

**PLAN FOR PROPOSED
TRAFFIC CONTROL, MARKING & DELINEATION
STANLY 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
1101.03	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
1145.01	Barricades
1150.01	Flaggers Devices
1160.01	Temporary Crash Cushion
1170.01	Portable Concrete Barrier
1180.01	Skinny - Drum
1205.01	Pavement Markings - Line Types and Offsets
1205.02	Pavement Markings - 2 Lane and Multilane Roadways
1205.04	Pavement Markings - Intersections
1250.01	Pavement Marker Spacing
1251.01	Raised Pavement Markers - Temporary and Permanent
1261.01	Guardrail and Barrier Delineator Spacing
1261.02	Guardrail and Barrier Delineator Types
1262.01	Guardrail End Delineation

PAVEMENT MARKING SCHEDULES

SYMB	DESCRIPTION	PAY ITEM QUANTITY	TOTAL
FINAL PAVEMENT MARKINGS			
V2	WHITE STOPBAR	POLYUREA(24") 59 LF	
		TOTAL	59 LF
VA	WHITE EDGELINE	3340 LF	
VI	YELLOW DOUBLE CENTER	3084 LF	
		TOTAL	6424 LF
MARKERS PERMANENT RAISED PAVEMENT MARKERS			
MA	YELLOW & YELLOW	16 EA	
		TOTAL	16 EA
TEMPORARY PAVEMENT MARKINGS			
PAINT(24") TEMPORARY PAVEMENT MARKERS			
P4	WHITE STOPBAR (2X)	186 LF	
		TOTAL	186 LF
COLD APPLIED PLASTIC (4") Type 4- Removable Tape			
CA	WHITE EDGELINE	498 LF	
CI	YELLOW DOUBLE CENTER	498 LF	
		TOTAL	996 LF
PAINT(4")			
PA	WHITE EDGELINE (2X)	11458 LF	
PI	YELLOW DOUBLE CENTER (2X)	11704 LF	
		TOTAL	23162 LF
MARKERS TEMPORARY RAISED PAVEMENT MARKERS			
MH	YELLOW & YELLOW	80 EA	
		TOTAL	80 EA

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
 - PORTABLE CONCRETE BARRIER
 - TEMPORARY SHORING

INDEX OF SHEETS

SHEET NO.	TITLE
TCP-1	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, LEGEND, PAVEMENT MARKING SCHEDULE, AND INDEX OF SHEETS
TCP-2	PROJECT NOTES
TCP-3	TRAFFIC CONTROL PHASING
TCP-4 THROUGH 6	PHASE I DETAIL DRAWINGS
TCP-7 THROUGH 9	PHASE II DETAIL DRAWINGS
TCP-10 THROUGH 14	PHASE III DETAIL DRAWINGS
TCP-15 AND 16	PHASE IV DETAIL DRAWINGS
TCP-17	DETOUR ROUTE DETAIL
TCP-18	ADVANCE WORK ZONE SIGN DETAIL
TCP-19	TEMPORARY SHORING DATA
TCP-20	PORTABLE CONCETE BARRIER AT TEMPORARY SHORING LOCATIONS
SD-1	SIGN DESIGN DETAIL
PM-1 AND 2	FINAL PAVEMENT MARKINGS

B-4276

TIP PROJECT:

\$\$\$\$\$SYTIME\$\$\$\$\$DNDON\$\$\$\$\$USERNAME\$\$\$\$\$

WilburSmith
ASSOCIATES
421 Fayetteville Street
Suite 1303
Raleigh, North Carolina 27601
phone: (919) 755-0583
fax: (919) 832-8798

APPROVED:	PLAN PREPARED FOR: N.C.D.O.T. WORK ZONE TRAFFIC CONTROL UNIT
DATE:	
SEAL	J. S. Bourne, PE TRAFFIC CONTROL ENGINEER
	J. Ishak, PE TRAFFIC CONTROL PROJECT ENGINEER
	H. Lawandos TRAFFIC CONTROL PROJECT DESIGN ENGINEER
	TRAFFIC CONTROL DESIGN ENGINEER / TECHNICIAN

GENERAL 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 UNDESIRE 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
ALL ROADS	MONDAY THROUGH FRIDAY 6:00 AM TO 9:00 AM 4:00 PM TO 6:00 PM

B) DO NOT CONDUCT SINGLE VEHICLE HAULING AS FOLLOWS: EGRESS FROM RAMPS BE ALLOWED:

ROAD NAME	DAY AND TIME RESTRICTIONS
NC 73	MONDAY THROUGH FRIDAY 6:00 AM TO 9:00 AM 4:00 PM TO 6:00 PM

C) DO NOT CONDUCT MULTI-VEHICLE HAULING AS FOLLOWS; INGRESS AND

ROAD NAME	DAY AND TIME RESTRICTIONS
NC 73	MONDAY THROUGH FRIDAY 6:00 AM TO 9:00 AM 4:00 PM TO 6:00 PM

D) DO NOT CONDUCT ANY HAULING OPERATIONS AGAINST THE FLOW OF TRAFFIC OF AN OPEN TRAVELWAY UNLESS THE HAULING OPERATION IS PROTECTED BY BARRIER OR GUARDRAIL OR AS DIRECTED BY THE ENGINEER.

LANE AND SHOULDER CLOSURE REQUIREMENTS

- E) 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.
- F) 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.
- G) 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.
- H) 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.

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 (WB-11) 500 FT 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) 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.
- M) PROVIDE PERMANENT SIGNING.
- N) PROVIDE DETOUR SIGNING.
- O) COVER OR REMOVE ALL DETOUR SIGNS WITHIN AND OFF THE PROJECT LIMITS WHEN A DETOUR IS NOT IN OPERATION.
- P) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.
- Q) INSTALL BLACK ON ORANGE "DIP" SIGNS (WB-2) AND/OR "BUMP" SIGNS (WB-1) IN ADVANCE OF THE UNEVEN AREA, OR AS DIRECTED BY THE ENGINEER.

TRAFFIC BARRIER

- R) 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 TEMPORARY BARRIER WITH THE TRAFFIC FLOW, BEGINNING WITH THE UPSTREAM SIDE OF TRAFFIC. REMOVE TEMPORARY BARRIER AGAINST THE TRAFFIC FLOW, BEGINNING WITH THE DOWNSTREAM SIDE OF TRAFFIC.

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.

S) 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 OR LESS	15 FT
45 - 50	20 FT
55	25 FT
60 MPH OR HIGHER	30 FT

TRAFFIC CONTROL DEVICES

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

PAVEMENT MARKINGS AND MARKERS

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

ROAD NAME	MARKING	MARKER
NC 73	POLYUREA	PERMANENT RAISED
NC 73 BRIDGE	POLYUREA	PERMANENT RAISED
-Y- LINES	POLYUREA	NONE

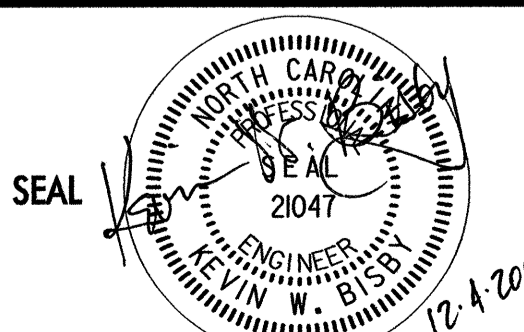
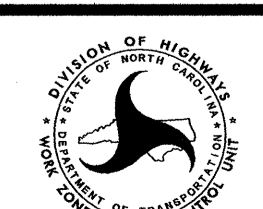
W) INSTALL TEMPORARY PAVEMENT MARKINGS AND TEMPORARY PAVEMENT MARKERS ON INTERIM LAYERS OF PAVEMENT AS FOLLOWS:

ROAD NAME	MARKING	MARKER
NC 73	PAINT	TEMPORARY RAISED
NC 73 BRIDGE	COLD APPLIED PLASTIC - TYPE 4	TEMPORARY RAISED
-Y- LINES	PAINT	NONE
ON-SITE DETOUR	PAINT	TEMPORARY RAISED

X) 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.

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

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

APPROVED: _____ DATE: _____	PROJECT NOTES								
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	DATE: 9/2007								
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421 Fayetteville Street
Suite 1303
Raleigh, North Carolina 27601
phone: (919) 755-0583
fax: (919) 832-8798

SYSTEMS: \$\$\$\$\$\$
 USER: \$\$\$\$\$\$
 DATE: \$\$\$\$\$\$
 TIME: \$\$\$\$\$\$

PHASE I

STEP 1:
ERECT ADVANCED WORK ZONE WARNING SIGNS ON NC 73, SR 1244 (HATLEY FARM RD), SR 1266 (CITY LAKE DR), SR 1406 (CLUB HOUSE DR), AND SR 1493 (APEX DR) IN ACCORDANCE WITH DETAIL DRAWING FOR WORK ZONE WARNING SIGNS. (SEE TCP-18)

STEP 2:
USING RDWY STD 1101.02 SHEET 1 OF 9 REMOVE EXISTING GUARDRAIL ADJACENT TO THE EXISTING EASTBOUND LANE OF NC 73 EAST OF THE BRIDGE, AND CONSTRUCT TEMPORARY GUARDRAIL AS SHOWN. (SEE TCP-4 AND ROADWAY PLAN)

STEP 3:
USING RDWY STD 1101.02 SHEET 1 OF 9 CONSTRUCT ON-SITE DETOUR FROM -DET- STA 13+81 TO -DET- STA 16+50 AND FROM -DET- STA 18+00 TO -DET- STA 25+05 UP TO THE EDGE AND ELEVATION OF THE EXISTING PAVEMENT. (SEE TCP-4 AND 5)

PHASE II

NOTE: THE CONTRACTOR SHALL COMPLETE THE WORK REQUIRED OF STEPS 1 THROUGH 7 WITHIN 30 CALENDAR DAYS. (SEE SPECIAL PROVISIONS)

STEP 1:
USING RDWY STD 1101.03 SHEETS 1 AND 2 OF 9 CLOSE SR 1266 (CITY LAKE DR) AND DETOUR TRAFFIC VIA NC 73 TO SR 1494; TO SR 1267; TO SR 1268; TO SR 1267. REFER TO TCP-17 AND SD-1 FOR OFF-SITE DETOUR SIGNING. SIGN LOCATIONS WILL BE APPROVED BY THE ENGINEER PRIOR TO IMPLEMENTING THE DETOUR.

STEP 2:
USING RDWY STD 1101.02 SHEET 1 OF 9 CONSTRUCT TEMPORARY GUARDRAIL ADJACENT TO THE EASTBOUND LANE OF NC 73 WEST OF THE BRIDGE. (SEE TCP-7)

STEP 3:
CONSTRUCT AS FOLLOWS: (SEE TCP-7)
-DET- STA 16+50 TO -DET- STA 18+00
-Y1- FROM ON-SITE DETOUR TO -Y1- STA 12+00

STEP 4:
PLACE PORTABLE CONCRETE BARRIER AND CRASH CUSHION ADJACENT TO THE WESTBOUND LANE OF THE ON-SITE DETOUR FROM -DET- STA 15+44 TO THE ON-SITE DETOUR BRIDGE. USE A BARRIER TRANSITION SECTION TO TIE BARRIER TO BRIDGE RAIL. (SEE TCP-8 AND ROADWAY PLAN)

NOTE: THE CONTRACTOR SHALL COMPLETE THE WORK REQUIRED OF STEPS 5 THROUGH 7 IN A CONTINUOUS OPERATION.

STEP 5:
USING RDWY STD 1101.02 SHEET 1 OF 9 DIRECT TRAFFIC INTO A ONE LANE, TWO WAY PATTERN ON WESTBOUND NC 73, AND PLACE TEMPORARY PAVEMENT MARKINGS ON THE EASTBOUND LANE OF THE ON-SITE DETOUR, -Y1- (CITY LAKE DR), AND -Y3- (CLUB HOUSE RD). (SEE TCP-8 AND 9)

STEP 6:
USING RDWY STD 1101.02 SHEET 1 OF 9 REDIRECT TRAFFIC INTO A ONE LANE, TWO WAY PATTERN ON THE EASTBOUND LANE OF THE ON-SITE DETOUR, AND PLACE TEMPORARY PAVEMENT MARKINGS ON THE WESTBOUND LANE OF THE ON-SITE DETOUR. (SEE TCP-8 AND 9)

STEP 7:
COVER OFF-SITE DETOUR SIGNS, REMOVE TRAFFIC CONTROL DEVICES FOR OFF-SITE DETOUR, OPEN THE ON-SITE DETOUR TO TWO WAY TRAFFIC, AND OPEN -Y1- (CITY LAKE DR).

PHASE III

STEP 1:
USING RDWY STD 1101.02 SHEET 1 OF 9 CONSTRUCT LEFT SIDE WIDENING ON NC 73 FROM -L- STA 14+50 TO STA -L- 15+20, AND FROM -L- STA 23+37 TO -L- STA 27+34 UP TO THE EDGE AND ELEVATION OF THE EXISTING PAVEMENT. (SEE TCP-10 AND 11)

CONSTRUCT NC 73 FROM -L- STA 15+20 TO -L- STA 23+37 EXCLUDING THE FINAL LAYER OF SURFACE COURSE. ONLY CONSTRUCT 4' OF THE PROPOSED RIGHT SHOULDER FROM -L- STA 21+21 TO -L- STA 23+09. (SEE TCP-10 AND 11)

INSTALL A PORTION OF THE PROPOSED GUARDRAIL ON THE RIGHT SIDE FROM -L- STA 18+11 TO PROPOSED BRIDGE RAIL AND INSTALL A TEMPORARY GRAU 350.

USING RDWY STD 1101.02 SHEET 1 OF 9 CONSTRUCT -Y3- SR 1406 (CLUB HOUSE RD) FROM -Y3- STA 10+22 TO -L- EXCLUDING THE FINAL LAYER OF SURFACE COURSE. (SEE TCP-10 AND 11)

NOTE: THE CONTRACTOR SHALL COMPLETE THE WORK REQUIRED OF STEPS 2 THROUGH 7 WITHIN 21 CALENDAR DAYS. (SEE SPECIAL PROVISIONS)

STEP 2:
USING RDWY STD 1101.03 SHEETS 1 AND 2 OF 9 CLOSE SR 1266 (CITY LAKE DR) UNCOVERING OFF-SITE DETOUR SIGNING, AND DETOUR TRAFFIC VIA NC 73 TO SR 1494; TO SR 1267; TO SR 1268; TO SR 1267. REFER TO TCP-17 AND SD-1 FOR OFF-SITE DETOUR SIGNS.

NOTE: THE CONTRACTOR SHALL COMPLETE THE WORK REQUIRED OF STEPS 3 THROUGH 5 IN A CONTINUOUS OPERATION.

STEP 3:
USING RDWY STD 1101.02 SHEET 1 OF 9 DIRECT TRAFFIC INTO A ONE LANE, TWO WAY PATTERN ON EASTBOUND LANE OF THE ON-SITE DETOUR, AND WEDGE THE PROPOSED WESTBOUND LANE OF NC 73 EXCLUDING THE FINAL LAYER OF SURFACE COURSE FROM -L- STA 13+36 TO STA -L- 15+20 AND -L- STA 23+37 TO -L- STA 27+50. (SEE TCP-12 AND 13)

STEP 4:
USING RDWY STD 1101.02 SHEET 1 OF 9 REDIRECT TRAFFIC INTO A ONE LANE, TWO WAY PATTERN ON THE WESTBOUND LANE OF NC 73, AND WEDGE THE PROPOSED EASTBOUND LANE OF NC 73 EXCLUDING THE FINAL LAYER OF SURFACE COURSE FROM -L- STA 13+36 TO STA 15+20 AND -L- STA 23+37 TO STA 27+50. (SEE TCP-12 AND 13)

STEP 5:
PLACE TEMPORARY PAVEMENT MARKINGS AND PAVEMENT MARKERS AND OPEN NC 73 TO TWO WAY TRAFFIC. (SEE TCP-12 AND 13)

STEP 6:
REMOVE PORTABLE CONCRETE BARRIER FROM ON-SITE DETOUR.

CONSTRUCT -Y1- (CITY LAKE DR) FROM -L- TO -Y1- STA 11+30 EXCLUDING THE FINAL LAYER OF SURFACE COURSE.

STEP 7:
PLACE TEMPORARY PAVEMENT MARKINGS, REMOVE OFF-SITE DETOUR SIGNS, REMOVE TEMPORARY GRAU 350 AND INTALL REMAINING GUARDRAIL, REMOVE TRAFFIC CONTROL DEVICES FOR OFF-SITE DETOUR, REMOVE TEMPORARY SHORING IF NECESSARY, AND OPEN -Y1- (CITY LAKE DR). (SEE TCP-14)

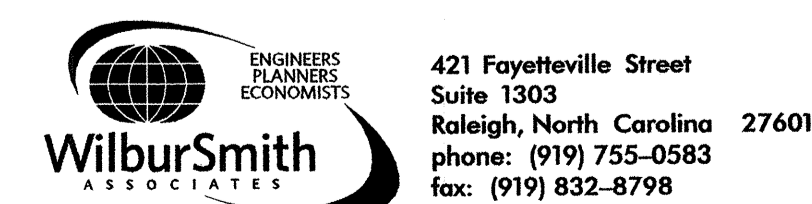
PHASE IV

STEP 1:
USING RDWY STD 1101.02 SHEET 1 OF 9 CONSTRUCT AS FOLLOWS EXCLUDING THE FINAL LAYER OF SURFACE COURSE: (SEE TCP-15 AND 16) NC 73 RIGHT SIDE WIDENING FROM -L- STA 23+37 TO -L- STA 27+50

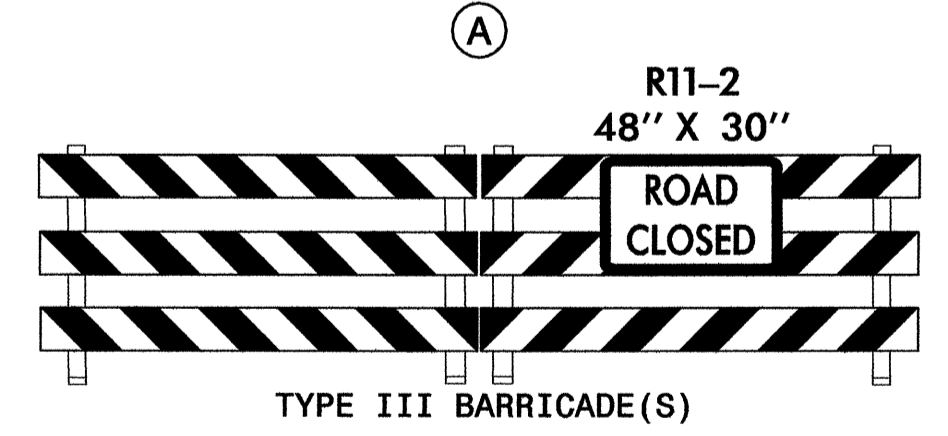
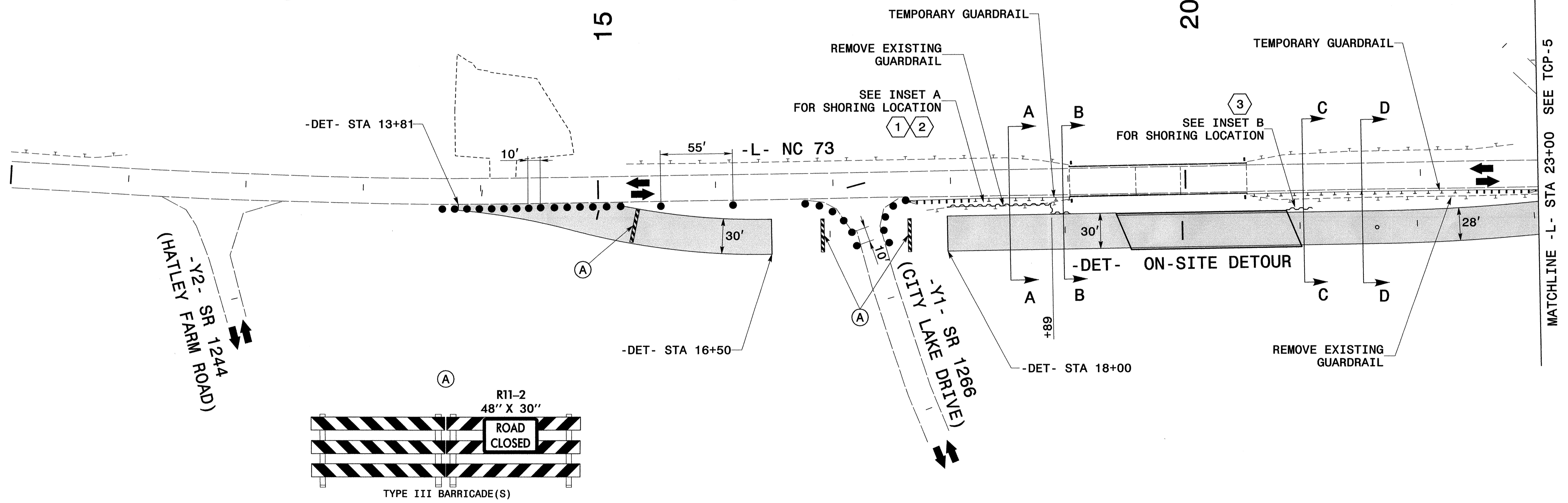
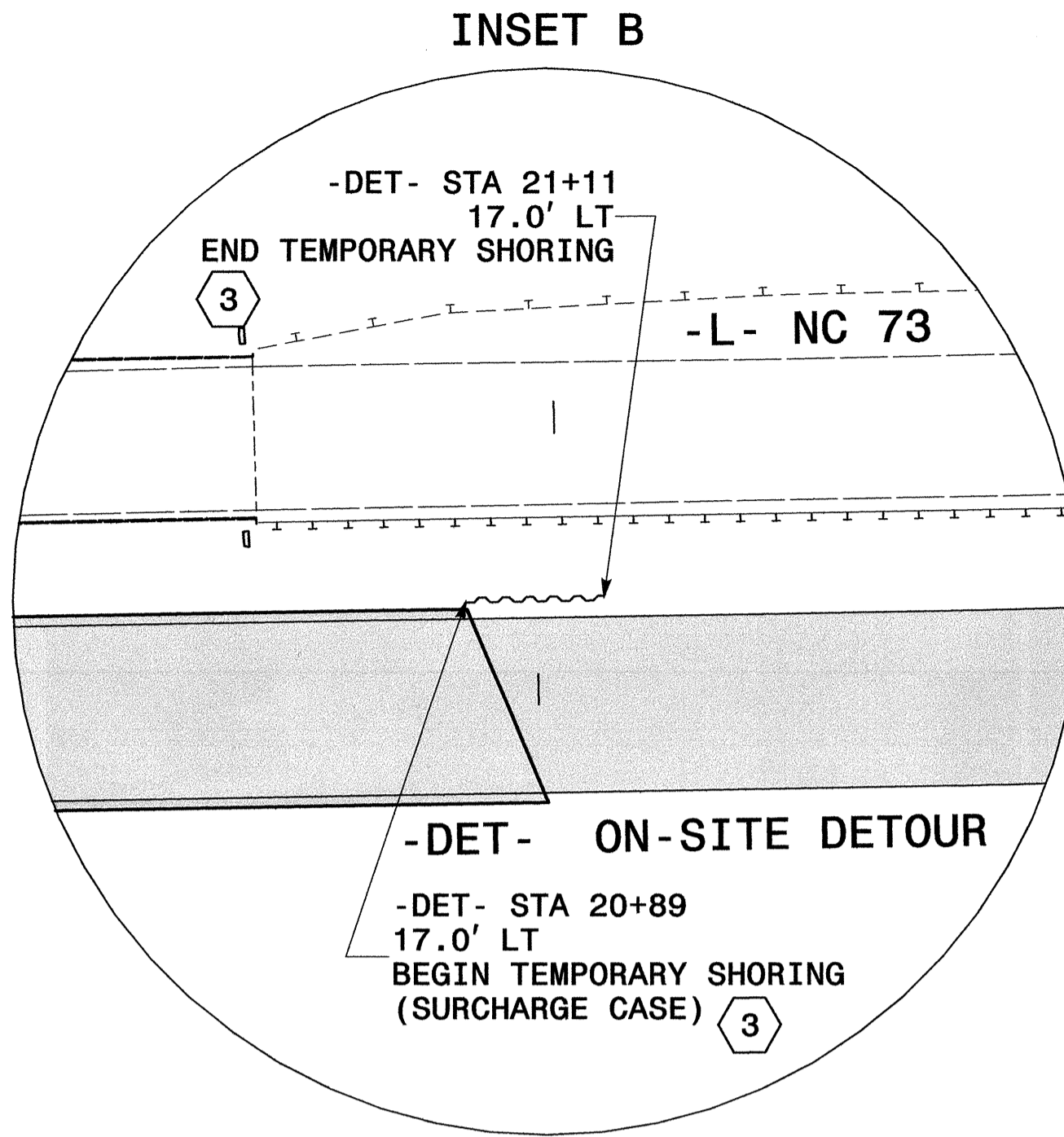
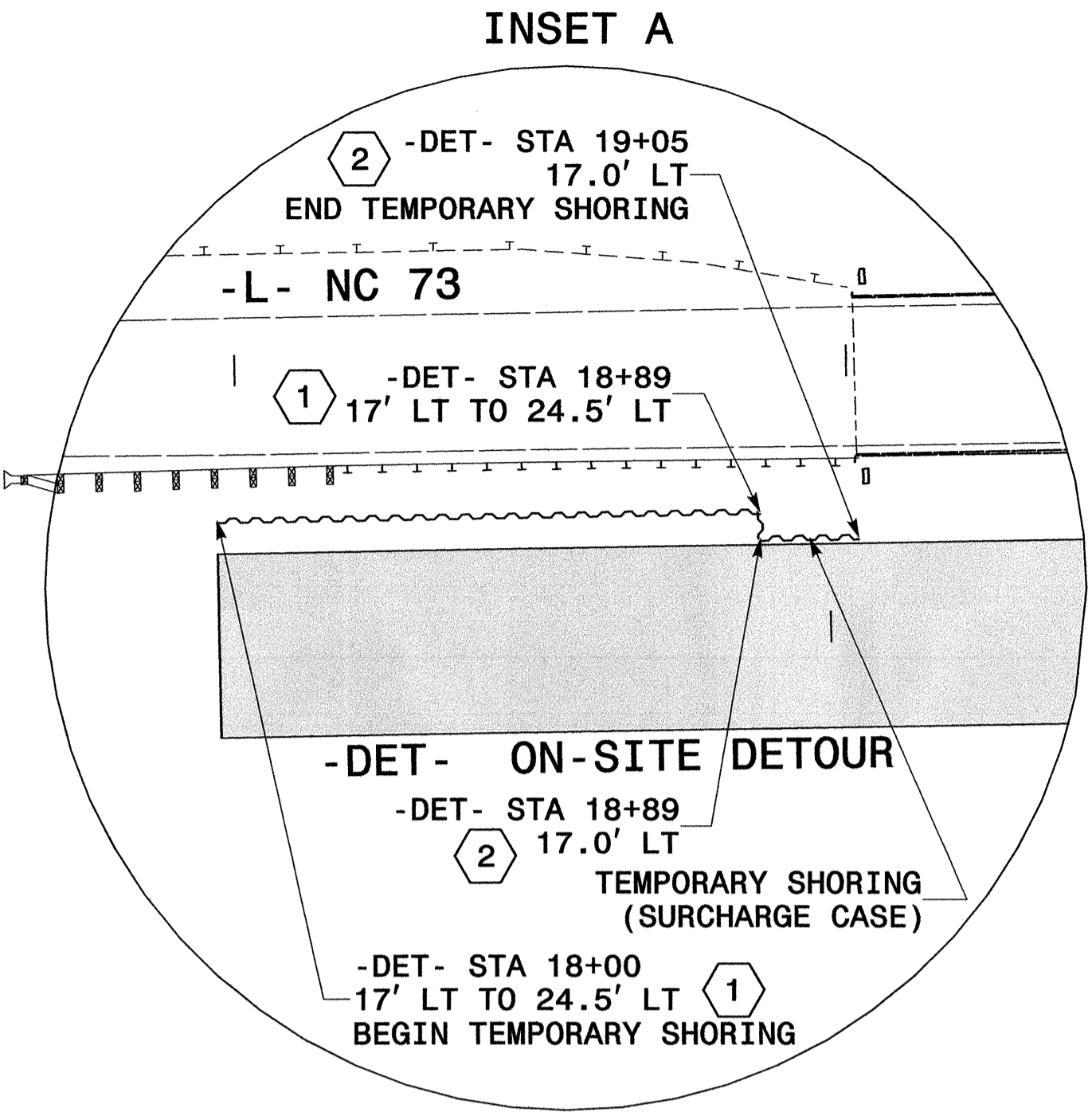
USING RDWY STD 1101.02 SHEET 1 OF 9 REMOVE THE ON-SITE DETOUR. (SEE TCP-15 AND 16)

STEP 2:
USING RDWY STD 1101.02 SHEET 1 OF 9 PLACE THE FINAL LAYER OF SURFACE COURSE ON ALL ROADS, FINAL PAVEMENT MARKINGS, AND PAVEMENT MARKERS. REMOVE ANY REMAINING TRAFFIC CONTROL DEVICES. (SEE PM-1 AND 2)

SYSTEMS
CONSTRUCTION
SCHEDULE



APPROVED: _____	DATE: _____	TRAFFIC CONTROL PHASING	
SCALE: NONE	DATE: 8/2008		REVISIONS
DESIGN BY: KWB	REVIEWED BY: DWP		



SEE TCP-6 FOR CROSS SECTION VIEWS

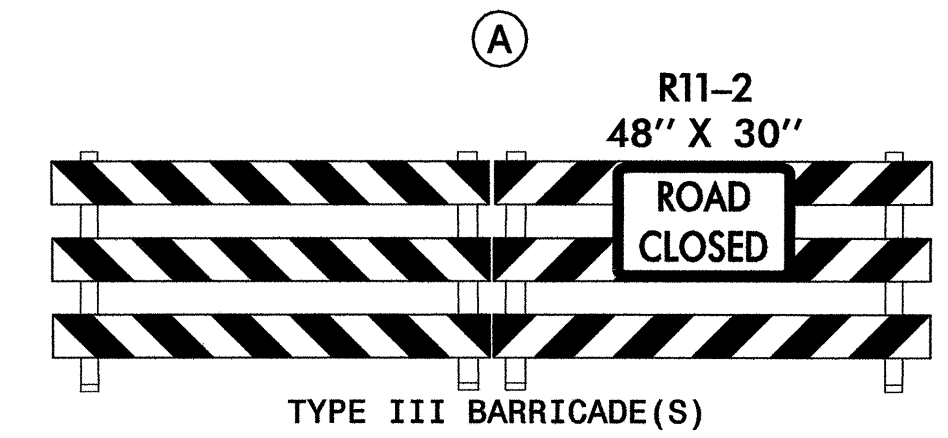
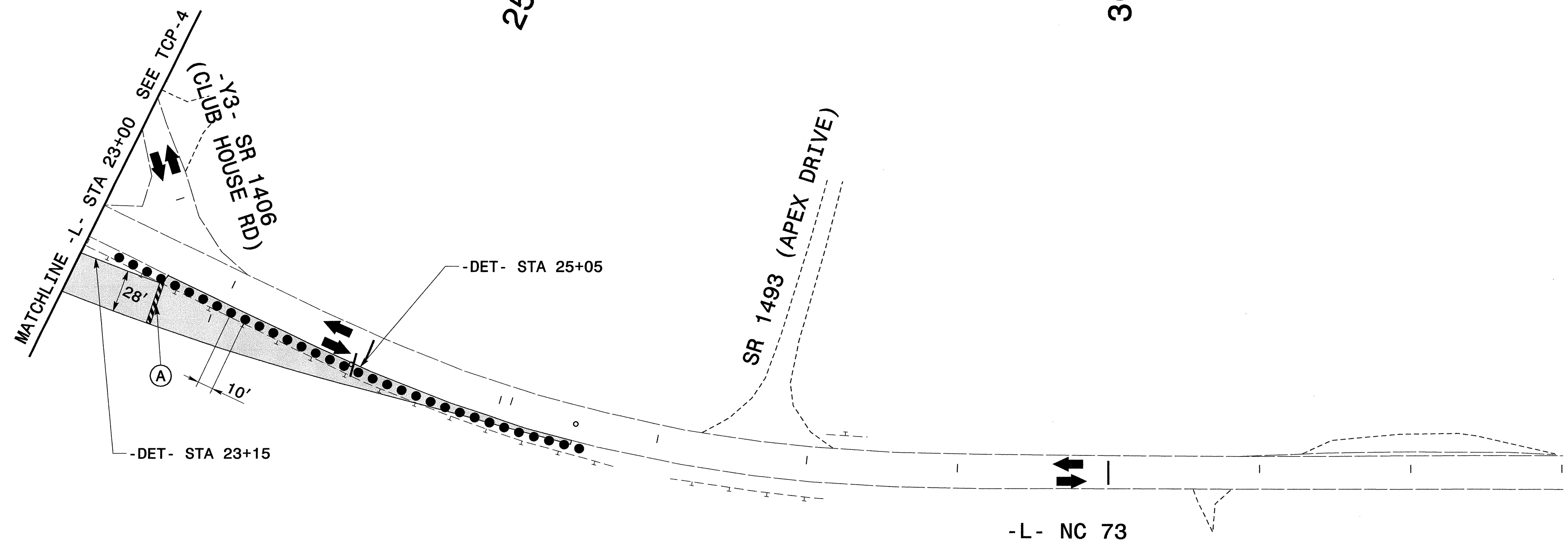
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PHASE I DETAIL DRAWING

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WilburSmith ASSOCIATES
 ENGINEERS PLANNERS ECONOMISTS
 421 Fayetteville Street
 Suite 1303
 Raleigh, North Carolina 27601
 phone: (919) 755-0583
 fax: (919) 832-8798

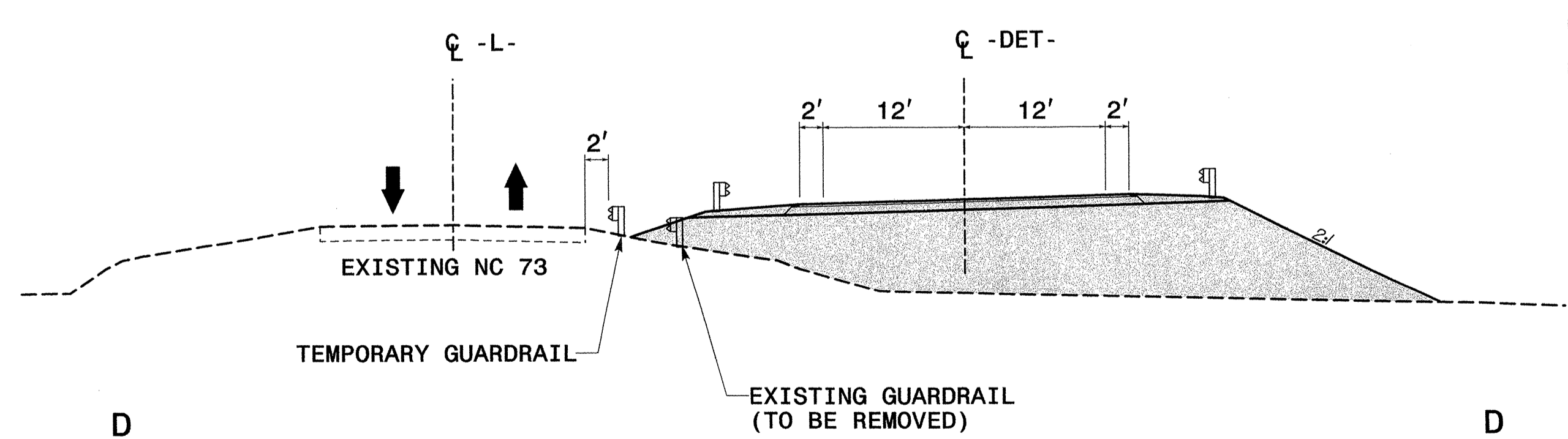
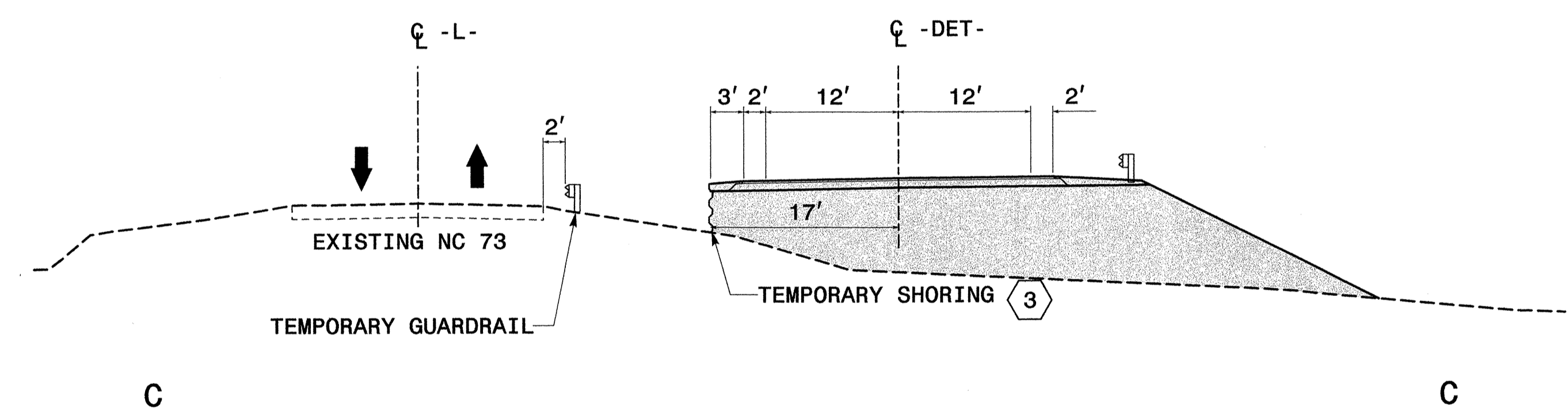
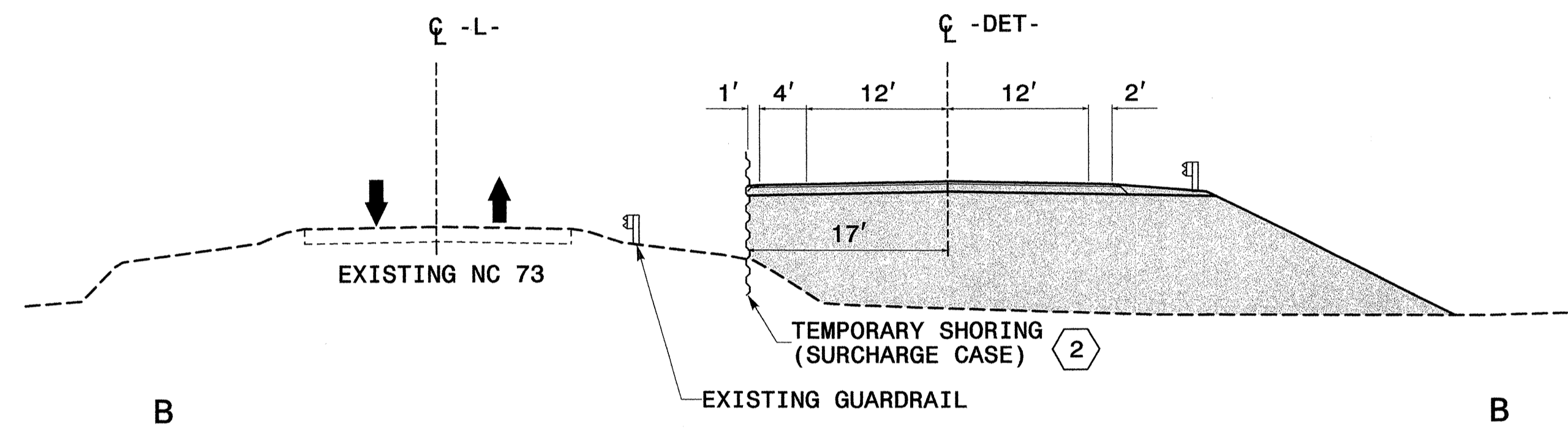
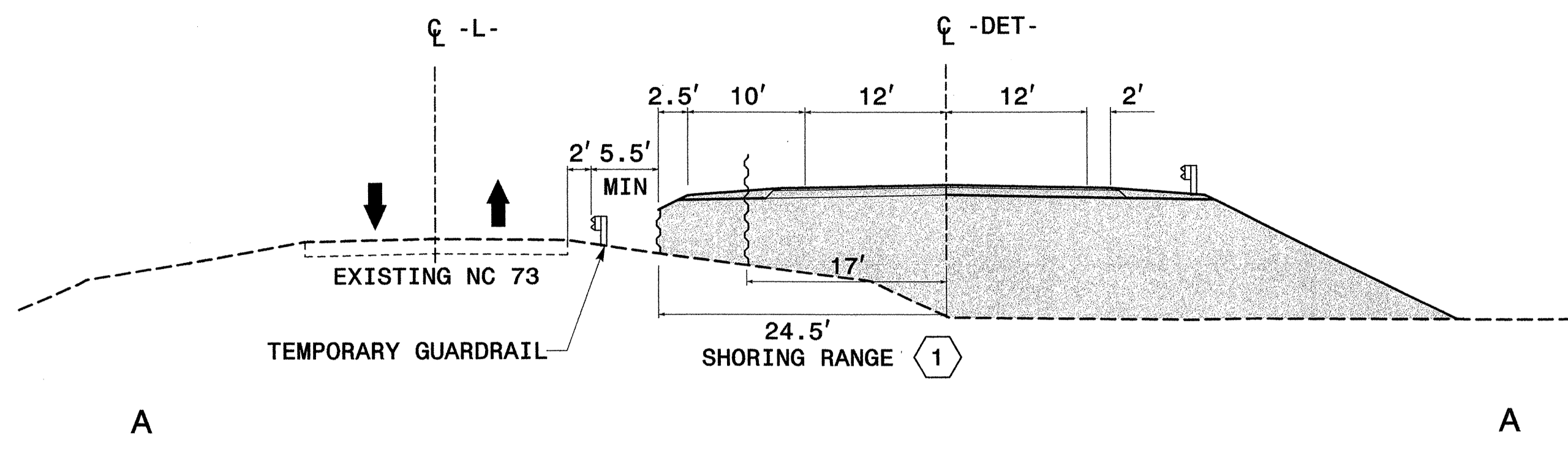
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WilburSmith
 ASSOCIATES
 ENGINEERS
 PLANNERS
 ECONOMISTS
 421 Fayetteville Street
 Suite 1303
 Raleigh, North Carolina 27601
 phone: (919) 755-0583
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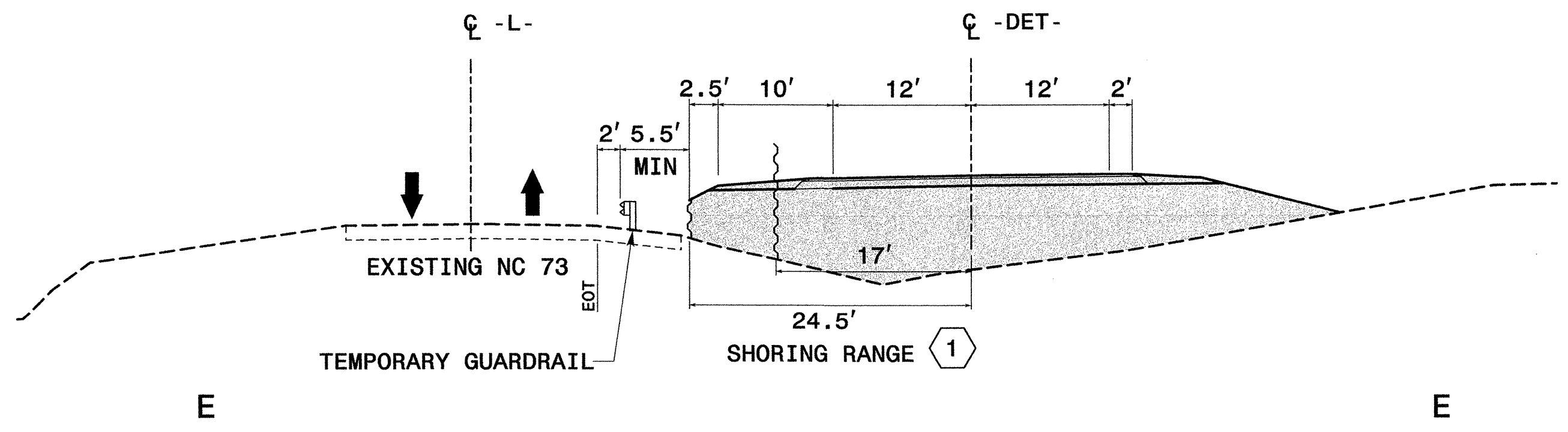
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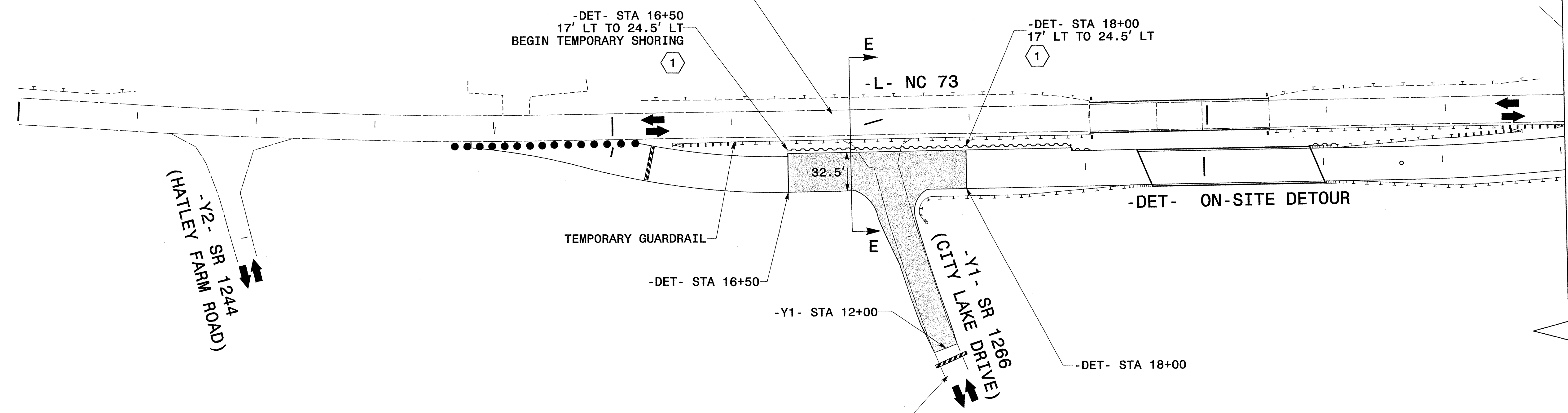
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SEE ALSO TCP-17 AND SD-1



USE RDWY STD 1101.03 SHEET 2.
SEE ALSO TCP-17 AND 18

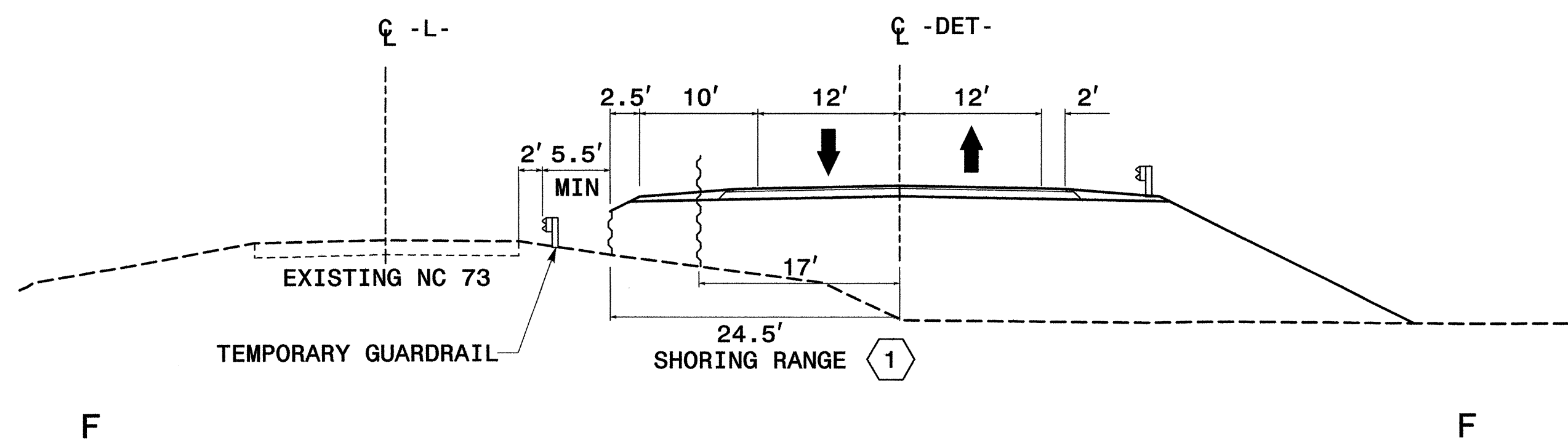
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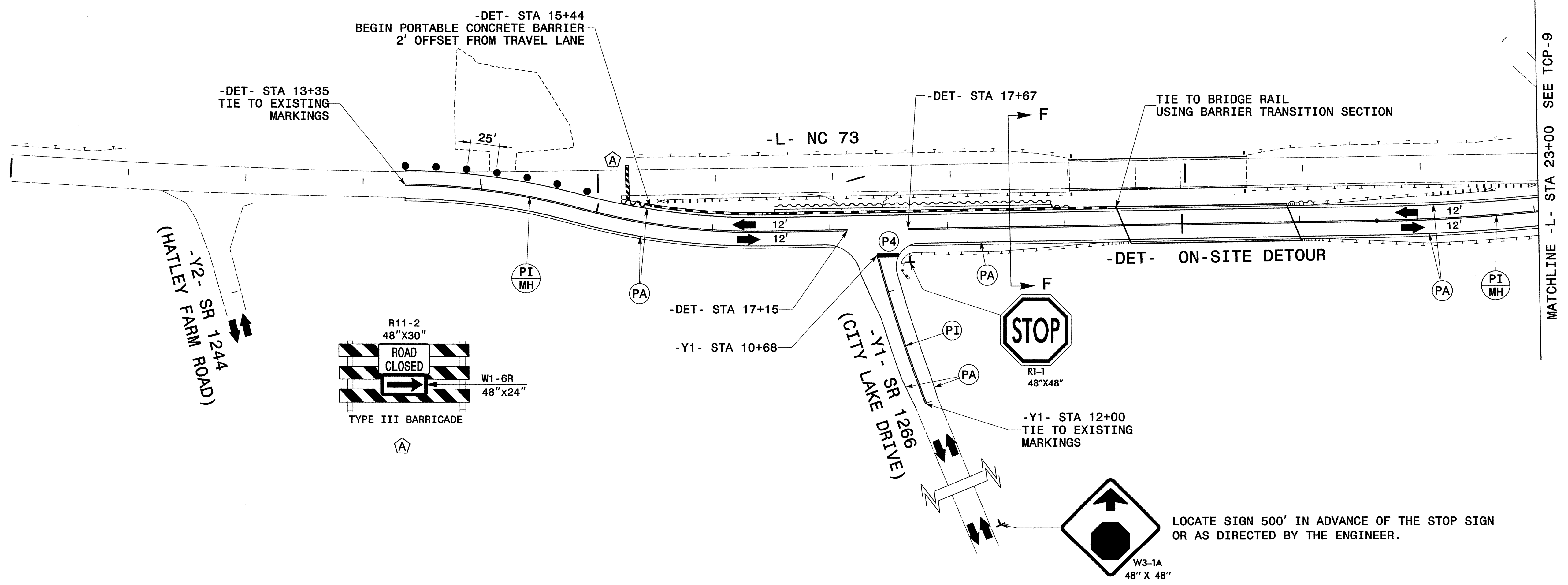
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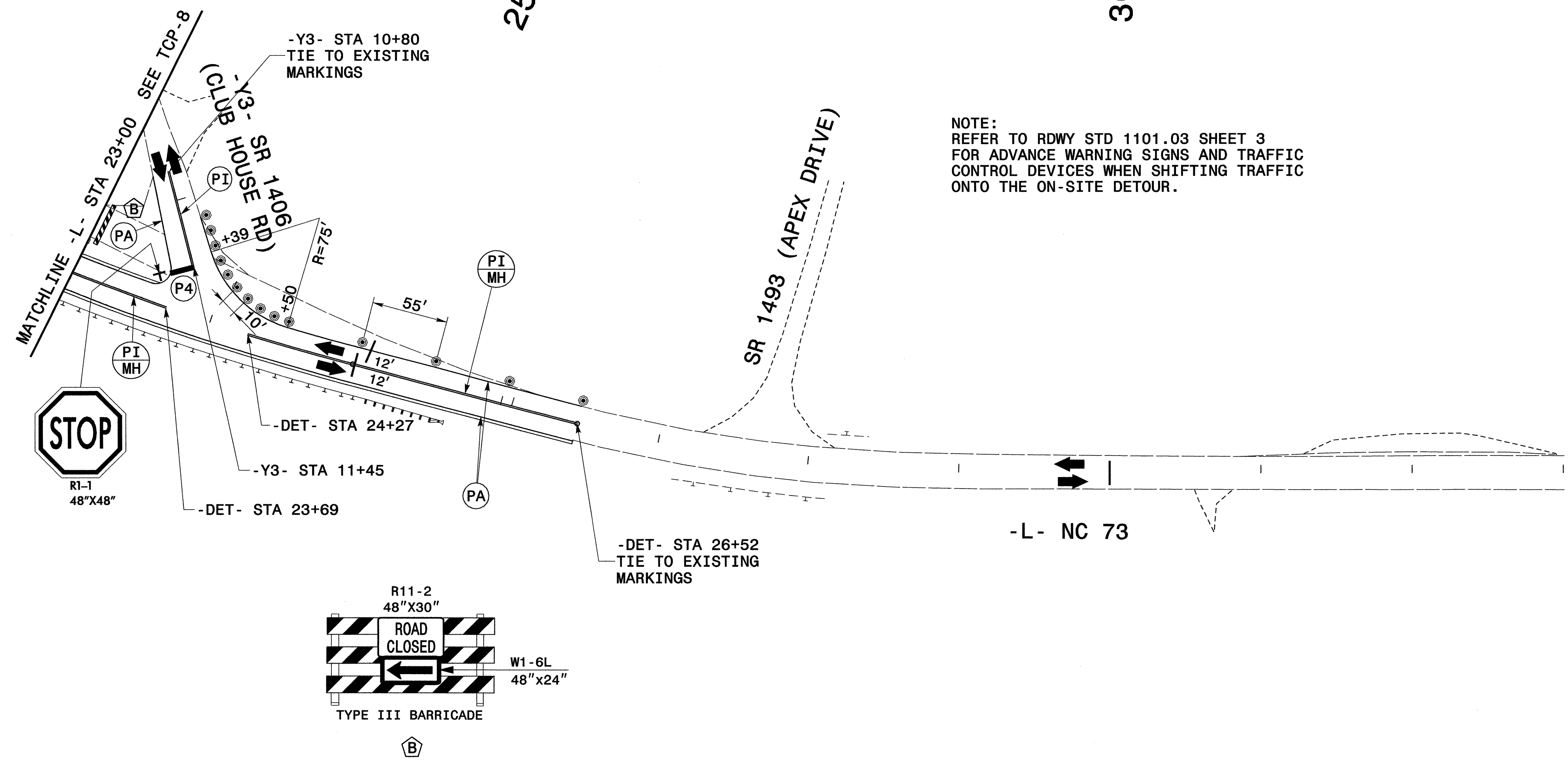
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FOR ADVANCE WARNING SIGNS AND TRAFFIC
CONTROL DEVICES WHEN SHIFTING TRAFFIC
ONTO THE ON-SITE DETOUR.



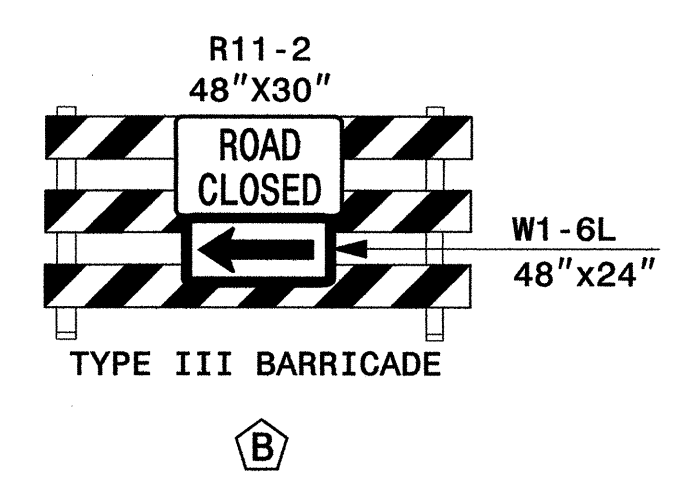
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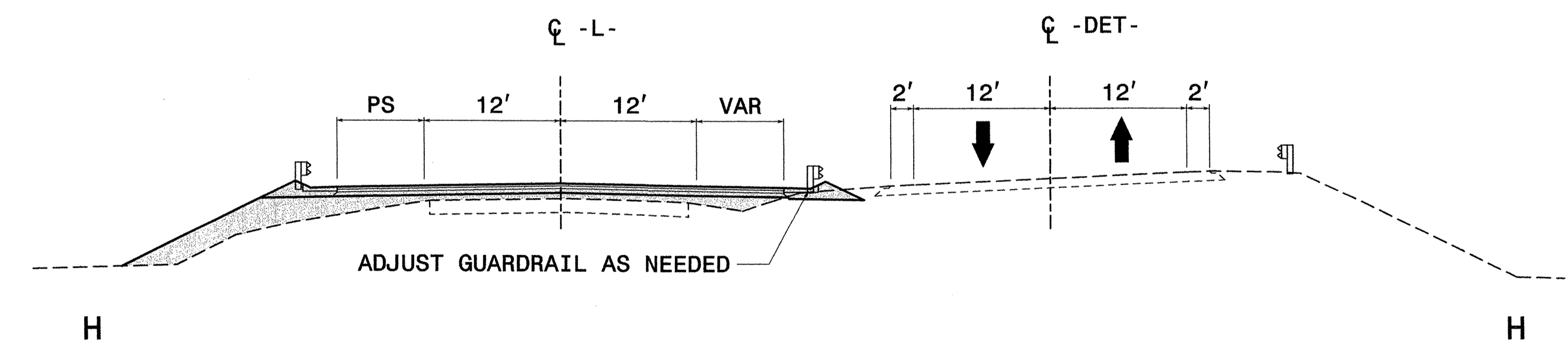
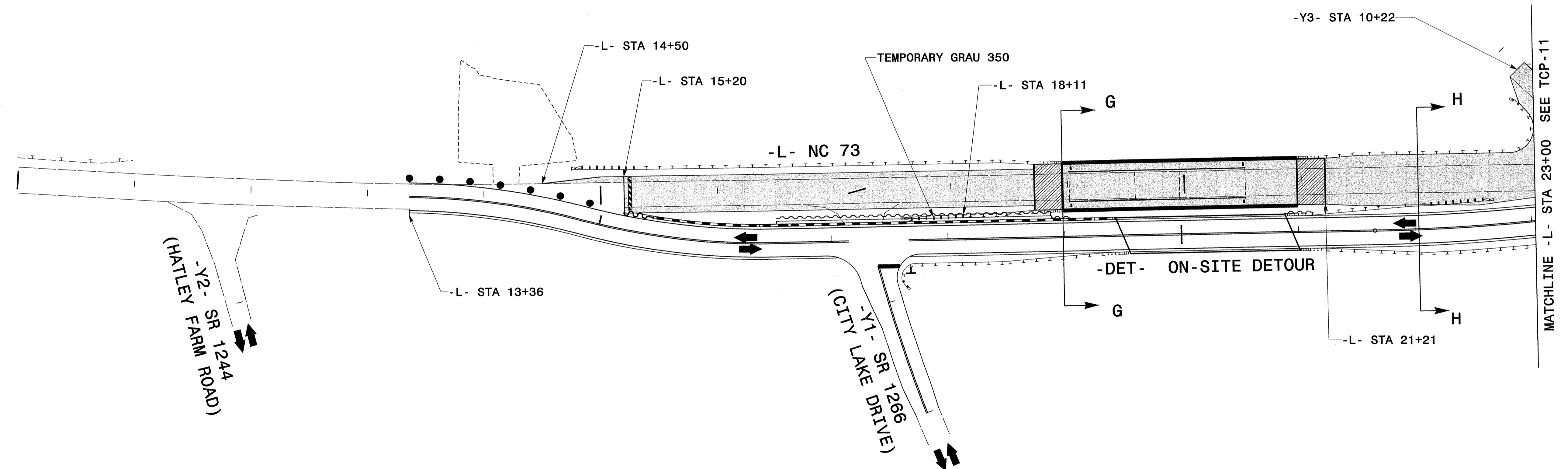
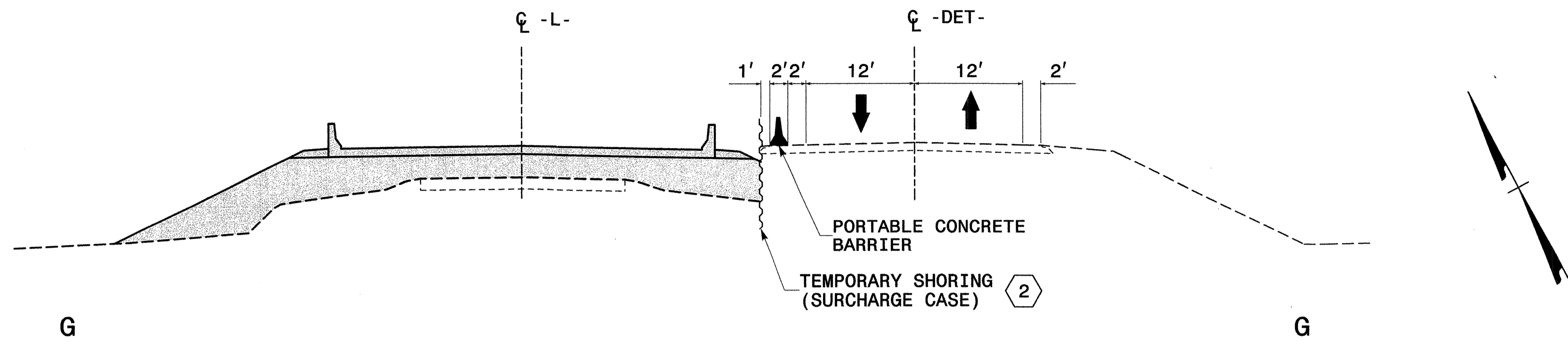
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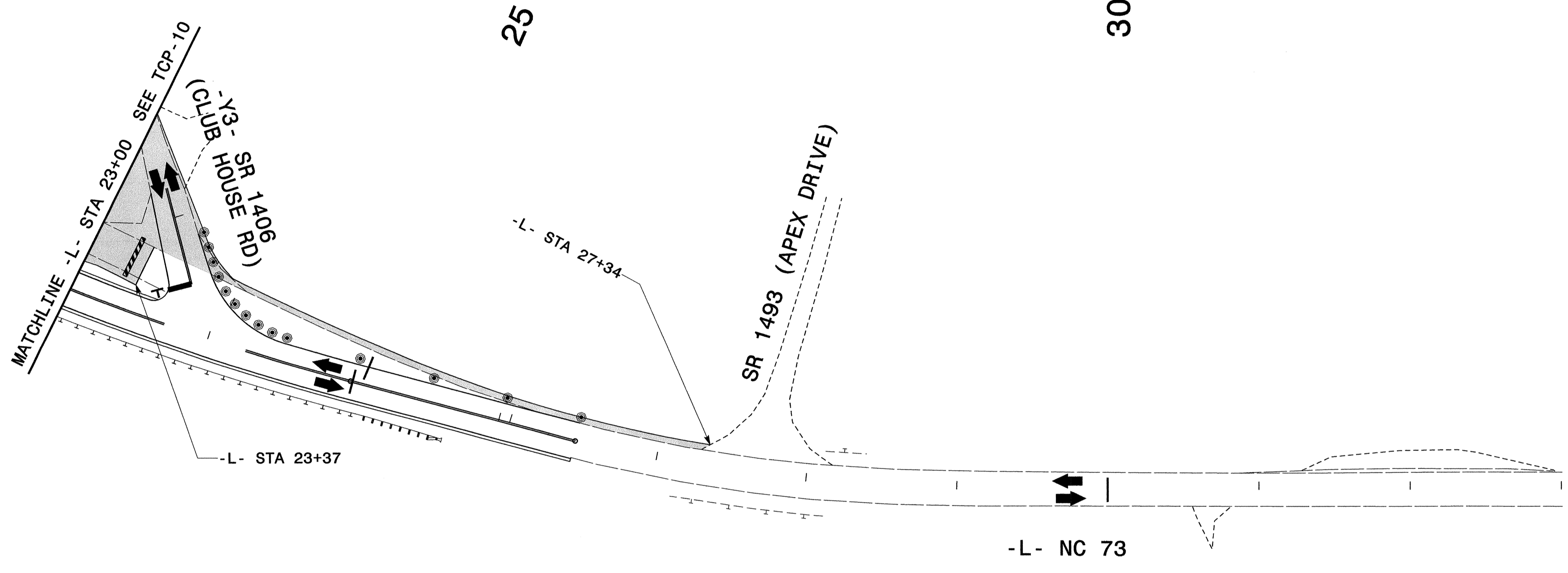
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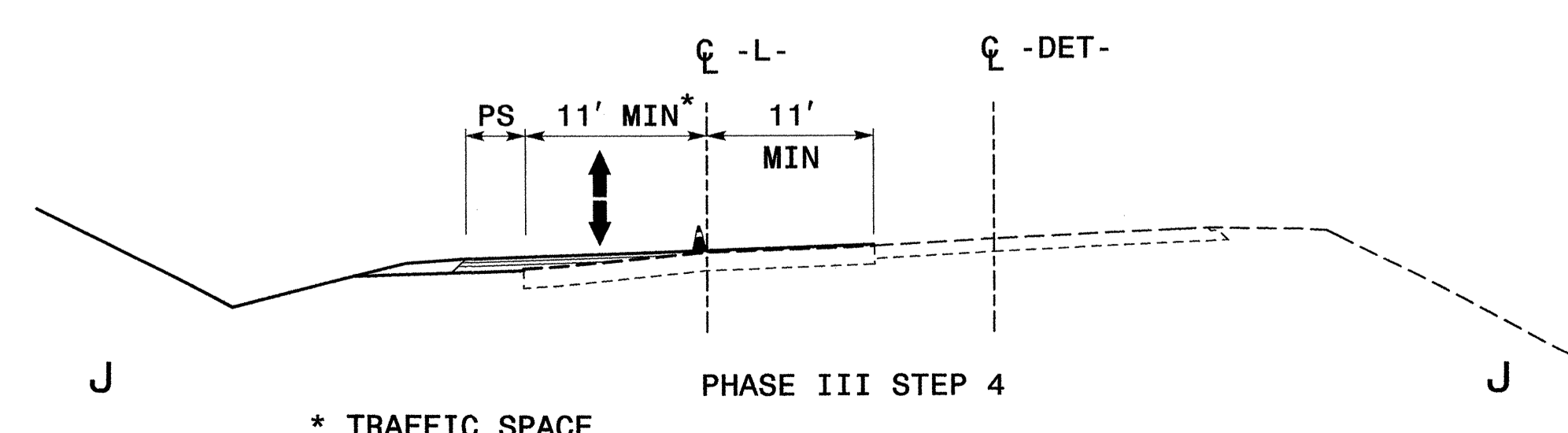
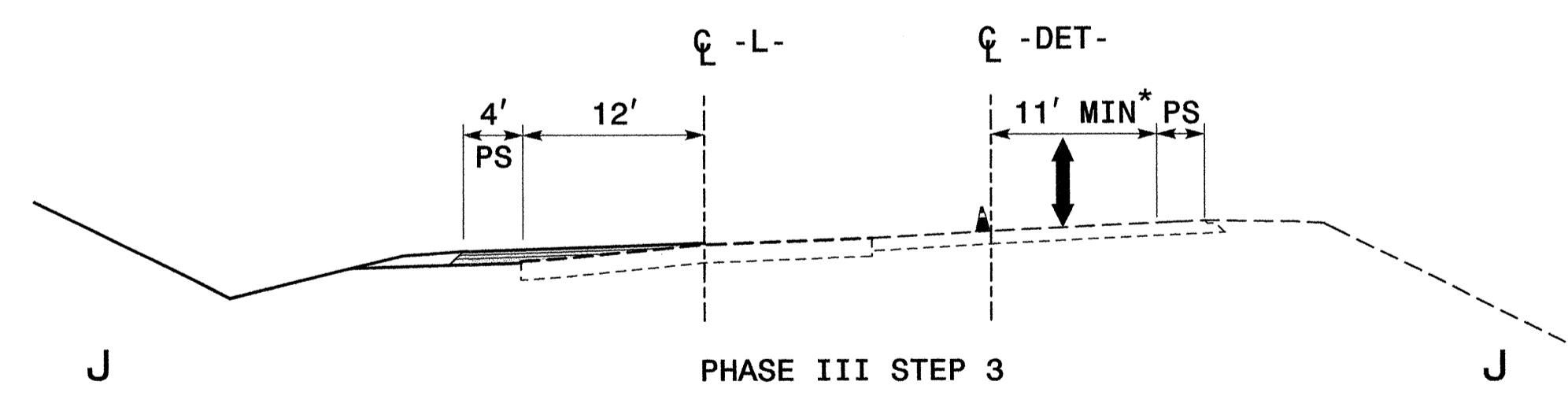
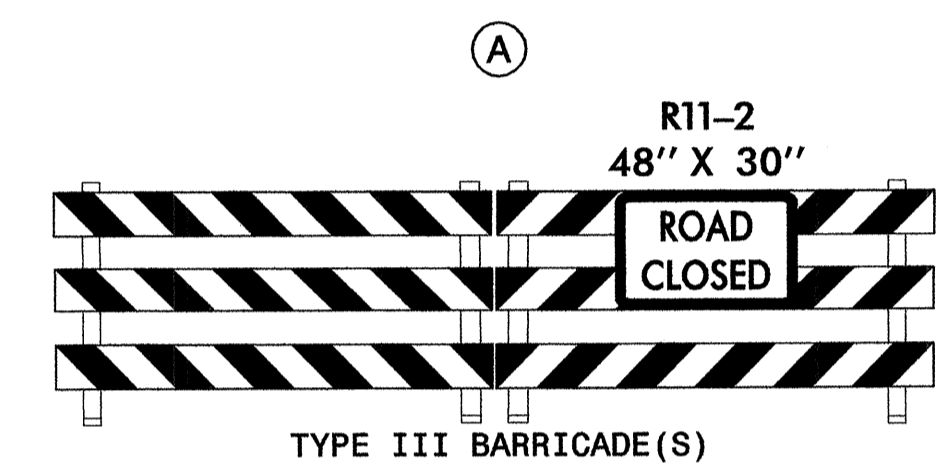
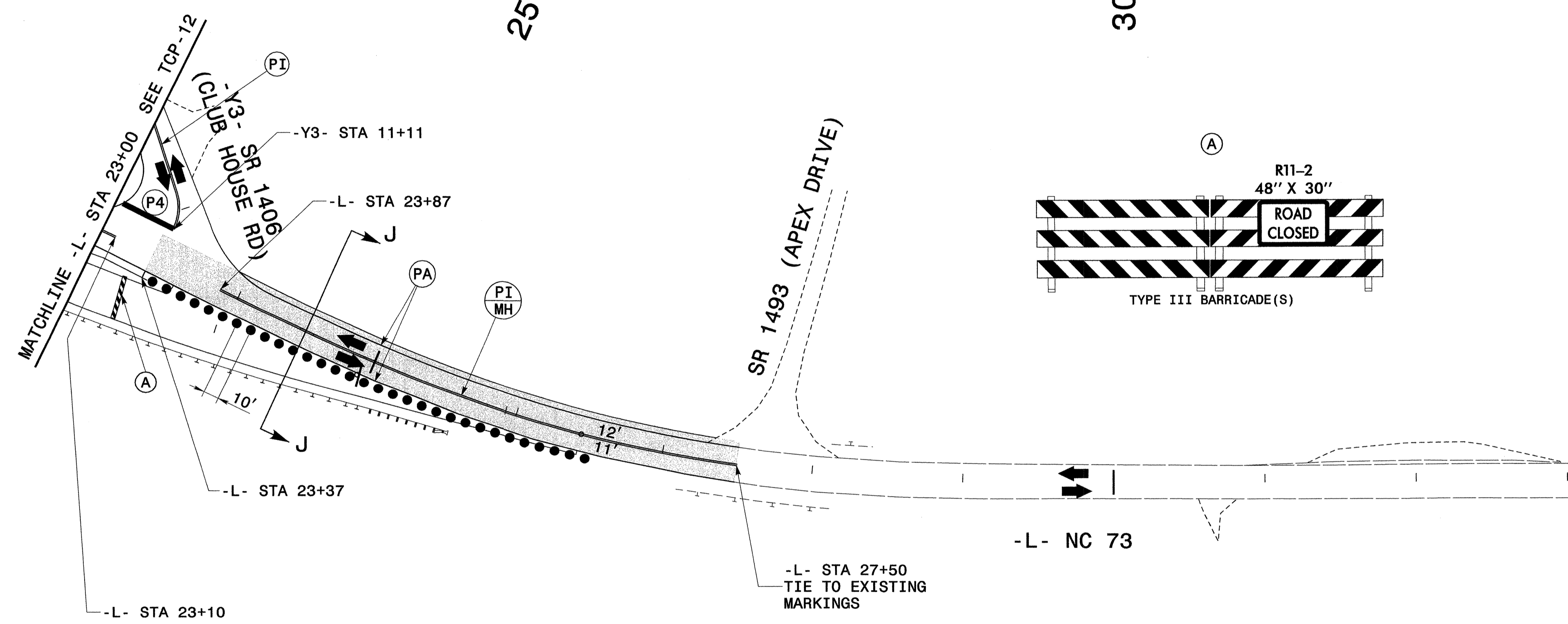
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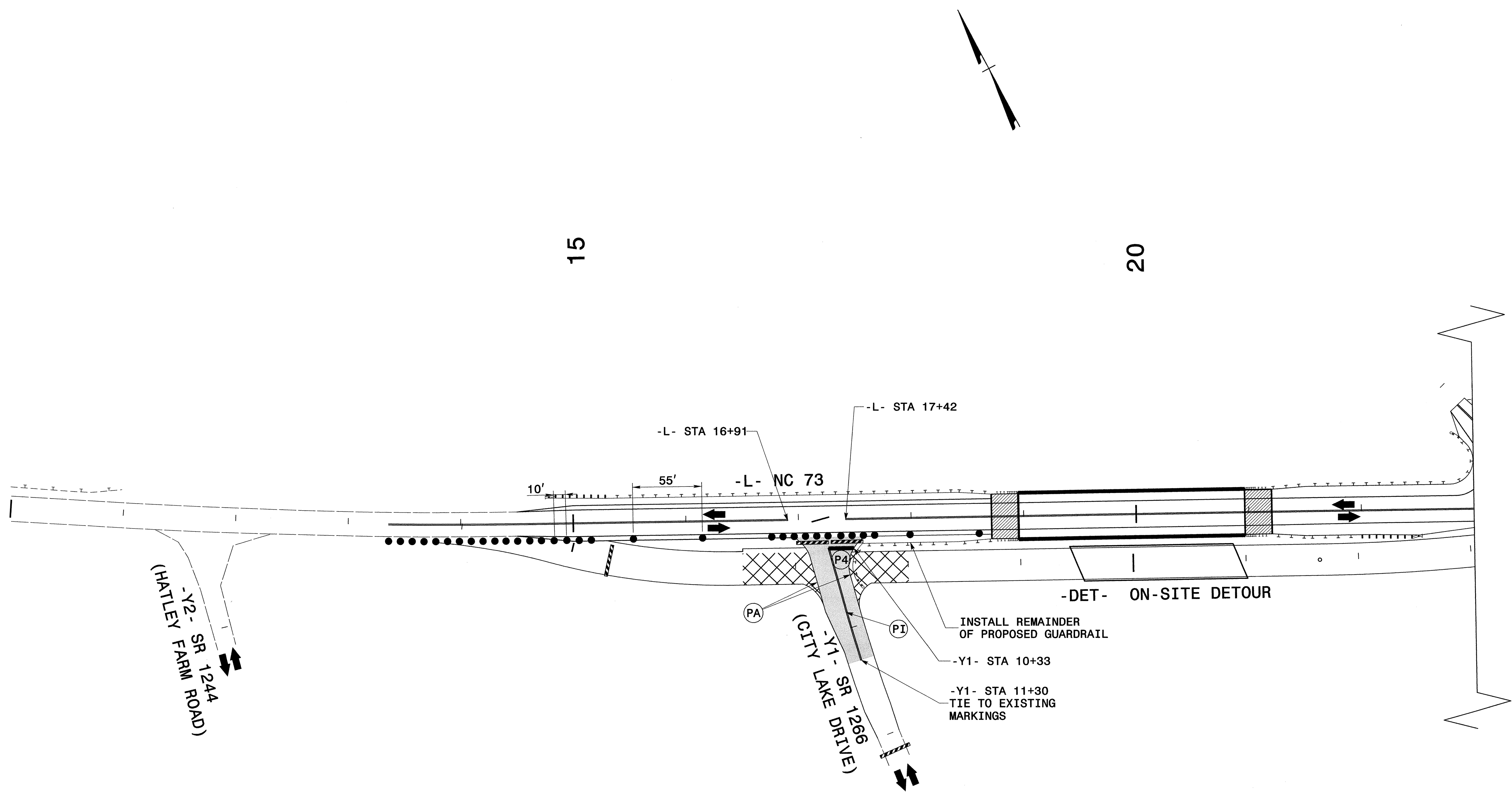
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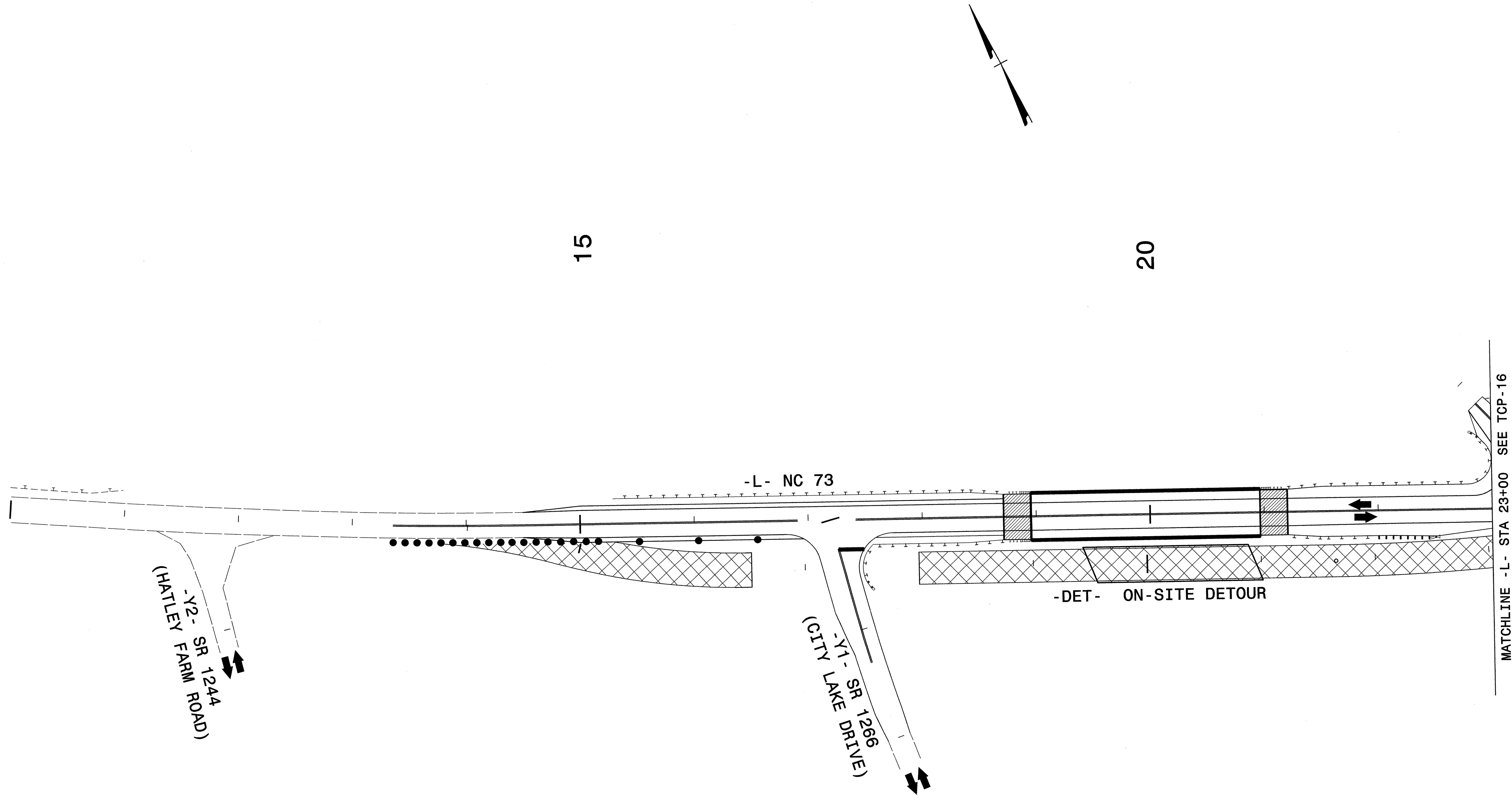
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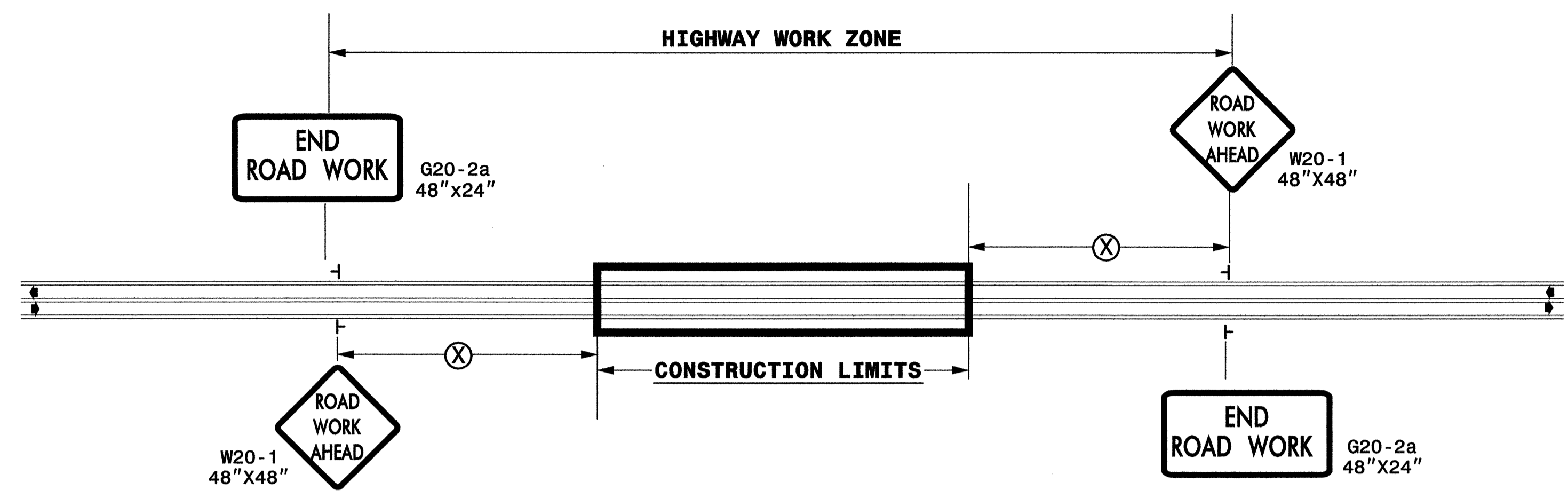
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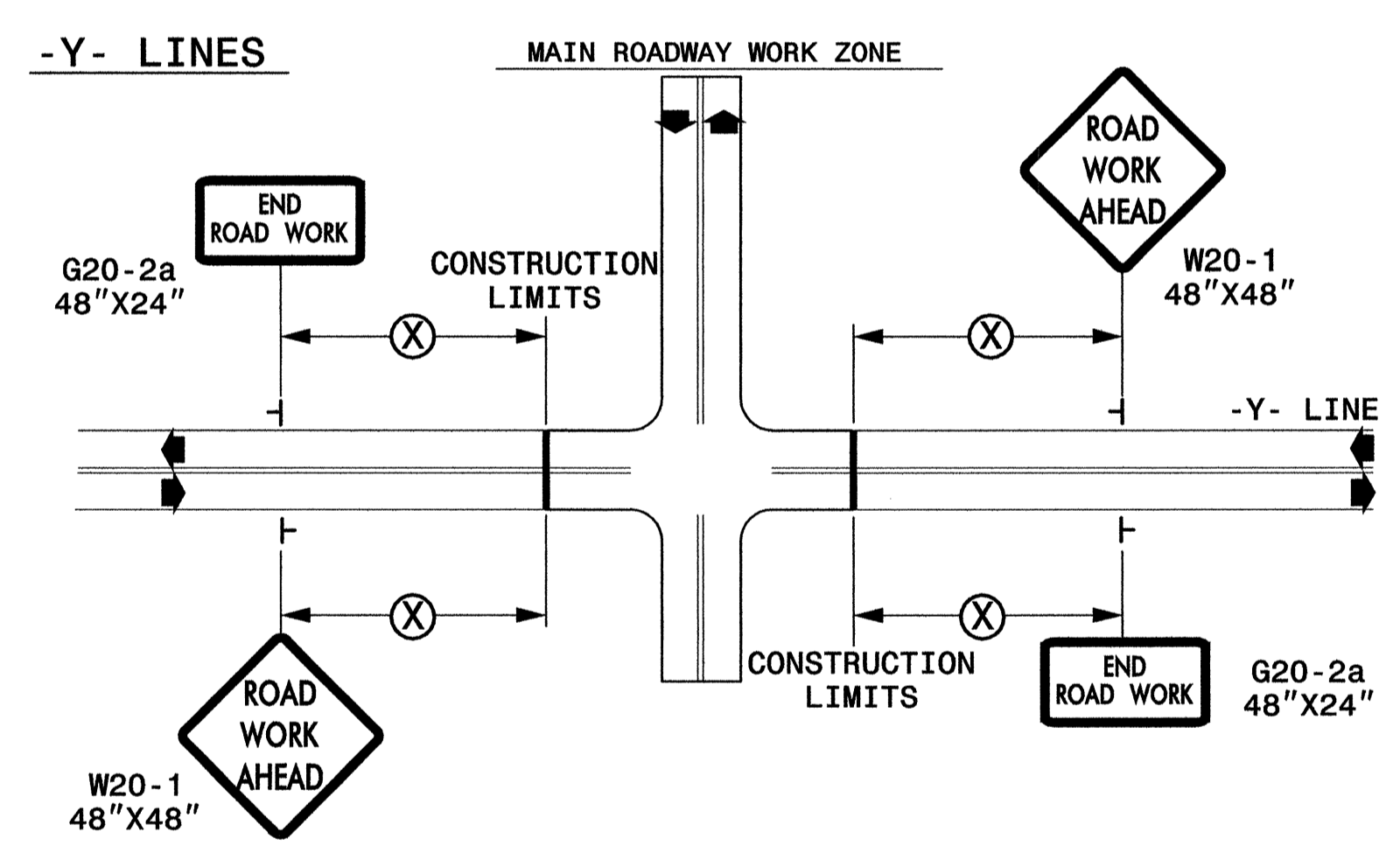
TWO-WAY UNDIVIDED ** (L-LINES)



POSTED SPEED LIMIT (M.P.H.)	RECOMMENDED MINIMUM SIGN SPACING
≤ 50	500'
≥ 55	1000'

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAYS INTERSECTING ALONG 2 WAY UNDIVIDED WORK ZONE (Y-LINES)



DETAIL DRAWING FOR
TWO-WAY UNDIVIDED
WORK ZONE WARNING SIGNS

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

SHEET 1 OF 1

APPROVED: _____	DATE: _____	DETAIL DRAWING FOR TWO-WAY UNDIVIDED AND URBAN FREEWAYS ADVANCED WORK ZONE WARNING SIGNS									
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	DATE: 9/2007										
	DESIGN BY: _____										
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01/01	11/04										

421 Fayetteville Street
Suite 1303
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Temporary Shoring No. 1

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+50.00 +/- -DETOUR -, 17 FT. TO 21.5 FT. LEFT OF DETOUR, TO STATION 18+89.00 +/- -DETOUR-, 17 FT. TO 21.5 FT. LEFT OF DETOUR, 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 FROM STATION 16+50.00 +/- - DETOUR -, 17 FT. TO 21.5 FT. LEFT OF DETOUR, TO STATION 18+89.00 +/- - DETOUR-, 17 FT. TO 21.5 FT. LEFT OF DETOUR. 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

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 18+89.00 +/- -DETOUR -, 17 FT. LEFT OF DETOUR, TO STATION 19+00.00 +/- -DETOUR-, 17 FT. LEFT OF DETOUR, 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 FROM STATION 18+89.00 +/- - DETOUR -, 17 FT. LEFT OF DETOUR, TO STATION 19+00.00 +/- - DETOUR-, 17 FT. LEFT OF DETOUR. 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. 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 20+89.00 +/- -DETOUR -, 17 FT. LEFT OF DETOUR, TO STATION 21+11.00 +/- -DETOUR-, 17 FT. LEFT OF DETOUR, USE THE FOLLOWING SOIL PARAMETERS:

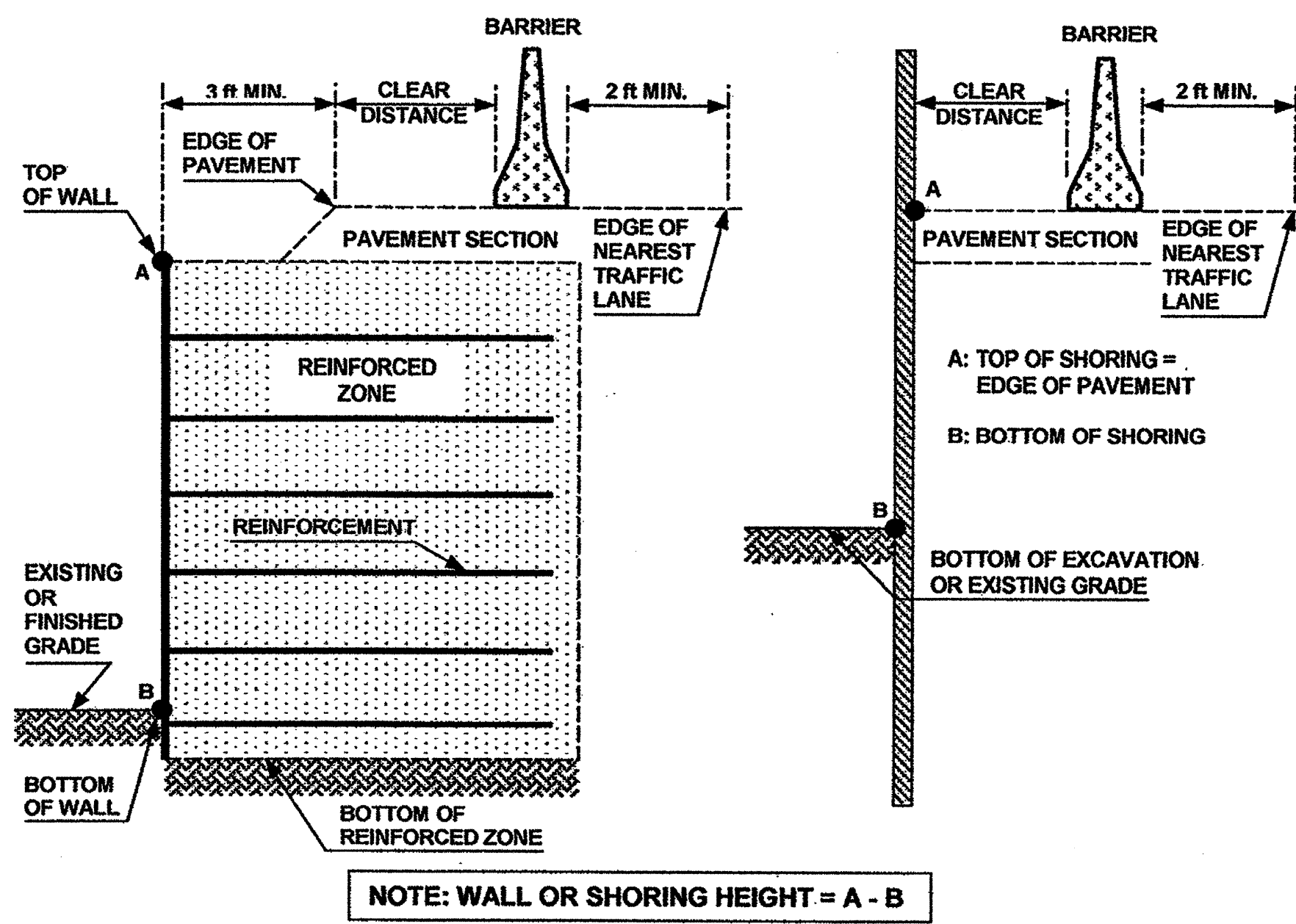
UNIT WEIGHT OF SOIL ABOVE WATER TABLE, $\gamma = 120$ PCF
 UNIT WEIGHT OF SOIL BELOW WATER TABLE, $\gamma = 60$ PCF
 FRICTION ANGLE, $\phi = 30$ DEGREES
 COHESION, $c = 0$ PSF

NO SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF THE TEMPORARY SHORING FROM STATION 20+89.00 +/- - DETOUR -, 17 FT. LEFT OF DETOUR, TO STATION 21+11.00 +/- - DETOUR-, 17 FT. LEFT OF DETOUR. 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.

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DWG. BY:			
DESIGN BY:			
REVIEWED BY:			



NOTE: WALL OR SHORING HEIGHT = A - B

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 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.
- 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/DESRESENG.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, RUNS OF BARRIER LESS THAN 200' IN LENGTH AND WET OR DRY PAVEMENT.

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

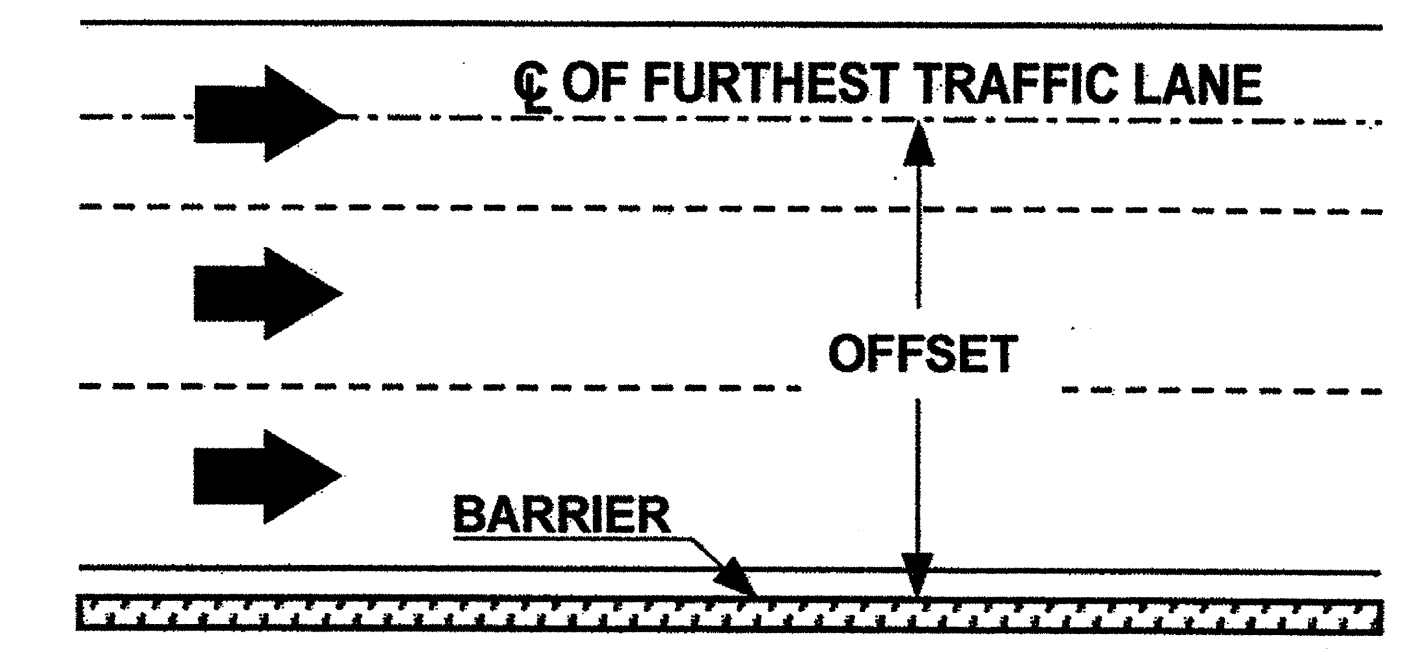


FIGURE B

APPROVED: <i>[Signature]</i>	DATE: 3/07	PORTABLE CONCRETE BARRIER AT TEMPORARY SHORING LOCATIONS	
SEAL 028380	SCALE: NONE	DESIGN BY: JI	REVISIONS
ENGINEER	DATE: 3/07	DESIGN BY: JI	
		REVIEWED BY: JI	

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