

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

STATE PROJECT REFERENCE NO.	SHEET NO.
U-4008	TCP-1

**PLAN FOR PROPOSED  
TRAFFIC CONTROL, MARKING & DELINEATION  
ORANGE COUNTY**

U-4008

**INDEX OF SHEETS**

SHEET NO.	TITLE
TCP-1	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, LEGEND, TEMP. PAVEMENT MARKING SCHEDULE, AND INDEX OF SHEETS
TCP-2 THRU TCP-3	PROJECT NOTES
TCP-4	PHASING
TCP-5 THRU TCP-6	PHASE I DETAILS
TCP-7 THRU TCP-10	PHASE II DETAILS
TCP-11	DETAIL DRAWINGS FOR ADVANCE WORK ZONE WARNING SIGNS
TCP-12	REPLACEMENT DETAIL FOR RSD 1101.04
TCP-13	REPLACEMENT DETAIL FOR RSD 1130.01
TCP-14	REPLACEMENT DETAIL FOR RSD 1145.01
PM-1	FINAL PAVEMENT MARKING SCHEDULE
PM-2 THRU PM-4	FINAL PAVEMENT MARKING PLANS

**ROADWAY STANDARD DRAWINGS**

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS"-ROADWAY DESIGN UNIT-N.C. DEPARTMENT OF TRANSPORTATION-RALEIGH, N.C., DATED JANUARY 2002 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
1135.01	CONES
1145.01	BARRICADES
1150.01	FLAGGERS
1205.01	PAVEMENT MARKINGS - LINE TYPES & OFFSETS
1205.02	PAVEMENT MARKINGS - 2 LANE & MULTILANE ROADWAYS
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.07	PAVEMENT MARKINGS - PEDESTRIAN CROSSWALKS
1205.08	PAVEMENT MARKINGS - SYMBOLS & WORD MESSAGES
1205.09	PAVEMENT MARKINGS - PAINTED ISLANDS
1250.01	PAVEMENT MARKER SPACING
1251.01	RAISED PAVEMENT MARKERS (TEMPORARY & PERMANENT)
1253.01	SNOWPLOWABLE RAISED PAVEMENT MARKERS
1261.01	GUARDRAIL & BARRIER DELINEATOR SPACING
1261.02	GUARDRAIL & BARRIER DELINEATOR TYPES
1262.01	GUARDRAIL END DELINEATION

**TEMP. PAVEMENT MARKING SCHEDULE**

SYMBOL	DESCRIPTION	PAY ITEM/QUANTITY BREAKDOWN	TOTAL QUANTITY
<b>PAVEMENT MARKING LINES</b>			
<b>PAINT (4")</b>			
PA	WHITE EDGELINE (2X)	36,000 LF	
PB	YELLOW EDGELINE (2X)	22,500 LF	
PC	3M WHITE SKIP (2X)	800 LF	
PD	0.5M WHITE MINISKIP (2X)	1300 LF	
PE	WHITE SOLID LANE LINE (2X)	9700 LF	
PI	YELLOW DOUBLE CENTER LINE (2X)	16,500 LF	TOTAL 94,000 LF
<b>PAINT (8")</b>			
PR	WHITE GORELINE (2X)	600 LF	TOTAL 600 LF
<b>PAINT (24")</b>			
P4	WHITE STOP BAR (2X)	1400 LF	TOTAL 1400 LF
<b>PAINT SYMBOLS</b>			
QA	LEFT TURN ARROW (2X)	72 EA	
QB	RIGHT TURN ARROW (2X)	56 EA	
QC	STRAIGHT ARROW (2X)	40 EA	
QE	COMBO STRAIGHT & RIGHT TURN ARROW (2X)	2 EA	TOTAL 170 EA
<b>PAINT CHARACTERS</b>			
QI	ALPHANUMERIC CHARACTER (2X)	96 EA	TOTAL 96 EA
<b>TEMPORARY RAISED MARKERS</b>			
MH	YELLOW AND YELLOW	103 EA	
MI	CRYSTAL AND RED	2405 EA	TOTAL 2508 EA

**TEMPORARY PAVEMENT MARKING SCHEDULE NOTES:**

- AS DIRECTED BY THE ENGINEER, TEMPORARY PAVEMENT MARKING (PAINT) MAY BE USED TO STRIPE THE FINAL TRAFFIC PATTERN ON -L- AND ALL -Y- LINES. THE TEMPORARY PAVEMENT MARKING SCHEDULE INCLUDES QUANTITIES FOR PLACING TWO APPLICATIONS OF PAINT ON THE FINAL SURFACE OF NEW ASPHALT WITH PERMANENT TRAFFIC PATTERNS WHICH WILL REMAIN IN PLACE UNTIL THE PROPOSED FINAL PAVEMENT MARKING (POLYUREA) IS APPLIED.
- FOR EACH PAINT PAVEMENT MARKING ITEM, 1X IMPLIES A SINGLE APPLICATION, 2X IMPLIES TWO APPLICATIONS AND 3X IMPLIES THREE APPLICATIONS.

**LEGEND**

- GENERAL**
- DIRECTION OF TRAFFIC FLOW
  - NORTH ARROW
  - PROPOSED PVMT. EXIST. PVMT.
  - WORK AREA
  - REMOVAL OF EXISTING PAVEMENT
- TRAFFIC CONTROL DEVICES**
- TYPE I BARRICADE
  - TYPE II BARRICADE
  - TYPE III BARRICADE
  - CONE
  - DRUM
  - FLASHING ARROW PANEL (TYPE C)
  - TYPE 'B' WARNING LIGHT
  - STATIONARY SIGN
  - PORTABLE SIGN
  - STATIONARY OR PORTABLE SIGN
  - WARNING FLAGS
  - CRASH CUSHION
  - CHANGEABLE MESSAGE SIGN
  - TRUCK MOUNTED IMPACT ATTENUATOR (TMIA)
  - POLICE
  - FLAGGER
- PAVEMENT MARKINGS**
- CRYSTAL/CRYSTAL PAVEMENT MARKER
  - YELLOW/YELLOW PAVEMENT MARKER
  - CRYSTAL/RED PAVEMENT MARKER
  - PAVEMENT MARKING SYMBOLS

APPROVED:	PLAN PREPARED BY: N.C.D.O.T. WORK ZONE TRAFFIC CONTROL UNIT
DATE: Feb 9, 2006	
SEAL	J. S. BOURNE, PE TRAFFIC CONTROL ENGINEER
	J. ISHAK, PE TRAFFIC CONTROL PROJECT ENGINEER
	J.L. PORTANOVA, PE TRAFFIC CONTROL PROJECT DESIGN ENGINEER
	HABIB LAWANDOS TRAFFIC CONTROL DESIGN ENGINEER

TIP PROJECT:

# GENERAL NOTES

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

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
1. -L- & -Y2A- (US 15/501 NB & SB) AND -Y3- (ERWIN RD)	7AM - 9PM MONDAY THRU FRIDAY 10AM - 9PM SATURDAY AND SUNDAY

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

ROAD NAME
1. -L- & -Y2A- (US 15/501)
2. -Y3- (ERWIN RD)

## HOLIDAY

- FOR ANY EVENT THAT CREATES UNUSUALLY HIGH TRAFFIC VOLUMES, AS DIRECTED BY THE ENGINEER.
- FOR NEW YEAR'S, BETWEEN THE HOURS OF 9 P.M. DECEMBER 31ST TO 7 A.M. JANUARY 2ND. IF NEW YEAR'S DAY IS ON A SATURDAY OR A SUNDAY, THEN UNTIL 7 A.M. THE FOLLOWING TUESDAY.
- FOR EASTER, BETWEEN THE HOURS OF 9 P.M. THURSDAY AND 7 A.M. MONDAY.
- FOR MEMORIAL DAY, BETWEEN THE HOURS OF 9 P.M. FRIDAY TO 7 A.M. TUESDAY.
- FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 9 P.M. THE DAY BEFORE INDEPENDENCE DAY AND 7 A.M. THE DAY AFTER INDEPENDENCE DAY.

IF INDEPENDENCE DAY IS ON A SATURDAY OR SUNDAY, THEN BETWEEN THE HOURS OF 9 P.M. THE THURSDAY BEFORE INDEPENDENCE DAY AND 7 A.M. THE TUESDAY AFTER INDEPENDENCE DAY.

- FOR LABOR DAY, BETWEEN THE HOURS OF 9 P.M. FRIDAY TO 7 A.M. TUESDAY.

# PROJECT NOTES

- FOR THANKSGIVING, BETWEEN THE HOURS OF 9 P.M. TUESDAY TO 7 A.M. MONDAY.

- FOR CHRISTMAS, BETWEEN THE HOURS OF 9 P.M. THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 7 A.M. THE FOLLOWING MONDAY AFTER THE WEEK OF CHRISTMAS.

C) DO NOT STOP TRAFFIC OR CLOSE ROADS AS FOLLOWS:

ROAD NAME	DAY AND TIME RESTRICTIONS
1. -L- & -Y2A- (US 15-501)	6AM - 12AM (MIDNIGHT) MONDAY THRU SUNDAY

D) DO NOT STOP TRAFFIC FOR MORE THAN 15 MINUTES AS FOLLOWS:

ROAD NAME	OPERATION
1. -L- & -Y2A- (US 15-501)	ANY OPERATION THAT REQUIRES STOPPING TRAFFIC

E) DO NOT CONDUCT ANY HAULING OPERATIONS AGAINST THE FLOW OF TRAFFIC OF AN OPEN TRAVELWAY UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL OR OTHERWISE DIRECTED BY THE ENGINEER.

## LANE AND SHOULDER CLOSURE REQUIREMENTS

F) 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.

G) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 40 FT (12m) 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.

H) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO AN UNDIVIDED FACILITY AND WITHIN 5 FT (1.5m) 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 (3m) 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.

I) 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.

J) DO NOT WORK SIMULTANEOUSLY, ON BOTH SIDES OF AN OPEN TRAVELWAY, WITHIN THE SAME LOCATION, ON A TWO-LANE, TWO-WAY ROAD.

K) DO NOT INSTALL MORE THAN ONE MILE OF LANE CLOSURE ON US 15/501, MEASURED FROM THE BEGINNING OF THE MERGE TAPER TO THE END OF THE LANE CLOSURE.

L) DO NOT INSTALL MORE THAN ONE LANE CLOSURE, IN ANY ONE DIRECTION, ON US 15/501.

## 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 A DROP-OFF AS FOLLOWS:

BACKFILL DROP-OFFS THAT EXCEED 2 INCHES (50mm) ON ROADWAYS WITH POSTED SPEED LIMITS OF 45 MPH OR GREATER.

BACKFILL DROP-OFFS THAT EXCEED 3 INCHES (75mm) ON ROADWAYS WITH POSTED SPEED LIMITS LESS THAN 45 MPH.

BACKFILL WITH SUITABLE COMPACTED MATERIAL, AS APPROVED BY THE ENGINEER, AT NO EXPENSE TO THE DEPARTMENT.

M) DO NOT EXCEED A DIFFERENCE OF 1.5 inches (40mm) IN ELEVATION BETWEEN OPEN LANES OF TRAFFIC. INSTALL ADVANCE WARNING "UNEVEN LANES" SIGNS (W8-11) 500 FT (150m) IN ADVANCE AND A MINIMUM OF ONCE EVERY 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 100 FT (31m) FROM THE EDGE OF TRAVEL LANE AND NO MORE THAN THREE (3) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.


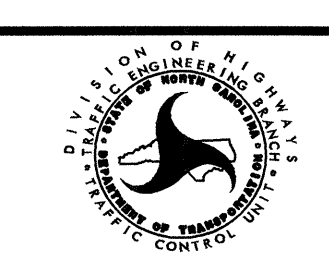
WHEN NO WORK IS BEING CONDUCTED FOR A PERIOD LONGER THAN ONE WEEK, REMOVE OR COVER ALL ADVANCE WORK ZONE WARNING SIGNS, AS DIRECTED BY THE ENGINEER, AT NO COST TO THE DEPARTMENT.

Q) PROVIDE PERMANENT SIGNING.

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

PROJ. REFERENCE NO.	SHEET NO.
U-4008	TCP-2

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APPROVED: <i>Joseph Ishak</i> DATE: 3/23/06	<b>PROJECT NOTES</b>	
SEAL 	SCALE: NONE	
	DATE: 2006	
	DWG. BY: HAL	
	DESIGN BY: HAL	
REVIEWED BY: JLP	REVISIONS	

# PROJECT NOTES

## GENERAL NOTES CONT'D

PROJ. REFERENCE NO.	SHEET NO.
U-4008	TCP-3

TRAFFIC CONTROL DEVICES

- S) WHEN USING ROADWAY STANDARD NO. 1101.02, CONES MAY BE USED IN LIEU OF DRUMS ON ALL ROADS.
- T) PLACE TYPE III BARRICADES, WITH "ROAD CLOSED" SIGN R11-2 ATTACHED, OF SUFFICIENT LENGTH TO CLOSE ENTIRE ROADWAY. STAGGER OR OVERLAP BARRICADES TO ALLOW FOR INGRESS OR EGRESS.
- U) PLACE SETS OF THREE DRUMS PERPENDICULAR TO THE EDGE OF THE TRAVELWAY ON 500 FT (150m) CENTERS WHEN UNOPENED LANES ARE CLOSED TO TRAFFIC. THESE DRUMS SHALL BE IN ADDITION TO CHANNELIZING DEVICES.

PAVEMENT MARKINGS AND MARKERS

- V) INSTALL PAVEMENT MARKINGS AND PAVEMENT MARKERS ON THE FINAL SURFACE AS FOLLOWS:

<u>ROAD NAME</u>	<u>MARKING</u>	<u>MARKER</u>
1. -L- & -Y2A- (US 15/501)	THERMOPLASTIC	PERM. RAISED
2. ALL -Y- LINES	THERMOPLASTIC	PERM. RAISED

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

<u>ROAD NAME</u>	<u>MARKING</u>	<u>MARKER</u>
1. -L- & -Y2A- (US 15/501)	PAINT	TEMP. RAISED
2. ALL -Y- LINES	PAINT	TEMP. RAISED

- X) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
- Y) REPLACE ANY PAVEMENT MARKINGS THAT HAVE BEEN DAMAGED BY THE END OF EACH DAY'S OPERATION.
- Z) TRACE THE EDGE OF PROPOSED MONOLITHIC ISLANDS WITH THE PROPER COLOR PAVEMENT MARKING PRIOR TO INSTALLATION OF A PROPOSED MONOLITHIC ISLAND.
- AA) PLACE AT LEAST TWO APPLICATIONS OF PAINT ON NEW ASPHALT WITH TEMPORARY TRAFFIC PATTERNS WHICH WILL REMAIN IN PLACE OVER THREE (3) MONTHS. PLACE ADDITIONAL APPLICATIONS OF PAINT UPON SUFFICIENT DRYING TIME, AS DETERMINED BY THE ENGINEER.

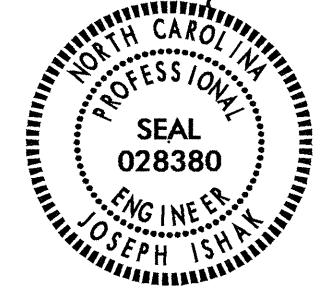

TEMPORARY/FINAL SIGNALS

- BB) NOTIFY THE ENGINEER TWO (2) MONTHS BEFORE A TRAFFIC SIGNAL INSTALLATION BY OTHERS IS REQUIRED.
- CC) SHIFT AND REVISE ALL SIGNAL HEADS AS SHOWN ON THE SIGNAL PLANS.

MISCELLANEOUS

- DD) PLACE DRUMS TO DELINEATE ISLANDS BEFORE INSTALLATION.

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 halawandos AT WZTC224250

APPROVED: <i>Joseph Ishak</i> DATE: 3/23/06 	<h2 style="margin: 0;">PROJECT NOTES</h2>	<table border="1" style="width: 100%;"> <tr> <td>SCALE:</td> <td>NONE</td> </tr> <tr> <td>DATE:</td> <td>2006</td> </tr> <tr> <td>DWG. BY:</td> <td>HAL</td> </tr> <tr> <td>DESIGN BY:</td> <td>HAL</td> </tr> <tr> <td>REVIEWED BY:</td> <td>JLP</td> </tr> </table>	SCALE:	NONE	DATE:	2006	DWG. BY:	HAL	DESIGN BY:	HAL	REVIEWED BY:	JLP
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# PHASING

PROJ. REFERENCE NO.	SHEET NO.
U-4008	TCP-4

**PHASING NOTE:**

- UNLESS OTHERWISE STATED IN THE PLANS, RETURN TRAFFIC TO EXISTING PATTERN BY THE END OF THE WORK DAY.

**PHASE 1**

STEP 1 - INSTALL ALL WORK ZONE SIGNS ACCORDING TO TCP-5 & 6.

COMPLETE THE WORK REQUIRED IN STEP 2 IN HUNDRED AND EIGHTY (180) CONSECUTIVE CALENDAR DAYS. SEE ICT AND SPECIAL PROVISIONS.

**NOTE:**

- \* MAINTAIN ACCESS TO PARCEL #2 (DUKE POWER) AT ALL TIME DURING THE CLOSURE OF -Y4A- (DOBBINS DR.).

STEP 2 - USING SHEETS TCP-6 AND TCP-8, PERFORM THE FOLLOWING:

- \* CLOSE -Y4A- (DOBBINS DR.) AS SHOWN ON SHEET TCP-6.
- \* CONSTRUCT THE PROPOSED -Y4A- (DOBBINS DR.) FROM -Y4A- STA 10+12+/- TO STA 22+37+/-, UP TO BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE, AND CONSTRUCT THE PROPOSED RETAINING WALL AS SHOWN ON SHEET TCP-6.
- \* PLACE TEMPORARY PAVEMENT MARKINGS (PAINT) AND TEMPORARY MARKERS (TEMPORARILY RAISED) ON PROPOSED -Y4A- (DOBBINS DR.) FROM -Y4A- STA 10+12+/- TO STA 22+37+/- AND OPEN TO TRAFFIC. SEE SHEET TCP-8.

- AWAY FROM TRAFFIC, MAY BEGIN CONSTRUCTION UP TO, BUT NOT INCLUDING, FINAL SURFACE LAYER ON -Y- FROM -Y- STA 10+22+/- TO STA 12+00+/- (SEE TCP-5)

- USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 3 OF 7, MAY BEGIN CONSTRUCTION UP TO EDGE AND ELEVATION OF EXISTING AT THE FOLLOWING LOCATIONS:

- FROM -L- LT STA 16+00+/- TO -L- LT STA 24+06+/- (US 15/501 SB)(SEE TCP-5)
- FROM -Y2A- RT 14+77+/- TO -Y1- RT STA 11+48+/- (US 15/501 NB)(SEE TCP-5)
- FROM -Y3- LT STA 22+12+/- (ERWIN RD.) TO -L- LT STA 36+50+/- (SEE TCP-6)
- FROM -Y1- LT STA 10+50+/- (EUROPA DR.) TO -Y2A- RT 35+74+/- (SEE TCP-5 & 6)

- FROM -L- RT STA 16+00+/- TO -L- RT STA 22+81+/- (US 15/501 SB)(SEE TCP-5)
- FROM -L- RT STA 26+50+/- TO -L- RT STA 36+50+/- (US 15/501 SB)(SEE TCP-6)
- FROM -Y2A- LT STA 14+77+/- TO -Y2A- LT STA 22+05+/- (US 15/501 NB)(SEE TCP-5)
- FROM -Y2A- LT STA 25+70+/- TO -Y2A- STA 31+83+/- (US 15/501 NB)(SEE TCP-6)

- AWAY FROM TRAFFIC, MAY BEGIN CONSTRUCTION OF BIKE PATH (-Y6-) FROM STA 10+17+/- TO STA 12+17+/- (SEE TCP-6)

STEP 3 - USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEETS 1 OF 7 AND 3 OF 7, PERFORM THE FOLLOWING:

- \* COMPLETE CONSTRUCTION UP TO EDGE AND ELEVATION OF EXISTING AT THE FOLLOWING LOCATION:

- FROM -Y2A- RT 14+77+/- TO -Y1- RT STA 11+48+/- (US 15/501 NB)(SEE TCP-5)
- FROM -Y1- LT STA 10+50+/- (EUROPA DR.) TO -Y2A- RT 35+74+/- (SEE TCP-5 & 6)

- \* PLACE TEMPORARY PAVEMENT MARKINGS AND MARKERS ON -Y2A- AND -Y1- ACCORDING TO TCP-7 & 8 AND SHIFT TO TEMPORARY PATTERN BY THE END OF THE WORK DAY.

**PHASE 2**

STEP 1 - USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 3 OF 7, COMPLETE CONSTRUCTION UP TO EDGE AND ELEVATION OF EXISTING AT THE FOLLOWING LOCATIONS:

- FROM -L- LT STA 16+00+/- TO -L- LT STA 24+06+/- (US 15/501 SB)(SEE TCP-7)
- FROM -Y3- LT STA 22+12+/- (ERWIN RD.) TO -L- LT STA 30+63+/- (SEE TCP-8)
- FROM -L- LT STA 32+82+/- TO -L- LT STA 36+50+/- (US 15/501 SB)(SEE TCP-8)

- FROM -L- RT STA 16+00+/- TO -L- RT STA 22+81+/- (US 15/501 SB)(SEE TCP-7)
- FROM -L- RT STA 26+50+/- TO -L- RT STA 36+50+/- (US 15/501 SB)(SEE TCP-8)
- FROM -Y2A- LT STA 14+77+/- TO -Y2A- LT STA 22+05+/- (US 15/501 NB)(SEE TCP-7)
- FROM -Y2A- LT STA 25+70+/- TO 31+83+/- (US 15/501 NB)(SEE TCP-8)
- FROM -Y2A- RT STA 11+00+/- TO -Y2A- RT 14+25+/- (PVMT REM)(US 15/501 NB)(SEE TCP-7)

- AWAY FROM TRAFFIC, COMPLETE CONSTRUCTION UP TO, BUT NOT INCLUDING, FINAL SURFACE LAYER OF THE FOLLOWING:

- FROM -Y- STA 10+22+/- TO STA 12+00+/- (SEE TCP-7)

- USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 3 OF 7, PLACE TEMPORARY PAVEMENT MARKINGS AND MARKERS ON -Y-, -Y2A- AND -L- ACCORDING TO TCP-9 & 10 AND SHIFT TO TEMPORARY TRAFFIC PATTERN BY THE END OF THE WORK DAY.

- INSTALL AND ACTIVATE TEMPORARY SIGNALS.

STEP 2 - USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 3 OF 7, CONSTRUCT UP TO, BUT NOT INCLUDING THE FINAL SURFACE COURSE AT THE FOLLOWING LOCATIONS:

- FROM -L- RT STA 22+81+/- TO -L- RT STA 26+50+/- (SEE TCP-9 & 10)
- FROM -Y2A- LT STA 22+05+/- TO -Y2A- LT STA 25+70+/- (SEE TCP-9 & 10)

- COMPLETE THE ENTIRE BIKE PATH (-Y6-). (SEE TCP-10)

STEP 2A- REMOVE EXISTING SIGNALS AND BEGIN INSTALLATION OF PROPOSED SIGNALS.

STEP 3 - USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 3 OF 7, PLACE THE FINAL LAYER OF SURFACE COURSE AND PLACE FINAL PAVEMENT MARKINGS AND MARKERS AT THE FOLLOWING LOCATIONS:

- FROM -L- STA 16+00+/- TO STA 36+50+/- (US 15/501 SB)
- FROM -Y2A- STA 14+77+/- TO STA 35+74+/- (US 15/501 NB)

- USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 1 OF 7, PLACE THE FINAL LAYER OF SURFACE COURSE AND PLACE FINAL PAVEMENT MARKINGS AND MARKERS AT THE FOLLOWING LOCATIONS:

- FROM -Y1- STA 10+30+/- TO STA 11+48+/- (EUROPA DR.)
- FROM -Y3- STA 18+50+/- TO STA 22+84+/- (ERWIN RD.)
- FROM -Y- STA 10+22+/- TO STA 13+19+/-
- FROM -Y4A- STA 10+12+/- TO STA 22+37+/- (DOBBINS DR.)

- USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 1 OF 7, PLACE THE REMAINING FINAL PAVEMENT MARKINGS ON -Y3- (ERWIN RD.) AS SHOWN ON PM-4.


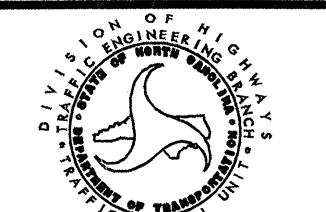
- COMPLETE INSTALLATION AND ACTIVATE PROPOSED SIGNALS.

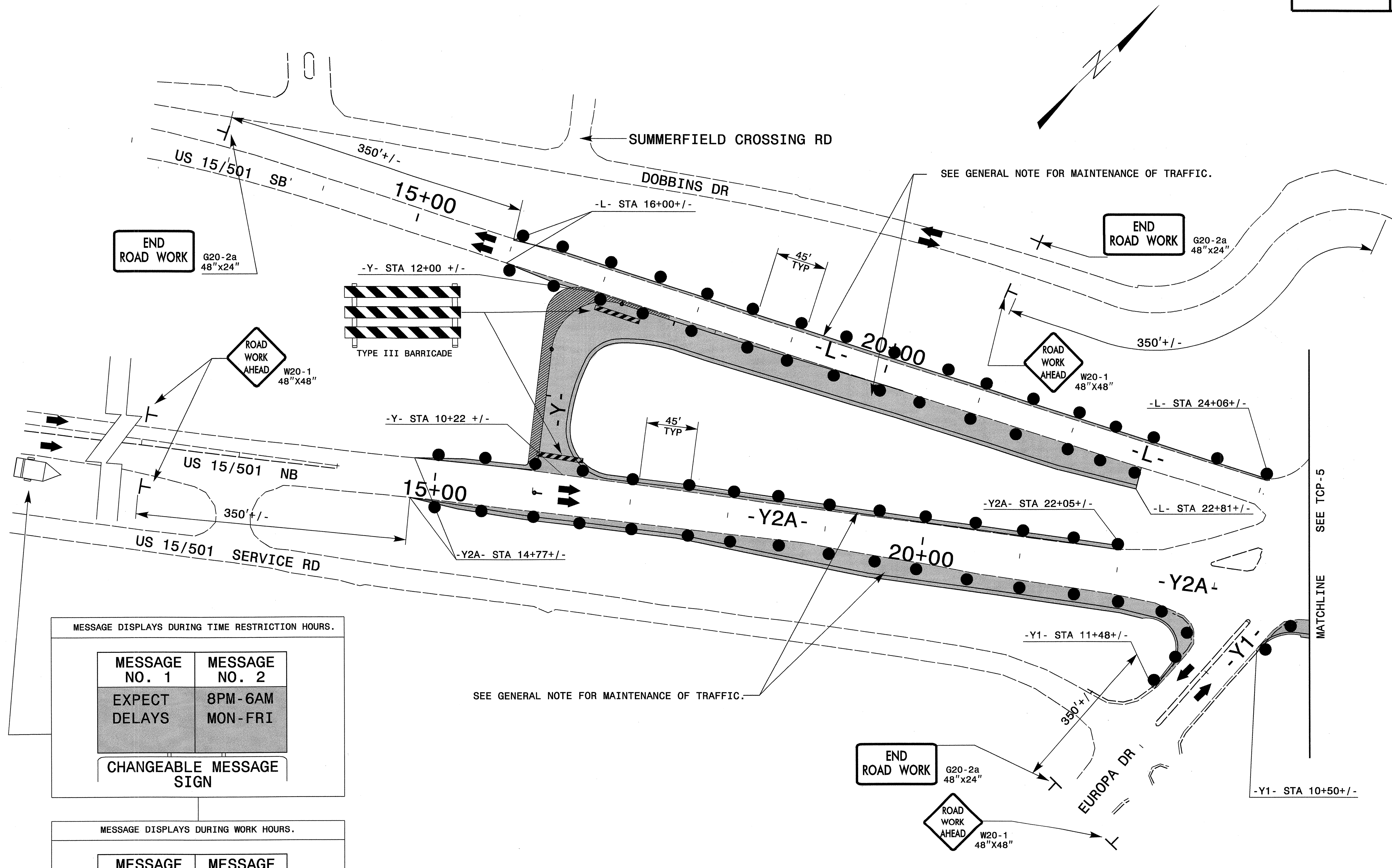
- REMOVE TEMPORARY SIGNALS.

- OPEN TO FINAL PATTERN.

STEP 4 - REMOVE ANY REMAINING TRAFFIC CONTROL DEVICES.

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APPROVED: <i>Joseph Tshak</i> DATE: 2/9/06		PHASING	
SEAL 	SCALE: NONE		REVISIONS
	DATE: 2006		
	DWG. BY: HAL		
	DESIGN BY: HAL		
REVIEWED BY: JLP		CADD	



END ROAD WORK  
G20-2a  
48" x 24"

END ROAD WORK  
G20-2a  
48" x 24"

ROAD WORK AHEAD  
W20-1  
48" x 48"

ROAD WORK AHEAD  
W20-1  
48" x 48"

MESSAGE DISPLAYS DURING TIME RESTRICTION HOURS.

MESSAGE NO. 1	MESSAGE NO. 2
EXPECT DELAYS	8PM-6AM MON-FRI

CHANGEABLE MESSAGE SIGN

MESSAGE DISPLAYS DURING WORK HOURS.

MESSAGE NO. 1	MESSAGE NO. 2
RT/LT LANE CLOSED	MERGE RT/LT

CHANGEABLE MESSAGE SIGN

END ROAD WORK  
G20-2a  
48" x 24"

ROAD WORK AHEAD  
W20-1  
48" x 48"

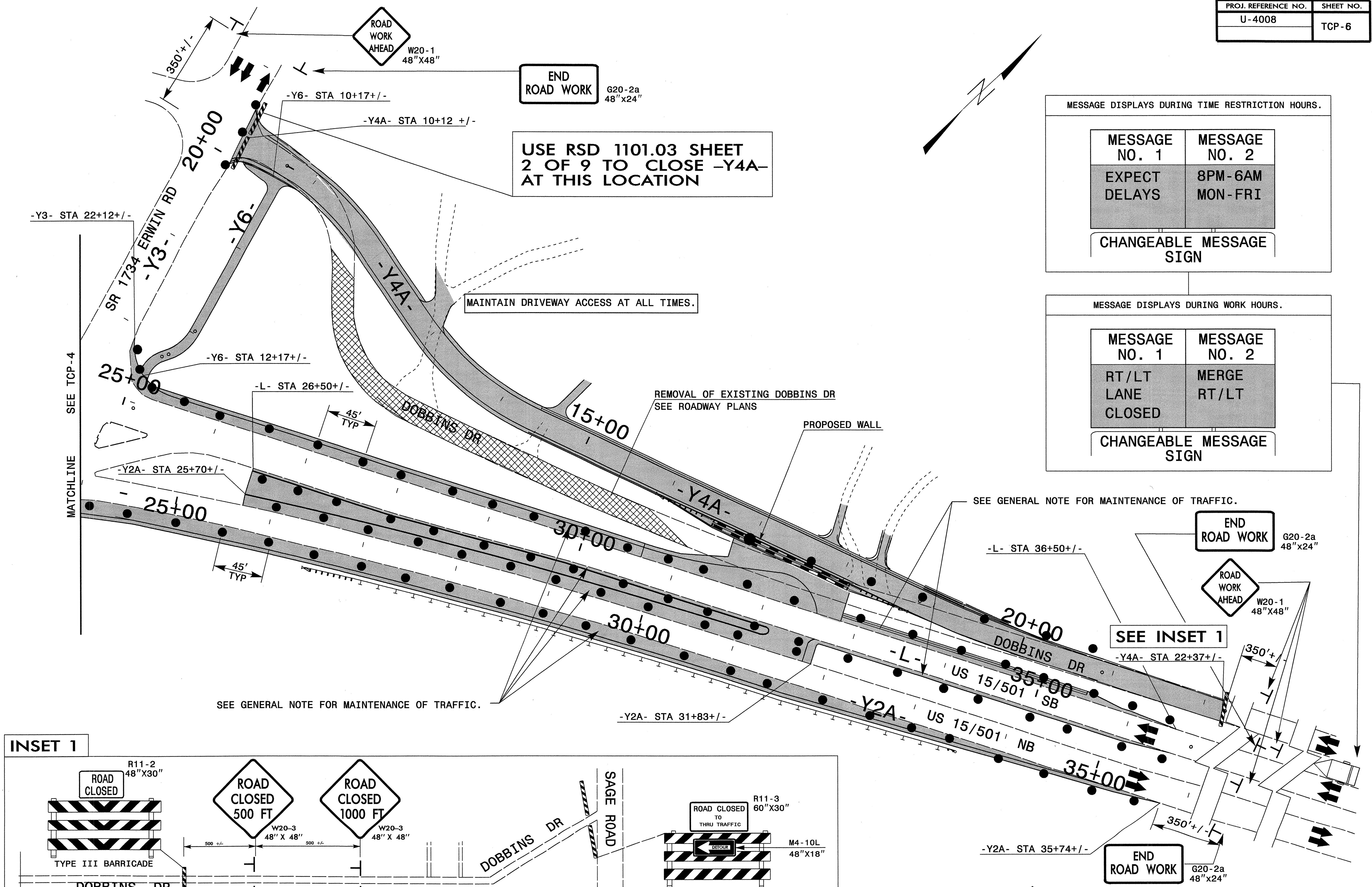
APPROVED: *Joseph Tshak* DATE: 2/9/06

SEAL  
NORTH CAROLINA PROFESSIONAL ENGINEER  
SEAL 028380  
JOSEPH TSHAK

PHASE I, DETAIL 1

SCALE: NONE		REVISIONS
DATE: 2006		
DESIGN BY: HAL		
REVIEWED BY: JLP		

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 halawandos AT WZTC224250



MESSAGE DISPLAYS DURING TIME RESTRICTION HOURS.

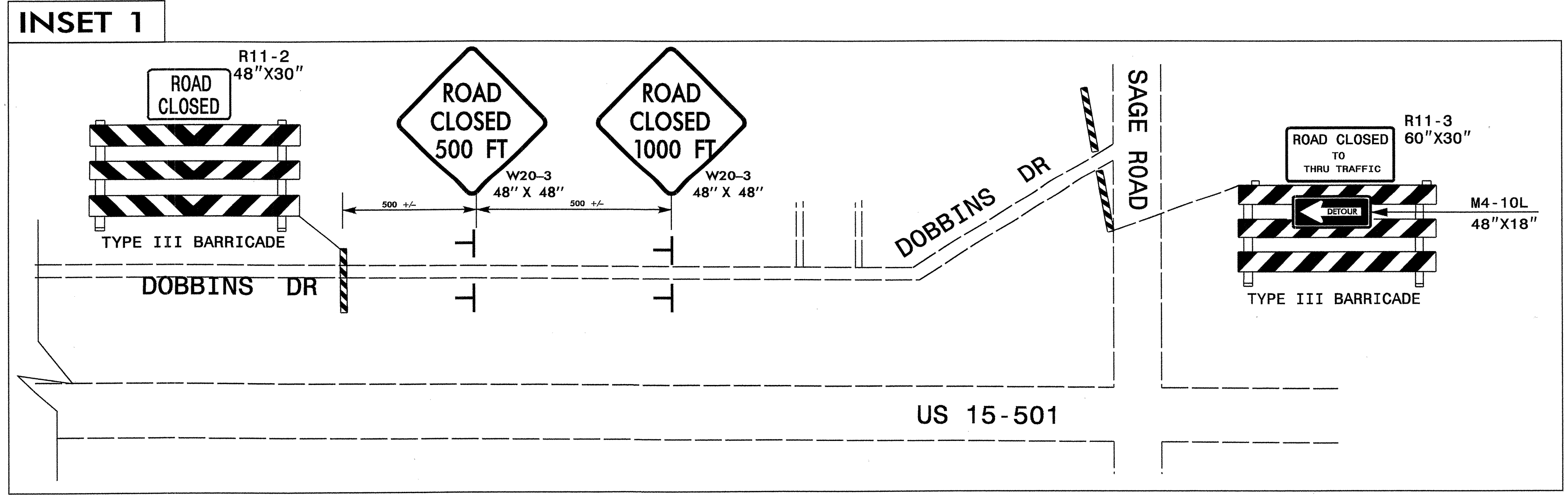
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EXPECT DELAYS	8PM-6AM MON-FRI

CHANGEABLE MESSAGE SIGN

MESSAGE DISPLAYS DURING WORK HOURS.

MESSAGE NO. 1	MESSAGE NO. 2
RT/LT LANE CLOSED	MERGE RT/LT

CHANGEABLE MESSAGE SIGN



APPROVED: *Joseph Ishak* DATE: 2/9/06

SEAL

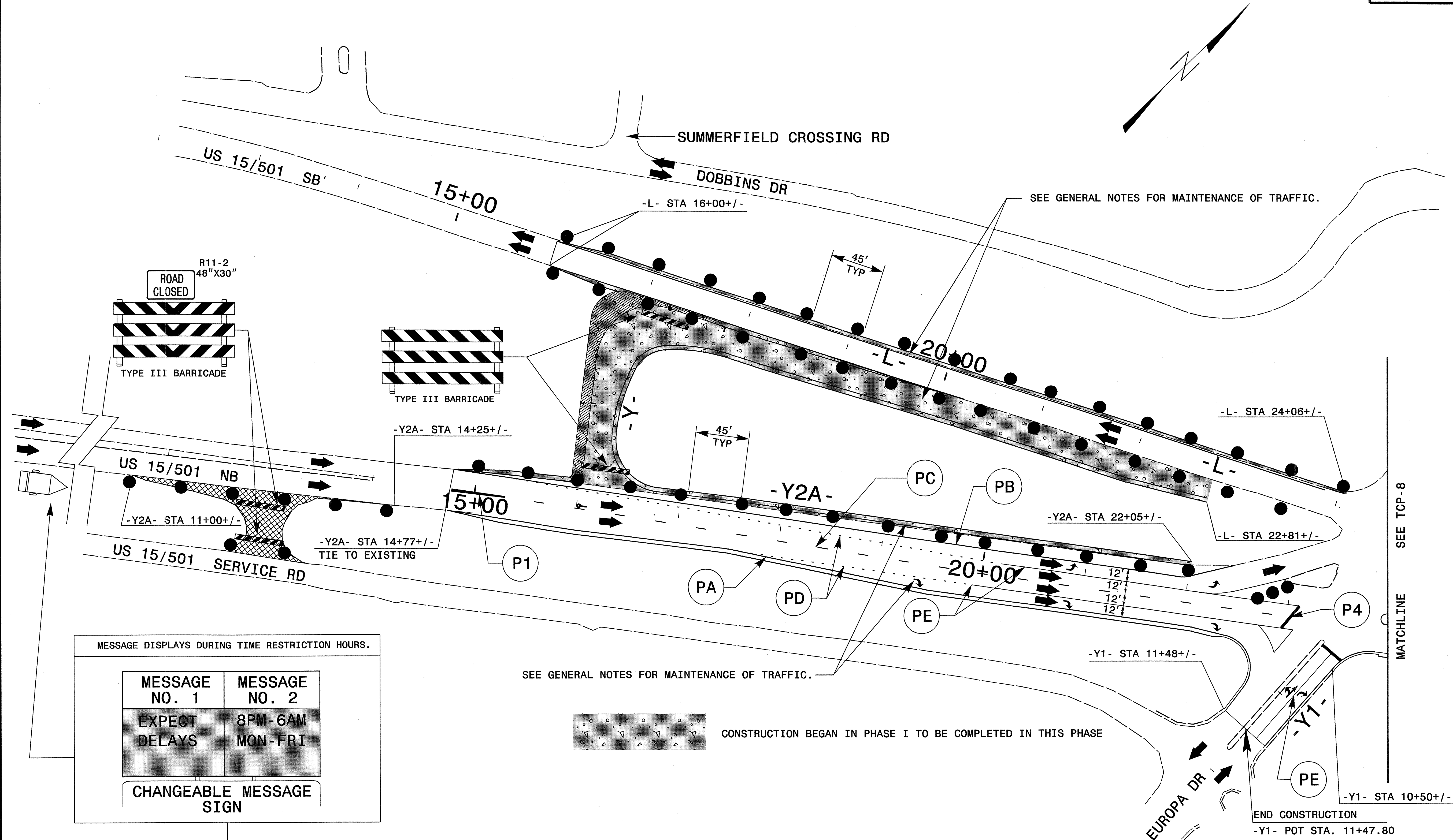
SEAL 028380 ENGINEER JOSEPH ISHAK

PHASE I, DETAIL 2

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DESIGN BY: HAL	

REVIEWED BY: JLP

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 halwandos AT WZT224250



MESSAGE DISPLAYS DURING TIME RESTRICTION HOURS.

MESSAGE NO. 1	MESSAGE NO. 2
EXPECT DELAYS	8PM - 6AM MON - FRI
CHANGEABLE MESSAGE SIGN	

MESSAGE DISPLAYS DURING WORK HOURS.

MESSAGE NO. 1	MESSAGE NO. 2
RT/LT LANE CLOSED	MERGE RT/LT
CHANGEABLE MESSAGE SIGN	

SEE GENERAL NOTES FOR MAINTENANCE OF TRAFFIC.

CONSTRUCTION BEGAN IN PHASE I TO BE COMPLETED IN THIS PHASE

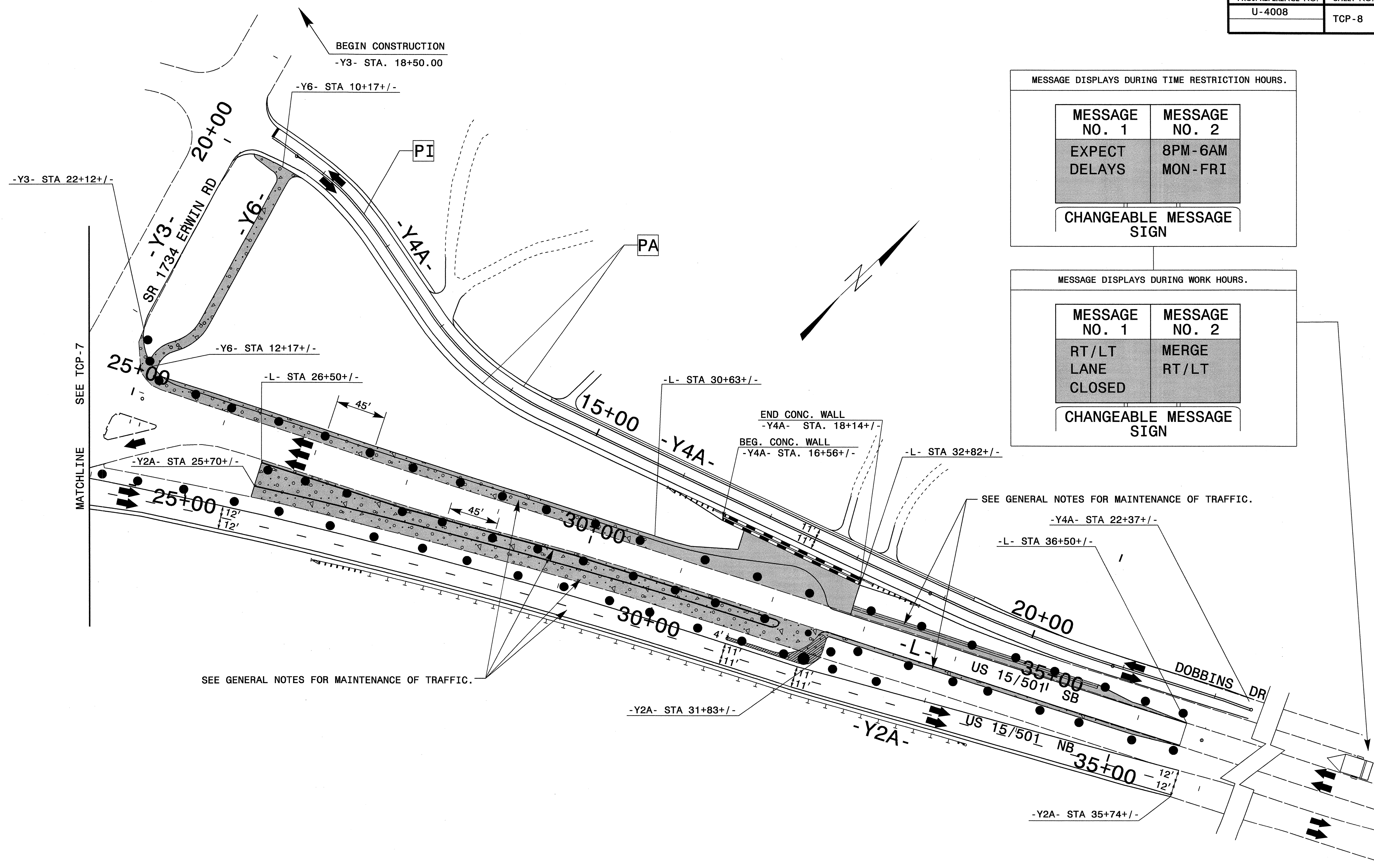
APPROVED: *Joseph Ishak* DATE: 2/9/06

SEAL

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 halawnds AT WZTC224250



MESSAGE DISPLAYS DURING TIME RESTRICTION HOURS.

MESSAGE NO. 1	MESSAGE NO. 2
EXPECT DELAYS	8PM-6AM MON-FRI

CHANGEABLE MESSAGE SIGN

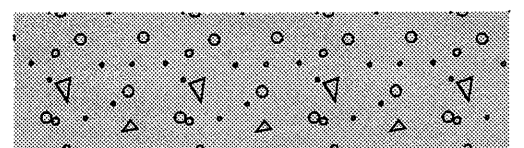
MESSAGE DISPLAYS DURING WORK HOURS.

MESSAGE NO. 1	MESSAGE NO. 2
RT/LT LANE CLOSED	MERGE RT/LT

CHANGEABLE MESSAGE SIGN

SEE GENERAL NOTES FOR MAINTENANCE OF TRAFFIC.

SEE GENERAL NOTES FOR MAINTENANCE OF TRAFFIC.



CONSTRUCTION BEGAN IN PHASE I TO BE COMPLETED IN THIS PHASE

APPROVED: *[Signature]* DATE: 2/9/06

SEAL

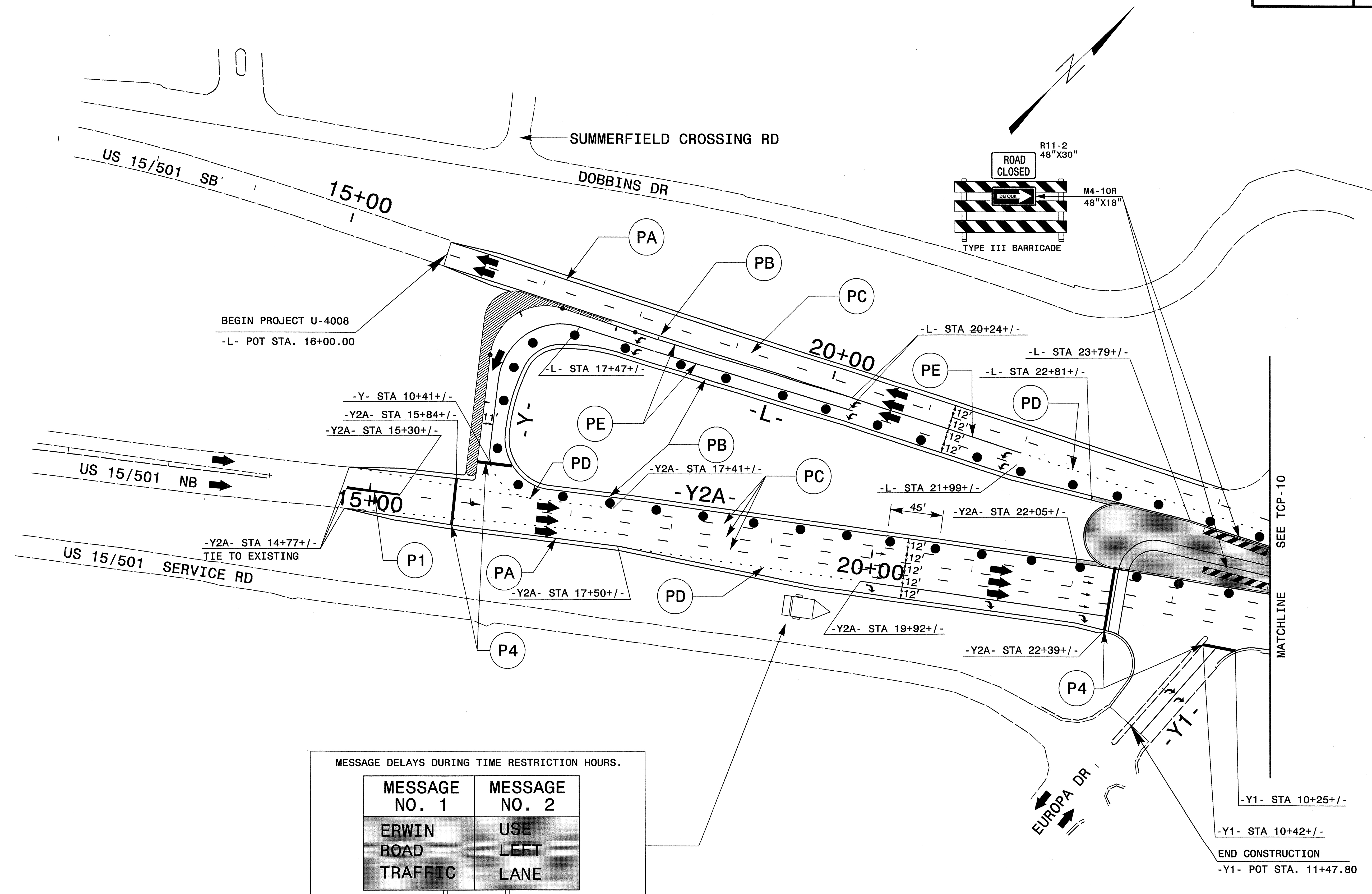
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REVIEWED BY:	JLP

REVISIONS

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 halawandos AT WZTC224250





MESSAGE DELAYS DURING TIME RESTRICTION HOURS.

MESSAGE NO. 1	MESSAGE NO. 2
ERWIN ROAD TRAFFIC	USE LEFT LANE

CHANGEABLE MESSAGE SIGN

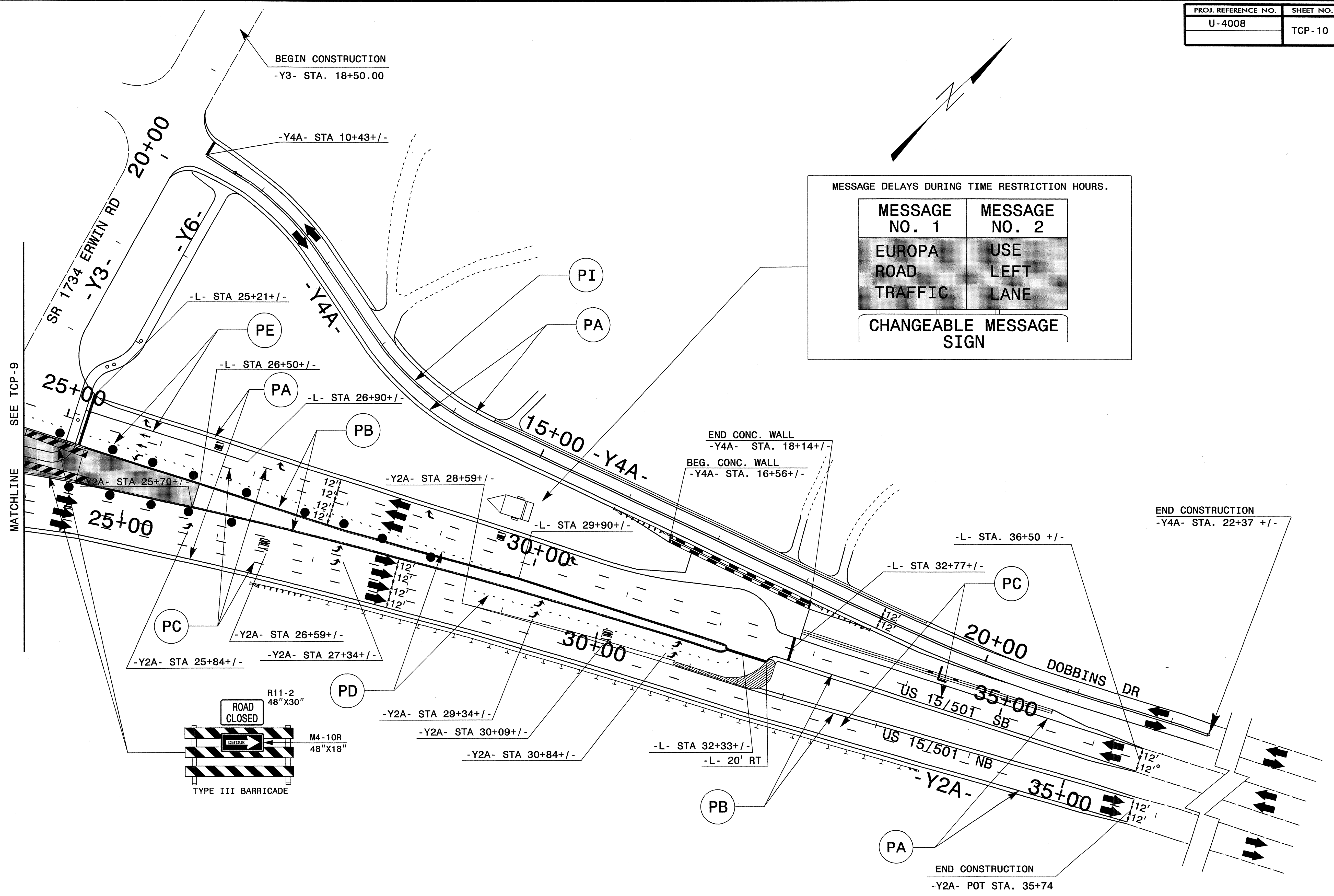
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SEAL

**PHASE II, DETAIL 3**

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REVIEWED BY: JLP	CADD FILE									

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 halawandos AT WZTC24250



MESSAGE DELAYS DURING TIME RESTRICTION HOURS.

MESSAGE NO. 1	MESSAGE NO. 2
EUROPA ROAD TRAFFIC	USE LEFT LANE

CHANGEABLE MESSAGE SIGN

APPROVED: *Joseph Ishak* DATE: 2/9/06

SEAL

**PHASE II, DETAIL 4**

SCALE: NONE		REVISIONS
DATE: 2006		
DWG. BY: HAL		
DESIGN BY: HAL		

REVIEWED BY: JLP

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 halawandos AT WZ1224250



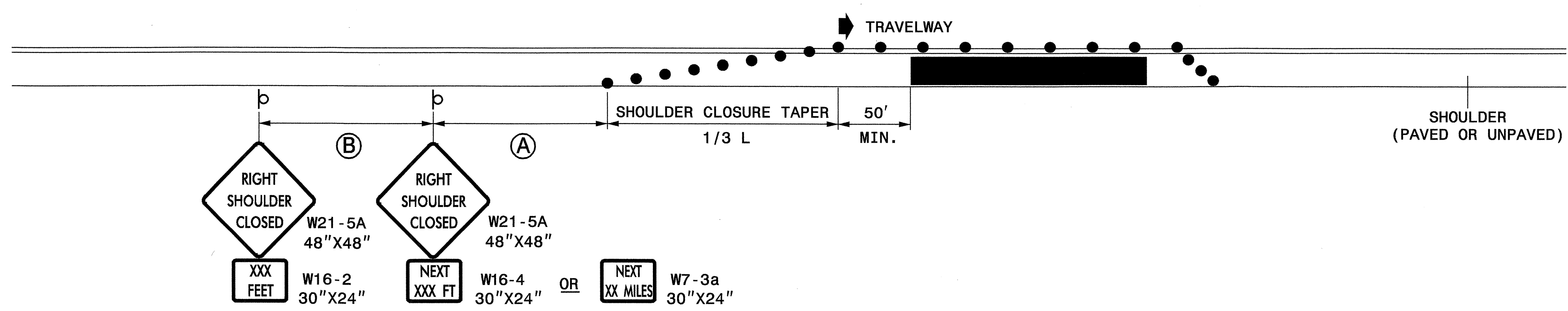
STATE OF NORTH CAROLINA  
DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
RALEIGH, N.C.

1-05

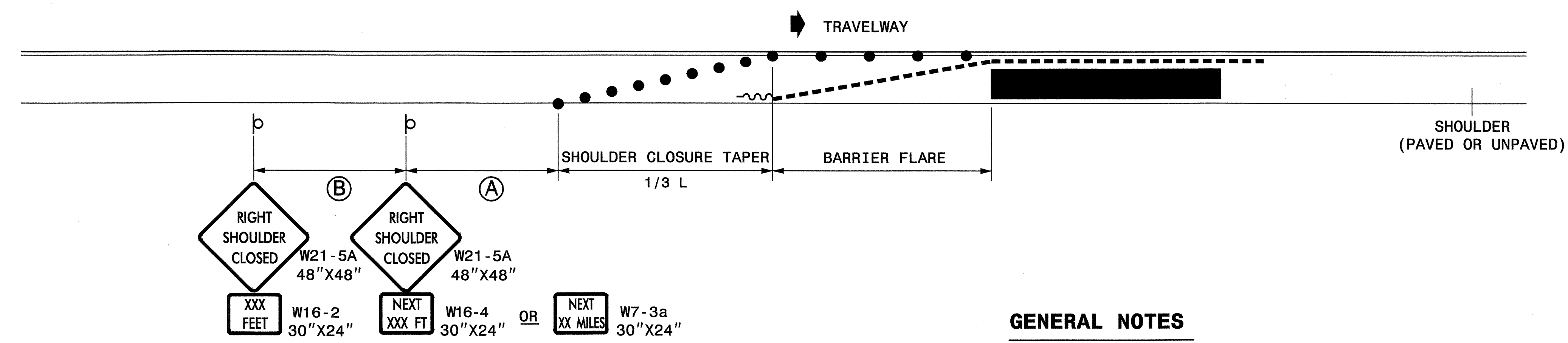
ENGLISH STANDARD DRAWING FOR  
**TEMPORARY SHOULDER CLOSURES**

SHEET 1 OF 1  
**1101D04**

**SHOULDER CLOSURES UTILIZING DRUMS**



**SHOULDER CLOSURES UTILIZING TEMPORARY BARRIER**



**GENERAL NOTES**

- PLACE SHOULDER CLOSURE SIGNS ON THE SAME SIDE AS THE SHOULDER THAT IS CLOSED.
- PLACE DRUMS IN THE SHOULDER TAPER AT THE MAXIMUM SPACING EQUAL IN FEET TO THE POSTED SPEED LIMIT. THE MAXIMUM SPACING OF DRUMS ALONG THE WORK AREA AND BARRIER FLARE IS EQUAL IN FEET TO 2 TIMES THE POSTED SPEED LIMIT.
- FLARE THE APPROACH END OF PORTABLE CONCRETE BARRIER BEYOND THE SHOULDER AND USE A CRASH CUSHION FOR PROTECTION IF THE EXPOSED END OF THE BARRIER IS WITHIN THE "CLEAR ZONE".
- USE STATIONARY SIGNS FOR LONG TERM OPERATIONS (LONGER THAN 3 DAYS).
- REFER TO STD. 1101.11 SHEETS 1, 3, & 4, FOR "L" DISTANCE, BARRIER FLARE RATES, AND SIGN SPACING.

**LEGEND**

- ~ TEMPORARY CRASH CUSHION
- PORTABLE CONCRETE BARRIER
- DRUM
- ⊥ STATIONARY OR PORTABLE SIGN
- ➔ DIRECTION OF TRAFFIC FLOW

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DIVISION OF HIGHWAYS  
RALEIGH, N.C.

1-05

ENGLISH STANDARD DRAWING FOR  
**TEMPORARY SHOULDER CLOSURES**

SHEET 1 OF 1  
**1101D04**

APPROVED: *[Signature]* DATE: *2/1/04*

SEAL

**REPLACEMENT DETAIL FOR RSD 1101.04**

SCALE: NONE		REVISIONS
DATE: 11/04		
DWG. BY: MMM		
DESIGN BY: MMM		
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STATE OF  
NORTH CAROLINA  
DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
RALEIGH, N.C.

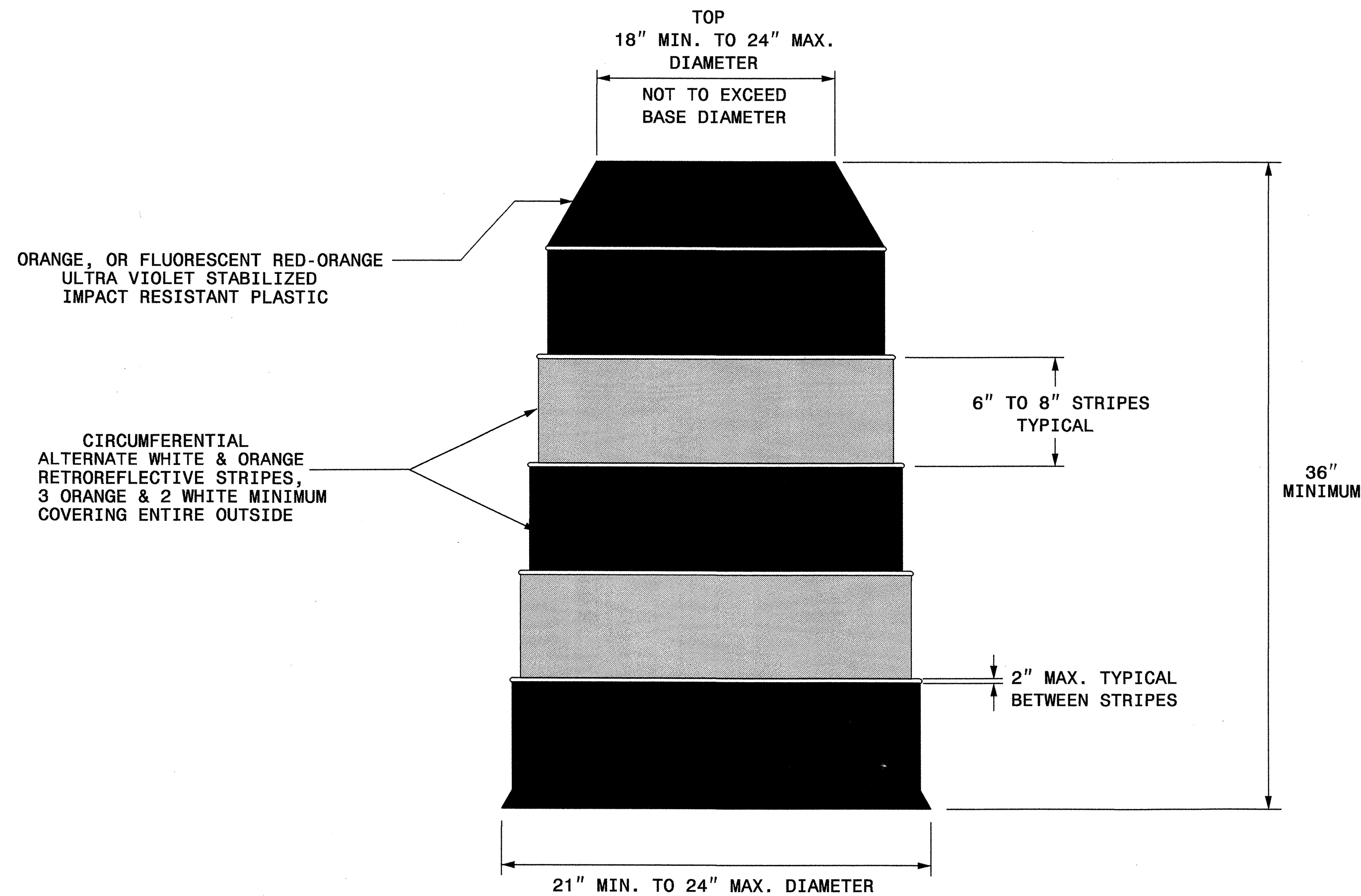
ENGLISH STANDARD DRAWING FOR  
**DRUMS**

SHEET 1 OF 1  
**1130D01**

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

ENGLISH STANDARD DRAWING FOR  
**DRUMS**

SHEET 1 OF 1  
**1130D01**



**GENERAL NOTES**

- BALLASTING SHALL BE ACHIEVED BY THE SAND BAG, TIRE-SIDEWALL BALLAST, OR PREFORMED WEIGHTED BASE BALLASTING METHODS. DO NOT PLACE BALLAST ON TOP OF THE DRUM, NOR AS TO PRESENT A HAZARD WHEN STRUCK.
- IF NECESSARY PLACE THE NAME OF THE AGENCY, CONTRACTOR, OR SUPPLIER ON NON-RETROREFLECTIVE DRUM SURFACES. SHOW THE LETTERS AND NUMBERS USING A NON-RETROREFLECTIVE COLOR AND NOT OVER 2" IN HEIGHT.

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ndawand08 AT WZ 1224250

APPROVED: *[Signature]* DATE: *8/10/06*

SEAL

**REPLACEMENT DETAIL FOR  
RSD 1130.01**

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DATE: 8/02		
DWG. BY: MMM		
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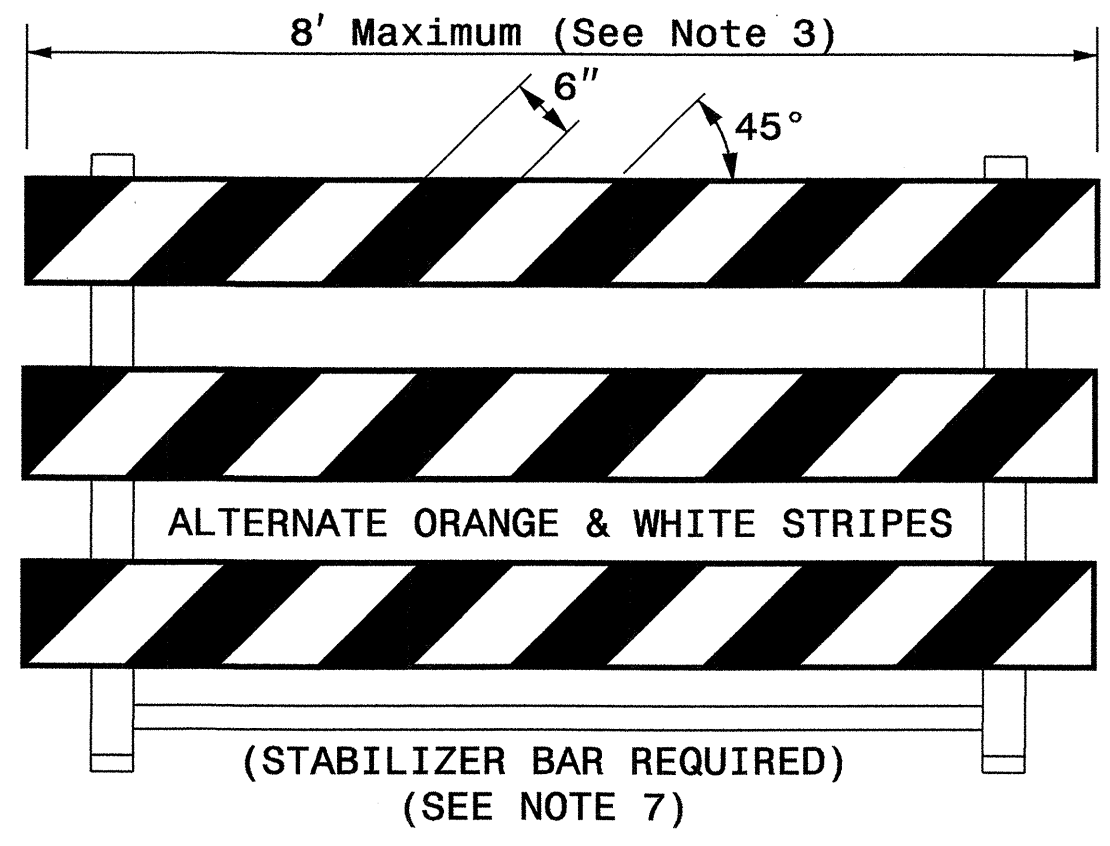
STATE OF NORTH CAROLINA  
 DEPT. OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 RALEIGH, N.C.

1-05

ENGLISH STANDARD DRAWING FOR  
**BARRICADES**  
 TYPE - III

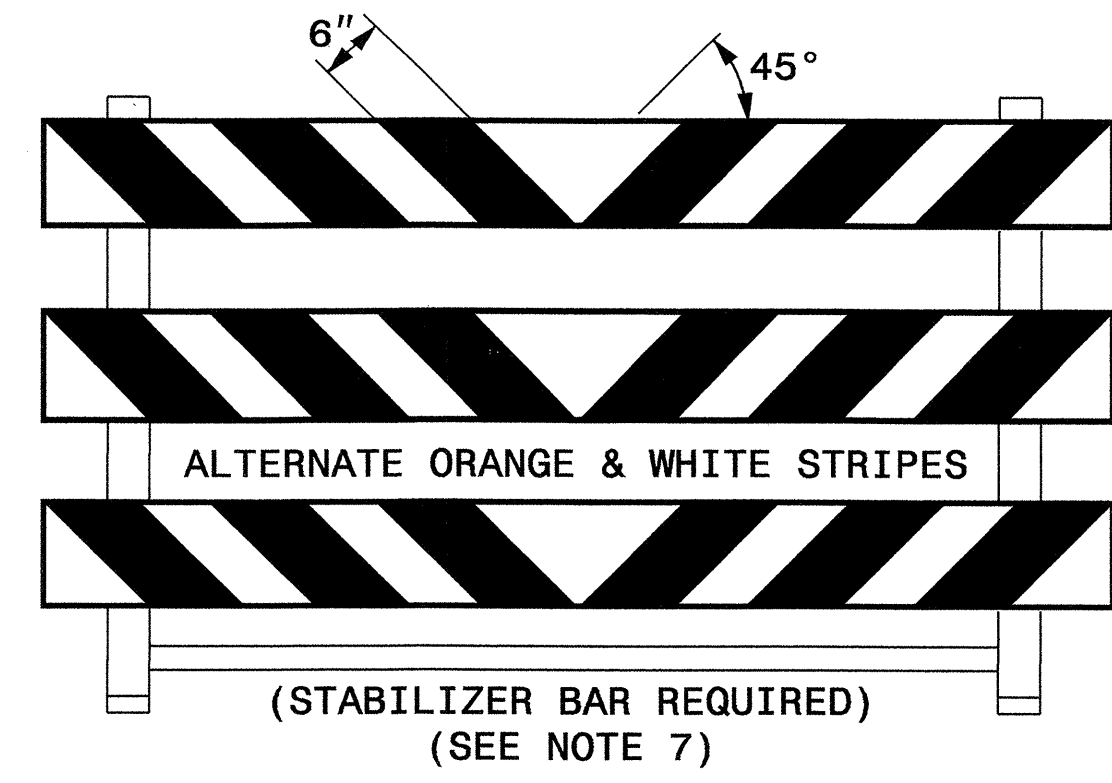
SHEET 1 OF 1  
**1145D01**

**TYPE III BARRICADE**



**TYPE III BARRICADE**

END-OF-ROADWAY APPLICATIONS



**GENERAL NOTES**

- 1) HORIZONTAL RAILS FOR TYPE-III BARRICADES MAY BE HOLLOW/CORRUGATED EXTRUDED RIGID POLYOLEFIN, HIGH DENSITY POLYETHYLENE, OR OTHER NCDOT APPROVED RAILS. BARRICADE RAILS OF FRANGIBLE PLASTICS SUCH AS PVC MAY NOT BE USED. IF APPROVED PLASTIC TYPE RAILS ARE USED, THEY MUST BE FLAME TREATED BY THE MANUFACTURER SO THAT REFLECTIVE SHEETING MAY ADHERE PROPERLY.
- 2) BARRICADES AND BARRICADE RAILS ARE APPROVED AS A SINGLE UNIT.
- 3) BARRICADE SHALL BE LIMITED TO A MAXIMUM LENGTH OF 8 FT UNLESS NCHRP 350 CRASH TESTED AND NCDOT APPROVED.
- 4) ONLY NCDOT APPROVED COMPOSITE AND ROLL-UP SIGNS MAY BE MOUNTED ON THE BARRICADE.
- 5) SIGNS MOUNTED ON BARRICADES SHOULD NOT COVER MORE THAN 50 PERCENT OF THE TOP TWO RAILS OR 33 PERCENT OF THE TOTAL AREA OF THE THREE RAILS.
- 6) USE TYPE VII, VIII OR IX SHEETING ON BOTH SIDES OF THE RAILS.
- 7) BARRICADE MUST BE NCHRP 350 AND NCDOT APPROVED WITH STABILIZER BAR OR ADEQUATE LATERAL BRACING.
- 8) ASSEMBLY OF THE GENERIC BARRICADES MUST BE SELF CERTIFIED BY THE ASSEMBLER.
- 9) BARRICADES USED TO CLOSE A ROADWAY SHALL EXTEND ACROSS THE ENTIRE ROADWAY. WHERE LOCAL TRAFFIC MUST BE MAINTAINED, THEY MAY BE PLACED IN A STAGGERED PATTERN.
- 10) STRIPES ON WORK ZONE BARRICADE RAILS SHALL BE ALTERNATE ORANGE AND WHITE RETROREFLECTIVE STRIPES, SLOPED DOWNWARD TOWARDS THE SIDE WHICH TRAFFIC IS TO PASS OR TURN IN DETOURING. WHERE NO TURNS ARE INTENDED, THE STRIPES SHOULD SLOPE DOWNWARD TOWARD THE CENTER OF THE BARRICADE OR BARRICADES. USE RED AND WHITE STRIPES FOR PERMANENT BARRICADES.
- 11) SEE APPROVED PRODUCTS LIST FOR MANUFACTURERS OF APPROVED BARRICADES.
- 12) PLACE MANUFACTURER'S NAME AND FEDERAL HIGHWAY ADMINISTRATION'S NCHRP 350 APPROVAL LETTER NUMBER ON BARRICADE.
- 13) USE SANDBAGS PLACED ON THE LOWER PART OF THE FRAME FOR BALLASTING. DO NOT PLACE SANDBAGS ON TOP OF A STRIPED RAIL. DO NOT BALLAST BARRICADES BY HEAVY OBJECTS SUCH AS ROCKS, CHUNKS OF CONCRETE OR OTHER ITEMS THAT WOULD CAUSE DAMAGE IF THE BARRICADE IS STRUCK BY A VEHICLE.

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1-05

ENGLISH STANDARD DRAWING FOR  
**BARRICADES**  
 TYPE - III

SHEET 1 OF 1  
**1145D01**

APPROVED: <i>[Signature]</i> DATE: 2/9/04	<b>REPLACEMENT DETAIL FOR RSD 1145.01</b>							
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