

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STATE PROJECT REFERENCE NO.	SHEET NO.
B-4037	TCP-1

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

B-4037

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 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
1101.05	WORK ZONE VEHICLE ACCESSES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1130.01	DRUM
1135.01	CONES
1145.01	BARRICADES
1150.01	FLAGGERS
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
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.12	PAVEMENT MARKINGS - BRIDGES
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

INDEX OF SHEETS

SHEET NO.	TITLE
TCP-1	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, LEGEND AND INDEX OF SHEETS
TCP-2 & 3	PROJECT NOTES
TCP-3A	TEMPORARY SHORING
TCP-4	DETAIL I
TCP-5	DETAIL II
TCP-6	DETOUR
TCP-7	DETAIL III
TCP-8	PORTABLE CONCRETE BARRIER AT TEMPORARY SHORING LOCATIONS
SD-1 TO SD-3	SPECIAL SIGN DESIGNS
PM-1	FINAL PAVEMENT MARKING PLAN

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 SKINNY DRUM
 - FLASHING ARROW PANEL (TYPE C)
 - STATIONARY SIGN
 - PORTABLE SIGN
 - STATIONARY OR PORTABLE SIGN
 - 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

TIP PROJECT:

\$FILE\$
2/19/2008

 © 2008 Kimley-Horn and Associates, Inc. Post Office Box 33046 Raleigh, North Carolina 27634 (919) 677-2000	APPROVED: _____ DATE: _____	PLAN PREPARED FOR N.C.D.O.T. BY: NCDOT CONTACTS:
	SCALE: NONE DATE: FEB 2008 DWG. BY: DAVID A. SHINBARA DESIGN BY: J. JASON PACE REVIEWED BY: A. AHAD SADAT	SEAL

PROJECT NOTES

PROJ. REFERENCE NO.	SHEET NO.
B-4037	TCP-2

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.

LANE AND SHOULDER CLOSURE REQUIREMENTS

- A) 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.

- B) 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.

- C) 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.

- D) 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.

PAVEMENT EDGE DROP OFF REQUIREMENTS

- E) 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.

- F) 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) (350 FT) IN ADVANCE AND A MINIMUM OF ONCE EVERY HALF MILE THROUGHOUT THE UNEVEN AREA. TRAFFIC PATTERN ALTERATIONS.

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

SIGNING

- H) 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.

- I) PROVIDE PERMANENT SIGNING.

- J) PROVIDE DETOUR SIGNING WITHIN AND/OR OFF THE PROJECT LIMITS.

- K) COVER OR REMOVE ALL DETOUR SIGNS WITHIN AND/OR OFF THE PROJECT LIMITS WHEN A DETOUR IS NOT IN OPERATION.

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

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

TRAFFIC BARRIER

- N) 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.

- O) 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 SHOWN IN THE PLANS.

TRAFFIC CONTROL DEVICES

- P) SPACE CHANNELIZING DEVICES IN WORK AREAS NO GREATER THAN TWICE THE POSTED SPEED LIMIT (MPH), EXCEPT 10 FT ON-CENTER IN RADIUS, 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.

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

PAVEMENT MARKINGS AND MARKERS

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

ROAD NAME	MARKING	MARKER
LOWER GLADY FORK RD	PAINT	NONE
UPPER GLADY FORK RD	PAINT	NONE

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

ROAD NAME	MARKING	MARKER
LOWER GLADY FORK RD	PAINT	NONE
UPPER GLADY FORK RD	PAINT	NONE

- T) PLACE TWO APPLICATIONS OF PAINT PAVEMENT MARKINGS ON THE FINAL WEARING SURFACE. PLACE THE SECOND APPLICATION OF PAINT UPON SUFFICIENT DRYING TIME OF THE FIRST.

- U) 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.

- V) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.

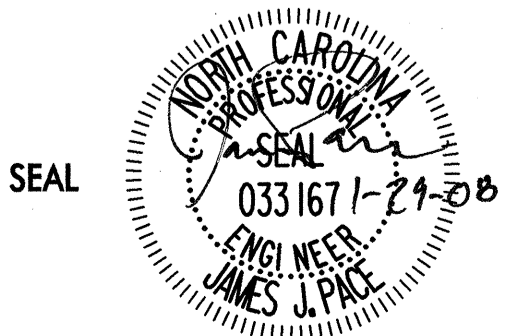
- W) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS BY THE END OF EACH DAY'S OPERATION.

MISCELLANEOUS

- X) IN THE EVENT A TIE-IN CANNOT BE MADE IN ONE DAYS 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) AND RESPECTIVELY IN ADVANCE OF THE UNEVEN AREAS. USE DRUMS TO DELINEATE THE EDGE OF ROADWAY ALONG UNPAVED AREAS.

LOCAL NOTES

THE ADJACENT PROPERTY OWNERS ARE TO BE NOTIFIED AT LEAST 3 WEEKS IN ADVANCE OF THEIR DRIVEWAY CONSTRUCTION. COORDINATE WITH THE PROPERTY OWNERS THROUGH THE PHASES OF CONSTRUCTION AS DIRECTED BY THE ENGINEER.

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1/29/2008

PHASING NOTES

GENERAL NOTES FOR ADVANCED WARNING SIGNS

- 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.

PHASE I, STEPS 1 THROUGH 4 (SEE SHEET TCP-4)

- STEP 1** PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITY, INSTALL WORK ZONE ADVANCE WARNING SIGNS AS SHOWN ON SHEET TCP-4.
- STEP 2** PLACE CHANGEABLE MESSAGE SIGNS (CMS) AS SHOWN ON SHEET TCP-4. USE NCDOT ROADWAY STANDARD DRAWING NO. 1101.02 SHEET 1 OF 9 AND FLAGGERS TO MAINTAIN TRAFFIC ON EXISTING UPPER GLADY FORK ROAD, LOWER GLADY FORK ROAD AND ACCESS TO ALL DRIVEWAYS; CONSTRUCT UPPER GLADY FORK ROAD TEMPORARY PAVEMENT WIDENING.
- STEP 3** WHILE MAINTAINING TRAFFIC ON EXISTING ROADS AND ACCESS TO ALL DRIVEWAYS:
- PLACE TEMPORARY PAVEMENT MARKINGS ON EXISTING UPPER GLADY ROAD AND TEMPORARY PAVEMENT AS SHOWN ON SHEET TCP-4 AND REMOVE CONFLICTING MARKINGS. SHIFT TRAFFIC ACCORDINGLY.
 - PLACE TEMPORARY PORTABLE CONCRETE BARRIERS (PCB) AND CRASH CUSHIONS ALONG THE EXISTING EDGE OF PAVEMENT.
- STEP 4** USE NCDOT ROADWAY STANDARD DRAWING NO. 1101.02 SHEET 1 OF 9 AND FLAGGERS TO MAINTAIN TRAFFIC ON EXISTING ROADS:
- PLACE TEMPORARY SHORING AS SHOWN ON SHEET TCP-4
 - CONSTRUCT PROPOSED BRIDGE
 - CONSTRUCT PROPOSED RETAINING WALLS/GABIONS FOR -L- AND -Y1-
 - CONSTRUCT PROPOSED UPPER GLADY FORK ROAD ROADWAY TIE-IN TO LOWER GLADY FORK ROAD UP TO BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE PAVEMENT.
 - CONSTRUCT PROPOSED UPPER GLADY FORK ROAD ROADWAY PARTIAL TIE-IN TO EXISTING UPPER GLADY FORK ROAD BEHIND THE PCB AS SHOWN ON TCP-4.



ALWAYS KEEP TWO LANE TWO-WAY ROADWAY OPEN FOR TRAFFIC DURING NIGHT TIME AND DAY TIME WHEN THE CONSTRUCTION ACTIVITIES ARE NOT IN PROGRESS.

PHASE II, STEPS 1 THROUGH 7 (SEE SHEETS TCP-5 TO TCP-7)

WORK IN A CONTINUOUS MANNER TO COMPLETE THE FOLLOWING WORK OF PHASE II STEP 1-3 WITHIN 21 CONSECUTIVE DAYS. (SEE INTERMEDIATE CONTRACT TIME)

- STEP 1** USING NCDOT ROADWAY STANDARD DRAWING NO. 1101.03 SHEETS 1 AND 2 OF 9, CLOSE UPPER GLADY FORK ROAD TO TRAFFIC AND DETOUR UPPER GLADY FORK ROAD'S TRAFFIC TO NC 151 AS SHOWN ON SHEETS TCP-5 AND TCP-6.
- STEP 2** COMPLETE CONSTRUCTION OF:
- PROPOSED UPPER GLADY FORK ROAD TIE-IN TO EXISTING UPPER GLADY FORK ROAD INCLUDING THE RETAINING WALL BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE PAVEMENT FROM -L- STA. 11+70 TO 13+82. USE FLAGGERS TO MAINTAIN ACCESS FOR DRIVEWAY AT -L- STA. 11+15.
 - PROPOSED DRIVEWAY TIE IN TO EXISTING UPPER GLADY FORK ROAD AT -L- STA. 13+25.
 - USE PROPOSED PERMANENT PAVEMENT MARKINGS PATTERN; PLACE TEMPORARY PAVEMENT MARKINGS ON PROPOSED UPPER GLADY FORK ROAD -L- STA. 11+70 TO 16+00.
- STEP 3** CLOSE EXISTING UPPER GLADY FORK ROAD AT EXISTING BRIDGE; OPEN UPPER GLADY FORK ROAD'S NEW ALIGNMENT TO TRAFFIC AND REMOVE DETOUR. (SEE SHEET TCP-7)
- STEP 4** USING NCDOT ROADWAY STANDARD DRAWING NO. 1101.02 SHEET 1 OF 9 AND FLAGGERS TO MAINTAIN LOWER GLADY FORK ROAD'S TRAFFIC; CONSTRUCT LOWER GLADY FORK ROAD'S WEDGING UP TO BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE PAVEMENT FROM -Y1- STA. 10+08 TO 11+89 AND STA. 14+02 TO 16+50. (SEE SHEET TCP-7)
- STEP 5** USING NCDOT ROADWAY STANDARD DRAWING NO. 1101.02 SHEET 1 OF 9 AND FLAGGERS TO MAINTAIN TRAFFIC; REMOVE EXISTING BRIDGE AND EXISTING PAVEMENT, CONSTRUCT SCOUR HOLE AND INSTALL GUARDRAIL AT THE OLD INTERSECTION OF UPPER GLADY FORK ROAD AND LOWER GLADY FORK ROAD. (SEE SHEET TCP-7)
- STEP 6** USE NCDOT ROADWAY STANDARD DRAWING NO. 1101.02 SHEET 1 OF 9 AND FLAGGERS TO MAINTAIN TRAFFIC:
- PLACE FINAL LAYER OF SURFACE COURSE PAVEMENT ON -L- FROM STA. 11+70 TO STA. 16+00, AND -Y1- STA. 10+08 TO 11+89 AND 14+02 TO 16+50.
 - PLACE FINAL PAVEMENT MARKINGS ON -L- AND -Y1-. SEE SHEET PM-1.
- STEP 7** OPEN ALL LANES TO TRAFFIC.

SHEET 3 OF 7

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5/21/2008

PROJ. REFERENCE NO.	SHEET NO.
B-4037	TCP-3A

TEMPORARY SHORING DATA

TEMPORARY SHORING NO. 1

FOR TEMPORARY SHORING, SEE TEMPORARY SHORING SPECIAL PROVISION.

DO NOT USE STANDARD TEMPORARY SHORING FROM STATION 13+75.00, VARIES FROM 22 FT. TO 39 FT. RIGHT OF -L-, TO STATION 14+05.00, VARIES FROM 22 FT. TO 39 FT. RIGHT OF -L-.

USE A TEMPORARY MSE WALL FROM STATION 13+75.00, VARIES FROM 22 FT. TO 39 FT. RIGHT OF -L-, TO STATION 14+05.00, VARIES FROM 22 FT. TO 39 FT. RIGHT OF -L-. SEE TEMPORARY SHORING SPECIAL PROVISION AND STANDARD TEMPORARY MSE WALL DETAILS.

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

WHEN USING CONTRACTOR DESIGNED SHORING, USE THE FOLLOWING SOIL PARAMETERS:
 UNIT WEIGHT OF SOIL ABOVE WATER TABLE, $\gamma = 120$ PCF
 UNIT WEIGHT OF SOIL BELOW WATER TABLE, $\gamma = 60$ PCF
 FRICTION ANGLE, $\phi = 30$ DEGREES
 COHESION, $c = 0$ PSF

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF THE TEMPORARY SHORING. 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 STANDARD TEMPORARY SHORING FROM STATION 10+40.00, VARIES FROM 20 FT. TO 36 FT. RIGHT OF -Y-, TO STATION 11+60.00, VARIES FROM 20 FT. TO 36 FT. RIGHT OF -Y-.

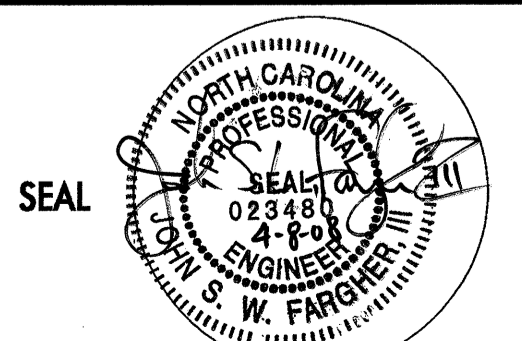
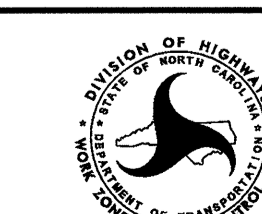
USE A TEMPORARY MSE WALL FROM 10+40.00, VARIES FROM 20 FT. TO 36 FT. RIGHT OF -Y-, TO STATION 11+60.00, VARIES FROM 20 FT. TO 36 FT. RIGHT OF -Y-. SEE TEMPORARY SHORING SPECIAL PROVISION AND STANDARD TEMPORARY MSE WALL DETAILS.

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

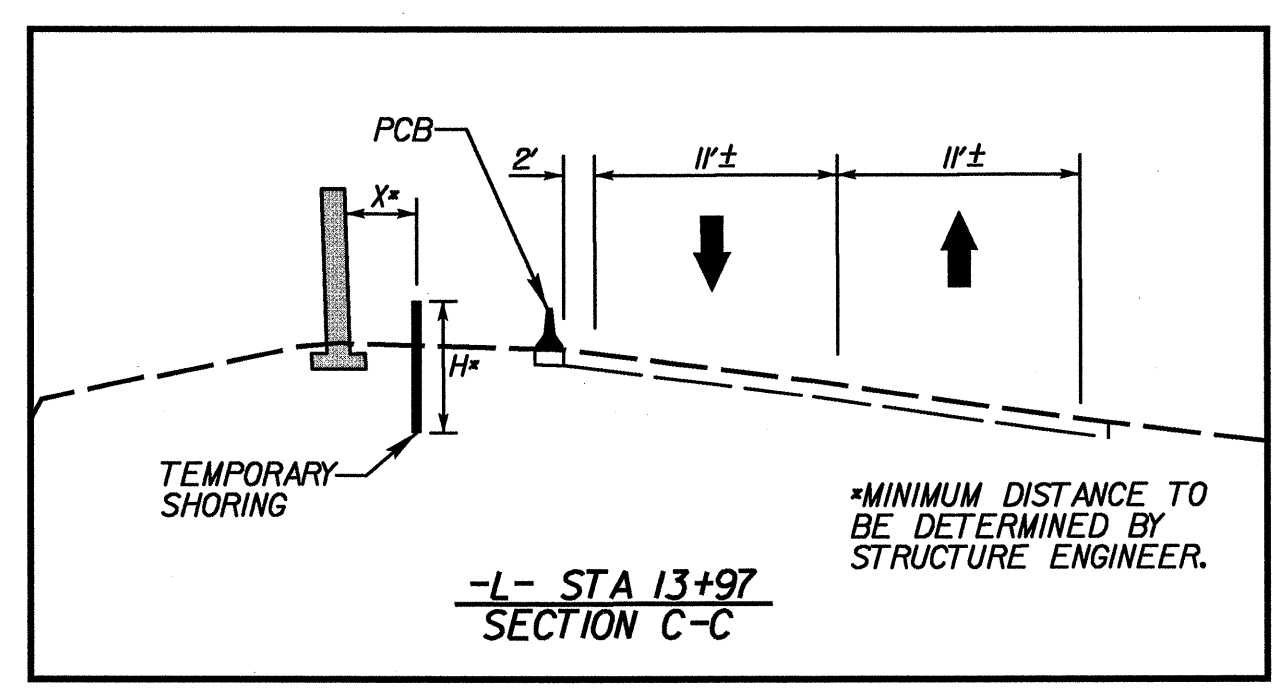
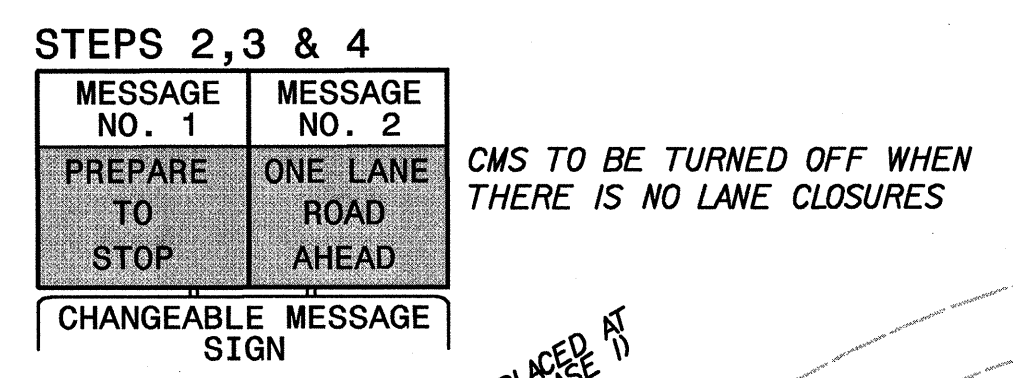
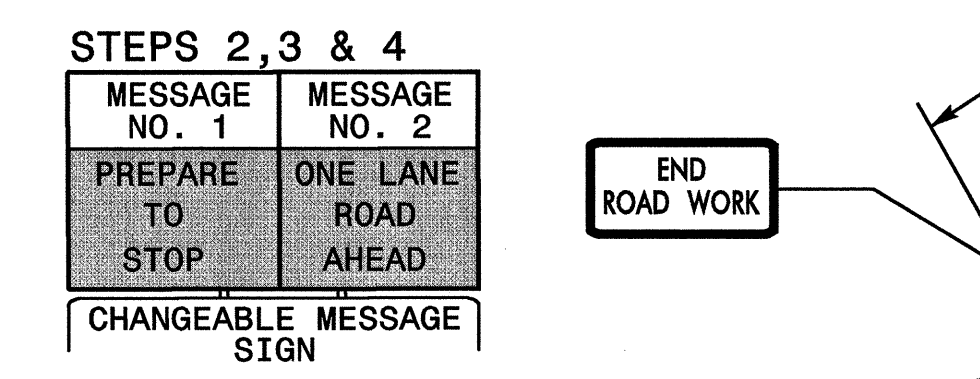
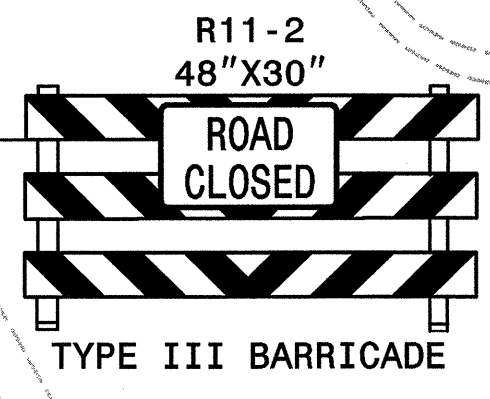
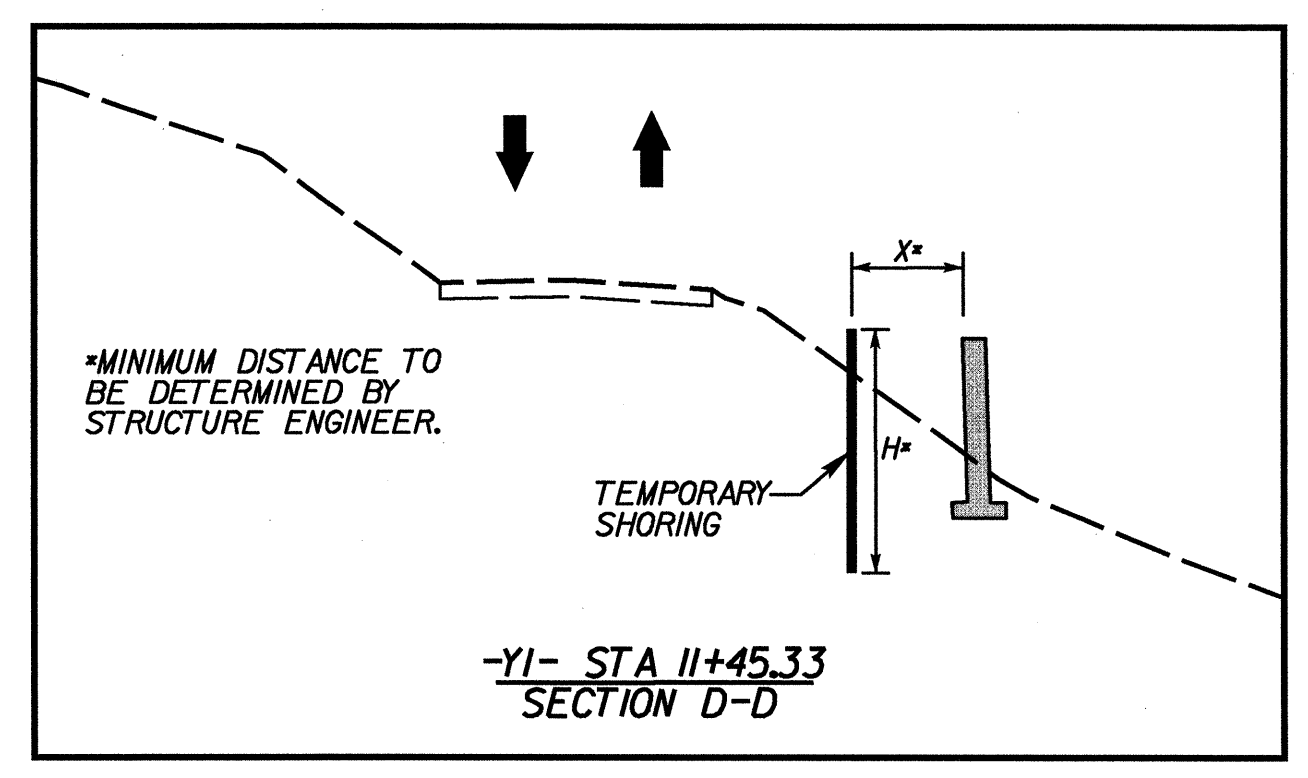
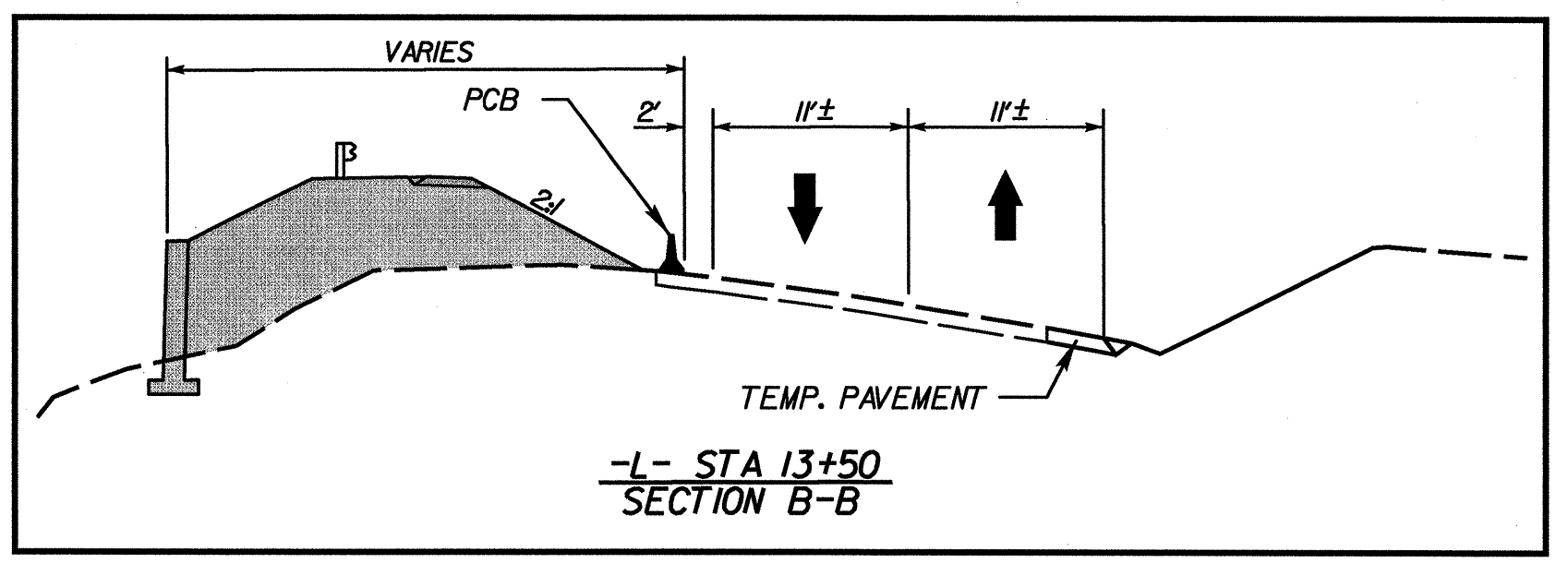
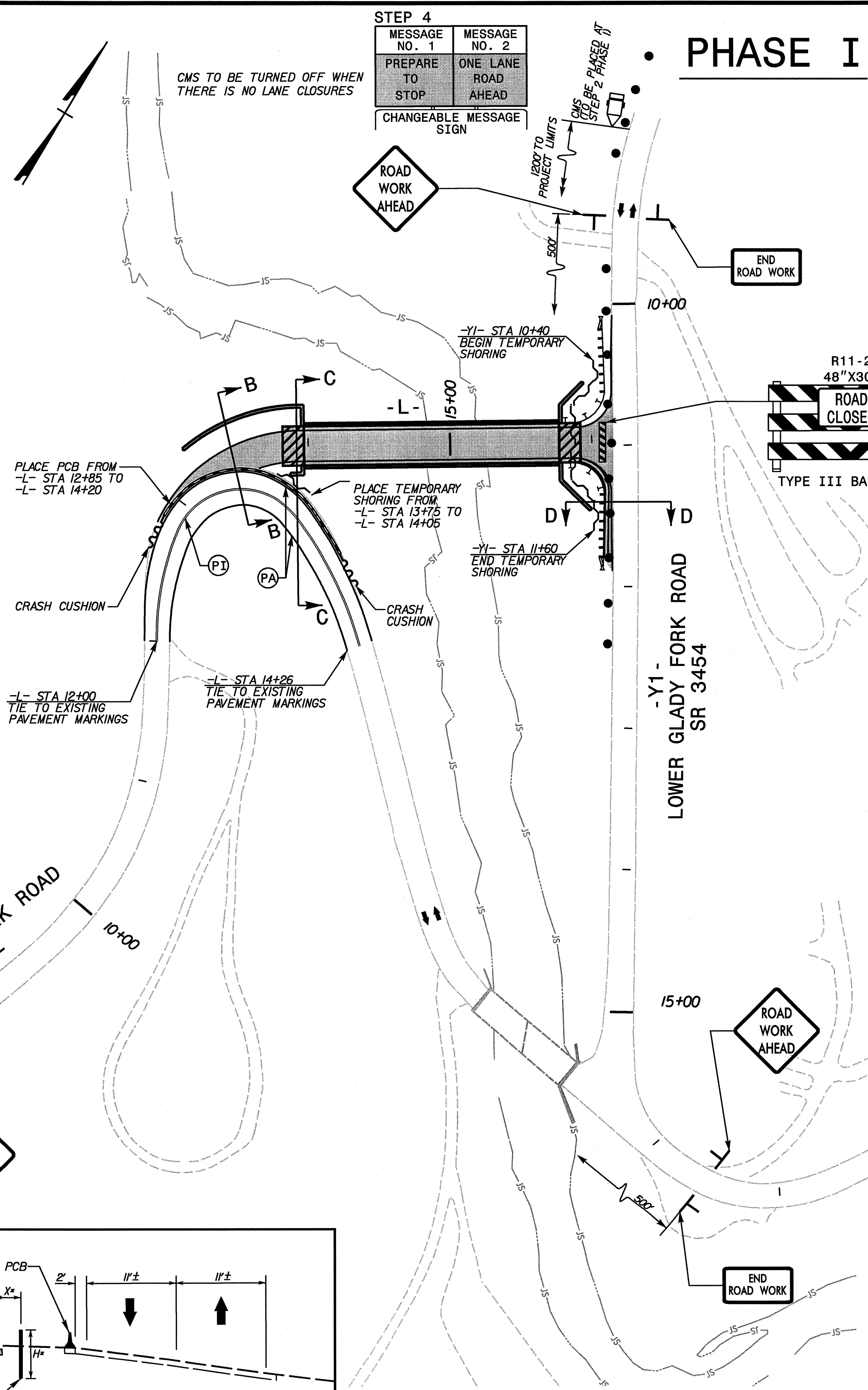
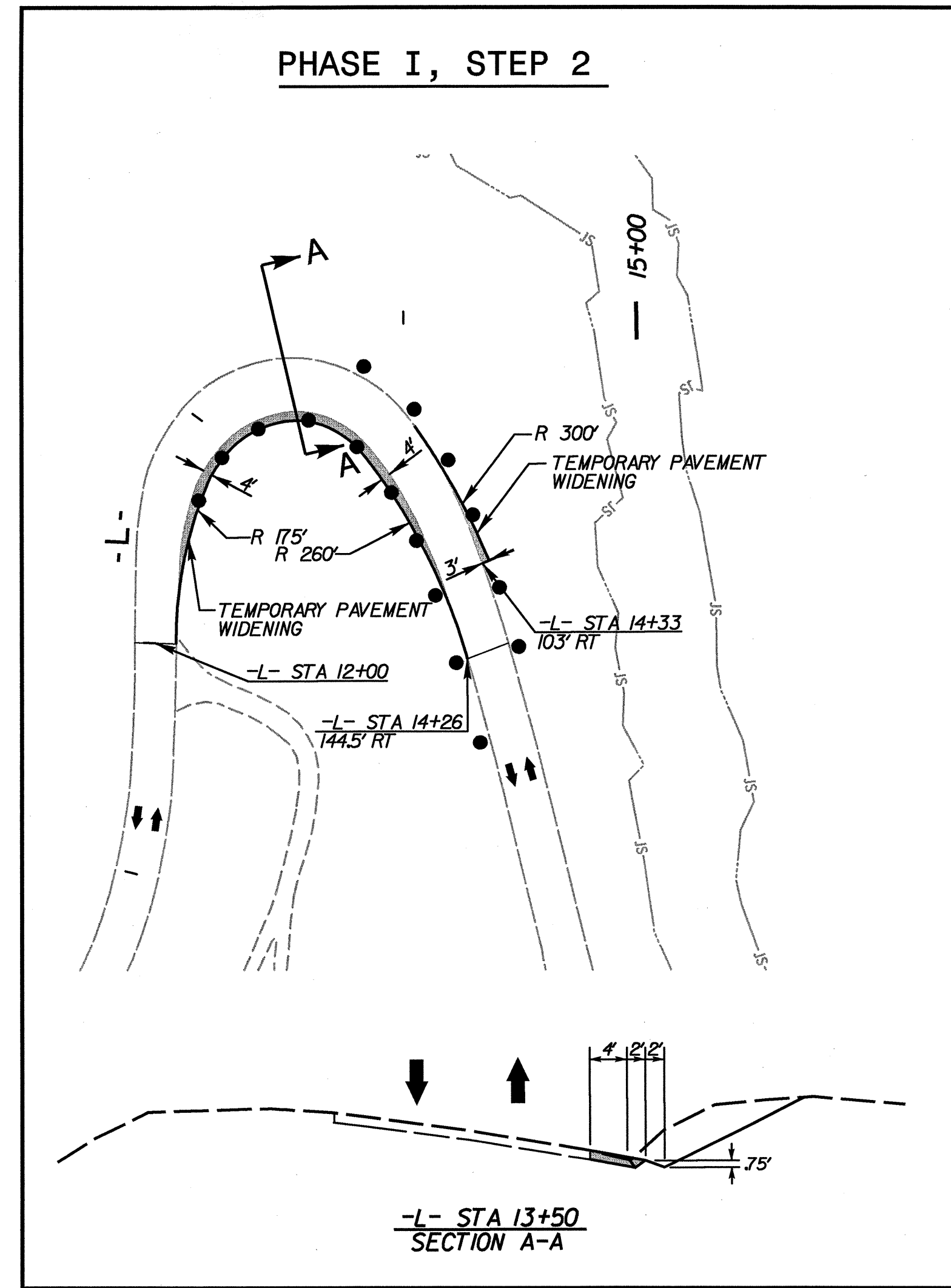
WHEN USING CONTRACTOR DESIGNED SHORING, USE THE FOLLOWING SOIL PARAMETERS:
 UNIT WEIGHT OF SOIL ABOVE WATER TABLE, $\gamma = 120$ PCF
 UNIT WEIGHT OF SOIL BELOW WATER TABLE, $\gamma = 60$ PCF
 FRICTION ANGLE, $\phi = 30$ DEGREES
 COHESION, $c = 0$ PSF

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF THE TEMPORARY SHORING. 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.

APPROVED: _____	DATE: _____	TEMPORARY SHORING DATA	
	SCALE: NONE		REVISIONS
	DATE: 04/08		
	DWG. BY: WSA		
	DESIGN BY: WSA		
REVIEWED BY: JDK			

08-APR-2008 08:09
 c:\documents\jsovo\locals-1\temp\b-4037_top_fr_top-3a.dgn
 isalvo AT 6E124787



APPROVED: _____ DATE: _____

SCALE: 1" = 50'

DATE: FEB 2008

DWG. BY: DAS

DESIGN BY: JJP

REVIEWED BY: AAS

DETAIL I

REVISIONS

SEAL

033167 1-29-08

JAMES J. PRICE

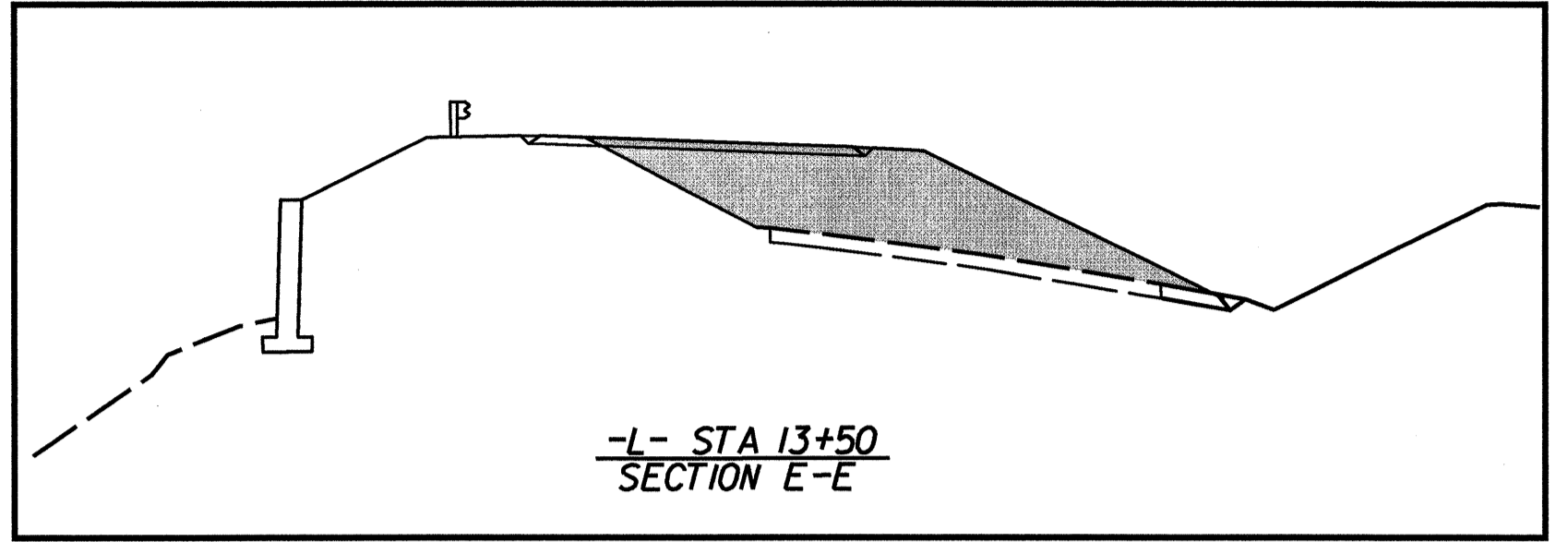
STATE OF NORTH CAROLINA

PROFESSIONAL ENGINEER

STATE ENGINEER

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1/29/2008

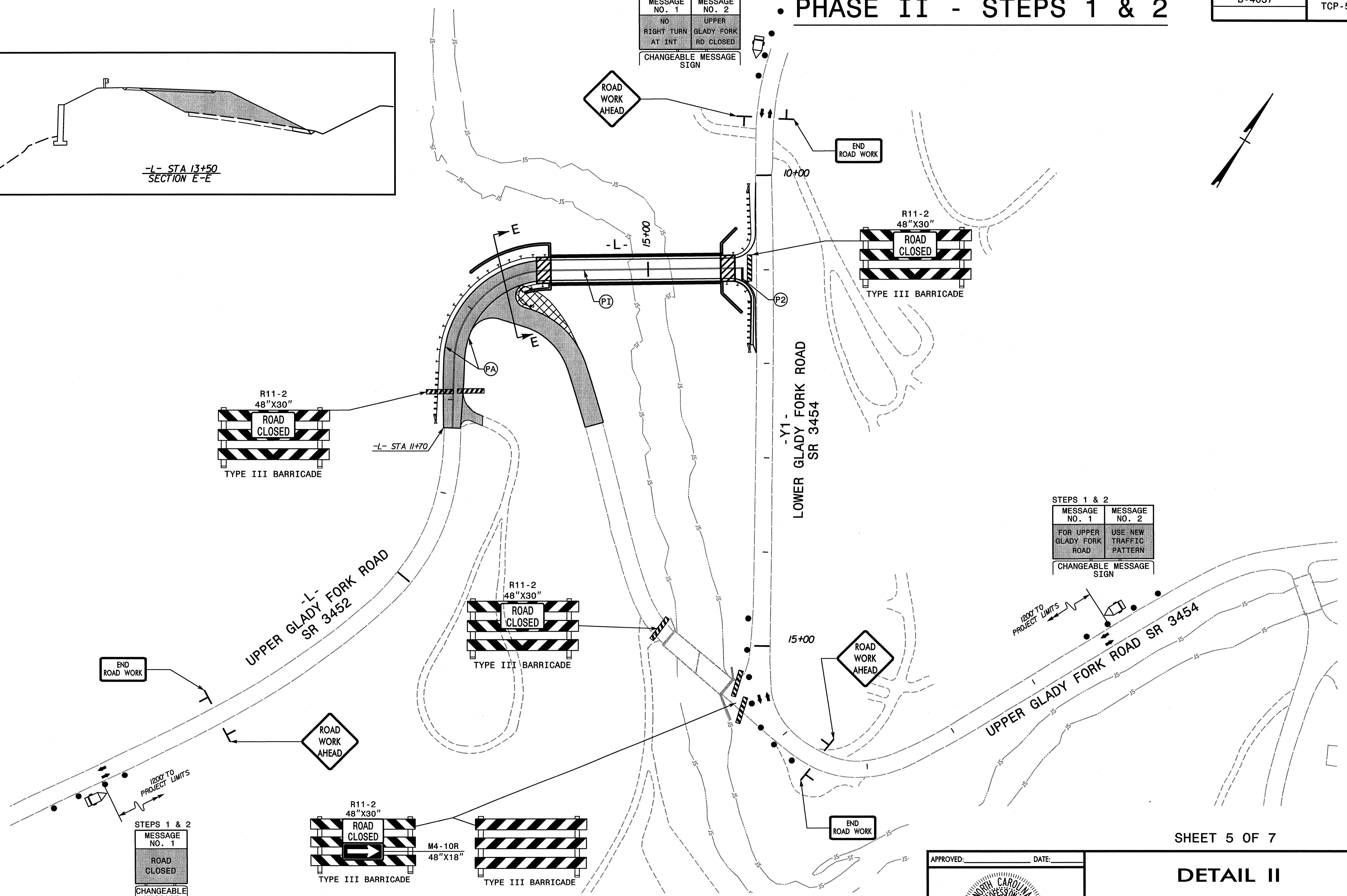
PHASE II - STEPS 1 & 2



STEPS 1 & 2

MESSAGE NO. 1	MESSAGE NO. 2
NO RIGHT TURN AT INT	UPPER GLADY FORD RD CLOSED

CHANGEABLE MESSAGE SIGN



STEPS 1 & 2

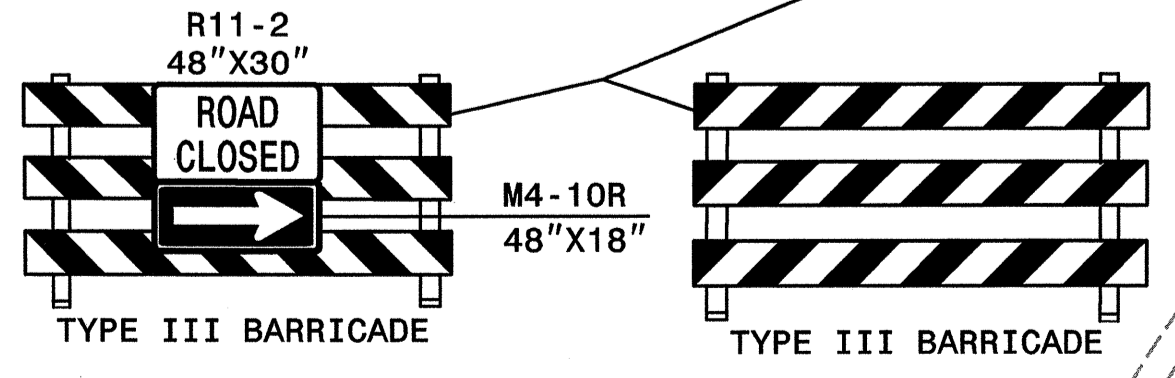
MESSAGE NO. 1	MESSAGE NO. 2
FOR UPPER GLADY FORD ROAD	USE NEW TRAFFIC PATTERN

CHANGEABLE MESSAGE SIGN

STEPS 1 & 2

MESSAGE NO. 1
ROAD CLOSED

CHANGEABLE MESSAGE SIGN



SHEET 5 OF 7

DETAIL II

APPROVED: _____ DATE: _____

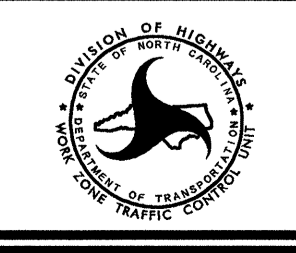
SCALE: 1" = 50'

DATE: FEB 2008

DWG. BY: DAS

DESIGN BY: JJP

REVIEWED BY: AAS

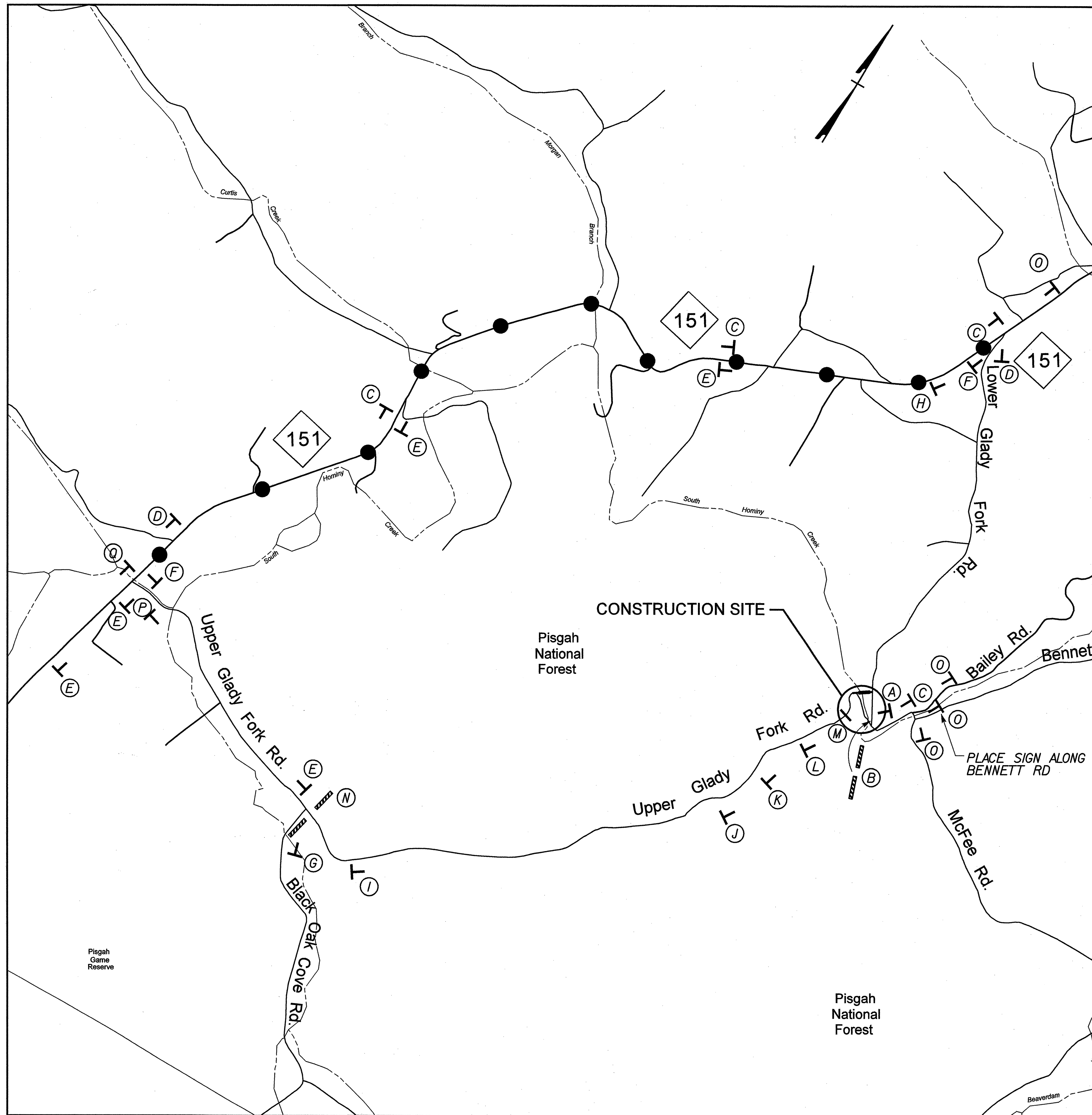


REVISIONS	

4/28/2008 \$FILE\$

PHASE II - STEPS 1 & 2 (DETOUR)

PROJ. REFERENCE NO. B-4037	SHEET NO. TCP-6
-------------------------------	--------------------



<p>(A) UPPER GLADY FORK RD DETOUR M4-8 24" X 12" M5-1 R 21" X 15"</p>	<p>(F) TO LOWER GLADY FORK RD M4-5 B 24" X 12" M6-1 21" X 15"</p>	<p>(J) ROAD CLOSED 1500 FT W20-3D 48" X 48"</p>
<p>(B) R11-2 48" X 30" ROAD CLOSED M4-10R 48" X 18" TYPE III BARRICADE</p>	<p>(G) TO LOWER GLADY FORK RD M4-5 B 24" X 12" M6-1 21" X 15"</p>	<p>(K) ROAD CLOSED 1000 FT W20-3C 48" X 48"</p>
<p>(C) UPPER GLADY FORK RD DETOUR M4-8 24" X 12" M6-3 21" X 15"</p>	<p>(H) TO LOWER GLADY FORK RD M4-5 B 24" X 12" M5-1 R 21" X 15"</p>	<p>(L) ROAD CLOSED 500 FT W20-3B 48" X 48"</p>
<p>(D) UPPER GLADY FORK RD DETOUR M4-8 24" X 12" M5-1 L 21" X 15"</p>	<p>(I) ROAD CLOSED AHEAD W20-3A 48" X 48"</p>	<p>(M) UPPER GLADY FORK RD CLOSED AT LOWER GLADY FORK RD SP</p>
<p>(E) TO LOWER GLADY FORK RD M4-5 B 24" X 12" M6-3 21" X 15"</p>	<p>(N) R11-2 48" X 30" ROAD CLOSED R11-4 60" X 30" ROAD CLOSED TO THRU TRAFFIC TYPE III BARRICADE</p>	<p>(O) UPPER GLADY FORK RD CLOSED 2.5 MILES AHEAD PRIOR TO LOWER GLADY FORK RD SP</p>
<p>(M) TYPE III BARRICADE</p>	<p>(P) END DETOUR M4-8a 24" X 18"</p>	

SHEET 6 OF 7

APPROVED: _____ DATE: _____	DETOUR	
	SCALE: 1" = 50'	
	DATE: FEB 2008	
	DWG. BY: DAS	
	DESIGN BY: JJP	
REVIEWED BY: AAS	REVISIONS	

\$FILE\$
2/12/2008

PHASE II - STEPS 3-6

MESSAGE NO. 1
NEW TRAFFIC PATTERN
CHANGEABLE MESSAGE SIGN

FOR LANE CLOSURES ONLY WHILE WORK IS IN PROGRESS
MESSAGE NO. 1
MESSAGE NO. 2
PREPARE TO STOP
ONE LANE ROAD AHEAD
CHANGEABLE MESSAGE SIGN

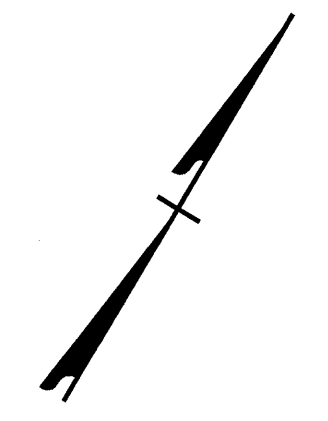
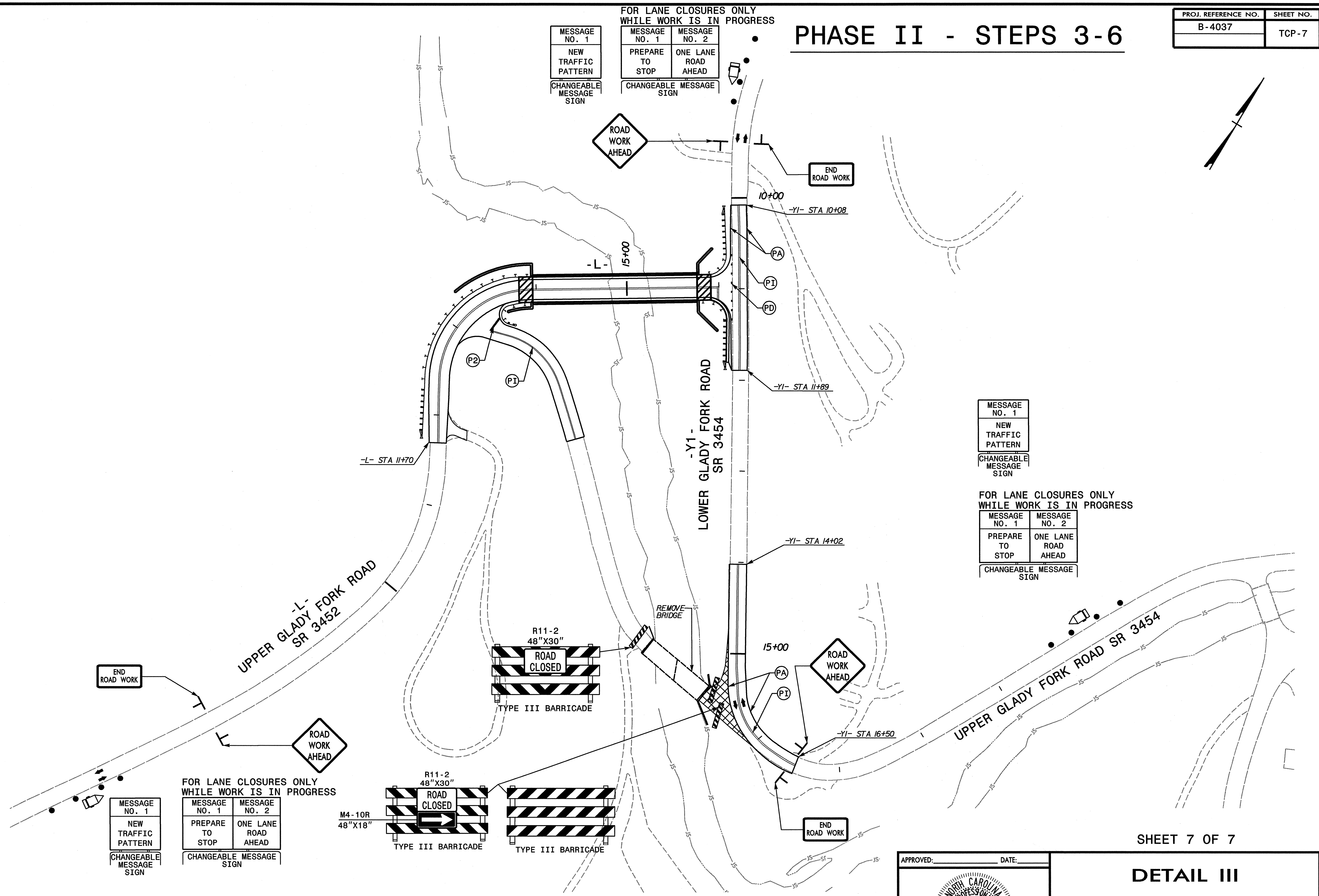
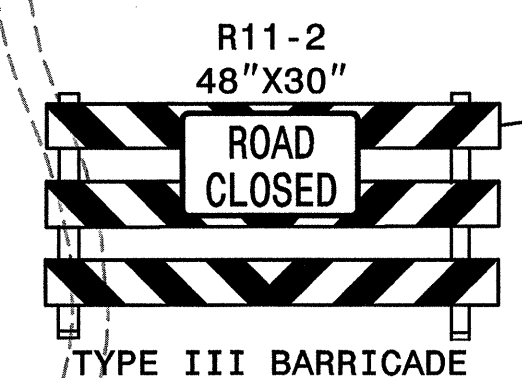
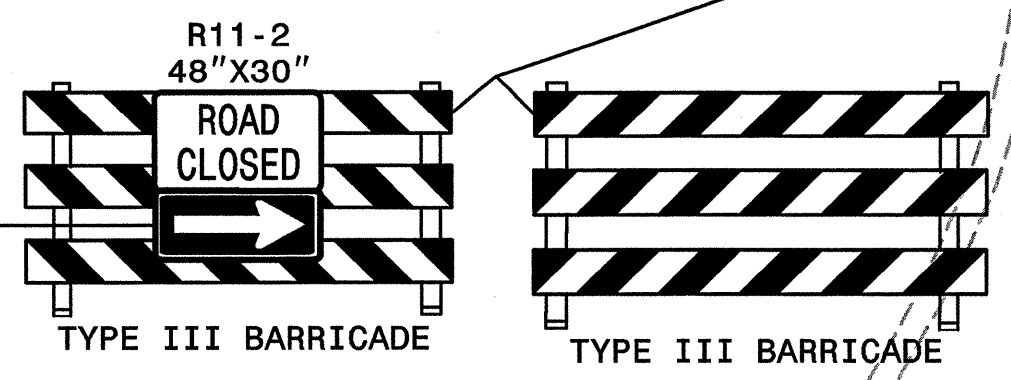
MESSAGE NO. 1
NEW TRAFFIC PATTERN
CHANGEABLE MESSAGE SIGN

FOR LANE CLOSURES ONLY WHILE WORK IS IN PROGRESS
MESSAGE NO. 1
MESSAGE NO. 2
PREPARE TO STOP
ONE LANE ROAD AHEAD
CHANGEABLE MESSAGE SIGN

MESSAGE NO. 1
NEW TRAFFIC PATTERN
CHANGEABLE MESSAGE SIGN

FOR LANE CLOSURES ONLY WHILE WORK IS IN PROGRESS
MESSAGE NO. 1
MESSAGE NO. 2
PREPARE TO STOP
ONE LANE ROAD AHEAD
CHANGEABLE MESSAGE SIGN

M4-10R
48"X18"



APPROVED: _____ DATE: _____

SEAL

DETAIL III

SCALE: 1" = 50'

DATE: FEB 2008

DWG. BY: DAS

DESIGN BY: JJP

REVIEWED BY: AAS

REVISIONS	

CADD FILE

4/28/2008 \$FILE\$

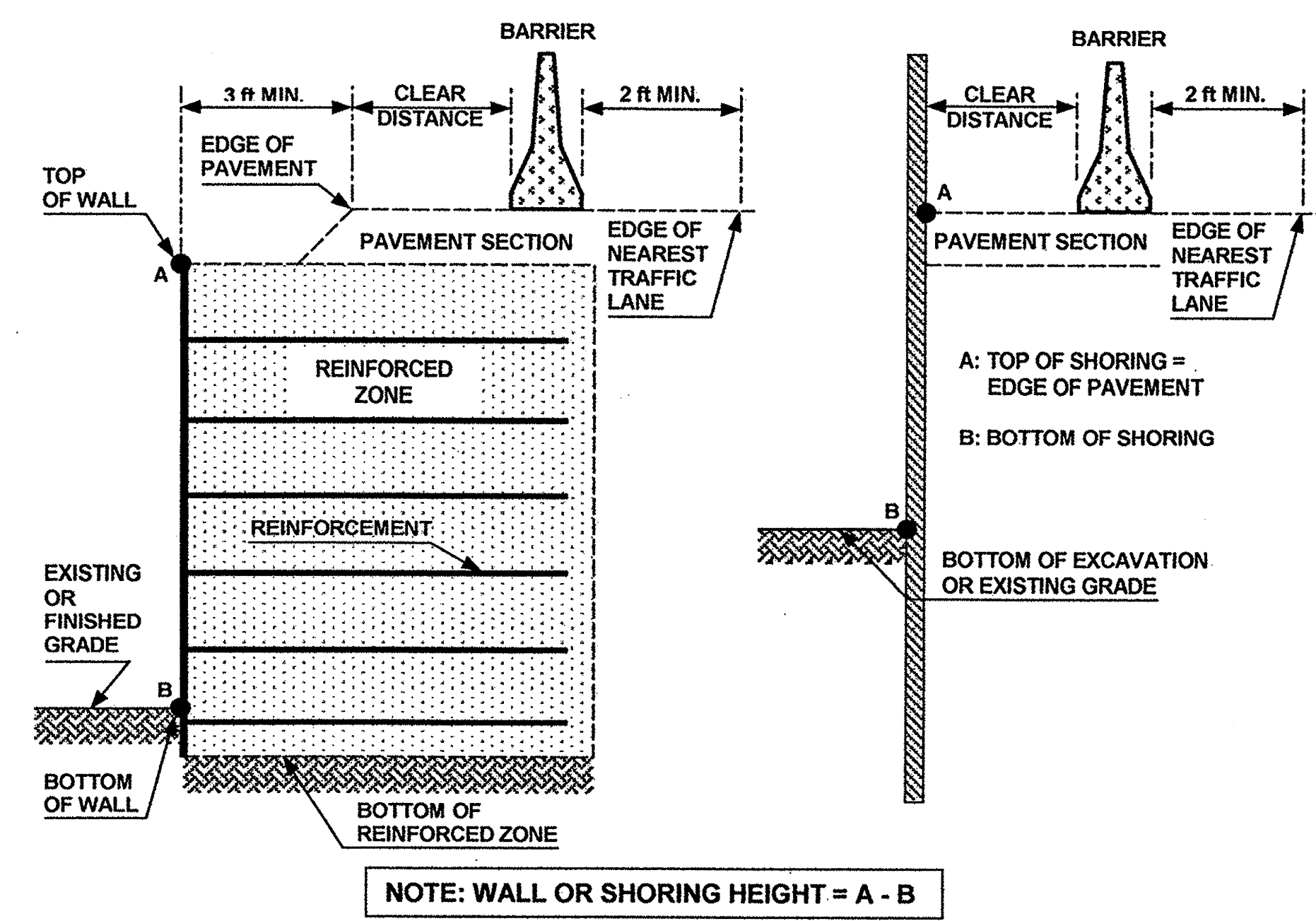


FIGURE A

NOTES

- REFER TO THE TRAFFIC CONTROL PLANS FOR SHORING LOCATIONS AND SOIL PARAMETERS.
- REFER TO THE "TEMPORARY SHORING" PROJECT SPECIAL PROVISION FOR MORE INFORMATION ABOUT TEMPORARY SHORING, MEASUREMENT AND PAYMENT.
- PROVIDE PORTABLE CONCRETE BARRIER TO PROTECT TEMPORARY SHORING IF SHORING IS LOCATED WITHIN THE CLEAR ZONE AS DEFINED IN THE AASHTO ROADSIDE DESIGN GUIDE.
- 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.
- 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.
- USE NCDOT PORTABLE CONCRETE BARRIER (PCB) IN ACCORDANCE WITH ROADWAY STANDARD DRAWING NO. 1170.01 AND SECTION 1170 OF THE STANDARD SPECIFICATIONS.
- USE OREGON TALL F-SHAPE CONCRETE BARRIER IN ACCORDANCE WITH DETAIL DRAWING AND SPECIAL PROVISION OBTAINED FROM: [HTTP://WWW.NCDOT.ORG/DOH/PRECONSTRUCT/WZTC/DESRES/ENGLISH/DESRESENG.HTML](http://www.ncdot.org/doh/preconstruct/wztc/desres/english/desreseng.html)
- 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.
- 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.
- 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

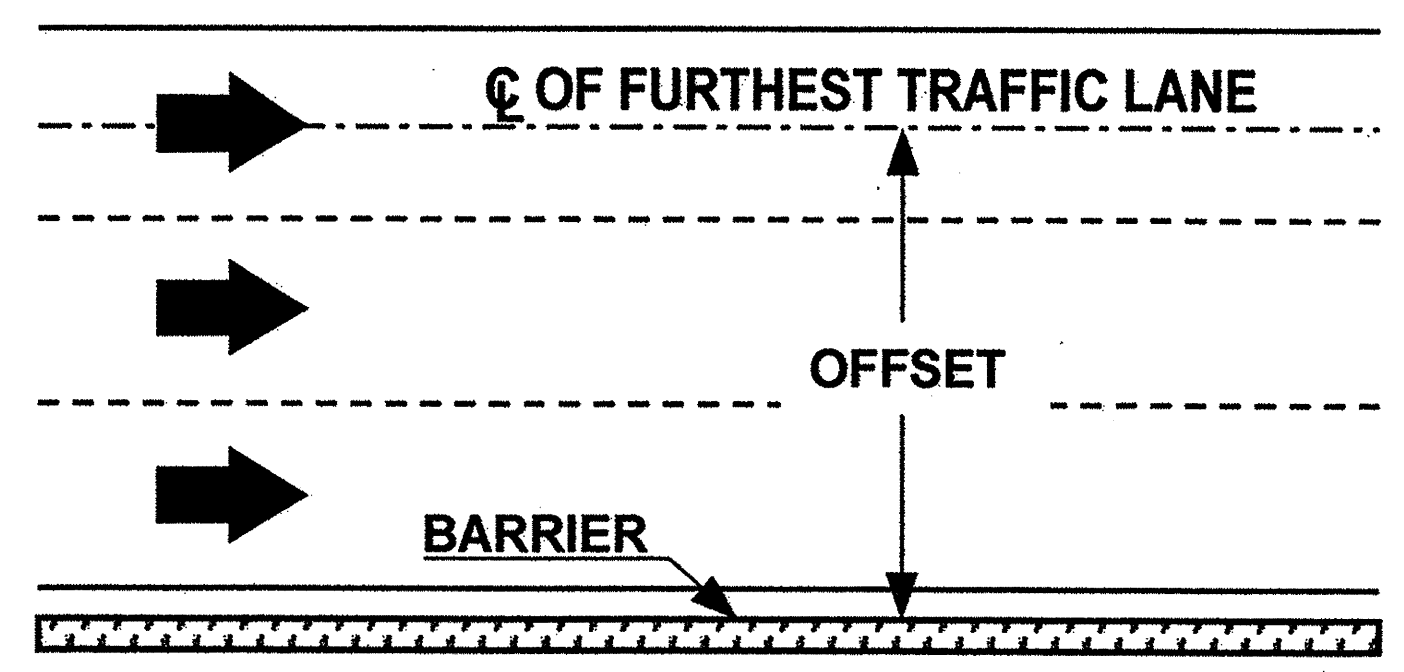


FIGURE B

APPROVED: <i>Joseph J. Shak</i>	DATE: 3/07	PORTABLE CONCRETE BARRIER AT TEMPORARY SHORING LOCATIONS		REVISIONS <table border="1"> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> </table>						
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22-MAR-2007 10:14
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jingarr@tt AT WZTCC22251