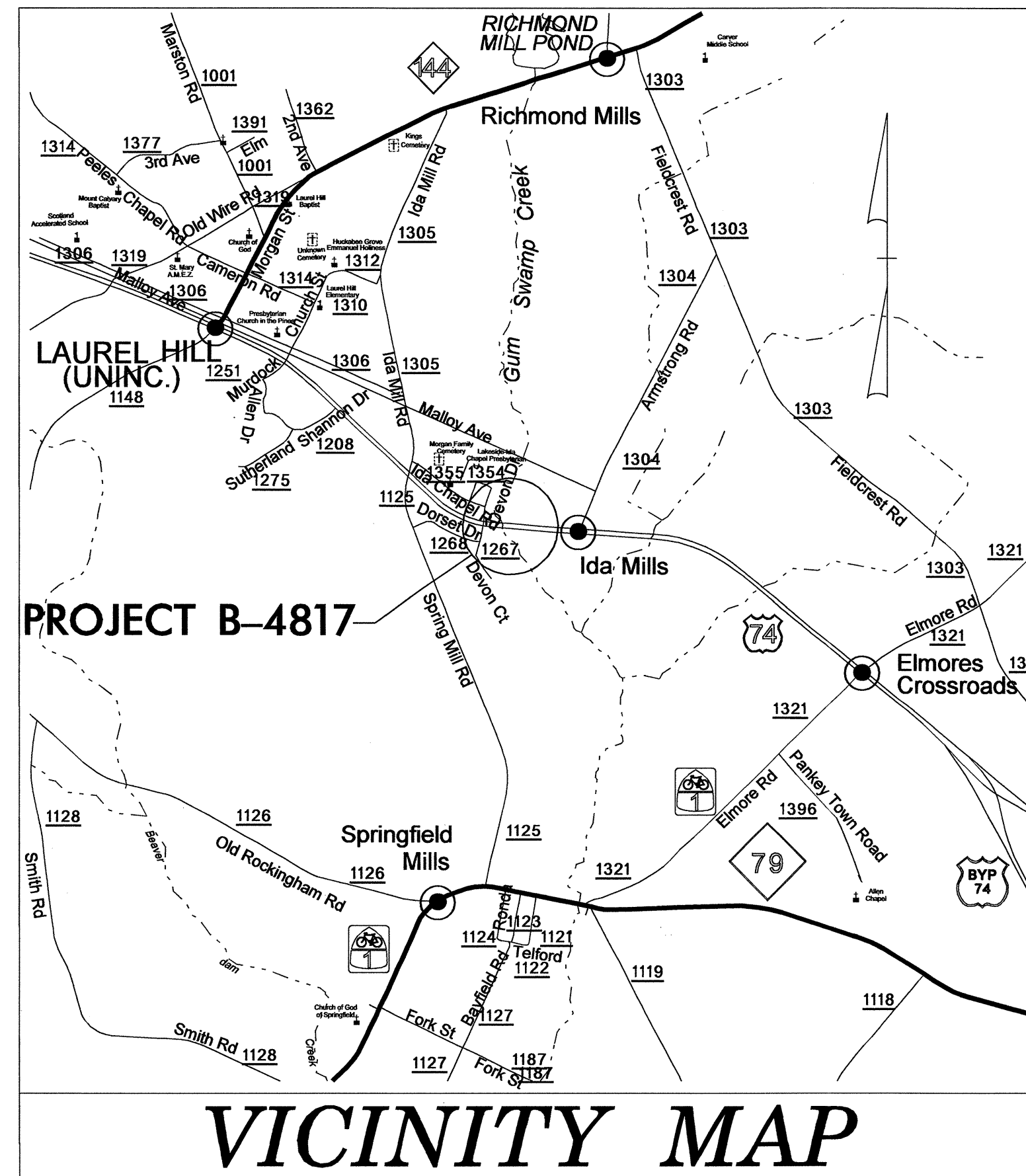
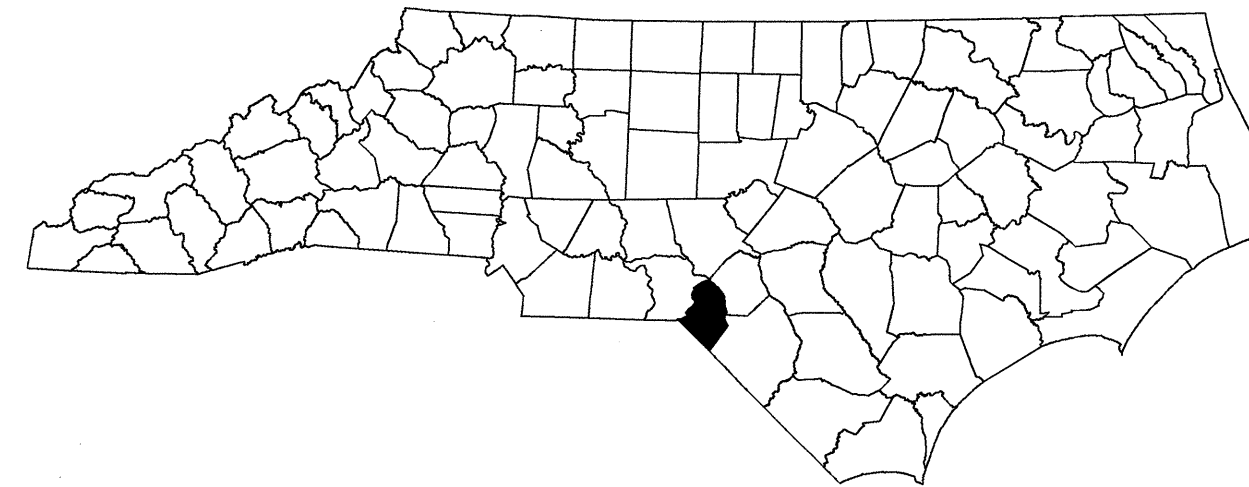


STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

SCOTLAND COUNTY



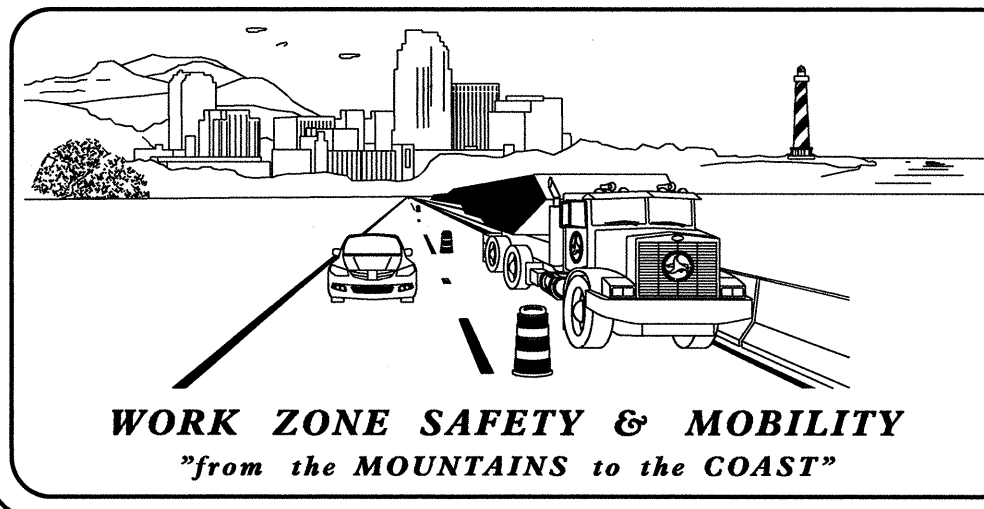
SHEET NO.	TITLE
TMP-1	TITLE SHEET, AND INDEX OF SHEETS
TMP-1A	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, LEGEND, AND TEMPORARY PAVEMENT MARKING
TMP-1B	TRANSPORTATION OPERATIONS PLAN: (MANAGEMENT STRATEGIES, LOCAL NOTES, AND GENERAL NOTES)
TMP-1C	TRANSPORTATION OPERATIONS PLAN: (GENERAL NOTES)
TMP-1D	PHASING
TMP-2A	PORTABLE CONCRETE BARRIER AT TEMPORARY SHORING LOCATIONS
TMP-2B	TEMPORARY SHORING DATA
TMP-3	PHASE I DETAIL
TMP-4	PHASE I DETAIL
TMP-5	PHASE II DETAIL
TMP-6	PHASE II DETAIL
TMP-7	PHASE III DETAIL
TMP-8	PHASE III DETAIL

SHEET NO.
TMP-1

B-4817

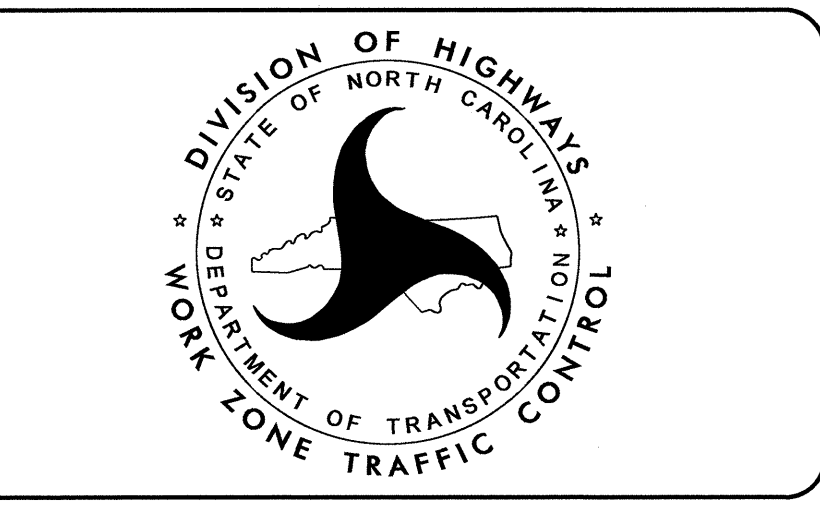
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N.C.D.O.T. WORK ZONE TRAFFIC CONTROL
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S. HASSAN TRAFFIC CONTROL DESIGN ENGINEER



APPROVED: *Ben Schoenbauer*
DATE: *September 4, 2012*

SEAL

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 2012 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 PANELS
1130.01	DRUMS
1135.01	CONES
1145.01	BARRICADES
1150.01	FLAGGING DEVICES
1160.01	TEMPORARY CRASH CUSHION
1165.01	TRUCK MOUNTED IMPACT ATTENUATOR
1170.01	PORTABLE CONCRETE BARRIER
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - 2 LANE & MULTILANE ROADWAYS
1261.01	GUARDRAIL AND BARRIER DELINEATOR SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATOR TYPES
1262.01	GUARDRAIL END DELINEATION
1264.01	OBJECT MARKERS
1264.02	PLACEMENT OF OBJECT MARKERS

LEGEND

GENERAL

- DIRECTION OF TRAFFIC FLOW
- DIRECTION OF PEDESTRIAN TRAFFIC FLOW
- EXIST. PVMT.
- NORTH ARROW
- PROPOSED PVMT.

- WORK AREA
- REMOVAL
- WEDGING
- USER DEFINED (IF NEEDED)

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

SIGNALS

- EXISTING
- PROPOSED
- TEMPORARY

PAVEMENT MARKINGS

- EXISTING LINES
- TEMPORARY LINES

PAVEMENT MARKERS

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

PAVEMENT MARKING SYMBOLS

- PAVEMENT MARKING SYMBOLS

TEMPORARY PAVEMENT MARKING	
SYMBOL	DESCRIPTION
	TEMPORARY PAVEMENT MARKINGS PAINT (4")
PA	WHITE EDGELINE (2X)
PB	YELLOW EDGELINE (2X)
PC	WHITE LANE SKIP LINE (2X)
NOTE: FOR EACH PAINT PAVEMENT MARKING ITEM, 1X IMPLIES A SINGLE APPLICATION, 2X IMPLIES TWO APPLICATIONS, AND 3X IMPLIES THREE APPLICATIONS.	

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APPROVED: <i>Ben Schenkman</i> DATE: 9/4/12			ROADWAY STANDARD DRAWINGS & LEGEND
SEAL			

MANAGEMENT STRATEGIES

THE FOLLOWING LISTED STRATEGIES DERIVE FROM DETAILED DESIGN LEVEL ASSESSMENTS OF THE WORK ZONE IMPACTS CONDUCTED DURING THE DEVELOPMENTAL STAGES OF THIS TRANSPORTATION MANAGEMENT PLAN (TMP).

RECOMMENDED MANAGEMENT STRATEGIES RELATIVE TO THIS TMP ARE AS FOLLOWS:

- FOUR-LANE TWO-WAY TRAFFIC PATTERN
TRAFFIC TO BE MAINTAINED WITH EXISTING PATTERN ON BOTH DIRECTIONS OF US 74 WHEN POSSIBLE.
- ONE-LANE ONE-WAY TRAFFIC PATTERN
TRAFFIC TO BE MAINTAINED INDEPENDENTLY ON EITHER DIRECTION OF US 74 UTILIZING LANE CLOSURES AS NECESSARY.
- ON-SITE DETOUR
TRAFFIC ON WESTBOUND US 74 SHALL BE MAINTAINED ON TEMPORARY ALIGNMENT UTILIZING TEMPORARY PAVEMENT, TEMPORARY GUARDRAIL, TEMPORARY BRIDGE AND TEMPORARY SHORING.

LOCAL NOTES

USE LEFT LANE CLOSURE ON WESTBOUND US 74 ONLY AS SHOWN ON TMP-4 AND TMP-8. IF ROAD WORK REQUIRES RIGHT LANE CLOSURE, USE RSD 1101.02, SHEET 6 OF 15. COVER ALL LANE CLOSURE SIGNAGE WHEN LANE CLOSURE IS NOT IN OPERATION.

GENERAL NOTES

CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSIONS IN THE DETAIL DRAWINGS, STANDARD DETAILS, AND ROADWAY DETAILS ARE NOT ATTAINABLE TO MEET FIELD CONDITIONS OR RESULT IN DUPLICATE OR UNDESIRED OVERLAPPING OF DEVICES. MODIFICATION MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING, OR REMOVAL OF DEVICES AS DIRECTED BY THE ENGINEER.

THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT EXCEPT WHEN OTHERWISE NOTED IN THE PLAN OR DIRECTED BY THE ENGINEER.

TIME RESTRICTIONS

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

ROAD NAME

US 74 EASTBOUND
US 74 WESTBOUND (DETOUR CROSSOVER ONLY)

HOLIDAY

1. FOR ANY UNEXPECTED OCCURRENCE THAT CREATES UNUSUALLY HIGH TRAFFIC VOLUMES, AS DIRECTED BY THE ENGINEER.
2. FOR NEW YEAR'S, BETWEEN THE HOURS OF 7:00 A.M. DECEMBER 31st TO 10:00 P.M. JANUARY 2ND. IF NEW YEAR'S DAY IS ON A FRIDAY, SATURDAY, SUNDAY, OR MONDAY THEN UNTIL 10:00 P.M. THE FOLLOWING TUESDAY.
3. FOR EASTER, BETWEEN THE HOURS OF 7:00 A.M. THURSDAY AND 10:00 P.M. MONDAY.
4. FOR MEMORIAL DAY, BETWEEN THE HOURS OF 7:00 A.M. FRIDAY TO 10:00 P.M. TUESDAY.
5. FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 7:00 A.M. THE DAY BEFORE INDEPENDENCE DAY AND 10:00 P.M. THE DAY AFTER INDEPENDENCE DAY.

IF INDEPENDENCE DAY IS ON A FRIDAY, SATURDAY, SUNDAY OR MONDAY THEN BETWEEN THE HOURS OF 10:00 P.M. THE THURSDAY BEFORE INDEPENDENCE DAY AND 10:00 P.M. THE TUESDAY AFTER INDEPENDENCE DAY.
6. FOR LABOR DAY, BETWEEN THE HOURS OF 7:00 A.M. FRIDAY AND 10:00 P.M. TUESDAY.
7. FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 7:00 A.M. TUESDAY TO 10:00 P.M. MONDAY.
8. FOR CHRISTMAS, BETWEEN THE HOURS OF 7:00 A.M. THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 10:00 P.M. THE FOLLOWING TUESDAY AFTER THE WEEK OF CHRISTMAS.

B) DO NOT STOP TRAFFIC AS FOLLOWS:

ROAD NAME	DAY AND TIME RESTRICTIONS	DURATION AND OPERATION
US 74	MONDAY-SUNDAY 7:00 A.M. - 10:00 P.M.	TRAFFIC SHIFTS, 15 MINUTES

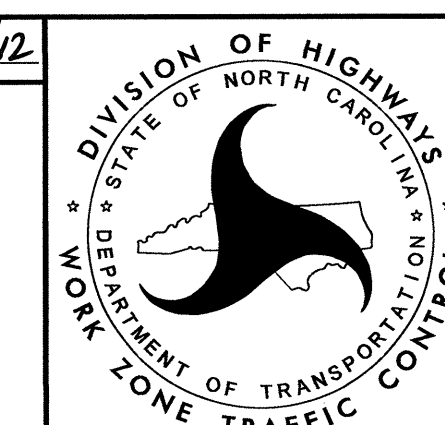
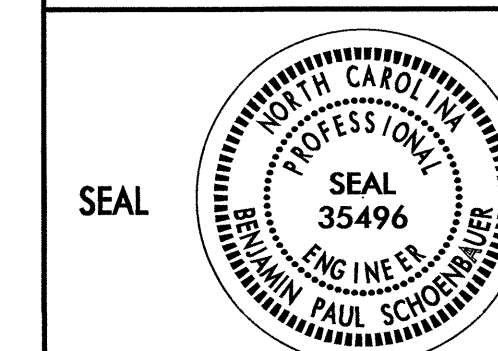
C) DO NOT CONDUCT ANY HAULING OPERATIONS AGAINST THE FLOW OF TRAFFIC OF AN OPEN TRAVELWAY UNLESS THE HAULING OPERATION IS PROTECTED BY BARRIER OR GUARDRAIL OR AS DIRECTED BY THE ENGINEER.

LANE AND SHOULDER CLOSURE REQUIREMENTS

- D) 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.
- E) 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.
- F) 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.
- G) 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.
- H) 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.
- I) DO NOT INSTALL MORE THAN ONE LANE CLOSURE IN ANY ONE DIRECTION ON US 74.

APPROVED: *Ben Schmitt* DATE: 9/4/12



MANAGEMENT STRATEGIES AND GENERAL NOTES

GENERAL NOTES

PAVEMENT EDGE DROP OFF REQUIREMENTS

- J) 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.

- K) 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) IN ADVANCE AND A MINIMUM OF EVERY HALF MILE THROUGHOUT THE UNEVEN AREA.

TRAFFIC PATTERN ALTERATIONS

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

SIGNING

- M) 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.

- N) PROVIDE SIGNING AND DEVICES REQUIRED TO CLOSE THE ROAD ACCORDING TO THE ROADWAY STANDARD DRAWINGS AND TRANSPORTATION MANAGEMENT PLANS.

PROVIDE SIGNING REQUIRED FOR THE OFF-SITE DETOUR ROUTE AS SHOWN IN THE TRANSPORTATION MANAGEMENT PLANS.

- O) 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.

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

TRAFFIC CONTROL DEVICES

- Q) 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 WHEN LANE CLOSURES ARE NOT IN EFFECT. WHEN SKINNY DRUMS ARE ALLOWED REFER TO SECTION 1180 OF STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES OR AS SHOWN IN THE PLANS.

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

- S) PLACE ADDITIONAL SETS OF THREE CHANNELIZING DRUMS PERPENDICULAR TO THE EDGE OF TRAVELWAY ON 500 FT CENTERS WHEN UNOPENED LANES ARE CLOSED TO TRAFFIC.

- T) TIE TEMPORARY PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.

- U) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS BY THE END OF EACH DAY'S OPERATION.

TRAFFIC BARRIER

- T) INSTALL TEMPORARY BARRIER ACCORDING TO THE TRAFFIC CONTROL PLANS AMAXIMUM 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 TRAFFIC CONTROL 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 TRAFFIC CONTROL 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 IMPACT ATTENUATOR (MAXIMUM 72 HOURS) OR A TEMPORARY CRASH CUSHION.


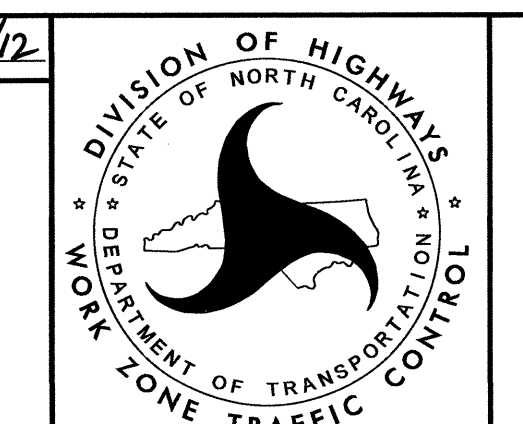
PROTECT THE APPROACH END OF MOVABLE/PORTABLE CONCRETE BARRIER FROM ONCOMING TRAFFIC AT ALL TIMES BY A TEMPORARY CRASH CUSHION UNLESS THE APPROACH END OF MOVABLE/PORTABLE CONCRETE BARRIER IS OFFSET FROM ONCOMING TRAFFIC AS FOLLOWS OR AS SHOWN IN THE PLANS:

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

MISCELLANEOUS

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

- W) 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) 500 FT AND 1000 FT AND RESPECTIVELY IN ADVANCE OF THE UNEVEN AREAS. USE DRUMS TO DELINEATE THE EDGE OF ROADWAY ALONG UNPAVED AREAS.

APPROVED: <i>Paul Schorbusch</i> DATE: 9/4/12 		<h1 style="margin: 0;">GENERAL NOTES</h1>
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PHASING

PHASE I

- STEP 1) USING ROADWAY STANDARD DRAWING 1101.01, SHEET 2 OF 3, INSTALL ADVANCE WORK ZONE WARNING SIGNS. COVER SIGNS.
- STEP 2) USING TMP-3; AND ROADWAY STANDARD DRAWING (RSD) 1101.04, SHEET 1 OF 1; CLOSE -Y1- AND -Y2- ACCESS POINTS FROM -L- (US 74). CLOSE MEDIAN CROSSOVER OF US 74 BETWEEN -L- STA. 12+00 +/- TO -L- STA. 18+10 +/- . USING RSD 1101.02, SHEET 3 OF 15, AS NECESSARY, REMOVE PAVEMENT FROM EXISTING US 74 CROSSOVER. (SEE ROADWAY PLANS).
- STEP 3) USING TMP-3; TMP-4, AND RSD 1101.02, SHEET 3 OF 15; CLOSE LEFT LANE OF -L1- (US 74 WESTBOUND) AND PLACE TEMPORARY PORTABLE CONCRETE BARRIER (PCB).
- STEP 4) AWAY FROM TRAFFIC, COMPLETE THE FOLLOWING:
- A) PLACE TEMPORARY SHORING (SEE DETAILS ON TMP-2B AND TMP-3)
 - B) CONSTRUCT -LDET- TEMPORARY STRUCTURE, TEMPORARY PAVEMENT, AND TEMPORARY GUARDRAIL; AND TIE INTO -L1- UP TO AND INCLUDING FINAL LAYER OF SURFACE COURSE (SEE ROADWAY PLANS).
 - C) PLACE TEMPORARY PAVEMENT MARKINGS ALONG -LDET- AS SHOWN ON TMP-5.

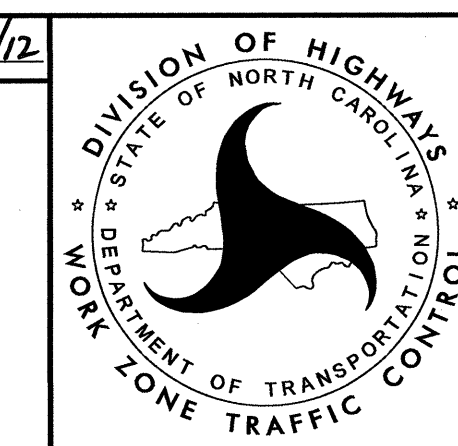
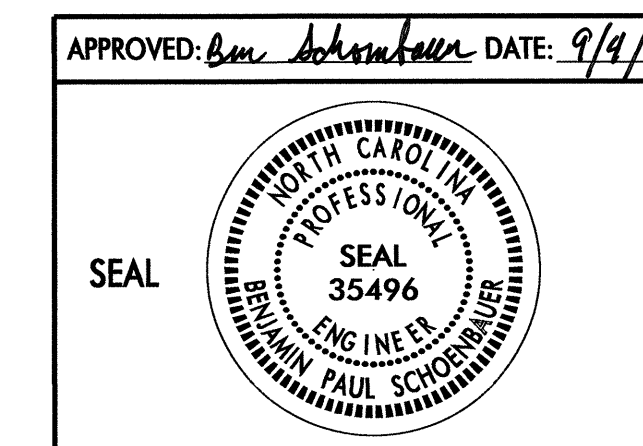
PHASE II

- STEP 1) USING TMP-6, PLACE WORK ZONE SPEED LIMIT SIGNAGE IN ACCORDANCE TO SPEED ZONE ORDINANCE.
- STEP 2) WORKING IN A CONTINUOUS MANNER, COMPLETE THE FOLLOWING:
- A) MAINTAINING LEFT LANE CLOSURE OF -L1-, REPLACE PCB WITH DRUMS.
 - B) WEDGE LEFT LANE OF -L1- IN -LDET- PATTERN ON BOTH ENDS OF THE PROJECT (SEE ROADWAY PLANS).
 - C) USING TMP-5; TMP-6; RSD 1101.02, SHEETS 3 AND 6 OF 15; AND RSD 1101.03, SHEET 3 OF 9; UNCOVER W23-2 AND WORK ZONE SPEED LIMIT SIGNAGE, SWITCH TRAFFIC ONTO LEFT LANE OF -L1- PRIOR TO -L- STA. 25+00, AND PLACE TRAFFIC ONTO -LDET- WHILE UTILIZING RIGHT LANE CLOSURE OVER ENTIRE LENGTH OF -LDET-.
 - D) CLOSE -L1- TO TRAFFIC.
 - E) BEHIND LANE CLOSURE, WEDGE RIGHT LANE OF -L1- IN -LDET- ON BOTH ENDS OF THE PROJECT (SEE ROADWAY PLANS)
 - F) PLACE TEMPORARY PAVEMENT MARKINGS AS SHOWN ON TMP-5.
 - G) OPEN BOTH LANES OF -LDET- TO TRAFFIC.
- STEP 3) AWAY FROM TRAFFIC, COMPLETE THE FOLLOWING (SEE ROADWAY AND STRUCTURE PLANS):
- REMOVE EXISTING BRIDGE NO. 23 AND APPROACHES ON -L1-. CONSTRUCT PROPOSED BRIDGE NO. 23 AND APPROACHES UP TO BUT NOT INCLUDING FINAL LAYER OF SURFACE COURSE. PLACE TEMPORARY PAVEMENT MARKINGS AS SHOWN ON FINAL PAVEMENT MARKING PLANS.
 - REMOVE PAVEMENT AND CONSTRUCT ROAD TERMINUS OF -Y1- AND -Y2-. CONSTRUCT PROPOSED SHOULDERS AT REMOVED ACCESS POINTS ON -L1-.
 - USING RSD 1101.02, SHEET 3 OF 15, AS NECESSARY; CONSTRUCT PROPOSED ROADWAY, SHOULDERS, AND GUARDRAIL OF -L1- FROM STA. 14+25 +/- TO STA. 22+35 +/- UP TO BUT NOT INCLUDING FINAL LAYER OF SURFACE COURSE. PLACE TEMPORARY PAVEMENT MARKINGS ALONG SHOULDER AS SHOWN ON FINAL PAVEMENT MARKING PLANS.

PHASE III

- STEP 1) WORKING IN A CONTINUOUS MANNER, COMPLETE THE FOLLOWING:
- A) USING RSD 1101.02, SHEET 3 OF 15; CLOSE RIGHT LANE OVER ENTIRE LENGTH OF -LDET-. BEHIND LANE CLOSURE, MILL AND LEVEL -L1- UP TO BUT NOT INCLUDING FINAL LAYER OF SURFACE COURSE (SEE ROADWAY PLANS).
 - B) USING TMP-7; TMP-8; AND RSD 1101.02, SHEET 3 OF 15; CLOSE -LDET- TO TRAFFIC AND PLACE TRAFFIC ON RIGHT LANE OF -L1-. PLACE TEMPORARY PCB AS SHOWN IN PLANS.
 - C) UNCOVER W23-2 AND REMOVE ALL WORK ZONE SPEED LIMIT SIGNAGE.
- STEP 2) AWAY FROM TRAFFIC, REMOVE -LDET- AND TEMPORARY STRUCTURE. USING RSD 1101.02, SHEET 3 OF 15, AS NECESSARY, REMOVE TIE-INS TO -LDET-, AND INSTALL PROPOSED GUARDRAIL. REMOVE PCB AFTER INSTALLATION OF GUARDRAIL.
- STEP 3) USING RSD 1101.02, SHEETS 3 AND 6 OF 15, PLACE FINAL LAYER OF SURFACE COURSE AND FINAL PAVEMENT MARKINGS.
- STEP 4) OPEN -L1- (US 74 WESTBOUND) TO PROPOSED TWO-LANE, ONE-WAY TRAFFIC PATTERN.
- STEP 5) REMOVE ALL WORK ZONE TRAFFIC CONTROL DEVICES.

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PHASING

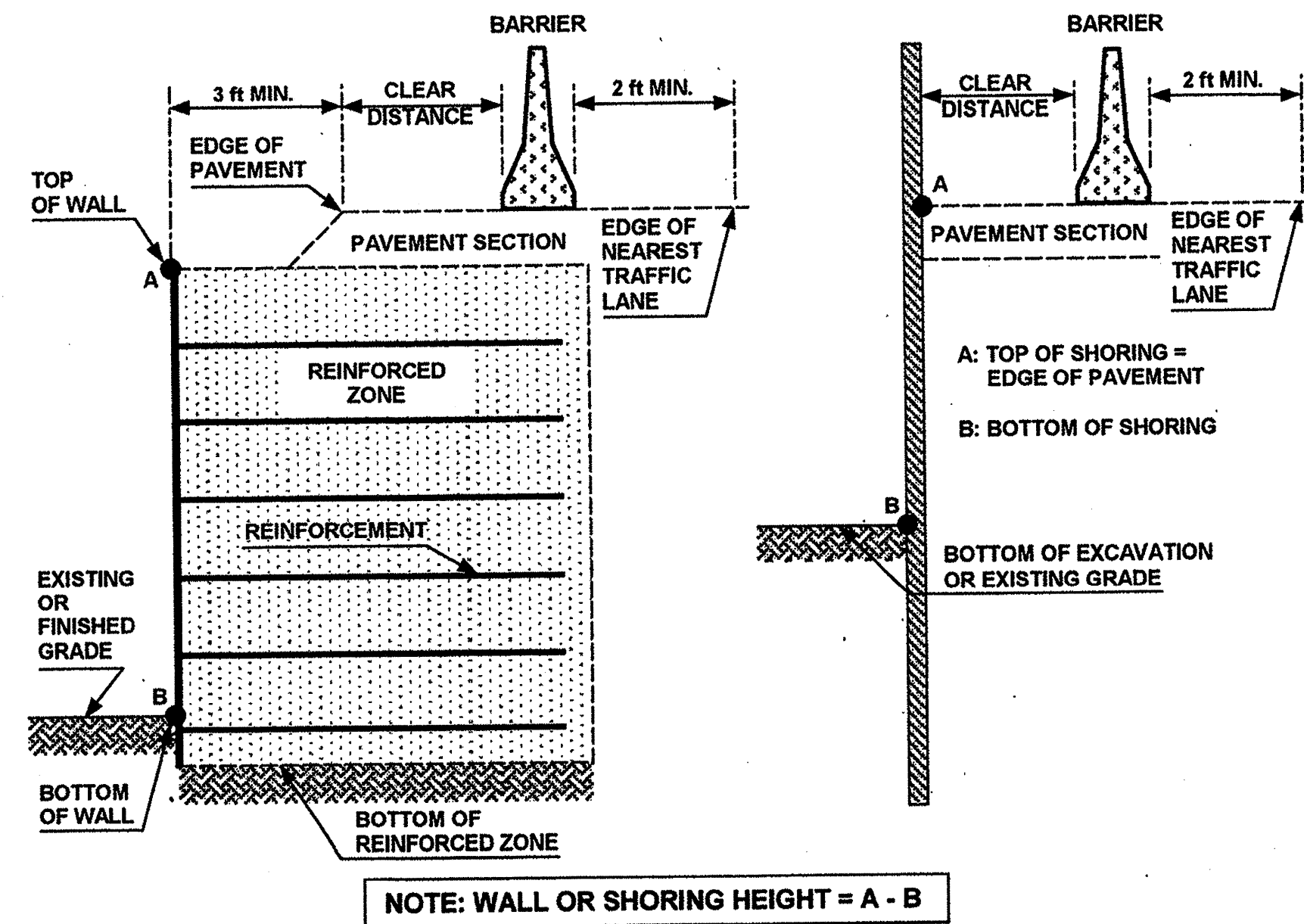


FIGURE A

NOTES

- 1- REFER TO THE TRAFFIC CONTROL PLANS FOR SHORING LOCATIONS AND SOIL PARAMETERS.
- 2- REFER TO THE "TEMPORARY SHORING" PROJECT SPECIAL PROVISION FOR MORE INFORMATION ABOUT TEMPORARY SHORING, MEASUREMENT AND PAYMENT.
- 3- PROVIDE PORTABLE CONCRETE BARRIER TO PROTECT TEMPORARY SHORING IF SHORING IS LOCATED WITHIN THE CLEAR ZONE AS DEFINED IN 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 PCB, ANCHORED PCB OR AN OREGON BARRIER FROM THE TABLE SHOWN IN FIGURE B. FOR TRAFFIC LANES AND PORTABLE CONCRETE BARRIER LOCATED ABOVE AND BEHIND TEMPORARY SHORING, THE FOLLOWING ARE DEFINED AS:

CLEAR DISTANCE - HORIZONTAL DISTANCE FROM THE BACK FACE OF THE BARRIER TO THE EDGE OF PAVEMENT FOR TEMPORARY MSE WALL OR TO THE FACE OF NON-ANCHORED TEMPORARY SHORING AS SHOWN IN FIGURE A.

OFFSET - HORIZONTAL DISTANCE FROM THE FRONT FACE OF THE BARRIER TO CENTERLINE OF THE FURTHEST TRAFFIC LANE AS SHOWN IN FIGURE B FOR 3 TRAFFIC LANES.
- 5- AT THE CONTRACTOR'S OPTION OR IF THE MINIMUM REQUIRED CLEAR DISTANCE IS NOT AVAILABLE, SET AN UNANCHORED PCB AGAINST THE TRAFFIC SIDE OF THE SHORING AND DESIGN SHORING FOR TRAFFIC IMPACT OR USE THE "SURCHARGE CASE WITH TRAFFIC IMPACT" FOR THE STANDARD TEMPORARY SHORING. DO NOT PLACE BARRIER DIRECTLY ON ANY SURFACE OTHER THAN ASPHALT OR CONCRETE. (CONTACT NCDOT PAVEMENT MANAGEMENT UNIT FOR APPLICABLE PAVEMENT DESIGN).
- 6- USE NCDOT PORTABLE CONCRETE BARRIER (PCB) IN ACCORDANCE WITH ROADWAY STANDARD DRAWING NO. 1170.01 AND SECTION 1170 OF THE STANDARD SPECIFICATIONS.
- 7- USE OREGON TALL F-SHAPE CONCRETE BARRIER IN ACCORDANCE WITH DETAIL DRAWING AND SPECIAL PROVISION OBTAINED FROM: WORK ZONE TRAFFIC CONTROL UNIT WEB PAGE.
- 8- UNLESS NOTED OTHERWISE ON THE PLANS, SET PORTABLE CONCRETE BARRIER WITH A MINIMUM DISTANCE OF 2 FT BETWEEN THE FRONT FACE OF THE BARRIER AND THE EDGE OF THE NEAREST TRAFFIC LANE AS SHOWN IN FIGURE A.
- 9- FOR PORTABLE CONCRETE BARRIER ABOVE AND BEHIND TEMPORARY MSE 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' 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 or Oregon Barrier	Asphalt	All Offsets	24 for All Design Speeds					
Anchored PCB or Oregon Barrier	Concrete (including bridge approach slabs)	All Offsets	12 for All Design Speeds					

* See Figure Below

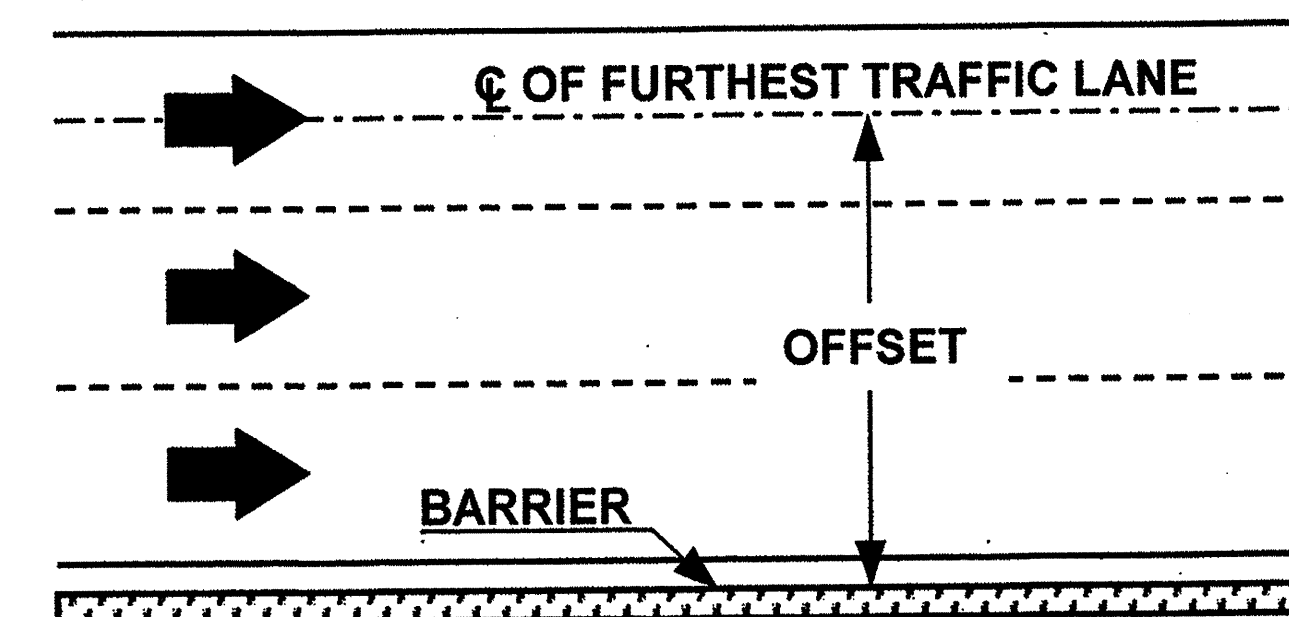
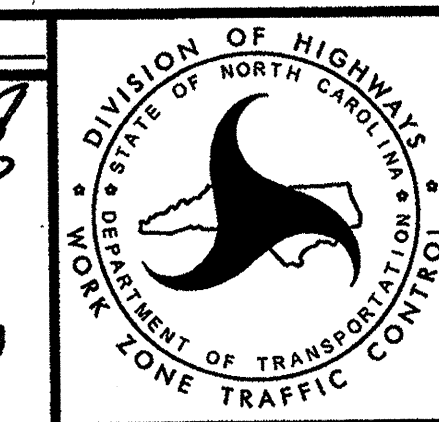


FIGURE B

APPROVED: *[Signature]* DATE: *[Date]*
SEAL 028380
SEP 10 2010



PORTABLE CONCRETE BARRIER
AT
TEMPORARY SHORING LOCATIONS

Temporary Shoring No. 1

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

DESIGN TEMPORARY SHORING FROM STATION 17+58 TO STATION 17+78, OFFSET RANGE 15.5 FT. TO 18.5 FT. LEFT OF -L- FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

UNIT WEIGHT (γ) = 120 LB/CF
 FRICTION ANGLE (ϕ) = 30 DEGREES
 COHESION (c) = 0 LB/SF
 GROUNDWATER ELEVATION = 196 FT

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

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF THE TEMPORARY SHORING FROM STATION 17+58 TO STATION 17+78, OFFSET RANGE 15.5 FT. TO 18.5 FT. LEFT OF -L-. THE INFORMATION PROVIDED FOR DESIGN WAS ASSUMED AND MAY NOT BE APPLICABLE TO THE ACTUAL SITE CONDITIONS ENCOUNTERED DURING CONSTRUCTION.

DO NOT USE A TEMPORARY WALL FOR THE TEMPORARY SHORING FROM STATION 17+58 TO STATION 17+78, OFFSET RANGE 15.5 FT. TO 18.5 FT. LEFT OF -L-.

Temporary Shoring No. 2

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

DESIGN TEMPORARY SHORING FROM STATION 17+58 TO STATION 17+78, OFFSET RANGE 16 FT. TO 18 FT. RT OF -L- FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

UNIT WEIGHT (γ) = 120 LB/CF
 FRICTION ANGLE (ϕ) = 30 DEGREES
 COHESION (c) = 0 LB/SF
 GROUNDWATER ELEVATION = 196 FT

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

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF THE TEMPORARY SHORING FROM STATION 17+58 TO STATION 17+78, OFFSET RANGE 16 FT. TO 18 FT. RT OF -L-. THE INFORMATION PROVIDED FOR DESIGN WAS ASSUMED AND MAY NOT BE APPLICABLE TO THE ACTUAL SITE CONDITIONS ENCOUNTERED DURING CONSTRUCTION.

DO NOT USE A TEMPORARY WALL FOR THE TEMPORARY SHORING FROM STATION 17+58 TO STATION 17+78, OFFSET RANGE 16 FT. TO 18 FT. RT OF -L-.

Temporary Shoring No. 3

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

DESIGN TEMPORARY SHORING FROM STATION 19+35 TO STATION 19+55, OFFSET RANGE 16 FT. TO 19 FT. LT OF -L- FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

UNIT WEIGHT (γ) = 120 LB/CF
 FRICTION ANGLE (ϕ) = 30 DEGREES
 COHESION (c) = 0 LB/SF
 GROUNDWATER ELEVATION = 196 FT

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

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF THE TEMPORARY SHORING FROM 19+35 TO STATION 19+55, OFFSET RANGE 16 FT. TO 19 FT. LT OF -L-. THE INFORMATION PROVIDED FOR DESIGN WAS ASSUMED AND MAY NOT BE APPLICABLE TO THE ACTUAL SITE CONDITIONS ENCOUNTERED DURING CONSTRUCTION.

DO NOT USE A TEMPORARY WALL FOR THE TEMPORARY SHORING FROM STATION 19+35 TO STATION 19+55, OFFSET RANGE 16 FT. TO 19 FT. LT OF -L-.

Temporary Shoring No. 4

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

DESIGN TEMPORARY SHORING FROM STATION 19+35 TO STATION 19+55 OFFSET RANGE 16 FT. TO 19.5 FT. RT OF -L- FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

UNIT WEIGHT (γ) = 120 LB/CF
 FRICTION ANGLE (ϕ) = 30 DEGREES
 COHESION (c) = 0 LB/SF
 GROUNDWATER ELEVATION = 196 FT

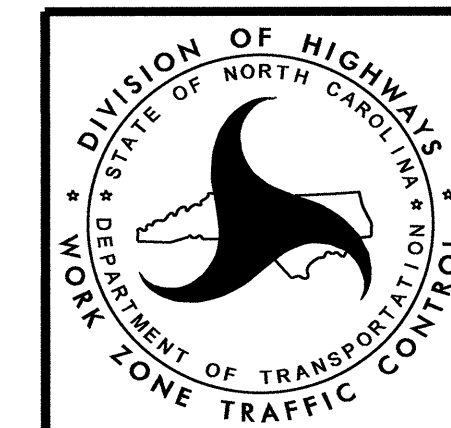
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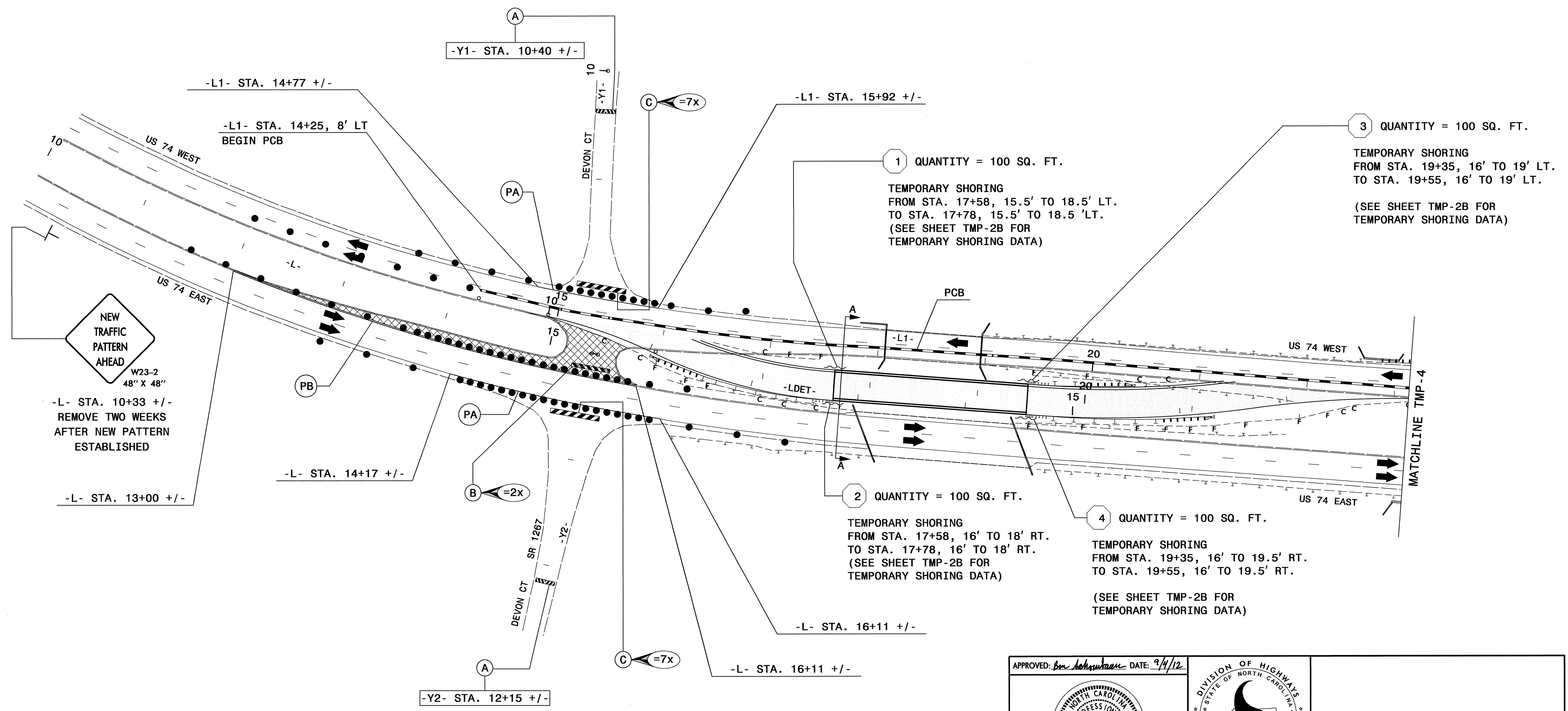
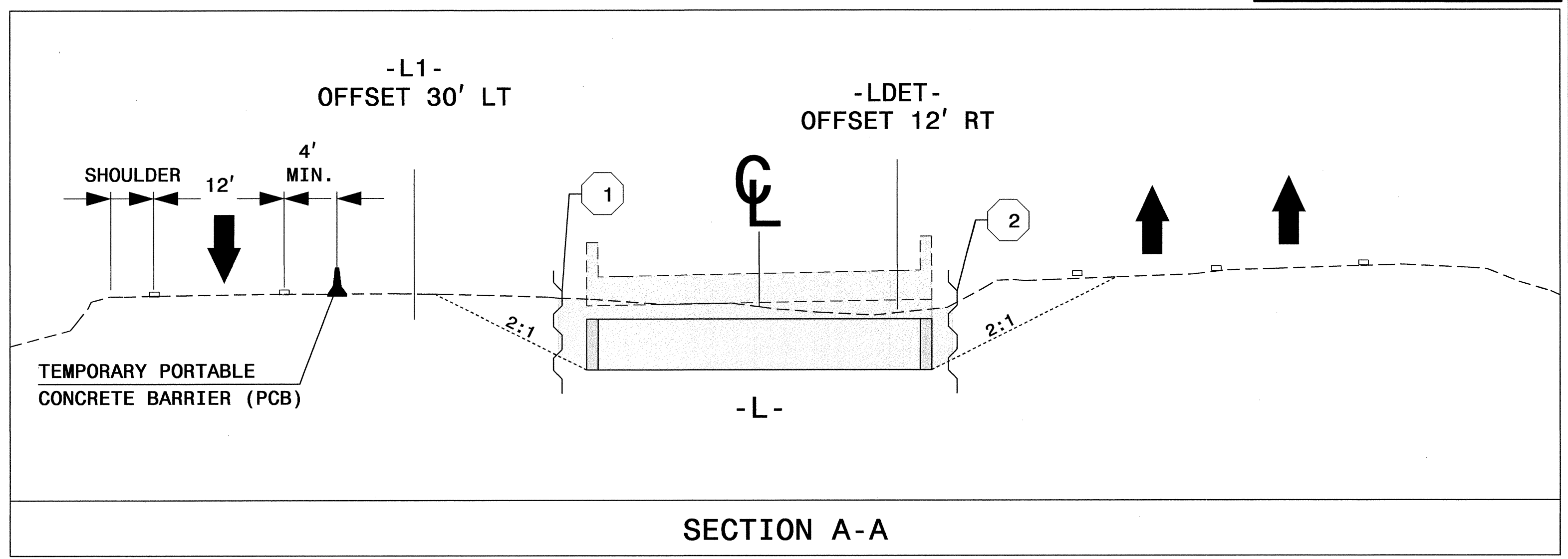
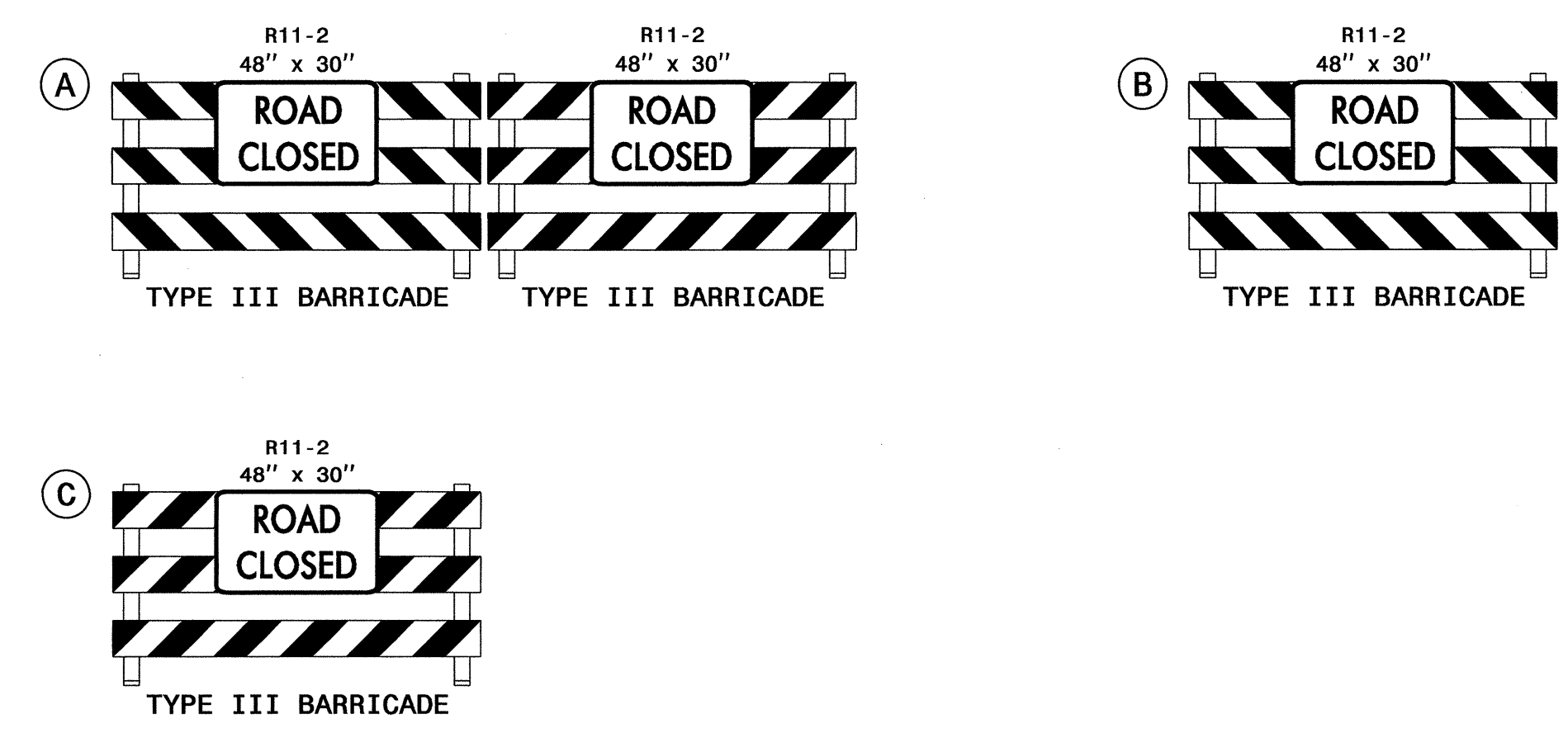
DO NOT USE A TEMPORARY WALL FOR THE TEMPORARY SHORING FROM STATION 19+35 TO STATION 19+55 OFFSET RANGE 16 FT. TO 19.5 FT. RT OF -L-.

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 shassan AT TE265820

THE TEMPORARY SHORING NOTES SHOWN ON THIS SHEET WERE PROVIDED THROUGH A SEALED DOCUMENT FROM THE GEOTECHNICAL ENGINEERING UNIT. THE DOCUMENT WAS SUBMITTED TO THE WZTC SECTION ON 8/14/2012 AND SEALED BY A PROFESSIONAL ENGINEER, DAVID L. TEAGUE, LICENSE # 027869.



TEMPORARY SHORING NOTES



NOTE: DENOTES THE NUMBER OF EACH BARRICADE/SIGN ASSEMBLY TO BE USED.

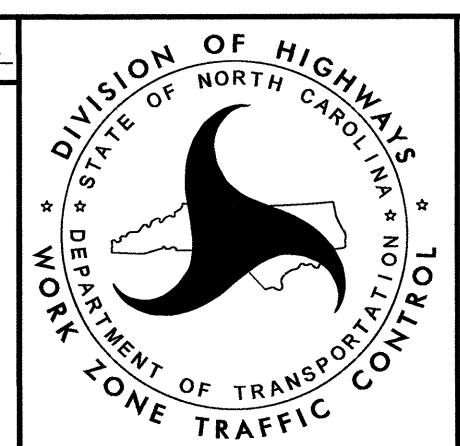
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SEAL

PROFESSIONAL ENGINEER

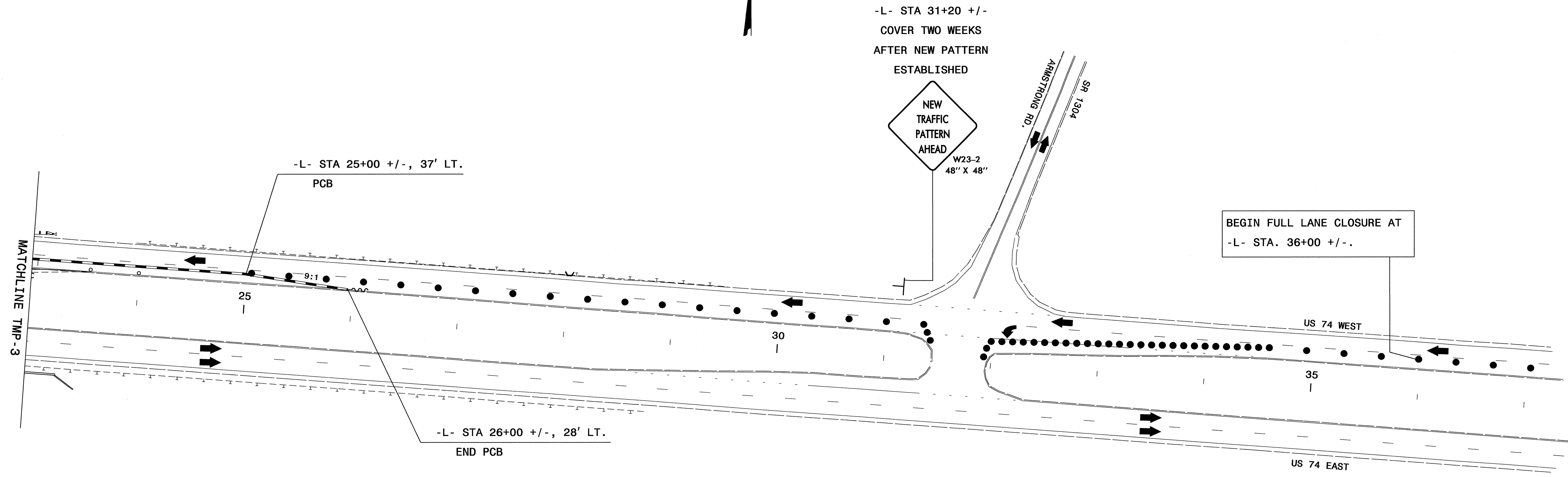
PAUL SCHORR

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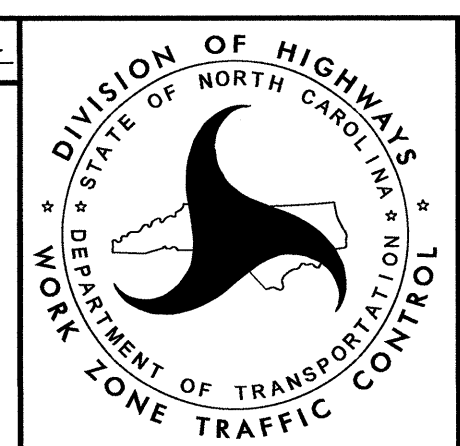
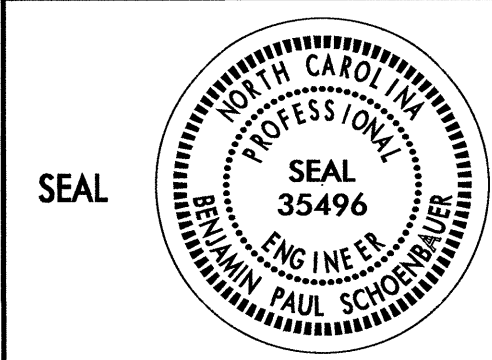
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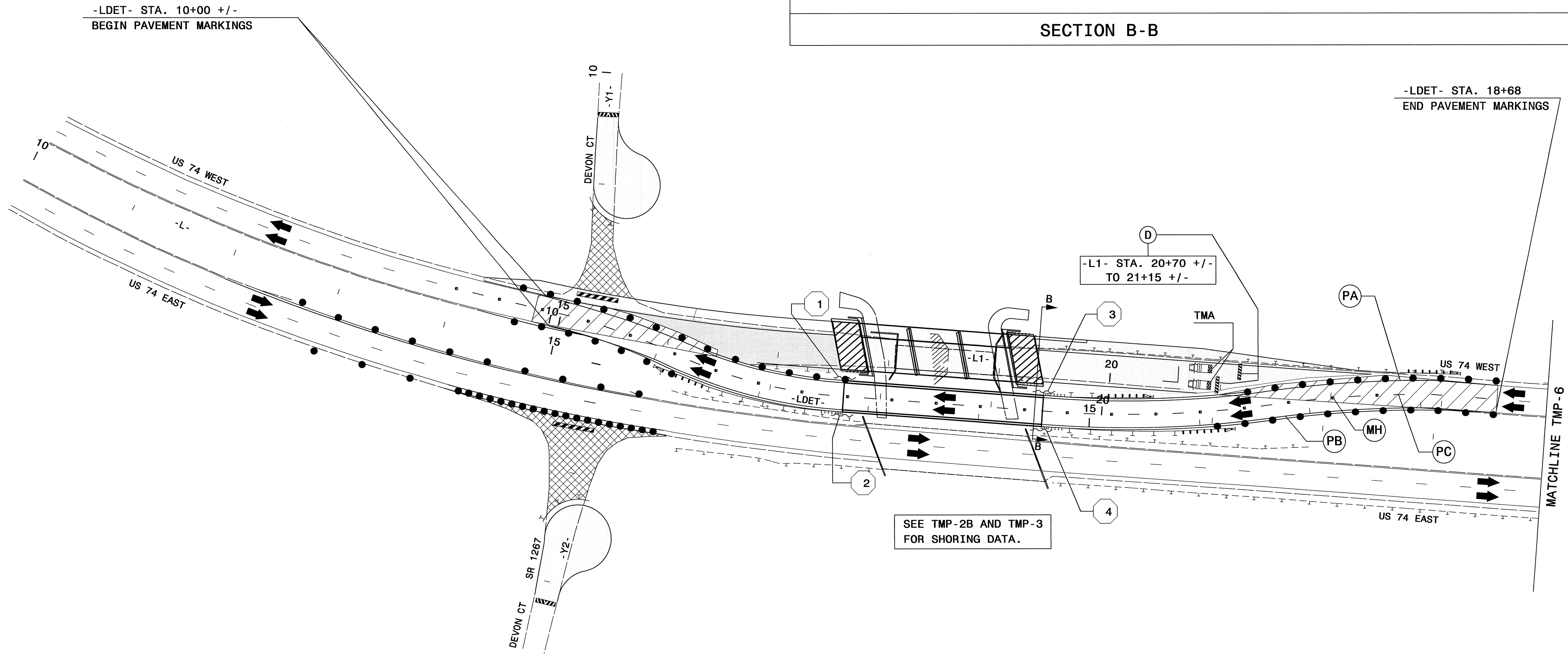
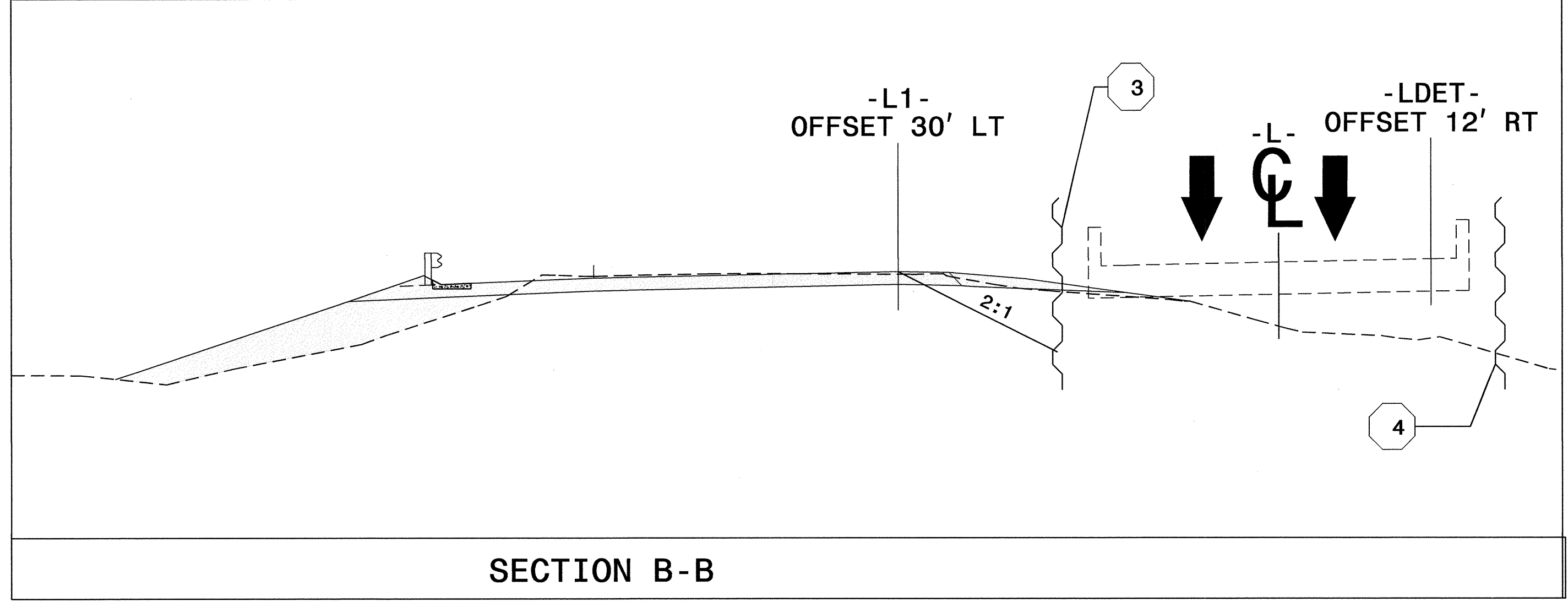
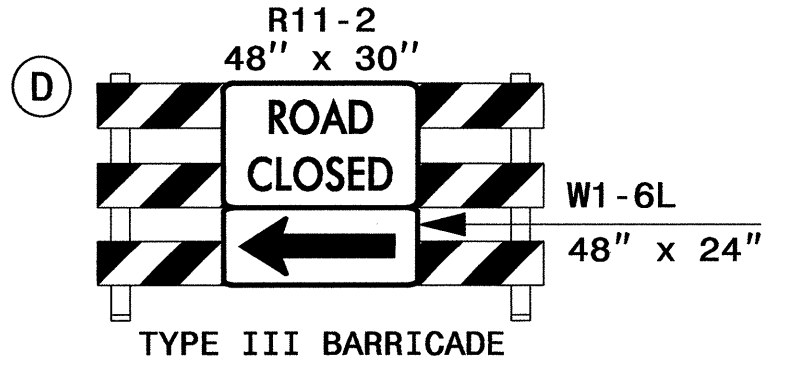


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APPROVED: *Em Schomberg* DATE: 9/4/12



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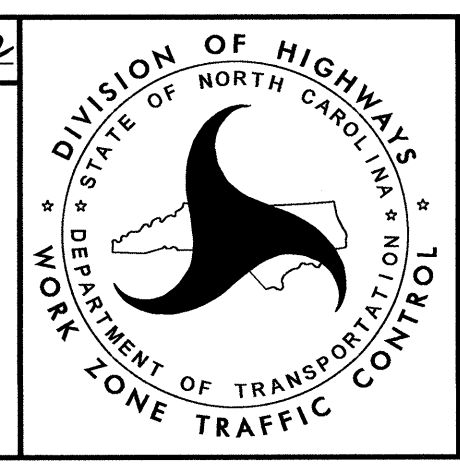


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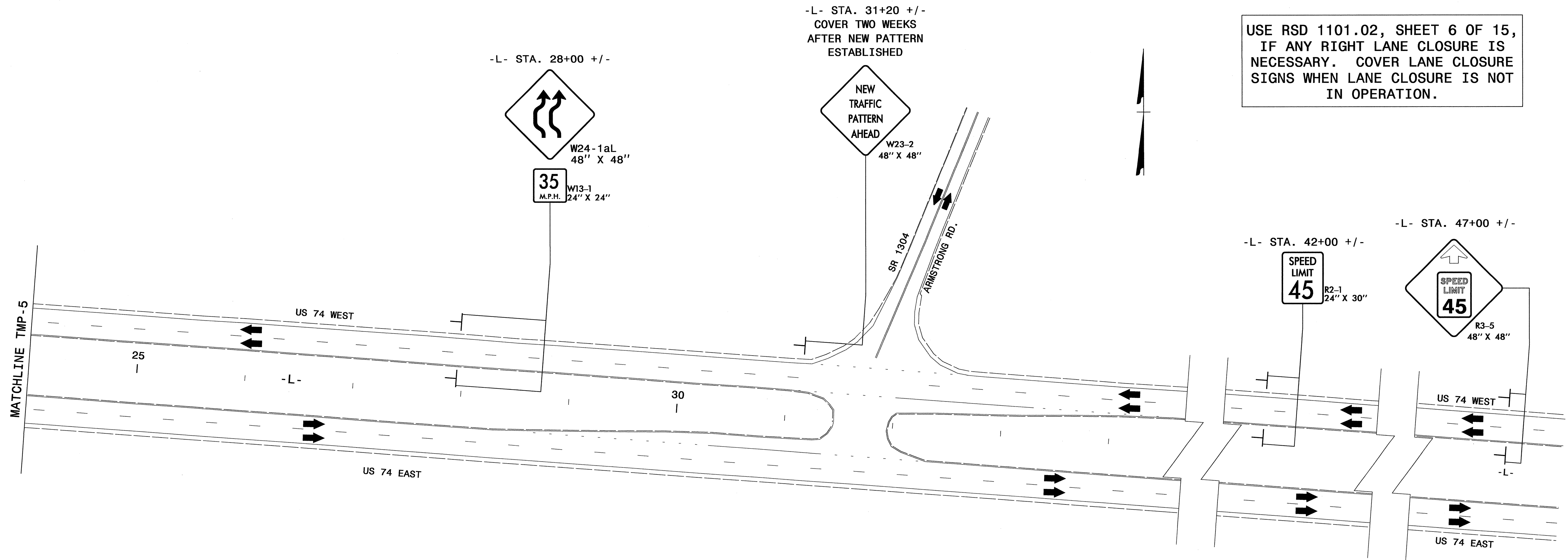
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SHOSSON AT 12265820

APPROVED: *Ben Schumaker* DATE: 9/4/12

SEAL
PAUL SCHUMAKER
ENGINEER
NO. 35496
STATE OF NORTH CAROLINA



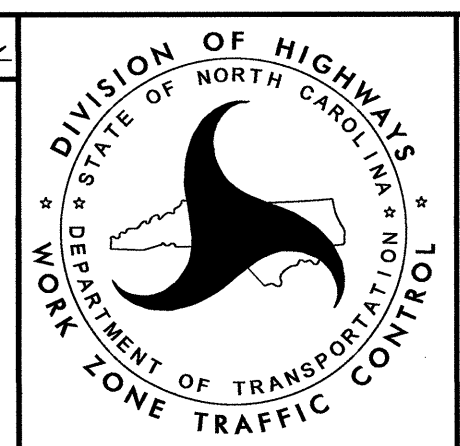
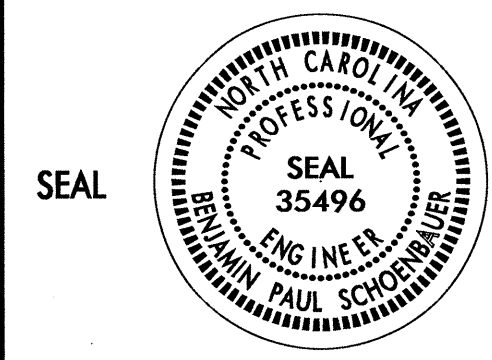
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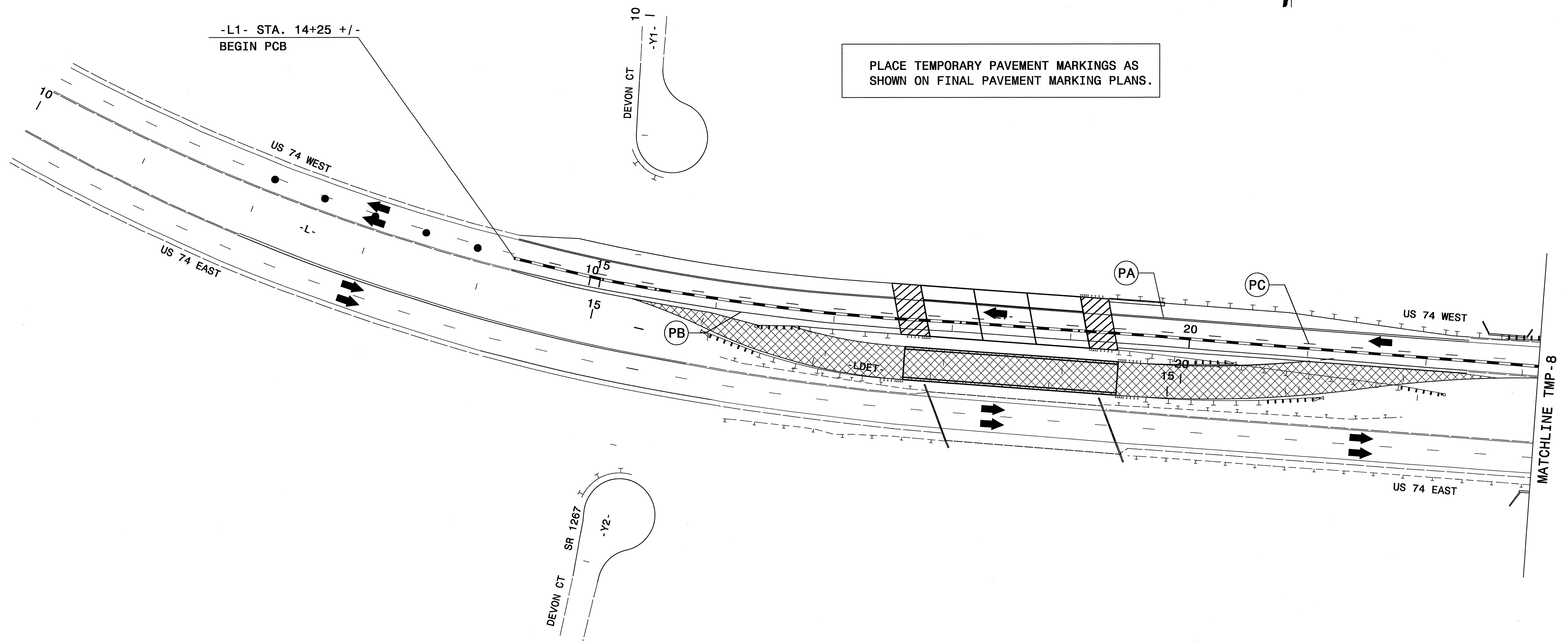
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IF ANY RIGHT LANE CLOSURE IS
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SIGNS WHEN LANE CLOSURE IS NOT
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APPROVED: *Paul Schosson* DATE: 9/4/12

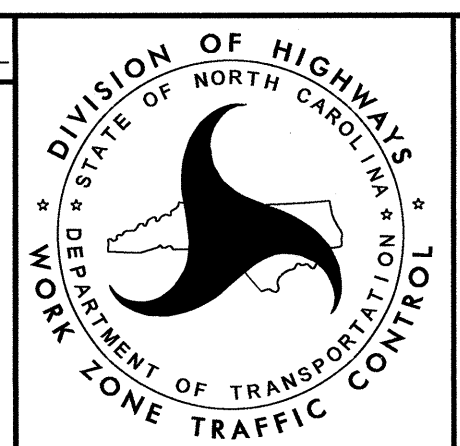
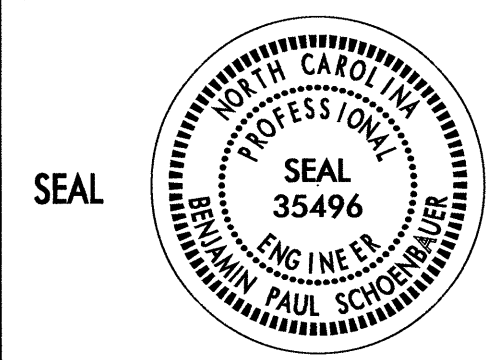


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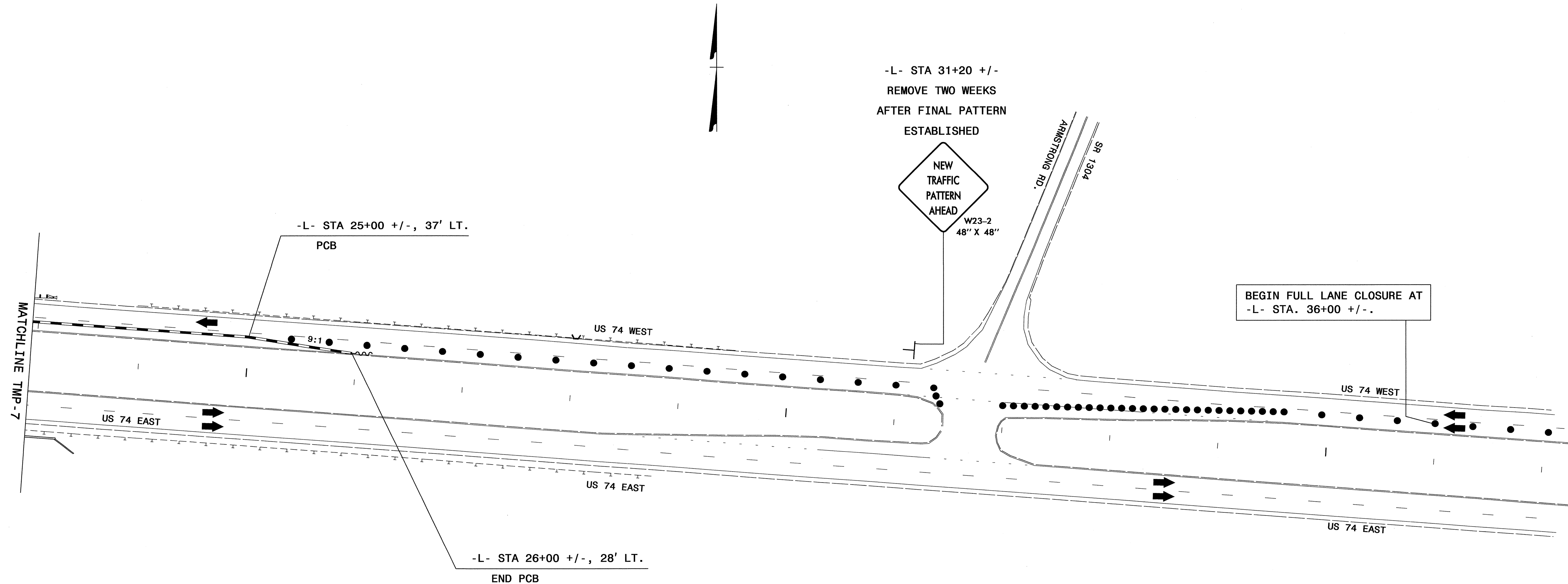


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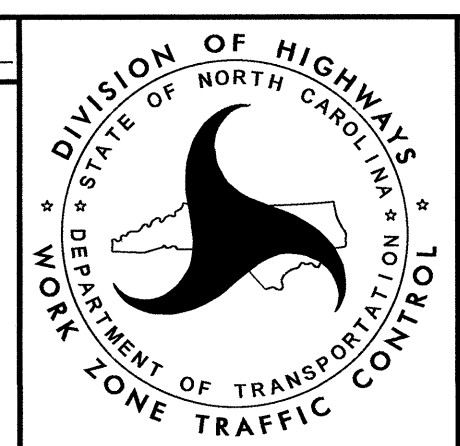
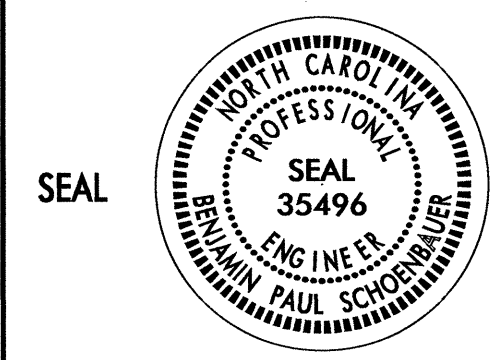


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APPROVED: *Em. Schreiber* DATE: 9/4/12



PHASE III DETAIL