STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

STATE PROJECT REFERENCE NO.	SHEET NO.
B-4114	TCP-1

PLAN FOR PROPOSED TRAFFIC CONTROL, MARKING, & DELINEATION

FRANKLIN COUNTY

TCP-6

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS SHOWN 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.	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	DRUMS
1135.	01	CONES
1145.0	01	BARRICADES
1150.	01	FLAGGING DEVICES
1165.	01	TRUCK MOUNTED IMPACT ATTENUATOR
1205.	01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.	02	PAVEMENT MARKINGS - 2 LANE & MULTILANE ROADWAYS
1205.	12	PAVEMENT MARKINGS - BRIDGES
1250.	01	PAVEMENT MARKER SPACING
1251.	01	RAISED PAVEMENT MARKERS - (TEMPORARY AND PERMANENT)
1261.	-	GUARDRAIL AND BARRIER DELINEATOR SPACING
1261.	-	GUARDRAIL AND BARRIER DELINEATOR TYPES
1262.	01	GUARDRAIL END DELINEATION
1264.	01	OBJECT MARKERS
1264.	02	PLACEMENT OF OBJECT MARKERS

INDEX OF SHEETS

PHASE III DETAIL

SHEET NO.	TITLE
TCP-1	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, INDEX OF SHEETS, AND LEGEND
TCP-2	PROJECT NOTES
TCP-3	PHASING
TCP-4	PHASE I DETAIL
TCP-5	PHASE II DETAIL

LEGEND

GENERAL

DIRECTION OF TRAFFIC FLOW

PROPOSED PVMT. ----- EXIST. PVMT.

WORK AREA

NORTH ARROW

REMOVAL OF EXISTING PAVEMENT

TRAFFIC CONTROL DEVICES

T TYPE I BARRICADE

TYPE III BARRICADE

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

APPROVED: SXCA FUSE DATE: 12/4/08 PLAN PREPARED BY: N.C.D.O.T. WORK ZONE TRAFFIC CONTROL UNIT J. S. BOURNE, P.E. TRAFFIC CONTROL ENGINEER J. S. KITE, P.E. TRAFFIC CONTROL PROJECT ENGINEER SEAL J. D. KUSE, P.E. TRAFFIC CONTROL PROJECT DESIGN ENGINEER S. D. MILLER, E.I.T. TRAFFIC CONTROL DESIGN ENGINEER / TECHNICIAN

M

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 WITHIN 15 FT OF AN 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 OR A LANE CLOSURE IS INSTALLED.
- C) 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.
- D) 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.
- E) 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

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

G) 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) 500 FT IN ADVANCE AND A MINIMUM OF EVERY HALF MILE THROUGHOUT THE UNEVEN AREA.

TRAFFIC PATTERN ALTERATIONS

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

SIGNING

- I) INSTALL ADVANCE WORK ZONE WARNING SIGNS NO MORE THAN THREE (3) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.
- J) PROVIDE PERMANENT SIGNING.
- K) PROVIDE DETOUR SIGNING WITHIN THE PROJECT LIMITS.
- L) COVER OR REMOVE ALL DETOUR SIGNS WITHIN THE PROJECT LIMITS WHEN A DETOUR IS NOT IN OPERATION.
- M) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

PROJECT NOTES

PROJ. REFERENCE NO. SHEET NO.

B-4114

TCP-2

TRAFFIC CONTROL DEVICES

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

PAVEMENT MARKINGS AND MARKERS

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

ROAD NAME	MARKING	IG MARKER	
SR 1146	PAINT	PERMANENT RAISED	

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

ROAD NAME	MARKING	MARKER
SR 1146	PAINT	TEMPORARY RAISED

- R) 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.
- S) 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.
- T) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
- U) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS BY THE END OF EACH DAY'S OPERATION.

TEMPORARY / FINAL SIGNALS

V) NOTIFY THE ENGINEER TWO (2) MONTHS BEFORE THE TEMPORARY TRAFFIC SIGNAL INSTALLATION.

MISCELLANEOUS

W) IN THE EVENT A TIE-IN CANNOT BE MADE IN ONE DAY'S 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 AND 1000 FT RESPECTIVELY IN ADVANCE OF THE UNEVEN AREAS. USE DRUMS TO DELINEATE THE EDGE OF ROADWAY ALONG UNPAVED AREAS.

GENERAL NOTES FOR ADVANCE WORK ZONE WARNING

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.

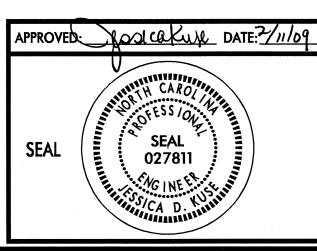
ALL SIGN SPACING DIMENSIONS ARE APPROXIMATE; FIELD ADJUST AS NECESSARY OR AS DIRECTED.

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 3LB 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.



PROJECT NOTES

SCALE: NONE

DATE: 11-08

DWG. BY: SDM

DESIGN BY: SDM

REVIEWED BY: JDK



REVISIONS

NOTE: MAINTAIN TRAFFIC ACCESS TO DRIVEWAYS LOCATED WITHIN THE PROJECT LIMITS.

IF GUARDRAIL INSTALLATION CANNOT BE COMPLETED IN ONE WORKING DAY AND THE UNPROTECTED GUARDRAIL END IS WITHIN 30 FEET OF AN OPEN TRAVEL LANE, PROTECT THE EXPOSED END OF THE GUARDRAIL USING AN APPROVED METHOD UNTIL THE INSTALLATION IS COMPLETE.

PHASE I

- STEP 1: INSTALL WORK ZONE WARNING SIGNS ON SR 1146 IN ACCORDANCE WITH SHEET TCP-4. IF SIGNS ARE INSTALLED MORE THAN THREE(3) DAYS BEFORE CONSTRUCTION BEGINS COVER SIGNS ACCORDING TO STANDARD SPECIFICATION SECTION 1110-1 AND 1110-3.
- STEP 2: USING ROADWAY STANDARD DRAWING 1101.02, SHEET 1 OF 9, CONSTRUCT DETOUR BRIDGE, DETOUR GUARDRAIL, AND ONSITE DETOUR UP TO EDGE AND ELEVATION OF EXISTING ROADWAY SR 1146 FROM -DET- STA. 10+22+/- TO -DET- STA. 18+29+/-. INSTALL TYPE III BARRICADES AND DRUMS TO CLOSE DETOUR TO TRAFFIC. SEE SHEET TCP-4.

INSTALL AND COVER WINDING ROAD SIGNS (W1-5) AND WORK ZONE SIGNING FOR THE TEMPORARY SIGNAL CONDITION. SEE SHEET TCP-5.

INSTALL TEMPORARY TRAFFIC SIGNAL SYSTEM BUT DO NOT ACTIVATE. SEE SPECIAL PROVISIONS.

STEP 3: USING ROADWAY STANDARD DRAWING 1101.02, SHEET 1 OF 9, TIE-IN DETOUR TO EXISTING ROADWAY SR 1146 FROM - DET- STA. 10+00+/-TO -DET- STA. 10+22+/- AND FROM -DET- STA. 18+29+/- TO -DET-STA. 18+54+/- AND PLACE TEMPORARY PAINT PAVEMENT MARKINGS AND TEMPORARY PAVEMENT MARKERS. SEE SHEET TCP-5 FOR TEMPORARY PAVEMENT MARKING PLACEMENT AND TEMPORARY PAVEMENT MARKING SCHEDULE. SEE ROADWAY STANDARD DRAWING 1205.12, SHEET 1 OF 1, FOR INSTALLATION OF TEMPORARY PAVEMENT MARKERS ON A ONE-LANE BRIDGE.

> USING ROADWAY STANDARD DRAWING 1101.02, SHEET 1 OF 9 SIMULTANEOUSLY SHIFT SR 1146 TRAFFIC TO THE DETOUR IN A ONE-LANE TWO-WAY TRAFFIC PATTERN, UNCOVER SIGNING FOR DETOUR OPERATIONS, AND ACTIVATE TEMPORARY TRAFFIC SIGNAL SYSTEM. PLACE TYPE III BARRICADES AND DRUMS TO CLOSE -L- TO TRAFFIC. SEE SHEET TCP-5.

PHASE II

STEP 1: USING ROADWAY STANDARD DRAWING 1101.02, SHEET 1 OF 9, CONSTRUCT -L- BRIDGE AND PROPOSED -L- ROADWAY UP TO BUT NOT INCLUDING FINAL LAYER OF SURFACE COURSE FROM -L- STA. 12+46 +/- TO -L- STA. 17+07 +/-.

> INSTALL PROPOSED EAST SIDE GUARDRAIL FROM -L- STA. 12+38 +/-TO -L- STA. 14+53 +/- AND EAST SIDE GUARDRAIL FROM -L- STA. 15+23 +/- TO -L- STA. 17+09 +/-.

PHASE III

- STEP 1: USING ROADWAY STANDARD DRAWING 1101.02, SHEET 1 OF 9,
 - INSTALL 15" DRAINAGE PIPE ON WEST SIDE OF -L- AT -L- STA. 18+10 +/-
 - CONSTRUCT TIE-INS UP TO BUT NOT INCLUDING FINAL LAYER OF SURFACE COURSE OF PROPOSED -L- FROM -L- STA. 10+50 +/- TO -L- STA. 12+46 +/- AND FROM -L- STA. 17+07 +/- TO -L- STA. 19+00 +/-
 - PLACE TEMPORARY PAINT PAVEMENT MARKINGS AND TEMPORARY PAVEMENT MARKERS. SEE SHEET TCP-6 FOR TEMPORARY PAVEMENT MARKING PLACEMENT AND SEE SHEET TCP-5 FOR TEMPORARY PAVEMENT MARKING SCHEDULE.

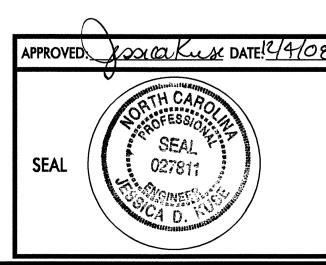
USING ROADWAY STANDARD DRAWING 1101.02, SHEET 1 OF 9, REMOVE TRAFFIC CONTROL DEVICES ON THE PROPOSED ALIGNMENT AND SHIFT TRAFFIC INTO A ONE LANE PATTERN ON THE EAST SIDE OF THE BRIDGE.

BY THE END OF THE WORK DAY, INSTALL THE GUARDRAIL ON THE WESTERN SIDE OF THE BRIDGE FROM STA. 13+16 +/- TO STA. 14+53 +/- AND FROM STA. 15+23 +/- TO STA. 17+38 +/- AND OPEN TO A TWO-LANE TWO-WAY TRAFFIC PATTERN. SEE TCP-6.

INSTALL TYPE III BARRICADES AND DRUMS CLOSING THE DETOUR TO TRAFFIC. SEE SHEET TCP-6.

- STEP 2: USING ROADWAY STANDARD DRAWING 1101.02, SHEET 1 OF 9, REMOVE DETOUR AND COMPLETE REMAINING PROPOSED CONSTRUCTION.
- STEP 3: USING ROADWAY STANDARD DRAWING 1101.02, SHEET 1 OF 9, PLACE FINAL LAYER OF SURFACE COURSE, PAINT PAVEMENT MARKINGS, AND INSTALL PERMANENT RAISED MARKERS. SEE SHEET TCP-6 FOR FINAL PAVEMENT MARKING PLACEMENT AND FINAL PAVEMENT MARKING SCHEDULE.

REMOVE ALL REMAINING TEMPORARY TRAFFIC CONTROL DEVICES AND OPEN SR 1146 TO TRAFFIC.



PHASING

NONE

11-08

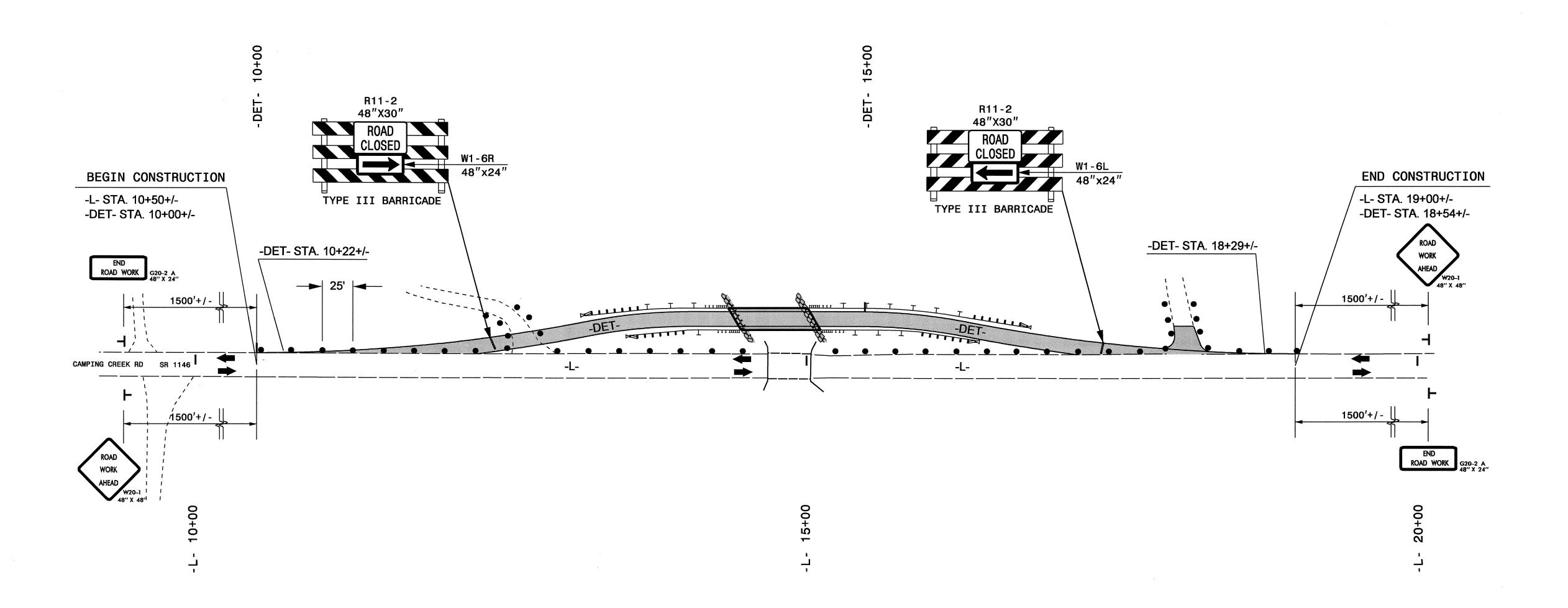
DWG. BY: SDM DESIGN BY: SDM REVIEWED BY: JDK **REVISIONS**

PROJ. REFERENCE NO. SHEET NO.

B-4114

TCP-4

-DET- CONSTRUCTION



APPROVED: DOCALLA DATE: 12/4/06

SEAL

027811

SEAL

027811

PHASE I DETAIL

SCALE: NONE

DATE: 11-08

DWG. BY: SDM

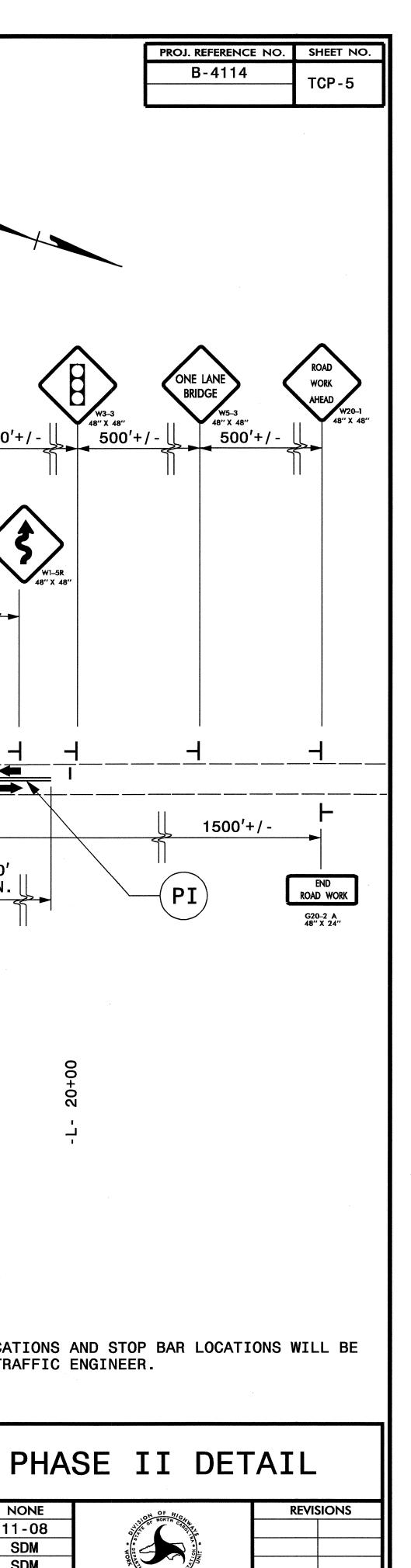
DESIGN BY: SDM

REVIEWED BY: JDK

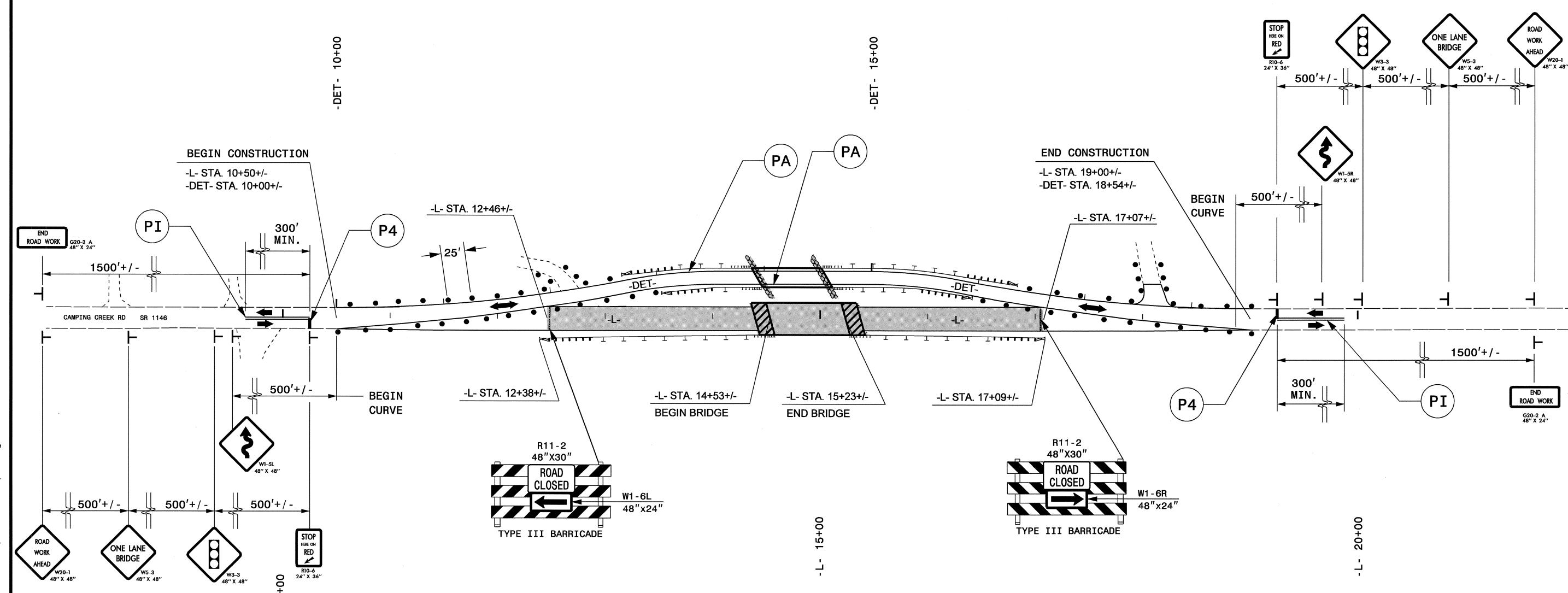
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REVISIONS

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-L- CONSTRUCTION



TEMPORARY PAVEMENT MARKING SCHEDULE

SYMBOL	DESCRIPTION	PAY I QUANT		TOTAL QUANT	
	PAVEMENT MARK	INGS			
D.4	PAINT 4"				
PA	WHITE EDGELINE (2X)	3416			
PΙ	YELLOW DOUBLE CENTER (2X)	2400	LF		
PA	WHITE EDGELINE (1X)	1700	LF		
ΡI	YELLOW DOUBLE CÊNTÉR (1X)	1700	LF		
P4	PAINT 24" WHITE STOPBAR (2X)	40	LF	9216	LI LI
	MARKERS			40	L-1
	TEMPORARY RAISED				
MM	CRYSTAL & CRYSTAL	88	EA		
MH	YELLOW & YELLOW	13	EA	1	
Wit t	TELEON & TELEON	10	LA	101	E
	NOTE: FOR EACH PAINT PAVEMENT MARKING ITE 2X IMPLIES TWO APPLICATIONS, AND 3X				N,

NOTES:

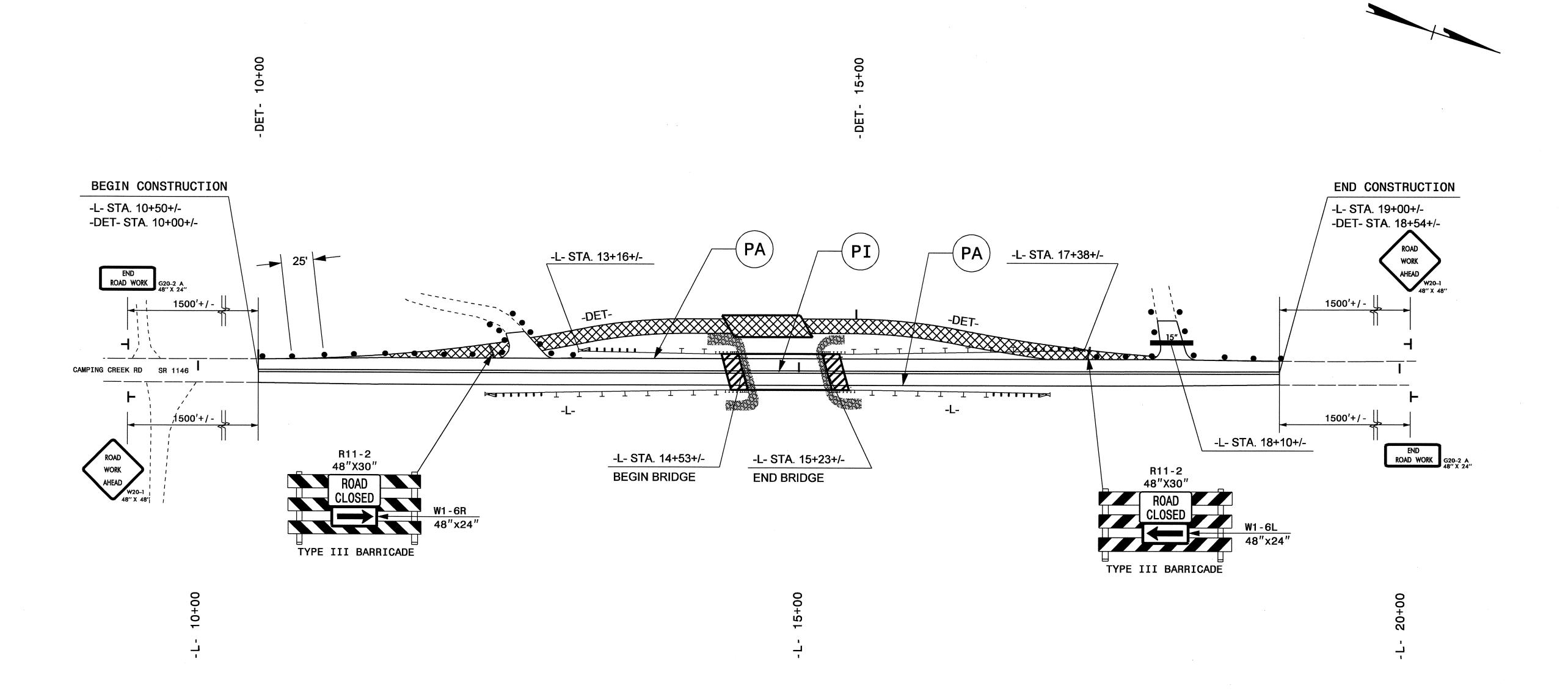
1. TEMPORARY TRAFFIC SIGNAL LOCATIONS AND STOP BAR LOCATIONS WILL BE DETERMINED BY THE DIVISION TRAFFIC ENGINEER.

APPROVED: JESSICAKUR DATE: 12/4		PHASE II DETAIL			
SEAL 027811	DATE: 11-08 DWG. BY: SDM DESIGN BY: SDM REVIEWED BY: JDK	OF TRANSPORT	REVISIONS		

-DET- REMOVAL AND -L- COMPLETION

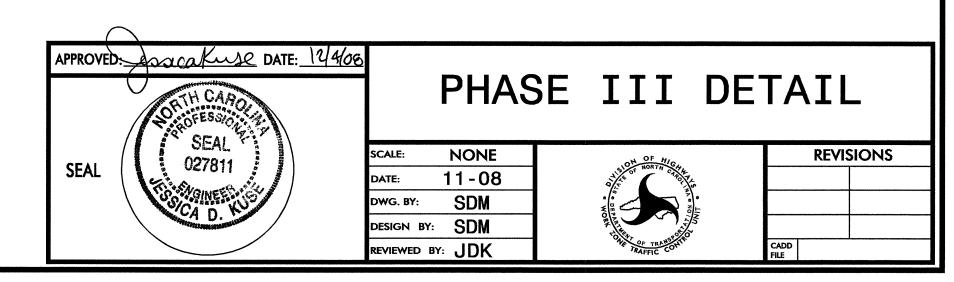
PROJ. REFERENCE NO. SHEET NO.

B-4114
TCP-6



FINAL PAVEMENT MARKING SCHEDULE

SYMBOL	DESCRIPTION	PAY ITEM QUANTITY	TOTAL QUANTITY
	PAVEMENT MARKI	INGS	
PA PI	WHITE EDGELINE (2X) YELLOW DOUBLE CENTER (2X)	3400 LF 3400 LF	6800 LF
	MARKERS		
МН	PERMANENT RAISED YELLOW & YELLOW	13 EA	13 EA
	NOTE: FOR EACH PAINT PAVEMENT MARKING ITEM 2X IMPLIES TWO APPLICATIONS, AND 3X	M, 1X IMPLIES A SINGLE APF IMPLIES THREE APPLICATION	PLICATION,



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