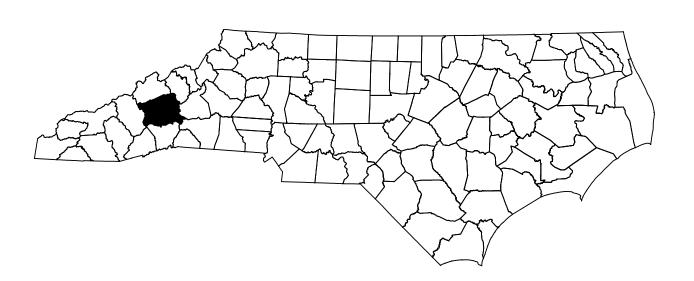
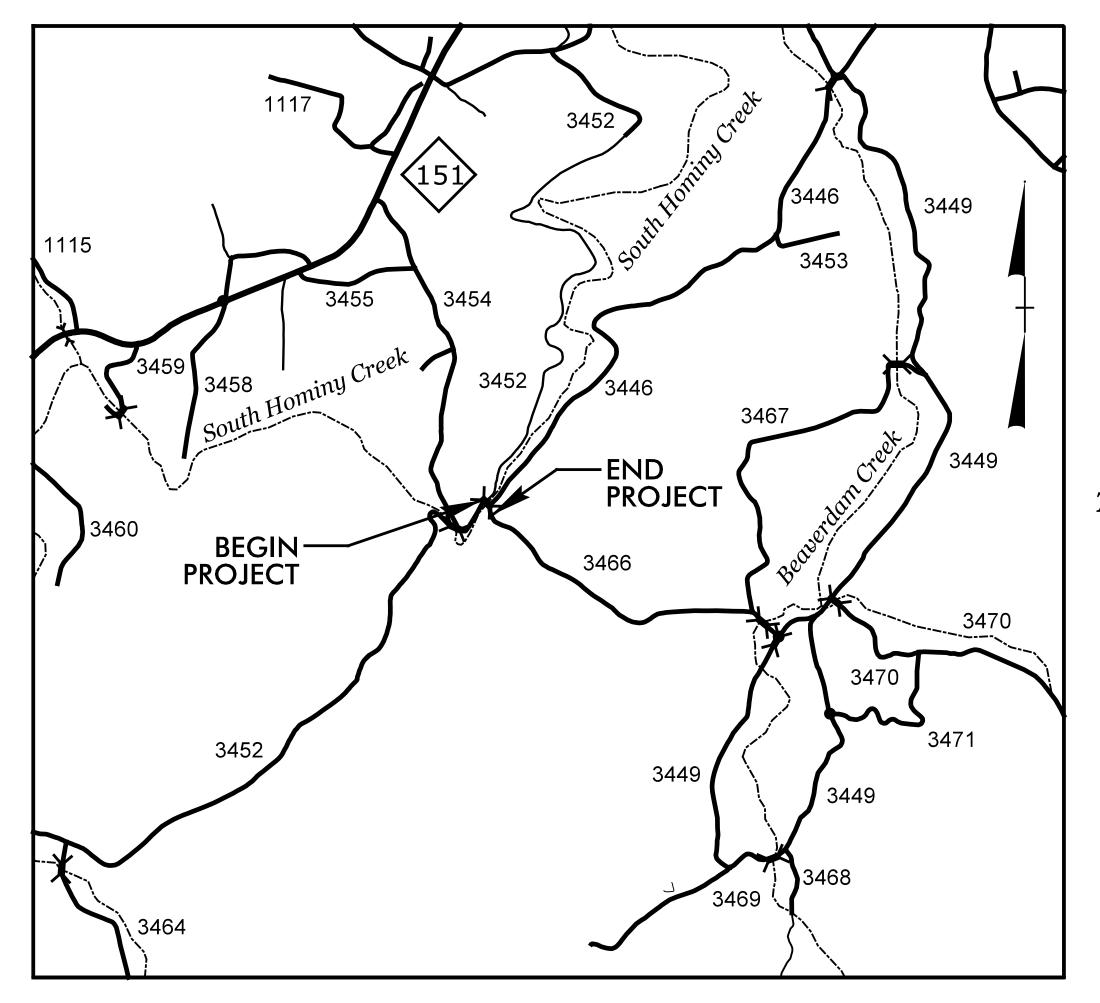
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LOCATION:

BRIDGE NO. 259 OVER SOUTH HOMINY CREEK ON SR 3466 (MCFEE RD.)

TYPE OF WORK:

GRADING, DRAINAGE, PAVING, AND STRUCTURE

INDEX OF SHEETS

SHEET NO.

<u>TITLE</u>

TITLE SHEET, VICINITY MAP, AND INDEX OF SHEETS

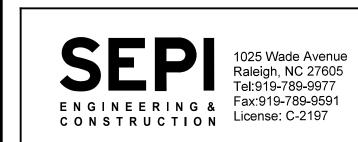
LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, LEGEND, AND TEMPORARY PAVEMENT MARKING SCHEDULE

TRANSPORTATION OPERATIONS PLAN: (MANAGEMENT TMP-1B

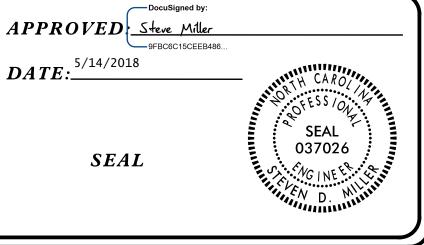
STRATEGIES AND GENERAL NOTES)

TEMPORARY SHORING DATA PHASING

PHASE I PHASE II



DATE: 5/14/2018



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

PLANS PREPARED BY:

S. D. MILLER, P.E.

M. S. ISHAK

D. A. PARKER, P.E. PROJECT ENGINEER

R. M. GARRETT PROJECT DESIGN ENGINEER

NCDOT CONTACTS:

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

M

SHEET NO.

TMP-1

5400

SEAL

PROJ. REFERENCE NO. SHEET NO. B-5400 TMP-1A

ROADWAY STANDARD DRAWINGS

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

| STD. NO. | <u>TITLE</u> |
|----------|--|
| 1101.01 | WORK ZONE ADVANCE WARNING SIGNS |
| 1101.02 | TEMPORARY LANE CLOSURES |
| 1101.03 | TEMPORARY ROAD CLOSURES |
| 1101.04 | TEMPORARY SHOULDER CLOSURES |
| 1101.05 | WORK ZONE VEHICLE ACCESSES |
| 1101.06 | WARNING SIGNS FOR BLASTING ZONES |
| 1101.11 | TRAFFIC CONTROL DESIGN TABLES |
| 1110.01 | STATIONARY WORK ZONE SIGNS |
| 1110.02 | PORTABLE WORK ZONE SIGNS |
| 1130.01 | DRUM |
| 1135.01 | CONES |
| 1145.01 | BARRICADES - TYPE III |
| 1150.01 | FLAGGERS |
| 1180.01 | SKINNY DRUM |
| 1205.01 | PAVEMENT MARKINGS - LINE TYPES AND OFFSETS |
| 1205.02 | PAVEMENT MARKINGS - TWO LANE AND MULTILANE ROADWAYS |
| 1205.04 | PAVEMENT MARKINGS - INTERSECTIONS |
| 1205.12 | PAVEMENT MARKINGS - BRIDGES |
| 1250.01 | RAISED PAVEMENT MARKERS - INSTALLATION SPACING |
| 1251.01 | RAISED PAVEMENT MARKERS - PERMANENT AND TEMPORARY |
| 1253.01 | RAISED PAVEMENT MARKERS - SNOWPLOWABLE |
| 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

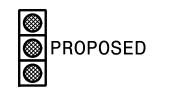
REMOVAL

WEDGING UNDER TRAFFIC

USER DEFINED (IF NEEDED)

SIGNALS







PAVEMENT MARKINGS

---EXISTING LINES TEMPORARY LINES

TRAFFIC CONTROL DEVICES

BARRICADE (TYPE III)

DRUM SKINNY DRUM O TUBULAR MARKER TEMPORARY CRASH CUSHION

FLASHING ARROW BOARD

FLAGGER

LAW ENFORCEMENT

TRUCK MOUNTED ATTENUATOR (TMA)

CHANGEABLE MESSAGE SIGN

TEMPORARY SIGNING

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 SCHEDULE

PAINT $4^{\prime\prime}$

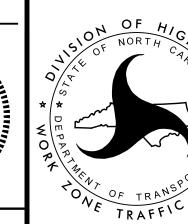
PA WHITE EDGELINE

PI YELLOW DOUBLE CENTER

APPROVED: Steve Miller

COLD APPLIED PLASTIC TYPE IV 24"

C2 WHITE STOPBAR



ROADWAY STANDARD DRAWINGS & LEGEND

1025 Wade Avenue Raleigh, NC 27605 Tel:919-789-9977

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

MANAGEMENT STRATEGIES

- TRAFFIC WILL BE MAINTAINED ON SITE THROUGH STAGED CONSTRUCTION OF BRIDGE NO. 259 UTILIZING TEMPORARY PORTABLE SIGNAL
- DRIVEWAY ACCESS WILL BE MAINTAINED THROUGHOUT THE PROJECT

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.

LANE AND SHOULDER CLOSURE REQUIREMENTS

- A) 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.
- B) 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.
- C) 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.
- D) 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.
- E) DO NOT WORK SIMULTANEOUSLY WITHIN 15 FT ON BOTH SIDES OF AN OPEN TRAVELWAY, RAMP, OR LOOP WITHIN THE SAME LOCATION UNLESS PROTECTED WITH GUARDRAIL OR BARRIER.

PAVEMENT EDGE DROP OFF REQUIREMENTS

F) 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.

G) 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) (200 FT) IN ADVANCE AND A MINIMUM OF EVERY HALF MILE THROUGHOUT THE UNEVEN AREA.

TRAFFIC PATTERN ALTERATIONS

H) NOTIFY THE ENGINEER TWENTY ONE (21) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION.

SIGNING

- I) INSTALL ADVANCE WORK ZONE WARNING SIGNS NO MORE THAN THREE (3) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.
- J) PROVIDE SIGNING AND DEVICES REQUIRED TO CLOSE THE ROAD ACCORDING TO THE ROADWAY STANDARD DRAWINGS AND TRAFFIC CONTROL PLANS.
- K) COVER OR REMOVE ALL SIGNS AND DEVICES REQUIRED TO CLOSE THE ROAD WHEN ROAD CLOSURE IS NOT IN OPERATION.
- L) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.
- M) INSTALL BLACK ON ORANGE "DIP" SIGNS (W8-2) AND/OR "BUMP" SIGNS (W8-1) 350 FEET IN ADVANCE OF THE UNEVEN AREA, OR AS DIRECTED BY THE ENGINEER.

TRAFFIC CONTROL DEVICES

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

PAVEMENT MARKINGS AND MARKERS

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

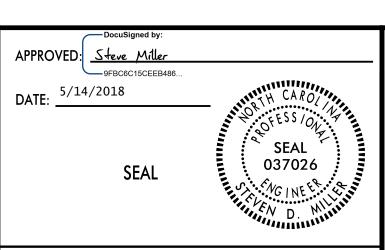
| ROAD NAME | MARKING | MARKER |
|-----------|------------------------------|------------------|
| BAILEY RD | PAINT & COLD APPLIED PLASTIC | TEMPORARY RAISED |
| MCFEE RD | PAINT & COLD APPLIED PLASTIC | TEMPORARY RAISED |

- Q) 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.
- R) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING
- S) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS BY THE END OF EACH DAY'S OPERATION.

MISCELLANEOUS

T) IN THE EVENT A 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) 200 FEET AND 400 FEET RESPECTIVELY IN ADVANCE OF THE UNEVEN AREAS. USE DRUMS TO DELINEATE THE EDGE OF ROADWAY ALONG UNPAVED AREAS.

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TRANSPORTATION
OPERATIONS
PLAN

PROJ. REFERENCE NO

B-5400

SHEET NO.

PROJ. REFERENCE NO. SHEET NO. TMP-2

TEMPORARY SHORING NO. 1

GROUNDWATER ELEVATION = 2,176 FT

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 -Y1- 12+29 \pm , 26.0 FT (LT), TO STATION -Y1- 12+75 \pm , 17.0 FT (LT), FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

ABOVE ELEVATION 2,175 FT:

UNIT WEIGHT (γ) = 110 PCF

FRICTION ANGLE (ϕ) = 26 DEGREES

GROUNDWATER ELEVATION = 2,176 FT

BELOW ELEVATION 2,175 FT:

UNIT WEIGHT (γ) = 155 PCF

FRICTION ANGLE (ϕ) = 40 DEGREES

DRIVEN PILING FOR TEMPORARY SHORING FROM STATION -Y1- 12+29±, 26.0 FT (LT), TO STATION -Y1- 12+75±, 17.0 FT (LT) WILL NOT PENETRATE BELOW ELEVATION 2,175 FT DUE TO WEATHERED OR HARD ROCK.

AT THE CONTRACTOR'S OPTION, USE STANDARD TEMPORARY SHORING FOR TEMPORARY SHORING FROM STATION -Y1- 12+29±, 26.0 FT (LT), TO STATION -Y1- 12+75±, 17.0 FT (LT). SEE GEOTECHNICAL STANDARD DETAIL NO. 1801.01 FOR STANDARD TEMPORARY SHORING.

TEMPORARY SHORING 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- $10+70\pm$, 21.0 FT (LT), TO STATION -L- $11+15\pm$, 3.0 FT (LT), FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

ABOVE ELEVATION 2,178 FT:

UNIT WEIGHT (γ) = 110 PCF

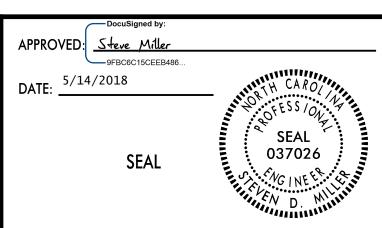
UNIT WEIGHT (γ) = 110 PCF FRICTION ANGLE (ϕ) = 26 DEGREES GROUNDWATER ELEVATION = 2,176 FT BELOW ELEVATION 2,178 FT: UNIT WEIGHT (γ) = 155 PCF FRICTION ANGLE (ϕ) = 40 DEGREES GROUNDWATER ELEVATION = 2,176 FT

DRIVEN PILING FOR TEMPORARY SHORING FROM STATION -L- 10+70±, 21.0 FT (LT), TO STATION -L- 11+15 ±, 3.0 FT (LT) WILL NOT PENETRATE BELOW ELEVATION 2,178 FT DUE TO WEATHERED OR HARD ROCK.

AT THE CONTRACTOR'S OPTION, USE STANDARD TEMPORARY SHORING FOR TEMPORARY SHORING FROM STATION -L- 10+70±, 21.0 FT (LT), TO STATION -L- 11+15 ±, 3.0 FT (LT). SEE GEOTECHNICAL STANDARD DETAIL NO. 1801.01 FOR STANDARD TEMPORARY SHORING.

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 MARCH 15, 2018 AND SEALED BY A PROFESSIONAL ENGINEER, MICHAEL H. STEPHENS, LICENSE # 028893.

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OF HICHAND AND CONTRACTOR TRAFFIC

TEMPORARY
SHORING DATA

PROJ. REFERENCE NO. SHEET NO. TMP-3

PHASING

PHASE I

- STEP 1: USING RSD 1101.01 SHEET 3 OF 3, INSTALL ADVANCE WARNING SIGNS ON GLADY FORK RD (SR 3452), BAILEY RD (SR 3452), BENNETT RD (SR 3446), AND MCFEE RD (SR 3466).
- STEP 2: USING RSD 1101.02 SHEET 1 OF 14, PLACE TEMPORARY PAVEMENT MARKINGS AND INSTALL PORTABLE SIGNALS AS SHOWN ON TMP-4.

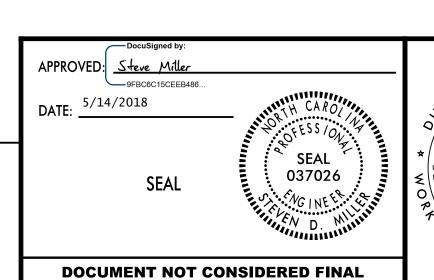
 ACTIVATE PORTABLE SIGNALS, PLACE TRAFFIC CONTROL DEVICES, AND SHIFT TRAFFIC TO A ONE-LANE, TWO-WAY PATTERN ON THE RIGHT (WESTERN) SIDE OF -Y1- AS SHOWN ON TMP-4.
- STEP 3: USING RSD 1101.02 SHEET 1 OF 14, INSTALL TEMPORARY GUARDRAIL FROM -Y1- STA 12+17 +/- TO -Y1- STA STA 13+05 +/- AND FROM -L- STA 10+70 +/- TO -L- STA 11+44 +/-.

 INSTALL TEMPORARY SHORING LOCATION 1 AND TEMPORARY SHORING LOCATION 2.
- STEP 4: AWAY FROM TRAFFIC AND USING RSD 1101.02 SHEET 1 OF 14, AS NEEDED, CONSTRUCT THE BRIDGE AND BEGIN ROAD CONSTRUCTION AS SHOWN ON TMP-4 UP TO BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE. REMOVE TEMPORARY SHORING 1 AND TEMPORARY SHORING 2 ONCE BRIDGE FOUNDATION IS COMPLETE.
- STEP 5: USING RSD 1101.02 SHEET 1 OF 14, PERFORM THE FOLLOWING IN A CONTINUOUS MANNER:
 - REMOVE TEMPORARY GUARDRAIL.
 - USE WEDGING TO CONSTRUCT A TIE-IN FROM THE PHASE I PATTERN TO THE PHASE II PATTERN SHOWN IN TMP-5.
 - MOVE DEVICES AND SHIFT TRAFFIC TO THE PHASE II PATTERN, DEACTIVATING AND REMOVING THE TEMPORARY PORTABLE SIGNAL SYSTEM.

PHASE II

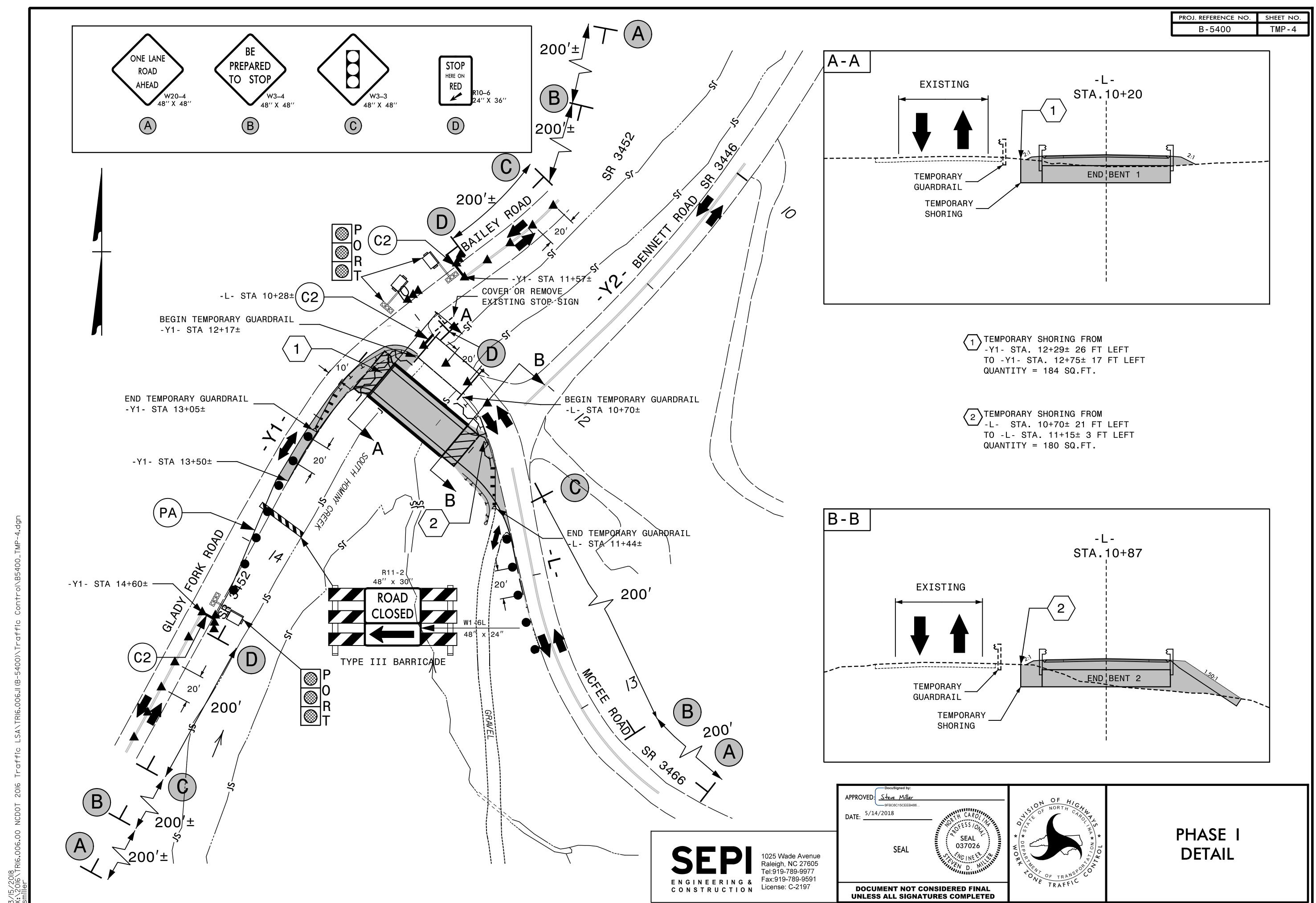
- STEP 1: USING RSD 1101.02 SHEET 1 OF 14, CONTINUE CONSTRUCTION AND REMOVE THE EXISTING BRIDGE. (SEE TMP-5)
- STEP 2: USING RSD 1101.02 SHEET 1 OF 14, COMPLETE CONSTRUCTION INCLUDING THE FINAL LAYER OF SURFACE COURSE AND FINAL PAVEMENT MARKINGS ACCORDING TO THE PAVEMENT MARKING PLANS. (SEE TMP-5)
- STEP 3: REMOVE ALL WORK ZONE TRAFFIC CONTROL DEVICES.

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UNLESS ALL SIGNATURES COMPLETED

PHASING



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PROJ. REFERENCE NO. SHEET NO. B-5400 TMP-5 R11-2 48" x 30" 0 -Y1- STA 11+50± STA.10+20 TYPE III BARRICADE -Y1- STA 12+31± —— -Y2- STA 11+50± -L- STA 10+19± — -Y1- STA 12+71± — TYPE III BARRICADE — -Y2- STA 12+52± -Y1- STA 13+51± -L- STA 10+91± - -L- STA 11+31± GLADY FORK AOAD B'-B' -L-STA.10+87 - -Y1/ STA 14+60± -L- STA 12+50± APPROVED: Steve Miller
9FBC6C15CEEB486... PHASE II SEAL **DETAIL** 1025 Wade Avenue Raleigh, NC 27605 Tel:919-789-9977 Fax:919-789-9591 License: C-2197 DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED