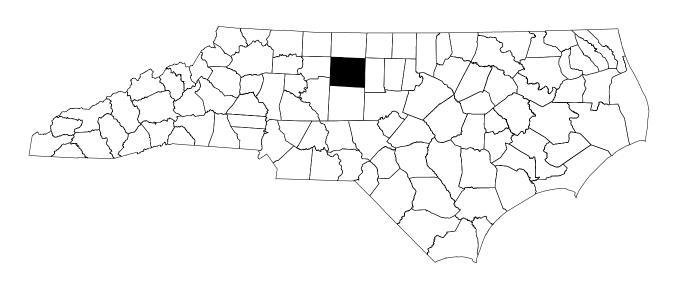
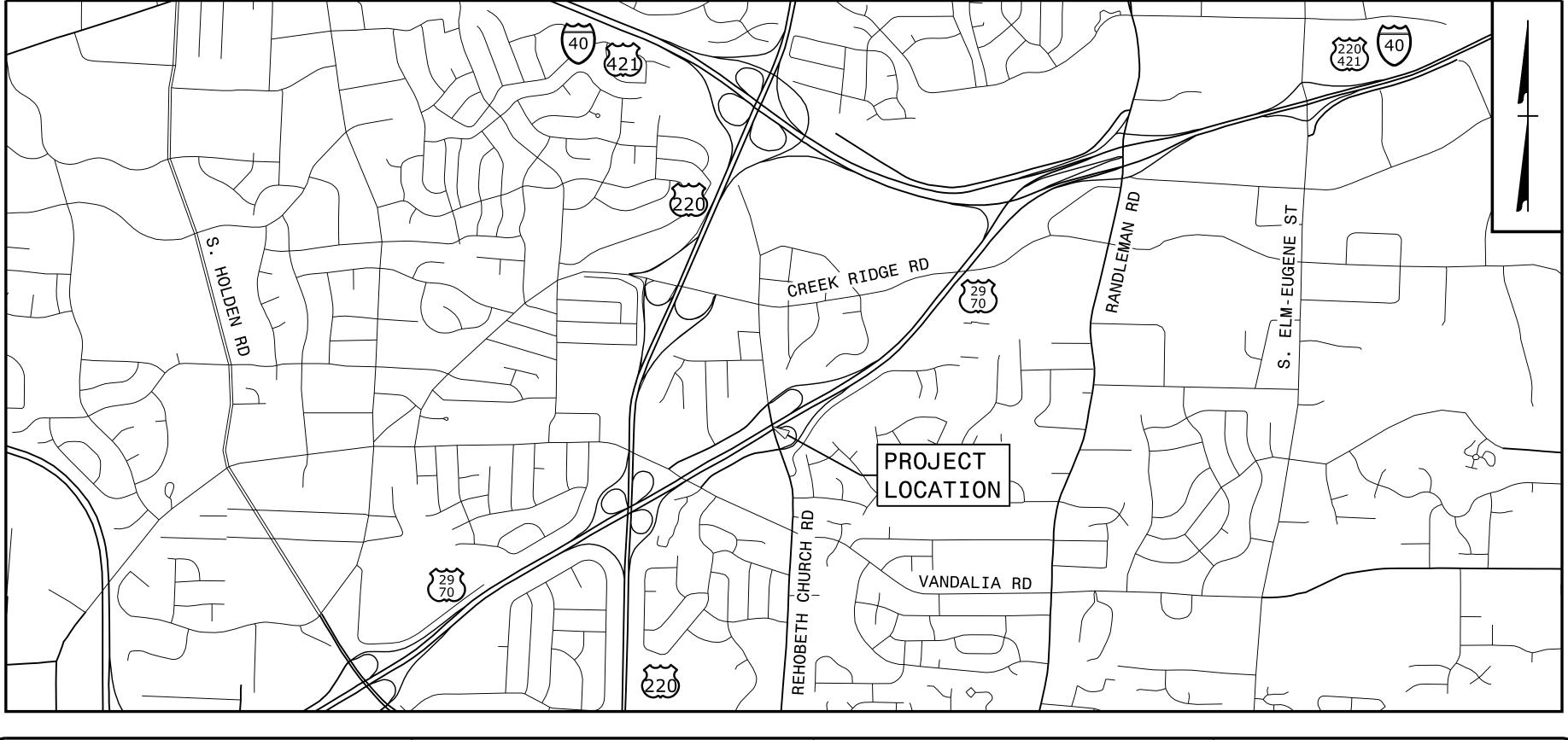
TRANSPORTATION MANAGEMENT PLAN

GUILFORD COUNTY



LOCATION: BRIDGE NO. 225 OVER US 29/70 ON SR 1115 (REHOBETH CHURCH ROAD)



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

PLANS PREPARED BY:

MIKE RZEPKA, P.E. TRAFFIC CONTROL PROJECT ENGINEER

CHRIS HARNDEN TRAFFIC CONTROL DESIGN ENGINEER NCDOT CONTACTS:

T. POWERS, P.E. PROJECT ENGINEER

PROJECT DESIGN ENGINEER



INDEX OF SHEETS

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<u>TITLE</u>

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TMP-1A

TMP-2

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TITLE SHEET, VICINITY MAP, AND INDEX OF SHEETS

AND LEGEND

LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS

TRANSPORTATION OPERATIONS PLAN: (MANAGEMENT STRATEGIES, GENERAL NOTES, AND LOCAL NOTES)

PORTABLE CONCRETE BARRIER AT TEMPORARY SHORING LOCATIONS

TEMPORARY SHORING DATA TMP-2A & TMP-2B

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TMP-4 & TMP-5 TEMPORARY TRAFFIC CONTROL PHASE 1 DETAILS TEMPORARY TRAFFIC CONTROL PHASE 2 DETAILS TMP-6 & TMP-7 TEMPORARY TRAFFIC CONTROL PHASE 3 DETAILS TMP-8 & TMP-9

PLAN PREPARED BY:

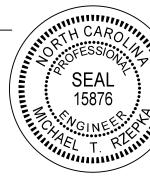
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APPROVED: Michael T. Ryepka

 $DATE: \frac{1/20/2023}{}$

SEAL



TMP-1

900

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

TITLE STD. NO.

1101.01	WORK ZONE ADVANCE WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
1101.03	TEMPORARY ROAD CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1101.05	WORK ZONE VEHICLE ACCESSES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1115.01	FLASHING ARROW BOARDS
1130.01	DRUMS
1135.01	CONES
1145.01	BARRICADES
1150.01	FLAGGERS
1160.01	TEMPORARY CRASH CUSHION
1165.01	TRUCK MOUNTED ATTENUATOR
1170.01	PORTABLE CONCRETE BARRIER
1180.01	SKINNY-DRUMS
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO-LANE AND MULTI-LANE ROADWAYS
1205.03	PAVEMENT MARKINGS - EXITS AND ENTRANCE RAMPS
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
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

PROJ. REFERENCE NO. SHEET NO. TMP-1A BP7.R006

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LEGEND

GENERAL

DIRECTION OF TRAFFIC FLOW

DIRECTION OF PEDESTRIAN TRAFFIC FLOW

----- EXIST. PVMT.

NORTH ARROW

— PROPOSED PVMT.

TEMP. SHORING (LOCATION PURPOSES ONLY)

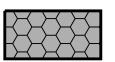
WORK AREA

CONTINUING CONSTRUCTION

REMOVAL



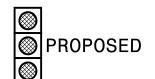
WEDGING



TEMPORARY PAVEMENT

SIGNALS







PAVEMENT MARKINGS

——EXISTING LINES ----TEMPORARY LINES

TRAFFIC CONTROL DEVICES

BARRICADE (TYPE III)

DRUM SKINNY DRUM STUBULAR 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

P1 PAINT 4" WHITE EDGELINE

PAINT 4" WHITE SOLID LANE LINE

PAINT 4'' 10'-30'/SP. WHITE SKIP

PAINT 4" 3'-9'/SP. WHITE MINI-SKIP

PAINT 4" 2'-6'/SP. WHITE MINI-SKIP

PAINT 4" YELLOW DOUBLE CENTER

PAINT 4" 2'-6'/SP. YELLOW MINI-SKIP

PAINT 8" WHITE GORELINE

PAINT 8" YELLOW DIAGONAL

PAINT 6" WHITE EDGELINE

PAINT 8" WHITE DIAGONAL

P43 PAINT 8" WHITE SOLID LANE LINE

P44 PAINT 8" 3'-9'/SP. WHITE MINI-SKIP

P61 PAINT 24" WHITE STOPBAR

PAINT LEFT TURN ARROW

P71 PAINT RIGHT TURN ARROW

PAINT STRAIGHT ARROW

PAINT COMBO LEFT-STRAIGHT ARROW

PAINT COMBO RIGHT-STRAIGHT ARROW

P100 PAINT ALPHANUMERIC CHARACTER

APPROVED: Michael T. Rzepka DATE: 1/20/2023 DOCUMENT NOT CONSIDERED FINAL

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ROADWAY STANDARD DRAWINGS & LEGEND

MANAGEMENT STRATEGIES

GENERAL NOTES

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PROJ. REFERENCE NO.

SHEET NO.

REHOBETH CHURCH ROAD

PHASE 1

- DAILY LANE CLOSURES WILL BE USED TO PLACE TRAFFIC IN A 3-LANE PATTERN ON THE RIGHT SIDE OF EXISTING BRIDGE
- LEFT HALF OF EXISTING BRIDGE IS REMOVED AND THE LEFT HALF OF NEW BRIDGE AND ROADWAY APPROACHES CONSTRUCTED BEHIND BARRIER

PHASE 2

- TRAFFIC IS SHIFTED TO 3-LANE PATTERN ON NEW BRIDGE AND ROADWAY APPROACHES.
- REMAINING BRIDGE AND ROADWAY APPROACHES ARE CONSTRUCTED BEHIND BARRIER
- LANE CLOSURES ARE USED TO WEDGE PAVEMENT TO FINAL GRADE

PHASE 3

- LANE CLOSURES ARE USED TO COMPLETE SIDEWALK WORK ON LEFT SIDE AND FINAL PAVING AND MARKINGS.

US 29/70

PHASE 1

- DAILY LANE CLOSURES ARE USED TO CONSTRUCT ENOUGH SHOULDER WIDENING TO INSTALL TEMPORARY BARRIER ALONG OUTSIDE AT
- BRIDGE PIER AND END ABUTMENT WORK IS PERFORMED BEHIND BARRIER. OVERHEAD BRIDGE WORK REQUIRING NIGHTLY ROAD CLOSURE WILL USE OFFSITE DETOUR.

PHASE 3

- FINAL WIDENING OF SHOULDER IS PERFORMED BEHIND BARRIER.

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				
REHOBETH CHURCH RD.	MONDAY THRU SUNDAY				
(PHASES 1 & 2)	6:00 AM TO 7:00 PM				
REHOBETH CHURCH RD.	MONDAY THRU FRIDAY				
(EXISTING PATTERN	6:00 AM TO 9:00 AM				
AND PHASE 3)	4:00 PM TO 7:00 PM				
US 29/70	MONDAY THRU SUNDAY 6:00 AM TO 8:00 PM				

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

ROAD NAME

US 29/70 AND REHOBETH CHURCH RD.

- 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 6:00 AM DECEMBER 31st TO 8:00 PM JANUARY 2ND. IF NEW YEAR'S DAY IS ON A FRIDAY, SATURDAY, SUNDAY, OR MONDAY THEN UNTIL 8:00 PM THE FOLLOWING TUESDAY.
- 3. FOR EASTER, BETWEEN THE HOURS OF 6:00 AM THURSDAY AND 8:00 PM MONDAY.
- 4. FOR MEMORIAL DAY, BETWEEN THE HOURS 6:00 AM FRIDAY TO 8:00 PM TUESDAY.
- 5. FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 6:00 AM THE DAY BEFORE INDEPENDENCE DAY AND 8:00 PM THE DAY AFTER INDEPENDENCE DAY.

IF INDEPENDENCE DAY IS ON A FRIDAY, SATURDAY, SUNDAY OR MONDAY THEN BETWEEN THE HOURS OF 6:00 AM THE THURSDAY BEFORE INDEPENDENCE DAY AND 8:00 PM THE TUESDAY AFTER INDEPENDENCE DAY.

- 6. FOR LABOR DAY, BETWEEN THE HOURS OF 6:00 AM FRIDAY AND 8:00 PM TUESDAY.
- 7. FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 6:00 AM TUESDAY TO 8:00 PM MONDAY.
- 8. FOR CHRISTMAS, BETWEEN THE HOURS OF 6:00 AM THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 8:00 PM THE FOLLOWING TUESDAY AFTER THE WEEK OF CHRISTMAS.

C) DO NOT CLOSE ROADS AS FOLLOWS:

ROAD NAME DAY AND TIME RESTRICTIONS

US 29/70 MONDAY THRU SUNDAY 6:00 AM TO 8:00 PM

D) DO NOT STOP TRAFFIC AS FOLLOWS:

DURATION AND DAY AND TIME ROAD NAME RESTRICTIONS OPERATION

MONDAY THRU SUNDAY US 29/70 30 MINUTES; 6:00 AM TO 8:00 PM BRIDGE DEMO &

GIRDER INSTALLATION

E) DO NOT CONDUCT SINGLE VEHICLE HAULING AS FOLLOWS; INGRESS AND EGRESS FROM RAMPS BE ALLOWED:

ROAD NAME DAY AND TIME RESTRICTIONS

REHOBETH CHURCH RD. MONDAY THRU FRIDAY 6:00 AM TO 9:00 AM US 29/70

4:00 PM TO 7:00 PM

F) DO NOT CONDUCT MULTI-VEHICLE HAULING AS FOLLOWS; INGRESS AND EGRESS FROM RAMPS BE ALLOWED:

ROAD NAME DAY AND TIME RESTRICTIONS

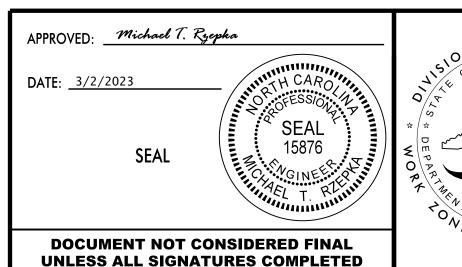
REHOBETH CHURCH RD. MONDAY THRU FRIDAY 6:00 AM TO 9:00 AM US 29/70 4:00 PM TO 7:00 PM

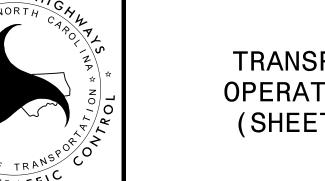
G) DO NOT CONDUCT ANY HAULING OPERATIONS AGAINST THE FLOW OF TRAFFIC OF AN OPEN TRAVELWAY UNLESS THE HAULING OPERATION IS PROTECTED BY BARRIER OR GUARDRAIL OR AS DIRECTED BY THE ENGINEER.

LANE AND SHOULDER CLOSURE REQUIREMENTS

- H) 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.
- I) 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.
- J) 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.





TRANSPORTATION OPERATIONS PLAN (SHEET 1 OF 2)

GENERAL NOTES (CONT.)

K) 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.

L) 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.

DO NOT INSTALL MORE THAN ONE LANE CLOSURE IN ANY ONE DIRECTION ON REHOBETH CHURCH RD. AND BUSINESS 85.

LANE AND SHOULDER CLOSURE REQUIREMENTS

N) 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.

O) 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) [LENGTH] IN ADVANCE AND A MINIMUM OF EVERY HALF MILE THROUGHOUT THE UNEVEN AREA.

TRAFFIC PATTERN ALTERATIONS

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

SIGNING

- Q) 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.
- R) PROVIDE SIGNING AND DEVICES REQUIRED TO CLOSE THE ROAD ACCORDING TO THE ROADWAY STANDARD DRAWINGS TRAFFIC CONTROL PLANS.

PROVIDE SIGNING REQUIRED FOR THE OFF-SITE DETOUR ROUTE AS SHOWN IN THE TRAFFIC CONTROL PLANS.

S) 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.

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

TRAFFIC BARRIER

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

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

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

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

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

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

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

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

TRAFFIC CONTROL DEVICES

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

SHEET NO. PROJ. REFERENCE NO. BP7.R006 TMP-1C

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PAVEMENT MARKINGS AND MARKERS

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

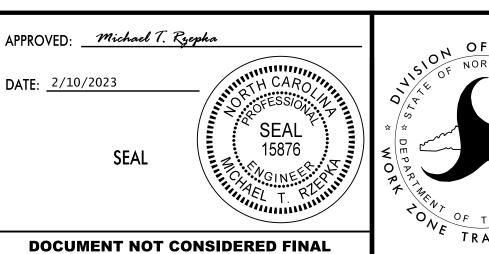
ROAD NAME **MARKER** MARKING

TEMPORARY RAISED REHOBETH CHURCH RD. PAINT

- BB) 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.
- CC) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
- DD) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS BY THE END OF EACH DAY'S OPERATION.
- EE) TRACE THE PROPOSED MONOLITHIC ISLAND LOCATIONS WITH PROPER COLOR PAVEMENT MARKINGS PRIOR TO INSTALLATIONS. PLACE DRUMS TO DELINEATE ANY MONOLITHIC ISLANDS.

MISCELLANEOUS

FF) LAW ENFORCEMENT SHALL BE USED TO MAINTAIN TRAFFIC THROUGH THE WORK AREA AND/OR INTERSECTIONS AS DIRECTED BY THE ENGINEER.



UNLESS ALL SIGNATURES COMPLETED



TRANSPORTATION OPERATIONS PLAN (SHEET 2 OF 2)

PLOT DRIVER: NCDOT_pdf_color_eng_50.plt
USER: CHARNDEN
DATE: 1/17/2023 TIME:

2 FT MIN. DISTANCE **EDGE OF PAVEMENT** OF WALL EDGE OF NEAREST PAVEMENT SECTION PAVEMENT SECTION NEAREST TRAFFIC TRAFFIC A: TOP OF SHORING = REINFORCED **EDGE OF PAVEMENT** ZONE **B: BOTTOM OF SHORING** REINFORCEMENT BOTTOM OF EXCAVATION OR EXISTING GRADE **FINISHED** GRADE BOTTOM OF WALL REINFORCED ZONE NOTE: WALL OR SHORING HEIGHT = A - B

NOTES

FIGURE A

- 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.

PROJ. REFERENCE NO.	SHEET NO.		
BP7.R006	TMP-2		

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MINIMUM REQUIRED CLEAR DISTANCE, inches

Barrier	Pavement	Offset *	Design Speed, mph					
Type	Type	ft	< 30	31-40	41-50	51-60	61-70	71-80
<u> </u>		<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
	Asphalt	26-32	29	32	36	39	42	45
	P 22.02.5	32-38	30	34	38	41	43	46
B		38-44	31	34	41	43	45	48
PCB		44-50	31	35	41	43	46	49
		50-56	32	36	42	44	47	50
ıre		>56	32	36	42	45	47	51
hc		<8	17	18	21	22	25	26
n c		8-14	19	20	23	25	26	29
Unanchored		14-20	22	22	24	26	28	31
		20-26	23	24	26	27	30	34
	Concrete	26-32	24	25	27	28	32	35
		32-38	24	26	27	30	33	36
		38-44	25	26	28	30	34	37
		44-50	26	26	28	32	35	37
		50-56	26	26	28	32	35	38
		>56	26	27	29	32	36	38
Anchored PCB	Asphalt	All Offsets	24 for All Design Speeds					
Anchored PCB	Concrete (including bridge approach slabs)	All Offsets	12 for All Design Speeds					

^{*} See Figure Below

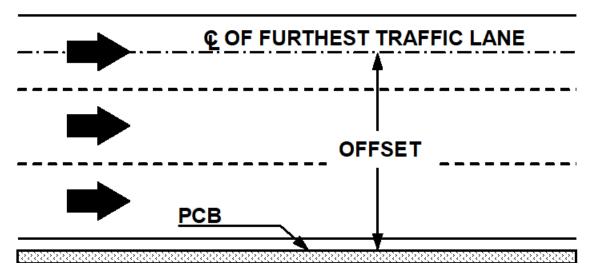
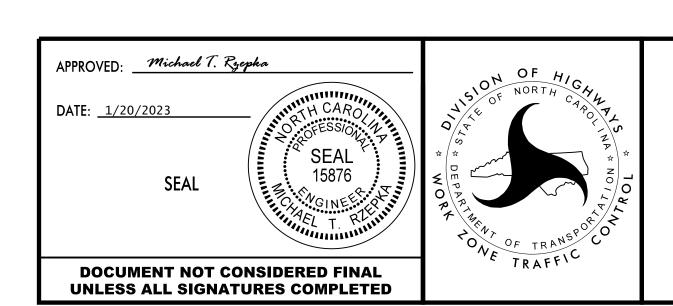


FIGURE B



PORTABLE CONCRETE
BARRIER AT
TEMPORARY SHORING
LOCATIONS

ABLE: NC| :: 1:51:17 10127116\

TEMPORARY SHORING DATA

PROJ. REFERENCE NO. SHEET NO. BP7.R006 TMP-2A

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

SHORING LOCATION NO. 1

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 -L- STA. 17+26 +/-, 8.50' LT TO -L-STA. 17+86 +/-, 8.50' LT FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

> UNIT WEIGHT (γ) = 120 PCF FRICTION ANGLE () = 32 DEGREES COHESION (c) = 0 PSF GROUNDWATER ELEVATION = 773 FT

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM -L- STA. 17+26 +/-, 8.50' LT TO -L- STA. 17+86 +/-, 8.50'LT. THE INFORMATION PROVIDED FOR TEMPORARY SHORING DESIGN WAS ASSUMED AND MAY NOT BE APPLICABLE TO THE ACTUAL SITE CONDITIONS ENCOUNTERED DURING CONSTRUCTION.

SHORING LOCATION NO. 3

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 -Y- STA. 14+70 +/-, 76.49'LT, TO -Y-STA. 15+22 +/-, 76.49' LT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

> UNIT WEIGHT (γ) = 120 PCF FRICTION ANGLE (♦) = 32 DEGREES COHESION (c) = 0 PSF GROUNDWATER ELEVATION = 773 FT

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM -Y- STA. 14+70 +/-, 76.49' LT, TO -Y- STA. 15+22 +/-, 76.49' 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 -Y- STA. 14+70 +/-, 76.49' LT, TO -Y- STA. 15+22 +/-, 76.49' LT MAY NOT PENETRATÉ BELOW ELÉVATION 775 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 -Y- STA. 14+70 +/-, 76.49' LT, TO -Y- STA. 15+22 +/-, 76.49' LT.

AT THE CONTRACTOR'S OPTION, USE A STANDARD TEMPORARY SHORING FOR TEMPORARY SHORING FROM -Y- STA. 14+70 +/-, 76.49' LT, TO -Y- STA. 15+22 +/-, 76.49' LT. SEE GEOTECHNICAL STANDARD DETAIL NO. 1801.01 FOR STANDARD TEMPORARY WALLS.

SHORING LOCATION NO. 5

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 -L- STA. 19+72 +/-, 8.50' LT TO -L-STA. 20+32 +/-, 8.50' LT FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

> UNIT WEIGHT (γ) = 120 PCF FRICTION ANGLE (♠) = 32 DEGREES COHESION (c) = 0° PSF GROUNDWATER ELEVATION = 773 FT

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM -L- STA. 19+72 +/-, 8.50' LT TO -L- STA. 20+32 +/-, 8.50'. THE INFORMATION PROVIDED FOR TEMPORARY SHORING DESIGN WAS ASSUMED AND MAY NOT BE APPLICABLE TO THE ACTUAL SITE CONDITIONS ENCOUNTERED DURING CONSTRUCTION.

SHORING LOCATION NO. 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 -L- STA. 17+26 +/-, 5.00' LT, TO -L-STA. 17+88 +/-, 5.00' LT, FOR THE FOLLOWING ASSUMÉD SOIL PÁRAMETERS AND GROUNDWATER ELEVATION:

> UNIT WEIGHT () = 120 PCFFRICTION ANGLE () = 32 DEGREES COHESION (c) = 0 PSFGROUNDWATER ELEVATION = 773 FT

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM -L- STA. 17+26 +/-, 5.00' LT, TO -L- STA. 17+88 +/-, 5.00' 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 -L- STA. 17+26 +/-, 5.00' LT, TO -L- STA. 17+88 +/-, 5.00'LT MAY NOT PENETRATE BELOW ELEVATION 775 FT DUE TO OBSTRUCTIONS, VERY DENSE OR HARD SOIL, BOULDERS OR WEATHERED OR HARD ROCK.

SHORING LOCATION NO. 4

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 -Y- STA. 14+46 +/-, 12.42' LT, TO -Y-STA. 14+95 +/-, 12.42' LT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

> UNIT WEIGHT (γ) = 120 PCF FRICTION ANGLE (♦) = 30 DEGREES COHESION (c) = 0 PSF GROUNDWATER ELEVATION = 773 FT

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM -Y- STA. 14+46 +/-, 12.42' LT, TO -Y- STA. 14+95 +/-, 12.42'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 -Y- STA. 14+46 +/-. 12.42' LT, TO -Y- STA. 14+95+/-, 12.42' LT MAY NOT PENETRATE BELOW ELEVATION 775 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 -Y- STA. 14+46 +/-, 12.42' LT, TO -Y- STA. 14+95 +/-, 12.42' LT.

AT THE CONTRACTOR'S OPTION, USE A STANDARD TEMPORARY SHORING FOR TEMPORARY SHORING FROM -Y- STA. 14+46 +/-, 12.42'LT, TO -Y- STA. 14+95 +/-, 12.42' LT. SEE GEOTECHNICAL STANDARD DETAIL NO. 1801.01 FOR STANDARD TEMPORARY WALLS.

SHORING LOCATION NO. 6

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.

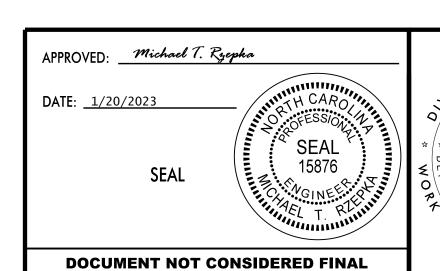
DESIGN TEMPORARY SHORING FROM -L- STA. 19+73 +/-, 5.00', TO -L- STA. 20+32 +/-, 5.00' LT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

> UNIT WEIGHT (γ) = 120 PCF FRICTION ANGLE (♦) = 32 DEGREES COHESION (c) = 0 PSF GROUNDWATER ELEVATION = 773 FT

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM -L- STA. 19+73 +/-, 5.00', TO -L- STA. 20+32 +/-. 5.00'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 -L- STA. 19+73 +/-, 5.00', TO -L- STA. 20+32 +/-, 5.00'LT MAY NOT PENETRATE BELOW ELEVATION 765 FT DUE TO OBSTRUCTIONS. VERY DENSE OR HARD SOIL, BOULDERS OR WEATHERED OR HARD ROCK.

AT THE CONTRACTOR'S OPTION, USE A STANDARD TEMPORARY SHORING FOR TEMPORARY SHORING FROM -L- STA. 19+73 +/-, 5.00', TO -L- STA. 20+32 +/-, 5.00' LT. SEE GEOTECHNICAL STANDARD DETAIL NO. 1801.01 FOR STANDARD TEMPORARY WALLS.



UNLESS ALL SIGNATURES COMPLETED



TEMPORARY SHORING DATA

: 10:42:37 10127116\6.

TEMPORARY SHORING DATA

SHORING LOCATION NO. 7

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 -Y- STA. 14+46 +/-, 12.20'RT, TO -Y-STA. 14+95 +/-, 12.20' RT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

> UNIT WEIGHT (γ) = 120 PCF FRICTION ANGLE () = 32 DEGREES COHESION (c) = 0 PSF GROUNDWATER ELEVATION = 773 FT

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM -Y- STA. 14+46 +/-, 12.20'RT, TO -Y- STA. 14+95 +/-, 12.20' 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 -Y- STA. 14+46 +/-, 12.20' RT, TO -Y- STA. 14+95 +/-, 12.20' RT MAY NOT PENETRATE BELOW ELÉVATION 775 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 -Y- STA. 14+46 +/-, 12.20' RT, TO -Y- STA. 14+95 +/-, 12.20' RT.

AT THE CONTRACTOR'S OPTION, USE A STANDARD TEMPORARY SHORING FOR TEMPORARY SHORING FROM -Y- STA. 14+46 +/-, 12.20'RT, TO -Y- STA. 14+95 +/-, 12.20' RT. SEE GEOTECHNICAL STANDARD DETAIL NO. 1801.01 FOR STANDARD TEMPORARY WALLS.

SHORING LOCATION NO. 8

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 -Y- STA. 14+22 +/-, 76.65' RT, TO -Y-STA. 14+71 +/-, 76.65' RT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

> UNIT WEIGHT (γ) = 120 PCF FRICTION ANGLE (ϕ) = 32 DEGREES COHESION (c) = 0 PSFGROUNDWATER ELEVATION = 773 FT

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM -Y- STA. 14+22 +/-, 76.65' RT, TO -Y- STA. 14+71 +/-, 76.65' 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 -Y- STA. 14+22 +/-, 76.65' RT, TO -Y- STA. 14+71 +/-, 76.65' RT MAY NOT PENETRATE BELOW ELEVATION 765 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 -Y- STA. 14+22 +/-, 76.65' RT, TO -Y- STA. 14+71 +/-, 76.65' RT.

AT THE CONTRACTOR'S OPTION, USE A STANDARD TEMPORARY SHORING FOR TEMPORARY SHORING FROM -Y- STA. 14+22 +/-, 76.65' RT, TO -Y- STA. 14+71 +/-, 76.65' RT. SEE GEOTECHNICAL STANDARD DETAIL NO. 1801.01 FOR STANDARD TEMPORARY WALLS.

SHORING LOCATION NO. 9

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 -Y- STA. 14+35 +/-, 76.56' LT, TO -Y-STA. 14+84 +/-, 76.56' LT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

> UNIT WEIGHT (γ) = 120 PCF FRICTION ANGLE (♦) = 32 DEGREES COHESION (c) = 0° PSF GROUNDWATER ELEVATION = 773 FT

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM -Y- STA. 14+35 +/-, 76.56' LT, TO -Y- STA. 14+84 +/-. 76.56' 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 -Y- STA. 14+35 +/-, 76.56' LT, TO -Y- STA. 14+84 +/-, 76.56' LT MAY NOT PENETRATÉ BELOW ELEVATION 775 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 -Y- STA. 14+35 +/-. 76.56' LT. TO -Y- STA. 14+84 +/-. 76.56' LT.

AT THE CONTRACTOR'S OPTION, USE A STANDARD TEMPORARY SHORING FOR TEMPORARY SHORING FROM -Y- STA. 14+35 +/-, 76.56' LT, TO -Y- STA. 14+84 +/-, 76.56' LT. SEE GEOTECHNICAL STANDARD DETAIL NO. 1801.01 FOR STANDARD TEMPORARY WALLS.

SHORING LOCATION NO. 10

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 -Y- STA. 14+08 +/-, 12.42'LT, TO -Y-STA. 14+57 +/-, 12.42' LT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

> UNIT WEIGHT (γ) = 120 PCF FRICTION ANGLE (ϕ) = 30 DEGREES COHESION (c) = 0 PSF GROUNDWATER ELEVATION = 773 FT

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM -Y- STA. 14+08 +/-, 12.42' LT, TO -Y- STA. 14+57 +/-, 12.42'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 -Y- STA. 14+08 +/-, 12.42' LT, TO -Y- STA. 14+57 +/-, 12.42' LT MAY NOT PENETRATÉ BELOW ELEVATION 775 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 -Y- STA. 14+08 +/-, 12.42' LT, TO -Y- STA. 14+57 +/-, 12.42' LT.

AT THE CONTRACTOR'S OPTION, USE A STANDARD TEMPORARY SHORING FOR TEMPORARY SHORING FROM -Y- STA. 14+08 +/-, 12.42'LT, TO -Y- STA. 14+57 +/-, 12.42' LT. SEE GEOTECHNICAL STANDARD DETAIL NO. 1801.01 FOR STANDARD TEMPORARY WALLS.

SHORING LOCATION NO. 11

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

PROJ. REFERENCE NO.

BP7.R006

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

SHEET NO.

TMP-2B

DESIGN TEMPORARY SHORING FROM -Y- STA. 14+08 +/-, 12.20'RT, TO -Y-STA. 14+57 +/-, 12.20' RT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

> UNIT WEIGHT (γ) = 120 PCF FRICTION ANGLE () = 32 DEGREES COHESION (c) = 0 PSFGROUNDWATER ELEVATION = 773 FT

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM -Y- STA. 14+08 +/-, 12.20' RT, TO -Y- STA. 14+57 +/-, 12.20' 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 -Y- STA. 14+08 +/-, 12.20' RT, TO -Y- STA. 14+57 +/-, 12.20' RT MAY NOT PENETRATÉ BELOW ELÉVATION 775 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 -Y- STA. 14+08 +/-, 12,20' RT, TO -Y- STA, 14+57 +/-, 12,20' RT,

AT THE CONTRACTOR'S OPTION, USE A STANDARD TEMPORARY SHORING FOR TEMPORARY SHORING FROM -Y- STA. 14+08 +/-, 12.20' RT, TO -Y- STA. 14+57 +/-, 12.20' RT. SEE GEOTECHNICAL STANDARD DETAIL NO. 1801.01 FOR STANDARD TEMPORARY WALLS.

SHORING LOCATION NO. 12

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 -Y- STA. 13+87 +/-, 76.65' RT, TO -Y-STA. 14+33 +/-, 76.65' RT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

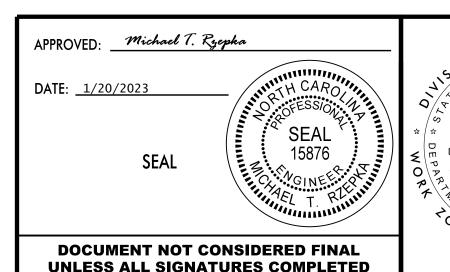
> UNIT WEIGHT (γ) = 120 PCF FRICTION ANGLE (♦) = 32 DEGREES COHESION (c) = 0° PSF GROUNDWATER ELEVATION = 773 FT

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM -Y- STA. 13+87 +/-, 76.65' RT, TO -Y- STA. 14+33 +/-, 76.65' 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 -Y- STA. 14+22 +/-, 76.65' RT, TO -Y- STA. 14+71 +/-, 76.65' RT MAY NOT PENETRATE BELOW ELÉVATION 765 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 -Y- STA. 14+22 +/-, 76.65' RT, TO -Y- STA. 14+71 +/-, 76.65' RT.

AT THE CONTRACTOR'S OPTION, USE A STANDARD TEMPORARY SHORING FOR TEMPORARY SHORING FROM -Y- STA. 14+22 +/-, 76.65' RT, TO -Y- STA. 14+71 +/-, 76.65' RT. SEE GEOTECHNICAL STANDARD DETAIL NO. 1801.01 FOR STANDARD TEMPORARY WALLS.





TEMPORARY SHORING DATA

PROJ. REFERENCE NO. SHEET NO. TMP-2C BP7.R006 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 40 MESSAGE MESSAGE MESSAGE MESSAGE NO. 2 NO. 2 US 29/70 EXIT 219 USE EXIT FOLLOW 218A OR SOUTH US 29/70 US 220 CLOSED US 220S CLOSED SOUTH CHANGEABLE MESSAGE CHANGEABLE MESSAGE SIGN CLOSE LEFT LANE USING MESSAGE MESSAGE RSD 1101.02, SHEET 3 OF 14 NO . 1 NO. 2 0.5 MILES IN ADVANCE OF EXIT AND PLACE CMS 1.0 MILES EXIT 219 FOLLOW IN ADVANCE OF LANE CLOSURE US 29/70 US 220 (PLACE ADDITIONAL CMS ALONG CLOSED SOUTH I-40 AS DIRECTED BY THE ENGINEER. 218 CMS MESSAGES MAY CHANGE CHANGEABLE MESSAGE PER THE ENGINEER) SIGN PLACE CMS 1.0 MILES IN ADVANCE EXIT 218A (US 220) (CMS MESSAGES MAY CHANGE PER THE ENGINEER) WEST CLOSE RANDLEMAN RD RAMP TO SB US 29/WB US 70 CREEK RIDGE RD TYPE III BARRICADE 29 70 SB US 29/WB US 70 CLOSURE POINT (ALL TRAFFIC MUST EXIT) RAMP SEE RSD 1101.03, SHEET 7 OF 9 WEST CLOSED 29) AHEAD/ VANDALIA RD CLOSE LOOP TO SB US 29/WB US 70 DETOUR M4-8 A 24" X 18" ROAD CLOSED TYPE III BARRICADE TYPE III BARRICADE 29 70 **CLOSED** CLOSED AHEAD AHEAD W20-3 48" X 48" VANDALIA RD NEXT LEFT NEXT RIGHT 42" X 12" 42" X 12" NOTES: COVER OR REMOVE DETOUR SIGNS WHEN NOT IN USE APPROVED: Michael T. Ryepha DATE: <u>1/20/2023</u> SB US 29/WB US 70 NIGHTLY CLOSURE DETOUR SB US 29/WB US 70 DETOUR = 220 FOR BRIDGE WORK SB REHOBETH RD TO US 29/70 = NB REHOBETH RD TO US 29/70 = ▲ ▲ ▲ DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJ. REFERENCE NO. SHEET NO. BP7.R006 TMP-2D 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 40 218 220 **EAST** END DETOUR M4–8 A 24" X 18" CREEK RIDGE RD 70 70 VANDALIA RD NB US 29/EB US 70 CLOSURE POINT (ALL TRAFFIC MUST EXIT) SEE RSD 1101.03, SHEET 7 OF 9 29 70 B VANDALIA RD CLOSE RAMP TO US 29/70 R11-2 48'' x 30'' NOTES: COVER OR REMOVE DETOUR SIGNS WHEN NOT IN USE CLOSED APPROVED: Michael T. Rzepka DATE: <u>1/20/2023</u> TYPE III BARRICADE NB US 29/EB US 70 RAMP CLOSED AHEAD NIGHTLY CLOSURE DETOUR FOR BRIDGE WORK 220 NEXT RIGHT

SP-4R
42" X 12" DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED NB US 29/70 DETOUR ROUTES =

NOTES:

BY THE RESIDENT ENGINEER.

NOTED IN THE PHASING PLANS.

EXISTING AND PROPOSED ROADS:

EXISTING AND/OR TEMPORARY TRAVEL LANES.

PHASE 1 (SEE TMP-4 & TMP-5)

SHOULDER OF -L- (REHOBETH CHURCH RD) AS SHOWN.

BY THE ENGINEER.

ADVANCE OF PCB.

THEN PLACE PCB AS SHOWN.

CONSTRUCTION OF THE FOLLOWING:

TEMPORARY GUARDRAIL.

STEP 1:

STEP 2:

BEFORE BEGINNING ANY CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL INSTALL

MAINTAIN VEHICULAR ACCESS TO ALL RESIDENCES AND BUSINESSES DURING THE LIFE

WHEN USING LANE CLOSURES (RSD 1101.02), RETURN TRAFFIC TO EXISTING AND/OR

TEMPORARY TRAFFIC PATTERN UPON ACTIVITIES COMPLETION, UNLESS OTHERWISE

WHEN PHASING STATES TO USE LANE CLOSURES, REFER TO THE FOLLOWING FOR ALL

-ALL MULTI-LANE FACILITIES POSTED < 60 MPH SEE RSD 1101.02 SHEET 3 OF 14

-ALL MULTI-LANE FACILITIES POSTED > 60 MPH SEE RSD 1101.02 SHEET 4 OF 14

WHEN WEDGING OVER 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 0.04 ROLLOVER IN BOTH

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

FOR ALL SHOULDER CLOSURES, SEE RSD 1101.04. WHEN PORTABLE CONCRETE BARRIER

(PCB) IS PRESENT ON SHOULDERS, PLACE SHOULDER CLOSURE SIGNS & DEVICES IN

USING LANE CLOSURES, CONSTRUCT PROPOSED WIDENING OF EXISTING PAVED

USING LANE CLOSURES, CONSTRUCT TEMPORARY PAVEMENT ALONG THE RIGHT SIDE

USING LANE CLOSURES, PLACE TEMPORARY MARKINGS ALONG -L- (REHOBETH CHURCH RD)

OR BEHIND BARRIER, USING LANE CLOSURES OR ROAD CLOSURES AS NEEDED, COMPLETE

FROM STA. 15+06 +/- TO STA. 26+50 +/-, OMITTING THE PROPOSED

TEMPORARY PAVEMENT AS SHOWN ON THE LEFT SIDE OF -L- INCLUDING

THE LEFT SIDE OF -L- (REHOBETH CHURCH RD) WITH WEDGING, AS NEEDED,

SHOULDERS TO 7' MINIMUM WIDTH ALONG THE OUTSIDE OF -Y- (US 29/70)

AS SHOWN AND SHIFT TRAFFIC TO THE PHASE 1 TRAFFIC PATTERN.

SIDEWALK, CURB & GUTTER, AND FINAL GUÁRDRAIL.

STAGE 1 OF BRIDGE CONSTRUCTION (SEE BRIDGE PLANS)

TOLAR DR INTERSECTION IN PHASE 1, STEP 2 TO COMPLETE CONSTRUCTION.

INSTALL TEMPORARY SIGNAL 07-2026T1 AT THE -L- (REHOBETH CHURCH RD) AND

-ALL ENTRANCE AND EXIT RAMPS SEE RSD 1101.02 SHEETS 9 AND 10 OF 14

COURSE UNTIL STATED TO PLACE FINAL LAYER IN THE PHASING PLANS.

COMPLETE PAVING UP TO, BUT NOT INCLUDING, THE FINAL LAYER OF SURFACE

-ALL TWO-LANE/TWO-WAY FACILITIES SEE RSD 1101.02 SHEET 1 OF 14

-ALL 3-LANE OR 5-LANE ROADWAYS SEE RSD 1101.02 SHEET 2 OF 14

OF THE CONTRACT, UNLESS OTHERWISE NOTED IN THE PHASING PLANS OR DIRECTED

ALL ADVANCE WARNING SIGNS AND TRAFFIC CONTROL DEVICES. FIELD VERIFY

COMPLETE ANY PROPOSED OR TEMPORARY WIDENING IN SUCH A MANNER THAT NO

LOCATIONS WITH THE RESIDENT ENGINEER PRIOR TO INSTALLATION.

PONDING OF WATER WILL OCCUR WITHIN THE TRAVEL LANE.

PHASING

PHASE 2 (SEE TMP-6 & TMP-7)

STEP 1:

USING LANE CLOSURES, PLACE TEMPORARY MARKINGS ALONG -L- (REHOBETH CHURCH RD) AS SHOWN AND SHIFT TRAFFIC TO THE PHASE 2 TRAFFIC PATTERN.

INSTALL TEMPORARY SIGNAL 07-2026T2 AT THE -L- (REHOBETH CHURCH RD) AND TOLAR DR INTERSECTION IN PHASE 2 TO COMPLETE CONSTRUCTION.

PHASE 3 (SEE TMP-8 & TMP-9)

USING LANE CLOSURES. PLACE TEMPORARY MARKINGS IN THE FINAL PATTERN ALONG -L- (REHOBETH CHURCH RD) AND SHIFT TRAFFIC TO THE FINAL TRAFFIC PATTERN (SEE FINAL PAVEMENT MARKING PLANS).

- REMAINING SIDEWALK, CURB & GUTTER, GUARDRAIL, AND SHOULDER WORK ON THE LEFT SIDE OF -L- (REHOBETH CHURCH RD) FROM STA. 15+06 +/-
- PROPOSED GUARDRAIL IN -Y- MEDIAN (PRIOR TO PCB REMOVAL).

INSTALL FINAL SIGNAL 07-2026 AT THE -L- (REHOBETH CHURCH RD) AND

ALL ROADS, AND RE-OPEN TO THE FINAL PATTERN. (SEE FINAL PAVEMENT MARKING PLANS).

USING LANE CLOSURES, INSTALL TEMPORARY SHORING AND PCB. AWAY FROM TRAFFIC OR BEHIND BARRIER, USING LANE CLOSURES OR ROAD CLOUSRES AS NEEDED, COMPLETE CONSTRUCTION OF THE FOLLOWING:

- THE RIGHT SIDE OF -L- (REHOBETH CHURCH RD) WITH WEDGING, AS NEEDED, FROM STA. 13+75 +/- TO STA. 26+50 +/-
- STAGE 2 OF BRIDGE CONSTRUCTION (SEE BRIDGE PLANS)

STEP 1:

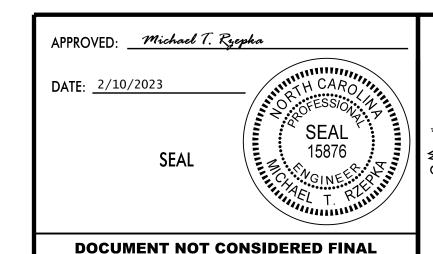
AWAY FROM TRAFFIC OR BEHIND BARRIER, AND USING LANE CLOSURES AS NEEDED, COMPLETE CONSTRUCTION OF THE FOLLOWING:

- TO STA. 22+15 +/-
- REMAINING WIDENING, PROPOSED BARRIER & GUARDRAIL, AND SHOULDER WORK ON THE LEFT SIDE OF -Y- (US 29/70) FROM STA. 12+94 +/-TO STA. 17+35 +/-
- REMAINING WIDENING, PROPOSED BARRIER & GUARDRAIL, AND SHOULDER WORK ON THE RIGHT SIDE OF -Y- (US 29/70) FROM STA. 11+75 +/-TO STA. 15+66 +/-

TOLAR DR INTERSECTION IN PHASE 3 TO COMPLETE CONSTRUCTION.

STEP 2:

USING LANE CLOSURES, COMPLETE ALL PROPOSED RESURFACING, PLACE THE FINAL LAYER OF SURFACE COURSE ON ALL ROADS, PLACE FINAL MARKINGS AND MARKERS ON



UNLESS ALL SIGNATURES COMPLETED



TEMPORARY TRAFFIC CONTROL PHASING

SHEET NO.

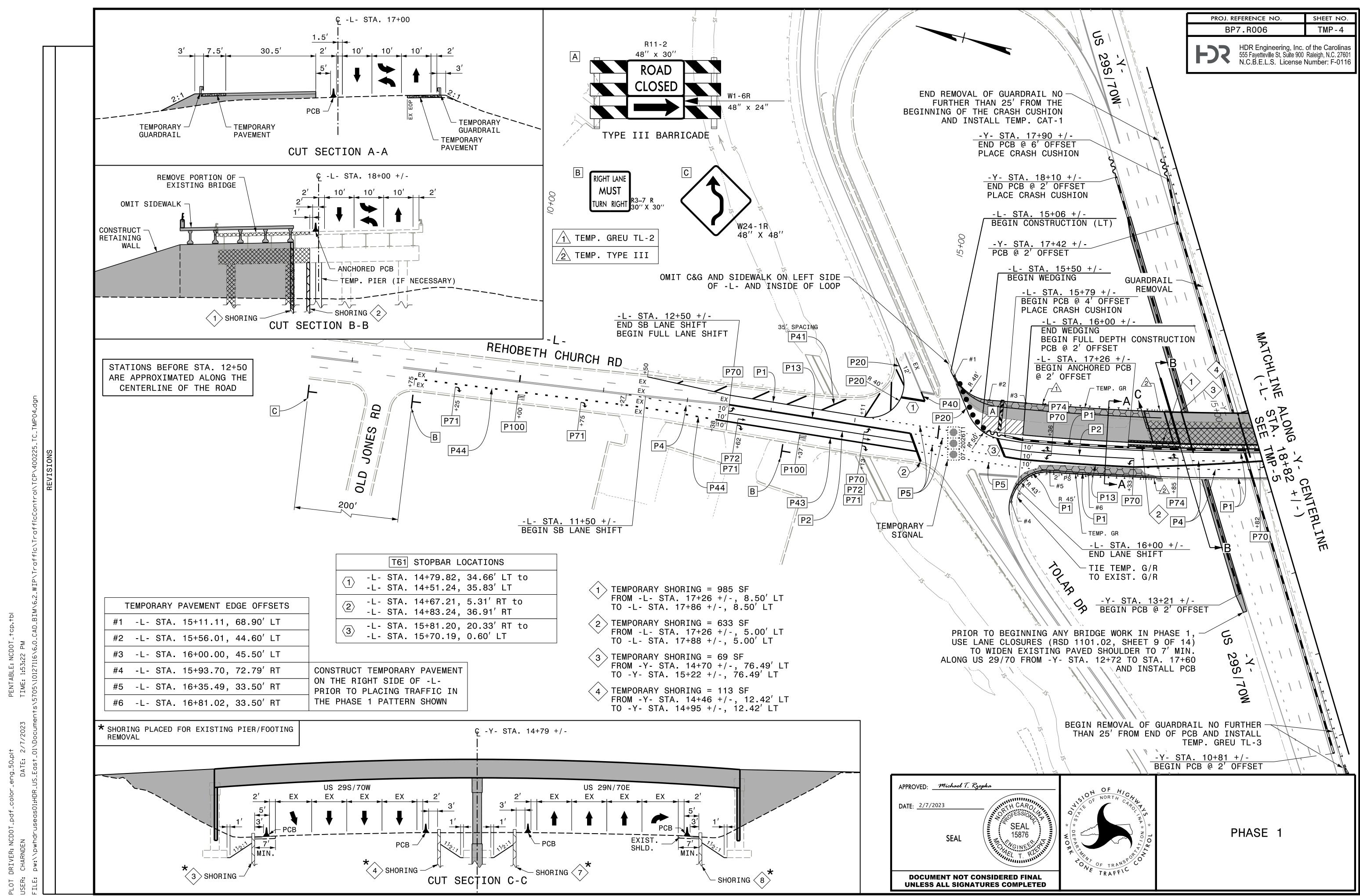
TMP-3

PROJ. REFERENCE NO.

BP7.R006

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

USING LANE CLOSURES, INSTALL TEMPORARY SHORING AND PCB. AWAY FROM TRAFFIC



TO WIDEN EXISTING PAVED SHOULDER TO 7' MIN.

AND INSTALL PCB

ALONG US 29/70 FROM -Y- STA. 11+60 TO STA. 15+79

TO -Y- STA. 14+71 +/-, 76.65' RT

-Y- STA. 11+29 +/-PCB @ 2' OFFSET

10+00

-Y- STA. 10+53 +/-BEGIN PCB @ 2' OFFSET

-Y- STA. 10+81 +/-BEGIN PCB @ 6' OFFSET

BEGIN REMOVAL OF GUARDRAIL NO

BEGINNING OF THE CRASH CUSHION

FURTHER THAN 25' FROM THE

AND INSTALL TEMP. CAT-1

PLACE CRASH CUSHION

PLACE CRASH CUSHION

#4 -L- STA. 20+43.94, 33.50' RT CONSTRUCT TEMPORARY PAVEMENT #5 -L- STA. 21+10.00, 33.50' RT ON THE RIGHT SIDE OF -L-PRIOR TO PLACING TRAFFIC IN #6 -L- STA. 21+51.80, 31.52' RT THE PHASE 1 PATTERN SHOWN #7 -L- STA. 21+99.09, 66.77' RT 5 TEMPORARY SHORING = 1,019 SF FROM -L- STA. 19+72 +/-, 8.50' LT TO -L- STA. 20+32 +/-, 8.50' LT APPROVED: Michael T. Rzepka (6) TEMPORARY SHORING = 662 SF DATE: 2/7/2023 FROM -L- STA. 19+73 +/-, 5.00' LT TO -L- STA. 20+32 +/-, 5.00' LT SEAL 15876 7 TEMPORARY SHORING = 119 SF SEAL FROM -Y- STA. 14+46 +/-, 12.20' RT TO -Y- STA. 14+95 +/-, 12.20' RT 8 TEMPORARY SHORING = 56 SF FROM -Y- STA. 14+22 +/-, 76.65' RT

DOCUMENT NOT CONSIDERED FINAL

UNLESS ALL SIGNATURES COMPLETED

PHASE 1

#3 -L- STA. 22+12.84, 92.36' LT

