

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STATE PROJECT REFERENCE NO.	SHEET NO.
B-4330	TCP-1

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

B-4330

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
1101.03	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
1150.01	FLAGGING DEVICES
1160.01	TEMPORARY CRASH CUSHION
1170.01	PORTABLE CONCRETE BARRIER
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 AND INDEX OF SHEETS
TCP-2	GENERAL NOTES
TCP-3	PHASING AND TEMPORARY PAVEMENT MARKING SCHEDULE
TCP-4	PHASE I
TCP-5	PHASE II
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)
 - 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

TIP PROJECT:

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APPROVED: DATE: 9/25/2007	PLAN PREPARED BY: N.C.D.O.T. WORK ZONE TRAFFIC CONTROL UNIT
	J.S. BOURNE, PE TRAFFIC CONTROL ENGINEER
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	HABIB A. LAWANDOS TRAFFIC CONTROL PROJECT DESIGN ENGINEER
	TRAFFIC CONTROL DESIGN ENGINEER

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 UNDESIRE 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.

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 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, ON BOTH SIDES OF AN OPEN TRAVELWAY, WITHIN THE SAME LOCATION, ON A TWO-LANE, TWO-WAY ROAD.

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 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.

- G) DO NOT EXCEED A DIFFERENCE OF 2.0 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 ONCE EVERY 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 WHEN WORK IS WITHIN 100 FT 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.

- J) INSTALL PERMANENT SIGNING.
- K) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

TRAFFIC BARRIER

- L) 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 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.

- M) 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 FOLLOWS OR AS SHOWN IN THE PLANS:

POSTED SPEED LIMIT	MINIMUM OFFSET
40 MPH OR LESS	15 FT
45 - 50 MPH	20 FT
55 MPH	25 FT
60 MPH OR HIGHER	30 FT

TRAFFIC CONTROL DEVICES

- N) WHEN USING ROADWAY STANDARD NO. 1101.02, CONES AND SKINNY-DRUMS MAY BE USED IN LIEU OF DRUMS ON -L-.
- O) 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

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

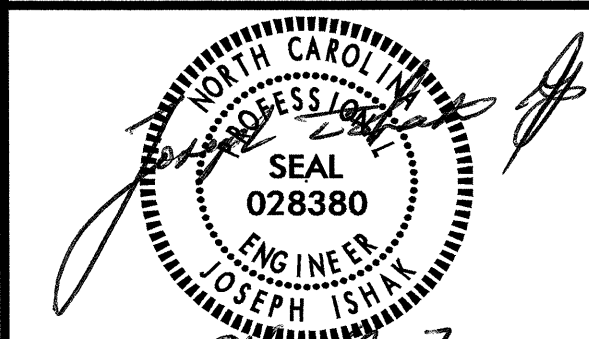

ROAD NAME	MARKING	MARKER
-L- SR 1158	PAINT	NONE
STRUCTURE	COLD APPLIED PLASTIC (TYPE III)	NONE

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

ROAD NAME	MARKING	MARKER
-L- SR 1158	PAINT	NONE
STRUCTURE	COLD APPLIED PLASTIC (TYPE IV)	NONE

- R) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
- S) REPLACE ANY PAVEMENT MARKINGS THAT HAVE BEEN DAMAGED BY THE END OF EACH DAY'S OPERATION.
- T) 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.

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PHASING

PHASE I

NOTE: MAINTAIN VEHICULAR ACCESS TO DRIVEWAYS WITHIN PROJECT LIMITS THROUGHOUT THE DURATION OF THE PROJECT.

STEP 1: USING ROADWAY STANDARD DRAWING 1101.02 SHEET 1 OF 9, PERFORM THE FOLLOWING: (SEE SHEET TCP-4).

- A) INSTALL WORK ZONE ADVANCE WARNING SIGNS ON SR 1158.
- B) CONSTRUCT PROPOSED -Y2- BETWEEN EXISTING -Y1- AND EXISTING -Y2-, AND OPEN TO TRAFFIC.
- C) INSTALL SIGNING FOR THE TEMPORARY ONE LANE TRAFFIC PATTERN.
- D) REMOVE EXISTING DOUBLE YELLOW CENTER LINE FROM 100 FT PRIOR TO THE "BEGIN PROJECT" LIMITS TO 100 FT BEYOND THE "END PROJECT LIMITS", AND PLACE TEMPORARY WHITE EDGE LINE ON -L- FROM STA. 12+50+/- TO STA. 16+45+/-.
- E) PLACE TRAFFIC IN A ONE-LANE, TWO-WAY TRAFFIC PATTERN IN THE EXISTING WB LANE OF THE EXISTING ROAD.
- F) USING RSD 1101.03 SHEET 8 OF 9 AS NEEDED, PERFORM THE FOLLOWING:
 - * REMOVE EXISTING EB WOOD BRIDGE RAIL AND INSTALL IT ON THE LOCATION SHOWN ON TCP-4 AND STRUCTURE PLANS.
 - * INSTALL TEMPORARY GUARDRAIL FROM -L- STA. 13+75+/- TO -L- STA. 14+10 +/- (BEGINNING OF EXISTING BRIDGE) AND FROM -L- STA. 14+85 +/- (END OF EXISTING BRIDGE) TO -L- STA. 15+25+/- AS SHOWN ON TCP-4. (REFER TO ROADWAY PLANS FOR SPECIAL DETAIL TO CONNECT TEMPORARY GUARDRAIL TO WOOD BRIDGE RAIL).
 - * INSTAL TEMPORARY SHORING # 1 FROM -L- STA. 13+91 +/- TO -L- STA. 14+15 +/- AND TEMPORARY SHORING # 2 FROM -L- STA. 14+72 +/- TO -L- STA. 14+95 +/-

STEP 2: USING RSD 1101.02 SHEET 1 OF 9 AND RSD 1101.03 SHEET 8 OF 9 AS NEEDED, PERFORM THE FOLLOWING: (SEE SHEET TCP-4, AND ROADWAY PLANS)

- CONSTRUCT RIGHT SIDE OF PROPOSED -L- FROM -L- STA. 13+00+/- TO -L- STA. 15+95+/-, INCLUDING PROPOSED PHASE I BRIDGE CONSTRUCTION, UP TO BUT NOT INCLUDING FINAL LAYER OF SURFACE COURSE.
- CONSTRUCT -Y1- FROM -Y1- STA. 10+00 +/- TO -Y1- STA. 10+72 +/-.

PHASE II

STEP 1: USING RSD 1101.02 SHEET 1 OF 9 AND RSD 1101.03 SHEET 8 OF 9 AS NEEDED, PERFORM THE FOLLOWING: (SEE SHEET TCP-5)

- A- INSTALL TEMPORARY PORTABLE CONCRETE BARRIER (PCB) ON SR 1158 (-L-) FROM STA. 13+80+/- TO STA. 15+20+/-, .
- B- PLACE TEMPORARY PAVEMENT MARKING FOR PHASE II TEMPORARY TRAFFIC PATTERN AND SHIFT TRAFFIC INTO A ONE-LANE, TWO-WAY TEMPORARY TRAFFIC PATTERN.
- C- REMOVE THE TEMPORARY GUARDRAIL AND TEMPORARY SHORINGS INSTALLED IN PHASE I, STEP 1, AND REMOVE THE REMAINING OF EXISTING BRIDGE.

STEP 2: USING RSD 1101.02 SHEET 1 OF 9 AND RSD 1101.03 SHEET 8 OF 9 AS NEEDED, PERFORM THE FOLLOWING: (SEE SHEET TCP-5 AND ROADWAY PLAN).

- COMPLETE CONSTRUCTION OF THE PROPOSED -L- INCLUDING PHASE II BRIDGE CONSTRUCTION, UP TO BUT NOT INCLUDING FINAL LAYER OF SURFACE COURSE.
- CONSTRUCT -Y- FROM -Y- STA. 10+00 +/- TO -Y- STA. 10+62 +/-.

STEP 3: USING RSD 1101.02, SHEET 1 OF 9, PERFORM THE FOLLOWING:

- REMOVE ALL PCB INSTALLED ON SR 1158 (-L-).
- PLACE FINAL LAYER OF SURFACE COURSE AND FINAL PAVEMENT MARKINGS ON -L- FROM -L- STA. 13+00 +/- TO -L- STA. 15+95 +/- . SEE SHEET PM-1.
- PLACE FINAL PAVEMENT MARKINGS ON -Y- FROM -Y- STA. 10+00 +/- TO -Y- STA. 10+62 +/- . SEE SHEET PM-1.
- OPEN -L- AND -Y- LINES TO PROPOSED TRAFFIC PATTERN.
- REMOVE ALL TEMPORARY SIGNINGS.

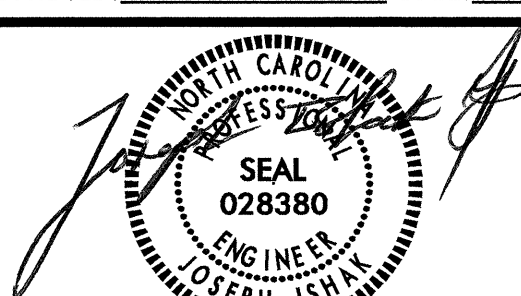

STEP 4: REMOVE ALL WORK ZONE TRAFFIC CONTROL DEVICES.

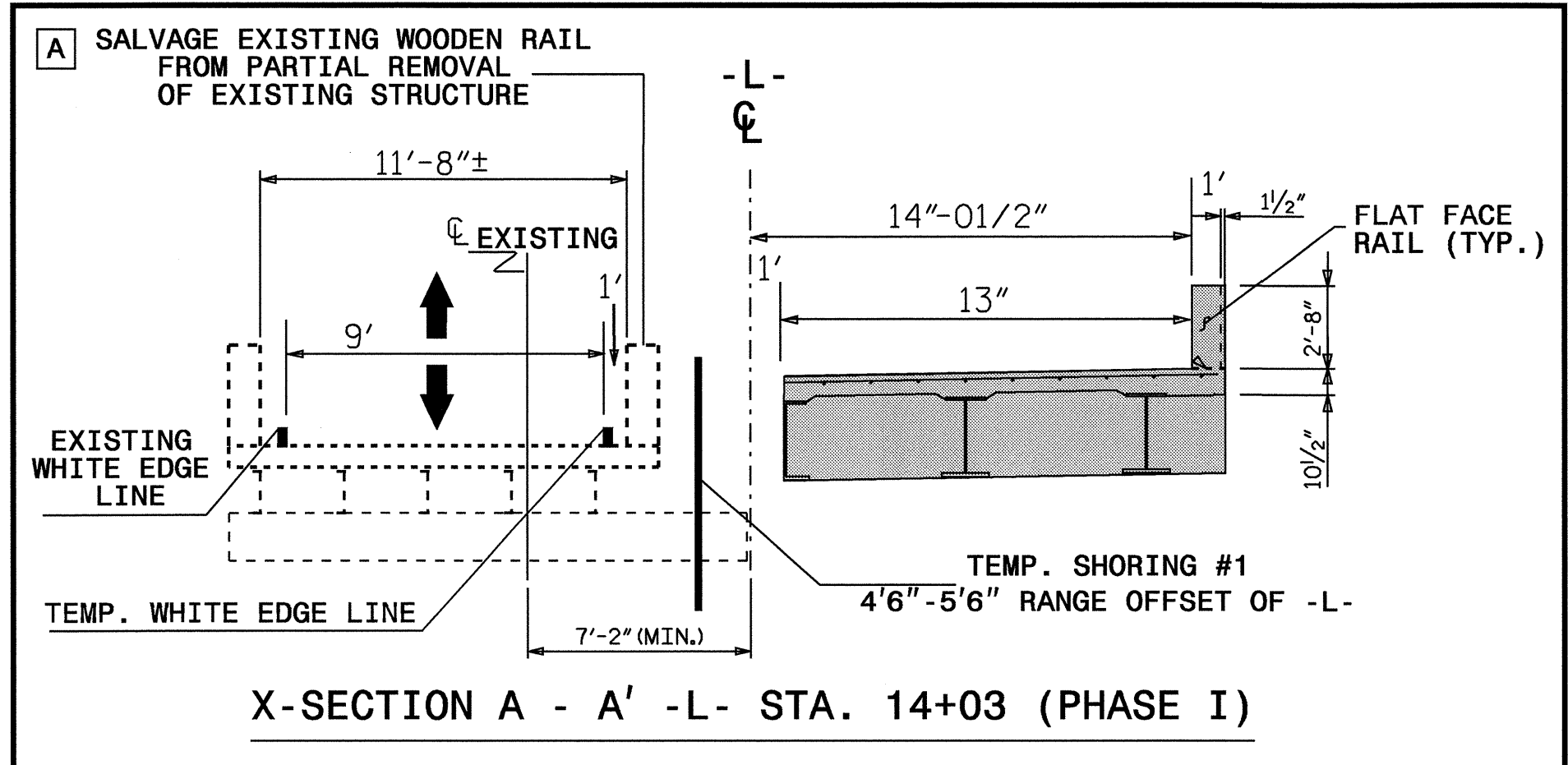
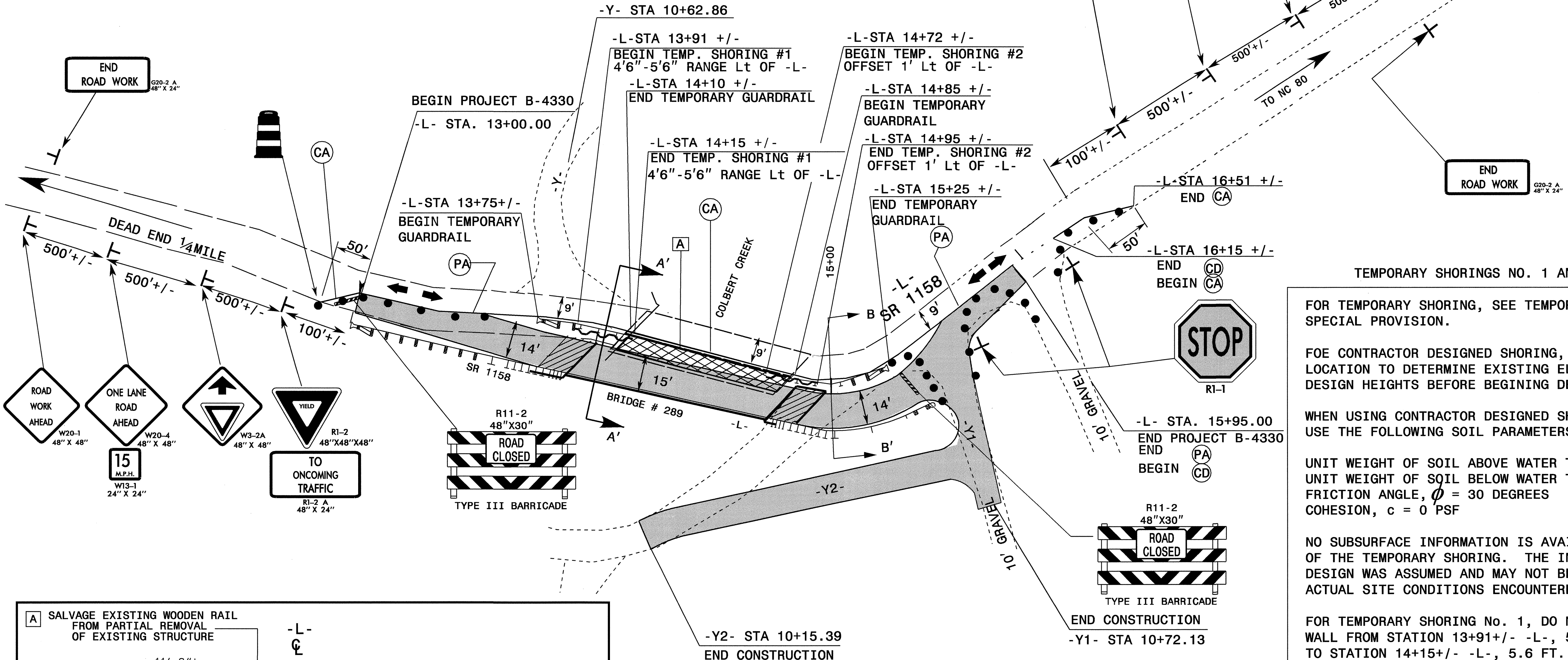
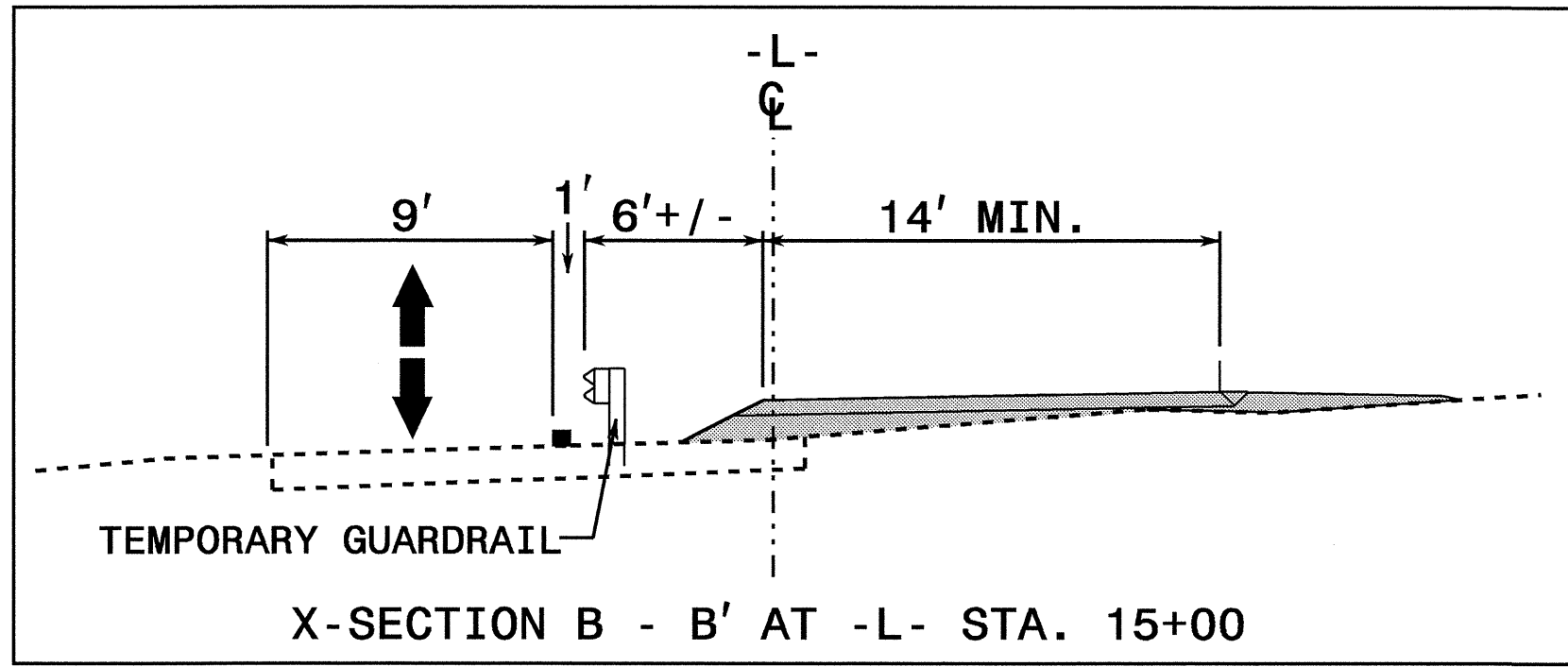
TEMPORARY PAVEMENT MARKING SCHEDULE

PAVEMENT MARKINGS				
COLD APPLIED PLASTIC (4") Type4 - Removable Tape				
CA	WHITE EDGELINE	225		LF
CD	WHITE MINISKIP	25		LF
			TOTAL	250 LF
PAINT(4")				
PA	WHITE EDGELINE (2X)	2000		LF
			TOTAL	2000 LF

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

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TEMPORARY SHORINGS NO. 1 AND NO. 2

FOR TEMPORARY SHORING, SEE TEMPORARY SHORING SPECIAL PROVISION.

FOR CONTRACTOR DESIGNED SHORING, SURVEY THE SHORING LOCATION TO DETERMINE EXISTING ELEVATION 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

NO 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 TEMPORARY SHORING No. 1, DO NOT USE A TEMPORARY MSE WALL FROM STATION 13+91 +/- -L-, 5.6 FT. LEFT OF -L-, TO STATION 14+15 +/- -L-, 5.6 FT. LEFT OF -L-.

FOR TEMPORARY SHORING No. 2, DO NOT USE A TEMPORARY MSE WALL FROM STATION 14+72 +/- -L-, 1.0 +/- FT. LEFT OF -L-, TO STATION 14+95 +/- -L-, 1.0 +/- FT. RIGHT OF -L-.

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.

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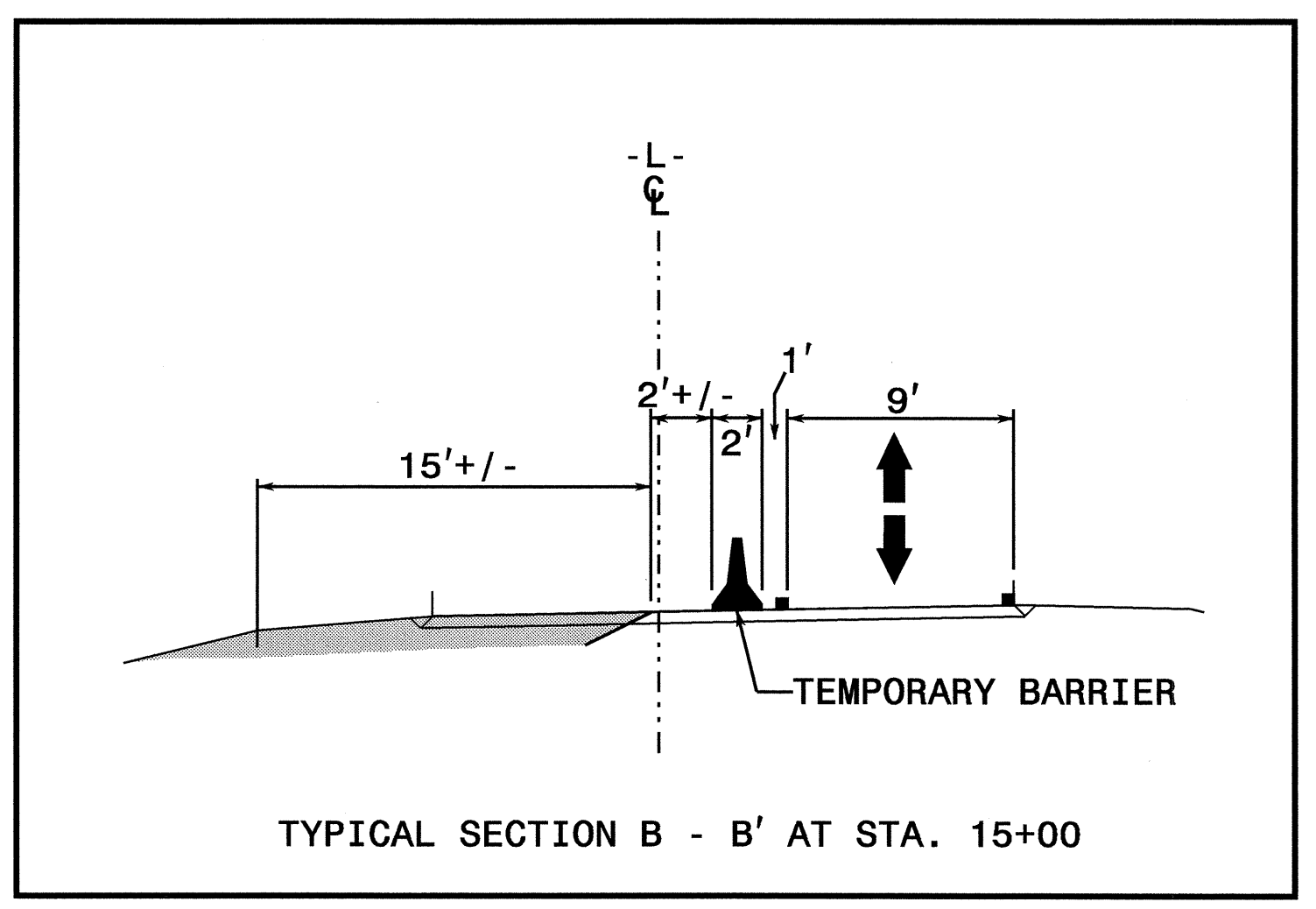
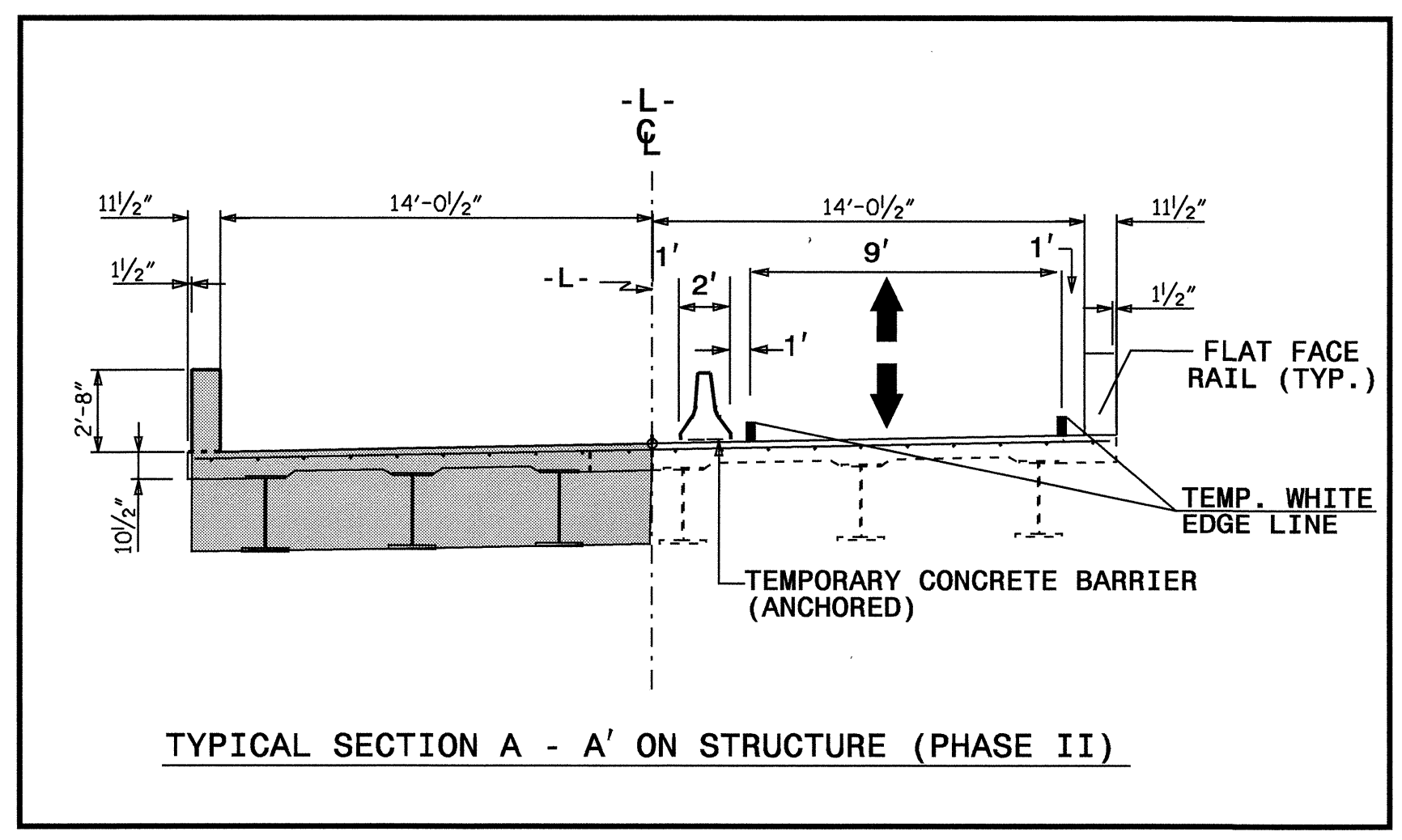
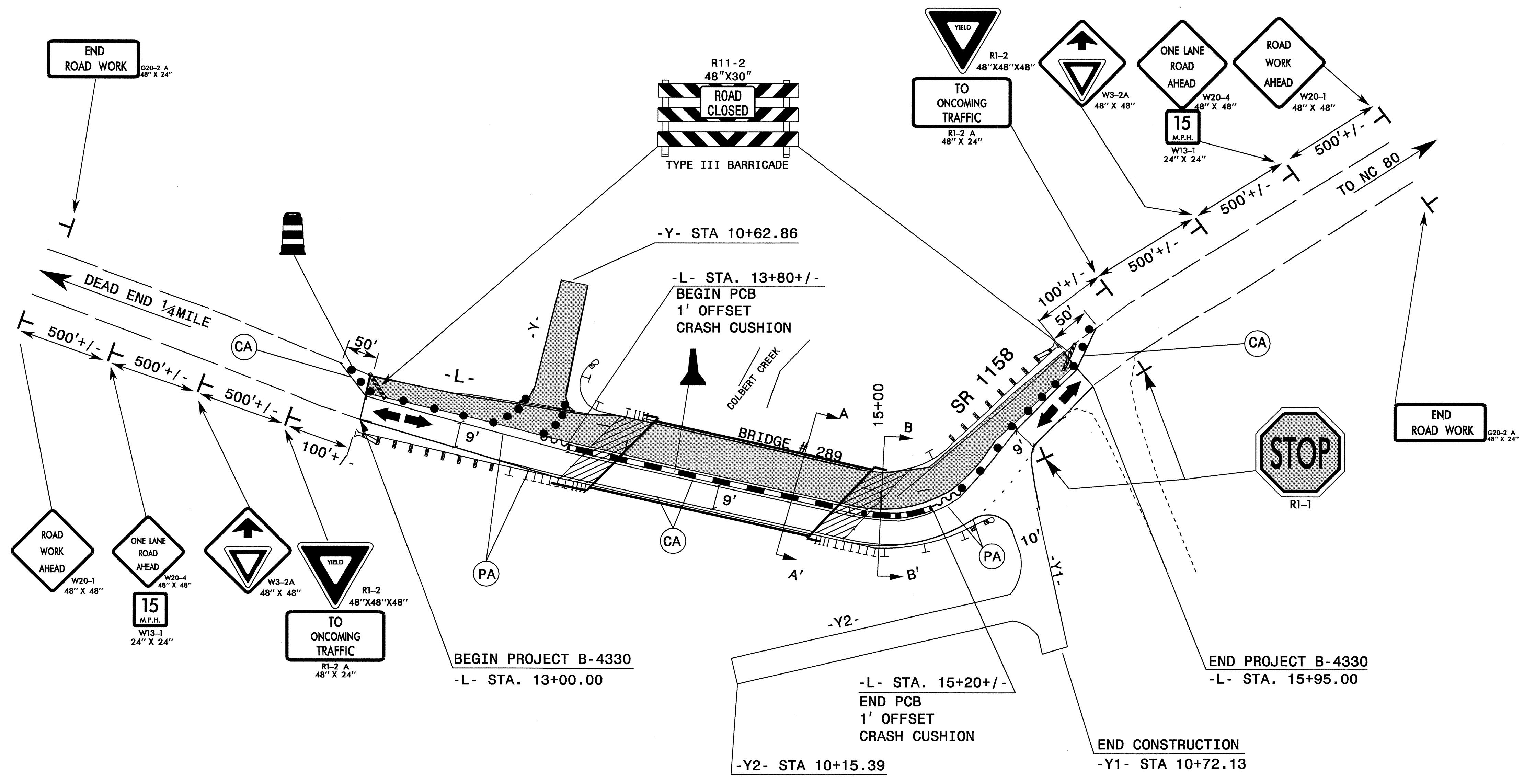
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