH THE DOWNSTREAM SIDE OF TRAFFIC.

INSTALL AND SPACE DRUMS NO GREATER THAN TWICE THE POSTED SPEED LIMIT (MPH) TO CLOSE OR KEEP THE SECTION OF THE ROADWAY CLOSED UNTIL THE TEMPORARY BARRIER CAN BE PLACED OR AFTER THE TEMPORARY BARRIER IS REMOVED.

PROTECT THE APPROACH END OF MOVABLE/PORTABLE CONCRETE BARRIER AT ALL TIMES DURING THE INSTALLATION AND REMOVAL OF THE BARRIER BY EITHER A TRUCK MOUNTED ATTENUATOR (MAXIMUM 72 HOURS) OR A TEMPORARY CRASH CUSHION.

PROTECT THE APPROACH END OF MOVABLE/PORTABLE CONCRETE BARRIER FROM ONCOMING TRAFFIC AT ALL TIMES BY A TEMPORARY CRASH CUSHION UNLESS THE APPROACH END OF MOVABLE/PORTABLE CONCRETE BARRIER IS OFFSET FROM ONCOMING TRAFFIC AS FOLLOWS OR AS SHOWN IN THE PLANS: (SEE ALSO 1101.05)

POSTED SPEED LIMIT	MINIMUM OFFSET
40 OR LESS	15 FT
45 - 50	20 FT
55	25 FT
60 MPH or HIGHER	30 FT

#### TRAFFIC CONTROL DEVICES

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

#### PAVEMENT MARKINGS AND MARKERS

M) INSTALL TEMPORARY PAVEMENT MARKINGS AND TEMPORARY PAVEMENT MARKERS ON INTERIM LAYERS OF PAVEMENT AS FOLLOWS:

ROAD NAME	<u>MARKING</u>	MARKER	
-L- US 158	PAINT	N/A	

PLACE ONE APPLICATION OF PAINT FOR TEMPORARY TRAFFIC PATTERNS. PLACE A SECOND APPLICATION OF PAINT SIX (6) MONTHS AFTER THE INITIAL APPLICATION AND EVERY SIX MONTHS AS DIRECTED BY THE ENGINEER.

O) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.

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SHEET NO.

TMP-1B

P) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS BY THE END OF EACH DAY'S OPERATION.

# MANAGEMENT STRATEGIES

#### TRAFFIC MANAGEMENT STRATEGIES

- LANE SHIFTS OR CLOSURES
- SHOULDER CLOSURES
- ONE-LANE, TWO WAY OPERATION (FLAGGING) - ONE-LANE, TWO WAY OPERATION (SIGNALIZED)
- NIGHT WORK
- WEEKEND WORK

#### WORK ZONE SAFETY @ MOBILITY STRATEGIES

- TEMPORARY TRAFFIC SIGNALS

APPROVED: Benjamin a. White 10/8/2025 DATE: **DOCUMENT NOT CONSIDERED FINAL** 

**UNLESS ALL SIGNATURES COMPLETED** 



TRANSPORTATION **OPERATIONS** PLAN

GANNETT One Glenwood Avenue Suite 900
Raleigh, NC 27603
919-420-7660
NC Lic. No. F-0270

#### SHORING LOCATION NO. 1

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

DESIGN TEMPORARY SHORING FROM STATION 14+15 +/- -L-, 2.7' (LT) TO STATION 14+40 +/- -L-, 2.7' (LT) FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

UNIT WEIGHT  $(\gamma)$  = 120 PCF FRICTION ANGLE  $(\phi)$  = 28 DEGREES COHESION (c) = 0 PSFGROUNDWATER ELEVATION = 483 FT

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 TEMPORARY SHORING FROM STATION 14+15 +/- -L-, 2.7' (LT) TO STATION 14+40 +/--L-, 2.7' (LT). THE INFORMATION PROVIDED FOR TEMPORARY SHORING DESIGN WAS ASSUMED AND MAY NOT BE APPLICABLE TO THE ACTUAL SITE CONDITIONS ENCOUNTERED DURING CONSTRUCTION.

#### SHORING LOCATION NO. 3

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

DESIGN TEMPORARY SHORING FROM STATION 14+22 +/- -L-, 0.3' (RT) TO STATION 14+54 +/- -L-, 0.3' (RT) FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

UNIT WEIGHT  $(\gamma)$  = 120 PCF FRICTION ANGLE  $(\phi)$  = 28 DEGREES COHESION (c) = 0 PSFGROUNDWATER ELEVATION = 483 FT

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 TEMPORARY SHORING FROM STATION 14+22 +/- -L-, 0.3' (RT) TO STATION 14+54 +/- -L-, 0.3' (RT). THE INFORMATION PROVIDED FOR TEMPORARY SHORING DESIGN WAS ASSUMED AND MAY NOT BE APPLICABLE TO THE ACTUAL SITE CONDITIONS ENCOUNTERED DURING CONSTRUCTION.

DRIVEN PILING FOR TEMPORARY SHORING FROM STATION 14+22 +/- -L-. 0.3' (RT) TO STATION 14+54 +/- -L-, 0.3' (RT) MAY NOT PENETRATE BELOW ELEVATION 456 FT DUE TO OBSTRUCTIONS, VERY DENSE OR HARD SOIL, BOULDERS OR WEATHERED OR HARD ROCK.

SHORING I.D. NO.	BEGIN STATION AND OFFSET	END STATION AND OFFSET	ESTIMATED AVERAGE HEIGHT	ESTIMATED MAXIMUM HEIGHT	SHORING LOCATION TYPE
<u>(1)</u>	-L- STA. 14+15 +/- 2.7 FT (LT)	-L- STA. 14+40 +/- 2.7 FT (LT)	3.7 FT	10.0 FT	STRUCTURE
<b>(2)</b>	-L- STA. 16+40 +/- 2.7 FT (LT)	-L- STA. 16+65 +/- 2.7 FT (LT)	3.7 FT	10.0 FT	STRUCTURE
3	-L- STA. 14+22 +/- 0.3 FT (RT)	-L- STA. 14+54 +/- 0.3 FT (RT)	7.0 FT	10.0 FT	STRUCTURE
4	-L- STA. 16+05 +/- 0.3 FT (RT)	-L- STA. 16+59 +/- 0.3 FT (RT)	8.2 FT	10.0 FT	STRUCTURE

#### SHORING LOCATION NO. 2

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

DESIGN TEMPORARY SHORING FROM STATION 16+40 +/- -L-, 2.7' (LT) TO STATION 16+65 +/- -L-, 2.7' (LT) FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

UNIT WEIGHT  $(\gamma) = 120$  PCF FRICTION ANGLE  $(\phi)$  = 28 DEGREES COHESION (c) = 0 PSFGROUNDWATER ELEVATION = 483 FT

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 TEMPORARY SHORING FROM STATION 16+40 +/- -L-, 2.7' (LT) TO STATION 16+65+/--L-, 2.7' (LT). THE INFORMATION PROVIDED FOR TEMPORARY SHORING DESIGN WAS ASSUMED AND MAY NOT BE APPLICABLE TO THE ACTUAL SITE CONDITIONS ENCOUNTERED DURING CONSTRUCTION.

#### SHORING LOCATION NO. 4

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

DESIGN TEMPORARY SHORING FROM STATION 16+05 +/- -L-, 0.3' (RT) TO STATION 16+59 +/- -L-, 0.3' (RT) FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

UNIT WEIGHT  $(\gamma) = 120$  PCF FRICTION ANGLE  $(\phi)$  = 28 DEGREES COHESION (c) = 0 PSFGROUNDWATER ELEVATION = 483 FT

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 TEMPORARY SHORING FROM STATION 16+05 +/- -L-, 0.3' (RT) TO STATION 16+59 +/- -L-, 0.3' (RT). THE INFORMATION PROVIDED FOR TEMPORARY SHORING DESIGN WAS ASSUMED AND MAY NOT BE APPLICABLE TO THE ACTUAL SITE CONDITIONS ENCOUNTERED DURING CONSTRUCTION.

DRIVEN PILING FOR TEMPORARY SHORING FROM STATION 16+05 +/- -L-, 0.3' (RT) TO STATION 16+59 +/- -L-, 0.3' (RT) MAY NOT PENETRATE BELOW ELEVATION 469 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 GEOTECHNICAL ENGINEERING UNIT. THE DOCUMENT WAS SUBMITTED TO THE DIVISION 7 PROJECT DEVELOPMENT ENGINEER ON 8/6/2025 AND SEALED BY A PROFESSIONAL ENGINEER, DAVID L. TEAGUE, LICENSE #027869.

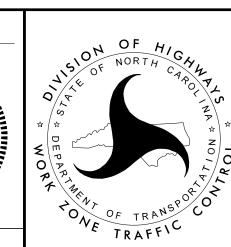


APPROVED:

DATE:

Benjamin a. White

10/8/2025



**TEMPORARY** SHORING NOTES

GANNETT One Glenwood Avenue
Suite 900
Raleigh, NC 27603
919-420-7660
NC Lic. No. F-0270

#### TEMPORARY SOIL NAIL WALL **TEMPORARY MSE WALL TEMPORARY SHORING** CLEAR DISTANCE **DISTANCE EDGE OF EDGE OF PAVEMENT PAVEMENT** OF WALL **OF WALL EDGE OF EDGE OF EDGE OF PAVEMENT SECTION PAVEMENT SECTION PAVEMENT SECTION NEAREST** TRAFFIC **TRAFFIC** TRAFFIC LANE LANE LANE **BOTTOM OF** REINFORCED **EXCAVATION ZONE OR EXISTING GRADE** A: TOP OF SHORING = **SOIL NAIL EDGE OF PAVEMENT** REINFORCEMENT **B: BOTTOM OF SHORING EXISTING EXISTING FINISHED FINISHED** GRADE **GRADE BOTTOM** OF WALL OF WALL **BOTTOM OF** REINFORCED ZONE NOTE: WALL OR SHORING HEIGHT = A-B

# FIGURE A

# **NOTES**

- 1- REFER TO THE TRAFFIC CONTROL PLANS FOR TEMPORARY SHORING LOCATIONS AND NOTES.
- 2- REFER TO THE "TEMPORARY SHORING" STANDARD PROVISION FOR INFORMATION ABOUT TEMPORARY SHORING AND PORTABLE CONCRETE BARRIER (PCB).
- 3- PCB IS REQUIRED IF TEMPORARY SHORING/WALL IS LOCATED WITHIN THE CLEAR ZONE IN ACCORDANCE WITH THE AASHTO ROADSIDE DESIGN GUIDE. DO NOT PLACE BARRIER DIRECTLY ON ANY SURFACE OTHER THAN ASPHALT OR CONCRETE.

  (CONTACT NCDOT PAVEMENT MANAGEMENT FOR APPLICABLE PAVEMENT DESIGN).
- 4- BASED ON THE CLEAR DISTANCE, OFFSET, DESIGN SPEED AND PAVEMENT TYPE, CHOOSE AN UNANCHORED OR ANCHORED PCB FROM THE TABLE SHOWN IN FIGURE B. CLEAR DISTANCE IS DEFINED AS SHOWN IN FIGURE A AND OFFSET IS DEFINED AS SHOWN IN FIGURE B.
- 5- AT THE CONTRACTOR'S OPTION OR IF THE MINIMUM REQUIRED CLEAR DISTANCE IS NOT AVAILABLE, SET PCB NEXT TO AND UP AGAINST THE TRAFFIC SIDE OF THE TEMPORARY SHORING/WALLS EXCEPT FOR BARRIER ABOVE TEMPORARY WALLS. PCB WITH THE MINIMUM REQUIRED CLEAR DISTANCE IS REQUIRED ABOVE TEMPORARY WALLS.
- 6- USE NCDOT PORTABLE CONCRETE BARRIER (PCB) IN ACCORDANCE WITH ROADWAY STANDARD DRAWING NO. 1170.01 AND SECTION 1170 OF THE STANDARD SPECIFICATIONS.
- 7- SET PCB WITH A MINIMUM HORIZONTAL DISTANCE OF 2 FT BETWEEN THE FRONT FACE OF THE BARRIER AND THE EDGE OF THE NEAREST TRAFFIC LANE AS SHOWN IN FIGURE A UNLESS OTHERWISE SHOWN IN THE PLANS OR APPROVED BY THE ENGINEER.
- 8- FOR PCB ABOVE AND BEHIND TEMPORARY WALLS, PROVIDE A MINIMUM DISTANCE OF 3 FT BETWEEN THE EDGE OF PAVEMENT AND THE WALL FACE AS SHOWN IN FIGURE A. IF THIS MINIMUM REQUIRED DISTANCE IS NOT AVAILABLE, CONTACT THE ENGINEER.
- 9- TABLE SHOWN IN FIGURE B IS BASED ON NCDOT RESEARCH PROJECT NO. 2005-010 WITH VEHICLE TYPE USED FOR NCHRP 350 CRASH TESTS.

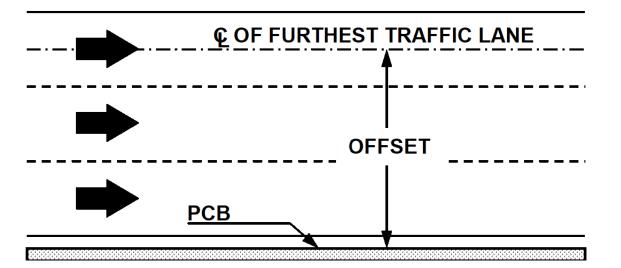


enue	PROJ. REFERENCE NO.	SHEET NO.
	BR-0155	TMP-2A

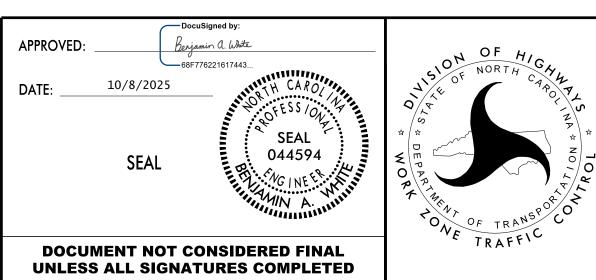
#### MINIMUM REQUIRED CLEAR DISTANCE, inches

Barrier	Pavement	Offset *	Design Speed, mph					
Type	Type	ft	< 30	31-40	41-50	51-60	61-70	71-80
		<8	24	26	29	32	36	40
		8-14	26	28	31	35	38	42
	Asphalt	14-20	27	29	34	36	39	43
		20-26	28	31	35	38	40	44
		26-32	29	32	36	39	42	45
		32-38	30	34	38	41	43	46
<b>8</b>		38-44	31	34	41	43	45	48
PCB		44-50	31	35	41	43	46	49
p		50-56	32	36	42	44	47	50
Unanchored		>56	32	36	42	45	47	51
hc		<8	17	18	21	22	25	26
<b>n</b> c		8-14	19	20	23	25	26	29
		14-20	22	22	24	26	28	31
		20-26	23	24	26	27	30	34
	Concrete	26-32	24	25	27	28	32	35
		32-38	24	26	27	30	33	36
		38-44	25	26	28	30	34	37
		44-50	26	26	28	32	35	37
		50-56	26	26	28	32	35	38
		>56	26	27	29	32	36	38
Anchored PCB	Asphalt	All Offsets	24 for All Design Speeds					
Anchored PCB	Concrete (including bridge approach slabs)	All Offsets	12 for All Design Speeds					

<sup>\*</sup> See Figure Below



# FIGURE B



PORTABLE CONCRETE BARRIER
AT
TEMPORARY SHORING LOCATIONS

PROJ. REFERENCE NO. SHEET NO. TMP-3 BR-0155

# **PHASING**

#### PHASE I

- STEP 1: USING ROADWAY STANDARD DRAWING (RSD) 1101.01 SHEET 3 OF 3 PLACE ADVANCE WARNING SIGNS ON US 158.
- STEP 2: USING RSD 1101.02 SHEET 1 OF 19 AND RSD 1101.04 SHEET 1 OF 2, PLACE TRAFFIC CONTROL DEVICES AND BEGIN PAVEMENT CONSTRUCTION ON THE SHOULDER UP TO THE EDGE AND ELEVATION OF EXISTING PAVEMENT AS FOLLOWS (SEE INSET ON SHEET TMP-4):
  - -L- STA. 11+82 +/- TO STA. 14+48 +/--L- STA. 16+19 +/- TO STA. 18+85 +/-
- STEP 3: USING RSD 1101.02 SHEET 1 OF 19 AND RSD 1101.04 SHEET 1 OF 2, PERFORM THE FOLLOWING IN A CONTINUOUS MANNER:
  - USE WEDGING TO CREATE TIE-IN FROM THE EXISTING PATTERN TO THE PHASE I PATTERN.
  - PLACE PCB AS FOLLOWS (SEE SHEETS TMP-4 AND TMP-5):
    - -L- STA. 13+00 +/- TO STA. 13+90 +/--L- STA. 16+90 +/- TO STA. 17+68 +/-
  - PLACE ANCHORED PCB AS FOLLOWS (SEE SHEET TMP-4 AND TMP-5):
    - -L- STA. 13+90 +/- TO STA. 16+90 +/-
  - PLACE TRAFFIC CONTROL DEVICES AS SHOWN ON SHEET TMP-4.
  - PLACE TEMPORARY MARKINGS AS SHOWN ON SHEET TMP-4.
  - SHIFT TRAFFIC INTO THE PHASE I PATTERN.
- STEP 4: USING RSD 1101.02 SHEETS 1 AND 17 OF 19 AND RSD 1101.04 SHEET 1 OF 2, PERFORM THE FOLLOWING IN A CONTINUOUS MANNER:
  - BEHIND BARRIER, CONSTRUCT STAGED BRIDGE AND ROADWAY APPROACHES, DRAINAGE AND GUARDRAIL. PAVE UP TO BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE AS FOLLOWS (SEE SHEETS TMP-4 AND TMP-5):
    - -L- STA. 10+24 +/- TO STA. 20+55 +/-
  - USE WEDGING TO CREATE TIE-IN TO THE PHASE II PATTERN.
  - REMOVE AND RESET PCB AS FOLLOWS (SEE SHEETS TMP-6 AND TMP-7):
    - -L- STA. 12+73 +/- TO STA. 14+00 +/--L- STA. 16+70 +/- TO STA. 18+00 +/-
  - REMOVE AND RESET ANCHORED PCB AS FOLLOWS (SEE SHEET TMP-6 AND TMP-7):
    - -L- STA. 14+00 +/- TO STA. 16+70 +/-
  - PLACE TRAFFIC CONTROL DEVICES AS SHOWN ON SHEET TMP-6.
  - PLACE TEMPORARY MARKINGS AS SHOWN ON SHEET TMP-6.
  - SHIFT TRAFFIC INTO THE PHASE II PATTERN.

#### PHASE II

STEP 1: BEHIND BARRIER AND USING RSD 1101.02 SHEETS 1 AND 17 OF 19 AND RSD 1101.04 SHEET 1 OF 2, COMPLETE STAGED BRIDGE AND ROADWAY APPROACHES INCLUDING DRAINAGE, GUARDRAIL AND EXISTING BRIDGE REMOVAL. PAVE UP TO BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE AS FOLLOWS (SEE SHEETS TMP-6 AND TMP-7):

-L- STA. 10+28 +/- TO STA. 20+84 +/-

STEP 2: USING 1101.02 SHEETS 1 AND 17 OF 19, PERFORM THE FOLLOWING:

- REMOVE PCB AND ANCHORED PCB.
- REMOVE TRAFFIC CONTROL DEVICES, TEMPORARY SIGNAL SIGNAGE AND TEMPORARY PORTABLE SIGNALS.

#### PHASE III

STEP 1: USING 1101.02 SHEET 1 OF 19, PAVE THE FINAL LAYER OF SURFACE COURSE FOR -L- AS FOLLOWS:

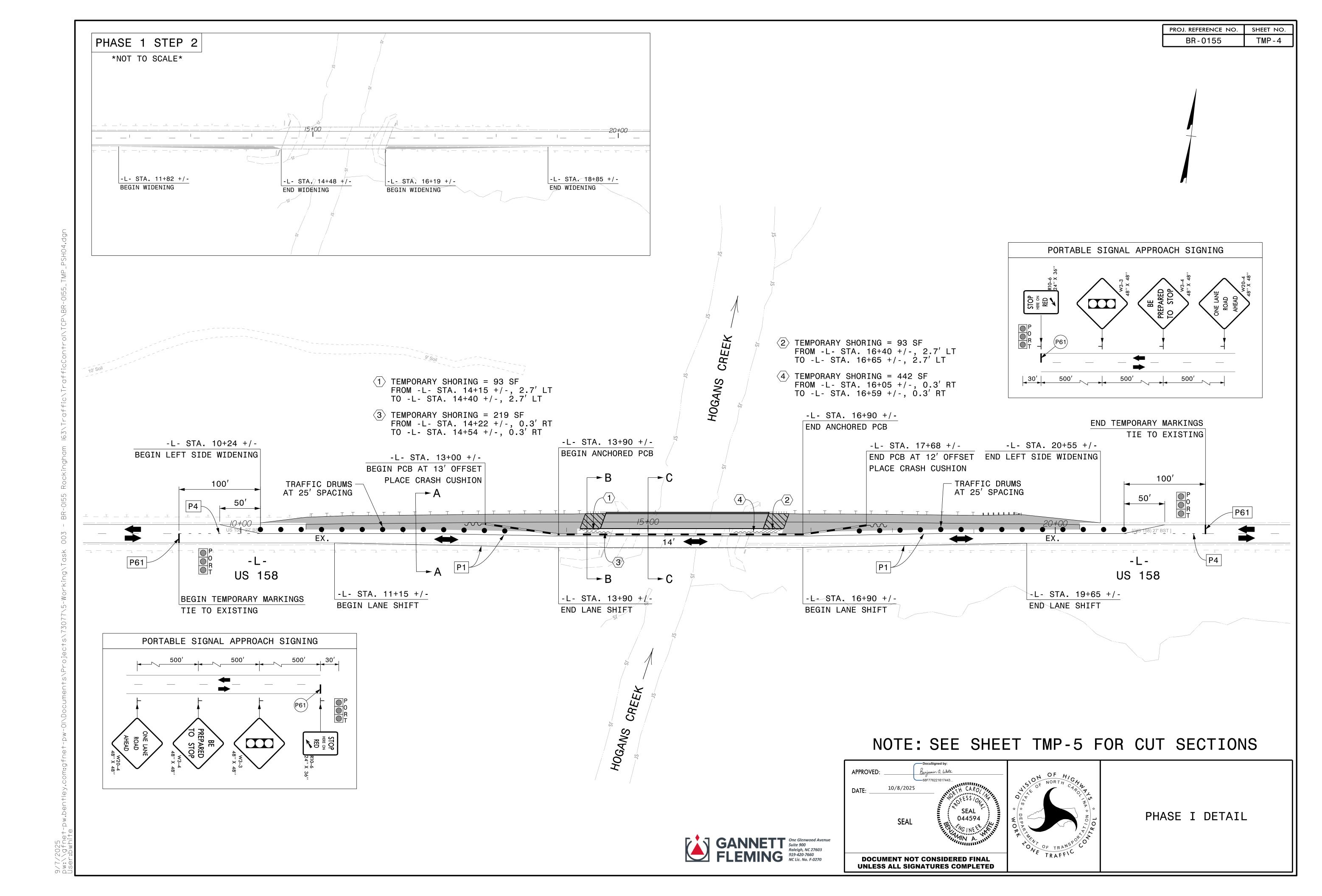
-L- STA. 10+24 +/- TO STA. 20+84 +/-

STEP 2: USING 1101.02 SHEETS 1 AND 14 OF 19, PLACE FINAL PAVEMENT MARKINGS FOR -L- LINE (SEE FINAL PAVEMENT MARKING PLANS).

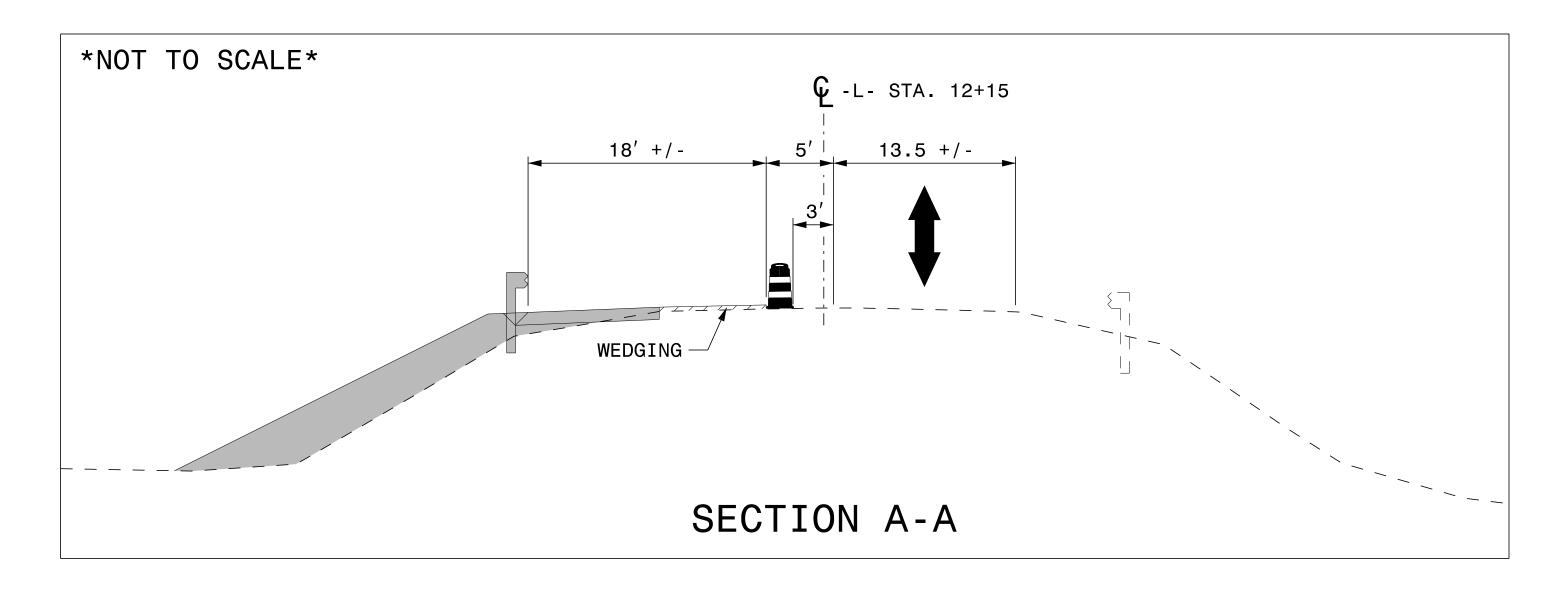
STEP 3: REMOVE ALL REMAINING WORK ZONE TRAFFIC CONTROL DEVICES AND OPEN ROADWAY TO TRAFFIC.

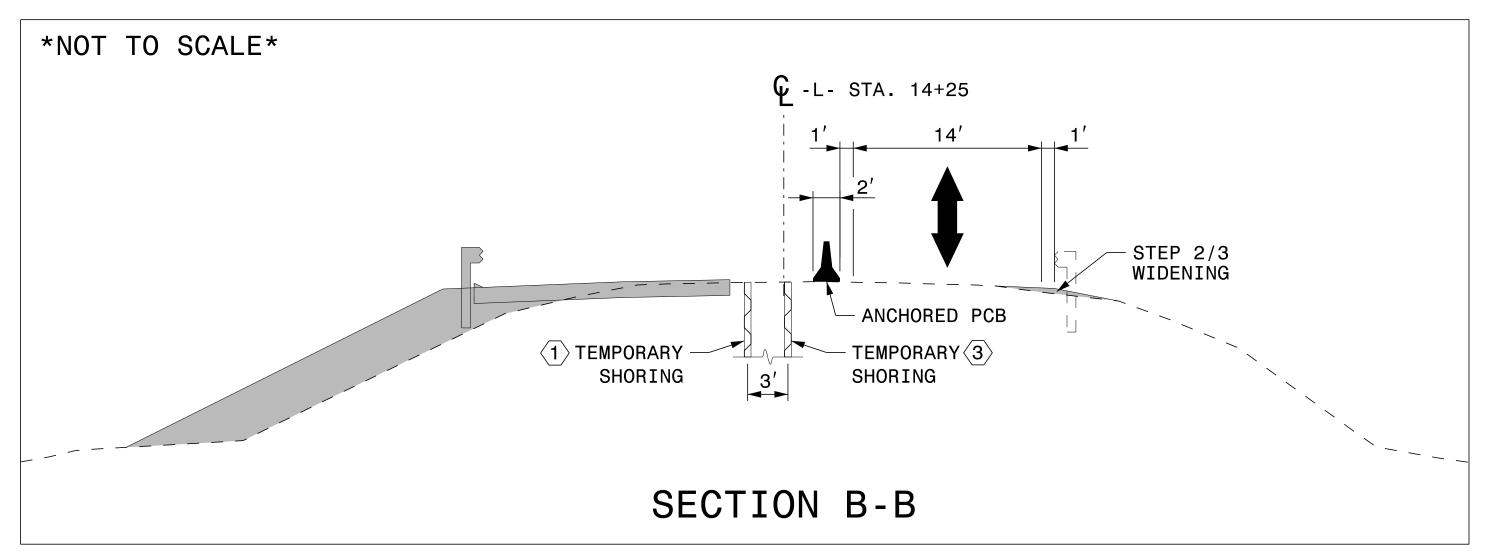


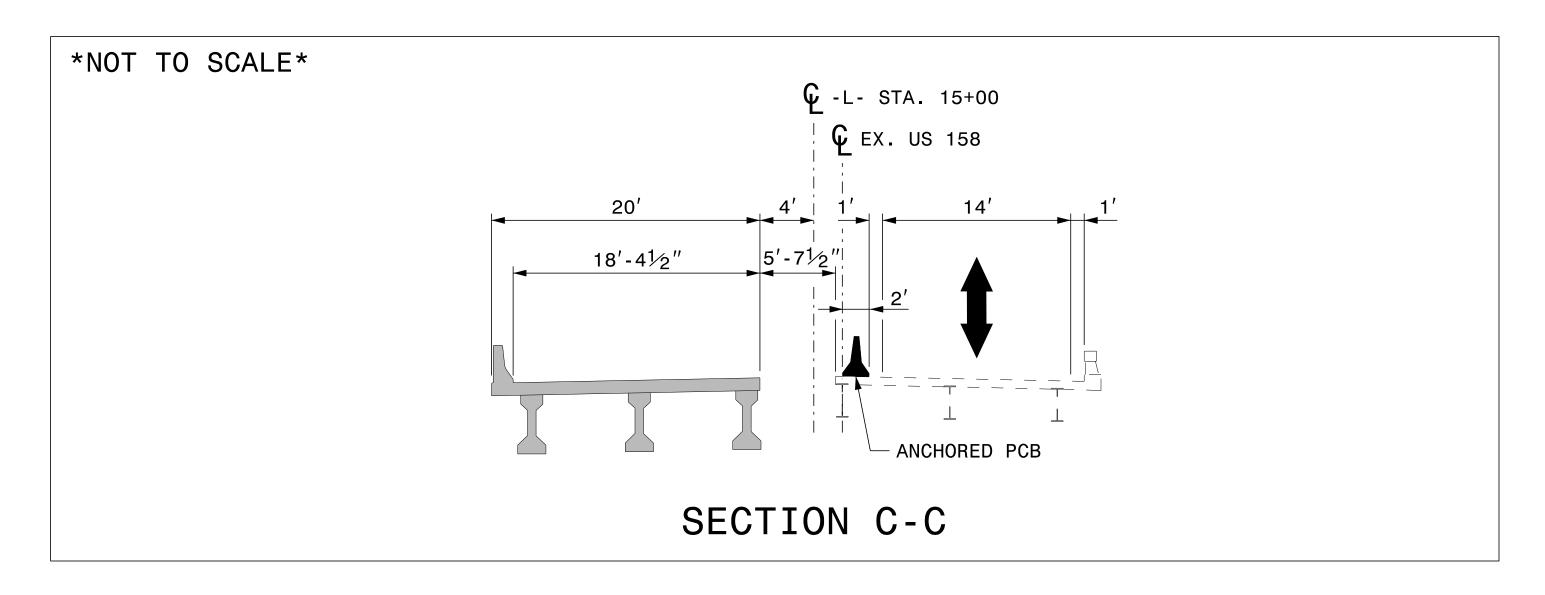
PHASING NOTES

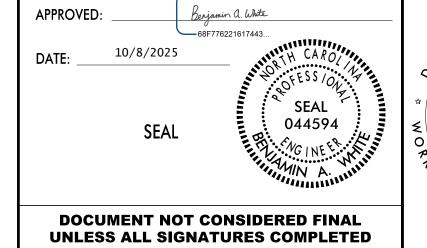


PROJ. REFERENCE NO. SHEET NO. BR - 0155 TMP - 5



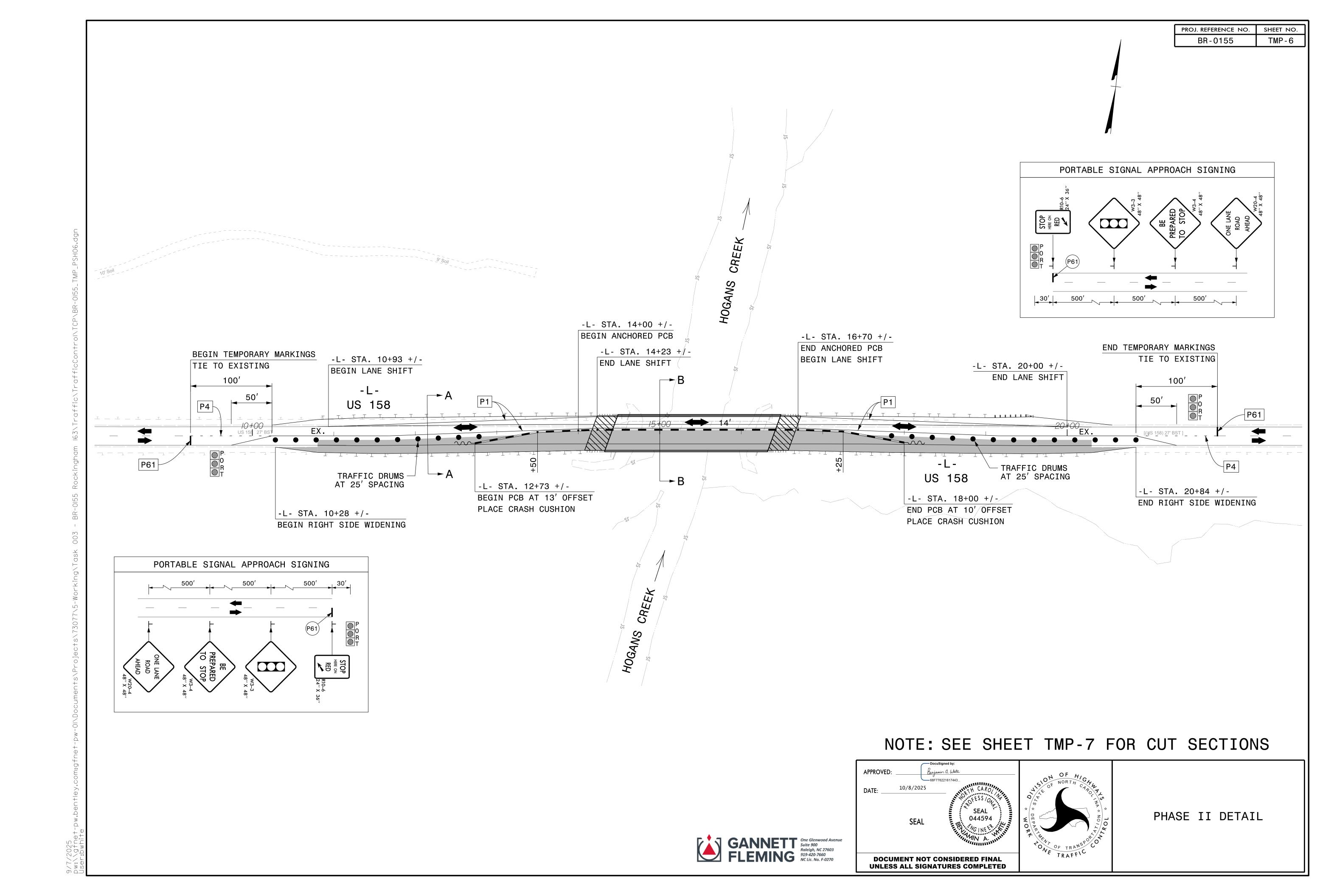




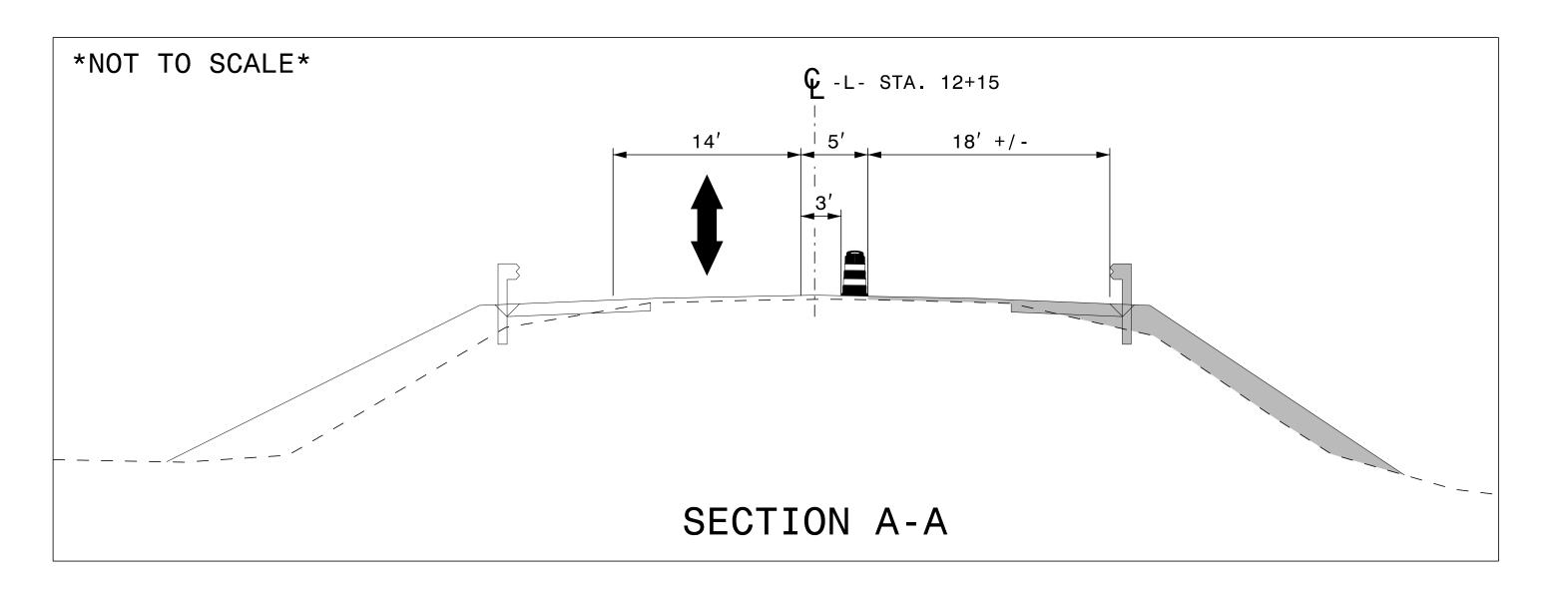


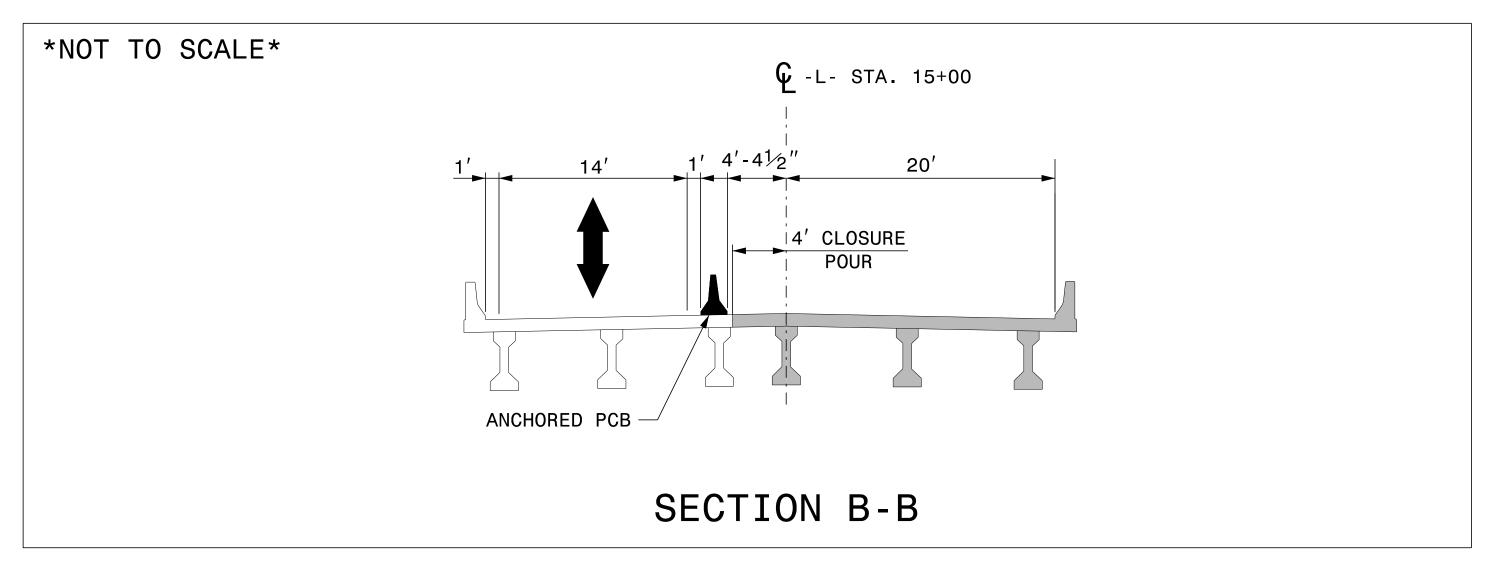


PHASE I CUT SECTIONS

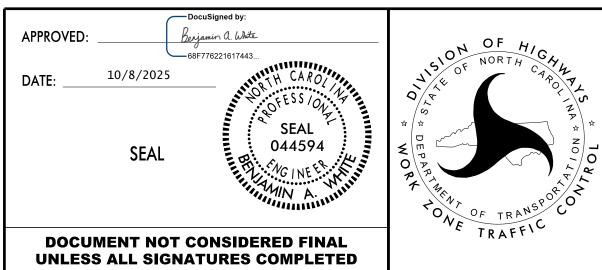


PROJ. REFERENCE NO.	SHEET NO.
BR-0155	TMP-7









PHASE II CUT SECTIONS