

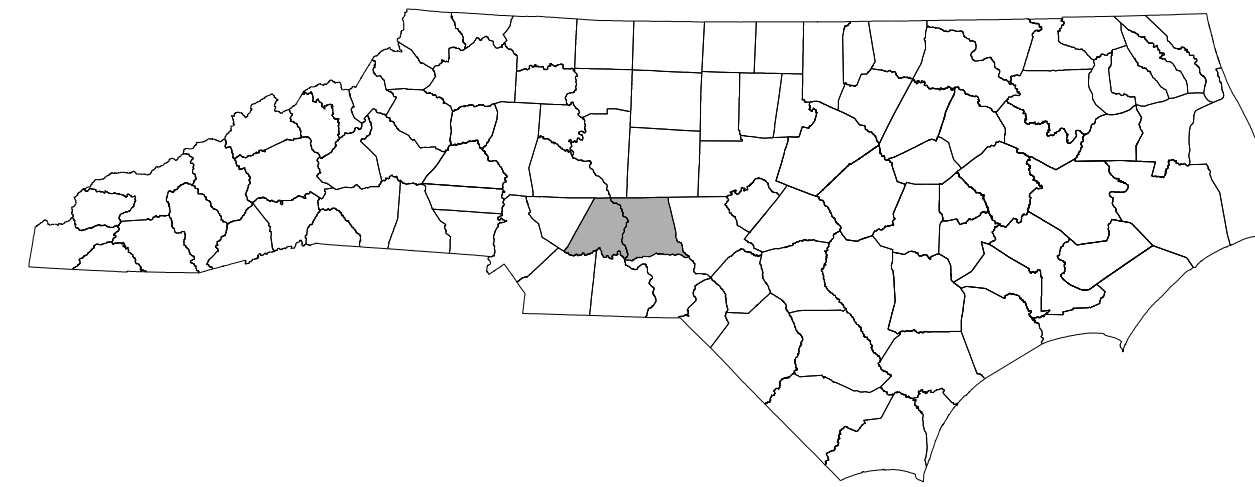
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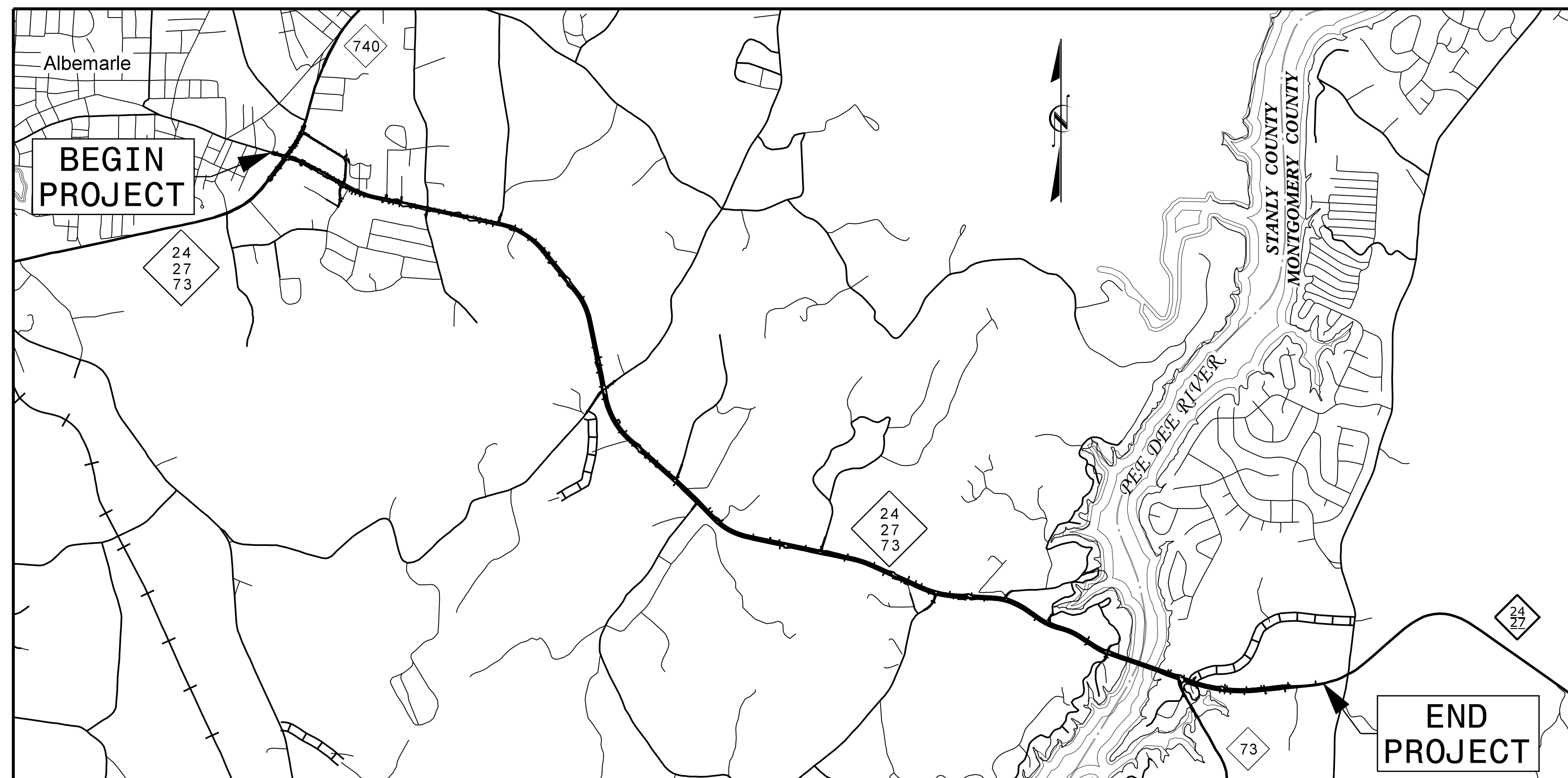
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STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**TRANSPORTATION MANAGEMENT PLAN**  
**STANLY & MONTGOMERY COUNTIES**



**LOCATION: NC 24-27 FROM NC 740 IN ALBEMARLE TO EAST OF THE PEE DEE RIVER**



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 THRU TMP-1D	TRANSPORTATION OPERATIONS PLAN: (MANAGEMENT STRATEGIES, GENERAL NOTES, AND LOCAL NOTES)
TMP-2A-1	PORTABLE CONCRETE BARRIER AT TEMPORARY SHORING LOCATIONS
TMP-2A-2 THRU TMP-2A-8	TEMPORARY SHORING DATA
TMP-2B-1 THRU TMP-2B-7	ON-SITE DETOUR ROUTES
TMP-2C-1 THRU TMP-2C-7	SPECIAL SIGN DESIGNS
TMP-3 THRU TMP-3C	TEMPORARY TRAFFIC CONTROL PHASING
TMP-4 THRU TMP-32A	PHASE 1 DETAILS
TMP-33 THRU TMP-44	PHASE 2 DETAILS
TMP-45	PHASE 2, STEP 4 DETAILS
TMP-46 THRU TMP-66	PHASE 3 DETAILS
TMP-67 THRU TMP-83	PHASE 4 DETAILS
TMP-84	PHASE 4, STEP 3 DETAILS

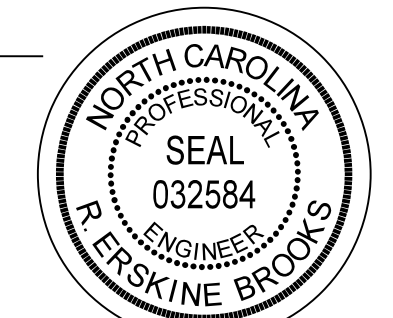
PLAN PREPARED BY:

**HR** HDR Engineering, Inc. of the Carolinas  
555 Fayetteville St, Suite 900 Raleigh, N.C. 27601  
N.C.B.E.L.S. License Number: F-0116

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**ERSKINE BROOKS, P.E.** TRAFFIC CONTROL PROJECT DESIGN ENGINEER  
**CHRIS HARNDEN** TRAFFIC CONTROL DESIGN ENGINEER

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APPROVED: *[Signature]*  
DATE: 12/18/2018

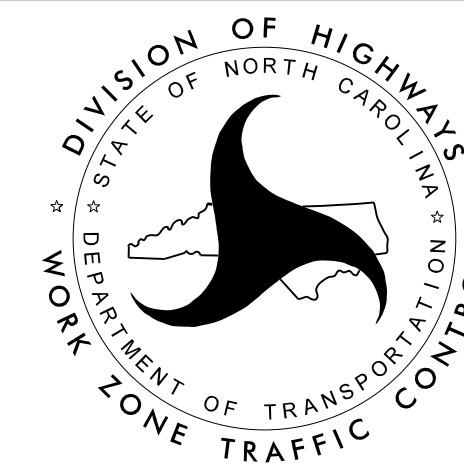


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**N.C.D.O.T. WORK ZONE TRAFFIC CONTROL**  
1561 MAIL SERVICE CENTER (MSC) RALEIGH, NC 27699-1561  
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TRAFFIC CONTROL DESIGN ENGINEER



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# ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS SHOWN IN "ROADWAY STANDARD DRAWINGS" - CONTRACT STANDARDS AND DEVELOPMENT UNIT - 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 ADVANCE WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
1101.03	TEMPORARY ROAD CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1101.06	WARNING SIGNS FOR BLASTING ZONES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1115.01	FLASHING ARROW BOARDS
1130.01	DRUM
1135.01	CONES
1145.01	BARRICADES
1150.01	FLAGGING DEVICES
1160.01	TEMPORARY CRASH CUSHION
1165.01	WORK VEHICLE LIGHTING SYSTEMS AND TMA DELINEATION
1170.01	PORTABLE CONCRETE BARRIER
1180.01	SKINNY-DRUM
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO-LANE AND MULTI-LANE ROADWAYS
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.05	PAVEMENT MARKINGS - TURN LANES
1205.06	PAVEMENT MARKINGS - LANE DROPS
1205.08	PAVEMENT MARKINGS - SYMBOLS AND WORD MESSAGES
1205.09	PAVEMENT MARKINGS - PAINTED ISLANDS
1205.12	PAVEMENT MARKINGS - BRIDGES
1205.13	PAVEMENT MARKINGS - LANE REDUCTIONS
1205.14	PAVEMENT MARKINGS - ROUNDABOUTS
1250.01	RAISED PAVEMENT MARKERS - INSTALLATION SPACING
1251.01	RAISED PAVEMENT MARKERS - PERMANENT AND TEMPORARY
1261.01	GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATORS - TYPES AND MOUNTING
1262.01	GUARDRAIL END DELINEATION
1264.01	OBJECT MARKERS - TYPES
1264.02	OBJECT MARKERS - INSTALLATION

## LEGEND

### GENERAL

- DIRECTION OF TRAFFIC FLOW
- DIRECTION OF PEDESTRIAN TRAFFIC FLOW
- EXIST. PVMT.
- NORTH ARROW
- PROPOSED PVMT.
- TEMP. SHORING (LOCATION PURPOSES ONLY)

- WORK AREA
- CONTINUING CONSTRUCTION
- REMOVAL
- WEDGING
- TEMPORARY PAVEMENT

### SIGNALS

- EXISTING
- PROPOSED
- TEMPORARY

### PAVEMENT MARKINGS

- EXISTING LINES
- TEMPORARY LINES

### 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

### TEMPORARY PAVEMENT MARKING

- |   |   |
|---|---|
| (CA) COLD APPLIED PLASTIC, TYPE 4 - 4" WHITE EDGELINE       | (PH) PAINT 4" YELLOW SINGLE CENTER        |
| (CI) COLD APPLIED PLASTIC, TYPE 4 - 4" YELLOW DOUBLE CENTER | (PI) PAINT 4" YELLOW DOUBLE CENTER        |
| (P2) PAINT 24" WHITE STOPBAR                                | (PN) PAINT 8" WHITE GORELINE              |
| (P8) PAINT 4" 2'-6"/SP. WHITE MINI-SKIP                     | (PO) PAINT 8" WHITE DIAGONAL              |
| (P10) PAINT 12" 3'-3"/SP. WHITE MINI-SKIP                   | (PP) PAINT 8" YELLOW DIAGONAL             |
| (P13) PAINT 8" 3'-9"/SP. WHITE MINI-SKIP                    | (PR) PAINT 8" WHITE SOLID LANE LINE       |
| (PA) PAINT 4" WHITE EDGELINE                                | (QA) PAINT LEFT TURN ARROW                |
| (PB) PAINT 4" YELLOW EDGELINE                               | (QB) PAINT RIGHT TURN ARROW               |
| (PC) PAINT 4" 10'-30"/SP. WHITE SKIP                        | (QC) PAINT STRAIGHT ARROW                 |
| (PD) PAINT 4" 3'-9"/SP. WHITE MINI-SKIP                     | (QE) PAINT COMBO RIGHT-STRAIGHT ARROW     |
| (PE) PAINT 4" WHITE SOLID LANE LINE                         | (QI) PAINT ALPHANUMERIC CHARACTER         |
| (PF) PAINT 4" 10'-30"/SP. YELLOW SKIP                       | (QW) PAINT FISH HOOK RIGHT-STRAIGHT ARROW |

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APPROVED: <i>P. Erskine Brooks</i>			<p>ROADWAY STANDARD DRAWINGS &amp; LEGEND</p>
DATE: 12/18/2018			
<p>SEAL</p>			
<p>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</p>			

PROJ. REFERENCE NO.	SHEET NO.
R-2530B	TMP-1B

**HDR** HDR Engineering, Inc. of the Carolinas  
 555 Fayetteville St, Suite 900 Raleigh, N.C. 27601  
 N.C.B.E.L.S. License Number: F-0116

# PROJECT NOTES

## MANAGEMENT STRATEGIES

THIS PROJECT WILL BE COMPLETED BY MAINTAINING TRAFFIC ON EXISTING NC 24/27/73. Y-LINE WIDENING, RECONSTRUCTION, AND TIE-INS WILL BE COMPLETED UNDER TRAFFIC, OR DURING CLOSURES AND DETOURS WHEN REQUIRED. TEMPORARY SHORING, TEMPORARY PAVEMENT, AND TRAFFIC SHIFTS WILL BE REQUIRED TO MAINTAIN TRAFFIC AND ALLOW ADEQUATE ROOM FOR CONSTRUCTION. TEMPORARY PAVEMENT AND TEMPORARY WEDGING WILL BE REQUIRED TO TRANSITION FROM EXISTING PAVEMENT TO THE PERMANENT PAVEMENT AND FOR TEMPORARY Y-LINE TIE-INS WHERE THE PROPOSED GRADES DO NOT MATCH EXISTING NC 24/27/73.

CULVERTS WILL BE CONSTRUCTED IN PHASES BY USE OF SHORING AND TEMPORARY BARRIER OR TEMPORARY GUARDRAIL PROTECTION. AREAS OF THE PROPOSED DRAINAGE SYSTEMS WILL ALSO REQUIRE POSITIVE PROTECTION AND PHASED CONSTRUCTION TO COMPLETE.

PHASE 1 WILL BE COMPLETED BY MAINTAINING TRAFFIC ON THE EXISTING ROADS, WHILE COMPLETING WIDENING ADJACENT TO TRAFFIC AND CONSTRUCTION OF THE NEW LANES AWAY FROM TRAFFIC. TEMPORARY PAVEMENT AND A TRAFFIC SHIFT OF NC 24/27/73 WILL BE REQUIRED AT THE -Y16- (NC 73) INTERSECTION TO BEGIN INSTALLATION OF THE PROPOSED DRAINAGE SYSTEM. CULVERT CONSTRUCTION WILL BEGIN BY INSTALLING TEMPORARY SHORING ADJACENT TO THE EXISTING ROADS AND CULVERTS TO ALLOW FOR EXCAVATION AND CONSTRUCTION OF THE NEW STRUCTURES. ANDERSON ROAD AND VALLEY DRIVE WILL BE RECONSTRUCTED DURING ROAD CLOSURES DUE TO GRADE DIFFERENCES AT THE TIE-INS WITH NC 24/27/73. BARNARD ROAD / HILCO STREET WILL BE CLOSED TO COMPLETE CONSTRUCTION OF THE PROPOSED CULVERT.

DURING PHASE 2, NC 24/27/73 TRAFFIC WILL BE SHIFTED TO A TEMPORARY PATTERN BETWEEN SWEET HOME CHURCH ROAD TO EAST OF THE VALLEY DRIVE / STONY GAP ROAD INTERSECTION TO ALLOW FOR CONSTRUCTION OF THE NEW EB LANES. VALLEY DRIVE WILL BE REOPENED UPON THE SHIFT TO THE TEMPORARY PATTERN ON NC 24/27/73, AND STONY GAP ROAD WILL BE CLOSED DUE TO THE GRADE DIFFERENCE AT THE INTERSECTION. MCNEIL ROAD WILL BE CLOSED TO COMPLETE THE INTERSECTION WITH THE EB TRAVEL LANES. NC 24/27/73 WILL BE SHIFTED TO A TEMPORARY PATTERN AT THE -Y16- (NC 73) INTERSECTION TO ALLOW FOR CONSTRUCTION OF THE NEW EB TRAVEL LANES AND CULVERT CONSTRUCTION ADJACENT TO THE SWIFT ISLAND LAKE BOAT ACCESS AREA. HILCO STREET WILL BE CLOSED AT THE INTERSECTION WITH -Y1- (NC 740) TO ALLOW FOR A FINAL TIE-IN OF THE INTERSECTION, THEN REOPENED TO THE FINAL PATTERN.

DURING PHASE 2, STEP 4, -Y16- (NC 73) TRAFFIC WILL BE SHIFTED TO THE FINAL ALIGNMENT TO ALLOW FOR CONSTRUCTION TO CONTINUE ON THE NEW -L- EB TRAVEL LANES AT THE INTERSECTION.

IN PHASE 3, NC 24/27/73 TRAFFIC WILL BE SHIFTED TO THE NEW EB TRAVEL LANES FROM THE -Y1- INTERSECTION TO JUST EAST OF THE -Y11- (STONY MOUNTAIN ROAD) INTERSECTION. PROPOSED CULVERTS AND DRAINAGE SYSTEMS WILL BE COMPLETED IN THIS AREA DURING THIS WORK. -Y14- (STRAND DRIVE) WILL BE CLOSED TO COMPLETE THE TIE-IN AND NEW -L- WB TRAVEL LANES IN THIS AREA. NC 24/27/73 WILL BE SHIFTED TO A TEMPORARY PATTERN AT THE -Y16- (NC 73) INTERSECTION TO ALLOW FOR CONSTRUCTION OF THE NEW -L- WB TRAVEL LANES.

PHASE 4 WILL SHIFT NC 24/27/73 TRAFFIC TO A TEMPORARY PATTERN FROM THE -Y1- INTERSECTION TO JUST EAST OF THE -Y8- (VALLEY DRIVE / STONY GAP ROAD) INTERSECTION, ALLOWING FOR COMPLETION OF THE REMAINING PROPOSED MEDIAN WORK THROUGH THIS AREA. CONSTRUCTION OF THE NEW -L- EB TRAVEL LANES WILL BE COMPLETED FROM -Y11- (STONY MOUNTAIN ROAD) TO THE -Y16- (NC 73) INTERSECTION, AS WELL AS THE REMAINING -L- EB TRAVEL LANES FROM EAST OF THE -Y16- INTERSECTION TO THE END OF THE PROJECT. THIS WORK WILL INCLUDE A CLOSURE OF -Y12- (INDIAN MOUND ROAD) TO COMPLETE THE -Y12- RECONSTRUCTION AND TIE-IN TO -L- DUE TO GRADE DIFFERENCES AT THE -L- INTERSECTION.

PHASE 4, STEP 3 WILL REQUIRE A SHIFT OF THE -L-, -Y2-, AND -Y2A- LANES AT THE ROUNDABOUT TO COMPLETE THE REMAINING MEDIAN AND SPLITTER ISLAND WORK.

PHASE 5 WILL SHIFT ALL TRAFFIC TO THE FINAL PATTERNS, ALLOWING FOR COMPLETION OF ALL REMAINING MEDIAN AND ISLAND WORK.

## 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
-L- (NC 24/27/73)	MON-FRI: 7:00 AM TO 9:00 AM
-Y1- (NC 24/27/73 / NC 740 / SPAULDING STREET)	4:00 PM TO 6:00 PM
-Y16- (NC 73)	

B) DO NOT CLOSE OR NARROW TRAVEL LANES DURING HOLIDAYS AND SPECIAL EVENTS AS FOLLOWS:

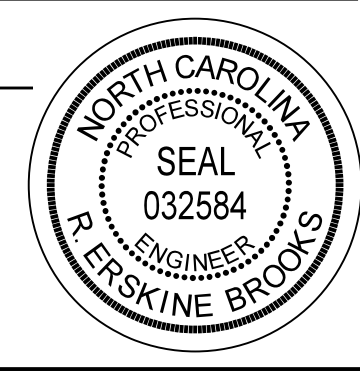

ROAD NAME
-L- (NC 24/27/73)
-Y1- (NC 24/27/73 / NC 740 / SPAULDING STREET)
-Y16- (NC 73)

### HOLIDAY

1. FOR ANY UNEXPECTED OCCURRENCE THAT CREATES UNUSUALLY HIGH TRAFFIC VOLUMES, AS DIRECTED BY THE ENGINEER.
2. FOR NEW YEAR'S, BETWEEN THE HOURS OF 7:00 A.M. DECEMBER 31ST TO 6:00 P.M. JANUARY 2ND. IF NEW YEAR'S DAY IS ON A FRIDAY, SATURDAY, SUNDAY, OR MONDAY THEN UNTIL 6:00 P.M. THE FOLLOWING TUESDAY.
3. FOR EASTER, BETWEEN THE HOURS OF 7:00 A.M. THURSDAY AND 6:00 P.M. MONDAY.
4. FOR MEMORIAL DAY, BETWEEN THE HOURS OF 7:00 A.M. FRIDAY TO 6:00 P.M. TUESDAY.
5. FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 7:00 A.M. THE DAY BEFORE INDEPENDENCE DAY AND 6:00 P.M. THE DAY AFTER INDEPENDENCE DAY.  
  
IF INDEPENDENCE DAY IS ON A FRIDAY, SATURDAY, SUNDAY OR MONDAY THEN BETWEEN THE HOURS OF 7:00 A.M. THE THURSDAY BEFORE INDEPENDENCE DAY AND 6:00 P.M. THE TUESDAY AFTER INDEPENDENCE DAY.
6. FOR LABOR DAY, BETWEEN THE HOURS OF 7:00 A.M. FRIDAY AND 6:00 P.M. TUESDAY.
7. FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 7:00 A.M. TUESDAY TO 6:00 P.M. MONDAY.
8. FOR CHRISTMAS, BETWEEN THE HOURS OF 7:00 A.M. THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 6:00 P.M. THE FOLLOWING TUESDAY AFTER THE WEEK OF CHRISTMAS.

REVISIONS

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APPROVED: <i>P. Erskine Brooks</i> DATE: 12/18/2018 <div style="text-align: center;">                       SEAL                 </div>	 DIVISION OF HIGHWAYS DEPARTMENT OF TRANSPORTATION WORK ZONE TRAFFIC CONTROL	<h2 style="margin: 0;">PROJECT NOTES</h2>
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## PROJECT NOTES

C) DO NOT CONDUCT MULTI-VEHICLE HAULING AS FOLLOWS:

ROAD NAME	DAY AND TIME RESTRICTIONS
-L- (NC 24/27/73)	MONDAY-FRIDAY: 7:00 AM TO 9:00 AM
-Y1- (NC 24/27/73 / NC 740 / SPAULDING STREET)	4:00 PM TO 6:00 PM
-Y16- (NC 73)	

D) DO NOT CONDUCT ANY HAULING OPERATIONS AGAINST THE FLOW OF TRAFFIC OF AN OPEN TRAVELWAY UNLESS THE HAULING OPERATION IS PROTECTED BY BARRIER OR GUARDRAIL OR AS DIRECTED BY THE ENGINEER.

LANE AND SHOULDER CLOSURE REQUIREMENTS

- E) 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.
- F) 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.
- G) 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.
- H) 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.
- I) 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.
- J) DO NOT INSTALL MORE THAN 1/2 MILE OF LANE CLOSURE ON NC 24/27/73 MEASURED FROM THE BEGINNING OF THE MERGE TAPER TO THE END OF THE LANE CLOSURE.
- K) DO NOT INSTALL MORE THAN ONE LANE CLOSURE IN ANY ONE DIRECTION ON NC 24/27/73.
- L) PROVIDE A MINIMUM OF 1 MILE BETWEEN LANE CLOSURES, MEASURED FROM THE END OF ONE CLOSURE TO THE FIRST SIGN OF THE NEXT LANE CLOSURE.

PAVEMENT EDGE DROP OFF REQUIREMENTS

- M) 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.
- N) 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) 1000 FT IN ADVANCE AND A MINIMUM OF EVERY HALF MILE THROUGHOUT THE UNEVEN AREA.

TRAFFIC PATTERN ALTERATIONS


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

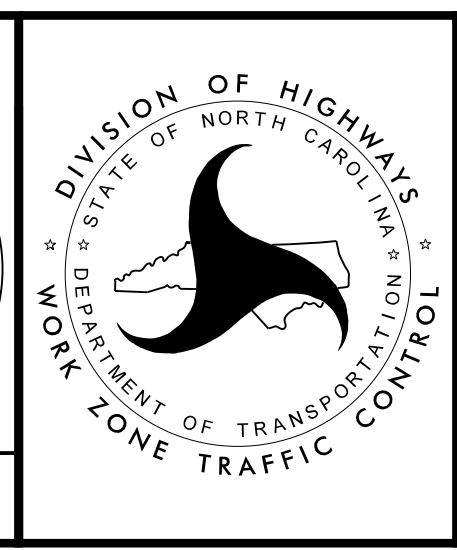
SIGNING

- P) 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.
- Q) PROVIDE SIGNING AND DEVICES REQUIRED TO CLOSE THE ROAD ACCORDING TO THE ROADWAY STANDARD DRAWINGS AND TRAFFIC CONTROL PLANS.  
  
 PROVIDE SIGNING REQUIRED FOR THE OFF-SITE DETOUR ROUTE AS SHOWN IN THE TRAFFIC CONTROL PLANS.
- R) COVER OR REMOVE ALL SIGNS AND DEVICES REQUIRED TO CLOSE THE ROAD WHEN ROAD CLOSURE IS NOT IN OPERATION.  
  
 COVER OR REMOVE ALL SIGNS REQUIRED FOR THE OFF-SITE DETOUR WHEN THE DETOUR IS NOT IN OPERATION.
- S) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.
- T) INSTALL BLACK ON ORANGE "DIP" SIGNS (W8-2) AND/OR "BUMP" SIGNS (W8-1) 500 FT IN ADVANCE OF THE UNEVEN AREA, OR AS DIRECTED BY THE ENGINEER.

REVISIONS

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APPROVED: *P. Erskine Brooks*  
 DATE: 12/18/2018  
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PROJECT NOTES

# PROJECT NOTES

**TRAFFIC BARRIER**

- U) 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.

- V) 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**

- W) 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.
- X) PLACE TYPE III BARRICADES, WITH "ROAD CLOSED" SIGN R11-2 ATTACHED, OF SUFFICIENT LENGTH TO CLOSE ENTIRE ROADWAY.
- Y) PLACE ADDITIONAL SETS OF THREE CHANNELIZING DEVICES DRUMS PERPENDICULAR TO THE EDGE OF TRAVELWAY ON 500 FT CENTERS WHEN UNOPENED LANES ARE CLOSED TO TRAFFIC.

**PAVEMENT MARKINGS AND MARKERS**

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

ROAD NAME	MARKING	MARKER
ALL ROADS	PAINT (ON ASPHALT) COLD APPLIED PLASTIC - TYPE IV (ON CONCRETE)	TEMPORARY RAISED

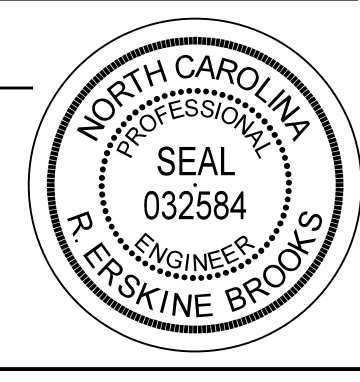

- AA) PLACE ONE APPLICATION OF PAINT FOR TEMPORARY TRAFFIC PATTERNS. PLACE A SECOND APPLICATION OF PAINT SIX (6) MONTHS AFTER THE INITIAL APPLICATION AND EVERY SIX MONTHS AS DIRECTED BY THE ENGINEER.
- BB) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
- CC) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS BY THE END OF EACH DAY'S OPERATION.
- DD) TRACE THE PROPOSED MONOLITHIC ISLAND LOCATIONS WITH PROPER COLOR PAVEMENT MARKINGS PRIOR TO INSTALLATION. PLACE DRUMS TO DELINEATE ANY PROPOSED MONOLITHIC ISLANDS BEFORE INSTALLATION.

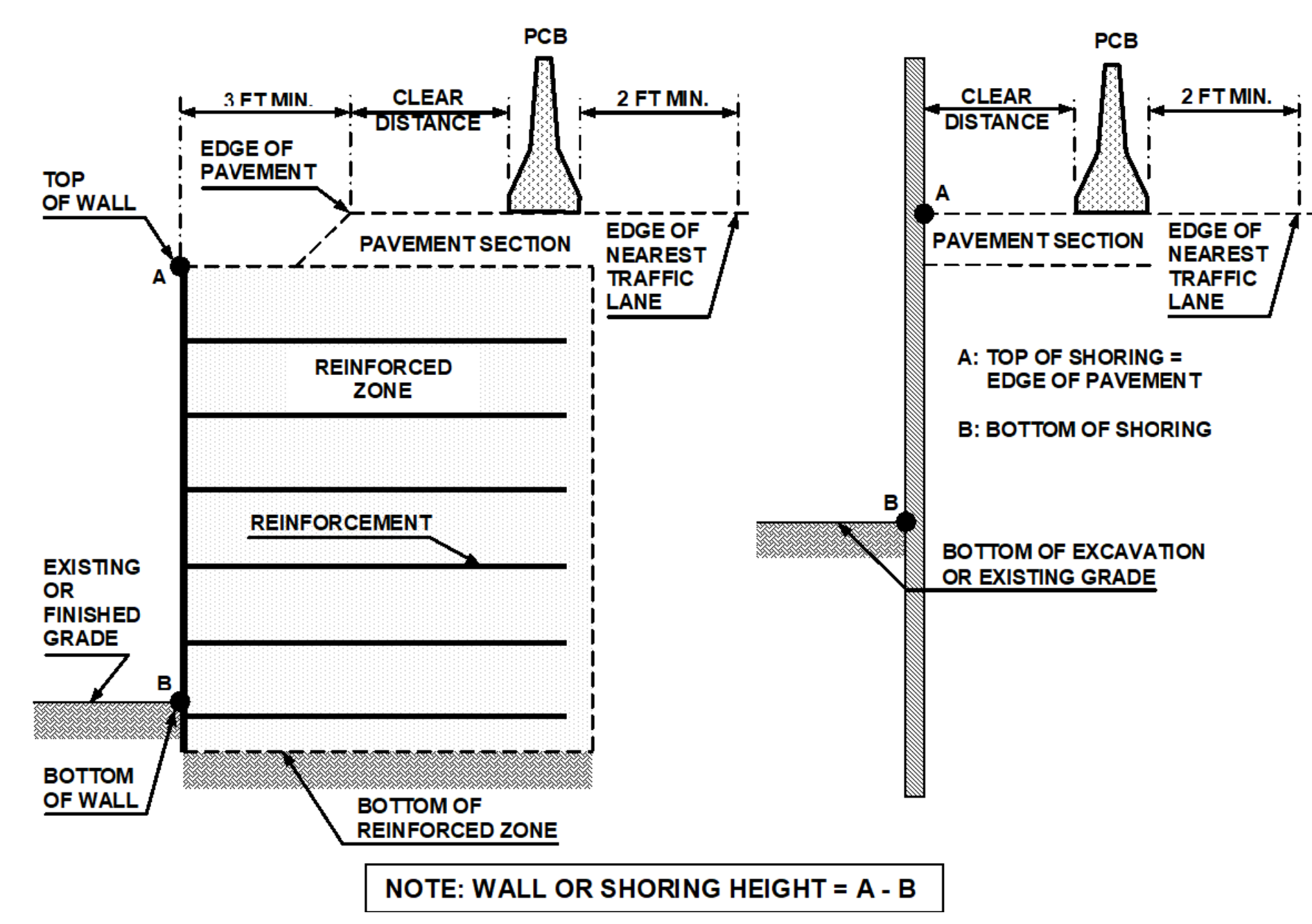
**MISCELLANEOUS**

- EE) LAW ENFORCEMENT MAY BE USED TO MAINTAIN TRAFFIC THROUGH THE WORK AREA AND/OR INTERSECTIONS AS DIRECTED BY THE ENGINEER.
- FF) IN THE EVENT A Y-LINE\* TIE-IN CANNOT BE MADE IN ONE DAY'S TIME, BRING THE TIE-IN AREA TO AN APPROPRIATE ROADWAY ELEVATION AS DETERMINED BY THE ENGINEER. PLACE BLACK ON ORANGE "LOOSE GRAVEL" SIGNS (W8-7) AND BLACK ON ORANGE "PAVEMENT ENDS" SIGNS (W8-3) 500 FT AND 250 FT RESPECTIVELY IN ADVANCE OF THE UNEVEN AREAS. USE DRUMS TO DELINEATE THE EDGE OF ROADWAY ALONG UNPAVED AREAS.
  - \* USE OF ABC OR INCIDENTAL STONE FOR A TEMPORARY TIE-IN, FILL FOR A DRAINAGE PIPE OR UTILITY CUT, OR OTHER OPERATION AS APPROVED BY THE ENGINEER, WILL NOT BE PERMITTED ON THE FOLLOWING ROADS:
    - -L- (NC 24/27/73)
    - -Y1- (NC 24/27/73 / NC 740 / SPAULDING STREET)
    - -Y16- (NC 73)
- GG) ALL CURB RAMP LOCATIONS SHALL BE DERIVED FROM STATIONING SHOWN ON PAVEMENT MARKING PLANS OR AS DIRECTED BY THE ENGINEER IN COORDINATION WITH THE SIGNING AND DELINEATION UNIT.
- HH) COMPLETE PROPOSED CONSTRUCTION IN SUCH A MANNER THAT PONDING OF WATER WILL NOT OCCUR IN THE TRAVEL LANES.
- II) TRAFFIC CONTROL DEVICES FROM TIP PROJECT B-4974, PHASE 2, SHALL REMAIN IN PLACE AND WILL BECOME DEVICES REQUIRED AS PART OF THIS PLAN. SEE PROJECT SPECIAL PROVISIONS, PAGES TC-1 AND TC-2, AND B-4974 PROJECT PLANS, SHEETS TMP-12 AND TMP-13.

REVISIONS

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 TIME: 9:38:01 PM  
 FILE: C:\Users\erbrooks\Desktop\AR-2530\2019-08-06\AR2530B-TC-TMP-01B.dgn

APPROVED: <i>P. Erskine Brooks</i>  DATE: 8/6/2019  SEAL  		<h2 style="margin: 0;">PROJECT NOTES</h2>
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		



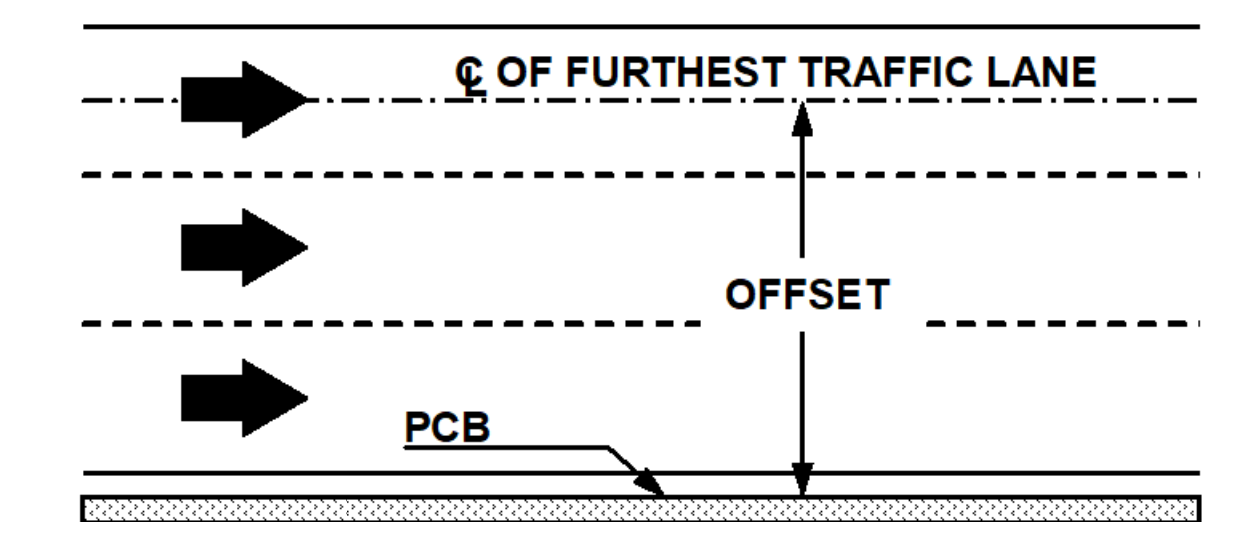
## FIGURE A

### 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.

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

**PORTABLE CONCRETE BARRIER AT TEMPORARY SHORING LOCATIONS**

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 USER: ERBROOKS  
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REVISIONS

SHORING LOCATION NO. 1

ELIMINATED

SHORING LOCATION NO. 2

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

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

DESIGN TEMPORARY SHORING FROM STATION -L- 38+45±, 5.5 FT LEFT, TO STATION -L- 39+05±, 5.5 FT LEFT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

UNIT WEIGHT ( $\gamma$ ) = 120 LB/CF  
 FRICTION ANGLE ( $\phi$ ) = 30 DEGREES  
 COHESION (C) = 0 LB/SF  
 GROUNDWATER ELEVATION = 552 FT

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM STATION -L- 38+45±, 5.5 FT LEFT, TO STATION -L- 39+05±, 5.5 FT LEFT. 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 -L- 38+45±, 5.5 FT LT, TO STATION -L- 39+05±, 5.5 FT LT MAY NOT PENETRATE BELOW ELEVATION 540 FT DUE TO OBSTRUCTIONS, VERY DENSE OR HARD SOIL, BOULDERS OR WEATHERED OR HARD ROCK.

DO NOT USE A TEMPORARY WALL FOR TEMPORARY SHORING FROM STATION -L- 38+45±, 5.5 FT LT, TO STATION -L- 39+05±, 5.5 FT LT

AT THE CONTRACTOR'S OPTION, USE STANDARD TEMPORARY SHORING FOR TEMPORARY SHORING FROM STATION -L- 38+45±, 5.5 FT LT, TO STATION -L- 39+05±, 5.5 FT LT. SEE STANDARD DETAIL NO. 1801.01 FOR STANDARD TEMPORARY SHORING.

IT MAY BE PREFERRED TO USE A TEMPORARY SOIL NAIL WALL FOR TEMPORARY SHORING FROM STATION -L- 38+45±, 5.5 FT LT, TO STATION -L- 39+05±, 5.5 FT LT. FOR TEMPORARY SOIL NAIL WALLS, SEE TEMPORARY SOIL NAIL WALLS PROVISION.

SHORING LOCATION NO. 3

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

TEMPORARY SHORING IS REQUIRED FOR THE CULVERT INSTALLATION FROM STATION -L- 38+45±, 3.5 FT RT, TO STATION -L- 39+05, 3.5 FT RT.

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

DESIGN TEMPORARY SHORING FROM STATION -L- 38+45±, 3.5 FT RT, TO STATION -L- 39+05±, 3.5 FT RT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

UNIT WEIGHT ( $\gamma$ ) = 120 LB/CF  
 FRICTION ANGLE ( $\phi$ ) = 30 DEGREES  
 COHESION (c) = 0 LB/SF  
 GROUNDWATER ELEVATION = 552 FT

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM STATION -L- 38+45±, 3.5 FT RT, TO STATION -L- 39+05±, 3.5 FT RT. 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 -L- 38+45±, 3.5 FT RT, TO STATION -L- 39+05±, 3.5 FT RT. SEE GEOTECHNICAL STANDARD DETAIL NO. 1801.02 FOR STANDARD TEMPORARY WALLS.

SHORING LOCATION NO. 4

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

TEMPORARY SHORING IS REQUIRED FOR THE CULVERT INSTALLATION FROM STATION -L- 52+55±, 6.1 FT LT, TO STATION -L- 53+35±, 5.6 FT LT.

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

DESIGN TEMPORARY SHORING FROM STATION -L- 52+55±, 6.1 FT LT, TO STATION -L- 53+35±, 5.6 FT LT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

UNIT WEIGHT ( $\gamma$ ) = 120 LB/CF  
 FRICTION ANGLE ( $\phi$ ) = 32 DEGREES  
 COHESION (c) = 0 LB/SF  
 GROUNDWATER ELEVATION = 548 FT

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM STATION -L- 52+55±, 6.1 FT LT, TO STATION -L- 53+35±, 5.6 FT LT. 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 -L- 52+55±, 6.1 FT LT, TO STATION -L- 53+35±, 5.6 FT LT MAY NOT PENETRATE BELOW ELEVATION 542 FT DUE TO OBSTRUCTIONS, VERY DENSE OR HARD SOIL, BOULDERS OR WEATHERED OR HARD ROCK.

DO NOT USE A TEMPORARY WALL FOR TEMPORARY SHORING FROM STATION -L- 52+55±, 6.1 FT LT, TO STATION -L- 53+35±, 5.6 FT LT.

IT MAY BE PREFERRED TO USE A TEMPORARY SOIL NAIL WALL FOR TEMPORARY SHORING FROM STATION -L- 52+55±, 6.1 FT LT, TO STATION -L- 53+35±, 5.6 FT LT. FOR TEMPORARY SOIL NAIL WALLS, SEE TEMPORARY SOIL NAIL WALLS PROVISION.

SHORING LOCATION NO. 5

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

TEMPORARY SHORING IS REQUIRED FOR THE CULVERT INSTALLATION FROM STATION -L- 52+55±, 5.5 FT RT, TO STATION -L- 53+35±, 5.5 FT RT.

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

DESIGN TEMPORARY SHORING FROM STATION -L- 52+55±, 5.5 FT RT, TO STATION -L- 53+35±, 5.5 FT RT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

UNIT WEIGHT ( $\gamma$ ) = 120 LB/CF  
 FRICTION ANGLE ( $\phi$ ) = 32 DEGREES  
 COHESION (c) = 0 LB/SF  
 GROUNDWATER ELEVATION = 548 FT

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM STATION -L- 52+55±, 5.5 FT RT, TO STATION -L- 53+35±, 5.5 FT RT. 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 -L- 52+55±, 5.5 FT RT, TO STATION -L- 53+35±, 5.5 FT RT. SEE GEOTECHNICAL STANDARD DETAIL NO. 1801.02 FOR STANDARD TEMPORARY WALLS.

SHORING LOCATION NO. 6

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

TEMPORARY SHORING IS REQUIRED FOR THE CULVERT INSTALLATION FROM STATION -L- 93+22±, 6.6 FT LT, TO STATION -L- 93+95±, 7.2 FT LT.

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

DESIGN TEMPORARY SHORING FROM STATION -L- 93+22±, 6.6 FT LT, TO STATION -L- 93+95±, 7.2 FT LT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

UNIT WEIGHT ( $\gamma$ ) = 120 LB/CF  
 FRICTION ANGLE ( $\phi$ ) = 32 DEGREES  
 COHESION (c) = 0 LB/SF  
 GROUNDWATER ELEVATION = 538 FT

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM STATION -L- 93+22±, 6.6 FT LT, TO STATION -L- 93+95±, 7.2 FT LT. 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 -L- 93+22±, 6.6 FT LT, TO STATION -L- 93+95±, 7.2 FT LT MAY NOT PENETRATE BELOW ELEVATION 531.5 FT DUE TO OBSTRUCTIONS, VERY DENSE OR HARD SOIL, BOULDERS OR WEATHERED OR HARD ROCK.

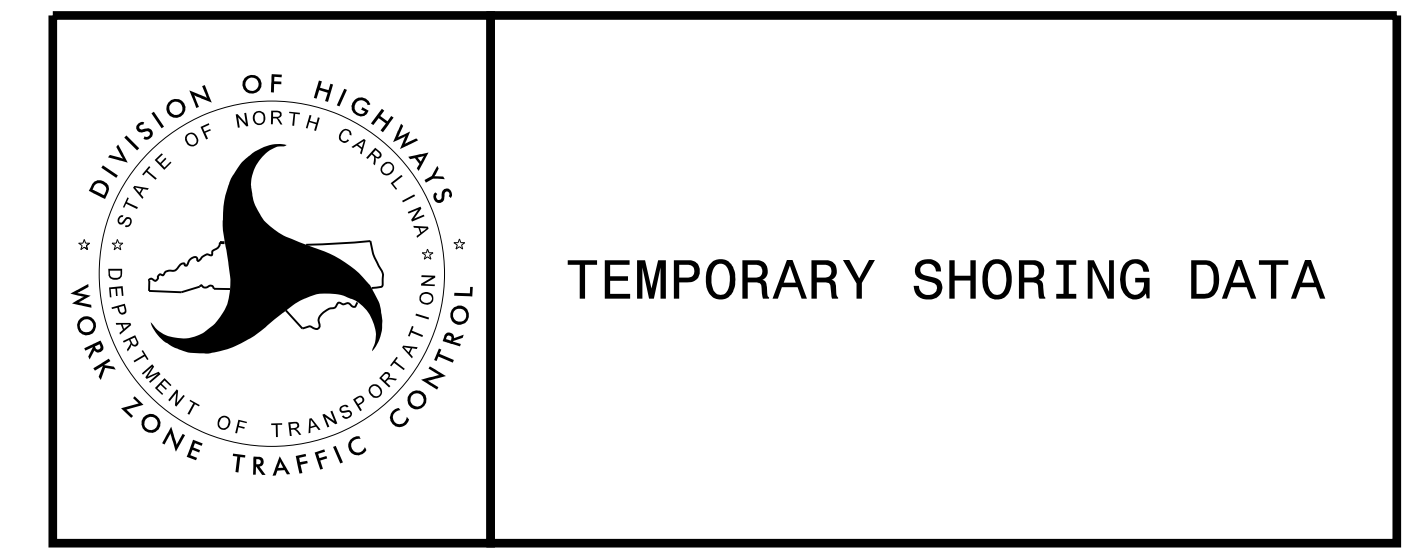
DO NOT USE A TEMPORARY WALL FOR TEMPORARY SHORING FROM STATION -L- 93+22±, 6.6 FT LT, TO STATION -L- 93+95±, 7.2 FT LT.

IT MAY BE PREFERRED TO USE A TEMPORARY SOIL NAIL WALL FOR TEMPORARY SHORING FROM STATION -L- 93+22±, 6.6 FT LT, TO STATION -L- 93+95±, 7.2 FT LT. FOR TEMPORARY SOIL NAIL WALLS, SEE TEMPORARY SOIL NAIL WALLS PROVISION.

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REVISIONS

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 07/26/2018 AND SEALED BY A PROFESSIONAL ENGINEER, SHIPING YANG, LICENSE # 031361.





SHORING LOCATION NO. 7

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

TEMPORARY SHORING IS REQUIRED FOR THE CULVERT INSTALLATION FROM STATION -L- 93+22±, 3.5 FT RT, TO STATION -L- 93+95±, 3.5 FT RT.

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

DESIGN TEMPORARY SHORING FROM STATION -L- 93+22±, 3.5 FT RT, TO STATION -L- 93+95±, 3.5 FT RT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

UNIT WEIGHT ( $\gamma$ ) = 120 LB/CF  
 FRICTION ANGLE ( $\phi$ ) = 32 DEGREES  
 COHESION (c) = 0 LB/SF  
 GROUNDWATER ELEVATION = 538 FT

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM STATION -L- 93+22±, 3.5 FT RT, TO STATION -L- 93+95±, 3.5 FT RT. 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 -L- 93+22±, 3.5 FT RT, TO STATION -L- 93+95±, 3.5 FT RT. SEE GEOTECHNICAL STANDARD DETAIL NO. 1801.02 FOR STANDARD TEMPORARY WALLS.

SHORING LOCATION NO. 8

ELIMINATED

SHORING LOCATION NO. 9

ELIMINATED

SHORING LOCATION NO. 10

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

TEMPORARY SHORING IS REQUIRED FOR THE CULVERT INSTALLATION FROM STATION -L- 118+78±, 9.0 FT LT, TO STATION -L- 119+34±, 9.0 FT LT.

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

DESIGN TEMPORARY SHORING FROM STATION -L- 118+78±, 9.0 FT LT, TO STATION -L- 119+34±, 9.0 FT LT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

UNIT WEIGHT ( $\gamma$ ) = 120 LB/CF  
 FRICTION ANGLE ( $\phi$ ) = 0 DEGREES  
 COHESION (c) = 0 LB/SF  
 GROUNDWATER ELEVATION = 570 FT

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM STATION -L- 118+78±, 9.0 FT LT, TO STATION -L- 119+34±, 9.0 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 -L- 118+78±, 9.0 FT LT, TO STATION -L- 119+34±, 9.0 FT LT. SEE GEOTECHNICAL STANDARD DETAIL NO. 1801.02 FOR STANDARD TEMPORARY WALLS.

SHORING LOCATION NO. 11

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

TEMPORARY SHORING IS REQUIRED FOR THE CULVERT INSTALLATION FROM STATION -L- 118+82±, 15.1 FT RT, TO STATION -L- 119+30±, 14.8 FT RT.

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

DESIGN TEMPORARY SHORING FROM STATION -L- 118+82±, 15.1 FT RT, TO STATION -L- 119+30±, 14.8 FT RT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

UNIT WEIGHT ( $\gamma$ ) = 120 LB/CF  
 FRICTION ANGLE ( $\phi$ ) = 30 DEGREES  
 COHESION (c) = 0 LB/SF  
 GROUNDWATER ELEVATION = 570 FT

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM STATION -L- 118+82±, 15.1 FT RT, TO STATION -L- 119+30±, 14.8 FT RT. THE INFORMATION PROVIDED FOR TEMPORARY SHORING DESIGN WAS ASSUMED AND MAY NOT BE APPLICABLE TO THE ACTUAL SITE CONDITIONS ENCOUNTERED DURING CONSTRUCTION.

DO NOT USE A TEMPORARY WALL FOR TEMPORARY SHORING FROM STATION -L- 118+82±, 15.1 FT RT, TO STATION -L- 119+30±, 14.8 FT RT.

AT THE CONTRACTOR'S OPTION, USE STANDARD TEMPORARY SHORING FOR TEMPORARY SHORING FROM STATION -L- 118+82±, 15.1 FT RT, TO STATION -L- 119+30±, 14.8 FT RT. SEE STANDARD DETAIL NO. 1801.01 FOR STANDARD TEMPORARY SHORING.

IT MAY BE PREFERRED TO USE A TEMPORARY SOIL NAIL WALL FOR TEMPORARY SHORING FROM STATION -L- 118+82±, 15.1 FT RT, TO STATION -L- 119+30±, 14.8 FT RT. FOR TEMPORARY SOIL NAIL WALLS, SEE TEMPORARY SOIL NAIL WALLS PROVISION.

SHORING LOCATION NO. 12

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

TEMPORARY SHORING IS REQUIRED FOR THE CULVERT INSTALLATION FROM STATION -L- 120+17±, 14.9 FT RT, TO STATION -L- 123+23±, 14.2 FT RT.

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

DESIGN TEMPORARY SHORING FROM STATION -L- 120+17±, 14.9 FT RT, TO STATION -L- 123+23±, 14.2 FT RT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

UNIT WEIGHT ( $\gamma$ ) = 120 LB/CF  
 FRICTION ANGLE ( $\phi$ ) = 30 DEGREES  
 COHESION (c) = 0 LB/SF  
 GROUNDWATER ELEVATION = 580 FT

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM STATION -L- 120+17 ±, 14.9\* RT, TO STATION -L- 123+23±, 14.2 FT 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 -L- 120+17±, 14.9 FT RT, TO STATION -L- 123+23±, 14.2 FT RT MAY NOT PENETRATE BELOW ELEVATION 572 FT DUE TO OBSTRUCTIONS, VERY DENSE OR HARD SOIL, BOULDERS OR WEATHERED OR HARD ROCK.

DO NOT USE A TEMPORARY WALL FOR TEMPORARY SHORING FROM STATION -L- 120+17±, 14.9 FT RT, TO STATION -L- 123+23±, 14.2 FT RT.

IT MAY BE PREFERRED TO USE A TEMPORARY SOIL NAIL WALL FOR TEMPORARY SHORING FROM STATION -L- 120+17±, 14.9 FT RT, TO STATION -L- 123+23±, 14.2 FT RT. FOR TEMPORARY SOIL NAIL WALLS, SEE TEMPORARY SOIL NAIL WALLS PROVISION.

SHORING LOCATION NO. 13

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

TEMPORARY SHORING IS REQUIRED FOR THE CULVERT INSTALLATION FROM STATION -L- 129+75±, 13.2 FT LT, TO STATION -L- 130+25±, 13.2 FT LT.

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

DESIGN TEMPORARY SHORING FROM STATION -L- 129+75±, 13.2 FT LT, TO STATION -L- 130+25±, 13.2 FT LT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

UNIT WEIGHT ( $\gamma$ ) = 120 LB/CF  
 FRICTION ANGLE ( $\phi$ ) = 32 DEGREES  
 COHESION (c) = 0 LB/SF  
 GROUNDWATER ELEVATION = 582 FT

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM STATION -L- 129+75±, 13.2 FT LT, TO STATION -L- 130+25±, 13.2 FT LT. 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 -L- 129+75±, 13.2 FT LT, TO STATION -L- 130+25±, 13.2 FT LT MAY NOT PENETRATE BELOW ELEVATION 578 FT DUE TO OBSTRUCTIONS, VERY DENSE OR HARD SOIL, BOULDERS OR WEATHERED OR HARD ROCK.

DO NOT USE A TEMPORARY WALL FOR TEMPORARY SHORING FROM STATION -L- 129+75±, 13.2 FT LT, TO STATION -L- 130+25±, 13.2 FT LT.

AT THE CONTRACTOR'S OPTION, USE STANDARD TEMPORARY SHORING FOR TEMPORARY SHORING FROM STATION -L- 129+75±, 13.2 FT LT, TO STATION -L- 130+25±, 13.2 FT LT. SEE STANDARD DETAIL NO. 1801.01 FOR STANDARD TEMPORARY SHORING.

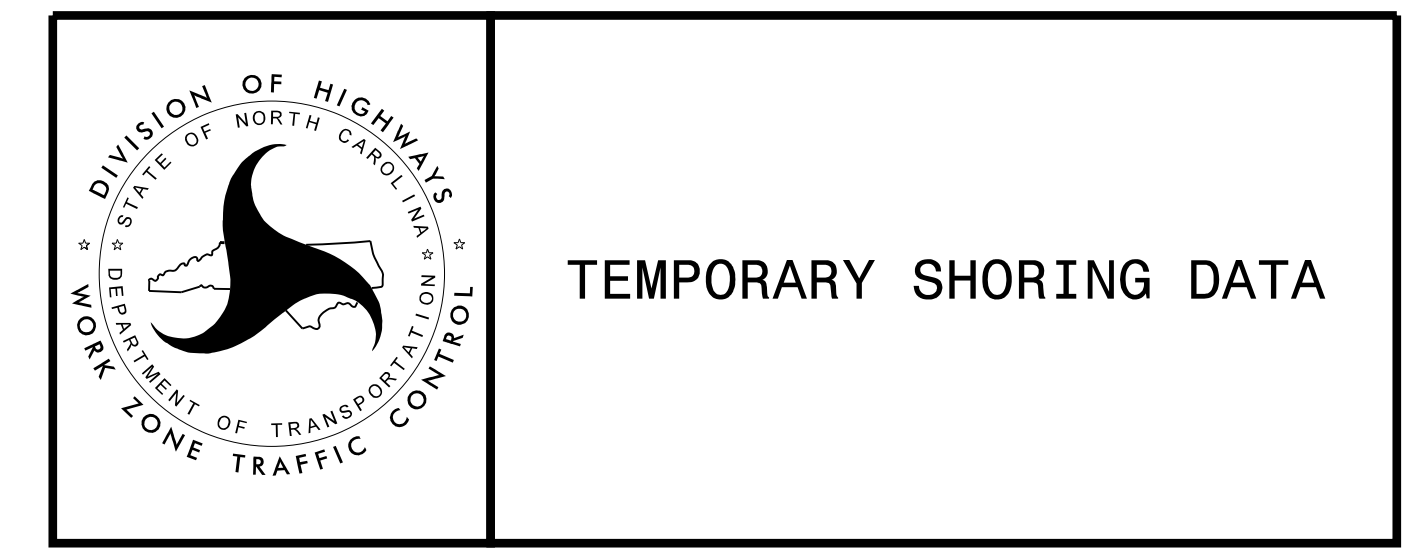
IT MAY BE PREFERRED TO USE A TEMPORARY SOIL NAIL WALL FOR TEMPORARY SHORING FROM STATION -L- 129+75±, 13.2 FT LT, TO STATION -L- 130+25±, 13.2 FT LT. FOR TEMPORARY SOIL NAIL WALLS, SEE TEMPORARY SOIL NAIL WALLS PROVISION.

SHORING LOCATION NO. 14

ELIMINATED

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 USER: ERBROOKS  
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 PENTABLE: NCDOT\_tcp.tbl  
 TIME: 10:10:25 AM  
 DATE: 12/10/2018  
 REVISIONS

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 07/26/2018 AND SEALED BY A PROFESSIONAL ENGINEER, SHIPING YANG, LICENSE # 031361.



SHORING LOCATION NO. 15

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

TEMPORARY SHORING IS REQUIRED FOR THE CULVERT INSTALLATION FROM STATION -L- 135+78±, 14.8 FT LT, TO STATION -L- 136+22±, 14.9 FT LT.

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

DESIGN TEMPORARY SHORING FROM STATION -L- 135+78±, 14.8 FT LT, TO STATION -L- 136+22±, 14.9 FT LT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

UNIT WEIGHT ( $\gamma$ ) = 120 LB/CF  
 FRICTION ANGLE ( $\phi$ ) = 32 DEGREES  
 COHESION (c) = 0 LB/SF  
 GROUNDWATER ELEVATION = 565 FT

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM STATION -L- 135+78±, 14.8 FT LT, TO STATION -L- 136+22±, 14.9 FT LT. 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 -L- 135+78±, 14.8 FT LT, TO STATION -L- 136+22±, 14.9 FT LT MAY NOT PENETRATE BELOW ELEVATION 560 FT DUE TO OBSTRUCTIONS, VERY DENSE OR HARD SOIL, BOULDERS OR WEATHERED OR HARD ROCK.

DO NOT USE A TEMPORARY WALL FOR TEMPORARY SHORING FROM STATION -L- 135+78±, 14.8 FT LT, TO STATION -L- 136+22±, 14.9 FT LT.

AT THE CONTRACTOR'S OPTION, USE STANDARD TEMPORARY SHORING FOR TEMPORARY SHORING FROM STATION -L- 135+78±, 14.8 FT LT, TO STATION -L- 136+22±, 14.9 FT LT. SEE STANDARD DETAIL NO. 1801.01 FOR STANDARD TEMPORARY SHORING.

IT MAY BE PREFERRED TO USE A TEMPORARY SOIL NAIL WALL FOR TEMPORARY SHORING FROM STATION -L- 135+78±, 14.8 FT LT, TO STATION -L- 136+22±, 14.9 FT LT. FOR TEMPORARY SOIL NAIL WALLS, SEE TEMPORARY SOIL NAIL WALLS PROVISION.

SHORING LOCATION NO. 16

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

TEMPORARY SHORING IS REQUIRED FOR THE CULVERT INSTALLATION FROM STATION -L- 144+22±, 5.0 FT LT, TO STATION -L- 144+65±, 5.0 FT LT.

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

DESIGN TEMPORARY SHORING FROM STATION -L- 144+22±, 5.0 FT LT, TO STATION -L- 144+65±, 5.0 FT LT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

UNIT WEIGHT ( $\gamma$ ) = 120 LB/CF  
 FRICTION ANGLE ( $\phi$ ) = 32 DEGREES  
 COHESION (c) = 0 LB/SF  
 GROUNDWATER ELEVATION = 535 FT

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM STATION -L- 144+22±, 5.0 FT LT, TO STATION -L- 144+65±, 5.0 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 -L- 144+22±, 5.0 FT LT, TO STATION -L- 144+65±, 5.0 FT LT. SEE GEOTECHNICAL STANDARD DETAIL NO. 1801.02 FOR STANDARD TEMPORARY WALLS.

SHORING LOCATION NO. 17

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

TEMPORARY SHORING IS REQUIRED FOR THE CULVERT INSTALLATION FROM STATION -L- 144+65±, 5.0 FT LT, TO STATION -L- 145+00±, 13.0 FT LT.

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

DESIGN TEMPORARY SHORING FROM STATION -L- 144+65±, 5.0 FT LT, TO STATION -L- 145+00±, 13.0 FT LT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

UNIT WEIGHT ( $\gamma$ ) = 120 LB/CF  
 FRICTION ANGLE ( $\phi$ ) = 32 DEGREES  
 COHESION (c) = 0 LB/SF  
 GROUNDWATER ELEVATION = 535 FT

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM STATION -L- 144+65±, 5.0 FT LT, TO STATION -L- 145+00±, 13.0 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 -L- 144+65±, 5.0 FT LT, TO STATION -L- 145+00±, 13.0 FT LT. SEE GEOTECHNICAL STANDARD DETAIL NO. 1801.02 FOR STANDARD TEMPORARY WALLS.

SHORING LOCATION NO. 18

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

TEMPORARY SHORING IS REQUIRED FOR THE CULVERT INSTALLATION FROM STATION -L- 145+00±, 13.0 FT LT, TO STATION -L- 145+40±, 13.0 FT LT.

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

DESIGN TEMPORARY SHORING FROM STATION -L- 145+00±, 13.0 FT LT, TO STATION -L- 145+40±, 13.0 FT LT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

UNIT WEIGHT ( $\gamma$ ) = 120 LB/CF  
 FRICTION ANGLE ( $\phi$ ) = 32 DEGREES  
 COHESION (c) = 0 LB/SF  
 GROUNDWATER ELEVATION = 538 FT

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM STATION -L- 145+00±, 13.0 FT LT, TO STATION -L- 145+40±, 13.0 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 -L- 145+00±, 13.0 FT LT, TO STATION -L- 145+40±, 13.0 FT LT. SEE GEOTECHNICAL STANDARD DETAIL NO. 1801.02 FOR STANDARD TEMPORARY WALLS.

SHORING LOCATION NO. 19

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

TEMPORARY SHORING IS REQUIRED FOR THE CULVERT INSTALLATION FROM STATION -L- 148+86±, 13.0 FT LT, TO STATION -L- 149+43±, 13.0 FT LT.

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

DESIGN TEMPORARY SHORING FROM STATION -L- 148+86±, 13.0 FT LT, TO STATION -L- 149+43±, 13.0 FT LT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

UNIT WEIGHT ( $\gamma$ ) = 120 LB/CF  
 FRICTION ANGLE ( $\phi$ ) = 32 DEGREES  
 COHESION (c) = 0 LB/SF  
 GROUNDWATER ELEVATION = 540 FT

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM STATION -L- 148+86±, 13.0 FT LT, TO STATION -L- 149+43±, 13.0 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 -L- 148+86±, 13.0 FT LT, TO STATION -L- 149+43±, 13.0 FT LT. SEE GEOTECHNICAL STANDARD DETAIL NO. 1801.02 FOR STANDARD TEMPORARY WALLS.

SHORING LOCATION NO. 20

ELIMINATED

SHORING LOCATION NO. 21

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

TEMPORARY SHORING IS REQUIRED FOR THE CULVERT INSTALLATION FROM STATION -L- 198+67±, 15.0 FT RT, TO STATION -L- 199+33±, 13.3 FT RT.

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

DESIGN TEMPORARY SHORING FROM STATION -L- 198+67±, 15.0 FT RT, TO STATION -L- 199+33±, 13.3 FT RT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

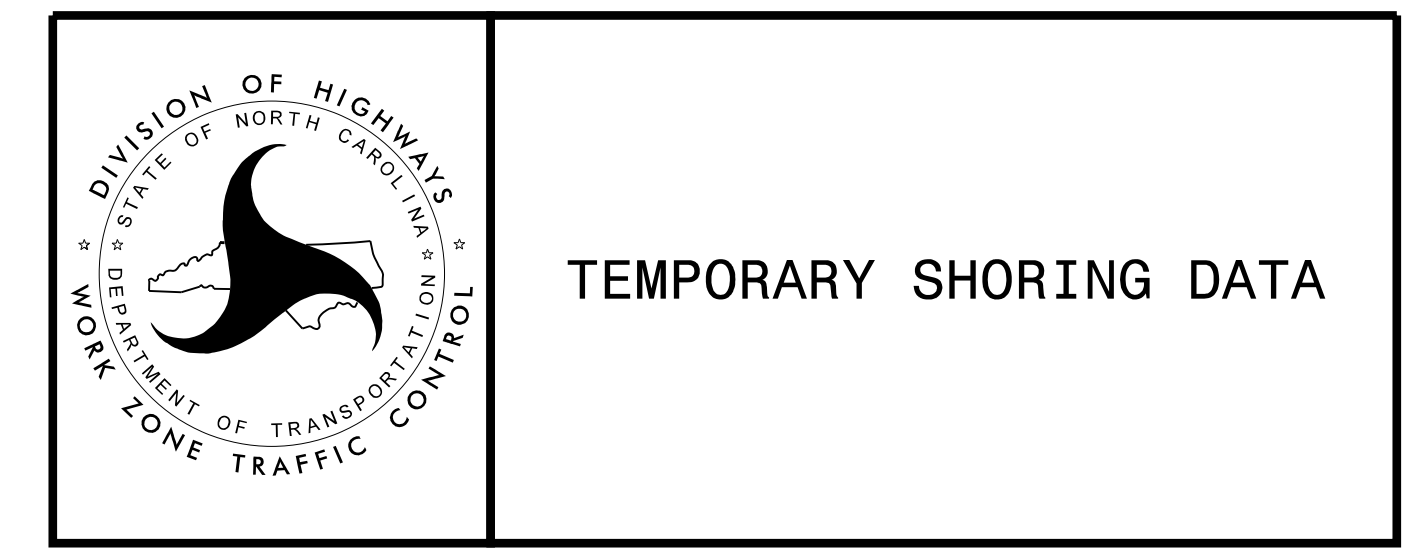
UNIT WEIGHT ( $\gamma$ ) = 120 LB/CF  
 FRICTION ANGLE ( $\phi$ ) = 32 DEGREES  
 COHESION (c) = 0 LB/SF  
 GROUNDWATER ELEVATION = 566 FT

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM STATION -L- 198+67±, 15.0 FT RT, TO STATION -L- 199+33±, 13.3 FT RT. 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 -L- 198+67±, 15.0 FT RT, TO STATION -L- 199+33±, 13.3 FT RT. SEE GEOTECHNICAL STANDARD DETAIL NO. 1801.02 FOR STANDARD TEMPORARY WALLS.

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 USER: ERBROOKS  
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 PENTABLE: NCDOT\_color\_50.plt  
 TIME: 10:10:26 AM  
 DATE: 12/10/2018  
 REVISIONS

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 07/26/2018 AND SEALED BY A PROFESSIONAL ENGINEER, SHIPING YANG, LICENSE # 031361.



SHORING LOCATION NO. 22

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

TEMPORARY SHORING IS REQUIRED FOR THE CULVERT INSTALLATION FROM STATION -L- 216+98±, 15.0 FT RT, TO STATION -L- 218+58±, 15.0 FT RT.

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

DESIGN TEMPORARY SHORING FROM STATION -L- 216+98±, 15.0 FT RT, TO STATION -L- 218+58±, 15.0 FT RT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

- UNIT WEIGHT ( $\gamma$ ) = 120 LB/CF
- FRICTION ANGLE ( $\phi$ ) = 0 DEGREES
- COHESION (c) = 1200 LB/SF
- GROUNDWATER ELEVATION = 496 FT

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM STATION -L- 216+98±, 15.0 FT RT, TO STATION -L- 218+58±, 15.0 FT RT. 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 -L- 216+98±, 15.0 FT RT, TO STATION -L- 218+58±, 15.0 FT RT. SEE GEOTECHNICAL STANDARD DETAIL NO. 1801.02 FOR STANDARD TEMPORARY WALLS.

SHORING LOCATION NO. 23

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

TEMPORARY SHORING IS REQUIRED FOR THE CULVERT INSTALLATION FROM STATION -L- 236+98±, 15.0 FT RT, TO STATION -L- 237+73±, 15.0 FT RT.

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

DESIGN TEMPORARY SHORING FROM STATION -L- 236+98±, 15.0 FT RT, TO STATION -L- 237+73±, 15.0 FT RT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

- UNIT WEIGHT ( $\gamma$ ) = 120 LB/CF
- FRICTION ANGLE ( $\phi$ ) = 30 DEGREES
- COHESION (c) = 0 LB/SF
- GROUNDWATER ELEVATION = 416 FT

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM STATION -L- 236+98±, 15.0 FT RT, TO STATION -L- 237+73±, 15.0 FT RT. 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 -L- 236+98±, 15.0 FT RT, TO STATION -L- 237+73±, 15.0 FT RT. SEE GEOTECHNICAL STANDARD DETAIL NO. 1801.02 FOR STANDARD TEMPORARY WALLS.

SHORING LOCATION NO. 24

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

TEMPORARY SHORING IS REQUIRED FOR THE CULVERT INSTALLATION FROM STATION -L- 243+08±, 15.3 FT LT, TO STATION -L- 243+52±, 15.4 FT LT.

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

DESIGN TEMPORARY SHORING FROM STATION -L- 243+08±, 15.3 FT LT, TO STATION -L- 243+52±, 15.4 FT LT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

- UNIT WEIGHT ( $\gamma$ ) = 120 LB/CF
- FRICTION ANGLE ( $\phi$ ) = 0 DEGREES
- COHESION (c) = 0 LB/SF
- GROUNDWATER ELEVATION = 418 FT

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM STATION -L- 243+08±, 15.3 FT LT, TO STATION -L- 243+52±, 15.4 FT LT. 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 -L- 243+08±, 15.3 FT LT, TO STATION -L- 243+52±, 15.4 FT LT MAY NOT PENETRATE BELOW ELEVATION 415 FT DUE TO OBSTRUCTIONS, VERY DENSE OR HARD SOIL, BOULDERS OR WEATHERED OR HARD ROCK.

DO NOT USE A TEMPORARY WALL FOR TEMPORARY SHORING FROM STATION -L- 243+08±, 15.3 FT LT, TO STATION -L- 243+52±, 15.4 FT LT.

AT THE CONTRACTOR'S OPTION, USE STANDARD TEMPORARY SHORING FOR TEMPORARY SHORING FROM STATION -L- 243+08±, 15.3 FT LT, TO STATION -L- 243+52±, 15.4 FT LT. SEE STANDARD DETAIL NO. 1801.01 FOR STANDARD TEMPORARY SHORING.

IT MAY BE PREFERRED TO USE A TEMPORARY SOIL NAIL WALL FOR TEMPORARY SHORING FROM STATION -L- 243+08±, 15.3 FT LT, TO STATION -L- 243+52±, 15.4 FT LT. FOR TEMPORARY SOIL NAIL WALLS, SEE TEMPORARY SOIL NAIL WALLS PROVISION.

SHORING LOCATION NO. 25

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

TEMPORARY SHORING IS REQUIRED FOR THE CULVERT INSTALLATION FROM STATION -L- 259+25±, 9.0 FT LT, TO STATION -L- 259+90±, 9.0 FT LT.

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

DESIGN TEMPORARY SHORING FROM STATION -L- 259+25±, 9.0 FT LT, TO STATION -L- 259+90±, 9.0 FT LT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

- UNIT WEIGHT ( $\gamma$ ) = 120 LB/CF
- FRICTION ANGLE ( $\phi$ ) = 30 DEGREES
- COHESION (c) = 0 LB/SF
- GROUNDWATER ELEVATION = 405 FT

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM STATION -L- 259+25±, 9.0 FT LT, TO STATION -L- 259+90±, 9.0 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 -L- 259+25±, 9.0 FT LT, TO STATION -L- 259+90±, 9.0 FT LT. SEE GEOTECHNICAL STANDARD DETAIL NO. 1801.02 FOR STANDARD TEMPORARY WALLS.

SHORING LOCATION NO. 26

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

TEMPORARY SHORING IS REQUIRED FOR THE CULVERT INSTALLATION FROM STATION -L- 275+25±, 13.0 FT LT, TO STATION -L- 277+60±, 13.0 FT LT.

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

DESIGN TEMPORARY SHORING FROM STATION -L- 275+25±, 13.0 FT LT, TO STATION -L- 277+60±, 13.0 FT LT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

- UNIT WEIGHT ( $\gamma$ ) = 120 LB/CF
- FRICTION ANGLE ( $\phi$ ) = 30 DEGREES
- COHESION (c) = 0 LB/SF
- GROUNDWATER ELEVATION = 405 FT

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM STATION -L- 275+25±, 13.0 FT LT, TO STATION -L- 277+60±, 13.0 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 -L- 275+25±, 13.0 FT LT, TO STATION -L- 277+60±, 13.0 FT LT. SEE GEOTECHNICAL STANDARD DETAIL NO. 1801.02 FOR STANDARD TEMPORARY WALLS.

SHORING LOCATION NO. 27

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

TEMPORARY SHORING IS REQUIRED FOR THE CULVERT INSTALLATION FROM STATION -L- 296+36±, 15.0 FT LT, TO STATION -L- 297+75±, 15.0 FT LT.

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

DESIGN TEMPORARY SHORING FROM STATION -L- 296+36±, 15.0 FT LT, TO STATION -L- 297+75±, 15.0 FT LT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

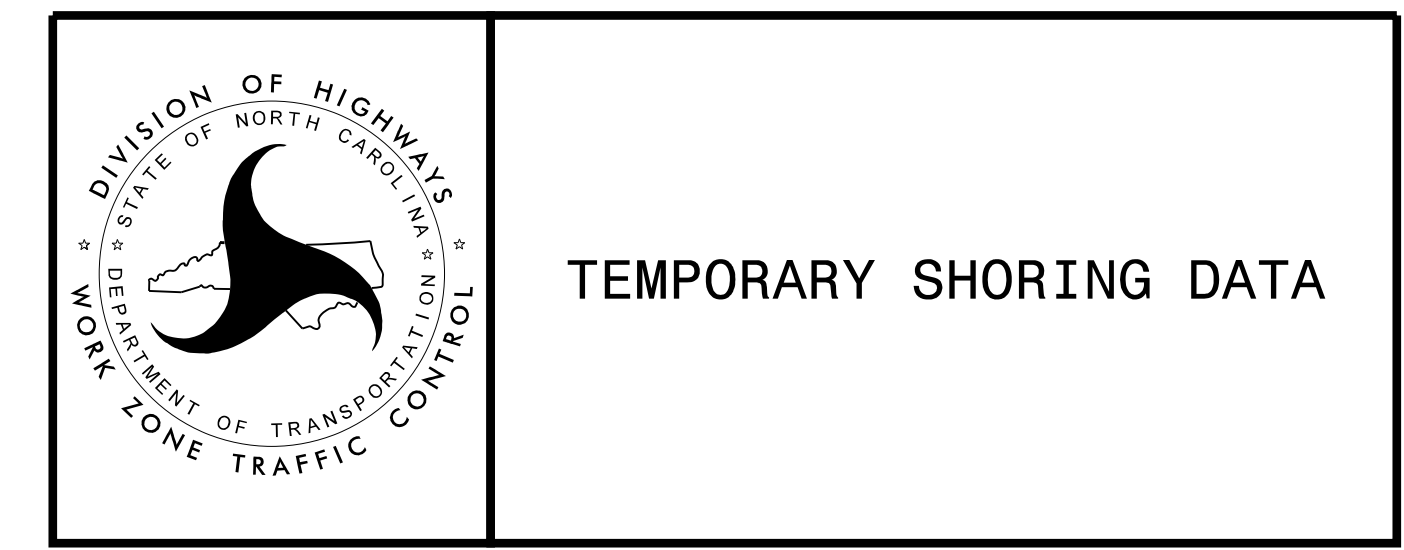
- UNIT WEIGHT ( $\gamma$ ) = 120 LB/CF
- FRICTION ANGLE ( $\phi$ ) = 30 DEGREES
- COHESION (c) = 0 LB/SF
- GROUNDWATER ELEVATION = 330 FT

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM STATION -L- 296+36±, 15.0 FT LT, TO STATION -L- 297+75±, 15.0 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 -L- 296+36±, 15.0 FT LT, TO STATION -L- 297+75±, 15.0 FT LT. SEE GEOTECHNICAL STANDARD DETAIL NO. 1801.02 FOR STANDARD TEMPORARY WALLS.

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 DATE: 12/10/2018  
 REVISIONS

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 07/26/2018 AND SEALED BY A PROFESSIONAL ENGINEER, SHIPING YANG, LICENSE # 031361.



SHORING LOCATION NO. 27A

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

TEMPORARY SHORING IS REQUIRED FOR THE CULVERT INSTALLATION FROM STATION -L- 296+36±, 15.0 FT LT, TO STATION -L- 296+36±, 10.0 FT RT.

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

DESIGN TEMPORARY SHORING FROM STATION -L- 296+36±, 15.0 FT LT, TO STATION -L- 296+36±, 10.0 FT RT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

UNIT WEIGHT ( $\gamma$ ) = 120 LB/CF  
 FRICTION ANGLE ( $\phi$ ) = 30 DEGREES  
 COHESION (c) = 0 LB/SF  
 GROUNDWATER ELEVATION = 330 FT

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM STATION -L- 296+36±, 15.0 FT LT, TO STATION -L- 296+36±, 10.0 FT RT. 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 -L- 296+36±, 15.0 FT LT, TO STATION -L- 296+36±, 10.0 FT RT. SEE GEOTECHNICAL STANDARD DETAIL NO. 1801.02 FOR STANDARD TEMPORARY WALLS.

SHORING LOCATION NO. 28

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

TEMPORARY SHORING IS REQUIRED FOR THE CULVERT INSTALLATION FROM STATION -L- 304+70±, 4.0 FT RT, TO STATION -L- 305+80±, 4.0 FT RT.

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

DESIGN TEMPORARY SHORING FROM STATION -L- 304+70±, 4.0 FT RT, TO STATION -L- 305+80±, 4.0 FT RT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

UNIT WEIGHT ( $\gamma$ ) = 120 LB/CF  
 FRICTION ANGLE ( $\phi$ ) = 30 DEGREES  
 COHESION (c) = 0 LB/SF  
 GROUNDWATER ELEVATION = 286 FT

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM STATION -L- 304+70±, 4.0 FT RT, TO STATION -L- 305+80±, 4.0 FT RT. 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 -L- 304+70±, 4.0 FT RT, TO STATION -L- 305+80±, 4.0 FT RT. SEE GEOTECHNICAL STANDARD DETAIL NO. 1801.02 FOR STANDARD TEMPORARY WALLS.

SHORING LOCATION NO. 29

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

TEMPORARY SHORING IS REQUIRED FOR THE CULVERT INSTALLATION FROM STATION -L- 304+75±, 20.5 FT RT, TO STATION -L- 305+55±, 24.1 FT RT.

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

DESIGN TEMPORARY SHORING FROM STATION -L- 304+75±, 20.5 FT RT, TO STATION -L- 305+55±, 24.1 FT RT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

UNIT WEIGHT ( $\gamma$ ) = 120 LB/CF  
 FRICTION ANGLE ( $\phi$ ) = 30 DEGREES  
 COHESION (c) = 0 LB/SF  
 GROUNDWATER ELEVATION = 286 FT

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM STATION -L- 304+75±, 20.5 FT RT, TO STATION -L- 305+55±, 24.1 FT 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 -L- 304+75±, 20.5 FT RT, TO STATION -L- 305+55±, 24.1 FT RT MAY NOT PENETRATE BELOW ELEVATION 288 FT DUE TO OBSTRUCTIONS, VERY DENSE OR HARD SOIL, BOULDERS OR WEATHERED OR HARD ROCK.

DO NOT USE A TEMPORARY WALL FOR TEMPORARY SHORING FROM STATION -L- 304+75±, 20.5 FT RT, TO STATION -L- 305+55±, 24.1 FT RT.

IT MAY BE PREFERRED TO USE A TEMPORARY SOIL NAIL WALL FOR TEMPORARY SHORING FROM STATION -L- 304+75±, 20.5 FT RT, TO STATION -L- 305+55±, 24.1 FT RT. FOR TEMPORARY SOIL NAIL WALLS, SEE TEMPORARY SOIL NAIL WALLS PROVISION.

SHORING LOCATION NO. 30

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

TEMPORARY SHORING IS REQUIRED FOR THE CULVERT INSTALLATION FROM STATION -L- 326+30 ±, 15.0\* LT, TO STATION -L- 326+70 ±, 15.0\* LT.

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

DESIGN TEMPORARY SHORING FROM STATION -L- 326+30±, 15.0 FT LT, TO STATION -L- 326+70±, 15.0 FT LT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

UNIT WEIGHT ( $\gamma$ ) = 120 LB/CF  
 FRICTION ANGLE ( $\phi$ ) = 30 DEGREES  
 COHESION (c) = 0 LB/SF  
 GROUNDWATER ELEVATION = 386 FT

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM STATION -L- 326+30±, 15.0 FT LT, TO STATION -L- 326+70±, 15.0 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 -L- 326+30±, 15.0 FT LT, TO STATION -L- 326+70±, 15.0 FT LT. SEE GEOTECHNICAL STANDARD DETAIL NO. 1801.02 FOR STANDARD TEMPORARY WALLS.

SHORING NO. 31 WILL BE INSTALLED DURING TIP PROJECT B-4974 CONSTRUCTION AND REMAIN IN PLACE UNTIL REMOVED DURING R-2530B CONSTRUCTION.

SHORING LOCATION NO. 31

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

TEMPORARY SHORING IS REQUIRED FOR THE CULVERT INSTALLATION FROM STATION -L- 334+83±, 9.0 FT RT, TO STATION -L- 335+40±, 8.2 FT RT.

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

DESIGN TEMPORARY SHORING FROM STATION -L- 334+83±, 9.0 FT RT, TO STATION -L- 335+40±, 8.2 FT RT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

UNIT WEIGHT ( $\gamma$ ) = 120 LB/CF  
 FRICTION ANGLE ( $\phi$ ) = 0 DEGREES  
 COHESION (c) = 400 LB/SF  
 GROUNDWATER ELEVATION = 306 FT

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM STATION -L- 334+83±, 9.0 FT RT, TO STATION -L- 335+40±, 8.2 FT 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 -L- 334+83±, 9.0 FT RT, TO STATION -L- 335+40±, 8.2 FT RT MAY NOT PENETRATE BELOW ELEVATION 300 FT DUE TO OBSTRUCTIONS, VERY DENSE OR HARD SOIL, BOULDERS OR WEATHERED OR HARD ROCK.

DO NOT USE A TEMPORARY WALL FOR TEMPORARY SHORING FROM STATION -L- 334+83±, 9.0 FT RT, TO STATION -L- 335+40±, 8.2 FT RT.

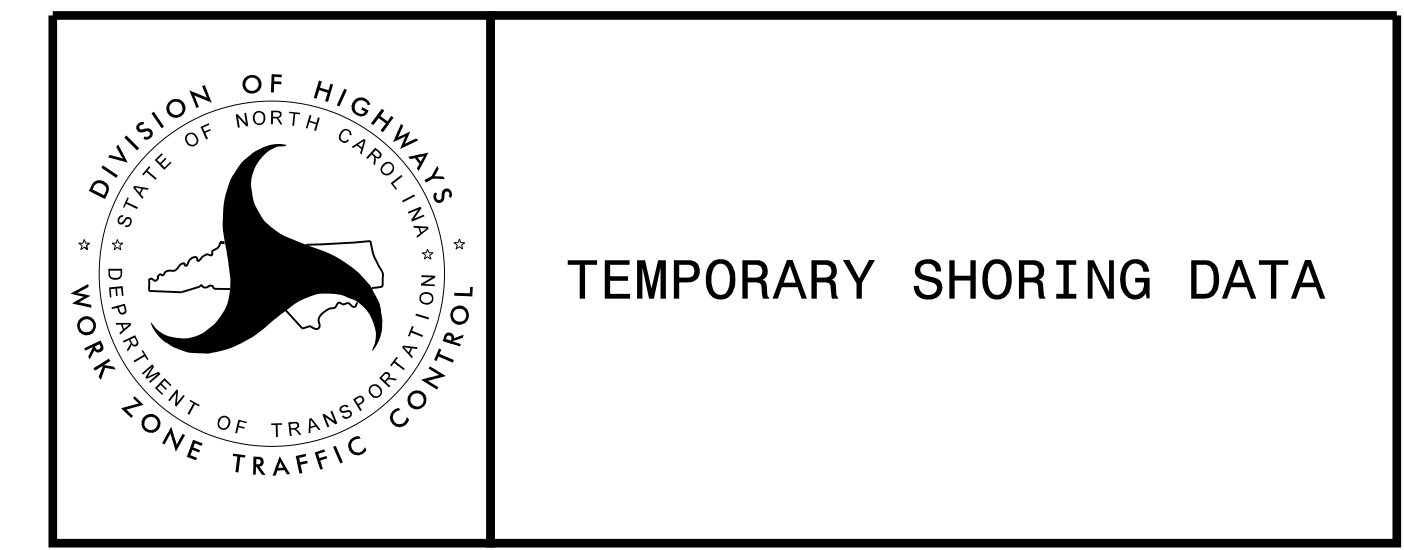
AT THE CONTRACTOR'S OPTION, USE STANDARD TEMPORARY SHORING FOR TEMPORARY SHORING FROM STATION -L- 334+83±, 9.0 FT RT, TO STATION -L- 335+40±, 8.2 FT RT. SEE STANDARD DETAIL NO. 1801.01 FOR STANDARD TEMPORARY SHORING.

IT MAY BE PREFERRED TO USE A TEMPORARY SOIL NAIL WALL FOR TEMPORARY SHORING FROM STATION -L- 334+83±, 9.0 FT RT, TO STATION -L- 335+40±, 8.2 FT RT. FOR TEMPORARY SOIL NAIL WALLS, SEE TEMPORARY SOIL NAIL WALLS PROVISION.

REVISIONS

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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 07/26/2018 AND SEALED BY A PROFESSIONAL ENGINEER, SHIPING YANG, LICENSE # 031361.



SHORING LOCATION NO. 32

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

TEMPORARY SHORING IS REQUIRED FOR THE CULVERT INSTALLATION FROM STATION -L- 362+85±, 43.9 FT LT, TO STATION -L- 363+25±, 39.9 FT LT.

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

DESIGN TEMPORARY SHORING FROM STATION -L- 362+85±, 43.9 FT LT, TO STATION -L- 363+25±, 39.9 FT LT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

- UNIT WEIGHT ( $\gamma$ ) = 120 LB/CF
- FRICTION ANGLE ( $\phi$ ) = 30 DEGREES
- COHESION (c) = 0 LB/SF
- GROUNDWATER ELEVATION = 282 FT

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM STATION -L- 362+85±, 43.9 FT LT, TO STATION -L- 363+25±, 39.9 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 -L- 362+85±, 43.9 FT LT, TO STATION -L- 363+25±, 39.9 FT LT. SEE GEOTECHNICAL STANDARD DETAIL NO. 1801.02 FOR STANDARD TEMPORARY WALLS.

SHORING LOCATION NO. 33

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

TEMPORARY SHORING IS REQUIRED FOR THE CULVERT INSTALLATION FROM STATION -L- 374+90±, 2.5 FT RT, TO STATION -L- 375+75±, 2.5 FT RT.

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

DESIGN TEMPORARY SHORING FROM STATION -L- 374+90±, 2.5 FT RT, TO STATION -L- 375+75±, 2.5 FT RT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

- UNIT WEIGHT ( $\gamma$ ) = 120 LB/CF
- FRICTION ANGLE ( $\phi$ ) = 30 DEGREES
- COHESION (c) = 0 LB/SF
- GROUNDWATER ELEVATION = 310 FT

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM STATION -L- 374+90±, 2.5 FT RT, TO STATION -L- 375+75±, 2.5 FT RT. 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 -L- 374+90±, 2.5 FT RT, TO STATION -L- 375+75±, 2.5 FT RT. SEE GEOTECHNICAL STANDARD DETAIL NO. 1801.02 FOR STANDARD TEMPORARY WALLS.

SHORING LOCATION NO. 34

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

TEMPORARY SHORING IS REQUIRED FOR THE CULVERT INSTALLATION FROM STATION -L- 374+90±, 20.3 FT RT, TO STATION -L- 376+05±, 16.9 FT RT.

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

DESIGN TEMPORARY SHORING FROM STATION -L- 374+90±, 20.3 FT RT, TO STATION -L- 376+05±, 16.9 FT RT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

- UNIT WEIGHT ( $\gamma$ ) = 120 LB/CF
- FRICTION ANGLE ( $\phi$ ) = 30 DEGREES
- COHESION (c) = 0 LB/SF
- GROUNDWATER ELEVATION = 310 FT

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM STATION -L- 374+90±, 20.3 FT RT, TO STATION -L- 376+05±, 16.9 FT RT. THE INFORMATION PROVIDED FOR TEMPORARY SHORING DESIGN WAS ASSUMED AND MAY NOT BE APPLICABLE TO THE ACTUAL SITE CONDITIONS ENCOUNTERED DURING CONSTRUCTION.

DO NOT USE A TEMPORARY WALL FOR TEMPORARY SHORING FROM STATION -L- 374+90±, 20.3 FT RT, TO STATION -L- 376+05±, 16.9 FT RT.

SHORING LOCATION NO. 35

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

TEMPORARY SHORING IS REQUIRED FOR THE CULVERT INSTALLATION FROM STATION -L- 381+00±, 0.0 FT LT, TO STATION -L- 382+25±, 0.0 FT LT.

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

DESIGN TEMPORARY SHORING FROM STATION -L- 381+00±, 0.0 FT LT, TO STATION -L- 382+25±, 0.0 FT LT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

- UNIT WEIGHT ( $\gamma$ ) = 120 LB/CF
- FRICTION ANGLE ( $\phi$ ) = 30 DEGREES
- COHESION (c) = 0 LB/SF
- GROUNDWATER ELEVATION = 311 FT

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM STATION -L- 381+00±, 0.0 FT LT, TO STATION -L- 382+25±, 0.0 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 -L- 381+00±, 0.0 FT LT, TO STATION -L- 382+25±, 0.0 FT LT. SEE GEOTECHNICAL STANDARD DETAIL NO. 1801.02 FOR STANDARD TEMPORARY WALLS.

SHORING LOCATION NO. 36

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

TEMPORARY SHORING IS REQUIRED FOR THE CULVERT INSTALLATION FROM STATION -L- 380+80±, 15.4 FT RT, TO STATION -L- 382+15±, 15.5 FT RT.

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

DESIGN TEMPORARY SHORING FROM STATION -L- 380+80±, 15.4 FT RT, TO STATION -L- 382+15±, 15.5 FT RT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

- UNIT WEIGHT ( $\gamma$ ) = 120 LB/CF
- FRICTION ANGLE ( $\phi$ ) = 30 DEGREES
- COHESION (c) = 0 LB/SF
- GROUNDWATER ELEVATION = 311 FT

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM STATION -L- 380+80±, 15.4 FT RT, TO STATION -L- 382+15±, 15.5 FT 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 -L- 380+80±, 15.4 FT RT, TO STATION -L- 382+15±, 15.5 FT RT MAY NOT PENETRATE BELOW ELEVATION 310 FT DUE TO OBSTRUCTIONS, VERY DENSE OR HARD SOIL, BOULDERS OR WEATHERED OR HARD ROCK.

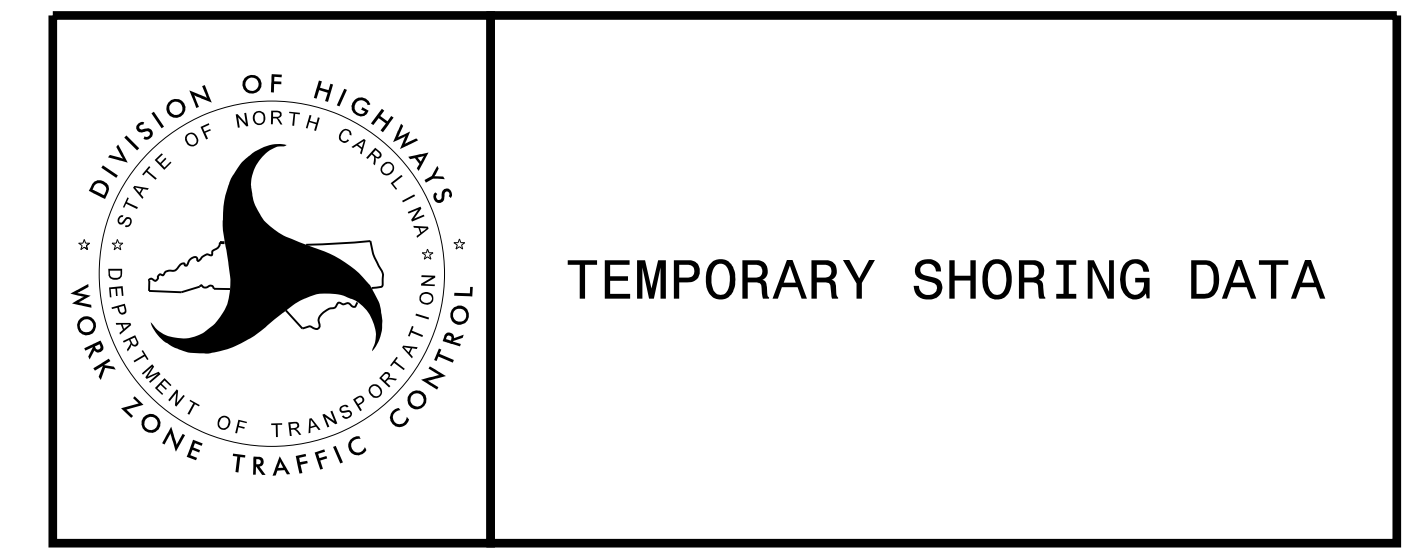
DO NOT USE A TEMPORARY WALL FOR TEMPORARY SHORING FROM STATION -L- 380+80±, 15.4 FT RT, TO STATION -L- 382+15±, 15.5 FT RT.

IT MAY BE PREFERRED TO USE A TEMPORARY SOIL NAIL WALL FOR TEMPORARY SHORING FROM STATION -L- 374+90±, 20.3 FT RT, TO STATION -L- 376+05±, 16.9 FT RT. FOR TEMPORARY SOIL NAIL WALLS, SEE TEMPORARY SOIL NAIL WALLS PROVISION.

REVISIONS

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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 07/26/2018 AND SEALED BY A PROFESSIONAL ENGINEER, SHIPING YANG, LICENSE # 031361.



SHORING LOCATION NO. 37

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

TEMPORARY SHORING IS REQUIRED FOR THE CULVERT INSTALLATION FROM STATION -L- 101+52±, 5.6 FT LT, TO STATION -L- 101+98±, 7.5 FT LT.

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

DESIGN TEMPORARY SHORING FROM STATION -L- 101+52±, 5.6 FT LT, TO STATION -L- 101+98±, 7.5 FT LT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:  
 UNIT WEIGHT ( $\gamma$ ) = 120 LB/CF  
 FRICTION ANGLE ( $\phi$ ) = 30 DEGREES  
 COHESION (c) = 0 LB/SF  
 GROUNDWATER ELEVATION = 550 FT

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM STATION -L- 101+52±, 5.6 FT LT, TO STATION -L- 101+98±, 7.5 FT LT. THE INFORMATION PROVIDED FOR TEMPORARY SHORING DESIGN WAS ASSUMED AND MAY NOT BE APPLICABLE TO THE ACTUAL SITE CONDITIONS ENCOUNTERED DURING CONSTRUCTION.

DO NOT USE A TEMPORARY WALL FOR TEMPORARY SHORING FROM STATION -L- 101+52±, 5.6 FT LT, TO STATION -L- 101+98±, 7.5 FT LT.

AT THE CONTRACTOR'S OPTION, USE STANDARD TEMPORARY SHORING FOR TEMPORARY SHORING FROM STATION -L- 101+52±, 5.6 FT LT, TO STATION -L- 101+98±, 7.5 FT LT. SEE STANDARD DETAIL NO. 1801.01 FOR STANDARD TEMPORARY SHORING.

IT MAY BE PREFERRED TO USE A TEMPORARY SOIL NAIL WALL FOR TEMPORARY SHORING FROM STATION -L- 101+52±, 5.6 FT LT, TO STATION -L- 101+98±, 7.5 FT LT. FOR TEMPORARY SOIL NAIL WALLS, SEE TEMPORARY SOIL NAIL WALLS PROVISION.

SHORING LOCATION NO. 38

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

TEMPORARY SHORING IS REQUIRED FOR THE CULVERT INSTALLATION FROM STATION -L- 101+50±, 5.8 FT RT, TO STATION -L- 102+00±, 6.6 FT RT.

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

DESIGN TEMPORARY SHORING FROM STATION -L- 101+50±, 5.8 FT RT, TO STATION -L- 102+00±, 6.6 FT RT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:  
 UNIT WEIGHT ( $\gamma$ ) = 120 LB/CF  
 FRICTION ANGLE ( $\phi$ ) = 30 DEGREES  
 COHESION (c) = 0 LB/SF  
 GROUNDWATER ELEVATION = 558 FT

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM STATION -L- 101+50±, 5.8 FT RT, TO STATION -L- 102+00±, 6.6 FT RT. 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 -L- 101+50±, 5.8 FT RT, TO STATION -L- 102+00±, 6.6 FT RT. SEE GEOTECHNICAL STANDARD DETAIL NO. 1801.02 FOR STANDARD TEMPORARY WALLS.

SHORING LOCATION NO. 39

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

TEMPORARY SHORING IS REQUIRED FOR THE CULVERT INSTALLATION FROM STATION -L- 358+70±, 7.4 FT LT, TO STATION -L- 359+55±, 1.6 FT RT.

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

DESIGN TEMPORARY SHORING FROM STATION -L- 358+70±, 7.4 FT LT, TO STATION -L- 359+55±, 1.6 FT RT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:  
 UNIT WEIGHT ( $\gamma$ ) = 120 LB/CF  
 FRICTION ANGLE ( $\phi$ ) = 30 DEGREES  
 COHESION (c) = 0 LB/SF  
 GROUNDWATER ELEVATION = 290 FT

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM STATION -L- 358+70±, 7.4 FT LT, TO STATION -L- 359+55±, 1.6 FT 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 -L- 358+70±, 7.4 FT LT, TO STATION -L- 359+55±, 1.6 FT RT MAY NOT PENETRATE BELOW ELEVATION 275 FT DUE TO OBSTRUCTIONS, VERY DENSE OR HARD SOIL, BOULDERS OR WEATHERED OR HARD ROCK.

DO NOT USE A TEMPORARY WALL FOR TEMPORARY SHORING FROM STATION -L- 358+70±, 7.4 FT LT, TO STATION -L- 359+55±, 1.6 FT RT.

IT MAY BE PREFERRED TO USE A TEMPORARY SOIL NAIL WALL FOR TEMPORARY SHORING FROM STATION -L- 358+70±, 7.4 FT LT, TO STATION -L- 359+55±, 1.6 FT RT. FOR TEMPORARY SOIL NAIL WALLS, SEE TEMPORARY SOIL NAIL WALLS PROVISION.

SHORING LOCATION NO. 40

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

TEMPORARY SHORING IS REQUIRED FOR THE CULVERT INSTALLATION FROM STATION -L- 358+80±, 5.5 FT RT, TO STATION -L- 359+58±, 7.8 FT RT.

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

DESIGN TEMPORARY SHORING FROM STATION -L- 358+80±, 5.5 FT RT, TO STATION -L- 359+58±, 7.8 FT RT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:  
 UNIT WEIGHT ( $\gamma$ ) = 120 LB/CF  
 FRICTION ANGLE ( $\phi$ ) = 30 DEGREES  
 COHESION (c) = 0 LB/SF  
 GROUNDWATER ELEVATION = 290 FT

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM STATION -L- 358+80±, 5.5 FT RT, TO STATION -L- 359+58±, 7.8 FT RT. 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 -L- 358+80±, 5.5 FT RT, TO STATION -L- 359+58±, 7.8 FT RT. SEE GEOTECHNICAL STANDARD DETAIL NO. 1801.02 FOR STANDARD TEMPORARY WALLS.

SHORING LOCATION NO. 41

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

TEMPORARY SHORING IS REQUIRED FOR THE CULVERT INSTALLATION FROM STATION -L- 362+55±, 7.4 FT LT, TO STATION -L- 363+45±, 1.6 FT RT.

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

DESIGN TEMPORARY SHORING FROM STATION -L- 362+55±, 7.4 FT LT, TO STATION -L- 363+45±, 1.6 FT RT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:  
 UNIT WEIGHT ( $\gamma$ ) = 120 LB/CF  
 FRICTION ANGLE ( $\phi$ ) = 30 DEGREES  
 COHESION (c) = 0 LB/SF  
 GROUNDWATER ELEVATION = 285 FT

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM STATION -L- 362+55±, 7.4 FT LT, TO STATION -L- 363+45±, 1.6 FT 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 -L- 362+55±, 7.4 FT LT, TO STATION -L- 363+45±, 1.6 FT RT MAY NOT PENETRATE BELOW ELEVATION 270 FT DUE TO OBSTRUCTIONS, VERY DENSE OR HARD SOIL, BOULDERS OR WEATHERED OR HARD ROCK.

DO NOT USE A TEMPORARY WALL FOR TEMPORARY SHORING FROM STATION -L- 362+55±, 7.4 FT LT, TO STATION -L- 363+45±, 1.6 FT RT.

IT MAY BE PREFERRED TO USE A TEMPORARY SOIL NAIL WALL FOR TEMPORARY SHORING FROM STATION -L- 362+55±, 7.4 FT LT, TO STATION -L- 363+45±, 1.6 FT RT. FOR TEMPORARY SOIL NAIL WALLS, SEE TEMPORARY SOIL NAIL WALLS PROVISION.

SHORING LOCATION NO. 42

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

TEMPORARY SHORING IS REQUIRED FOR THE CULVERT INSTALLATION FROM STATION -L- 362+50±, 10.0 FT RT, TO STATION -L- 363+47±, 10.0 FT RT.

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

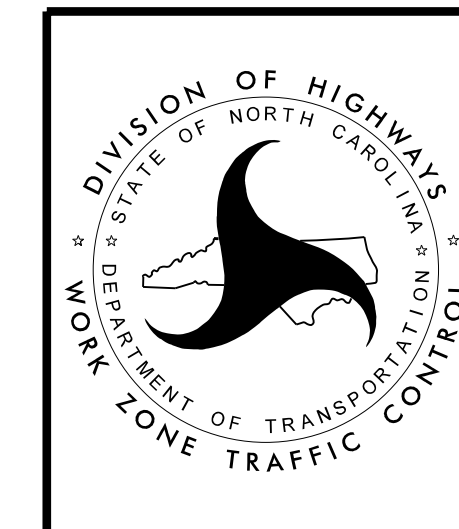
DESIGN TEMPORARY SHORING FROM STATION -L- 362+50±, 10.0 FT RT, TO STATION -L- 363+47±, 10.0 FT RT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:  
 UNIT WEIGHT ( $\gamma$ ) = 120 LB/CF  
 FRICTION ANGLE ( $\phi$ ) = 30 DEGREES  
 COHESION (c) = 0 LB/SF  
 GROUNDWATER ELEVATION = 285 FT

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM STATION -L- 362+50±, 10.0 FT RT, TO STATION -L- 363+47±, 10.0 FT RT. THE INFORMATION PROVIDED FOR TEMPORARY SHORING DESIGN WAS ASSUMED AND MAY NOT BE APPLICABLE TO THE ACTUAL SITE CONDITIONS ENCOUNTERED DURING CONSTRUCTION.

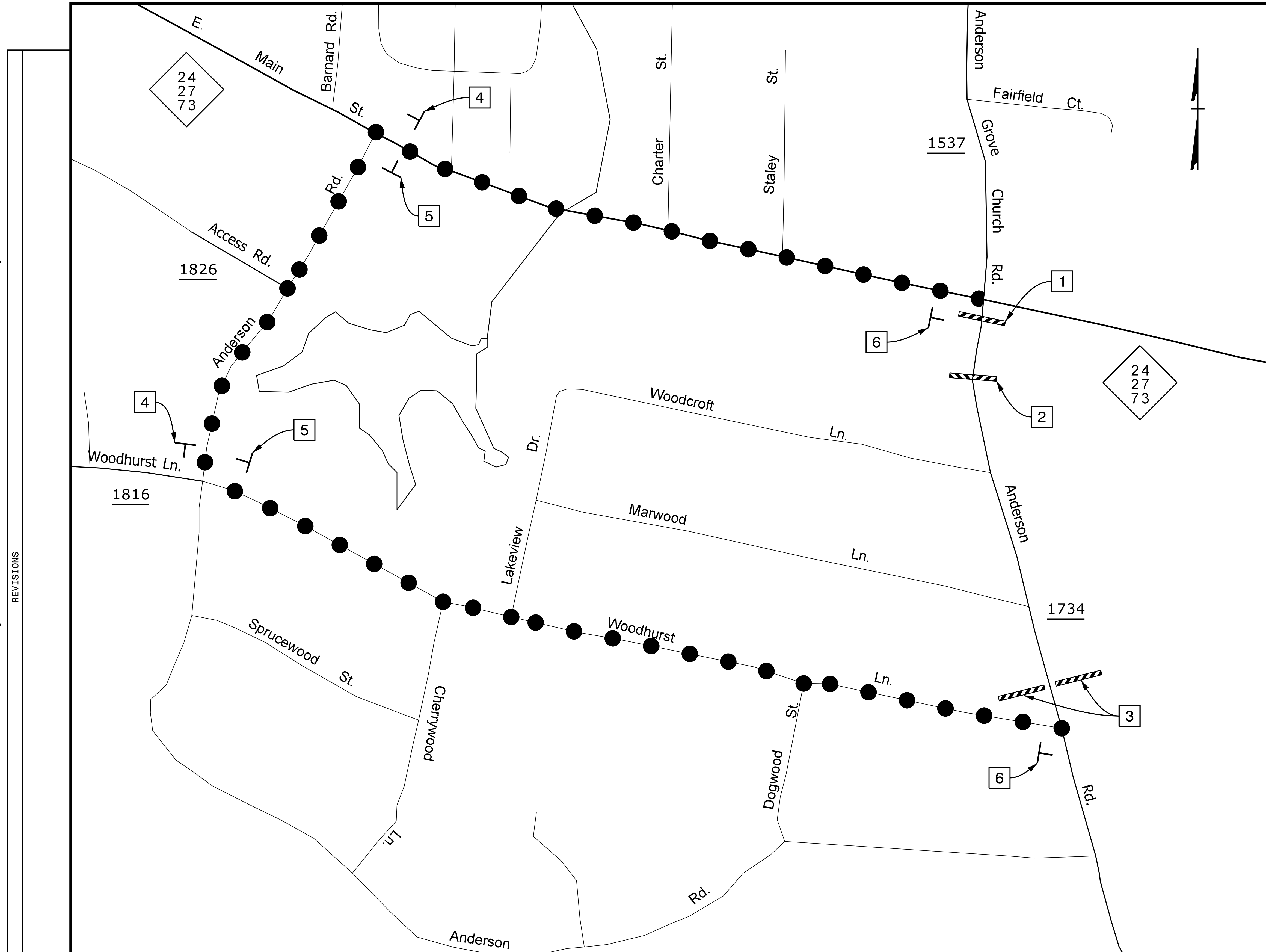
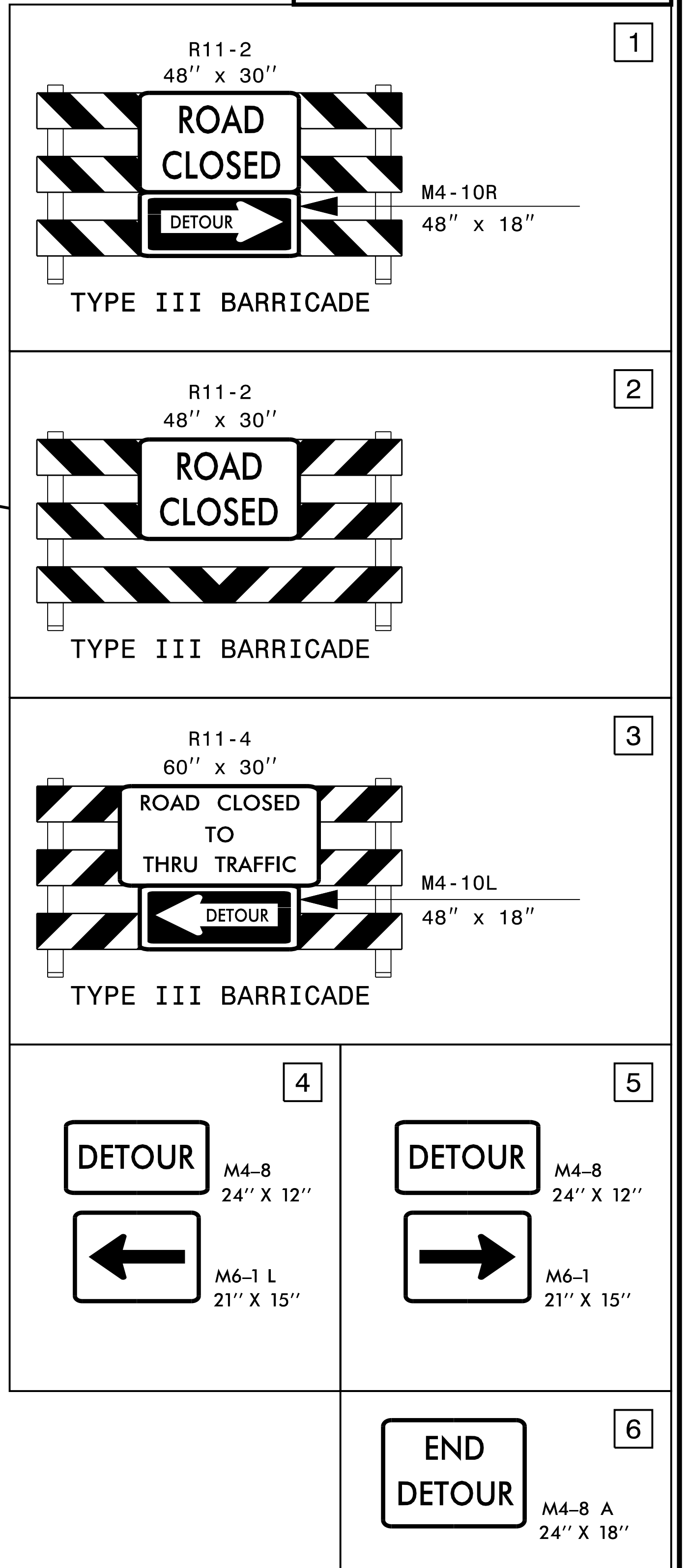
AT THE CONTRACTOR'S OPTION, USE A STANDARD TEMPORARY WALL FOR TEMPORARY SHORING FROM STATION -L- 362+50±, 10.0 FT RT, TO STATION -L- 363+47±, 10.0 FT RT. SEE GEOTECHNICAL STANDARD DETAIL NO. 1801.02 FOR STANDARD TEMPORARY WALLS.

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 USER: ERBROOKS  
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 PENTABLE: NCDOT\_tcp.tbl  
 TIME: 10:10:31 AM  
 DATE: 12/10/2018  
 REVISIONS

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 07/26/2018 AND SEALED BY A PROFESSIONAL ENGINEER, SHIPING YANG, LICENSE # 031361.



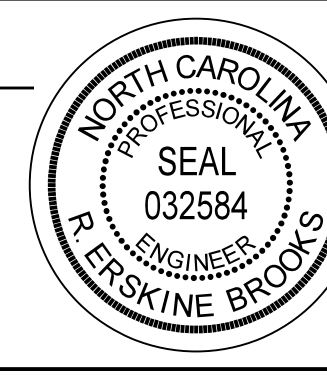
TEMPORARY SHORING DATA

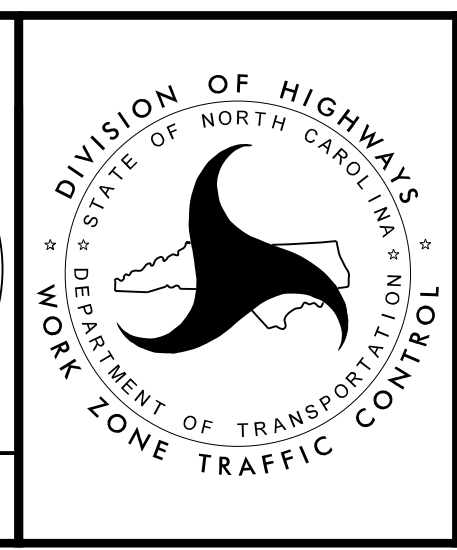


REVISIONS

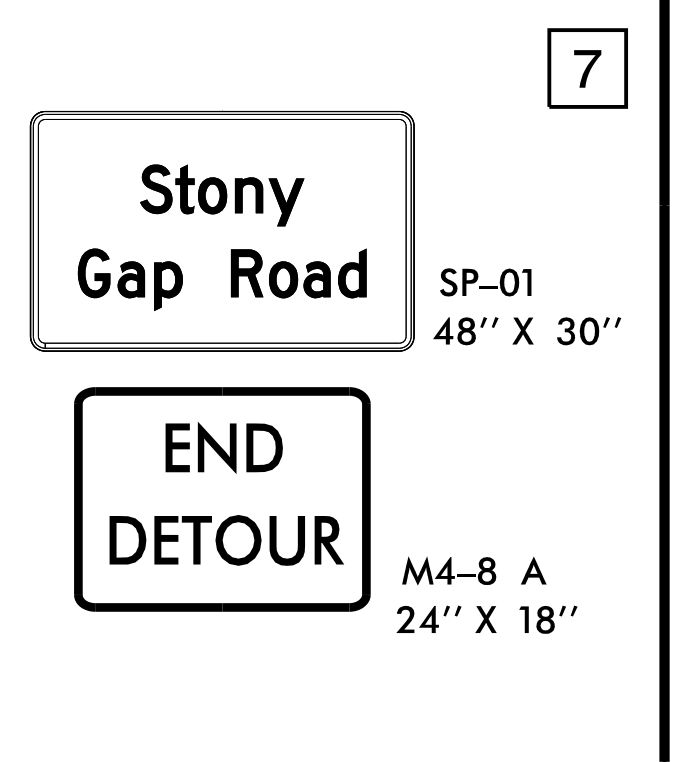
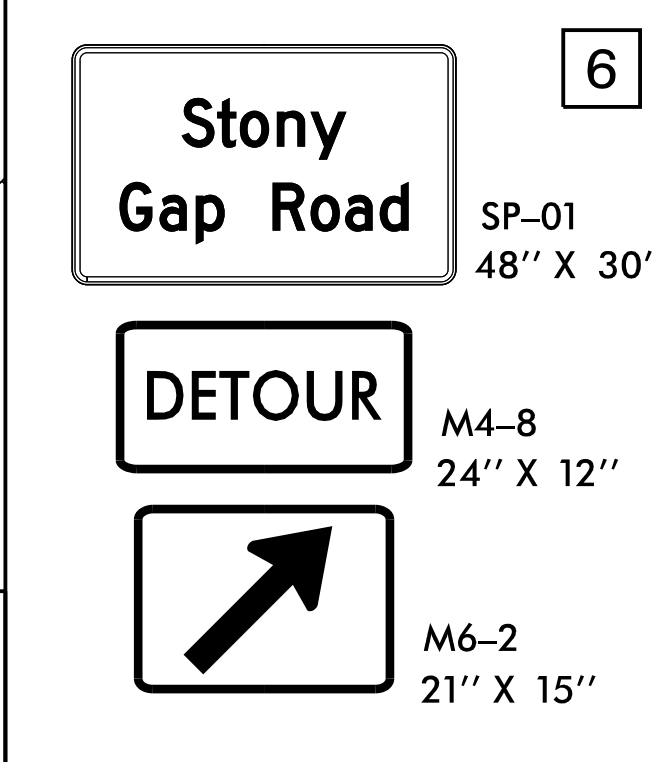
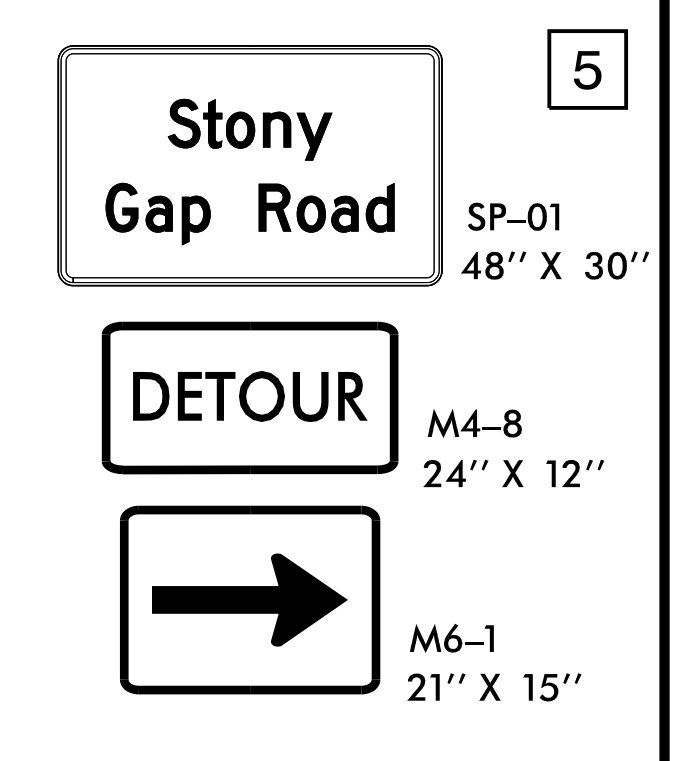
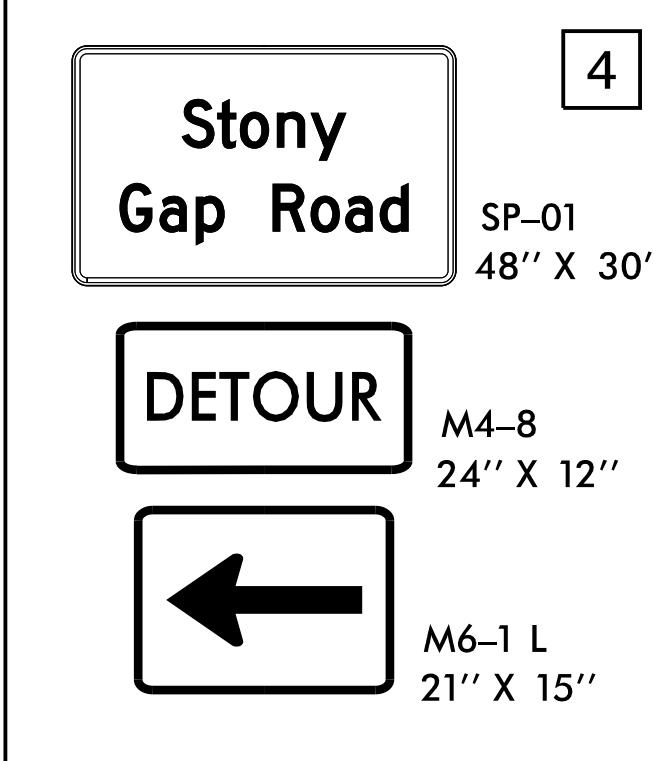
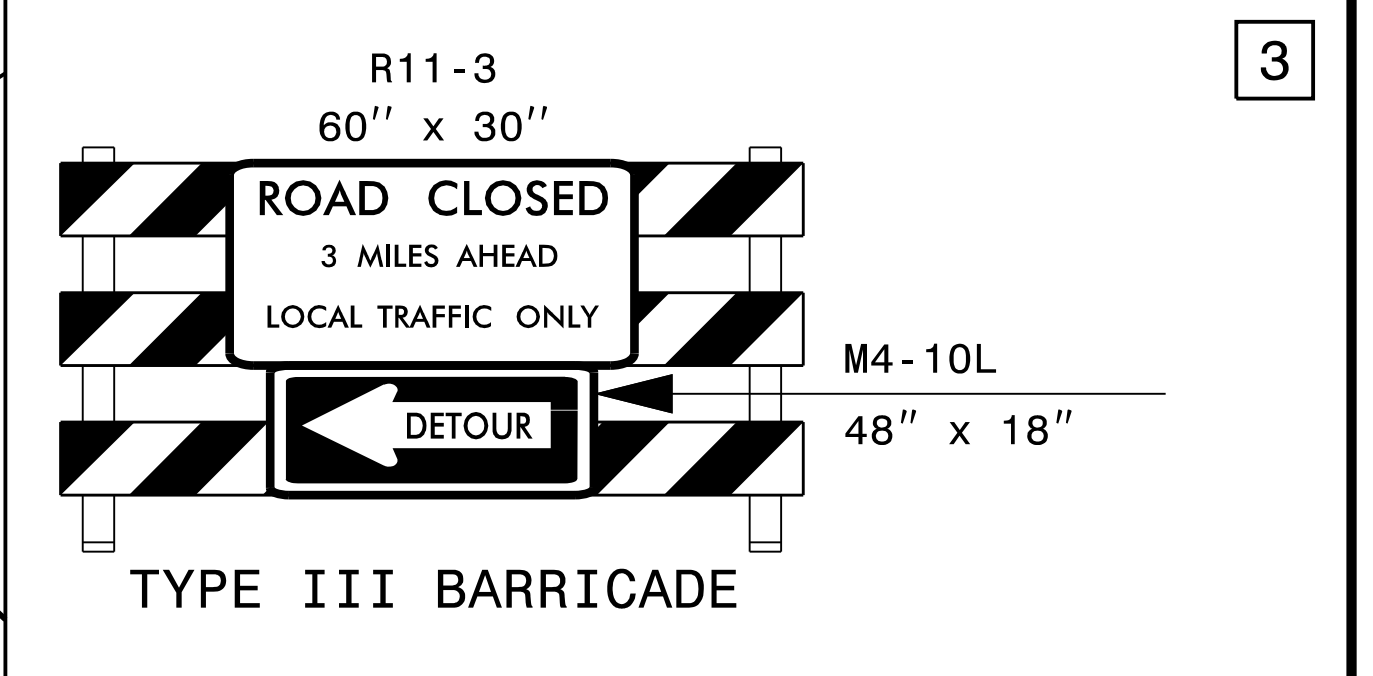
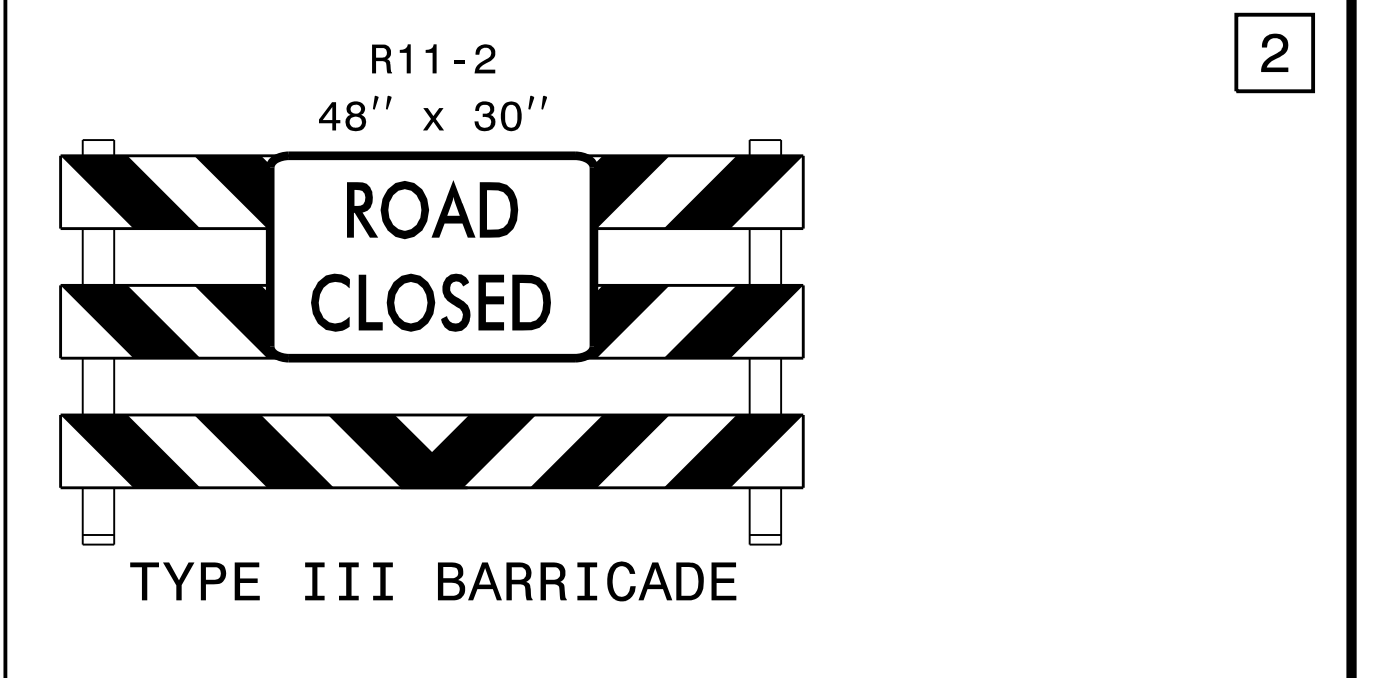
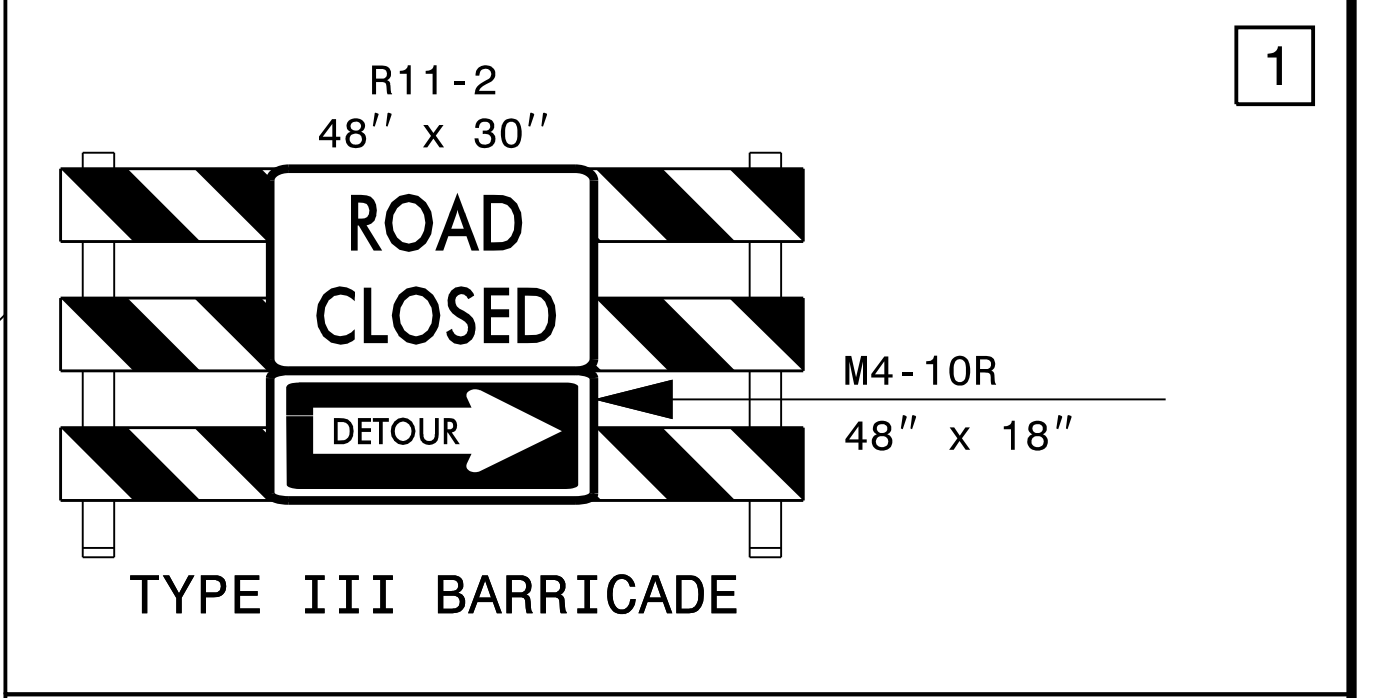
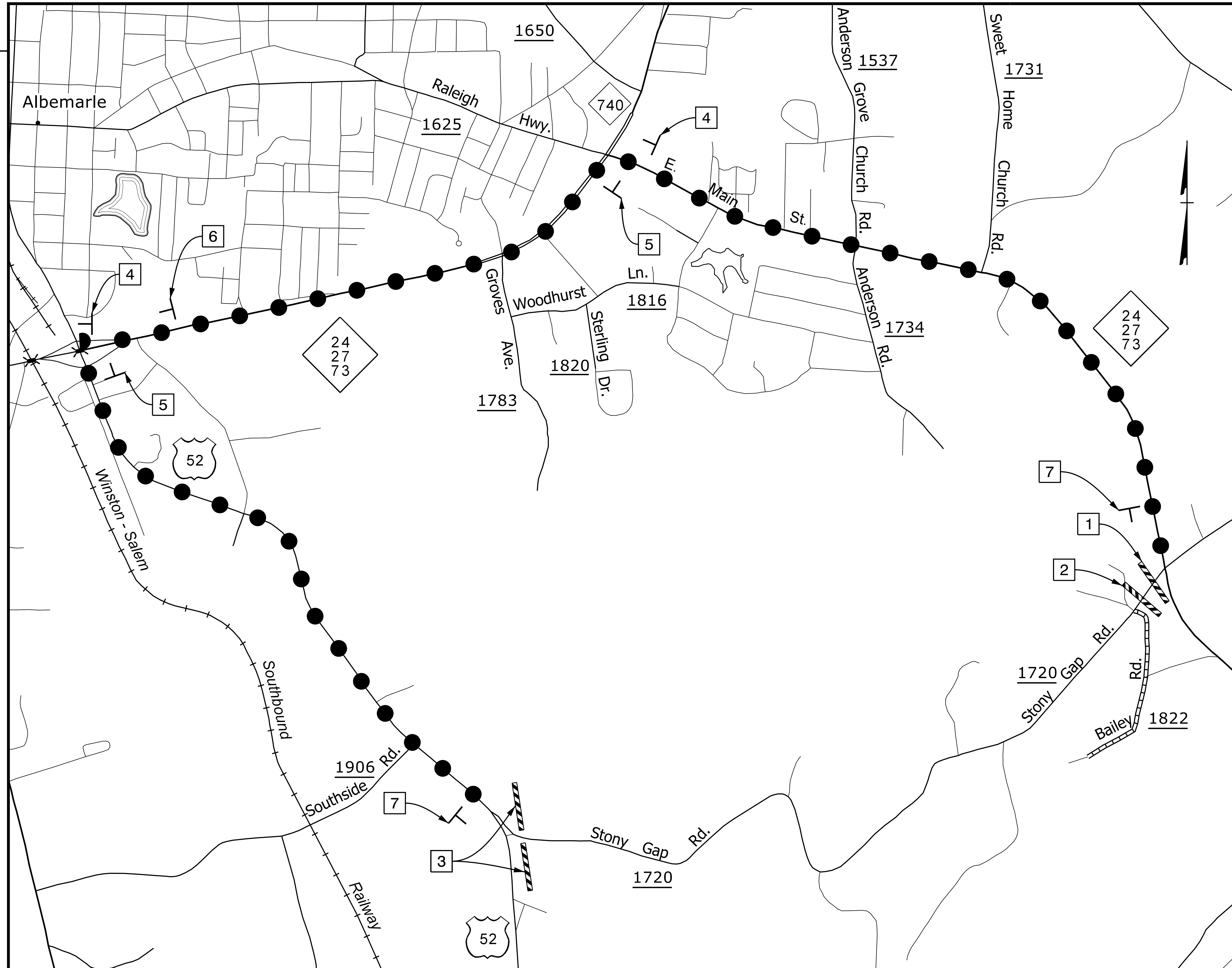
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DETOUR ROUTE = ● ● ●

APPROVED: *P. Erskine Brooks*  
 DATE: 12/18/2018  
 SEAL  
  
**DOCUMENT NOT CONSIDERED FINAL  
 UNLESS ALL SIGNATURES COMPLETED**



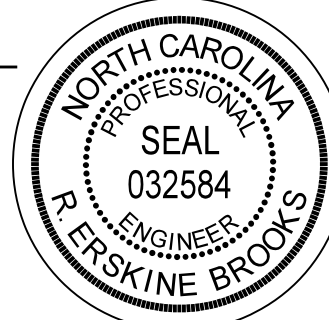
DETOUR ROUTE  
 ANDERSON RD



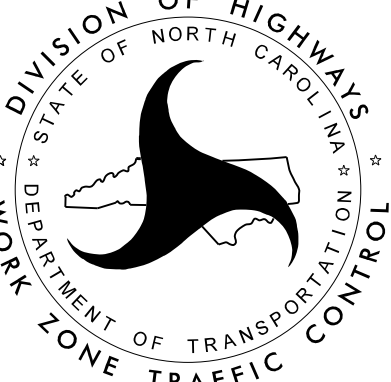
REVISIONS

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APPROVED: *P. Erskine Brooks*  
 DATE: 12/18/2018



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



**DETOUR ROUTE  
STONY GAP RD**

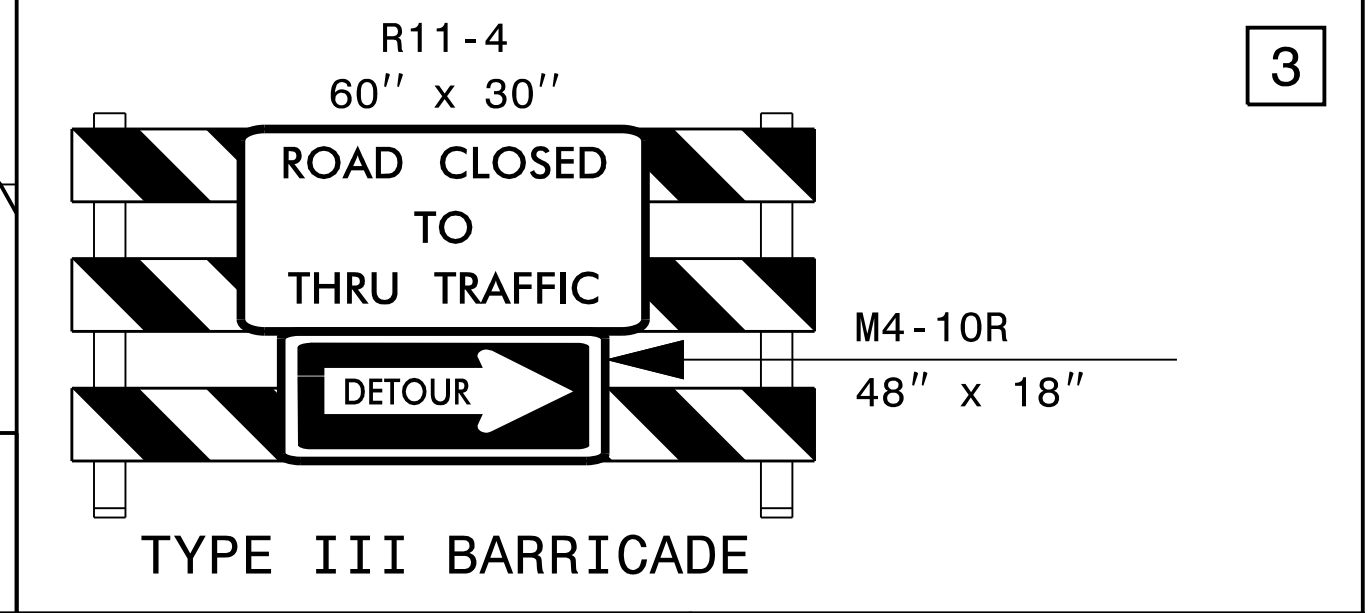
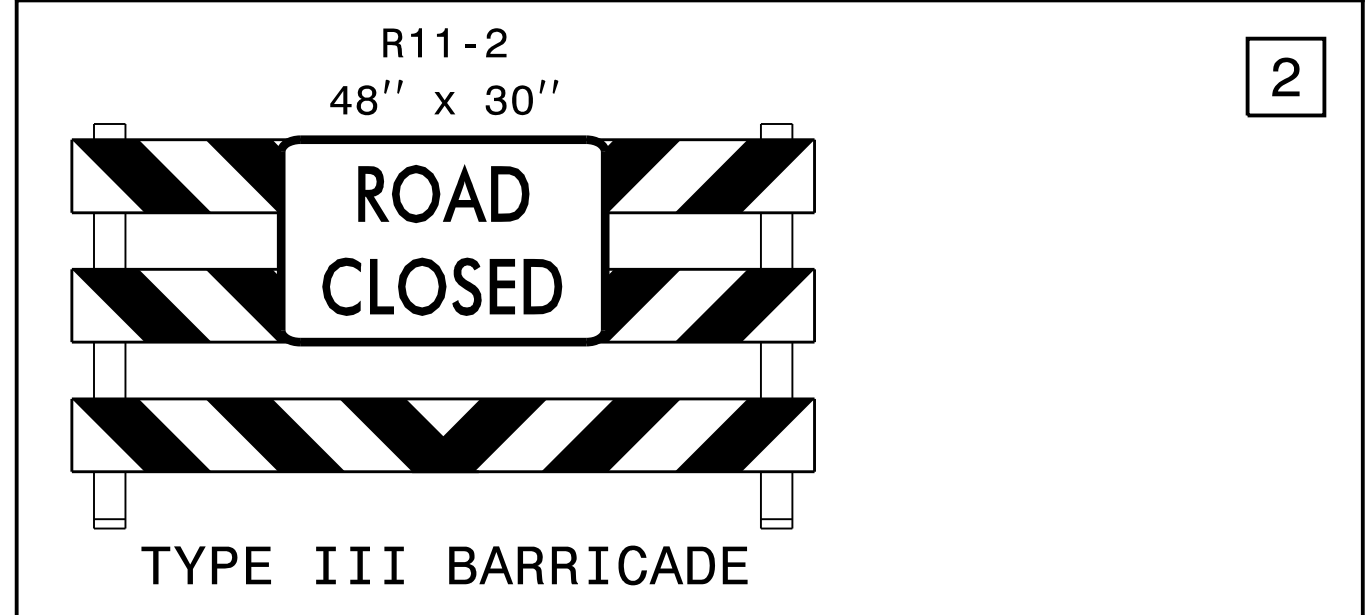
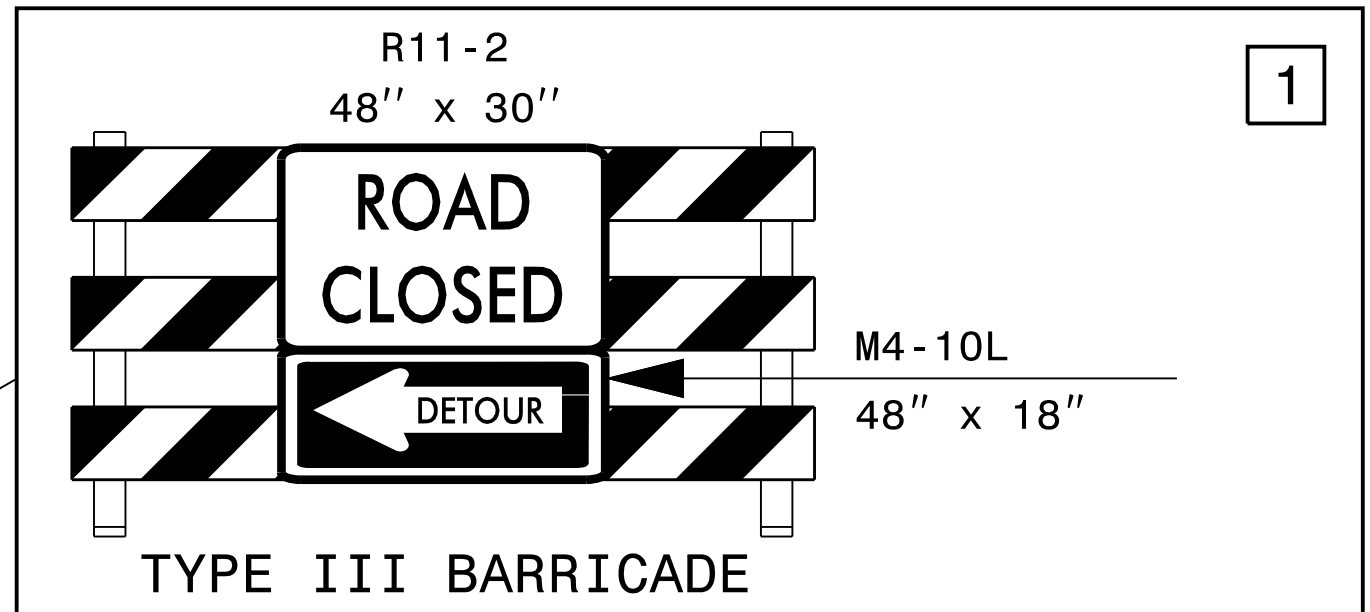
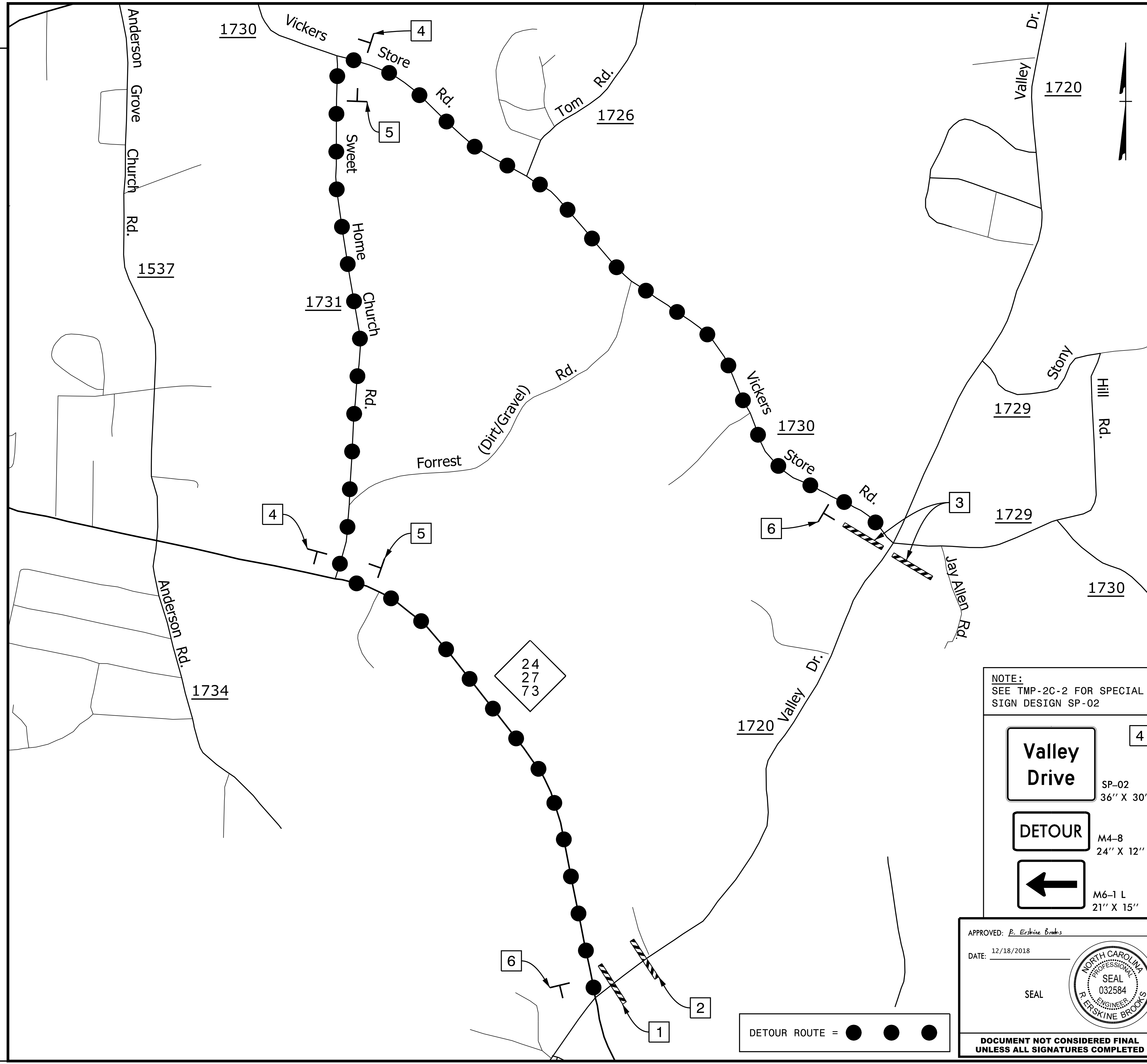
DETOUR ROUTE = ● ● ●

NOTE:  
SEE TMP-2C-1 FOR SPECIAL  
SIGN DESIGN SP-01

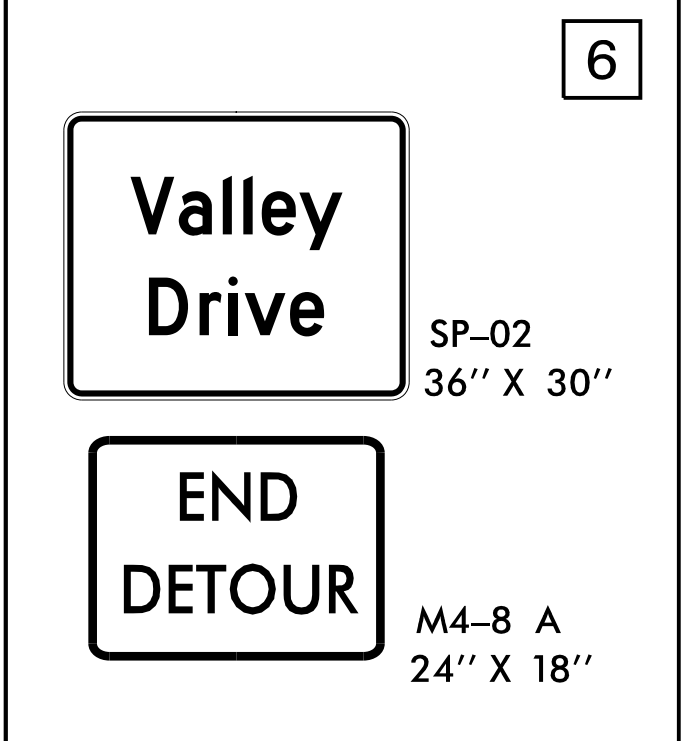
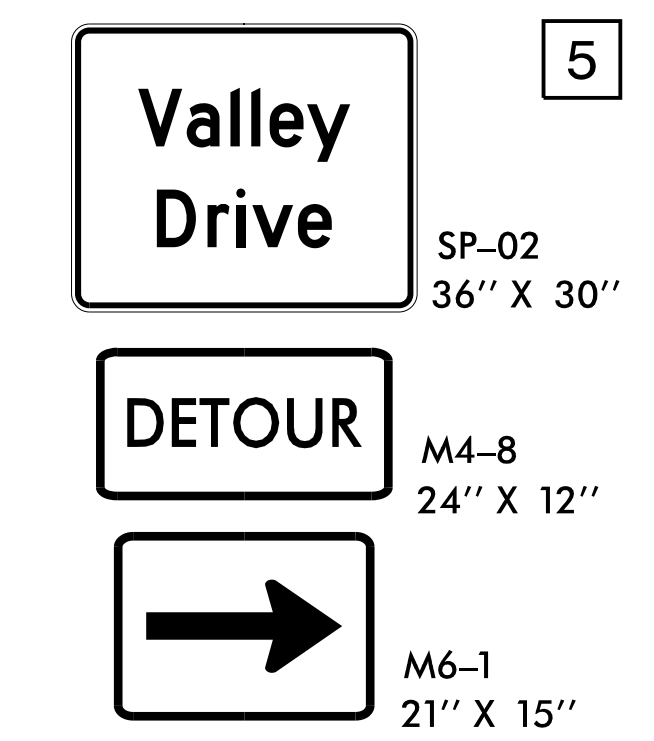
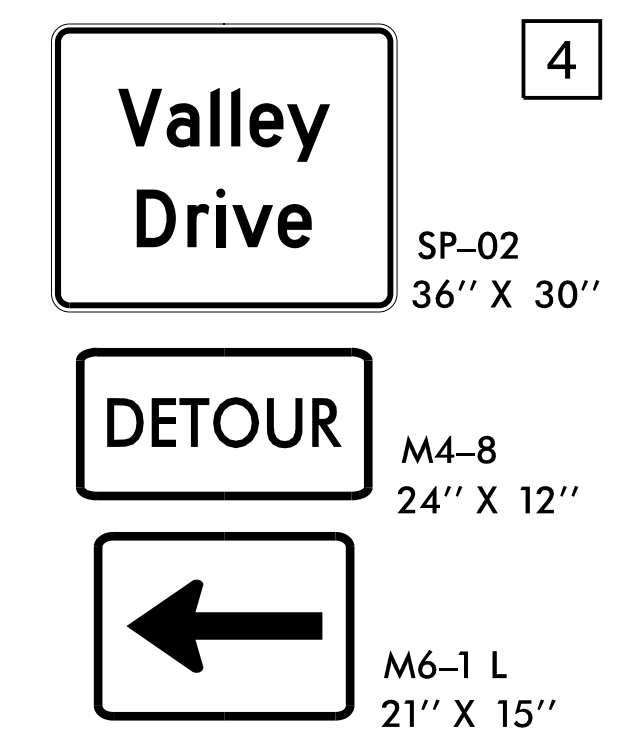


REVISIONS

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NOTE:  
SEE TMP-2C-2 FOR SPECIAL  
SIGN DESIGN SP-02

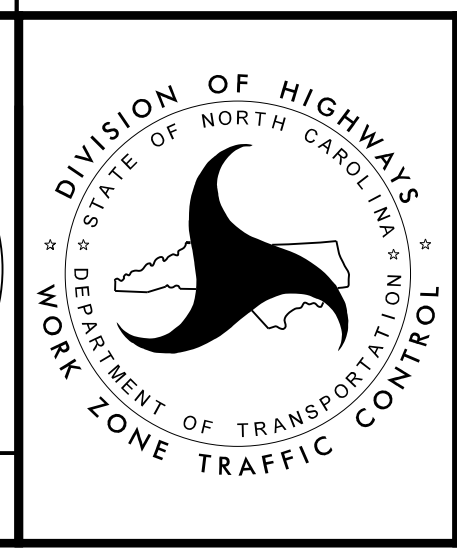


DETOUR ROUTE = ● ● ●

APPROVED: *P. Erskine Brooks*  
 DATE: 12/18/2018  
 SEAL



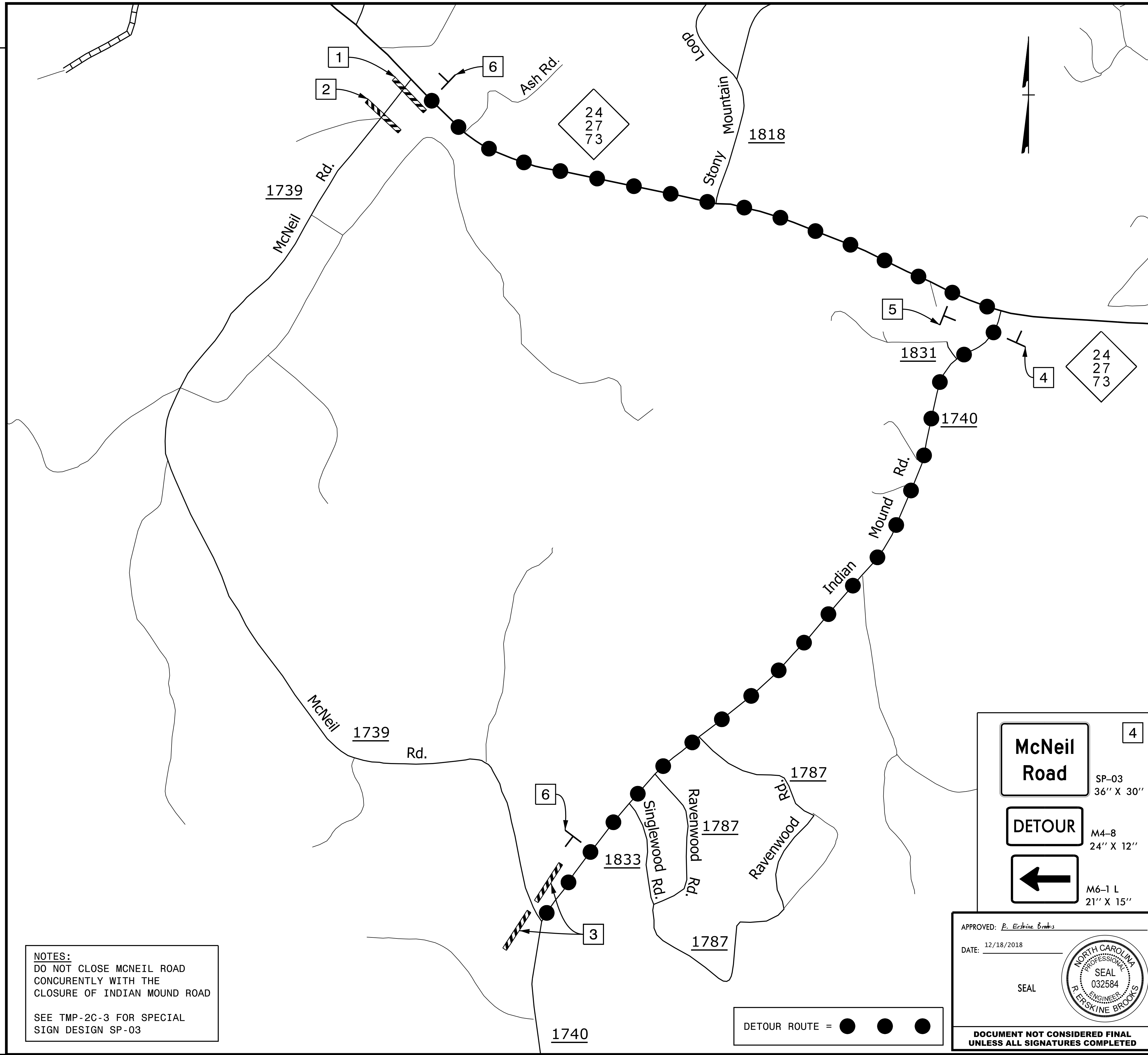
DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED



DETOUR ROUTE  
VALLEY DR



PLOT DRIVER: NCDOT\_pdf\_color\_eng\_50.plt    PENTABLE: NCDOT\_top.tbl  
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REVISIONS





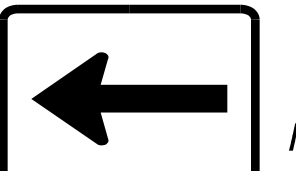
**NOTES:**  
 DO NOT CLOSE MCNEIL ROAD  
 CONCURRENTLY WITH THE  
 CLOSURE OF INDIAN MOUND ROAD  
  
 SEE TMP-2C-3 FOR SPECIAL  
 SIGN DESIGN SP-03

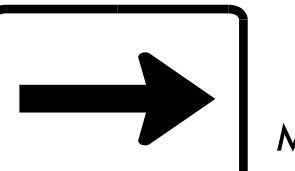
DETOUR ROUTE = ● ● ●

R11-2 48" x 30"  TYPE III BARRICADE	M4-10L 48" x 18" 	1
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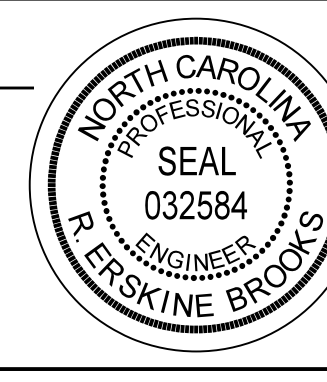
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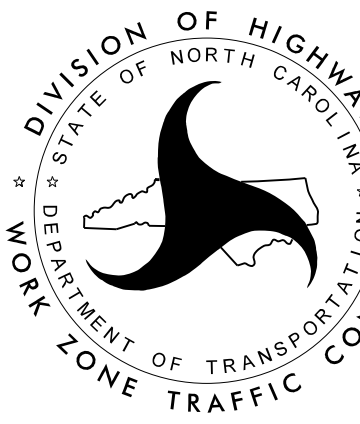
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McNeil Road SP-03 36" X 30"	4
DETOUR M4-8 24" X 12" 	
M6-1 L 21" X 15"	

McNeil Road SP-03 36" X 30"	5
DETOUR M4-8 24" X 12" 	
M6-1 21" X 15"	

McNeil Road SP-03 36" X 30"	6
END DETOUR M4-8 A 24" X 18"	

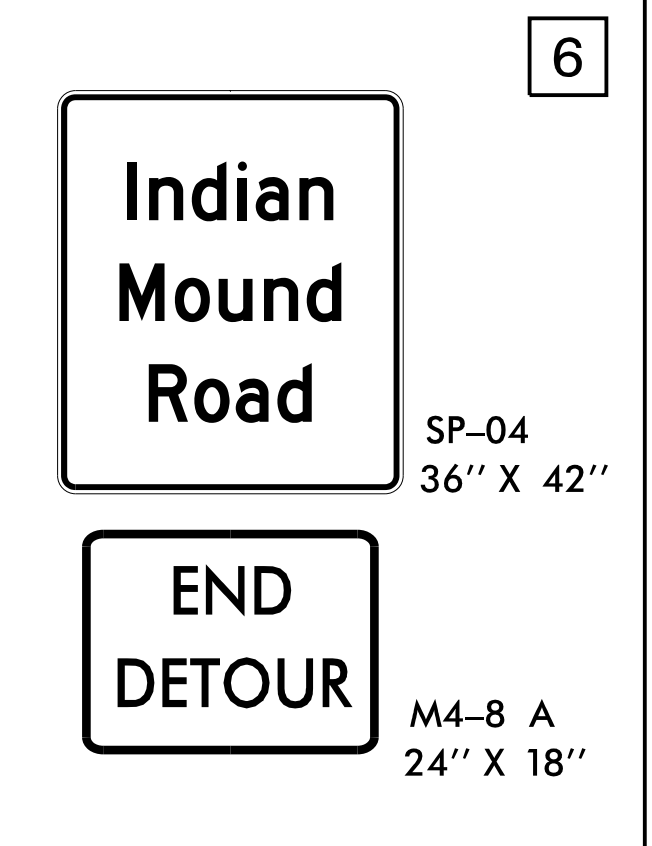
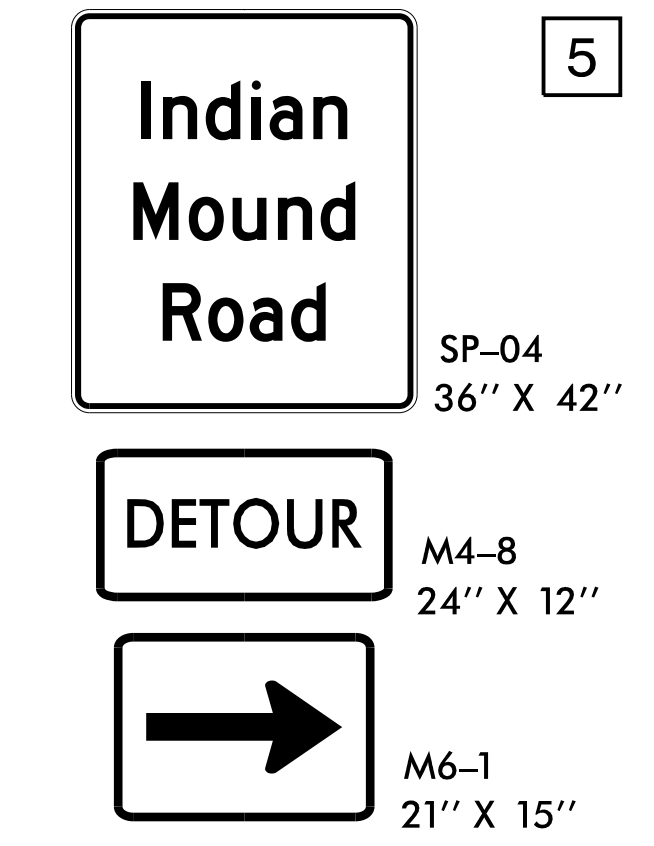
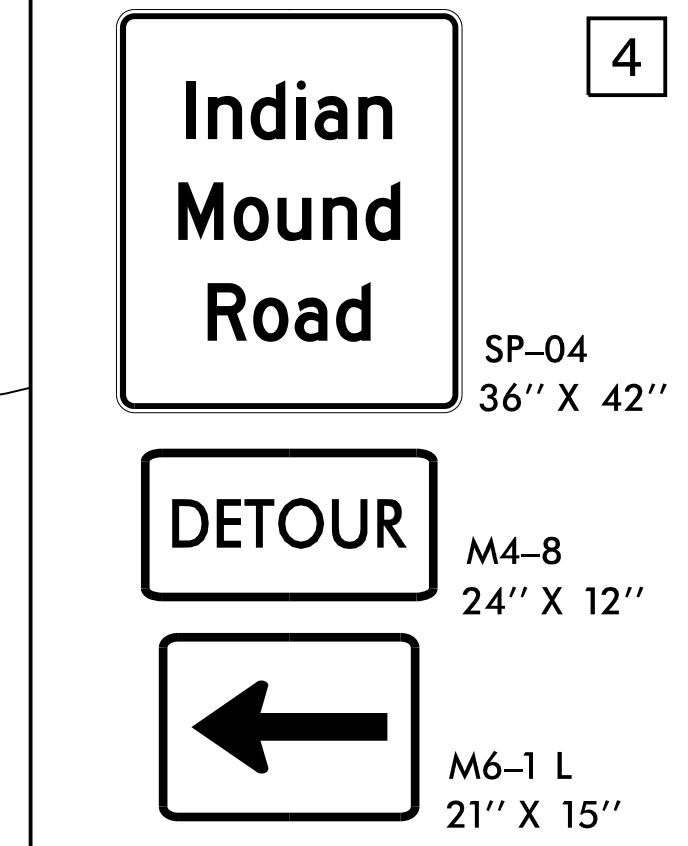
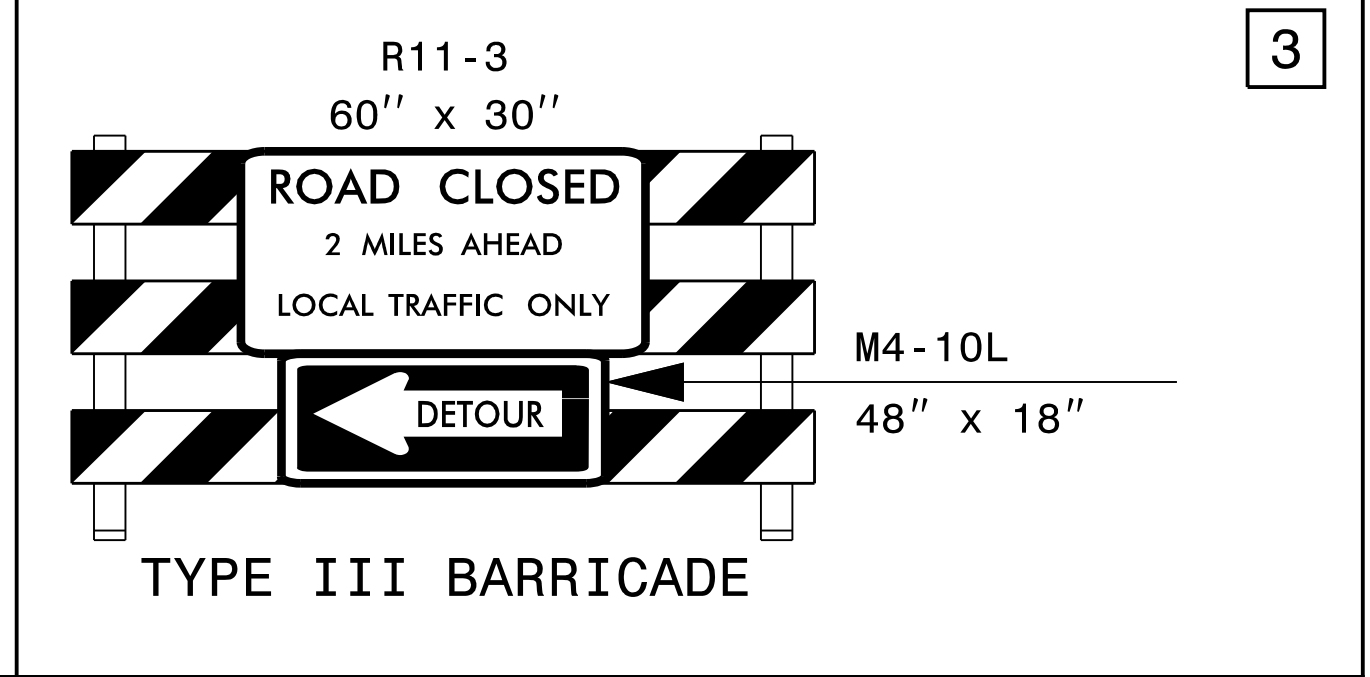
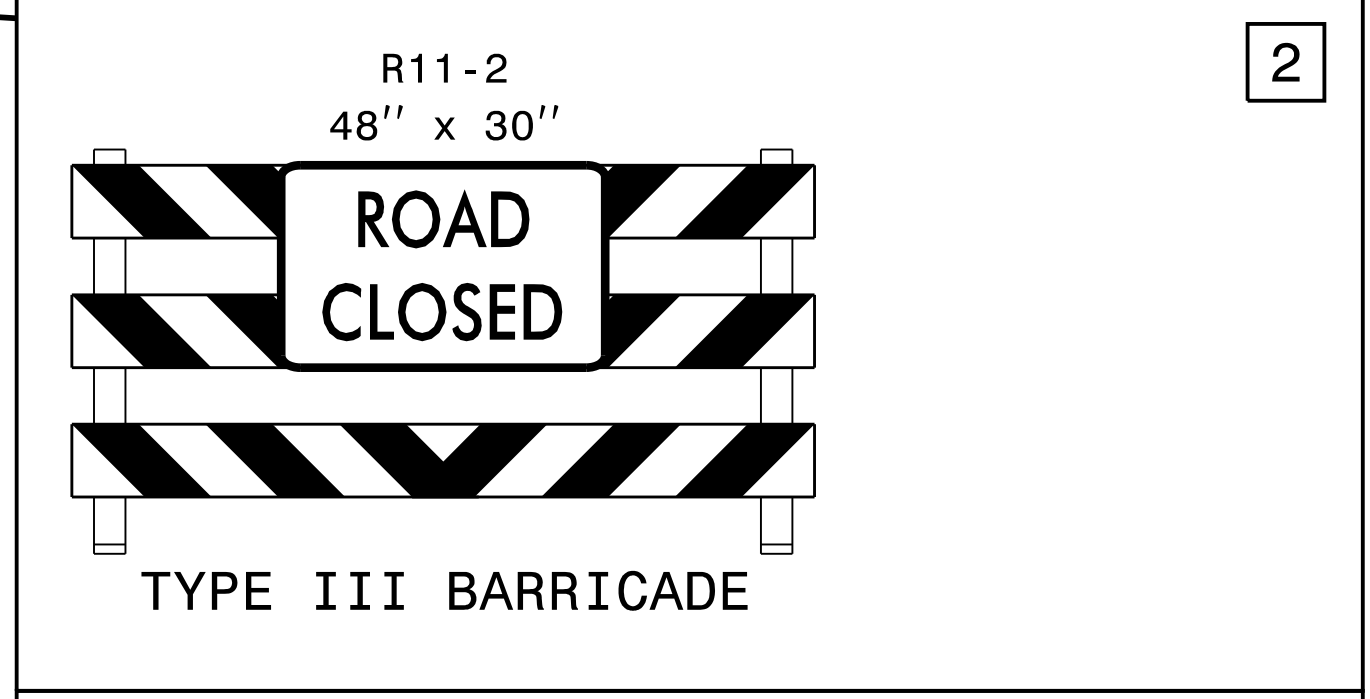
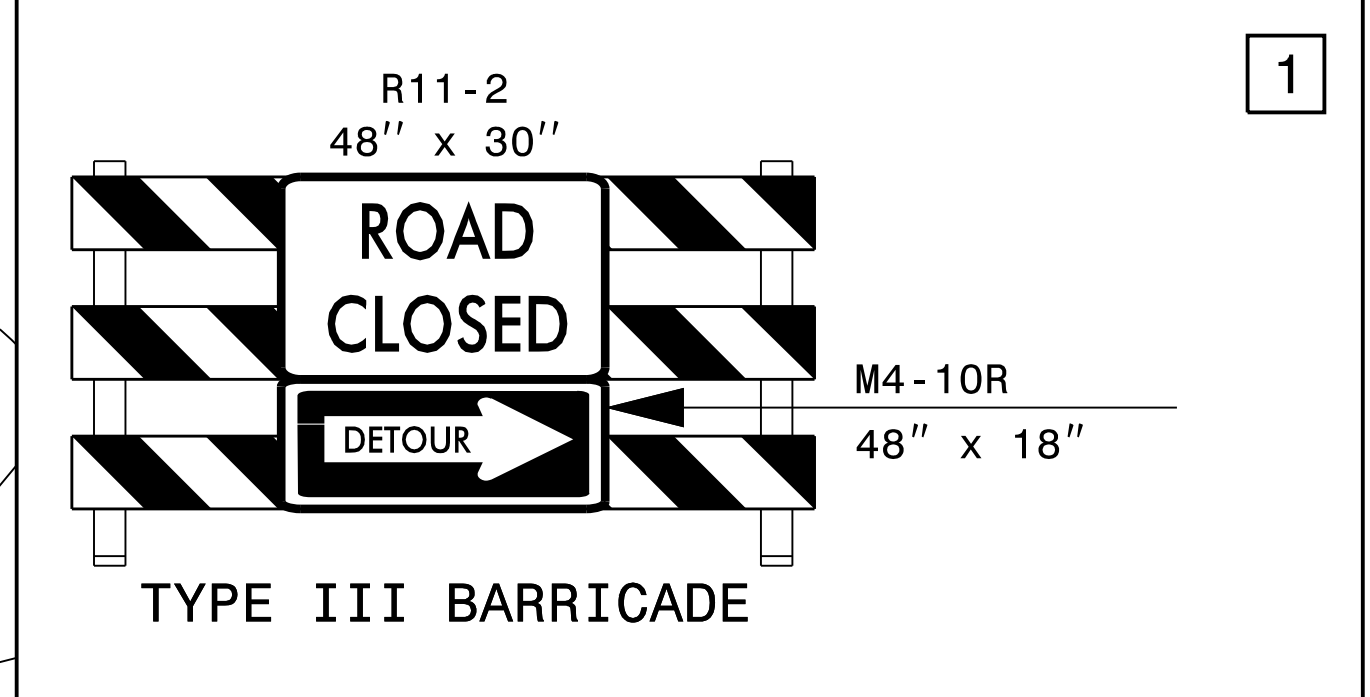
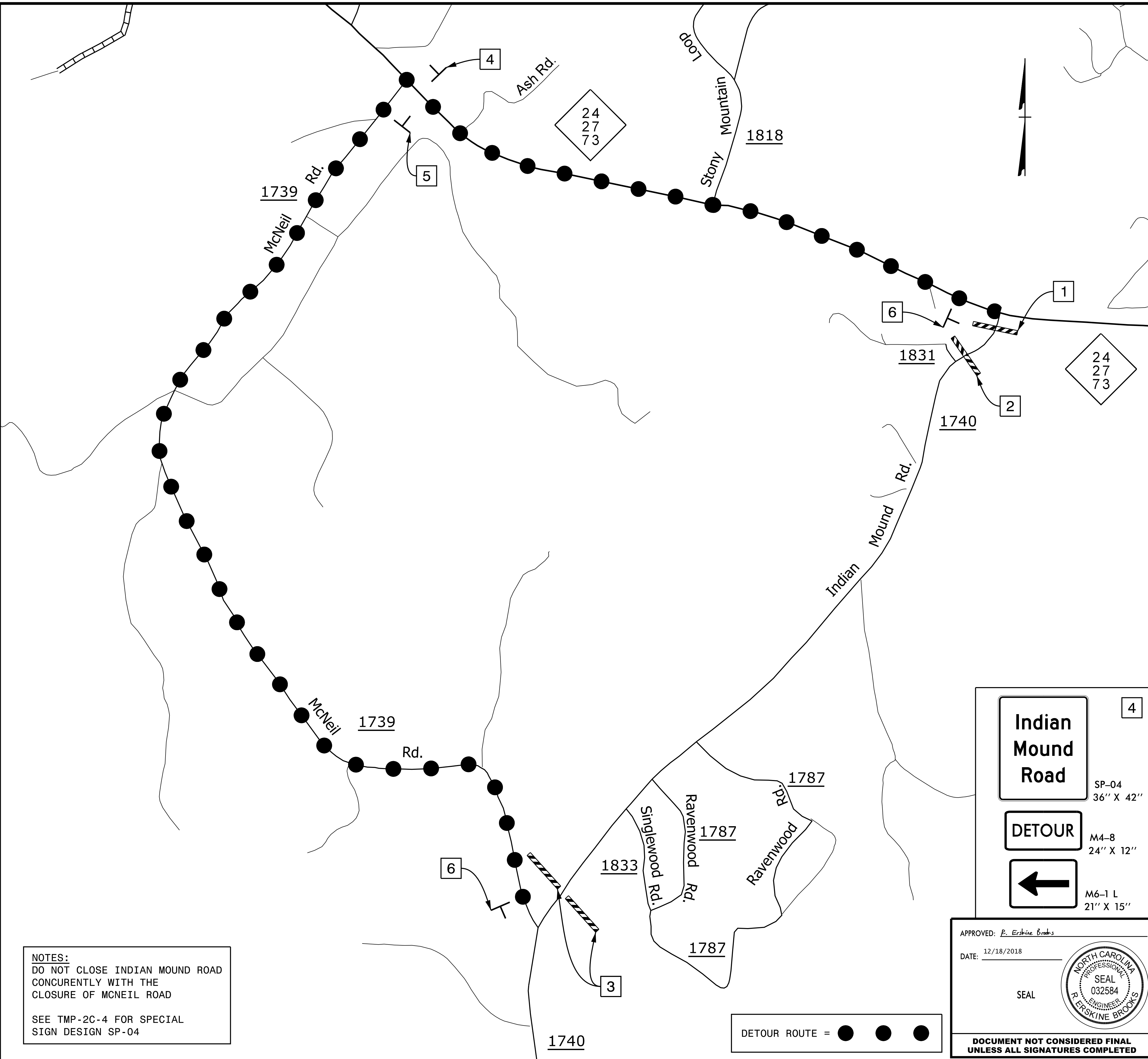
APPROVED: <i>P. Erskine Brooks</i> DATE: 12/18/2018 SEAL  <b>DOCUMENT NOT CONSIDERED FINAL          UNLESS ALL SIGNATURES COMPLETED</b>
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NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 WORK ZONE TRAFFIC CONTROL

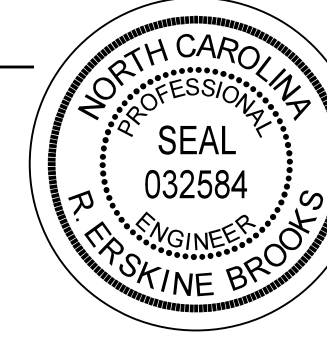
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MCNEIL RD

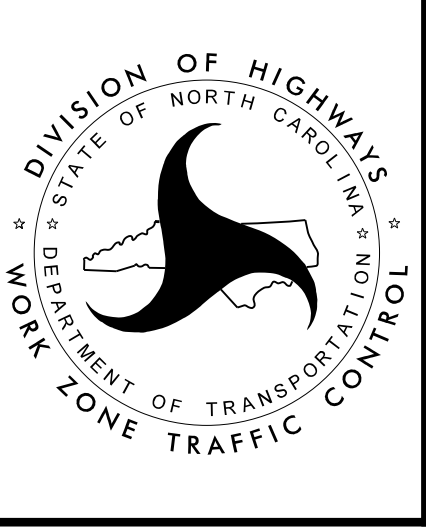
REVISIONS



**NOTES:**  
 DO NOT CLOSE INDIAN MOUND ROAD CONCURRENTLY WITH THE CLOSURE OF MCNEIL ROAD  
 SEE TMP-2C-4 FOR SPECIAL SIGN DESIGN SP-04

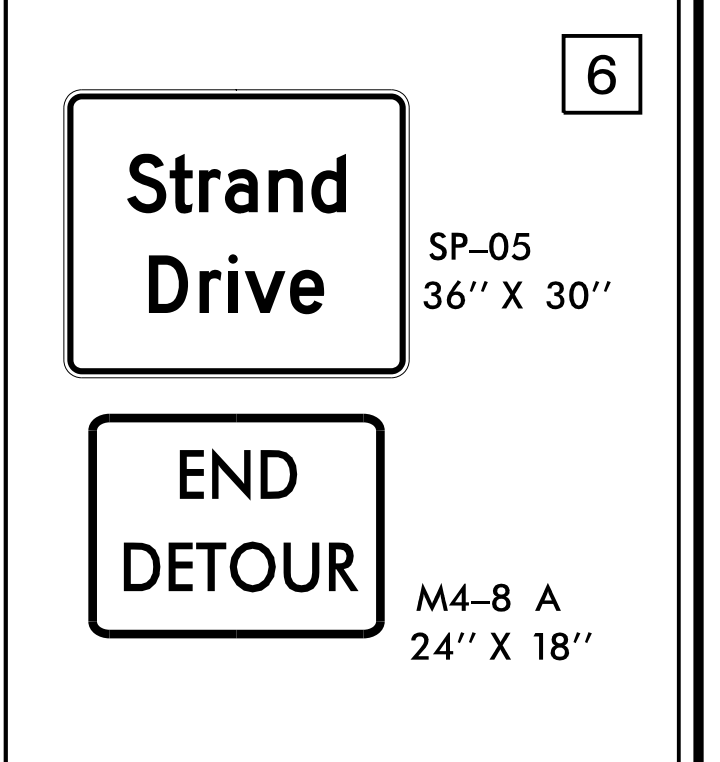
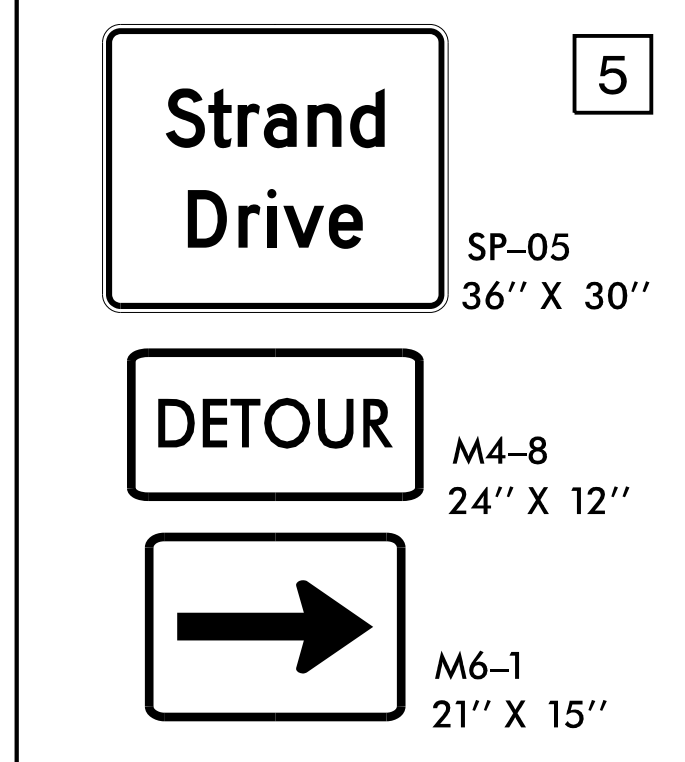
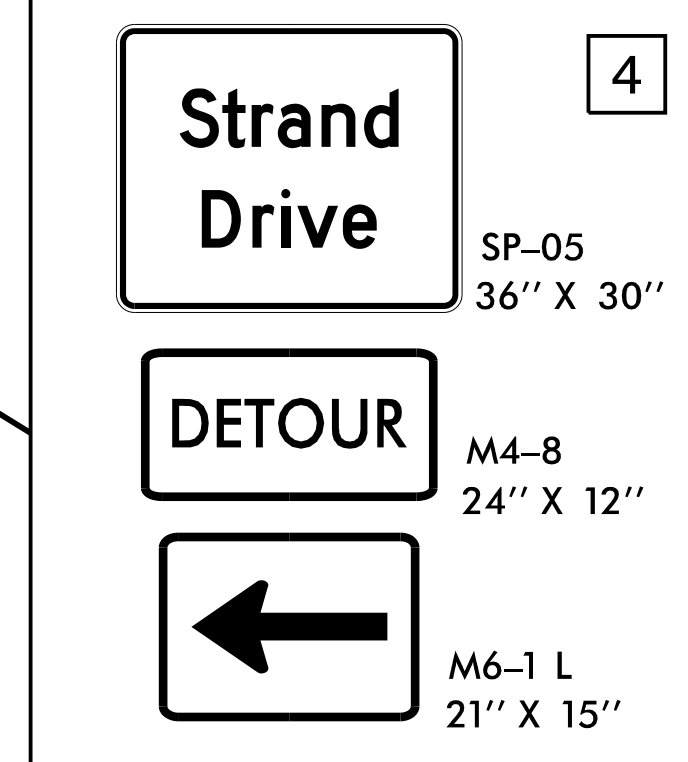
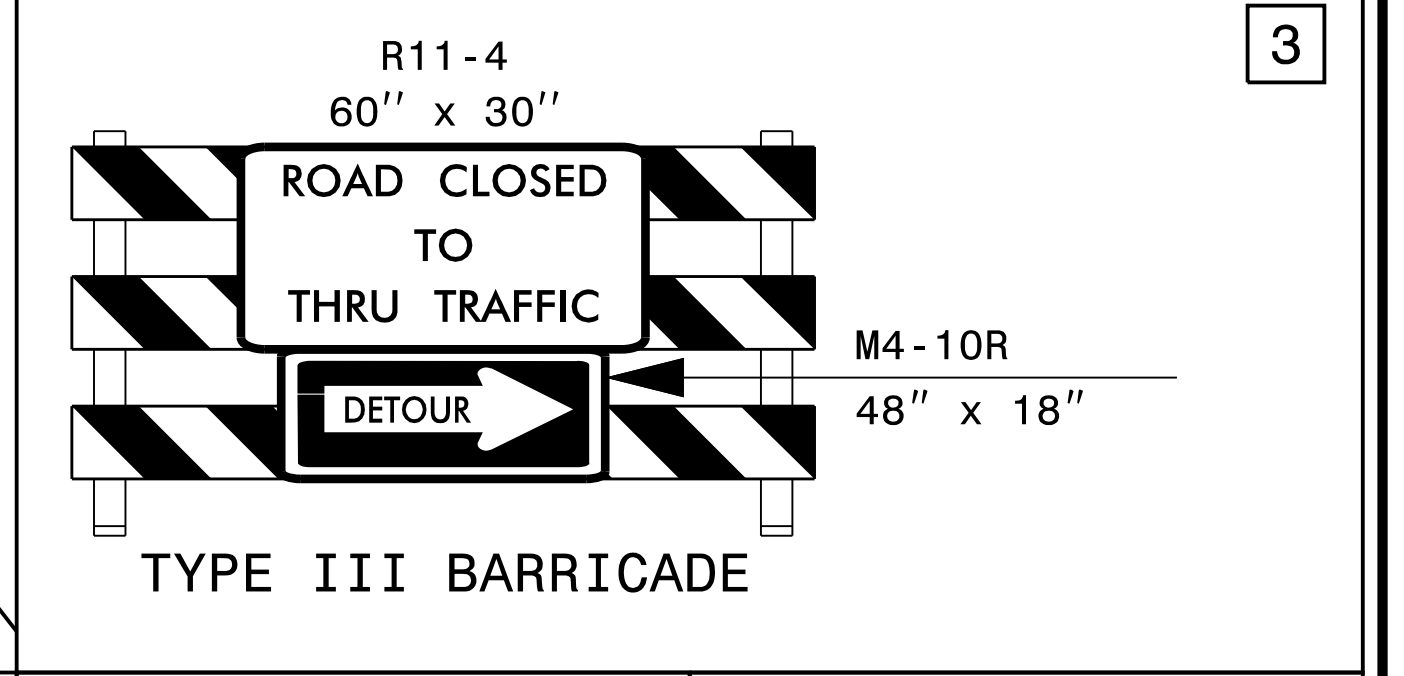
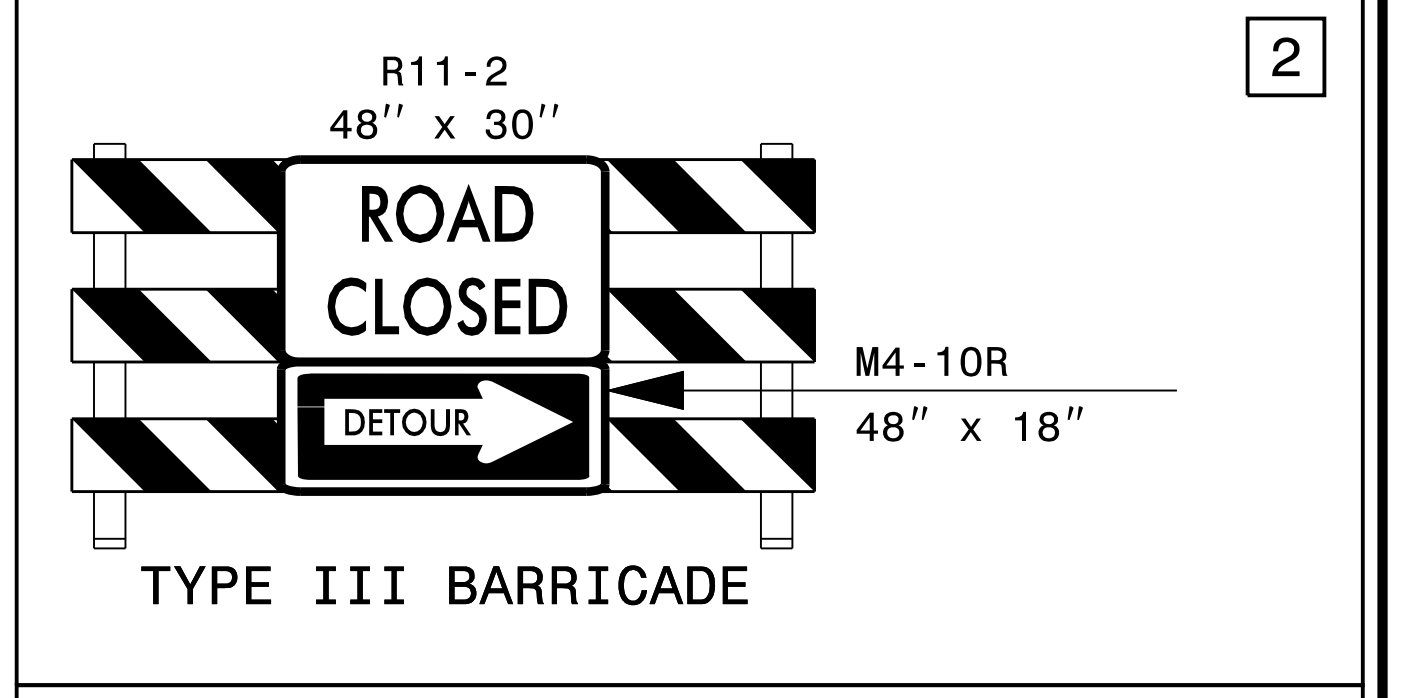
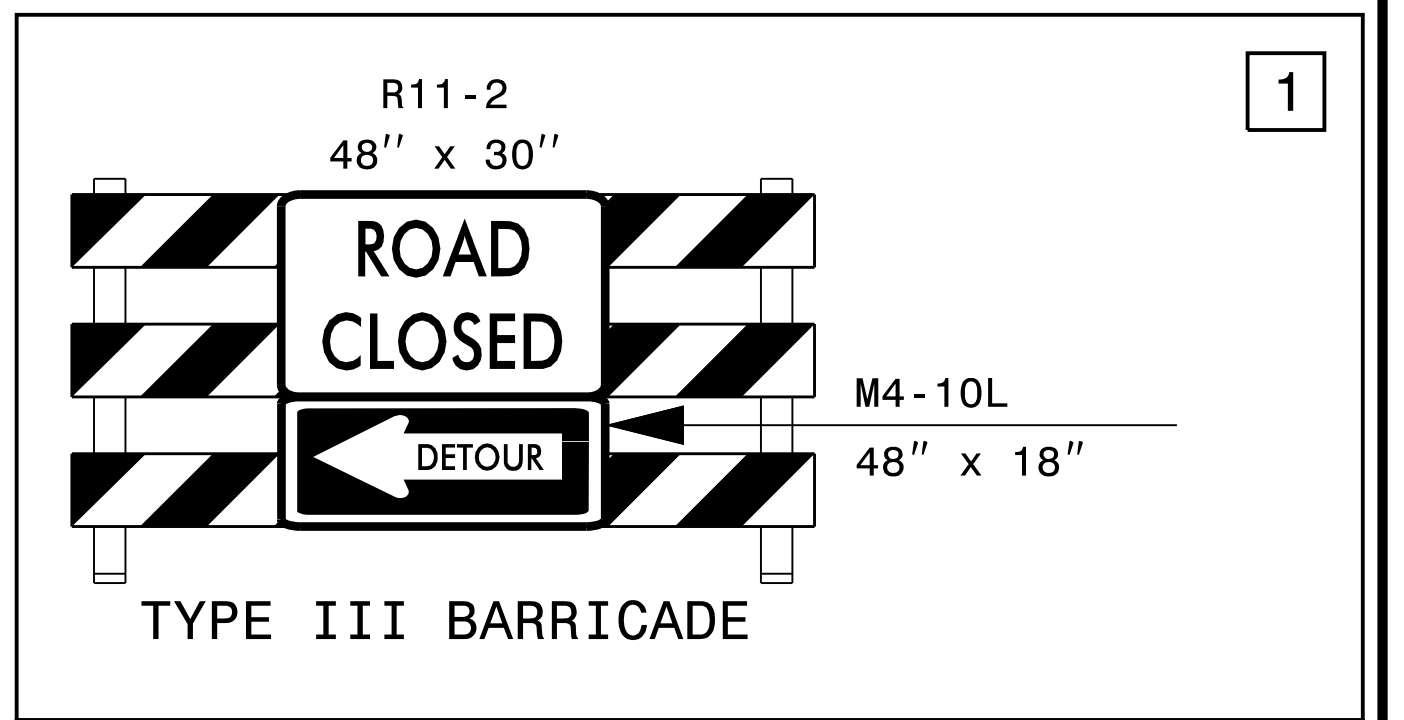
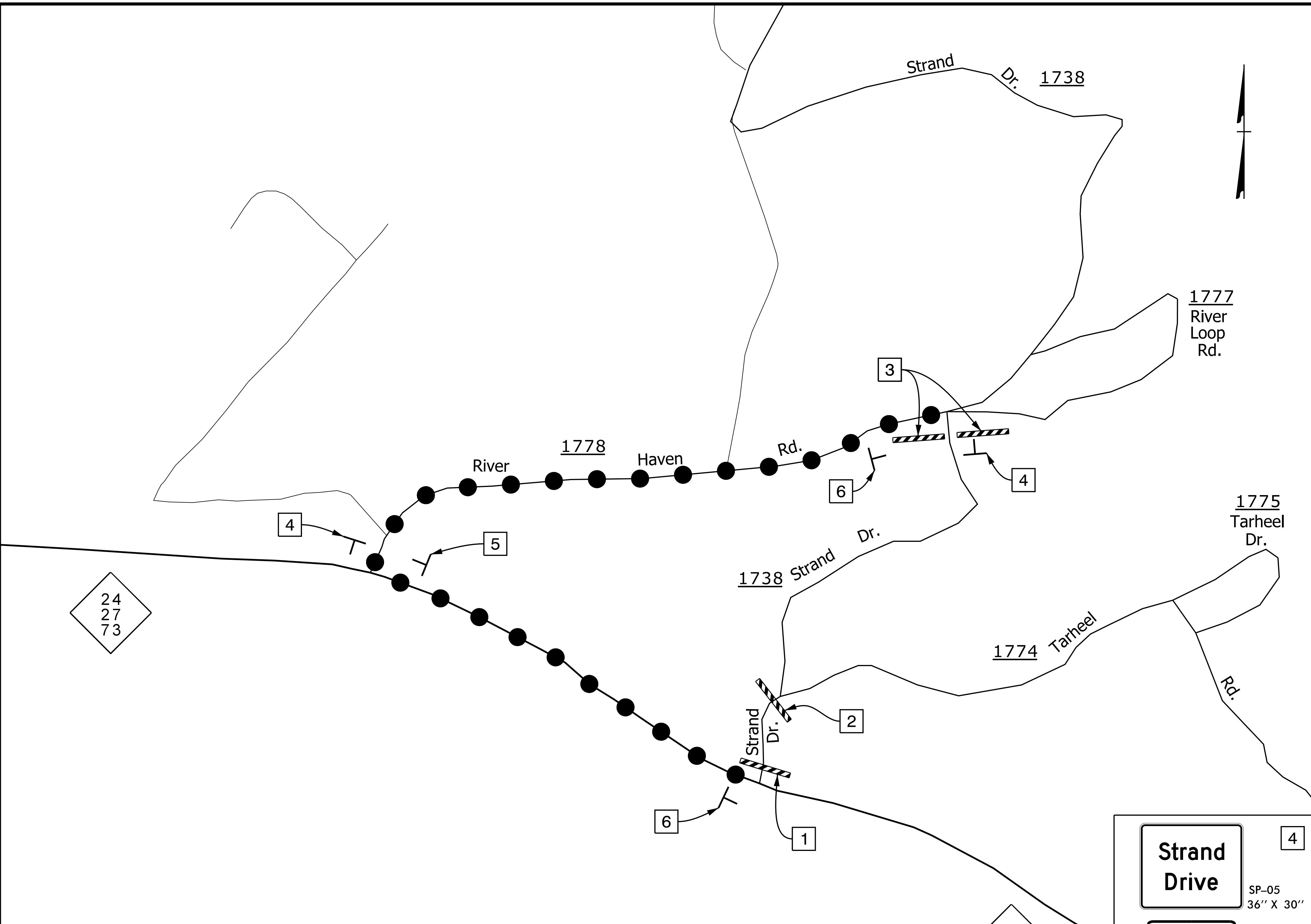
DETOUR ROUTE = ● ● ●

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 DATE: 12/18/2018  
 SEAL  
  
 DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



DETOUR ROUTE  
 INDIAN MOUND RD

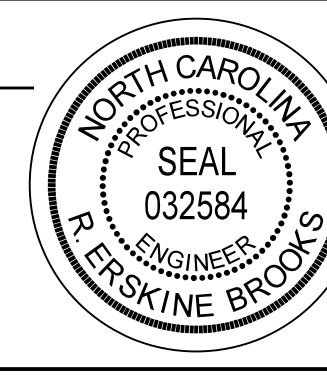
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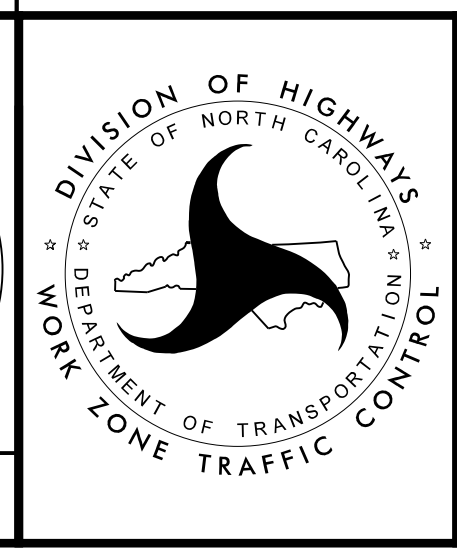
NOTE:  
SEE TMP-2C-5 FOR SPECIAL  
SIGN DESIGN SP-05

DETOUR ROUTE = ● ● ●

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DATE: 12/18/2018  
SEAL



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UNLESS ALL SIGNATURES COMPLETED



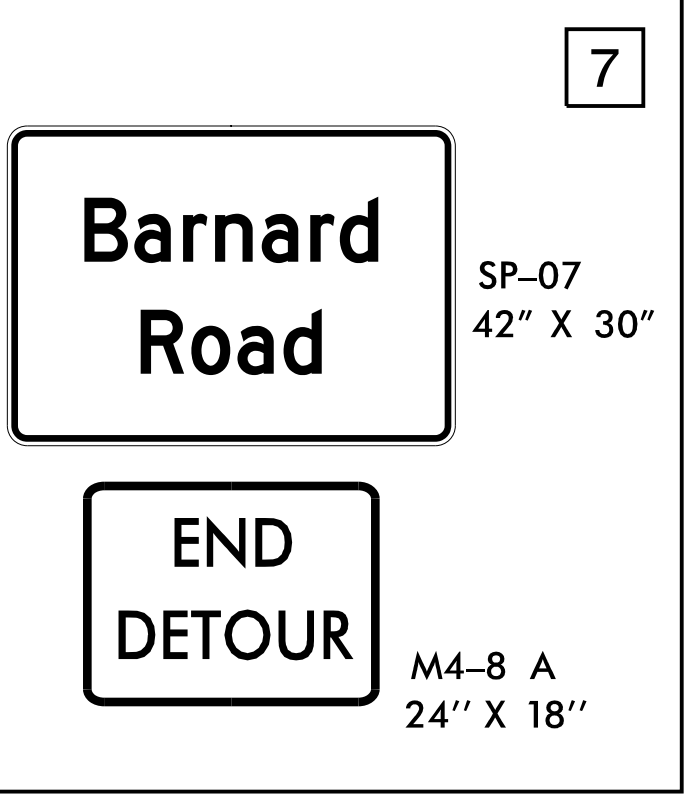
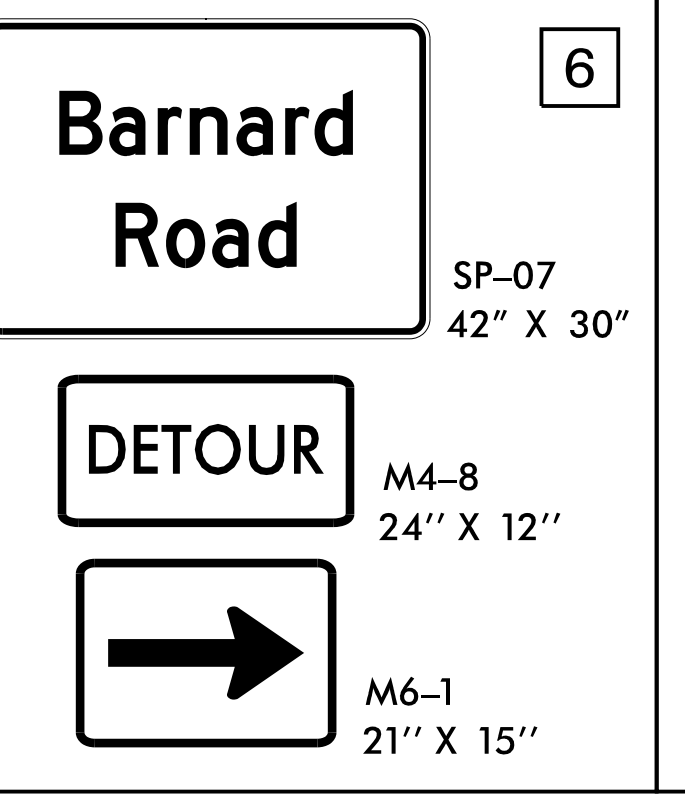
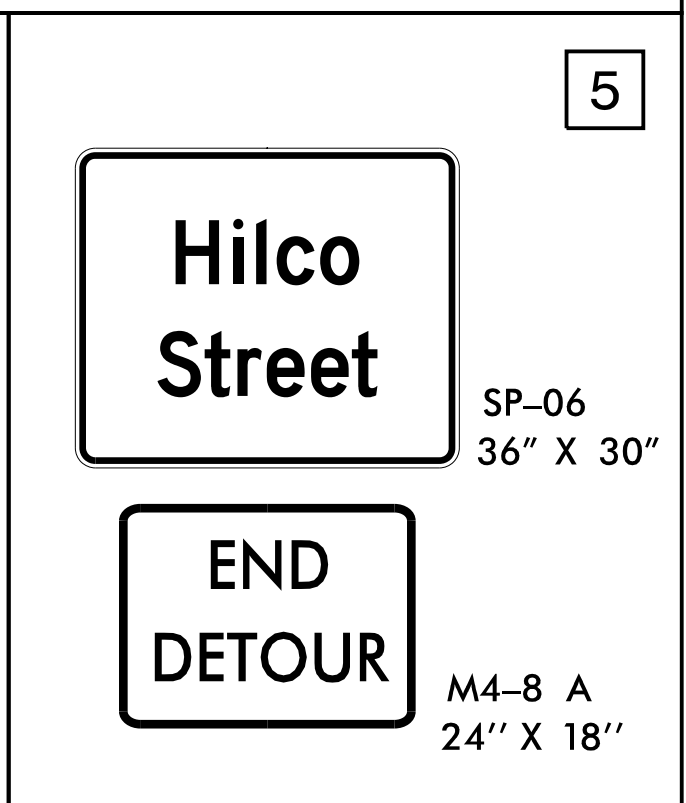
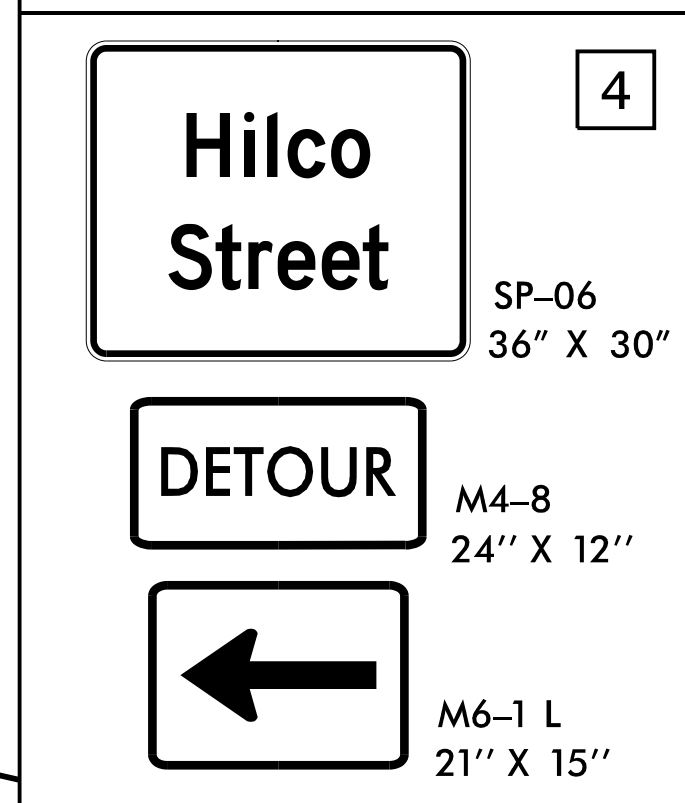
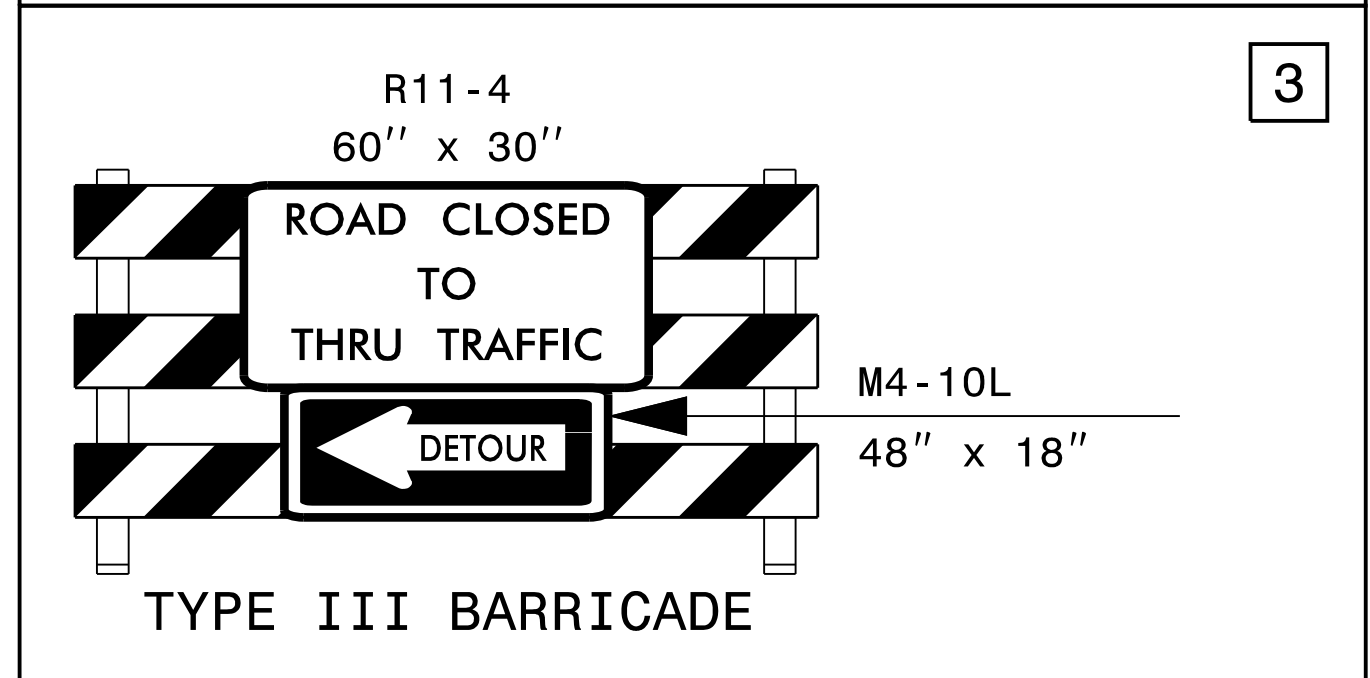
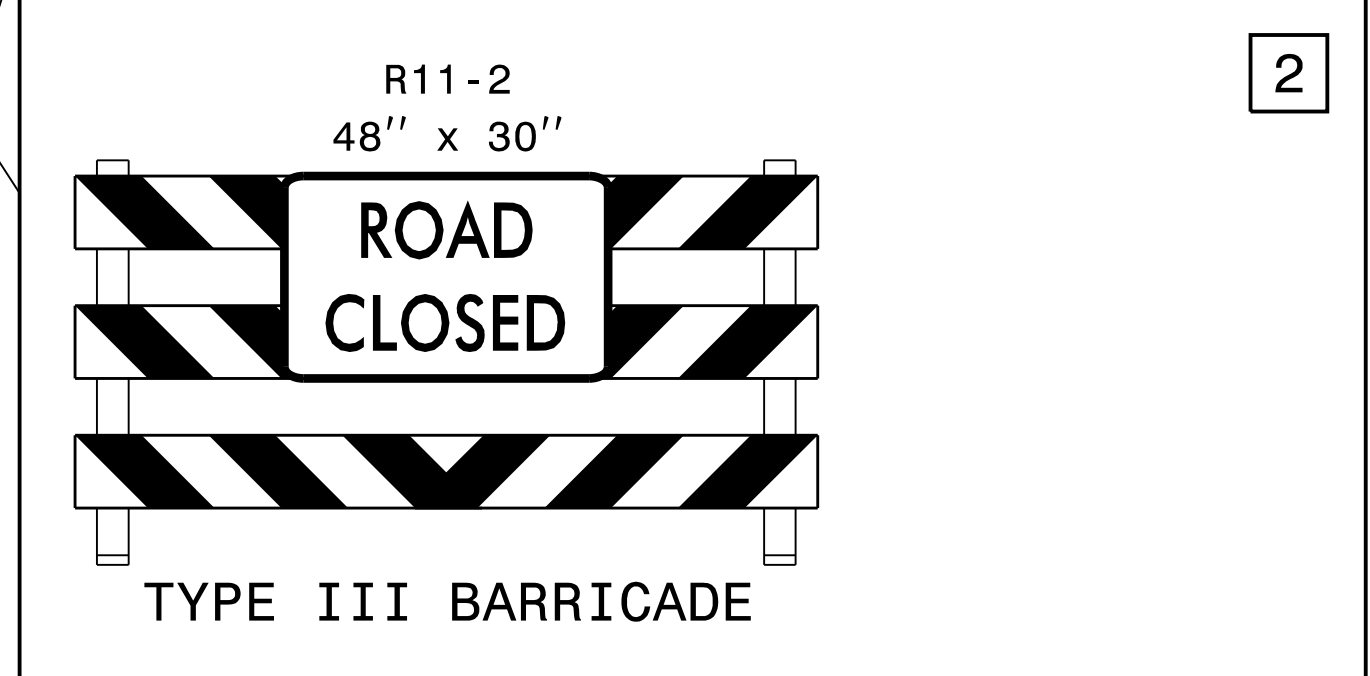
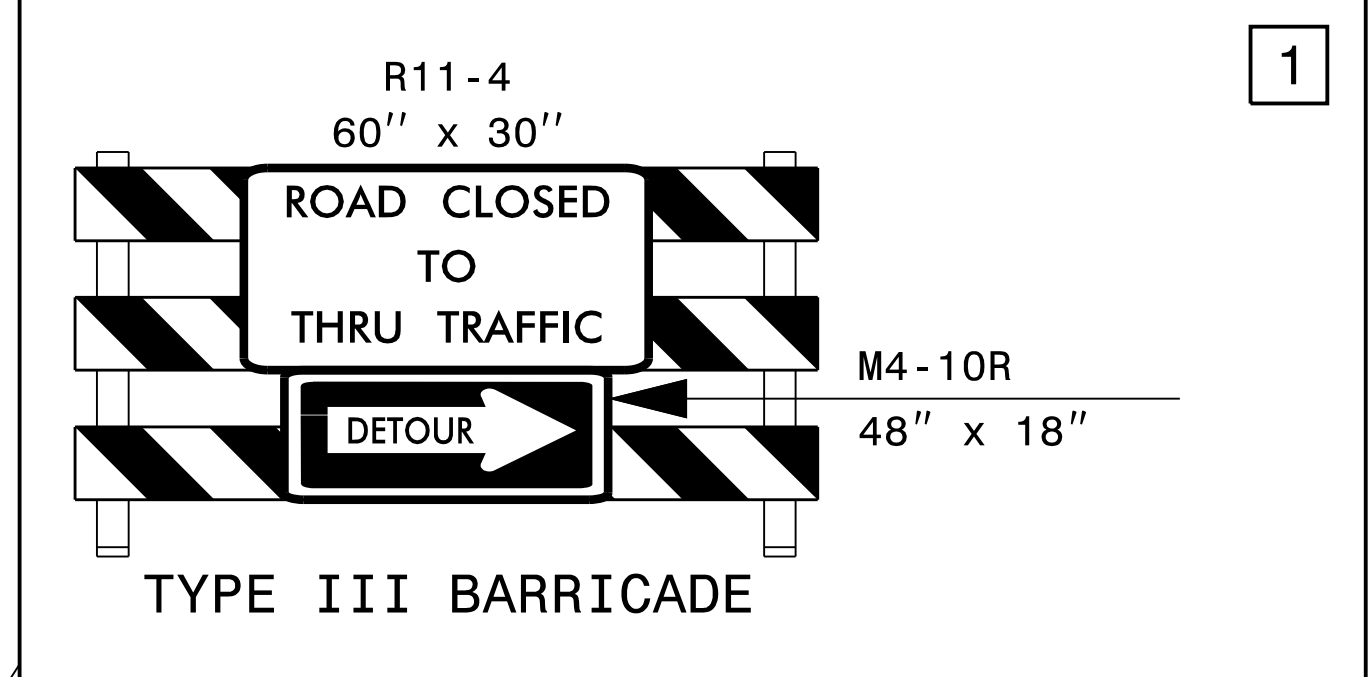
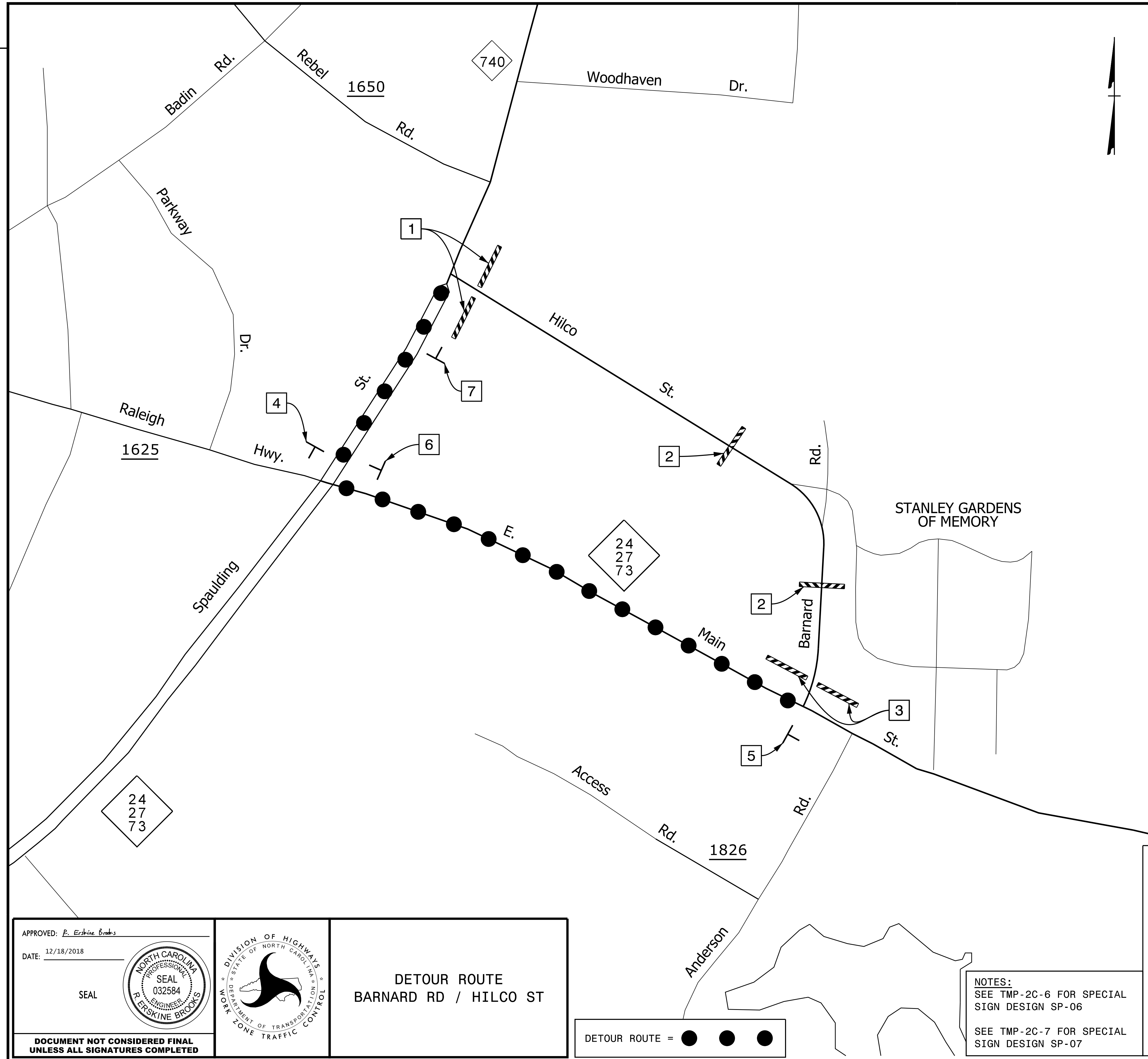
DETOUR ROUTE  
STRAND DR

PLOT DRIVER: NCDOT\_color\_eng\_50.plt  
 USER: ERBROOKS  
 PENTABLE: NCDOT\_tcp.tbl  
 DATE: 12/10/2018  
 TIME: 10:11:23 AM  
 FILE: p:\pwhdr\users\01\HDR\_US\_East\_01\Documents\3322\10001376\10052612\60\_CAD\BIM\6.2\_Work\_In\_Progress\TrafficControl\TCR\2530B-TC\_TMP-02B-06\_Strand Dr\_Detour.dgn

REVISIONS


24  
27  
73

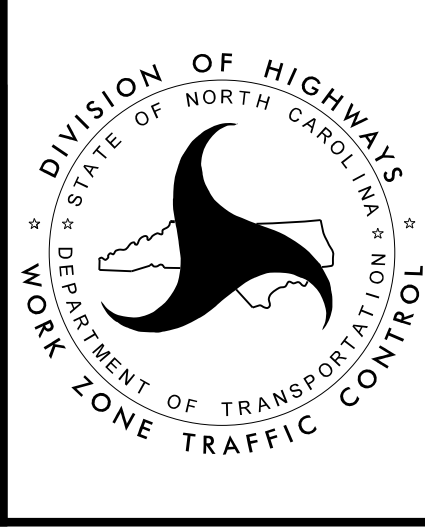
24  
27  
73



REVISIONS

PLOT DRIVER: NCDOT\_color\_eng\_50.plt  
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APPROVED: *P. Erskine Brooks*  
 DATE: 12/18/2018  
 SEAL  




DETOUR ROUTE  
BARNARD RD / HILCO ST

DETOUR ROUTE = ● ● ●

NOTES:  
 SEE TMP-2C-6 FOR SPECIAL SIGN DESIGN SP-06  
 SEE TMP-2C-7 FOR SPECIAL SIGN DESIGN SP-07



SIGN NUMBER: SP-02  
 TYPE: D  
 QUANTITY: 6

SIGN WIDTH: 3'-0"  
 HEIGHT: 2'-6"  
 TOTAL AREA: 7.5 Sq.Ft.

BORDER TYPE: RECESSED  
 RECESS: 0.50"  
 WIDTH: 0.75"  
 RADII: 1.88"

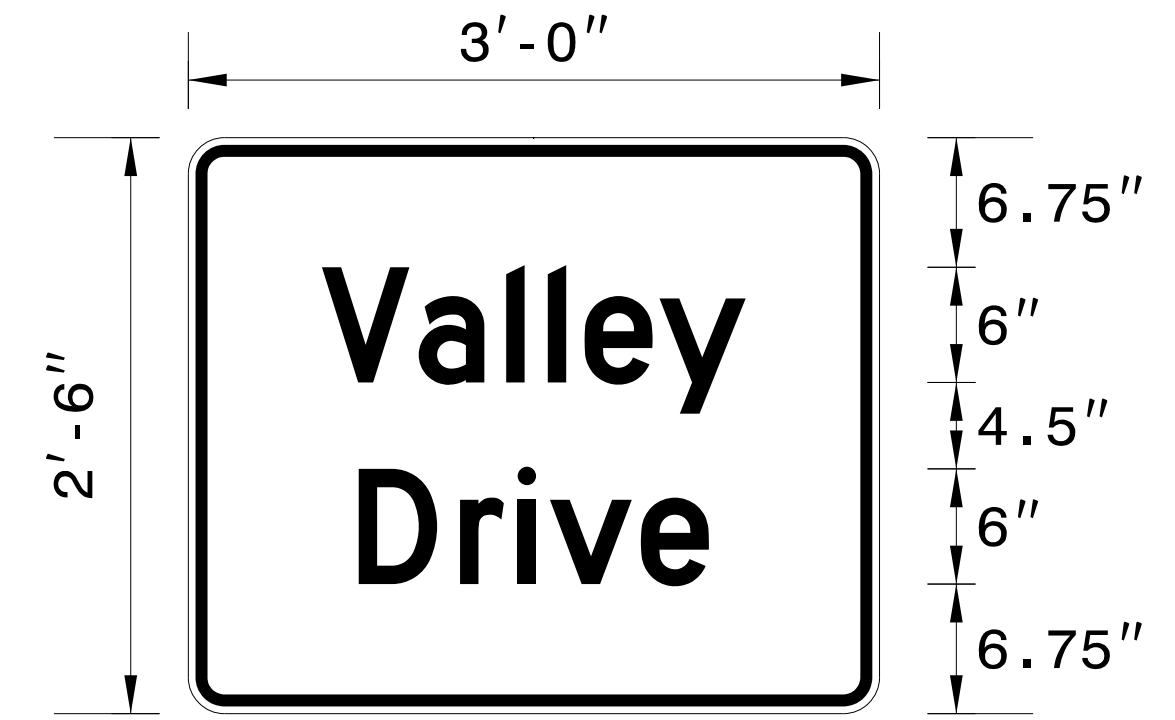
NO. Z BARS:  
 LENGTH:

BACKG COLOR: Orange  
 COPY COLOR: Black

SYMBOL	X	Y	WIDTH	HEIGHT

MAT'L: 0.08" (2.0 mm) ALUMINUM

DESIGN BY: CHRIS HARNDEN      CHECKED BY: RON KING  
 PROJECT ID: R-2530B              DIV: 8 & 10              DATE: Oct 10, 2018



BORDER  
 R=1.88"  
 TH=0.75"  
 IN=0.50"

- USE NOTES: 1,2
- 1. Legend and border shall be direct applied non reflective sheeting.
  - 2. Background shall be Grade B reflective sheeting.

Letter spacings are to start of next letter

		Letter spacings are to start of next letter											Series/Size Text Length					
	V	a	l	l	e	y												D 2000
7	5	4.6	2.2	1.9	3.9	4.5	7											22.1
	D	r	i	v	e													D 2000
8.9	5.3	3	1.7	4.7	3.5	8.9												18.2

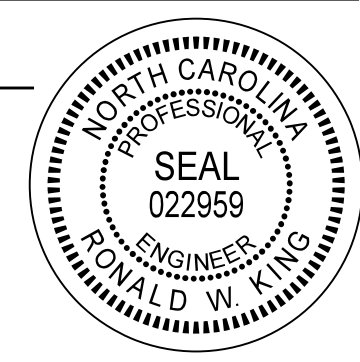
REVISONS

PLOT DRIVER: NCDOT\_color\_eng\_50.plt      PENTABLE: NCDOT\_tcp.tbl  
 USER: CHARNEN      DATE: 12/18/18      TIME: 10:42:43  
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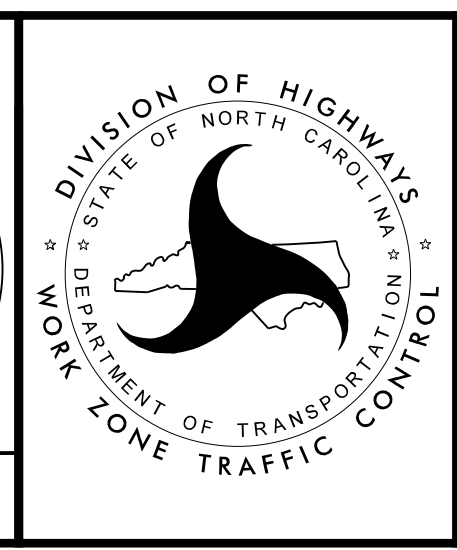
APPROVED: *Ron King*

DATE: 12/18/2018

SEAL



DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED



**SPECIAL SIGN DESIGN**  
**VALLEY DR**

SIGN NUMBER: SP-03  
 TYPE: D  
 QUANTITY: 4  
 SIGN WIDTH: 3'-0"  
 HEIGHT: 2'-6"  
 TOTAL AREA: 7.5 Sq.Ft.  
 BORDER TYPE: RECESSED  
 RECESS: 0.50"  
 WIDTH: 0.75"  
 RADII: 1.88"  
 NO. Z BARS:  
 LENGTH:

BACKG COLOR: Orange  
 COPY COLOR: Black

SYMBOL	X	Y	WIDTH	HEIGHT

MAT'L: 0.08" (2.0 mm) ALUMINUM

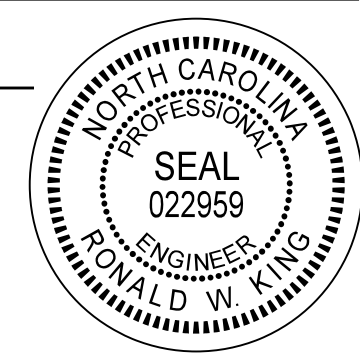
DESIGN BY: CHRIS HARNDEN  
 PROJECT ID: R-2530B  
 CHECKED BY: RON KING  
 DIV: 8 & 10  
 DATE: Oct 10, 2018

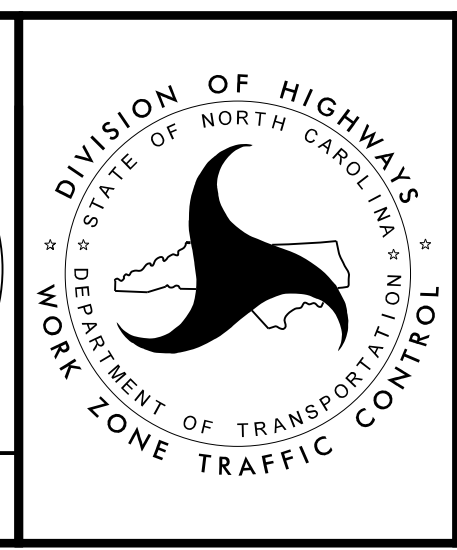


BORDER  
 R=1.88"  
 TH=0.75"  
 IN=0.50"

- USE NOTES: 1,2
- Legend and border shall be direct applied non reflective sheeting.
  - Background shall be Grade B reflective sheeting.

Letter spacings are to start of next letter											Series/Size	
											Text Length	
	M	c	N	e	i	l						D 2000
6.6	5.8	4.4	5.2	4.4	2.2	1	6.6					22.9
	R	o	a	d								D 2000
9.5	4.7	4.3	4.3	3.6	9.5							17

APPROVED: Ron King  
 DATE: 12/18/2018  
 SEAL  
  
 DOCUMENT NOT CONSIDERED FINAL  
 UNLESS ALL SIGNATURES COMPLETED



**SPECIAL SIGN DESIGN**  
**MCNEIL RD**

PLOT DRIVER: NCDOT\_pdf\_color\_eng\_50.ppt    PENTABLE: NCDOT\_tcp.tbl  
 USER: CHARNDEN    DATE: 12/18/18    TIME: 10:42:44  
 FILE: p:\pwhdr\users\01\HDR-US-East\_01\Documents\3322\10001376\10052612\60\_CAD\_BITMAP.6.2\_Work\_In\_Progress\TrafficControl\TMR2530B-TC\_TMP-02C-SSD.dgn

REVISONS



SIGN NUMBER: SP-04  
TYPE: D  
QUANTITY: 4

BACKG COLOR: Orange  
COPY COLOR: Black

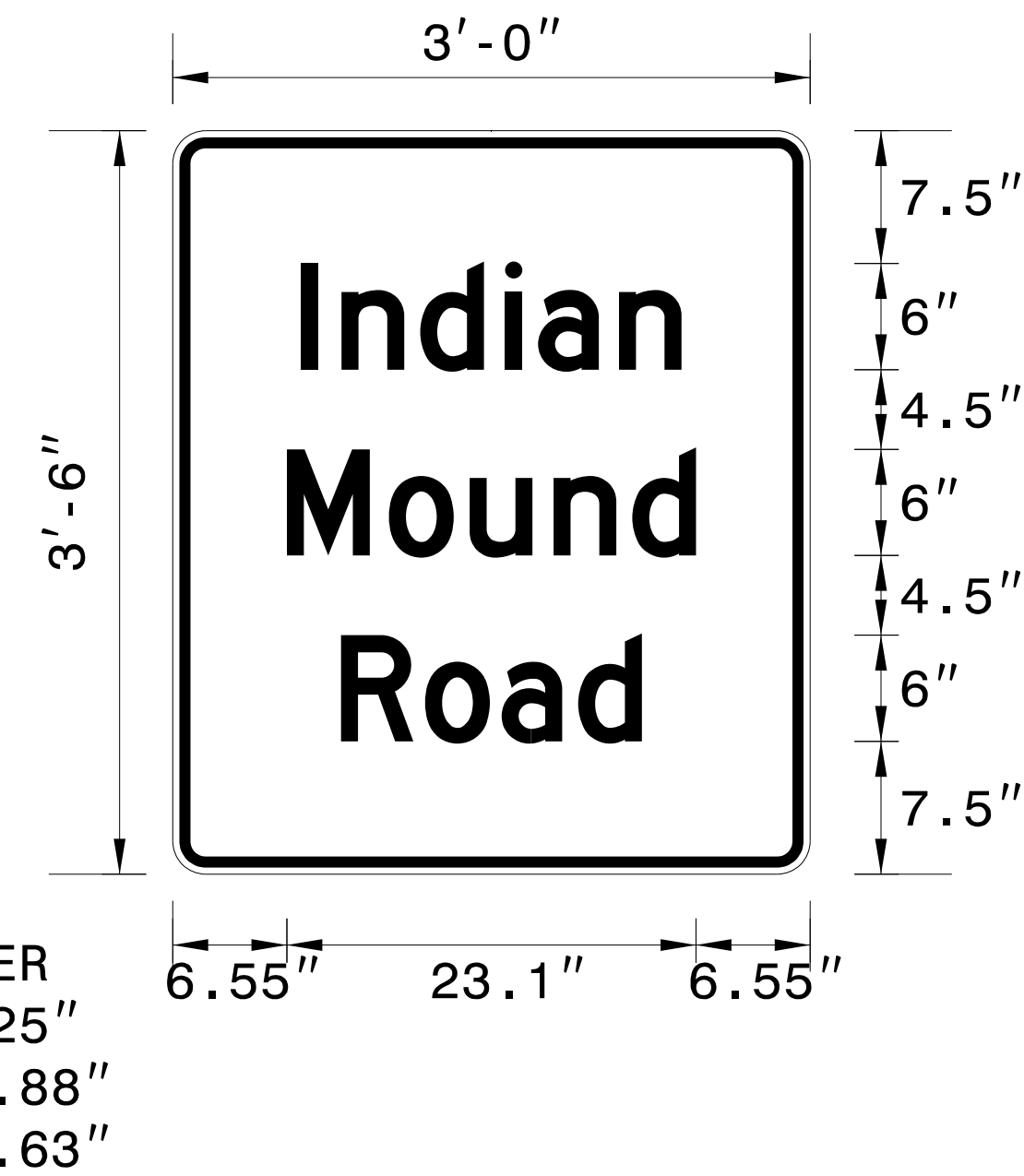
SYMBOL	X	Y	WIDTH	HEIGHT

SIGN WIDTH: 3'-0"  
HEIGHT: 3'-6"  
TOTAL AREA: 10.5 Sq.Ft.

BORDER TYPE: RECESSED  
RECESS: 0.63"  
WIDTH: 0.88"  
RADII: 2.25

NO. Z BARS:                   MAT'L: 0.08" (2.0 mm) ALUMINUM  
LENGTH:

DESIGN BY: CHRIS HARNDEN                   CHECKED BY: RON KING  
PROJECT ID: R-2530B                           DIV: 8 & 10                                   DATE: Oct 10, 2018



- USE NOTES: 1,2
- Legend and border shall be direct applied non reflective sheeting.
  - Background shall be Grade B reflective sheeting.

Letter spacings are to start of next letter

	I	n	d	i	a	n															Series/Size Text Length	
7.3	2.3	4.4	4.8	1.9	4.6	3.5	7.3														D 2000 21.5	
6.5	5.8	4.6	4.7	4.4	3.6	6.4															D 2000 23.1	
9.5	4.7	4.3	4.3	3.6	9.5																D 2000 17	

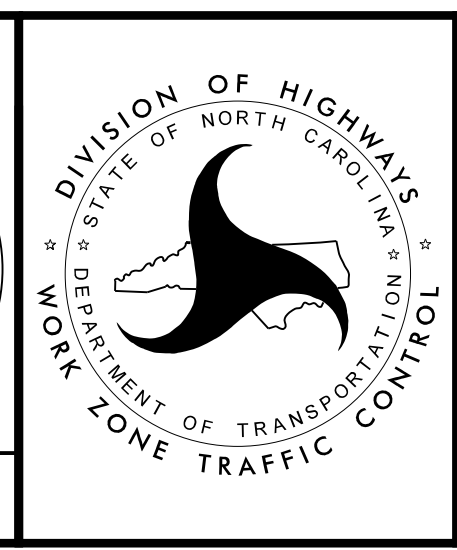
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 USER: CHARNDEN                   DATE: 12/18/18                   TIME: 10:42:45  
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REVISITONS

APPROVED: Ron King  
DATE: 12/18/2018

SEAL

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



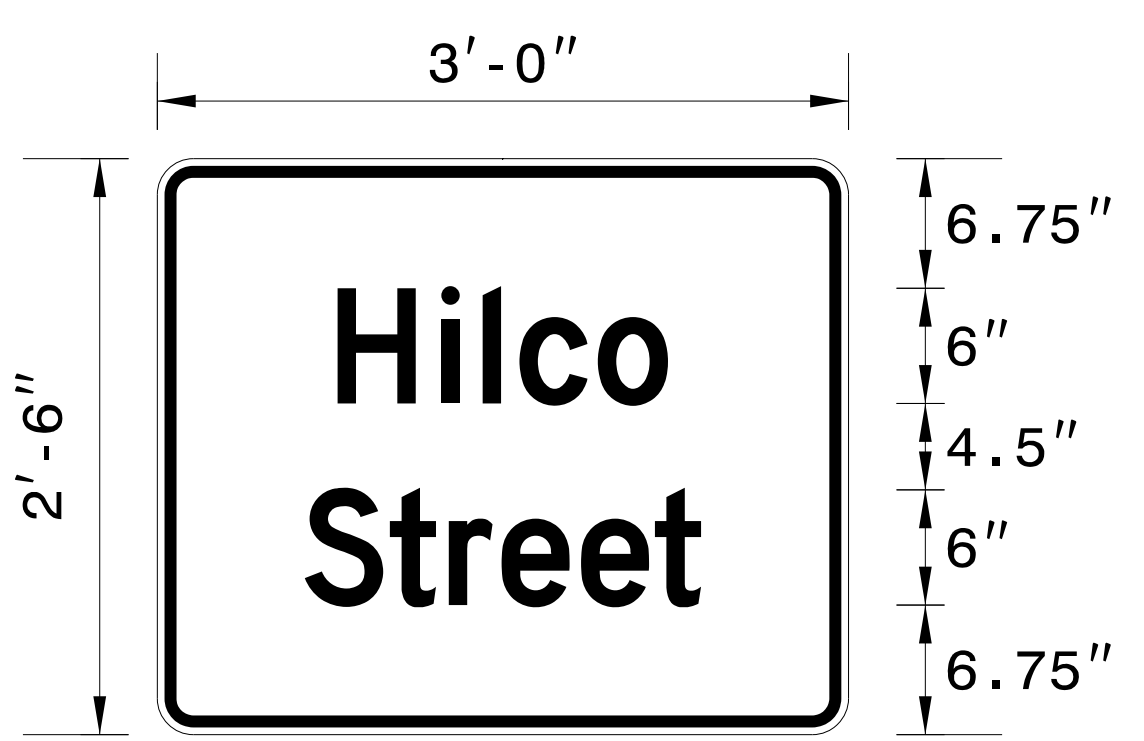
**SPECIAL SIGN DESIGN  
INDIAN MOUND RD**



SIGN NUMBER: SP-06  
TYPE: D  
QUANTITY: 2  
SIGN WIDTH: 3'-0"  
HEIGHT: 2'-6"  
TOTAL AREA: 7.5 Sq.Ft.  
BORDER TYPE: RECESSED  
RECESS: 0.50  
WIDTH: 0.75  
RADII: 1.88  
NO. Z BARS:  
LENGTH:  
BACKG COLOR: Orange  
COPY COLOR: Black  
MAT'L: 0.08" (2.0 mm) ALUMINUM

SYMBOL	X	Y	WIDTH	HEIGHT

DESIGN BY: CHRIS HARNDEN  
PROJECT ID: R-2530B  
CHECKED BY: RON KING  
DIV: 8 & 10  
DATE: Oct 10, 2018



BORDER  
R=1.88"  
TH=0.75"  
IN=0.50"

- USE NOTES: 1,2
- Legend and border shall be direct applied non reflective sheeting.
  - Background shall be Grade B reflective sheeting.

Letter spacings are to start of next letter

		H	i	l	c	o				Series/Size Text Length		
9.4	5.4	2.2	1.9	4.1	3.7	9.4				D 2000		
7.7	4.4	3.1	2.8	4.1	3.8	2.4	7.7				17.2	
		S	t	r	e	e	t				D 2000	
		7.7	4.4	3.1	2.8	4.1	3.8	2.4	7.7			20.6

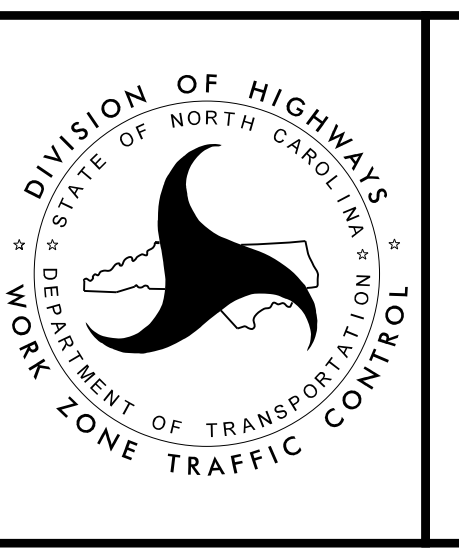
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REVISIONS

APPROVED: Ron King  
 DATE: 12/18/2018

SEAL


DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



SPECIAL SIGN DESIGN  
HILCO ST



# PHASING

PROJ. REFERENCE NO.	SHEET NO.
R-2530B	TMP-3
 HDR Engineering, Inc. of the Carolinas 555 Fayetteville St, Suite 900 Raleigh, N.C. 27601 N.C.B.E.L.S. License Number: F-0116	

## NOTES:

BEFORE BEGINNING ANY CONSTRUCTION ACTIVITIES, INSTALL ADVANCE WARNING SIGNS ACCORDING TO RSD 1101.01. FIELD VERIFY LOCATIONS WITH THE RESIDENT ENGINEER PRIOR TO INSTALLATION.

MAINTAIN ACCESS TO ALL RESIDENCES, SCHOOLS, BUS STOPS, EMERGENCY SERVICES, AND BUSINESSES AT ALL TIMES. PRIOR TO INCORPORATIONS, OBTAIN WRITTEN APPROVAL FROM THE ENGINEER ON METHOD TO MAINTAIN ACCESS.

COMPLETE ANY PROPOSED OR TEMPORARY WIDENING IN SUCH A MANNER THAT NO PONDING OF WATER WILL OCCUR WITHIN THE TRAVEL LANE.

WHEN WEDGING OVER THE EXISTING PAVEMENT, WEDGE TO PROPOSED ELEVATION (LESS THE FINAL LAYER OF SURFACE COURSE), OR WEDGE AS NEEDED TO MAINTAIN TRAFFIC. MAINTAIN POSITIVE DRAINAGE AND MAINTAIN A MAXIMUM .04 ROLLOVER IN BOTH EXISTING AND/OR TEMPORARY TRAVEL LANES.

REPLACE MARKINGS AND RETURN TRAFFIC TO THE CURRENT TRAFFIC PATTERN AT THE END OF EACH WORK PERIOD UNLESS OTHERWISE NOTED IN THE PHASING OR DIRECTED BY THE ENGINEER.

WHEN USING LANE CLOSURES (RSD 1101.02), RETURN TRAFFIC TO EXISTING AND/OR CURRENT TEMPORARY TRAFFIC PATTERN UPON ACTIVITIES COMPLETION, UNLESS OTHERWISE NOTED IN THE PHASING.

WHEN PHASING STATES TO USE LANE CLOSURES, REFER TO THE FOLLOWING FOR ALL EXISTING AND PROPOSED ROADS:

- ALL TWO-LANE/TWO-WAY FACILITIES - SEE RSD 1101.02, SHEET 1 OF 15
- ALL 3-LANE OR 5-LANE ROADWAYS - SEE RSD 1101.02, SHEET 2 OF 15
- ALL MULTI-LANE FACILITIES POSTED < 60 MPH - SEE RSD 1101.02, SHEET 3 OF 15

WHEN PHASING STATES TO STOP TRAFFIC FOR TRAFFIC SHIFTS, REFER TO THE FOLLOWING FOR ALL EXISTING AND PROPOSED ROADS:

- ALL TWO-LANE/TWO-WAY FACILITIES - SEE RSD 1101.03, SHEET 8 OF 9
- ALL MULTI-LANE FACILITIES - SEE RSD 1101.03, SHEET 9 OF 9

FOR ALL SHOULDER CLOSURES, SEE RSD 1101.04. INSTALL SHOULDER CLOSURES IN ADVANCE OF PORTABLE CONCRETE BARRIER.

WHEN INSTALLING AND ACTIVATING TEMPORARY AND FINAL SIGNALS, USE LANE CLOSURES (RSD 1101.02, SHEETS 1, 2, AND 3) AND LAW ENFORCEMENT.

COMPLETE PAVING UP TO BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE UNTIL STATED TO PLACE FINAL LAYER IN THE PHASING.

## PHASE 1

### STEP 1:

USING LANE CLOSURES AND WORKING IN A CONTINUOUS MANNER, PLACE TEMPORARY MARKINGS AND SHIFT EXISTING NC 24/27 TRAFFIC TO A TEMPORARY PATTERN FROM -L- STA. 48+00 +/- TO STA. 56+50 +/-, THEN INSTALL PCB FROM -L- STA. 50+40 +/- TO STA. 54+00 +/- AS SHOWN ON SHEET TMP-6.

USING LANE CLOSURES, CONSTRUCT TEMPORARY PAVEMENT ADJACENT TO EXISTING NC 24/27, THEN INSTALL PCB AT THE FOLLOWING CULVERT LOCATIONS:

- -L- FROM STA. 37+20 +/- TO STA. 40+00 +/- (SHEET TMP-5)
- -L- FROM STA. 91+60 +/- TO STA. 95+20 +/- (SHEET TMP-9)

USING LANE CLOSURES, INSTALL PCB ALONG -L- (NC 24) FROM STA. 352+00 +/- TO STA. 355+50 +/- . RESET PCB REMAINING FROM TIP PROJECT B-4974 FROM -L- STA. 351+00 +/- TO STA. 352+00 +/- . (SEE SHEET TMP-28)

USING LANE CLOSURES, INSTALL TEMPORARY GUARDRAIL ADJACENT TO EXISTING NC 24/27 AT THE FOLLOWING LOCATIONS:

- -L- FROM STA. 114+62 +/- TO STA. 124+88 +/- (SHEETS TMP-11, TMP-12)
- -L- FROM STA. 125+80 +/- TO STA. 139+18 +/- (SHEETS TMP-12, TMP-13)
- -L- FROM STA. 215+30 +/- TO STA. 219+30 +/- (SHEETS TMP-18, TMP-19)
- -L- FROM STA. 239+00 +/- TO STA. 244+75 +/- (SHEET TMP-20)
- -L- FROM STA. 296+17 +/- TO STA. 300+50 +/- (SHEETS TMP-24, TMP-25)
- -L- FROM STA. 303+55 +/- TO -Y14- STA. 14+05 +/- (SHEET TMP-25)
- -L- FROM STA. 316+00 +/- TO STA. 325+00 +/- (SHEET TMP-26)
- -L- FROM STA. 373+75 +/- TO STA. 377+87.5 +/- (SHEETS TMP-30, TMP-31)
- -L- FROM STA. 378+50 +/- TO STA. 385+12.5 +/- (SHEETS TMP-30, TMP-31)

### STEP 2:

USING LANE CLOSURES AS NECESSARY, INSTALL TEMPORARY SHORING REQUIRED FOR CULVERT CONSTRUCTION AT THE FOLLOWING LOCATIONS:



- -L- STA. 38+75 +/- (SHORING NO. 2, SHEET TMP-5)
- -L- STA. 53+00 +/- (SHORING NO. 4, SHEET TMP-6)
- -L- STA. 93+55 +/- (SHORING NO. 6, SHEET TMP-9)
- -L- STA. 305+50 +/- (SHORING NO. 29, SHEET TMP-25)
- -L- STA. 375+50 +/- (SHORING NO. 34, SHEET TMP-30)
- -L- STA. 381+50 +/- (SHORING NO. 36, SHEET TMP-30)

INSTALL AND ACTIVATE THE TEMPORARY SIGNAL 10-0591T1 AT THE -L-/-Y19- INTERSECTION AND TEMPORARY SIGNAL 10-0731T1 AT -Y19- STA. 28+00 +/- , THEN USING LANE CLOSURES, BEGIN CONSTRUCTION OF THE FOLLOWING: (SEE SHEETS TMP-4 AND TMP-32)

- -Y1- FROM STA. 9+00 +/- TO -L- INTERSECTION (COMPLETE THE MEDIAN AND RIGHT SIDE WORK, INCLUDING ASPHALT WEDGING TO THE FINAL GRADE OVER THE EXISTING SB TRAVEL LANES. WEDGE OVER THE EXISTING NB TRAVEL LANES AS NECESSARY TO MAINTAIN TRAFFIC.)
- -Y1- FROM -L- INTERSECTION TO STA. 28+90 +/- (COMPLETE THE MEDIAN AND LEFT SIDE WORK, INCLUDING ASPHALT WEDGING TO THE FINAL GRADE OVER THE EXISTING EB TRAVEL LANES. WEDGE OVER THE EXISTING WB TRAVEL LANES AS NECESSARY TO MAINTAIN TRAFFIC.)
- -L- FROM STA. 19+61 +/- TO -Y1- INTERSECTION (LT) (WEDGE OVER THE EXISTING TRAVEL LANES AS NECESSARY TO MAINTAIN TRAFFIC.)
- INSTALLATION OF SIGNAL 10-0591T2 AT THE -L- / -Y1- INTERSECTION
- INSTALLATION OF SIGNAL 10-0731T2 AT -Y19- STA. 28+00 +/-

PLOT DRIVER: NCDOT\_pdf\_color\_eng\_50.plt  
 USER: ERBROOKS  
 DATE: 12/10/2018  
 TIME: 10:11:53 AM  
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REVISIONS

APPROVED: <u>P. Eskine Brooks</u> DATE: 12/18/2018 		<p style="text-align: center; font-size: 24pt; font-weight: bold;">PHASING</p>
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		

# PHASING

PROJ. REFERENCE NO.	SHEET NO.
R-2530B	TMP-3A



## PHASE 1 (CONTINUED)

### STEP 3:

AWAY FROM TRAFFIC AND USING LANE CLOSURES AS NECESSARY, BEGIN CONSTRUCTION OF THE FOLLOWING: (SEE SHEETS TMP-4 THRU TMP-32A)

- -L- FROM STA. 24+50 +/- (-Y1- INTERSECTION) TO STA. 44+30 +/- (RT) (INCLUDING TEMPORARY PAVEMENT / DRIVEWAY CONNECTIONS AS NECESSARY TO MAINTAIN ACCESS TO EXISTING BUSINESSES, PROPOSED CULVERT AND TEMPORARY SHORING NO. 3 AT -L- STA. 38+75 +/-, AND TEMPORARY PAVEMENT WITHIN FUTURE ROUNDABOUT, AS SHOWN ON SHEET TMP-5)
- -L- FROM STA. 45+30 +/- TO STA. 68+85 +/- (RT) (INCLUDING TEMPORARY PAVEMENT, PROPOSED CULVERT, AND TEMPORARY SHORING NO. 5 AT -L- STA. 53+00 +/-)
- -L- FROM STA. 69+80 +/- TO STA. 98+00 +/- (RT) (INCLUDING TEMPORARY PAVEMENT, PROPOSED CULVERT, AND TEMPORARY SHORING NO. 7 AT -L- STA. 93+55 +/-)
- -L- FROM STA. 105+00 +/- TO STA. 152+50 +/- (LT) (INCLUDING TEMPORARY SHORING NOS. 10 - 13 AND NOS. 15 - 19 REQUIRED TO CONSTRUCT PROPOSED DRAINAGE SYSTEMS, AND TEMPORARY PAVEMENT FROM -L- STA. 140+45 +/- TO STA. 144+10 +/-)
- -L- FROM STA. 153+50 +/- TO STA. 163+00 +/- (LT)
- -L- FROM STA. 168+00 +/- TO STA. 197+37 +/- (RT) (INCLUDING TEMPORARY PAVEMENT FOR TEMPORARY INTERSECTION WITH -Y9- (DUNLAP ROAD), -L- STA. 188+50 +/-)
- -L- FROM STA. 198+17 +/- TO STA. 245+00 +/- (RT) (INCLUDING TEMPORARY SHORING NOS. 21 - 24 REQUIRED TO CONSTRUCT PROPOSED DRAINAGE SYSTEM, AND TEMPORARY PAVEMENT FOR TEMPORARY INTERSECTION WITH -Y11- (STONY MOUNTAIN ROAD), -L- STA. 238+40 +/-)
- -L- FROM STA. 252+00 +/- TO STA. 295+00 +/- (LT) (INCLUDING TEMPORARY SHORING NOS. 25 AND 26 REQUIRED TO CONSTRUCT PROPOSED DRAINAGE SYSTEM, AND TEMPORARY PAVEMENT FROM -L- STA. 272+05 +/- TO STA. 274+45 +/-)
- -L- FROM STA. 296+17 +/- TO STA. 310+50 +/- (LT) (INCLUDING TEMPORARY SHORING NOS. 27 AND 27A REQUIRED TO CONSTRUCT PROPOSED DRAINAGE SYSTEM, AND PROPOSED CULVERT AND TEMPORARY SHORING NO. 28 AT -L- STA. 305+50 +/-)
- -L- FROM STA. 311+40 +/- TO STA. 329+15 +/- (LT) (INCLUDING TEMPORARY SHORING NO. 30 REQUIRED TO CONSTRUCT PROPOSED DRAINAGE SYSTEM)
- -L- FROM STA. 331+25 +/- TO STA. 335+24 +/- (LT)
- -L- FROM STA. 346+97 +/- TO STA. 348+80 +/- (LT)
- -L- FROM STA. 368+00 +/- TO STA. 386+54 +/- (LT) (INCLUDING TEMPORARY SHORING NO. 33 REQUIRED TO CONSTRUCT PROPOSED DRAINAGE SYSTEM, PROPOSED CULVERT AND TEMPORARY SHORING NO. 35 AT -L- STA. 381+50 +/-, AND TEMPORARY PAVEMENT FROM -L- STA. 380+39 +/- TO STA. 385+91 +/-)
- -Y2- FROM STA. 12+85 +/- TO STA. 22+00 +/-
- -Y2- FROM STA. 29+00 +/- TO -L-
- -Y2A- FROM -L- TO STA. 17+20 +/- (INCLUDING ASPHALT WEDGING AS SHOWN ON SHEET TMP-5)
- -Y14- FROM STA. 13+75 +/- TO -L-
- -Y16- FROM STA. 12+00 +/- TO STA. 16+05 +/- (INCLUDING ASPHALT WEDGING AND TEMPORARY PAVEMENT CONSTRUCTION AS SHOWN ON SHEET TMP-28)

USING LANE CLOSURES, CONCURRENTLY WITH ADJACENT WIDENING AND CONSTRUCTION OF -L-, PLACE ASPHALT WEDGING OVER EXISTING NC 24 TRAVEL LANES AS NECESSARY TO MAINTAIN TRAFFIC IN THE FOLLOWING LOCATIONS: (SEE SHEETS TMP-4 THRU TMP-8)

- -L- FROM -Y1- INTERSECTION TO STA. 31+50 +/-
- -L- FROM STA. 39+00 +/- TO STA. 46+00 +/- (PLACE TEMPORARY WEDGING ON EXISTING ANDERSON ROAD [-L- STA. 45+00], AS NECESSARY, TO MAINTAIN TRAFFIC)
- -L- FROM STA. 54+50 +/- TO STA. 93+90 +/-

AWAY FROM TRAFFIC AND USING LANE CLOSURES AS NECESSARY, BEGIN CONSTRUCTION OF TEMPORARY PAVEMENT IN THE FOLLOWING LOCATIONS:

- -L- FROM STA. 98+50 +/- TO STA. 105+00 +/- (LT) (SHEET TMP-10)
- -L- FROM STA. 163+00 +/- TO STA. 169+92 +/- (LT) (SHEETS TMP-14, 15)
- -L- FROM STA. 245+00 +/- TO STA. 252+99 +/- (RT) (SHEETS TMP-20, 21)
- -L- FROM STA. 348+06 +/- TO STA. 352+26 +/- (MEDIAN) (SHEET TMP-28)
- -L- FROM STA. 357+23 +/- TO STA. 360+49 +/- (RT) (SHEETS TMP-28, 29)
- -L- FROM STA. 357+21 +/- TO STA. 370+16 +/- (LT) (SHEETS TMP-28, 29) (INCLUDING TEMPORARY SHORING NO. 32)

### STEP 4:

CLOSE AND DETOUR -Y6- (ANDERSON ROAD) (SEE SHEET TMP-2B-1 FOR DETOUR ROUTE), THEN AWAY FROM TRAFFIC AND USING LANE CLOSURES AS NECESSARY, COMPLETE CONSTRUCTION OF THE FOLLOWING. PLACE TEMPORARY MARKINGS IN THE EXISTING PATTERN, THEN REOPEN -Y6- FOLLOWING COMPLETION OF THE WORK. (SEE SHEET TMP-7)

- -L- FROM STA. 68+85 +/- TO STA. 69+80 +/-
- -Y6- FROM -L- TO STA. 12+86 +/-

CLOSE AND DETOUR -Y8- (VALLEY DRIVE) (SEE SHEET TMP-2B-3 FOR DETOUR ROUTE), THEN AWAY FROM TRAFFIC AND USING LANE CLOSURES AS NECESSARY, COMPLETE CONSTRUCTION OF THE FOLLOWING. (SEE SHEET TMP-14)

- -L- FROM STA. 152+50 +/- TO STA. 153+50 +/-
- -Y8- FROM STA. 13+68 +/- TO -L- INTERSECTION

COMPLETE CONSTRUCTION PREVIOUSLY BEGUN IN THE FOLLOWING LOCATIONS:

- -L- FROM STA. 19+61 +/- TO STA. -Y1- INTERSECTION (LT)
- -L- FROM STA. 42+40 +/- TO STA. 44+30 +/- (RT)
- -L- FROM STA. 105+00 +/- TO STA. 163+00 +/- (LT)
- -Y1- FROM STA. 13+22 +/- TO STA. 20+00 +/- (RT)
- -Y1- FROM STA. 20+00 +/- TO STA. 28+90 +/- (LT)
- -Y16- FROM STA. 12+00 +/- TO STA. 16+05 +/-
- -Y2A- FROM -L- TO STA. 17+20 +/-

COMPLETE CONSTRUCTION OF THE TEMPORARY PAVEMENT PREVIOUSLY BEGUN IN THE FOLLOWING LOCATIONS:

- -L- FROM STA. 98+50 +/- TO STA. 105+00 +/- (LT)
- -L- FROM STA. 163+00 +/- TO STA. 169+92 +/- (LT)

USING LANE CLOSURES AND WHILE MAINTAINING TRAFFIC ON -Y13- (RIVER HAVEN DRIVE), CONSTRUCT -L- FROM STA. 295+00 +/- TO STA. 296+17 +/- AND -Y13- FROM STA. 13+72 +/- TO -L- INTERSECTION, INCLUDING ASPHALT WEDGING. RETURN TRAFFIC TO THE EXISTING PATTERN AT THE END OF EACH WORKDAY. MAINTAIN EXISTING -Y13- TRAFFIC BY USE OF INCIDENTAL STONE AS NECESSARY. PLACE TEMPORARY MARKINGS IN THE EXISTING PATTERN UPON COMPLETION OF THE WORK. (SEE SHEET TMP-24)

CONSTRUCT TEMPORARY PAVEMENT AT THE STRAND DRIVE / FOX ROAD INTERSECTION AS SHOWN ON SHEET TMP-25.

USING LANE CLOSURES AND WHILE MAINTAINING TRAFFIC ON -Y15- (TAR HEEL DRIVE), CONSTRUCT -L- FROM STA. 329+15 +/- TO STA. 331+25 +/- AND -Y15- FROM STA. 11+30 +/- TO -L- INTERSECTION, INCLUDING ASPHALT WEDGING. RETURN TRAFFIC TO THE EXISTING PATTERN AT THE END OF EACH WORKDAY. PLACE TEMPORARY MARKINGS IN THE EXISTING PATTERN UPON COMPLETION OF THE WORK. (SEE SHEET TMP-27)

CLOSE AND DETOUR -Y2- (BARNARD ROAD / HILCO STREET) (SEE SHEET TMP-2B-7 FOR DETOUR ROUTE), THEN AWAY FROM TRAFFIC AND USING LANE CLOSURES AS NECESSARY, COMPLETE CONSTRUCTION OF -Y2- FROM STA. 22+00 +/- TO STA. 29+00 +/- (SEE SHEET TMP-32A) UPON COMPLETION OF THE WORK, PLACE TEMPORARY MARKINGS IN THE FINAL PATTERN ON -Y2- FROM STA. 12+85 +/- TO THE -L- INTERSECTION (SEE SHEET TMP-34), THEN REOPEN -Y2-.

### STEP 5:

WORKING IN A CONTINUOUS MANNER AND USING LANE CLOSURES AS NECESSARY, PLACE TEMPORARY MARKINGS ON -Y1-, COMPLETE INSTALLATION AND ACTIVATION OF TEMPORARY SIGNALS 10-0591T2 AND 10-0731T2, THEN SHIFT TRAFFIC TO THE TEMPORARY PATTERN AS SHOWN ON SHEETS TMP-33 AND TMP-44.

WORKING IN A CONTINUOUS MANNER AND USING LANE CLOSURES AS NECESSARY, PLACE TEMPORARY MARKINGS ON -Y2A- AND SHIFT TRAFFIC TO THE TEMPORARY PATTERN ON THE -Y2A- FINAL ALIGNMENT AS SHOWN ON SHEET TMP-34.

AWAY FROM TRAFFIC, INSTALL PCB AT THE FOLLOWING LOCATIONS:

- -L- FROM STA. 117+85 +/- TO STA. 120+00 +/- (SEE SHEET TMP-36)
- -L- FROM STA. 140+70 +/- TO STA. 151+00 +/- (SEE SHEETS TMP-38, 39)
- -L- FROM STA. 152+00 +/- TO STA. 159+60 +/- (SEE SHEET TMP-39)

USING LANE CLOSURES, INSTALL PCB ALONG THE LEFT SIDE OF -L- FROM STA. 361+65 +/- TO STA. 366+05 +/- (SEE SHEET TMP-43)

USING LANE CLOSURES, REMOVE PCB ALONG -L- (NC 24) FROM STA. 346+90 +/- TO STA. 355+50 +/-.

### STEP 6:

WORKING IN A CONTINUOUS MANNER AND USING LANE CLOSURES AS NECESSARY, PLACE TEMPORARY MARKINGS AND SHIFT NC 24 TRAFFIC TO THE TEMPORARY PATTERN ON -L- FROM STA. 98+50 +/- TO STA. 170+97, AS SHOWN ON SHEETS TMP-35 THRU TMP-40. CONCURRENTLY WITH THE SHIFT OF NC 24, DETOUR AND CLOSE -Y8- (STONY GAP ROAD) ON THE SOUTH SIDE OF NC 24 (SEE DETOUR ON SHEET TMP-2B-2) AND PLACE TEMPORARY MARKINGS AND THEN REOPEN -Y8- (VALLEY DRIVE) ON THE NORTH SIDE OF NC 24 TO THE PATTERN SHOWN ON SHEET TMP-39.

WORKING IN A CONTINUOUS MANNER AND USING LANE CLOSURES AS NECESSARY, PLACE TEMPORARY MARKINGS ON -L- FROM STA. 347+00 +/- TO STA. 371+75 +/-, AND SHIFT NC 24 AND -Y16- (NC 73) TRAFFIC TO THE TEMPORARY PATTERNS AS SHOWN ON SHEETS TMP-42 AND TMP-43.

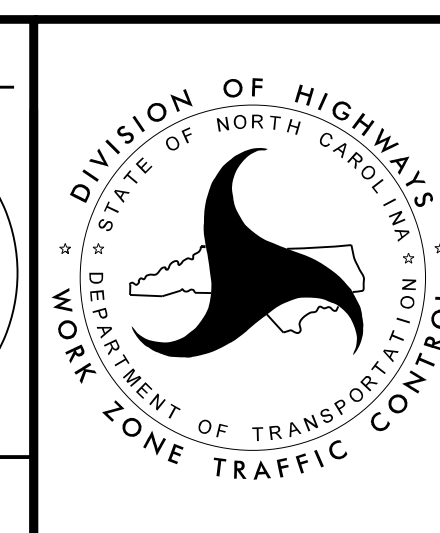
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APPROVED: P. Eskine Brooks  
DATE: 12/18/2018

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# PHASING

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PROJ. REFERENCE NO.	SHEET NO.
R-2530B	TMP-3B

**HDR** HDR Engineering, Inc. of the Carolinas  
 555 Fayetteville St, Suite 900 Raleigh, N.C. 27601  
 N.C.B.E.L.S. License Number: F-0116

## PHASE 2

### STEP 1:

CLOSE AND DETOUR -Y2- (HILCO STREET) (SEE SHEET TMP-2B-7 FOR DETOUR ROUTE), THEN AWAY FROM TRAFFIC AND USING LANE CLOSURES AS NECESSARY, CONSTRUCT -Y1- FROM STA. 10+76 +/- TO STA. 12+00 +/- (LT) AND -Y2- FROM -Y1- INTERSECTION TO STA. 12+85 +/- (SEE SHEET TMP-44) UPON COMPLETION OF THE WORK, PLACE TEMPORARY MARKINGS IN THE FINAL PATTERN ON -Y2- (SEE SHEET TMP-66), THEN REOPEN -Y2-.

USING LANE CLOSURES, BEGIN CONSTRUCTION OF THE FOLLOWING: (SEE SHEETS TMP-33 AND TMP-44)

- -Y1- FROM STA. 9+00 +/- TO STA. 20+00 +/- (-L- INTERSECTION) (LT) (INCLUDING ASPHALT WEDGING UP TO BUT NOT INCLUDING THE FINAL SURFACE COURSE OVER THE EXISTING NB TRAVEL LANES)
- -Y1- FROM STA. 20+00 +/- (-L- INTERSECTION) TO STA. 28+90 +/- (RT) (INCLUDING ASPHALT WEDGING UP TO BUT NOT INCLUDING THE FINAL SURFACE COURSE OVER THE EXISTING SB TRAVEL LANES)
- -L- FROM STA. 19+61 +/- TO -Y1- INTERSECTION (RT) (INCLUDING ASPHALT WEDGING UP TO BUT NOT INCLUDING THE FINAL SURFACE COURSE OVER THE EXISTING SB TRAVEL LANES)
- INSTALLATION OF SIGNAL 10-0591T3 AT THE -L- / -Y1- INTERSECTION
- INSTALLATION OF SIGNAL 10-0731T3 AT -Y19- STA. 28+00 +/-

AWAY FROM TRAFFIC AND USING LANE CLOSURES AS NECESSARY, BEGIN CONSTRUCTION OF THE FOLLOWING: (SEE SHEET TMP-34)

- -L- FROM STA. 44+30 +/- TO STA. 45+30 +/-

USING LANE CLOSURES, INSTALL PCB AT THE FOLLOWING LOCATIONS:

- -L- FROM STA. 98+50 +/- TO STA. 103+20 +/- (SEE SHEET TMP-35)
- -L- FROM STA. 355+70 +/- TO STA. 364+40 +/- (RIGHT SIDE OF TEMPORARY PATTERN, SEE SHEETS TMP-42 AND TMP-43)

### STEP 2:

AWAY FROM TRAFFIC AND USING LANE CLOSURES AS NECESSARY, BEGIN CONSTRUCTION OF THE FOLLOWING: (SEE SHEETS TMP-4 THRU TMP-31)

- -L- FROM STA. 98+00 +/- TO STA. 151+75 +/- (RT) (INCLUDING TEMPORARY SHORING NOS. 37 AND 38 REQUIRED TO CONSTRUCT PROPOSED DRAINAGE SYSTEM)
- -L- FROM STA. 154+40 +/- TO STA. 168+00 +/- (RT)

AWAY FROM TRAFFIC AND USING LANE CLOSURES AS NECESSARY, CONSTRUCT -L- FROM STA. 151+75 +/- TO STA. 154+40 +/- AND REMAINING PORTION OF -Y8- (STONY GAP ROAD) FROM THE -L- INTERSECTION TO -Y8- STA. 27+06 +/-, AS SHOWN ON SHEET TMP-39. UPON COMPLETION OF THIS WORK, REMOVE THE PCB ALONG -L- WITHIN THE -Y8- INTERSECTION, PLACE TEMPORARY MARKINGS ALONG -Y8- (STONY GAP ROAD) TO A TEMPORARY INTERSECTION WITH -L- (NC 24), THEN REOPEN -Y8-, AS SHOWN ON SHEET TMP-39A.

CLOSE AND DETOUR -Y10- (McNEIL ROAD) (SEE SHEET TMP-2B-4 FOR DETOUR ROUTE), THEN AWAY FROM TRAFFIC AND USING LANE CLOSURES AS NECESSARY, BEGIN CONSTRUCTION OF -L- FROM STA. 197+37 +/- TO STA. 198+17 +/- (RT) AND -Y10- FROM THE -L- INTERSECTION TO STA. 13+04 +/- (SEE SHEET TMP-41)

AWAY FROM TRAFFIC AND USING LANE CLOSURES AS NECESSARY, CONSTRUCT THE FOLLOWING: (SEE SHEET TMP-42)

- -L- FROM STA. 353+00 +/- TO STA. 354+30 +/- (INCLUDING TEMPORARY PAVEMENT AND WEDGING [-L- STA. 350+00 +/- TO STA. 356+50 +/-] OVER EXISTING NC 24 AT THE -Y16- INTERSECTION)
- -Y16- FROM -L- INTERSECTION TO STA. 12+00 +/-

AWAY FROM TRAFFIC AND USING LANE CLOSURES AS NECESSARY, BEGIN CONSTRUCTION OF THE FOLLOWING: (SEE SHEETS TMP-42 AND TMP-43)

- -L- FROM STA. 354+30 +/- TO STA. 364+00 +/- (INCLUDING INSTALLATION OF TEMPORARY SHORING NOS. 39 AND 40 AT -L- STA. 359+00 +/-, AND INSTALLATION OF TEMPORARY SHORING NOS. 41 AND 42 AND THE PROPOSED CULVERT AT -L- STA. 363+00 +/-)
- -L- FROM STA. 364+00 +/- TO 367+21 +/- (TEMPORARY PAVEMENT) (INCLUDING WEDGING OVER EXISTING NC 24 AS NECESSARY)

AWAY FROM TRAFFIC, COMPLETE ALL WORK IN THE SWIFT ISLAND LAKE BOAT ACCESS AREA. (SEE SHEETS TMP-42 AND TMP-43)

### STEP 3:

AWAY FROM TRAFFIC AND USING LANE CLOSURES AS NECESSARY, PLACE TEMPORARY MARKINGS ON NC 24 AND -Y16- (FINAL ALIGNMENT), AND SHIFT TRAFFIC TO THE TEMPORARY PATTERN AS SHOWN ON SHEET TMP-45.

### STEP 4:

AWAY FROM TRAFFIC AND USING LANE CLOSURES AS NECESSARY, CONSTRUCT THE FOLLOWING: (SEE SHEET TMP-45)

- -L- FROM STA. 348+66 +/- TO STA. 351+00 +/- (RT) (TEMP PAVEMENT) (INCLUDING WEDGING OVER EXISTING NC 24 TEMPORARY TRAVEL LANES AS NECESSARY)
- -L- FROM STA. 351+00 +/- TO STA. 353+00 +/- (RT)

COMPLETE ALL WORK ON PREVIOUSLY BEGUN IN THE FOLLOWING LOCATIONS:

- -L- FROM STA. 19+61 +/- TO STA. 245+00 +/- (RT)
- -L- FROM STA. 245+00 +/- TO STA. 252+99 +/- (RT) (TEMP PAVEMENT)
- -L- FROM STA. 354+30 +/- TO STA. 364+00 +/- (RT)
- -L- FROM STA. 364+00 +/- TO STA. 367+21 +/- (RT) (TEMP PAVEMENT)
- -Y1- FROM STA. 12+00 +/- TO STA. 20+00 +/- (LT)
- -Y1- FROM STA. 20+00 +/- TO STA. 28+90 +/- (RT)
- -Y10-

### STEP 5:

CLOSE AND DETOUR -Y14- (STRAND DRIVE) (SEE SHEET TMP-2B-6 FOR DETOUR ROUTE).

AWAY FROM TRAFFIC AND USING LANE CLOSURES AS NECESSARY, PLACE PCB AT THE FOLLOWING LOCATIONS:

- -L- STA. 37+90 +/- TO STA. 40+60 +/- (SEE SHEET TMP-47)
- -L- STA. 51+65 +/- TO STA. 55+75 +/- (SEE SHEET TMP-48)
- -L- STA. 92+20 +/- TO STA. 96+00 +/- (SEE SHEET TMP-51)
- -L- STA. 357+50 +/- TO STA. 364+40 +/- (SEE SHEETS TMP-62, 63)

### STEP 6:

WORKING IN A CONTINUOUS MANNER AND USING LANE CLOSURES AS NECESSARY, PLACE TEMPORARY MARKINGS ON -L- FROM STA. 19+61 +/- TO THE -Y1- INTERSECTION AND ON -Y1-, COMPLETE INSTALLATION AND ACTIVATION OF TEMPORARY SIGNALS 10-0591T3 AND 10-0731T3, THEN SHIFT TRAFFIC TO THE TEMPORARY PATTERNS AS SHOWN ON SHEETS TMP-46 AND TMP-66.

WORKING IN A CONTINUOUS MANNER AND USING LANE CLOSURES AS NECESSARY, PLACE TEMPORARY MARKINGS ON -L- FROM -Y1- INTERSECTION TO STA. 254+10 +/-, -Y2-, -Y5-, -Y6-, -Y7-, -Y8-, -Y9-, -Y10-, AND -Y11-, THEN SHIFT TRAFFIC TO THE TEMPORARY PATTERNS AS SHOWN ON SHEETS TMP-46 THRU TMP-60, AND REOPEN -Y10- (McNEIL ROAD) TO THE TEMPORARY PATTERN.


WORKING IN A CONTINUOUS MANNER AND USING LANE CLOSURES AS NECESSARY, PLACE TEMPORARY MARKINGS ON -L- FROM STA. 347+05 +/- TO STA. 370+16 +/- AND ADJUST TEMPORARY MARKINGS ON -Y16- (NC 73) AT THE -L- INTERSECTION, THEN SHIFT TRAFFIC TO THE TEMPORARY PATTERN AS SHOWN ON SHEETS TMP-62 AND TMP-63.

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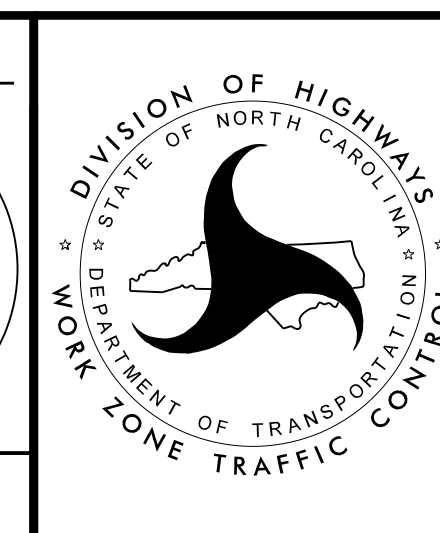
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## PHASE 3

### STEP 1:

USING LANE CLOSURES, COMPLETE MEDIAN ISLAND CONSTRUCTION ON -Y1-. (SEE SHEETS TMP-46 AND TMP-66)

USING LANE CLOSURES, PLACE PCB ALONG THE LEFT SIDE OF -L- FROM STA. 364+40 +/- TO STA. 368+00 +/- . (SEE SHEET TMP-63)

AWAY FROM TRAFFIC AND USING LANE CLOSURES AS NECESSARY, BEGIN CONSTRUCTION OF THE FOLLOWING: (SEE SHEETS TMP-46 THRU TMP-65)

- -L- FROM STA. 25+50 +/- TO STA. 42+25 +/- (LT)
- -L- FROM STA. 43+40 +/- TO STA. 105+00 +/- (LT)
- -L- FROM STA. 163+00 +/- TO STA. 187+70 +/- (LT)
- -L- FROM STA. 189+00 +/- TO STA. 237+80 +/- (LT)
- -L- FROM STA. 239+00 +/- TO STA. 252+00 +/- (LT)
- -L- FROM STA. 310+50 +/- TO STA. 311+40 +/- (LT)
- -L- FROM STA. 386+00 +/- TO STA. 396+23 +/- (INCLUDING WEDGING OVER EXISTING NC 24 TRAVEL LANES)
- -Y2- FROM STA. 30+50 +/- TO -L- (LT)
- -Y3-
- -Y4-
- -Y5-
- -Y7-
- -Y14- FROM STA. 11+42 +/- TO STA. 13+75 +/-
- -Y17-
- FINAL SIGNAL 10-0591 AT THE -L-/-Y1- INTERSECTION

USING LANE CLOSURES AND WHILE MAINTAINING TRAFFIC ON -Y9- (DUNLAP ROAD), CONSTRUCT -L- FROM STA. 187+70 +/- TO STA. 189+00 +/- AND -Y9-. MAINTAIN EXISTING -Y9- TRAFFIC BY USE OF INCIDENTAL STONE AND TRAFFIC SHIFTS AS NECESSARY. (SEE SHEET TMP-55) UPON COMPLETION OF -Y9-, USING LANE CLOSURES, PLACE TEMPORARY MARKINGS AND SHIFT TRAFFIC TO THE EXISTING PATTERN WITH TEMPORARY TIE TO -L-.

USING LANE CLOSURES AND WHILE MAINTAINING TRAFFIC ON -Y11- (STONY MOUNTAIN ROAD), CONSTRUCT -L- FROM STA. 237+80 +/- TO STA. 239+00 +/- AND -Y11-. MAINTAIN EXISTING -Y11- TRAFFIC BY USE OF INCIDENTAL STONE AND TRAFFIC SHIFTS AS NECESSARY. (SEE SHEET TMP-59) UPON COMPLETION OF -Y11-, USING LANE CLOSURES, PLACE TEMPORARY MARKINGS AND SHIFT TRAFFIC TO THE EXISTING PATTERN WITH TEMPORARY TIE TO -L-.

### STEP 2:

AWAY FROM TRAFFIC AND USING LANE CLOSURES AS NECESSARY, CONSTRUCT -L- FROM STA. 348+80 +/- TO STA. 368+00 +/- (LT), INCLUDING TEMPORARY PAVEMENT FROM STA. 348+80 +/- TO STA. 352+90 +/- (MED). (SEE SHEETS TMP-62 AND TMP-63)

COMPLETE ALL WORK PREVIOUSLY BEGUN ON -L- AND Y-LINES.

### STEP 3:

CLOSE AND DETOUR -Y12- (INDIAN MOUND ROAD) (SEE SHEET TMP-2B-5 FOR DETOUR ROUTE).

AWAY FROM TRAFFIC AND USING LANE CLOSURES AS NECESSARY, PLACE PCB ALONG THE LEFT SIDE OF -L- FROM STA. 272+30 +/- TO STA. 279+00 +/- . (SEE SHEETS TMP-75,76)

AWAY FROM TRAFFIC, BEGIN PLACING TEMPORARY MARKINGS ALONG THE NEW WESTBOUND TRAVEL LANES OF -L- FOR THE PHASE 4 TRAFFIC PATTERNS. (SEE SHEETS TMP-67 THRU TMP-83)

### STEP 4:

WORKING IN A CONTINUOUS MANNER AND USING LANE CLOSURES AS NECESSARY, PLACE TEMPORARY MARKINGS IN THE FINAL PATTERN ON -Y1-, INSTALL AND ACTIVATE FINAL SIGNAL 10-0591 AT THE -L-/-Y1- INTERSECTION AND FINAL SIGNAL 10-0731 AT -Y19- STA. 28+00 +/-, THEN SHIFT TRAFFIC TO THE FINAL PATTERN.

WORKING IN A CONTINUOUS MANNER AND USING LANE CLOSURES AS NECESSARY, COMPLETE TEMPORARY MARKINGS ALONG -L-, INCLUDING Y-LINES AND INTERSECTION TIE-INS, THEN SHIFT TRAFFIC TO THE TEMPORARY PATTERNS AS SHOWN ON SHEETS TMP-67 THRU TMP-83.

## PHASE 4

### STEP 1:

USING LANE CLOSURES, COMPLETE REMAINING MONOLITHIC ISLANDS AND MEDIAN WORK ON -L- FROM THE -Y1- INTERSECTION TO STA. 160+00 +/- . (SEE SHEETS TMP-67 THRU TMP-70)

USING LANE CLOSURES, COMPLETE THE ROUNDABOUT CENTRAL ISLAND WORK AT THE -L- / -Y2- / -Y2A- INTERSECTION. (SEE SHEET TMP-70)

AWAY FROM TRAFFIC AND USING LANE CLOSURES AS NECESSARY, BEGIN CONSTRUCTION OF THE FOLLOWING: (SEE SHEETS TMP-73 THRU TMP-80)

- -L- FROM STA. 245+00 +/- TO STA. 274+50 +/- (RT)
- -L- FROM STA. 275+50 +/- TO STA. 329+15 +/- (RT)
- -L- FROM STA. 331+25 +/- TO STA. 351+00 +/- (RT) (EXCLUDING WORK ON THE EXISTING BRIDGE)
- -L- FROM STA. 361+30 +/- TO STA. 386+00 +/- (RT)

AWAY FROM TRAFFIC AND USING LANE CLOSURES AS NECESSARY, CONSTRUCT -L- FROM STA. 274+50 +/- TO STA. 275+50 +/- AND -Y12- FROM -L- INTERSECTION TO STA. 16+72 +/- . (SEE SHEET TMP-76) UPON COMPLETION OF -Y12-, REMOVE PCB ADJACENT TO NC 24 IN THE -Y12- INTERSECTION AREA, PLACE TEMPORARY MARKINGS, THEN REOPEN -Y12- AND SHIFT TRAFFIC TO THE TEMPORARY PATTERN AND INTERSECTION TIE TO -L-, AS SHOWN ON SHEET TMP-76A.

USING LANE CLOSURES AND WHILE MAINTAINING TRAFFIC ON -Y15- (LAKE TILLERY ROAD), CONSTRUCT -L- FROM STA. 329+15 +/- TO STA. 331+25 +/- AND -Y15- FROM -L- INTERSECTION TO STA. 16+95 +/-, INCLUDING ASPHALT WEDGING. RETURN TRAFFIC TO THE EXISTING PATTERN AT THE END OF EACH WORKDAY. PLACE TEMPORARY MARKINGS IN THE EXISTING PATTERN UPON COMPLETION OF THE WORK. (SEE SHEET TMP-79)

### STEP 2:

WORKING IN A CONTINUOUS MANNER AND USING LANE CLOSURES, PLACE TEMPORARY MARKINGS AT THE -L- / -Y2- / -Y2A- ROUNDABOUT, THEN SHIFT TRAFFIC TO THE TEMPORARY PATTERNS AS SHOWN ON SHEET TMP-84.

### STEP 3:

COMPLETE ALL REMAINING MEDIAN AND SPLITTER ISLAND WORK AT THE -L- / -Y2- / -Y2A- ROUNDABOUT. (SEE SHEET TMP-84)

COMPLETE ALL WORK PREVIOUSLY BEGUN IN PHASE 3, STEP 1.

WHERE AREAS ARE COMPLETE, AWAY FROM TRAFFIC, BEGIN PLACING TEMPORARY MARKINGS IN THE FINAL PATTERN ALONG THE NEW EASTBOUND TRAVEL LANES OF -L-.

### STEP 4:

WORKING IN A CONTINUOUS MANNER AND USING LANE CLOSURES AS NECESSARY, COMPLETE TEMPORARY MARKINGS PLACED IN THE FINAL PATTERN ON ALL ROADS, THEN SHIFT TRAFFIC TO THE FINAL PATTERNS.

## PHASE 5

### STEP 1:

USING LANE CLOSURES, COMPLETE ALL REMAINING MEDIAN WORK AND CONCRETE ISLANDS ON -L- AND Y-LINES.

### STEP 2:



USING LANE CLOSURES, PLACE FINAL ASPHALT SURFACE COURSE ON ALL ALIGNMENTS, THEN PLACE ALL FINAL MARKINGS AND MARKERS, AND OPEN ALL LANES TO TRAFFIC.

### STEP 3:


REMOVE ALL REMAINING TRAFFIC CONTROL SIGNS AND DEVICES.

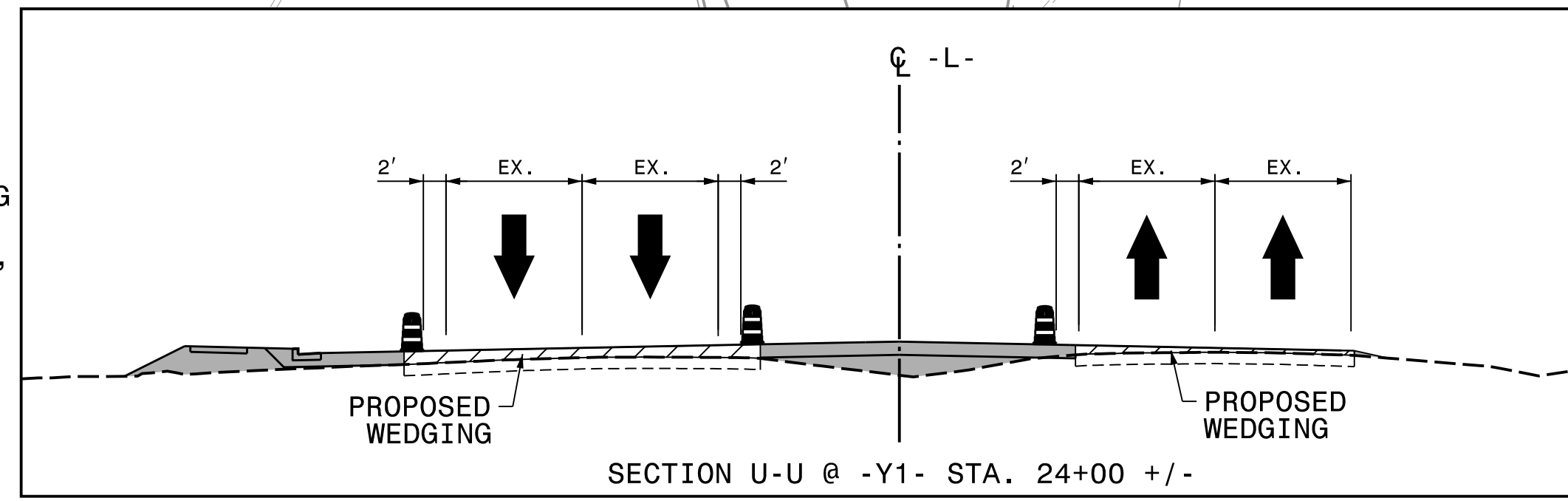
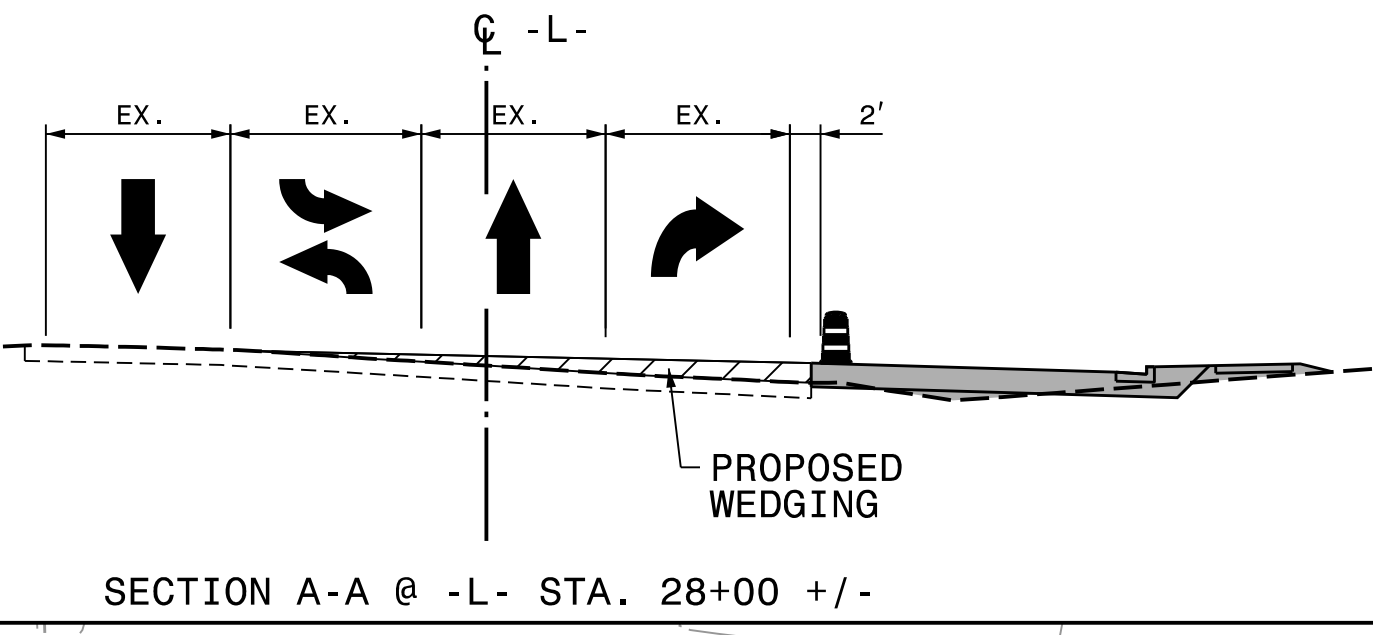
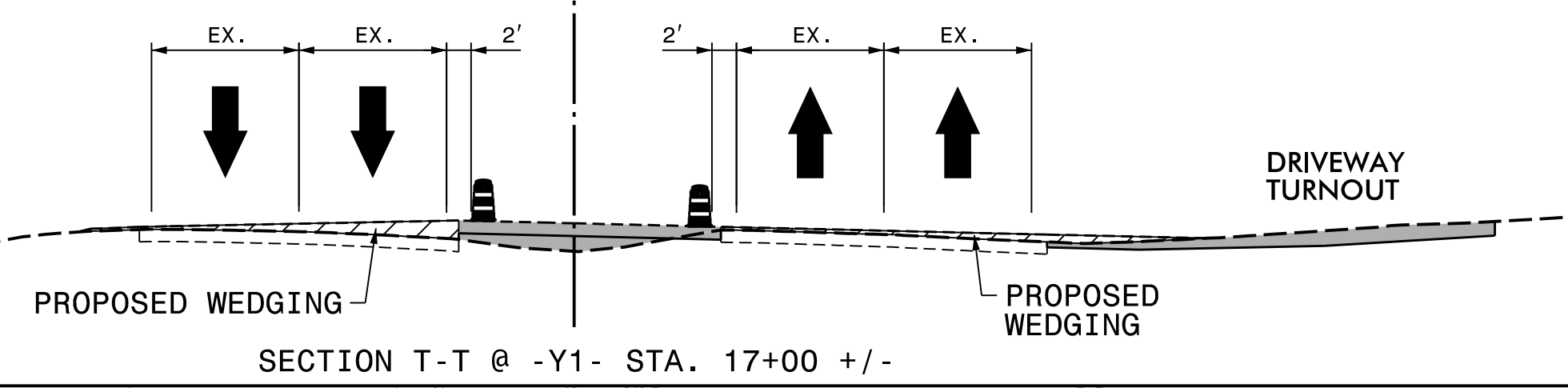
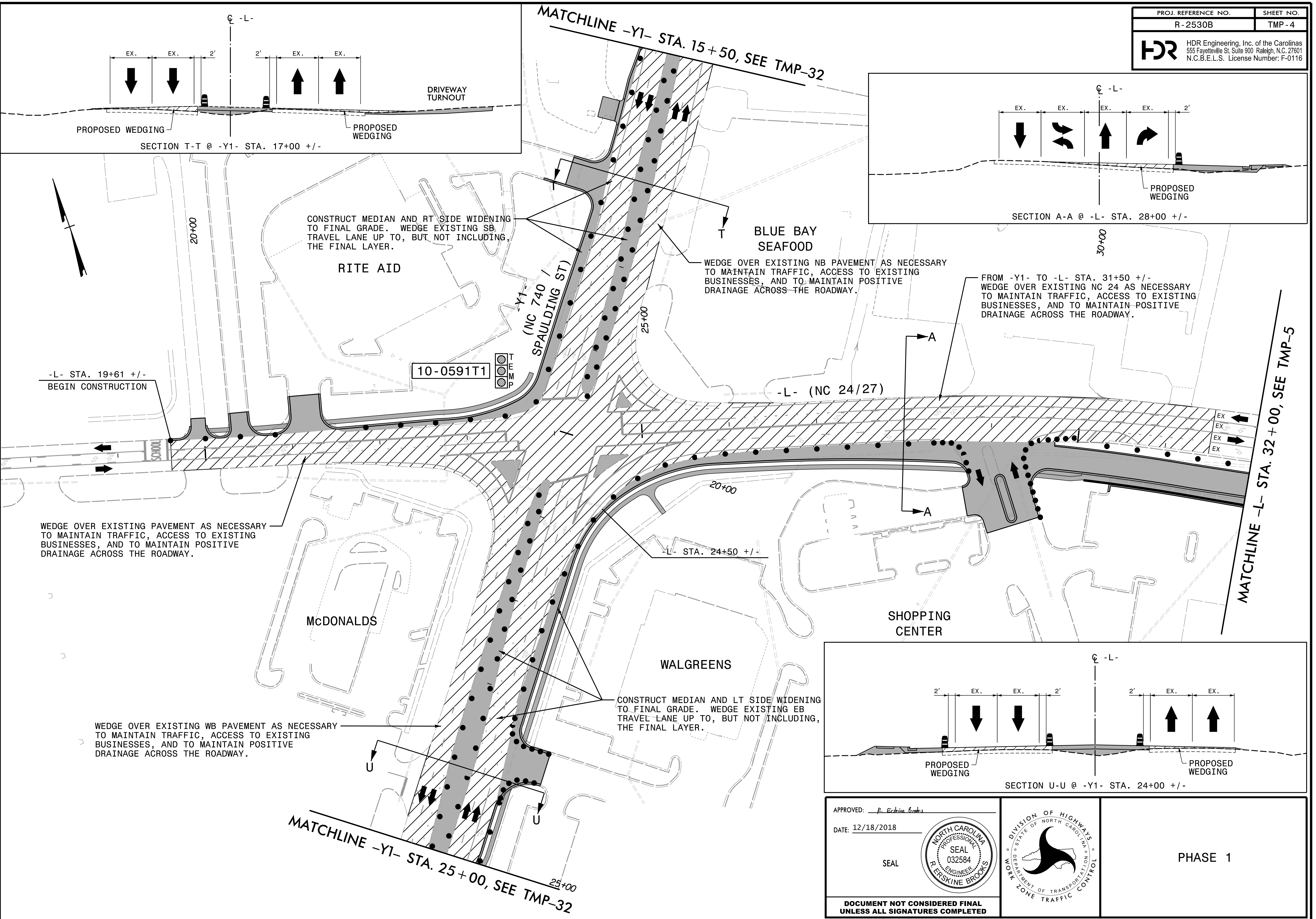
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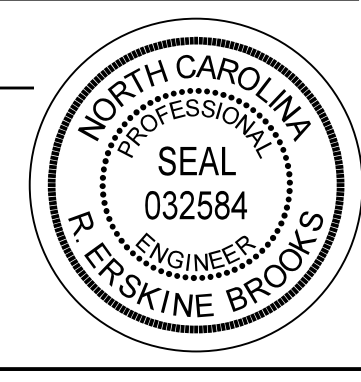
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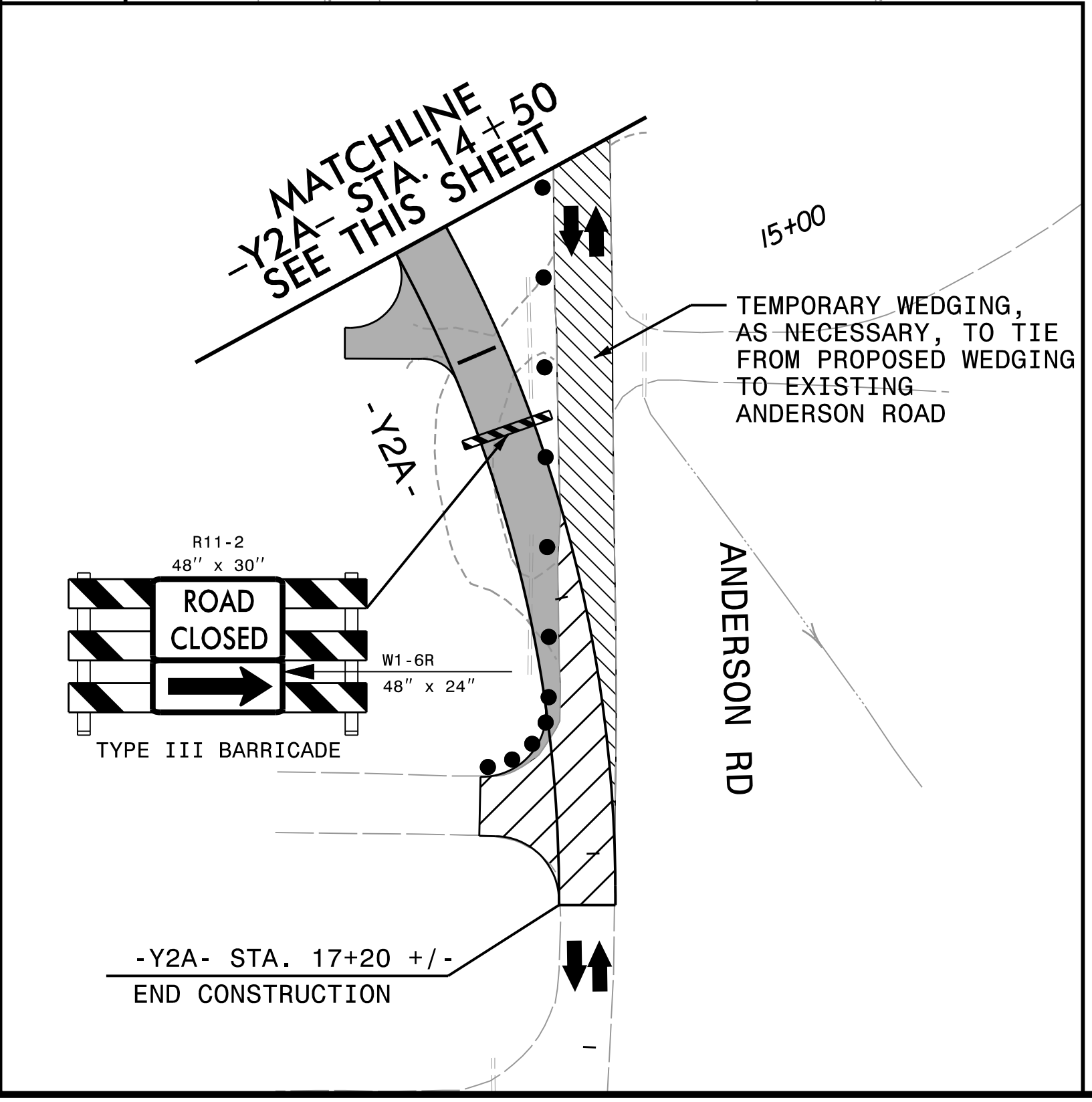
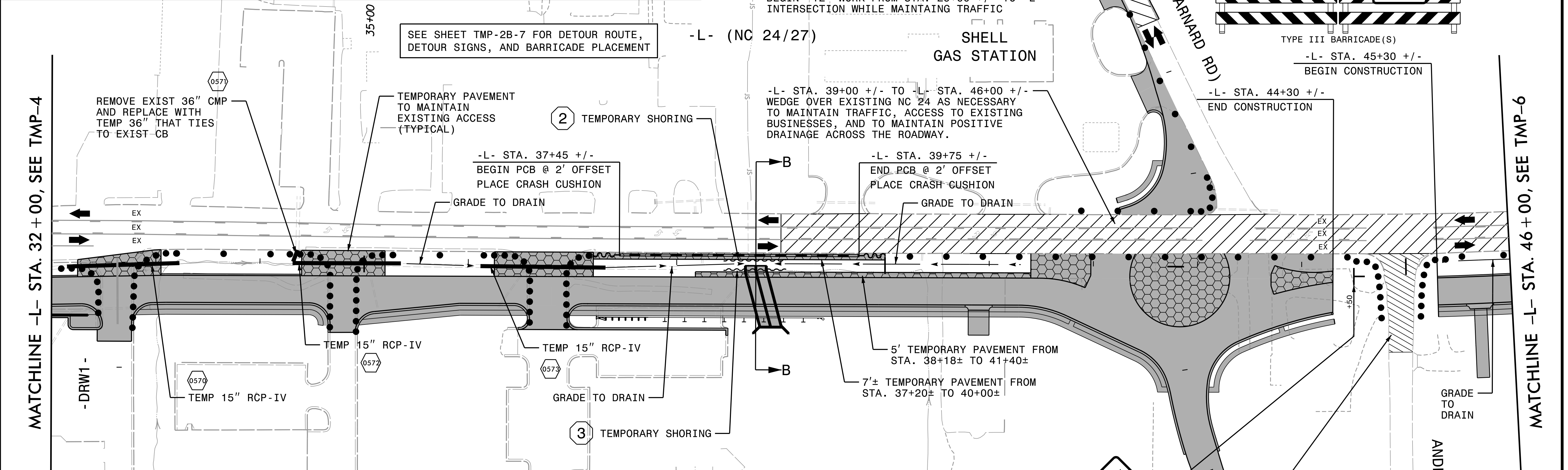
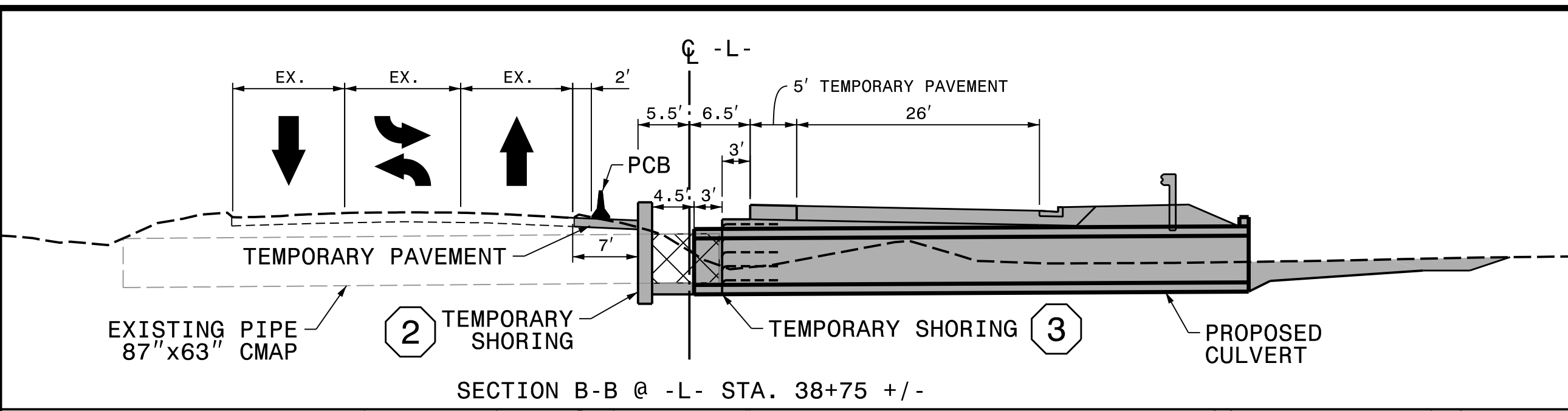


PHASE 1

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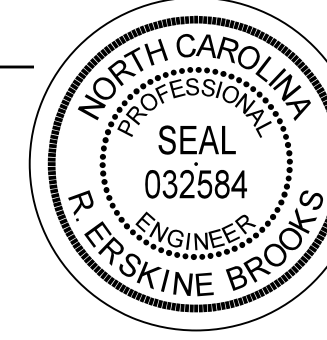


<p>② TEMPORARY SHORING No. 2 QUANTITY = 380 SF FROM -L- STA. 38+45±, 5.5' LT TO -L- STA. 39+05±, 5.5' LT</p>	<p>③ TEMPORARY SHORING No. 3 QUANTITY = 360 SF FROM -L- STA. 38+45±, 3.5' RT TO -L- STA. 39+05±, 3.5' RT</p>
--	--

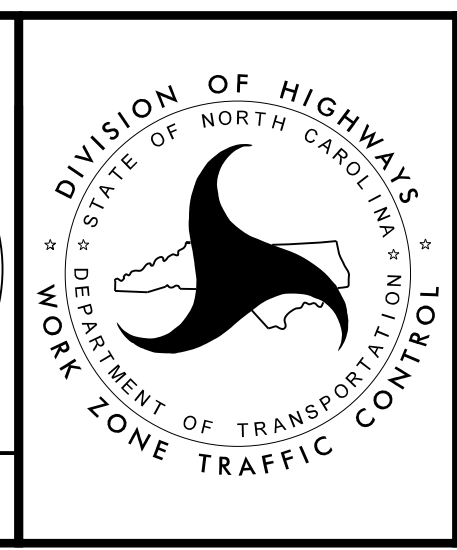
APPROVED: P. E. E. Brooks

DATE: 12/18/2018

SEAL



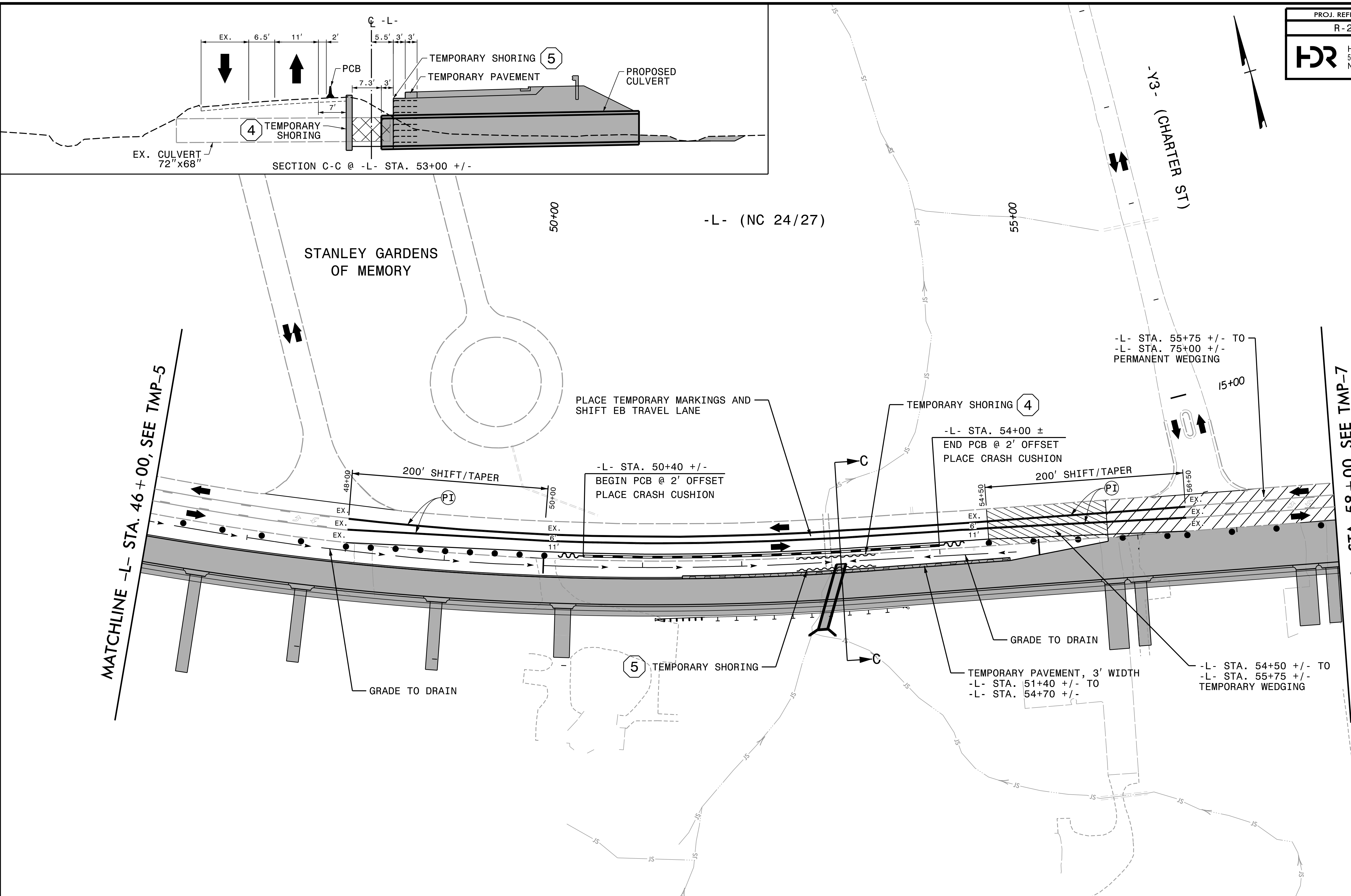
DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED



PHASE 1

PLOT DRIVER: NCDOT\_color\_eng\_50.plt  
 USER: ERBROOKS  
 DATE: 12/13/2018  
 TIME: 8:41:04 AM  
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REVISIONS



REVISIONS


PLOT DRIVER: NCDOT\_pdf\_color\_eng\_50.plt  
 USER: ERBROOKS  
 DATE: 12/10/2018  
 TIME: 10:12:34 AM  
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4 TEMPORARY SHORING No. 4 QUANTITY = 710 SF FROM -L- STA. 52+55±, 6.1' LT TO -L- STA. 53+35±, 5.6' LT	5 TEMPORARY SHORING No. 5 QUANTITY = 710 SF FROM -L- STA. 52+55±, 5.5' RT TO -L- STA. 53+35±, 5.5' RT
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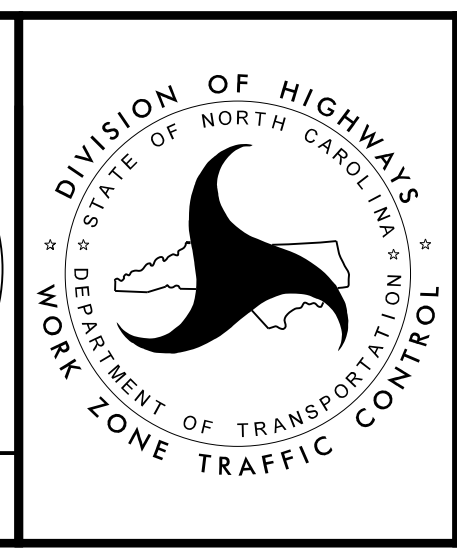
APPROVED: P. Eskine Brooks

DATE: 12/18/2018

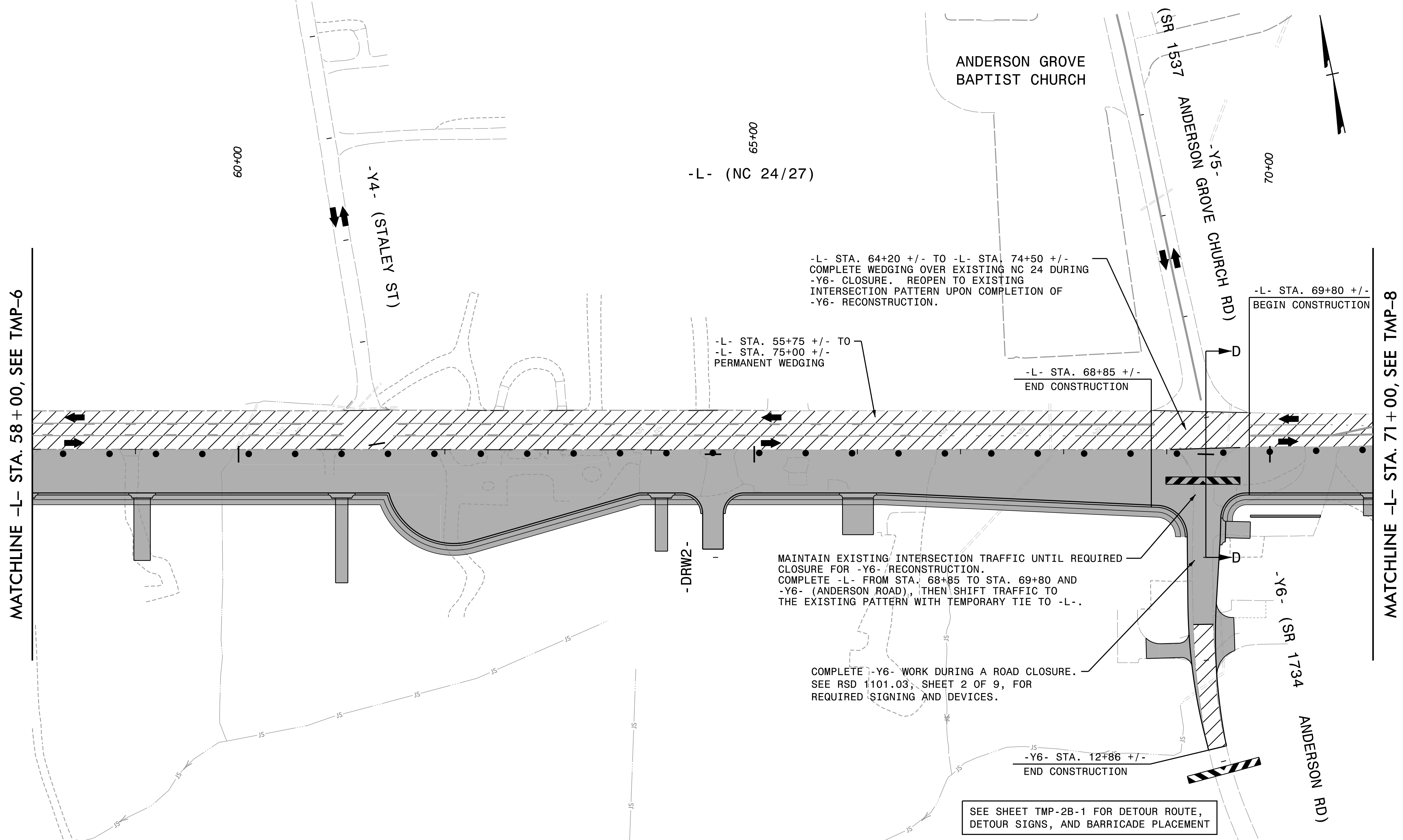
SEAL



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

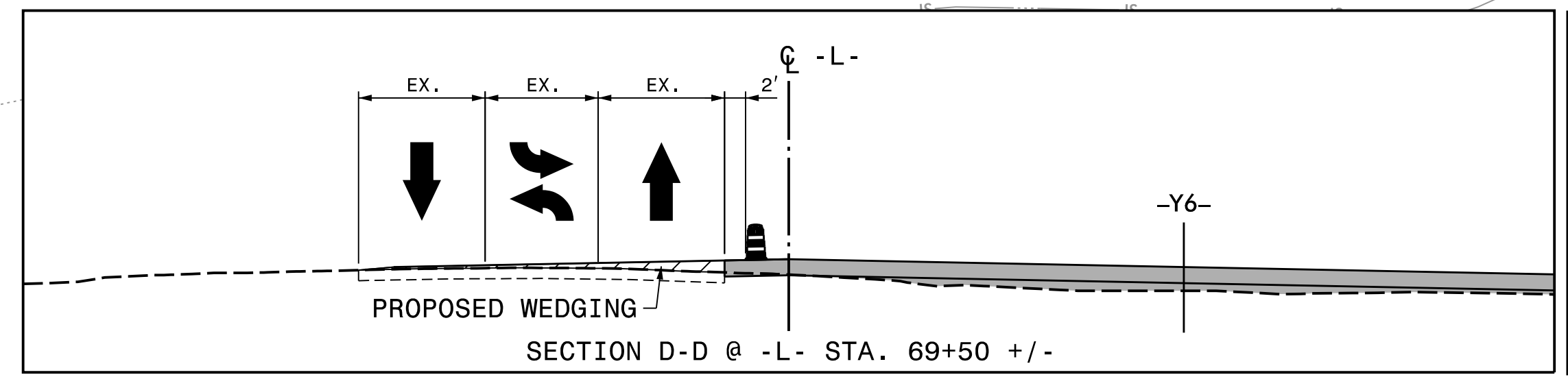


PHASE 1



MATCHLINE -L- STA. 58 + 00, SEE TMP-6

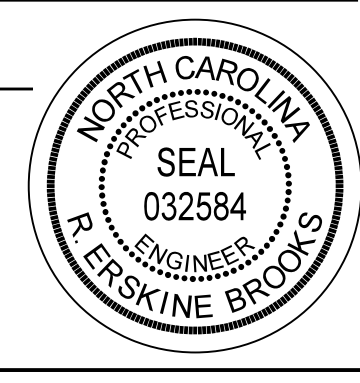
MATCHLINE -L- STA. 71 + 00, SEE TMP-8



APPROVED: P. Eskin Brooks

DATE: 12/18/2018

SEAL




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

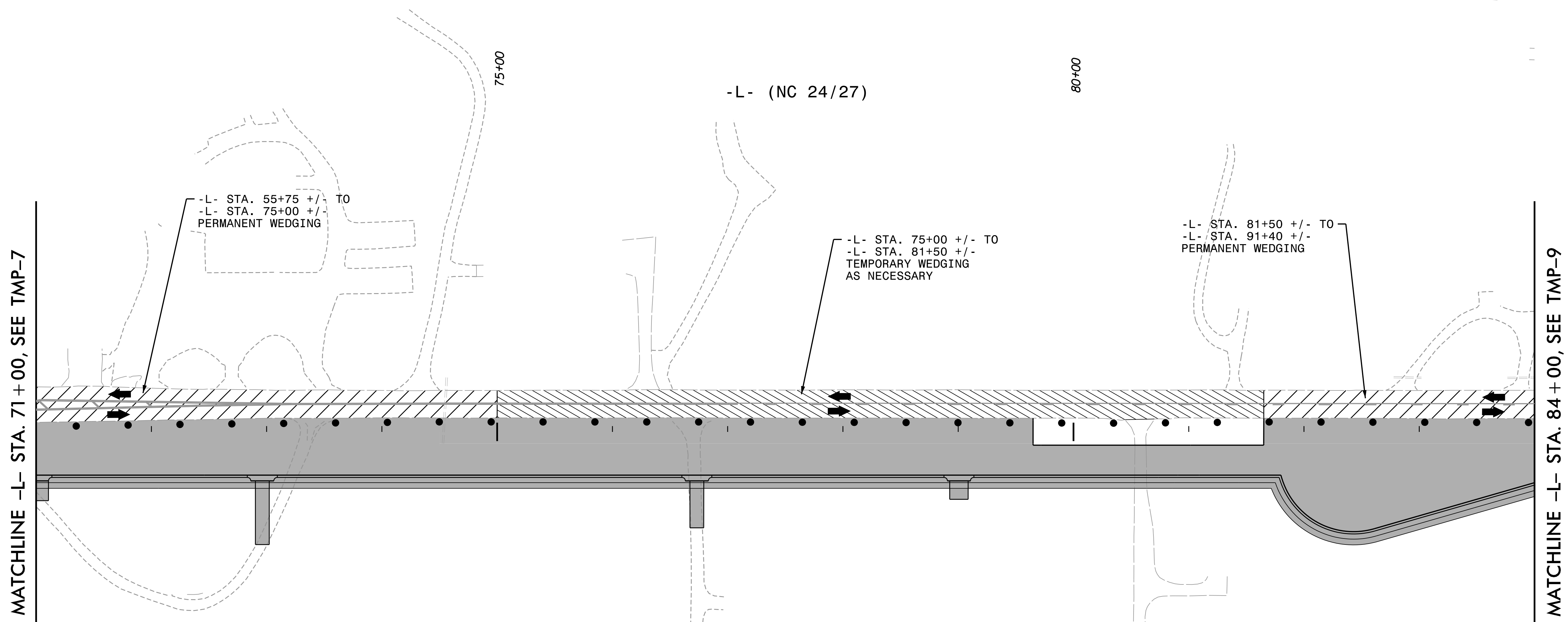
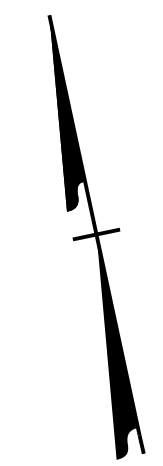


PHASE 1

PLOT DRIVER: NCDOT\_pdf\_color\_eng\_50.pit  
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 PENTABLE: NCDOT\_tcp.tbl  
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REVISIONS

PROJ. REFERENCE NO.	SHEET NO.
R-2530B	TMP-8
 HDR Engineering, Inc. of the Carolinas 555 Fayetteville St, Suite 900 Raleigh, N.C. 27601 N.C.B.E.L.S. License Number: F-0116	



MATCHLINE -L- STA. 71 + 00, SEE TMP-7

MATCHLINE -L- STA. 84 + 00, SEE TMP-9

-L- STA. 55+75 +/- TO  
-L- STA. 75+00 +/-  
PERMANENT WEDGING

-L- STA. 75+00 +/- TO  
-L- STA. 81+50 +/-  
TEMPORARY WEDGING  
AS NECESSARY

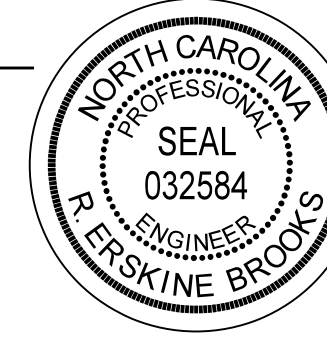
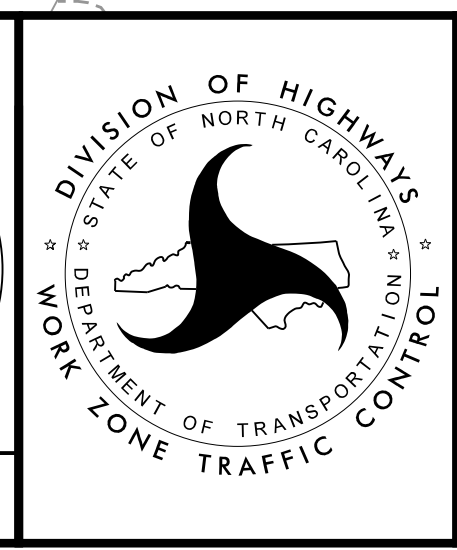
-L- STA. 81+50 +/- TO  
-L- STA. 91+40 +/-  
PERMANENT WEDGING

PLOT DRIVER: NCDOT\_pdf\_color\_eng\_50.plt  
 USER: ERBROOKS  
 DATE: 12/10/2018  
 TIME: 10:13:01 AM  
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REVISIONS

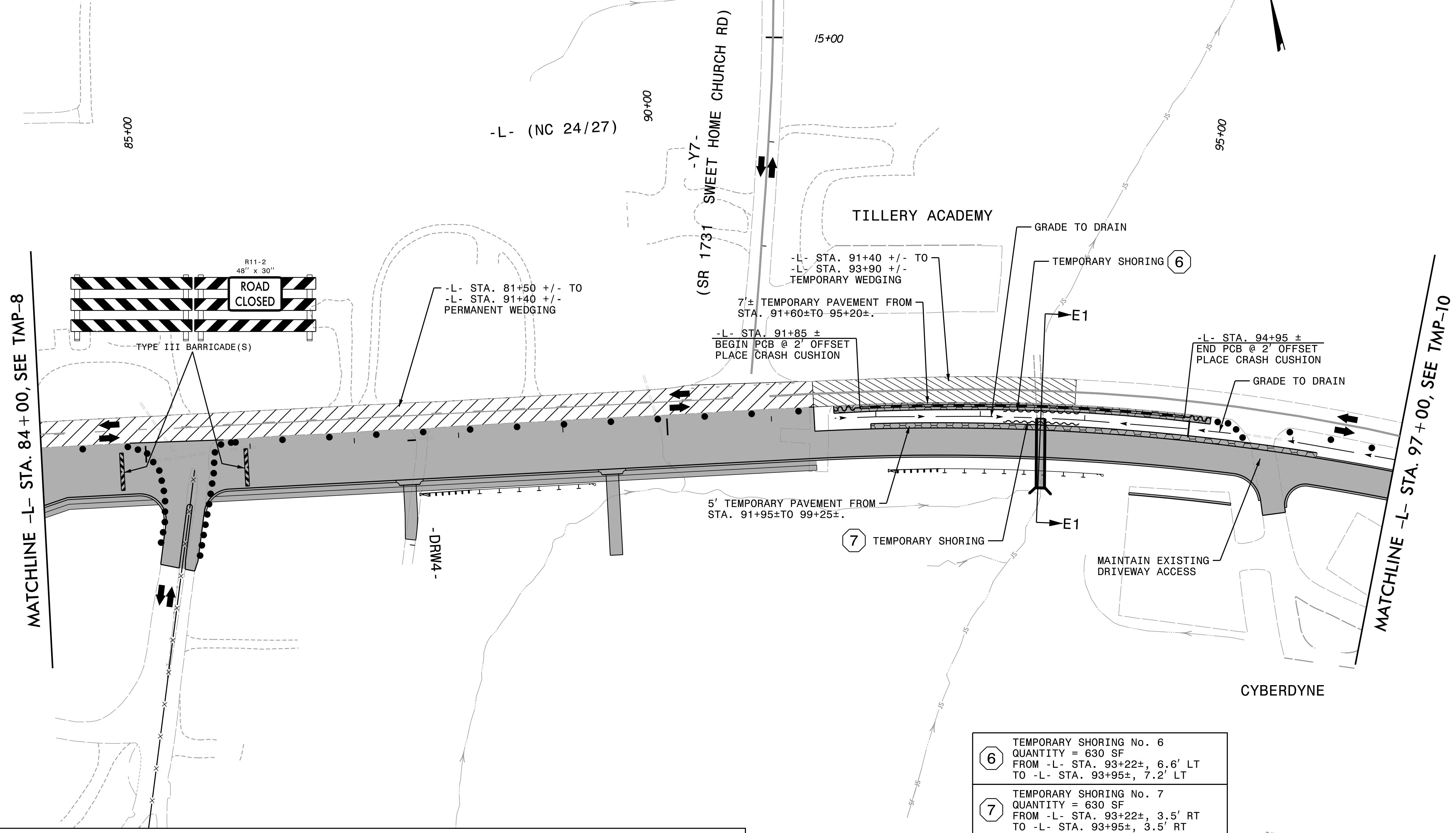
APPROVED: P. Eskine Brooks  
 DATE: 12/18/2018

SEAL

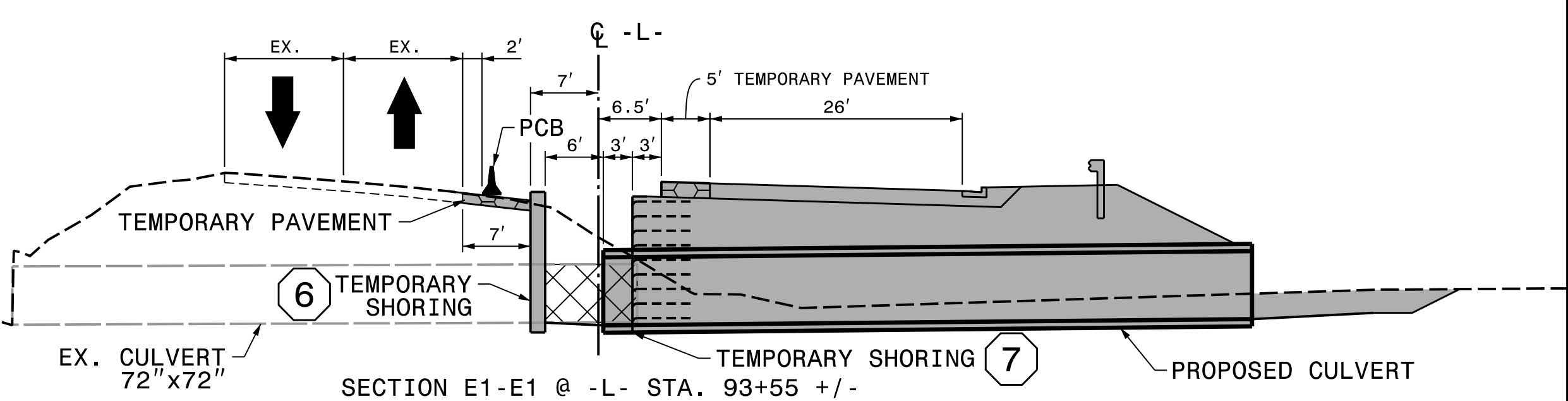



PHASE 1

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED



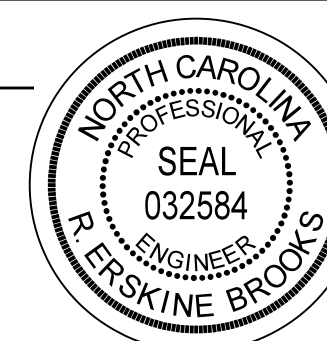
6	TEMPORARY SHORING No. 6 QUANTITY = 630 SF FROM -L- STA. 93+22±, 6.6' LT TO -L- STA. 93+95±, 7.2' LT
7	TEMPORARY SHORING No. 7 QUANTITY = 630 SF FROM -L- STA. 93+22±, 3.5' RT TO -L- STA. 93+95±, 3.5' RT



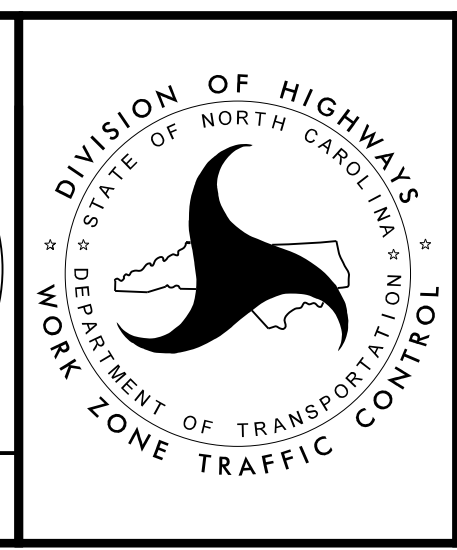
APPROVED: P. Eskine Brooks

DATE: 12/18/2018

SEAL



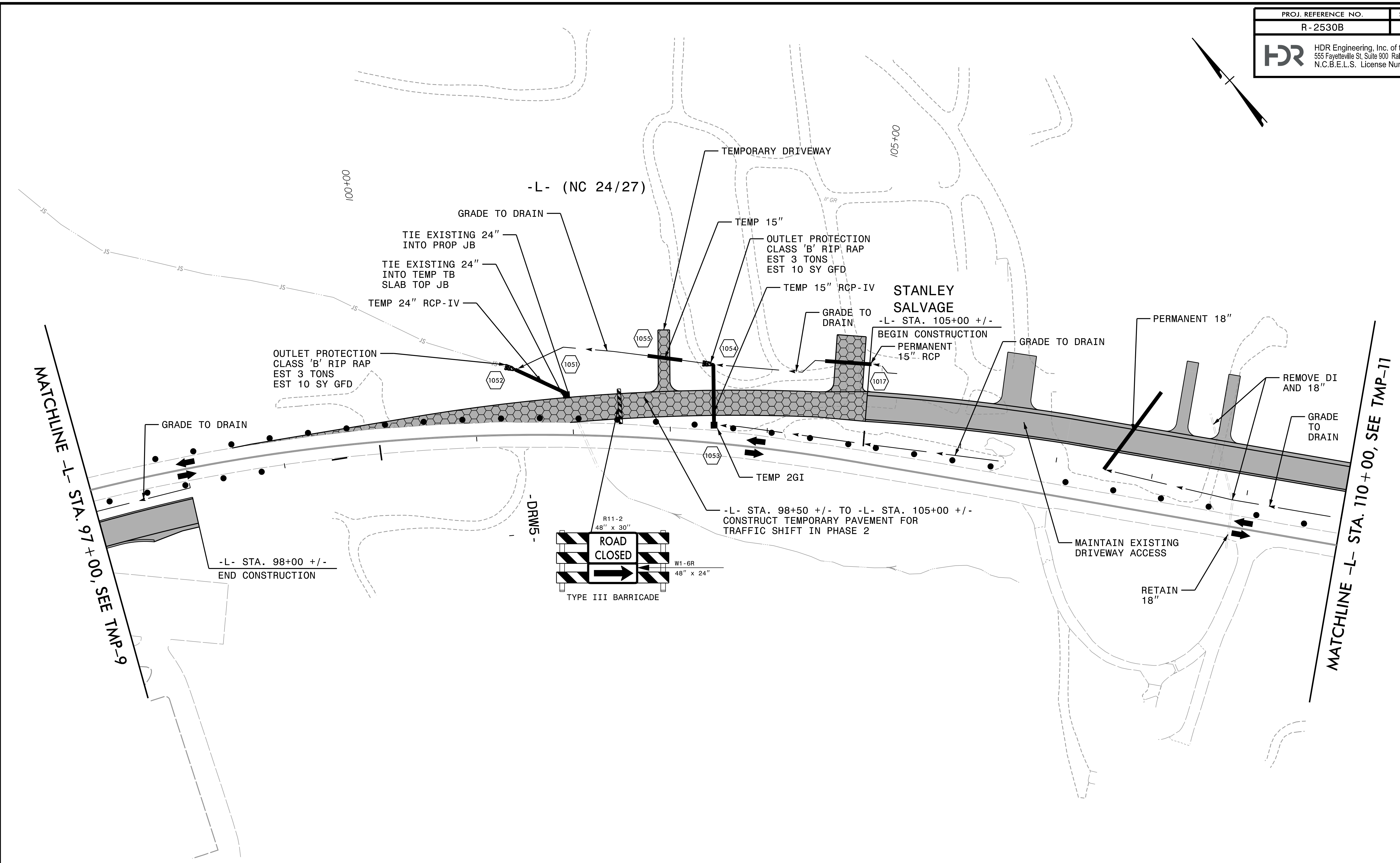
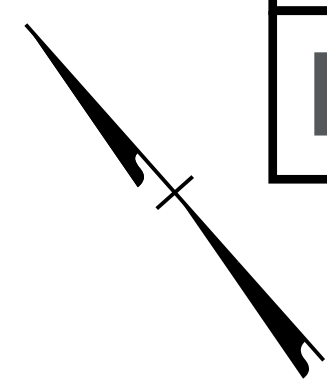
DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED



PHASE 1

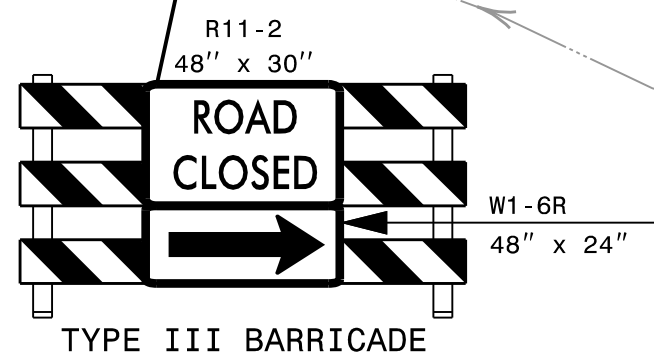
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 TIME: 10:13:13 AM  
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REVISIONS



MATCHLINE -L- STA. 97+00, SEE TMP-9

MATCHLINE -L- STA. 110+00, SEE TMP-11



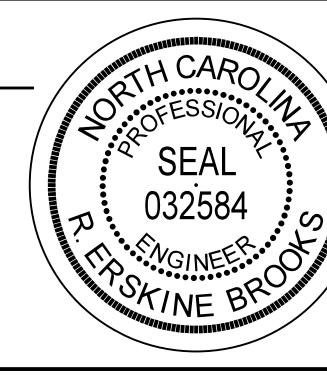
REVISIONS

PLOT DRIVER: NCDOT\_pdf\_color\_eng\_50.plt  
 USER: ERBROOKS  
 DATE: 8/7/2019  
 TIME: 9:45:52 AM  
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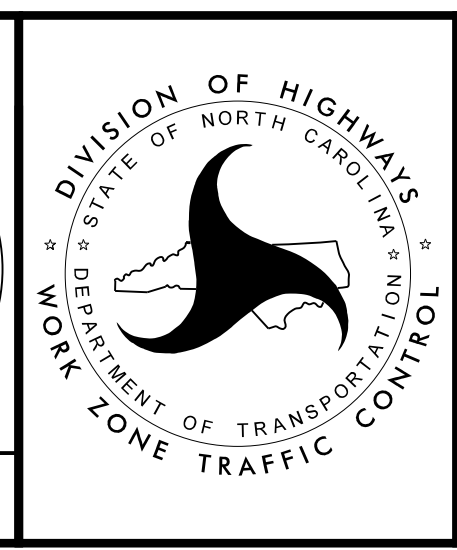
APPROVED: *P. Erskine Brooks*

DATE: 8/7/2019


SEAL

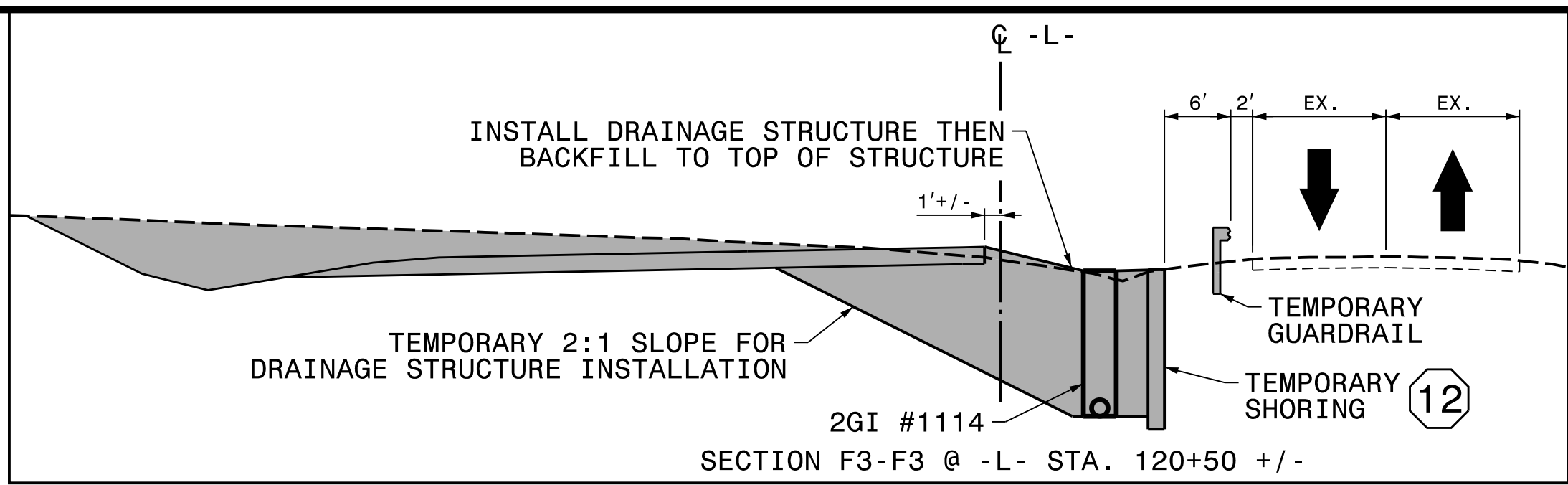
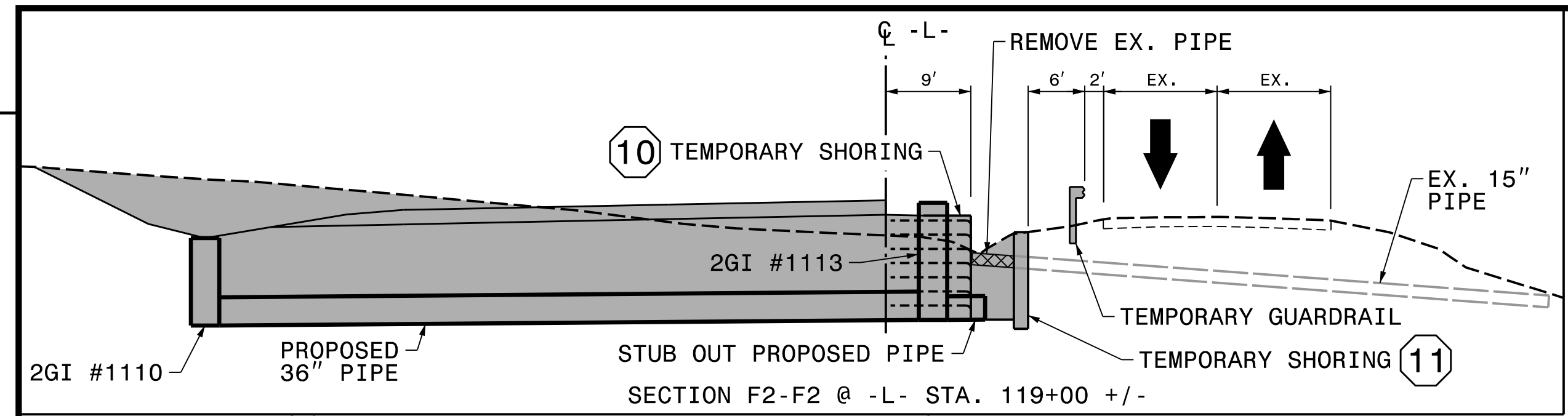


**DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED**



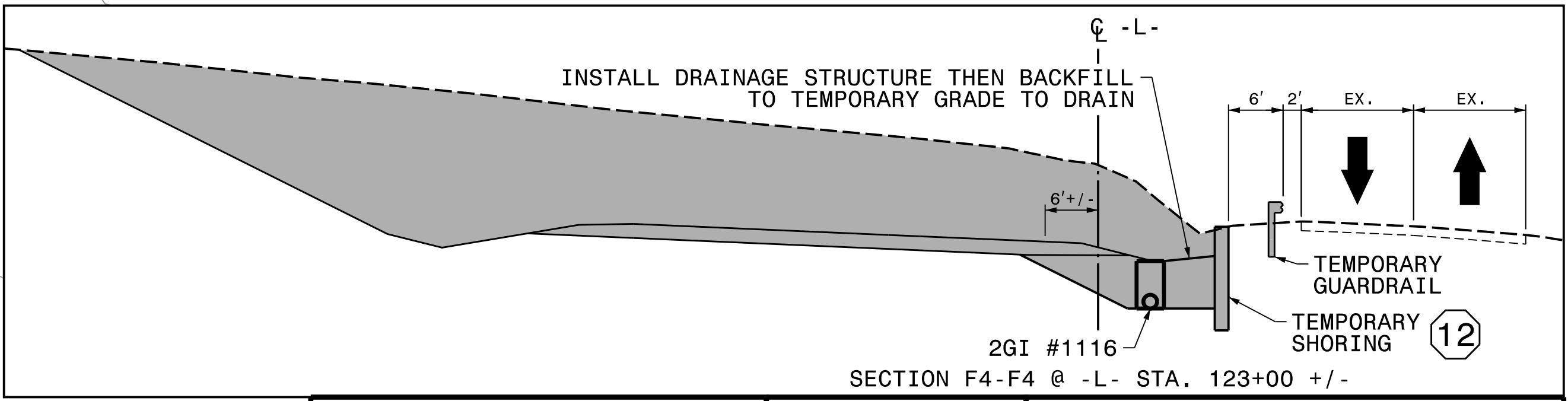
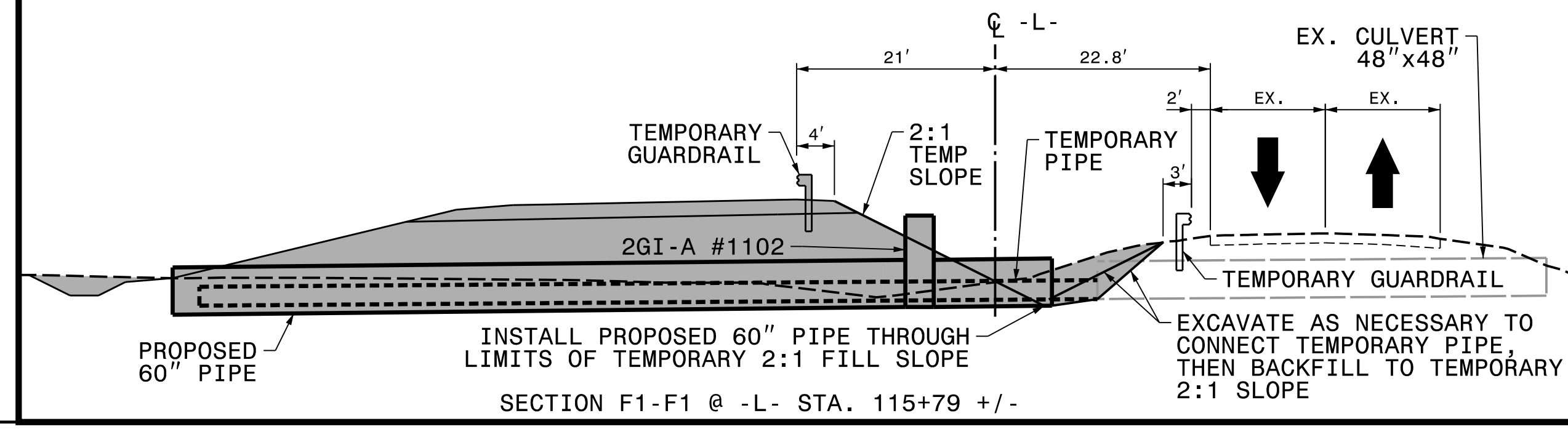
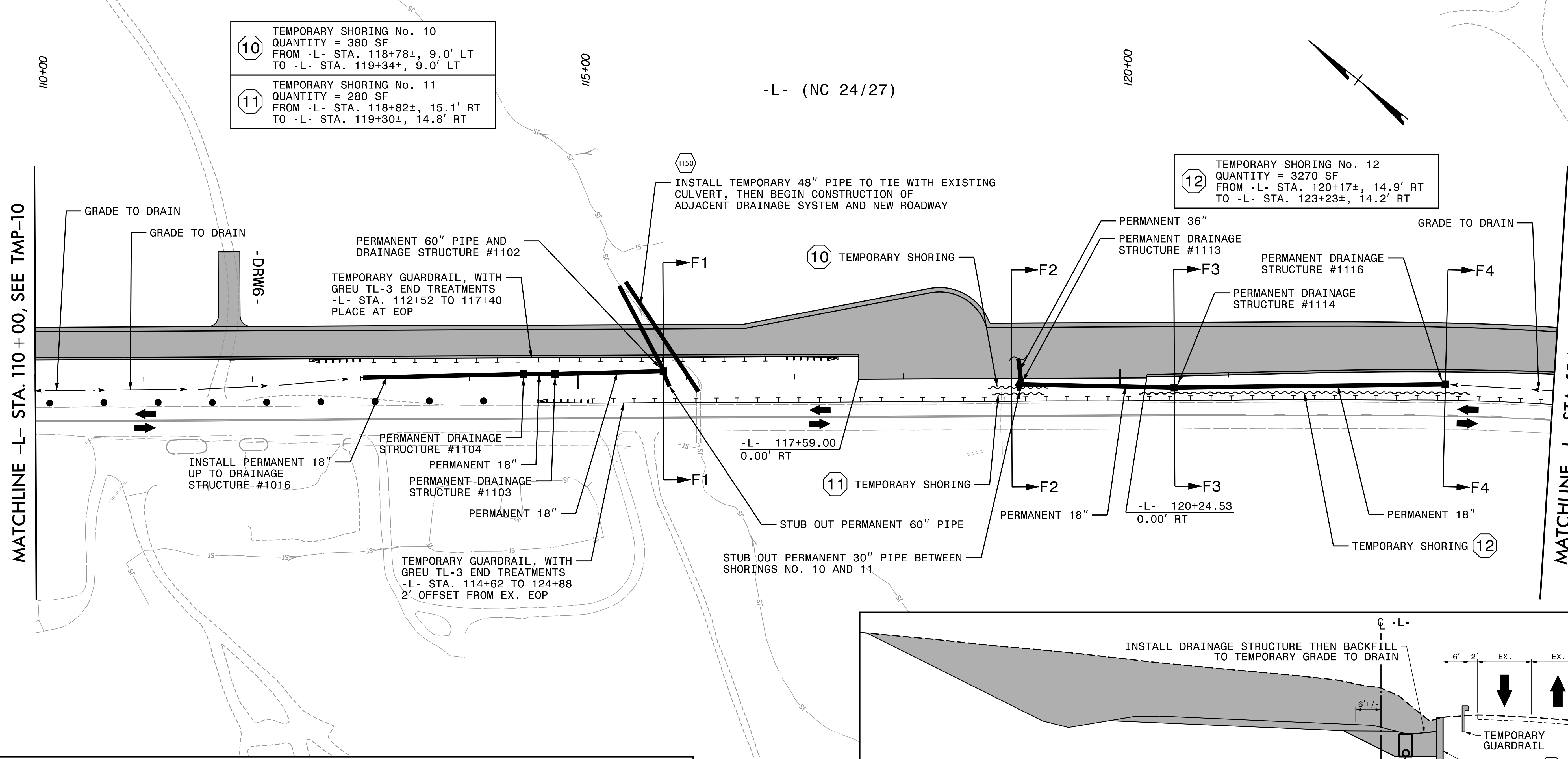
PHASE 1

PROJ. REFERENCE NO. R-2530B	SHEET NO. TMP-11
 HDR Engineering, Inc. of the Carolinas 555 Fayetteville St., Suite 900 Raleigh, N.C. 27601 N.C.B.E.L.S. License Number: F-0116	



(10)	TEMPORARY SHORING No. 10 QUANTITY = 380 SF FROM -L- STA. 118+78±, 9.0' LT TO -L- STA. 119+34±, 9.0' LT
(11)	TEMPORARY SHORING No. 11 QUANTITY = 280 SF FROM -L- STA. 118+82±, 15.1' RT TO -L- STA. 119+30±, 14.8' RT

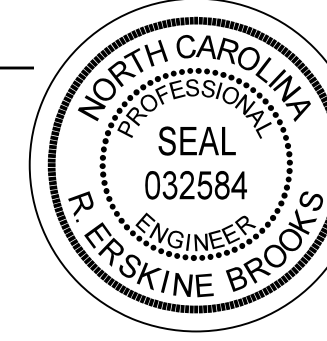
(12)	TEMPORARY SHORING No. 12 QUANTITY = 3270 SF FROM -L- STA. 120+17±, 14.9' RT TO -L- STA. 123+23±, 14.2' RT
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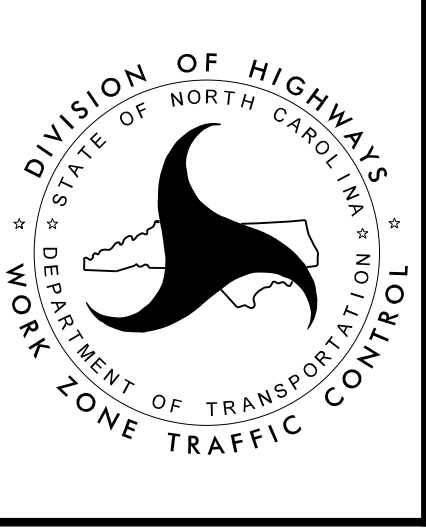
APPROVED: *P. Eskine Brooks*

DATE: 12/18/2018

SEAL



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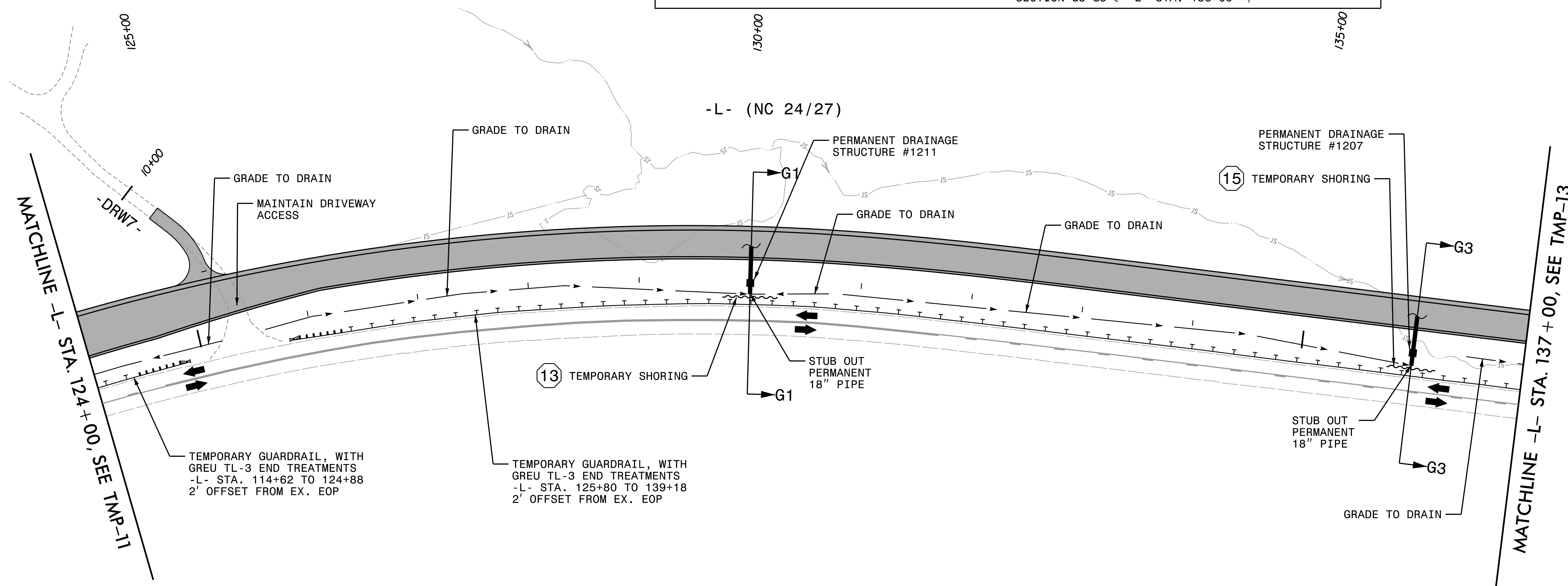
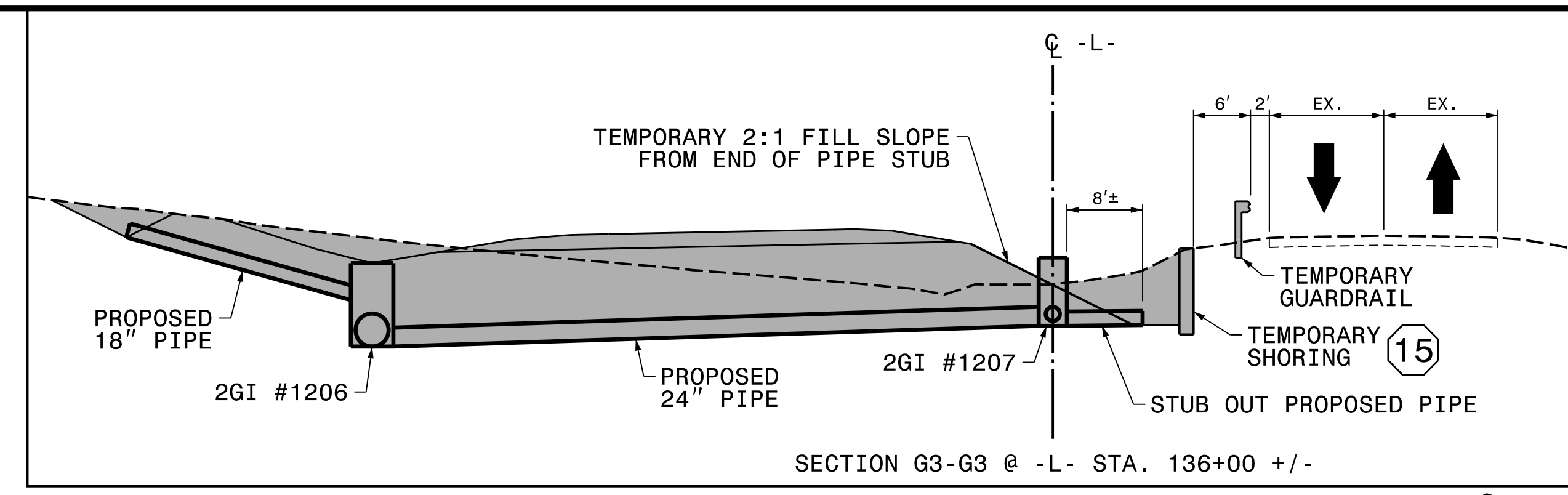


PHASE 1

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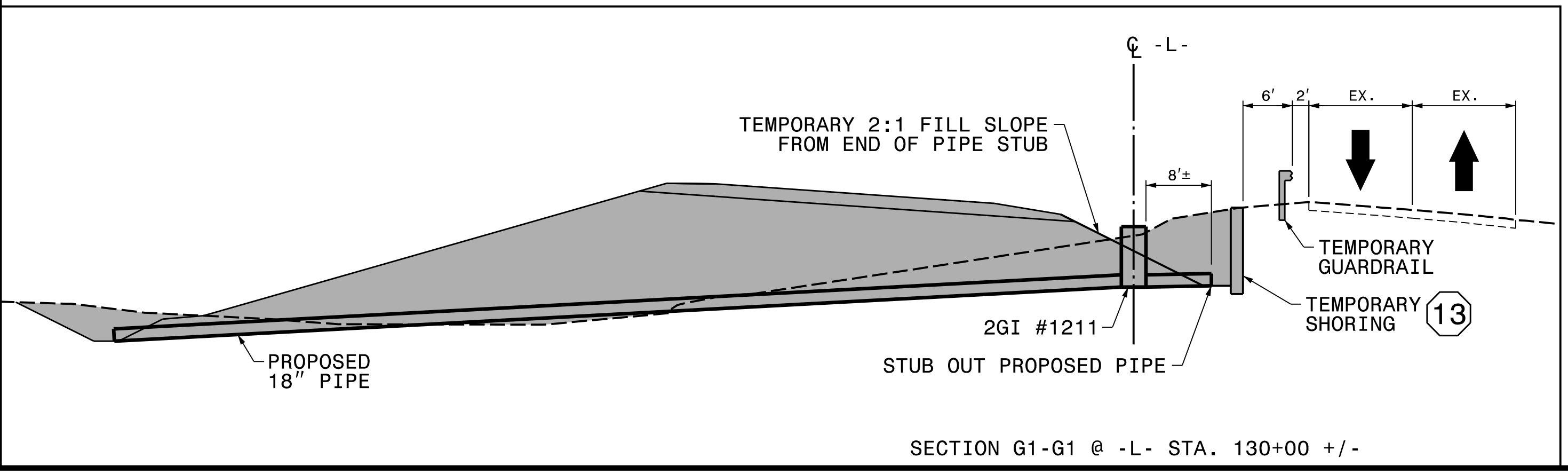
REVISIONS






**13** TEMPORARY SHORING No. 13  
 QUANTITY = 300 SF  
 FROM -L- STA. 129+75±, 13.2' LT  
 TO -L- STA. 130+25±, 13.2' LT

**15** TEMPORARY SHORING No. 15  
 QUANTITY = 230 SF  
 FROM -L- STA. 135+78±, 14.8' LT  
 TO -L- STA. 136+22±, 14.9' LT



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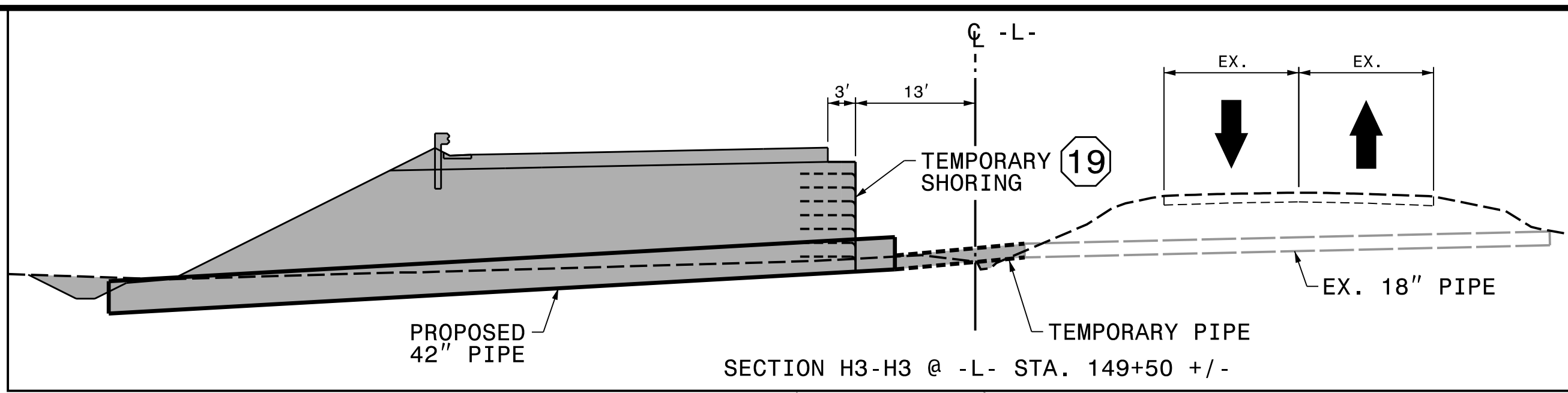
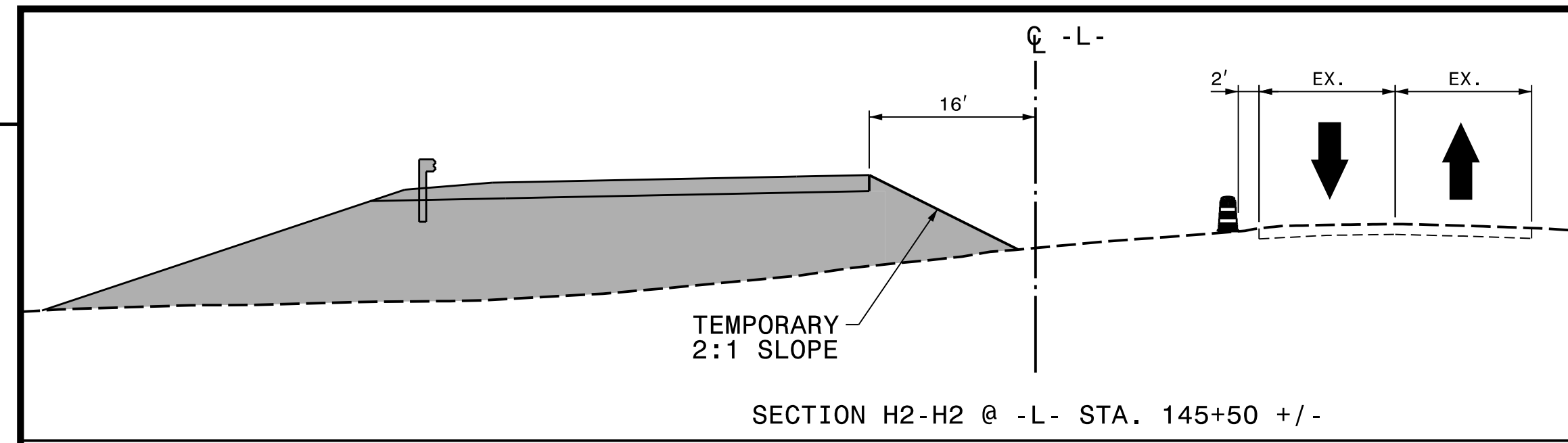
SEAL




PHASE 1

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REVISIONS

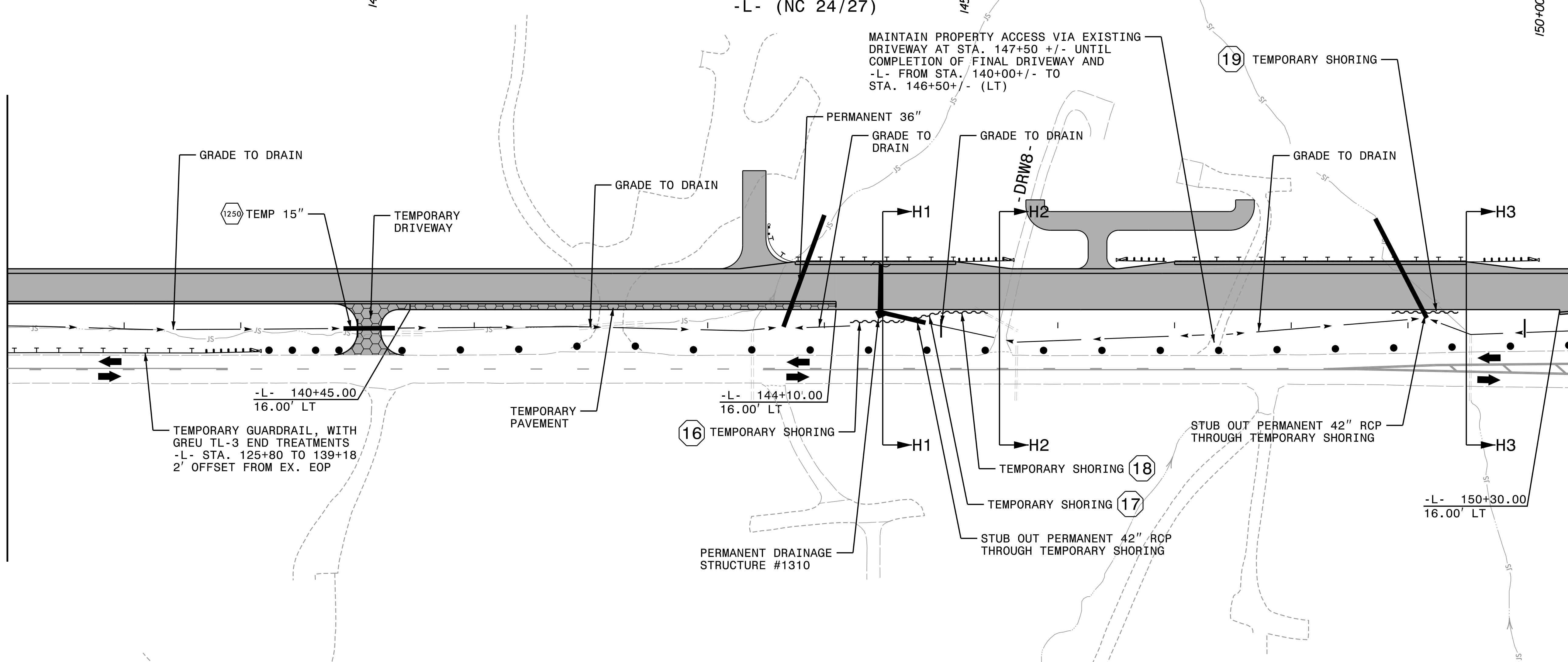


18 TEMPORARY SHORING No. 18  
 QUANTITY = 260 SF  
 FROM -L- STA. 145+00±, 13.0' LT  
 TO -L- STA. 145+40±, 13.0' LT

19 TEMPORARY SHORING No. 19  
 QUANTITY = 400 SF  
 FROM -L- STA. 148+86±, 13.0' LT  
 TO -L- STA. 149+43±, 13.0' LT

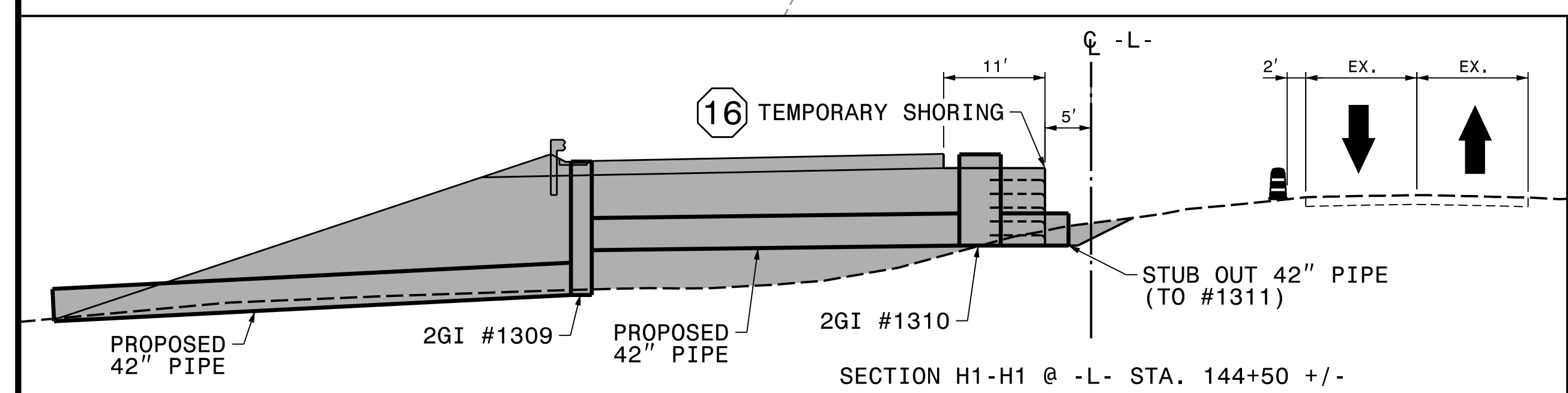
MATCHLINE -L- STA. 137+00, SEE TMP-12

MATCHLINE -L- STA. 150+50, SEE TMP-14



16 TEMPORARY SHORING No. 16  
 QUANTITY = 300 SF  
 FROM -L- STA. 144+22±, 5.0' LT  
 TO -L- STA. 144+65±, 5.0' LT

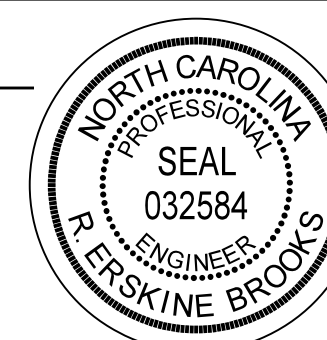
17 TEMPORARY SHORING No. 17  
 QUANTITY = 300 SF  
 FROM -L- STA. 144+65±, 5.0' LT  
 TO -L- STA. 145+00±, 13.0' LT



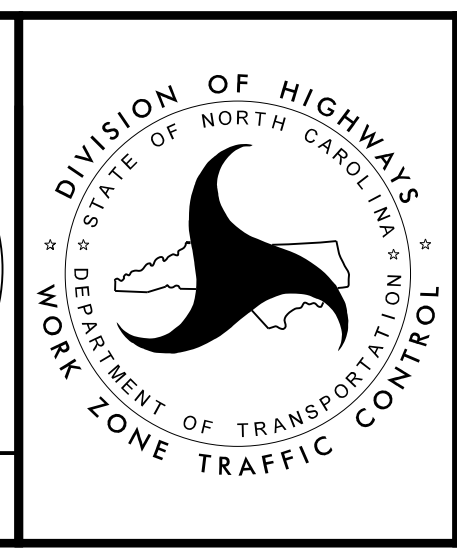
APPROVED: P. Eskine Brooks

DATE: 12/18/2018

SEAL



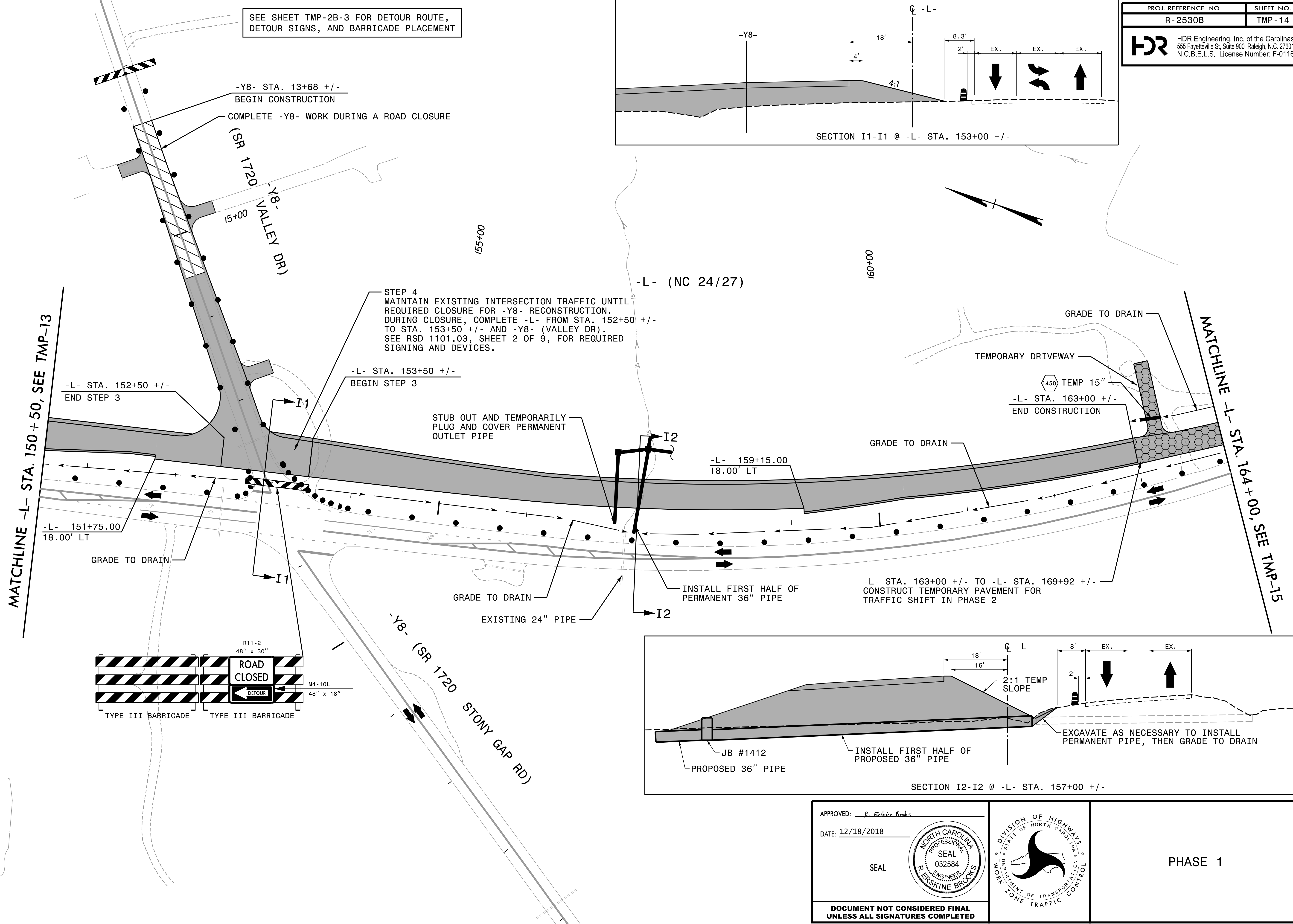
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



PHASE 1

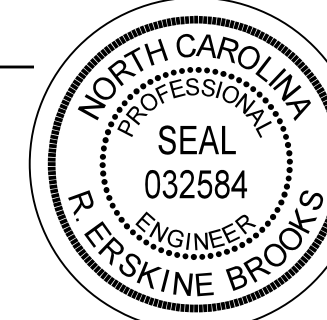
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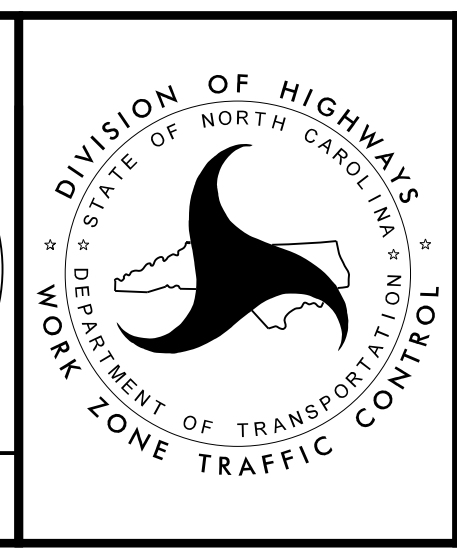
REVISIONS



REVISIONS

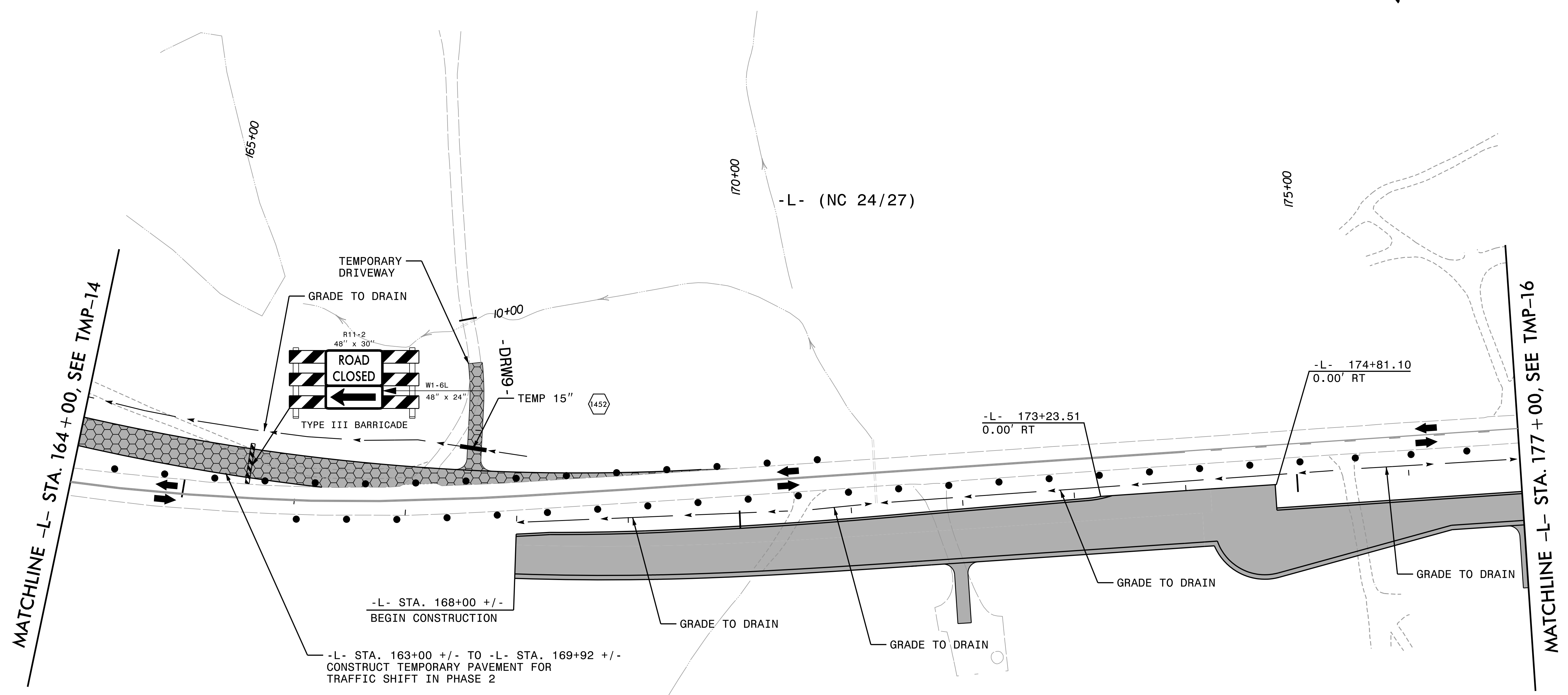
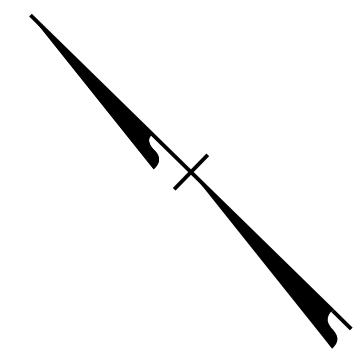
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APPROVED: *P. Eskine Brooks*  
 DATE: 12/18/2018  
 SEAL  





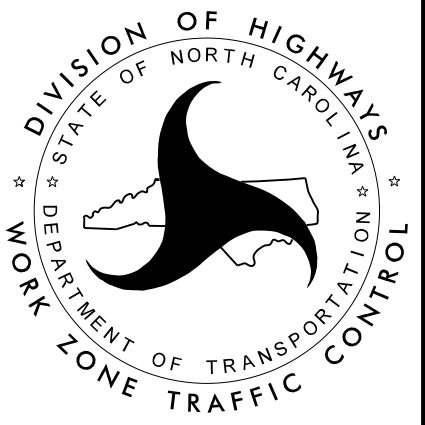
PHASE 1

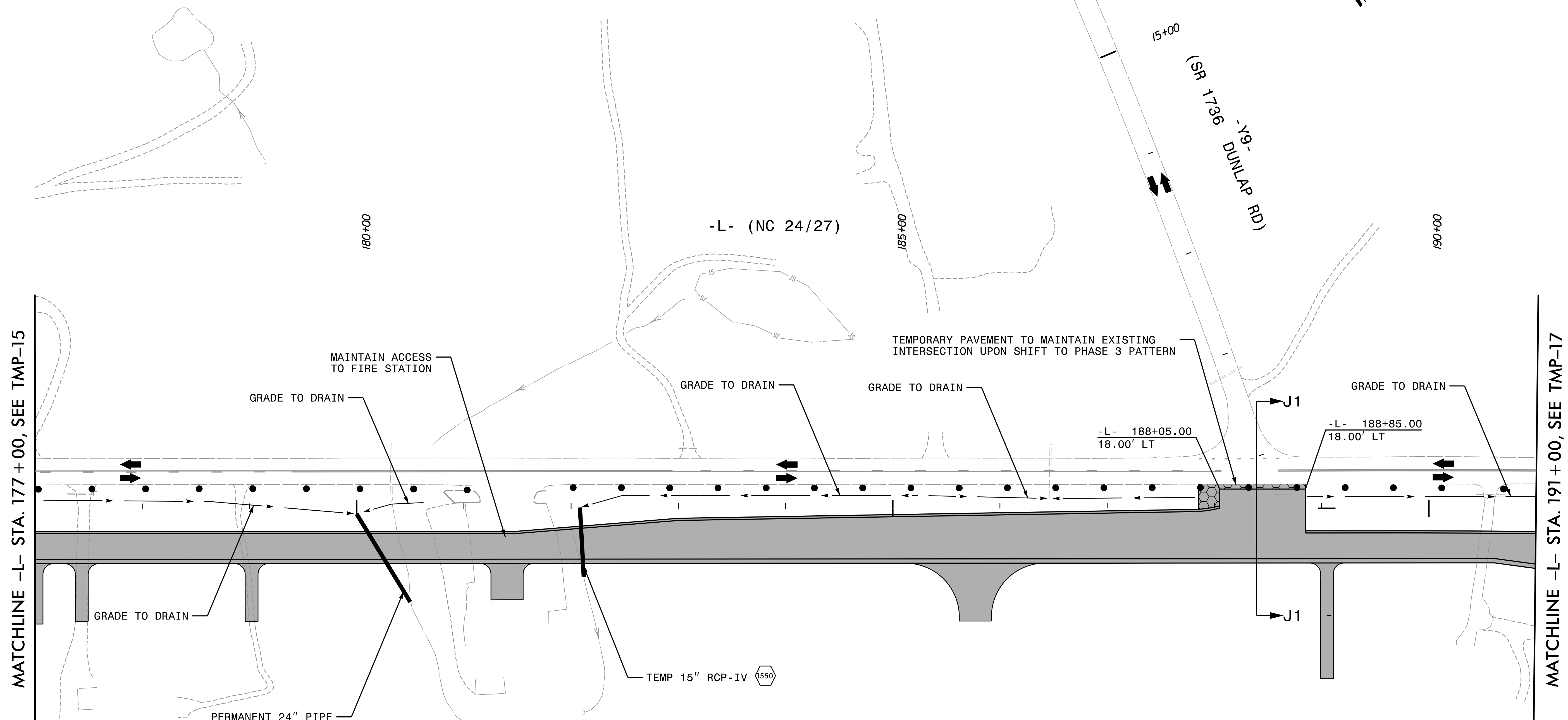
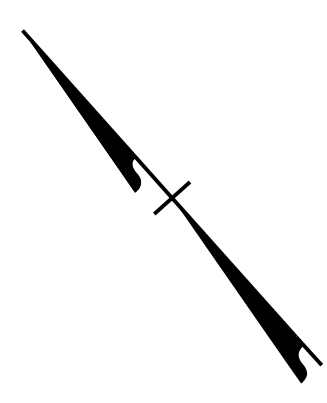
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



REVISIONS

PLOT DRIVER: NCDOT\_pdf\_color\_eng\_50.plt PENTABLE: NCDOT\_tcp.tbl  
 USER: ERBROOKS DATE: 12/10/2018 TIME: 10:44:32 AM  
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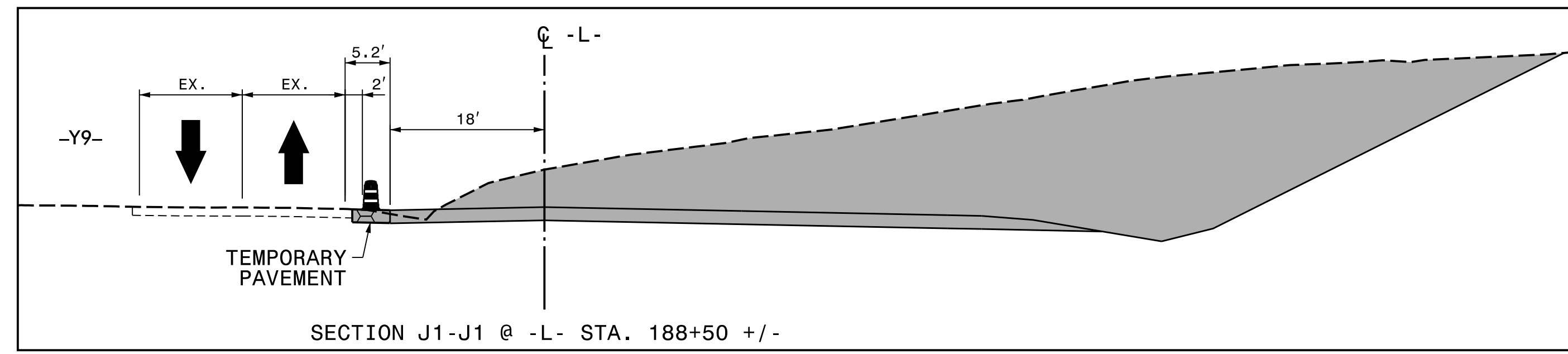
APPROVED: <u>P. Eekie Brooks</u> DATE: 12/18/2018 SEAL 		PHASE 1
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MATCHLINE -L- STA. 177 + 00, SEE TMP-15

MATCHLINE -L- STA. 191 + 00, SEE TMP-17

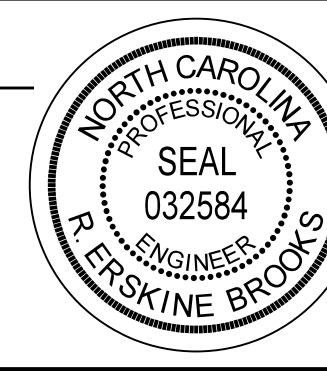
ALBEMARLE VOLUNTEER FIRE STATION



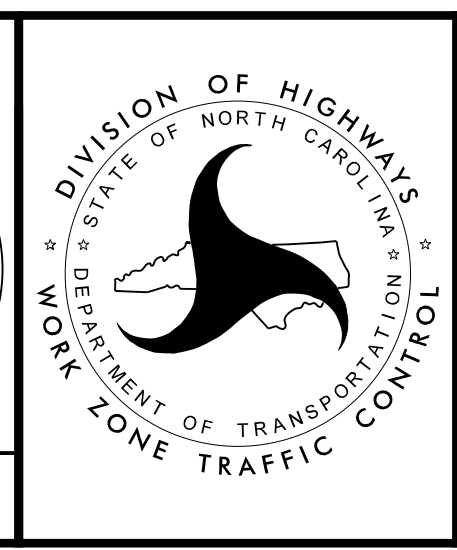
REVISIONS

PLOT DRIVER: NCDOT\_pdf\_color\_eng\_50.plt  
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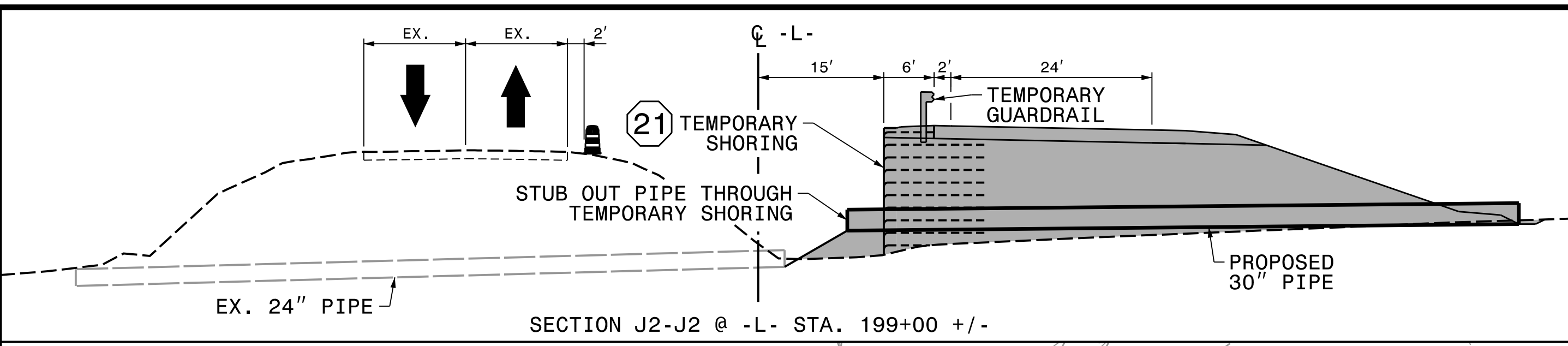
APPROVED: P. Eskine Brooks  
 DATE: 12/18/2018  
 SEAL




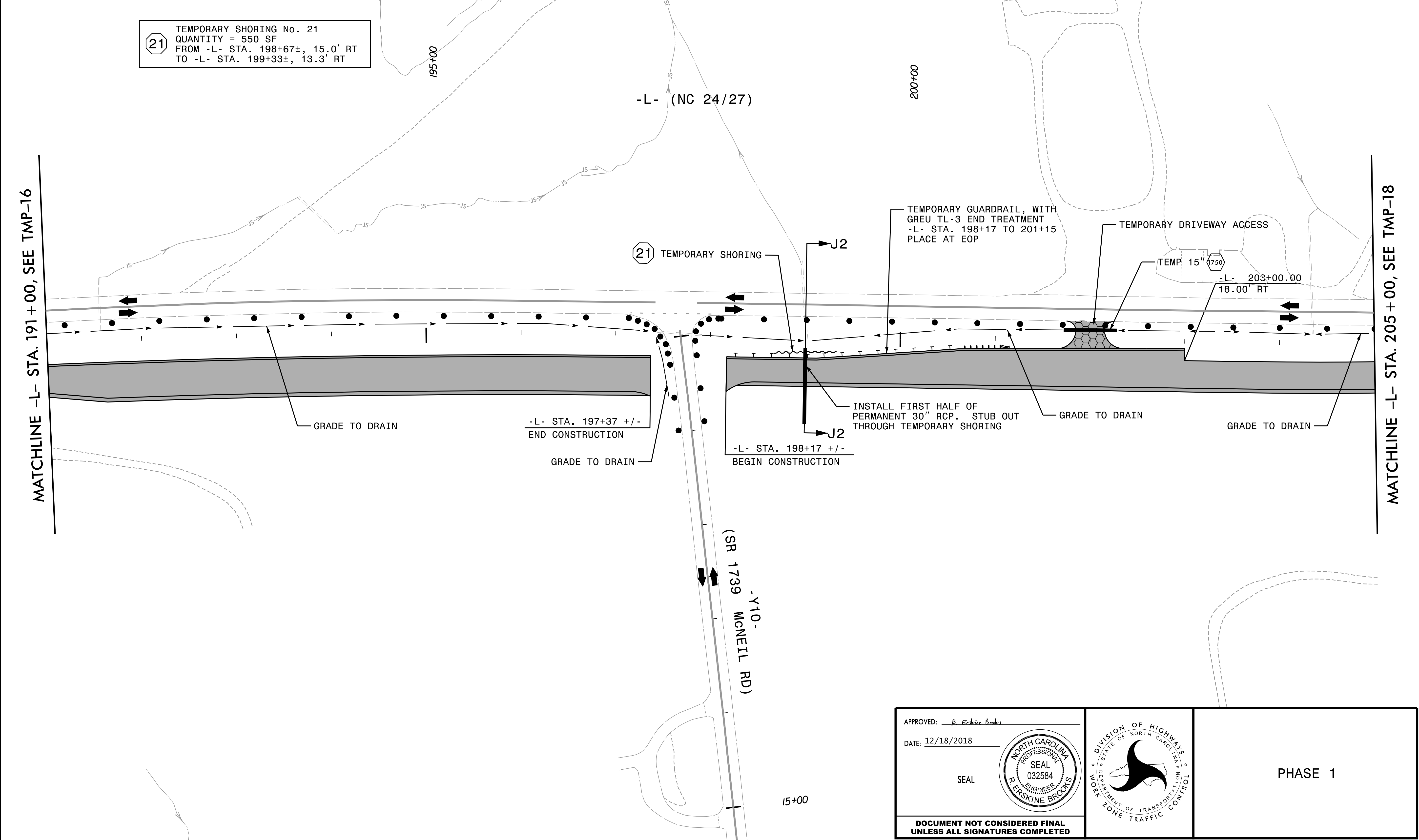
**DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED**

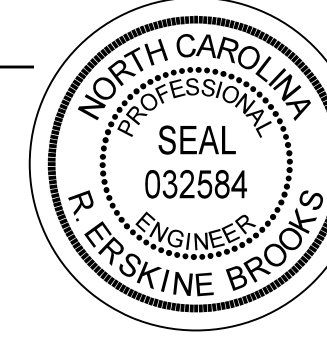


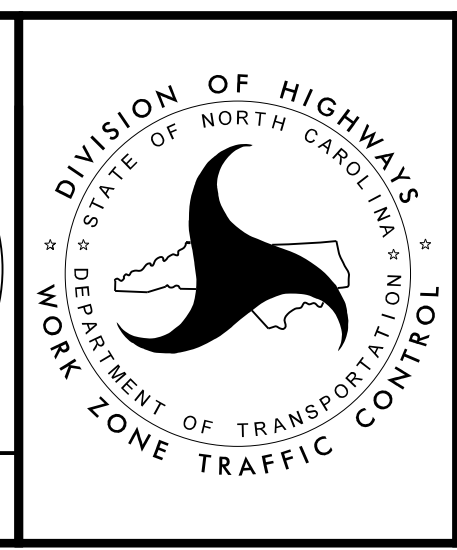
PHASE 1




 TEMPORARY SHORING No. 21  
 QUANTITY = 550 SF  
 FROM -L- STA. 198+67±, 15.0' RT  
 TO -L- STA. 199+33±, 13.3' RT



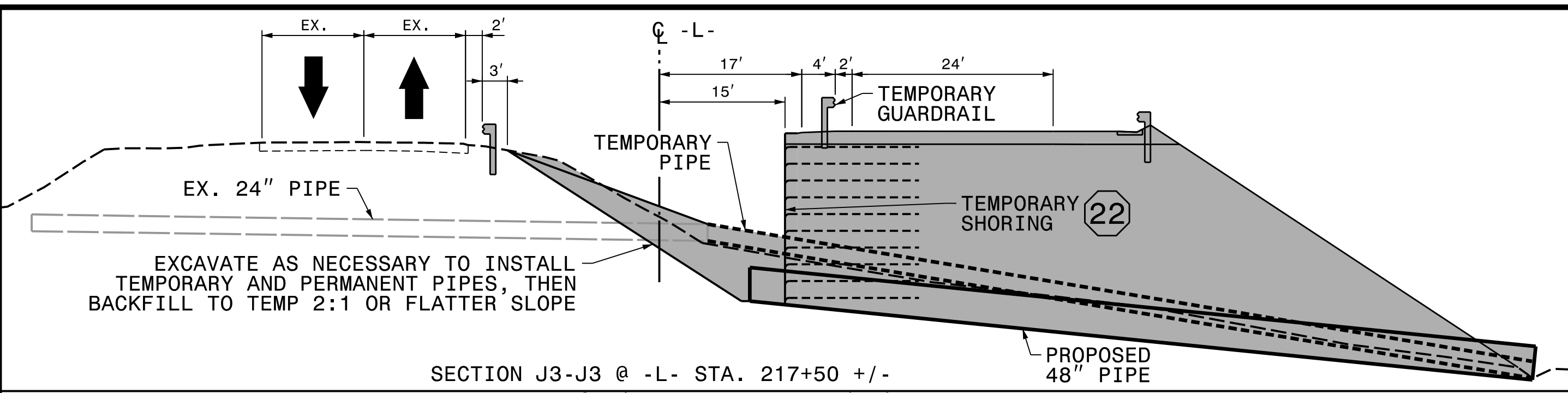
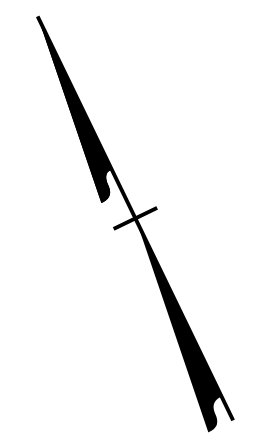
APPROVED: P. Eskin Brooks  
 DATE: 12/18/2018  
 SEAL  
  
**DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED**



PHASE 1

PLOT DRIVER: NCDOT\_pdf\_color\_eng\_50.plt PENTABLE: NCDOT\_tcp.tbl  
 USER: ERBROOKS DATE: 12/10/2018 TIME: 10:14:59 AM  
 FILE: p:\pwhdr\users\01\hbr\us\_east\_01\documents\3322\10001376\10052612\60\_cad\BIM\6.2\_Work\_In\_Progress\TrafficControl\TCR\2530B\_TC\_TMP-17.dgn

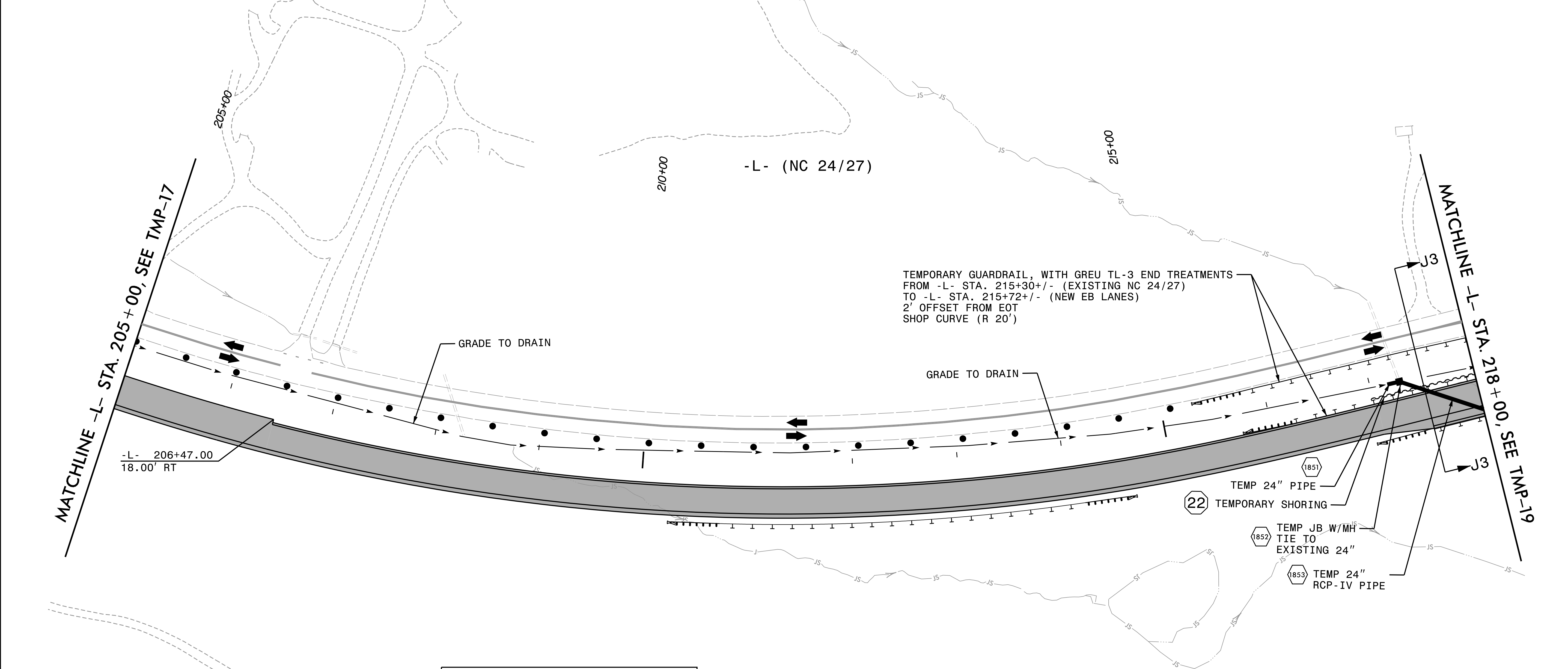
REVISIONS



EXCAVATE AS NECESSARY TO INSTALL TEMPORARY AND PERMANENT PIPES, THEN BACKFILL TO TEMP 2:1 OR FLATTER SLOPE

SECTION J3-J3 @ -L- STA. 217+50 +/-

PROPOSED 48" PIPE



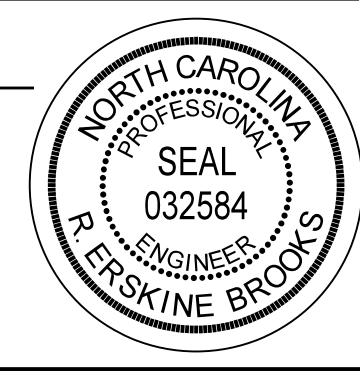
TEMPORARY GUARDRAIL, WITH GREU TL-3 END TREATMENTS FROM -L- STA. 215+30+/- (EXISTING NC 24/27) TO -L- STA. 215+72+/- (NEW EB LANES) 2' OFFSET FROM EOT SHOP CURVE (R 20')

**22** TEMPORARY SHORING No. 22  
 QUANTITY = 1950 SF  
 FROM -L- STA. 216+98±, 15.0' RT  
 TO -L- STA. 218+58±, 15.0' RT

APPROVED: P. Erskine Brooks

DATE: 12/18/2018


SEAL

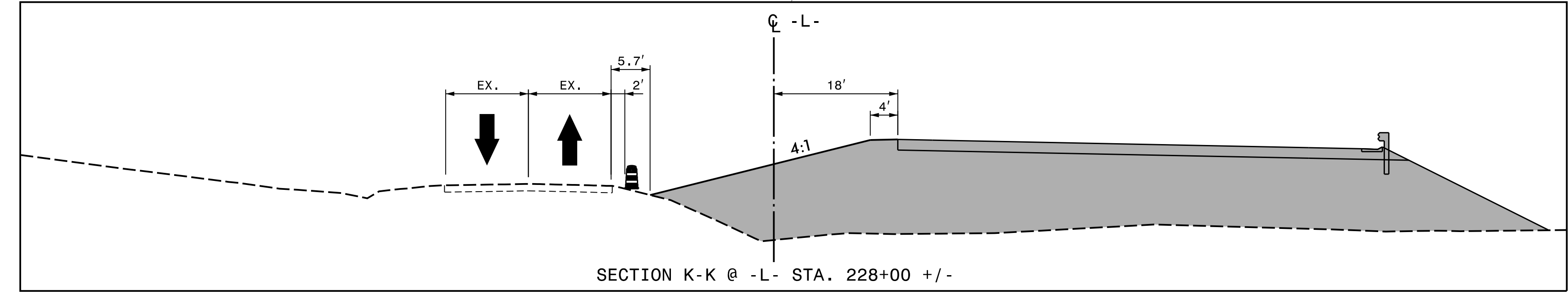
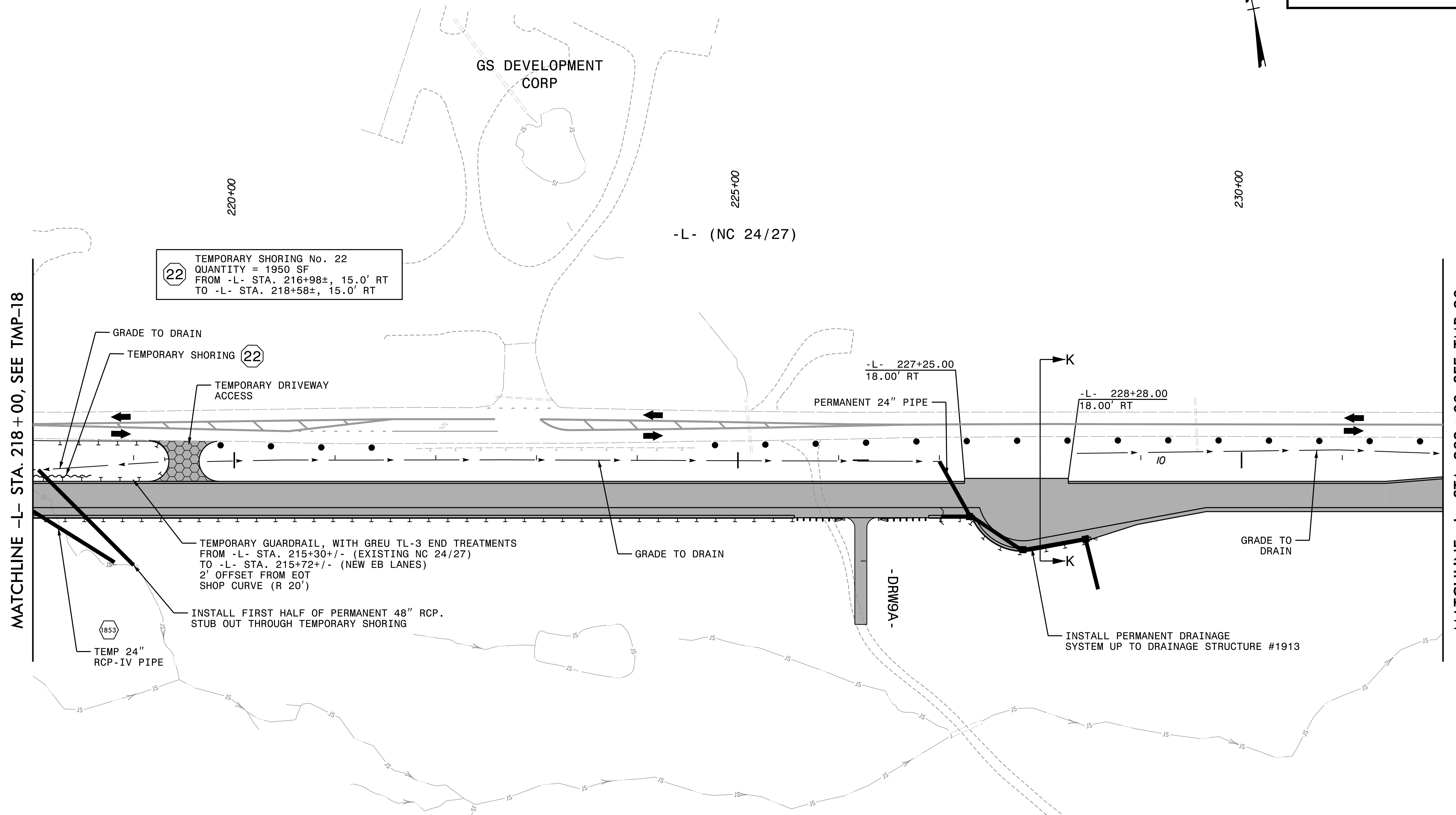
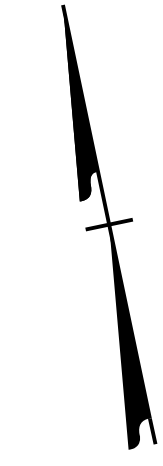



PHASE 1

REVISIONS

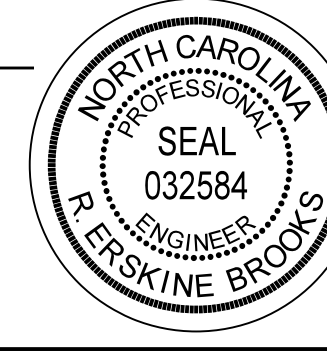
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 USER: ERBROOKS  
 DATE: 12/10/2018  
 TIME: 10:15:13 AM  
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APPROVED: P. Eskine Brooks  
 DATE: 12/18/2018

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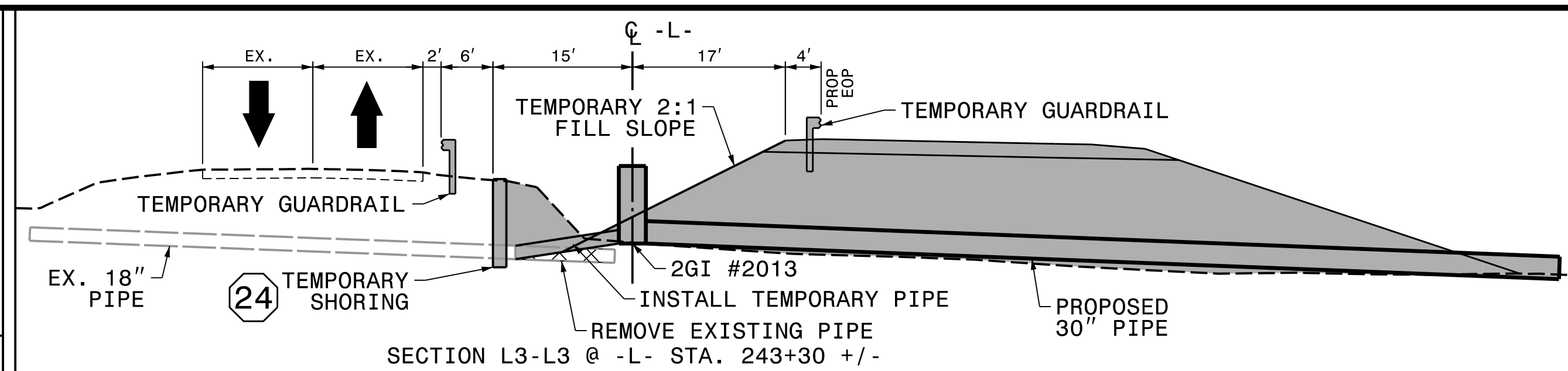
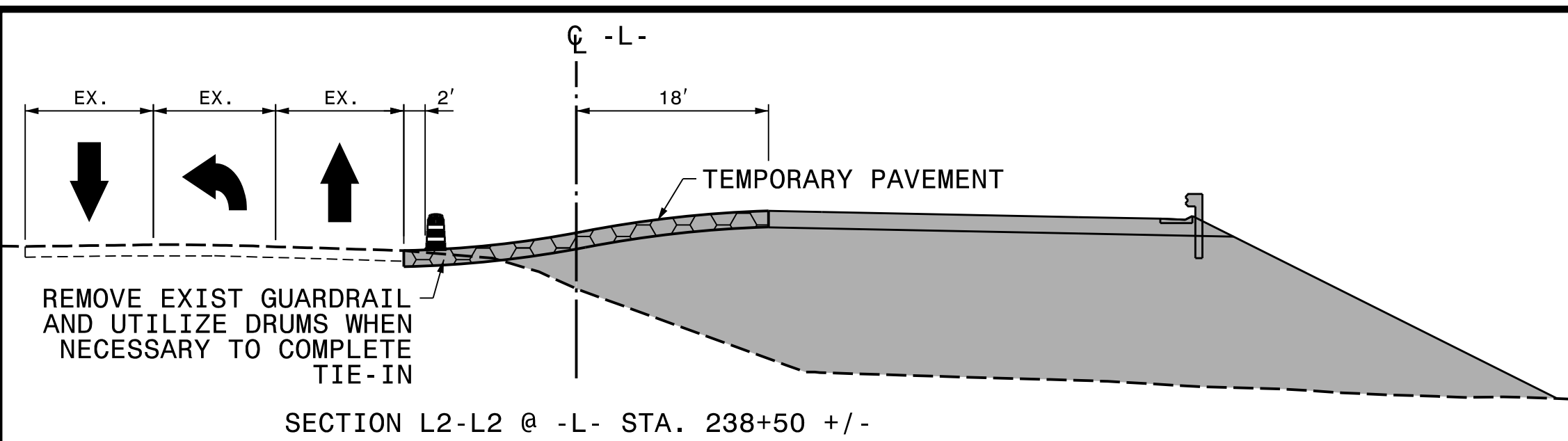



PHASE 1

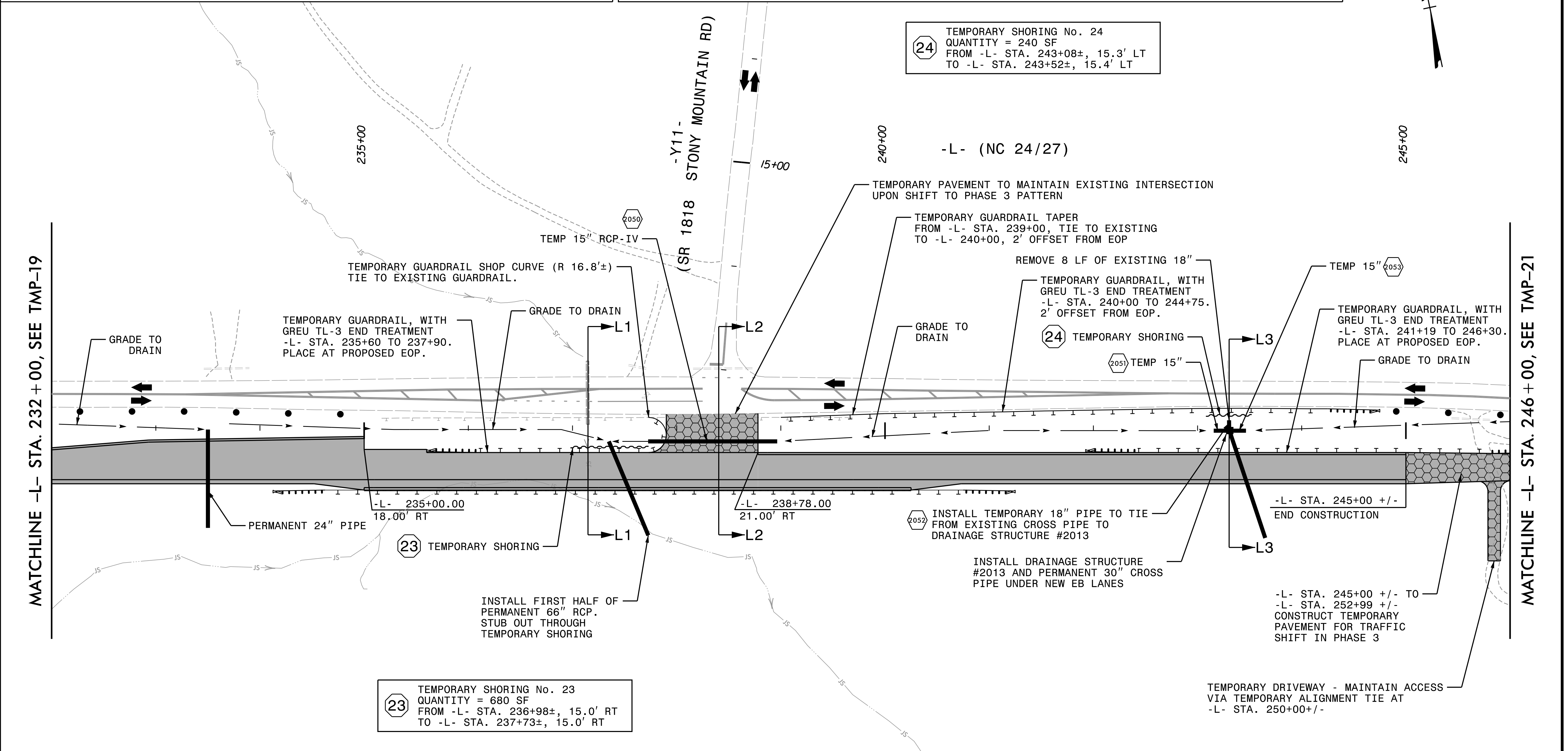
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REVISIONS

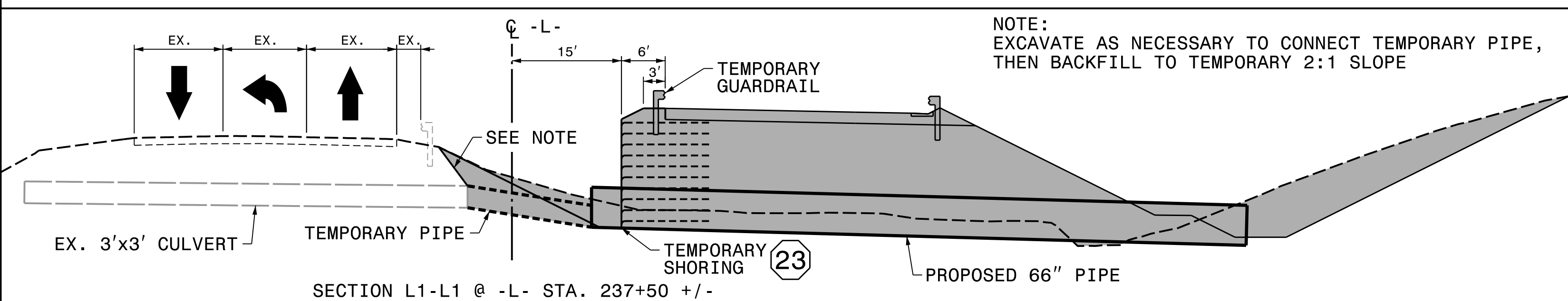




24 TEMPORARY SHORING No. 24  
 QUANTITY = 240 SF  
 FROM -L- STA. 243+08±, 15.3' LT  
 TO -L- STA. 243+52±, 15.4' LT



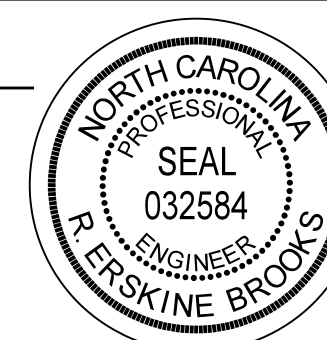
23 TEMPORARY SHORING No. 23  
 QUANTITY = 680 SF  
 FROM -L- STA. 236+98±, 15.0' RT  
 TO -L- STA. 237+73±, 15.0' RT



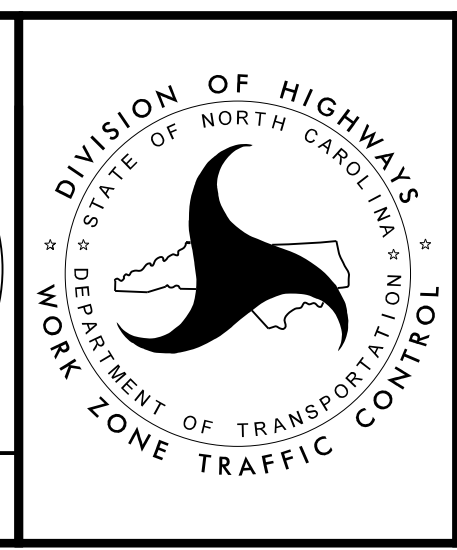
APPROVED: *P. Eskine Brooks*

DATE: 12/18/2018

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PHASE 1

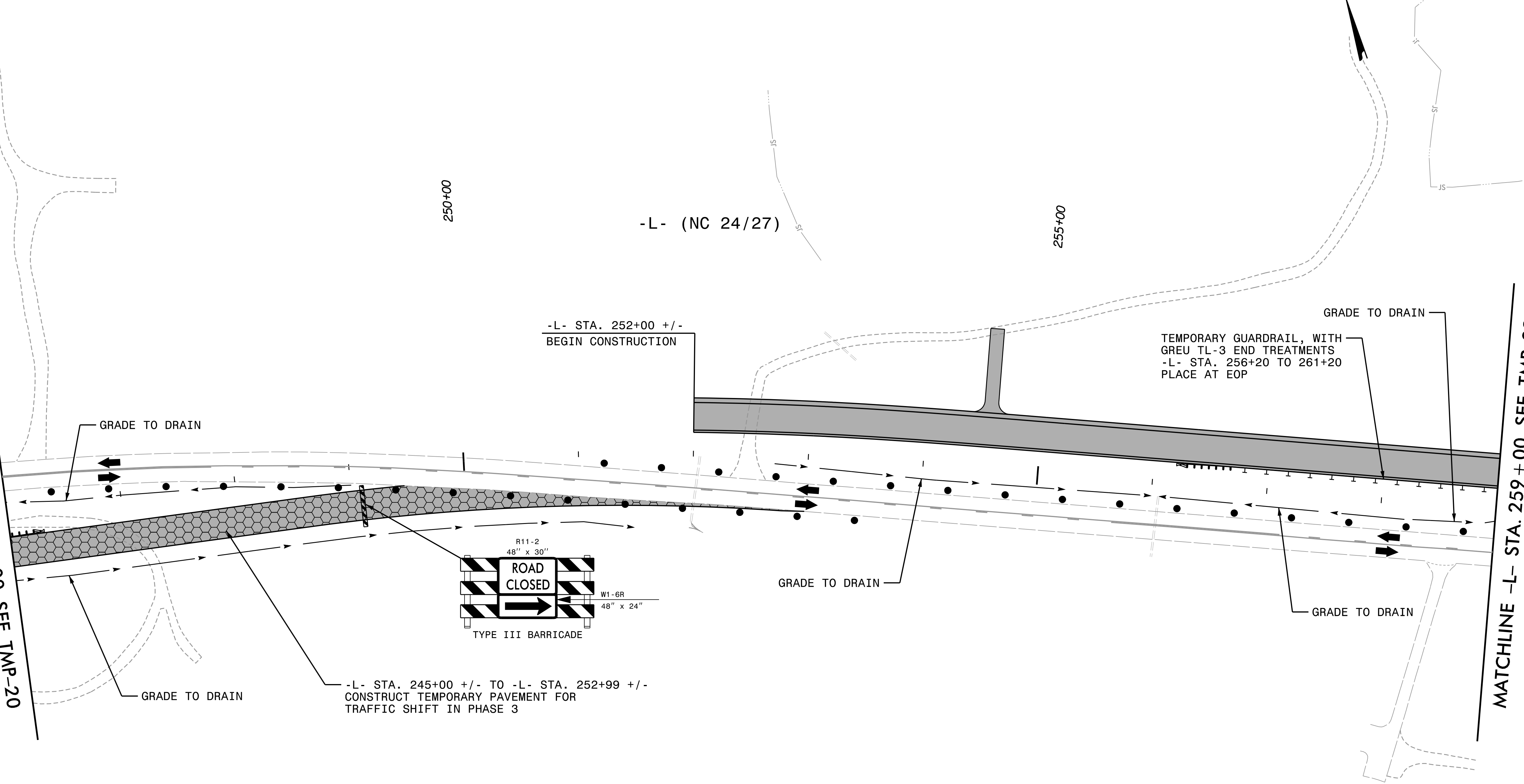
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REVISIONS

PROJ. REFERENCE NO.	SHEET NO.
R-2530B	TMP-21
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MATCHLINE -L- STA. 246 + 00, SEE TMP-20

MATCHLINE -L- STA. 259 + 00, SEE TMP-22



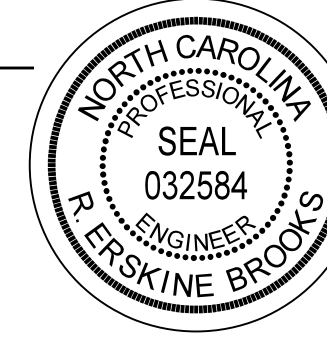
REVISIONS

PLOT DRIVER: NCDOT\_pdf\_color\_eng\_50.plt  
 USER: ERBROOKS  
 DATE: 12/10/2018  
 TIME: 10:15:55 AM  
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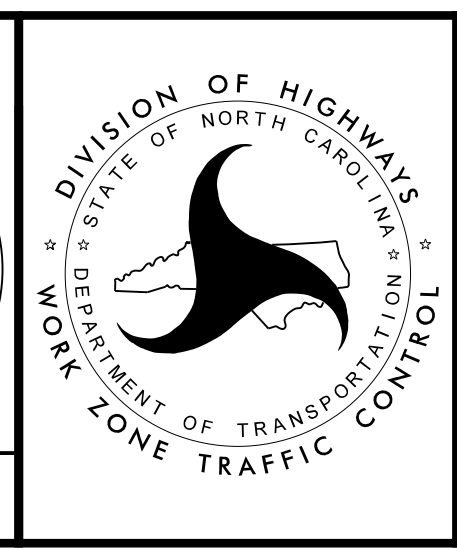
APPROVED: P. Eskin Brooks

DATE: 12/18/2018

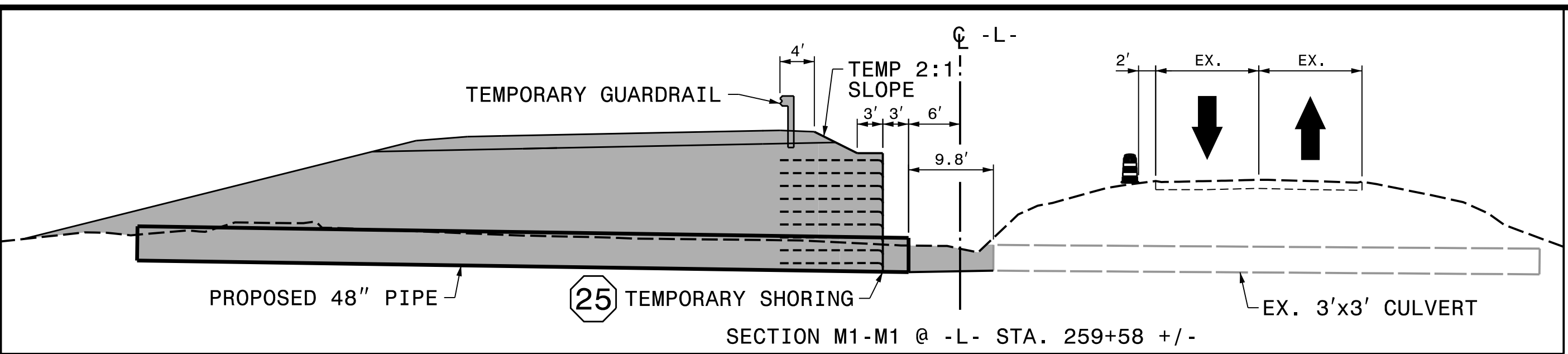
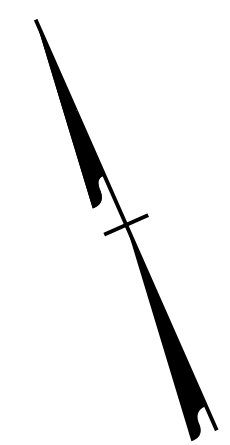
SEAL



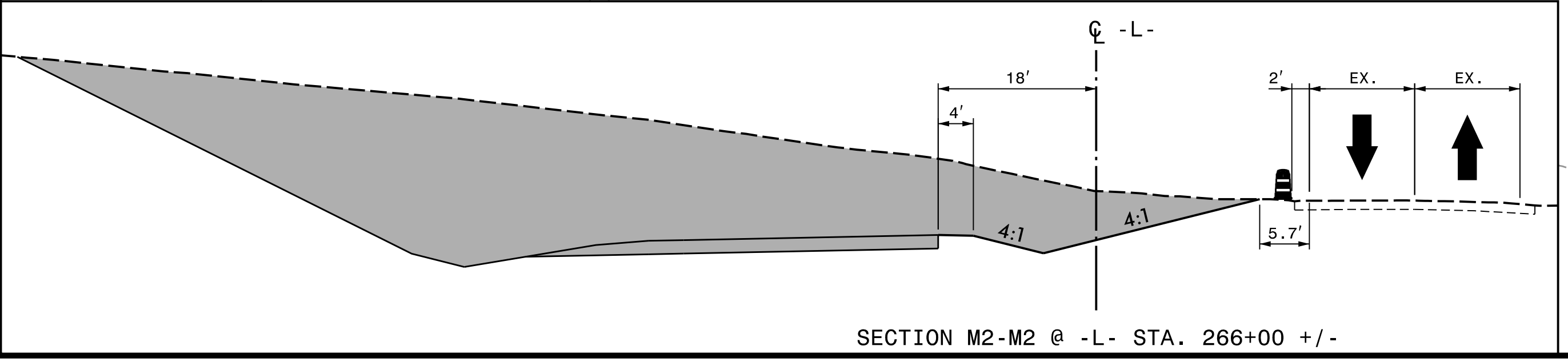
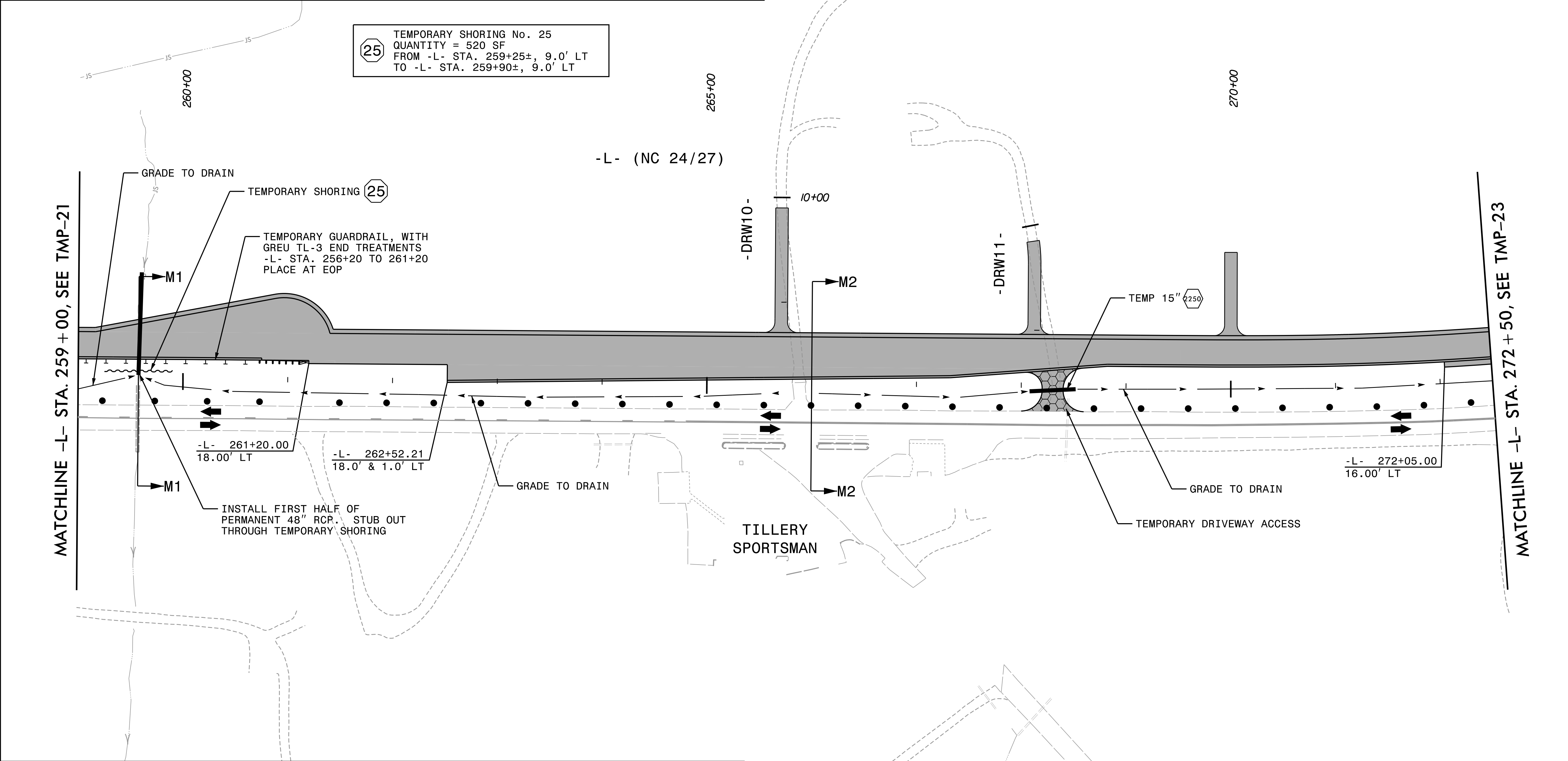
**DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED**



PHASE 1



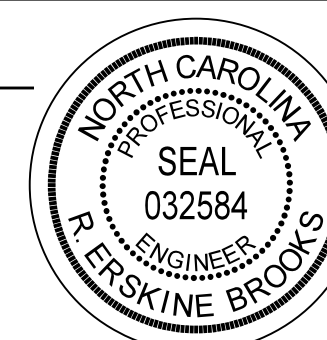
TEMPORARY SHORING No. 25  
 QUANTITY = 520 SF  
 FROM -L- STA. 259+25±, 9.0' LT  
 TO -L- STA. 259+90±, 9.0' LT



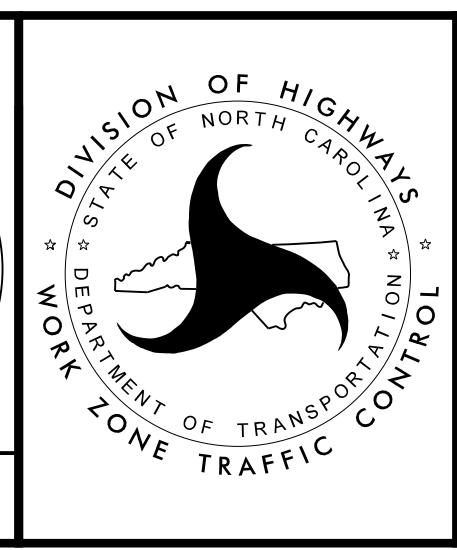
APPROVED: P. Eskine Brooks

DATE: 12/18/2018

SEAL



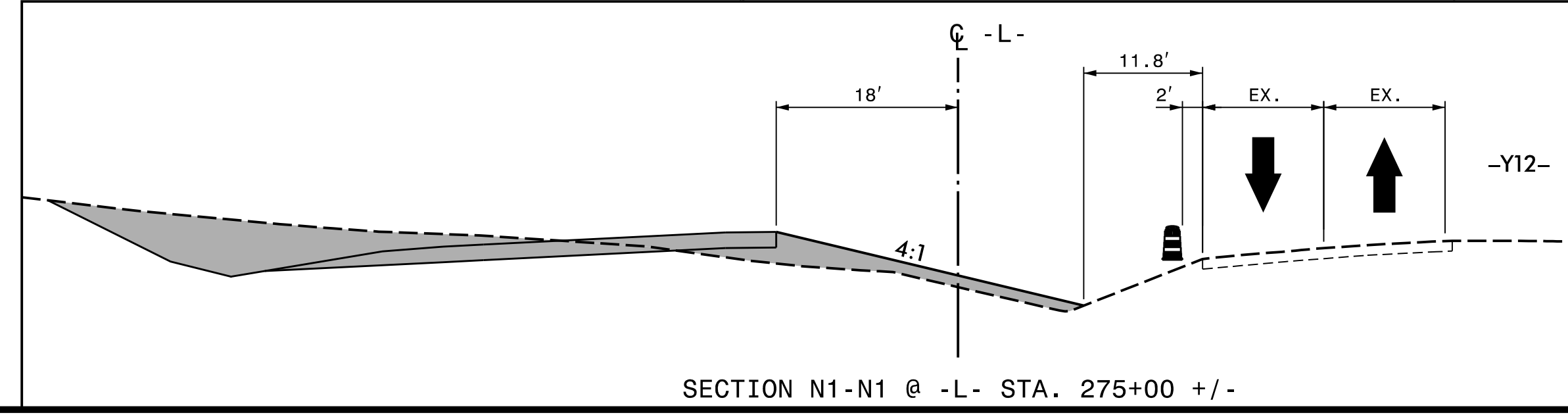
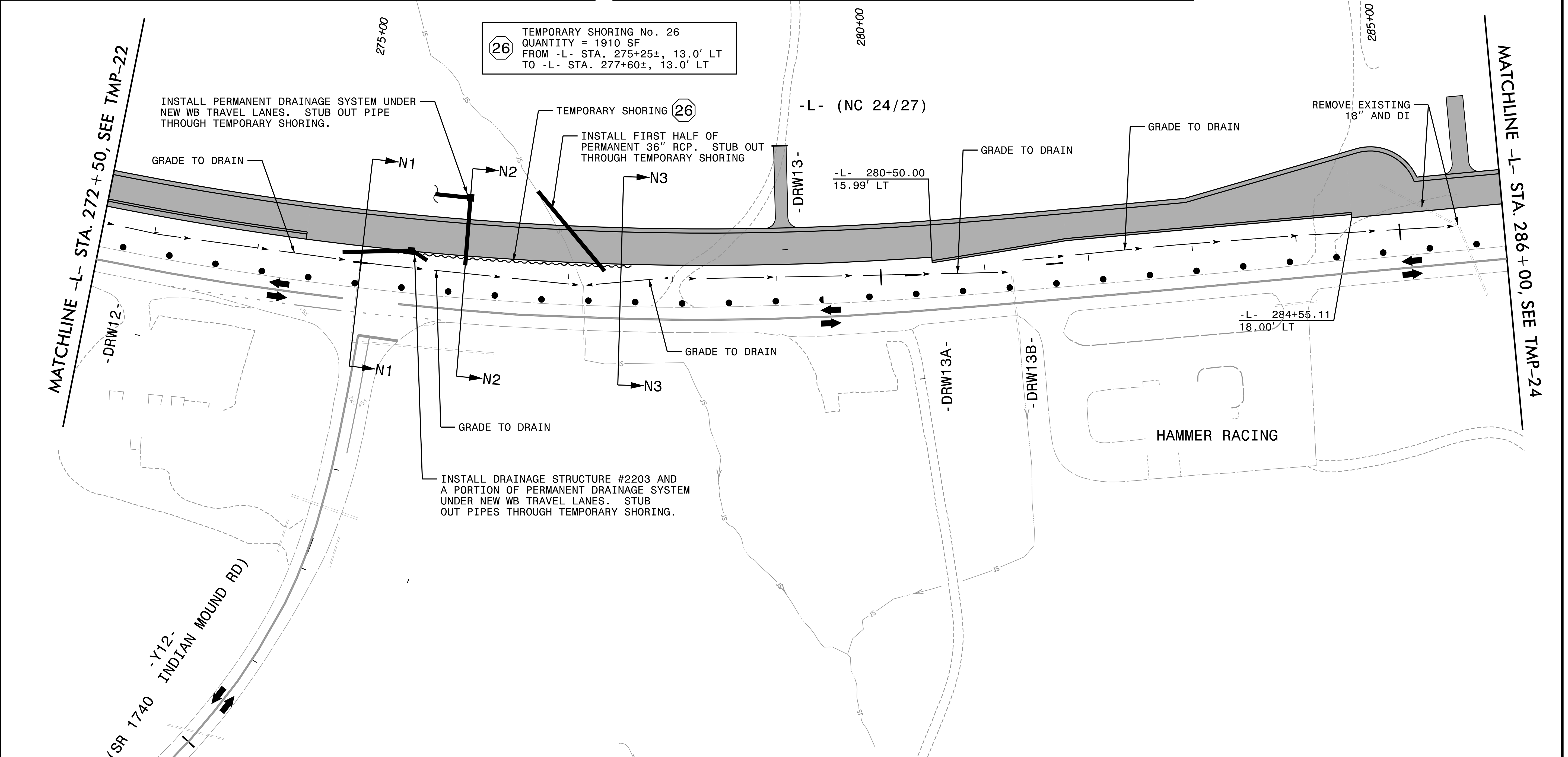
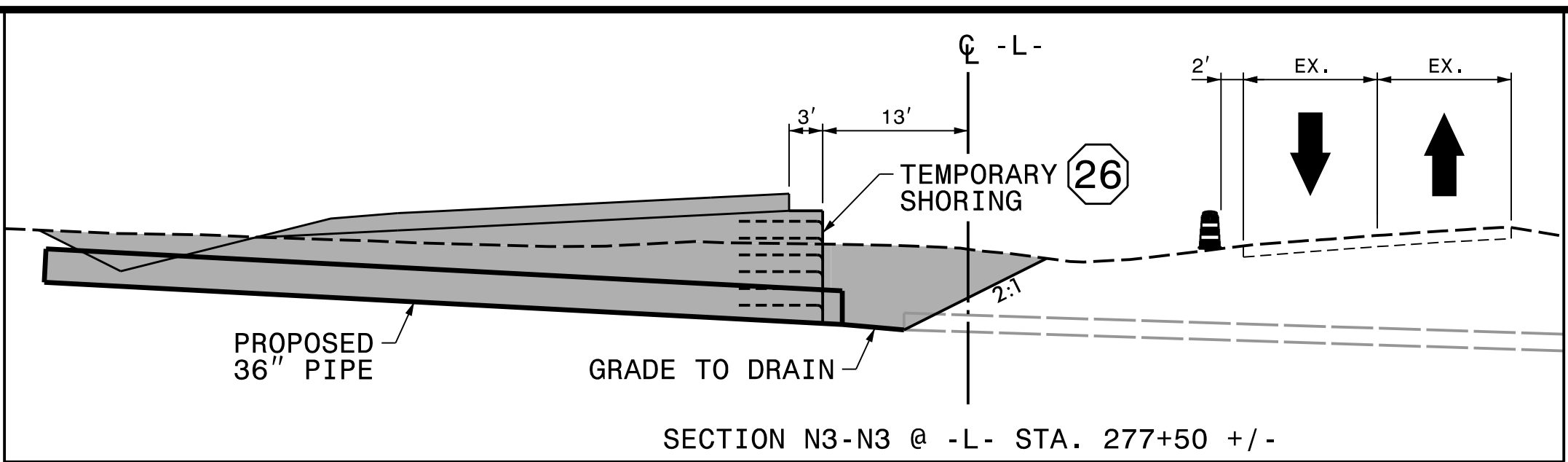
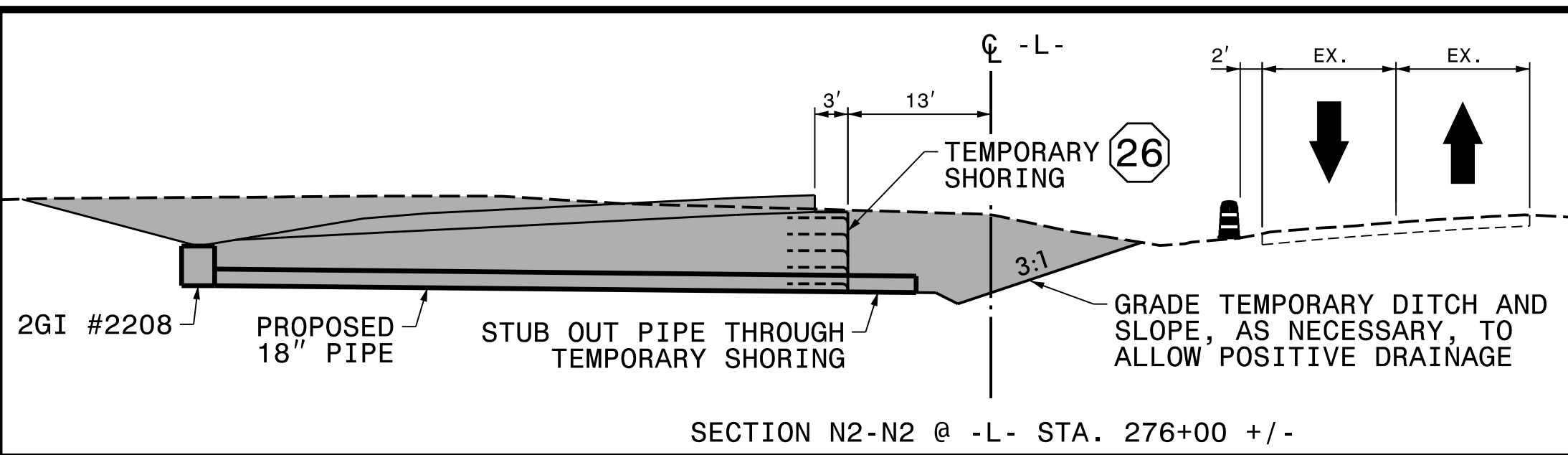
DOCUMENT NOT CONSIDERED FINAL  
 UNLESS ALL SIGNATURES COMPLETED



PHASE 1

PLOT DRIVER: NCDOT\_pdf\_color\_eng\_50.plt  
 USER: ERBROOKS  
 DATE: 12/10/2018  
 TIME: 10:16:10 AM  
 FILE: p:\pwhdr\users\01\hbr\US\_East\_01\Documents\3322\10001376\10052612\60\_CAD\BIM\6.2\_Work\_In\_Progress\TrafficControl\TCR\2530B-TC\_TMP-22.dgn


REVISIONS



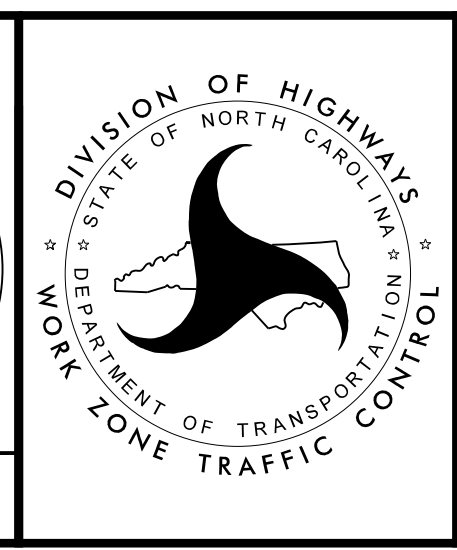
APPROVED: P. Erskine Brooks

DATE: 12/18/2018

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PHASE 1

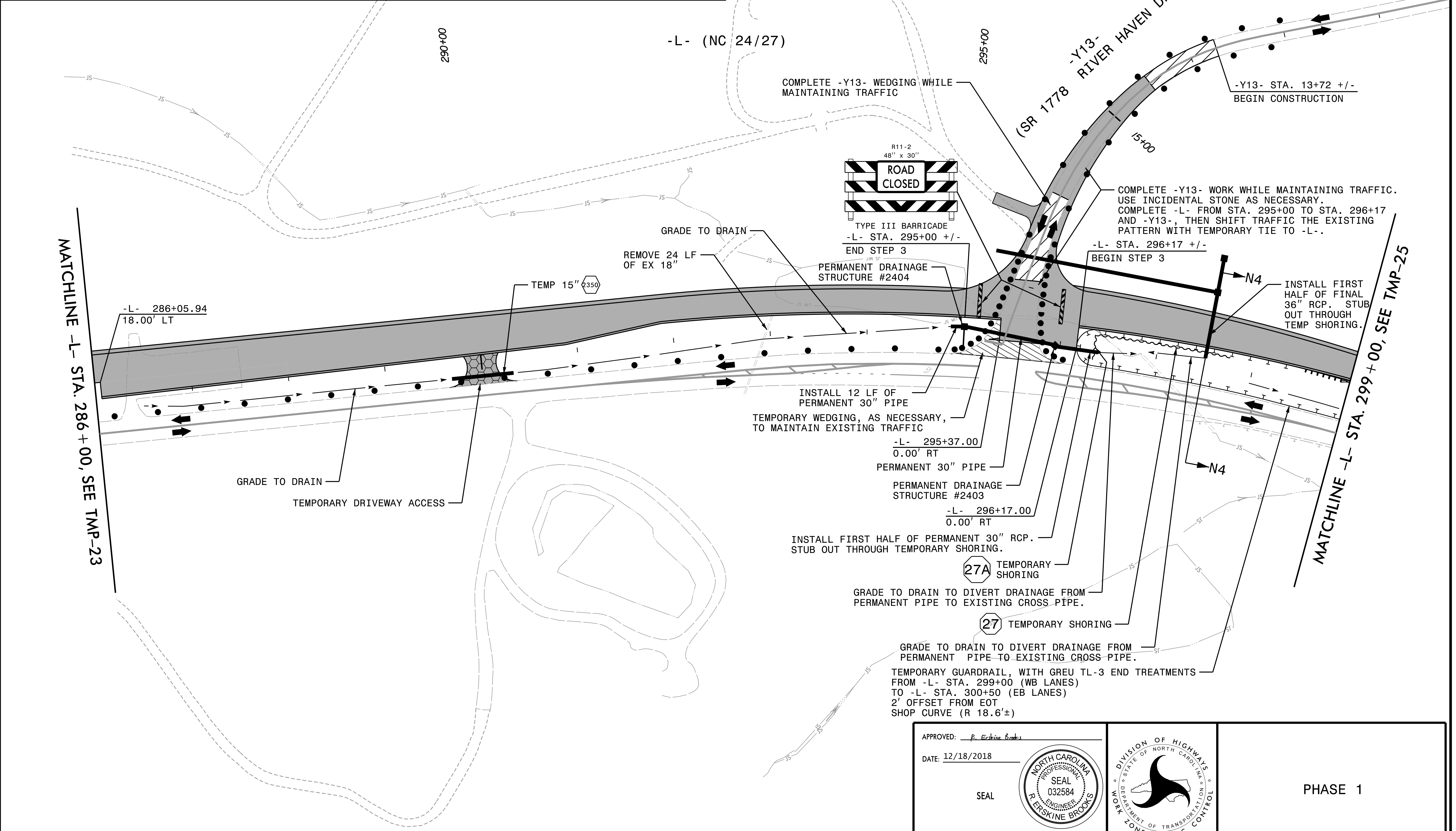
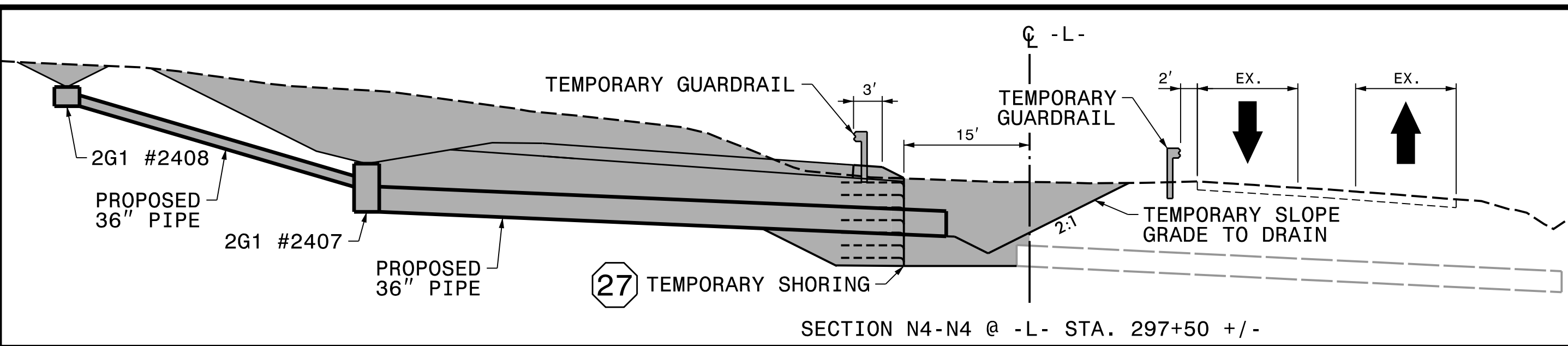
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REVISIONS

PROJ. REFERENCE NO. R-2530B	SHEET NO. TMP-24
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 TEMPORARY SHORING No. 27  
 QUANTITY = 1350 SF  
 FROM -L- STA. 296+36±, 15.0' LT  
 TO -L- STA. 297+75±, 15.0' LT

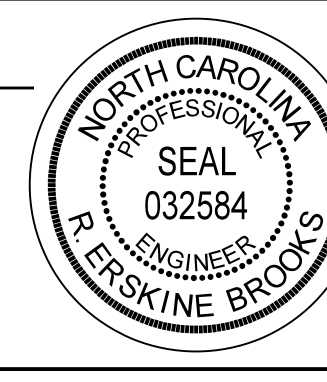
 TEMPORARY SHORING No. 27A  
 QUANTITY = 140 SF  
 FROM -L- STA. 296+36±, 15.0' LT  
 TO -L- STA. 296+36±, 10.0' RT



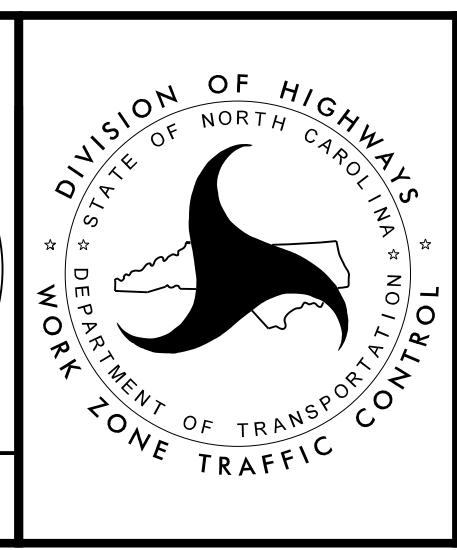
APPROVED: P. Erskine Brooks

DATE: 12/18/2018

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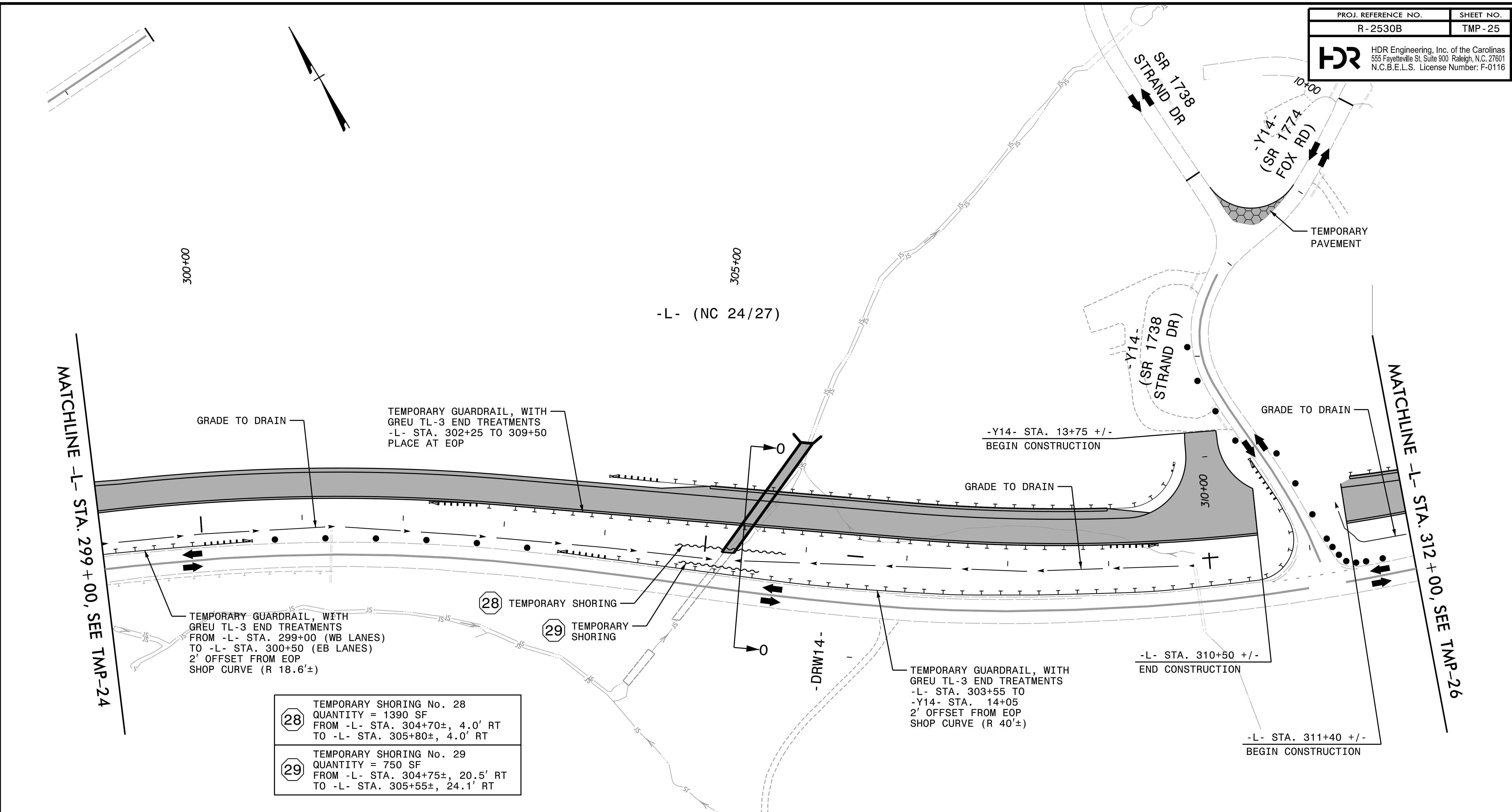
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



PHASE 1

PLOT DRIVER: NCDOT\_pdf\_color\_eng\_50.plt  
 USER: ERBROOKS  
 PENTABLE: NCDOT\_tcp.tbl  
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 TIME: 10:16:39 AM  
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REVISIONS



MATCHLINE -L- STA. 299+00, SEE TMP-24

MATCHLINE -L- STA. 312+00, SEE TMP-26

GRADE TO DRAIN  
 TEMPORARY GUARDRAIL, WITH GREU TL-3 END TREATMENTS  
 -L- STA. 302+25 TO 309+50  
 PLACE AT EOP

TEMPORARY GUARDRAIL, WITH GREU TL-3 END TREATMENTS  
 FROM -L- STA. 299+00 (WB LANES)  
 TO -L- STA. 300+50 (EB LANES)  
 2' OFFSET FROM EOP  
 SHOP CURVE (R 18.6'±)

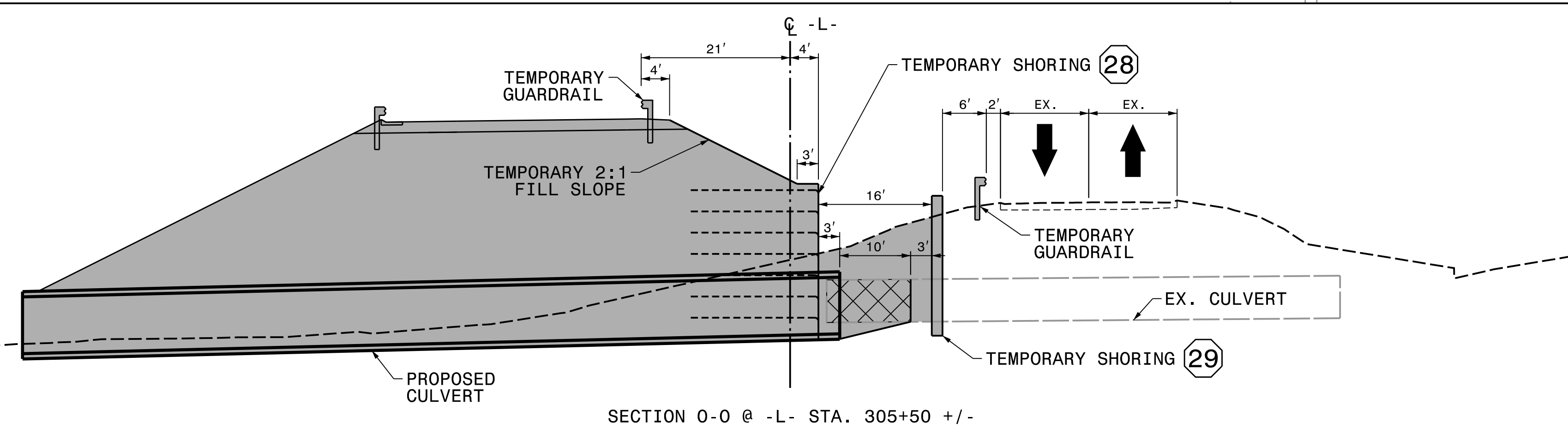
28 TEMPORARY SHORING  
 29 TEMPORARY SHORING

-Y14- STA. 13+75 +/-  
 BEGIN CONSTRUCTION

-L- STA. 310+50 +/-  
 END CONSTRUCTION

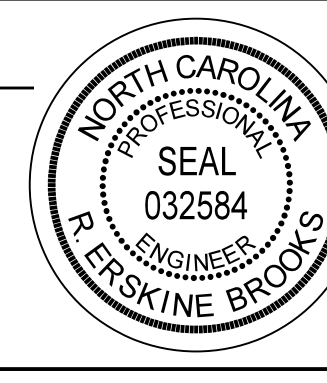
-L- STA. 311+40 +/-  
 BEGIN CONSTRUCTION

28	TEMPORARY SHORING No. 28 QUANTITY = 1390 SF FROM -L- STA. 304+70±, 4.0' RT TO -L- STA. 305+80±, 4.0' RT
29	TEMPORARY SHORING No. 29 QUANTITY = 750 SF FROM -L- STA. 304+75±, 20.5' RT TO -L- STA. 305+55±, 24.1' RT

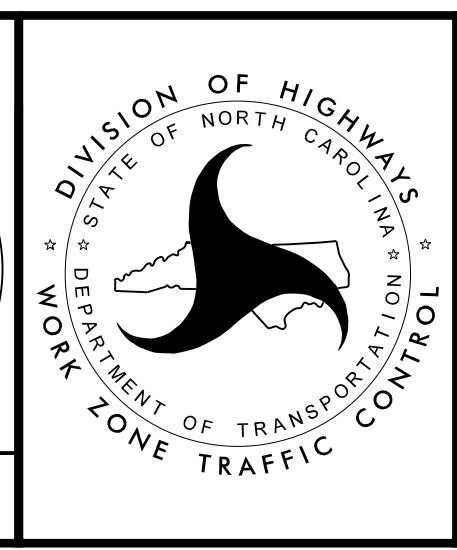


APPROVED: P. Eskin Brooks  
 DATE: 12/18/2018

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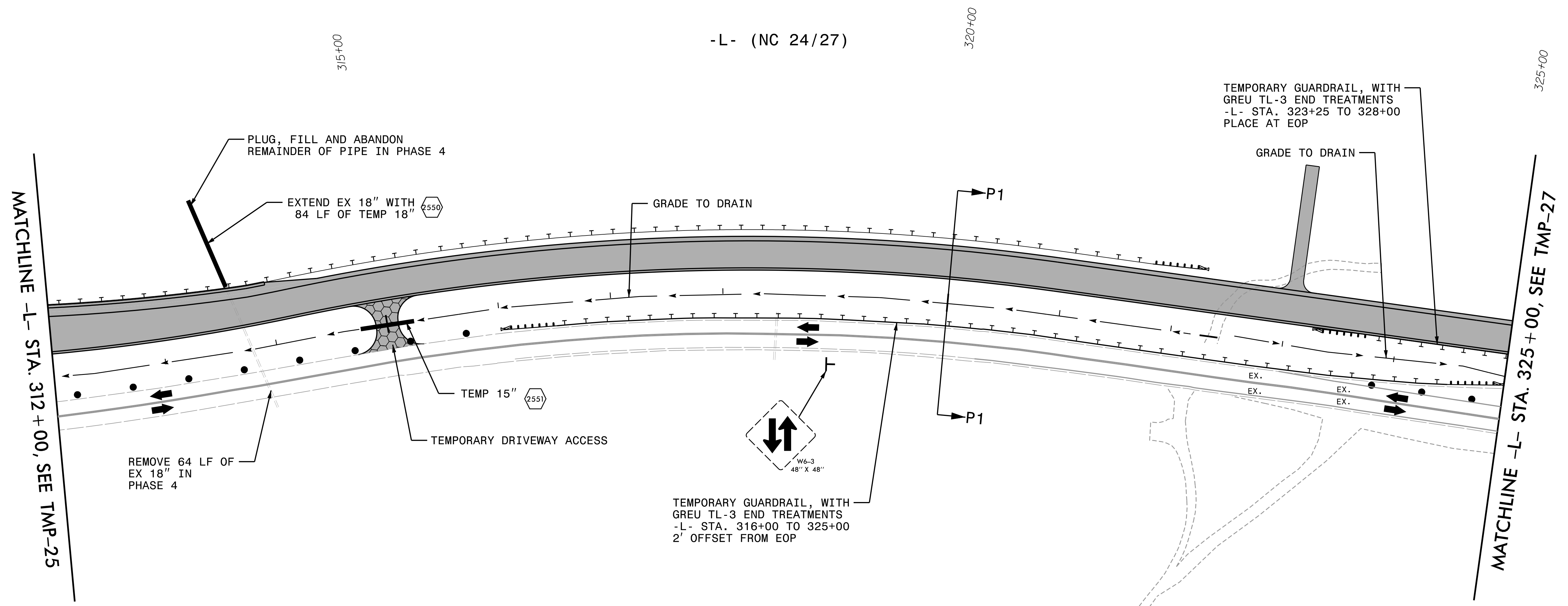
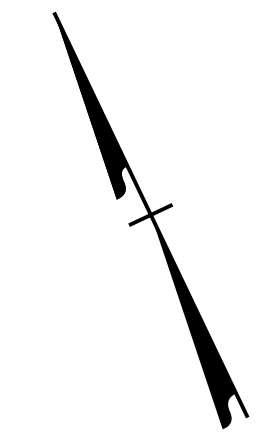
**DOCUMENT NOT CONSIDERED FINAL  
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PHASE 1

PLOT DRIVER: NCDOT\_pdf\_color\_eng\_50.plt  
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REVISIONS



REMOVE 64 LF OF EX 18" IN PHASE 4

PLUG, FILL AND ABANDON REMAINDER OF PIPE IN PHASE 4

EXTEND EX 18" WITH 84 LF OF TEMP 18"  $\phi$ 250

TEMP 15"  $\phi$ 255

TEMPORARY DRIVEWAY ACCESS

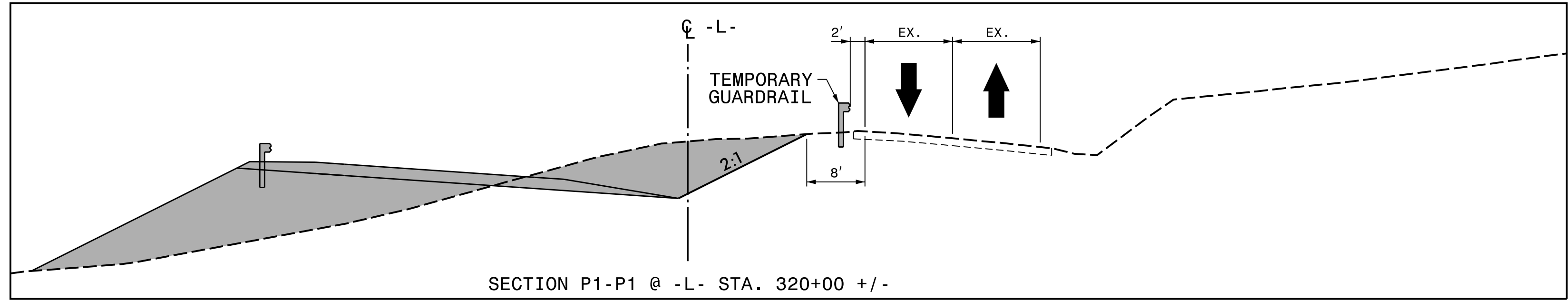
GRADE TO DRAIN

TEMPORARY GUARDRAIL, WITH GREU TL-3 END TREATMENTS -L- STA. 323+25 TO 328+00 PLACE AT EOP

GRADE TO DRAIN

TEMPORARY GUARDRAIL, WITH GREU TL-3 END TREATMENTS -L- STA. 316+00 TO 325+00 2' OFFSET FROM EOP

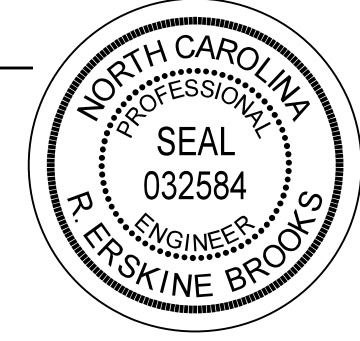
NOTE: TRAFFIC CONTROL DEVICES FROM TIP PROJECT B-4974 SHALL REMAIN IN PLACE AND BECOME PART OF THIS PLAN. (SEE GENERAL NOTE "II", SHEET TMP-01D, AND PROJECT SPECIAL PROVISION)



APPROVED: *P. Erskine Brooks*

DATE: 8/6/2019

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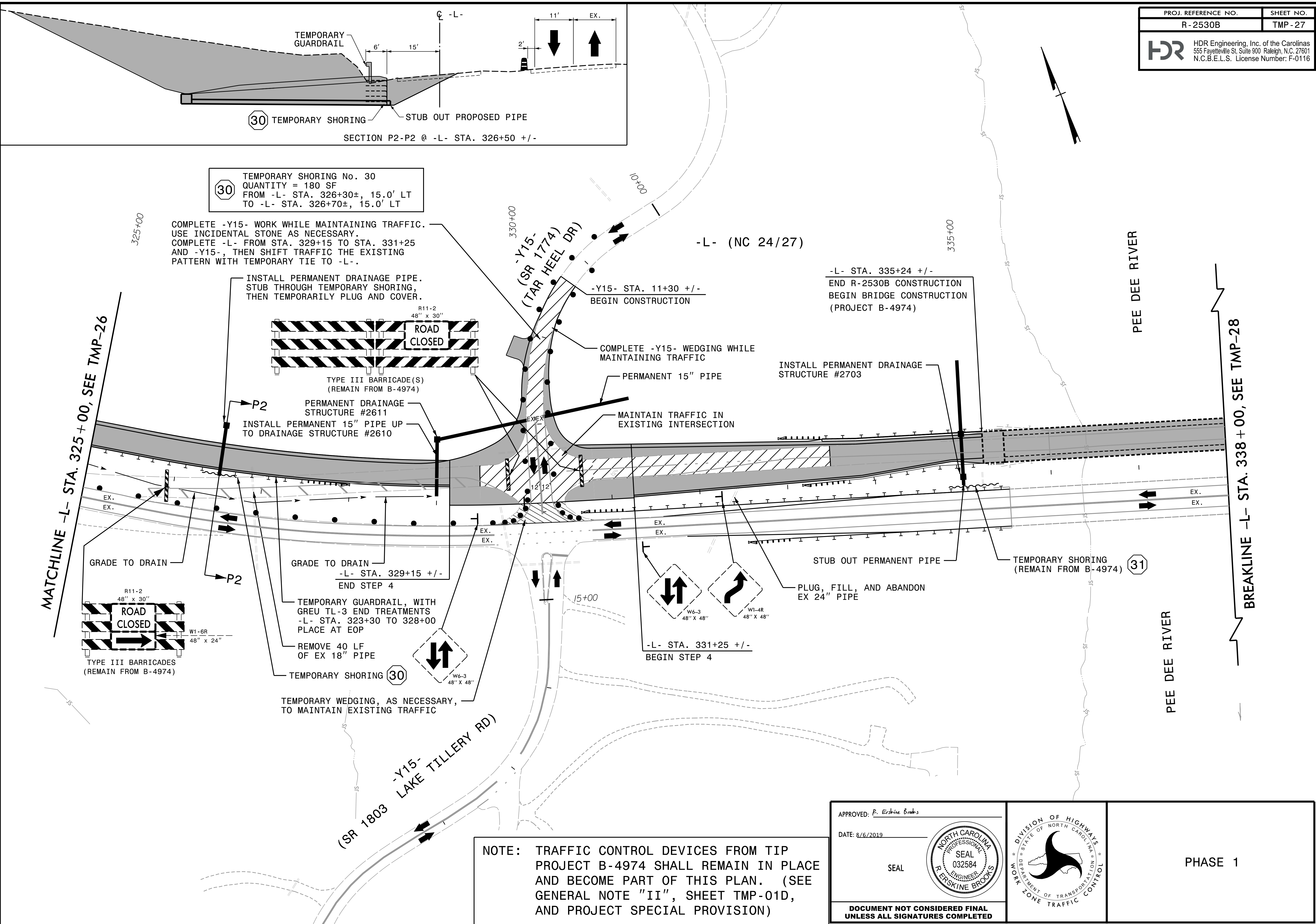
**DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED**



PHASE 1

REVISIONS

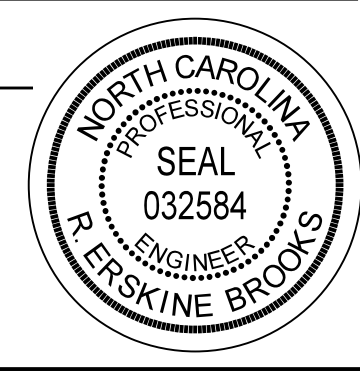
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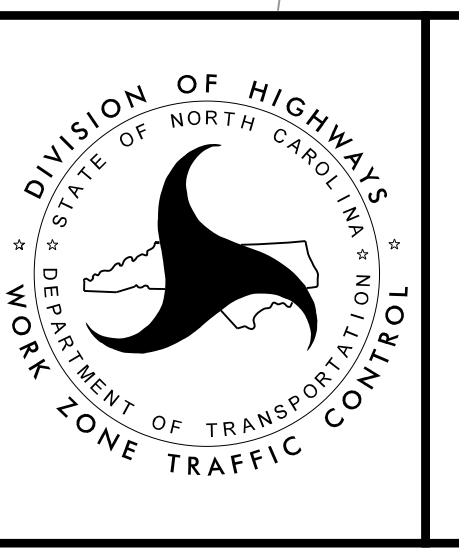


REVISIONS

PLOT DRIVER: NCDOT\_pdf\_color\_eng\_50.ppt  
 USER: ERBROOKS  
 DATE: 8/6/2019  
 TIME: 9:47:36 PM  
 FILE: C:\Users\erbrooks\Desktop\AR-2530\2019-08-06\AR2530B\_TC\_TMP-27.dgn


NOTE: TRAFFIC CONTROL DEVICES FROM TIP PROJECT B-4974 SHALL REMAIN IN PLACE AND BECOME PART OF THIS PLAN. (SEE GENERAL NOTE "II", SHEET TMP-01D, AND PROJECT SPECIAL PROVISION)

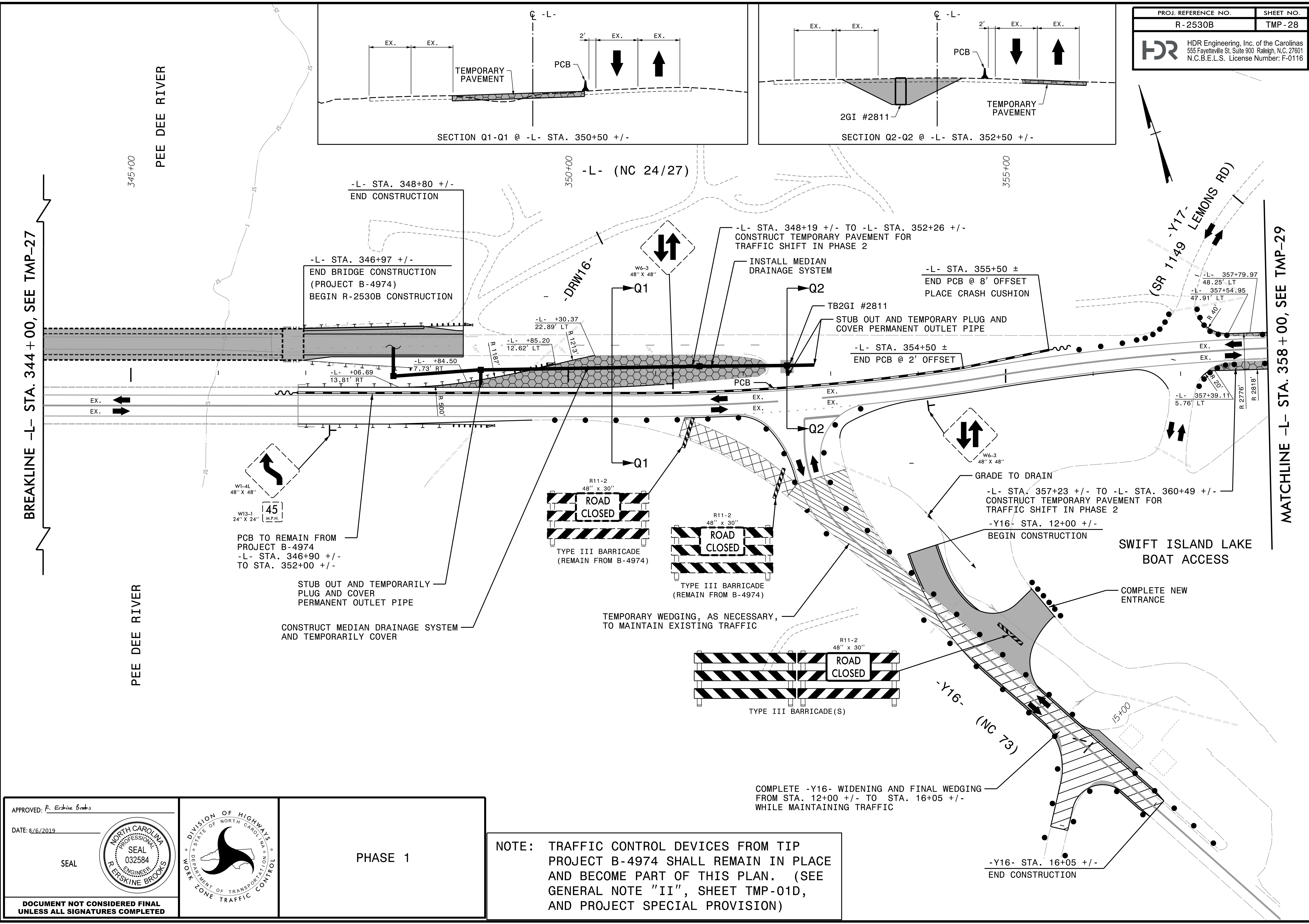
APPROVED: *P. Erskine Brooks*  
 DATE: 8/6/2019  
 SEAL  




PHASE 1




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REVISIONS


PLOT DRIVER: NCDOT\_pdf\_color\_eng\_50.pit  
 USER: ERBROOKS  
 DATE: 8/6/2019  
 TIME: 9:48:26 PM  
 FILE: C:\Users\erbrook\OneDrive\Work\2530\2019-08-06\R2530B-TC\_TMP-28.dgn

APPROVED: P. Erskine Brooks  
 DATE: 8/6/2019



SEAL

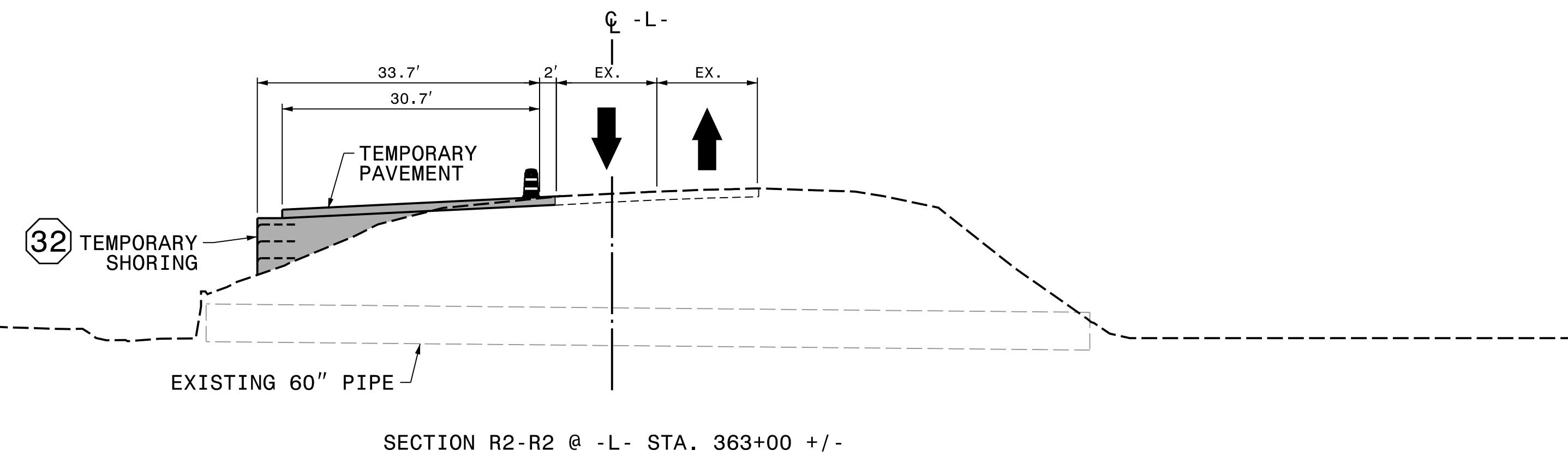
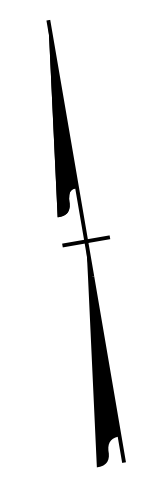
**DOCUMENT NOT CONSIDERED FINAL  
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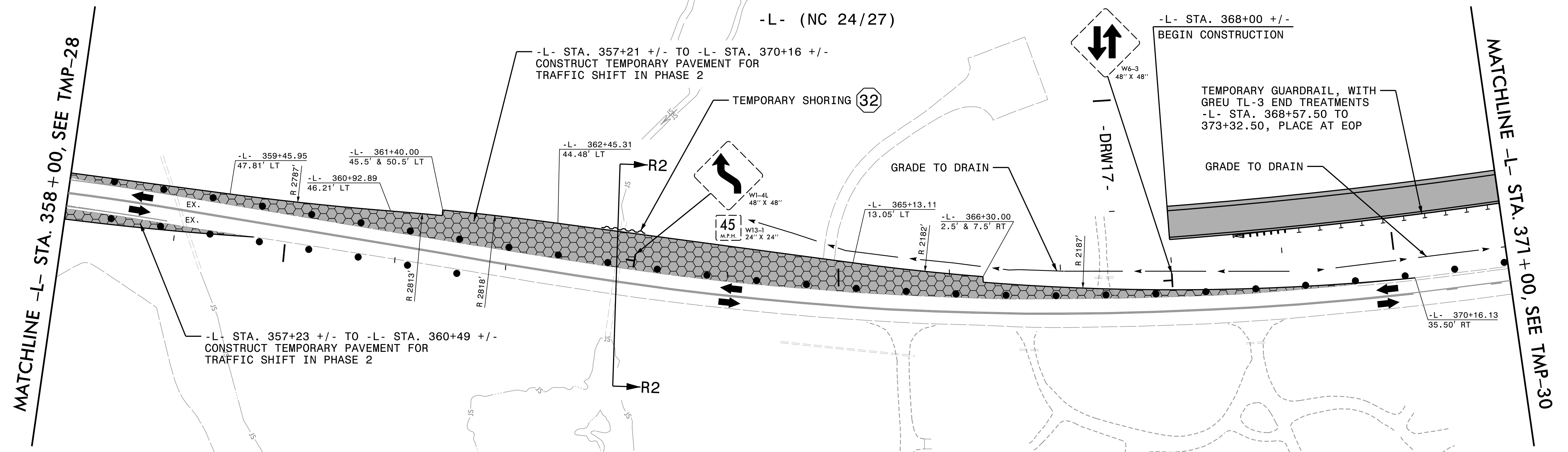
**PHASE 1**

**NOTE: TRAFFIC CONTROL DEVICES FROM TIP PROJECT B-4974 SHALL REMAIN IN PLACE AND BECOME PART OF THIS PLAN. (SEE GENERAL NOTE "II", SHEET TMP-01D, AND PROJECT SPECIAL PROVISION)**

PENTABLE: NCDOT\_tcp.tbl  
 DATE: 8/6/2019  
 TIME: 9:48:26 PM



32 TEMPORARY SHORING No. 32  
 QUANTITY = 180 SF  
 FROM -L- STA. 362+85±, 43.9' LT  
 TO -L- STA. 363+25±, 39.9' LT



REVISIONS

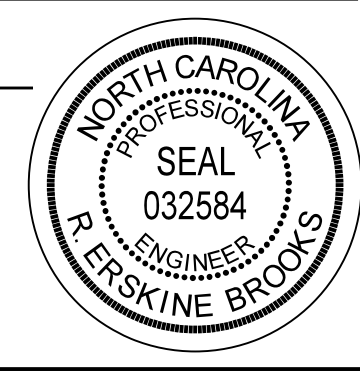
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 DATE: 8/6/2019  
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NOTE: TRAFFIC CONTROL DEVICES FROM TIP PROJECT B-4974 SHALL REMAIN IN PLACE AND BECOME PART OF THIS PLAN. (SEE GENERAL NOTE "II", SHEET TMP-01D, AND PROJECT SPECIAL PROVISION)

APPROVED: *P. Erskine Brooks*

DATE: 8/6/2019

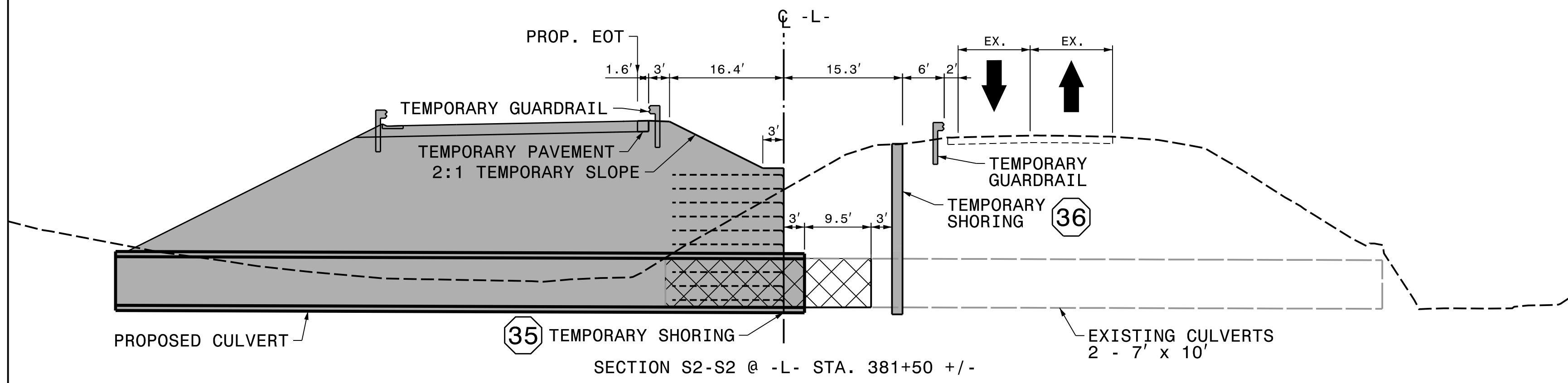
SEAL



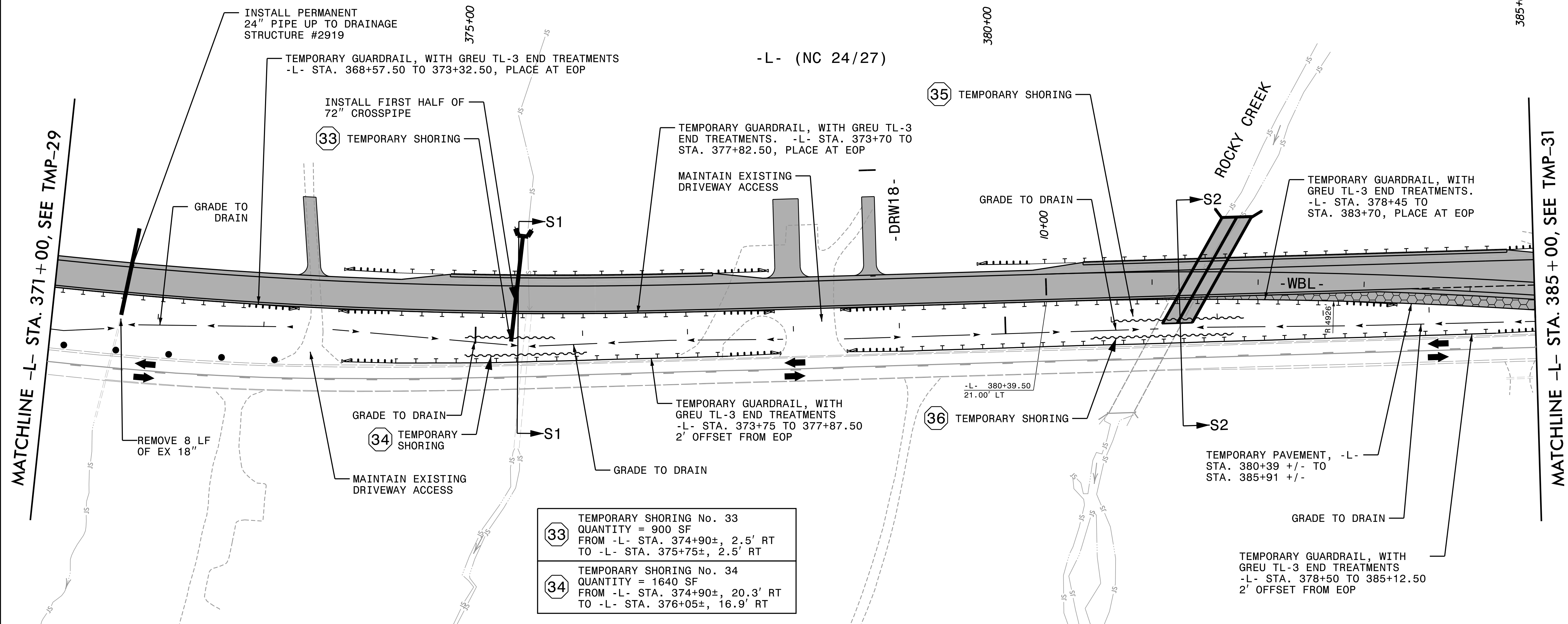
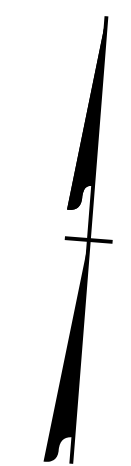
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



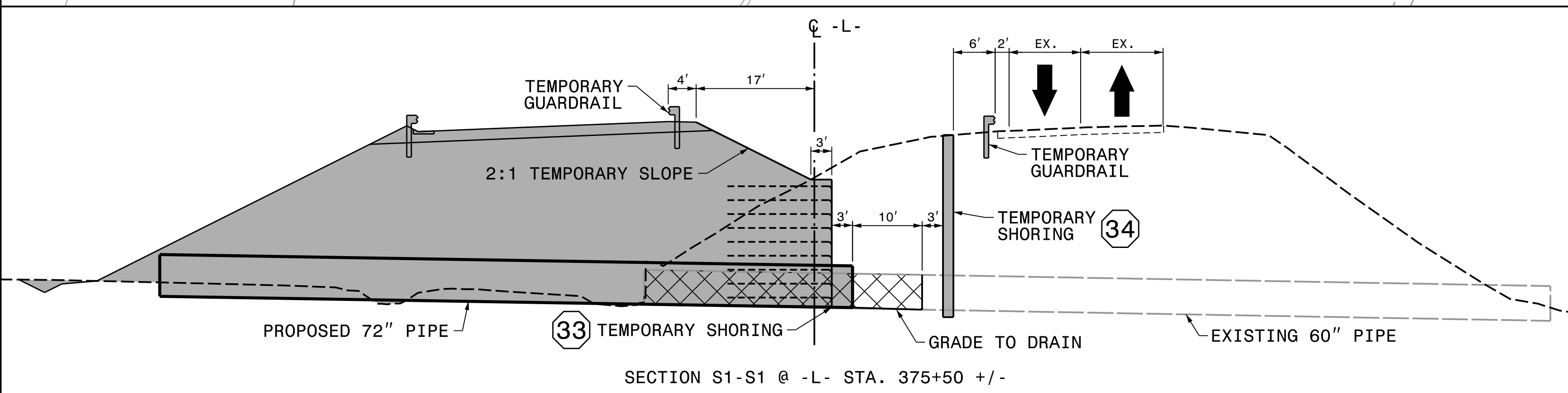
PHASE 1



<p><b>35</b></p> <p>TEMPORARY SHORING No. 35          QUANTITY = 1750 SF          FROM -L- STA. 381+00±, 0.0' LT          TO -L- STA. 382+25±, 0.0' LT</p>
<p><b>36</b></p> <p>TEMPORARY SHORING No. 36          QUANTITY = 2130 SF          FROM -L- STA. 380+80±, 15.4' RT          TO -L- STA. 382+15±, 15.5' RT</p>



<p><b>33</b></p> <p>TEMPORARY SHORING No. 33          QUANTITY = 900 SF          FROM -L- STA. 374+90±, 2.5' RT          TO -L- STA. 375+75±, 2.5' RT</p>
<p><b>34</b></p> <p>TEMPORARY SHORING No. 34          QUANTITY = 1640 SF          FROM -L- STA. 374+90±, 20.3' RT          TO -L- STA. 376+05±, 16.9' RT</p>

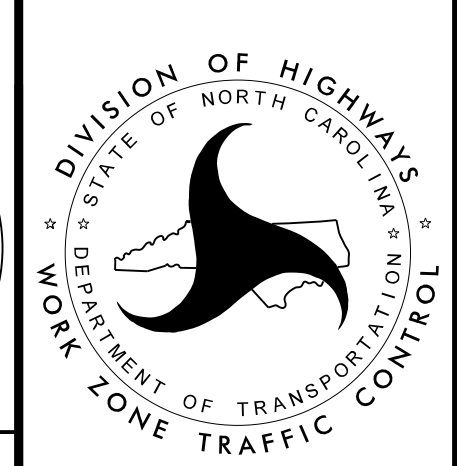
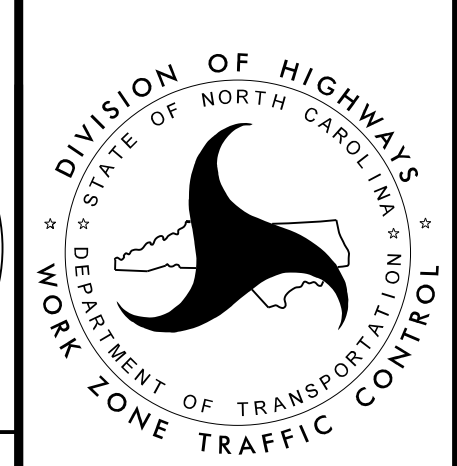


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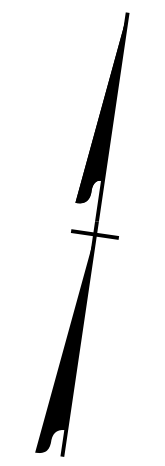
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UNLESS ALL SIGNATURES COMPLETED



PHASE 1

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 USER: ERBROOKS  
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REVISIONS



REVISIONS

PLOT DRIVER: NCDOT\_pdf\_color\_eng\_50.plt  
 USER: ERBROOKS  
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 TIME: 10:18:23 AM  
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MESSAGE NO. 1	MESSAGE NO. 2
TRAFFIC SHIFT AHEAD	ADVISORY SPEED 45 MPH
CHANGEABLE MESSAGE SIGN	

APPROVED: <u>P. Eskine Brooks</u> DATE: 12/18/2018 SEAL 		PHASE 1
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