

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STATE PROJECT REFERENCE NO.	SHEET NO.
B-4190	TCP-01

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

MCDOWELL COUNTY

B-4190

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
1115.01	FLASHING ARROW PANELS
1130.01	DRUMS
1135.01	CONES
1145.01	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 - (PERMANENT AND TEMPORARY)
1261.01	GUARDRAIL AND BARRIER DELINEATOR SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATOR TYPES
1262.01	GUARDRAIL END DELINEATION

INDEX OF SHEETS

SHEET NO.	TITLE
TCP-01	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, LEGEND AND INDEX OF SHEETS
TCP-02	PROJECT NOTES
TCP-03	PHASING AND TEMPORARY PAVEMENT MARKING / MARKER SCHEDULE
TCP-04 & TCP-05	PHASE I DETAILS
TCP-06 & TCP-07	PHASE II DETAILS

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
 - 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

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APPROVED:	PLAN PREPARED BY: N.C.D.O.T. WORK ZONE TRAFFIC CONTROL
DATE: 1/13/10	
SEAL	J. S. BOURNE, P.E. STATE TRAFFIC MANAGEMENT ENGINEER
	J. S. KITE, P.E. TRAFFIC CONTROL PROJECT ENGINEER
	J. D. KUSE, P.E. TRAFFIC CONTROL PROJECT DESIGN ENGINEER
	R. M. GARRETT TRAFFIC CONTROL DESIGN ENGINEER

PROJECT NOTES

PROJ. REFERENCE NO.	SHEET NO.
B-4190	TCP-02

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 ENGINEERS.

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.

WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO A DIVIDED FACILITY AND WITHIN 10 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 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 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 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) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

TRAFFIC CONTROL DEVICES

- L) SPACE CHANNELIZING DEVICES IN WORK AREAS NO GREATER IN FEET 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.
- M) PLACE TYPE III BARRICADES, WITH "ROAD CLOSED" SIGN R11-2 ATTACHED, OF SUFFICIENT LENGTH TO CLOSE ENTIRE ROADWAY.

PAVEMENT MARKINGS AND MARKERS

- N) INSTALL PAVEMENT MARKINGS AND PAVEMENT MARKERS ON THE FINAL SURFACE AS SHOWN IN THE PAVEMENT MARKING PLAN.
- O) INSTALL TEMPORARY PAVEMENT MARKINGS AND TEMPORARY PAVEMENT MARKERS ON INTERIM LAYERS OF PAVEMENT AS FOLLOWS:

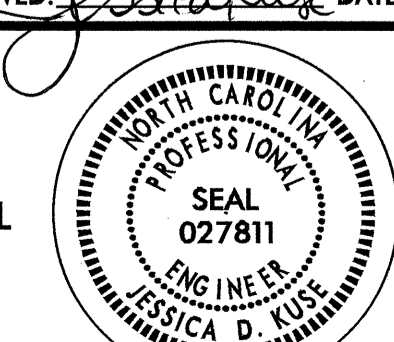

ROAD NAME	MARKING	MARKER
-L- (EXIST) NC 226	PAINT	TEMPORARY RAISED PAVEMENT MARKERS
-DET-	PAINT	TEMPORARY RAISED PAVEMENT MARKERS

- P) 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.
- Q) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
- R) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS BY THE END OF EACH DAY'S OPERATION.

WORK ZONE ADVANCE WARNING SIGNS

- 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.

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PHASING

PHASE I

STEP 1 - INSTALL ADVANCE WARNING SIGNS, DRUMS AND BARRICADES AS SHOWN ON SHEETS TCP-04 AND TCP-05. (SEE PROJECT NOTES SHEET TCP-02 REGARDING ADVANCE WARNING SIGN ASSEMBLIES).

NOTE: TRAFFIC TO BE MAINTAINED IN THE EXISTING 2-LANE, 2-WAY PATTERN ALONG NC 226 ROADWAY. (SEE SHEETS TCP-04 AND TCP-05)

STEP 2 - USING ROADWAY STANDARD DRAWING 1101.02, SHEET 1 OF 9 AS NEEDED, CONSTRUCT TEMPORARY 12'-10" X 8'-4" DRAINAGE PIPE, GUARDRAIL AND DETOUR ALIGNMENT FROM -DET- STA. 10+75+/- TO STA. 25+25+/- LYING OUTSIDE OF THE EXISTING TRAFFIC PATTERN ALONG -L- NC 226. (SEE ROADWAY PLANS AND SHEETS TCP-04 AND TCP-05) TEMPORARY DETOUR ALIGNMENT TO REMAIN CLOSED AT THIS TIME.

- REMOVE AND RELOCATE EXISTING GUARDRAIL AND END TREATMENTS CONFLICTING WITH THE TEMPORARY DETOUR ALIGNMENT FROM -DET- STA. 16+00+/- TO STA. 23+00+/-.

STEP 3 - WORKING IN A CONTINUOUS MANNER COMPLETE THE FOLLOWING:

- USING ROADWAY STANDARD DRAWING 1101.02, SHEET 1 OF 9 CONSTRUCT REMAINDER OF -DET- ALIGNMENT AT EACH TIE-IN LOCATION WITH EXISTING -L- NC 226 INCLUDING THE FINAL SURFACE COURSE ALONG THE DETOUR ROUTE IN ITS ENTIRETY.

- INSTALL TEMPORARY PAVEMENT MARKINGS AND MARKERS AS SHOWN ON SHEETS TCP-06 AND TCP-07.

- SIMULTANEOUSLY INSTALL TRAFFIC CONTROL WARNING SIGNS AND DEVICES NECESSARY TO CLOSE EXISTING -L- NC 226 AND SHIFT TRAFFIC INTO 2-LANE, 2-WAY THE PHASE II TRAFFIC PATTERN ONTO THE DETOUR ALIGNMENT.

PHASE II

STEP 1 - REMOVE EXISTING BRIDGE AND CONSTRUCT PROPOSED CULVERT AND ROADWAY UP TO BUT NOT INCLUDING THE FINAL SURFACE COURSE FROM -L- STA. 17+00+/- TO STA. 18+75+/- (SEE ROADWAY PLANS AND SHEETS TCP-06 AND TCP-07)

- INSTALL PROPOSED GUARDRAIL LYING OUTSIDE OF THE MAINTAINED DETOUR TRAFFIC PATTERN FROM -L- STA. 16+15+/- TO STA. 20+00+/- (SEE ROADWAY PLANS AND SHEETS TCP-06 AND TCP-07)

STEP 2 - INSTALL TEMPORARY PAVEMENT MARKINGS IN THE FINAL PATTERN ALONG -L- AND SHIFT TRAFFIC INTO THE FINAL 2-LANE, 2-WAY PATTERN ON THE EXISTING ROADWAY ALIGNMENT (-L-).

STEP 3 - USING ROADWAY STANDARD DRAWING 1101.02, SHEET 1 OF 9 INSTALL THE REMAINING GUARDRAIL INSTALLATION FROM -L- STA. 20+00+/- TO 22+50+/- (PROTECT AREA WITH TMIA DURING OPERATION) (SEE ROADWAY PLANS)

- REMOVE TEMPORARY DETOUR, DRAINAGE AND GUARDRAIL INSTALLED DURING PHASE I CONSTRUCTION.

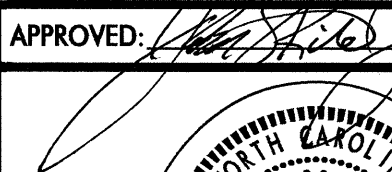
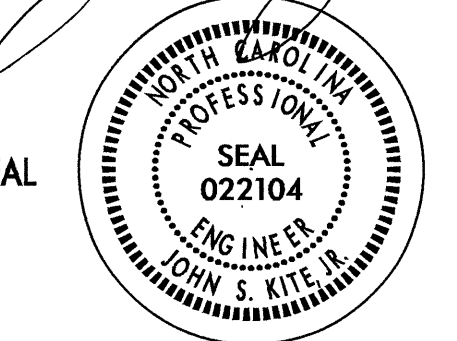

STEP 4 - INSTALL FINAL SURFACE LAYER AND FINAL PAVEMENT MARKINGS AND MARKERS ALONG -L-.

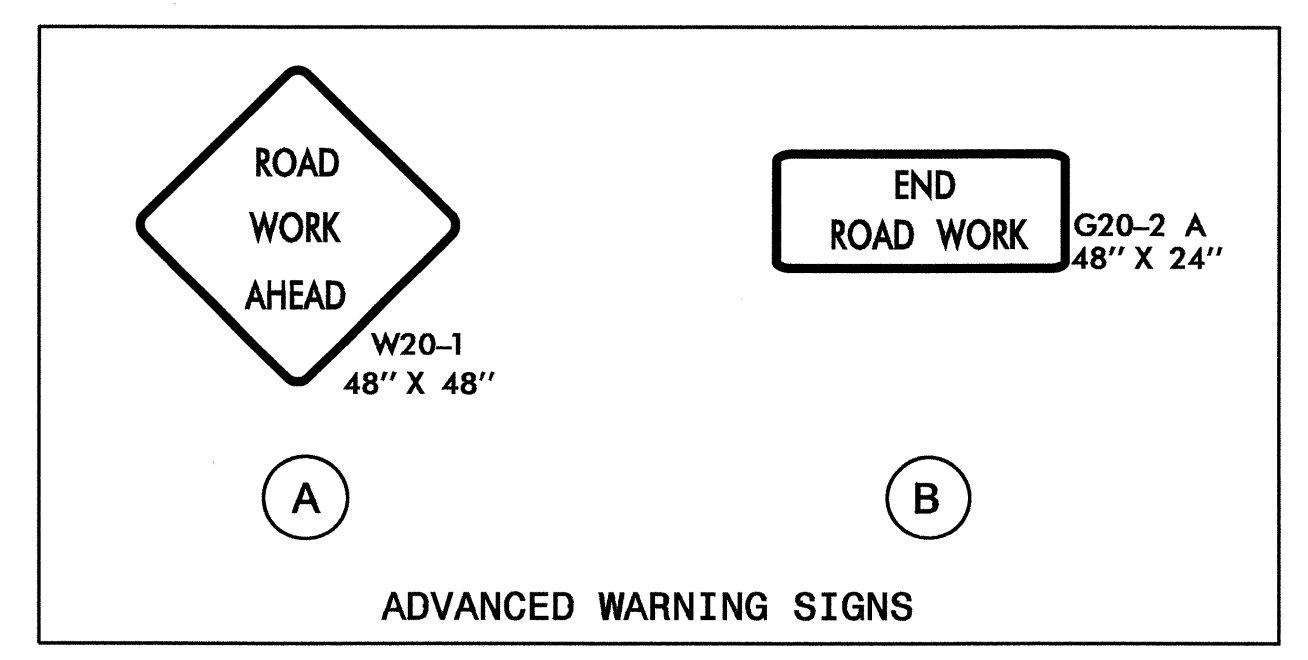
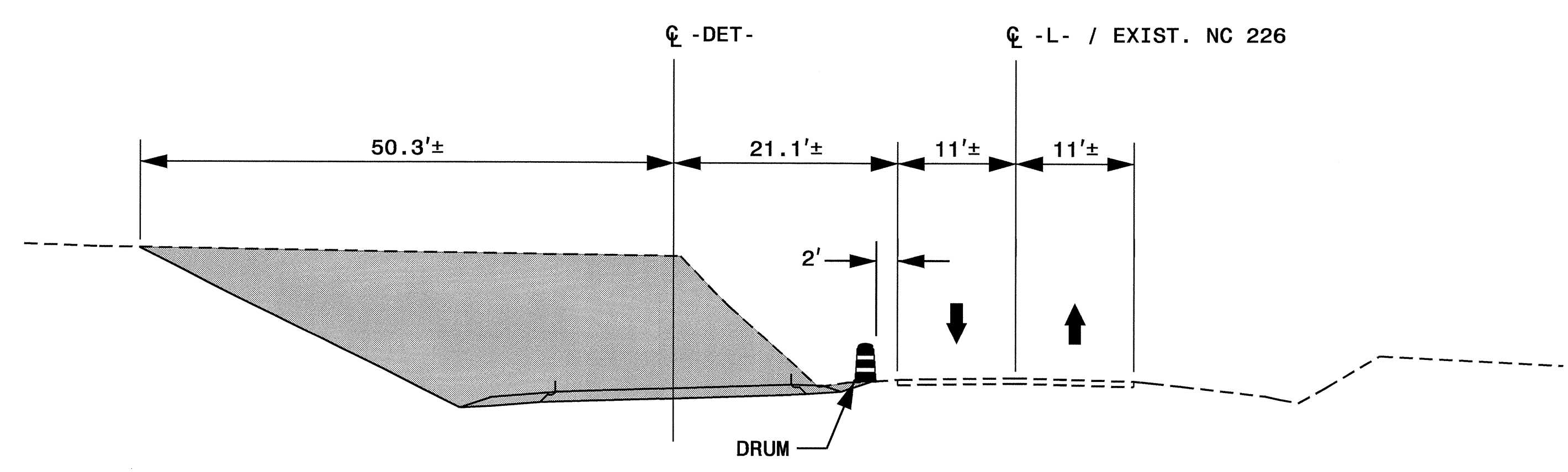
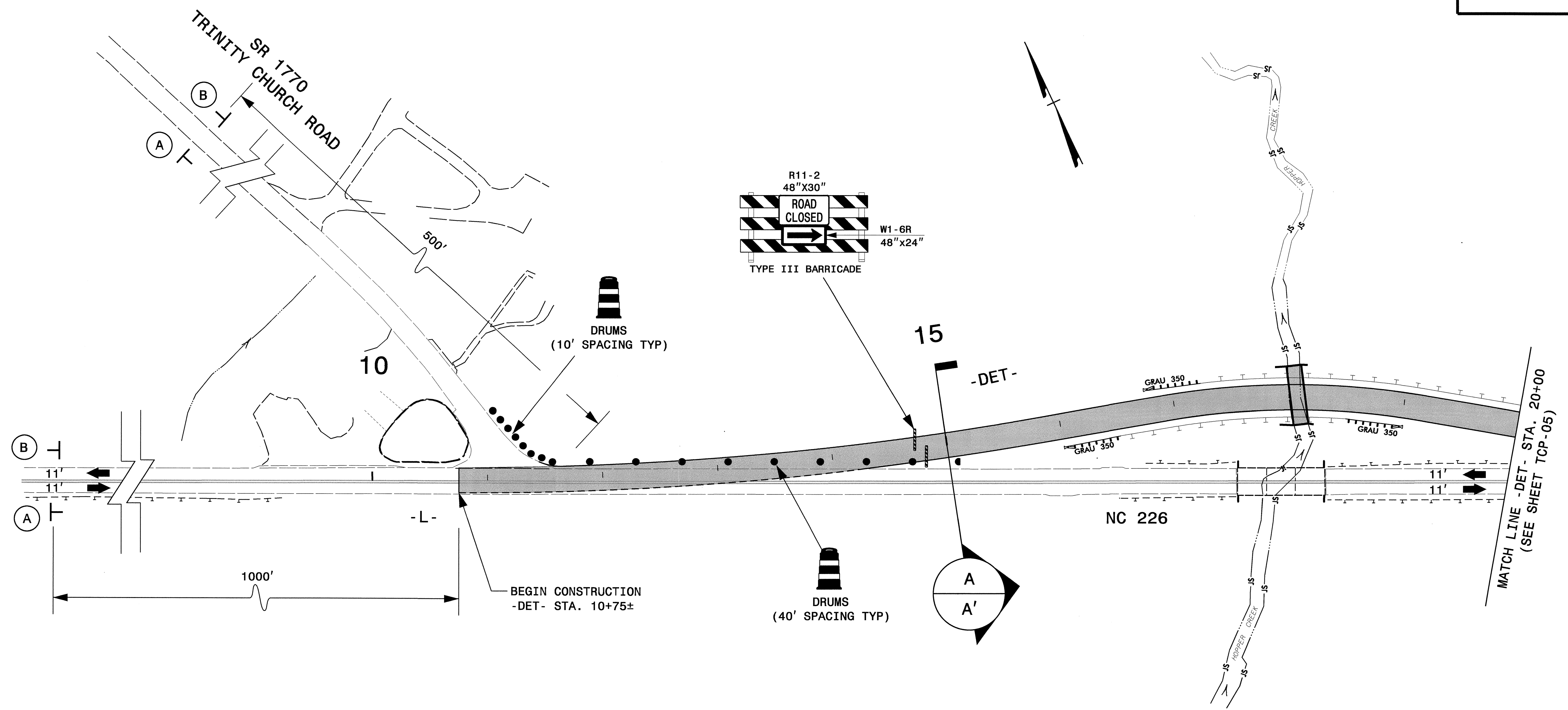
STEP 5 - REMOVE ALL REMAINING WORK ZONE TRAFFIC CONTROL SIGNS AND DEVICES.

TEMPORARY PAVEMENT MARKING / MARKER SCHEDULE

SYMBOL	DESCRIPTION	PAY ITEM	QUANTITY	TOTAL
TEMPORARY PAVEMENT MARKINGS				
PAINT (4")				
PA	WHITE EDGELINE (2X)	13518	LF	
PI	YELLOW DOUBLE CENTER (2X)	13489	LF	
				TOTAL 27007 LF
MARKERS				
TEMPORARY RAISED PAVEMENT MARKERS				
MH	YELLOW & YELLOW	18	EA	
				TOTAL 18 EA

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

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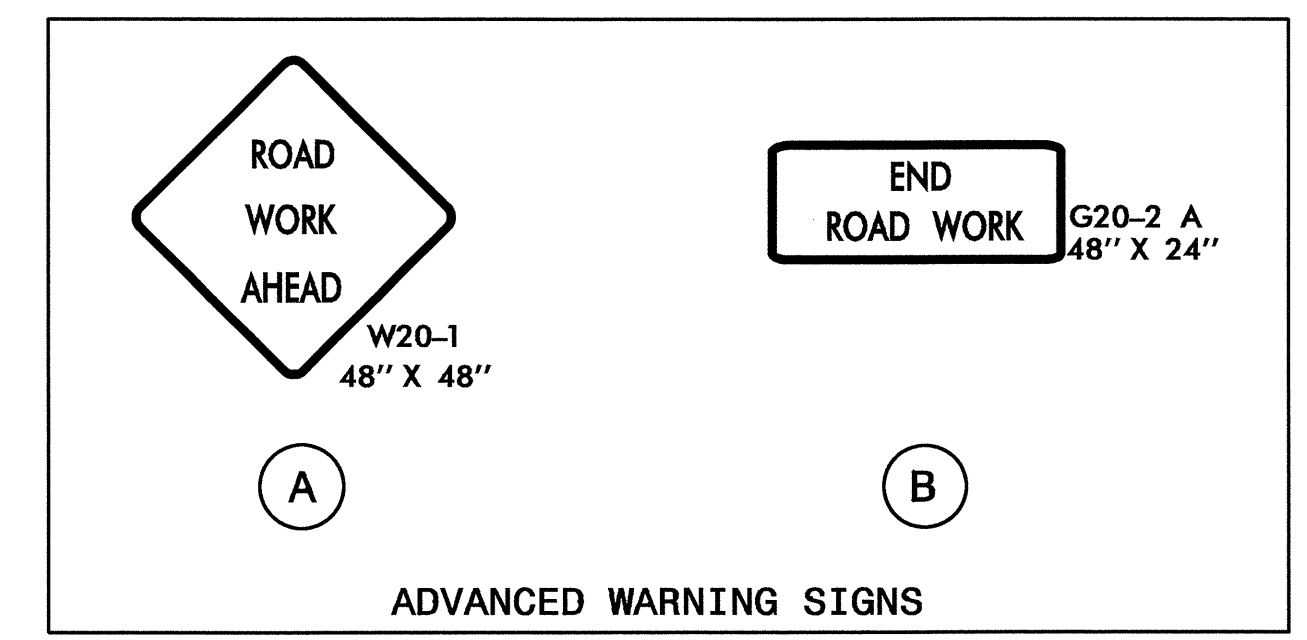
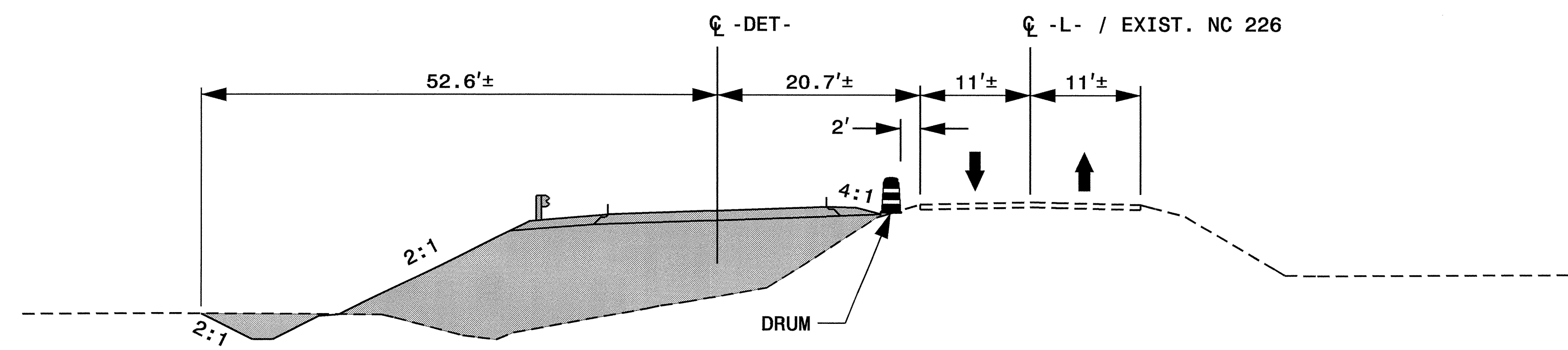
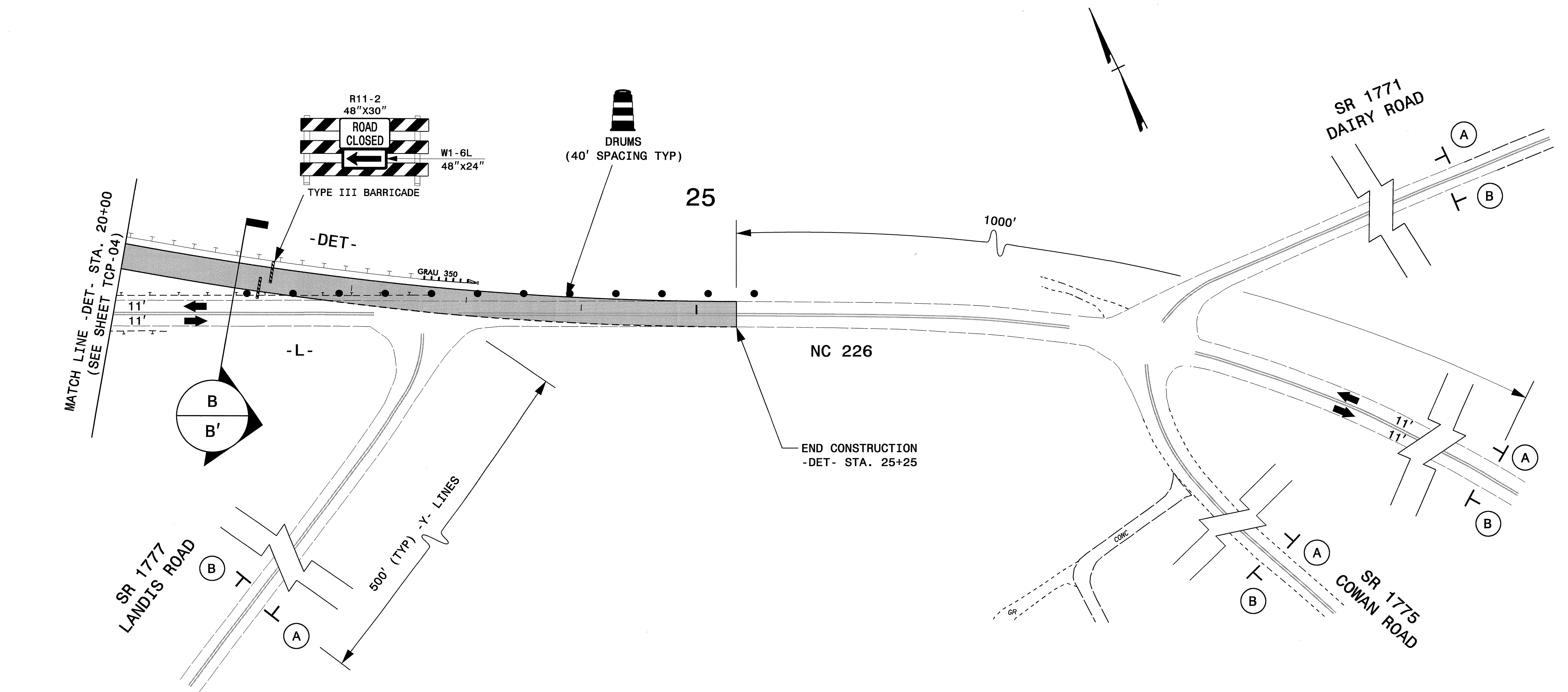
PROFESSIONAL SEAL 027811 ENGINEER JESSICA D. KULUS

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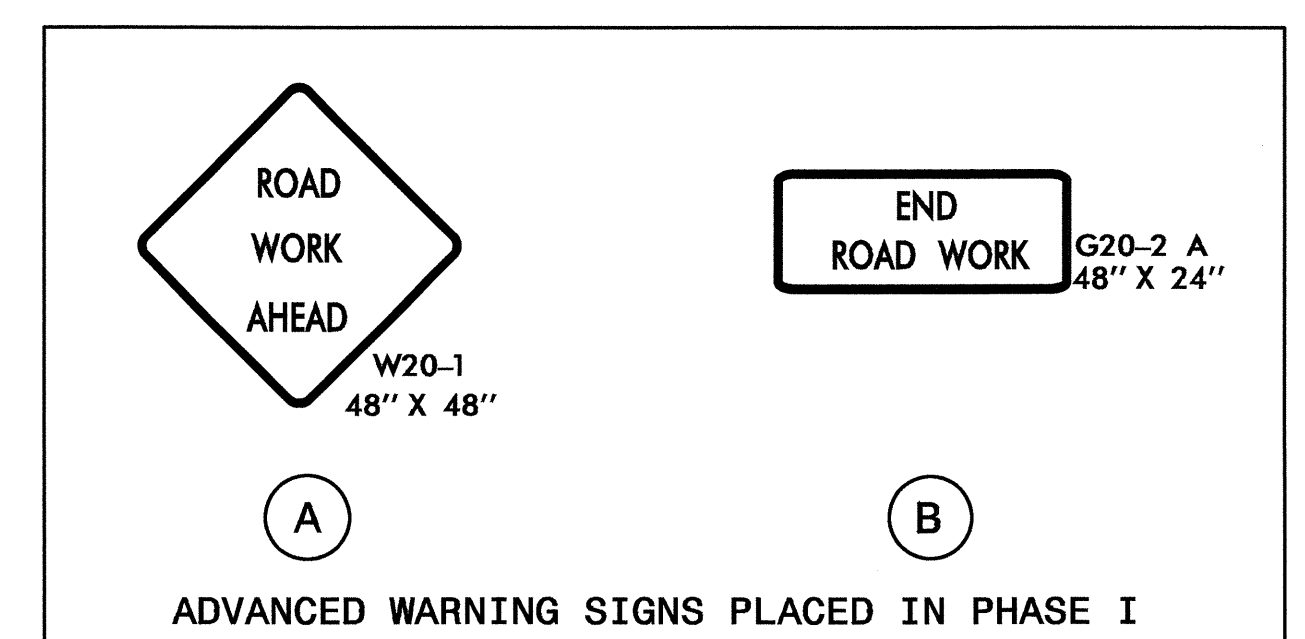
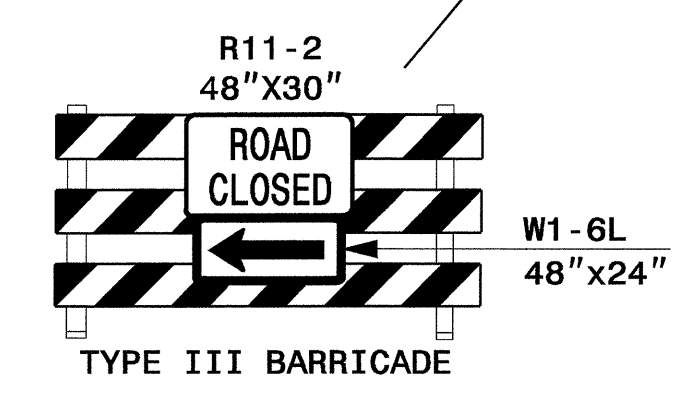
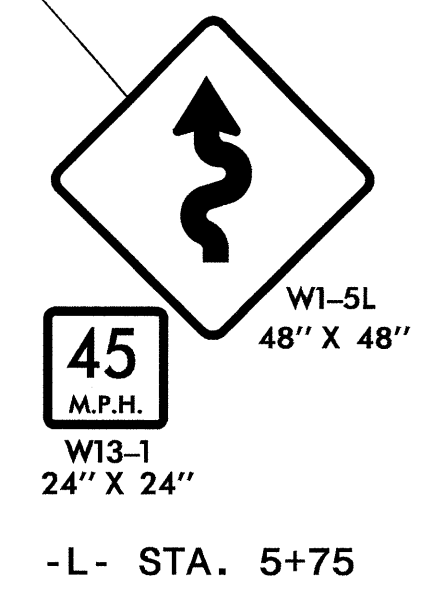
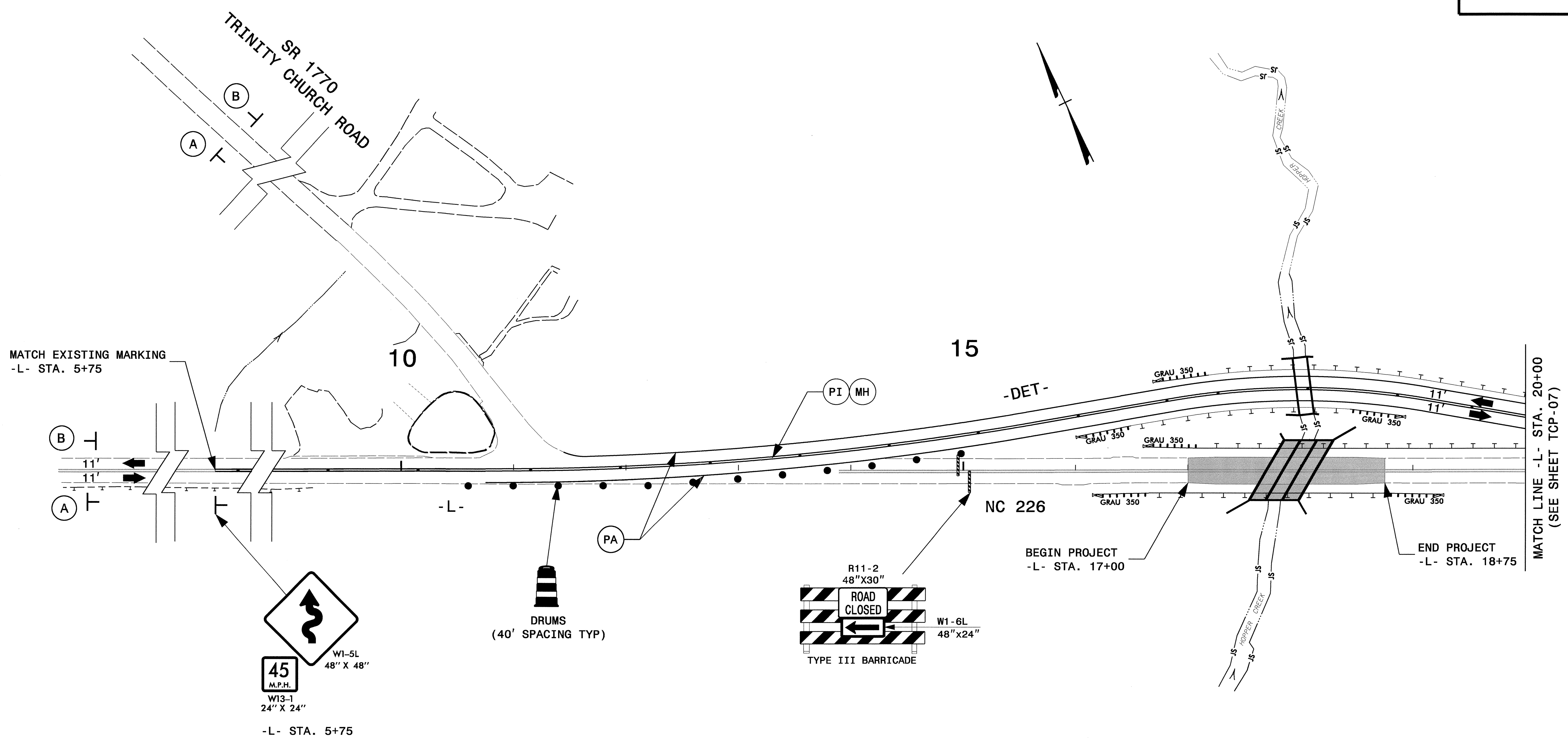
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PHASE II

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