B-4013

TIP PROJECT:

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STATE PROJECT REFERENCE NO.	SHEET NO.
B-4013	TCP-1

PLAN FOR PROPOSED
TRAFFIC CONTROL, MARKING & DELINEATION

ASHE COUNTY

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
1101.04	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
1130.01	DRUM
1135.01	CONES
1145.01	BARRICADES - TYPE III
1150.01	FLAGGING DEVICES
1205.01	PAVEMENT MARKINGS - LINE TYPES & OFFSETS
1205.02	PAVEMENT MARKINGS - 2 LANE & MULTILANE ROADWAYS
1205.12	PAVEMENT MARKINGS - BRIDGES
1261.01	GUARDRAIL & BARRIER DELINEATOR SPACING
1261.02	GUARDRAIL & BARRIER DELINEATOR TYPES
1262.01	GUARDRAIL END DELINEATION

INDEX OF SHEETS

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

PAVEMENT MARKING SCHEDULE

SYMBOL	DESCRIPTION	PAY ITEM QUANTITY	TOTAL
	INTERMEDIATE MARKINGS REM. TAPE (4")		
RA	WHITE EDGELINE	1175 LF	1175 LF
	PAINT (4")		
PA	WHITE EDGELINE (2X)	3490 LF	
PI	YELLOW DOUBLE CENTER (2X)	600 LF	4090 LF
	PAINT (24")		
P4	WHITE STOPBAR (2X)	72 LF	72 LF
	FINAL MARKINGS PAINT (4")		
PA	WHITE EDGELINE (2X)	3500 LF	
PI	YELLOW DOUBLE CENTER (2X)	3500 LF	7000 LF

N.C.D.O.T. TRAFFIC CONTROL, MARKING & DELINEATION SECTION LIST OF CONTACTS

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JOSEPH ISHAK, P.E.	*TRAFFIC CONTROL PROJECT ENGINEER*
HABIB LAWANDOS	*TRAFFIC CONTROL PROJECT DESIGN ENGINEER*
JOE FUTRELL	*TRAFFIC CONTROL DESIGN ENGINEER*

APPROVED: 1-3-2007 *DATE:*

NORTH CAROLINA PROFESSIONAL SEAL 21116 ENGINEER BOB A. MAY

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C.L. MULLEN *DESIGN ENGINEER*

A.B. PRIDGEN *DESIGN TECHNICIAN*

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1/3/2007

PROJECT NOTES

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 STOP TRAFFIC FOR MORE THAN 15 MINUTES AS FOLLOWS:

ROAD NAME	OPERATION
1. SR 1320	TRAFFIC SHIFTS

LANE AND SHOULDER CLOSURE REQUIREMENTS

B) 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.

C) 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 1101.04 UNLESS THE AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

D) 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.

E) 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.

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

G) DO NOT PERFORM WORK INVOLVING HEAVY EQUIPMENT WITHIN 15 FT (5m) OF THE EDGE OF TRAVELWAY WHEN WORK IS BEING PERFORMED BEHIND A LANE CLOSURE ON THE OPPOSITE SIDE OF THE TRAVELWAY.

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

PAVEMENT EDGE DROP OFF REQUIREMENTS

I) 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.

J) 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

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

SIGNING

L) 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.

M) PROVIDE PERMANENT SIGNING.

N) PROVIDE DETOUR SIGNING WITHIN THE PROJECT LIMITS.

O) COVER OR REMOVE ALL DETOUR SIGNS WITHIN THE PROJECT LIMITS.

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

PROJECT NOTES

TRAFFIC BARRIER

Q) INSTALL WATER FILLED BARRIER ACCORDING TO THE TRAFFIC CONTROL PLANS A MAXIMUM OF TWO (2) WEEKS PRIOR TO BEGINNING WORK IN ANY LOCATION. ONCE WATER FILLED 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.

ONCE WATER FILLED BARRIER IS INSTALLED AT ANY LOCATION AND NO WORK IS PERFORMED BEHIND THE WATER FILLED BARRIER FOR A PERIOD LONGER THAN TWO (2) MONTHS, REMOVE/RESET WATER FILLED BARRIER AT NO COST TO THE DEPARTMENT UNLESS OTHERWISE STATED IN THE TRAFFIC CONTROL PLANS, BARRIER IS PROTECTING A HAZARD, OR AS DIRECTED BY THE ENGINEER.

R) INSTALL WATER FILLED BARRIER WITH THE TRAFFIC FLOW, BEGINNING WITH THE UPSTREAM SIDE OF TRAFFIC. REMOVE WATER FILLED 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 CLOSED THE SECTION OF THE ROADWAY UNTIL THE BARRIER CAN BE PLACED OR AFTER BARRIER IS REMOVED.

TRAFFIC CONTROL DEVICES

S) SPACE CHANNELIZING DEVICES IN WORK AREAS NO GREATER THAN TWICE THE POSTED SPEED LIMIT (MPH), EXCEPT 10 FT (3m) ON-CENTER IN RADII, AND 3 FT (1m) OFF THE EDGE OF AN OPEN TRAVELWAY, WHEN LANE CLOSURES ARE NOT IN EFFECT.

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.

PAVEMENT MARKINGS AND MARKERS

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

ROAD NAME	MARKING	MARKER
1. SR 1320	PAINT	NONE

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

ROAD NAME	MARKING	MARKER
1. SR 1320	PAINT/REM. TAPE	NONE
2. -L- BRIDGE DECK	REM. TAPE	NONE

W) PLACE AT LEAST TWO APPLICATIONS OF PAINT PAVEMENT MARKINGS ON THE FINAL WEARING SURFACE ON NEW ASPHALT PAVEMENT. PLACE ADDITIONAL APPLICATIONS OF PAINT UPON SUFFICIENT DRYING TIME, AS DETERMINED BY THE ENGINEER.

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) 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

AA) NOTIFY THE ENGINEER TWO (2) MONTHS BEFORE A TRAFFIC SIGNAL INSTALLATION BY OTHERS IS REQUIRED.

BB) SHIFT AND REVISE ALL SIGNAL HEADS AS SHOWN ON THE SIGNAL PLANS.

MISCELLANEOUS

CC) 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) 500 FT (150m) AND 1000 FT (300m) RESPECTIVELY IN ADVANCE OF THE UNEVEN AREAS. USE DRUMS TO DELINEATE THE EDGE OF ROADWAY ALONG UNPAVED AREAS.

LOCAL NOTES

1) FOR TEMPORARY SHORING, SEE TEMPORARY SHORING SPECIAL PROVISION.

TEMPORARY SHORING NO. 1:

DO NOT USE STANDARD SHORING FROM STA. 14+65, -L- 20' RIGHT, TO STA. 14+75 -L-, 20' RIGHT. CONTRACTOR DESIGN SHORING IS REQUIRED.

WHEN USING CONTRACTOR DESIGN SHORING FROM STA. 14+65 -L-, 20' RIGHT, TO STA. 14+75 -L-, 20' RIGHT, USE THE FOLLOWING SOIL PARAMETERS:

UNIT WEIGHT OF SOIL ABOVE WATER TABLE, y = 120 PCF
UNIT WEIGHT OF SOIL BELOW WATER TABLE, y = 60 PCF
FRICTION ANGLE, 0 = 30 DEGREES
COHESION, c = 0 PSF

DRIVEN PILING FOR TEMPORARY SHORING FROM STA. 14+65 -L-, 20' RT., TO STA. 14+75, 20' RIGHT, MAY NOT PENETRATE BELOW ELEVATION 2958' DUE TO THE PRESENCE OF AN OBSTRUCTION, VERY DENSE OR HARD SOIL, WEATHERED OR HARD ROCK.

FOR CONTRACTOR DESIGN SHORING, SURVEY THE SHORING LOCATION TO DRIVEN PILING FOR TEMPORARY SHORING FROM STA. 14+65 -L-, 20' RIGHT, DETERMINE EXISTING LOCATIONS AND ACTUAL DESIGN HEIGHTS BEFORE BEGINNING DESIGN.

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

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APPROVED: [signature] DATE: 1-16-07

SEAL
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PROJECT NOTES

SCALE:	NONE
DATE:	10/06
DWG. BY:	ABP
DESIGN BY:	CLM
REVIEWED BY:	BAM

DIVISION OF HIGHWAYS TRAFFIC ENGINEERING BRANCH STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION TRAFFIC CONTROL UNIT

REVISIONS

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1/16/2007

PROJ. REFERENCE NO.	SHEET NO.
B-4013	TCP-3

PHASE I

STEP 1. INSTALL WORK ZONE ADVANCED WARNING SIGNS ALONG SR 1320 (ROARING FORK RD.) (SEE TCP-4 AND TCP-7).

STEP 2. USING RSD 1101.02, SHT. 1 OF 9, CONSTRUCT TEMPORARY WIDENING UP TO THE EXISTING PAVEMENT ELEVATION ALONG THE RIGHT SIDE OF SR 1320 AT THE FOLLOWING STATIONS (SEE TCP-4, DETAIL 'A'):

-L- STA. 9+50+/- TO -L- STA. 13+90+/-

USING RSD 1101.02, SHT. 1 OF 9, BEGIN CLEARING AND GRUBBING AND GRADING OF PROPOSED -L- AS MUCH AS POSSIBLE (SEE TCP-4).

BEGIN ANY PROPOSED -L- STRUCTURE WORK THAT DOES NOT CONFLICT WITH EXISTING TRAFFIC PATTERN.

INSTALL TEMPORARY SIGNAL #1 ACCORDING TO THE SIGNAL PLANS. INSTALL/COVER THE ADVANCE TEMPORARY SIGNAL SIGNING (SEE TCP-4).

MAINTAIN ACCESS TO EXISTING DRIVEWAYS AT ALL TIMES DURING CONSTRUCTION.

PERFORM THE FOLLOWING WORK IN STEP 3 AND STEP 4 IN A CONTINUOUS MANNER UNTIL COMPLETION:

STEP 3. USING RSD 1101.02, SHT. 1 OF 9, REMOVE EXISTING MARKINGS AND PLACE TEMPORARY MARKINGS ON SR 1320 AS MUCH AS POSSIBLE FOR THE TEMPORARY ONE-LANE, TWO-WAY OPERATION (SEE TCP-4).

STEP 4. USING RSD 1101.02, SHT. 1 OF 9, SHIFT SR 1320 TRAFFIC TO THE TEMPORARY ONE-LANE, TWO-WAY PATTERN. PLACE REMAINING MARKINGS AND SIMULTANEOUSLY ACTIVATE TEMPORARY SIGNAL #1 AND UNCOVER ADVANCE TEMPORARY SIGNAL SIGNING (SEE TCP-4).

PLACE DRUMS ON SR 1320 FOR THE TEMPORARY ONE-LANE, TWO-WAY TRAFFIC PATTERN UNTIL WATER FILLED BARRIER CAN BE INSTALLED.

STEP 5. USING TEMPORARY SIGNAL OPERATION AND FLAGGERS AS NECESSARY, INSTALL WATER FILLED BARRIER ON SR 1320 AT THE FOLLOWING STATIONS (SEE TCP-4):

-L- STA. 12+50+/- TO -L- STA. 15+00+/-

NOTE: ADDITIONAL SHY DISTANCE (OFFSET TO TRAFFIC) MAY BE REQUIRED FOR WATER FILLED BARRIER, AS DETERMINED BY THE ENGINEER, TO ACCOMODATE TURNING MOVEMENTS FOR TRUCKS OR BUSES AT THE IMMEDIATE SOUTH END OF THE EXISTING SR 1320 BRIDGE.

STEP 6. BEHIND BARRIER, INSTALL TEMPORARY SHORING ALONG THE LEFT SIDE OF EXISTING SR 1320 AT THE FOLLOWING STATIONS (SEE LOCAL NOTE #1, AND TCP-4):

-L- STA. 14+65+/- TO -L- STA. 14+75+/-

COMPLETE PROPOSED -L- STRUCTURE, GRADING, AND APPROACHES AS MUCH AS POSSIBLE UP TO BUT NOT INCLUDING THE FINAL LAYER AT THE FOLLOWING STATIONS (SEE TCP-4):

-L- STA. 12+50+/- TO -L- STA. 19+25+/-

MAINTAIN ACCESS TO EXISTING DRIVEWAYS AT ALL TIMES DURING CONSTRUCTION.

PHASE II

STEP 1. INSTALL AND COVER TEMPORARY SIGNAL #2 ACCORDING TO THE SIGNAL PLANS (SEE TCP-5). INSTALL PROPOSED ATTENUATOR AND GUARDRAIL ON LEFT SIDE OF -L- STRUCTURE.

PERFORM THE FOLLOWING WORK IN STEP 2 THRU STEP 5 IN A CONTINUOUS MANNER UNTIL COMPLETION:

STEP 2. PLACE TEMPORARY SIGNAL #1 IN FLASH MODE. USING RSD 1101.02, SHT. 1 OF 9, SHIFT SR 1320 TRAFFIC ONTO RIGHT SIDE TEMPORARY WIDENING AT THE FOLLOWING STATIONS (SEE TCP-5, DETAIL 'B'):

-L- STA. 9+50+/- TO -L- STA. 13+90+/-

REMOVE PHASE I WATER FILLED BARRIER FROM THE FOLLOWING STATIONS AND REPLACE WITH DRUMS (SEE TCP-5, DETAIL 'B'):

-L- STA. 12+50+/- TO -L- STA. 13+90+/-

STEP 3. USING RSD 1101.02, SHT. 1 OF 9, CONSTRUCT -L- LEFT SIDE TIE-IN UP TO BUT NOT INCLUDING THE FINAL LAYER AT THE FOLLOWING STATIONS (SEE TCP-5, DETAIL 'B'):

-L- STA. 10+50+/- TO -L- STA. 13+00+/-

REMOVE TEMPORARY SIGNAL #1 AND ADJUST ADVANCE SIGNAL SIGNING FOR TEMPORARY SIGNAL #2 OPERATION (SEE TCP-5).

PLACE PAVEMENT MARKINGS AS MUCH AS POSSIBLE FOR THE TEMPORARY ONE-LANE, TWO-WAY TRAFFIC PATTERN (SEE TCP-5).

MAINTAIN ACCESS TO EXISTING DRIVEWAYS AT ALL TIMES DURING CONSTRUCTION.

STEP 4. USING RSD 1101.02, SHT. 1 OF 9, SHIFT SR 1320 TRAFFIC TO THE TEMPORARY ONE-LANE, TWO-WAY PATTERN (SEE TCP-5). ACTIVATE TEMPORARY SIGNAL #2 (SEE SIGNAL PLANS).

INSTALL/RESET WATER FILLED BARRIER AT THE FOLLOWING STATIONS (SEE TCP-5):

-L- STA. 11+20+/- TO -L- STA. 15+00+/-

STEP 5. OPEN SR 1320 TRAFFIC TO THE TEMPORARY ONE-LANE, TWO-WAY SIGNALIZED PATTERN (SEE TCP-5).

STEP 6. USING RSD 1101.02, SHT. 1 OF 9, COMPLETE -L- RIGHT SIDE CONSTRUCTION UP TO BUT NOT INCLUDING THE FINAL LAYER AT THE FOLLOWING STATIONS (SEE TCP-5):

-L- STA. 10+50+/- TO -L- STA. 13+00+/-
-L- STA. 15+00+/- TO -L- STA. 19+25+/-

REMOVE TEMPORARY SHORING INSTALLED IN PHASE I, STEP 5.

CONSTRUCT PROPOSED DRIVEWAYS AND REMOVE EXISTING SR 1320 STRUCTURE. INSTALL PROPOSED ATTENUATOR AND GUARDRAIL ON RIGHT SIDE OF -L- STRUCTURE (SEE TCP-5).

MAINTAIN ACCESS TO EXISTING DRIVEWAYS AT ALL TIMES DURING CONSTRUCTION.

PHASE III

PERFORM THE FOLLOWING WORK IN STEP 1 AND STEP 2 IN A CONTINUOUS MANNER UNTIL COMPLETION:

STEP 1. PLACE TEMPORARY SIGNAL #2 IN FLASH MODE. USING RSD 1101.02, SHT. 1 OF 9, REMOVE WATER FILLED BARRIER AND REPLACE WITH DRUMS. PLACE PAVEMENT MARKING YELLOW DOUBLE CENTERLINE AND RIGHT SIDE WHITE EDGELINE AS MUCH AS POSSIBLE ALONG -L- FOR FINAL TWO-LANE, TWO-WAY TRAFFIC PATTERN (SEE TCP-6).

STEP 2. USING RSD 1101.02, SHT. 1 OF 9, OPEN -L- (SR 1320) TO THE FINAL TWO-LANE, TWO-WAY PATTERN AND PLACE REMAINING PAVEMENT MARKINGS (SEE TCP-6). REMOVE TEMPORARY SIGNAL #2 AND SIGNAL SIGNING. MAINTAIN ADVANCE WARNING SIGNS.

STEP 3. USING RSD 1101.02, SHT. 1 OF 9, PLACE FINAL LAYER OF SURFACE COURSE AND FINAL PAVEMENT MARKINGS ON -L- (SEE TCP-6).

REMOVE ALL SIGNING AND TRAFFIC CONTROL DEVICES FROM SR 1320.

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APPROVED: Bob A. May DATE: 11/6/06

SEAL — NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 21116 BOB A. MAY

PHASING

SCALE:	NONE
DATE:	10/06
DWG. BY:	ABP
DESIGN BY:	CLM
REVIEWED BY:	BAM

DIVISION OF HIGHWAYS · TRAFFIC ENGINEERING BRANCH · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · TRAFFIC CONTROL UNIT

REVISIONS

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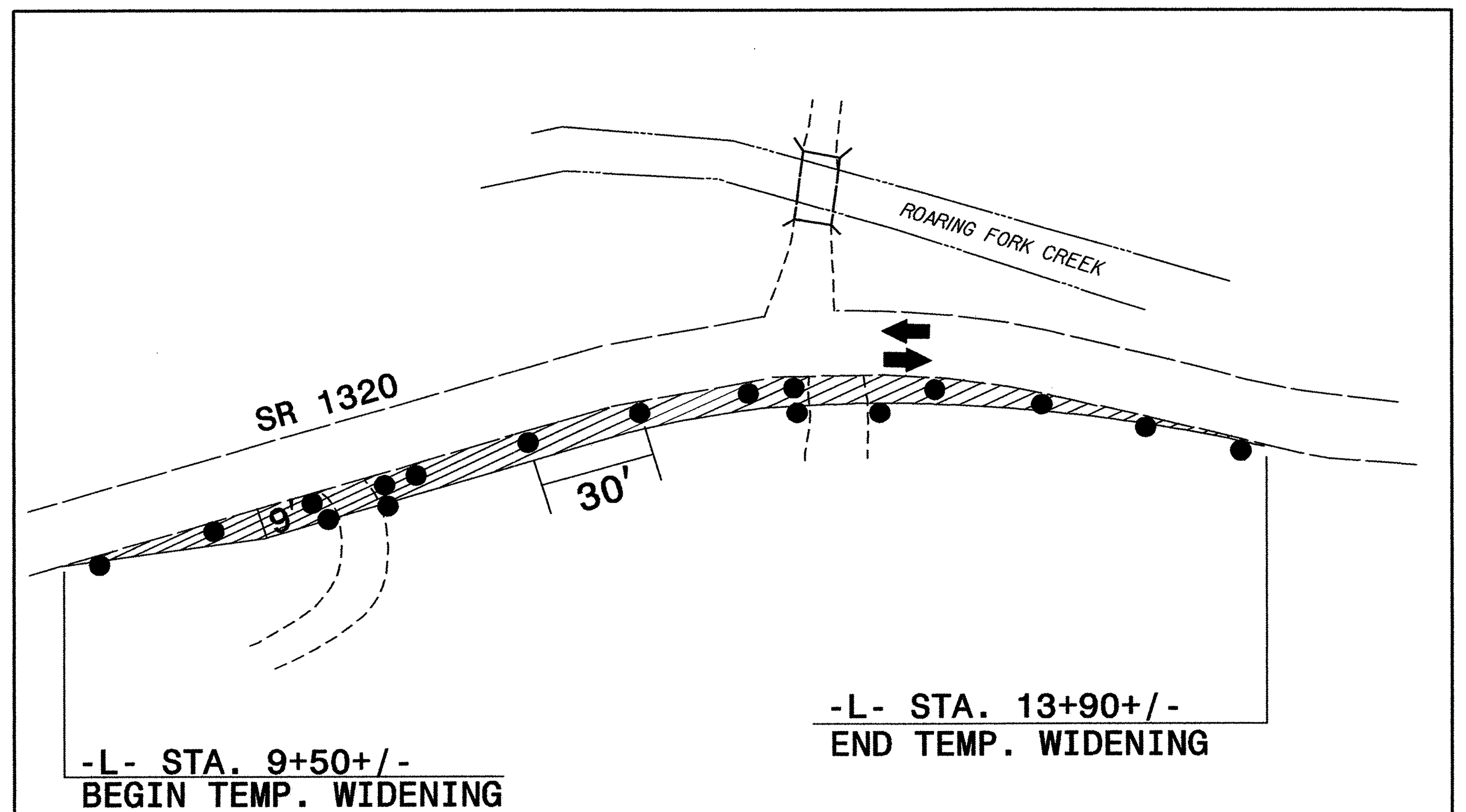
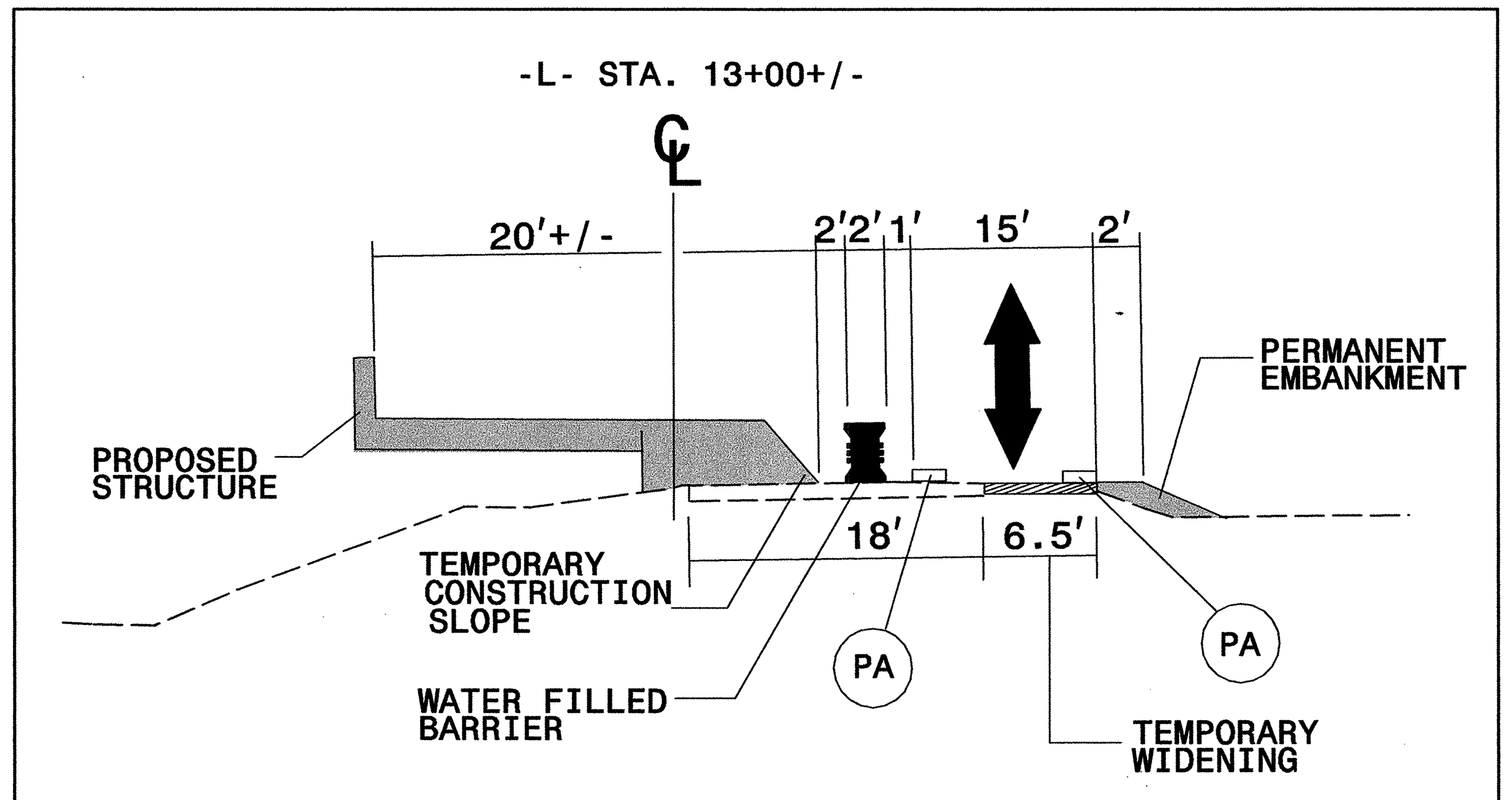
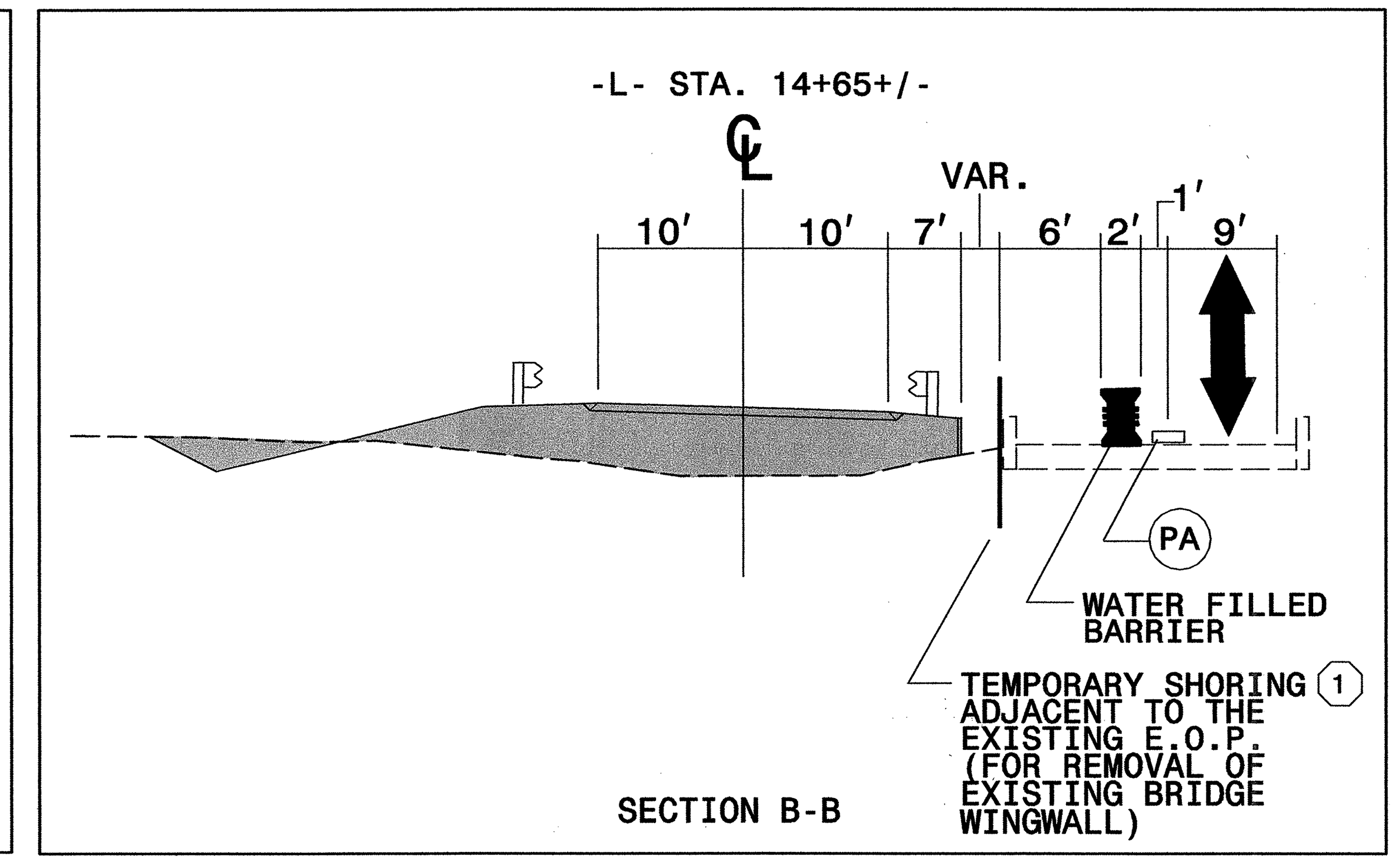
PROJ. REFERENCE NO.	SHEET NO.
B-4013	TCP-4



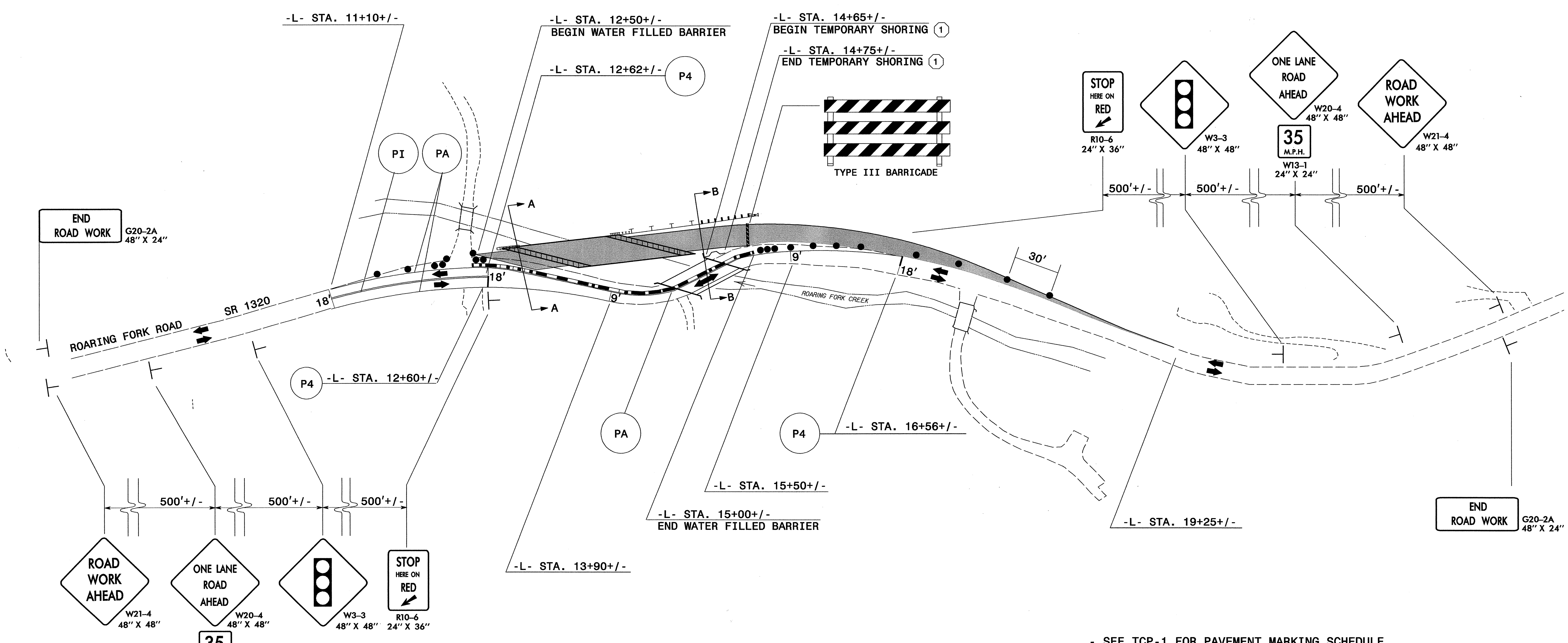
DETAIL 'A'



SECTION A-A



SECTION B-B



35 M.P.H.
W13-1
24" X 24"

LEGEND

- PROP. CONSTRUCTION
- TEMP. WIDENING
- ONGOING CONST.
- PROP. WEDGE/WIDEN

FOR TEMPORARY SHORING, THE FOLLOWING SOIL PARAMETERS SHALL BE USED:

UNIT WT. OF SOIL ABOVE WATER TABLE, γ = 120 pcf
UNIT WT. OF SOIL BELOW WATER TABLE, γ' = 60 pcf
FRICTION ANGLE, ϕ = 30 °
COHESION, c = 0 psf

(1) QUANTITY = 100 sq.ft.

(SEE NOTE(S) TCP-2 LOCAL NOTES

- SEE TCP-1 FOR PAVEMENT MARKING SCHEDULE
- SEE SIGNAL PLANS FOR TEMPORARY SIGNAL #1 DESIGN

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CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

APPROVED: [signature] DATE: 11/6/06

SEAL — NORTH CAROLINA PROFESSIONAL SEAL 21116 ENGINEER BOB A. MAY

PHASE I

SCALE:	NONE
DATE:	10/06
DWG. BY:	ABP
DESIGN BY:	CLM
REVIEWED BY:	BAM

DIVISION OF HIGHWAYS — TRAFFIC ENGINEERING BRANCH — STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION — TRAFFIC CONTROL UNIT

REVISIONS	
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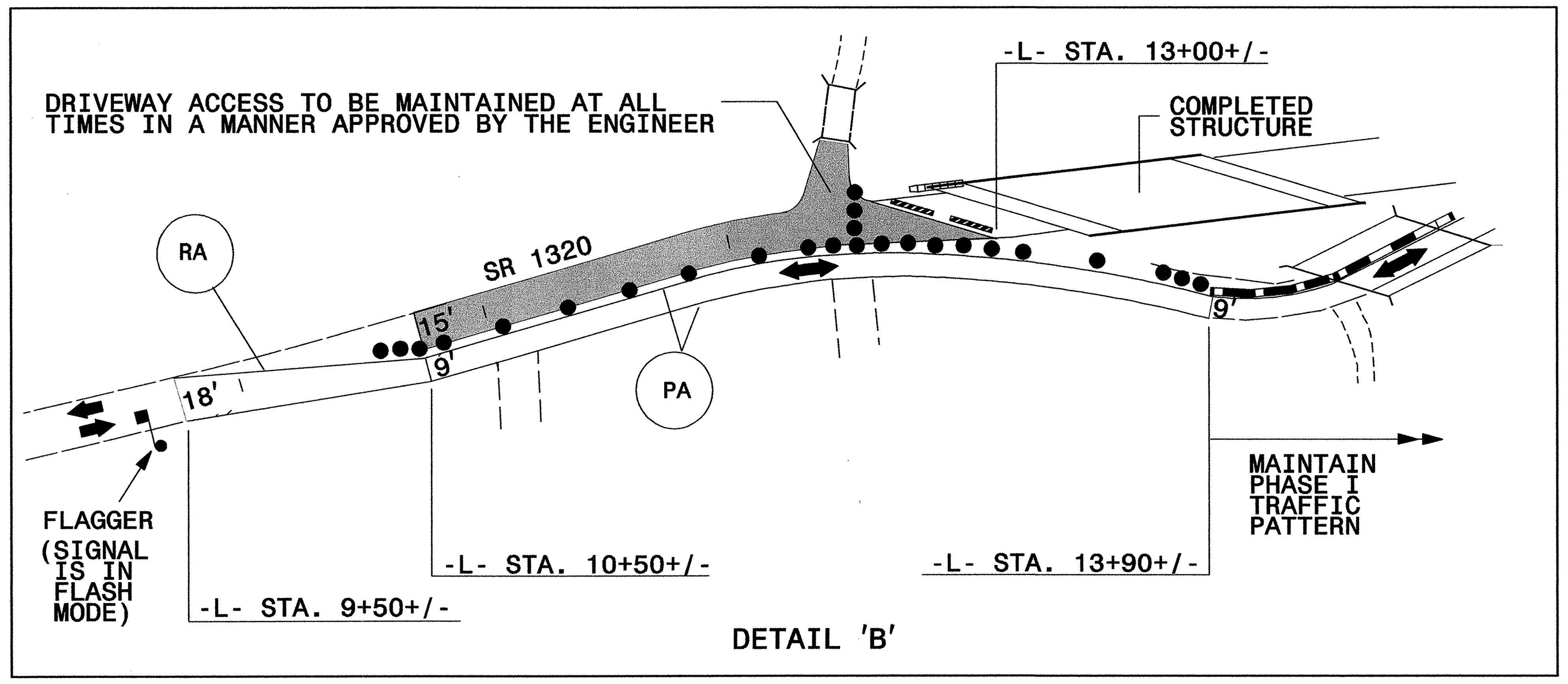
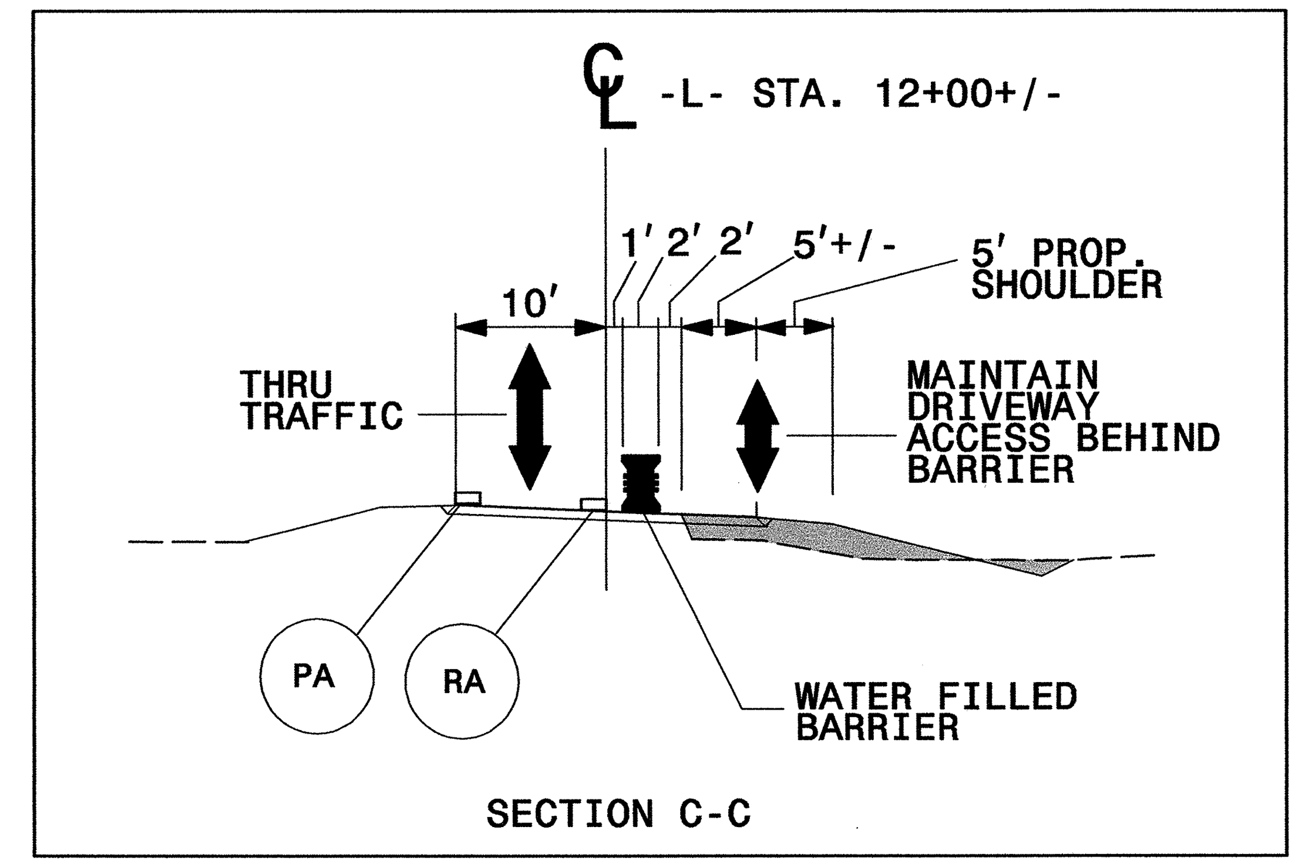
11/6/2006

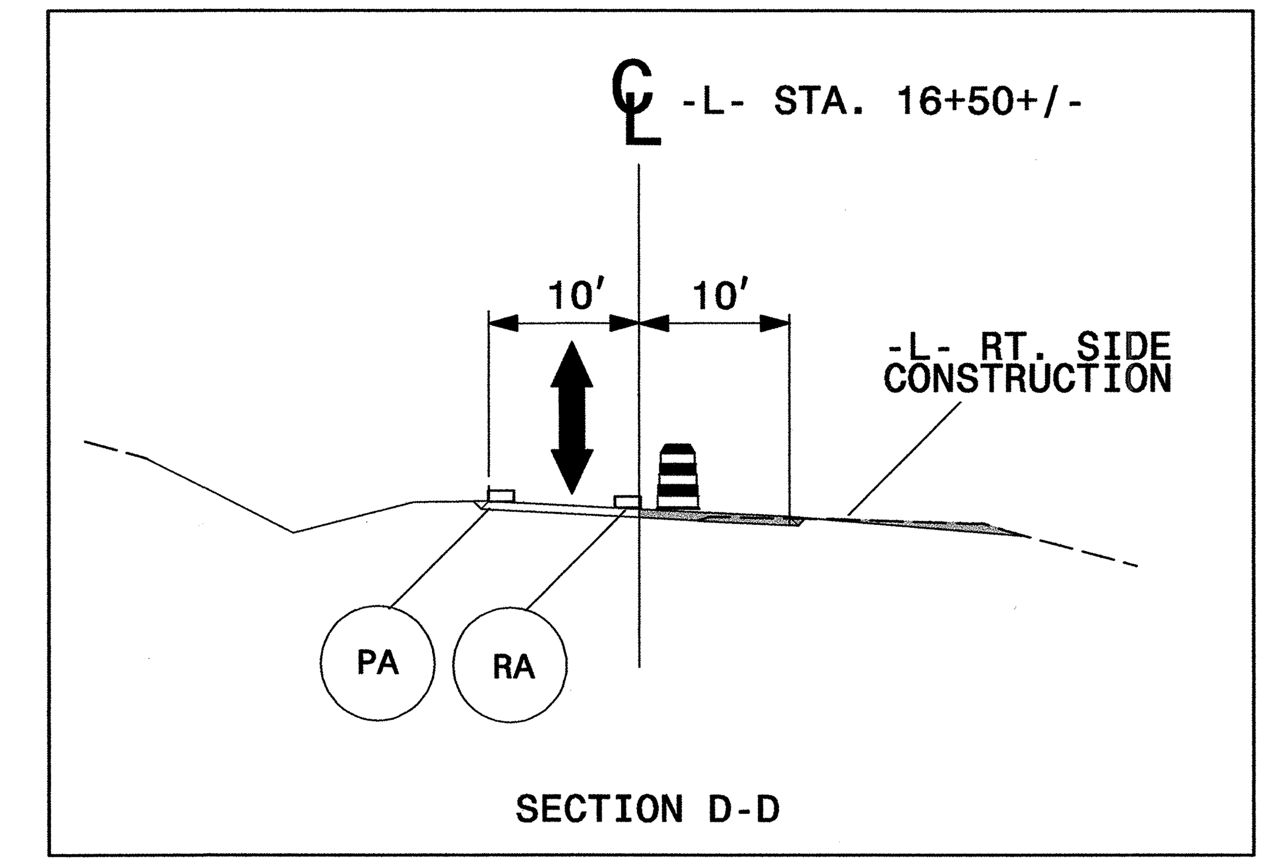
PROJ. REFERENCE NO.	SHEET NO.
B-4013	TCP-5



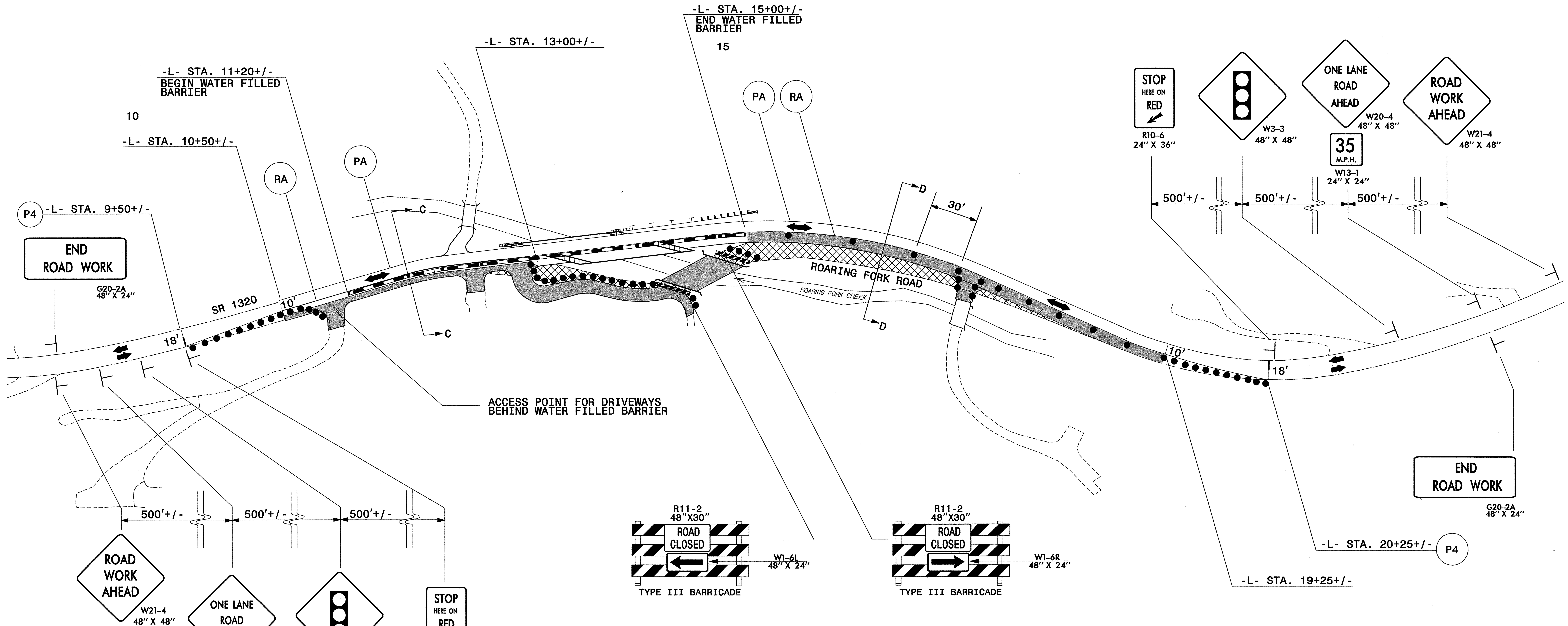
DETAIL 'B'



SECTION C-C



SECTION D-D



LEGEND

- PROP. CONSTRUCTION
- TEMP. WIDENING
- ONGOING CONST.
- PROP. WEDGE/WIDEN

- SEE TCP-1 FOR PAVEMENT MARKING SCHEDULE
- SEE SIGNAL PLANS FOR TEMPORARY SIGNAL #2 DESIGN

WETHERILL ENGINEERING
559 Jones Franklin Rd. Suite 164
Raleigh, N.C. 27606
Bus: 919 851 8077
Fax: 919 851 8107
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

APPROVED: [signature] DATE: 10/5/2006

SEAL — NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 21116 BOB A. MAY

PHASE II

SCALE:	NONE
DATE:	10/06
DWG. BY:	ABP
DESIGN BY:	CLM
REVIEWED BY:	BAM

DIVISION OF HIGHWAYS — TRAFFIC ENGINEERING BRANCH — STATE OF NORTH CAROLINA — DEPARTMENT OF TRANSPORTATION — TRAFFIC CONTROL UNIT

REVISIONS

CADD FILE

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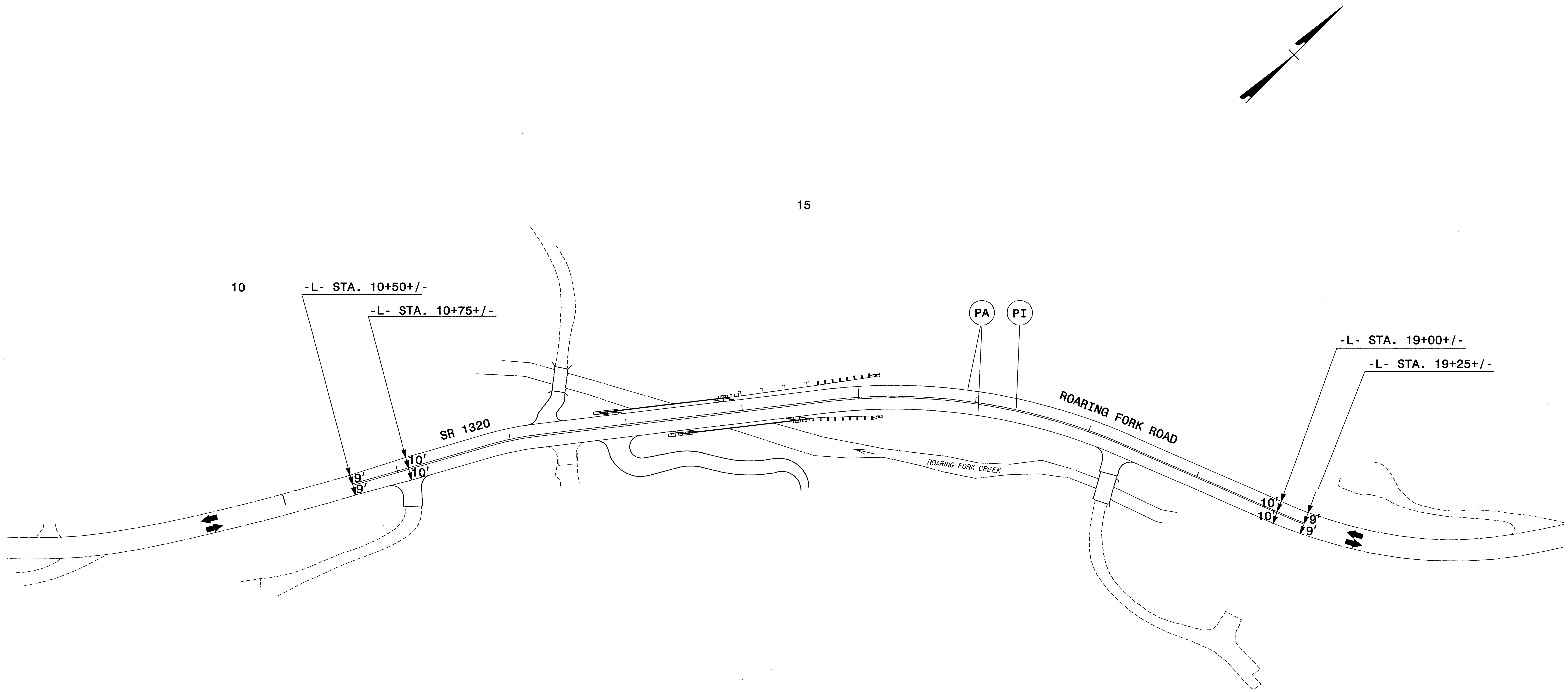
10/5/2006



- SEE TCP-1 FOR PAVEMENT MARKING SCHEDULE
- REFER TO ROADWAY STANDARD DRAWING NO'S 1205.01, 1205.02, 1205.12, 1261.01, 1261.02, AND 1262.01

WETHERILL ENGINEERING

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TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

APPROVED: Bob A. May DATE: 10/5/2006

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 21116 ENGINEER BOB A. MAY

PHASE III

SCALE:	NONE
DATE:	10/06
DWG. BY:	ABP
DESIGN BY:	CLM
REVIEWED BY:	BAM

DIVISION OF HIGHWAYS · TRAFFIC ENGINEERING BRANCH · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · TRAFFIC CONTROL UNIT

REVISIONS

CADD FILE

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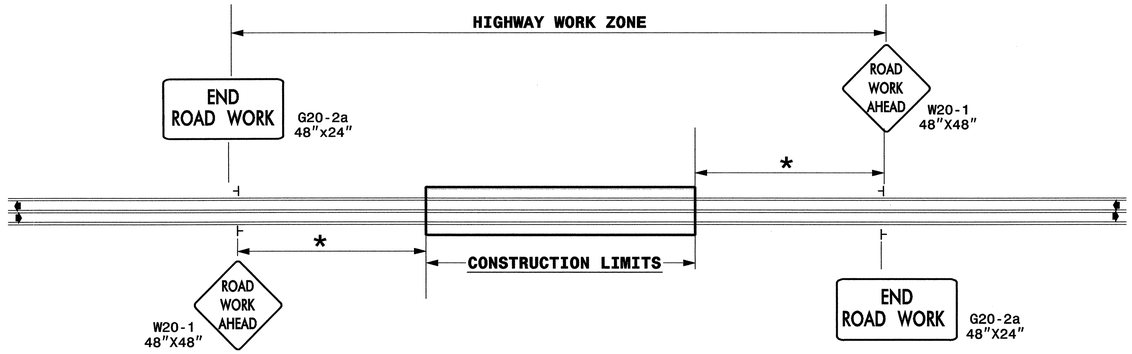
10/5/2006

PROJ. REFERENCE NO.	SHEET NO.
B-4013	TCP-7

TWO-WAY UNDIVIDED ** (L-LINES)



* SEE TCP-4 & TCP-5 FOR PLACEMENT OF SIGNS

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

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

DETAIL DRAWING FOR TWO-WAY UNDIVIDED WORK ZONE WARNING SIGNS

SHEET 1 OF 1

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CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

APPROVED: Bob A May DATE: 10/5/2006

SEAL — NORTH CAROLINA PROFESSIONAL SEAL 21116 ENGINEER

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

SCALE:	NONE
DATE:	10/06
DWG. BY:	ABP
DESIGN BY:	CLM
REVIEWED BY:	BAM

REVISIONS	
7-98	10/01
10-98	03/04
01/01	11/04
CADD FILE	

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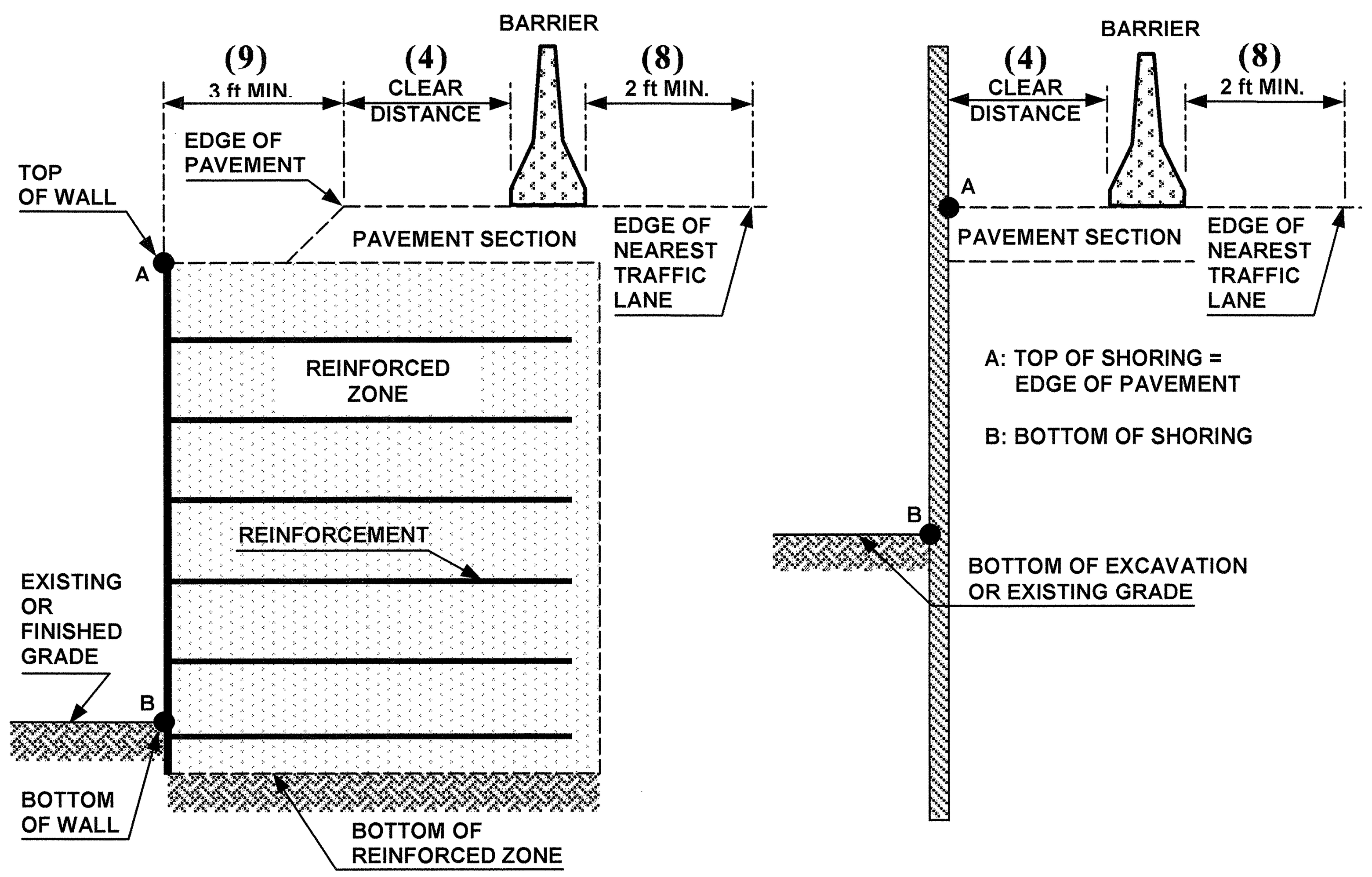
10/5/2006

PROJ. REFERENCE NO.	SHEET NO.
B-4013	TCP-8



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.

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 AS SHOWN IN FIGURE A FOR TEMPORARY MSE WALL AND NON-ANCHORED TEMPORARY SHORING.

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.

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: HTTP://WWW.NCDOT.ORG/DOH/PRECONSTRUCT/WZTC/DESRES/ENGLISH/DESRESENG.HTML

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 AND WET OR DRY PAVEMENT.

MINIMUM REQUIRED CLEAR DISTANCE, inches

Barrier Type	Pavement Type	Offset (4) 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 (4)	24 for All Design Speeds					
Anchored PCB or Oregon Barrier	Concrete (including bridge approach slabs)	All Offsets (4)	12 for All Design Speeds					

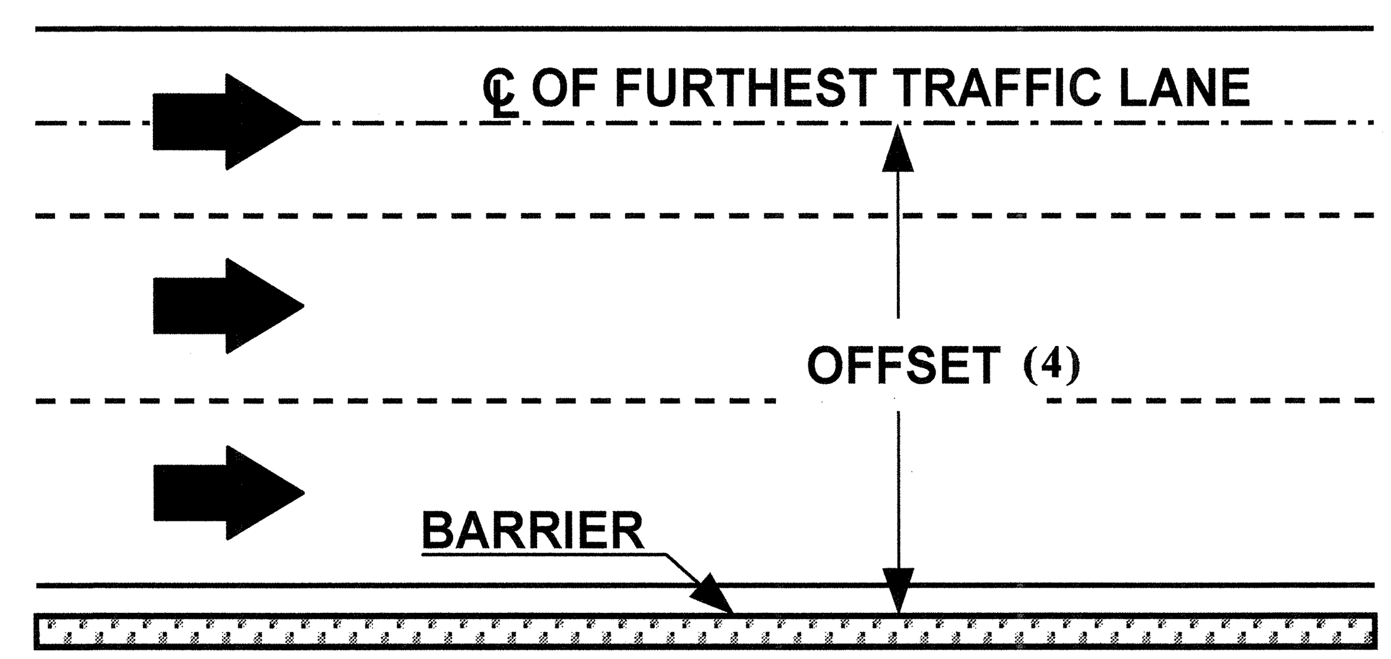


FIGURE B

APPROVED:________ DATE:________

SEAL

PORTABLE CONCRETE BARRIER AT TEMPORARY SHORING LOCATIONS

SCALE:	NONE
DATE:	1/07
DWG. BY:	JI
DESIGN BY:	JI
REVIEWED BY:	JI

REVISIONS

CADD FILE