B-4097

TIP PROJECT:

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STATE PROJECT REFERENCE NO.	SHEET NO.
B-4097	TCP-1

PLAN FOR PROPOSED
TRAFFIC CONTROL, MARKING & DELINEATION
DAVIDSON COUNTY

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS APPEAR 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
1101.05	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	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

SHEET NO.	TITLE
TCP-1	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, LEGEND, INDEX OF SHEETS, TEMPORARY SHORING DATA, AND TEMPORARY AND FINAL PAVEMENT MARKING SCHEDULES
TCP-2	PROJECT NOTES AND PHASING
TCP-3	PHASE I AND II DETAILS
TCP-4	DETAIL DRAWING FOR TWO-WAY UNDIVIDED AND URBAN FREEWAYS ADVANCED WORK ZONE WARNING SIGNS
TCP-5	PORTABLE CONCRETE BARRIER AT TEMPORARY SHORING LOCATIONS

LEGEND

GENERAL

- DIRECTION OF TRAFFIC FLOW
- NORTH ARROW
- PROPOSED PVMT. -------- EXIST. PVMT.
- WORK AREA

TRAFFIC CONTROL DEVICES

- TYPE III BARRICADE
- CONE
- DRUM
- STATIONARY SIGN
- PORTABLE SIGN
- FLAGGER

TEMPORARY AND FINAL PAVEMENT MARKING SCHEDULES

SYMBOL	DESCRIPTION
	FINAL PAVEMENT MARKINGS
	COLD APPLIED PLASTIC (4") Type2 - Permanent High Performance
CA	WHITE EDGELINE
CI	YELLOW DOUBLE CENTER
	THERMOPLASTIC(4", 90 MILS)
TA	WHITE EDGELINE
	THERMOPLASTIC(4", 120 MILS)
TI	YELLOW DOUBLE CENTER
	TEMPORARY PAVEMENT MARKINGS
	PAINT(4")
PA	WHITE EDGELINE (2X)
PI	YELLOW DOUBLE CENTER (2X)

NOTE: THE TEMPORARY SHORING NOTES SHOWN ON THIS SHEET WERE PROVIDED THROUGH A SEALED DOCUMENT FROM THE GEOTECHNICAL ENGINEERING UNIT. THE DOCUMENT WAS SUBMITTED TO THE WZTCU ON AUGUST 14, 2008 AND SEALED BY A PROFESSIONAL ENGINEER, JOHN S. W. FARGHER, LICENSE #23480.

NOTE: ALL DIMENSIONS AND STATIONS +/-

TEMPORARY SHORING DATA

Temporary Shoring No. 1 (SEE SHEET TCP-3)

FOR TEMPORARY SHORING, SEE TEMPORARY SHORING SPECIAL PROVISION.

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 14+06.00 -L-, 25 FT. RIGHT OF CENTERLINE, TO STATION 14+26.00 -L-, 25 FT. RIGHT OF CENTERLINE, 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 14+06.00 -L-, 25 FT. RIGHT OF CENTERLINE, TO STATION 14+26.00 -L-, 25 FT. RIGHT OF CENTERLINE. 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 (SEE SHEET TCP-3)

FOR TEMPORARY SHORING, SEE TEMPORARY SHORING SPECIAL PROVISION.

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 16+00.00 -L-, 25 FT. RIGHT OF CENTERLINE, TO STATION 16+20.00 -L-, 25 FT. RIGHT OF CENTERLINE, 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 16+00.00 -L-, 25 FT. RIGHT OF CENTERLINE, TO STATION 16+20.00 -L-, 25 FT. RIGHT OF CENTERLINE. 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: _____

SEAL

J. W. Woolard

NORTH CAROLINA PROFESSIONAL SEAL 19862 ENGINEER J. W. WOOLARD

11/24/08

PLAN PREPARED BY: N.C.D.O.T. WORK ZONE TRAFFIC CONTROL UNIT

J. S. BOURNE, P.E. TRAFFIC CONTROL ENGINEER

G. L. GETTIER, P.E. TRAFFIC CONTROL PROJECT ENGINEER

J. W. WOOLARD, P.E. TRAFFIC CONTROL PROJECT DESIGN ENGINEER

D. A. HAYES, E.I. TRAFFIC CONTROL DESIGN ENGINEER / TECHNICIAN

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PROJECT 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.

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.

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.

E) DO NOT INSTALL MORE THAN ½ MILE OF LANE CLOSURE ON -L- SR 1147 MEASURED FROM THE BEGINNING OF THE MERGE TAPER TO THE END OF THE LANE CLOSURE.

F) DO NOT INSTALL MORE THAN ONE LANE CLOSURE, IN ANY ONE DIRECTION, ON -L- SR 1147.

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

PAVEMENT EDGE DROP OFF REQUIREMENTS

H) 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 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.

I) 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 OF THE UNEVEN AREA.

TRAFFIC PATTERN ALTERATIONS

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

SIGNING

K) 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.

L) PROVIDE PERMANENT SIGNING.

M) PROVIDE DETOUR SIGNING WITHIN AND OFF THE PROJECT LIMITS.

N) THE CONTRACTOR WILL COVER OR REMOVE ALL DETOUR SIGNS WITHIN AND OFF THE PROJECT LIMITS WHEN A DETOUR IS NOT IN OPERATION.

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

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 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.

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
1. SR 1147 (OLD SALISBURY RD)	THERMOPLASTIC	NONE
2. SR 1147 (BRIDGE DECK)	COLD APPLIED LONG LIFE TAPE	NONE

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

ROAD NAME	MARKING	MARKER
1. SR 1147 (OLD SALISBURY RD)	PAINT	NONE

T) 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.

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

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

PHASING

PHASE I

STEP 1) INSTALL ADVANCE WORK ZONE WARNING SIGNS NO MORE THAN THREE (3) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION (SEE TCP-4).

STEP 2) USING ROADWAY STANDARD DRAWING (RSD) 1101.02, SHEET 1 OF 9 AS NEEDED, CONSTRUCT -DETOUR- FROM STA. 10+50 -DETOUR- TO STA 19+58 -DETOUR- UP TO AND INCLUDING THE FINAL LIFT OF SURFACE COURSE AND BRIDGE STRUCTURE. AWAY FROM TRAFFIC INSTALL TEMPORARY PAVEMENT MARKINGS FROM STA. 12+00 -DETOUR- TO STA. 18+00 -DETOUR- (SEE TCP-3).

PHASE II

STEP 1) USING RSD 1101.02, SHEET 1 OF 9 AND 1101.03, SHEET 3 OF 9, REMOVE CONFLICTING EXISTING MARKINGS, INSTALL TEMPORARY PAVEMENT MARKINGS FROM STA. 10+00 -DETOUR- TO STA. 12+00 -DETOUR- AND FROM STA. 18+00 -DETOUR- TO STA. 20+08 -DETOUR-, AND SHIFT -L- TRAFFIC ONTO -DETOUR- (SEE TCP-3).

STEP 2) AWAY FROM TRAFFIC CONSTRUCT THE FOLLOWING UP TO BUT NOT INCLUDING THE FINAL LIFT OF SURFACE COURSE:
- -L- LEFT FROM STA. 11+00 -L- TO STA. 11+50 -L-
- -L- FROM STA. 11+50 -L- TO STA. 17+50 -L-
- -L- LEFT FROM STA. 17+50 -L- TO STA. 18+15 -L-

AWAY FROM TRAFFIC INSTALL TEMPORARY SHORING FROM STA. 14+06 -L- TO STA. 14+26 -L-, AND FROM STA. 16+00 -L- TO STA. 16.20 -L- AS SHOWN ON TCP-3.

AWAY FROM TRAFFIC INSTALL PERMANENT GUARDRAIL AS SHOWN ON TCP-3, ENDING GUARDRAIL ON -L- RIGHT AT STA. 12+00 -L- AND OMITTING TO THE EAST OF THE BRIDGE STRUCTURE.

AWAY FROM TRAFFIC, INSTALL THE COLD APPLIED LONG LIFE TAPE ON THE BRIDGE DECK.

STEP 3) USING RSD 1101.02, SHEET 1 OF 9, REMOVE DETOUR MARKINGS FROM STA. 10+00 -DETOUR- TO STA. 10+00 -L- AND FROM STA. 19+00 -L- TO STA. 20+08 -DETOUR-. THEN WORKING IN A CONTINUOUS MANNER WEDGE THE FOLLOWING UP TO BUT NOT INCLUDING THE FINAL LIFT OF SURFACE COURSE, SHIFT TRAFFIC ONTO THE FINAL PATTERN, REMOVE TEMPORARY GUARDRAIL AS NEEDED TO INSTALL ALL REMAINING PERMANENT GUARDRAIL, AND INSTALL TEMPORARY PAVEMENT MARKINGS:
- -L- FROM STA. 10+00 -L- TO STA. 11+00 -L-
- -L- RIGHT FROM STA. 11+00 -L- TO STA. 11+50 -L-
- -L- RIGHT FROM STA. 17+50 -L- TO STA. 18+15 -L-
- -L- FROM STA. 18+15 -L- TO STA. 20+08 -L-

STEP 4) USING RSD 1101.02, SHEET 1 OF 9 AS NEEDED, WORK IN A CONTINUOUS MANNER TO REMOVE -DETOUR- FROM STA. 10+50 -DETOUR- TO STA. 19+58 -DETOUR-, INCLUDING THE BRIDGE STRUCTURE, TEMPORARY SHORING, AND COMPLETE CONSTRUCTION OF FINAL SHOULDERS.

STEP 5) USING RSD 1101.02, SHEET 1 OF 9, INSTALL THE FINAL LIFT OF SURFACE COURSE, RESURFACING, AND FINAL PAVEMENT MARKINGS (THERMOPLASTIC) ON -L- FROM STA. 9+50 -L- TO STA. 19+50 -L- NOT INCLUDING THE BRIDGE DECK (SEE TCP-3 FOR PAVEMENT MARKING STATIONS).

STEP 6) REMOVE ALL SIGNING AND TRAFFIC CONTROL DEVICES.

APPROVED: ________ DATE: ________

SEAL — NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 19862 J. W. WOOLARD, JR. — 11/24/08

GENERAL NOTES AND PHASING

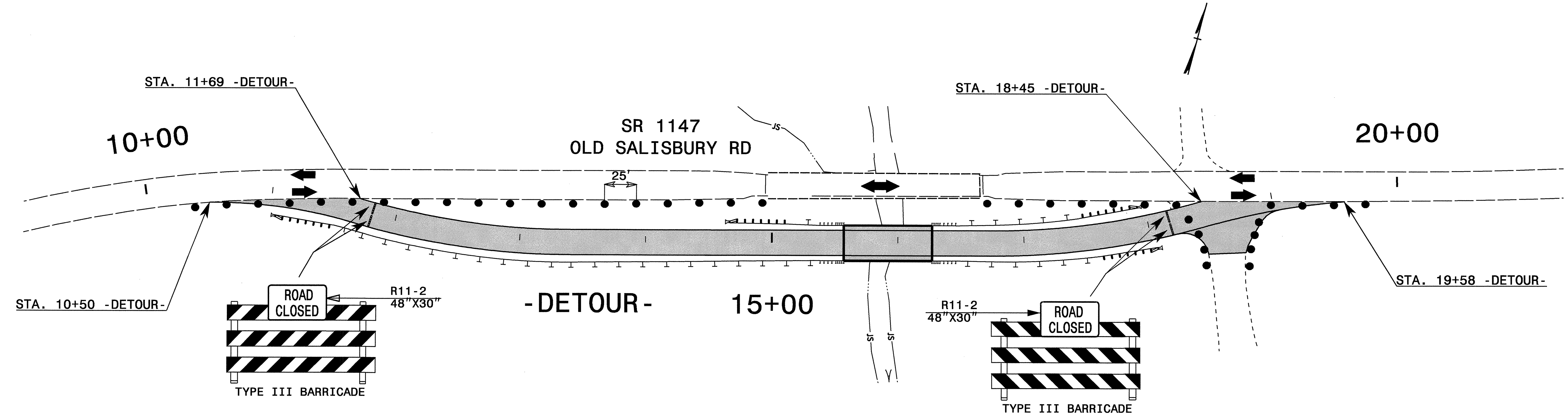
SCALE:	NONE
DATE:	11/08
DWG. BY:	DAH
DESIGN BY:	DAH
REVIEWED BY:	JWW

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

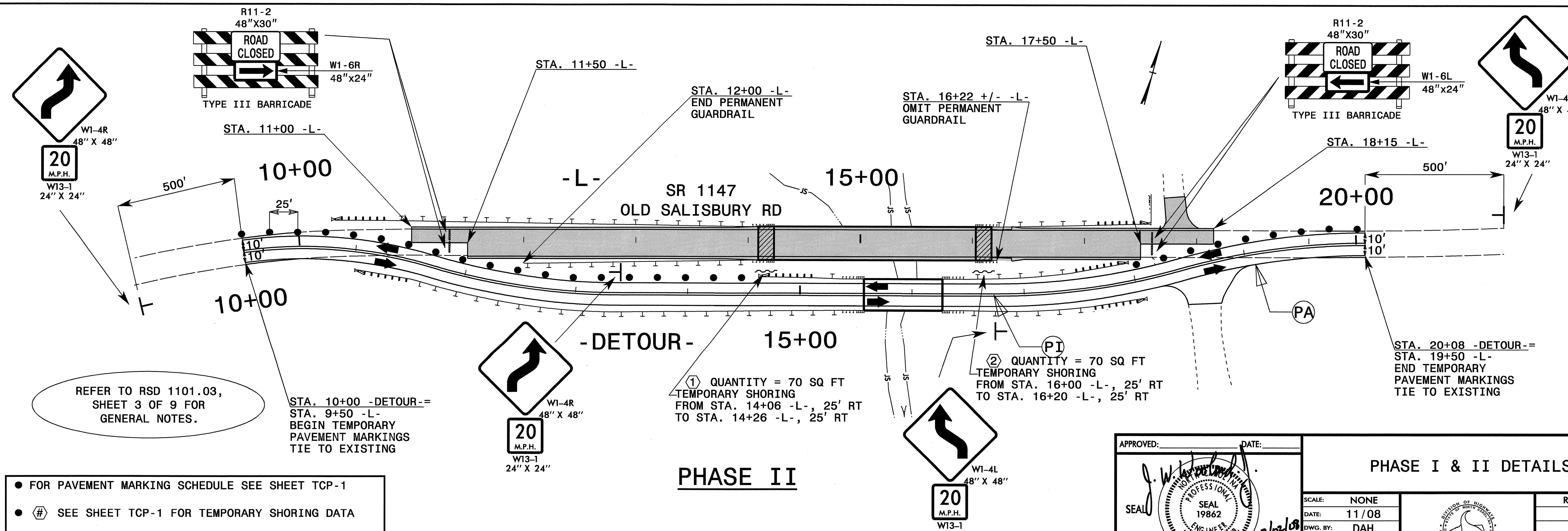
REVISIONS

CADD FILE

PROJ. REFERENCE NO.	SHEET NO.
B-4097	TCP-3



PHASE I



REFER TO RSD 1101.03, SHEET 3 OF 9 FOR GENERAL NOTES.

- FOR PAVEMENT MARKING SCHEDULE SEE SHEET TCP-1
- ⟨#⟩ SEE SHEET TCP-1 FOR TEMPORARY SHORING DATA

PHASE II

APPROVED: ____________ DATE: ________

SEAL — NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 19862 J. W. WOOLARD, JR. — J. W. Woolard, Jr. 12/02/08

PHASE I & II DETAILS

SCALE:	NONE
DATE:	11/08
DWG. BY:	DAH
DESIGN BY:	DAH
REVIEWED BY:	JWW

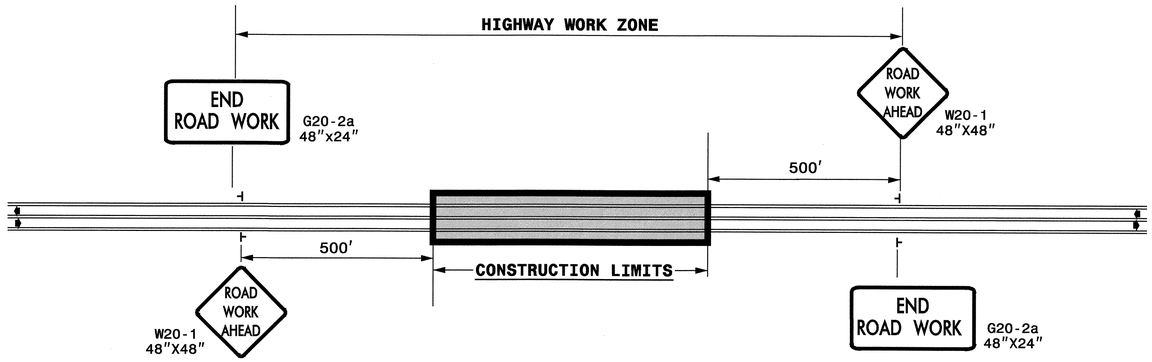
DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION WORK ZONE TRAFFIC CONTROL UNIT

REVISIONS

CADD FILE

PROJ. REFERENCE NO.	SHEET NO.
B-4097	TCP-4

TWO-WAY UNDIVIDED ** -L- SR 1147



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: _____

SEAL — NORTH CAROLINA PROFESSIONAL SEAL 19862 ENGINEER J.W. WOOLARD JR. — 11/24/08

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

SCALE:	NONE
DATE:	11/08
DWG. BY:	DAH
DESIGN BY:	DAH
REVIEWED BY:	JWW

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

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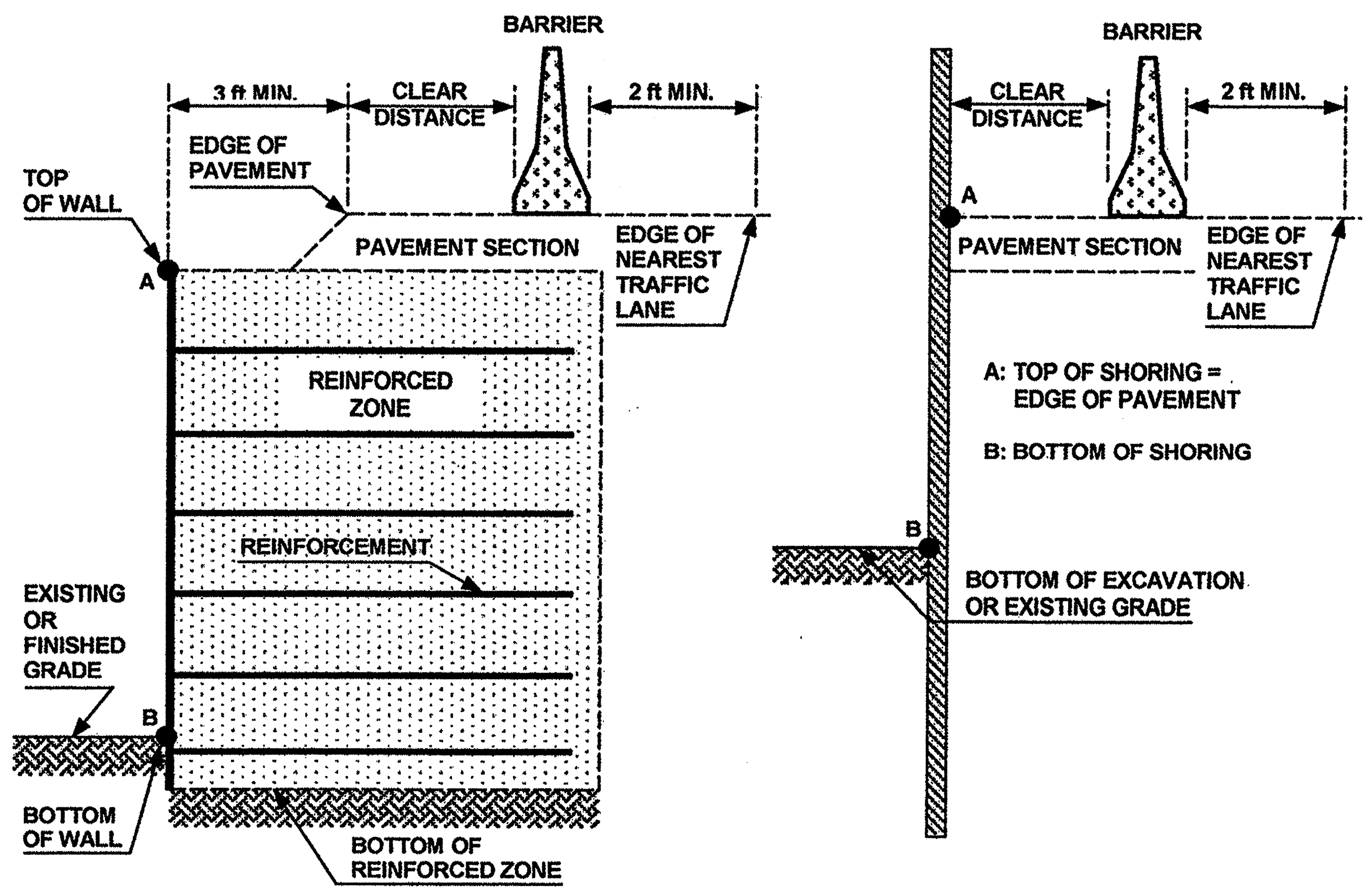
B-4097	TCP- 5



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 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.

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, 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

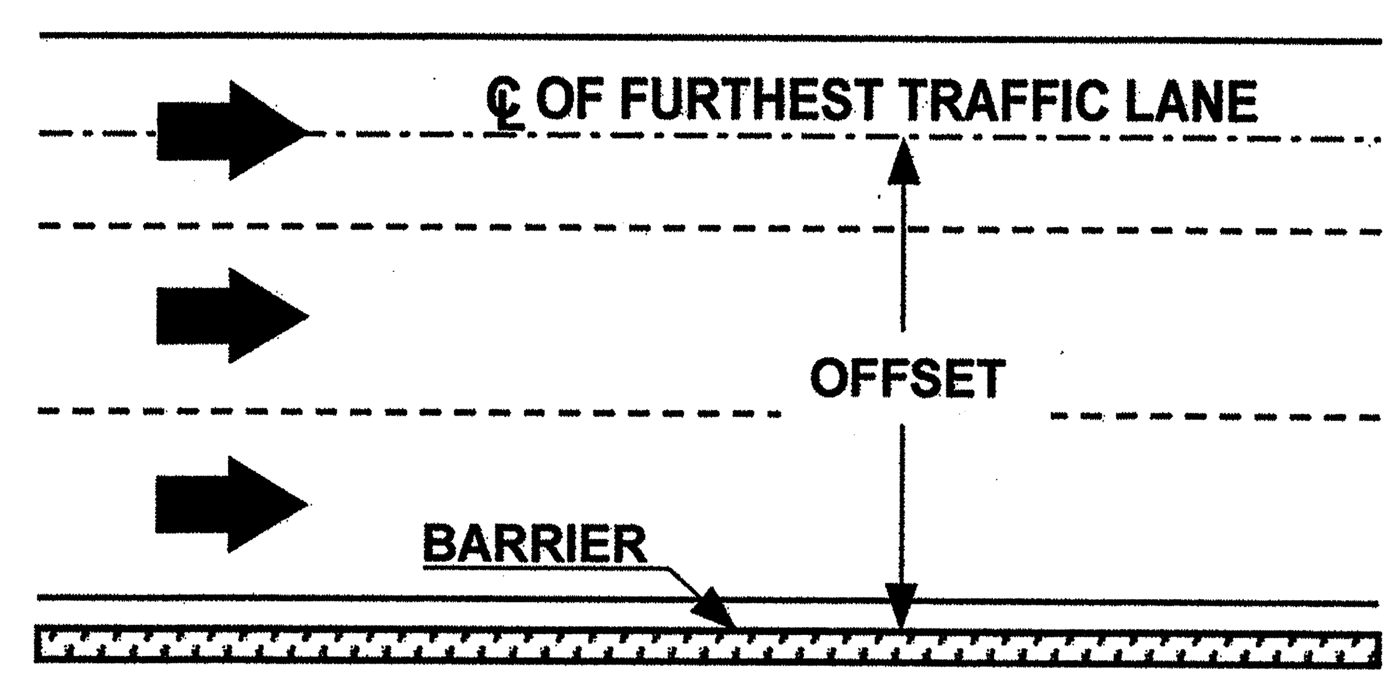


FIGURE B

APPROVED:	DATE:
SEAL 028380 ENGINEER	

PORTABLE CONCRETE BARRIER AT TEMPORARY SHORING LOCATIONS

SCALE:	NONE
DATE:	3/07
DWG. BY:	JI
DESIGN BY:	JI
REVIEWED BY:	JI

REVISIONS