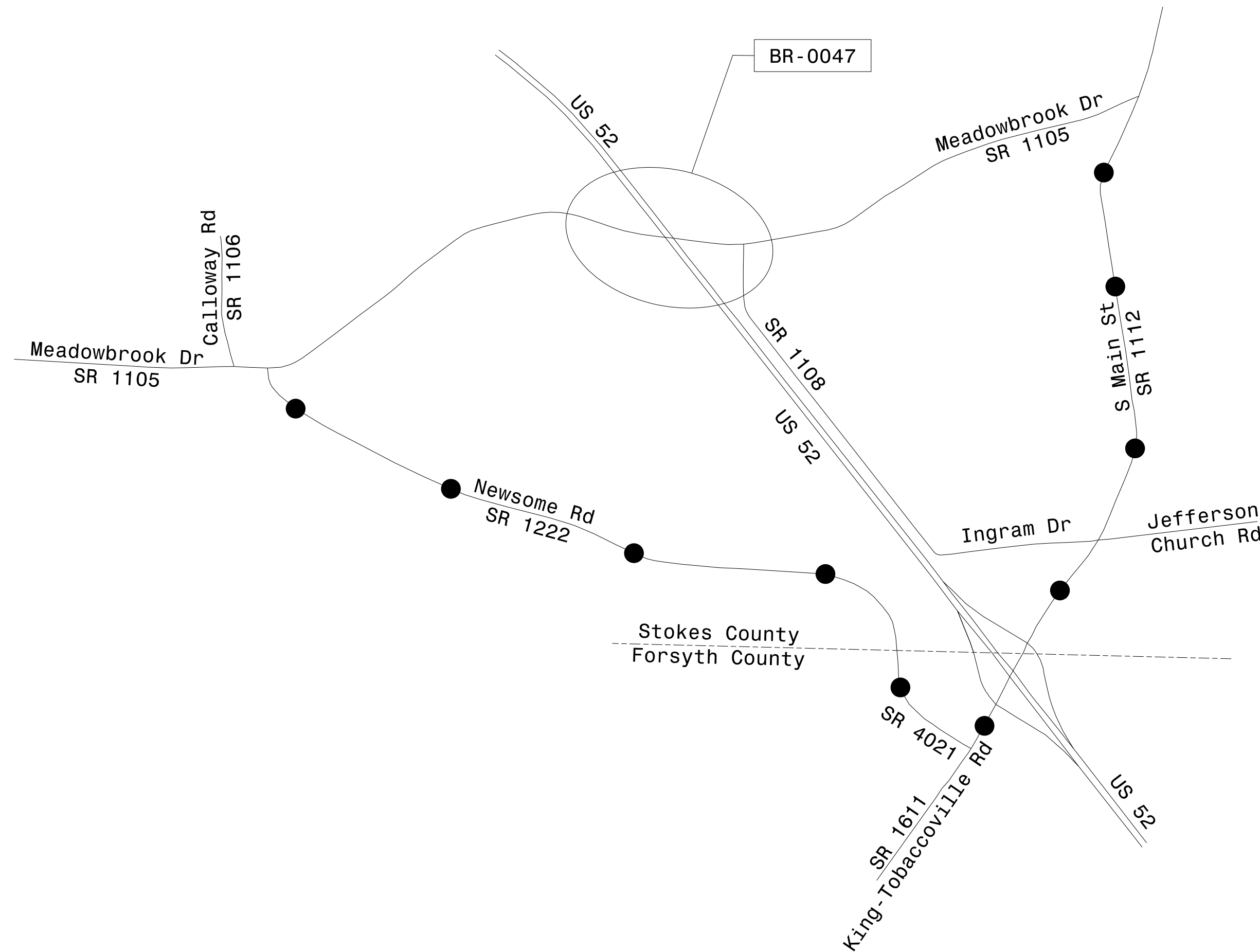
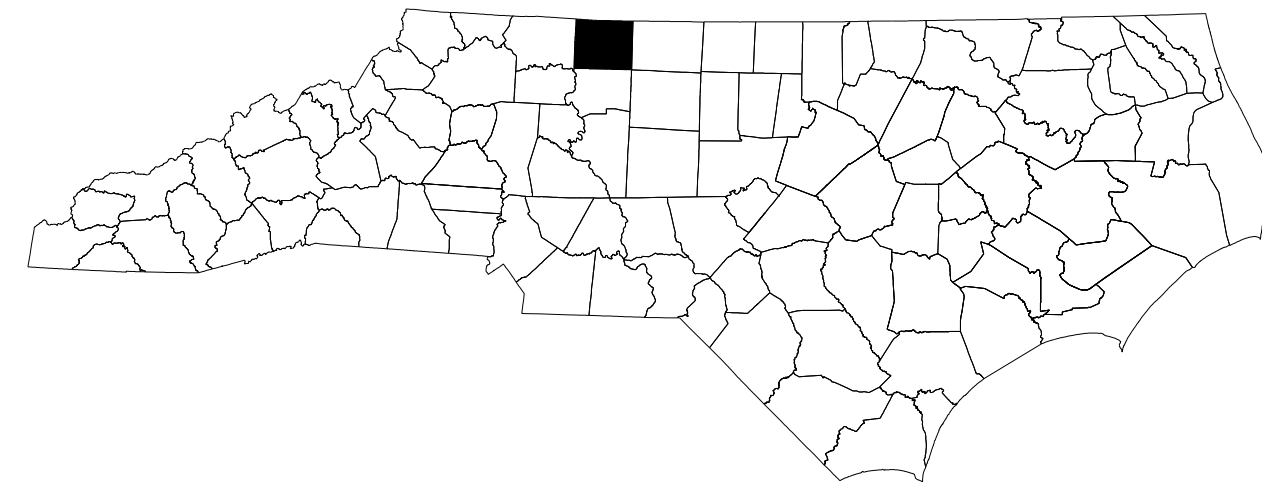


STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**TRANSPORTATION MANAGEMENT PLAN**

**STOKES COUNTY**



LOCATION: REPLACE BRIDGE 10 ON SR 1105 (MEADOWBROOK DR) OVER US 52  
TYPE OF WORK: GRADING, DRAINAGE, PAVING, AND STRUCTURE

**INDEX OF SHEETS**

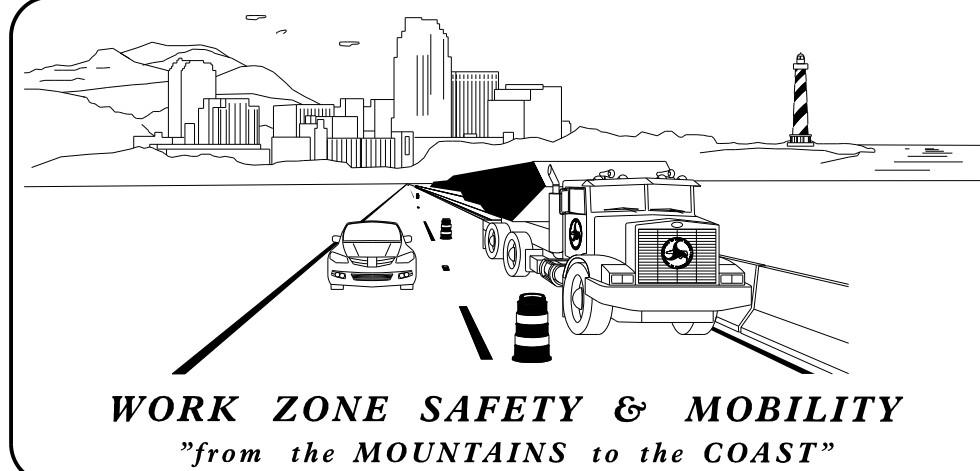
SHEET NO.	TITLE
TMP-1	TITLE SHEET, VICINITY MAP, AND INDEX OF SHEETS
TMP-1A	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS AND LEGEND
TMP-1B & TMP-1C	TRANSPORTATION OPERATIONS PLAN: (MANAGEMENT STRATEGIES, GENERAL NOTES, LOCAL NOTES, AND PHASING)
TMP-2	PORTABLE CONCRETE BARRIER AT TEMPORARY SHORING LOCATIONS
TMP-2A	TEMPORARY SHORING NOTES
TMP-2B	SPECIAL SIGN DESIGN
TMP-3	MEADOWBROOK DR DETOUR ROUTE
TMP-4	MEADOWBROOK DR ROAD CLOSURE DETAIL
TMP-5	US 52 DETOUR ROUTE
TMP-6	STEPS 5-9
TMP-7 & TMP-8	US 52 SECTION VIEWS

SHEET NO.  
TMP-1

**BR-0047**

**TIP PROJECT:**

3/31/2020 R:\NSP\Proj\Special\BR0047\TrafficControl\TCP\BR0047\_TC\_TMP01\_title\_sheet.dgn User:derichardson



**PLANS PREPARED BY:**  
DONNIE RICHARDSON  
NCDOT/WZTC

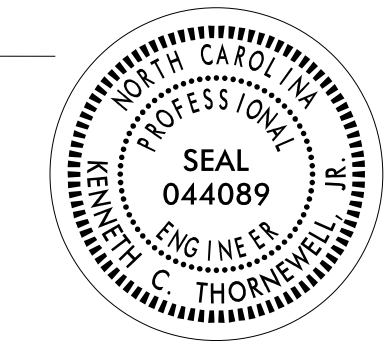
**NCDOT CONTACTS:**  
KENNETH THORNEWELL, PE  
PROJECT ENGINEER  
MIKE STEELMAN  
PROJECT DESIGN ENGINEER



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

APPROVED: *Kenneth C. Thornevell Jr., P.E.*  
DATE: 3/31/2020

SEAL



# ROADWAY STANDARD DRAWINGS

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

STD. NO.	TITLE
1101.01	WORK ZONE WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
1101.03	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	FLAGGING DEVICES
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 MULTILANE ROADWAYS
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.05	PAVEMENT MARKINGS - TURN LANES
1205.12	PAVEMENT MARKINGS - BRIDGES
1250.01	RAISED PAVEMENT MARKERS - INSTALLATION SPACING
1251.01	RAISED PAVEMENT MARKERS - (PERMANENT AND TEMPORARY)

# LEGEND

## GENERAL

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

## SIGNALS

- 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

- 6" PAINT
- P6 WHITE EDGELINE
- P7 YELLOW EDGELINE
- PK 10 FT WHITE SKIP

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APPROVED: <i>Kenneth C. Thornwell Jr., P.E.</i> <small>1E991EP27373405</small> DATE: 3/31/2020			<h3>ROADWAY STANDARD DRAWINGS &amp; LEGEND</h3>
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>			

# GENERAL NOTES

PROJ. REFERENCE NO.	SHEET NO.
BR-0047	TMP-1B

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
-Y2- US 52 NB	MON-FRI 4:00 PM TO 7:00 PM
-Y2- US 52 SB	MON-FRI 6:00 AM TO 9:00 AM

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

ROAD NAME
-Y2- US 52 (BOTH DIRECTIONS)

### 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 6:00 AM DECEMBER 31st TO 7:00 PM JANUARY 2ND. IF NEW YEAR'S DAY IS ON A FRIDAY, SATURDAY, SUNDAY, OR MONDAY THEN UNTIL 7:00 PM THE FOLLOWING TUESDAY.
3. FOR EASTER, BETWEEN THE HOURS OF 6:00 AM THURSDAY AND 7:00 PM MONDAY.
4. FOR MEMORIAL DAY, BETWEEN THE HOURS OF 6:00 AM FRIDAY TO 7:00 PM TUESDAY.
5. FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 6:00 AM THE DAY BEFORE INDEPENDENCE DAY AND 7:00 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 7:00 PM THE TUESDAY AFTER INDEPENDENCE DAY.
6. FOR LABOR DAY, BETWEEN THE HOURS OF 6:00 AM FRIDAY AND 7:00 PM TUESDAY.
7. FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 6:00 AM TUESDAY TO 7:00 PM MONDAY.
8. FOR CHRISTMAS, BETWEEN THE HOURS OF 6:00 AM THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 7:00 PM THE FOLLOWING TUESDAY AFTER THE WEEK OF CHRISTMAS.

C) DO NOT CLOSE ROADS AS FOLLOWS:

ROAD NAME	DAY AND TIME RESTRICTIONS
-Y2- US 52 NB	MON-SUN 5:00 AM TO 10:00 PM
-Y2- US 52 SB	MON-SUN 5:00 AM TO 10:00 PM
-Y2- US 52 BOTH DIRECTIONS	MON-SUN 5:00 AM TO MIDNIGHT

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.
- 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 SIMULTANEOUS LANE CLOSURE IN ANY ONE DIRECTION ON US 52.
- K) PROVIDE TRAFFIC CONTROL FOR APPROPRIATE LANE CLOSURES FOR SURVEYING DONE BY THE DEPARTMENT.

### PAVEMENT EDGE DROP OFF REQUIREMENTS

- L) 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.
- M) 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

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

### SIGNING

O) 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.

P) 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.

Q) 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.

R) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

S) INSTALL BLACK ON ORANGE "DIP" SIGNS (W8-2) AND/OR "BUMP" SIGNS (W8-1) 1000 FT IN ADVANCE OF THE UNEVEN AREA, OR AS DIRECTED BY THE ENGINEER.

### TRAFFIC BARRIER

T) 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.

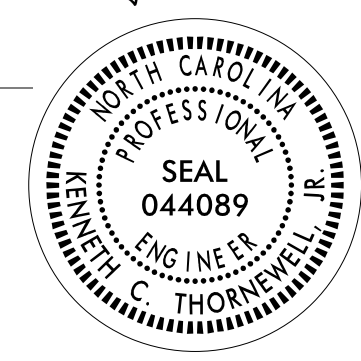

INSTALL TEMPORARY BARRIER WITH THE TRAFFIC FLOW BEGINNING WITH THE UPSTREAM SIDE OF TRAFFIC. REMOVE TEMPORARY BARRIER AGAINST THE TRAFFIC FLOW BEGINNING WITH THE DOWNSTREAM SIDE OF TRAFFIC.

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.

U) 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

<p>APPROVED: <i>Kenneth C. Thornwell Jr., P.E.</i>  <small>1E991EF27373405</small></p> <p>DATE: 3/31/2020</p>			<h2 style="margin: 0;">TRANSPORTATION OPERATIONS PLAN</h2>
<p><b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b></p>			

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## PHASING

### GENERAL NOTES (CONT'D)

#### TRAFFIC CONTROL DEVICES

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

#### PAVEMENT MARKINGS AND MARKERS

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

ROAD NAME	MARKING	MARKER
ALL ROADS	PAINT	TEMP RAISED

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

#### MISCELLANEOUS

- CC) 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) IN ADVANCE OF THE UNEVEN AREAS. USE DRUMS TO DELINEATE THE EDGE OF ROADWAY ALONG UNPAVED AREAS.

### MANAGEMENT STRATEGIES

#### MEADOWBROOK DR

USE OFF SITE DETOUR TO REMOVE EXISTING BRIDGE AND CONSTRUCT PROPOSED BRIDGE AND APPROACHES.

#### US 52

USE A COMBINATION OF OFF SITE DETOUR (FOR ALL OVER HEAD WORK), PCB, TEMPORARY SHORING AND LANE CLOSURES.

### LOCAL NOTES

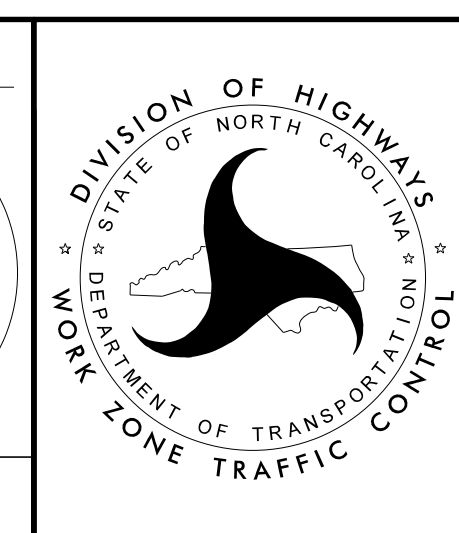
- IN ORDER TO HAVE TIME TO ADEQUATELY REROUTE SCHOOL BUSES, THE DIVISION PROJECT MANAGER WILL CONTACT THE STOKES COUNTY SCHOOLS TRANSPORTATION DIRECTOR (336-591-7169) AT LEAST ONE MONTH PRIOR TO ROAD CLOSURE.
- THE DIVISION PROJECT MANAGER WILL COORDINATE WITH EMERGENCY MANAGEMENT OFFICIALS (CITY OF KING FIRE DEPARTMENT CHIEF/EM COORDINATOR [336-983-3030], STOKES COUNTY EMS [336-593-5409], STOKES COUNTY SHERIFF'S OFFICE [336-593-8787]) TO DISCUSS DETOUR PLANNING FOR EMERGENCY VEHICLES.

- STEP 1 - INSTALL WORK ZONE ADVANCE WARNING SIGNS. SEE RSD 1101.01.
- STEP 2 - INSTALL AND COVER ALL OFF-SITE DETOUR SIGNS AS SHOWN ON TMP-3.
- STEP 3 - USING RSD 1101.03, SHEET 1 OF 9, TMP-3 AND TMP-4, CLOSE -L- (MEADOWBROOK DR) AND OFF-SITE DETOUR TRAFFIC ALONG DETOUR ROUTE.
- PLACE CMS BOARDS ALONG US 52 DETOUR ROUTES SHOWN ON TMP-5 (ACTIVATE ONLY DURING US 52 CLOSURES. SEE STEPS 4 AND 10)
- STEP 4 - WITH MEADOWBROOK DR TRAFFIC DETOURED OFF-SITE, ACTIVATE CMS BOARDS AS NEEDED FOR OVERHEAD WORK (SEE GENERAL NOTE C), AND BEGIN EXISTING BRIDGE REMOVAL, USING RSD 1101.03, SHEET 7 OF 9 TO CLOSE US 52 AND DETOUR ALL TRAFFIC TO DETOUR ROUTE SHOWN ON TMP-5
- STEP 5 - USING RSD 1101.02, SHEET 4 OF 14, RE-STRIPE -Y2- (US 52) TO PATTERN SHOWN ON TMP-6.
- STEP 6 - USING RSD 1101.02, SHEET 4 OF 14, INSTALL PCB. SEE TMP-6 AND TMP-7.
- STEP 7 - BEHIND PCB, REMOVE EXISTING MEDIAN GUARDRAIL AND INSTALL TEMPORARY SHORING. SEE TMP-2A, TMP-6, AND TMP-7.
- STEP 8 - BEHIND PCB, REMOVE THE EXISTING MEDIAN BENTS AND FOOTING. SEE TMP-6 AND TMP-7.
- USING RSD 1101.02, SHEET 4 OF 14, WHERE NECESSARY, REMOVE THE EXISTING OUTSIDE SHOULDER BENTS AND END BENTS. SEE TMP-7.
- STEP 9 - BEHIND PCB, CONSTRUCT PROPOSED MEDIAN BENTS. SEE TMP-6 AND TMP-8.
- USING RSD 1101.02, SHEET 4 OF 14, CONSTRUCT OUTSIDE WIDENING OF -Y2- (US 52) (INCLUDING END BENTS) UP TO, BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE (INCLUDING GUARDRAIL REPLACEMENT). SEE ROADWAY PLANS.
- STEP 10 - IN A CONTINUOUS OPERATION, USING RSD 1101.02, SHEET 4 OF 14, REMOVE MEDIAN PCB AND INSTALL PROPOSED MEDIAN GUARDRAIL.
- ACTIVATE CMS BOARDS AS NEEDED FOR OVERHEAD WORK (SEE GENERAL NOTE C), AND CONSTRUCT PROPOSED BRIDGE, USING RSD 1101.03, SHEET 7 OF 9 TO CLOSE US 52 AND DETOUR ALL TRAFFIC TO DETOUR ROUTE SHOWN ON TMP-5.
- STEP 11 - AWAY FROM TRAFFIC, CONSTRUCT APPROACH WORK FROM -L- 12+60+/- TO 21+75+/- UP TO, BUT NOT INCLUDING, FINAL LAYER OF SURFACE COURSE. SEE TMP-6.
- USING RSD 1101.02, SHEET 1 OF 14, CONSTRUCT -L- 10+50+/- TO 12+60+/- AND 21+75+/- TO 26+30+/- UP TO, BUT NOT INCLUDING, FINAL LAYER OF SURFACE COURSE. INSTALL TEMPORARY PAVEMENT MARKINGS IN FINAL PATTERN AS SHOWN IN PMP PLANS.
- USING RSD 1101.02, SHEET 1 OF 14, CONSTRUCT -Y1-, -Y3-, -Y4-, AND -Y5- UP TO, BUT NOT INCLUDING, THE FINAL LAYER OF SURFACE COURSE. INSTALL TEMPORARY PAVEMENT MARKINGS IN FINAL PATTERN AS SHOWN IN PMP PLANS.
- STEP 12 - AWAY FROM TRAFFIC AND USING RSD 1101.02, SHEET 1 OF 14 WHERE NECESSARY, INSTALL FINAL LAYER OF SURFACE COURSE ON -L- FROM 10+50+/- TO 26+30+/- . INSTALL FINAL PAVEMENT MARKINGS AND MARKERS ON -L- AND REMOVE ALL OFF-SITE DETOUR SIGNS AND ROAD CLOSURE SIGNS AND OPEN MEADOWBROOK DR TO TRAFFIC.
- USING RSD 1101.02, SHEET 1 OF 14, INSTALL FINAL LAYER OF SURFACE COURSE ON -Y1-, -Y3-, -Y4-, AND -Y5- . INSTALL FINAL PAVEMENT MARKINGS IN FINAL PATTERN AS SHOWN IN PMP PLANS.
- USING RSD 1101.02, SHEET 4 OF 14, INSTALL FINAL LAYER OF SURFACE COURSE ON -Y2- (US 52). INSTALL FINAL PAVEMENT MARKINGS IN FINAL PATTERN AS SHOWN IN PMP PLANS.

APPROVED: *Kenneth C. Hornswell Jr., P.E.*  
DocuSigned by: Kenneth C. Hornswell Jr., P.E. 1E981EF27373405...  
 DATE: 3/31/2020

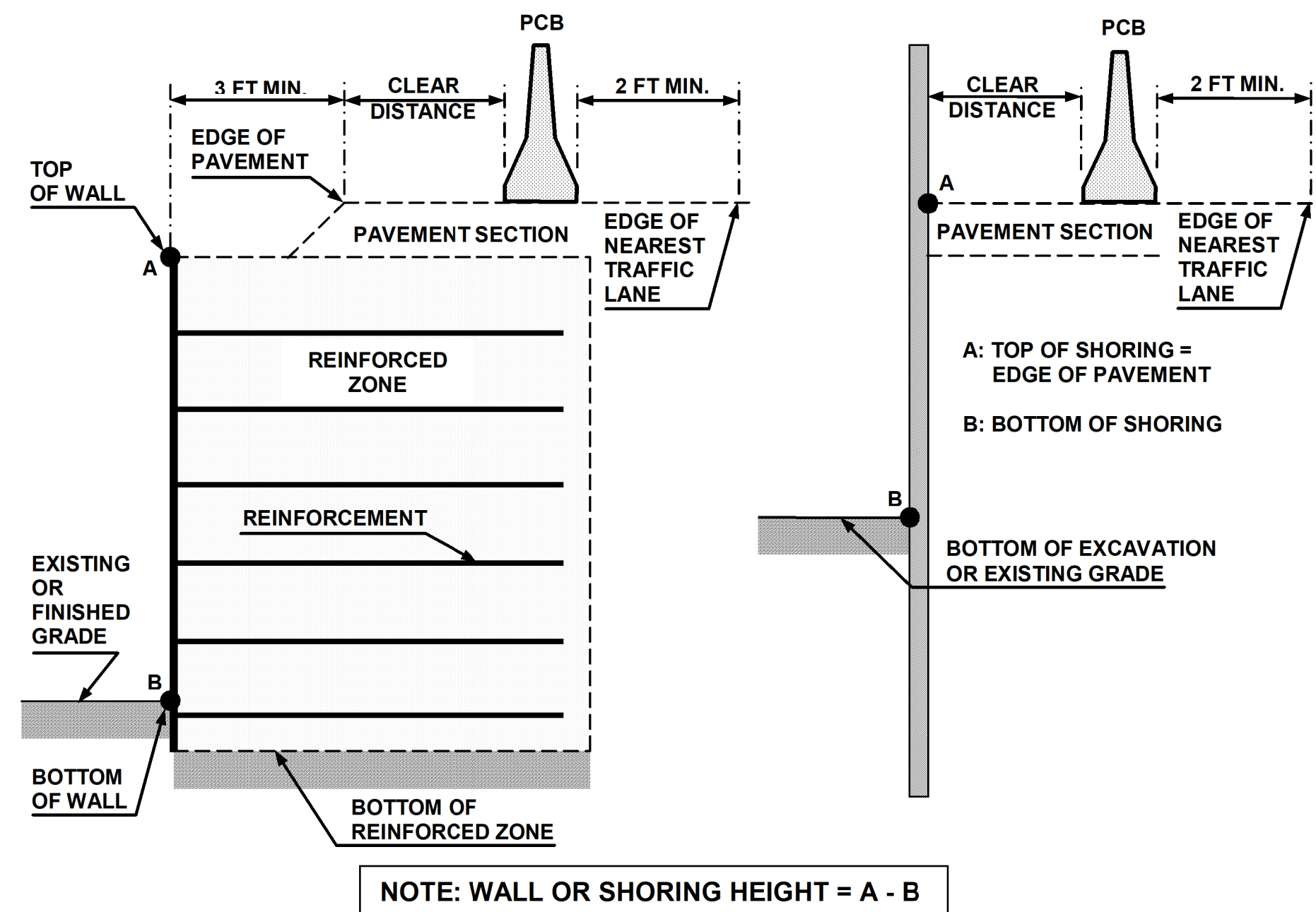
SEAL  
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ENGINEER  
KENNETH C. THORNEVELL

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**TRANSPORTATION  
OPERATIONS  
PLAN**

3/31/2020 R:\NS\Proj\Special\BR0047\TrafficControl\TCP\BR0047\_TC\_TMP01C\_notes\_and\_phasing.dgn User:derlchardson



## FIGURE A

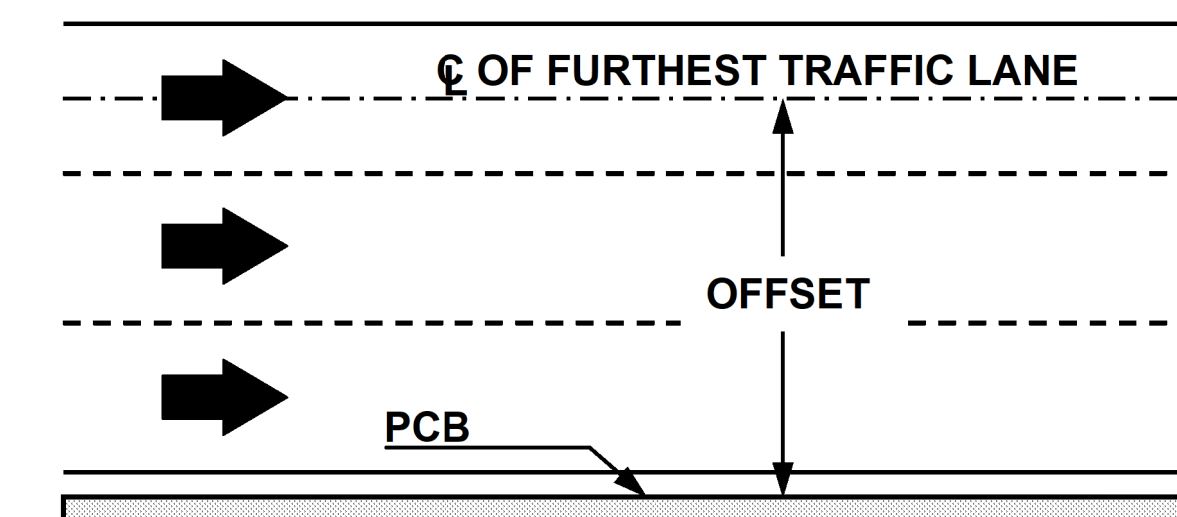
### NOTES

- REFER TO THE TRAFFIC CONTROL PLANS FOR TEMPORARY SHORING LOCATIONS AND NOTES.
- REFER TO THE "TEMPORARY SHORING" PROJECT SPECIAL PROVISION FOR INFORMATION ABOUT TEMPORARY SHORING AND PORTABLE CONCRETE BARRIER (PCB).
- 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).
- 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.
- 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.
- USE NCDOT PORTABLE CONCRETE BARRIER (PCB) IN ACCORDANCE WITH ROADWAY STANDARD DRAWING NO. 1170.01 AND SECTION 1170 OF THE STANDARD SPECIFICATIONS.
- PCB REQUIREMENTS FOR TEMPORARY WALLS APPLY TO TEMPORARY MECHANICALLY STABILIZED EARTH (MSE) WALLS AND TEMPORARY SOIL NAIL WALLS.
- 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.
- 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.
- TABLE SHOWN IN FIGURE B IS BASED ON NCDOT RESEARCH PROJECT NO. 2005-010 WITH VEHICLE TYPE USED FOR NCHRP 350 CRASH TESTS. BARRIER DEFLECTIONS AND RESULTING MINIMUM REQUIRED CLEAR DISTANCES MIGHT VARY SIGNIFICANTLY FOR LARGER HEAVIER VEHICLES, RUNS OF BARRIER LESS THAN 200 FT IN LENGTH AND WET OR DRY PAVEMENT.

### MINIMUM REQUIRED CLEAR DISTANCE, inches

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

\* See Figure Below



## FIGURE B

APPROVED <i>Kenneth C. Thornton</i> 3/27/2020 SEAL 		PORTABLE CONCRETE BARRIER AT TEMPORARY SHORING LOCATIONS
---	--	--

TEMPORARY SHORING LOCATION NO 1 (SEE TMP-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 STATION 13+01, 7.5 FT RIGHT, TO STATION 14+08, 7.5 FT RIGHT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:  
 UNIT WEIGHT  $\gamma$  = 120 PCF  
 FRICTION ANGLE  $\phi$  = 30 DEGREES  
 COHESION (c) = 0 PSF  
 GROUNDWATER ELEVATION = 1018.0 FT

DRIVEN PILING FOR TEMPORARY SHORING FROM STATION 13+01, 7.5 FT RIGHT, TO STATION 14+08, 7.5 FT RIGHT MAY NOT PENETRATE BELOW ELEVATION 1005.0 FT DUE TO OBSTRUCTIONS, VERY DENSE OR HARD SOIL, BOULDERS OR WEATHERED OR HARD ROCK.

AT THE CONTRACTOR'S OPTION, USE STANDARD TEMPORARY SHORING FOR TEMPORARY SHORING FROM STATION 13+01, 7.5 FT RIGHT, TO STATION 14+08, 7.5 FT RIGHT. SEE GEOTECHNICAL STANDARD DETAIL NO. 1801.01 FOR STANDARD TEMPORARY SHORING.

TEMPORARY SHORING LOCATION NO 2 (SEE TMP-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.

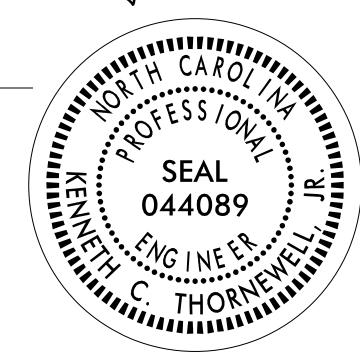
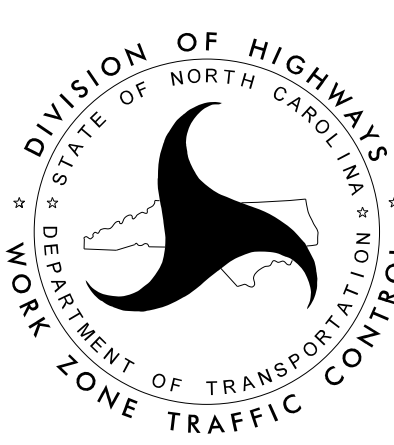
DESIGN TEMPORARY SHORING FROM STATION 13+01, 7.5 FT LEFT, TO STATION 14+08, 7.5 FT LEFT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:  
 UNIT WEIGHT  $\gamma$  = 120 PCF  
 FRICTION ANGLE  $\phi$  = 30 DEGREES  
 COHESION (c) = 0 PSF  
 GROUNDWATER ELEVATION = 1018.0 FT

DRIVEN PILING FOR TEMPORARY SHORING FROM STATION 13+08, 7.5 FT LEFT, TO STATION 14+08, 7.5 FT LEFT MAY NOT PENETRATE BELOW ELEVATION 1005.0 FT DUE TO OBSTRUCTIONS, VERY DENSE OR HARD SOIL, BOULDERS OR WEATHERED OR HARD ROCK.

AT THE CONTRACTOR'S OPTION, USE STANDARD TEMPORARY SHORING FOR TEMPORARY SHORING FROM STATION 13+01, 7.5 FT LEFT, TO STATION 14+08, 7.5 FT LEFT. 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 FEBRUARY 27, 2020 AND SEALED BY A PROFESSIONAL ENGINEER, SHANE C. CLARK, PE, LICENSE # 29869.

2/27/2020 R:\NSP\Pro\Special\BR0047\Traffic\TrafficControl\TCP\BR0047\_TC\_TMP02A\_shoring\_notes.dgn User:derickardson

<p>APPROVED <i>Kenneth C. Thornwell Jr., P.E.</i>  <small>DocuSigned by: 1E991EF27373405</small></p> <p>DATE: 3/31/2020</p>  <p><b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b></p>		<p>TEMPORARY SHORING NOTES</p>
---	---	--------------------------------

SIGN NUMBER: SP19149      BACKG COLOR: Fluorescent Orange  
 TYPE: STATIONARY      COPY COLOR: Black  
 QUANTITY: SEE PLANS

SYMBOL	X	Y	WID	HT

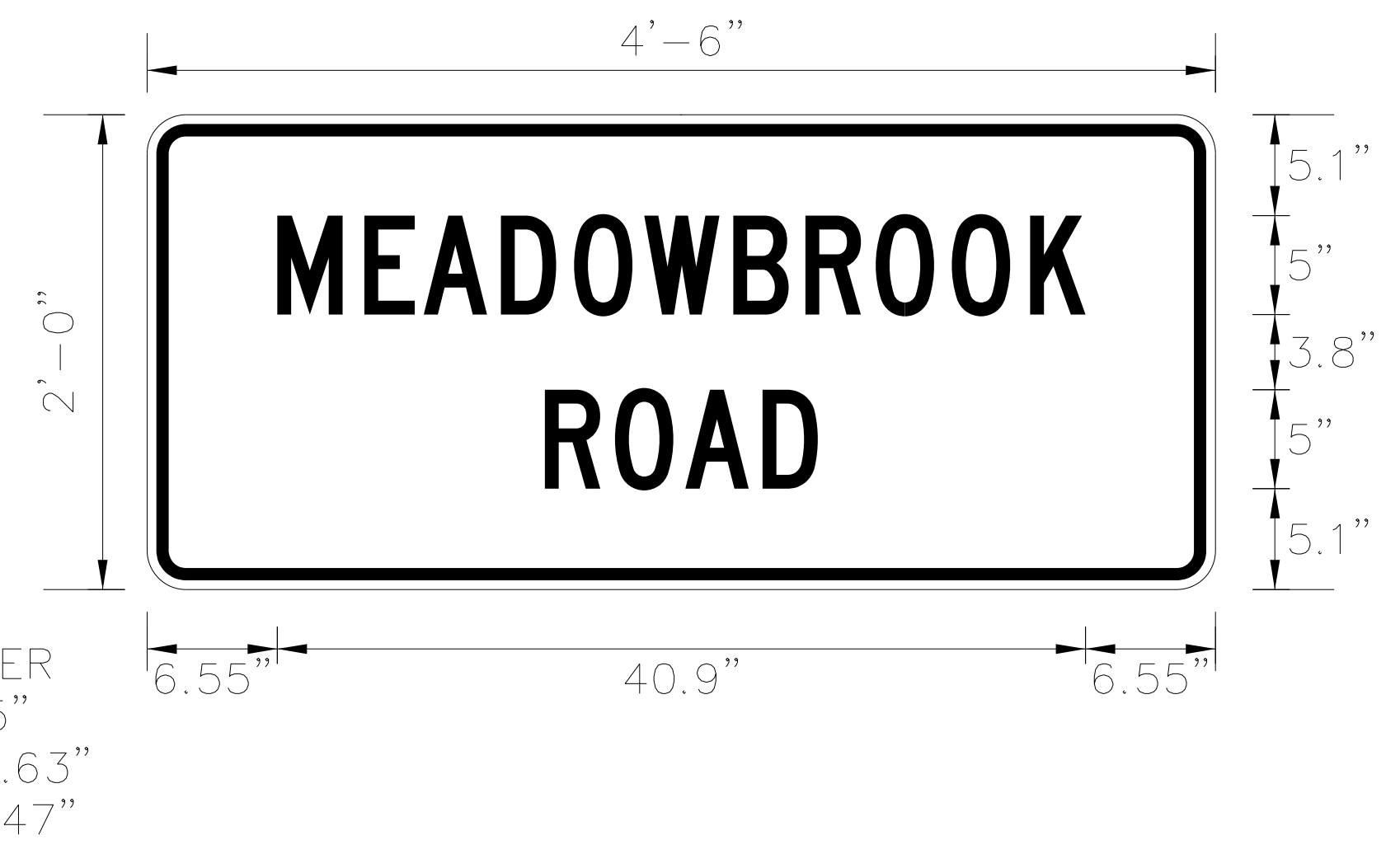
SIGN WIDTH: 4'-6"  
 HEIGHT: 2'-0"  
 TOTAL AREA: 9.0 Sq.Ft.

BORDER TYPE: INSET  
 RECESS: 0.47"  
 WIDTH: 0.63"  
 RADII: 1.5"

NO. Z BARS:  
 LENGTH:

MAT'L: 0.080" (2.0 mm) ALUMINUM

DESIGN BY: EEW      CHECKED BY:      Sep 26, 2019  
 PROJECT ID: BD-0047      LOCATION:      DIV: 9



USE NOTES: 1,2

- Legend and border shall be direct applied black non-reflective sheeting.
- Background shall be NC GRADE B fluorescent orange retroreflective sheeting.

Spacing Factor is 1 unless specified otherwise

**LETTER POSITIONS**

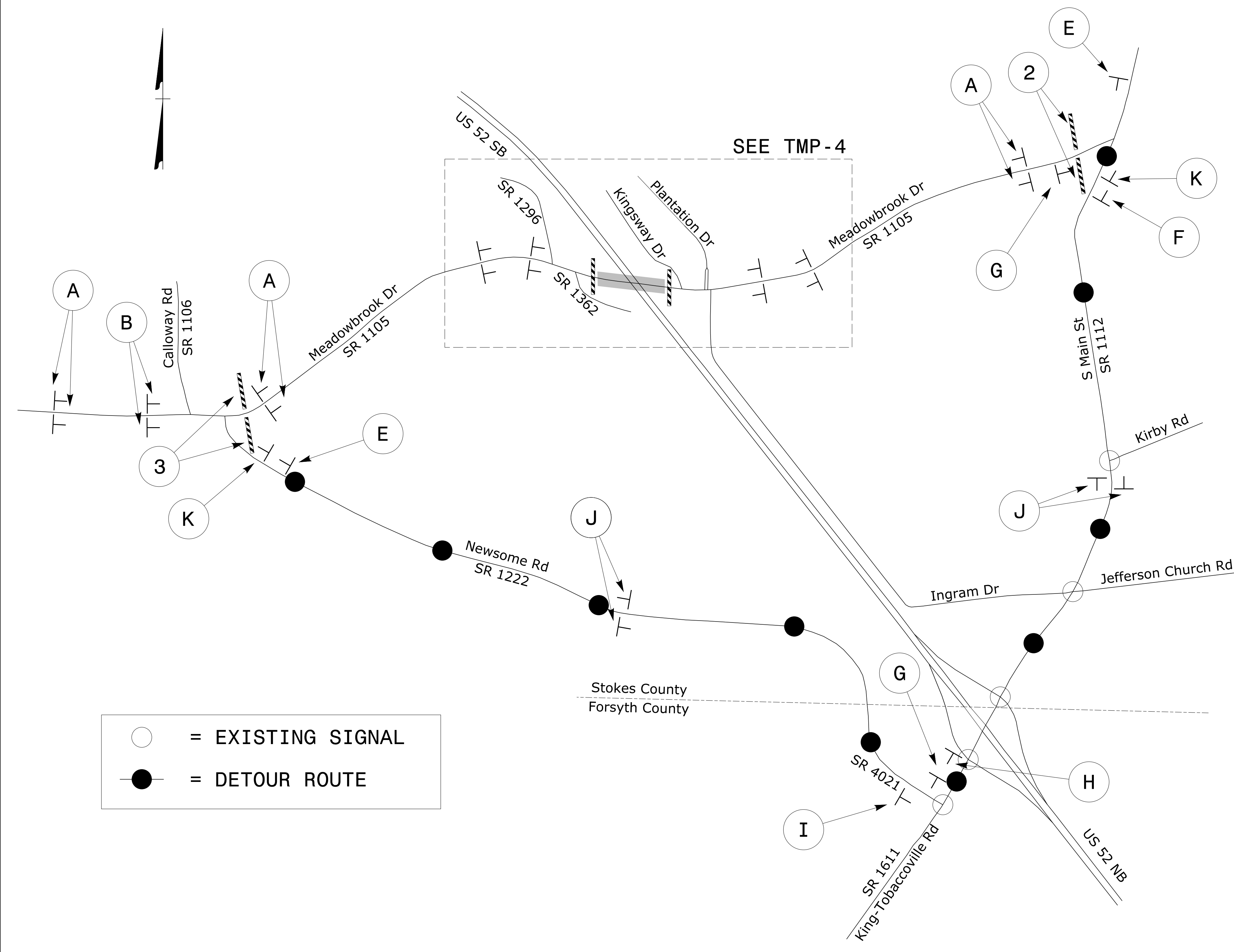
Letter spacings are to start of next letter

Letter Spacings													Series/Size
M	E	A	D	O	W	B	R	O	O	K			Text Length
6.6	4.4	3	3.9	3.7	3.6	4.5	3.7	3.6	3.8	3.9	2.8	6.6	C 2000 40.9
	R	O	A	D									C 2000 13.8
20.1	3.6	3.6	3.9	2.8	20.1								

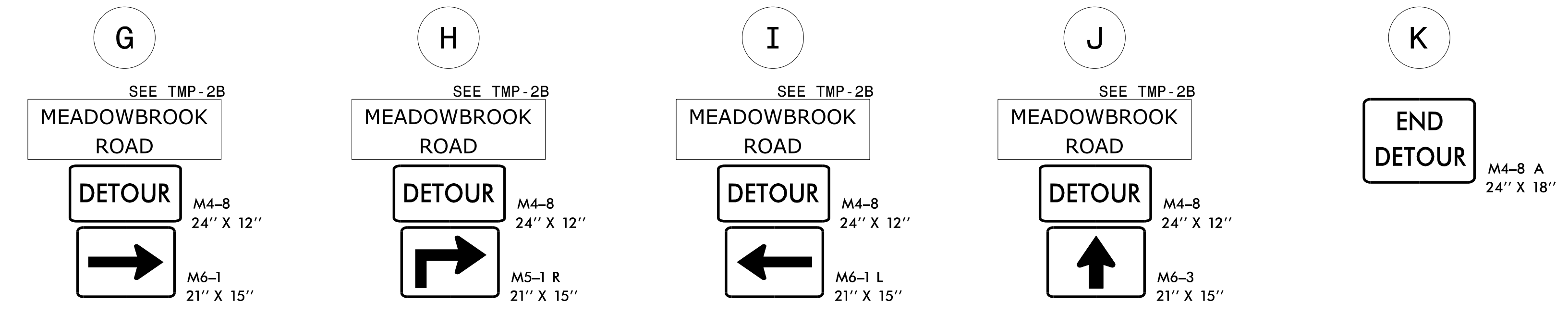
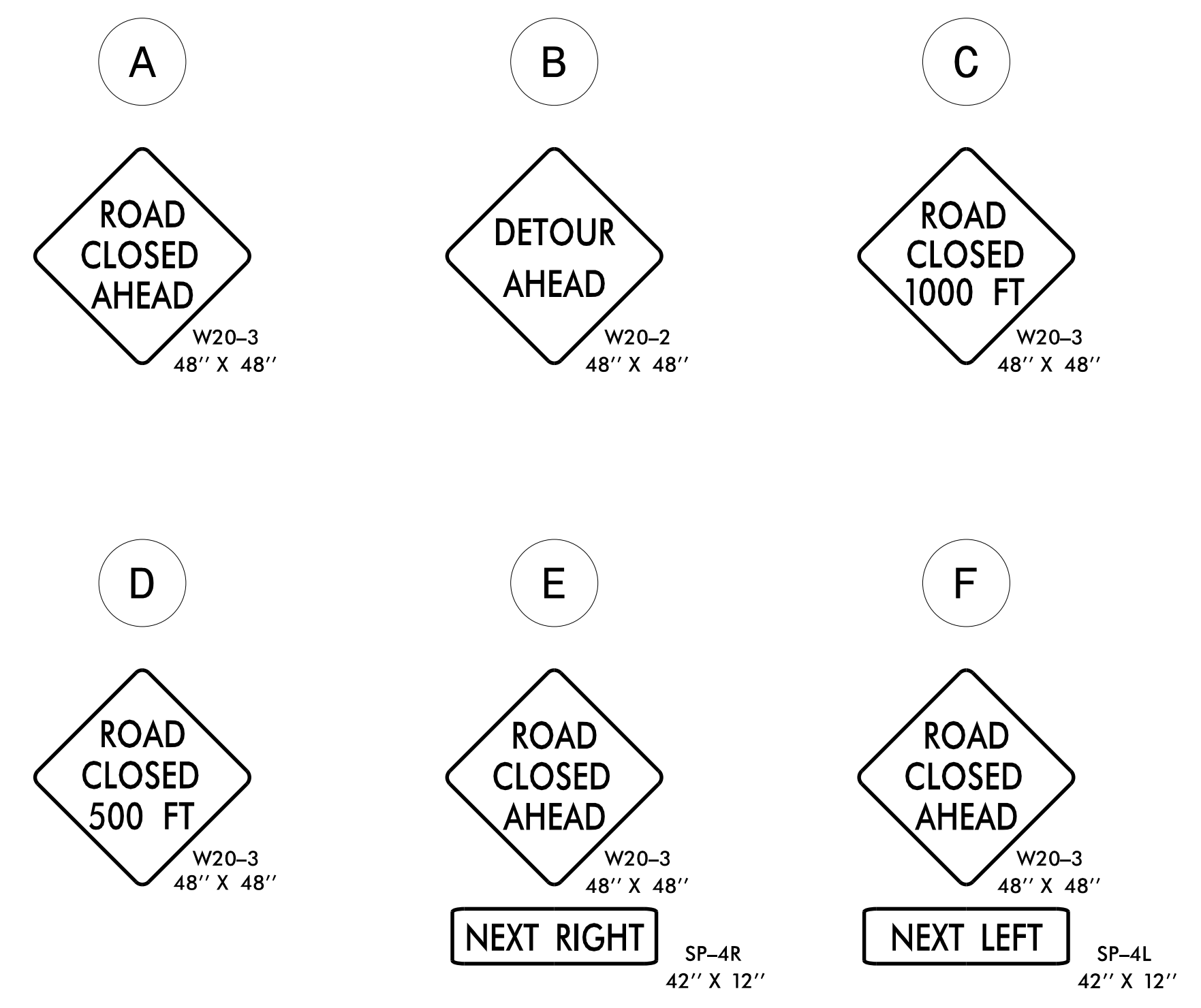
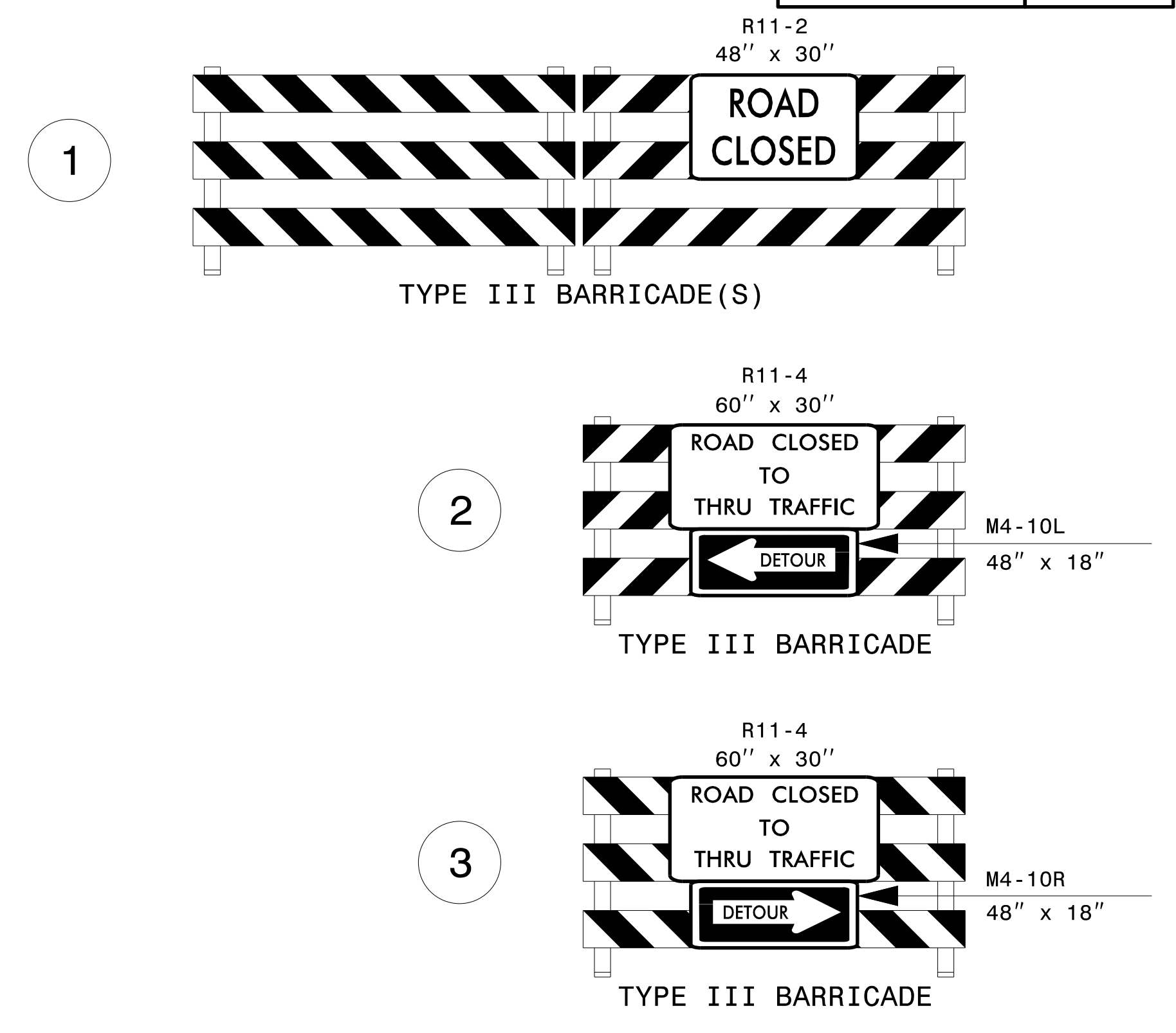
NORTH CAROLINA D.O.T. SIGN DETAIL

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 User:dercharadson

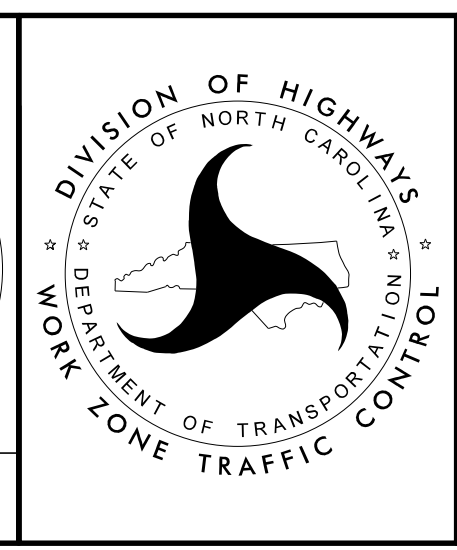
APPROVED: <u>Rene B. Roach</u> DATE: 1/24/2020			<b>SPECIAL SIGN DESIGN</b>
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>			



○ = EXISTING SIGNAL  
 ● = DETOUR ROUTE



APPROVED: *Kenneth C. Hornswell Jr., P.E.*  
 DATE: 3/31/2020  
 SEAL 044089  
 C. THORNEWELL

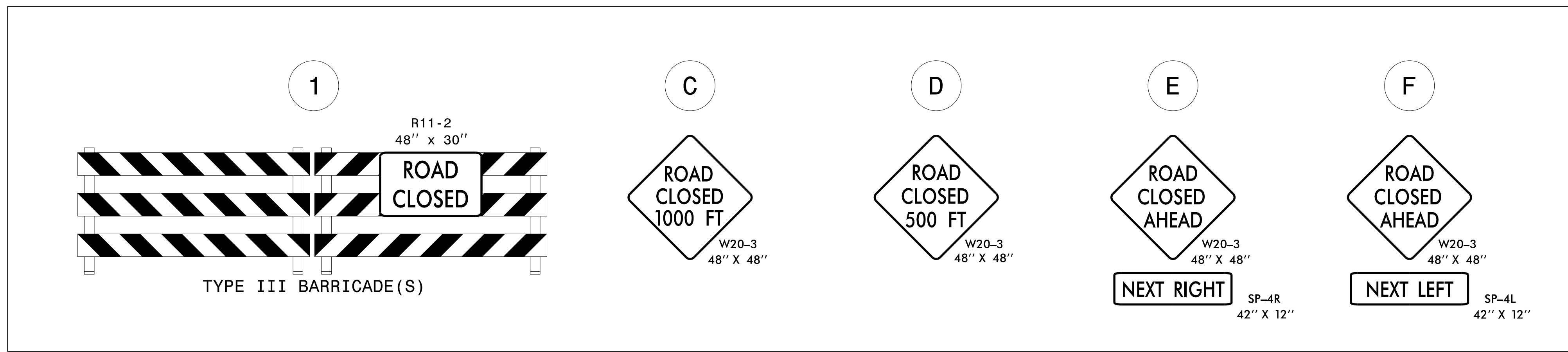
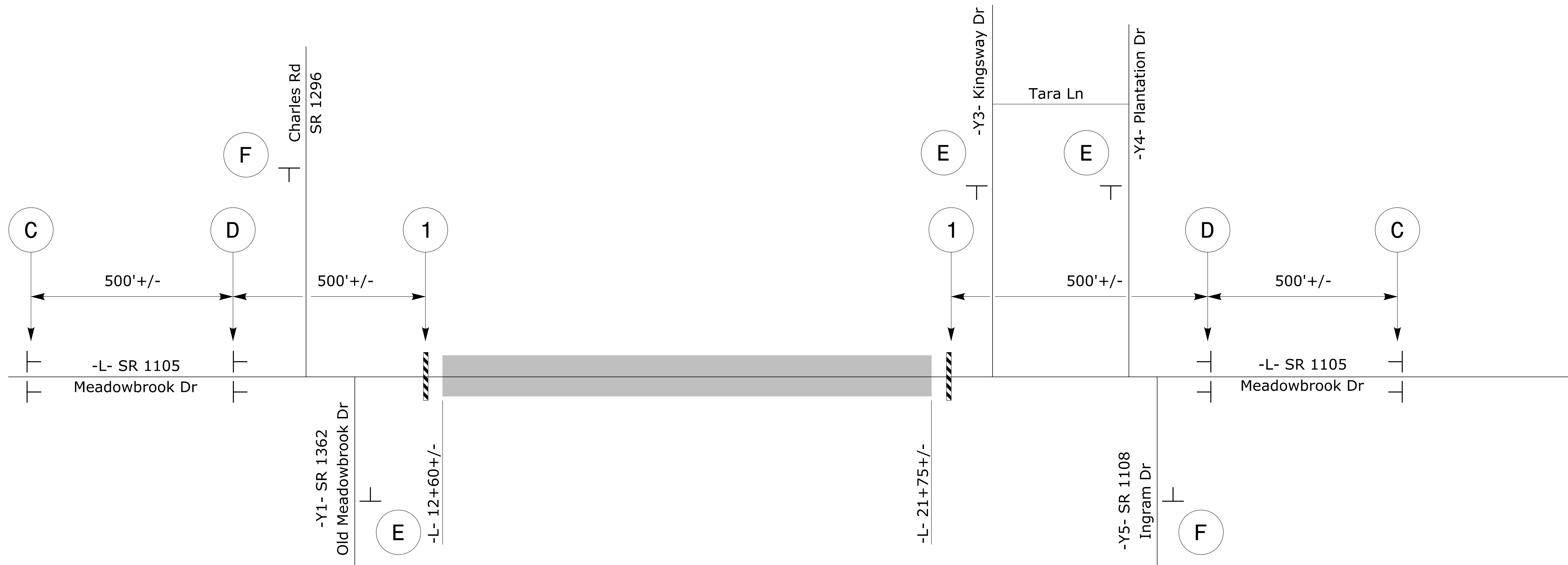


MEADOWBROOK DR  
 DETOUR ROUTE

2/27/2020 R:\NSP\Pro\Special\BR0047\TrafficControl\TCP\BR0047\_TC\_TMP03\_detour\_route.dgn User:derichardson

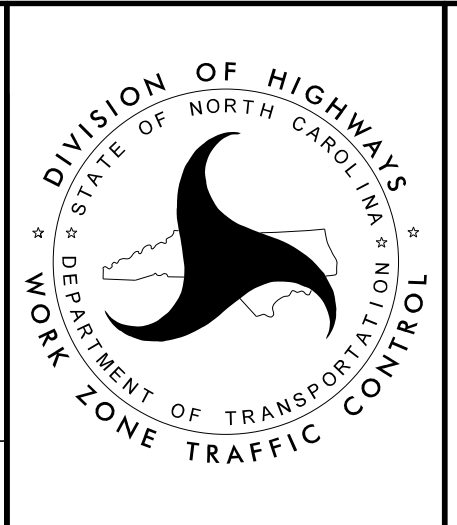
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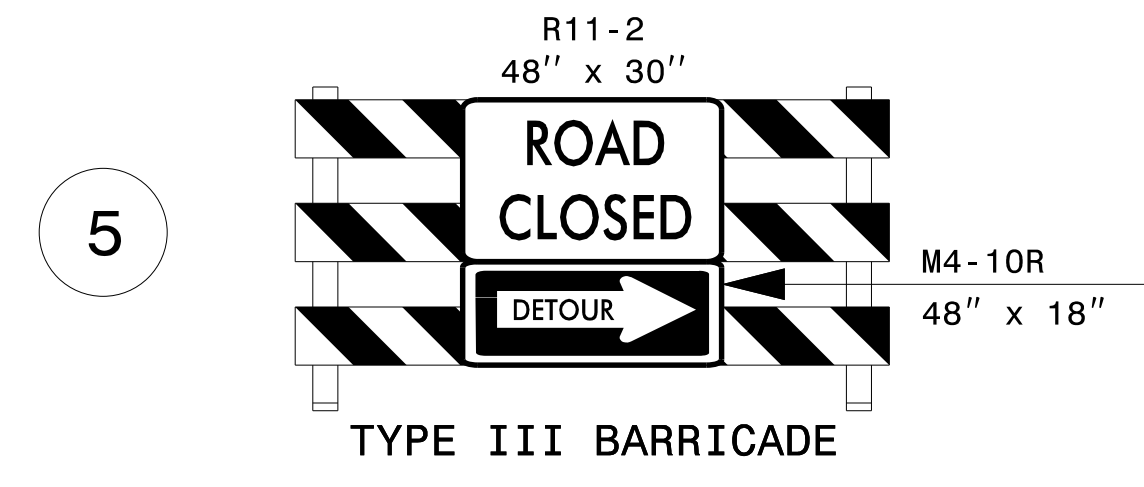
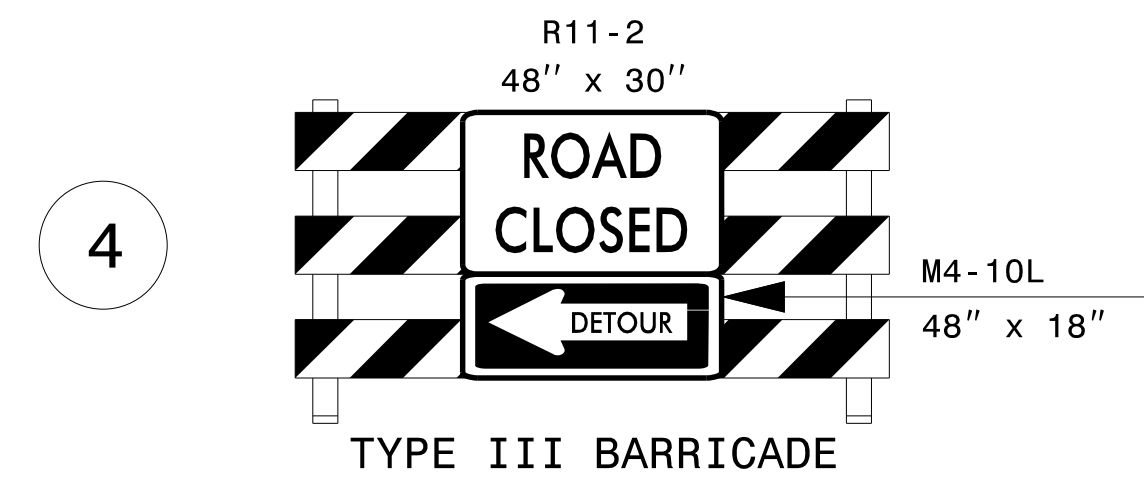
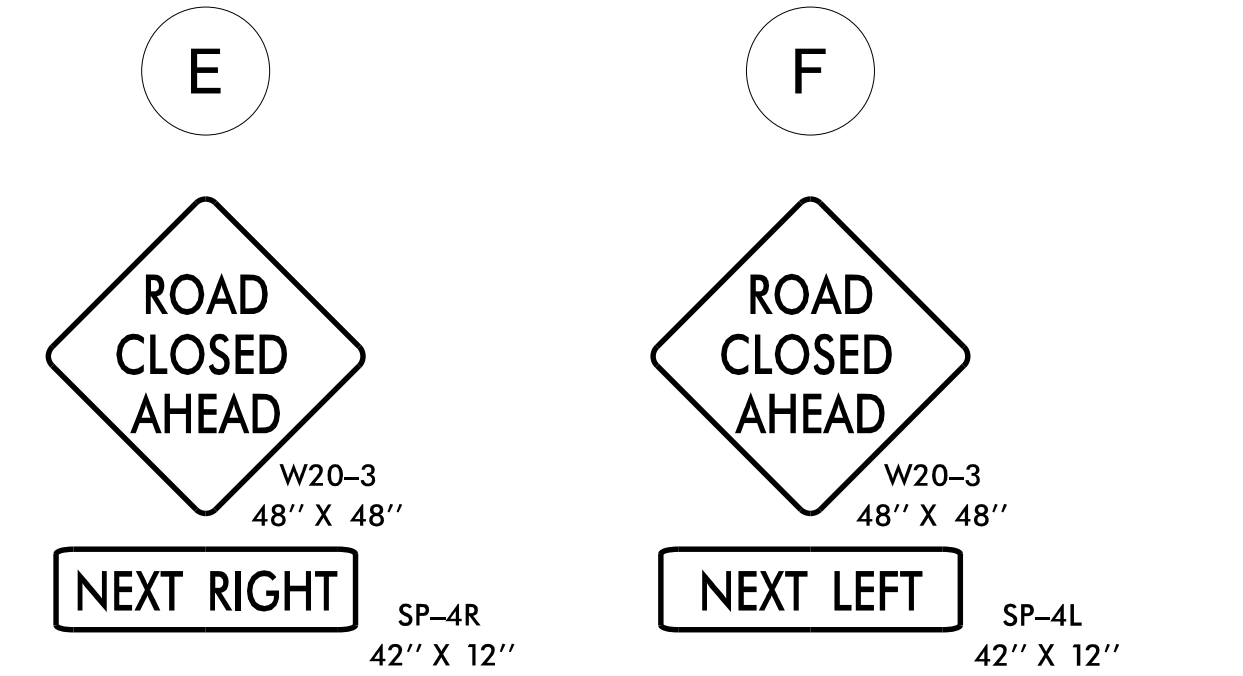
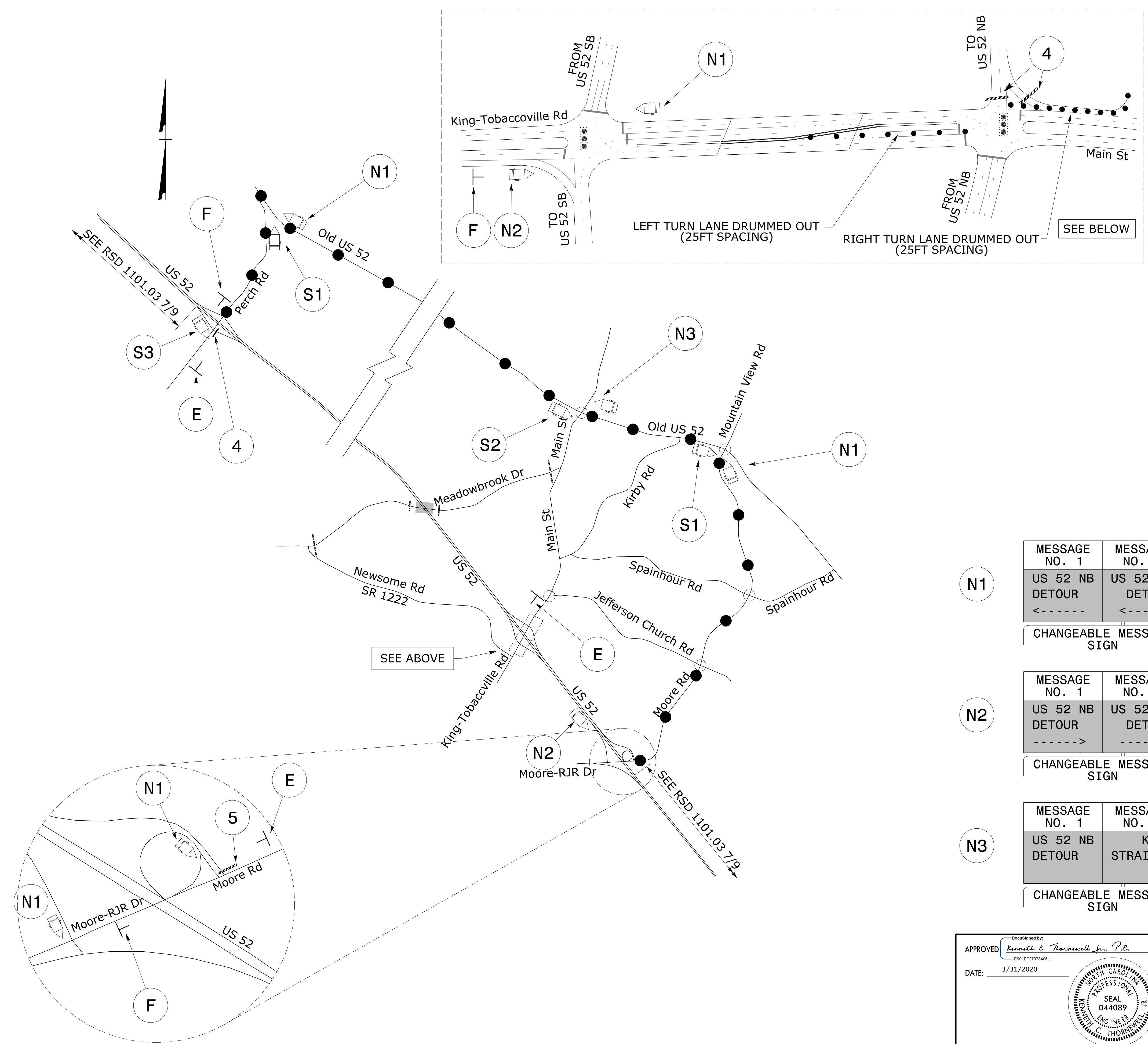
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 User: dertchardson

APPROVED: *Kenneth C. Thornewell, Jr., P.E.*  
 DATE: 3/31/2020  
 SEAL 044089  
 ENGINEER  
 C. THORNEWELL, JR.  
 PROFESSIONAL ENGINEER  
 NORTH CAROLINA



**MEADOWBROOK DR  
 ROAD CLOSURE  
 DETAIL**

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



N1

MESSAGE NO. 1	MESSAGE NO. 2
US 52 NB DETOUR <-----	US 52 NB DETOUR <-----

CHANGEABLE MESSAGE SIGN

S1

MESSAGE NO. 1	MESSAGE NO. 2
US 52 SB DETOUR ----->	US 52 SB DETOUR ----->

CHANGEABLE MESSAGE SIGN

N2

MESSAGE NO. 1	MESSAGE NO. 2
US 52 NB DETOUR ----->	US 52 NB DETOUR ----->

CHANGEABLE MESSAGE SIGN

S2

MESSAGE NO. 1	MESSAGE NO. 2
US 52 SB DETOUR	KEEP STRAIGHT

CHANGEABLE MESSAGE SIGN

N3

MESSAGE NO. 1	MESSAGE NO. 2
US 52 NB DETOUR	KEEP STRAIGHT

CHANGEABLE MESSAGE SIGN

S3

MESSAGE NO. 1	MESSAGE NO. 2
US 52 SB DETOUR <-----	US 52 SB DETOUR <-----

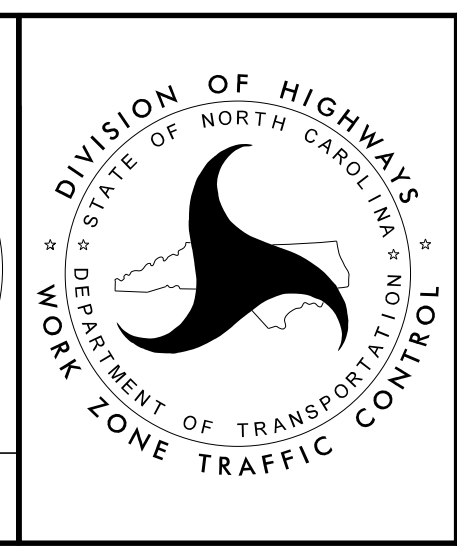
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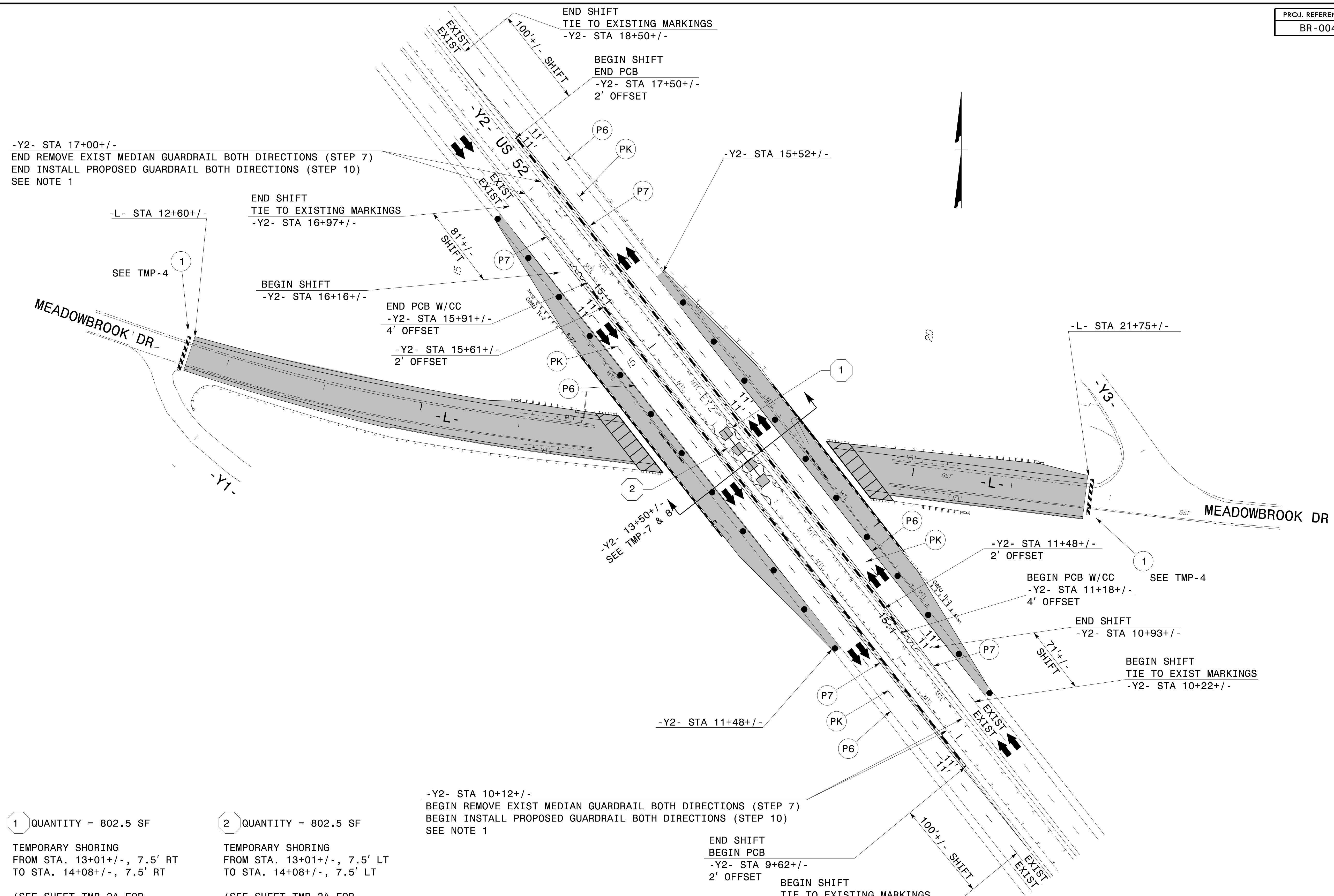
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 DATE: 3/31/2020

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 044089  
 ENGINEER  
 KENNETH C. THORNWELL, JR., P.E.

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**US 52  
DETOUR ROUTE**



1 QUANTITY = 802.5 SF  
 TEMPORARY SHORING  
 FROM STA. 13+01+/-, 7.5' RT  
 TO STA. 14+08+/-, 7.5' RT  
 (SEE SHEET TMP-2A FOR  
 TEMPORARY SHORING NOTES)

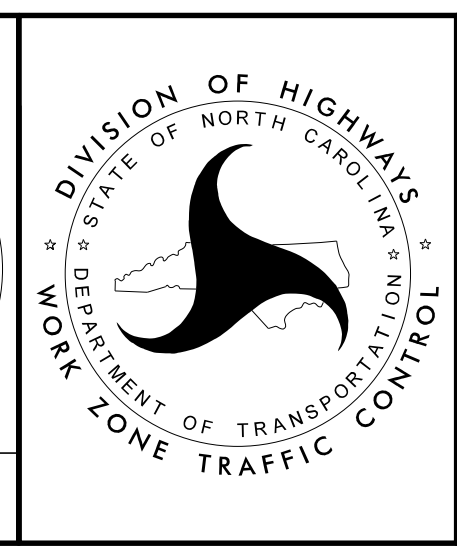
2 QUANTITY = 802.5 SF  
 TEMPORARY SHORING  
 FROM STA. 13+01+/-, 7.5' LT  
 TO STA. 14+08+/-, 7.5' LT  
 (SEE SHEET TMP-2A FOR  
 TEMPORARY SHORING NOTES)

NOTE 1  
 TRAILING PCB RUNOUT SHALL EXTEND AT LEAST 50' BEYOND LIMITS  
 OF EXIST MEDIAN GUARDRAIL AS INDICATED BY STATIONING ABOVE.

-Y2- STA 10+12+/-  
 BEGIN REMOVE EXIST MEDIAN GUARDRAIL BOTH DIRECTIONS (STEP 7)  
 BEGIN INSTALL PROPOSED GUARDRAIL BOTH DIRECTIONS (STEP 10)  
 SEE NOTE 1

END SHIFT  
 BEGIN PCB  
 -Y2- STA 9+62+/-  
 2' OFFSET  
 BEGIN SHIFT  
 TIE TO EXISTING MARKINGS  
 -Y2- STA 8+62+/-

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 DATE: 3/31/2020  
  
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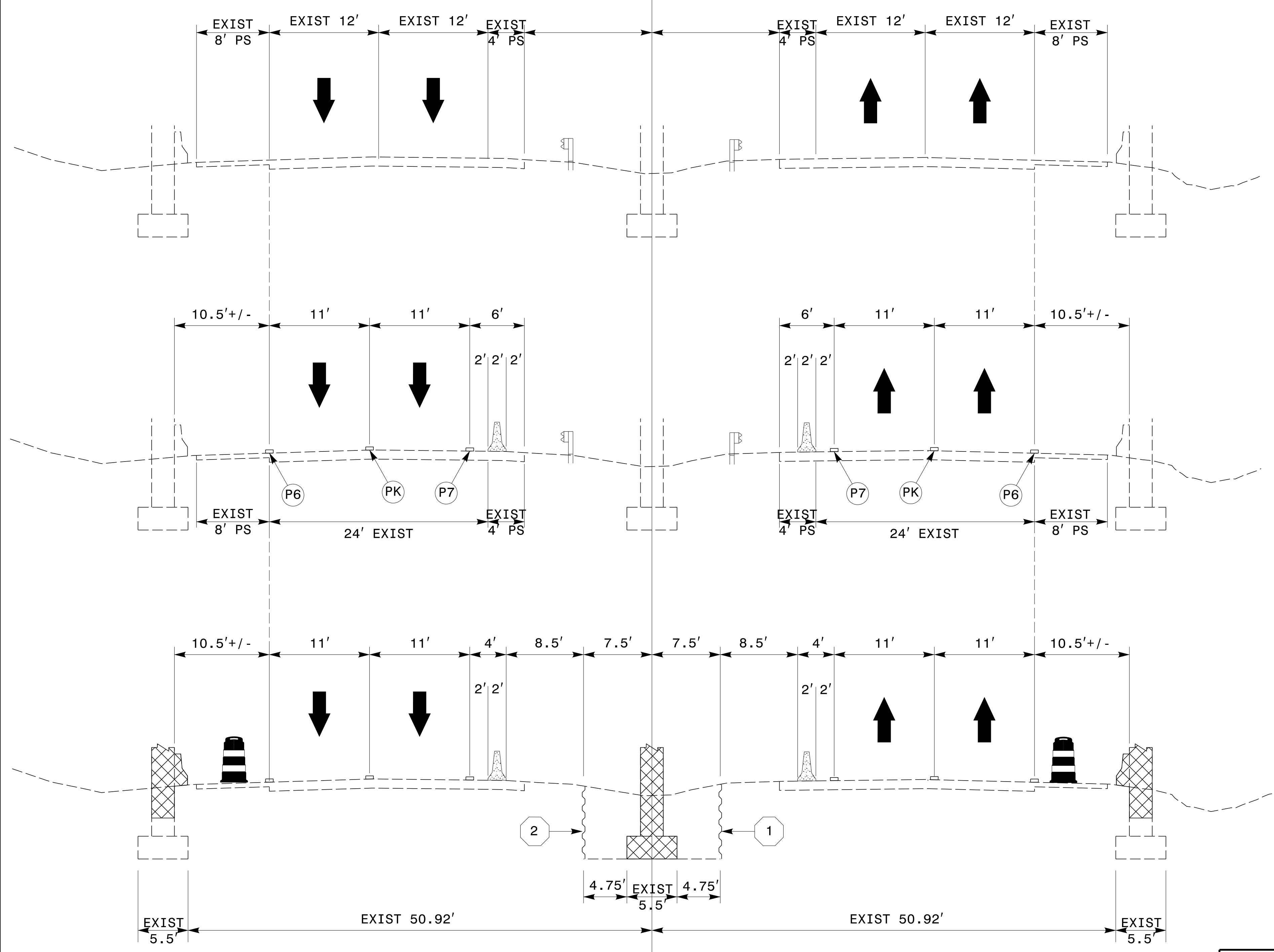
STEPS 5-9

2/27/2020  
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 User: dcharlson

-Y2-  
 C  
 13+50+/-

US 52 SB

US 52 NB



EXISTING

STEPS 5 & 6

STEPS 7 & 8

SEE TMP-2A FOR TEMPORARY SHORING NOTES  
 SEE TMP-6 FOR TEMPORARY SHORING PLAN VIEW

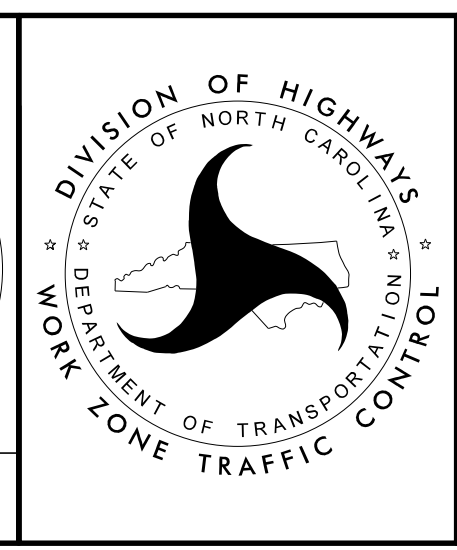
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 User: dbrichardson

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 DATE: 3/31/2020

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 ENGINEER  
 KENNETH C. THORNEVELL JR.

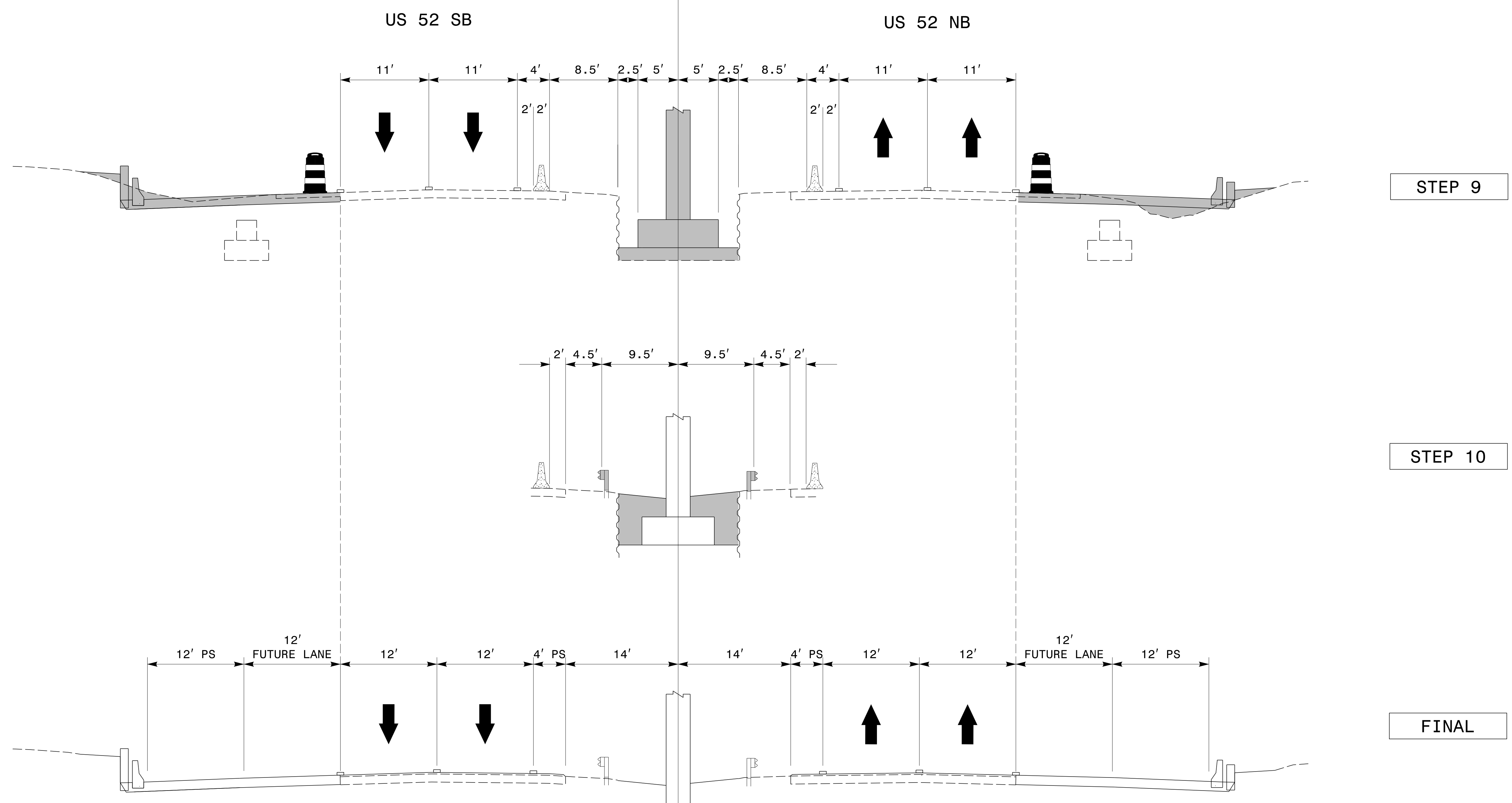
**DOCUMENT NOT CONSIDERED FINAL  
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US 52  
 SECTION VIEWS

DEPARTMENT OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 WORK ZONE TRAFFIC CONTROL

-Y2-  
 Ⓢ  
 13+50+/-



NOTE: SEE PM PLANS FOR FINAL PAVEMENT MARKINGS AND MARKERS

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1E991EF27373405...

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 044089  
 ENGINEER  
 KENNETH C. THOMSEN JR.

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US 52  
 SECTION VIEWS

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