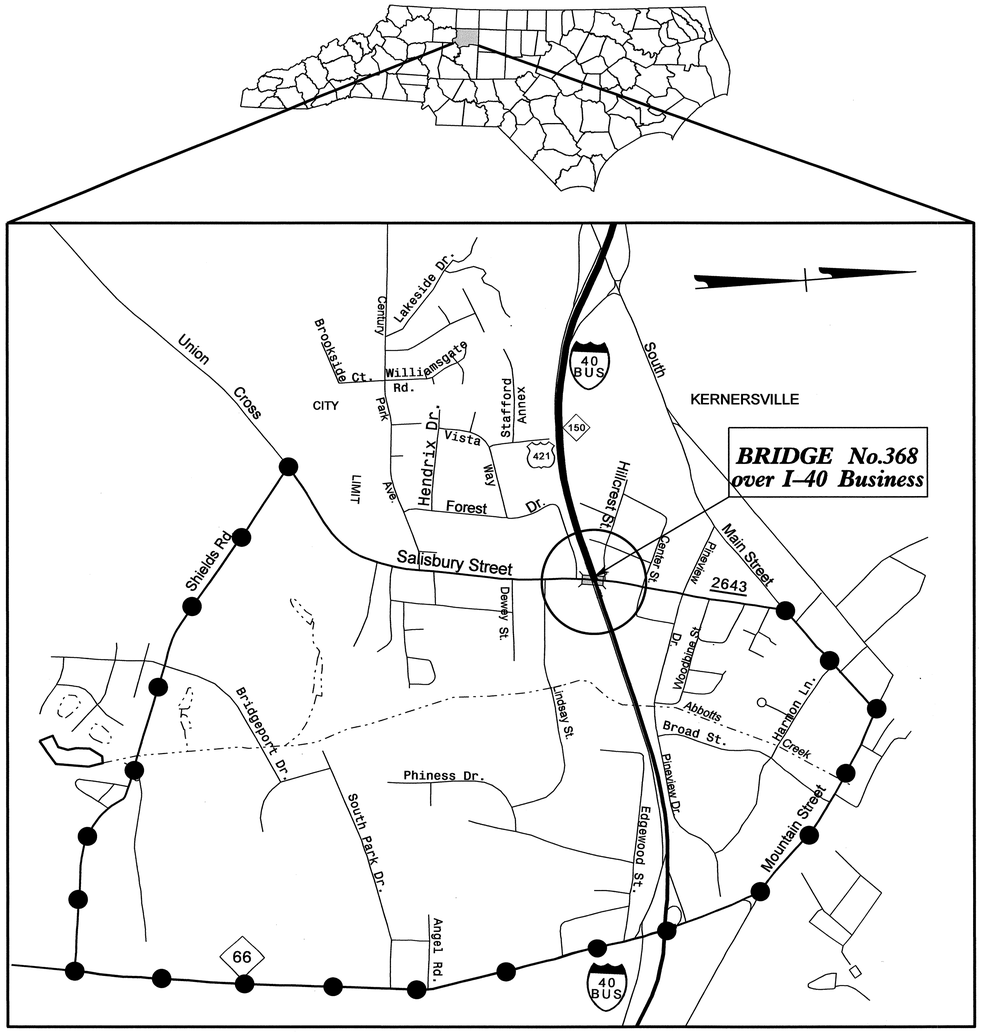
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

FORSYTH COUNTY



INDEX OF SHEETS

SHEET NO.	TITLE
TMP-1	TITLE SHEET, AND INDEX OF SHEETS
TMP-1A	ROADWAY STANDARD DRAWINGS, LEGEND, AND TEMPORARY PAVEMENT MARKING
TMP-1B,TMP-1C	TRANSPORTATION OPERATION PLAN: (MANAGEMENT STRATEGIES, GENERAL NOTES AND LOCAL NOTES)
TMP-2A	PORTABLE CONCRETE BARRIER AT TEMPORARY SHORING LOCATIONS
TMP-2B	ADVANCED WORK ZONE WARNING SIGNS FOR FREEWAYS (4 LANES OR GREATER)
TMP-2C	DETAIL DRAWING FOR ADVANCED WORK ZONE WARNING SIGN DESIGNS
TMP-2D	DETAIL DRAWING FOR TWO-WAY UNDIVIDED AND URBAN FREEWAYS ADVANCED WORK ZONE WARNING SIGNS
TMP-3	TEMPORARY TRAFFIC CONTROL PHASING
TMP-4	OFFSITE DETOUR ROUTE AND BARRICADES PLACEMENT ON SALISBURY ST.
TMP-5	TEMPORARY TRAFFIC CONTROL. TYPICAL SECTION UNDER STRUCTURE
TMP-6	TEMPORARY TRAFFIC CONTROL DETAIL 1
TMP-7	TEMPORARY TRAFFIC CONTROL DETAIL 2
TMP-8	TEMPORARY TRAFFIC CONTROL DETAIL 3A
TMP-9	TEMPORARY TRAFFIC CONTROL DETAIL 3B
TMP-10	TEMPORARY TRAFFIC CONTROL DETAIL 4
TMP-11	TEMPORARY TRAFFIC CONTROL DETAIL 5
SD-1	SPECIAL SIGN DESIGN

SHEET NO.
TMP-1

B-4510

TIP PROJECT:

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

N.C.D.O.T. WORK ZONE TRAFFIC CONTROL
1580 MAIL SERVICE CENTER (MSC) RALEIGH, NC 27699-1580
1020 BIRCH RIDGE DRIVE, RALEIGH, NC 27610 (DELIVERY)
PHONE: (919) 250-4094 FAX: (919) 250-4098

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JOSEPH ISHAK, P.E. — *TRAFFIC CONTROL PROJECT ENGINEER*
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DIVISION OF HIGHWAYS * STATE OF NORTH CAROLINA * DEPARTMENT OF TRANSPORTATION * WORK ZONE TRAFFIC CONTROL

APPROVED: Joseph Ishak
DATE: Jan. 26, 2011

NORTH CAROLINA PROFESSIONAL SEAL 028380 ENGINEER JOSEPH ISHAK

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PROJ. REFERENCE NO.	SHEET NO.
B-4510	TMP-1A

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS SHOWN IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JULY 2006 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
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
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 & OFFSETS
1205.02	PAVEMENT MARKINGS - 2 LANE & MULTILANE ROADWAYS
1205.05	PAVEMENT MARKINGS - TURN LANES
1205.09	PAVEMENT MARKINGS - PAINTED ISLANDS
1205.12	PAVEMENT MARKINGS - BRIDGES
1250.01	PAVEMENT MARKER SPACING
1251.01	RAISED PAVEMENT MARKERS - (TEMPORARY & PERMANENT)
1261.01	GUARDRAIL & BARRIER DELINEATOR SPACING
1261.02	GUARDRAIL & BARRIER DELINEATOR TYPES
1262.01	GUARDRAIL END DELINEATION
1264.01	OBJECT MARKERS
1264.02	PLACEMENT OF OBJECT MARKERS
1267.01	FLEXIBLE DELINEATOR INSTALLATION
1267.02	FLEXIBLE DELINEATOR SPACING
1267.03	FLEXIBLE DELINEATOR - INTERCHANGES

LEGEND

GENERAL

- DIRECTION OF TRAFFIC FLOW
- EXIST. PVMT.
- NORTH ARROW
- PROPOSED PVMT.
- WORK AREA
- PAVEMENT WIDENING (TO REMAIN IN PLACE)
- CLOSED PERMANENTLY

TRAFFIC CONTROL DEVICES

- BARRICADE (TYPE III)
- DRUM
- TEMPORARY CRASH CUSHION
- FLASHING ARROW PANEL (TYPE C)
- FLAGGER
- TRUCK MOUNTED IMPACT ATTENUATOR (TMIA)
- CHANGEABLE MESSAGE SIGN

TEMPORARY SIGNING

- PORTABLE SIGN
- STATIONARY SIGN
- STATIONARY OR PORTABLE SIGN

PAVEMENT MARKINGS

- EXISTING LINES
- TEMPORARY LINES

PAVEMENT MARKING SYMBOLS

PAVEMENT MARKING SYMBOLS

TEMPORARY PAVEMENT MARKING

C6	TYPE 4 REMOVABLE TAPE, WHITE EDGE LINE
P6	PAINT, WHITE EDGE LINE
P7	PAINT, YELLOW EDGE LINE
PM	PAINT, WHITE SOLID LANE LINE

APPROVED: _____ DATE: _____

NORTH CAROLINA PROFESSIONAL SEAL 028380 ENGINEER JOSEPH ISHAK

June 21, 2011

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

ROADWAY STANDARD DRAWINGS & LEGEND

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PROJ. REFERENCE NO.	SHEET NO.
B-4510	TMP-1B

MANAGEMENT STRATEGIES

- SALISBURY ST. (SR 2643) WILL BE CLOSED TO THROUGH TRAFFIC DURING CONSTRUCTION BETWEEN THE INTERSECTIONS WITH FOREST DR. AND HILLCREST ST. ACCESS TO THE LEARNING CENTER AND KERNERSVILLE GOSPEL MISSION WILL BE MAINTAINED AT ALL TIMES. INFORMATION WILL BE PROVIDED TO LOCALS ABOUT PROJECT CONSTRUCTION AND ROAD CLOSURES.

- FOREST DR. WILL BE CLOSED TO TRAFFIC AT FOREST DR./SALISBURY ST. INTERSECTION, AND TRAFFIC DETOURED VIA LOCAL ROADS (CENTURY PARK AVE.).

- HILLCREST ST. WILL BE CLOSED PERMANENTLY PRIOR TO BEGINNING OF CONSTRUCTION.

- ROLLING ROAD BLOCK OPERATIONS WILL BE USED TO STOP TRAFFIC ON I-40BUS FOR 30 MINUTES AT A TIME DURING REMOVAL OF EXISTING STRUCTURE AND INSTALLATION OF PROPOSED GIRDERS.

- UNDER 1-WEEK ICT, WB I-40 BUS TRAFFIC WILL BE PLACED INTO ONE-LANE PATTERN USING RIGHT LANE CLOSURE. PAVEMENT WIDENING WILL BE CONSTRUCTED ON THE OUTSIDE OF I-40BUS WB.
  I-40BUS EB TRAFFIC WILL REMAIN IN EXISTING PATTERN.

- TEMPORARY CHANGEABLE MESSAGE SIGNS AND EXISTING DYNAMIC MESSAGE BOARDS WILL BE USED TO INFORM MOTORISTS OF EXPECTED DELAYS AND ALTERNATE ROUTES DURING REMOVAL OF EXISTING STRUCTURE, INSTALLATION OF PROPOSED GIRDER, AND CONSTRUCTION OF A TEMPORARY PAVEMENT.

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 AS FOLLOWS:

ROAD NAME	DAY AND TIME RESTRICTIONS
I-40 BUS/US 421	- MONDAY THROUGH FRIDAY FROM 6:00 AM TO 8:00 PM
	- SATURDAY FROM 9:00 AM TO 10:00 PM
	- SUNDAY FROM 11:00 AM TO 10:00 PM

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

ROAD NAME
I-40 BUS/US 421

HOLIDAY

1. FOR ANY UNEXPECTED OCCURRENCE THAT CREATES UNUSUALLY HIGH TRAFFIC VOLUMES, AS DIRECTED BY THE ENGINEER.
2. FOR NEW YEAR'S, BETWEEN THE HOURS OF 6:00 A.M. DECEMBER 31st 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.
3. FOR EASTER, BETWEEN THE HOURS OF 6:00 A.M. THURSDAY AND 8:00 P.M. MONDAY.
4. FOR MEMORIAL DAY, BETWEEN THE HOURS OF 6:00 A.M. FRIDAY TO 8:00 P.M. TUESDAY.
5. 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.
6. FOR LABOR DAY, BETWEEN THE HOURS OF 6:00 A.M. FRIDAY AND 8:00 P.M. TUESDAY.
7. FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 6:00 A.M. TUESDAY TO 8:00 P.M. MONDAY.
8. FOR CHRISTMAS, BETWEEN THE HOURS OF 6:00 A.M. THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 8:00 P.M. THE FOLLOWING TUESDAY AFTER THE WEEK OF CHRISTMAS.
9. FOR WAKE FOREST UNIVERSITY FOOTBALL GAMES AT BB&T FIELD IN WINSTON-SALEM, BETWEEN 4 (FOUR) HOURS BEFORE THE START AND 4 (FOUR) HOURS AFTER THE END OF THE EACH GAME.
10. FOR DIXIE CLASSIC FAIR IN WINSTON-SALEM, BETWEEN 1 (ONE) DAY PRIOR TO THE OPENING OF THE FAIR AND 1 (ONE) DAY AFTER THE END OF THE DIXIE CLASSIC FAIR.

C) DO NOT STOP TRAFFIC AS FOLLOWS:

ROAD NAME	DAY AND TIME RESTRICTIONS	DURATION AND OPERATION
I-40 BUS/US 421	MONDAY THROUGH SUNDAY FROM 5:00 AM TO 11:00 PM	30 MIN. FOR GIRDER REMOVAL OR INSTALLATION

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

LANE AND SHOULDER CLOSURE REQUIREMENTS

E) REMOVE LANE CLOSURE DEVICES FROM THE LANE WHEN WORK IS NOT BEING PERFORMED BEHIND THE LANE CLOSURE OR WHEN A LANE CLOSURE IS NO LONGER NEEDED OR AS DIRECTED BY THE ENGINEER.

F) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 15 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN SHOULDER USING ROADWAY STANDARD DRAWING NO. 1101.04 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL OR A LANE CLOSURE IS INSTALLED.

G) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO AN UNDIVIDED FACILITY AND WITHIN 5 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

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.

H) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN A LANE OF TRAVEL OF AN UNDIVIDED OR DIVIDED FACILITY, CLOSE THE LANE ACCORDING TO THE TRAFFIC CONTROL PLANS, ROADWAY STANDARD DRAWINGS, OR AS DIRECTED BY THE ENGINEER. CONDUCT THE WORK SO THAT ALL PERSONNEL AND/OR EQUIPMENT REMAIN WITHIN THE CLOSED TRAVEL LANE.

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

J) DO NOT INSTALL MORE THAN 1 MILE OF LANE CLOSURE ON I-40BUS MEASURED FROM THE BEGINNING OF THE MERGE TAPER TO THE END OF THE LANE CLOSURE.

K) DO NOT INSTALL MORE THAN ONE LANE CLOSURE IN ANY DIRECTION ON I-40 BUS.

L) PROVIDE TRAFFIC CONTROL FOR APPROPRIATE LANE CLOSURES FOR SURVEYING DONE BY THE DEPARTMENT.

PAVEMENT EDGE DROP OFF REQUIREMENTS

M) 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.

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

TRAFFIC PATTERN ALTERATIONS

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

SIGNING

P) 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.

Q) PROVIDE PERMANENT SIGNING.

R) 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.

S) COVER OR REMOVE ALL SIGNS AND DEVICES REQUIRED TO CLOSE THE ROAD WHEN ROAD CLOSURE IS NOT IN OPERATION.

   COVER OR REMOVE ALL SIGNS REQUIRED FOR THE OFF-SITE DETOUR WHEN THE DETOUR IS NOT IN OPERATION.

APPROVED:_____ DATE:_____

NORTH CAROLINA PROFESSIONAL SEAL 028380 ENGINEER JOSEPH ISHAK

July 21, 2014

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

TRANSPORTATION OPERATION PLAN (SHEET 1 OF 2)

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

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

TRAFFIC BARRIER

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

W) 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

TRAFFIC CONTROL DEVICES

X) 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.

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

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

PAVEMENT MARKINGS AND MARKERS

AA) INSTALL PAVEMENT MARKINGS AND PAVEMENT MARKERS ON THE FINAL SURFACE AS SHOWN IN THE PAVEMENT MARKING PLAN.

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

ROAD NAME	MARKING	MARKER
I-40 BUS/US 421	PAINT	TEMP. RAISED

CC) 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.

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

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

MISCELLANEOUS

FF) POLICE MAY BE USED TO MAINTAIN TRAFFIC THROUGH THE WORK AREA AS DIRECTED BY THE ENGINEER.

GG) IN THE EVENT A TIE-IN ON DRIVEWAYS 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 RESPECTIVELY IN ADVANCE OF THE UNEVEN AREAS. USE DRUMS TO DELINEATE THE EDGE OF ROADWAY ALONG UNPAVED AREAS.

HH) CONTRACTOR SHALL MAINTAIN SIDEWALK ACCESS AT ALL TIMES AS STATED IN THE PHASING. CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE TEMPORARY SIDEWALKS (CONCRETE, ASPHALT, OR OTHER SUITABLE MATERIAL AS APPROVED BY THE ENGINEER) AT ALL LOCATIONS WHERE THE OPEN PEDESTRIAN TRAVELWAY HAS BEEN REMOVED FOR CONSTRUCTION OPERATIONS (UTILITIES, DRAINAGE, ETC.).

LOCAL NOTES

1. MAINTAIN ACCESS TO THE LEARNING CENTER AND KERNERSVILLE FULL GOSPEL MISSION AT ALL TIMES.

2. EXISTING DYNAMIC MESSAGE BOARDS ON I-40 BUS/US 421 WILL BE USED TO INFORM THE TRAFFIC ABOUT POSSIBLE DELAYS ON WB I-40 BUS/US 421 AND ALTERNATE ROUTES. COORDINATE WITH TRAFFIC MANAGEMENT CENTER (TMC) IN THE TRIAD REGION TO PLACE APPROPRIATE MESSAGES ON EXISTING DYNAMIC MESSAGE BOARDS (SEE SHEET TMP-11).

APPROVED:_____ DATE:_____

NORTH CAROLINA PROFESSIONAL SEAL 028380 ENGINEER JOSEPH ICHAK

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

TRANSPORTATION OPERATION PLAN (SHHET 2 OF 2)

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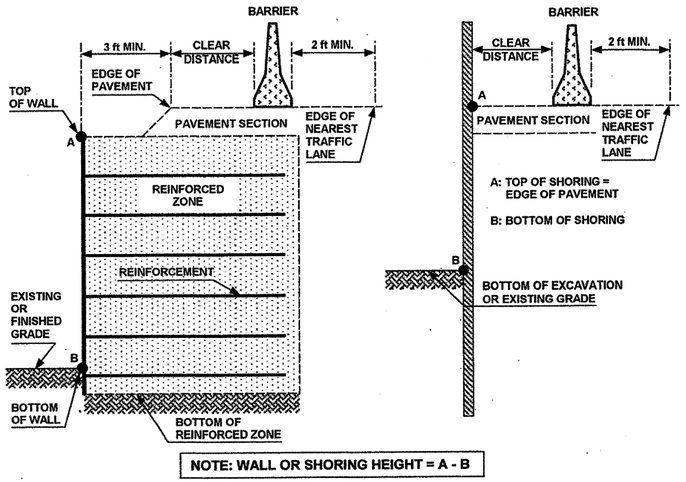


NOTE: WALL OR SHORING HEIGHT = A - B

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

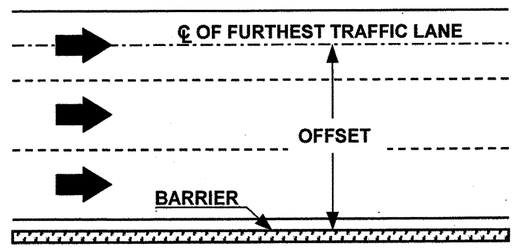


FIGURE B

APPROVED: _____ DATE: _____

SEAL 028380 ENGINEER JOSEPH A. HUMMER NORTH CAROLINA PROFESSIONAL

September 2010

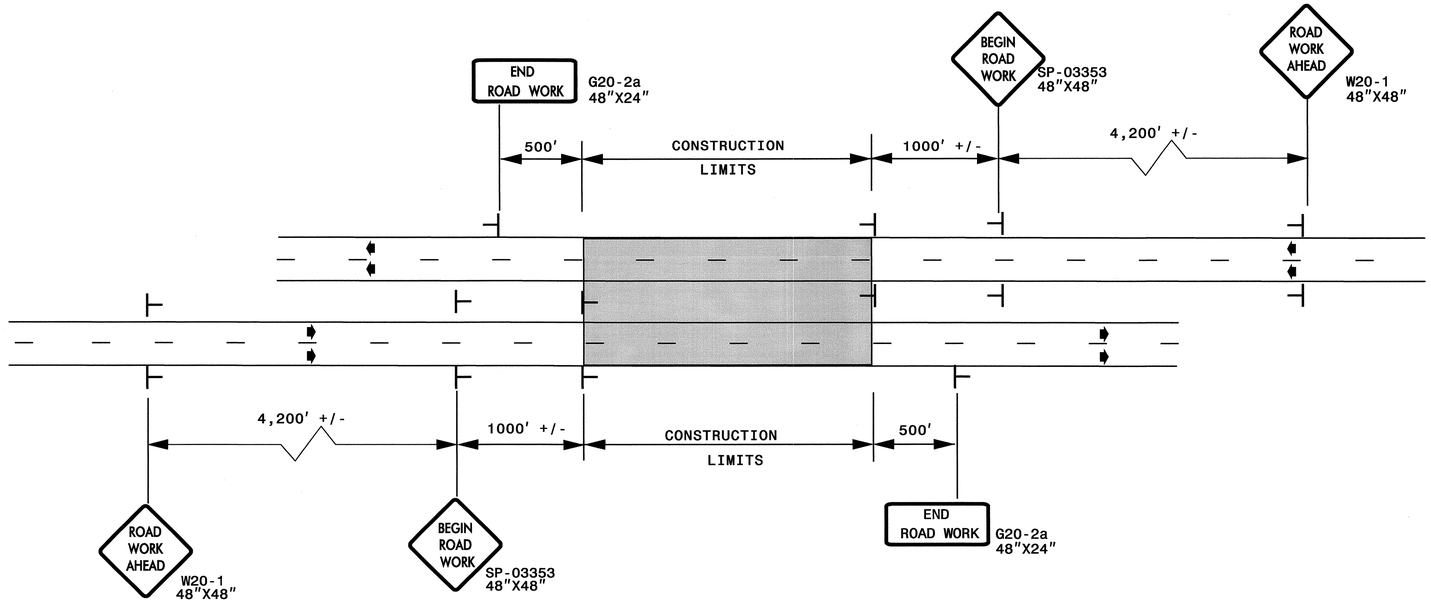
DIVISION OF HIGHWAYS • STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION • WORK ZONE TRAFFIC CONTROL

PORTABLE CONCRETE BARRIER
AT
TEMPORARY SHORING LOCATIONS

ADVANCED WORK ZONE WARNING SIGNING FOR FREEWAYS (4 LANES OR GREATER)

PROJ. REFERENCE NO.	SHEET NO.
B-4510	TMP-2B

DETAIL A

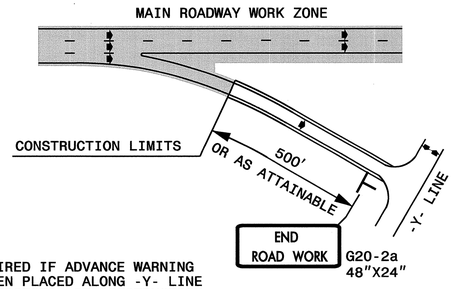


LEGEND
- ⊢ STATIONARY SIGN
- ➧ DIRECTION OF TRAFFIC FLOW

* USE THE "$250 SPEEDING PENALTY" SIGN, SPEED LIMIT SIGN, AND ORANGE PANEL; ONLY WHEN A "$250 SPEEDING PENALTY" ORDINANCE HAS BEEN ISSUED BY THE REGIONAL TRAFFIC ENGINEER.

DETAIL B

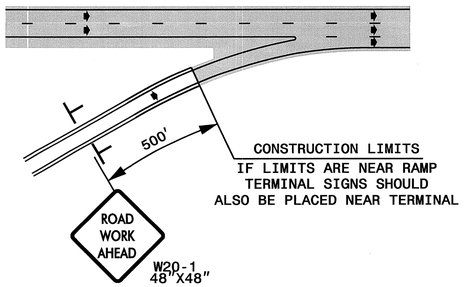
EXIT RAMPS



NOTE: SIGN NOT REQUIRED IF ADVANCE WARNING SIGNS HAVE BEEN PLACED ALONG -Y- LINE THAT RAMP INTERSECTS. IF CONSTRUCTION LIMITS ARE AT END OF RAMP, PLACE SIGN AT END OF RAMP.

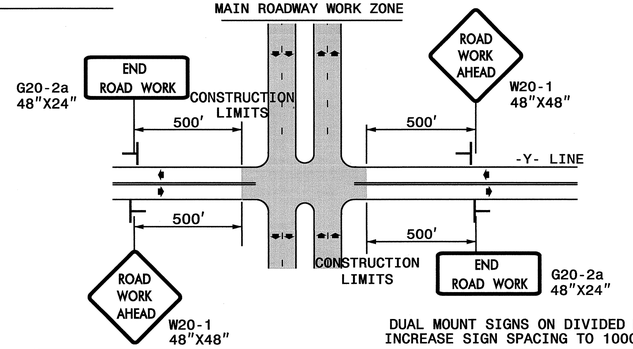
DETAIL C

ENTRANCE RAMPS



DETAIL D

-Y- LINES



DUAL MOUNT SIGNS ON DIVIDED HIGHWAYS AND INCREASE SIGN SPACING TO 1000'+/-.

GENERAL NOTES

- USE FLUORESCENT ORANGE SHEETING (TYPE VII OR HIGHER) ON ALL ADVANCED WORK ZONE SIGNS.
- DO NOT INSTALL ADVANCE WARNING SIGNS MORE THAN 3 DAYS PRIOR TO BEGINNING OF WORK.
- SIGNS SHOWN ARE REQUIRED FOR WORK ZONES THAT WILL REMAIN IN EFFECT OVERNIGHT. FOR SHORT-TERM DAILY MAINTENANCE TYPE OPERATIONS, THIS SIGNING APPLICATION IS OPTIONAL; MAY USE ONLY APPLICABLE ROADWAY STANDARD DRAWINGS INSTEAD. HOWEVER, IF THIS SIGNING APPLICATION IS USED, SIGNS MAY BE PORTABLE MOUNTED.
- ALL SIGN SPACING DIMENSIONS ARE APPROXIMATE, FIELD ADJUST AS NECESSARY OR AS DIRECTED.
- USE 3LB STEEL U-CHANNEL POST OR 4" X 4" WOOD POST FOR ALL WORK ZONE SIGNS. 3LB STEEL U-CHANNEL POSTS MUST MEET THE REQUIREMENTS OF STANDARD SPECIFICATION SECTION 1094-1(B), MAY BE GALVANIZED STEEL, OR MAY BE PAINTED GREEN BY THE POST MANUFACTURER. SQUARE STEEL TUBING POSTS HAVING EQUIVALENT STRENGTH OF THE 3 LB STEEL U-CHANNEL POST ARE ALSO ACCEPTABLE FOR USE. ERECT SIGNS PER ROADWAY STANDARD DRAWING 1110.01. PAYMENT FOR WOOD POSTS, 3LB STEEL U-CHANNEL AND SQUARE STEEL TUBING POSTS WITH SIGNS WILL BE MADE ACCORDING TO STANDARD SPECIFICATION "WORK ZONE SIGNS" SECTION 1110.
- WHEN NECESSARY, USE SPLICING IN ACCORDANCE WITH ROADWAY STANDARD DRAWING NO. 1110.01. REMOVE ENTIRE POST WHEN REMOVING SIGNS WITH SPLICED POSTS.
- DO NOT BACK BRACE SIGN SUPPORTS.

APPROVED:_____ DATE:_____

NORTH CAROLINA PROFESSIONAL SEAL 028380 ENGINEER JOSEPH ISHAK

Jan 21st 2011

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

ADVANCED WORK ZONE WARNING SIGNS FOR FREEWAYS (4 LANES OR GREATER)

19-JAN-2011 14:11
\\dot\dfsroot\Proj\TIPProjects-B\B4510\Traffic\TrafficControl\TCP\B-4510_TC_TMP_2B.dgn
alyudmi AT TE24474

PROJ. REFERENCE NO.	SHEET NO.
B-4510	TMP-2C

SP 03353

SIGN NUMBER: SP-03353
TYPE: A
QUANTITY: 1

SIGN WIDTH: 4'-0"
HEIGHT: 4'-0"
TOTAL AREA: 16.0 Sq.Ft.

BORDER TYPE: FLUSH
RECESS: 0.59"
WIDTH: 0.75"
RADII: 1.38"

NO. Z BARS: N/A
LENGTH: N/A

BACKG COLOR: Fluorescent Orange
COPY COLOR: Black

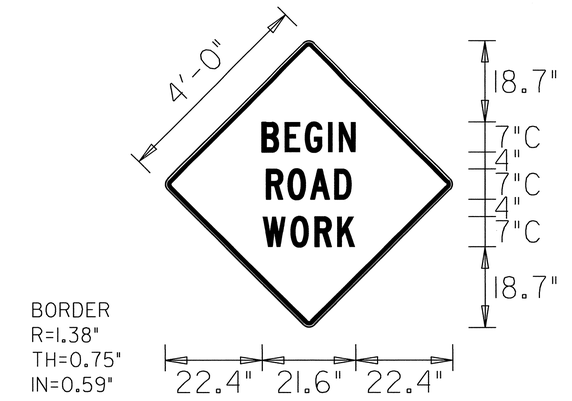
SYMBOL	X	Y	WID	HT

MAT'L:

USE NOTES: 2, 4

1. Legend and border shall be direct applied Type VII reflective sheeting.
2. Legend and border shall be direct applied non-reflective sheeting.
3. Shields shall be Type VII reflective sheeting on 0.032" (0.8mm) aluminum and demountable.
4. Background shall be Type VII reflective sheeting.
5. Background shall be Type I reflective sheeting.
6. Center arrow(s) vertically on sign.
7. Bottom panel shall be yellow Type III sheeting. Legend shall be direct applied black non-reflective sheeting. Yellow panel is:

DESIGNED: SLOWDOWNEY
PROJECT ID: ALL PROJECTS
CHECKED BY: CHECKED
DIV: DIV
STD #: W20-1
DATE: Aug 20,2003



LETTER POSITIONS

Letter spacings are to start of next letter

																											Series/Size Text Length
		B	E	G	I	N																					C7
	22.4	5.3	4.6	5.4	2.5	3.8	22.4																				21.6
		R	O	A	D																						C7
	23.4	5	5.2	5.6	3.8	23.4																					19.6
		W	O	R	K																						C7
	22.6	6.4	5.6	5.2	4	22.6																					21.2

Spacing Factor is 1 unless specified otherwise

GENERAL NOTES FOR THE "BEGIN ROAD WORK" SIGN

-SIGN SP-03353 "BEGIN ROAD WORK" ONLY APPLIES TO FULL CONTROL AND PARTIAL CONTROL OF ACCESS ROADWAYS

-WHEN USED, INSTALL SIGN SP-03353 "BEGIN ROAD WORK" ACCORDING TO DETAIL A ON SHEET TMP-2C.

APPROVED: _____ DATE: _____

NORTH CAROLINA PROFESSIONAL SEAL 028380 ENGINEER JOSEPH ISHAK

Jan 31, 2011

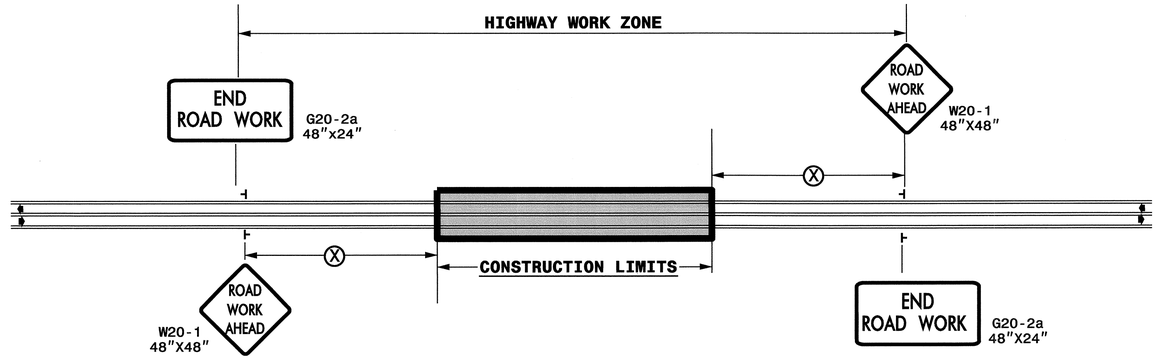
DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

DETAIL DRAWING FOR ADVANCED WORK ZONE WARNING SIGN DESIGNS

29-JAN-2011 14:12
c:\dot\cfsroot0\Proj\TIPProjects-B\B4510\Traffic\TrafficControl\TCP\B-4510_TC_TMP_2C.dgn
alyudmi AT TE24474I

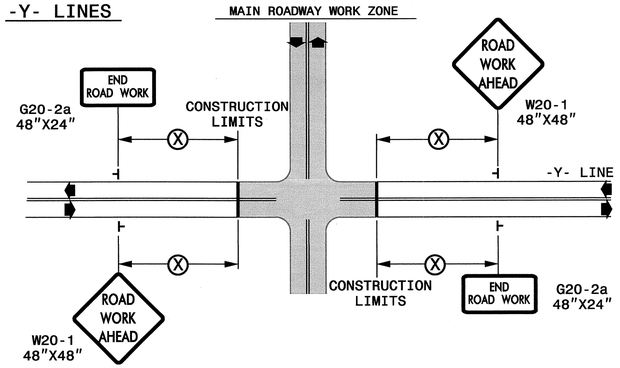
PROJ. REFERENCE NO.	SHEET NO.
B-4510	TMP-2D

TWO-WAY UNDIVIDED ** (L-LINES)



POSTED SPEED LIMIT (M.P.H.)	RECOMMENDED MINIMUM SIGN SPACING Ⓧ
≤ 50	500′
≥ 55	1000′

ROADWAYS INTERSECTING ALONG 2 WAY UNDIVIDED WORK ZONE (Y-LINES)



GENERAL NOTES

- USE FLUORESCENT ORANGE SHEETING (TYPE VII OR HIGHER) ON ALL ADVANCED WORK ZONE SIGNS.
- DO NOT INSTALL ADVANCE WARNING SIGNS MORE THAN 3 DAYS PRIOR TO BEGINNING OF WORK.
- SIGNS SHOWN ARE REQUIRED FOR WORK ZONES THAT WILL REMAIN IN EFFECT OVERNIGHT. FOR SHORT-TERM DAILY MAINTENANCE TYPE OPERATIONS, THIS SIGNING APPLICATION IS OPTIONAL; MAY USE ONLY APPLICABLE ROADWAY STANDARD DRAWINGS INSTEAD. HOWEVER, IF THIS SIGNING APPLICATION IS USED, SIGNS MAY BE PORTABLE MOUNTED.
- ALL SIGN SPACING DIMENSIONS ARE APPROXIMATE, FIELD ADJUST AS NECESSARY OR AS DIRECTED.
- USE 3LB STEEL U-CHANNEL POST OR 4" X 4" WOOD POST FOR ALL WORK ZONE SIGNS. 3LB STEEL U-CHANNEL POSTS MUST MEET THE REQUIREMENTS OF STANDARD SPECIFICATION SECTION 1094-1(B), MAY BE GALVANIZED STEEL, OR MAY BE PAINTED GREEN BY THE POST MANUFACTURER. SQUARE STEEL TUBING POSTS HAVING EQUIVALENT STRENGTH OF THE 3 LB STEEL U-CHANNEL POST ARE ALSO ACCEPTABLE FOR USE. ERECT SIGNS PER ROADWAY STANDARD DRAWING 1110.01. PAYMENT FOR WOOD POSTS, 3LB STEEL U-CHANNEL AND SQUARE STEEL TUBING POSTS WITH SIGNS WILL BE MADE ACCORDING TO STANDARD SPECIFICATION "WORK ZONE SIGNS" SECTION 1110.
- WHEN NECESSARY, USE SPLICING IN ACCORDANCE WITH ROADWAY STANDARD DRAWING NO. 1110.01. REMOVE ENTIRE POST WHEN REMOVING SIGNS WITH SPLICED POSTS.
- DO NOT BACK BRACE SIGN SUPPORTS.
- ** TWO-WAY UNDIVIDED ADVANCE WARNING SIGN CONFIGURATION MAY BE USED ON URBAN MULTI-LANE FACILITIES WHERE CONDITIONS LIMIT THE USE OF DUAL MOUNTED SIGNS AS DETERMINED BY THE ENGINEER.

LEGEND

⊢ STATIONARY SIGN

DIRECTION OF TRAFFIC FLOW

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

DETAIL DRAWING FOR TWO-WAY UNDIVIDED WORK ZONE WARNING SIGNS

SHEET 1 OF 1

APPROVED:_____ DATE:_____

NORTH CAROLINA PROFESSIONAL SEAL 028380 ENGINEER JOSEPH ISHAK
Jan 26, 2011

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

DETAIL DRAWING FOR TWO-WAY UNDIVIDED AND URBAN FREEWAYS WORK ZONE WARNING SIGNS

19-JAN-2011 13:54
\\dot\dfsroot01\Proj\TIPProjects-B\B4510\Traffic\TrafficControl\TCP\B-4510_TC_TMP_2D.dgn
alyudmi AT TE24474I

PROJ. REFERENCE NO.	SHEET NO.
B-4510	TMP-3

PHASING

NOTE:
MAINTAIN ACCESS TO ALL RESIDENCES AND BUSINESSES AT ALL TIMES WITHIN THE PROJECT LIMIT UNLESS OTHERWISE NOTED IN PHASING.

STEP 1:
- USING RSD 1101.03, SHEET 1 OF 9, SHEETS TMP-4, TMP-10 AND SD-1, INSTALL DETOUR SIGNS, PLACE TYPE III BARRICADES TO CLOSE SALISBURY ST. (-L-) TO THROUGH TRAFFIC FROM -L- STA.14+67+/- TO -L- STA.20+00+/-.
- INSTALL OBJECT MARKERS AND TYPE III BARRICADES TO CLOSE HILLCREST ST. PERMANENTLY TO THROUGH TRAFFIC. SEE ROADWAY PLANS.
- INSTALL TYPE III BARRICADES TO CLOSE FOREST DR. (-DRI 1-) TO THROUGH TRAFFIC FROM -DRI 1- STA.12+75+/- TO -DRI 1- STA.14+17+/- AS SHOWN ON SHEET TMP-10.
- INSTALL "NO OUTLET" SIGNS ON SALISBURY ST. (-L-) AND FOREST DR. (-DR 1-) AS SHOWN ON SHEET TMP-6.
- INSTALL ADVANCED WORK ZONE WARNING SIGNS ALONG I-40 BUS/US 421 (-EY4-) AND FOREST DR. (-DRI 1-). SEE SHEETS TMP-2B, TMP-2C AND TMP-2D.

STEP 2:
AWAY FROM TRAFFIC AND USING RSD 1101.02, SHEET 1 OF 9, AS NEEDED, BEGIN CONSTRUCTION OF PROPOSED ROADWAY UP TO BUT NOT INCLUDING FINAL LAYER OF SURFACE COURSE FROM -L- STA.14+67+/- TO -L- STA.20+00+/- AND FROM -DR 1- STA.12+75+/- TO -DR 1- STA.14+17+/-. SEE ROADWAY PLANS.

NOTE:
USING SHEET TMP-11, INSTALL CMSs SEVEN (7) DAYS PRIOR TO BEGINNING WORK IN STEP 3, TO INFORM MOTORISTS OF EXPECTED DELAYS ON I-40 BUS/US 421 DURING REMOVAL OF EXISTING STRUCTURE.

STEP 3:
MODIFY CMS MESSAGES AS SHOWN ON SHEET TMP-11.
USING ROLLING ROAD BLOCK OPERATION (RSD 1101.02, SHEET 9 OF 9), STOP TRAFFIC ON I-40BUS/US 421 FOR 30 MINUTES AT A TIME, AND REMOVE EXISTING STRUCTURE. SEE SHEET TMP-1B, NOTE 'C'.

STEP 4:
1) - USING RSD 1101.02, SHEET 3 OF 9, AND RSD 1101.04, SHEET 1 OF 1, INSTALL PCB AND CRASH CUSHION ALONG OUTSIDE SHOULDERS OF I-40 BUS/US 421 IN BOTH DIRECTIONS AT THE FOLLOWING LOCATIONS:
SEE SHEETS TMP-5, DETAIL 1, AND TMP-6.
* WB FROM -EY4- STA.12+00+/- TO -EY4- STA.17+35+/-,
* EB FROM -EY4- STA.8+75+/- TO -EY4- STA.14+00+/-.

2) BEHIND PCB, REMOVE EXISTING OUTSIDE BENTS AND BEGIN CONSTRUCTION OF PROPOSED OUTSIDE ABUTMENTS ON I-40 BUS/US 421 IN BOTH DIRECTIONS.

ICT SEVEN (7) CONSECUTIVE CALENDAR DAYS

COMPLETE THE WORK REQUIRED IN STEP 5 IN SEVEN (7) CONSECUTIVE CALENDAR DAYS.
SEE INTERMEDIATE CONTRACT TIME AND LIQUIDATED DAMAGES.

STEP 5:
1. RSD 1101.02, SHEET 3 OF 9, PERFORM THE FOLLOWING:
SEE SHEETS TMP-5, DETAILS 2 AND 3, TMP-7 THROUGH TMP-9.
1) CLOSE RIGHT LANE ON I-40 BUS/US 421 WB, INSTALL TEMPORARY TAPE (WHITE EDGE LINE) FROM -EY4- STA.7+00+/- TO -EY4- STA.19+50+/-, AND PLACE WB TRAFFIC IN ONE-LANE PATTERN.
2) REMOVE PCB AND CRASH CUSHION, INSTALLED IN STEP 4 ON WB DIRECTION FROM -EY4- STA.12+00+/- TO -EY4- STA.17+35+/-.
3) CONSTRUCT PAVEMENT WIDENING ON THE OUTSIDE OF I-40 BUS/US 421 WB. PLACE TEMPORARY PAVEMENT MARKING (PAINT WHITE EDGE LINE AND PAINT WHITE LANE LINE) AND TEMPORARY MARKERS FROM -EY4- STA.7+00+/- TO -EY4- STA.19+50+/-.
2. USING RSD 1101.02, SHEETS 3 OF 9 AND 9 OF 9, SHIFT I-40 BUS/US 421 WB TRAFFIC ONTO THE NEWLY CONSTRUCTED OUTSIDE LANE IN ONE-LANE PATTERN.
3. USING RSD 1101.02, SHEET 3 OF 9, REMOVE TEMPORARY TAPE AND PLACE TEMPORARY PAVEMENT MARKING (PAINT YELLOW EDGE LINE) ON WB FROM -EY4- STA.7+00+/- TO -EY4- STA.19+50+/-.
4. USING RSD 1101.02, SHEET 9 OF 9, SHIFT WB TRAFFIC IN TWO-LANE PATTERN FROM -EY4- STA.7+00+/- TO -EY4- STA.19+50+/- AS SHOWN ON SHEET TMP-8.

STEP 6:
USING RSD 1101.02, SHEET 3 OF 9, PERFORM THE FOLLOWING:
SEE SHEETS TMP-5, DETAIL 3, TMP-8 AND TMP-9.
1) REMOVE PCB AND CRASH CUSHION, INSTALLED IN STEP 4 ON EB DIRECTIONS FROM -EY4- STA.8+75+/- TO -EY4- STA.14+00+/-.
2) - REMOVE PART OF EXISTING GUARDRAIL ALONG INSIDE SHOULDER OF I-40 BUS/US 421 WB, AND INSTALL PCB AND CRASH CUSHION FROM -EY4- STA.10+50+/- TO -EY4- STA.16+52+/-. INSTALL TEMPORARY GUARDRAIL END TREATMENT TO PROTECT TRAFFIC. SEE SHEET TMP-8.
- REMOVE PART OF EXISTING GUARDRAIL ALONG INSIDE SHOULDER OF I-40 BUS/US 421 EB, AND INSTALL PCB FROM -EY4-STA.12+55+/- TO -EY4- STA.13+45+/- AS SHOWN ON SHEET TMP-8.
USE TEMPORARY ANCHOR UNIT TO CONNECT EXISTING GUARDRAIL WITH PCB.

ICT SIXTY (60) CONSECUTIVE CALENDAR DAYS

COMPLETE THE WORK REQUIRED IN STEP 7 IN SIXTY (60) CONSECUTIVE CALENDAR DAYS.
SEE INTERMEDIATE CONTRACT TIME AND LIQUIDATED DAMAGES.

STEP 7:
BEHIND PCB, PERFORM THE FOLLOWING:
SEE ROADWAY AND STRUCTURE PLANS, SHEETS TMP-5, DETAIL 3, AND TMP-8.
1) REMOVE EXISTING MEDIAN BENT
2) CONSTRUCT TEMPORARY SHORING No.1:
10' LT FROM -EY4- STA.12+65+/- TO -EY4- STA.13+35+/-
AND TEMPORARY SHORING No.2:
10' RT FROM -EY4- STA.12+65+/- TO -EY4- STA.13+35+/-
3) CONSTRUCT PROPOSED MEDIAN BENT, REMOVE TEMPORARY SHORING No.1 AND No.2, INSTALL GUARDRAIL ALONG INSIDE SHOULDER OF I-40BUS/US 421 WB.

STEP 8:
AWAY FROM TRAFFIC, COMPLETE CONSTRUCTION OF PROPOSED OUTSIDE ABUTMENTS ON I-40 BUS/US 421 IN BOTH DIRECTIONS.

NOTE:
USING SHEET TMP-11, INSTALL CMSs SEVEN (7) DAYS PRIOR TO BEGINNING THE WORK IN STEP 9, TO INFORM MOTORISTS OF EXPECTED DELAYS ON I-40 BUS/US 421 DURING GIRDER INSTALLATION.

STEP 9:
MODIFY CMS MESSAGES AS SHOWN ON SHEET TMP-11. USING ROLLING ROAD BLOCK OPERATION (RSD 1101.02, SHEET 9 OF 9), STOP TRAFFIC ON I-40 BUS/US 421 FOR 30 MINUTES AT A TIME, AND INSTALL PROPOSED GIRDERS. SEE SHEET TMP-1B, NOTE 'C'.

STEP 10:
- USING RSD 1101.02, SHEETS 3 OF 9 AND 9 OF 9, PERFORM THE FOLLOWING:
SEE SHEET TMP-5, DETAIL 4.
1) CLOSE LEFT LANE ON I-40 BUS/US 421 WB AND PLACE TRAFFIC IN ONE-LANE PATTERN.
2) REMOVE PCB AND CRASH CUSHION, INSTALLED IN STEP 6 ALONG INSIDE SHOULDER OF I-40 BUS/US 421 WB, AND PLACE GUARDRAIL FROM -EY4- STA.10+50+/- TO -YE4- STA.16+52+/-
3) PLACE FINAL LAYER OF OPEN GRADED FRICTION COURSE AND FINAL PAVEMENT MARKINGS (WHITE SKIP LINE AND YELLOW EDGE LINE) AND MARKERS ON LEFT LANE OF WB WITHIN THE CONSTRUCTION LIMITS.
4) CLOSE RIGHT LANE ON I-40 BUS/US 421 WB AND SHIFT TRAFFIC IN ONE-LANE PATTERN.
5) PLACE FINAL LAYER OF OPEN GRADED FRICTION COURSE AND FINAL PAVEMENT MARKING (WHITE EDGE LINE) ON RIGHT LANE OF WB WITHIN THE CONSTRUCTION LIMITS.
6) PLACE I-40 BUS/US 421 WB TRAFFIC IN TWO-LANE PATTERN.

- USING RSD 1101.02, SHEET 3 OF 9, REMOVE PCB AND TEMPORARY ANCHOR UNIT, INSTALLED IN STEP 6 ALONG INSIDE SHOULDER OF I-40BUS/US 421 EB , AND PLACE GUARDRAIL FROM -EY4- STA.12+55+/- TO -EY4- STA.13+45+/-.

STEP 11:
- AWAY FROM TRAFFIC AND USING RSD 1101.02, SHEET 1 OF 9, AS NEEDED, COMPLETE CONSTRUCTION OF PROPOSED ROADWAY UP TO BUT INCLUDING FINAL LAYER OF SURFACE COURSE FROM -L- STA.14+67+/- TO -L- STA.20+00+/- AND FROM -DRI 1- STA.12+75+/- TO -DRI 1- STA.14+17+/-.
SEE ROADWAY PLANS.
- REMOVE ALL TRAFFIC CONTROL DEVICES, INSTALLED ALONG I-40 BUS/US 421 (-EY4-).

NOTE:
MAINTAIN ACCESS TO THE LEARNING CENTER AND KERNERSVILLE FULL GOSPEL MISSION WHILE WEDGING SALISBURY ST.

STEP 12:
USING RSD 1101.02, SHEET 1 OF 9, PERFORM THE FOLLOWING:
1) - WEDGE AND PLACE TEMPORARY PAVEMENT MARKING AT THE END OF EACH WORK DAY ON -L- FROM STA.11+80+/- TO STA.14+67+/- AND FROM STA.21+85+/- TO STA.22+50+/-.
- CONSTRUCT PROPOSED UP TO BUT NOT INCLUDING FINAL LAYER OF SURFACE COURSE FROM -L- STA.20+00+/- TO -L- STA.21+85+/- AND FROM -DRI 1- STA.11+75+/- TO -DRI 1- STA.12+75+/-.
2) PLACE TEMPORARY PAVEMENT MARKING AND MARKERS FROM -L- STA.11+80+/- TO -L- STA.22+50+/- AND FROM -DRI 1- STA.11+75+/- TO -DRI 1- STA.14+17+/-.
3) REMOVE ALL TRAFFIC CONTROL DEVICES AND DETOUR SIGNS INSTALLED ON -L- AND -DRI 1-. OPEN -L- (SALISBURY ST.) AND -DRI 1- (FOREST DR.) TO PROPOSED TRAFFIC PATTERN.

STEP 13:
USING RSD 1101.02, SHEET 1 OF 9, PLACE FINAL LAYER OF SURFACE COURSE AND FINAL PAVEMENT MARKING AND MARKERS AS FOLLOW:
SEE ROADWAY AND FINAL PAVEMENT MARKING PLANS.
* FROM -L- STA.11+80+/- TO -L- STA.22+50+/-
* FROM -DRI 1- STA.11+75+/- TO -DRI 1- STA.14+17+/-.

APPROVED:_____ DATE:_____

NORTH CAROLINA PROFESSIONAL SEAL 028380 ENGINEER JOSEPH ISHAK
June 21, 2011

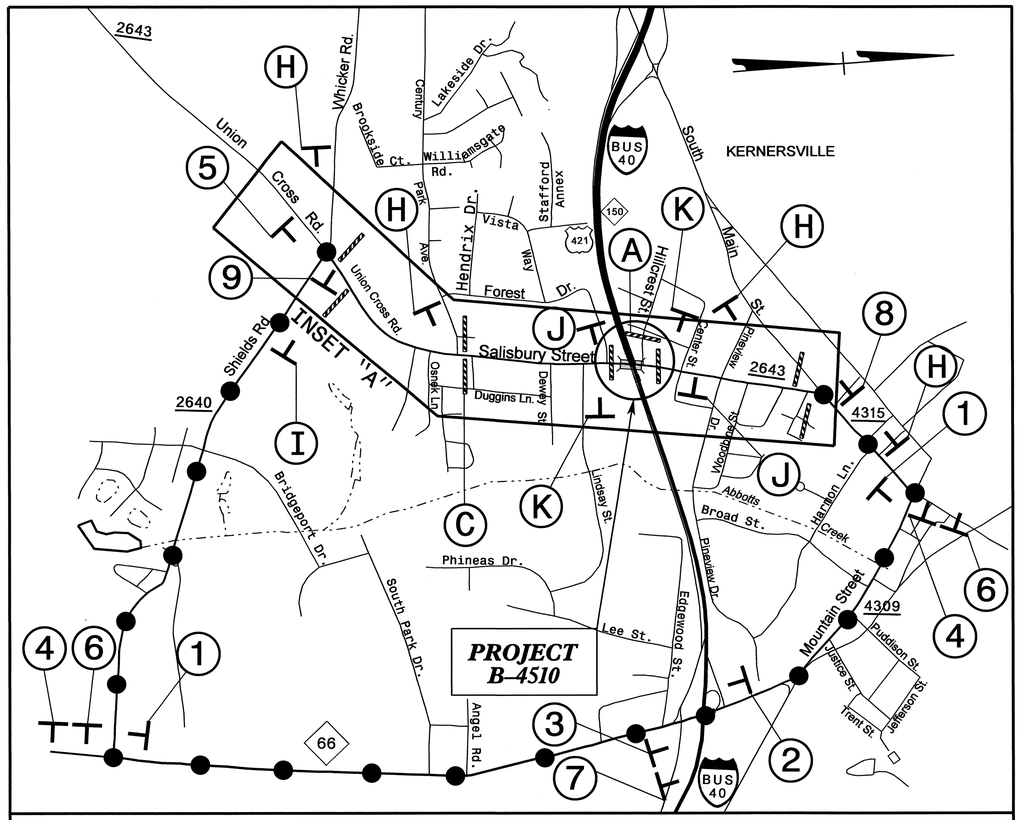
DIVISION OF HIGHWAYS * STATE OF NORTH CAROLINA * DEPARTMENT OF TRANSPORTATION * WORK ZONE TRAFFIC CONTROL

TEMPORARY TRAFFFIC CONTROL PHASING

21-JUN-2011 07:38
\\dot\dfsroot\Proj\TIPProjects-B\B4510\Traffic\TrafficControl\TCP\B-4510_Final TMP\B-4510_TC_TMP_3.dgn
alydam1 AT TE244741

PROJ. REFERENCE NO.	SHEET NO.
B-4510	TMP-4

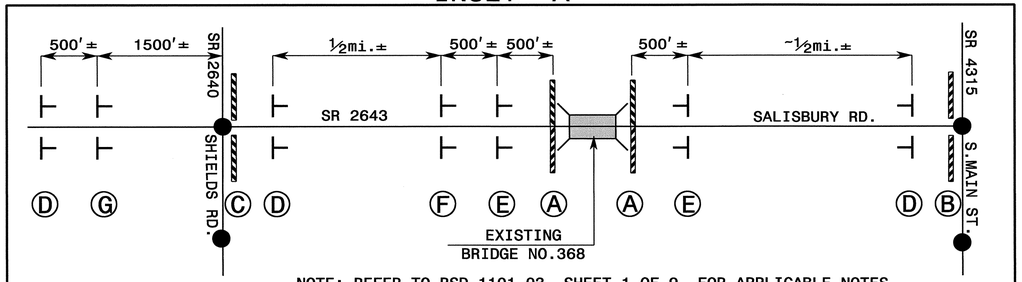
VICINITY MAP: FORSYTH COUNTY



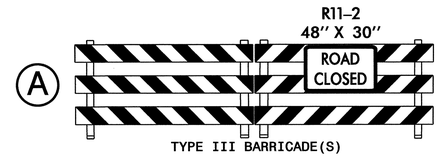
OFFSITE DETOUR

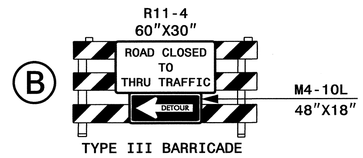
DETOUR ROUTE:
FROM SALISBURY ST. (SR 2643) TO SHIELDS RD. (SR 2640) TO NC 66 TO MOUNTAIN ST. (SR 4309) TO MAIN ST. (SR 4315) BACK TO SALISBURY ST.

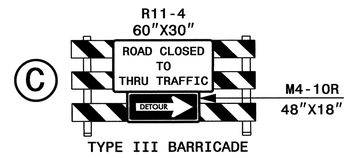
INSET "A"

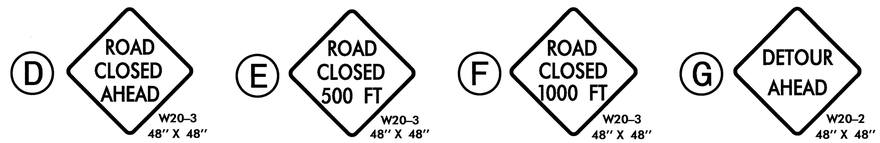


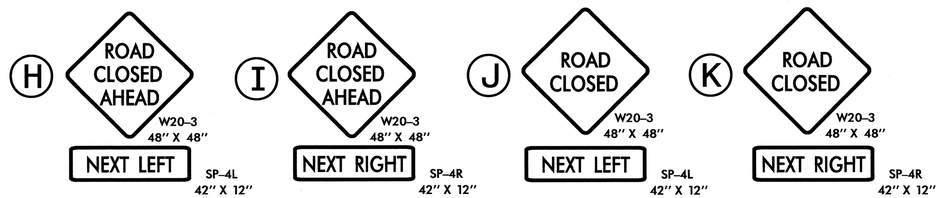
NOTE: REFER TO RSD 1101.03, SHEET 1 OF 9, FOR APPLICABLE NOTES.

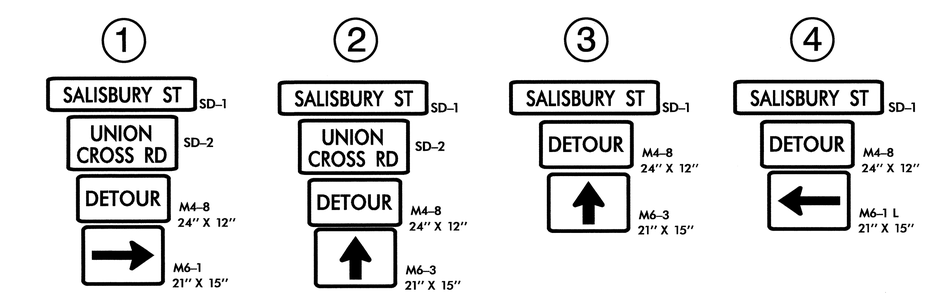


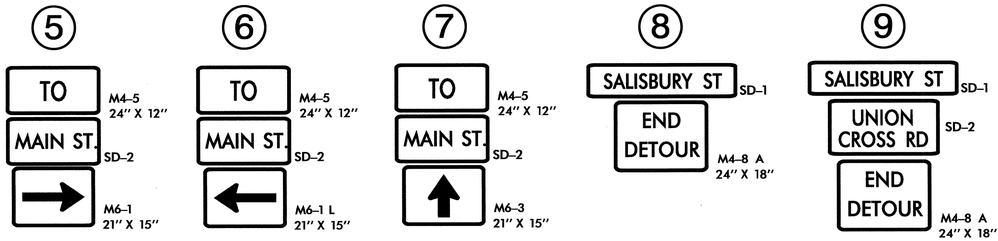












NOTES:
1. REFER TO RSD 1101.03, SHEETS 1 OF 9 AND 2 OF 9, FOR DISTANCES AND SIGNS PLACEMENT.
2. SEE SHEET SD-1 FOR SPECIAL SIGN DESIGNS.

APPROVED: _____ DATE: _____

NORTH CAROLINA PROFESSIONAL SEAL 028380 ENGINEER JOSEPH ISHAK
Jan 31, 2011

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

OFFSITE DETOUR ROUTE AND BARRICADES PLACEMENT ON SALISBURY RD.

19-JAN-2011 13:53
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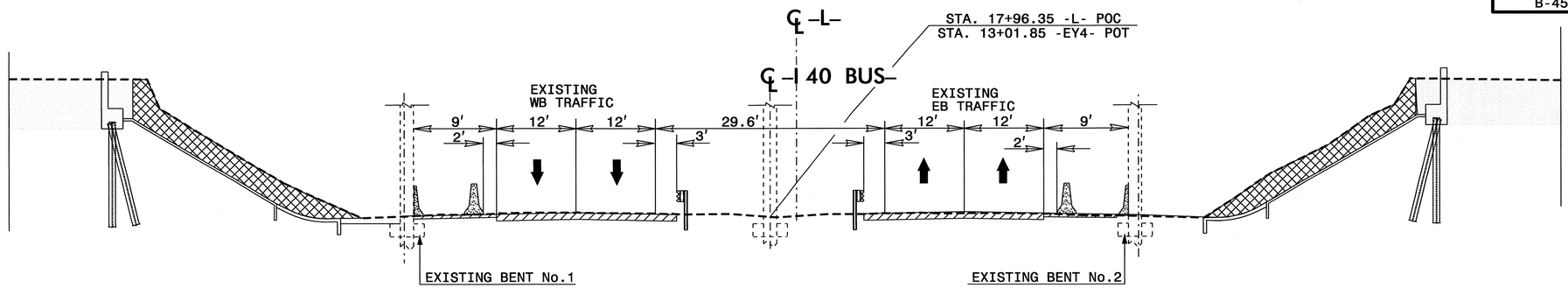
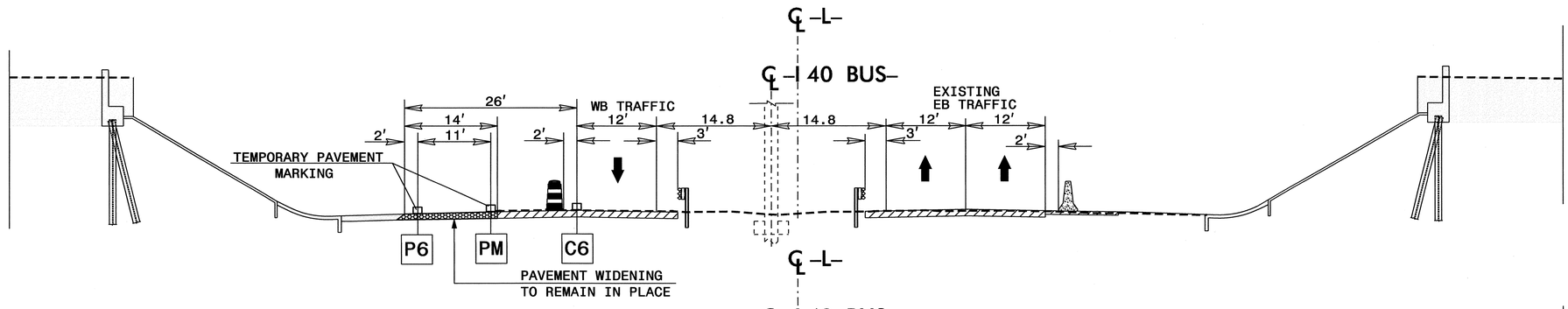
alyudml AT TE24474I

PROJ. REFERENCE NO.	SHEET NO.
B-4510	TMP-5

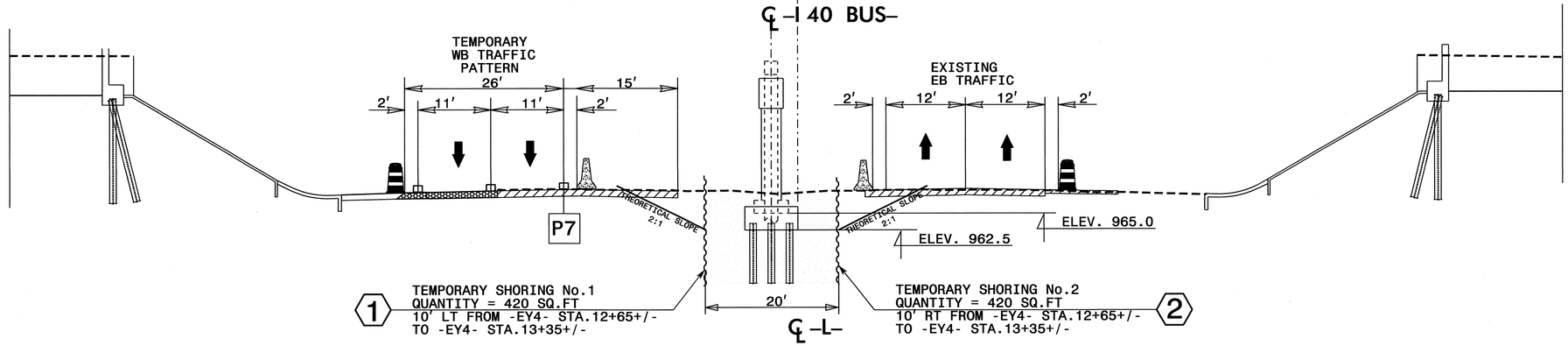
DETAIL 1



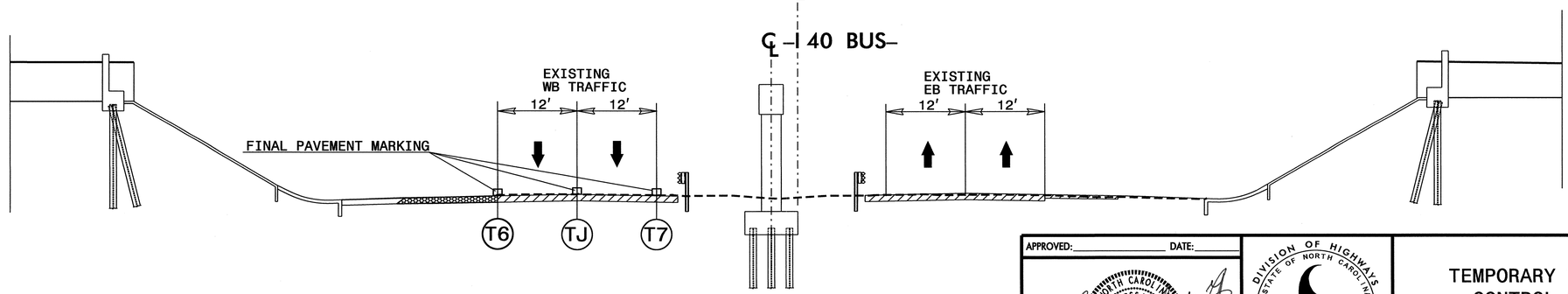
DETAIL 2



DETAIL 3



DETAIL 4



NOTES:
1. SEE SHEETS TMP-6 THROUGH TMP-9 FOR PLAN VIEW.
2. SEE SHEET TMP-8 FOR TEMPORARY SHORING NOTES.

APPROVED: _____ DATE: _____

NORTH CAROLINA PROFESSIONAL SEAL 028380 ENGINEER JOSEPH ISHAK

June 21, 2011

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

TEMPORARY TRAFFIC CONTROL PLAN. TYPICAL SECTION UNDER STRUCTURE

21-JUN-2011 07:34
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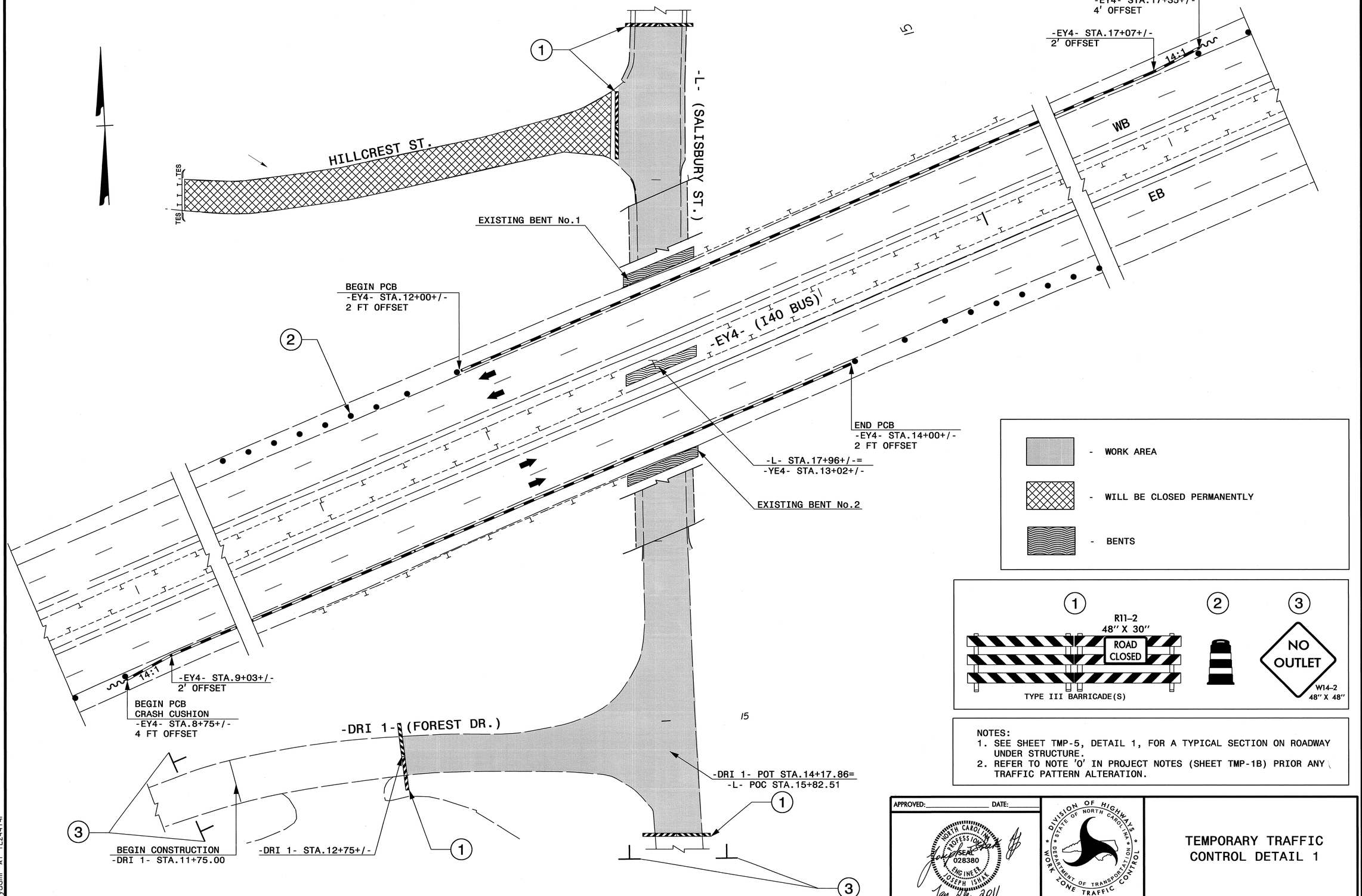
alyudml AT TE24474I

PROJ. REFERENCE NO.	SHEET NO.
B-4510	TMP-6



- WORK AREA
- WILL BE CLOSED PERMANENTLY
- BENTS

NOTES:
1. SEE SHEET TMP-5, DETAIL 1, FOR A TYPICAL SECTION ON ROADWAY UNDER STRUCTURE.
2. REFER TO NOTE 'O' IN PROJECT NOTES (SHEET TMP-1B) PRIOR ANY TRAFFIC PATTERN ALTERATION.

APPROVED: _____ DATE: _____

NORTH CAROLINA PROFESSIONAL SEAL 028380 ENGINEER JOSEPH ISHAK
Jan 06, 2011

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

TEMPORARY TRAFFIC CONTROL DETAIL 1

19-JAN-2011 13:51
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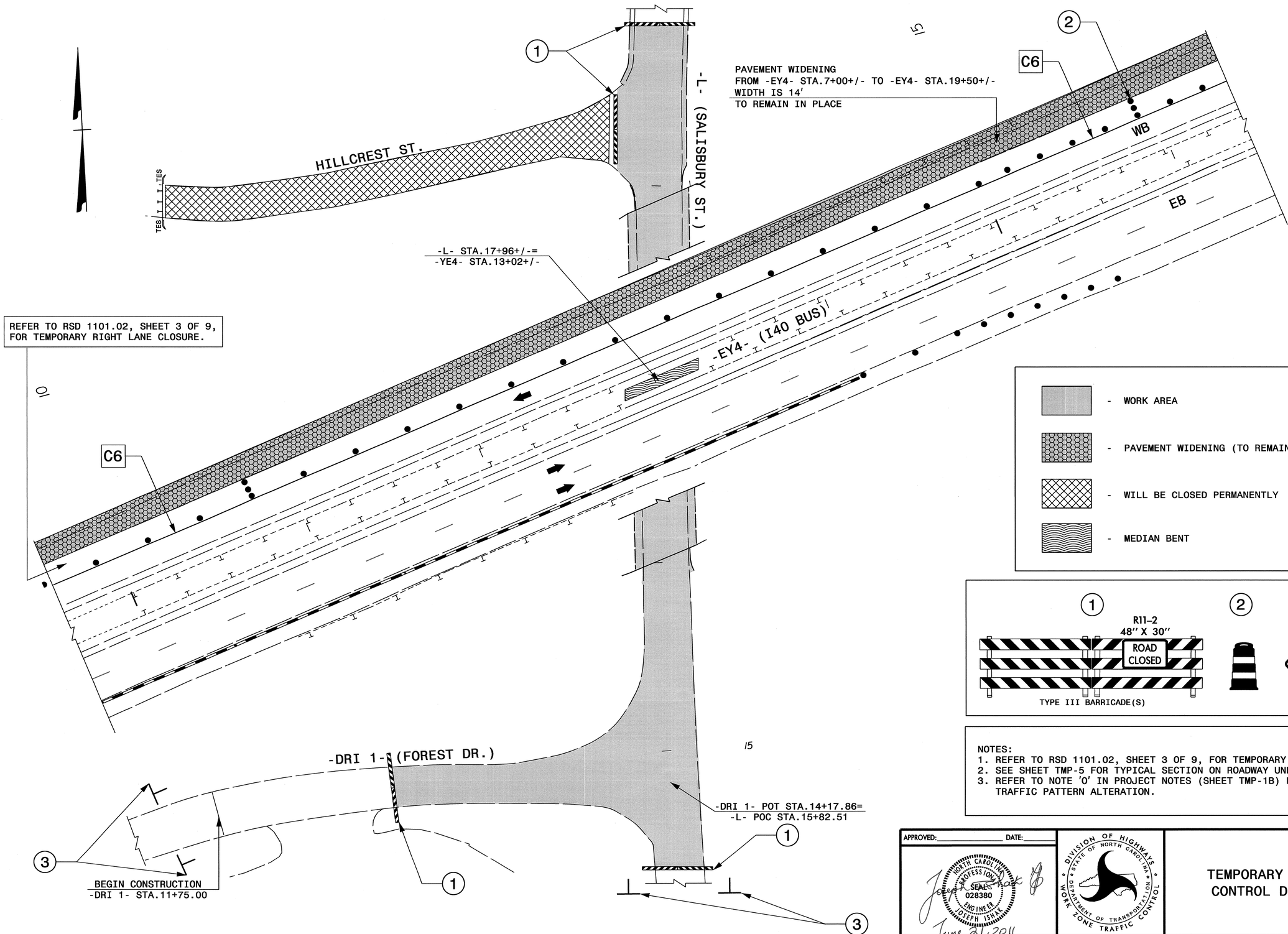
alyudml AT TE24474I

PROJ. REFERENCE NO.	SHEET NO.
B-4510	TMP-7



- WORK AREA
- PAVEMENT WIDENING (TO REMAIN IN PLACE)
- WILL BE CLOSED PERMANENTLY
- MEDIAN BENT

NOTES:
1. REFER TO RSD 1101.02, SHEET 3 OF 9, FOR TEMPORARY LANE CLOSURES.
2. SEE SHEET TMP-5 FOR TYPICAL SECTION ON ROADWAY UNDER STRUCTURE.
3. REFER TO NOTE 'O' IN PROJECT NOTES (SHEET TMP-1B) PRIOR ANY TRAFFIC PATTERN ALTERATION.

APPROVED: _____ DATE: _____

NORTH CAROLINA PROFESSIONAL SEAL 028380 ENGINEER JOSEPH ISHAK

June 21, 2011

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

TEMPORARY TRAFFIC CONTROL DETAIL 2

21-JUN-2011 08:19
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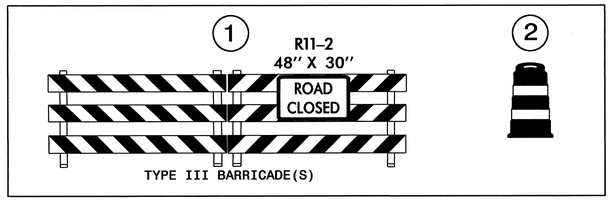
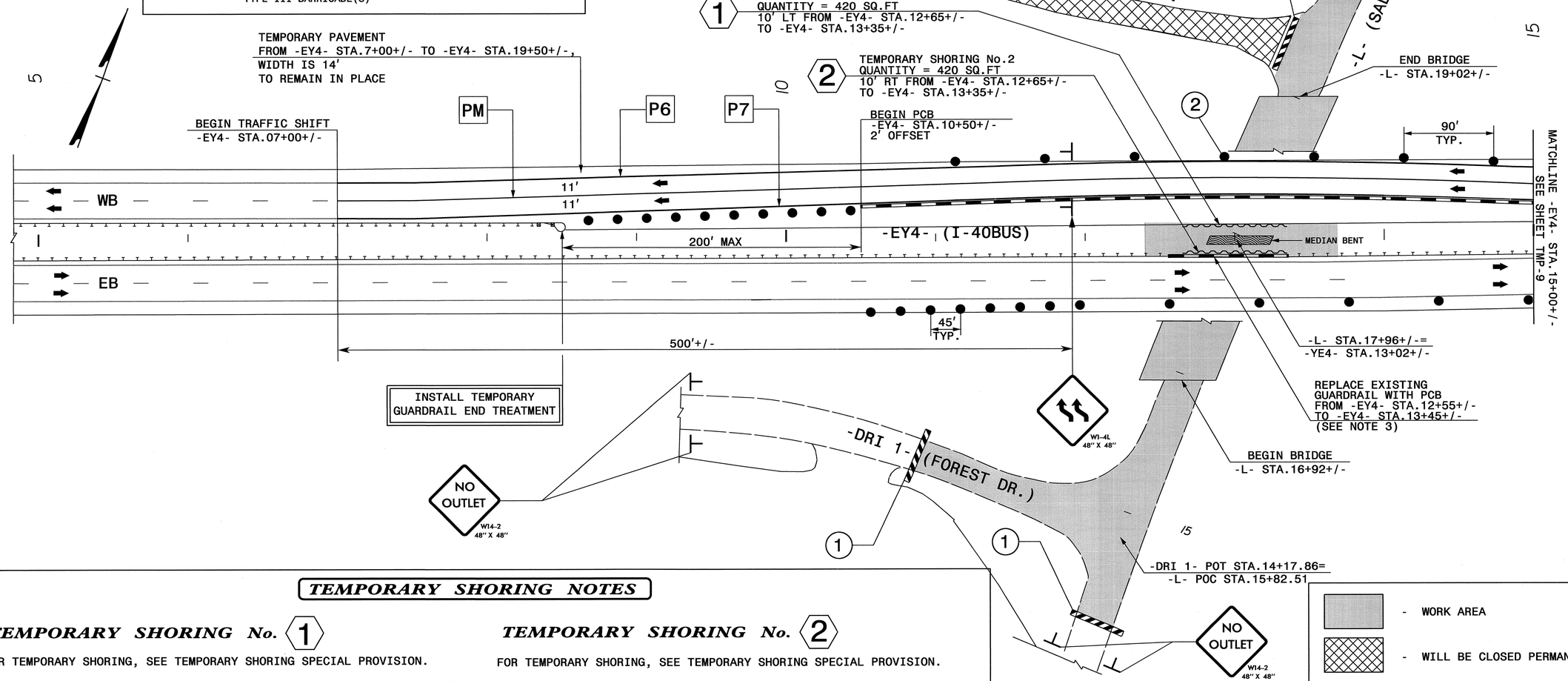
alyudmi AT TE24474

PROJ. REFERENCE NO.	SHEET NO.
B-4510	TMP-8





TEMPORARY SHORING NOTES

TEMPORARY SHORING No. 1

FOR TEMPORARY SHORING, SEE TEMPORARY SHORING SPECIAL PROVISION.

DO NOT USE TEMPORARY MSE WALL FROM STATION 12+65.00+/- -EY4-, 10 FT. RIGHT OF -EY4-, TO STATION 13+35.00+/- -EY4-, 10 FT. RIGHT OF -EY4-.

FOR CONTRACTOR DESIGNED SHORING, SURVEY THE SHORING LOCATION TO DETERMINE EXISTING ELEVATIONS AND ACTUAL DESIGN HEIGHTS BEFORE BEGINNING DESIGN.

WHEN USING CONTRACTOR DESIGNED SHORING FROM STATION 12+65.00+/- -EY4-, 10 FT. RIGHT OF -EY4-, TO STATION 13+35.00+/- -EY4-, 10 FT. RIGHT OF -EY4-, USE THE FOLLOWING SOIL PARAMETERS:
UNIT WEIGHT OF SOIL ABOVE WATER TABLE, γ = 120 PCF
UNIT WEIGHT OF SOIL BELOW WATER TABLE, γ = 60 PCF
FRICTION ANGLE, ϕ =30 DEGREES
COHESION, c = 0 PSF

NO SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF THE TEMPORARY SHORING FROM STATION 12+65.00+/- -EY4-, 10 FT. RIGHT OF -EY4-., TO STATION 13+35.00+/- -EY4-, 10 FT. RIGHT OF -EY4-. THE INFORMATION PROVIDED FOR DESIGN WAS ASSUMED AND MAY NOT BE APPLICABLE TO THE ACTUAL SITE CONDITIONS ENCOUNTERED DURING CONSTRUCTION.

FOR PORTABLE CONCRETE BARRIERS ABOVE AND BEHIND TEMPORARY SHORING, USE AN NCDOT PORTABLE CONCRETE BARRIER (UNANCHORED OR ANCHORED) OR AN OREGON TALL F-SHAPE CONCRETE BARRIER IN ACCORDANCE WITH THE TRAFFIC CONTROL PLANS.

TEMPORARY SHORING No. 2

FOR TEMPORARY SHORING, SEE TEMPORARY SHORING SPECIAL PROVISION.

DO NOT USE TEMPORARY MSE WALL FROM STATION 12+65.00+/- -EY4-, 10 FT. LEFT OF -EY4-, TO STATION 13+35.00+/- -EY4-, 10 FT. LEFT OF -EY4-.

FOR CONTRACTOR DESIGNED SHORING, SURVEY THE SHORING LOCATION TO DETERMINE EXISTING ELEVATIONS AND ACTUAL DESIGN HEIGHTS BEFORE BEGINNING DESIGN.

WHEN USING CONTRACTOR DESIGNED SHORING FROM STATION 12+65.00+/- -EY4-, 10 FT. LEFT OF -EY4-., TO STATION 13+35.00+/- -EY4-, 10 FT. LEFT OF -EY4-, USE THE FOLLOWING SOIL PARAMETERS:
UNIT WEIGHT OF SOIL ABOVE WATER TABLE, γ = 120 PCF
UNIT WEIGHT OF SOIL BELOW WATER TABLE, γ = 60 PCF
FRICTION ANGLE, ϕ = 30 DEGREES
COHESION, c = 0 PSF

NO SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF THE TEMPORARY SHORING FROM STATION 12+65.00+/- -EY4-, 10 FT. LEFT OF -EY4-., TO STATION 13+35.00+/- -EY4-, 10 FT. LEFT OF -EY4-. THE INFORMATION PROVIDED FOR DESIGN WAS ASSUMED AND MAY NOT BE APPLICABLE TO THE ACTUAL SITE CONDITIONS ENCOUNTERED DURING CONSTRUCTION.

FOR PORTABLE CONCRETE BARRIERS ABOVE AND BEHIND TEMPORARY SHORING, USE AN NCDOT PORTABLE CONCRETE BARRIER (UNANCHORED OR ANCHORED) OR AN OREGON TALL F-SHAPE CONCRETE BARRIER IN ACCORDANCE WITH THE TRAFFIC CONTROL PLANS.

NOTES:
1. REFER TO RSD 1101.02, SHEET 8 OF 9, FOR TEMPORARY LANE CLOSURES.
2. REFER TO RSD 1101.05, SHEET 1 OF 1, FOR WORK ZONE VEHICLE ACCESSES.
3. USE TEMPORARY ANCHOR UNIT TO CONNECT EXISTING GUARDRAIL WITH TEMPORARY PCB. SEE ROADWAY ESTIMATE FOR A TEMPORARY ANCHOR UNIT PAY ITEM.
4. SEE SHEET TMP-5 FOR TYPICAL SECTION ON ROADWAY UNDER STRUCTURE.
5. REFER TO NOTE 'O' IN PROJECT NOTES (SHEET TMP-1B) PRIOR TO ANY TRAFFIC PATTERN ALTERATION.
6. REFER TO RSD 1101.04, SHEET 1 OF 1, FOR TRMPORARY SHOULDER CLOSURES.
7. SEE SHEET TMP-5, DETAIL 3, FOR THE TEMPORARY SHORING CUT SECTIONS.
8. THE TEMPORARY SHORING NOTES SHOWN ON THIS SHEET WERE PROVIDED THROUGH A SEALED DOCUMENT FROM GEOTECHNICAL ENGINEERING UNIT. THE DOCUMENT WAS SUBMITTED TO THE WZTC ON JULY 14, 2011 AND SEALED BY A PROFESSIONAL ENGINEER, JOHN L. PILIPCHUK, LICENSE # 025521.

APPROVED:_____ DATE:_____

NORTH CAROLINA PROFESSIONAL SEAL 028380 ENGINEER JOSEPH ISHAK
July 14, 2011

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

TEMPORARY TRAFFIC CONTROL DETAIL 3A

14-JUL-2011 10:32
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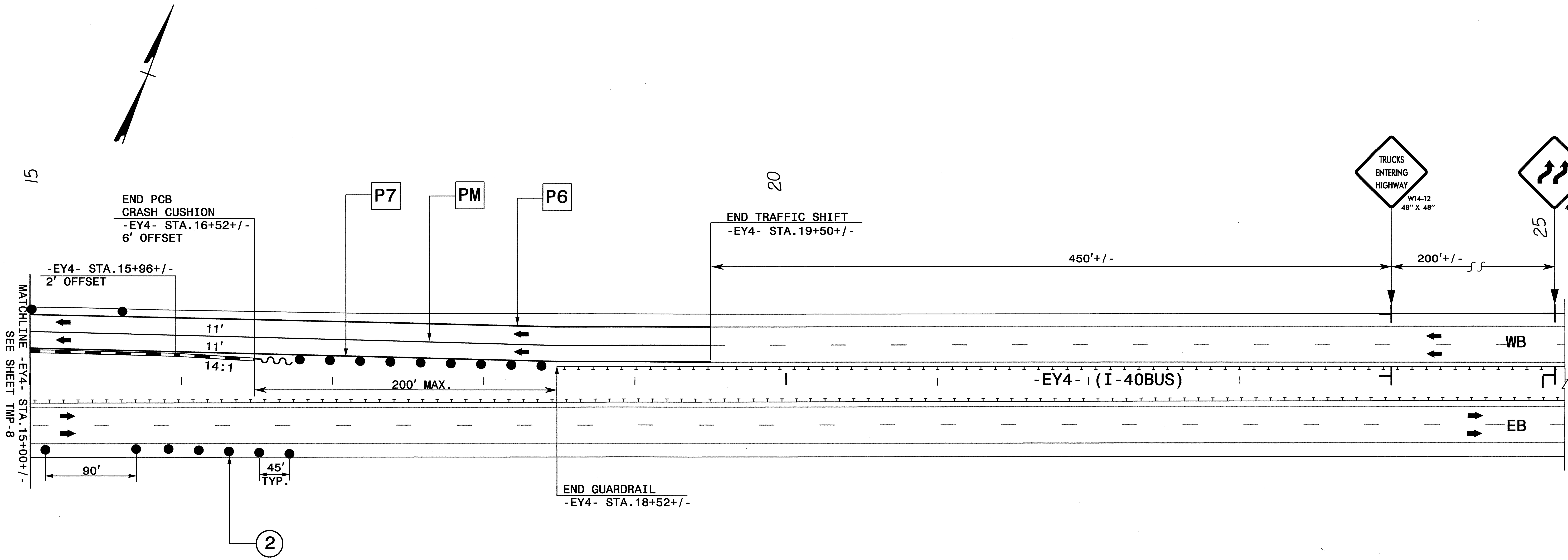
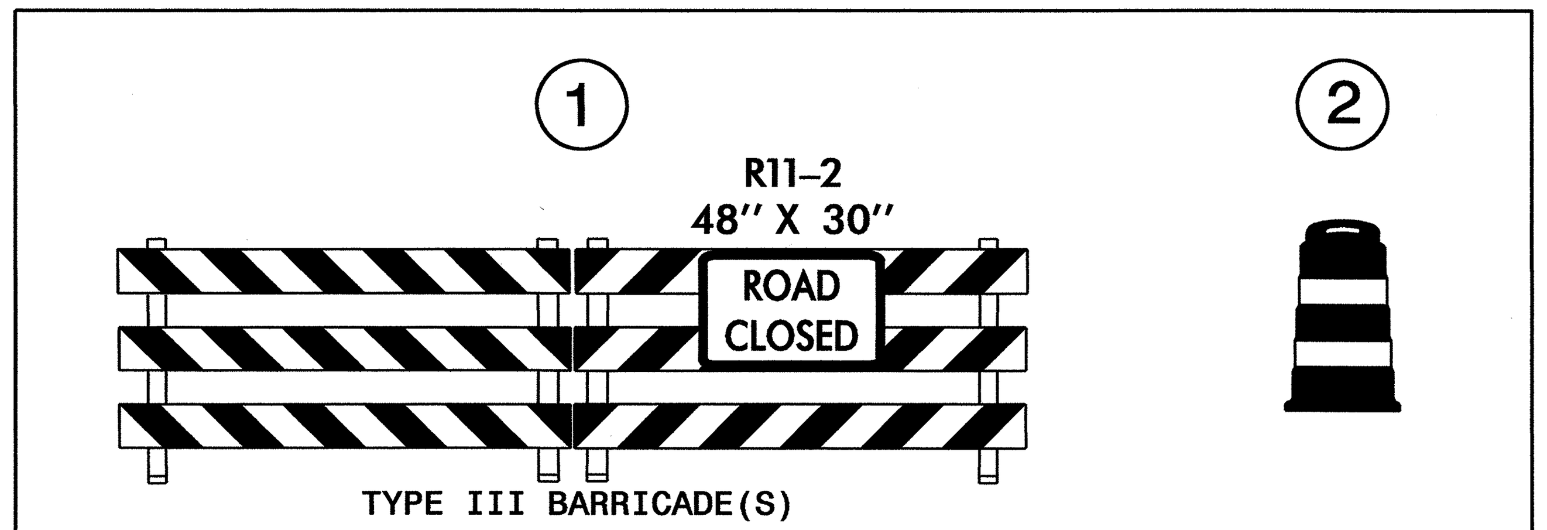
ALYUDM1 AT TE24474



NOTES:
1. REFER TO RSD 1101.02, SHEET 8 OF 9, FOR TEMPORARY LANE CLOSURES.
2. REFER TO RSD 1101.05, SHEET 1 OF 1, FOR WORK ZONE VEHICLE ACCESSES.
3. SEE SHEET TMP-5 FOR TYPICAL SECTION ON ROADWAY UNDER STRUCTURE.
4. REFER TO NOTE 'O' IN PROJECT NOTES (SHEET TMP-1B) PRIOR ANY TRAFFIC PATTERN ALTERATION.
5. REFER TO RSD 1101.04, SHEET 1 OF 1, FOR TRMPORARY SHOULDER CLOSURES.



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alyudmi AT TE24474I

APPROVED:__________ DATE:______

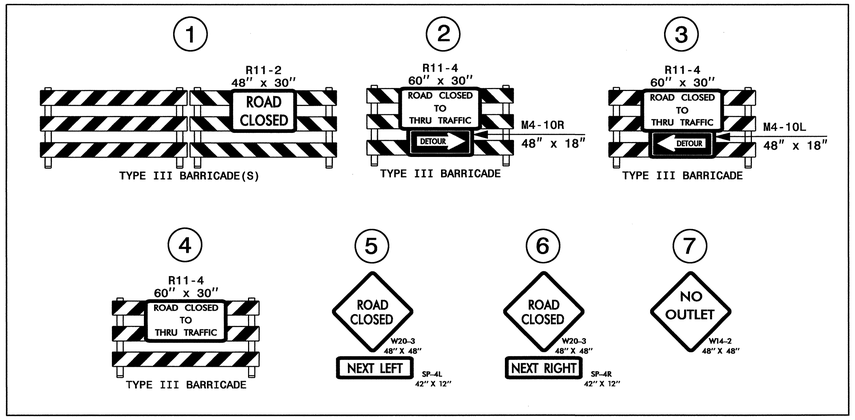
NORTH CAROLINA PROFESSIONAL SEAL 028380 ENGINEER JOSEPH ISHAK

Joseph Ishak
Jan 26, 2011

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

TEMPORARY TRAFFIC CONTROL DETAIL 3B

PROJ. REFERENCE NO.	SHEET NO.
B-4510	TMP-10



- WORK AREA
- WEDGING
- WILL BE CLOSED PERMANENTLY

NOTES:
1. REFER TO RSD 1101.03, SHEETS 1 AND 2 OF 9, FOR TEMPORARY ROAD CLOSURES.
2. MAINTAIN ACCESS TO THE LEARNING CENTER AND KERNERSVILLE FULL GOSPEL MISSION AT ALL TIMES.
3. MAINTAIN FOREST DR. (-DRI 1-) TRAFFIC VIA CENTURY PARK AVE. DURING CONSTRUCTION OF -DRI1-.

APPROVED: _____ DATE: _____

NORTH CAROLINA PROFESSIONAL SEAL 028380 ENGINEER JOSEPH ISHAK
Jan 21, 2011

DIVISION OF HIGHWAYS * STATE OF NORTH CAROLINA * I-40 BUS EAST * DEPARTMENT OF TRANSPORTATION * WORK ZONE TRAFFIC CONTROL

TEMPORARY TRAFFIC CONTROL DETAIL 4

19-JAN-2011 13:32
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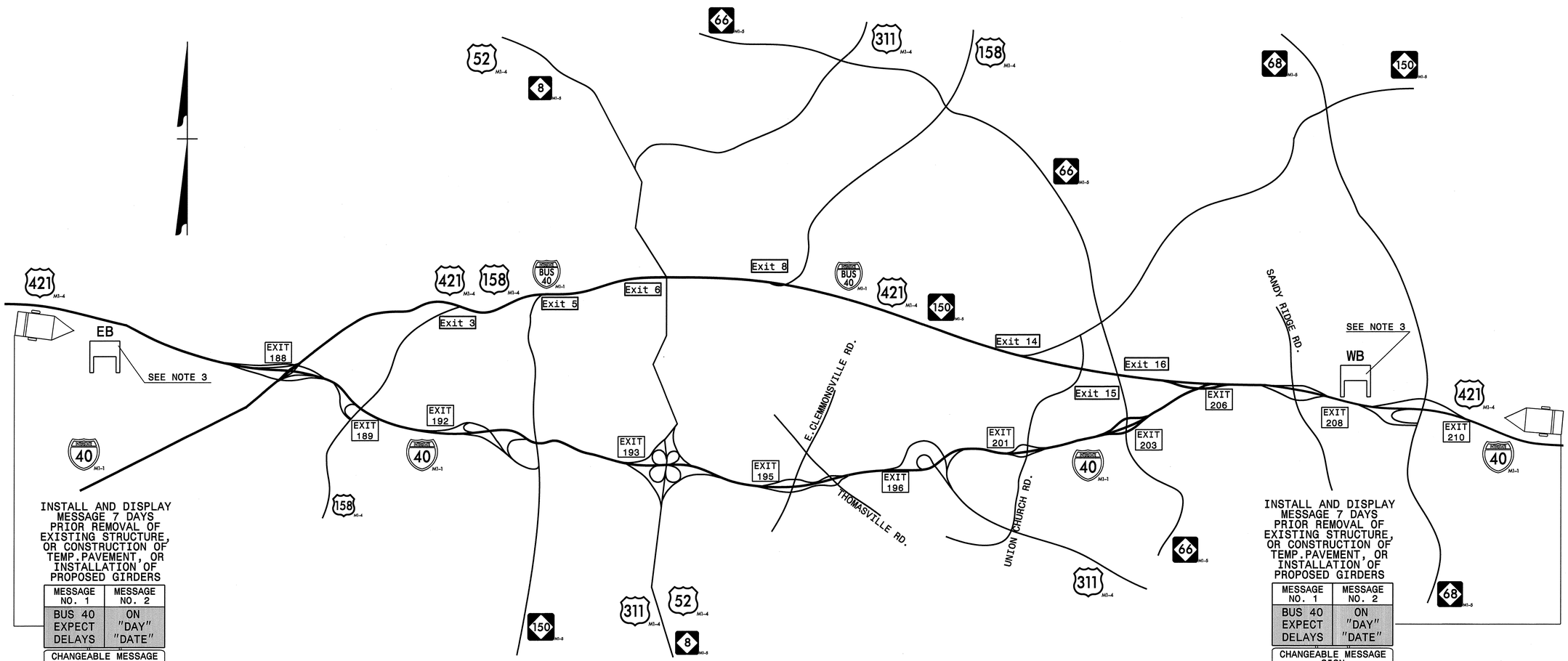
alyudmi AT TE24474

PROJ. REFERENCE NO.	SHEET NO.
B-4510	TMP-11

VICINITY MAP: FORSYTH COUNTY



INSTALL AND DISPLAY MESSAGE 7 DAYS PRIOR REMOVAL OF EXISTING STRUCTURE, OR CONSTRUCTION OF TEMP.PAVEMENT, OR INSTALLATION OF PROPOSED GIRDERS

MESSAGE NO. 1	MESSAGE NO. 2
BUS 40 EXPECT DELAYS	ON "DAY" "DATE"

CHANGEABLE MESSAGE SIGN

DISPLAY MESSAGE DURING REMOVAL OF EXISTING STRUCTURE, OR CONSTRUCTION OF TEMP.PAVEMENT, OR INSTALLATION OF PROPOSED GIRDERS

MESSAGE NO. 1	MESSAGE NO. 2
BUS 40 EXPECT DELAYS	USE I-40 BYP FOR ALT RTE

CHANGEABLE MESSAGE SIGN

INSTALL AND DISPLAY MESSAGE 7 DAYS PRIOR REMOVAL OF EXISTING STRUCTURE, OR CONSTRUCTION OF TEMP.PAVEMENT, OR INSTALLATION OF PROPOSED GIRDERS

MESSAGE NO. 1	MESSAGE NO. 2
BUS 40 EXPECT DELAYS	ON "DAY" "DATE"

CHANGEABLE MESSAGE SIGN

DISPLAY MESSAGE DURING REMOVAL OF EXISTING STRUCTURE, OR CONSTRUCTION OF TEMP.PAVEMENT, OR INSTALLATION OF PROPOSED GIRDERS

MESSAGE NO. 1	MESSAGE NO. 2
BUS 40 EXPECT DELAYS	USE I-40 BYP FOR ALT RTE

CHANGEABLE MESSAGE SIGN

NOTES:
1. USE THIS DETAIL FOR I-40 BUS ALTERNATE ROUTE SIGNING DURING REMOVAL OF EXISTING STRUCTURE, OR CONSTRUCTION OF TEMPORARY PAVEMENT ON THE OUTSIDE OF WB I-40 BUS/US 421, OR INSTALLATION OF PROPOSED GIRDERS.
2. COORDINATE WITH THE ENGINEER FOR LOCATION OF CMSs.
3. EXISTING DYNAMIC MESSAGE BOARDS ON I-40 BUS/US 421 WILL BE USED TO INFORM THE TRAFFIC ABOUT DELAYS ON I-40 BUS/US 421 AND ALTERNATE ROUTES. COORDINATE WITH TRAFFIC MANAGEMENT CENTER (TMC) IN THE TRIAD REGION TO PLACE APPROPRIATE MESSAGES ON EXISTING DYNAMIC MESSAGE BOARDS.

APPROVED:_____ DATE:_____

NORTH CAROLINA PROFESSIONAL SEAL 028380 ENGINEER JOSEPH ISHAK

Jan 5th, 2011

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

TEMPORARY TRAFFIC CONTROL DETAIL 5

19-JAN-2011 13:22
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alyudmi AT TE244741