

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STATE PROJECT REFERENCE NO.	SHEET NO.
B-3916	TCP-1

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

B-3916

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
1115.01	Flashing Arrow Panels
1130.01	Drums
1135.01	Cones
1145.01	Barricades
1150.01	Flagging Devices
1160.01	Temporary Crash Cushion
1165.01	Truck Mounted Impact Attenuator
1180.01	Skinny Drum
1205.01	Pavement Markings - Line Types & Offsets
1205.02	Pavement Markings - 2 Lane & Multilane Roadways
1205.04	Pavement Markings - Intersections
1205.05	Pavement Markings - Turn Lanes
1205.12	Pavement Markings - Bridges
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
1264.01	Object Markers
1264.02	Placement of Object Markers

INDEX OF SHEETS

SHEET NO.	TITLE
TCP-1	List of Applicable Roadway Standard Drawings (RSD), Legend, Temporary Pavement Marking Schedule, and Index of Sheets
TCP-2	General Notes and Phasing
TCP-3	Temporary Shoring Notes
TCP-4	Phase I Detail
TCP-5	Phase II Detail
TCP-6	Phase III Detail
TCP-7	Advance Work Zone Warning Signs
TCP-8	Portable Concrete Barrier at Temporary Shoring Locations
PM-1	Final Pavement Marking Plan and Schedule

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)
 - 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

TEMPORARY PAVEMENT MARKING SCHEDULE

SYMBOL	DESCRIPTION	TEMPORARY PAVEMENT MARKINGS		PAY ITEM QUANTITY BREAKDOWN		TOTAL QUANTITY	
		PAINT (4")	PAINT (24")	MARKERS	MARKERS		
PA	WHITE EDGELINE (2X)			5,336	L.F.		
PB	YELLOW EDGELINE (2X)			5,336	L.F.		
PC	10 FT. WHITE SKIP (2X)			741	L.F.		
PD	2 FT. WHITE MINISKIP (2X)			50	L.F.		
PE	WHITE SOLID LANE LINE (2X)			2376	L.F.		
PG	2 FT. YELLOW MINISKIP (2X)			55	L.F.		
						TOTAL	13,894 L.F.
P4	WHITE STOPBAR (2X)			60	L.F.		
						TOTAL	60 L.F.
MI	CRYSTAL & RED			83	EA.		
						TOTAL	83 EA.

NOTE: FOR EACH PAINT PAVEMENT MARKING ITEM, 1X IMPLIES A SINGLE APPLICATION, 2X IMPLIES TWO APPLICATIONS, AND 3X IMPLIES THREE APPLICATIONS.

APPROVED: <i>Chad L. Lanford</i> DATE: 2/15/07	PLAN PREPARED BY: N.C.D.O.T. WORK ZONE TRAFFIC CONTROL UNIT
SEAL 	J. S. BOURNE, PE TRAFFIC CONTROL ENGINEER
	M. MCDIARMID, PE TRAFFIC CONTROL PROJECT ENGINEER
	C. LANFORD, PE TRAFFIC CONTROL PROJECT DESIGN ENGINEER

TIP PROJECT:

GENERAL NOTES

PHASING

PROJ. REFERENCE NO.	SHEET NO.
B-3916	TCP-2

Changes may be required when physical dimensions in the detail drawings, standard details and roadway details are not attainable to meet field conditions, or result in duplicate, or undesired overlapping of devices. Modification may include: moving, supplementing, covering or removal of devices, as directed by the Engineer.

The following General Notes apply at all times for the duration of the construction project, except when otherwise noted in the plan, or directed by the Engineer.

Time Restrictions

A) Do not close or narrow travel lanes as follows:

Road Name	Day and Time Restrictions
1. US 401	Monday thru Friday 6:00 am to 9:00 am Monday thru Friday 4:00 pm to 7:00 pm

B) Do not close or narrow travel lanes during holidays and special events as follows:

Road Name	Holiday
1. US 401	
1.	For any event that creates unusually high traffic volumes, as directed by the Engineer
2.	For New Year's Day, between the hours of 6:00 a.m. December 31st and 7:00 p.m. January 2nd. If New Year's Day is on a Friday, Saturday, Sunday or Monday, then until 7:00 p.m. the following Tuesday.
3.	For Easter, between the hours of 6:00 a.m. Thursday and 7:00 p.m. Monday.
4.	For Memorial Day, between the hours of 6:00 a.m. Friday and 7:00 p.m. Tuesday.
5.	For Independence Day, between the hours of 6:00 a.m. the day before Independence Day and 7:00 p.m. the day after Independence Day. If Independence Day is on a Friday, Saturday, Sunday or Monday, then between the hours of 6:00 a.m. the Thursday before Independence Day and 7:00 p.m. the Tuesday after Independence Day.
6.	For Labor Day, between the hours of 6:00 a.m. Friday and 7:00 p.m. Tuesday.
7.	For Thanksgiving Day, between the hours of 6:00 a.m. Tuesday and 7:00 p.m. Monday.
8.	For Christmas, between the hours of 6:00 a.m. the Friday before the week of Christmas Day and 7:00 p.m. the following Tuesday after the week of Christmas Day.

Lane and Shoulder Closure Requirements

- C) 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.
- D) 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.
- E) When personnel and/or equipment are working on the shoulder adjacent to a divided facility and within 10 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.
- F) 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.
- 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 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.
- J) 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) in advance and a minimum of every half 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) Contractor will be responsible for permanent signing.
- M) Contractor will be responsible for detour signing within and off the project limits.
- N) Ensure all necessary signing is in place prior to altering any traffic pattern.
- O) Install black on orange "Dip" signs (W8-2) 500 ft (150m) in advance of the uneven area.
- P) Install black on orange "Bump" signs (W8-1) 500 ft (150m) in advance of the uneven area.

Traffic Control Devices

- Q) 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.
- R) 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.
- S) 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

T) Install pavement markings and pavement markers on the final surface as follows:

Road Name	Marking	Marker
1. US 401	Thermoplastic	Snowplowable

U) Install temporary pavement markings and temporary pavement markers on interim layers of pavement as follows:

Road Name	Marking	Marker
1. US 401	Paint	Temporary Raised

V) Tie proposed pavement marking lines to existing pavement marking lines.

W) Replace any pavement markings that have been damaged by the end of each day's operation.

X) 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.

Miscellaneous

Y) 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:
Maintain access to all driveways within project limits.

Phase I

- Step 1: Install all workzone advance warning signs on US 401. If work is not pursued within three days of sign installation, the signs shall be covered or removed in a method approved by the Engineer according to Section 1110 of the Standard Specifications. Advance warning signs shall be installed when construction is within 100 ft. of existing travel lane (See TCP-7).
- Step 2: Using Roadway Standard Drawing (RSD) 1101.02, Sheet 3 of 9, remove existing guardrail along the left side of -L- from Sta. 17+22+/- -L- to Sta. 17+50+/- -L- and from Sta. 23+44+/- -L- to Sta. 25+80+/- -L-. Install temporary crash cushion at Sta. 23+44+/- -L- left side. If this work cannot be completed by the end of the work period, install a TMIA for a maximum of 72 hours at the exposed end(s) of guardrail and return traffic to the one-way, two-lane pattern on exiting US 401 southbound (See TCP-4):

Step 3: Away from traffic, construct -DET- up to and including the final surface course, temporary drainage, guardrail and temporary structure from Sta. 13+50+/- -DET- to Sta. 20+35+/- -DET- (See TCP-4).

Step 4: Using RSD 1101.02, Sheet 3 of 9, and TCP-4, shift traffic to one-way, one-lane pattern on US 401 SB and construct -DET- up to the existing edge and elevation of pavement from Sta. 10+57+/- -DET- to Sta. 13+50+/- -DET- and from Sta. 20+35+/- -DET- to Sta. 21+78+/- -DET- (See TCP-4):

Install all barricades, drums, and temporary traffic control signs (See TCP-4).

Step 5: Using RSD 1101.02, Sheet 3 of 9, install temporary pavement markings and temporary markers and shift traffic to a one-way, two-lane traffic pattern on -DET-. (See TCP-5).

Install all barricades, drums, and temporary traffic control signs (See TCP-5).

Phase II

Step 1: Install temporary shoring as follows (See TCP-3, TCP-5 and TCP-8):
Sta. 19+25+/- -L- to Sta. 19+65+/- -L- offset 40' Left
Sta. 19+25+/- -L- to Sta. 19+50+/- -L- offset 30' Right
Sta. 21+10+/- -L- to Sta. 21+35+/- -L- offset 40' Left
Sta. 20+83+/- -L- to Sta. 21+45+/- -L- offset 30' Right

Step 2: Away from traffic, construct -L- and structure, up to but not including the final layer of surface course, from Sta.17+52+/- -L- to Sta. 23+50+/- -L- (See TCP-5).

Using RSD 1101.02, Sheet 3 of 9, construct -L- up to the edge and elevation of -DET- as follows (See TCP-5):
Sta. 14+40+/- -L- to Sta. 17+52+/- -L-
Sta. 23+50+/- -L- to Sta. 25+73+/- -L-

Step 3: Using 1101.02, Sheet 3 of 9, and working in a continuous operation, complete the following (See TCP-5):

- Pave/wedge -L- up to but not including the final lift of surface course from Sta.13+40+/- -L- to Sta.17+52+/- -L- and from Sta. 23+50+/- -L- to Sta. 26+95+/- -L- .

- Install temporary paint pavement markings and markers from Sta.13+40+/- -L- to Sta. 26+95+/- -L- and open -L- to a one-way, two-lane pattern.

Phase III

Step 1: Using RSD 1101.02, Sheet 3 of 9, complete shoulder work and permanent drainage, remove -DET-, and install permanent guardrail on left side of -L-(see TCP-6).

Step 2: Using RSD 1101.02, Sheet 3 of 9, place final layer of surface course, final pavement markings and snow plowable markers on -L- from Sta. 13+40+/- -L- to Sta. 26+95+/- -L- (See TCP-6 and PM-1):

Step 3: Remove all traffic control devices and signage.

APPROVED: *Chad R. Lanford* DATE: 2/19/07

GENERAL NOTES AND PHASING

SCALE:	NONE
DATE:	01/07
DWG. BY:	CLL
DESIGN BY:	CLL
REVIEWED BY:	MMM



REVISIONS	

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PROJ. REFERENCE NO.	SHEET NO.
B-3916	TCP-3

TEMPORARY SHORING NOTES

Temporaray Shoring No. 1

1. A 1.5:1 (H:V) SLOPE OR FLATTER MAY BE PREFERRED IN LIEU OF STATION 19+25 -L-, 40 FT LT, TO STATION 19+65 -L-, 40 FT LT, AS SHOWN ON THE PLANS.
2. FOR TEMPORARY SHORING, SEE TEMPORARY SHORING SPECIAL PROVISION.
3. DRIVEN PILING FOR TEMPORARY SHORING FROM STATION 19+25 -L-, 40 FT LT, TO STATION 19+65 -L-, 40 FT LT, MAY NOT PENETRATE BELOW ELEVATION 241 FT DUE TO THE PRESENCE OF AN OBSTRUCTION, VERY DENSE OR HARD SOIL, WEATHERED OR HARD ROCK. SEE SUBSURFACE INFORMATION FOR ADDITIONAL DETAILS.
4. FOR CONTRACTOR DESIGNED SHORING, SURVEY THE SHORING LOCATION TO DETERMINE EXISTING ELEVATIONS AND ACTUAL DESIGN HEIGHTS BEFORE BEGINNING DESIGN.
5. WHEN USING CONTRACTOR DESIGNED SHORING FROM STATION 19+25 -L-, 40 FT LT, TO STATION 19+65 -L-, 40 FT LT, 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, $\phi = 30^\circ$
 COHESION, $c = 0$ PSF

Temporaray Shoring No. 2

1. FOR TEMPORARY SHORING, SEE TEMPORARY SHORING SPECIAL PROVISION.
2. DRIVEN PILING FOR TEMPORARY SHORING FROM STATION 19+25 -L-, 30 FT RT, TO STATION 19+50 -L-, 30 FT RT, MAY NOT PENETRATE BELOW ELEVATION 234 FT DUE TO THE PRESENCE OF AN OBSTRUCTION, VERY DENSE OR HARD SOIL, WEATHERED OR HARD ROCK. SEE SUBSURFACE INFORMATION FOR ADDITIONAL DETAILS.
3. FOR CONTRACTOR DESIGNED SHORING, SURVEY THE SHORING LOCATION TO DETERMINE EXISTING ELEVATIONS AND ACTUAL DESIGN HEIGHTS BEFORE BEGINNING DESIGN.
4. WHEN USING CONTRACTOR DESIGNED SHORING FROM STATION 19+25 -L-, 30 FT RT, TO STATION 19+50 -L-, 30 FT RT, 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, $\phi = 30^\circ$
 COHESION, $c = 0$ PSF

Temporaray Shoring No. 3

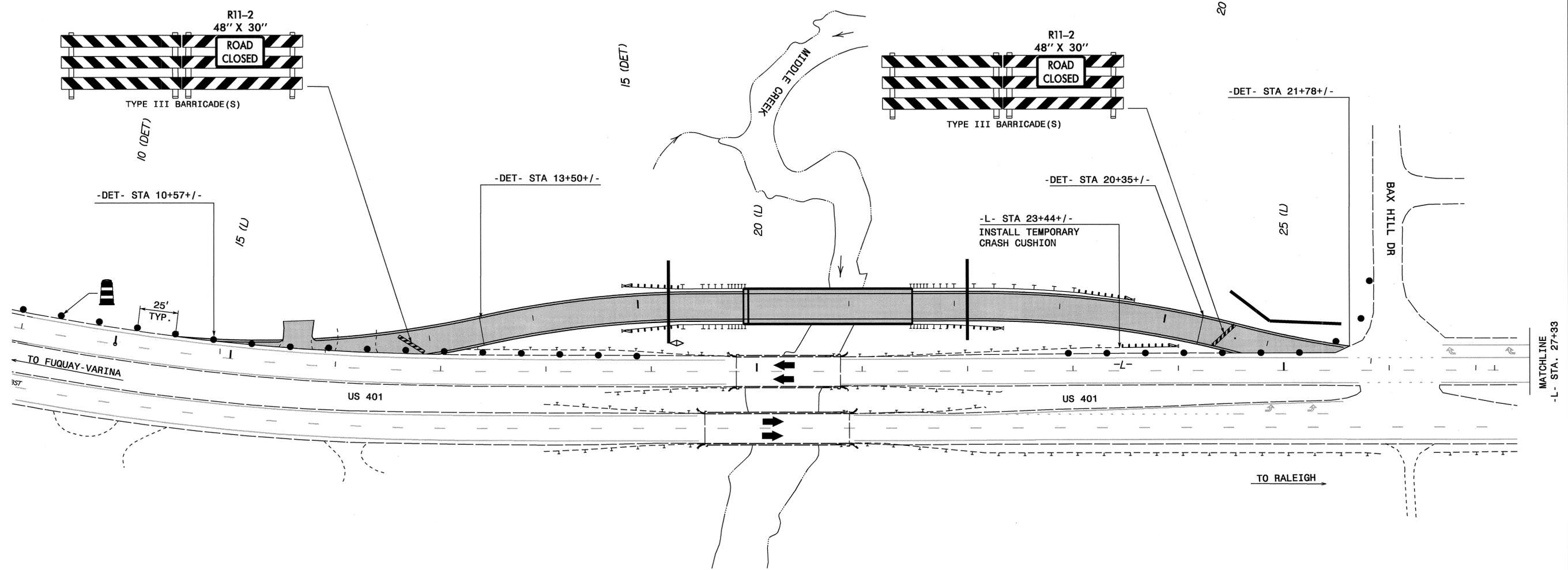
1. A 1.5:1 (H:V) SLOPE OR FLATTER MAY BE PREFERRED IN LIEU OF STATION 21+10 -L-, 40 FT LT, TO STATION 21+35 -L-, 40 FT LT, AS SHOWN ON THE PLANS.
2. FOR TEMPORARY SHORING, SEE TEMPORARY SHORING SPECIAL PROVISION.
3. DRIVEN PILING FOR TEMPORARY SHORING FROM STATION 21+10 -L-, 40 FT LT, TO STATION 21+35 -L-, 40 FT LT, MAY NOT PENETRATE BELOW ELEVATION 240 FT DUE TO THE PRESENCE OF AN OBSTRUCTION, VERY DENSE OR HARD SOIL, WEATHERED OR HARD ROCK. SEE SUBSURFACE INFORMATION FOR ADDITIONAL DETAILS.
4. FOR CONTRACTOR DESIGNED SHORING, SURVEY THE SHORING LOCATION TO DETERMINE EXISTING ELEVATIONS AND ACTUAL DESIGN HEIGHTS BEFORE BEGINNING DESIGN.
5. WHEN USING CONTRACTOR DESIGNED SHORING FROM STATION 21+10 -L-, 40 FT LT, TO STATION 21+35 -L-, 40 FT LT, 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, $\phi = 30^\circ$
 COHESION, $c = 0$ PSF

Temporaray Shoring No. 4

1. FOR TEMPORARY SHORING, SEE TEMPORARY SHORING SPECIAL PROVISION.
2. DRIVEN PILING FOR TEMPORARY SHORING FROM STATION 20+83 -L-, 30 FT RT, TO STATION 21+45 -L-, 30 FT RT, MAY NOT PENETRATE BELOW ELEVATION 234 FT DUE TO THE PRESENCE OF AN OBSTRUCTION, VERY DENSE OR HARD SOIL, WEATHERED OR HARD ROCK. SEE SUBSURFACE INFORMATION FOR ADDITIONAL DETAILS.
3. FOR CONTRACTOR DESIGNED SHORING, SURVEY THE SHORING LOCATION TO DETERMINE EXISTING ELEVATIONS AND ACTUAL DESIGN HEIGHTS BEFORE BEGINNING DESIGN.
4. WHEN USING CONTRACTOR DESIGNED SHORING FROM STATION 19+25 -L-, 30 FT RT, TO STATION 21+45 -L-, 30 FT RT, 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, $\phi = 30^\circ$
 COHESION, $c = 0$ PSF

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APPROVED: <i>Chad L. Lanford</i> DATE: 2/15/07		TEMPORARY SHORING NOTES	
	SCALE: NONE		REVISIONS
	DATE: 01/07		
	DWG. BY: CLL		
	DESIGN BY: CLL		
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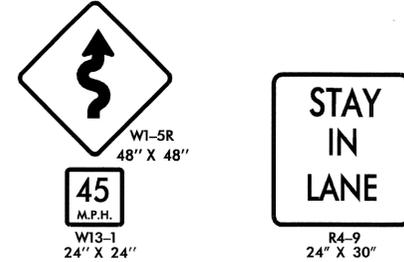


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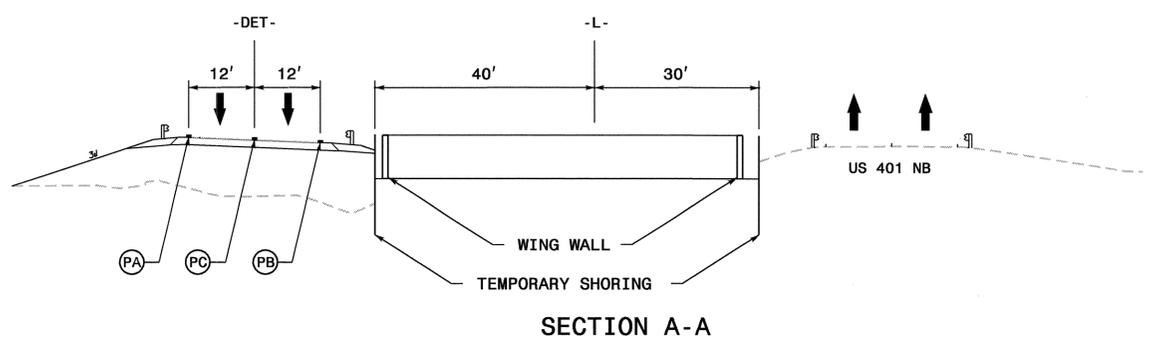
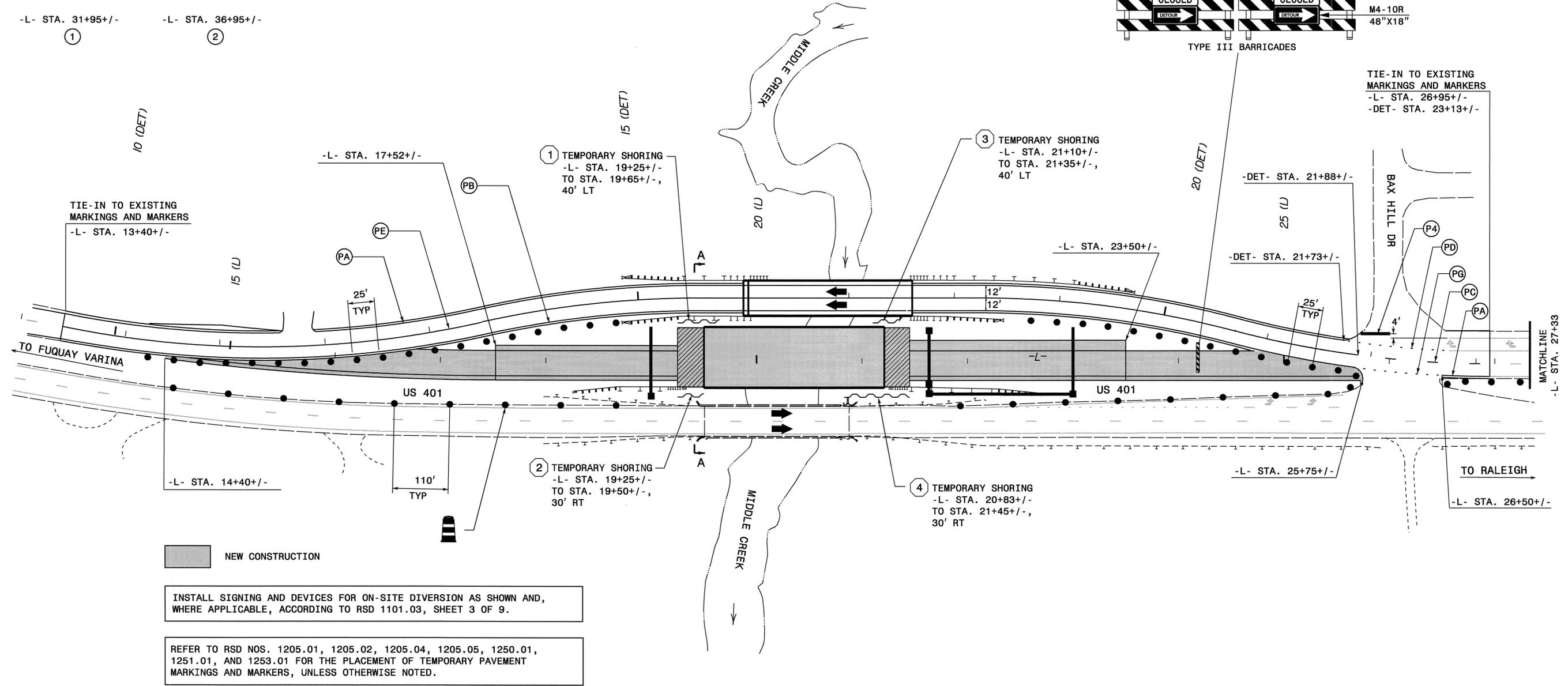
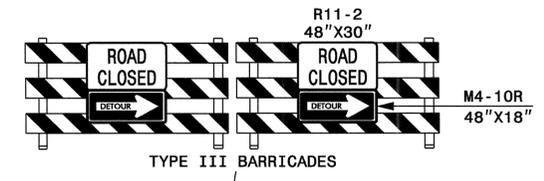
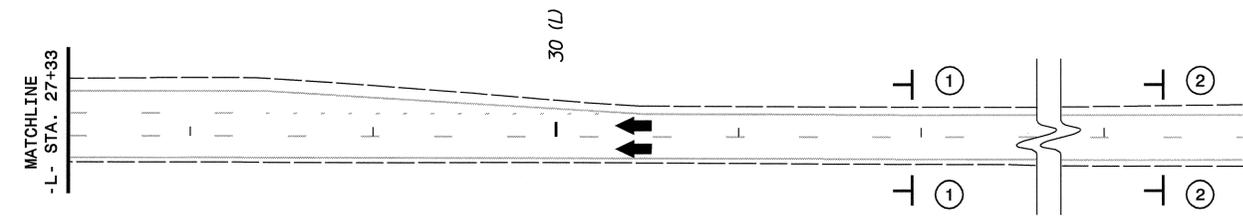
INSTALL DRUMS, LANE CLOSURE SIGNING,
AND CMS ACCORDING TO RSD 1101.02,
SHEET 3 OF 9.

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APPROVED: <i>Chad L. Lanford</i> DATE: 2/15/07		PHASE I DETAIL	
		DATE: 01/07	REVISIONS
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DESIGN BY: CLL			
REVIEWED BY: MMM			CADD FILE: B-3916 TC TCP3.DGN



-L- STA. 31+95+/- (1)
-L- STA. 36+95+/- (2)



FOR TEMPORARY SHORING, THE FOLLOWING SOIL PARAMETERS SHALL BE USED:
 UNIT WT. OF SOIL ABOVE WATER TABLE, $\gamma = 120$ PCF
 UNIT WT. OF SOIL BELOW WATER TABLE, $\gamma' = 60$ PCF
 FRICTION ANGLE, $\phi = 30^\circ$
 COHESION, $c = 0$ PSF

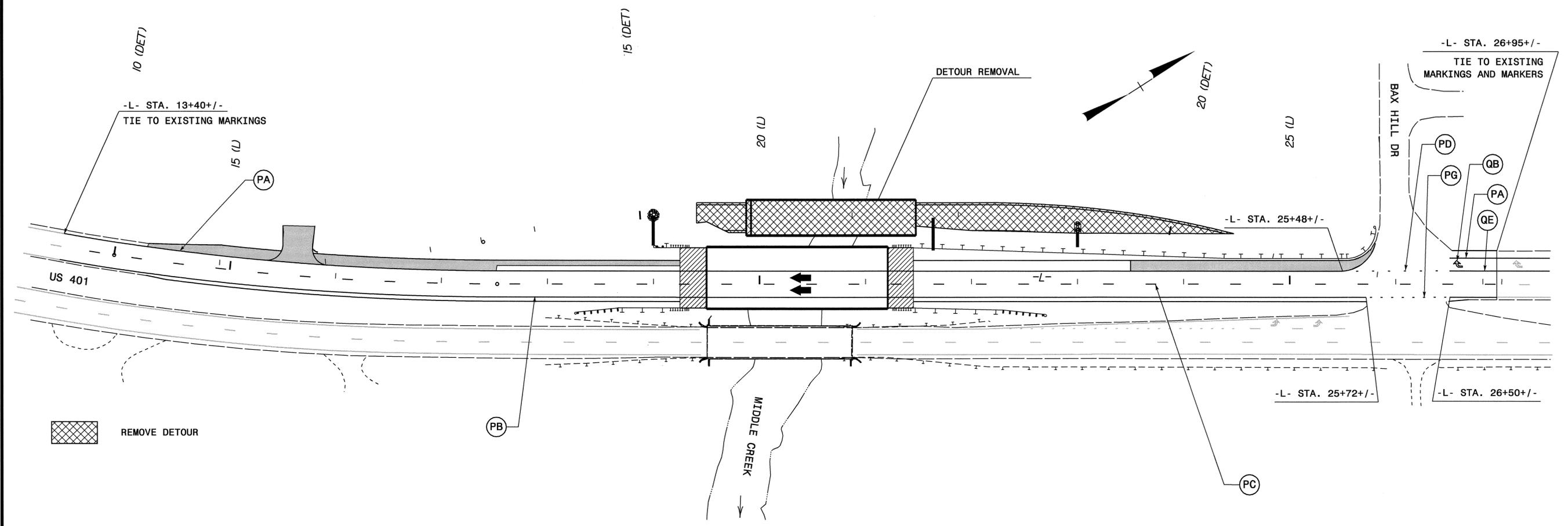
- (1) QUANTITY = 240 SF
- (2) QUANTITY = 75 SF
- (3) QUANTITY = 125 SF
- (4) QUANTITY = 310 SF

(SEE TEMPORARY SHORING NOTES ON TCP-3)

SEE TCP-1 FOR TEMPORARY PAVEMENT MARKING SCHEDULE.

APPROVED: <i>Chad L. Lanford</i> DATE: 2/19/07	PHASE II DETAIL	
	SCALE: NONE	
	DATE: 01/07	
	DWG. BY: CLL	
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SEE TCP-1 FOR TEMPORARY PAVEMENT MARKING SCHEDULE.

APPROVED: <i>Chad L. Lanford</i> DATE: 2/15/07		PHASE III DETAIL																								
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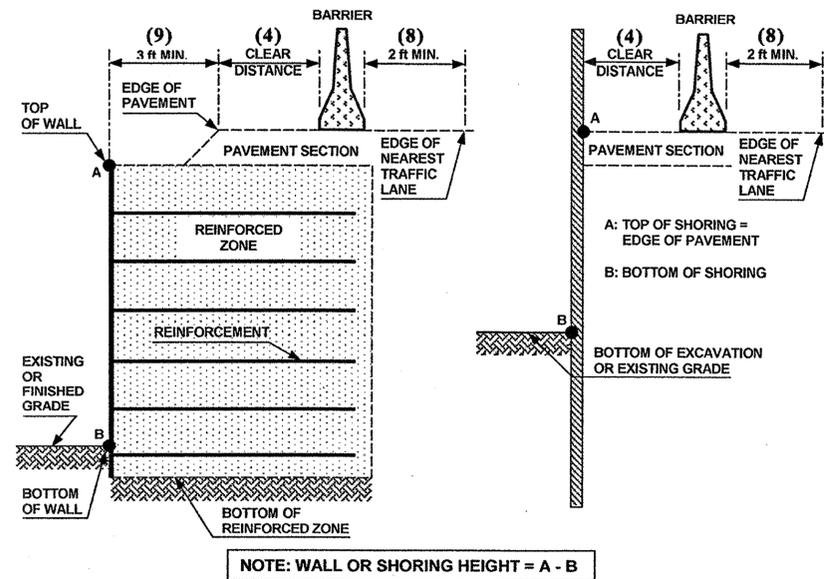


FIGURE A

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 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.
- 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/desreseeng.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 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					

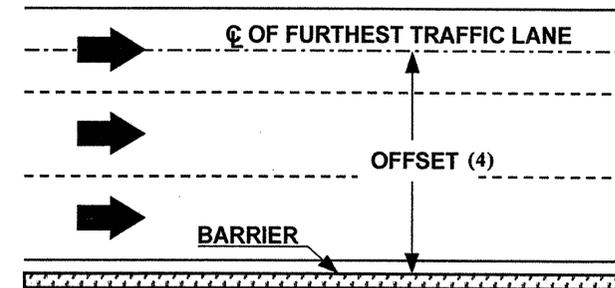


FIGURE B

APPROVED: _____ DATE: _____	PORTABLE CONCRETE BARRIER AT TEMPORARY SHORING LOCATIONS	
	SCALE: NONE	
	DATE: 1/07	
	DWG. BY: JI	
	DESIGN BY: JI	
REVIEWED BY: JI	REVISIONS	

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