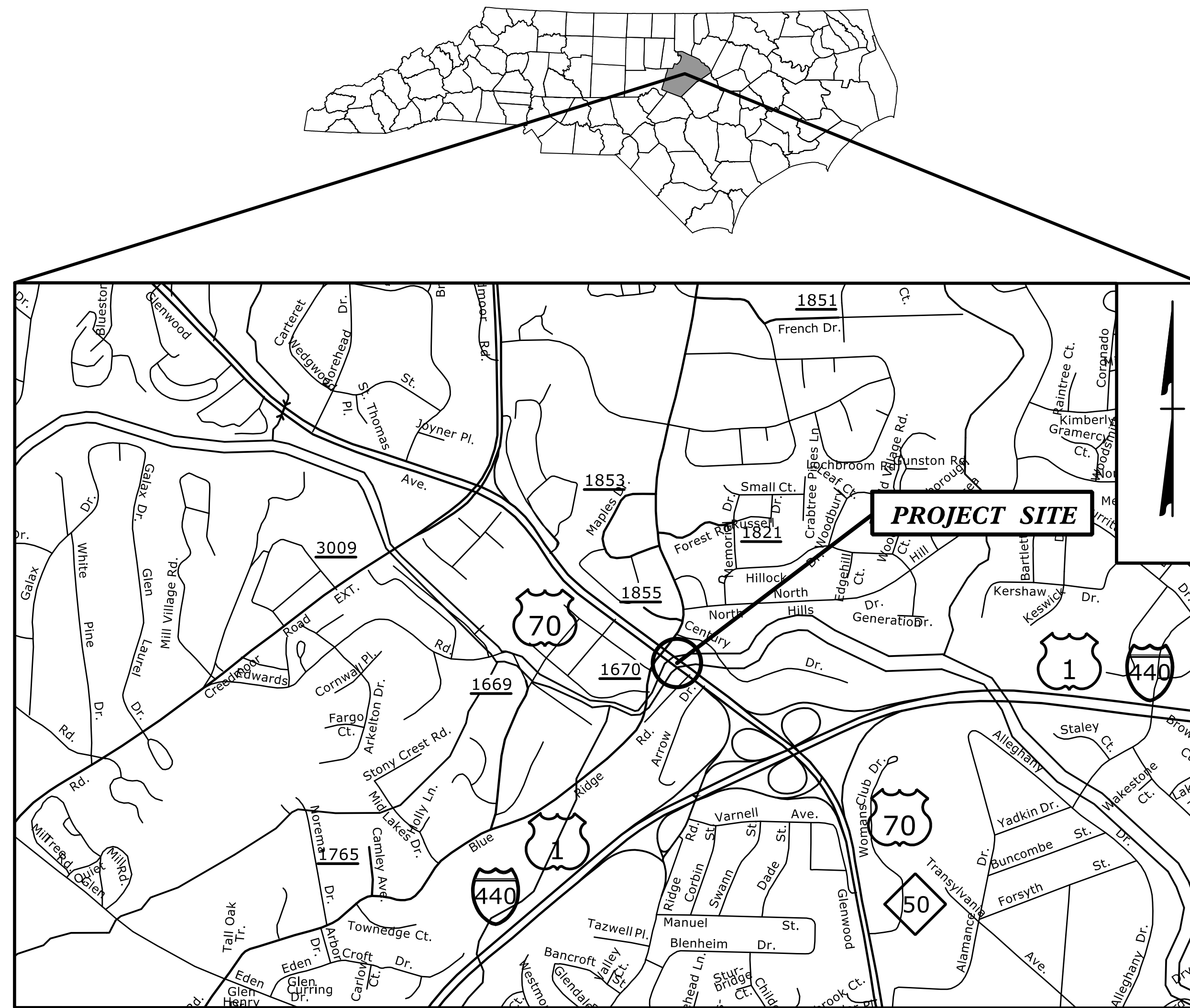


STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

WAKE COUNTY



**LOCATION: BRIDGES #84 & #91 ON GLENWOOD AVENUE
(US 70) OVER CRABTREE CREEK IN WAKE COUNTY**

TYPE OF WORK: BRIDGE REHABILITATION

SHEET NO.	TITLE
TMP-1	TITLE SHEET, VICINITY AND INDEX OF SHEETS
TMP-1A	ROADWAY STANDARD DRAWINGS, LEGEND, MANAGEMENT STRATEGIES & PAVEMENT MARKING SCHEDULE
TMP-1B	GENERAL NOTES
TMP-2	EB CUT SECTIONS
TMP-2A - TMP-2B	WB CUT SECTIONS
TMP-3	TEMPORARY TRAFFIC CONTROL PHASING & LOCAL NOTES
TMP-4 - TMP-6	EB1 DETAILS
TMP-7 - TMP-10	EB2 DETAILS
TMP-11 - TMP-14	EB3 DETAILS
TMP-15	WB1 DETAIL
TMP-16 - TMP-19	WB2 DETAILS
TMP-20 - TMP-22	WB3 DETAILS
TMP-23 - TMP-26	WB4 DETAILS
TMP-27 - TMP-30	WB5 DETAILS
TMP-31 - TMP-33	WB6 DETAILS

R. B. EARLY, PE _____ TRAFFIC CONTROL PROJECT ENGINEER
R. B. EARLY, PE _____ TRAFFIC CONTROL PROJECT DESIGN ENGINEER
J. A. PHILLIPS _____ TRAFFIC CONTROL DESIGN ENGINEER

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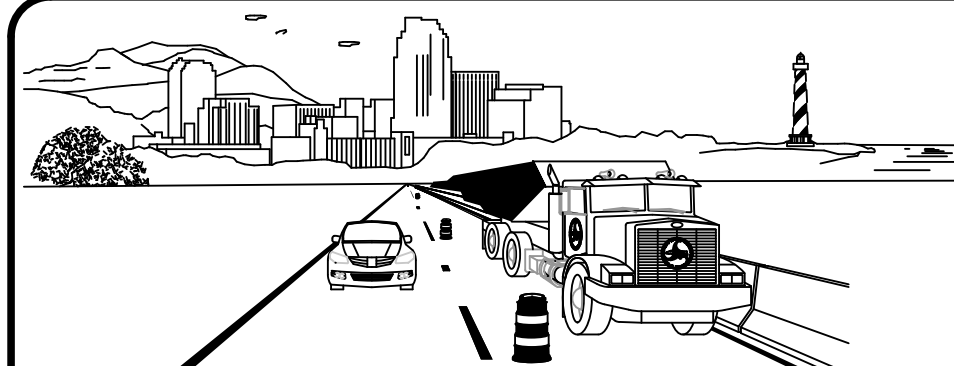
APPROVED: Rhonda B. Early
DATE: 3/29/2016

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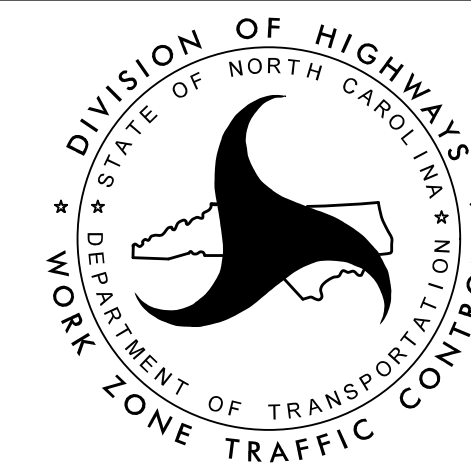
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WORK ZONE SAFETY & MOBILITY
"from the MOUNTAINS to the COAST"

N.C.D.O.T. WORK ZONE TRAFFIC CONTROL
1561 MAIL SERVICE CENTER (MSC) RALEIGH, NC 27699-1561
750 N. GREENFIELD PARKWAY, GARNER, NC 27529 (DELIVERY)
PHONE: (919) 773-2800 FAX: (919) 771-2745

J. S. BOURNE, P.E. _____ STATE TRAFFIC MANAGEMENT ENGINEER
D.W. BISSETTE, P.E. _____ TRAFFIC CONTROL PROJECT ENGINEER
HELEN SHYU, P.E. _____ TRAFFIC CONTROL PROJECT DESIGN ENGINEER
ALLA LYUDMIRSKAYA _____ TRAFFIC CONTROL DESIGN ENGINEER



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 BOARDS
1130.01	DRUMS
1135.01	CONES
1145.01	BARRICADES
1150.01	FLAGGING DEVICES
1165.01	WORK VEHICLE LIGHTING SYSTEMS AND TMA DELINEATION
1180.01	SKINNY - DRUM
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO LANE AND MULTILANE ROADWAYS
1205.12	PAVEMENT MARKINGS - BRIDGES

MANAGEMENT STRATEGIES

THE OBJECTIVE OF THIS PROJECT IS TO COMPLETE THE REHABILITATION OF THE HIGH VALUE BRIDGES #84 & #91 OVER CRABTREE CREEK ON GLENWOOD AVE (US 70) USING A SERIES OF NIGHT TIME LANE CLOSURES.

THE CONTRACTOR WILL ESTABLISH A PLAN OF ACTION / SEQUENCE OF CONSTRUCTION TO COMPLETE THE REHAB AND UTILIZE THE PROVIDED LANE CLOSURES AS DESIRED.
NOTE: THE TIME RESTRICTIONS MAY VARY WITH EACH LANE CLOSURE.

LEGEND

GENERAL

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

- WORK AREA
- REMOVAL
- INCIDENTAL STONE
- WEDGE / WIDEN (USING FLAGGERS)
- TEMPORARY PAVEMENT

TRAFFIC CONTROL DEVICES

- BARRICADE (TYPE III)
- CONE
- DRUM SKINNY DRUM TUBULAR MARKER
- TEMPORARY CRASH CUSHION
- FLASHING ARROW PANEL (TYPE C)
- FLAGGER
- LAW ENFORCEMENT
- TRUCK MOUNTED IMPACT ATTENUATOR (TMIA)
- CHANGEABLE MESSAGE SIGN

TEMPORARY SIGNING

- PORTABLE SIGN
- STATIONARY SIGN
- STATIONARY OR PORTABLE SIGN

SIGNALS

- EXISTING
- PROPOSED
- TEMPORARY

PAVEMENT MARKINGS

- EXISTING LINES
- TEMPORARY LINES

PAVEMENT MARKING SYMBOLS

- PAVEMENT MARKING SYMBOLS

PAVEMENT MARKERS

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

PAVEMENT MARKING SCHEDULE

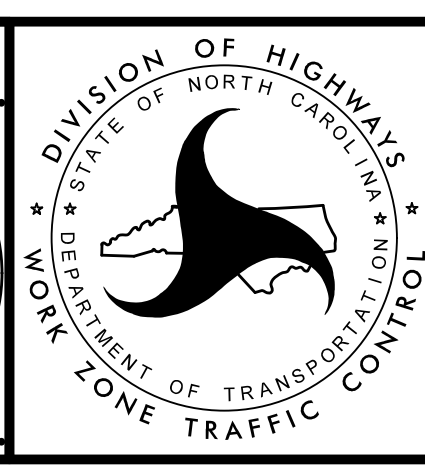
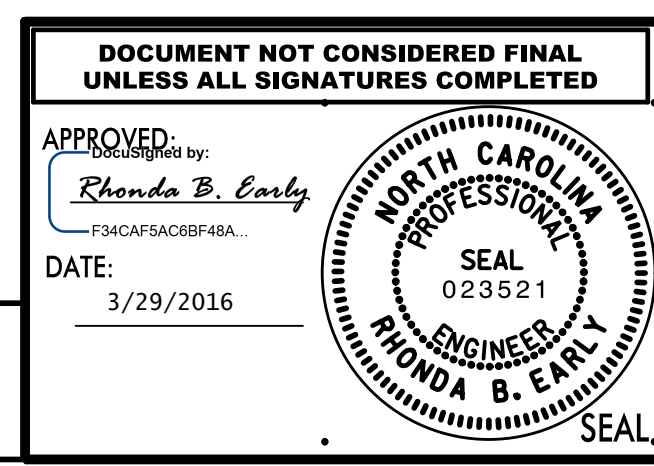
SYMBOL	DESCRIPTION	PAY ITEM
<u>TEMPORARY PAVEMENT MARKING LINES</u>		
		PAINT (4")
PA	WHITE EDGELINE	
PB	YELLOW EDGELINE	
PC	10' WHITE SKIP	
PE	WHITE SOLID LINE	
<u>PAVEMENT MARKING SYMBOLS & CHARACTERS</u>		
		PAINT SYMBOL
QB	RIGHT TURN ARROW	
<u>FINAL PAVEMENT MARKING LINES</u>		
		COLD APPLIED PLASTIC (4")
CA	WHITE EDGELINE	
CB	YELLOW EDGELINE	
CC	10' WHITE SKIP	
CE	WHITE SOLID LINE	
NOTE: FOR EACH PAINT PAVEMENT MARKING ITEM, REFER TO GENERAL NOTES FOR NUMBER OF APPLICATIONS.		
<u>PAVEMENT MARKERS</u>		
		PERMANENT RAISED
MB	CRYSTAL & RED	

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TRANSPORTATION
MANAGEMENT PLAN
ROADWAY STANDARD
DRAWINGS, LEGEND
MANAGEMENT STRATEGIES &
PAVEMENT MARKING SCHEDULE

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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 UNDESIRE 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
ALL ROADS	MONDAY THRU THURSDAY 6:00 AM - 8:00 PM
	FRIDAY 6:00 AM TO 10:00 PM
	SATURDAY 8:00 AM TO 10:00 PM
	SUNDAY 9:00 AM TO 8:00 PM

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

ROAD NAME

ALL ROADS

HOLIDAY

- FOR ANY UNEXPECTED OCCURRENCE THAT CREATES UNUSUALLY HIGH TRAFFIC VOLUMES, AS DIRECTED BY THE ENGINEER.
- FOR EASTER, BETWEEN THE HOURS OF 6:00 A.M. THURSDAY AND 8:00 P.M. MONDAY.
- FOR MEMORIAL DAY, BETWEEN THE HOURS OF 6:00 A.M. FRIDAY TO 8:00 P.M. TUESDAY.
- FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 6:00 A.M. THE DAY BEFORE INDEPENDENCE DAY AND 8:00 P.M. THE DAY AFTER INDEPENDENCE DAY.

IF INDEPENDENCE DAY IS ON A FRIDAY, SATURDAY, SUNDAY OR MONDAY THEN BETWEEN THE HOURS OF 6:00 A.M. THE THURSDAY BEFORE INDEPENDENCE DAY AND 8:00 P.M. THE TUESDAY AFTER INDEPENDENCE DAY.
- FOR LABOR DAY, BETWEEN THE HOURS OF 6:00 A.M. FRIDAY TO 8:00 P.M. TUESDAY.
- FOR THANKSGIVING DAY, CHRISTMAS AND NEW YEARS, BETWEEN THE HOURS OF 6:00 A.M. NOVEMBER 15TH TO 8:00 P.M. JANUARY 2ND. IF NEW YEAR'S DAY IS ON A FRIDAY, SATURDAY, SUNDAY OR MONDAY THEN UNTIL 8:00 P.M. THE FOLLOWING TUESDAY AFTER NEW YEAR'S DAY.

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 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.

GENERAL NOTES

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 REMAINS 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 -L- (SR 1221).

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) 500' 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 TRAFFIC CONTROL PLANS.

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

Q) INSTALL BLACK ON ORANGE "DIP" SIGNS (W8-2) AND/OR "BUMP" SIGNS (W8-1) 500' IN ADVANCE OF THE UNEVEN AREA, OR AS DIRECTED BY THE ENGINEER.

TRAFFIC CONTROL DEVICES

R) 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 OPENED TRAVELWAY. REFER TO STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES SECTIONS 1130 (DRUMS), 1135 (CONES), AND 1180 (SKINNY DRUMS) FOR ADDITIONAL REQUIREMENTS.

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

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

PAVEMENT MARKINGS AND MARKERS

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

ROAD NAME	MARKING	MARKER
GLENWOOD AVE (US 70)	PAINT	TEMPORARY

V) 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.

W) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.

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

Y) INSTALL FINAL PAVEMENT MARKINGS AND FINAL PAVEMENT MARKERS AS FOLLOWS:

ROAD NAME	MARKING	MARKER
GLENWOOD AVE (US 70)	POLYUREA (WITH HIGHLY REFLECTIVE ELEMENTS)	RAISED PERMANENT

MISCELLANEOUS

Z) PROVIDE AND OPERATE 2 ADDITIONAL CMS'S TO BE USED AS DIRECTED BY THE ENGINEER.

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

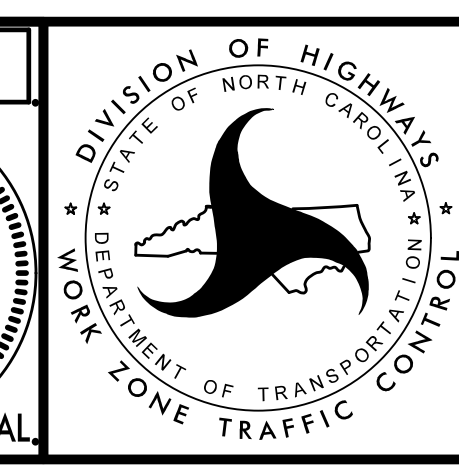
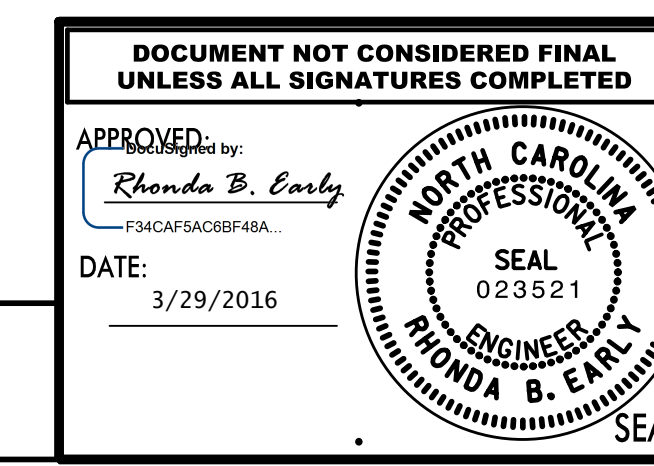
BB) TEMPORARY PAVEMENT MARKINGS PLACED ON CONCRETE SUREFACES ARE TO BE PLACED IN THE EXACT LOCATION OF THE FINAL PAVEMENT MARKINGS.

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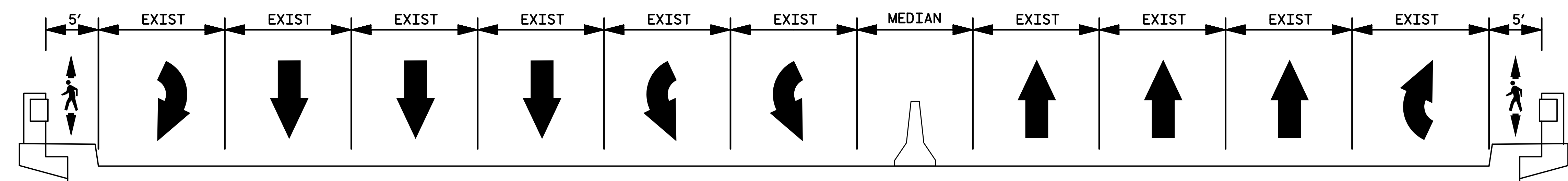
TRANSPORTATION
MANAGEMENT PLAN

GENERAL NOTES

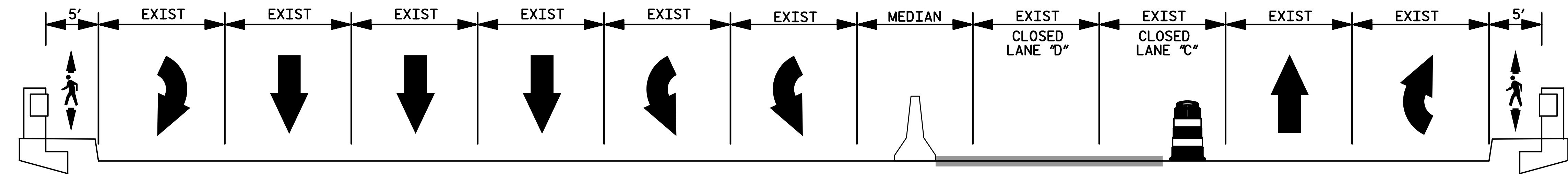
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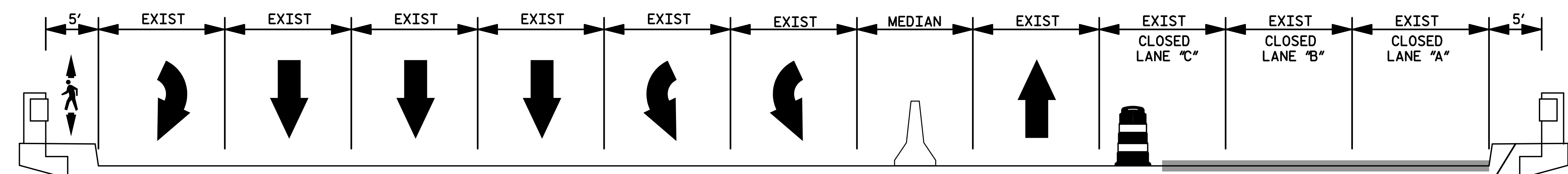
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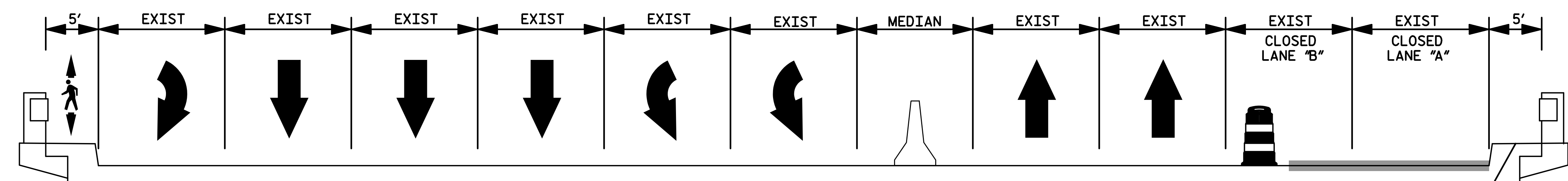
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EB2



EB3



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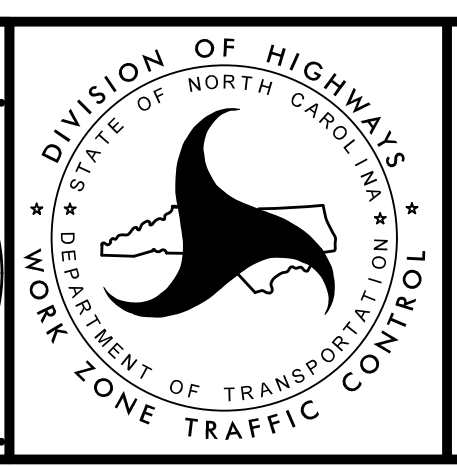
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APPROVED: *Rhonda B.*
 DATE: 3/28/2016

PROFESSIONAL ENGINEER
 SEAL
 023521
 RHONDA B. EARLY

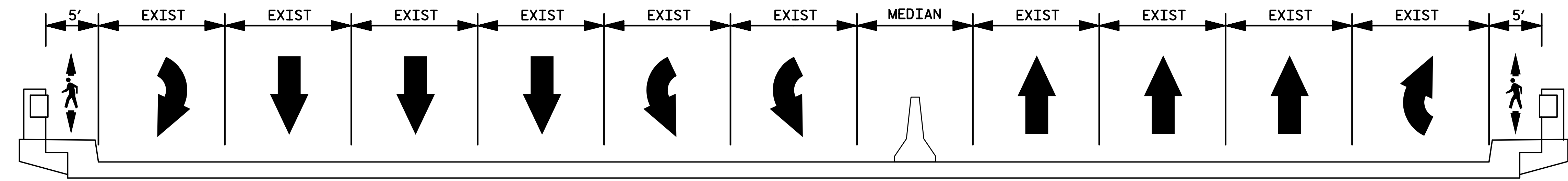


TRANSPORTATION
 MANAGEMENT PLAN

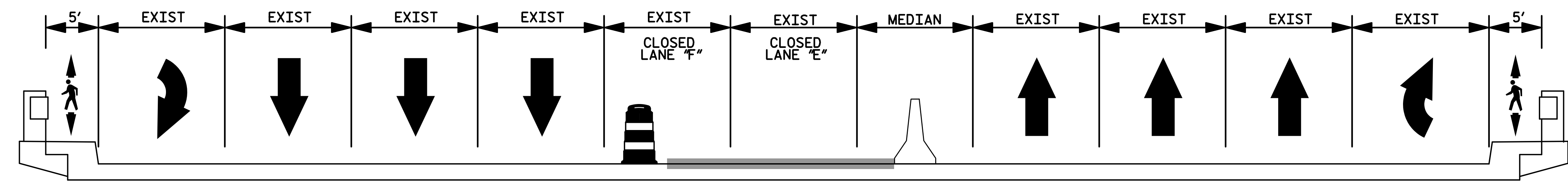
EB CUT SECTIONS

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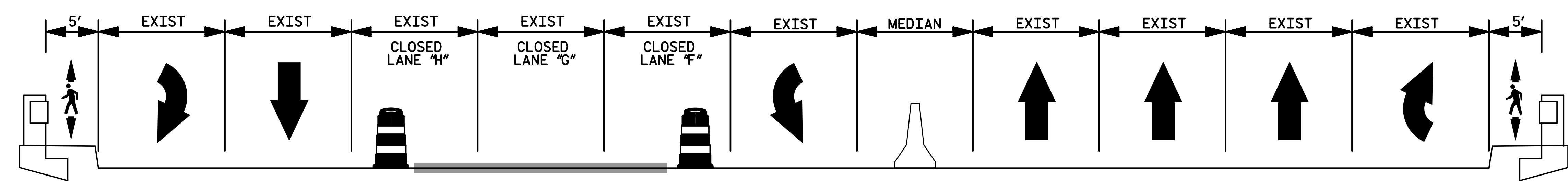
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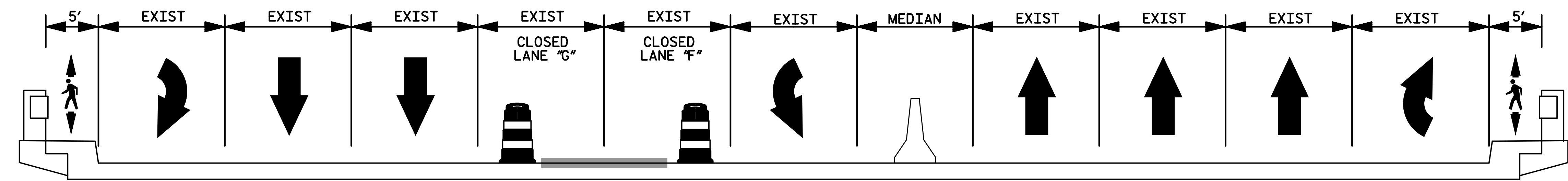
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WB2



WB3



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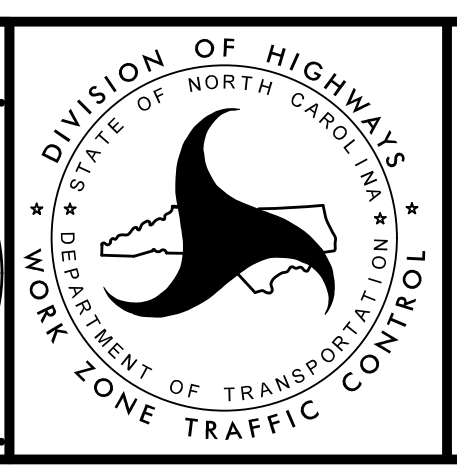
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APPROVED: *Rhonda B. Early*
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 DATE: 3/28/2016



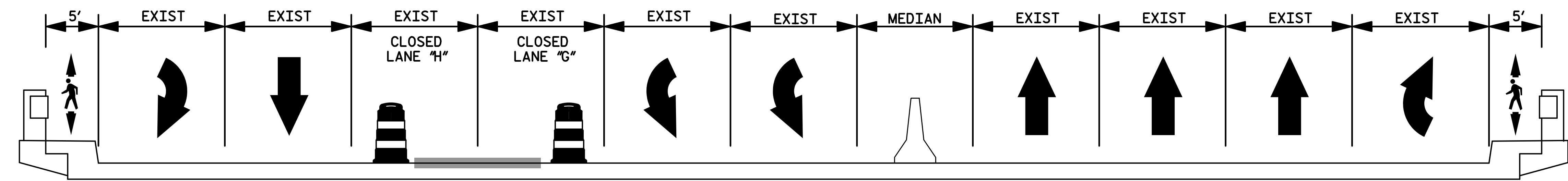
TRANSPORTATION
 MANAGEMENT PLAN

WB CUT SECTIONS

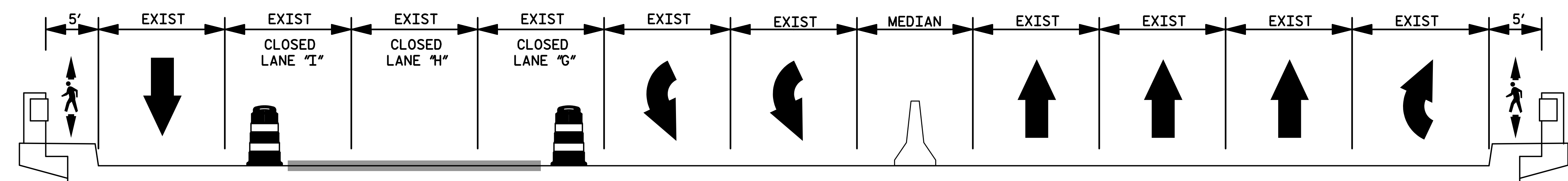
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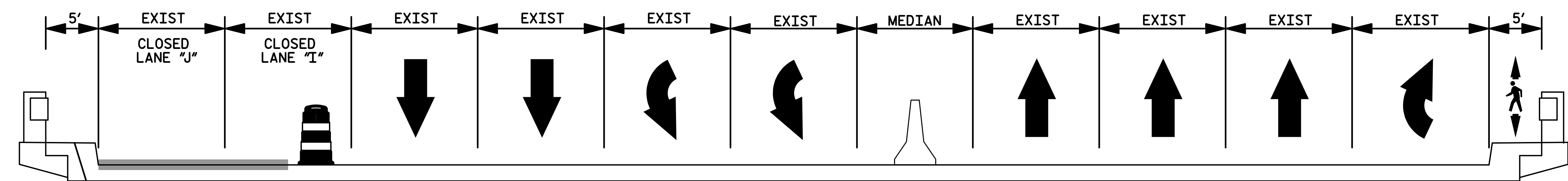
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WB5



WB6



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APPROVED: *Rhonda B.*
Rhonda B. Early
Professional Engineer
F34CFA3AC8BF
SEAL
023521

DATE: 3/28/2016

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
WORK ZONE TRAFFIC CONTROL

TRANSPORTATION
MANAGEMENT PLAN

WB CUT SECTIONS

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PHASING

NOTES:

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

MAINTAIN VEHICULAR ACCESS TO ALL BUSINESSES DURING THE LIFE OF THE CONTRACT UNLESS OTHERWISE NOTED IN THE PHASING OR DIRECTED BY THE ENGINEER.

USE FLAGGERS UNDER BRIDGE TO PROTECT PEDESTRIANS FROM OVERHEAD CONSTRUCTION.

THE TERM RSD DENOTES "ROADWAY STANDARD DRAWING".

PHASING (SEE LANE ID INSET FOR CLOSURE IDENTIFICATION)

STEP 1: INSTALL WORK ZONE ADVANCE WARNING SIGNS ON GLENWOOD AVE (US 70), LEAD MINE RD, NORTH HILLS DR, CREEDMORE RD (NC 50), BLUE RIDGE RD, I-440 (RALEIGH BELTLINE) ACCORDING TO RSD 1101.01.

NOTE: STEPS 2 THRU 10 MAY BE COMPLETED IN ANY ORDER; HOWEVER, SEQUENCE MUST BE APPROVED BY ENGINEER.

COMPLETE REHAB OF EASTBOUND LANES.
NOTE: LANES "A" THRU LANE "D" ARE EASTBOUND LANES.

STEP 2: USING NIGHTLY LANE CLOSURES AS NEEDED, CLOSE LANES "C" & "D". USING DETAIL EB1, COMPLETE IMPROVEMENTS FOR LANE "D" AND HALF OF LANE "C". SEE SHEETS TMP-4 THRU TMP-6 FOR DETAILS. (LN-3)

STEP 3: USING NIGHTLY LANE CLOSURES AS NEEDED, CLOSE LANES "A", "B" & "C". USING DETAIL EB2, COMPLETE IMPROVEMENTS FOR LANE "A", LANE "B" AND HALF OF LANE "C" OR HALF OF LANE "B" AND HALF OF LANE "C". SEE SHEETS TMP-7 THRU TMP-10 FOR DETAILS. (LN-1, LN-2, LN-3, LN-8, LN-9)

STEP 4: USING NIGHTLY LANE CLOSURES AS NEEDED, CLOSE LANES "A" & "B". USING DETAIL EB3, COMPLETE IMPROVEMENTS FOR LANE "A" & HALF OF LANE "B". SEE SHEETS TMP-11 THRU TMP-14 FOR DETAILS. (LN-1, LN-2, LN-8, LN-9)

COMPLETE REHAB OF WESTBOUND LANES.
NOTE: LANES "E" THRU "J" ARE WESTBOUND LANES.

STEP 5: USING NIGHTLY LANE CLOSURES AS NEEDED, CLOSE LANES "E" & "F". USING DETAIL WB1, COMPLETE IMPROVEMENTS FOR LANE "E" AND HALF OF LANE "F". SEE SHEET TMP-15 FOR DETAIL. (LN-4)

STEP 6: USING NIGHTLY LANE CLOSURES AS NEEDED, CLOSE LANES "F", "G" & "H". USING DETAIL WB2, COMPLETE IMPROVEMENTS FOR HALF OF LANE "F", LANE "G" AND HALF OF LANE "H". SEE SHEETS TMP-16 THRU TMP-19 FOR DETAILS. (LN-4, LN-5, LN-6)

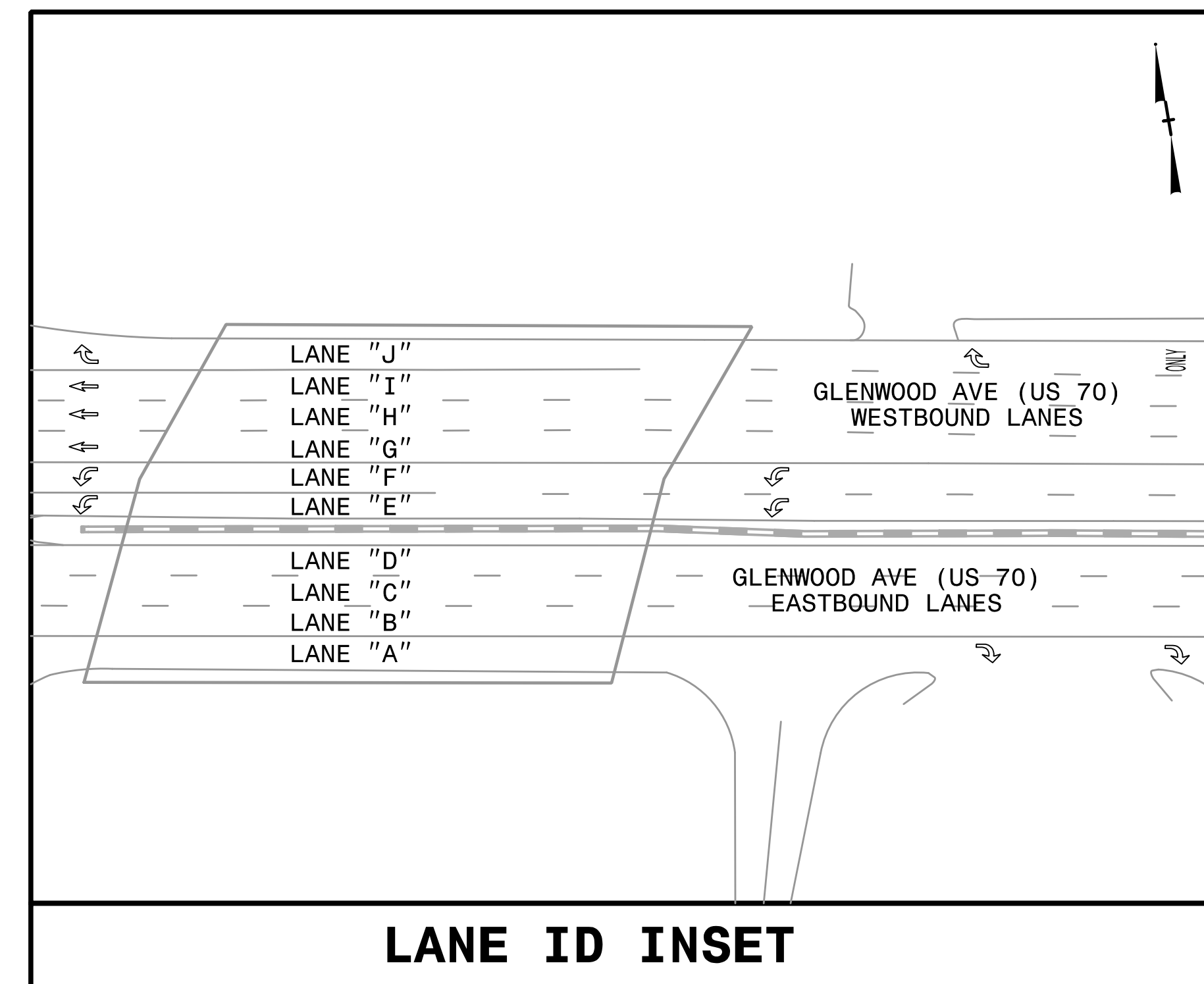
STEP 7: USING NIGHTLY LANE CLOSURES AS NEEDED, CLOSE LANES "F" & "G". USING DETAIL WB3, COMPLETE IMPROVEMENTS FOR HALF OF LANE "F" AND HALF OF LANE "G". SEE SHEETS TMP-20 THRU TMP-22 FOR DETAILS. (LN-4, LN-5)

STEP 8: USING NIGHTLY LANE CLOSURES AS NEEDED, CLOSE LANES "G" & "H". USING DETAIL WB4, COMPLETE IMPROVEMENTS FOR HALF OF LANE "G" AND HALF OF LANE "H". SEE SHEETS TMP-23 THRU TMP-26 FOR DETAILS. (LN-5, LN-6)

STEP 9: USING NIGHTLY LANE CLOSURES AS NEEDED, CLOSE LANES "G", "H" & "I". USING DETAIL WB5, COMPLETE IMPROVEMENTS FOR LANE HALF OF LANE "G", LANE "H", AND HALF OF LANE "I". SEE SHEETS TMP-27 THRU TMP-30 FOR DETAILS. (LN-5, LN-6, LN-7)

STEP 10: USING NIGHTLY LANE CLOSURES AS NEEDED, CLOSE LANES "I" & "J". USING DETAIL WB6, COMPLETE IMPROVEMENTS FOR HALF OF LANE "I" AND LANE "J". SEE SHEETS TMP-31 THRU TMP-33 FOR DETAILS. (LN-7, LN-8)

STEP 11: USING RSD 1101.02 (SHEET 12 OF 15), PLACE FINAL PAVEMENT MARKINGS AND MARKERS. REMOVE ALL TEMPORARY SIGNS AND DEVICES.



LANE ID INSET

LOCAL NOTES

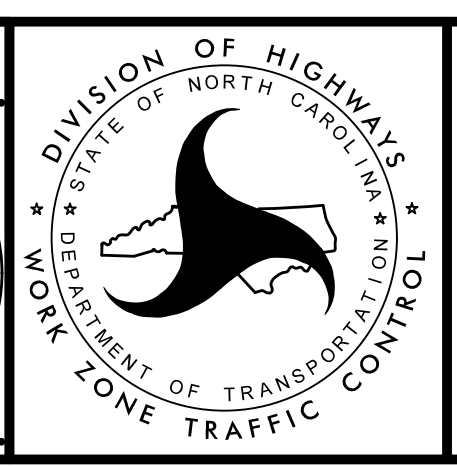
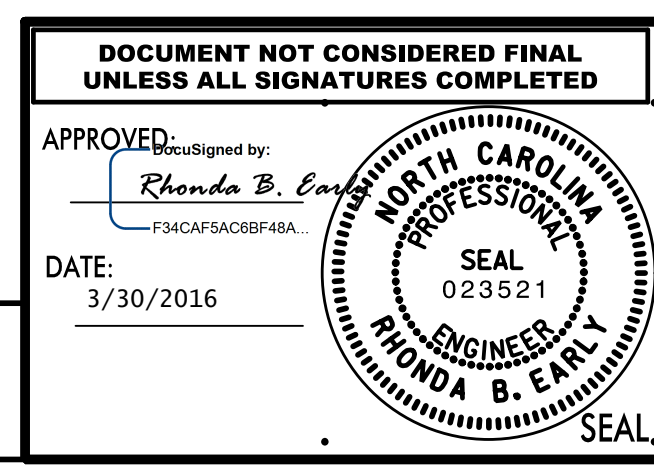
- LN-1 CONTRACTOR MAY ELECT TO COMPLETE THE WORK REQUIRED FOR LANE "A" DURING STEP 3 OR 4.
- LN-2 CONTRACTOR MAY ELECT TO COMPLETE THE WORK REQUIRED FOR LANE "B" DURING STEP 3 OR IN HALF SECTIONS DURING STEPS 3 & 4.
- LN-3 CONTRACTOR MUST COMPLETE THE WORK REQUIRED FOR LANE "C" IN HALF SECTIONS DURING STEPS 2 & 3.
- LN-4 CONTRACTOR MAY ELECT TO COMPLETE THE WORK REQUIRED FOR NORTH HALF OF LANE "F" DURING STEP 6 OR 7.
- LN-5 CONTRACTOR MAY ELECT TO COMPLETE THE WORK REQUIRED FOR LANE "G" DURING STEP 6 OR IN HALF SECTIONS DURING STEPS 7 & 8 OR DURING STEPS 7 & 9.
- LN-6 CONTRACTOR MAY ELECT TO COMPLETE THE WORK REQUIRED FOR LANE "H" DURING STEP 9 OR IN HALF SECTIONS DURING STEPS 6 & 8.
- LN-7 CONTRACTOR MUST COMPLETE THE WORK REQUIRED FOR LANE "I" IN HALF SECTIONS DURING STEPS 9 & 10.
- LN-8 CLOSE SIDEWALK WHEN WORKING IN ADJACENT LANE. COORDINATE SIDEWALK CLOSURE WITH CRABTREE VALLEY MALL AND LOCAL HOTELS.
- LN-9 NOTIFY THE ENGINEER TWENTY ONE (21) CALENDAR DAYS PRIOR TO CLOSING ROADS OR DRIVES. ASSIST IN PUBLIC INFORMATION, INCLUDING INFORMATION FROM CRABTREE VALLEY MALL MANAGEMENT OFFICE. COORDINATE WITH CITY OF RALEIGH IN REGARDS TO SIGNAL TIMING MODIFICATIONS IF NEEDED.

8/29/2016
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REVISIONS

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 CONCUR: _____
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 VERIFY: _____

QA/QC STAGE: _____



TRANSPORTATION
 MANAGEMENT PLAN
**PHASING
 AND
 LOCAL NOTES**
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8/17/99

REVISIONS

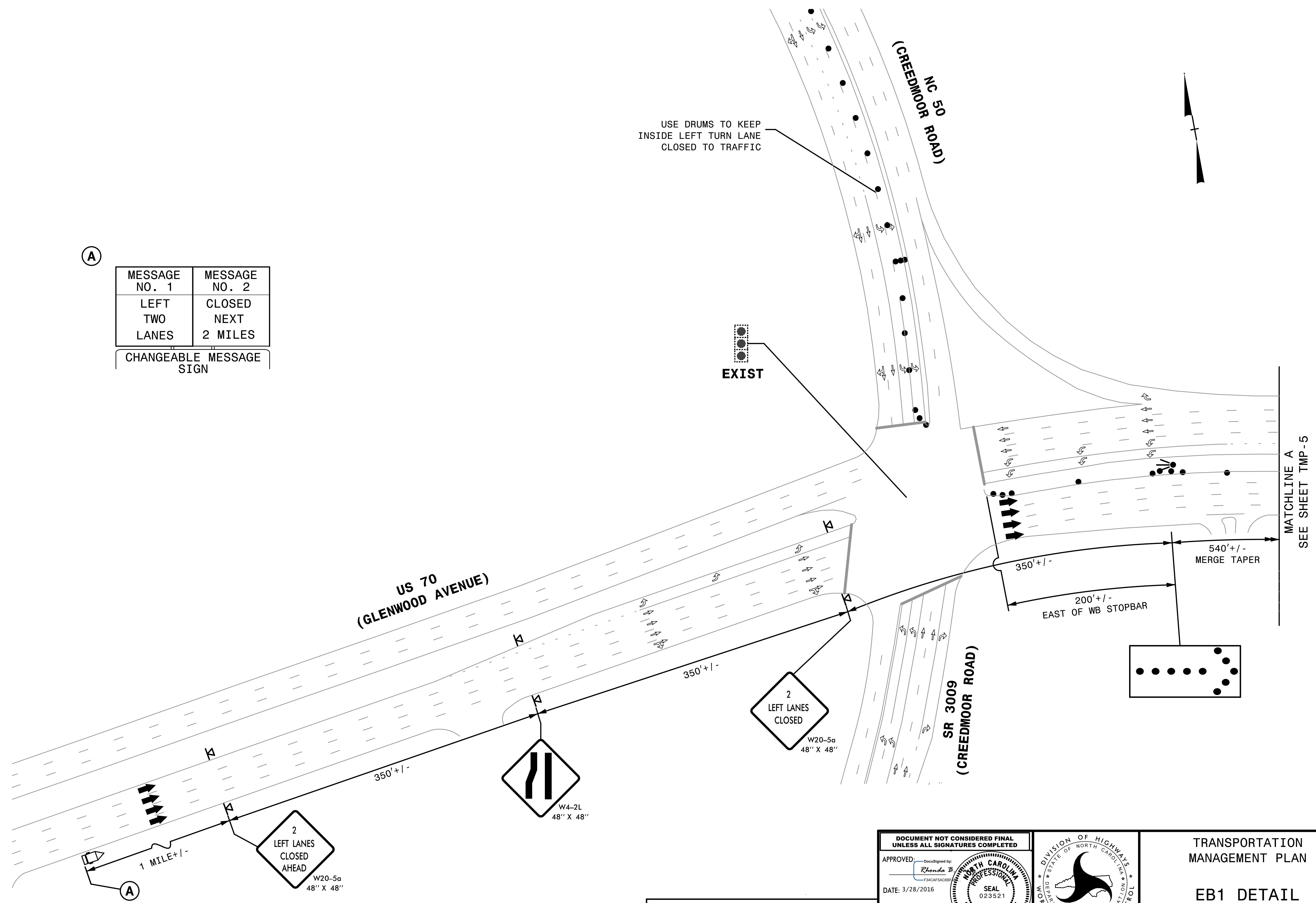
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QA/QC STAGE:
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A

MESSAGE NO. 1	MESSAGE NO. 2
LEFT TWO LANES	CLOSED NEXT 2 MILES

CHANGEABLE MESSAGE SIGN



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 Raleigh, North Carolina 27609
 NC License No: C-1554

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APPROVED: *Rhonda B. Early*
 Rhonda B. Early
 P.E. 023521
 ENGINEER

DATE: 3/28/2016

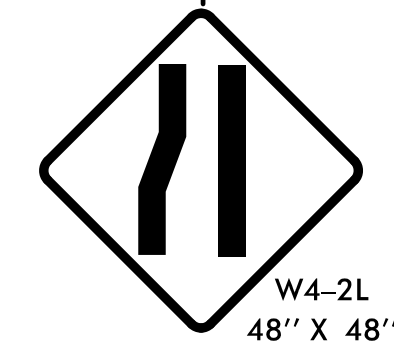
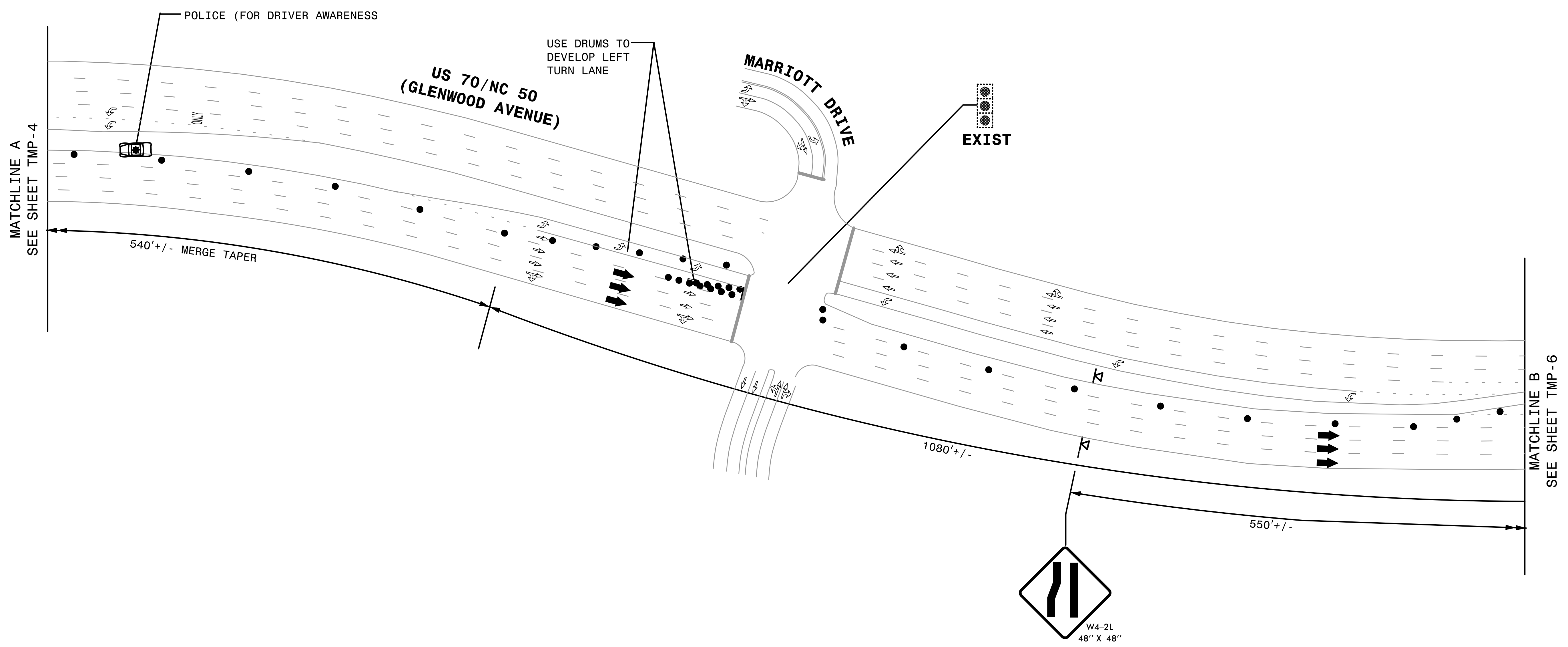
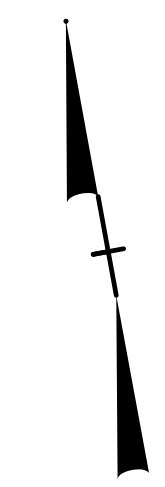
SEAL

DIVISION OF HIGHWAYS
 STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 WORK ZONE TRAFFIC CONTROL

TRANSPORTATION
 MANAGEMENT PLAN

EB1 DETAIL

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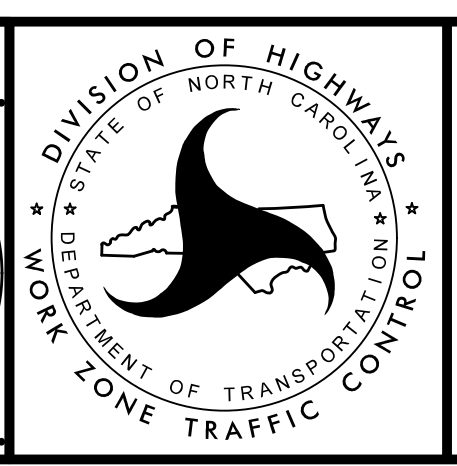
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F34CAFSAC86F

DATE: 3/28/2016

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ENGINEER
RHONDA B. EARLY
023521



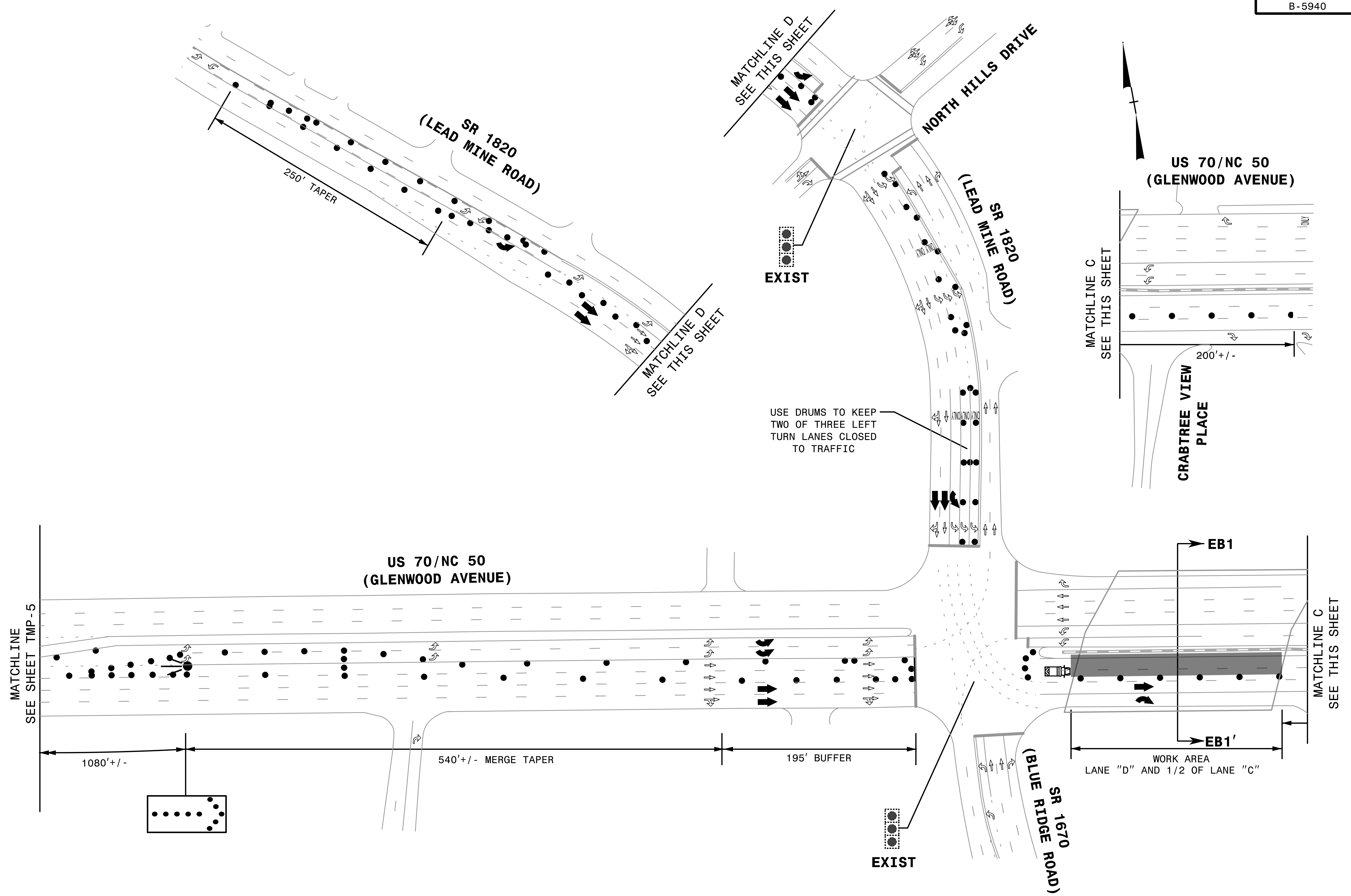
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EB1 DETAIL

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REVISIONS



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 RHONDA B. EARLY
 023521

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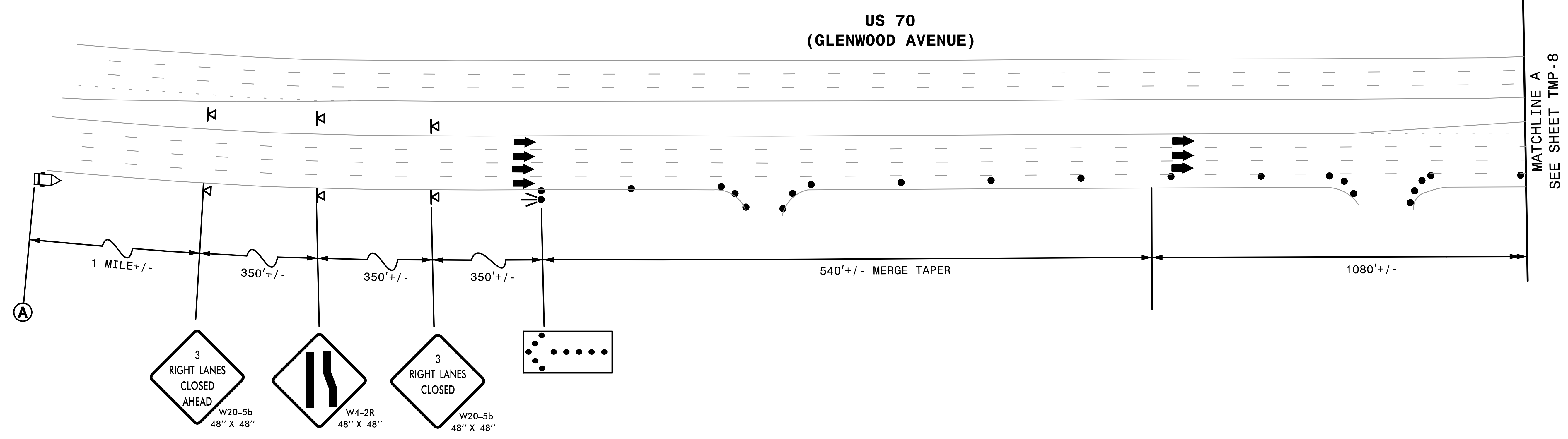
TRANSPORTATION MANAGEMENT PLAN

EB1 DETAIL

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REVISIONS



MATCHLINE A
SEE SHEET TMP-8

A

MESSAGE NO. 1	MESSAGE NO. 2
RIGHT THREE LANES	CLOSED NEXT 2 MILES

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MANAGEMENT PLAN

EB2 DETAIL

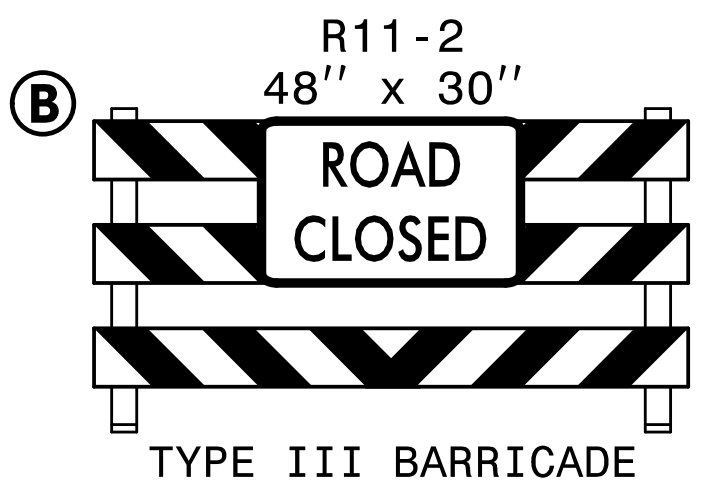
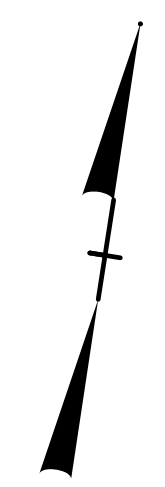
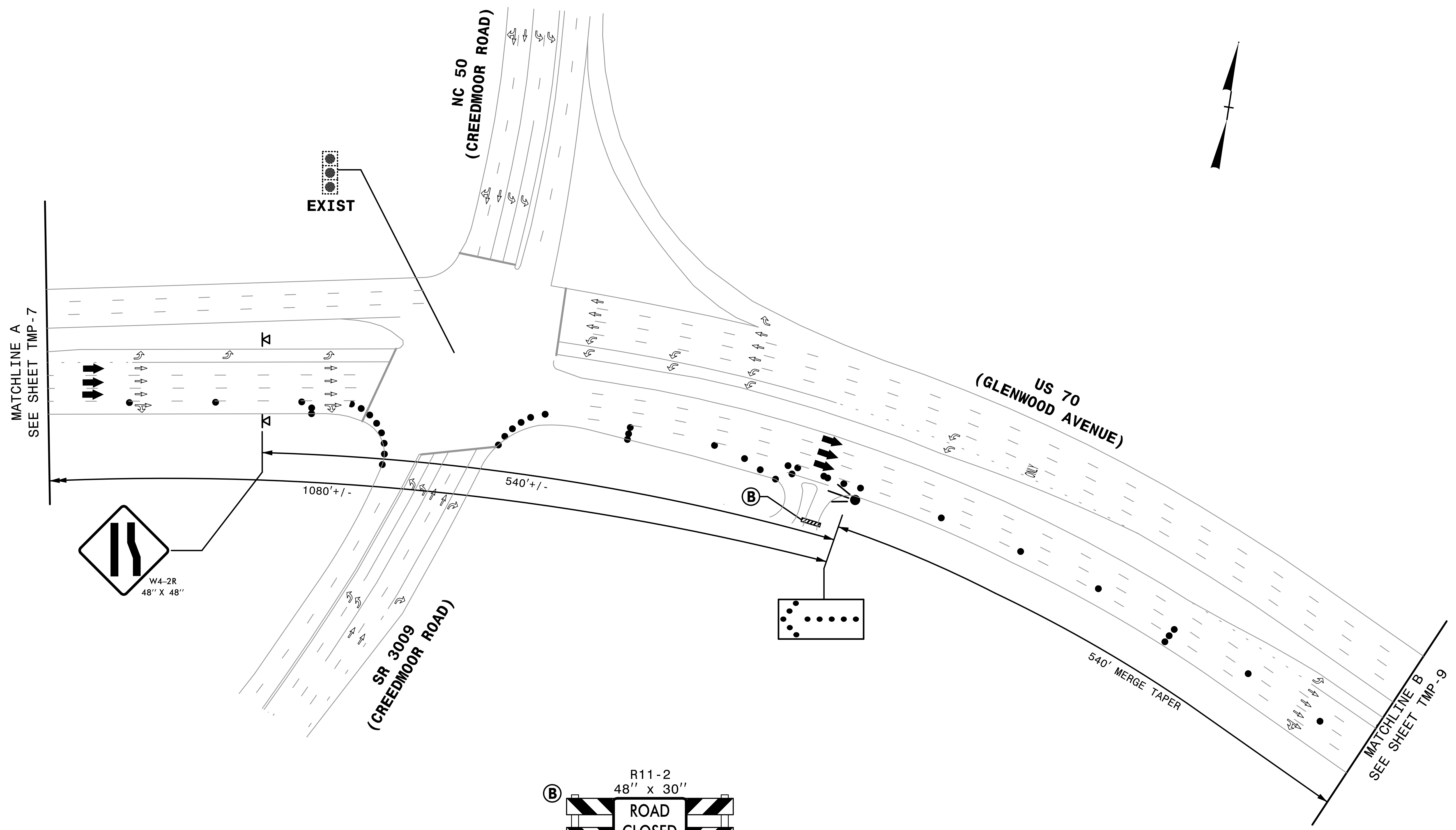
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ENGINEER
RHONDA B. EARLY
023521

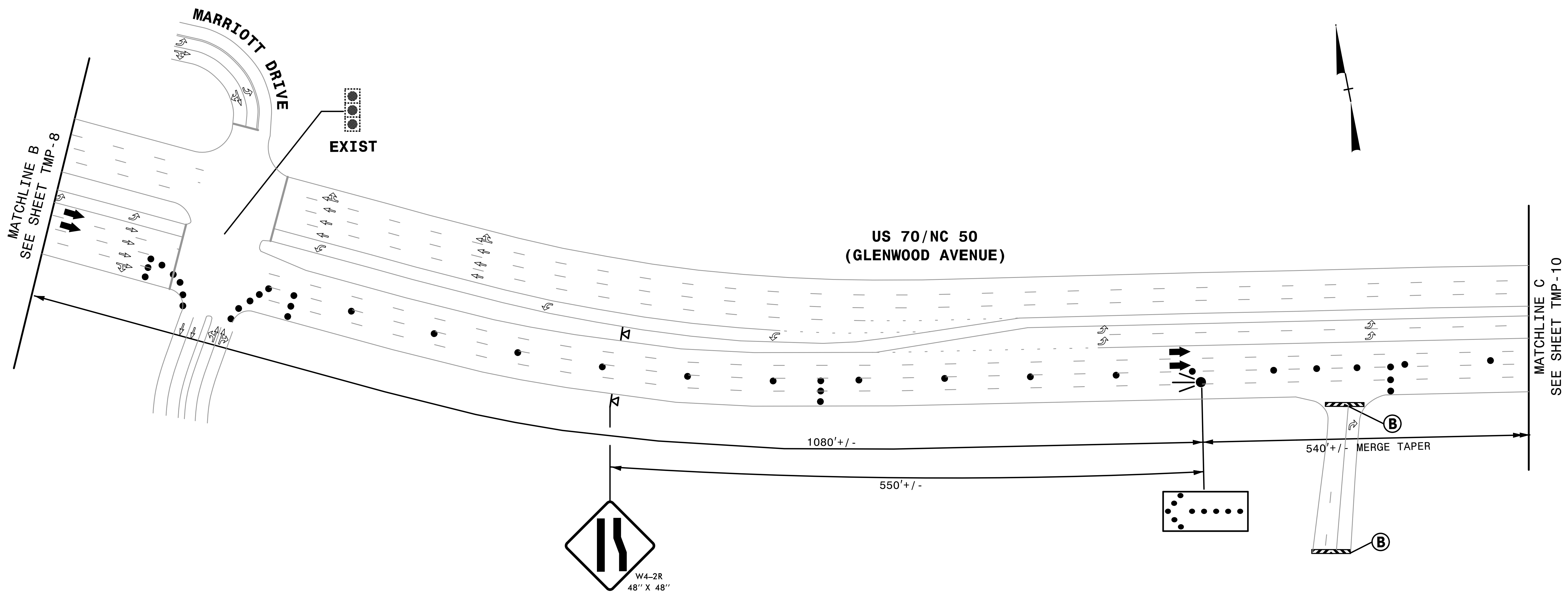
DIVISION OF HIGHWAYS
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DEPARTMENT OF TRANSPORTATION
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TRANSPORTATION
MANAGEMENT PLAN

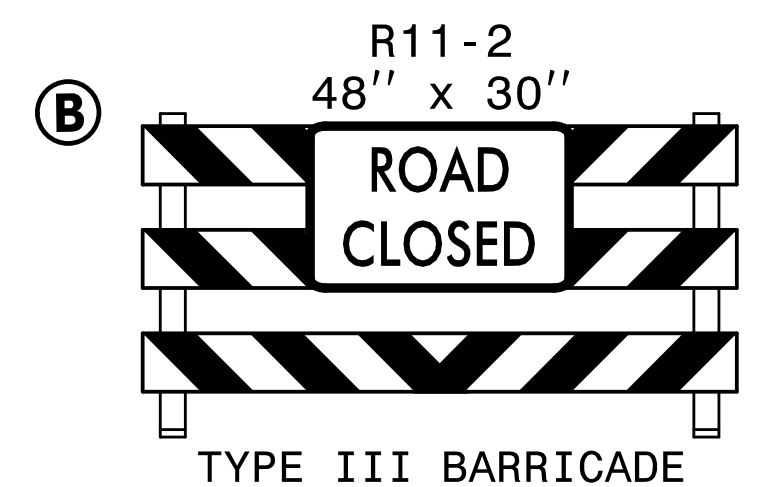
EB2 DETAIL

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CLOSE ALL DRIVE/ACCESS POINTS ON EASTBOUND LANE FROM MARRIOTT DRIVE TO BLUE RIDGE ROAD.



REVISIONS

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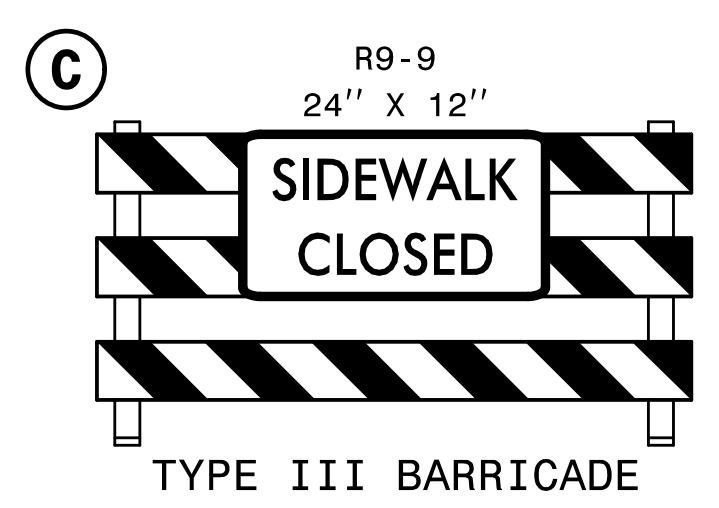
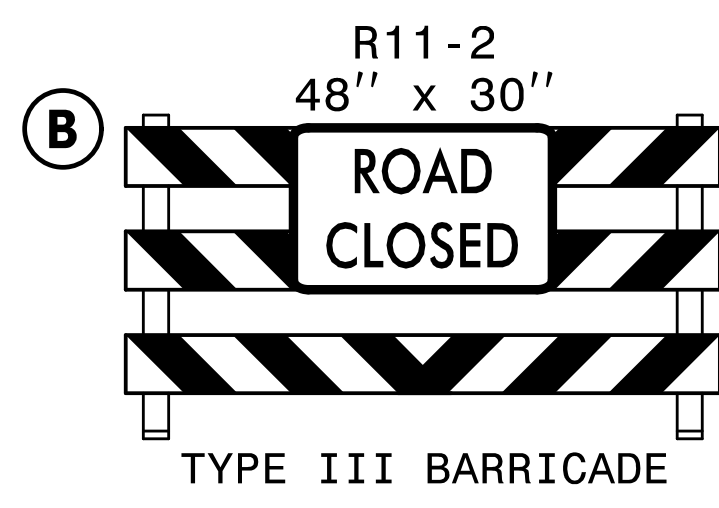
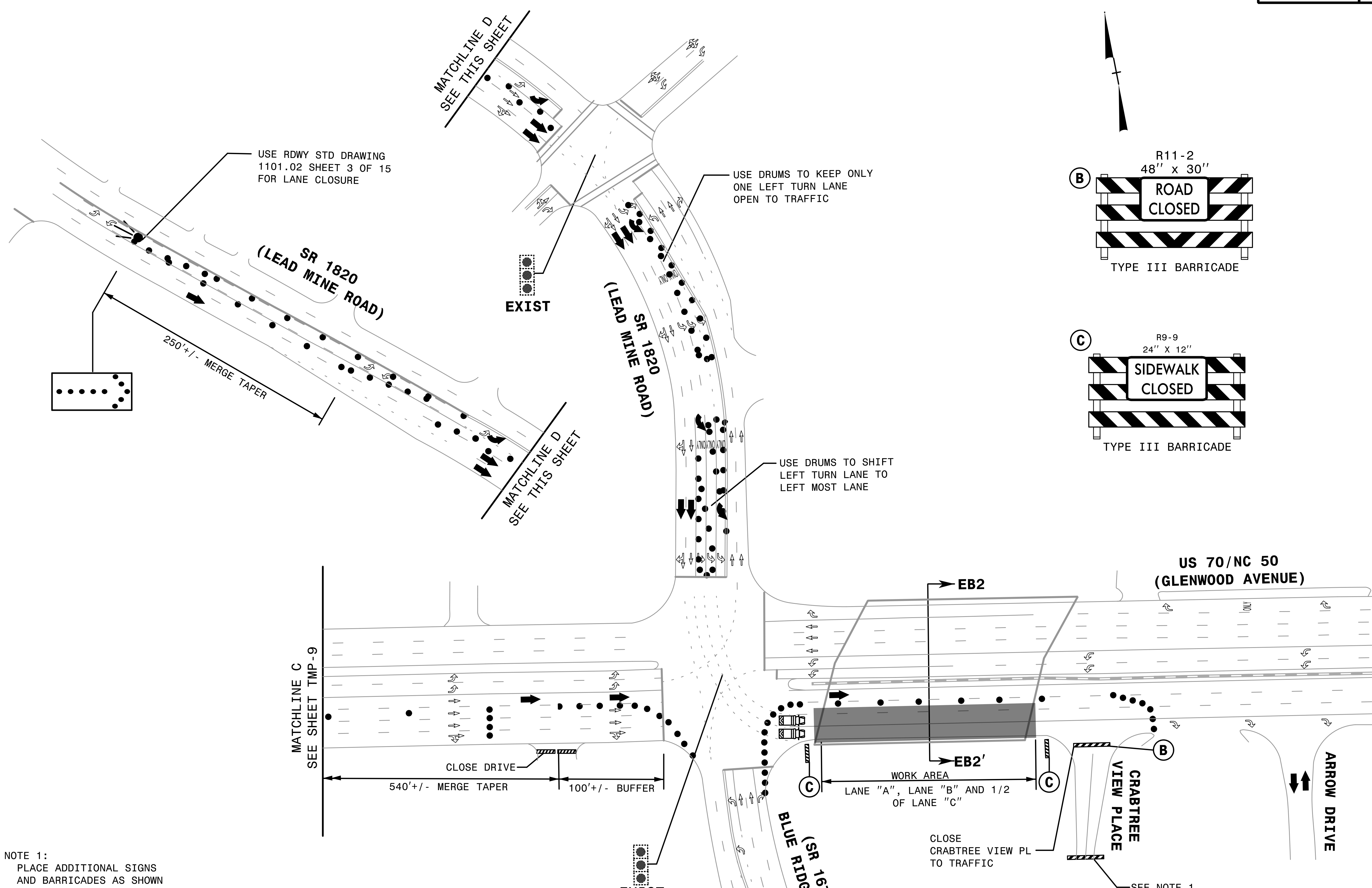
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3/28/2016

DATE: 3/28/2016

TRANSPORTATION MANAGEMENT PLAN

EB2 DETAIL

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NOTE 1:
PLACE ADDITIONAL SIGNS
AND BARRICADES AS SHOWN
ON RSD 1101.03 (SHEET 1 OF 9)

REFER TO SHEET TMP-2 FOR CUT SECTION.

CLOSE ALL DRIVE/ACCESS POINTS ON EASTBOUND LANE
FROM MARRIOTT DRIVE TO BLUE RIDGE ROAD.

REVISIONS

7/28/2016
10:15 AM
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Rhonda B. Early
Professional Engineer
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023521
RHONDA B. EARLY

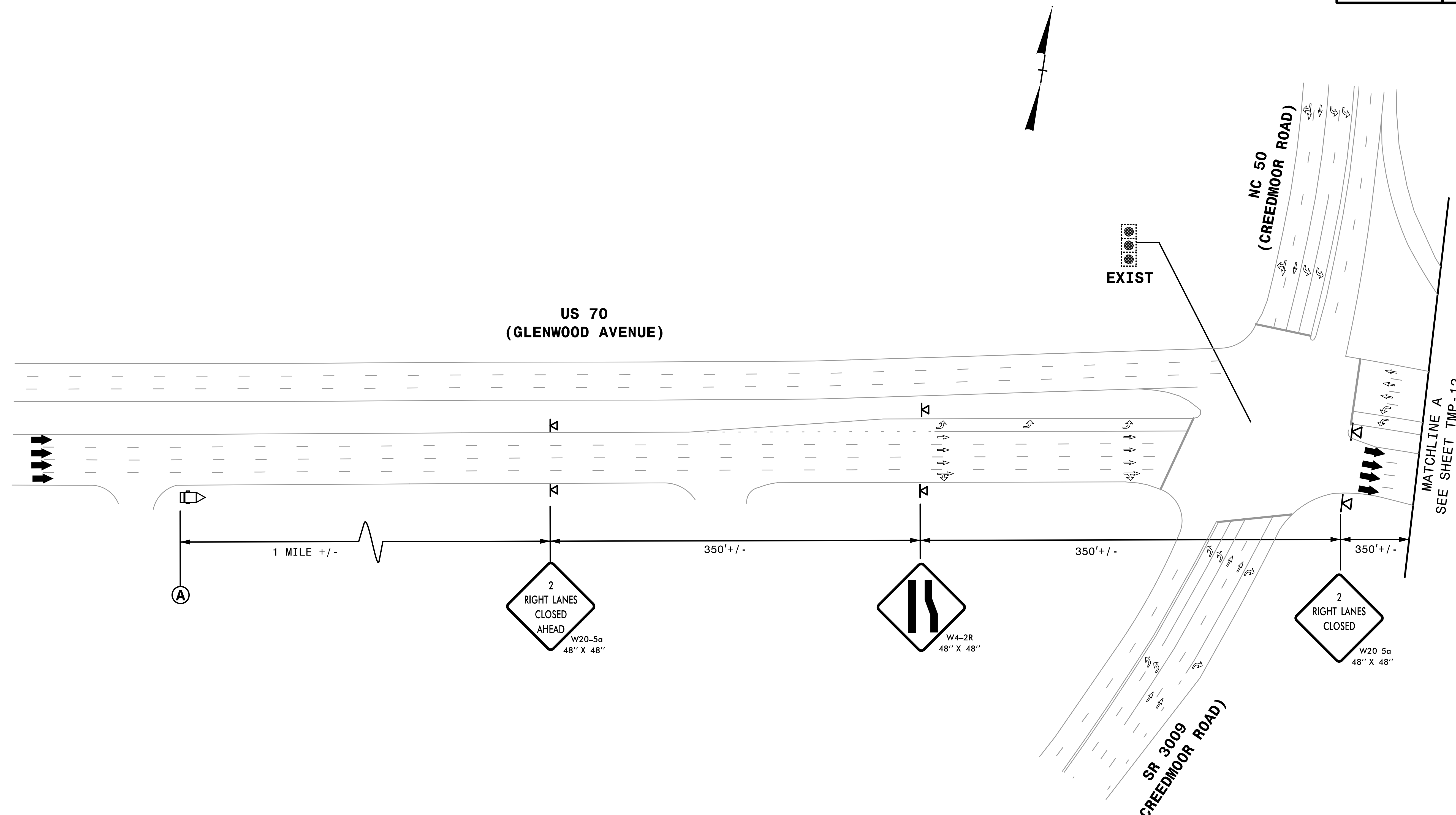
DIVISION OF HIGHWAYS
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DEPARTMENT OF TRANSPORTATION
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MANAGEMENT PLAN

EB2 DETAIL

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MESSAGE NO. 1	MESSAGE NO. 2
RIGHT TWO LANES	CLOSED NEXT 2 MILES

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Rhonda B. Early
Professional Engineer
F34C4F8AC6BF
SEAL 023521

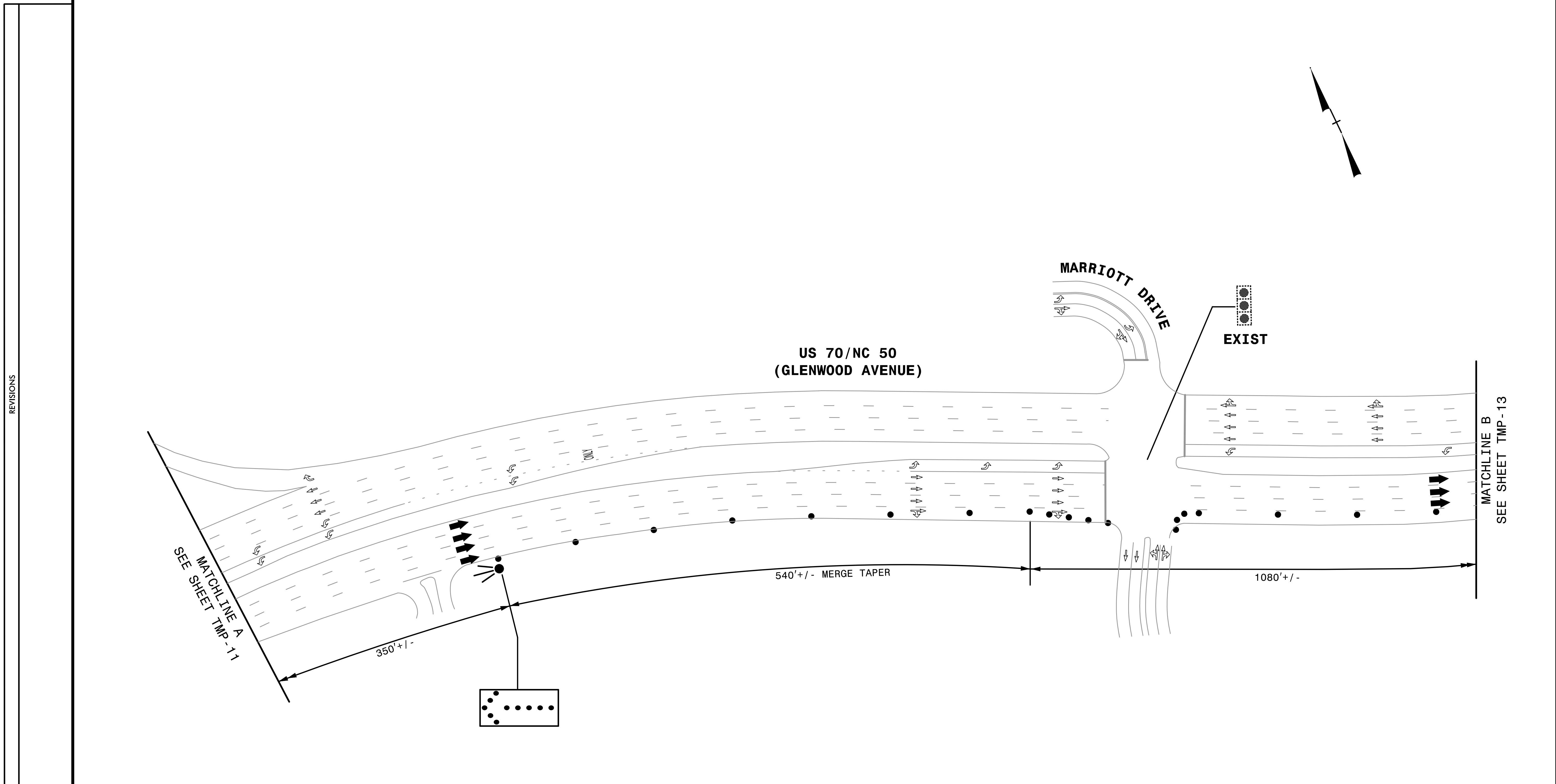
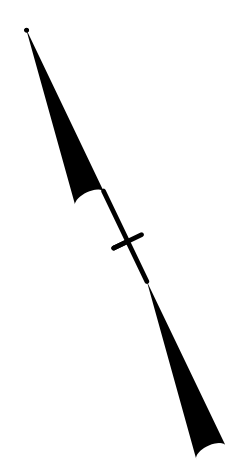
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EB3 DETAIL

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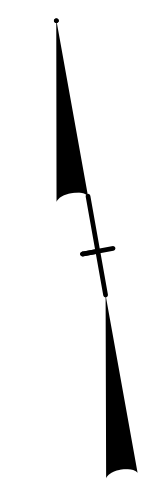
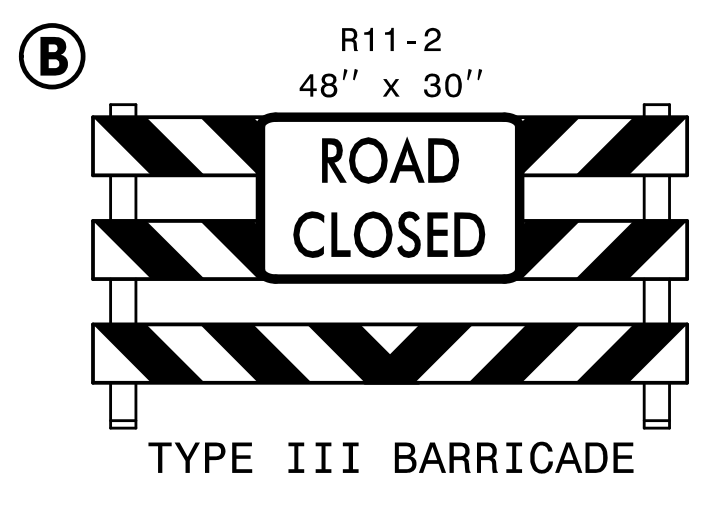
SEAL
 NORTH CAROLINA
 PROFESSIONAL
 ENGINEER
 RHONDA B. EARLY
 023521

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 STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
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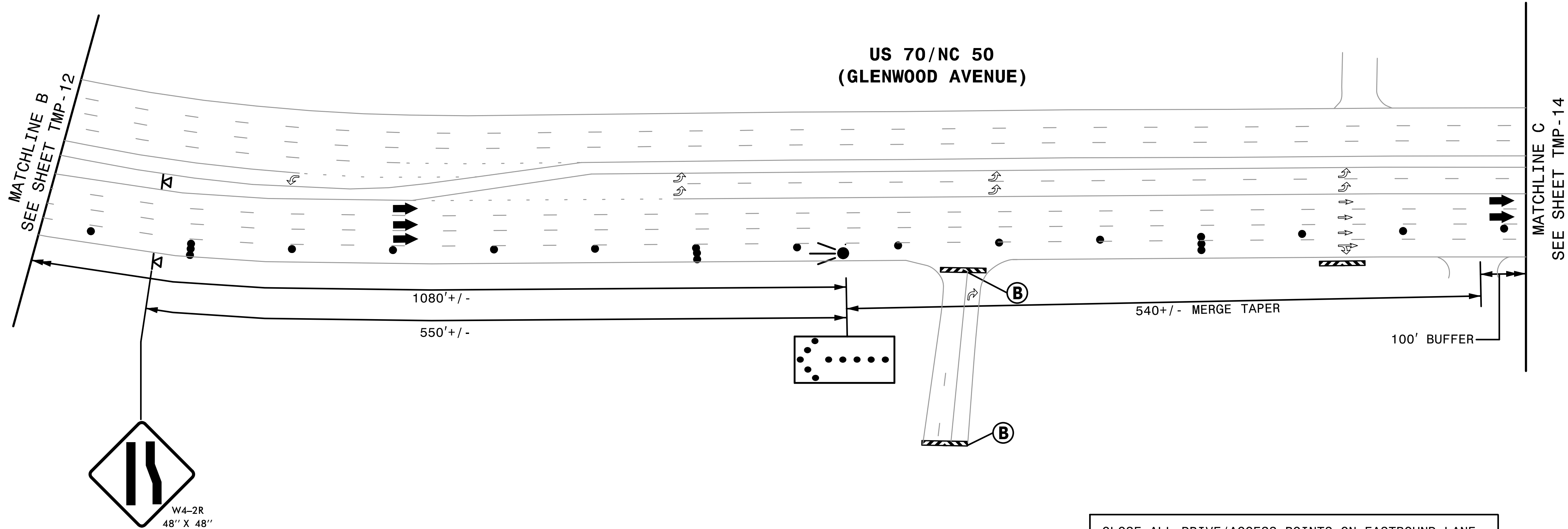
TRANSPORTATION
 MANAGEMENT PLAN

EB3 DETAIL

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REVISIONS
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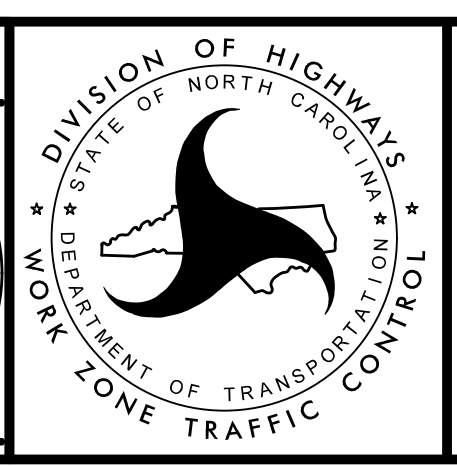
CLOSE ALL DRIVE/ACCESS POINTS ON EASTBOUND LANE FROM MARRIOTT DRIVE TO BLUE RIDGE ROAD.



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FACAFSACBFF
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ENGINEER



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EB3 DETAIL

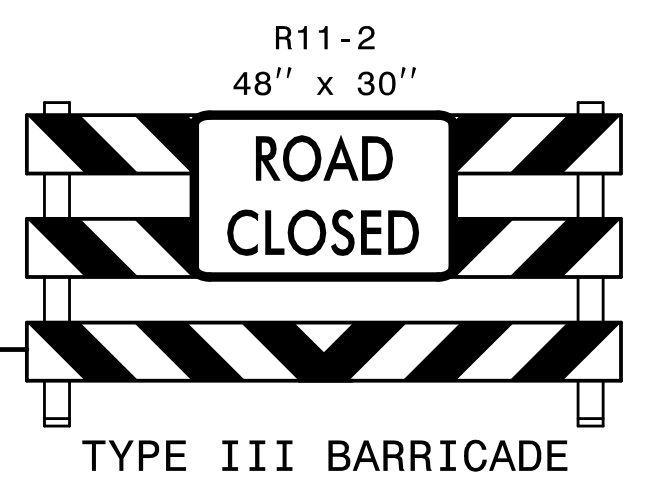
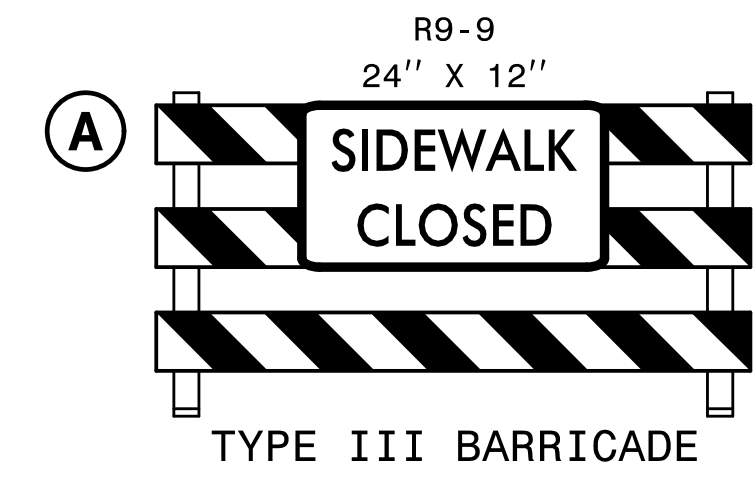
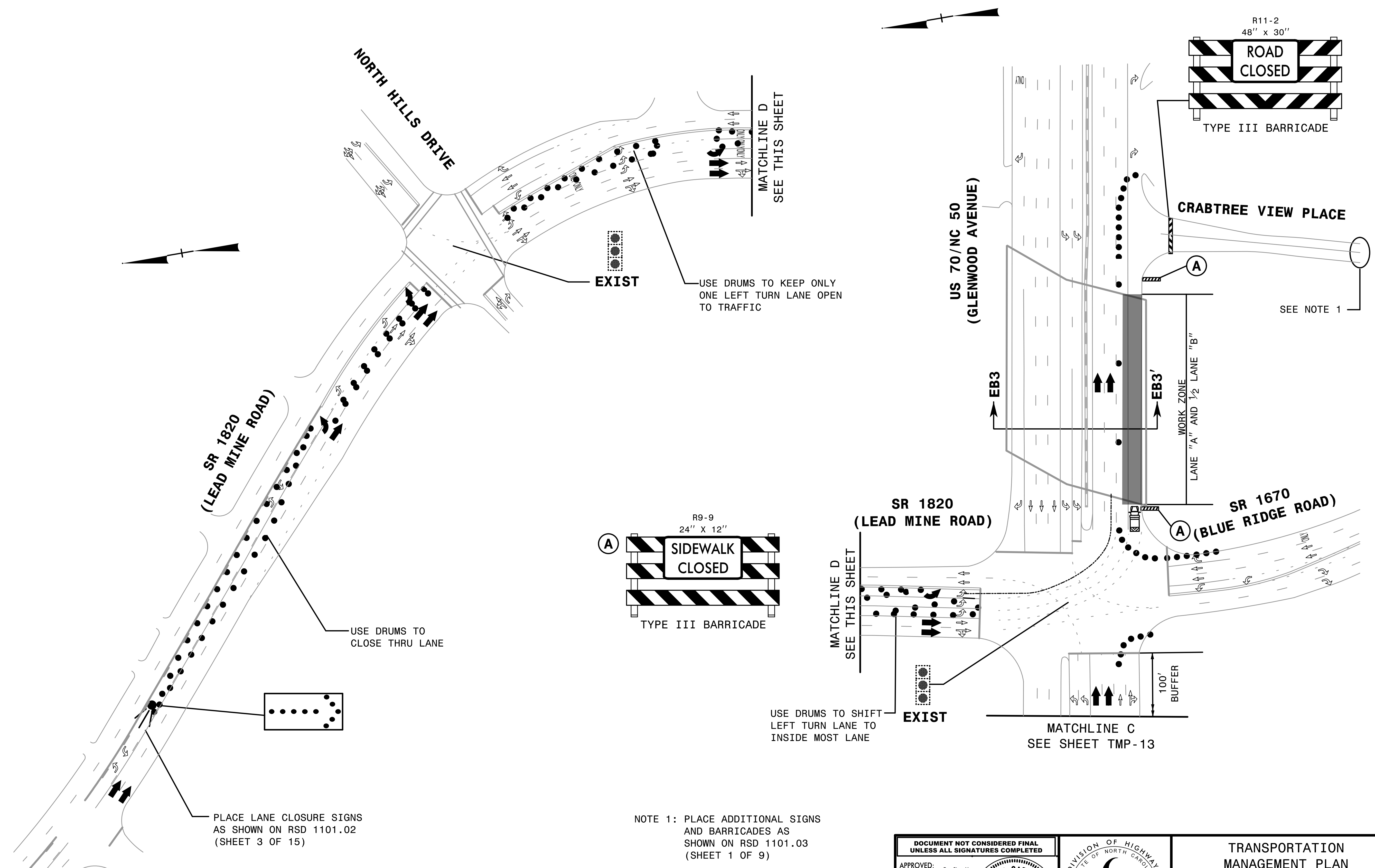
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PLACE LANE CLOSURE SIGNS AS SHOWN ON RSD 1101.02 (SHEET 3 OF 15)

USE DRUMS TO CLOSE THRU LANE

USE DRUMS TO KEEP ONLY ONE LEFT TURN LANE OPEN TO TRAFFIC

USE DRUMS TO SHIFT LEFT TURN LANE TO INSIDE MOST LANE

NOTE 1: PLACE ADDITIONAL SIGNS AND BARRICADES AS SHOWN ON RSD 1101.03 (SHEET 1 OF 9)

REFER TO SHEET TMP-2 FOR CUT SECTION(S).

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 PROFESSIONAL ENGINEER
 SEAL 023521
 DATE: 3/28/2016

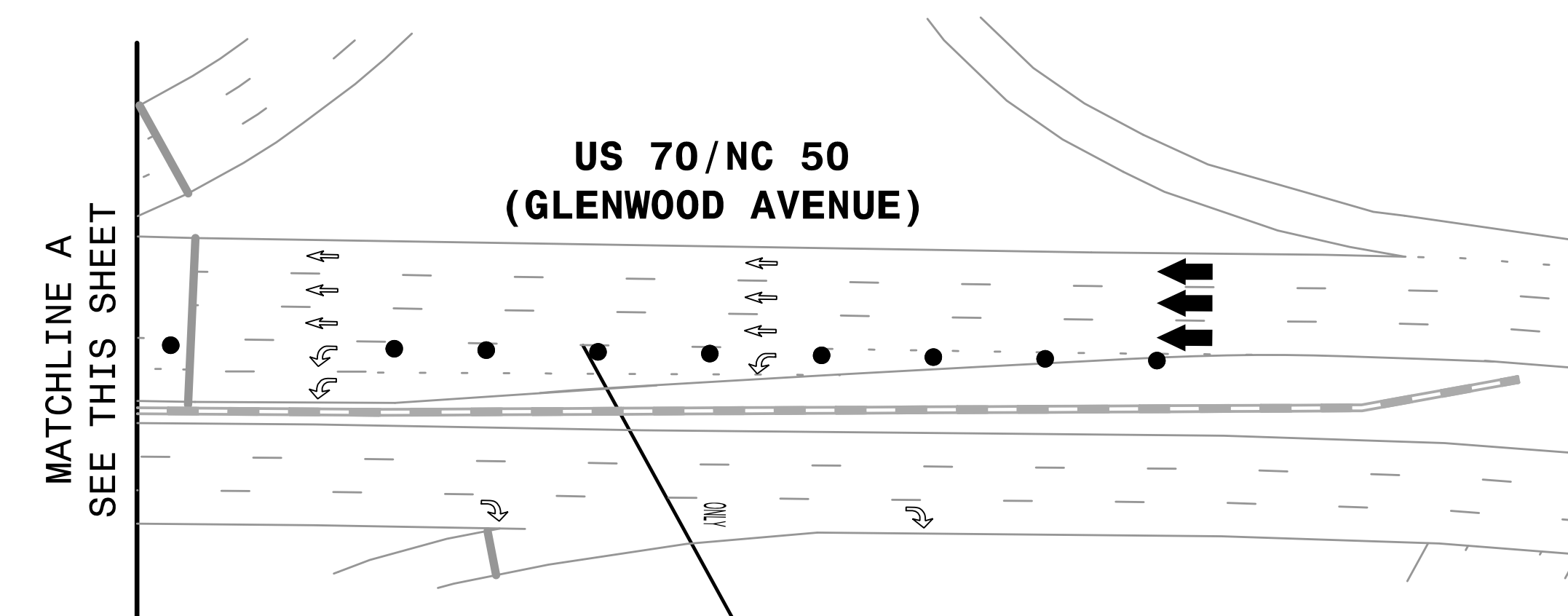
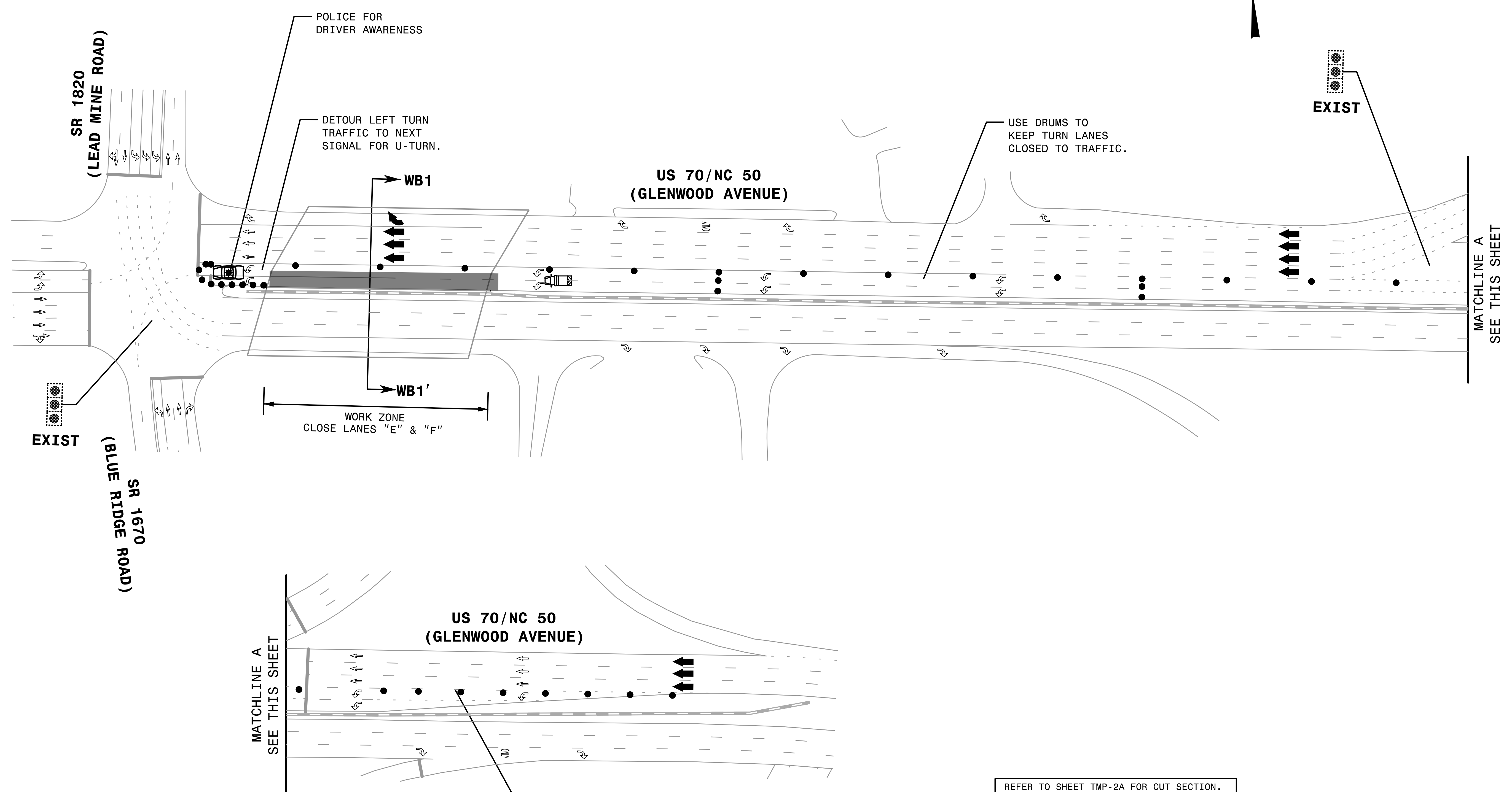
DIVISION OF HIGHWAYS
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TRANSPORTATION MANAGEMENT PLAN

EB3 DETAIL

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REFER TO SHEET TMP-2A FOR CUT SECTION.

REVISIONS

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 023521
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 PROFESSIONAL ENGINEER
 RHONDA B. EARLY

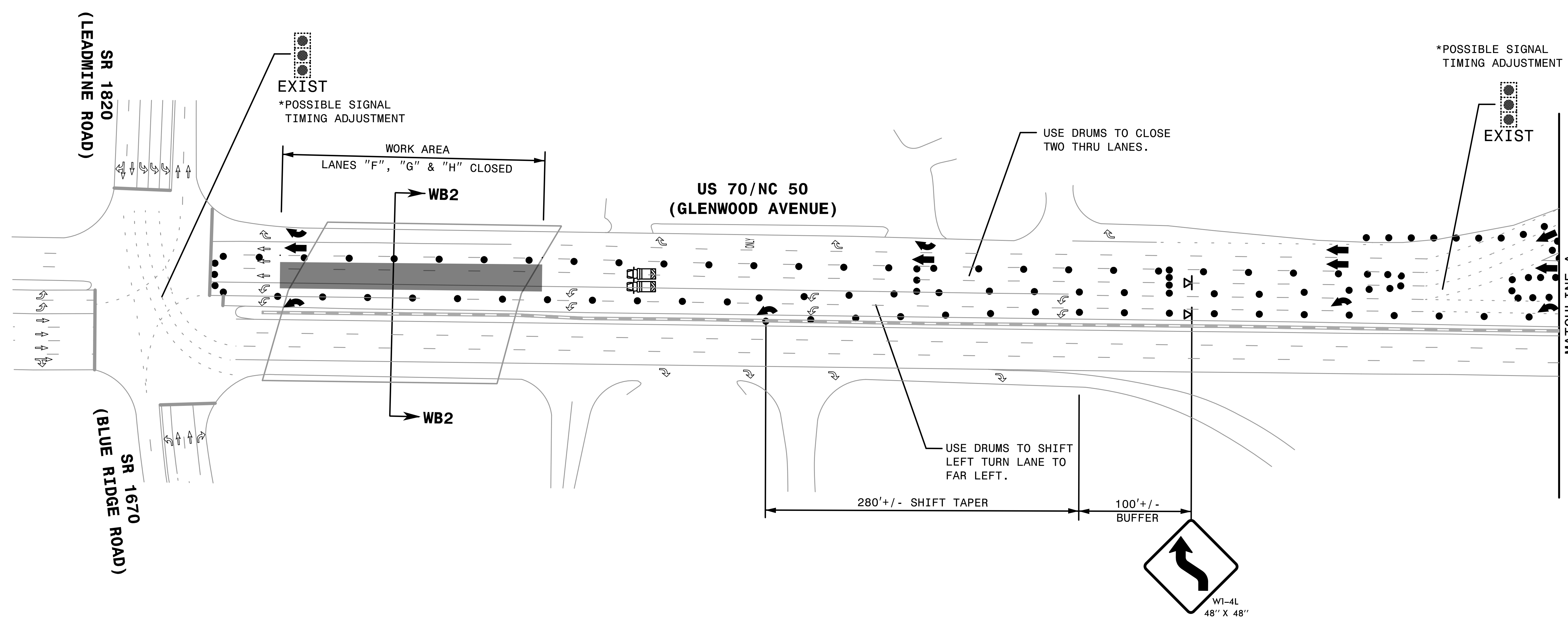
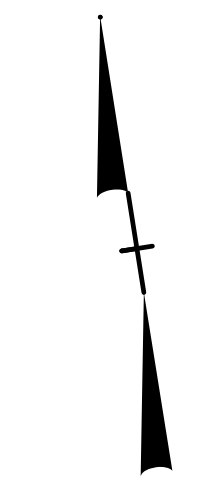
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 DEPARTMENT OF TRANSPORTATION
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MANAGEMENT PLAN

WB1 DETAIL

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REVISIONS

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RHONDA B. EARLY
ENGINEER

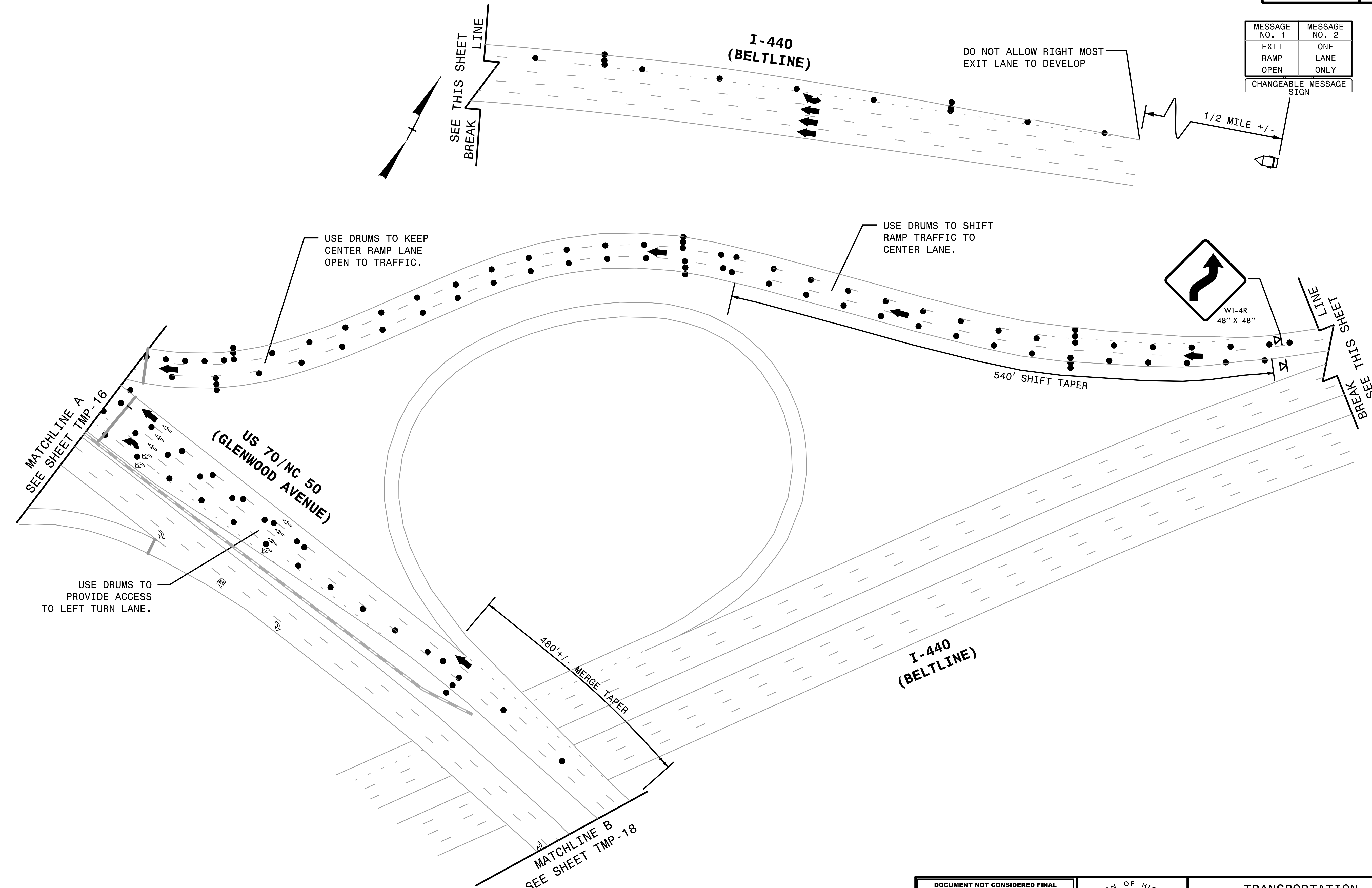
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**TRANSPORTATION
MANAGEMENT PLAN**

WB2 DETAIL

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MESSAGE NO. 1	MESSAGE NO. 2
EXIT RAMP OPEN	ONE LANE ONLY
CHANGEABLE MESSAGE SIGN	



REVISIONS

QA/QC STAGE:	
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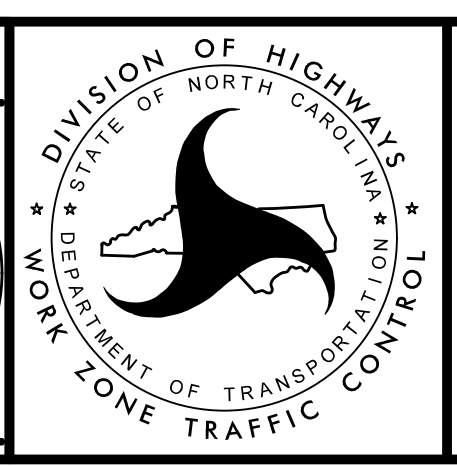
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 F54C4F5AC6B7
 ENGINEER
 DATE: 3/28/2016

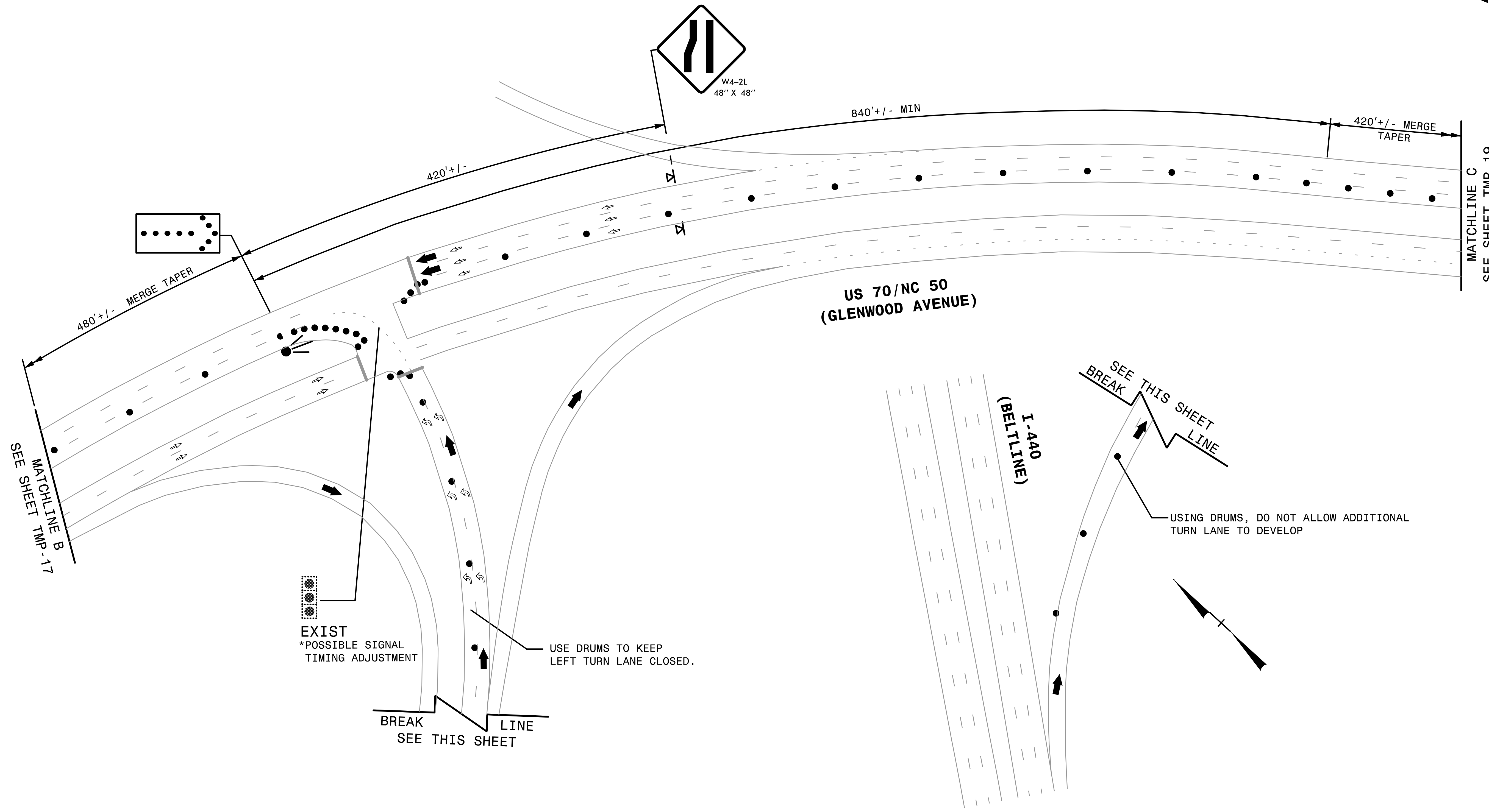
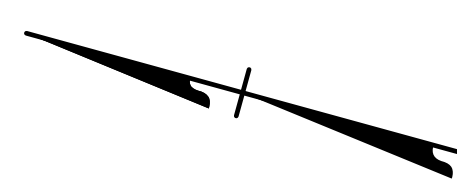
SEAL
 023521
 RYONDA B. EARLY



TRANSPORTATION
 MANAGEMENT PLAN

WB2 DETAIL

...TCP15BP.13.36_te_WB2-2.dgn



REVISIONS

7/28/2016
10:11:15 AM
TCP\15BP\13.36_te_WB2-3.dgn

QA/QC STAGE:	
REVIEW:	
CONCUR:	
REVISE:	
VERIFY:	

EXIST
*POSSIBLE SIGNAL
TIMING ADJUSTMENT

USE DRUMS TO KEEP
LEFT TURN LANE CLOSED.

USING DRUMS, DO NOT ALLOW
ADDITIONAL
TURN LANE TO DEVELOP

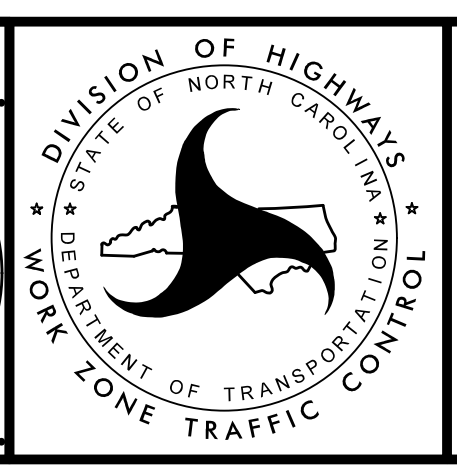
HNTB HNTB NORTH CAROLINA, P.C.
343 E. SIX FORKS ROAD, SUITE 200
RALEIGH, NORTH CAROLINA 27609
NC LICENSE NO: C-1554

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APPROVED: *Rhonda B.*
F34CAFACBFB

DATE: 3/28/2016

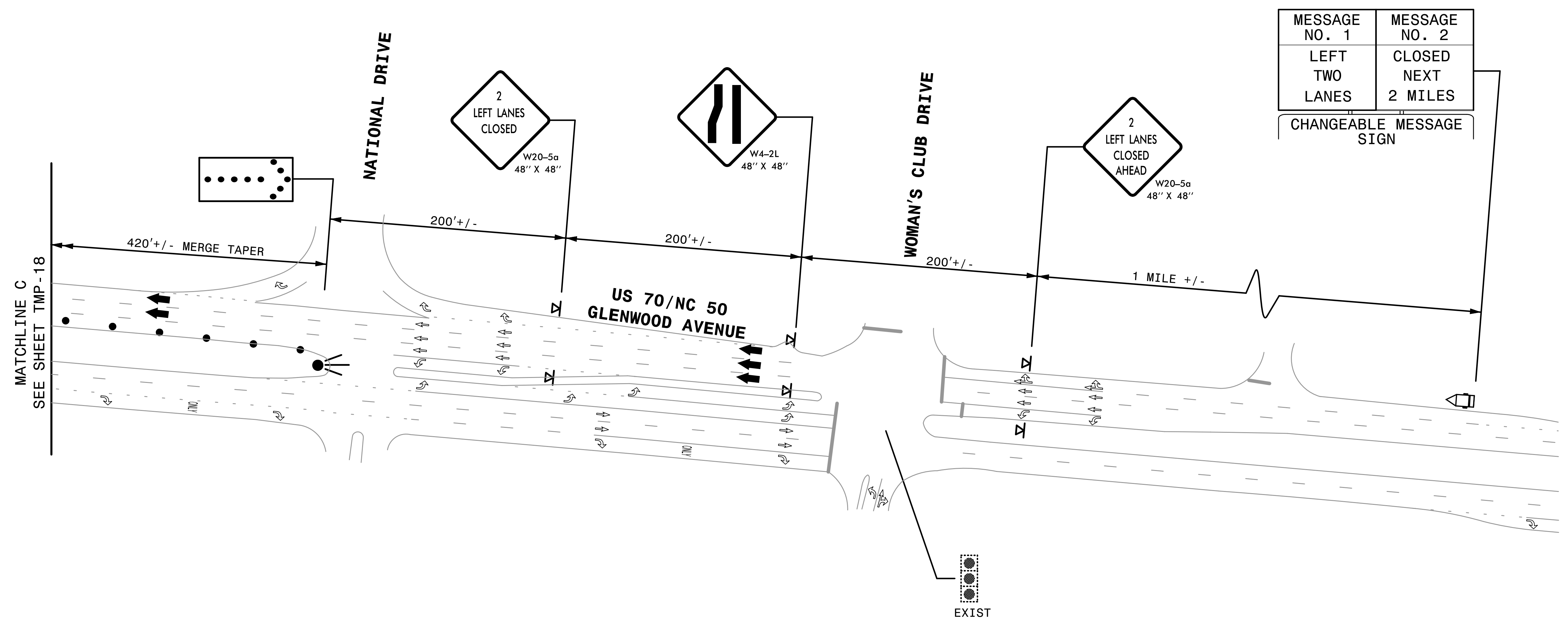
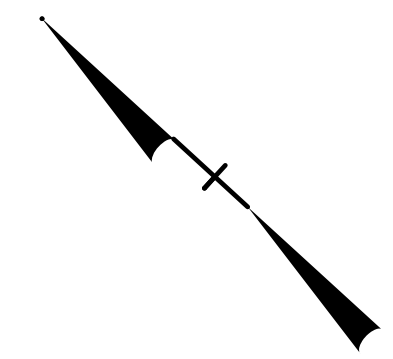
SEAL
NORTH CAROLINA
PROFESSIONAL
ENGINEER
RHONDA B. EARLY
023521



TRANSPORTATION
MANAGEMENT PLAN

WB2 DETAIL

...TCP\15BP\13.36_te_WB2-3.dgn



MATCHLINE C
SEE SHEET TMP-18

REVISIONS

7/28/2016
10:15 AM
TCP\15BP\13.36_te_WB2-4.dgn

QA/QC STAGE:	
REVIEW:	
CONCUR:	
REVISE:	
VERIFY:	

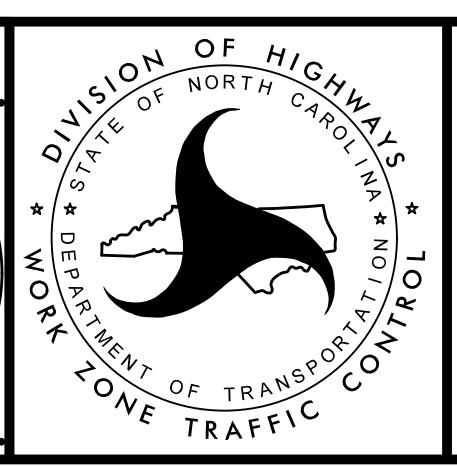
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NC License No: C-1554

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F34CAFAC6BFF

DATE: 3/28/2016

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NORTH CAROLINA
PROFESSIONAL
ENGINEER
RHONDA B. EARLY
023521



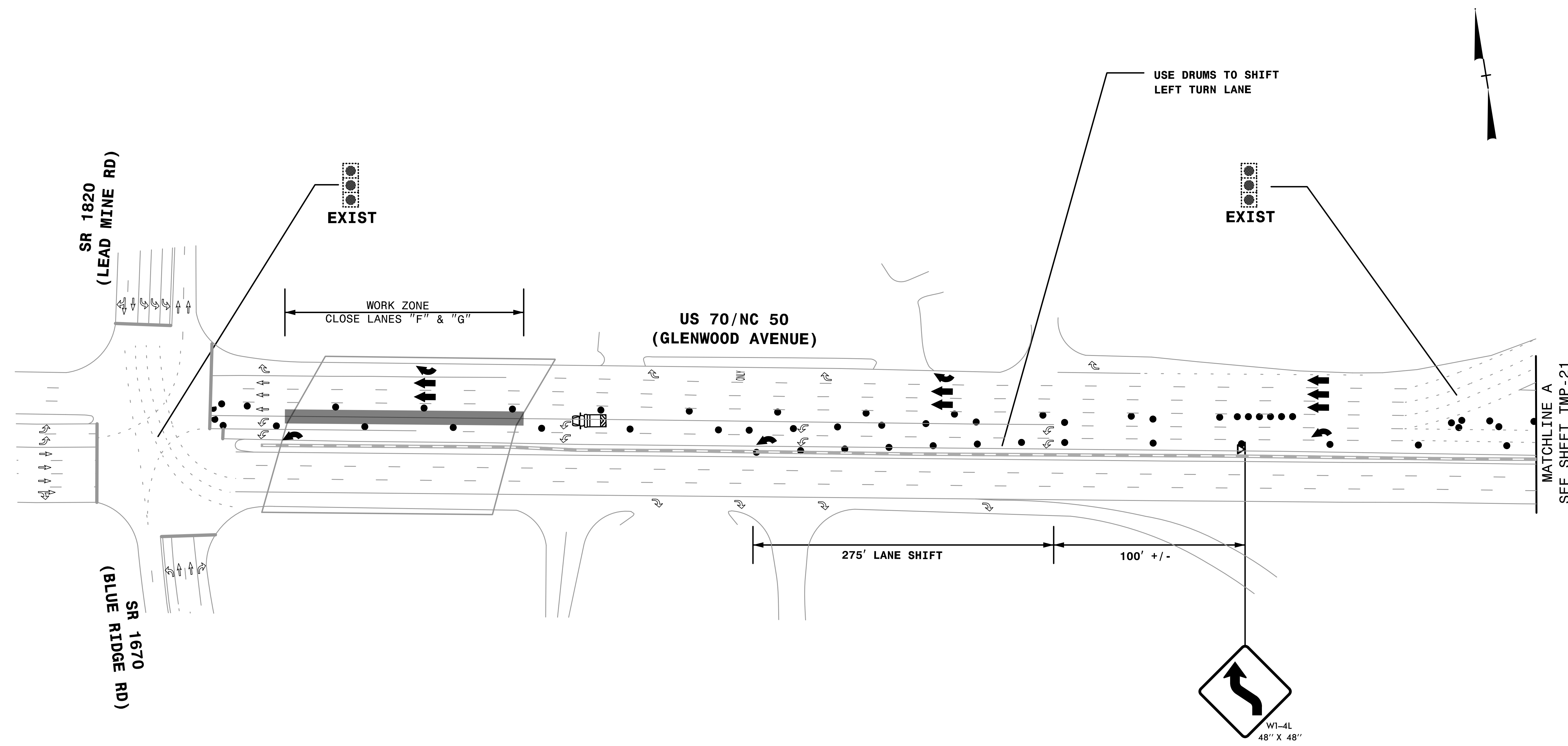
TRANSPORTATION
MANAGEMENT PLAN

WB2 DETAIL

...TCP\15BP\13.36_te_WB2-4.dgn

8/17/99

REVISIONS



3/28/2016 10:41:25 AM
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 CONCUR:
 REVISE:
 VERIFY:

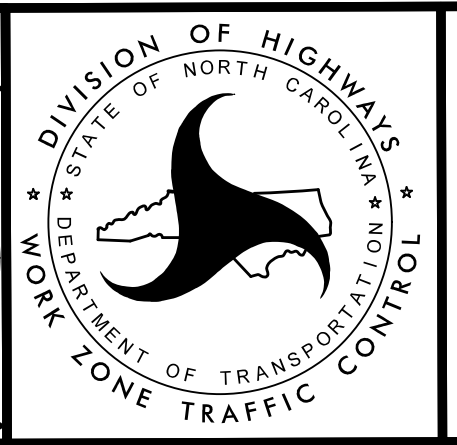
REFER TO SHEET TMP-2A FOR CUT SECTION.

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 Raleigh, North Carolina 27609
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 F3MCAFSACBBB
 DATE: 3/28/2016

SEAL
 023521
 PHOENIA B. EARLY
 ENGINEER

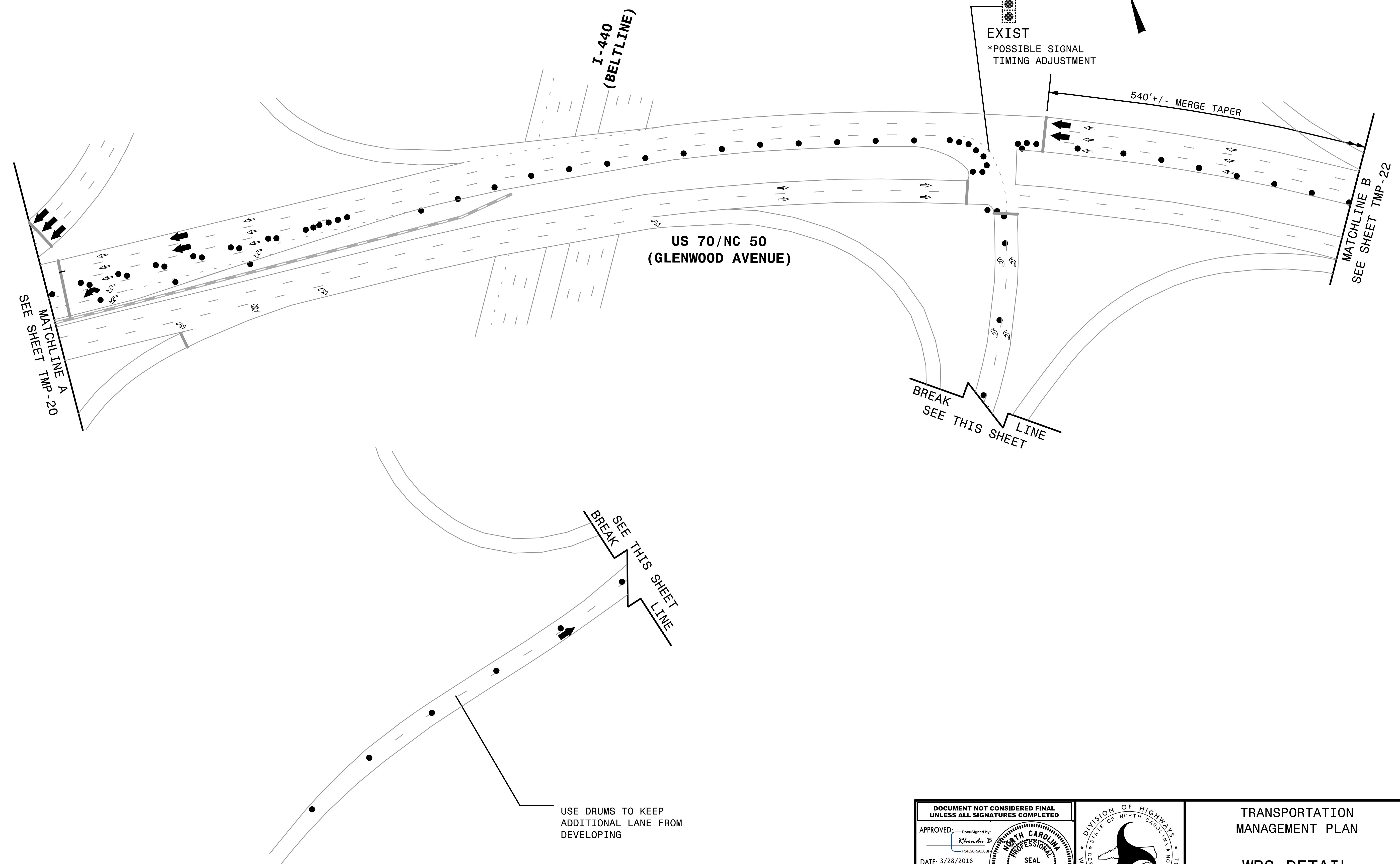


TRANSPORTATION
 MANAGEMENT PLAN

WB3 DETAIL

...\\TCP\15BP.13.36_te_WB3-1.dgn

B.17/99



REVISIONS

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REVIEW:	
CONCUR:	
REVISE:	
VERIFY:	

7/28/2016
 10:11:15 AM
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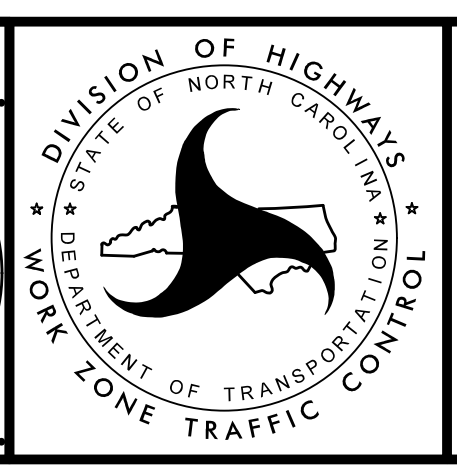
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DocuSigned by: Rhonda B. #34CAF5AC6BF

DATE: 3/28/2016

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 NORTH CAROLINA PROFESSIONAL ENGINEER
 RYONDA B. EARLY
 023521

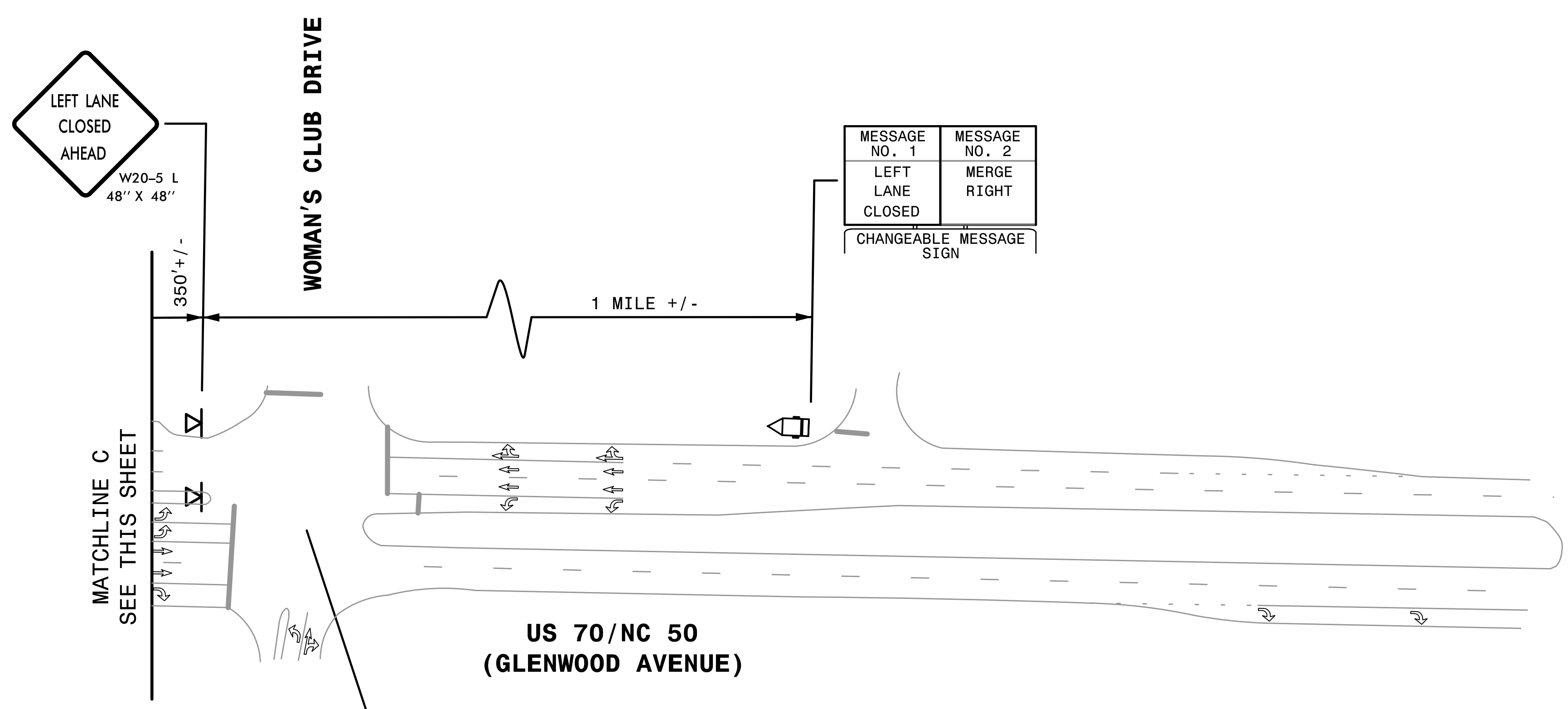
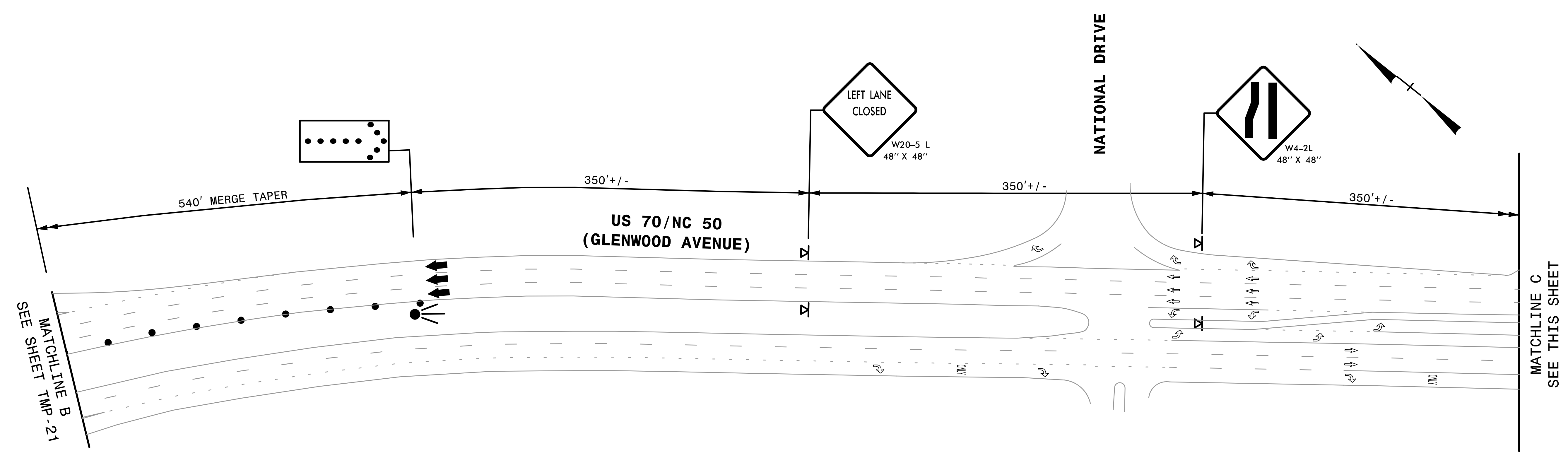


TRANSPORTATION MANAGEMENT PLAN

WB3 DETAIL

...\\TCP15BP13.36_te_WB3-2.dgn

8/17/99



REVISIONS

QA/QC STAGE:	
REVIEW:	
CONCUR:	
REVISE:	
VERIFY:	

7/28/2016
 10:45 AM
 \\TCF\15BP\13.36_te_WB3-3.dgn

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DATE: 3/28/2016

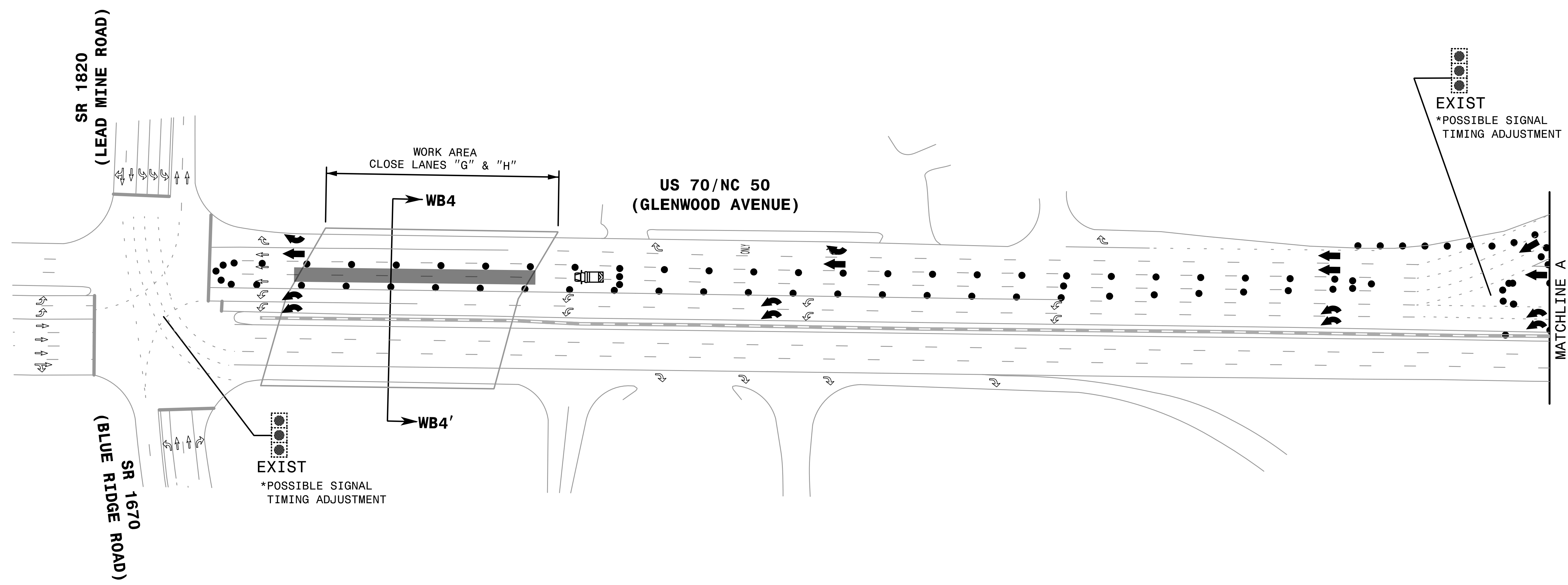
SEAL
 NORTH CAROLINA
 PROFESSIONAL ENGINEER
 RHONDA B. EARLY
 023521

DIVISION OF HIGHWAYS
 STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 WORK ZONE TRAFFIC CONTROL

TRANSPORTATION
 MANAGEMENT PLAN

WB3 DETAIL

...\\TCP\15BP\13.36_te_WB3-3.dgn



B.17/99

REVISIONS

NO.	DATE	DESCRIPTION

REFER TO SHEET TMP-2B FOR CUT SECTION.

7/28/2016
 10:11:15 AM
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QA/QC STAGE:

REVIEW: _____

CONCUR: _____

REVISE: _____

VERIFY: _____

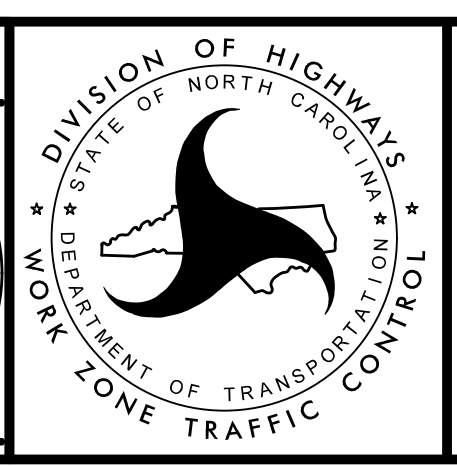
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 NC License No: C-1554

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 DocuSigned by:
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 F5ACAF5AC6BF

DATE: 3/28/2016

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 NORTH CAROLINA
 PROFESSIONAL ENGINEER
 RHONDA B. EARLY
 023521



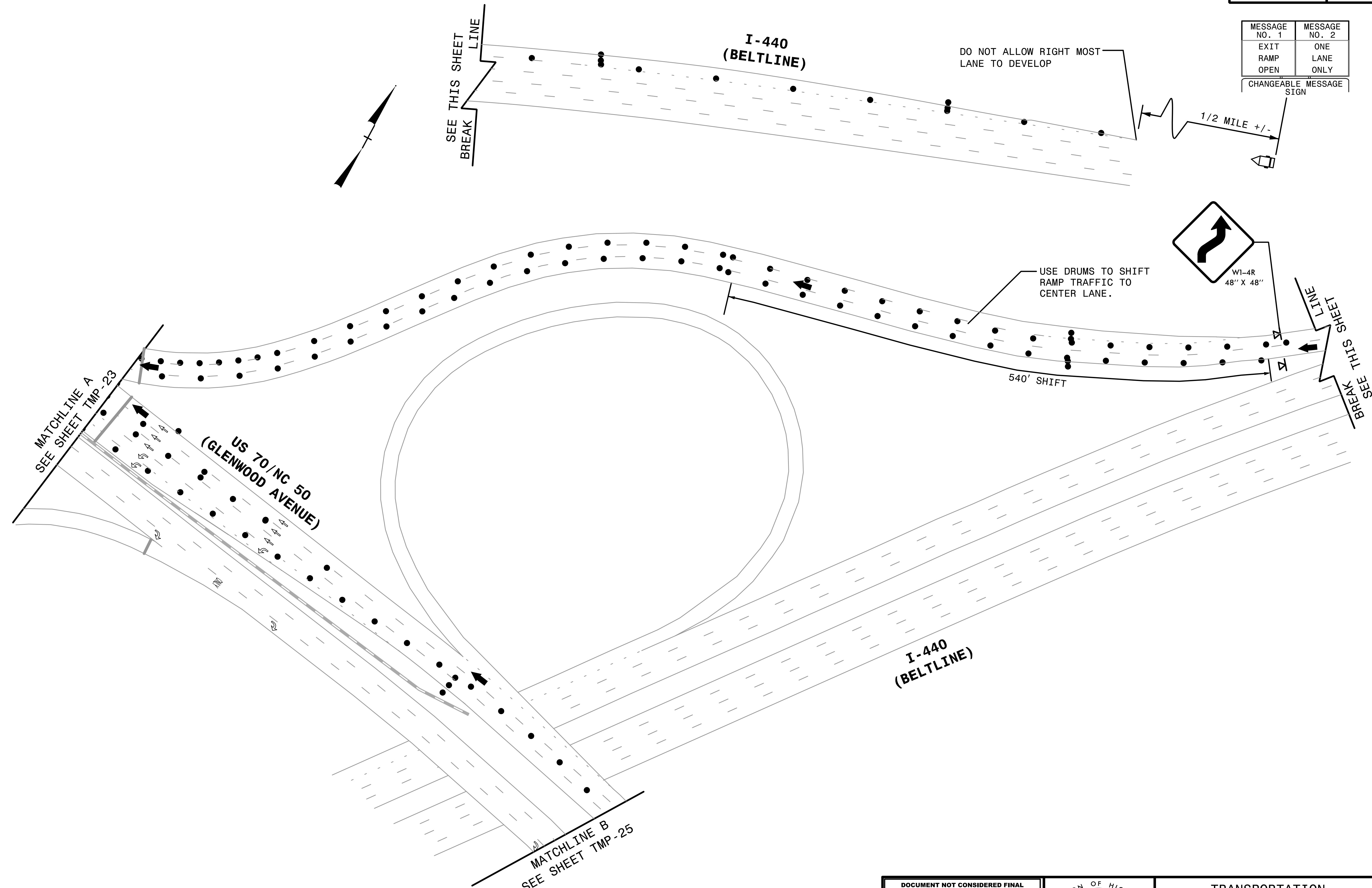
TRANSPORTATION
 MANAGEMENT PLAN

WB4 DETAIL

...\\TCF\15BP\13.36_te_WB4-1.dgn

PROJ. REFERENCE NO.	SHEET NO.
B-5940	TMP-24

MESSAGE NO. 1	MESSAGE NO. 2
EXIT RAMP OPEN	ONE LANE ONLY
CHANGEABLE MESSAGE SIGN	



REVISIONS

QA/QC STAGE:	
REVIEW:	
CONCUR:	
REVISE:	
VERIFY:	

7/28/2016
 10:11:15 AM
 \\TC\15BP\13.36_te_WB4-2.dgn

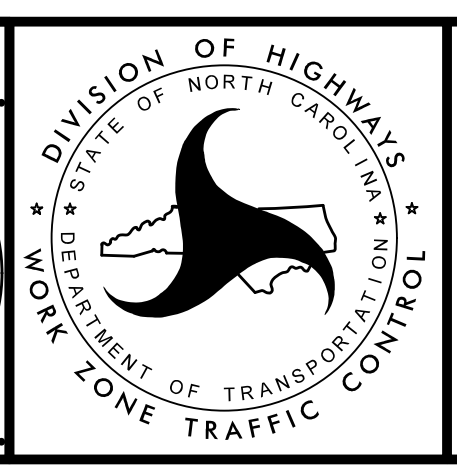
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 RALEIGH, NORTH CAROLINA 27609
 NC LICENSE NO: C-1554

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APPROVED: Rhonda B.
DocuSigned by:
Rhonda B.
F34CAFAC6BF

DATE: 3/28/2016

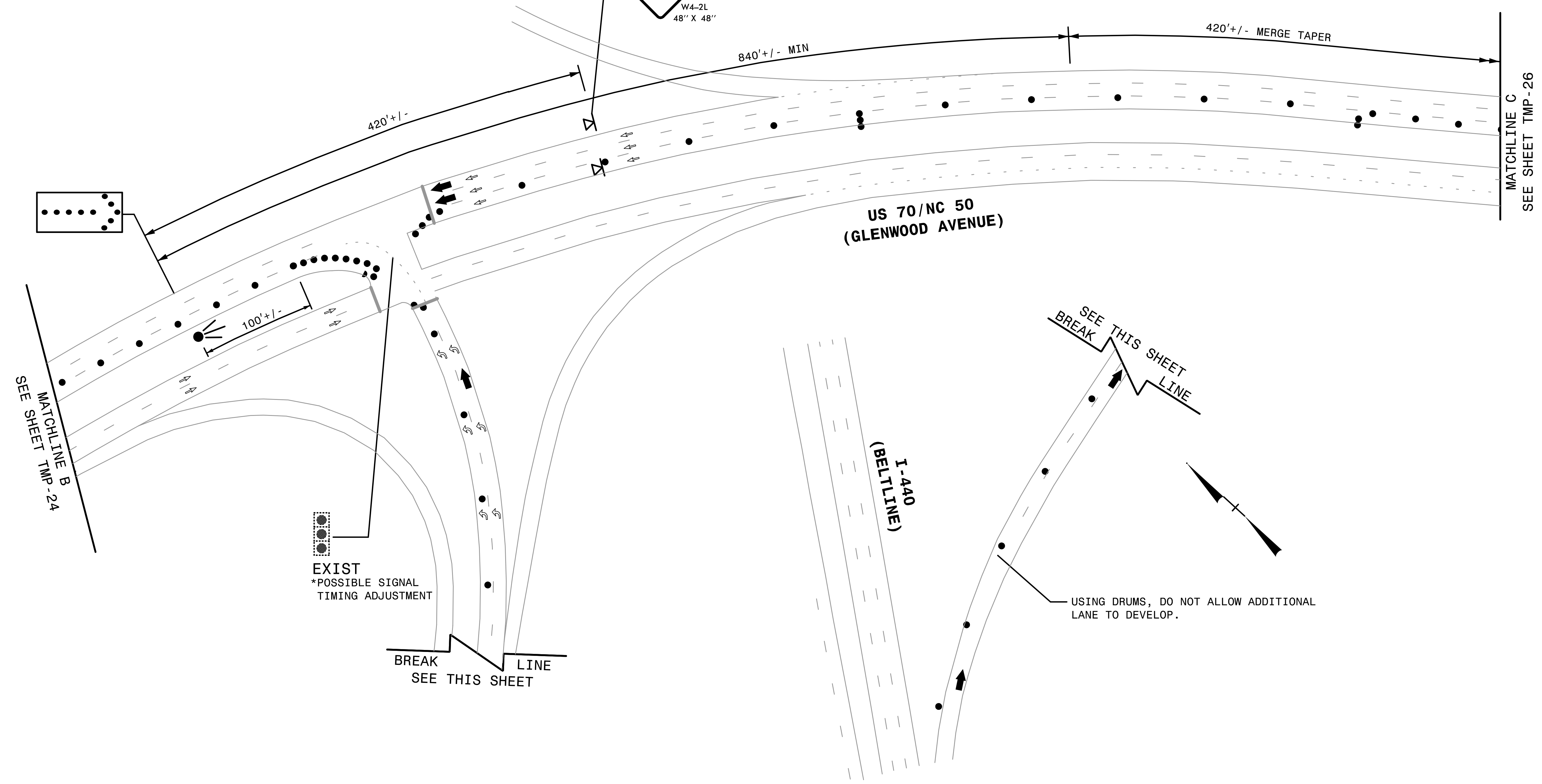
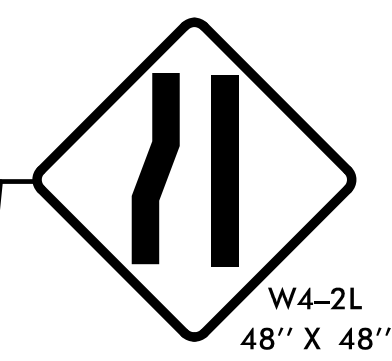
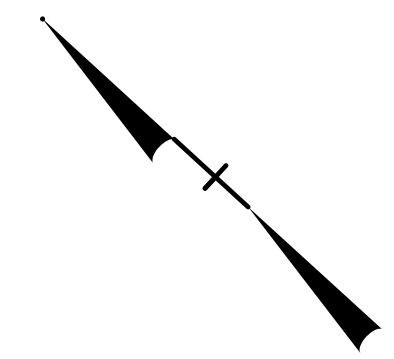
PROFESSIONAL ENGINEER SEAL
 NORTH CAROLINA
 023521
 RHONDA B. EARLY



TRANSPORTATION
 MANAGEMENT PLAN

WB4 DETAIL

...TC\15BP\13.36_te_WB4-2.dgn



REVISIONS

7/28/2016
10:11:15 AM
TCP\15BP.13.36_te_WB4-3.dgn

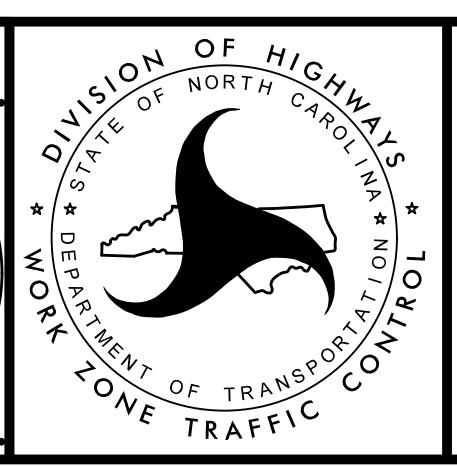
QA/QC STAGE:	
REVIEW:	
CONCUR:	
REVISE:	
VERIFY:	

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APPROVED: *Rhonda B.*
F34CAFAC6BF
SEAL
023521
Rhonda B. Early
ENGINEER

DATE: 3/28/2016

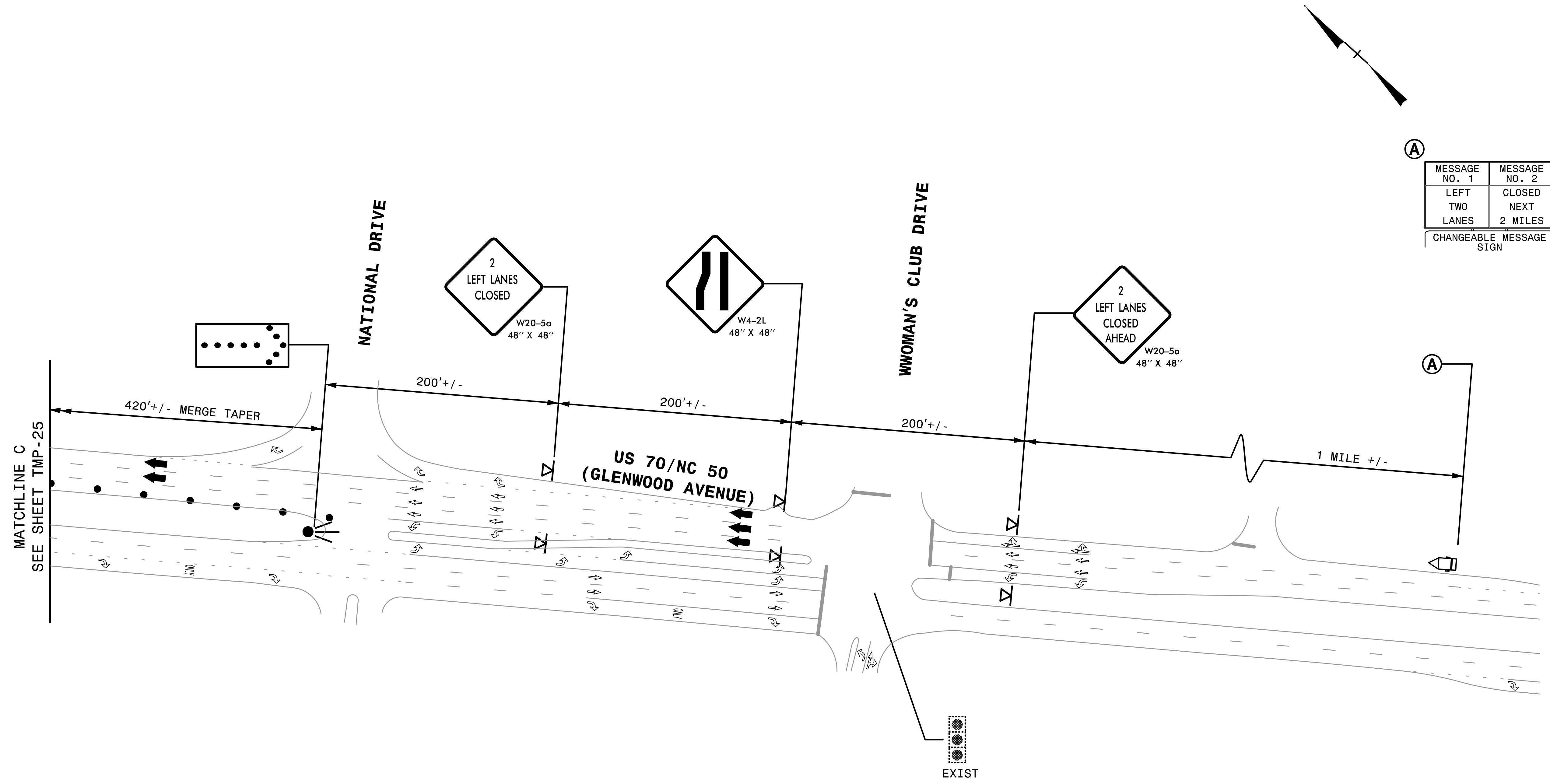


TRANSPORTATION
MANAGEMENT PLAN

WB4 DETAIL

...TCP\15BP.13.36_te_WB4-3.dgn

B.17/99



MESSAGE NO. 1	MESSAGE NO. 2
LEFT TWO LANES	CLOSED NEXT 2 MILES
CHANGEABLE MESSAGE SIGN	

REVISIONS

7/23/2016
 10:11:15 AM
 \\TCF\15BP\13.36_te_WB4-4.dgn

QA/QC STAGE:	
REVIEW:	
CONCUR:	
REVISE:	
VERIFY:	

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 F34CFA5AC86F
 DATE: 3/28/2016

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 023521
 RYONDA B. EARLY
 ENGINEER

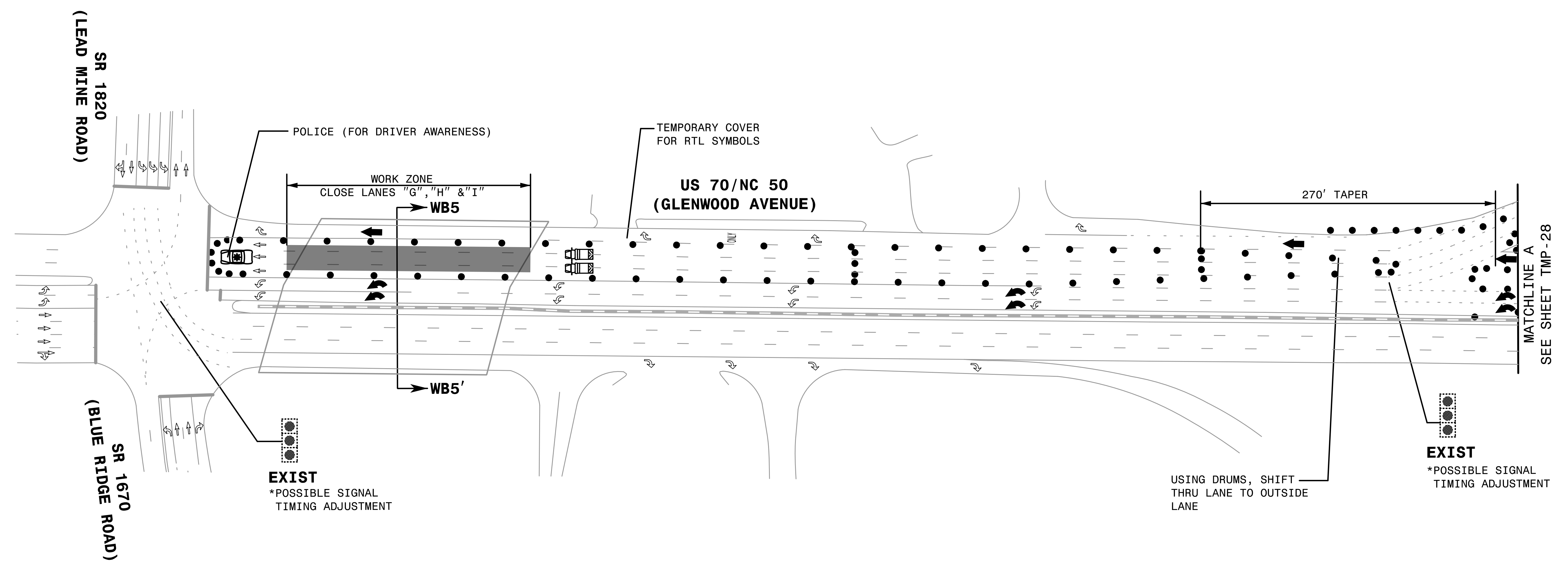
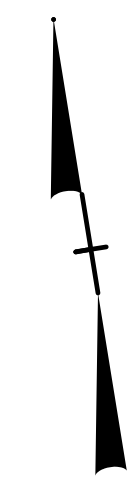
DIVISION OF HIGHWAYS
 STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 WORK ZONE TRAFFIC CONTROL

TRANSPORTATION
 MANAGEMENT PLAN

WB4 DETAIL

...TCP\15BP\13.36_te_WB4-4.dgn

8/17/99



REVISIONS

REVIEW:	_____
CONCUR:	_____
REVISE:	_____
VERIFY:	_____

REFER TO SHEET TMP-2B FOR CUT SECTION(S).

3/28/2016 10:41:53 AM
 ...\\TCP\15BP.13.36_te_WB5-1.dgn

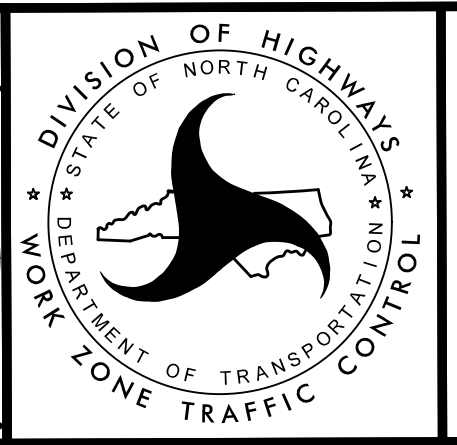
HNTB HNTB NORTH CAROLINA, P.C.
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 Raleigh, North Carolina 27609
 NC License No: C-1554

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 F34CAFACBBF

DATE: 3/28/2016

SEAL
 023521
 NORTH CAROLINA PROFESSIONAL ENGINEER
 RHONDA B. EARLY



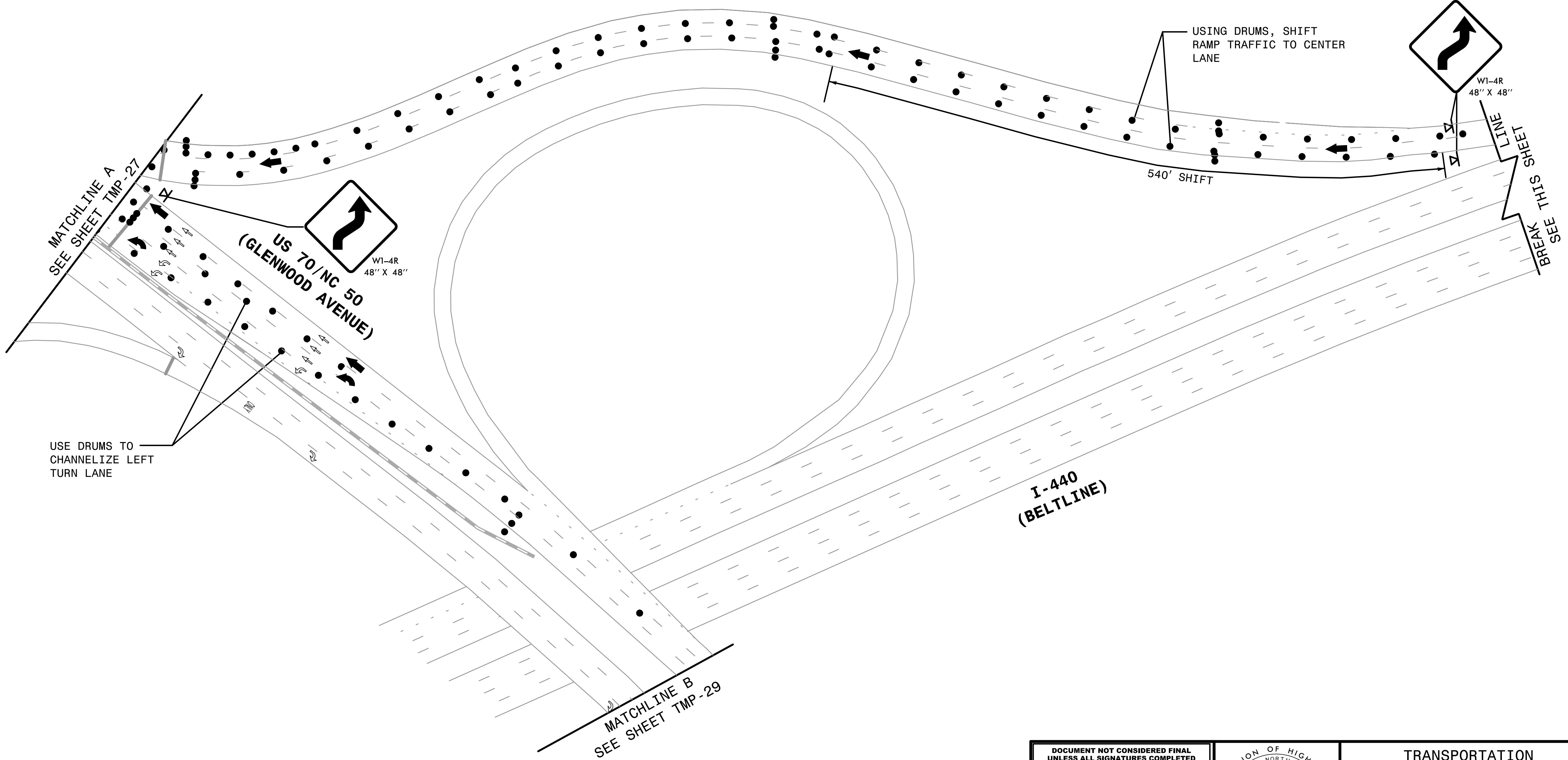
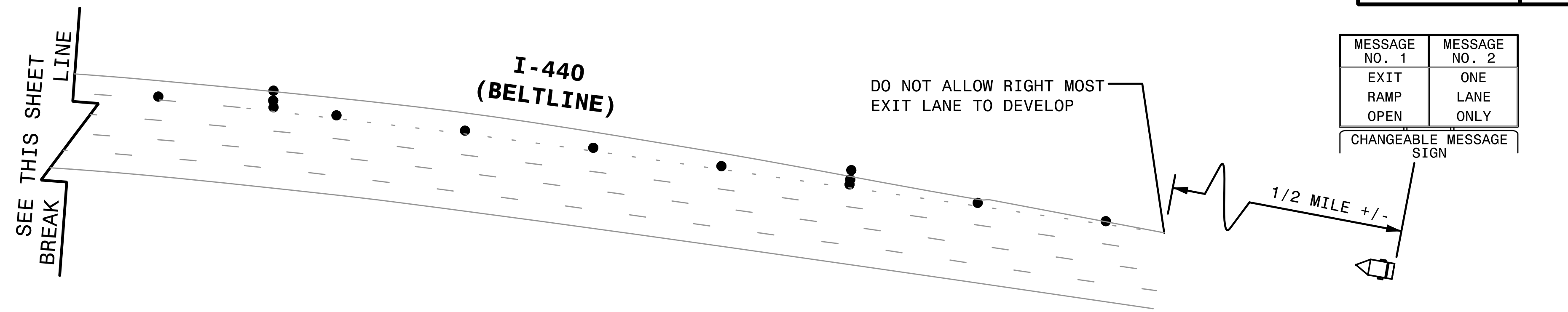
TRANSPORTATION
 MANAGEMENT PLAN

WB5 DETAIL

...\\TCP\15BP.13.36_te_WB5-1.dgn

PROJ. REFERENCE NO.	SHEET NO.
B-5940	TMP-28

MESSAGE NO. 1	MESSAGE NO. 2
EXIT RAMP OPEN	ONE LANE ONLY
CHANGEABLE MESSAGE SIGN	



REVISIONS

QAC STAGE:	
REVIEW:	
CONCUR:	
REVISE:	
VERIFY:	

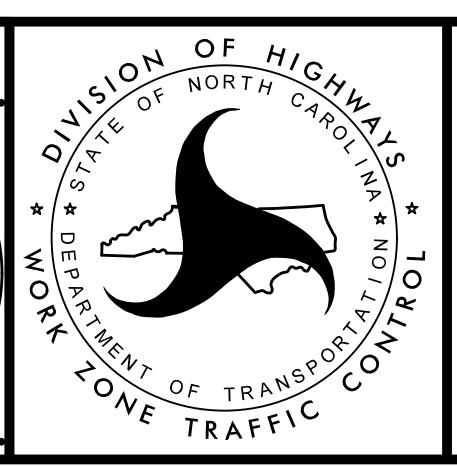
7/28/2016
 10:11:53 AM
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 Raleigh, North Carolina 27609
 NC License No: C-1554

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 DATE: 3/28/2016

SEAL
 NORTH CAROLINA
 PROFESSIONAL ENGINEER
 RHONDA B. EARLY
 023521



TRANSPORTATION
 MANAGEMENT PLAN

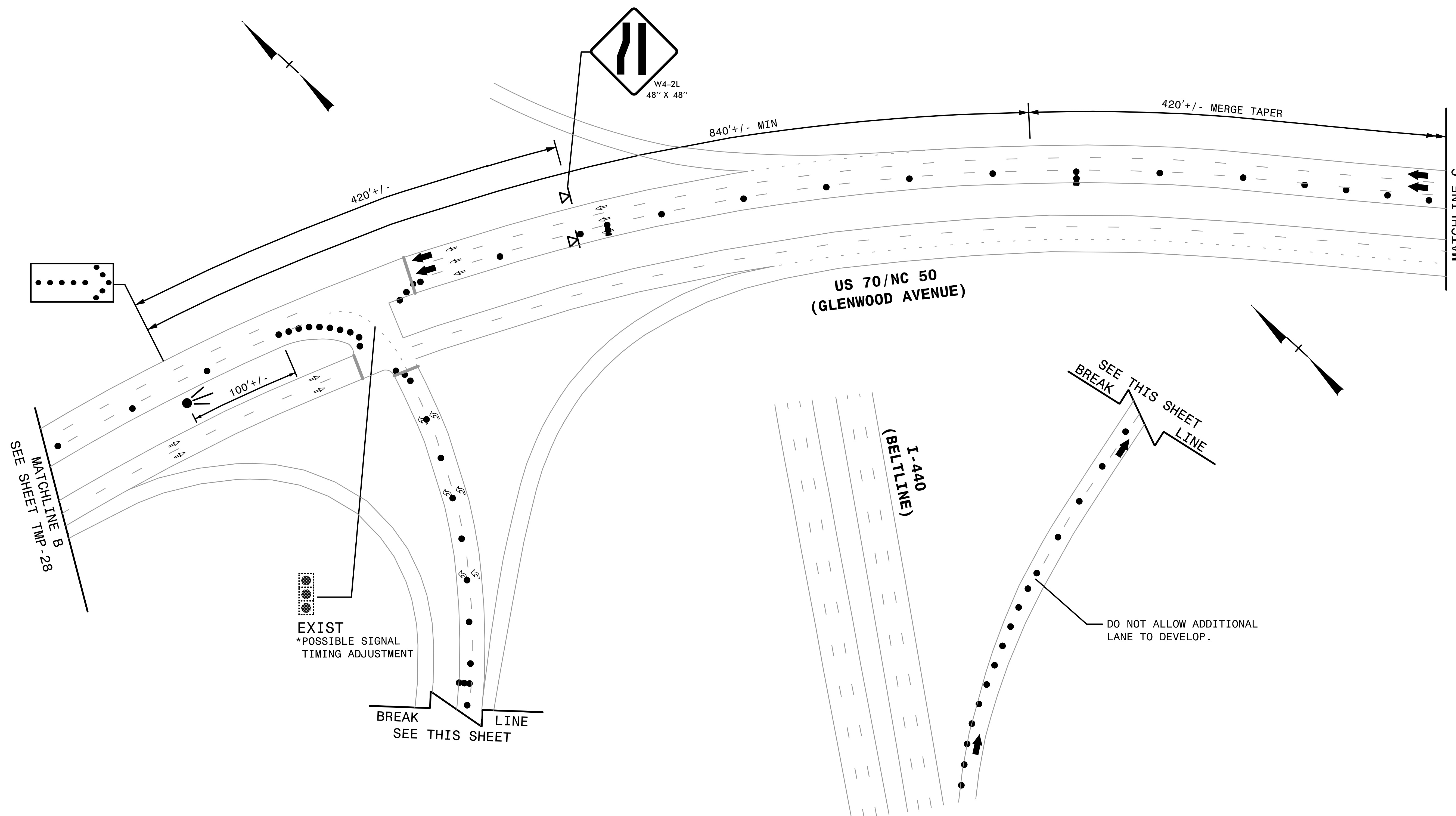
WB5 DETAIL

...TCP15BP.13.36_te_WB5-2.dgn

8/17/99

REVISIONS

NO.	DATE	DESCRIPTION



7/28/2016
10:15 AM
T:\CP\15BP\13.36_te_WB5-3.dgn

QA/QC STAGE:
REVIEW:
CONCUR:
REVISE:
VERIFY:

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Rhonda B. Early
F34CAF5ACB9E

DATE: 3/28/2016

SEAL
023521
PROFESSIONAL ENGINEER
RHONDA B. EARLY

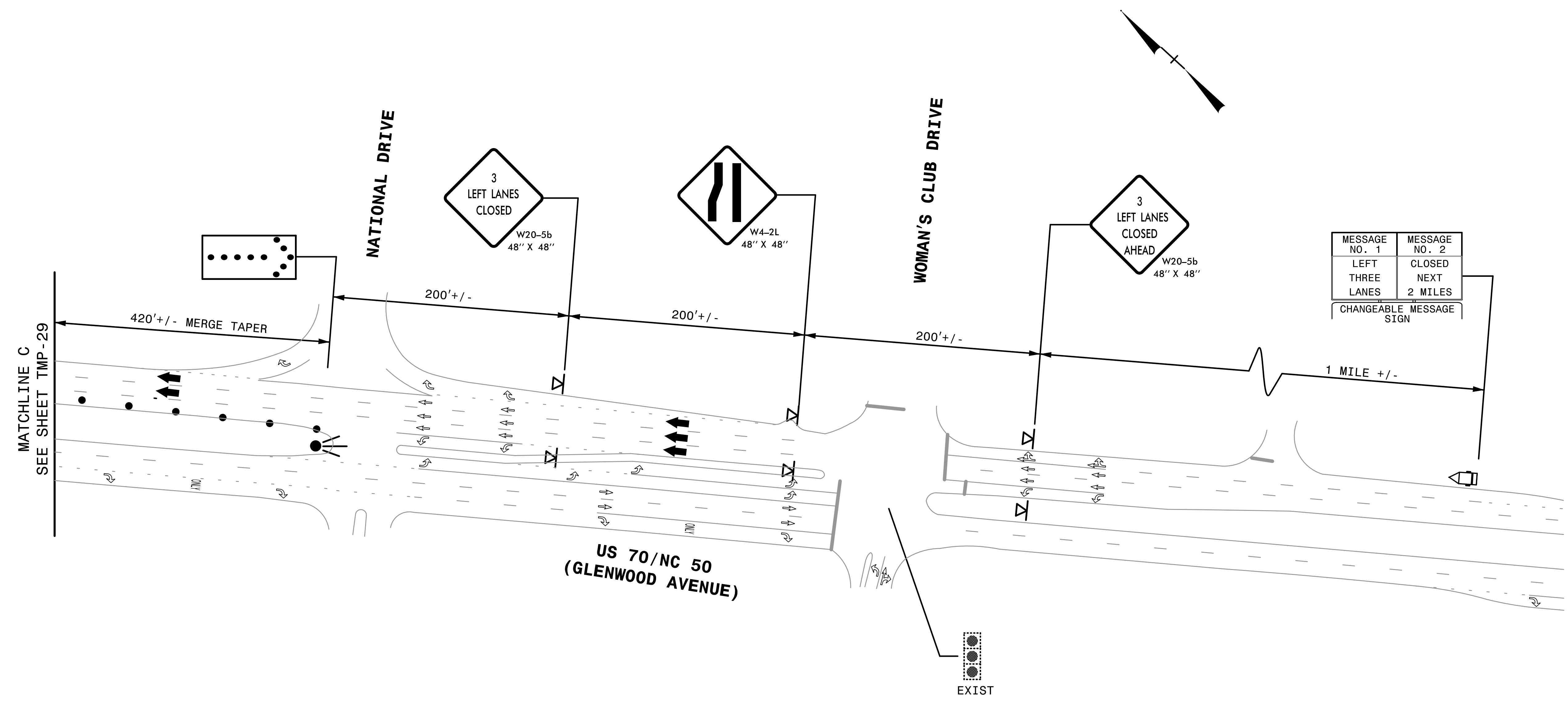
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
WORK ZONE TRAFFIC CONTROL

TRANSPORTATION
MANAGEMENT PLAN

WB5 DETAIL

...TCP\15BP\13.36_te_WB5-3.dgn

B.17/99



MATCHLINE C
SEE SHEET TMP-29

NATIONAL DRIVE

WOMAN'S CLUB DRIVE

US 70/NC 50
(GLENWOOD AVENUE)

EXIST

MESSAGE NO. 1	MESSAGE NO. 2
LEFT THREE LANES	CLOSED NEXT 2 MILES
CHANGEABLE MESSAGE SIGN	

REVISIONS

7/28/2016
 10:45 AM
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QA/QC STAGE:	
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CONCUR:	
REVISE:	
VERIFY:	

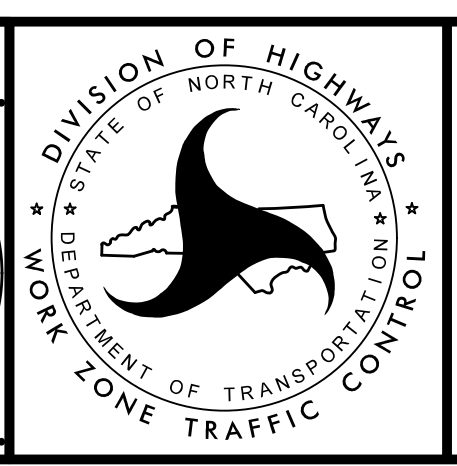
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DATE: 3/28/2016

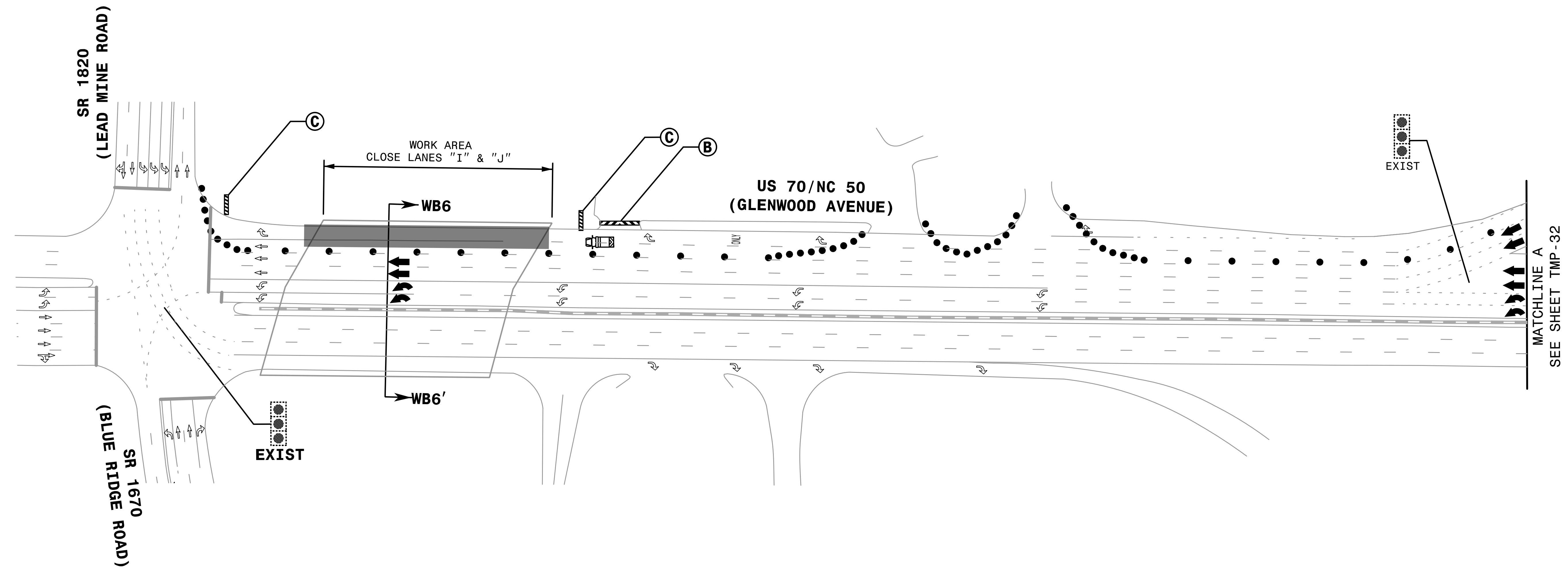
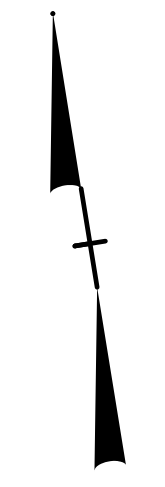
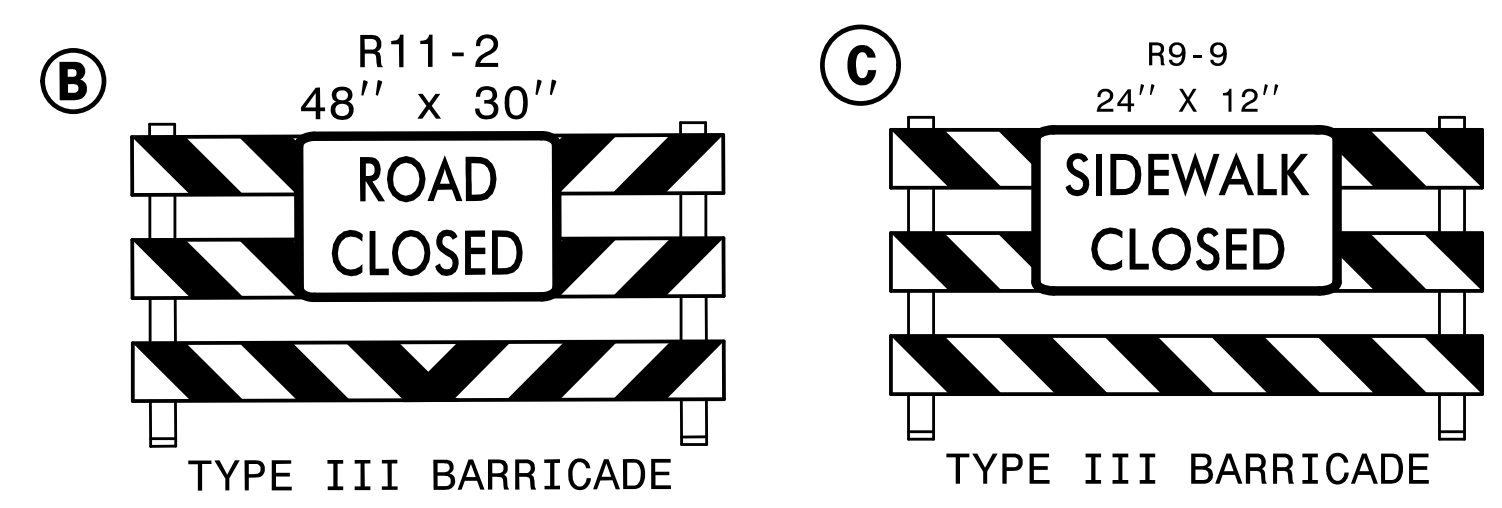
SEAL
 023521
 RYONDA B. EARLY
 ENGINEER



TRANSPORTATION
 MANAGEMENT PLAN

WB5 DETAIL

...TCP\15BP.13.36_te_WB5-4.dgn



REVISIONS

3/28/2016
10:41:46 AM
...TCP\15BP.13.36_te_WB6-1.dgn

QA/QC STAGE:

REVIEW: _____

CONCUR: _____

REVISE: _____

VERIFY: _____

REFER TO SHEET TMP-2B FOR CUT SECTION.

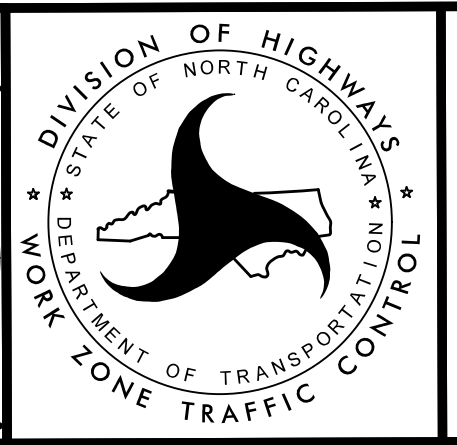
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APPROVED: *Rhonda B.*
F34CPSACBB

DATE: 3/28/2016

SEAL
023521
PHONIA B. EARLY
ENGINEER

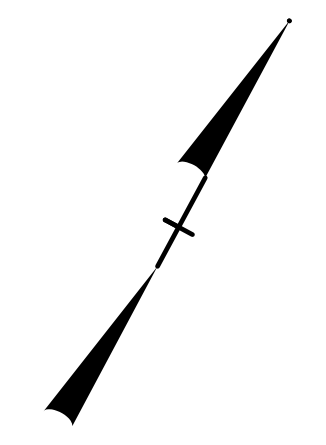


TRANSPORTATION
MANAGEMENT PLAN

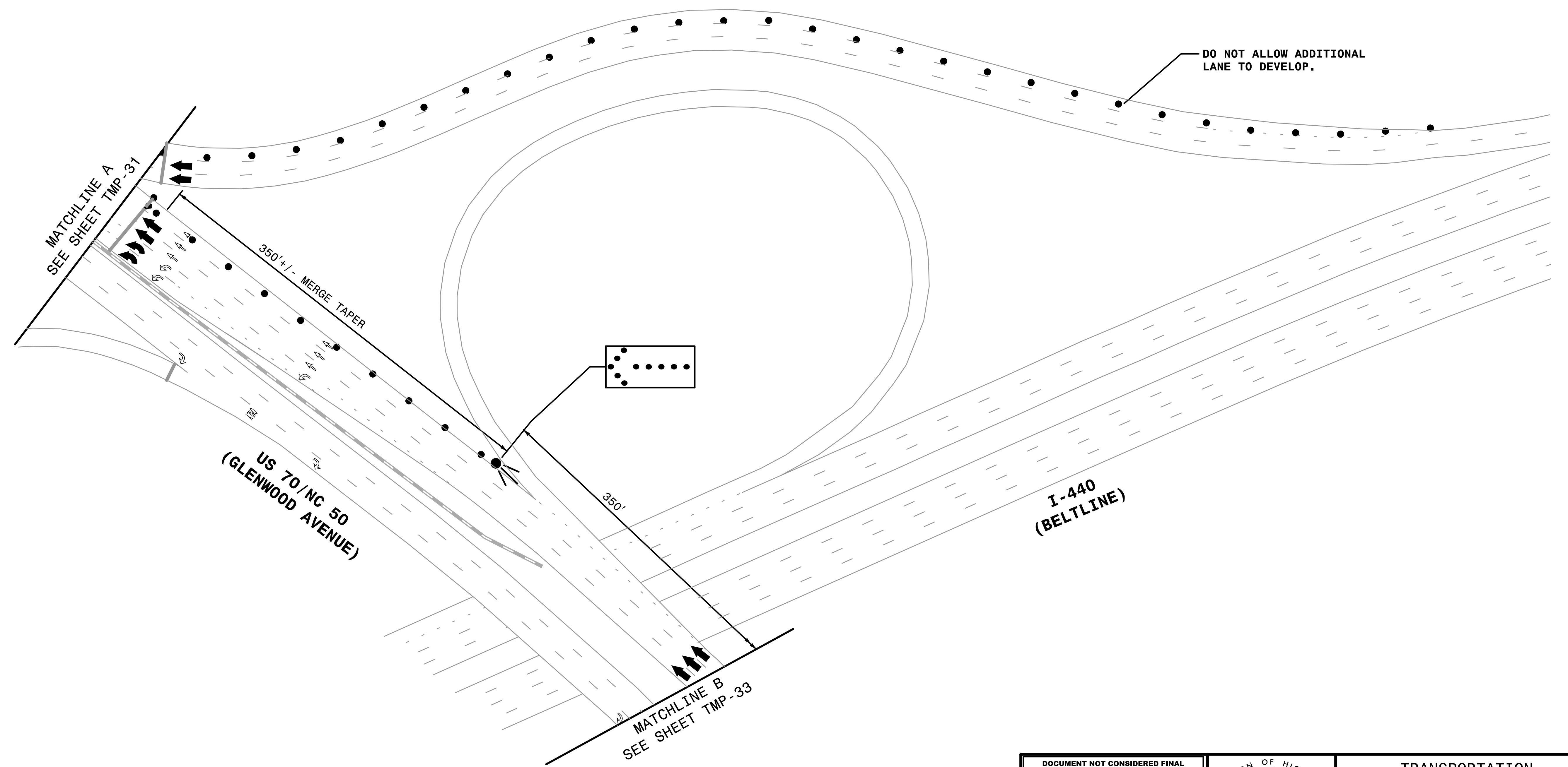
WB6 DETAIL

...TCP\15BP.13.36_te_WB6-1.dgn

B.17/99



DO NOT ALLOW ADDITIONAL
LANE TO DEVELOP.

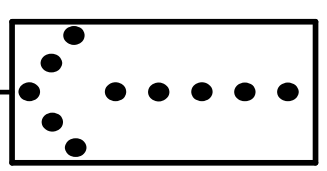


MATCHLINE A
SEE SHEET TMP-31

US 70/NC 50
(GLENWOOD AVENUE)

MATCHLINE B
SEE SHEET TMP-33

I-440
(BELTLINE)



7/24/2016 10:24:00 AM
I:\TCP\15BP.13.36_te_WB6-2.dgn

REVISIONS

QA/QC STAGE:

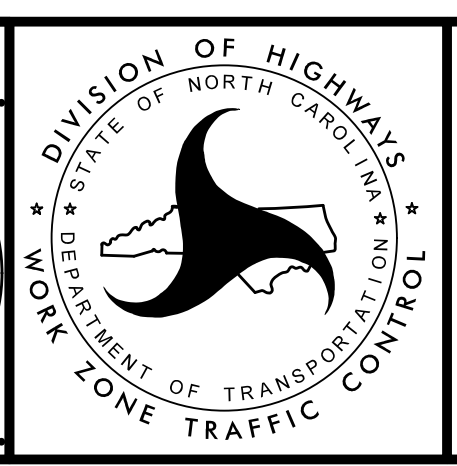
REVIEW: _____
CONCUR: _____
REVISE: _____
VERIFY: _____

HNTB
HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

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UNLESS ALL SIGNATURES COMPLETED**

APPROVED: *Rhonda B.*
Rhonda B. EARLY
F34C4FA3AC8BF
DATE: 3/28/2016

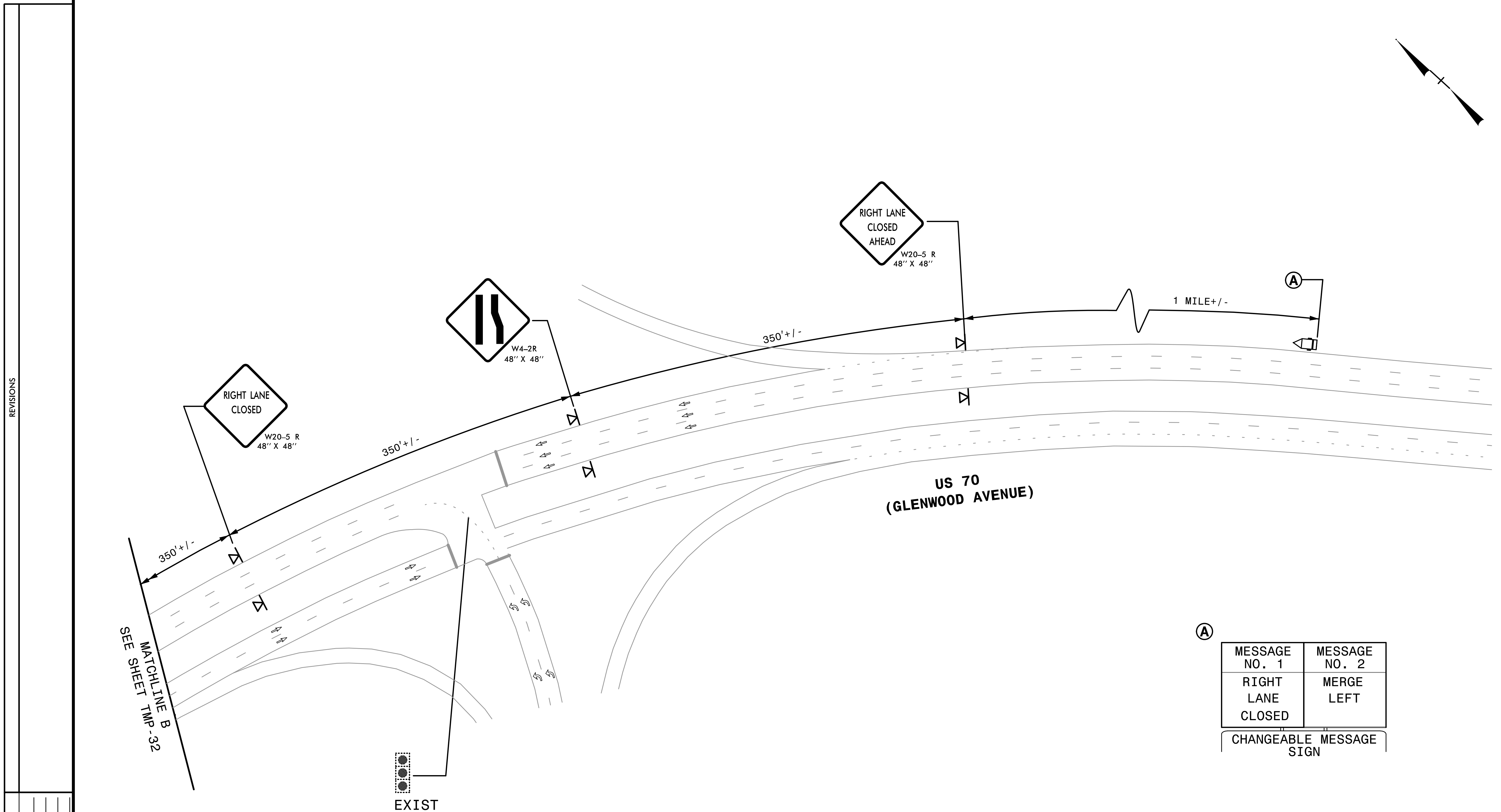
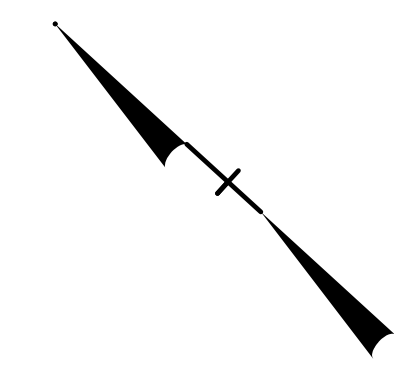
SEAL
023521
NORTH CAROLINA
PROFESSIONAL
ENGINEER
RHONDA B. EARLY
SEAL



TRANSPORTATION
MANAGEMENT PLAN

WB6 DETAIL

... \TCP\15BP.13.36_te_WB6-2.dgn



REVISIONS

7/28/2016
10:15:15 AM
TCP\15BP.13.36_te_WB6-3.dgn

QA/QC STAGE:	
REVIEW:	
CONCUR:	
REVISE:	
VERIFY:	

(A)	
MESSAGE NO. 1	MESSAGE NO. 2
RIGHT LANE CLOSED	MERGE LEFT
CHANGEABLE MESSAGE SIGN	

HNTB HNTB NORTH CAROLINA, P.C.
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NC License No: C-1554

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APPROVED: *Rhonda B.*
Rhonda B. Early
F54C4F5AC6B7

DATE: 3/28/2016

SEAL
023521
RIONDA B. EARLY
ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
WORK ZONE TRAFFIC CONTROL

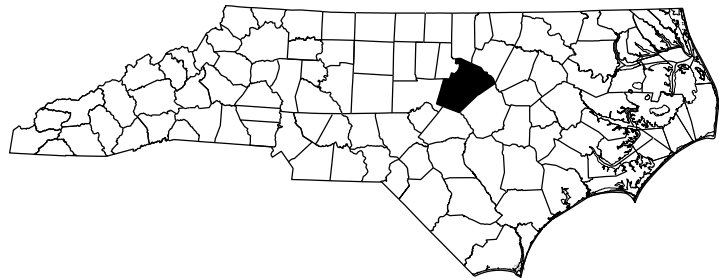
TRANSPORTATION
MANAGEMENT PLAN

WB6 DETAIL

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PROJECT: B-5940

CONTRACT NO:



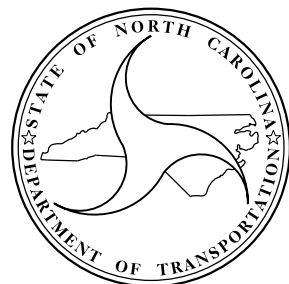
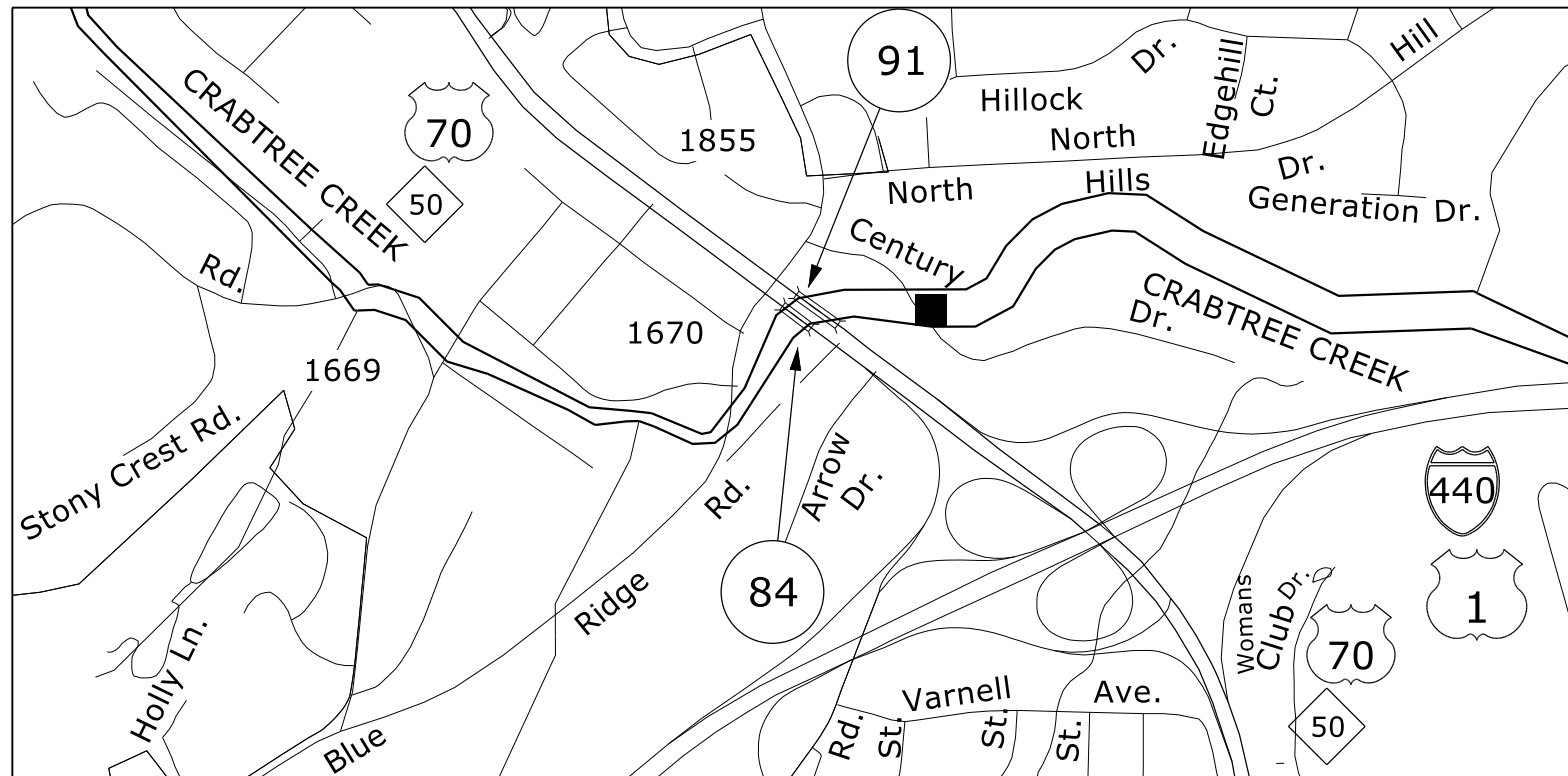
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

WAKE COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5940	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
46485.1.1		PE	
46485.3.1		CONST	

**LOCATION: BRIDGE #84 ON US-70 /NC-50 (GLENWOOD AVENUE) EBL OVER CRABTREE CREEK
BRIDGE #91 ON US-70 /NC-50 (GLENWOOD AVENUE) WBL OVER CRABTREE CREEK**

TYPE OF WORK: BRIDGE PRESERVATION - SCARIFICATION, HYDRO-DEMOLITION, DECK REPAIR, LATEX MODIFIED CONCRETE OVERLAY-VERY EARLY STRENGTH, AND JOINT DEMOLITION



DESIGN DATA

#84 ADT 2011 = 34,500
#91 ADT 2011 = 34,500

PROJECT LENGTH

BRIDGE #84 = 0.04 MILE
BRIDGE #91 = 0.04 MILE

Prepared in the Office of:
**DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS**
STRUCTURES MANAGEMENT UNIT
1000 BIRCH RIDGE DR. RALEIGH, N.C. 27610

MACK BAILEY, P.E.
PROJECT ENGINEER

2012 STANDARD SPECIFICATIONS

LETTING DATE:
JULY 27, 2016

DocuSigned by:

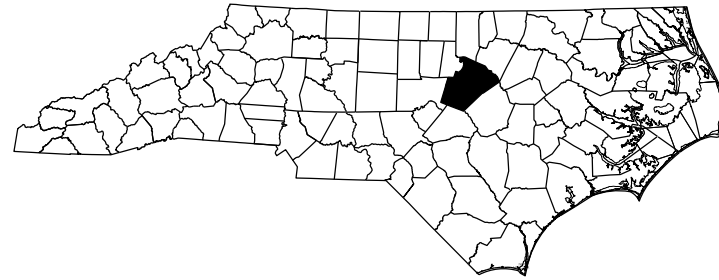


5/11/2016

FARZIN ASEFNIA, P.E.
PROJECT DESIGN ENGINEER

PROJECT: B-5940

CONTRACT:



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

WAKE COUNTY

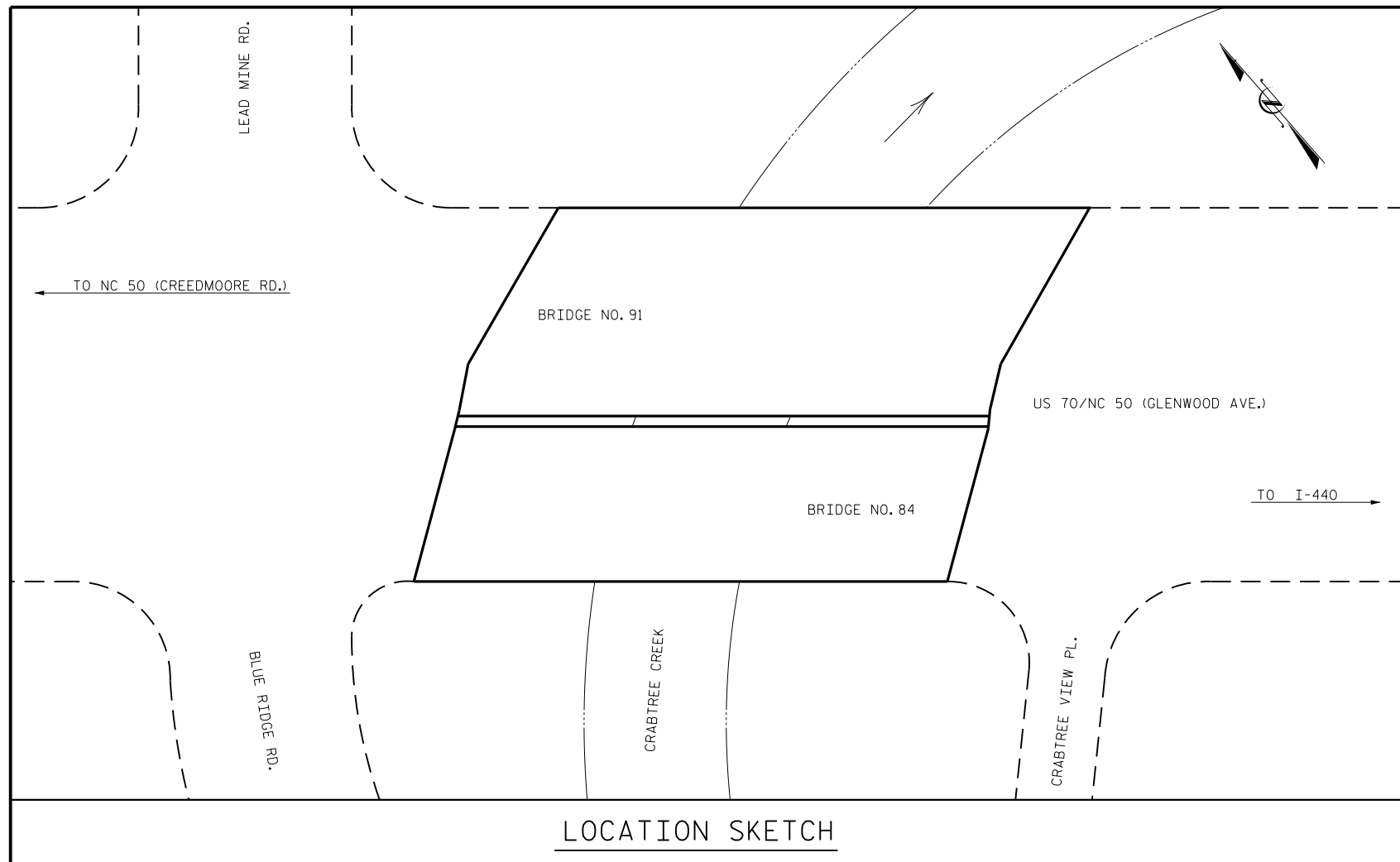
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N.C.	B-5940	1A	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
46485.1.1		P.E.	
46485.3.1		CONST.	

**LOCATION: BRIDGE #84 ON US-70 /NC-50 (GLENWOOD AVENUE) EBL OVER CRABTREE CREEK
BRIDGE #91 ON US-70 /NC-50 (GLENWOOD AVENUE) WBL OVER CRABTREE CREEK**

**TYPE OF WORK: BRIDGE PRESERVATION - SCARIFICATION, HYDRO-DEMOLITION, DECK REPAIR,
LATEX MODIFIED CONCRETE OVERLAY-VERY EARLY STRENGTH, AND JOINT DEMOLITION**

INDEX OF SHEETS

<i>1</i>	<i>TITLE SHEET</i>
<i>1A</i>	<i>INDEX OF SHEETS</i>
<i>S-1 - S-14</i>	<i>STRUCTURAL PLANS</i>
<i>SN</i>	<i>STANDARD NOTES</i>



NOTES:

INFORMATION INDICATED ON THE LOCATION SKETCH SHALL BE CONSIDERED GENERAL INFORMATION ONLY. CONTRACTOR SHALL CONFIRM, THROUGH OTHER SOURCES, SPECIFIC INFORMATION REGARDING THE BRIDGES, ROADWAYS, UTILITIES, THE SURROUNDING AREA, AND ANY OTHER ASPECTS THAT MAY BE NECESSARY TO PERFORM AND COMPLETE THE PROJECT.

EXISTING DIMENSIONS AND BRIDGE CONDITION ARE FROM BEST INFORMATION AVAILABLE. THE CONTRACTOR SHALL FIELD VERIFY THE INFORMATION SHOWN ON THE PLANS AND NOTIFY THE ENGINEER IF ACTUAL DIMENSIONS AND CONDITIONS DIFFER.

IT IS THE CONTRACTOR'S RESPONSIBILITY TO FOLLOW ALL STATE AND FEDERAL SAFETY REQUIREMENTS.

THE CONTRACTOR MUST COLLECT, TREAT AND DISPOSE OF RUN-OFF WATER FROM THE HYDRO-DEMOLITION PROCESS, SEE MANAGING HYDRO-DEMOLITION WATER SPECIAL PROVISION.

EXISTING JOINTS AND DECK DRAINS SHALL BE SEALED PRIOR TO BEGINNING SURFACE PREPARATION OF BRIDGE DECK.

DURING CONSTRUCTION, BERMS OR APPROPRIATE MEASURES SHALL BE USED TO ENSURE HYDRO-DEMOLITION WATER DOES NOT FLOW OR MIGRATE INTO ACTIVE TRAVEL LANES.

THE CONTRACTOR SHALL PROVIDE A METHOD OF HANDLING UNEXPECTED BLOW THROUGH OF THE DECK.

LONGITUDINAL CONSTRUCTION JOINTS OF OVERLAYS SHALL BE LOCATED ALONG THE CENTERLINE OR EDGE OF TRAVEL LANES.

FOR SCARIFYING BRIDGE DECK, HYDRO-DEMOLITION OF BRIDGE DECK, CLASS II SURFACE PREPARATION, AND CLASS III SURFACE PREPARATION, SEE OVERLAY SURFACE PREPARATION SPECIAL PROVISION.

FOR CONTROL OF TRAFFIC AND LIMITS ON PHASING OF CONSTRUCTION, SEE TRANSPORTATION MANAGEMENT PLAN.

FOR BRIDGE JOINT DEMOLITION, SEE SPECIAL PROVISIONS.

FOR LATEX MODIFIED CONCRETE-VERY EARLY STRENGTH, SEE SPECIAL PROVISIONS.

FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.

FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR CONCRETE FOR DECK REPAIR, SEE SPECIAL PROVISION.

FOR VOLUMETRIC MIXER, SEE SPECIAL PROVISIONS.

LOCATION SKETCH

TOTAL BILL OF MATERIAL

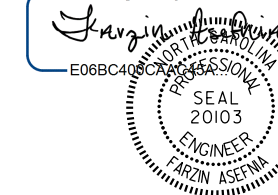
BRIDGE NO.	GROOVING BRIDGE FLOORS	* CLASS II SURFACE PREPARATION	* CLASS III SURFACE PREPARATION	** LATEX MODIFIED CONCRETE OVERLAY-VES	PLACING & FINISHING OF LATEX MODIFIED CONCRETE OVERLAY-VES	FOAM JOINT SEALS	* VOLUMETRIC MIXER	* CONCRETE FOR DECK REPAIR	BRIDGE JOINT DEMOLITION	SCARIFYING BRIDGE DECK	HYDRO-DEMOLITION OF BRIDGE DECK	ELASTOMERIC CONCRETE
	SO. FT.	SO. YDS.	SO. YDS.	C.Y.	SO. YDS.	LUMP SUM	LUMP SUM	CU. FT.	SO. FT.	SO. YDS.	SO. YDS.	CU. FT.
84	10,000	4	4	58	1185	LUMP SUM	LUMP SUM	1	162	1185	1185	40
91	14,334	4	4	82	1670	LUMP SUM	LUMP SUM	1	252	1670	1670	63
TOTAL	24,334	8	8	140	2855	LUMP SUM	LUMP SUM	2	414	2855	2855	103

* CLASS II AND CLASS III SURFACE PREPARATION, VOLUMETRIC MIXER, AND CONCRETE FOR DECK REPAIR ARE NOT ANTICIPATED. TOKEN PAY ITEMS ARE INDICATED FOR PRICING PURPOSES. IN CASE UNANTICIPATED CLASS III SURFACE PREPARATION AREAS ARE ENCOUNTERED.

** THE QUANTITY OF LATEX MODIFIED CONCRETE OVERLAY - VES INCLUDES THE 4" OVERLAP BETWEEN OVERLAYS.

PROJECT NO. B-5940
WAKE COUNTY
 BRIDGE NO.: 84 & 91

DocuSigned by:



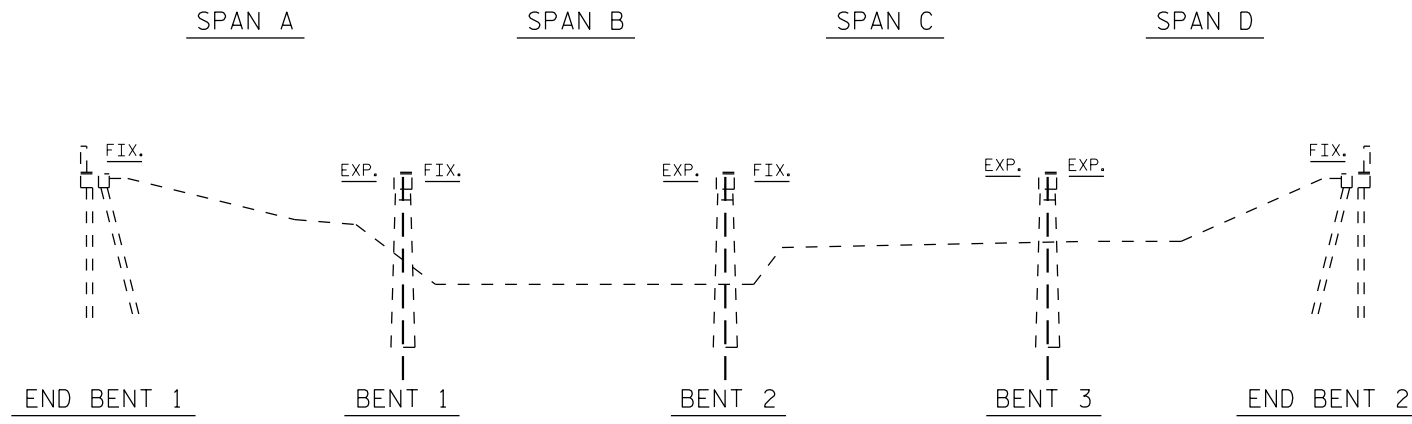
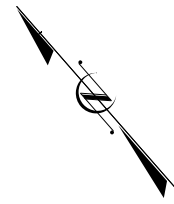
5/11/2016

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
GENERAL DRAWING
 BRIDGES OVER CRABTREE CREEK
 ON US 70 & NC 50 BETWEEN
 NC 50 (CREEDMOORE RD.)
 AND I-440

DRAWN BY : D.V. JOYNER DATE : 3/2016
 CHECKED BY : W. SMITH DATE : 3/2016

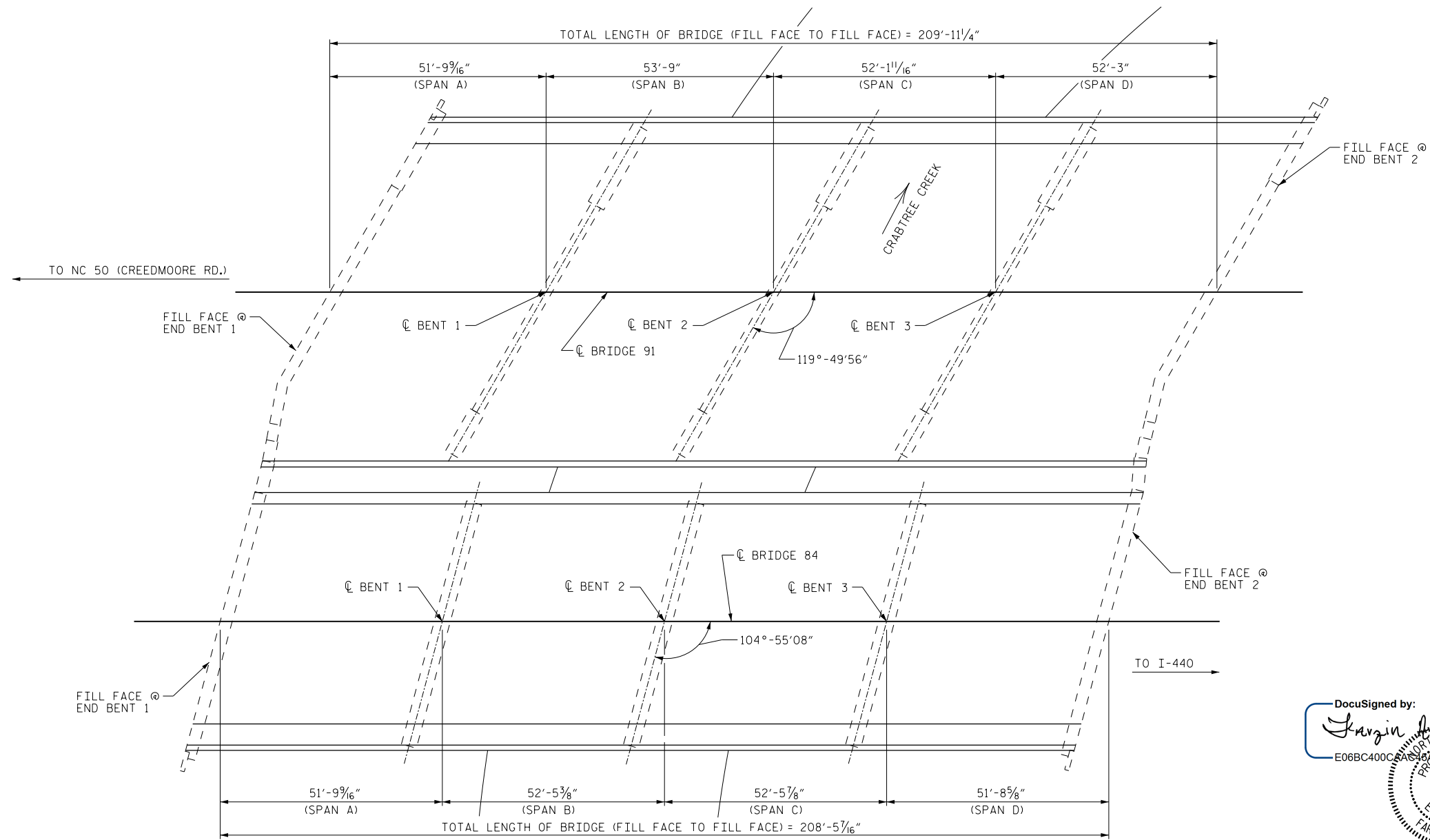
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 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-1
1			3			TOTAL SHEETS
2			4			14



ELEVATION

SECTIONS AT BENTS AND END BENTS ARE AT RIGHT ANGLES
(BRIDGE #84 SHOWN, BRIDGE #91 SIMILAR)



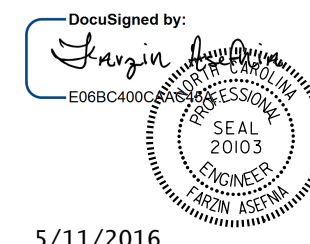
PLAN

COLUMNS AND FOOTINGS NOT SHOWN IN PLAN VIEW FOR CLARITY

I hereby certify that this structure was rehabilitated according to these plans or as noted therein.

Resident Engineer _____ Date _____

PROJECT NO. B-5940
WAKE COUNTY
 BRIDGE NO.: 84 & 91



5/11/2016

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
GENERAL DRAWING
 BRIDGES OVER CRABTREE CREEK
 ON US 70 & NC 50 BETWEEN
 NC 50 (CREEDMOORE RD.)
 AND I-440

DRAWN BY : D.V. JOYNER DATE : 3/2016
 CHECKED BY : W. SMITH DATE : 3/2016

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 SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-2
1			3			TOTAL SHEETS
2			4			14

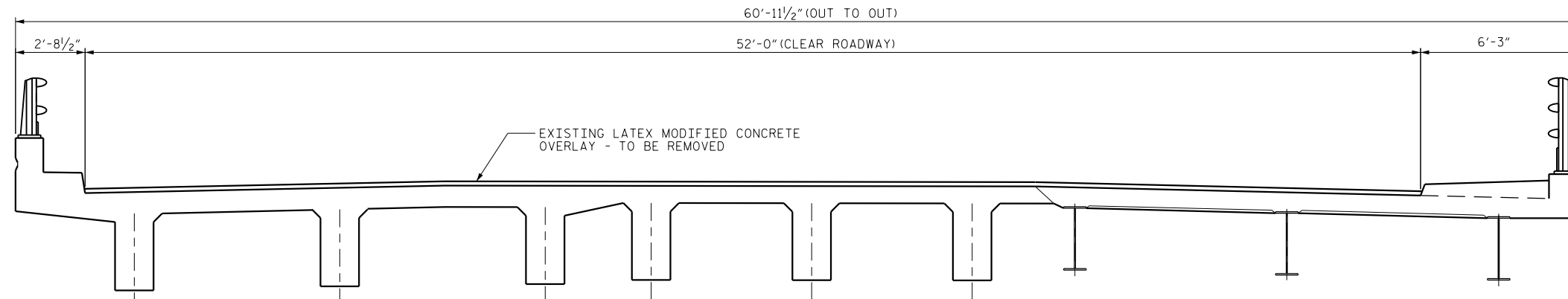
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NOTE:

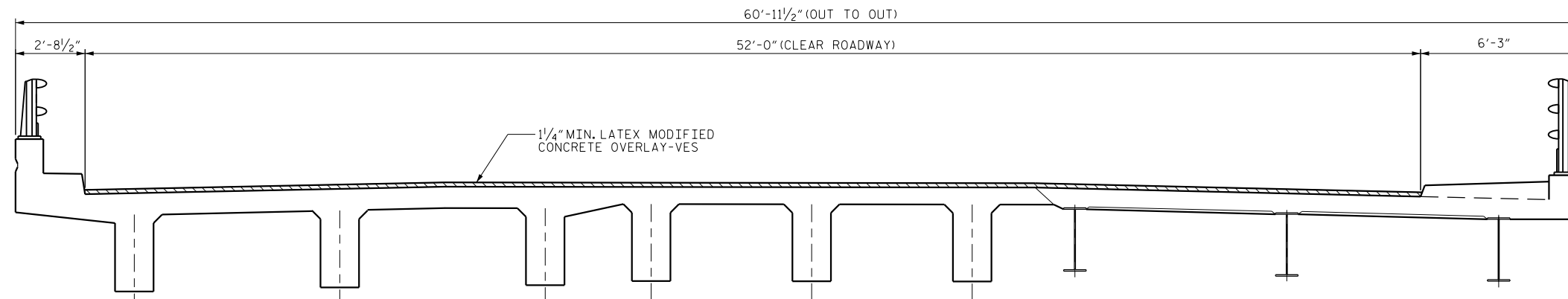
WHEN PREPARING THE SURFACE FOR LMC OVERLAY-VES ADJACENT TO A PREVIOUSLY PLACED LMC-VES STAGE, THE PREVIOUSLY PLACED LMC-VES SHALL BE REMOVED FOR A DISTANCE OF 4-INCHES FROM THE LMC-VES EDGE. THE SURFACE OF THE NEW STAGE AREA, ALONG WITH THE 4 INCH OVERLAY AREA, SHALL BE PREPARED AS PER THE OVERLAY SURFACE PREPARATION SPECIAL PROVISIONS. NEW LMC-VES SHALL BE PLACED IN THE 4-INCH OVERLAP, AS PART OF NEW LMC-VES STAGE PLACEMENT.

THE LONGITUDINAL LMC-VES EDGE SHALL ONLY BE LOCATED AT THE CENTER OF TRAVELING LANE OR AT THE LANE STRIPING.

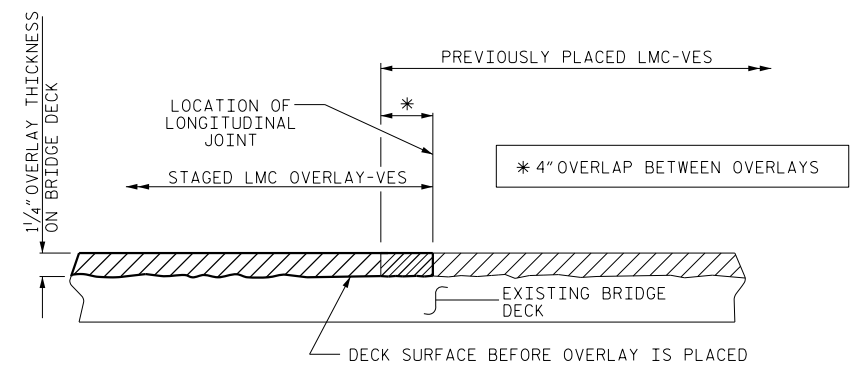
SEE TRAFFIC MANAGEMENT PLANS FOR LANE WIDTHS, SEQUENCING, AND OTHER TRAFFIC CONTROL MEASURES FOR STAGING OF LMC-VES AND SURFACE PREPARATION.



TYPICAL SECTION



TYPICAL SECTION



SECTION THRU DECK
STAGED LMC-VES OVERLAY JOINT
(AS NEEDED)

PROJECT NO. B-5940
WAKE COUNTY
BRIDGE NO. 84

DocuSigned by:
Farzin Asefina
E06BC400
PROFESSIONAL ENGINEER
SEAL 2013
FARZIN ASEFINA
5/11/2016

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE
TYPICAL SECTION
& LATEX MODIFIED CONCRETE-VES DETAILS OF SPANS A, B, C, & D

DRAWN BY : D.V. JOYNER DATE : 3/2016
CHECKED BY : W. SMITH DATE : 3/2016

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-3
1			3			TOTAL SHEETS
2			4			14

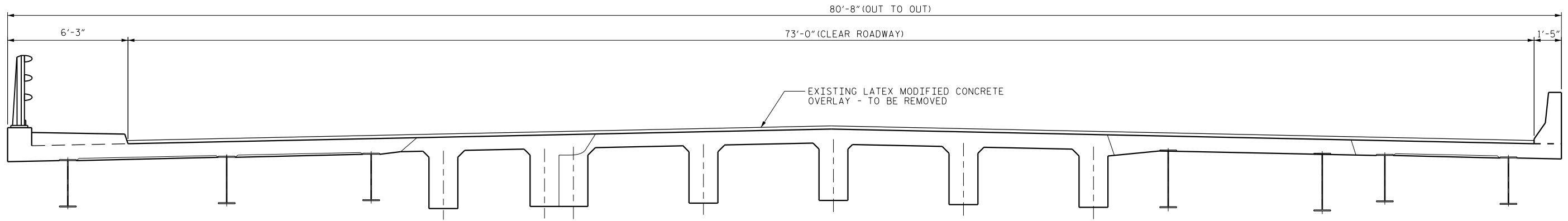
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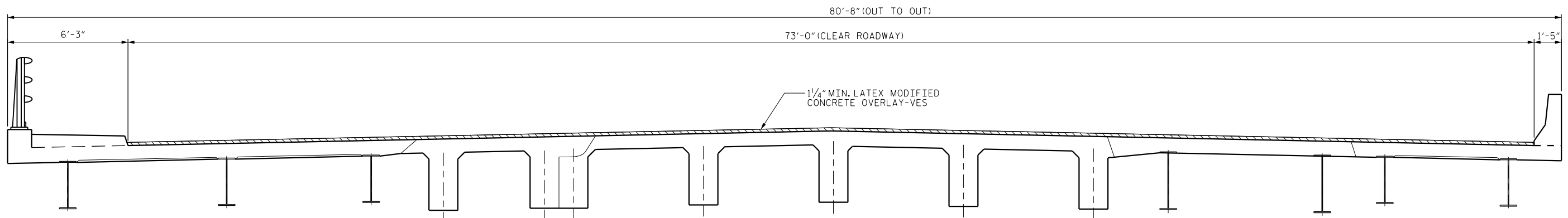
WHEN PREPARING THE SURFACE FOR LMC OVERLAY-VES ADJACENT TO A PREVIOUSLY PLACED LMC-VES STAGE, THE PREVIOUSLY PLACED LMC-VES SHALL BE REMOVED FOR A DISTANCE OF 4-INCHES FROM THE LMC-VES EDGE. THE SURFACE OF THE NEW STAGE AREA, ALONG WITH THE 4 INCH OVERLAY AREA, SHALL BE PREPARED AS PER THE OVERLAY SURFACE PREPARATION SPECIAL PROVISIONS. NEW LMC-VES SHALL BE PLACED IN THE 4-INCH OVERLAP, AS PART OF NEW LMC-VES STAGE PLACEMENT.

THE LONGITUDINAL LMC-VES EDGE SHALL ONLY BE LOCATED AT THE CENTER OF TRAVELING LANE OR AT THE LANE STRIPING.

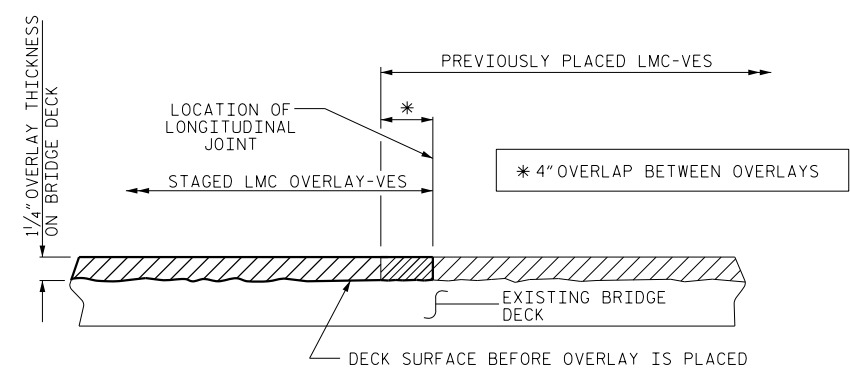
SEE TRAFFIC MANAGEMENT PLANS FOR LANE WIDTHS, SEQUENCING, AND OTHER TRAFFIC CONTROL MEASURES FOR STAGING OF LMC-VES AND SURFACE PREPARATION.



TYPICAL SECTION



TYPICAL SECTION



**SECTION THRU DECK
STAGED LMC-VES OVERLAY JOINT
(AS NEEDED)**

PROJECT NO. B-5940
WAKE COUNTY
 BRIDGE NO. 91

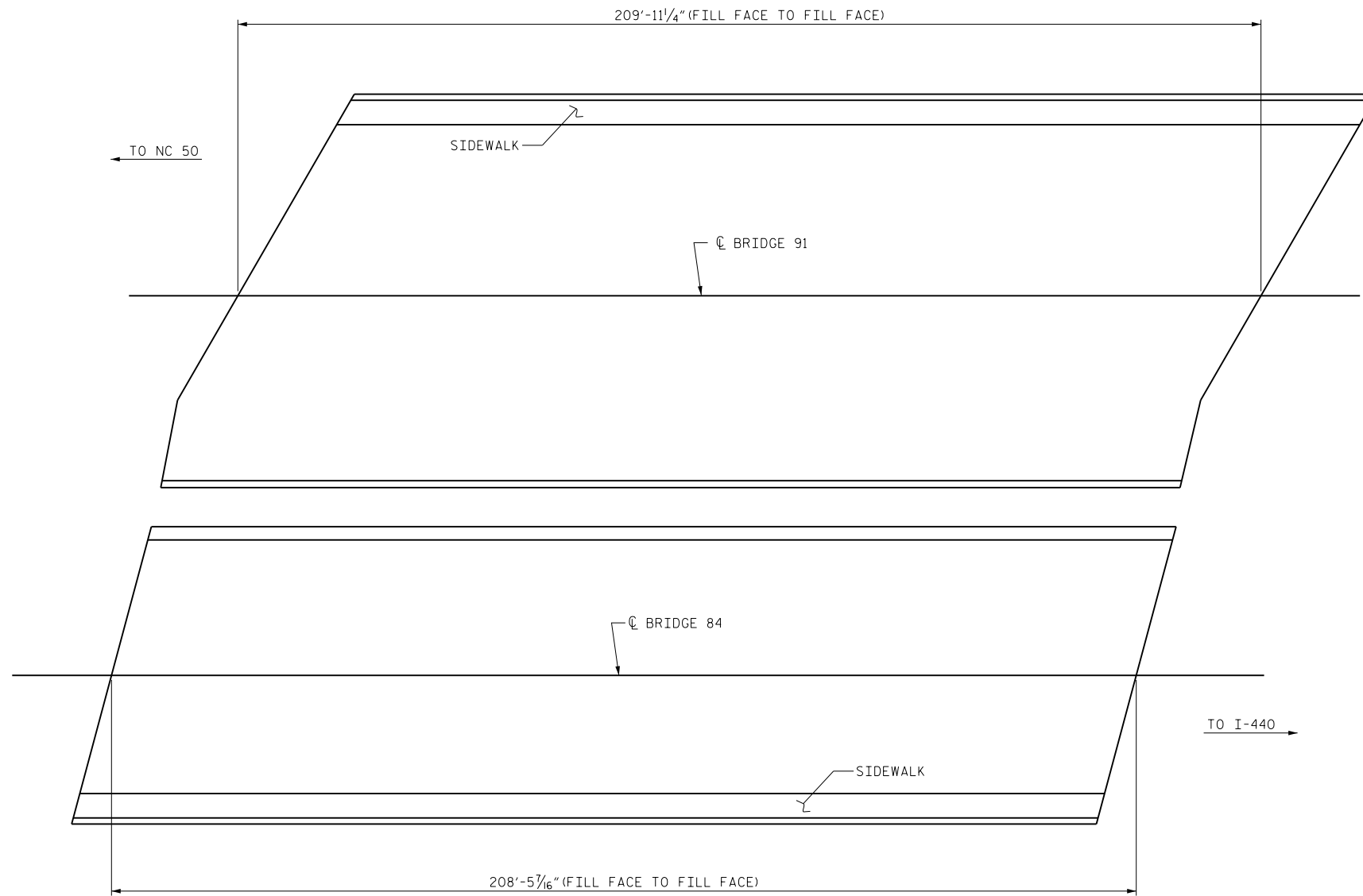
DocuSigned by:
Farzin Asefina
 E06BC409C
 PROFESSIONAL ENGINEER
 SEAL 20103
 FARZIN ASEFINA
 5/11/2016

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
SUPERSTRUCTURE
 TYPICAL SECTION
 & LATEX MODIFIED CONCRETE-
 VES DETAILS OF
 SPANS A, B, C, & D

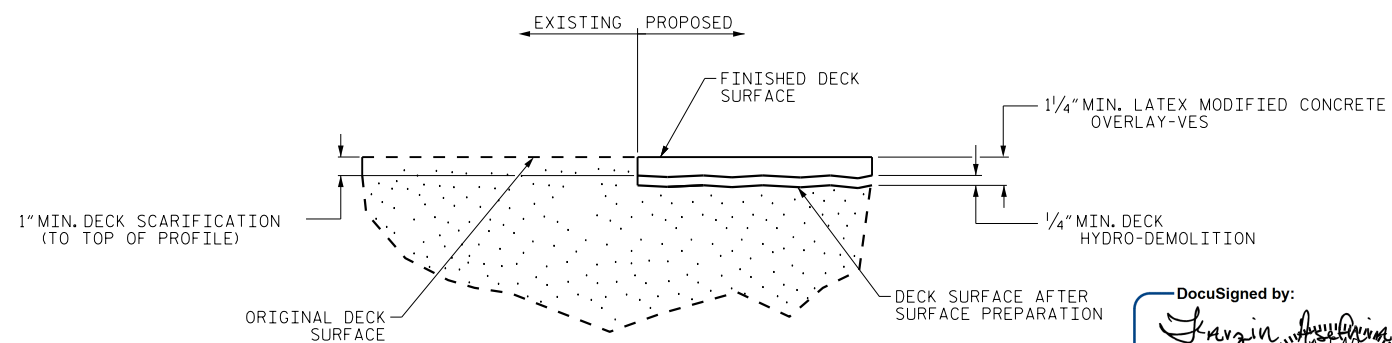
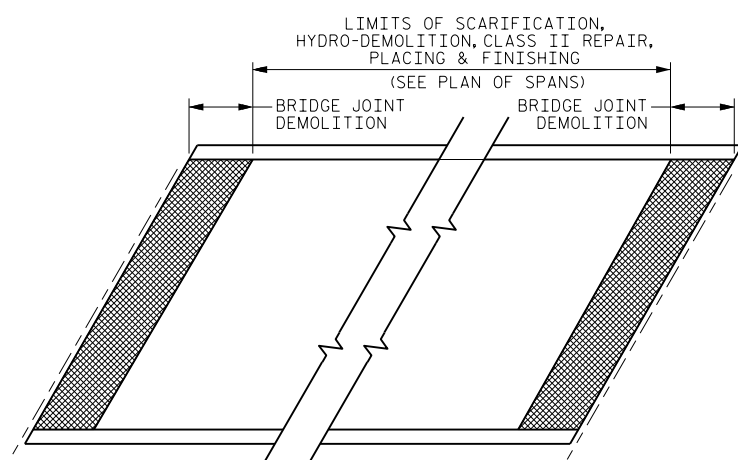
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 CHECKED BY : W. SMITH DATE : 3/2016

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NO.	BY:	DATE:	NO.	BY:	DATE:	S-4
1			3			TOTAL SHEETS
2			4			14

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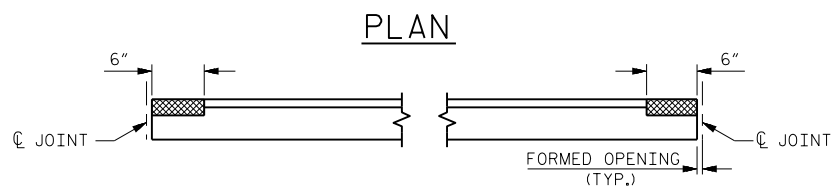
DECK SCARIFICATION,
HYDRO-DEMOLITION, AND
LATEX MODIFIED CONCRETE
OVERLAY-VES



PROJECT NO. B-5940
WAKE COUNTY
BRIDGE NO. 84 & 91

DocuSigned by:
Farzin Asefina
E06BC400
STATE OF NORTH CAROLINA
PROFESSIONAL
ENGINEER
FARZIN ASEFINA
5/11/2016

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
**SUPERSTRUCTURE
SURFACE PREPARATION**

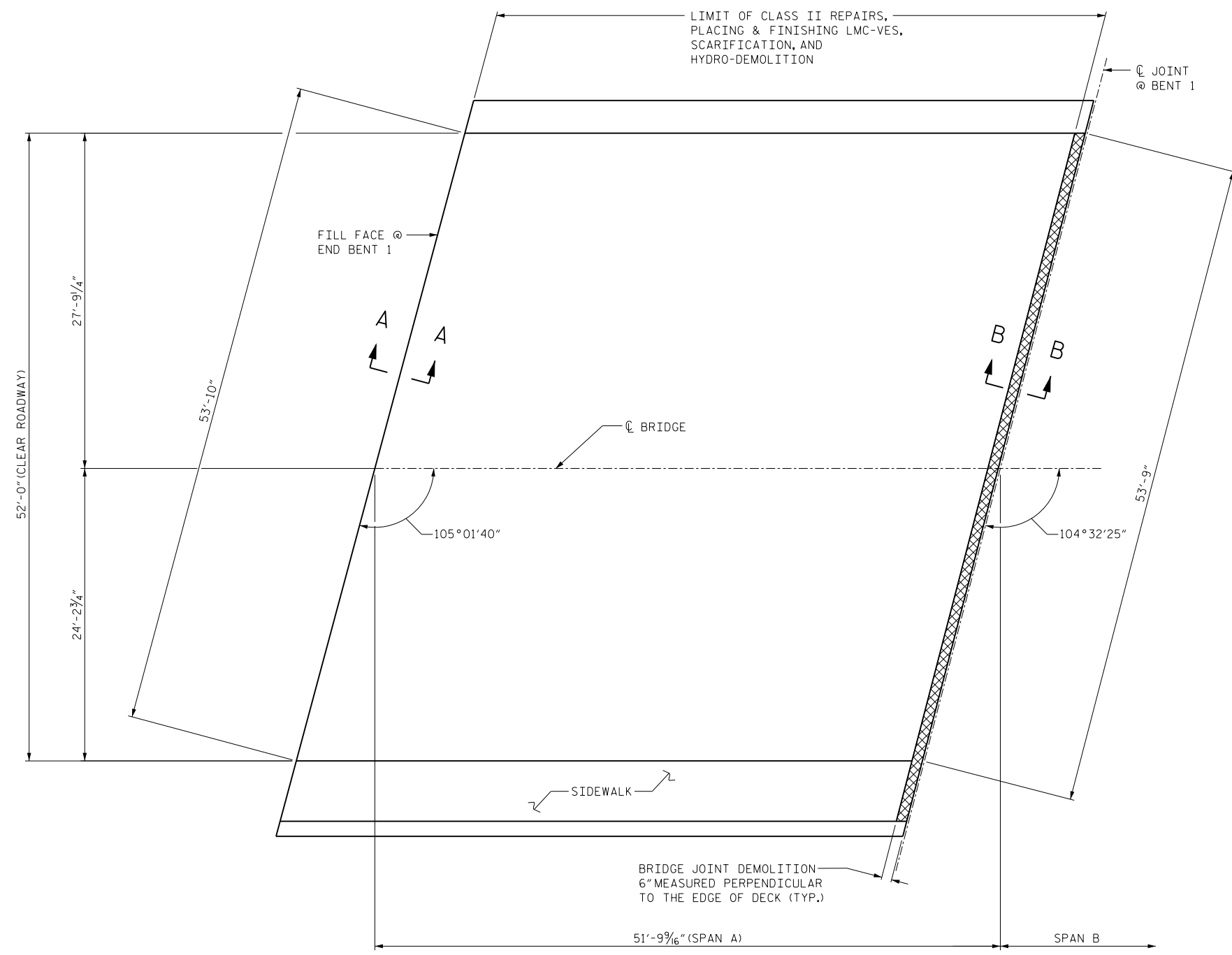


**DETAIL FOR LATEX
MODIFIED CONCRETE OVERLAY-VES**

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SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			S-5
2			4			14

DRAWN BY : D.V. JOYNER DATE : 3/2016
CHECKED BY : W. SMITH DATE : 3/2016



PLAN OF SPAN A
(FOR SECTION VIEW, SEE "JOINT DETAILS" SHEET S-14)

SPAN "A" QUANTITIES		
	ESTIMATE	ACTUAL
CLASS II SURFACE PREPARATION	1 SQ. YDS.	
CLASS III SURFACE PREPARATION	1 SQ. YDS.	
BRIDGE JOINT DEMOLITION	27 SQ. FT.	
SCARIFYING BRIDGE DECK	297 SQ. YDS.	
HYDRO-DEMOLITION OF BRIDGE DECK	297 SQ. YDS.	

PAYMENT FOR CLASS II & CLASS III SURFACE PREPARATION IS BASED ON THE SQUARE FEET OF ADDITIONAL DEMOLITION REQUIRED FOLLOWING HYDRO-DEMOLITION OF THE BRIDGE DECK. SEE SPECIAL PROVISIONS.

THE CONTRACTOR SHALL ONLY PLACE FOAM JOINT SEALS AT THE SIDEWALKS.

NO ELASTOMERIC CONCRETE SHALL BE USED AT THE SIDEWALKS.

- CLASS II SURFACE PREPARATION
- BRIDGE JOINT DEMOLITION
- SCARIFICATION & HYDRO-DEMOLITION

PROJECT NO. B-5940
WAKE COUNTY
 BRIDGE NO. 84
 SHEET 1 OF 4

DocuSigned by:

 E06BC400...
 NORTH CAROLINA PROFESSIONAL ENGINEER
 SEAL 20103
 FARZIN ASEFINA
 5/11/2016

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SURFACE PREPARATION
 SPAN A
 EASTBOUND LANE

DRAWN BY : D.V. JOYNER DATE : 4/2016
 CHECKED BY : W. SMITH DATE : 4/2016

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-6
1			3			TOTAL SHEETS
2			4			14

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

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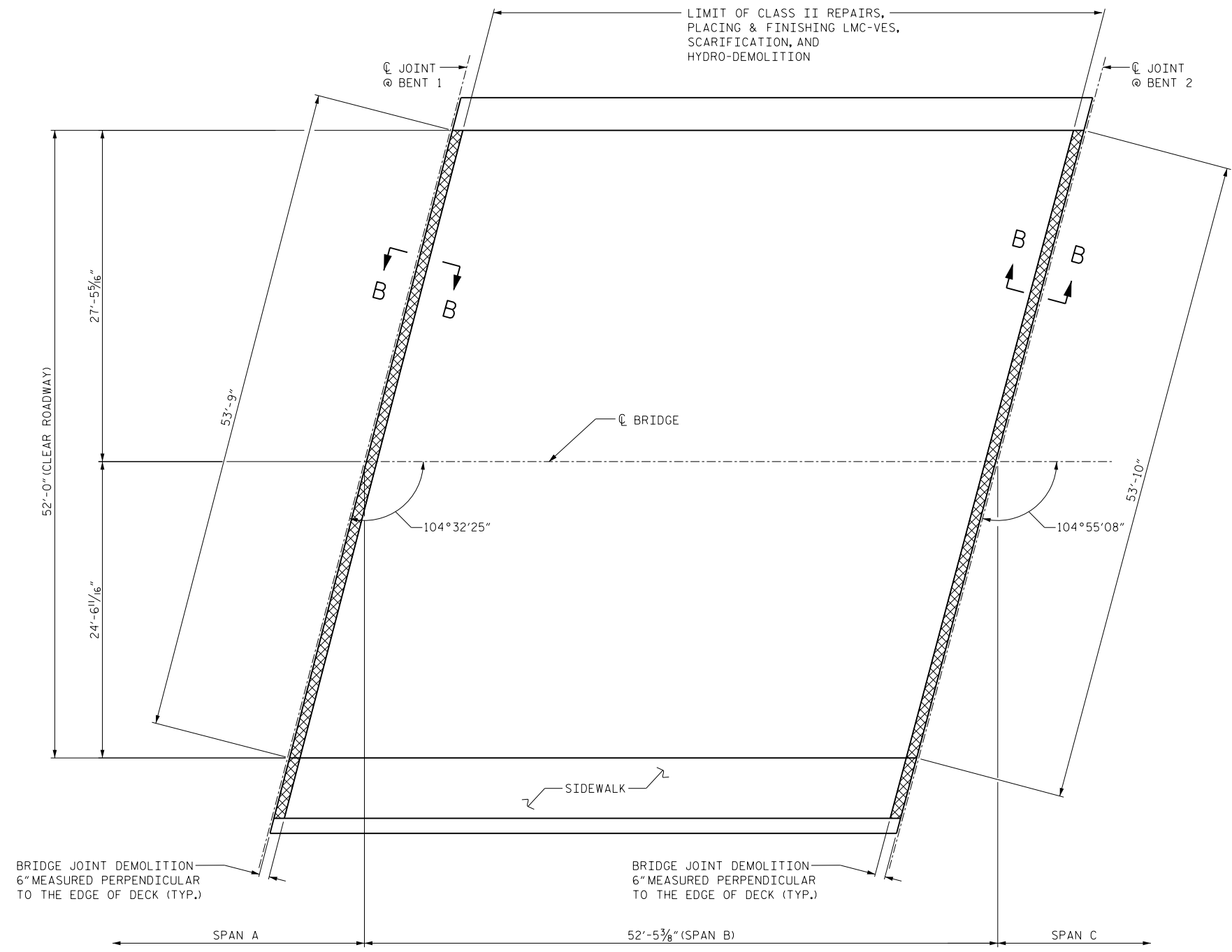
SPAN "B" QUANTITIES		
	ESTIMATE	ACTUAL
CLASS II SURFACE PREPARATION	1 SQ. YDS.	
CLASS III SURFACE PREPARATION	1 SQ. YDS.	
BRIDGE JOINT DEMOLITION	54 SQ. FT.	
SCARIFYING BRIDGE DECK	296 SQ. YDS.	
HYDRO-DEMOLITION OF BRIDGE DECK	296 SQ. YDS.	

PAYMENT FOR CLASS II & CLASS III SURFACE PREPARATION IS BASED ON THE SQUARE FEET OF ADDITIONAL DEMOLITION REQUIRED FOLLOWING HYDRO-DEMOLITION OF THE BRIDGE DECK. SEE SPECIAL PROVISIONS.

THE CONTRACTOR SHALL ONLY PLACE FOAM JOINT SEALS AT THE SIDEWALKS.

NO ELASTOMERIC CONCRETE SHALL BE USED AT THE SIDEWALKS.

-  CLASS II SURFACE PREPARATION
-  BRIDGE JOINT DEMOLITION
-  SCARIFICATION & HYDRO-DEMOLITION



PLAN OF SPAN B
(FOR SECTION VIEW, SEE "JOINT DETAILS" SHEET S-14)

PROJECT NO. B-5940
WAKE COUNTY
 BRIDGE NO. 84
 SHEET 2 OF 4

DocuSigned by:
Farzin Asefina
 E06BC4...
 NORTH CAROLINA PROFESSIONAL ENGINEER
 SEAL 20103
 FARZIN ASEFINA
 5/11/2016

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SURFACE PREPARATION
 SPAN B
 EASTBOUND LANE

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-7	
1			3			TOTAL SHEETS	14
2			4				

DRAWN BY : D.V. JOYNER DATE : 4/2016
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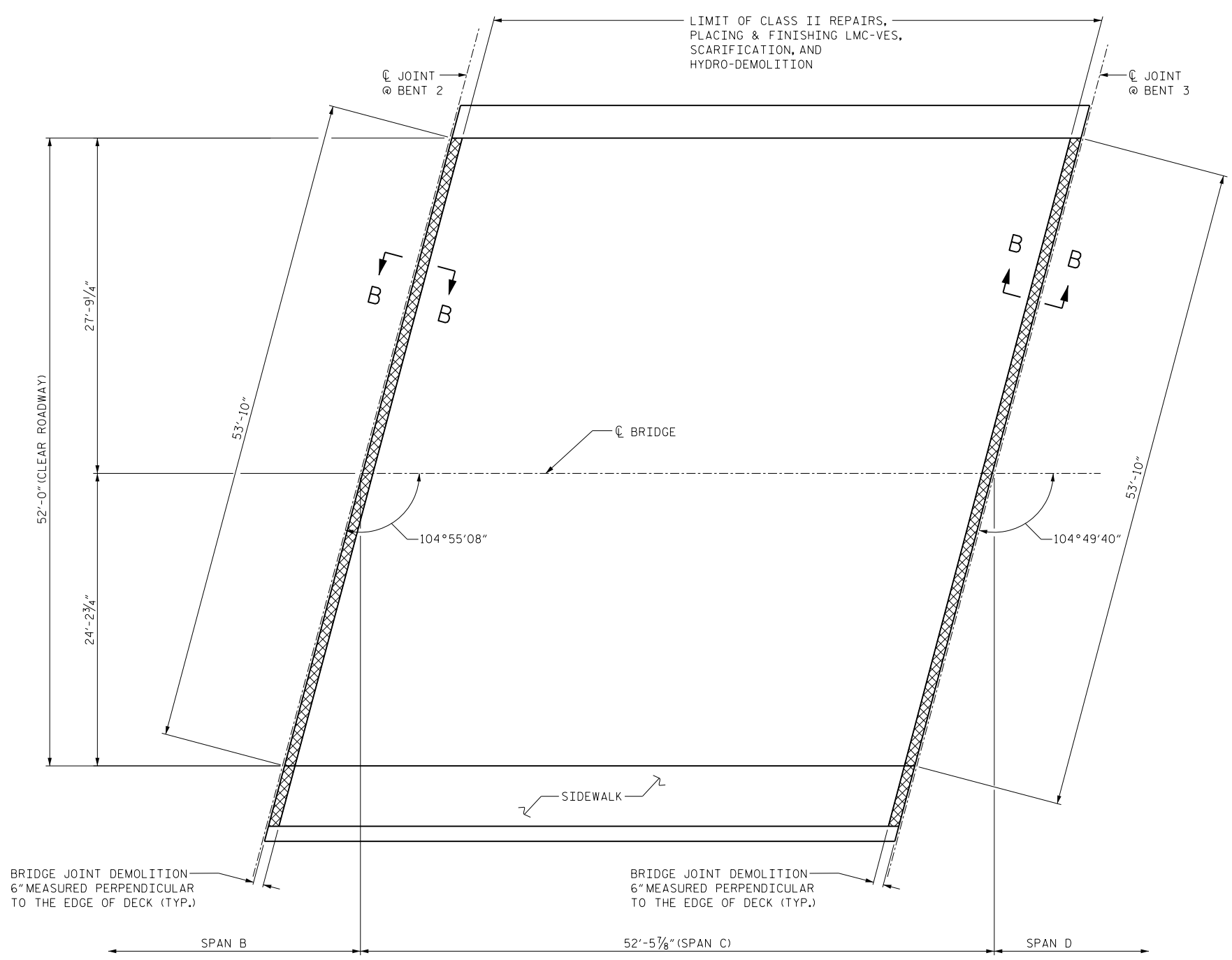
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


SPAN "C" QUANTITIES		
	ESTIMATE	ACTUAL
CLASS II SURFACE PREPARATION	1 SQ. YDS.	
CLASS III SURFACE PREPARATION	1 SQ. YDS.	
BRIDGE JOINT DEMOLITION	54 SQ. FT.	
SCARIFYING BRIDGE DECK	297 SQ. YDS.	
HYDRO-DEMOLITION OF BRIDGE DECK	297 SQ. YDS.	

PAYMENT FOR CLASS II & CLASS III SURFACE PREPARATION IS BASED ON THE SQUARE FEET OF ADDITIONAL DEMOLITION REQUIRED FOLLOWING HYDRO-DEMOLITION OF THE BRIDGE DECK. SEE SPECIAL PROVISIONS.

THE CONTRACTOR SHALL ONLY PLACE FOAM JOINT SEALS AT THE SIDEWALKS.

NO ELASTOMERIC CONCRETE SHALL BE USED AT THE SIDEWALKS.



-  CLASS II SURFACE PREPARATION
-  BRIDGE JOINT DEMOLITION
-  SCARIFICATION & HYDRO-DEMOLITION

PROJECT NO. B-5940
WAKE COUNTY
 BRIDGE NO. 84
 SHEET 3 OF 4

PLAN OF SPAN C
 (FOR SECTION VIEW, SEE "JOINT DETAILS" SHEET S-14)

DocuSigned by:
Farzin Asefina
 E06BC408
 STATE OF NORTH CAROLINA
 PROFESSIONAL ENGINEER
 SEAL
 20103
 FARZIN ASEFINA
 5/11/2016

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SURFACE PREPARATION
 SPAN C
 EASTBOUND LANE

DRAWN BY : D.V. JOYNER DATE : 4/2016
 CHECKED BY : W. SMITH DATE : 4/2016

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-8
1			3			TOTAL SHEETS
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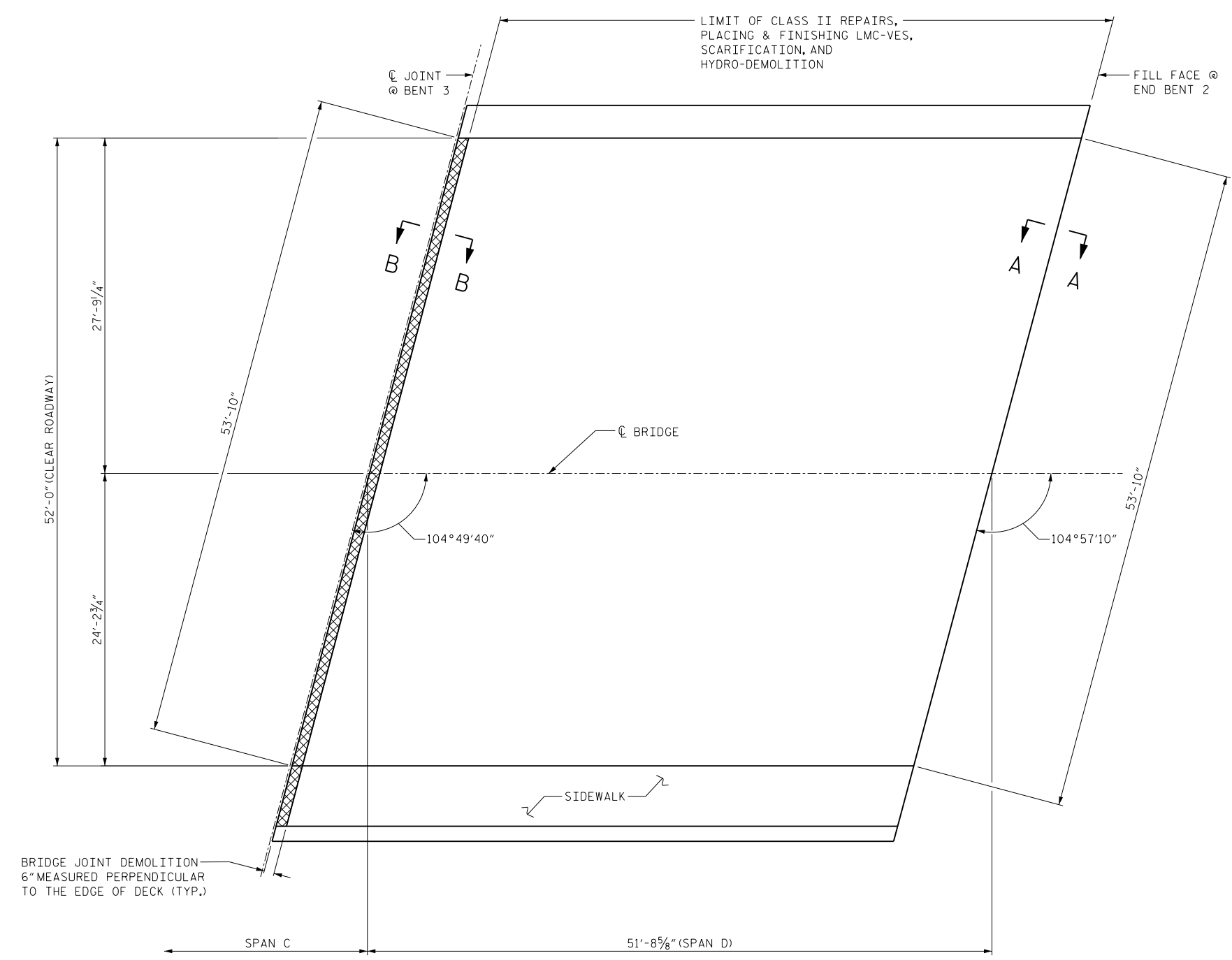
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


SPAN "D" QUANTITIES		
	ESTIMATE	ACTUAL
CLASS II SURFACE PREPARATION	1 SQ. YDS.	
CLASS III SURFACE PREPARATION	1 SQ. YDS.	
BRIDGE JOINT DEMOLITION	27 SQ. FT.	
SCARIFYING BRIDGE DECK	295 SQ. YDS.	
HYDRO-DEMOLITION OF BRIDGE DECK	295 SQ. YDS.	

PAYMENT FOR CLASS II & CLASS III SURFACE PREPARATION IS BASED ON THE SQUARE FEET OF ADDITIONAL DEMOLITION REQUIRED FOLLOWING HYDRO-DEMOLITION OF THE BRIDGE DECK. SEE SPECIAL PROVISIONS.

THE CONTRACTOR SHALL ONLY PLACE FOAM JOINT SEALS AT THE SIDEWALKS.

NO ELASTOMERIC CONCRETE SHALL BE USED AT THE SIDEWALKS.



-  CLASS II SURFACE PREPARATION
-  BRIDGE JOINT DEMOLITION
-  SCARIFICATION & HYDRO-DEMOLITION

PROJECT NO. B-5940
WAKE COUNTY
 BRIDGE NO. 84
 SHEET 4 OF 4

PLAN OF SPAN D
 (FOR SECTION VIEW, SEE "JOINT DETAILS" SHEET S-14)

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Farzin Asefina
 E06BC401
 NORTH CAROLINA PROFESSIONAL ENGINEER
 SEAL 20103
 FARZIN ASEFINA
 5/11/2016

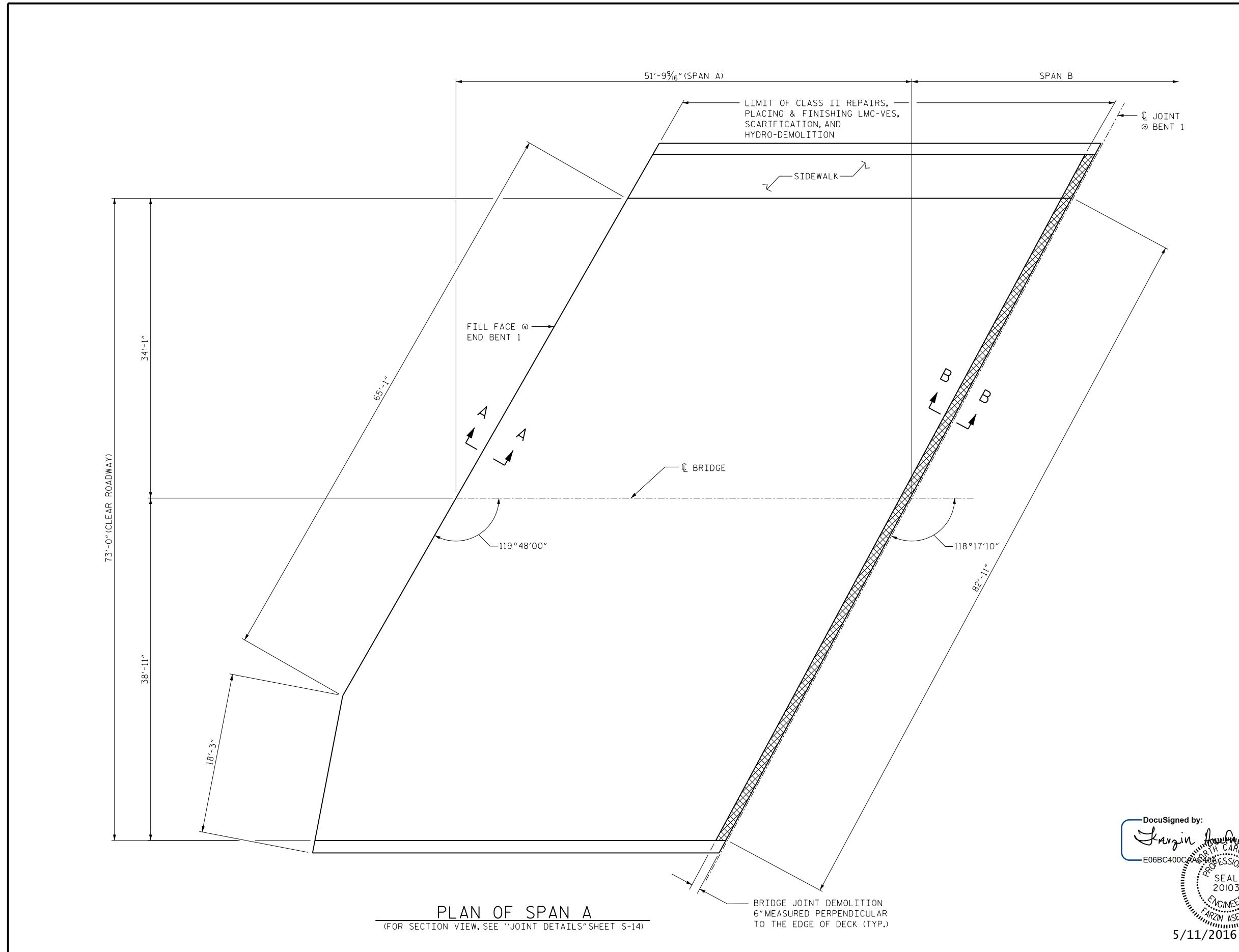
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SURFACE PREPARATION
 SPAN D
 EASTBOUND LANE

DRAWN BY : D.V. JOYNER DATE : 4/2016
 CHECKED BY : W. SMITH DATE : 4/2016

REVISIONS						SHEET NO.
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SPAN "A" QUANTITIES		
	ESTIMATE	ACTUAL
CLASS II SURFACE PREPARATION	1 SQ. YDS.	
CLASS III SURFACE PREPARATION	1 SQ. YDS.	
BRIDGE JOINT DEMOLITION	42 SQ. FT.	
SCARIFYING BRIDGE DECK	410 SQ. YDS.	
HYDRO-DEMOLITION OF BRIDGE DECK	410 SQ. YDS.	

PAYMENT FOR CLASS II & CLASS III SURFACE PREPARATION IS BASED ON THE SQUARE FEET OF ADDITIONAL DEMOLITION REQUIRED FOLLOWING HYDRO-DEMOLITION OF THE BRIDGE DECK. SEE SPECIAL PROVISIONS.

THE CONTRACTOR SHALL ONLY PLACE FOAM JOINT SEALS AT THE SIDEWALKS.

NO ELASTOMERIC CONCRETE SHALL BE USED AT THE SIDEWALKS.

-  CLASS II SURFACE PREPARATION
-  BRIDGE JOINT DEMOLITION
-  SCARIFICATION & HYDRO-DEMOLITION

PLAN OF SPAN A
(FOR SECTION VIEW, SEE "JOINT DETAILS" SHEET S-14)

PROJECT NO. B-5940
WAKE COUNTY
 BRIDGE NO. 91
 SHEET 1 OF 4

DocuSigned by:
Farzin Asefina
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 NORTH CAROLINA PROFESSIONAL ENGINEER
 SEAL 2013
 FARZIN ASEFINA
 5/11/2016

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SURFACE PREPARATION
 SPAN A
 WESTBOUND LANE

DRAWN BY : D.V. JOYNER DATE : 4/2016
 CHECKED BY : W. SMITH DATE : 4/2016

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SPAN "B" QUANTITIES		
	ESTIMATE	ACTUAL
CLASS II SURFACE PREPARATION	1 SQ. YDS.	
CLASS III SURFACE PREPARATION	1 SQ. YDS.	
BRIDGE JOINT DEMOLITION	84 SQ. FT.	
SCARIFYING BRIDGE DECK	426 SQ. YDS.	
HYDRO-DEMOLITION OF BRIDGE DECK	426 SQ. YDS.	

PAYMENT FOR CLASS II & CLASS III SURFACE PREPARATION IS BASED ON THE SQUARE FEET OF ADDITIONAL DEMOLITION REQUIRED FOLLOWING HYDRO-DEMOLITION OF THE BRIDGE DECK. SEE SPECIAL PROVISIONS.

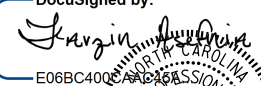
THE CONTRACTOR SHALL ONLY PLACE FOAM JOINT SEALS AT THE SIDEWALKS.

NO ELASTOMERIC CONCRETE SHALL BE USED AT THE SIDEWALKS.

-  CLASS II SURFACE PREPARATION
-  BRIDGE JOINT DEMOLITION
-  SCARIFICATION & HYDRO-DEMOLITION

PROJECT NO. B-5940
WAKE COUNTY
 BRIDGE NO. 91

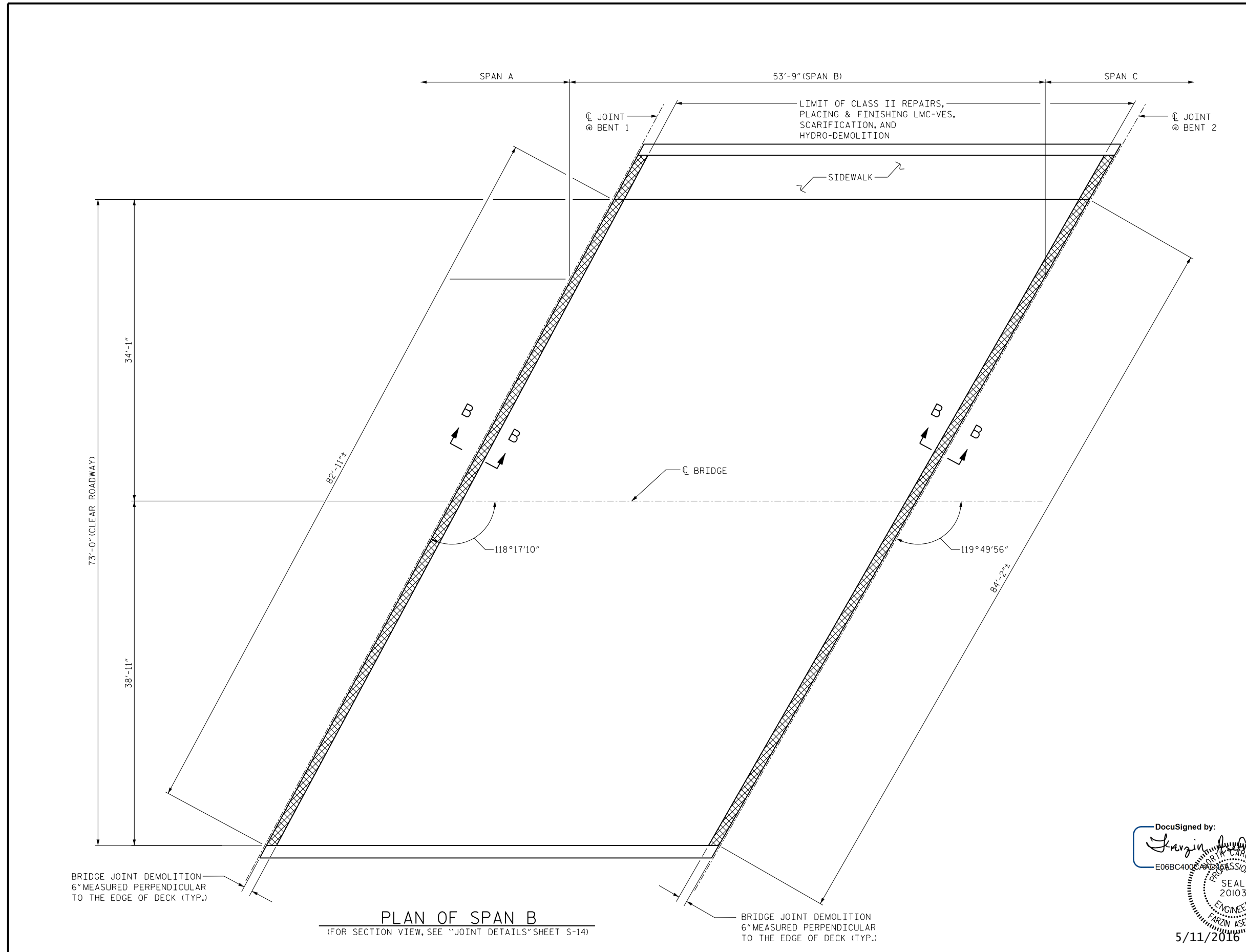
SHEET 2 OF 4

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 FARZIN ASEFINA
 5/11/2016

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SURFACE PREPARATION
 SPAN B
 WESTBOUND LANE

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PLAN OF SPAN B
 (FOR SECTION VIEW, SEE "JOINT DETAILS" SHEET S-14)

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 CHECKED BY : W. SMITH DATE : 4/2016

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


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SPAN "C" QUANTITIES		
	ESTIMATE	ACTUAL
CLASS II SURFACE PREPARATION	1 SQ. YDS.	
CLASS III SURFACE PREPARATION	1 SQ. YDS.	
BRIDGE JOINT DEMOLITION	84 SQ. FT.	
SCARIFYING BRIDGE DECK	416 SQ. YDS.	
HYDRO-DEMOLITION OF BRIDGE DECK	416 SQ. YDS.	

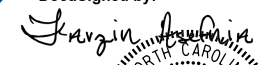

PAYMENT FOR CLASS II & CLASS III SURFACE PREPARATION IS BASED ON THE SQUARE FEET OF ADDITIONAL DEMOLITION REQUIRED FOLLOWING HYDRO-DEMOLITION OF THE BRIDGE DECK. SEE SPECIAL PROVISIONS.

THE CONTRACTOR SHALL ONLY PLACE FOAM JOINT SEALS AT THE SIDEWALKS.

NO ELASTOMERIC CONCRETE SHALL BE USED AT THE SIDEWALKS.

-  CLASS II SURFACE PREPARATION
-  BRIDGE JOINT DEMOLITION
-  SCARIFICATION & HYDRO-DEMOLITION

PROJECT NO. B-5940
WAKE COUNTY
 BRIDGE NO. 91
 SHEET 3 OF 4

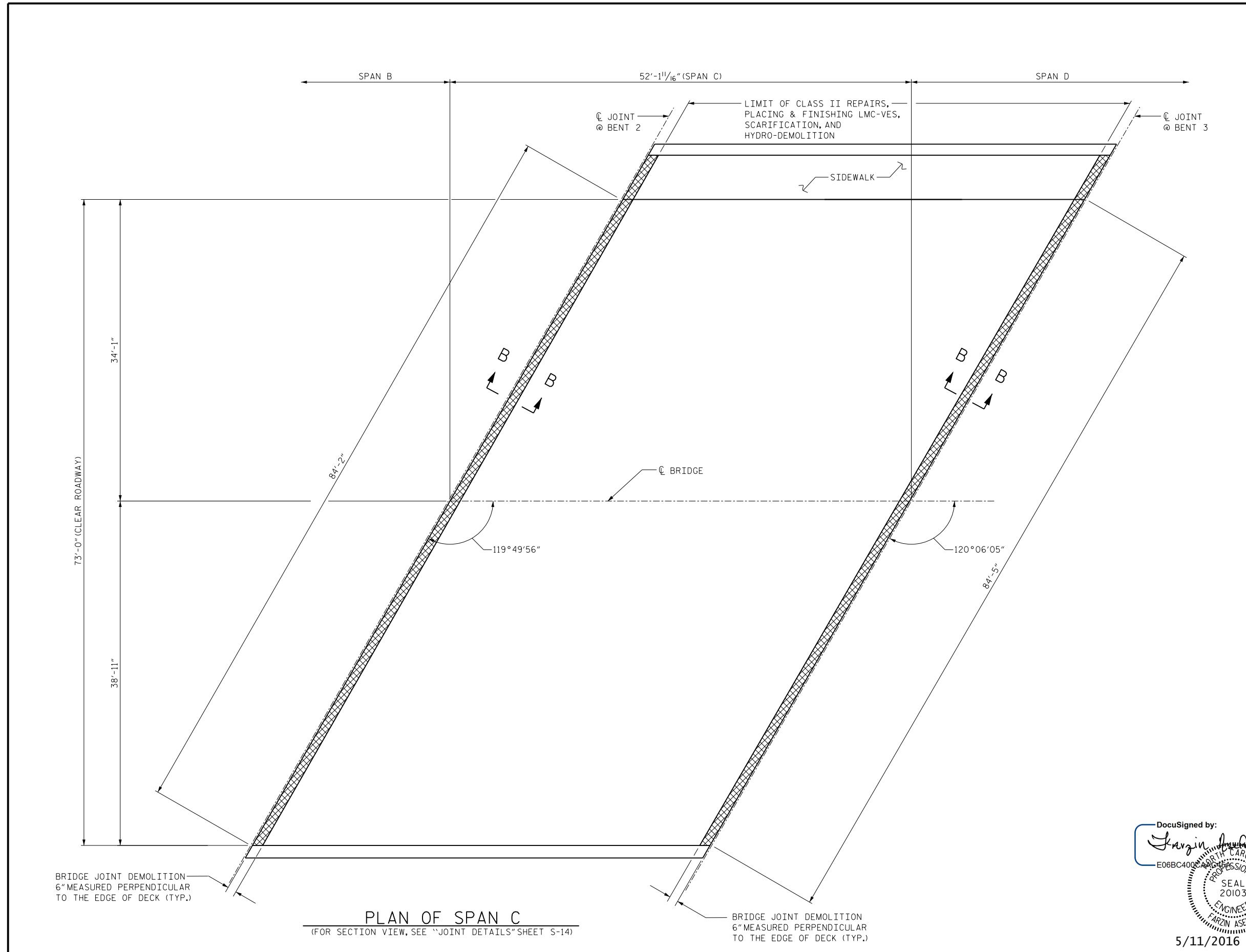
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 5/11/2016

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SURFACE PREPARATION
 SPAN C
 WESTBOUND LANE

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SPAN "D" QUANTITIES		
	ESTIMATE	ACTUAL
CLASS II SURFACE PREPARATION	1 SQ. YDS.	
CLASS III SURFACE PREPARATION	1 SQ. YDS.	
BRIDGE JOINT DEMOLITION	42 SQ. FT.	
SCARIFYING BRIDGE DECK	418 SQ. YDS.	
HYDRO-DEMOLITION OF BRIDGE DECK	418 SQ. YDS.	

PAYMENT FOR CLASS II & CLASS III SURFACE PREPARATION IS BASED ON THE SQUARE FEET OF ADDITIONAL DEMOLITION REQUIRED FOLLOWING HYDRO-DEMOLITION OF THE BRIDGE DECK. SEE SPECIAL PROVISIONS.

THE CONTRACTOR SHALL ONLY PLACE FOAM JOINT SEALS AT THE SIDEWALKS.

NO ELASTOMERIC CONCRETE SHALL BE USED AT THE SIDEWALKS.

-  CLASS II SURFACE PREPARATION
-  BRIDGE JOINT DEMOLITION
-  SCARIFICATION & HYDRO-DEMOLITION

PROJECT NO. B-5940
WAKE COUNTY
 BRIDGE NO. 91
 SHEET 4 OF 4

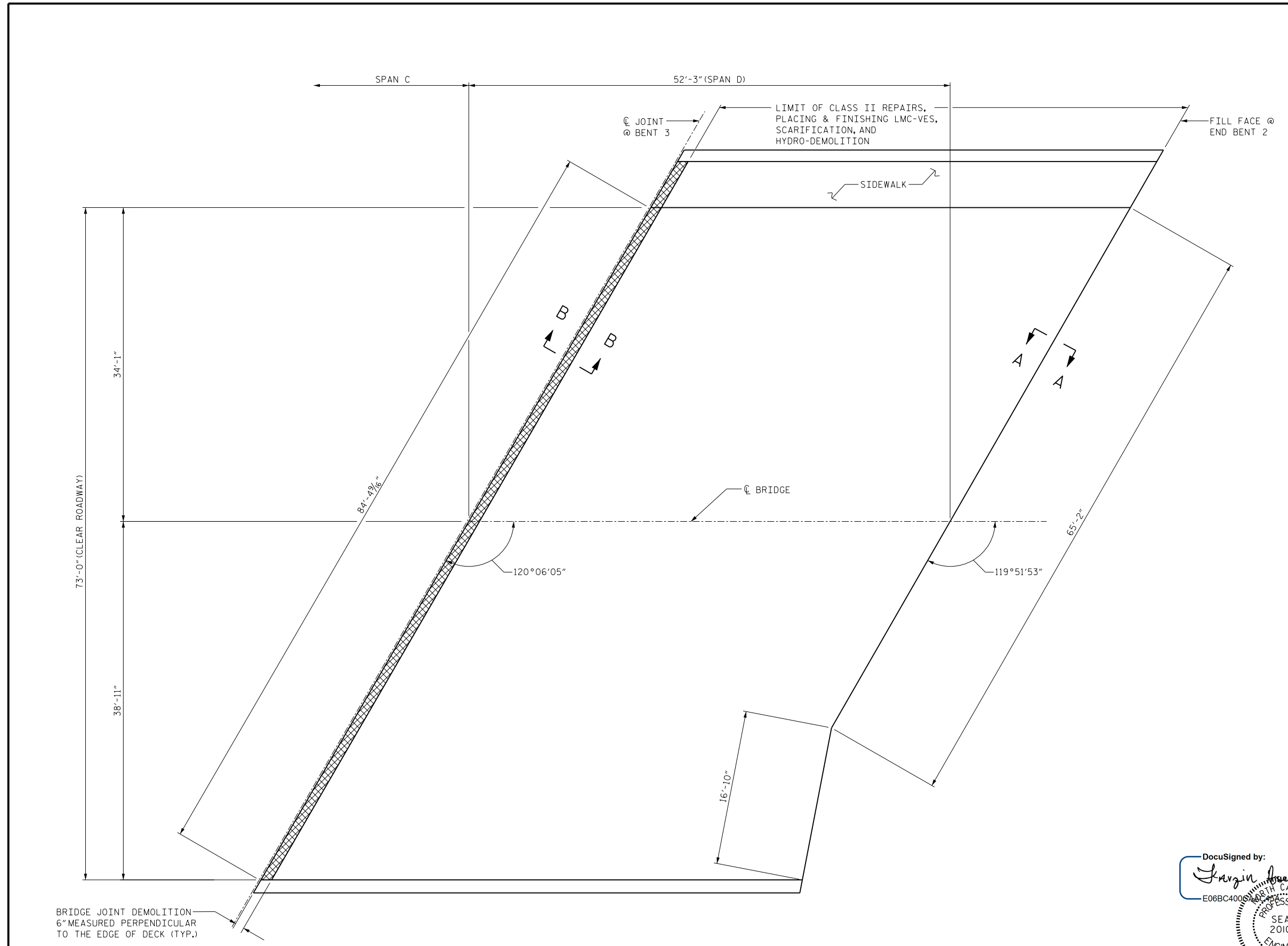
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Farzin Asefina
 E06BC4000
 NORTH CAROLINA PROFESSIONAL ENGINEER
 SEAL 20103
 FARZIN ASEFINA
 5/11/2016

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 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SURFACE PREPARATION
 SPAN D
 WESTBOUND LANE

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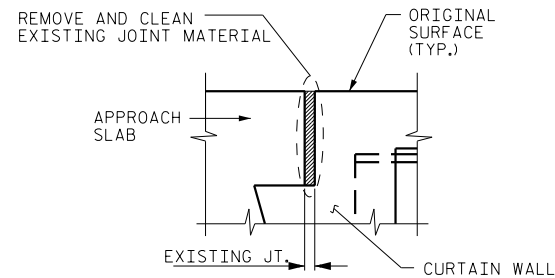
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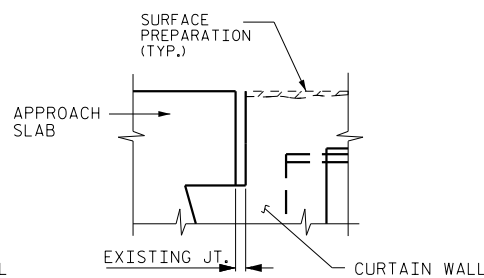
PLAN OF SPAN D
 (FOR SECTION VIEW, SEE "JOINT DETAILS" SHEET S-14)

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 CHECKED BY : W. SMITH DATE : 4/2016

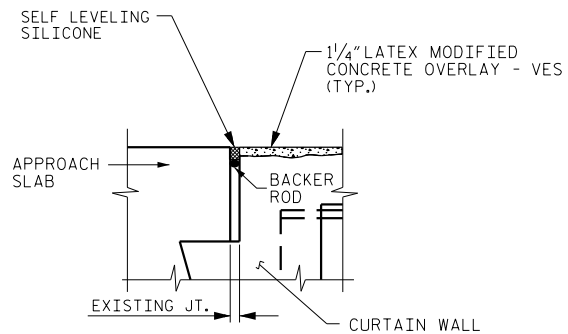
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EXISTING JOINT



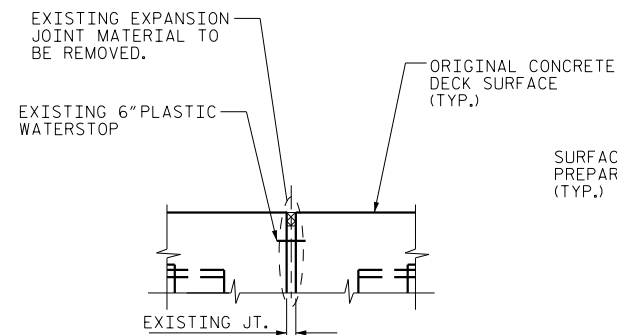
MINIMUM EXISTING JOINT DEMOLITION



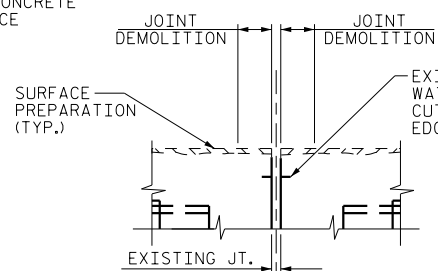
PROPOSED JOINT

JOINT INSTALLATION SEQUENCE AT END BENTS

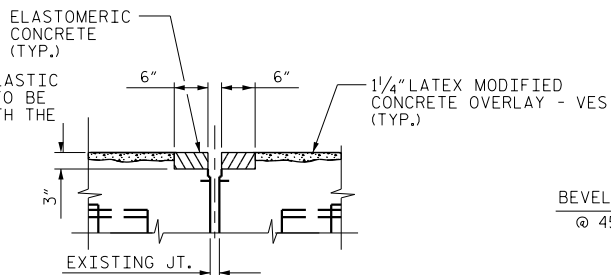
SECTION A-A



EXISTING JOINT



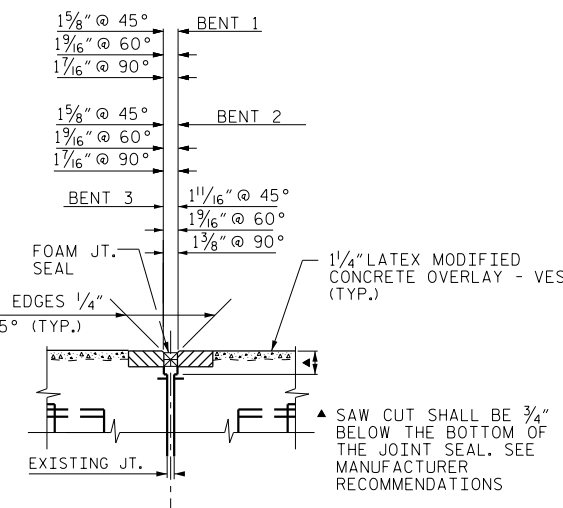
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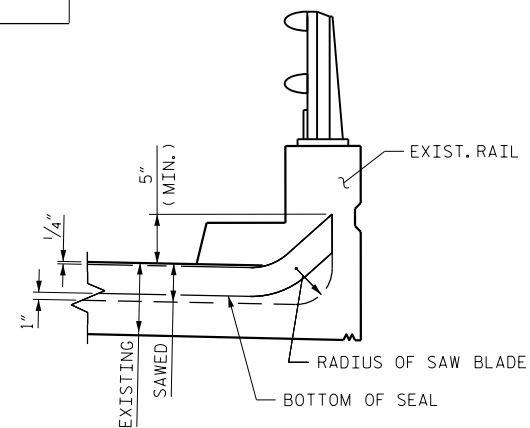
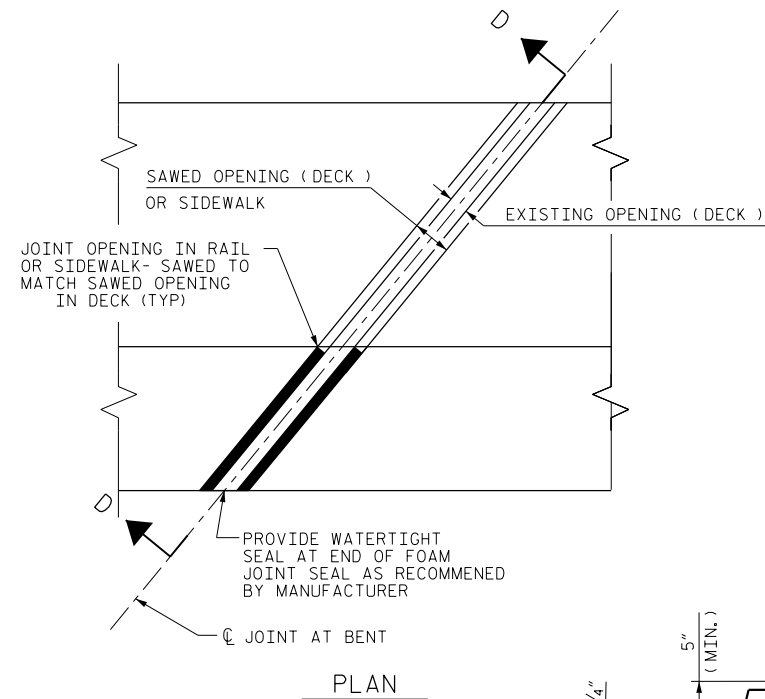
PROPOSED JOINT

JOINT INSTALLATION SEQUENCE AT BENTS

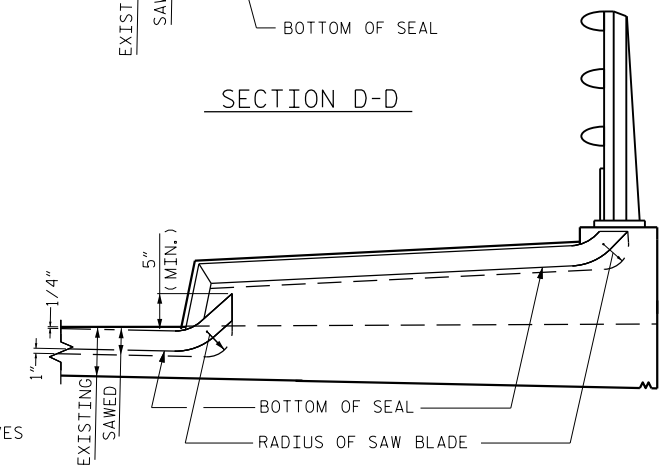
SECTION B-B



PROPOSED FOAM JOINT SEAL EXPANSION



SECTION D-D



SECTION D-D

NOTES:

- CONTRACTOR SHALL FIELD VERIFY THE EXISTING FORMED JOINT MATERIAL.
- FOR FOAM JOINT SEALS, SEE SPECIAL PROVISIONS.
- FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.
- RETAIN ALL EXISTING REINFORCING STEEL. CLEAN AND REPAIR AS NEEDED.
- THE WIDTH OF THE UNCOMPRESSED FOAM JOINT MATERIAL SHALL BE 2".
- THE CONTRACTOR SHALL ONLY PLACE FOAM JOINT SEALS AT THE SIDEWALKS.
- NO ELASTOMERIC CONCRETE SHALL BE USED AT THE SIDEWALKS.

PROJECT NO. B-5940
 WAKE COUNTY
 BRIDGE NO.: 84 & 91

DocuSigned by:
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 ENGINEER
 FARZIN ASEMA
 5/11/2016

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE
 JOINT DETAILS

DRAWN BY : D.V. JOYNER DATE : 4/2016
 CHECKED BY : W. SMITH DATE : 4/2016

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NO.	BY:	DATE:	NO.	BY:	DATE:	S-14
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2			4			14

STANDARD NOTES

DESIGN DATA:

SPECIFICATIONS	-----	A.A.S.H.T.O. (CURRENT)
LIVE LOAD	-----	SEE PLANS
IMPACT ALLOWANCE	-----	SEE A.A.S.H.T.O.
STRESS IN EXTREME FIBER OF		
STRUCTURAL STEEL - AASHTO M270 GRADE 36	-	20,000 LBS. PER SQ. IN.
- AASHTO M270 GRADE 50W	-	27,000 LBS. PER SQ. IN.
- AASHTO M270 GRADE 50	-	27,000 LBS. PER SQ. IN.
REINFORCING STEEL IN TENSION		
GRADE 60	--	24,000 LBS. PER SQ. IN.
CONCRETE IN COMPRESSION	-----	1,200 LBS. PER SQ. IN.
CONCRETE IN SHEAR	-----	SEE A.A.S.H.T.O.
STRUCTURAL TIMBER - TREATED OR		
UNTREATED - EXTREME FIBER STRESS	-----	1,800 LBS. PER SQ. IN.
COMPRESSION PERPENDICULAR TO GRAIN OF TIMBER	-----	375 LBS. PER SQ. IN.
EQUIVALENT FLUID PRESSURE OF EARTH	-----	30 LBS. PER CU. FT. (MINIMUM)

MATERIAL AND WORKMANSHIP:

EXCEPT AS MAY OTHERWISE BE SPECIFIED ON PLANS OR IN THE SPECIAL PROVISIONS, ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE 2012 "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" OF THE N. C. DEPARTMENT OF TRANSPORTATION.

STEEL SHEET PILING FOR PERMANENT OR TEMPORARY APPLICATIONS SHALL BE HOT ROLLED.

CONCRETE:

UNLESS OTHERWISE REQUIRED ON PLANS, CLASS A CONCRETE SHALL BE USED FOR ALL PORTIONS OF ALL STRUCTURES WITH THE EXCEPTION THAT: CLASS AA CONCRETE SHALL BE USED IN BRIDGE SUPERSTRUCTURES, ABUTMENT BACKWALLS, AND APPROACH SLABS; AND CLASS B CONCRETE SHALL BE USED FOR SLOPE PROTECTION AND RIP RAP.

CONCRETE CHAMFERS:

UNLESS OTHERWISE NOTED ON THE PLANS, ALL EXPOSED CORNERS ON STRUCTURES SHALL BE CHAMFERED 3/4" WITH THE FOLLOWING EXCEPTIONS: TOP CORNERS OF CURBS MAY BE ROUNDED TO 1-1/2" RADIUS WHICH IS BUILT INTO CURB FORMS; CORNERS OF TRANSVERSE FLOOR EXPANSION JOINTS SHALL BE ROUNDED WITH A 1/4" FINISHING TOOL UNLESS OTHERWISE REQUIRED ON PLANS; AND CORNERS OF EXPANSION JOINTS IN THE ROADWAY FACES AND TOPS OF CURBS AND SIDEWALKS SHALL BE ROUNDED TO A 1/4" RADIUS WITH A FINISHING STONE OR TOOL UNLESS OTHERWISE REQUIRED ON PLANS.

DOWELS:

DOWELS WHEN INDICATED ON PLANS AS FOR CULVERT EXTENSIONS, SHALL BE EMBEDDED AT LEAST 12" INTO THE OLD CONCRETE AND GROUTED INTO PLACE WITH 1:2 CEMENT MORTAR.

ALLOWANCE FOR DEAD LOAD DEFLECTION, SETTLEMENT, ETC. IN CASTING SUPERSTRUCTURES:

BRIDGES SHALL BE BUILT ON THE GRADE OR VERTICAL CURVE SHOWN ON PLANS. SLABS, CURBS AND PARAPETS SHALL CONFORM TO THE GRADE OR CURVE.
ALL DIMENSIONS WHICH ARE GIVEN IN SECTION AND ARE AFFECTED BY DEAD LOAD DEFLECTIONS ARE DIMENSIONS AT CENTER LINE OF BEARING UNLESS OTHERWISE NOTED ON PLANS. IN SETTING FORMS FOR STEEL BEAM BRIDGES AND PRESTRESSED CONCRETE GIRDER BRIDGES, ADJUSTMENTS SHALL BE MADE DUE TO THE DEAD LOAD DEFLECTIONS FOR THE ELEVATIONS SHOWN. WHERE BLOCKS ARE SHOWN OVER BEAMS FOR BUILDING UP TO THE SLAB, THE VERTICAL DIMENSIONS OF THE BLOCKS SHALL BE ADJUSTED BETWEEN BEARINGS TO COMPENSATE FOR DEAD LOAD DEFLECTIONS, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER. WHERE BOTTOM OF SLAB IS IN LINE WITH BOTTOM OF TOP FLANGES, DEPTH OF SLAB BETWEEN BEARINGS SHALL BE ADJUSTED TO COMPENSATE FOR DEAD LOAD DEFLECTION, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER.
IN SETTING FALSEWORK AND FORMS FOR REINFORCED CONCRETE SPANS, AN ALLOWANCE SHALL BE MADE FOR DEAD LOAD DEFLECTIONS, SETTLEMENT OF FALSEWORK, AND PERMANENT CAMBER WHICH SHALL BE PROVIDED FOR IN ADDITION TO THE ELEVATIONS SHOWN. AFTER REMOVAL OF THE FALSEWORK, THE FINISHED STRUCTURES SHALL CONFORM TO THE PROFILE AND ELEVATIONS SHOWN ON THE PLANS AND CONSTRUCTION ELEVATIONS FURNISHED BY THE ENGINEER.
DETAILED DRAWINGS FOR FALSEWORK OR FORMS FOR BRIDGE SUPERSTRUCTURE AND ANY STRUCTURE OR PARTS OF A STRUCTURE AS NOTED ON THE PLANS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE CONSTRUCTION OF THE FALSEWORK OR FORMS IS STARTED.

REINFORCING STEEL:

ALL REINFORCING STEEL SHALL BE DEFORMED. DIMENSIONS RELATIVE TO PLACEMENT OF REINFORCING ARE TO CENTERS OF BARS UNLESS OTHERWISE INDICATED IN THE PLANS. DIMENSIONS ON BAR DETAILS ARE TO CENTERS OF BARS OR ARE OUT TO OUT AS INDICATED ON PLANS.
WIRE BAR SUPPORTS SHALL BE PROVIDED FOR REINFORCING STEEL WHERE INDICATED ON THE PLANS. WHEN BAR SUPPORT PIECES ARE PLACED IN CONTINUOUS LINES, THEY SHALL BE SO PLACED THAT THE ENDS OF THE SUPPORTING WIRES SHALL BE LAPPED TO LOCK LEGS ON ADJOINING PIECES.

STRUCTURAL STEEL:

AT THE CONTRACTOR'S OPTION, HE MAY SUBSTITUTE 7/8" Ø SHEAR STUDS FOR THE 3/4" Ø STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" Ø STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF 7/8" Ø STUDS ALONG THE BEAM AS SHOWN FOR 3/4" Ø STUDS BASED ON THE RATIO OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" Ø STUDS. STUDS OF THE LENGTH SPECIFIED ON THE PLANS MUST BE PROVIDED. THE MAXIMUM SPACING SHALL BE 2'-0".
EXCEPT AT THE INTERIOR SUPPORTS OF CONTINUOUS BEAMS WHERE THE COVER PLATE IS IN CONTACT WITH BEARING PLATE, THE CONTRACTOR MAY, AT HIS OPTION, SUBSTITUTE FOR THE COVER PLATES DESIGNATED ON THE PLANS COVER PLATES OF THE EQUIVALENT AREA PROVIDED THESE PLATES ARE AT LEAST 5/16" IN THICKNESS AND DO NOT EXCEED A WIDTH EQUAL TO THE FLANGE WIDTH LESS 2" OR A THICKNESS EQUAL TO 2 TIMES THE FLANGE THICKNESS. THE SIZE OF FILLET WELDS SHALL CONFORM TO THE REQUIREMENTS OF THE CURRENT ANSI/AASHTO/AWS "BRIDGE WELDING CODE". ELECTROSLAG WELDING WILL NOT BE PERMITTED.
WITH THE SOLE EXCEPTION OF EDGES AT SURFACES WHICH BEAR ON OTHER SURFACES, ALL SHARP EDGES AND ENDS OF SHAPES AND PLATES SHALL BE SLIGHTLY ROUNDED BY SUITABLE MEANS TO A RADIUS OF APPROXIMATELY 1/16" INCH OR EQUIVALENT FLAT SURFACE AT A SUITABLE ANGLE PRIOR TO PAINTING, GALVANIZING, OR METALLIZING.

HANDRAILS AND POSTS:

METAL STANDARDS AND FACES OF THE CONCRETE END POSTS FOR THE METAL RAIL SHALL BE SET NORMAL TO THE GRADE OF THE CURB, UNLESS OTHERWISE SHOWN ON PLANS. THE METAL RAIL AND TOPS OF CONCRETE POSTS USED WITH THE ALUMINUM RAIL SHALL BE BUILT PARALLEL TO THE GRADE OF THE CURB.
METAL HANDRAILS SHALL BE IN ACCORDANCE WITH THE PLANS. RAILS SHALL BE AS MANUFACTURED FOR BRIDGE RAILING. CASTINGS SHALL BE OF A UNIFORM APPEARANCE. FINIS AND OTHER DEFORMATIONS RESULTING FROM CASTING OR OTHERWISE SHALL BE REMOVED IN A MANNER SO THAT A UNIFORM COLORING OF THE COMPLETED CASTING SHALL BE OBTAINED. CASTINGS WITH DISCOLORATIONS OR OF NON-UNIFORM COLORING WILL NOT BE ACCEPTED. CERTIFIED MILL REPORTS ARE REQUIRED FOR METAL RAILS AND POSTS.

SPECIAL NOTES:

GENERALLY, IN CASE OF DISCREPANCY, THIS STANDARD SHEET OF NOTES SHALL GOVERN OVER THE SPECIFICATIONS, BUT THE REMAINDER OF THE PLANS SHALL GOVERN OVER NOTES HEREON, AND SPECIAL PROVISIONS SHALL GOVERN OVER ALL. SEE SPECIFICATIONS ARTICLE 105-4.

ENGLISH

JANUARY, 1990