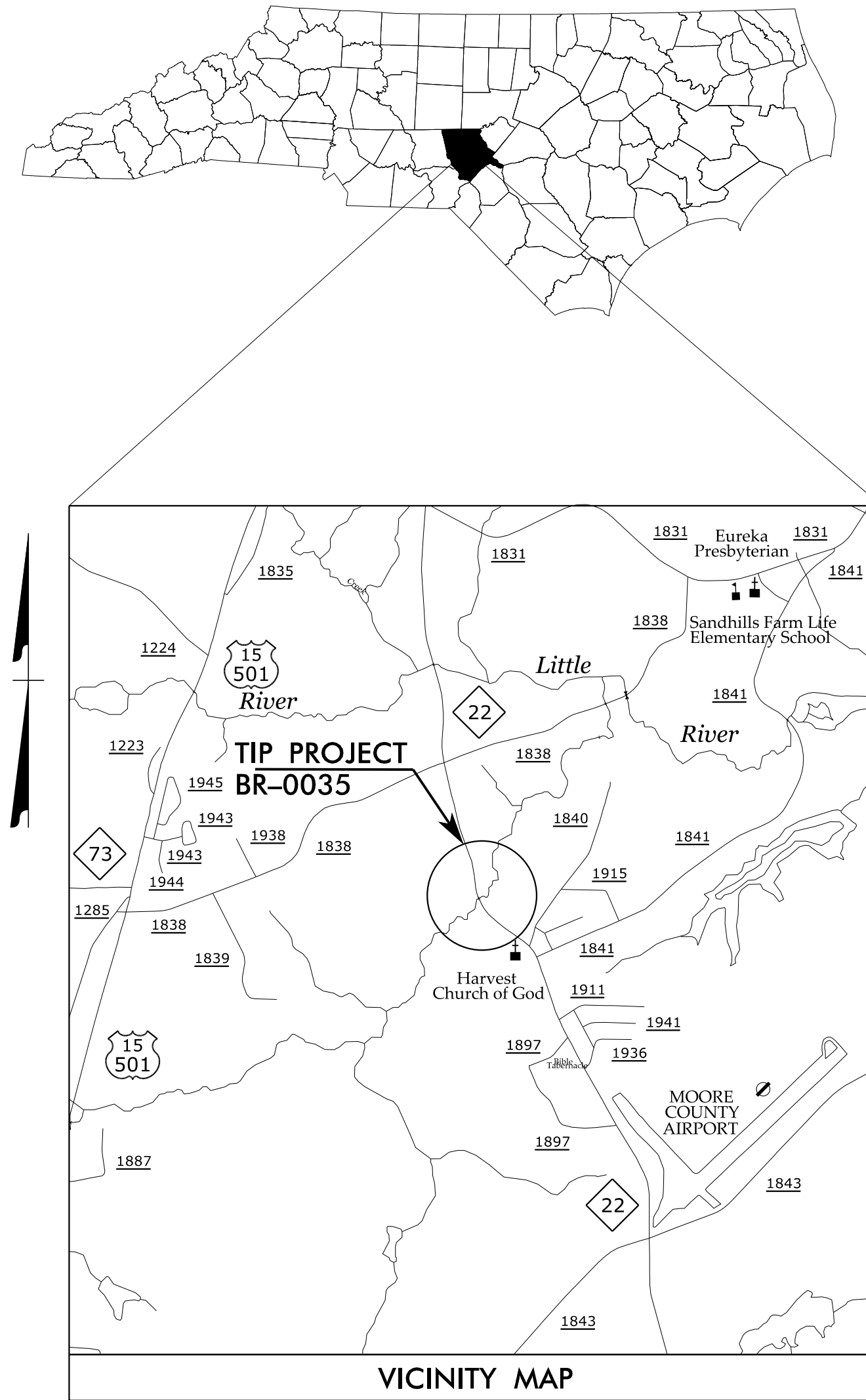


STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**TRANSPORTATION MANAGEMENT PLAN**

**MOORE COUNTY**



**LOCATION: BRIDGE NO. 24 ON NC 22 OVER NICKS CREEK**

**TYPE OF WORK: GRADING, DRAINAGE, PAVING AND CULVERT**

**INDEX OF SHEETS**

SHEET NO.	TITLE
TMP-1	TITLE SHEET, VICINITY MAP, AND INDEX OF SHEETS
TMP-1A	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, LEGEND, AND TEMPORARY PAVEMENT MARKING
TMP-1B	TRANSPORTATION OPERATIONS PLAN: MANAGEMENT STRATEGIES AND GENERAL NOTES
TMP-2A	PORTABLE CONCRETE BARRIER AT TEMPORARY SHORING LOCATIONS
TMP-2B	TEMPORARY SHORING DATA
TMP-3	TEMPORARY TRAFFIC CONTROL PHASING
TMP-4	TEMPORARY TRAFFIC CONTROL PHASE I DETAIL A
TMP-5	TEMPORARY TRAFFIC CONTROL PHASE I DETAIL B
TMP-6	TEMPORARY TRAFFIC CONTROL PHASE II DETAIL A
TMP-7	TEMPORARY TRAFFIC CONTROL PHASE II DETAIL B

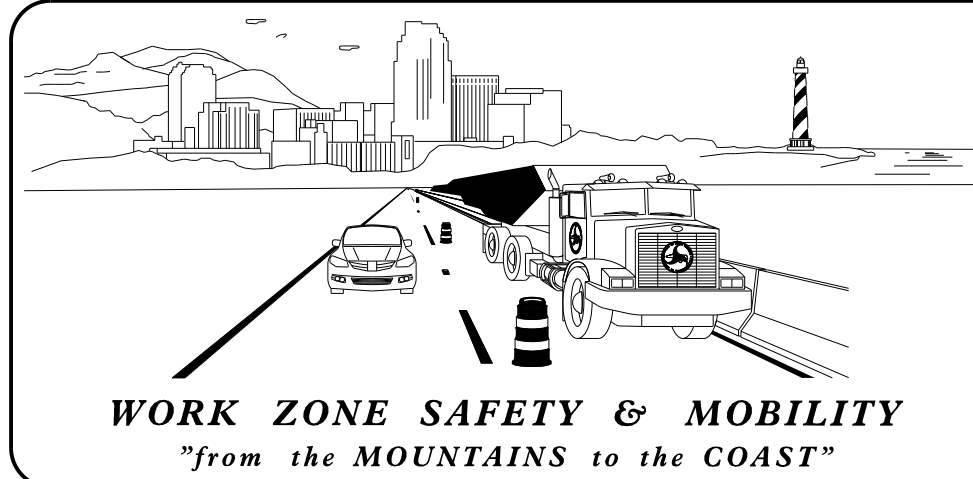
SHEET NO.

TMP-1

**BR-0035**

**TIP PROJECT:**

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**PLANS PREPARED BY:**  
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PROJECT ENGINEER  
ALLA LYUDMIRSKAYA  
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**APPROVED:** *Kenneth C. Thornevell Jr., P.E.*  
DATE: 8/2/2021

SEAL  
KENNETH C. THORNEWELL, JR.  
PROFESSIONAL ENGINEER  
SEAL 044089

# ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS SHOWN IN "ROADWAY STANDARD DRAWINGS" - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2018 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
1101.01	WORK ZONE WARNING SIGNS
1101.02	TEMPORARY LANE 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	DRUMS
1135.01	CONES
1145.01	BARRICADES
1150.01	FLAGGING DEVICES
1160.01	TEMPORARY CRASH CUSHION
1170.01	PORTABLE CONCRETE BARRIER
1180.01	SKINNY - DRUMS
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO LANE AND MULTILANE ROADWAYS
1205.12	PAVEMENT MARKINGS - BRIDGES
1250.01	PAVEMENT MARKER SPACING
1251.01	RAISED PAVEMENT MARKERS - (TEMPORARY AND PERMANENT)
1253.01	SNOWPLOWABLE RAISED PAVEMENT MARKERS
1261.01	GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATORS - TYPES AND MOUNTING
1262.01	GUARDRAIL END DELINEATION

# 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
- TEMPORARY PAVEMENT

## SIGNALS

- EXISTING
- PROPOSED
- TEMPORARY

## PAVEMENT MARKINGS

- EXISTING LINES
- TEMPORARY LINES

## TEMPORARY PAVEMENT MARKING

- PAVEMENT MARKINGS - PAINT (4")
- P1 WHITE EDGLINE
  - P13 YELLOW DOUBLE CENTER

## TRAFFIC CONTROL DEVICES

- BARRICADE (TYPE III)
- CONE
- DRUM
- SKINNY DRUM
- TUBULAR MARKER
- TEMPORARY CRASH CUSHION
- FLASHING ARROW BOARD
- FLAGGER
- LAW ENFORCEMENT
- TRUCK MOUNTED ATTENUATOR (TMA)
- CHANGEABLE MESSAGE SIGN

## TEMPORARY SIGNING

- PORTABLE SIGN
- STATIONARY SIGN
- STATIONARY OR PORTABLE SIGN

## PAVEMENT MARKERS

- CRYSTAL/CRYSTAL
- CRYSTAL/RED
- YELLOW/YELLOW

## PAVEMENT MARKING SYMBOLS

- PAVEMENT MARKING SYMBOLS

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APPROVED: DATE: 5/18/2020			<p style="text-align: center;"><b>ROADWAY STANDARD DRAWINGS, LEGEND AND TEMPORARY PAVEMENT MARKING</b></p>
<p><b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b></p>			



## MANAGEMENT STRATEGIES

RECOMMENDED MANAGEMENT STRATEGIES RELATIVE TO THIS TMP ARE AS FOLLOWS:

AWAY FROM TRAFFIC AND BEHIND TEMPORARY PCB:

- CONSTRUCT PROPOSED CULVERT (STAGE 1 AND STAGE 2).

FLAGGER OPERATION:

- CONSTRUCT TEMPORARY PAVEMENT ON EXISTING NC 22
- CONSTRUCT PROPOSED -DR1-, -DR2- AND -DR3-
- PLACE TEMPORARY PAVEMENT MARKINGS ONTO PROPOSED -L- (NC 22)
- PLACE FINAL LAYER OF SURFACE COURSE AND FINAL PAVEMENT MARKINGS ONTO PROPOSED -L- (NC 22)
- TRAFFIC SHIFTS.

LANE REDUCTION:

- ULTIZE TWO 11-FOOT LANES ON NEWLY CONSTRUCTED -L- (NC 22) WHILE COMPLETE CONSTRUCTION STAGE 2 OF PROPOSED CULVERT.

## GENERAL NOTES

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.

TIME RESTRICTIONS

A) DO NOT CLOSE OR NARROW TRAVEL LANES AS FOLLOWS:

ROAD NAME	DAY AND TIME RESTRICTIONS
NC 22	MONDAY THROUGH FRIDAY FROM 7:00 AM TO 9:00 AM AND FROM 4:00 PM TO 6:00 PM

LANE AND SHOULDER CLOSURE REQUIREMENTS

- B) 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.
- C) 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.
- D) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO AN UNDIVIDED FACILITY AND WITHIN 5 FT OF AN 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.

WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO A DIVIDED FACILITY AND WITHIN 10 FT OF AN 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.

- E) 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.

- F) PROVIDE TRAFFIC CONTROL FOR APPROPRIATE LANE CLOSURES FOR SURVEYING DONE BY THE DEPARTMENT.

PAVEMENT EDGE DROP OFF REQUIREMENTS

- G) 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.

- H) DO NOT EXCEED A DIFFERENCE OF 2 INCHES IN ELEVATION BETWEEN OPEN LANES OF TRAFFIC FOR NOMINAL LIFTS OF 1.5 INCHES. INSTALL ADVANCE WARNING "UNEVEN LANES" SIGNS (W8-11) 350 FT. IN ADVANCE AND A MINIMUM OF EVERY HALF MILE THROUGHOUT THE UNEVEN AREA.

TRAFFIC PATTERN ALTERATIONS

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

SIGNING

- J) 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.
- K) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.
- L) INSTALL BLACK ON ORANGE "DIP" SIGNS (W8-2) AND/OR "BUMP" SIGNS (W8-1) 350 FT. IN ADVANCE OF THE UNEVEN AREA, OR AS DIRECTED BY THE ENGINEER.

TRAFFIC BARRIER

- M) 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.

- N) 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:

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

- O) 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.
- P) PLACE TYPE III BARRICADES, WITH "ROAD CLOSED" SIGN R11-2 ATTACHED, OF SUFFICIENT LENGTH TO CLOSE ENTIRE ROADWAY.

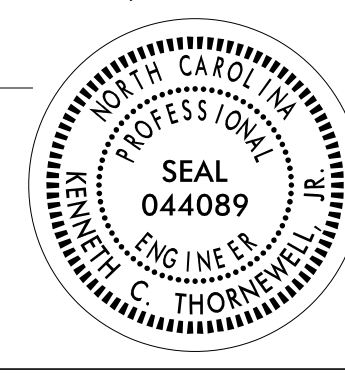
PAVEMENT MARKINGS AND MARKERS

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

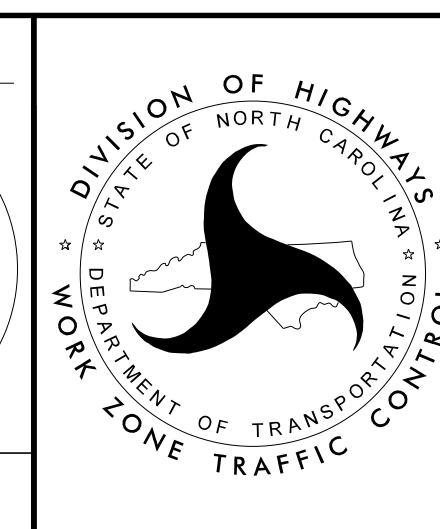
ROAD NAME	MARKING	MARKER
NC 22	PAINT	TEMP. RAISED

- R) 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.
- S) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
- T) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS BY THE END OF EACH DAY'S OPERATION.
- U) CONTRACTOR SHALL MAINTAIN SIDEWALK ACCESS AT ALL TIMES AS STATED IN THE PHASING. CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE TEMPORARY SIDEWALKS (CONCRETE, ASPHALT, OR OTHER SUITABLE MATERIAL AS APPROVED BY THE ENGINEER) AT ALL LOCATIONS WHERE THE OPEN PEDESTRIAN TRAVELWAY HAS BEEN REMOVED FOR CONSTRUCTION OPERATIONS (UTILITIES, DRAINAGE, ETC.).

APPROVED: *Kenneth C. Thornewell, Jr., P.E.*  
1E991EF27373405  
 DATE: 8/2/2021

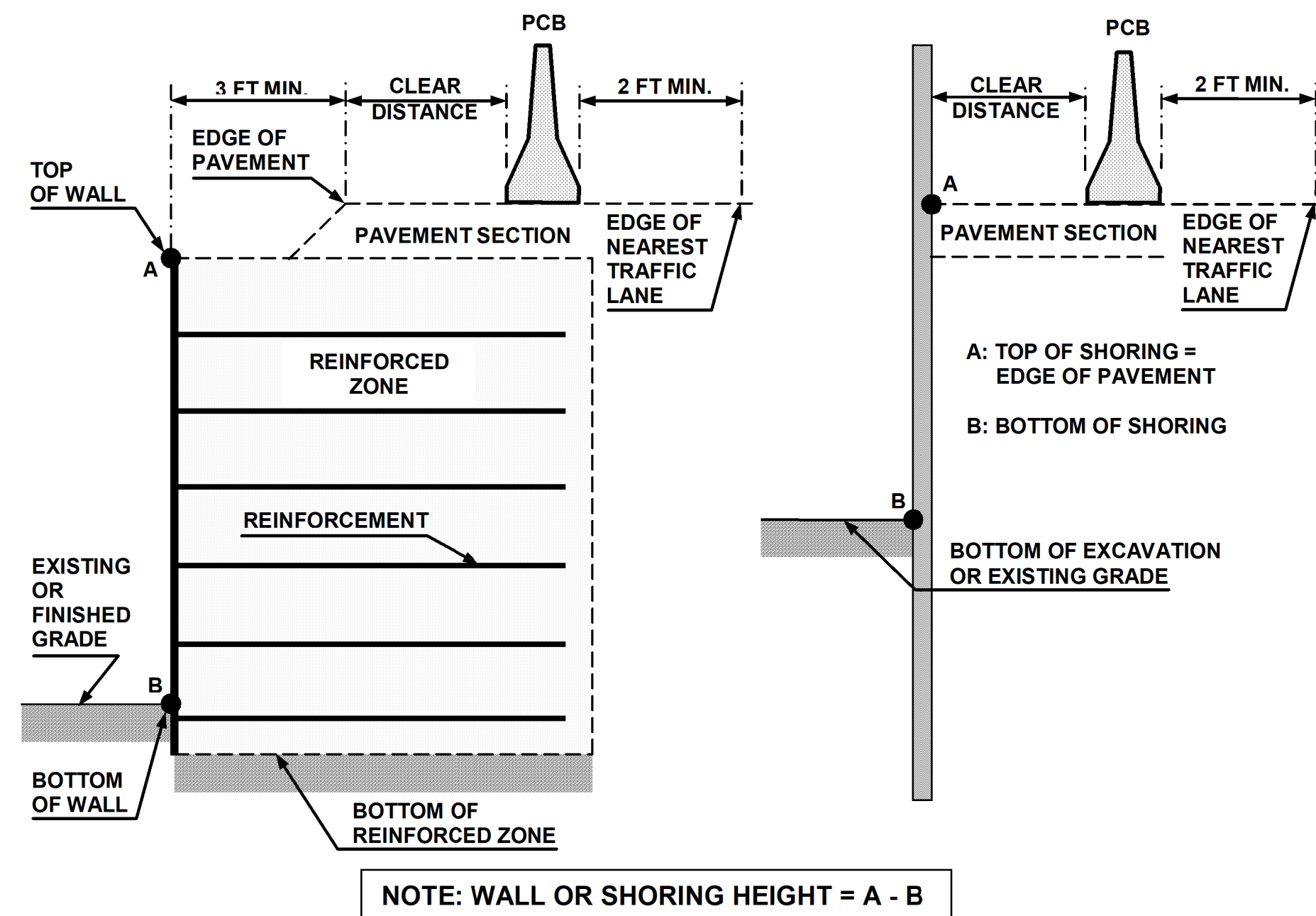


**DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED**



**TRANSPORTATION  
OPERATIONS PLAN:  
MANAGEMENT STRATEGIES  
AND GENERAL NOTES**





## FIGURE A

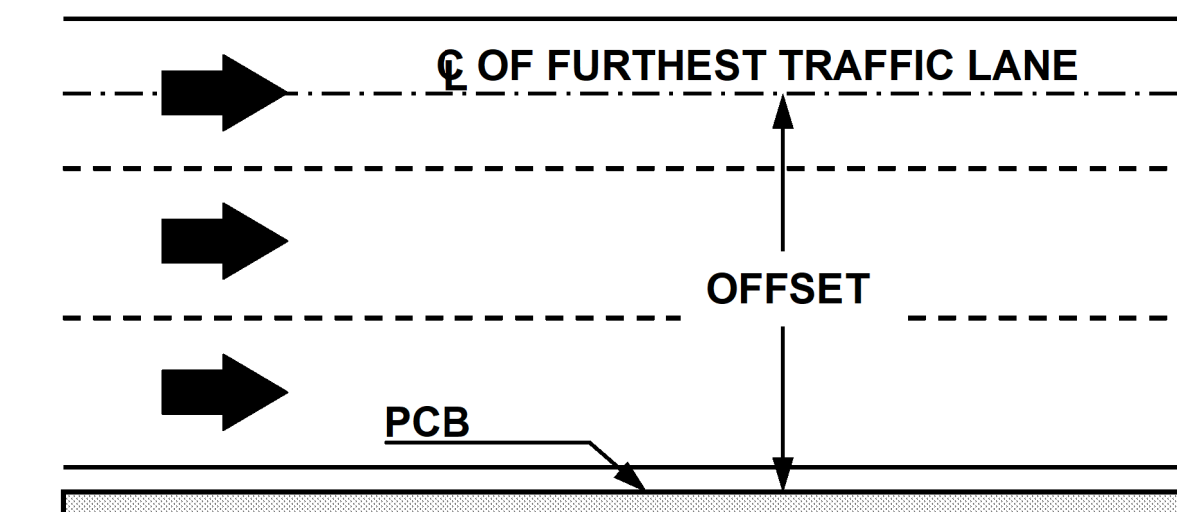
### NOTES

- 1- REFER TO THE TRAFFIC CONTROL PLANS FOR TEMPORARY SHORING LOCATIONS AND NOTES.
- 2- REFER TO THE "TEMPORARY SHORING" PROJECT SPECIAL PROVISION FOR INFORMATION ABOUT TEMPORARY SHORING AND PORTABLE CONCRETE BARRIER (PCB).
- 3- PCB IS REQUIRED IF TEMPORARY SHORING 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 UNIT 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 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- PCB REQUIREMENTS FOR TEMPORARY WALLS APPLY TO TEMPORARY MECHANICALLY STABILIZED EARTH (MSE) WALLS AND TEMPORARY SOIL NAIL WALLS.
- 8- 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 AND OR AS APPROVED BY THE ENGINEER.
- 9- 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 THESE MINIMUM REQUIRED DISTANCES ARE NOT AVAILABLE, CONTACT THE ENGINEER.
- 10- TABLE SHOWN IN FIGURE B IS BASED ON NCDOT RESEARCH PROJECT NO. 2005-010 WITH VEHICLE TYPE USED FOR NCHRP 350 CRASH TESTS. BARRIER DEFLECTIONS AND RESULTING MINIMUM REQUIRED CLEAR DISTANCES MIGHT VARY SIGNIFICANTLY FOR LARGER HEAVIER VEHICLES, RUNS OF BARRIER LESS THAN 200 FT IN LENGTH AND WET OR DRY PAVEMENT.

**MINIMUM REQUIRED CLEAR DISTANCE, inches**

Barrier Type	Pavement Type	Offset * ft	Design Speed, mph					
			<30	31-40	41-50	51-60	61-70	71-80
Unanchored PCB	Asphalt	<8	24	26	29	32	36	40
		8-14	26	28	31	35	38	42
		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
		38-44	31	34	41	43	45	48
		44-50	31	35	41	43	46	49
		50-56	32	36	42	44	47	50
	>56	32	36	42	45	47	51	
	Concrete	<8	17	18	21	22	25	26
		8-14	19	20	23	25	26	29
		14-20	22	22	24	26	28	31
		20-26	23	24	26	27	30	34
		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					

\* See Figure Below



## FIGURE B

<p>APPROVED: <i>Kenneth C. Thornwell Jr., P.E.</i> 1E9B1EF27373405</p> <p>DATE: 5/18/2020</p>		
<p><b>PORTABLE CONCRETE BARRIER AT TEMPORARY SHORING LOCATIONS</b></p>		
<p><b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b></p>		

NOTES FOR TEMPORARY SHORING No.1

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

DESIGN TEMPORARY SHORING FROM STATION 18+00+/- -L-, 37 FT. LT. TO STATION 24+00+/- -L-, 15 FT. LT., FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

UNIT WEIGHT OF SOIL ABOVE WATER TABLE,  $\gamma = 120$  PCF  
 UNIT WEIGHT OF SOIL BELOW WATER TABLE,  $\gamma' = 60$  PCF  
 FRICTION ANGLE,  $\phi = 30$   
 COHESION,  $c = 0$  PSF  
 GROUNDWATER ELEVATION = 312 FT.

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

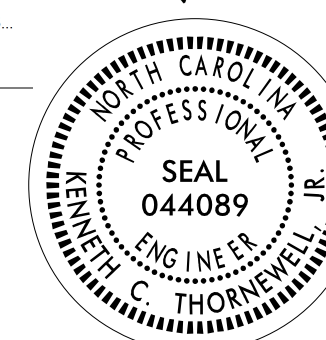
LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM STATION 18+00+/- -L-, 37 FT. LT. TO STATION 24+00+/- -L-, 15 FT. LT. THE INFORMATION PROVIDED FOR TEMPORARY SHORING DESIGN WAS ASSUMED AND MAY NOT BE APPLICABLE TO THE ACTUAL SITE CONDITIONS ENCOUNTERED DURING CONSTRUCTION.

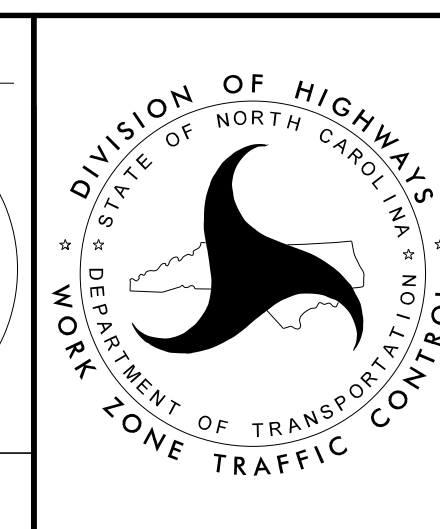
AT THE CONTRACTOR'S OPTION, USE A STANDARD TEMPORARY WALL FOR TEMPORARY SHORING FROM STATION 18+00+/- -L-, 37 FT. LT. TO STATION 24+00+/- -L-, 15 FT. LT. SEE GEOTECHNICAL STANDARD DETAIL 1801.02 FOR STANDARD TEMPORARY WALLS.

DO NOT CANTILEVER, BRACED, OR ANCHORED SHORING FOR TEMPORARY SHORING FROM STATION 18+00+/- -L-, 37 FT. LT. TO STATION 24+00+/- -L-, 15 FT. LT.

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 WZTC SECTION ON 8/22/2019 AND SEALED BY A PROFESSIONAL ENGINEER, DAVID TEAGUE, LICENSE # 027869.

APPROVED: *Kenneth C. Thornwell, Jr., P.E.*  
DocuSigned by: Kenneth C. Thornwell, Jr., P.E. 1E091EF27373405  
 DATE: 5/18/2020

  
**DOCUMENT NOT CONSIDERED FINAL  
 UNLESS ALL SIGNATURES COMPLETED**



TEMPORARY SHORING DATA

5/14/2020  
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 User: slvudmi



## PHASING

NOTE:  
MAINTAIN ACCESS TO ALL RESIDENCES AND BUSINESSES ALL TIMES.

### PHASE I

#### STEP 1:

USING RSD 1101.01, SHEET 3 OF 3, INSTALL WORK ZONE ADVANCE WARNING SIGNS ON NC 22.

#### STEP 2:

USING RSD 1101.02 SHEET 1 OF 14, PERFORM THE FOLLOWING (SEE SHEETS TMP-4 AND TMP-5):

- CONSTRUCT TEMPORARY PAVEMENT ALONG NORTHBOUND NC 22, AND INSTALL TEMPORARY ANCHORED PCB AND CRASH CUSHION FROM -L- STA.17+60+/- TO -L- STA.22+05+/- . CONNECT TEMPORARY ANCHORED PCB TO EXISTING GUARDRAIL AT -L- STA.22+05+/- , USING B-77 TRANSITION.

#### STEP 3:

AWAY FROM TRAFFIC AND BEHIND TEMPORARY ANCHORED PCB, PERFORM THE FOLLOWING (SEE SHEETS TMP-4 AND TMP-5):

- INSTALL TEMPORARY SHORING FROM -L- STA.18+00+/- , 37 FT. LT TO -L- STA.24+00+/- , 15 FT. LT.
- CONSTRUCT STAGE 1 OF PROPOSED CULVERT AND ROADWAY FROM -L- STA.14+50+/- TO -L- STA.26+50+/- .

USING RSD 1101.02 SHEET 1 OF 14, PERFORM THE FOLLOWINGS:

- CONSTRUCT PROPOSED -DR2-
- BEGIN CONSTRUCTION OF PROPOSED -DR3- UP TO BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE.

#### STEP 4:

USING RSD 1101.02 SHEET 1 OF 14, AND WORKING IN CONTINUOUS MANNER, PERFORM THE FOLLOWINGS (SEE SHEETS TMP-6 AND TMP-7):

- COMPLETE CONSTRUCTION OF PROPOSED -DR3-
- COMPLETE THE TIE-INS CONSTRUCTION ON -L- , AND PLACE TEMPORARY PAVEMENT MARKINGS FROM -L- STA.11+80+/- TO -L- STA.29+00+/-
- PLACE TEMPORARY ANCHORED PCB AND CRASH CUSHION ALONG SOUTHBOUND -L- FROM -L- STA.18+00+/- TO -L- STA.23+75+/- . INSTALL TEMPORARY GUARDRAIL WITH GUARDRAIL ANCHOR UNIT TYPE B-77, AND CONNECT INTO TEMPORARY ANCHORED PCB AT -L- STA.23+75+/-
- PLACE TRAFFIC ONTO NEWLY CONSTRUCTED -L- IN TEMPORARY TRAFFIC PATTERN, AND ON -DR3- .

### PHASE II

#### STEP 1:

- AWAY FROM TRAFFIC AND BEHIND TEMPORARY ANCHORED PCB, COMPLETE STAGE 2 CONSTRUCTION OF PROPOSED CULVERT, AND REMOVE EXISTING NC 22 ALIGNMENT (SEE ROADWAY PLANS AND SHEETS TMP-6 AND TMP-7).
- USING RSD 1101.02, SHEET 1 OF 14, COMPLETE CONSTRUCTION OF PROPOSED -DR1- (SEE SHEET TMP-6).

#### STEP 2:

AWAY FROM TRAFFIC AND USING RSD 1101.02, SHEET 1 OF 14, AS NEEDED, REMOVE TEMPORARY ANCHORED PCB, CRASH CUSHION, AND TEMPORARY GUARDRAIL, INSTALLED IN PHASE 1, STEP 4. PLACE PROPOSED GUARDRAIL ALONG SOUTHBOUND -L- AND -DR3- (SEE ROADWAY PLANS).

#### STEP 3:

USING RSD 1101.02, SHEET 1 OF 14, PLACE TEMPORARY PAVEMENT MARKINGS FROM -L- STA.20+47+/- TO -L- STA.25+35+/- AND SHIFT TRAFFIC ON -L- IN FINAL TRAFFIC PATTERN.

#### STEP 4:

USING RSD 1101.02, SHEET 1 OF 14, PLACE FINAL LAYER OF SURFACE COURSE AND FINAL PAVEMENT MARKINGS ON -L- .

#### STEP 5:

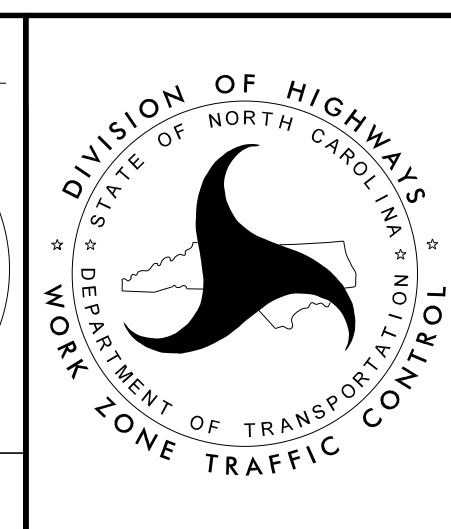
REMOVE ALL TEMPORARY WORK ZONE TRAFFIC CONTROL DEVICES.

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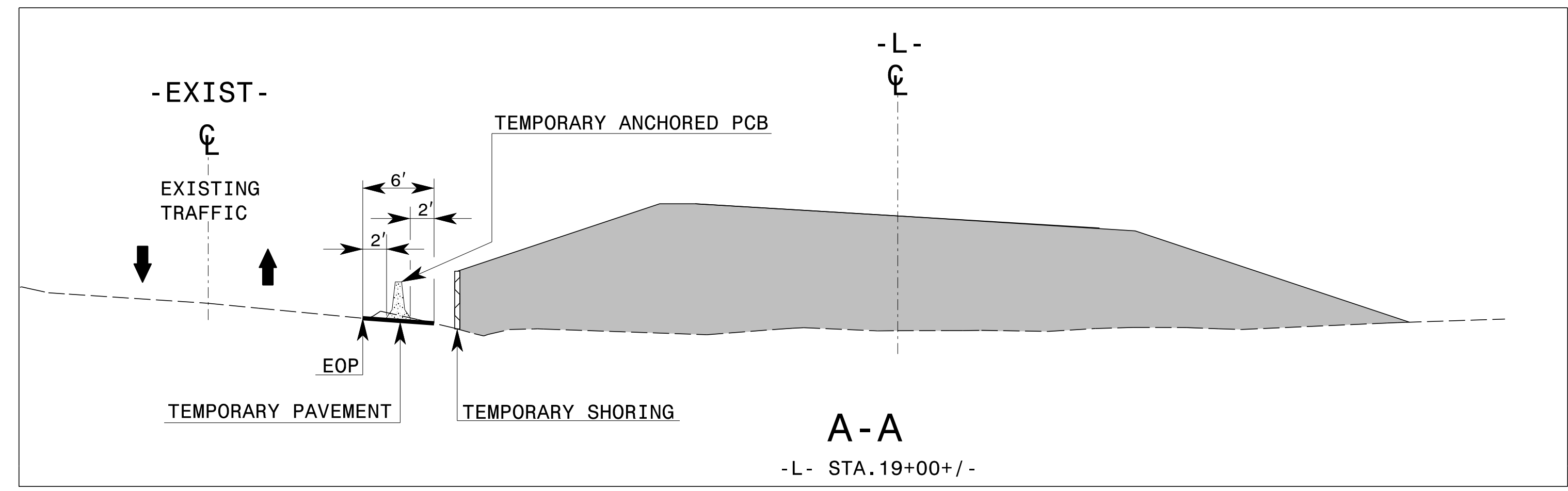
APPROVED: *Kenneth C. Thornwell Jr., P.E.*  
1E991EF27373405  
 DATE: 8/2/2021

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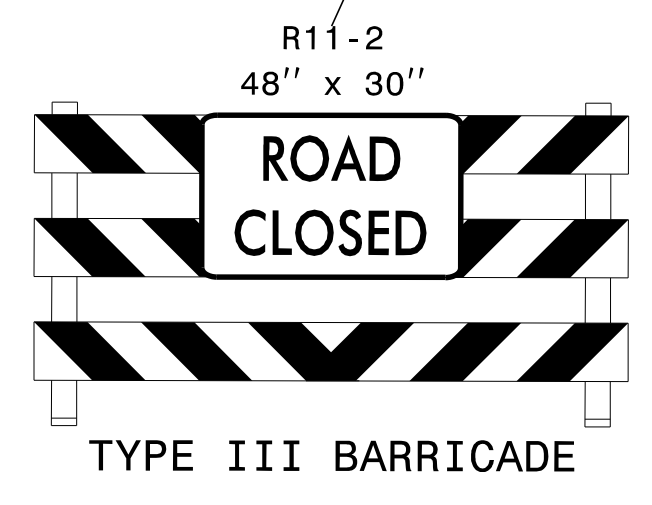
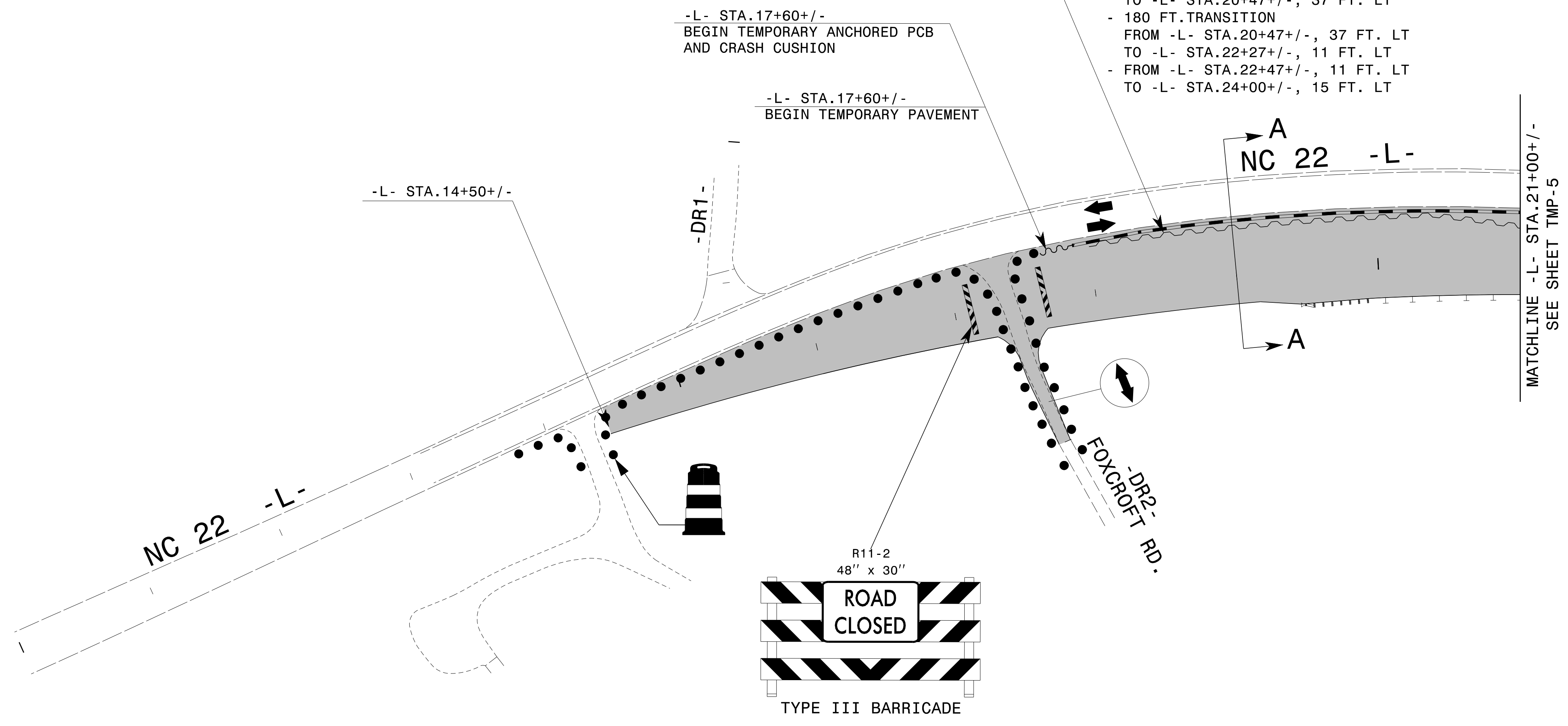


PHASING



① QUANTITY = 3,629 SQ. FT.

- TEMPORARY SHORING:
- FROM -L- STA. 18+00+/-, 37 FT. LT TO -L- STA. 20+47+/-, 37 FT. LT
  - 180 FT. TRANSITION FROM -L- STA. 20+47+/-, 37 FT. LT TO -L- STA. 22+27+/-, 11 FT. LT
  - FROM -L- STA. 22+47+/-, 11 FT. LT TO -L- STA. 24+00+/-, 15 FT. LT

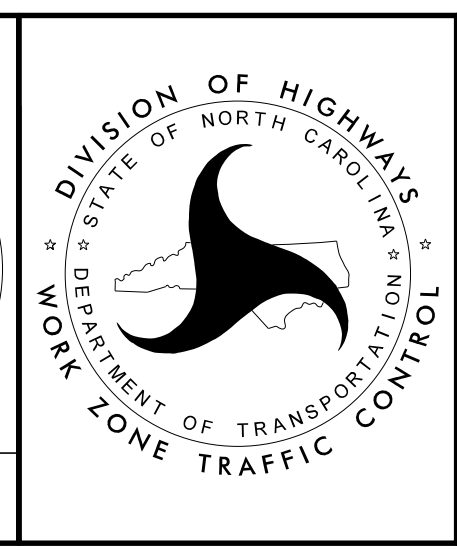


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Kenneth C. Thornwell Jr., P.E.  
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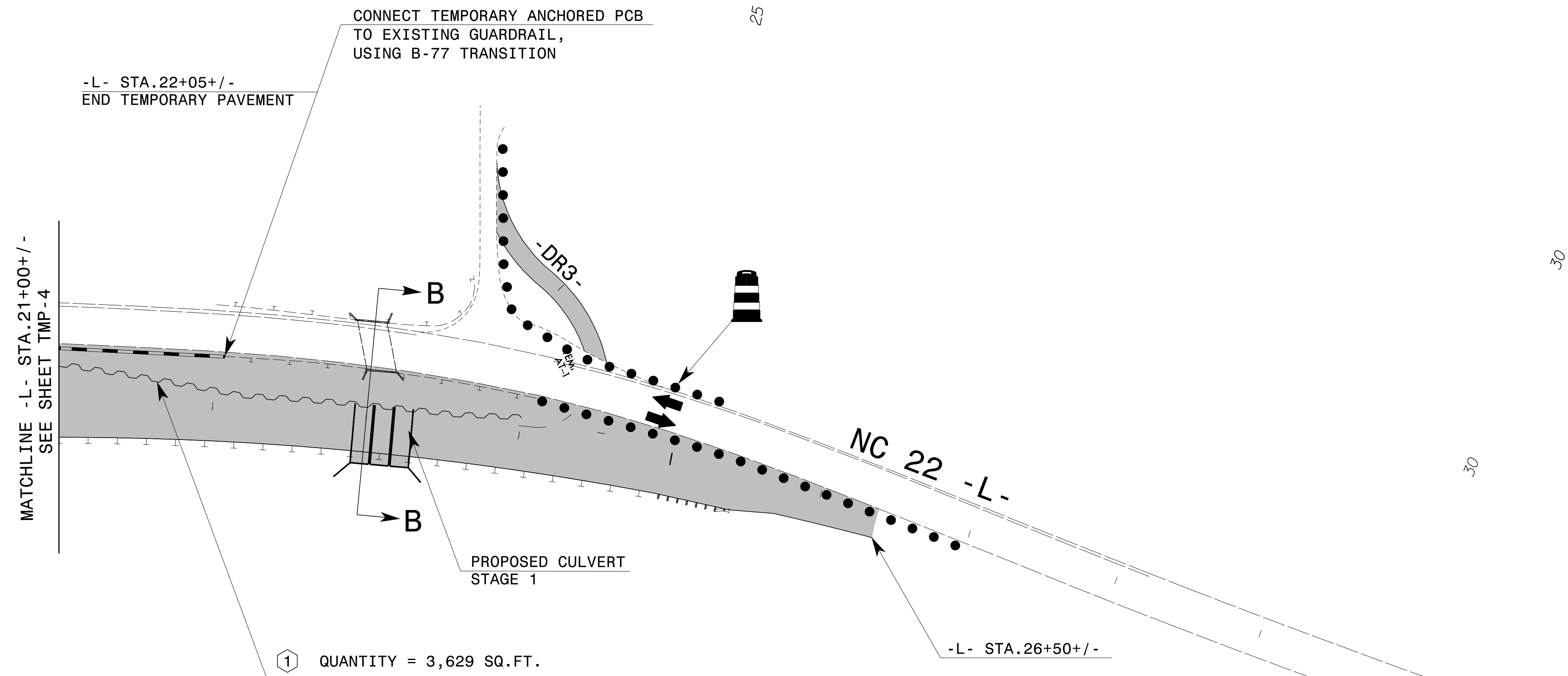
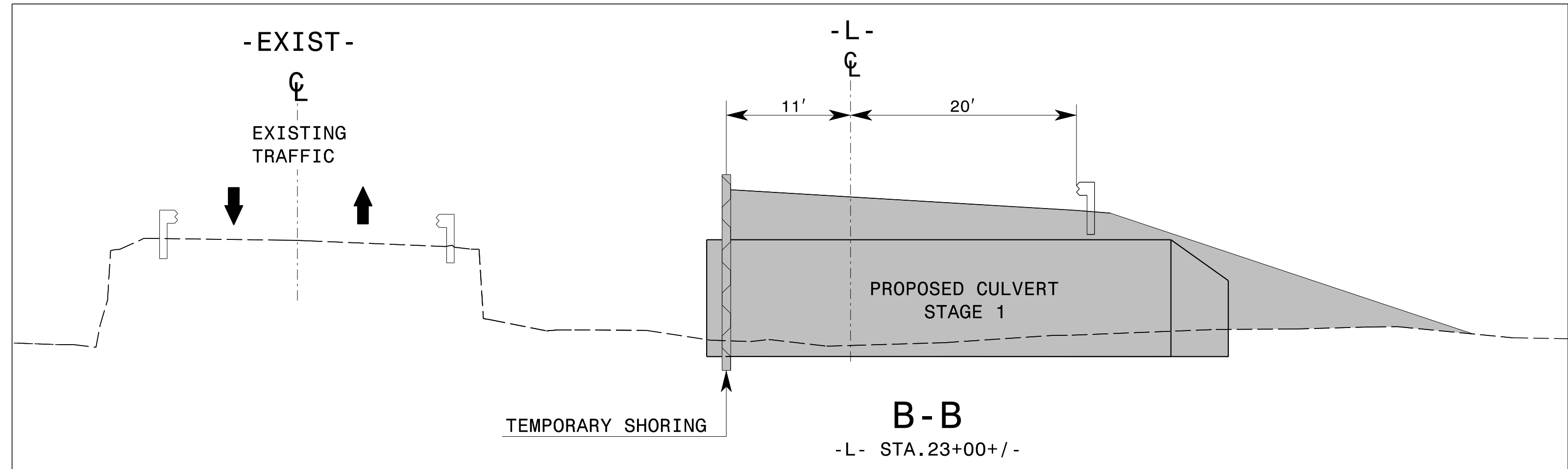
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PHASE I,  
DETAIL A

7/27/2021  
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User: slyudmi



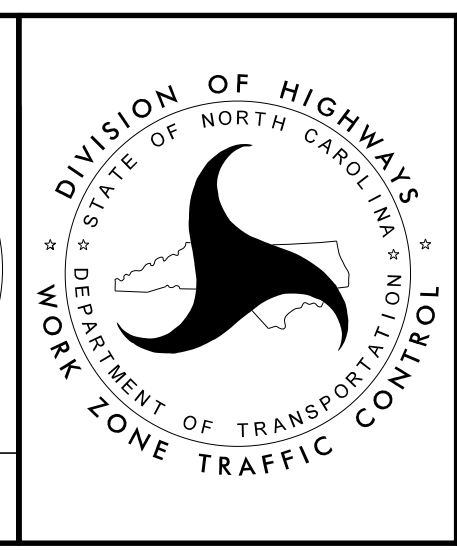
- ① QUANTITY = 3,629 SQ. FT.
- TEMPORARY SHORING:
- FROM -L- STA. 18+00+/-, 37 FT. LT TO -L- STA. 20+47+/-, 37 FT. LT
  - 180 FT. TRANSITION FROM -L- STA. 20+47+/-, 37 FT. LT TO -L- STA. 22+27+/-, 11 FT. LT
  - FROM -L- STA. 22+47+/-, 11 FT. LT TO -L- STA. 24+00+/-, 15 FT. LT

4/14/2020  
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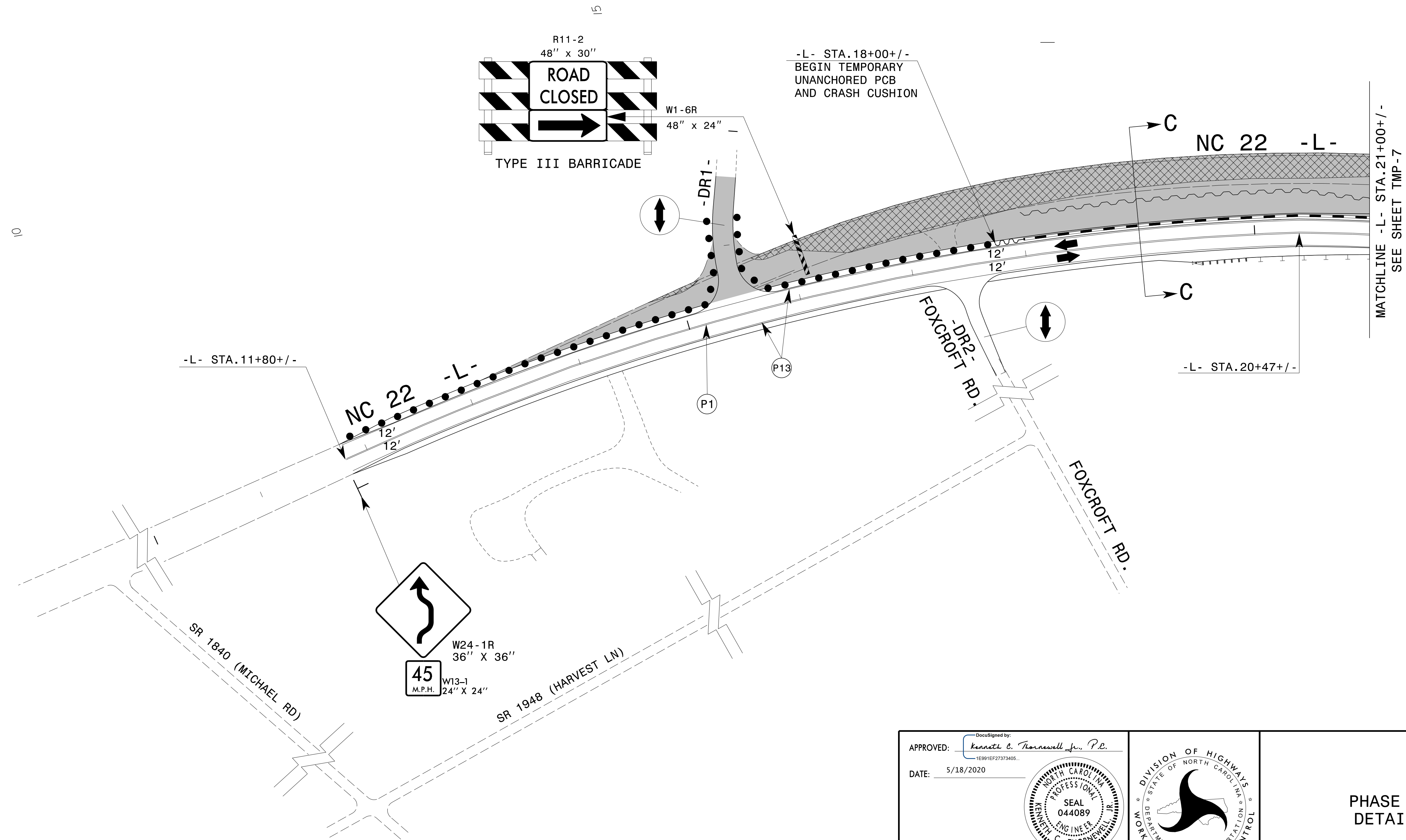
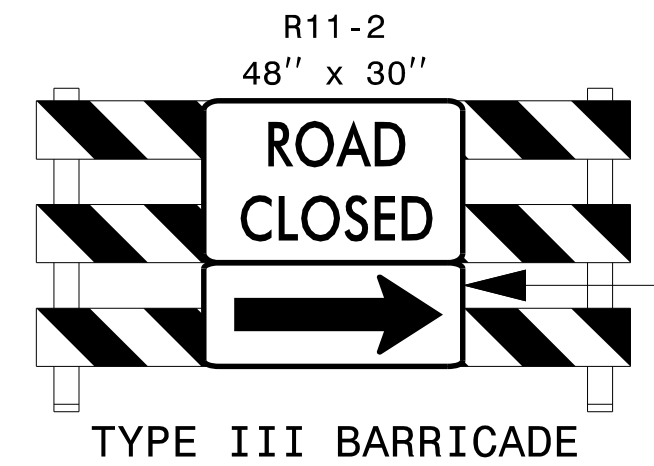
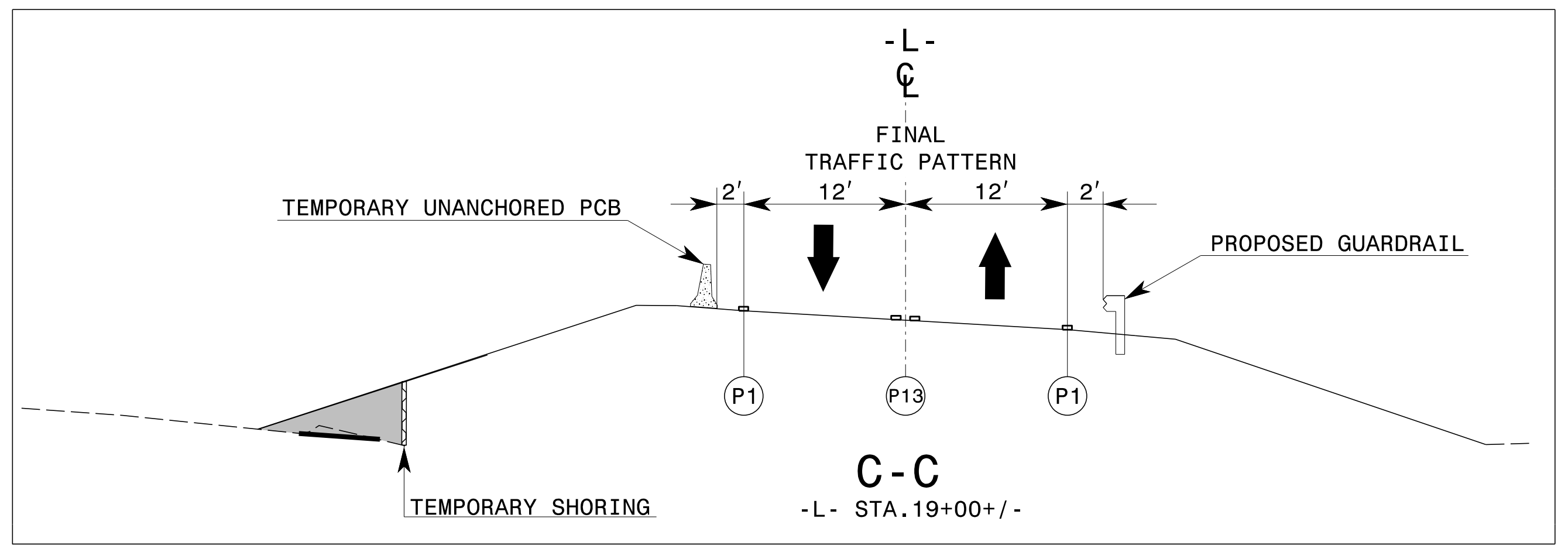
DATE: 5/18/2020

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**PHASE I,  
DETAIL B**

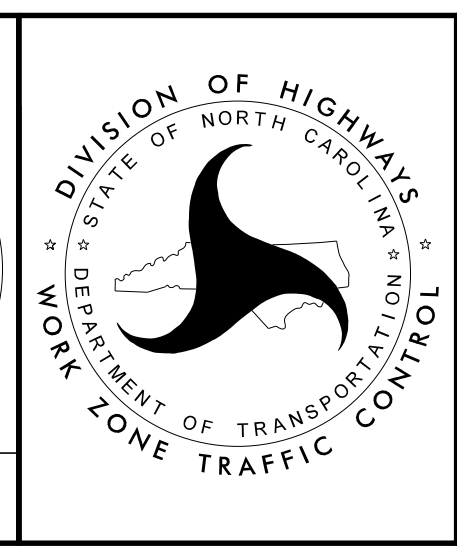




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 DATE: 5/18/2020

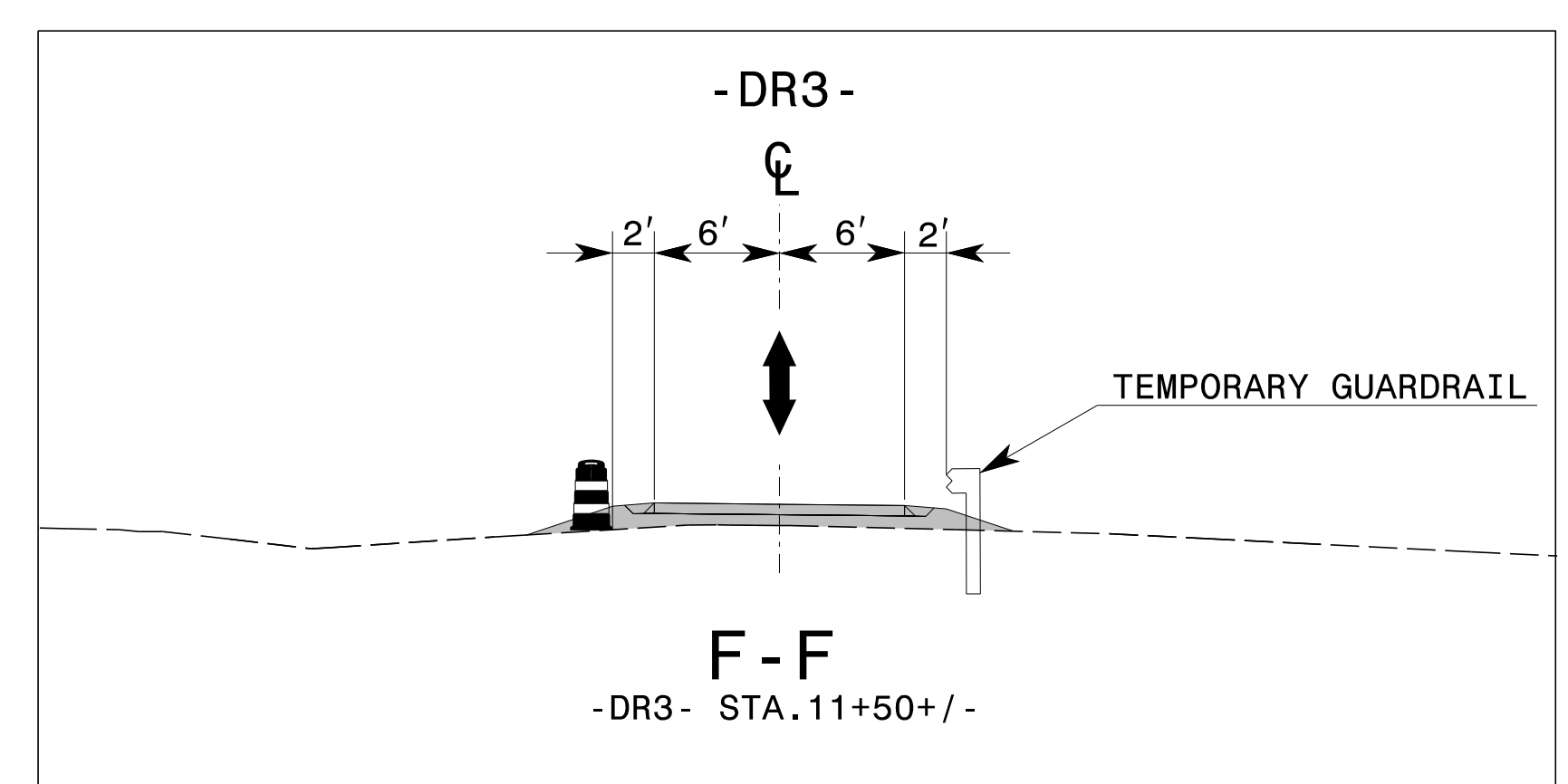
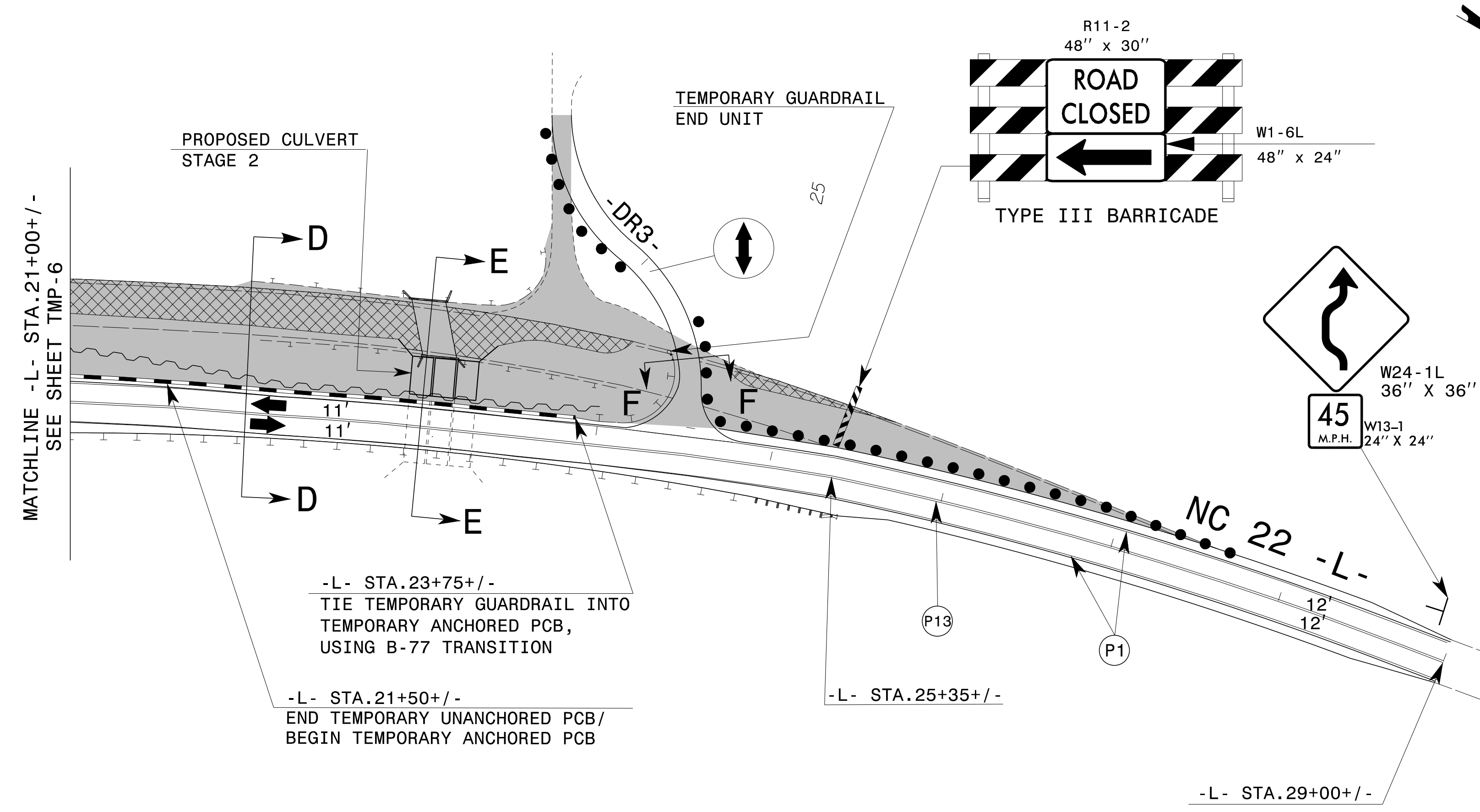
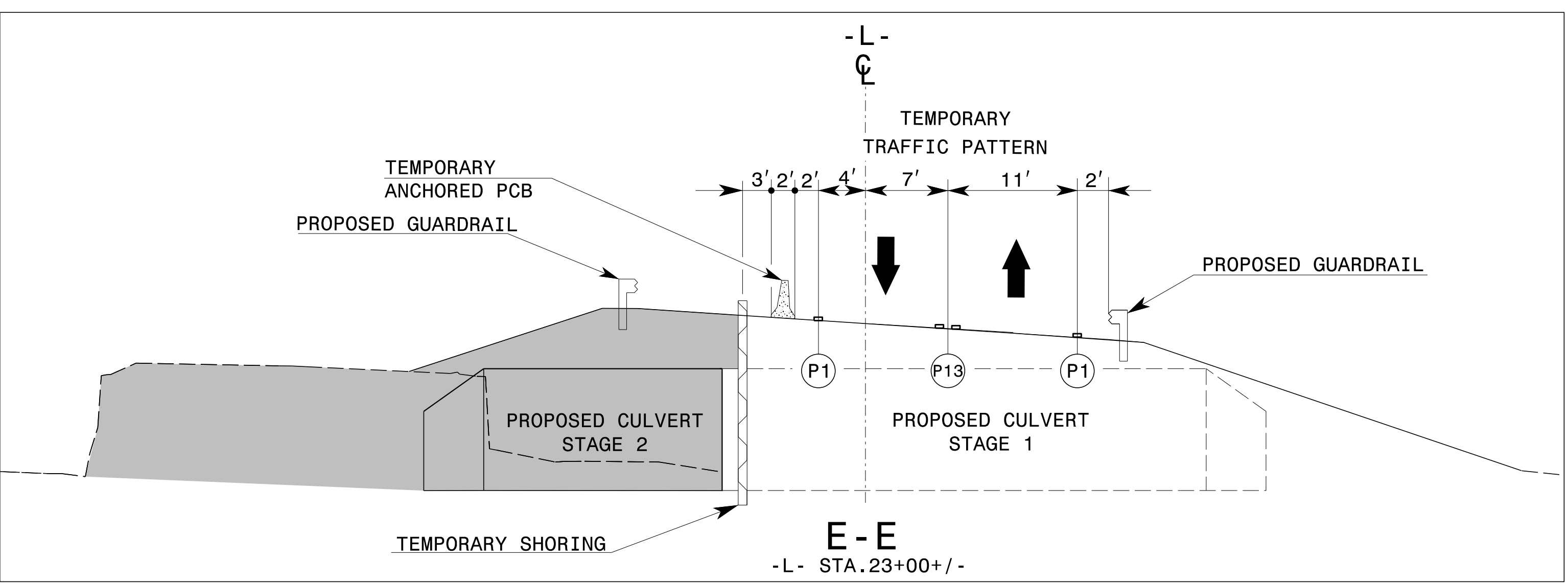
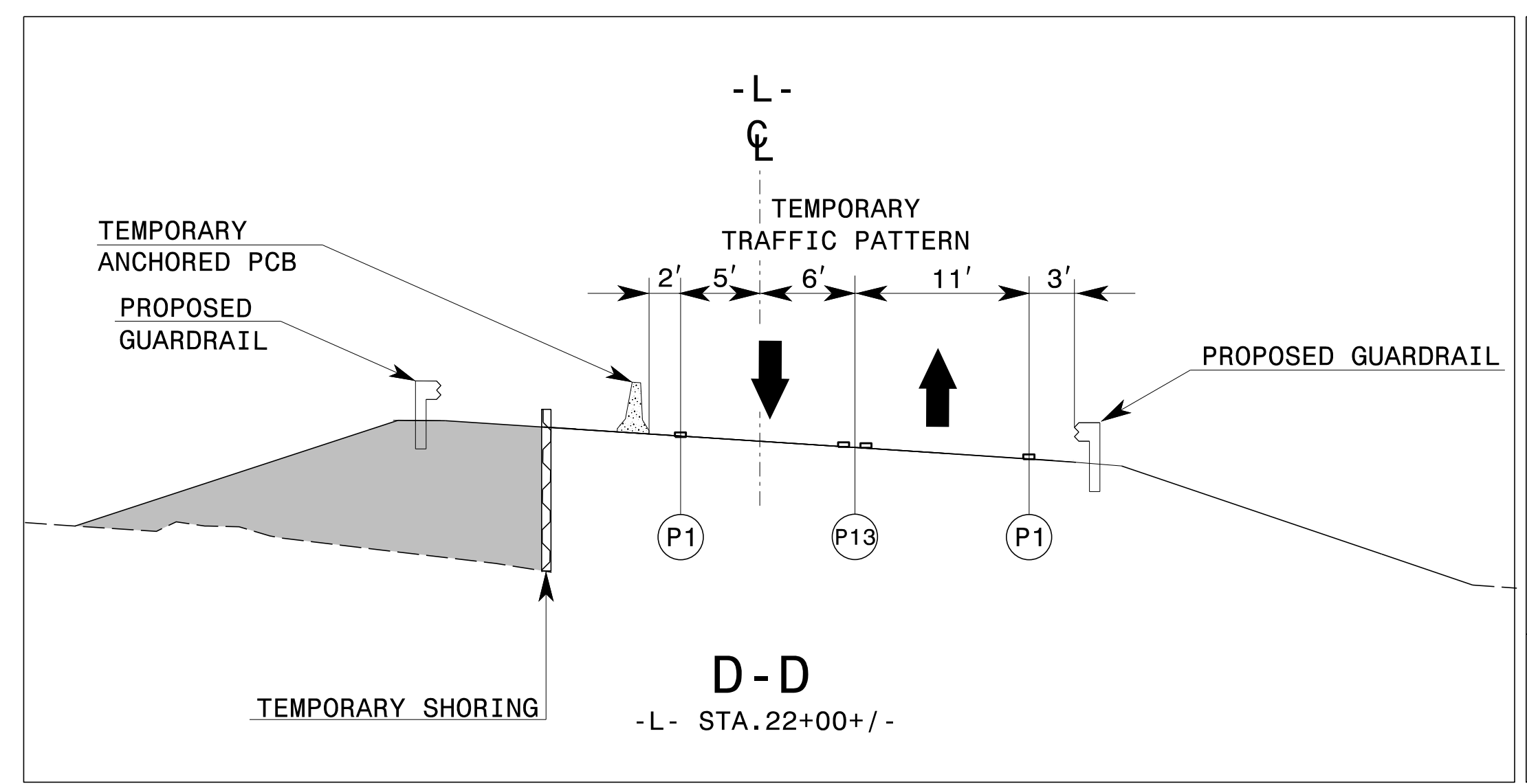
Seal: KENNETH C. THORNWELL, JR., P.E., PROFESSIONAL ENGINEER, SEAL 044089

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PHASE II, DETAIL A

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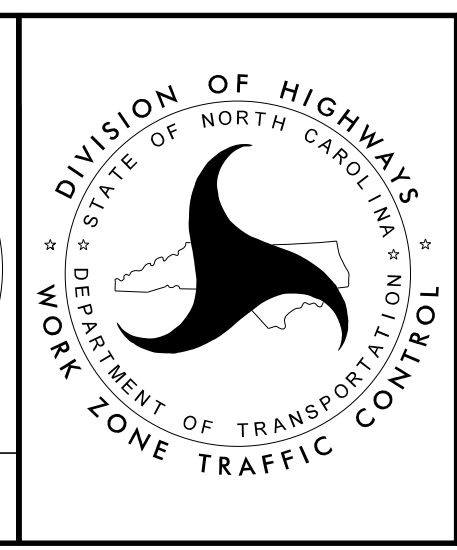


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DATE: 5/18/2020

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**PHASE II,  
DETAIL B**

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