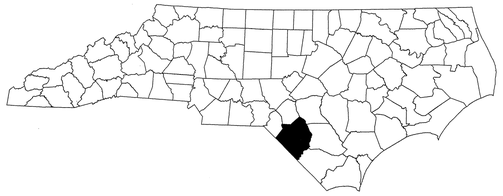
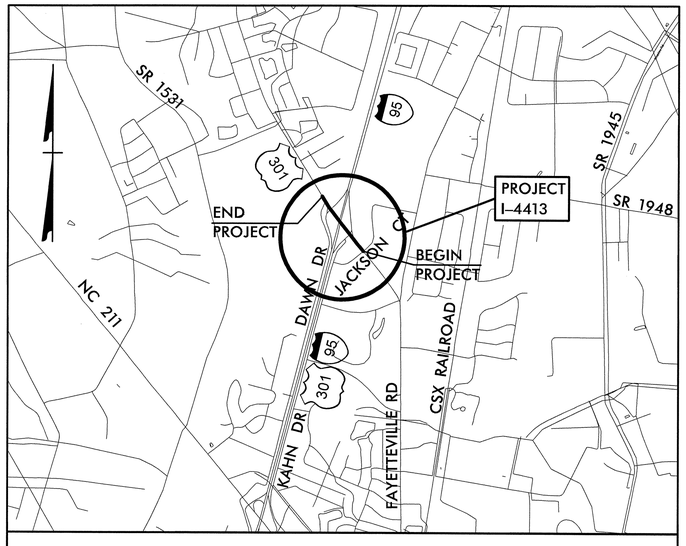
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

ROBESON COUNTY





VICINITY MAP

LOCATION: BRIDGE NO. 36 ON US 301 (FAYETTEVILLE ROAD) OVER I-95 (EXIT 22)

TYPE OF WORK: GRADING, PAVING, DRAINAGE, STRUCTURES, SIGNALS, AND SIGNING

WORK ZONE SAFETY & MOBILITY
"from the MOUNTAINS to the COAST"

N.C.D.O.T. WORK ZONE TRAFFIC CONTROL
1561 MAIL SERVICE CENTER (MSC) RALEIGH, NC 27699-1561
750 N. GREENFIELD PARKWAY, GARNER, NC 27529 (DELIVERY)
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DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

INDEX OF SHEETS

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APPROVED: Steven D. Miller
DATE: 5-1-12

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 037026 ENGINEER STEVEN D. MILLER

SHEET NO.
TMP-1

I-4413

TIP PROJECT:

$$$$$$SYSTIME$$$$$
$$$$$$USERNAME$$$$$

PROJ. REFERENCE NO.	SHEET NO.
I-4413	TMP-1A

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 2012 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
1101.01	WORK ZONE ADVANCE WARNING SIGNS
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 BOARDS
1130.01	DRUM
1135.01	CONES
1145.01	BARRICADES - TYPE III
1150.01	FLAGGING DEVICES
1160.01	TEMPORARY CRASH CUSHION - REFLECTIVE END TREATMENT
1165.01	TRUCK MOUNTED ATTENUATOR - DELINEATION
1170.01	POSITIVE PROTECTION - PORTABLE CONCRETE BARRIER
1180.01	SKINNY-DRUM
1205.01	PAVEMENT MARKINGS - LINE TYPES & OFFSETS
1205.02	PAVEMENT MARKINGS - DIVIDED AND UNDIVIDED ROADWAYS
1205.03	PAVEMENT MARKINGS - INTERCHANGES
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.05	PAVEMENT MARKINGS - TURN LANES
1205.06	PAVEMENT MARKINGS - THRU LANE DROPS
1205.07	PAVEMENT MARKINGS - PEDESTRIAN CROSSWALKS
1205.08	PAVEMENT MARKINGS - SYMBOLS & WORD MESSAGES
1205.09	PAVEMENT MARKINGS - PAINTED ISLANDS
1205.12	PAVEMENT MARKINGS - BRIDGES
1250.01	PAVEMENT MARKER SPACING
1251.01	RAISED PAVEMENT MARKERS - TEMPORARY & PERMANENT
1261.01	GUARDRAIL & BARRIER DELINEATOR SPACING
1261.02	GUARDRAIL & BARRIER DELINEATOR TYPES
1262.01	GUARDRAIL END DELINEATION

$$$$$$SYSTIME$$$$$$
$$$$$$USERNAME$$$$$$

LEGEND

GENERAL

- DIRECTION OF TRAFFIC FLOW
- DIRECTION OF PEDESTRIAN TRAFFIC FLOW
- EXIST. PVMT.
- NORTH ARROW
- PROPOSED PVMT.
- WORK AREA
- REMOVAL
- USER DEFINED (IF NEEDED)
- USER DEFINED (IF NEEDED)

TRAFFIC CONTROL DEVICES

- BARRICADE (TYPE III)
- CONE
- DRUM SKINNY DRUM TUBULAR MARKER
- TEMPORARY CRASH CUSHION
- FLASHING ARROW PANEL (TYPE C)
- FLAGGER
- LAW ENFORCEMENT
- TRUCK MOUNTED IMPACT ATTENUATOR (TMIA)
- CHANGEABLE MESSAGE SIGN

TEMPORARY SIGNING

- PORTABLE SIGN
- STATIONARY SIGN
- STATIONARY OR PORTABLE SIGN

SIGNALS

EXISTING PROPOSED TEMPORARY (TEMP)

PAVEMENT MARKINGS

- EXISTING LINES
- TEMPORARY LINES

PAVEMENT MARKERS

- CRYSTAL/CRYSTAL
- CRYSTAL/RED
- YELLOW/YELLOW

PAVEMENT MARKING SYMBOLS

PAVEMENT MARKING SYMBOLS

TEMPORARY PAVEMENT MARKING SCHEDULE

SYMBOL	DESCRIPTION
	TEMPORARY PAVEMENT MARKINGS
	PAINT (4")
PA	WHITE EDGELINE
PD	WHITE MINI SKIP
PE	WHITE SOLID LANE LINE
PI	YELLOW DOUBLE CENTER
P4	WHITE STOP BAR
	PAINT (6")
P6	WHITE EDGELINE
P7	YELLOW EDGELINE
PL	WHITE SOLID LANE LINE
	MARKERS
	TEMPORARY RAISED PAVEMENT MARKERS
MH	YELLOW & YELLOW
MI	CRYSTAL & RED

APPROVED: Steven Miller DATE: 5-1-12

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 037026 ENGINEER STEVEN D. MILLER

DIVISION OF HIGHWAYS • STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION • WORK ZONE TRAFFIC CONTROL

ROADWAY STANDARD DRAWINGS & LEGEND

PROJ. REFERENCE NO.	SHEET NO.
I-4413	TMP-1B

MANAGEMENT STRATEGIES

-FAYETTEVILLE ROAD, DAWN DRIVE, AND I-95 TRAFFIC WILL BE MAINTAINED DURING LANE AND SHOULDER CLOSURES.

-ONCE THE BRIDGE LEFT OF -L- IS CONSTRUCTED, FAYETTEVILLE ROAD TRAFFIC WILL BE DIVERTED TO THIS BRIDGE WHILE THE EXISTING BRIDGE IS REMOVED AND THE BRIDGE RIGHT OF -L- IS CONSTRUCTED.

-FOR OVERHEAD WORK ON I-95, THE TRAFFIC WILL BE DETOURED VIA THE INTERCHANGE RAMPS DURING LOW VOLUME HOURS.

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 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
US 301/FAYETTEVILLE RD	MONDAY THROUGH SUNDAY FROM 7:00 A.M. TO 8:00 P.M.
INTERSTATE 95	MONDAY THROUGH THURSDAY FROM 12:00 P.M. (NOON) TO 7:00 P.M. AND FRIDAY 9:00 A.M. TO SUNDAY 9:00 P.M.

B) DO NOT CLOSE OR NARROW TRAVEL LANES DURING HOLIDAYS AND SPECIAL EVENTS AS FOLLOWS:

<u>ROAD NAME</u>

US 301/FAYETTEVILLE RD

HOLIDAY

1. FOR ANY UNEXPECTED OCCURRENCE THAT CREATES UNUSUALLY HIGH TRAFFIC VOLUMES, AS DIRECTED BY THE ENGINEER.
2. FOR NEW YEAR'S, BETWEEN THE HOURS OF 7:00 A.M. DECEMBER 31ST TO 8:00 P.M. JANUARY 2ND. IF NEW YEAR'S DAY IS ON A FRIDAY, SATURDAY, SUNDAY, OR MONDAY THEN UNTIL 8:00 P.M. THE FOLLOWING TUESDAY.
3. FOR EASTER, BETWEEN THE HOURS OF 7:00 A.M. THURSDAY AND 8:00 P.M. MONDAY.
4. FOR MEMORIAL DAY, BETWEEN THE HOURS OF 7:00 A.M. FRIDAY TO 8:00 P.M. TUESDAY.
5. FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 7:00 A.M. THE DAY BEFORE INDEPENDENCE DAY AND 8:00 P.M. THE DAY AFTER INDEPENDENCE DAY.

   IF INDEPENDENCE DAY IS ON A FRIDAY, SATURDAY, SUNDAY, OR MONDAY THEN BETWEEN THE HOURS OF 7:00 A.M. THE THURSDAY BEFORE INDEPENDENCE DAY AND 8:00 P.M. THE TUESDAY AFTER INDEPENDENCE DAY.
6. FOR LABOR DAY, BETWEEN THE HOURS OF 7:00 A.M. FRIDAY AND 8:00 P.M. TUESDAY.
7. FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 7:00 A.M. TUESDAY TO 8:00 P.M. MONDAY.
8. FOR CHRISTMAS, BETWEEN THE HOURS OF 7:00 A.M. THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 8:00 P.M. THE FOLLOWING TUESDAY AFTER THE WEEK OF CHRISTMAS.
9. FOR ROBESON COMMUNITY COLLEGE GRADUATION, BETWEEN THE HOURS OF 7:00 A.M. THE DAY OF THE EVENT AND 8:00 P.M. THE DAY OF THE EVENT.

<u>ROAD NAME</u>

INTERSTATE 95

HOLIDAY

1. FOR ANY UNEXPECTED OCCURRENCE THAT CREATES UNUSUALLY HIGH TRAFFIC VOLUMES, AS DIRECTED BY THE ENGINEER.
2. FOR NEW YEAR'S, BETWEEN THE HOURS OF 9:00 A.M. DECEMBER 31ST TO 9:00 P.M. JANUARY 2ND. IF NEW YEAR'S DAY IS ON A FRIDAY, SATURDAY, SUNDAY, OR MONDAY THEN UNTIL 9:00 P.M. THE FOLLOWING TUESDAY.
3. FOR EASTER, BETWEEN THE HOURS OF 9:00 A.M. THURSDAY AND 9:00 P.M. MONDAY.
4. FOR MEMORIAL DAY, BETWEEN THE HOURS OF 9:00 A.M. FRIDAY TO 9:00 P.M. TUESDAY.
5. FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 9:00 A.M. THE DAY BEFORE INDEPENDENCE DAY AND 9:00 P.M. THE DAY AFTER INDEPENDENCE DAY.

   IF INDEPENDENCE DAY IS ON A FRIDAY, SATURDAY, SUNDAY, OR MONDAY THEN BETWEEN THE HOURS OF 9:00 A.M. THE THURSDAY BEFORE INDEPENDENCE DAY AND 9:00 P.M. THE TUESDAY AFTER INDEPENDENCE DAY.
6. FOR LABOR DAY, BETWEEN THE HOURS OF 9:00 A.M. FRIDAY AND 9:00 P.M. TUESDAY.
7. FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 9:00 A.M. TUESDAY TO 9:00 P.M. MONDAY.
8. FOR CHRISTMAS, BETWEEN THE HOURS OF 9:00 A.M. THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 9:00 P.M. THE FOLLOWING TUESDAY AFTER THE WEEK OF CHRISTMAS.
9. FOR THE DAYTONA 500, BETWEEN THE HOURS OF 9:00 A.M. THE DAY OF THE EVENT AND 9:00 P.M. THE DAY AFTER THE EVENT.

C) DO NOT CLOSE ROADS AS FOLLOWS:

ROAD NAME	DAY AND TIME RESTRICTIONS	OPERATION
I-95	MONDAY THROUGH THURSDAY FROM 5:00 A.M. TO 11:00 P.M. AND FRIDAY 5:00 A.M. TO SUNDAY 11:00 P.M.	OVERHEAD STRUCTURE WORK

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 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.

APPROVED: [signature] DATE: 5-1-12

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 037026 ENGINEER STEVEN D. MILLER

DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

TRANSPORTATION OPERATIONS PLAN

GENERAL NOTES CONTINUED

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.

I) 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.

J) DO NOT INSTALL MORE THAN ONE LANE CLOSURE IN ANY ONE DIRECTION ON INTERSTATE 95 OR US 301/FAYETTEVILLE ROAD.

PAVEMENT EDGE DROP OFF REQUIREMENTS

K) 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.

L) 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) EVERY HALF MILE THROUGHOUT THE UNEVEN AREA.

TRAFFIC PATTERN ALTERATIONS

M) NOTIFY THE ENGINEER THIRTY (30) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION.

SIGNING

N) INSTALL ADVANCE WORK ZONE WARNING SIGNS NO MORE THAN THREE (3) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.

O) PROVIDE SIGNING AND DEVICES REQUIRED TO CLOSE THE ROAD ACCORDING TO THE ROADWAY STANDARD DRAWINGS AND TRAFFIC CONTROL PLANS.

P) COVER OR REMOVE ALL SIGNS AND DEVICES REQUIRED TO CLOSE THE ROAD WHEN ROAD CLOSURE IS NOT IN OPERATION.

Q) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

TRAFFIC BARRIER

R) INSTALL TEMPORARY BARRIER ACCORDING TO THE TRANSPORTATION MANAGEMENT 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 TRANSPORTATION MANAGEMENT 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 TRANSPORTATION MANAGEMENT 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 ATTENUATOR (MAXIMUM 72 HOURS) OR A TEMPORARY CRASH CUSHION.

TRAFFIC CONTROL DEVICES

T) WHEN LANE CLOSURES ARE NOT IN EFFECT 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. REFER TO STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES SECTIONS 1130 (DRUMS), 1135 (CONES), AND 1180 (SKINNY DRUMS) FOR ADDITIONAL REQUIREMENTS.

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

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

ROAD NAME	MARKING	MARKER
US 301/FAYETTEVILLE RD	4" PAINT	TEMPORARY RAISED
DAWN DRIVE	4" PAINT	TEMPORARY RAISED
I-95	6" PAINT	TEMPORARY RAISED

W) 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.

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

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

Z) TRACE THE PROPOSED MONOLITHIC ISLAND LOCATIONS WITH PROPER COLOR PAVEMENT MARKINGS PRIOR TO INSTALLATION. PLACE DRUMS TO DELINEATE ANY PROPOSED MONOLITHIC ISLANDS BEFORE INSTALLATION.

MISCELLANEOUS

AA LAW ENFORCEMENT MAY BE USED TO MAINTAIN TRAFFIC THROUGH THE WORK AREA AND/OR INTERSECTIONS AS DIRECTED BY THE ENGINEER.

BB ALL CURB RAMP LOCATIONS SHALL BE DERIVED FROM STATIONING SHOWN ON PAVEMENT MARKING PLANS OR AS DIRECTED BY THE ENGINEER IN COORDINATION WITH THE SIGNING AND DELINEATION UNIT.

CC CONTRACTOR SHALL MAINTAIN SIDEWALK ACCESS AT ALL TIMES AS STATED IN THE PHASING. CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE TEMPORARY SIDEWALKS (CONCRETE, ASPHALT, OR OTHER SUITABLE MATERIAL AS APPROVED BY THE ENGINEER) AT ALL LOCATIONS WHERE THE OPEN PEDESTRIAN TRAVELWAY HAS BEEN

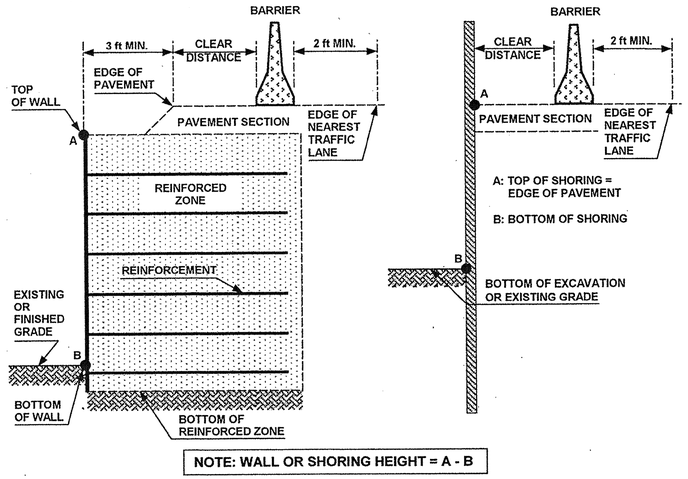
APPROVED: [signature] DATE: 5-1-12

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 037026 ENGINEER STEVEN D. MILLER

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION WORK ZONE TRAFFIC CONTROL

TRANSPORTATION OPERATIONS PLAN



NOTE: WALL OR SHORING HEIGHT = A - B

FIGURE A

NOTES

1- REFER TO THE TRAFFIC CONTROL PLANS FOR SHORING LOCATIONS AND SOIL PARAMETERS.

2- REFER TO THE "TEMPORARY SHORING" PROJECT SPECIAL PROVISION FOR MORE INFORMATION ABOUT TEMPORARY SHORING, MEASUREMENT AND PAYMENT.

3- PROVIDE PORTABLE CONCRETE BARRIER TO PROTECT TEMPORARY SHORING IF SHORING IS LOCATED WITHIN THE CLEAR ZONE AS DEFINED IN THE AASHTO ROADSIDE DESIGN GUIDE. DO NOT PLACE BARRIER DIRECTLY ON ANY SURFACE OTHER THAN ASPHALT OR CONCRETE. (CONTACT NCDOT PAVEMENT MANAGEMENT UNIT FOR APPLICABLE PAVEMENT DESIGN).

4- 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.

5- 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. DO NOT PLACE BARRIER DIRECTLY ON ANY SURFACE OTHER THAN ASPHALT OR CONCRETE. (CONTACT NCDOT PAVEMENT MANAGEMENT UNIT FOR APPLICABLE PAVEMENT DESIGN).

6- USE NCDOT PORTABLE CONCRETE BARRIER (PCB) IN ACCORDANCE WITH ROADWAY STANDARD DRAWING NO. 1170.01 AND SECTION 1170 OF THE STANDARD SPECIFICATIONS.

7- USE OREGON TALL F-SHAPE CONCRETE BARRIER IN ACCORDANCE WITH DETAIL DRAWING AND SPECIAL PROVISION OBTAINED FROM: WORK ZONE TRAFFIC CONTROL UNIT WEB PAGE.

8- 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.

9- 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.

10- 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.

MINIMUM REQUIRED CLEAR DISTANCE, inches

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

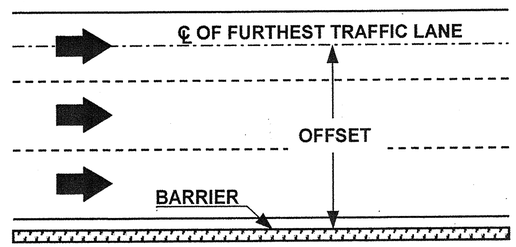


FIGURE B

APPROVED:_____ DATE:_____

SEAL

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 028380

Sept 2010

DIVISION OF HIGHWAYS • STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION • WORK ZONE TRAFFIC CONTROL

PORTABLE CONCRETE BARRIER
AT
TEMPORARY SHORING LOCATIONS

SHORING LOCATION NO. 1

FOR TEMPORARY SHORING AND POSITIVE PROTECTION FOR TEMPORARY SHORING, SEE PLANS AND TEMPORARY SHORING PROVISION.

BEFORE BEGINNING TEMPORARY SHORING DESIGN OR CONSTRUCTION, SURVEY EXISTING GROUND ELEVATIONS IN THE VICINITY OF SHORING LOCATIONS TO DETERMINE ACTUAL SHORING HEIGHTS.

DESIGN TEMPORARY SHORING FROM STATION 20+65± -L-, 22.5 FT LEFT, TO STATION 21+25± -L-, 22.5 FT LEFT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUND WATER ELEVATION:

UNIT WEIGHT (γ) = 120 LB/CF
FRICTION ANGLE (ϕ) = 30 DEGREES
COHESION (c) = 0 LB/SF
GROUND WATER ELEVATION = 124 FT±

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM STATION 20+65± -L-, 22.5 FT LEFT, TO STATION 21+25± -L-, 22.5 FT LEFT. THE INFORMATION PROVIDED FOR TEMPORARY SHORING DESIGN WAS ASSUMED AND MAY NOT BE APPLICABLE TO THE ACTUAL SITE CONDITIONS ENCOUNTERED DURING CONSTRUCTION.

DO NOT USE CANTILEVER, BRACED AND/OR ANCHORED SHORING FOR TEMPORARY SHORING FROM STATION 20+65± -L-, 22.5 FT LEFT, TO STATION 21+25± -L-, 22.5 FT LEFT.

AT THE CONTRACTOR*S OPTION, USE A STANDARD TEMPORARY WALL FOR TEMPORARY SHORING FROM STATION 20+65± -L-, 22.5 FT LEFT, TO STATION 21+25± -L-, 22.5 FT LEFT. SEE STANDARD DRAWING NO. 1801.02 FOR STANDARD TEMPORARY WALLS.

WHEN BACKFILL FOR RETAINING WALLS OVERLAPS WITH THE REINFORCED ZONE OF TEMPORARY WALLS, USE SHORING BACKFILL OR BACKFILL MATERIAL REQUIRED FOR RETAINING WALLS, WHICHEVER IS BETTER, IN THE REINFORCED ZONE OF TEMPORARY WALLS.

SHORING LOCATION NO. 2

FOR TEMPORARY SHORING AND POSITIVE PROTECTION FOR TEMPORARY SHORING, SEE PLANS AND TEMPORARY SHORING PROVISION.

BEFORE BEGINNING TEMPORARY SHORING DESIGN OR CONSTRUCTION, SURVEY EXISTING GROUND ELEVATIONS IN THE VICINITY OF SHORING LOCATIONS TO DETERMINE ACTUAL SHORING HEIGHTS.

DESIGN TEMPORARY SHORING FROM STATION 23+15± -L-, 22.5 FT LEFT, TO STATION 24+50± -L-, 22.5 FT LEFT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUND WATER ELEVATION:

UNIT WEIGHT (γ) = 120 LB/CF
FRICTION ANGLE (ϕ) = 30 DEGREES
COHESION (c) = 0 LB/SF
GROUND WATER ELEVATION = 124 FT±

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM STATION 23+15± -L-, 22.5 FT LEFT, TO STATION 24+50± -L-, 22.5 FT LEFT. THE INFORMATION PROVIDED FOR TEMPORARY SHORING DESIGN WAS ASSUMED AND MAY NOT BE APPLICABLE TO THE ACTUAL SITE CONDITIONS ENCOUNTERED DURING CONSTRUCTION.

DO NOT USE CANTILEVER, BRACED AND/OR ANCHORED SHORING FOR TEMPORARY SHORING FROM STATION 23+15± -L-, 22.5 FT LEFT, TO STATION 24+50± -L-, 22.5 FT LEFT.

AT THE CONTRACTOR*S OPTION, USE A STANDARD TEMPORARY WALL FOR TEMPORARY SHORING FROM STATION 23+15± -L-, 22.5 FT LEFT, TO STATION 24+50± -L-, 22.5 FT LEFT. SEE STANDARD DRAWING NO. 1802.02 FOR STANDARD TEMPORARY WALLS.

WHEN BACKFILL FOR RETAINING WALLS OVERLAPS WITH THE REINFORCED ZONE OF TEMPORARY WALLS, USE SHORING BACKFILL OR BACKFILL MATERIAL REQUIRED FOR RETAINING WALLS, WHICHEVER IS BETTER, IN THE REINFORCED ZONE OF TEMPORARY WALLS.

SHORING LOCATION NO. 3

FOR TEMPORARY SHORING AND POSITIVE PROTECTION FOR TEMPORARY SHORING, SEE PLANS AND TEMPORARY SHORING PROVISION.

BEFORE BEGINNING TEMPORARY SHORING DESIGN OR CONSTRUCTION, SURVEY EXISTING GROUND ELEVATIONS IN THE VICINITY OF SHORING LOCATIONS TO DETERMINE ACTUAL SHORING HEIGHTS.

DESIGN TEMPORARY SHORING FROM STATION 20+70± -L-, 19.0 FT LEFT, TO STATION 21+35± -L-, 19.0 FT LEFT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUND WATER ELEVATION:

UNIT WEIGHT (γ) = 120 LB/CF
FRICTION ANGLE (ϕ) = 30 DEGREES
COHESION (c) = 0 LB/SF
GROUND WATER ELEVATION = 124 FT±

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM STATION 20+70± -L-, 19.0 FT LEFT, TO STATION 21+35± -L-, 19.0 FT LEFT. THE INFORMATION PROVIDED FOR TEMPORARY SHORING DESIGN WAS ASSUMED AND MAY NOT BE APPLICABLE TO THE ACTUAL SITE CONDITIONS ENCOUNTERED DURING CONSTRUCTION.

DO NOT USE A TEMPORARY WALL FOR TEMPORARY SHORING FROM STATION 20+70± -L-, 19.0 FT LEFT, TO STATION 21+35± -L-, 19.0 FT LEFT.

IT MAY BE PREFERRED TO USE A TEMPORARY SOIL NAIL WALL FOR TEMPORARY SHORING FROM STATION 20+70± -L-, 19.0 FT LEFT, TO STATION 21+35± -L-, 19.0 FT LEFT. FOR TEMPORARY SOIL NAIL WALLS, SEE TEMPORARY SOIL NAIL WALLS PROVISION.

SPECIAL NOTE ON PLAN FOR SHORING LOCATION NO. 3

AT THE CONTRACTOR'S OPTION, USE STANDARD TEMPORARY SHORING FOR TEMPORARY SHORING WHEN APPLICABLE FROM STATION 20+70± -L-, 19.0 FT LEFT, TO STATION 21+35± -L-, 19.0 FT LEFT. SEE STANDARD DRAWING NO. 1801.01 FOR STANDARD TEMPORARY SHORING.

SHORING LOCATION NO. 4

FOR TEMPORARY SHORING AND POSITIVE PROTECTION FOR TEMPORARY SHORING, SEE PLANS AND TEMPORARY SHORING PROVISION.

BEFORE BEGINNING TEMPORARY SHORING DESIGN OR CONSTRUCTION, SURVEY EXISTING GROUND ELEVATIONS IN THE VICINITY OF SHORING LOCATIONS TO DETERMINE ACTUAL SHORING HEIGHTS.

DESIGN TEMPORARY SHORING FROM STATION 23+10± -L-, 19.0 FT LEFT, TO STATION 23+75± -L-, 19.0 FT LEFT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUND WATER ELEVATION:

UNIT WEIGHT (γ) = 120 LB/CF
FRICTION ANGLE (ϕ) = 30 DEGREES
COHESION (c) = 0 LB/SF
GROUND WATER ELEVATION = 124 FT±

LIMITED UBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM STATION 23+10± -L-, 19.0 FT LEFT, TO STATION 23+75± -L-, 19.0 FT LEFT. THE INFORMATION PROVIDED FOR TEMPORARY SHORING DESIGN WAS ASSUMED AND MAY NOT BE APPLICABLE TO THE ACTUAL SITE CONDITIONS ENCOUNTERED DURING CONSTRUCTION.

DO NOT USE A TEMPORARY WALL FOR TEMPORARY SHORING FROM STATION 23+10± -L-, 19.0 FT LEFT, TO STATION 23+75± -L-, 19.0 FT LEFT.

IT MAY BE PREFERRED TO USE A TEMPORARY SOIL NAIL WALL FOR TEMPORARY SHORING FROM STATION 23+10± -L-, 19.0 FT LEFT, TO STATION 23+75± -L-, 19.0 FT LEFT. FOR TEMPORARY SOIL NAIL WALLS, SEE TEMPORARY SOIL NAIL WALLS PROVISION.

SPECIAL NOTE ON PLAN FOR SHORING LOCATION NO. 4

AT THE CONTRACTOR'S OPTION, USE STANDARD TEMPORARY SHORING FOR TEMPORARY SHORING WHEN APPLICABLE FROM STATION 23+10± -L-, 19.0 FT LEFT, TO STATION 23+75± -L-, 19.0 FT LEFT. SEE STANDARD DRAWING NO. 1801.01 FOR STANDARD TEMPORARY SHORING.

APPROVED: 4/19/2012 DATE:

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 30943 ENGINEER THEIN TUN ZAW

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
WORK ZONE TRAFFIC CONTROL

TEMPORARY SHORING DATA

SHORING LOCATION NO. 5

FOR TEMPORARY SHORING AND POSITIVE PROTECTION FOR TEMPORARY SHORING, SEE PLANS AND TEMPORARY SHORING PROVISION.

BEFORE BEGINNING TEMPORARY SHORING DESIGN OR CONSTRUCTION, SURVEY EXISTING GROUND ELEVATIONS IN THE VICINITY OF SHORING LOCATIONS TO DETERMINE ACTUAL SHORING HEIGHTS.

DESIGN TEMPORARY SHORING FROM STATION 42+57± -Y1-, 11.0 FT RIGHT, TO STATION 43+22± -Y1-, 11.0 FT RIGHT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUND WATER ELEVATION:

UNIT WEIGHT (γ) = 120 LB/CF
FRICTION ANGLE (ϕ) = 30 DEGREES
COHESION (c) = 0 LB/SF
GROUND WATER ELEVATION = 124 FT±

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM STATION 42+57± -Y1-, 11.0 FT RIGHT, TO STATION 43+22± -Y1-, 11.0 FT RIGHT. THE INFORMATION PROVIDED FOR TEMPORARY SHORING DESIGN WAS ASSUMED AND MAY NOT BE APPLICABLE TO THE ACTUAL SITE CONDITIONS ENCOUNTERED DURING CONSTRUCTION.

DO NOT USE A TEMPORARY WALL FOR TEMPORARY SHORING FROM STATION 42+57± -Y1-, 11.0 FT RIGHT, TO STATION 43+22± -Y1-, 11.0 FT RIGHT.

AT THE CONTRACTOR'S OPTION, USE A STANDARD TEMPORARY SHORING FOR TEMPORARY SHORING FROM STATION 42+57± -Y1-, 11.0 FT RIGHT, TO STATION 43+22± -Y1-, 11.0 FT RIGHT. SEE STANDARD DRAWING NO. 1801.01 FOR STANDARD TEMPORARY SHORING.

SHORING LOCATION NO. 6

FOR TEMPORARY SHORING AND POSITIVE PROTECTION FOR TEMPORARY SHORING, SEE PLANS AND TEMPORARY SHORING PROVISION.

BEFORE BEGINNING TEMPORARY SHORING DESIGN OR CONSTRUCTION, SURVEY EXISTING GROUND ELEVATIONS IN THE VICINITY OF SHORING LOCATIONS TO DETERMINE ACTUAL SHORING HEIGHTS.

DESIGN TEMPORARY SHORING FROM STATION 42+57± -Y1-, 11.0 FT LEFT, TO STATION 43+22± -Y1-, 11.0 FT LEFT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUND WATER ELEVATION:

UNIT WEIGHT (γ) = 120 LB/CF
FRICTION ANGLE (ϕ) = 30 DEGREES
COHESION (c) = 0 LB/SF
GROUND WATER ELEVATION = 124 FT±

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM STATION 42+57± -Y1-, 11.0 FT LEFT, TO STATION 43+22± -Y1-, 11.0 FT LEFT. THE INFORMATION PROVIDED FOR TEMPORARY SHORING DESIGN WAS ASSUMED AND MAY NOT BE APPLICABLE TO THE ACTUAL SITE CONDITIONS ENCOUNTERED DURING CONSTRUCTION.

DO NOT USE A TEMPORARY WALL FOR TEMPORARY SHORING FROM STATION 42+57± -Y1-, 11.0 FT LEFT, TO STATION 43+22± -Y1-, 11.0 FT LEFT.

AT THE CONTRACTOR'S OPTION, USE A STANDARD TEMPORARY SHORING FOR TEMPORARY SHORING FROM STATION 42+57± -Y1-, 11.0 FT LEFT, TO STATION 43+22± -Y1-, 11.0 FT LEFT. SEE STANDARD DRAWING NO. 1801.01 FOR STANDARD TEMPORARY SHORING.

SHORING LOCATION NO. 7

FOR TEMPORARY SHORING AND POSITIVE PROTECTION FOR TEMPORARY SHORING, SEE PLANS AND TEMPORARY SHORING PROVISION.

BEFORE BEGINNING TEMPORARY SHORING DESIGN OR CONSTRUCTION, SURVEY EXISTING GROUND ELEVATIONS IN THE VICINITY OF SHORING LOCATIONS TO DETERMINE ACTUAL SHORING HEIGHTS.

DESIGN TEMPORARY SHORING FROM STATION 43+80± -Y1-, 11.0 FT RIGHT, TO STATION 44+45± -Y1-, 11.0 FT RIGHT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUND WATER ELEVATION:

UNIT WEIGHT (γ) = 120 LB/CF
FRICTION ANGLE (ϕ) = 30 DEGREES
COHESION (c) = 0 LB/SF
GROUND WATER ELEVATION = 124 FT±

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM STATION 43+80± -Y1-, 11.0 FT RIGHT, TO STATION 44+45± -Y1-, 11.0 FT RIGHT. THE INFORMATION PROVIDED FOR TEMPORARY SHORING DESIGN WAS ASSUMED AND MAY NOT BE APPLICABLE TO THE ACTUAL SITE CONDITIONS ENCOUNTERED DURING CONSTRUCTION.

DO NOT USE A TEMPORARY WALL FOR TEMPORARY SHORING FROM STATION 43+80± -Y1-, 11.0 FT RIGHT, TO STATION 44+45* -Y1-, 11.0 FT RIGHT.

AT THE CONTRACTOR*S OPTION, USE A STANDARD TEMPORARY SHORING FOR TEMPORARY SHORING FROM STATION 43+80± -Y1-, 11.0 FT RIGHT, TO STATION 44+45± -Y1-, 11.0 FT RIGHT. SEE STANDARD DRAWING NO. 1801.01 FOR STANDARD TEMPORARY SHORING.

SHORING LOCATION NO. 8

FOR TEMPORARY SHORING AND POSITIVE PROTECTION FOR TEMPORARY SHORING, SEE PLANS AND TEMPORARY SHORING PROVISION.

BEFORE BEGINNING TEMPORARY SHORING DESIGN OR CONSTRUCTION, SURVEY EXISTING GROUND ELEVATIONS IN THE VICINITY OF SHORING LOCATIONS TO DETERMINE ACTUAL SHORING HEIGHTS.

DESIGN TEMPORARY SHORING FROM STATION 43+80± -Y1-, 11.0 FT LEFT, TO STATION 44+45± -Y1-, 11.0 FT LEFT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUND WATER ELEVATION:

UNIT WEIGHT (γ) = 120 LB/CF
FRICTION ANGLE (ϕ) = 30 DEGREES
COHESION (c) = 0 LB/SF
GROUND WATER ELEVATION = 124 FT±

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM STATION 43+80± -Y1-, 11.0 FT LEFT, TO STATION 44+45± -Y1-, 11.0 FT LEFT. THE INFORMATION PROVIDED FOR TEMPORARY SHORING DESIGN WAS ASSUMED AND MAY NOT BE APPLICABLE TO THE ACTUAL SITE CONDITIONS ENCOUNTERED DURING CONSTRUCTION.

DO NOT USE A TEMPORARY WALL FOR TEMPORARY SHORING FROM STATION 43+80± -Y1-, 11.0 FT LEFT, TO STATION 44+45± -Y1-, 11.0 FT LEFT.

AT THE CONTRACTOR*S OPTION, USE A STANDARD TEMPORARY SHORING FOR TEMPORARY SHORING FROM STATION 43+80± -Y1-, 11.0 FT LEFT, TO STATION 44+45± -Y1-, 11.0 FT LEFT. SEE STANDARD DRAWING NO. 1801.01 FOR STANDARD TEMPORARY SHORING.

APPROVED: 4/19/2012 DATE:

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 30943 ENGINEER TEIN TUN ZAN

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION WORK ZONE TRAFFIC CONTROL

TEMPORARY SHORING DATA

PROJ. REFERENCE NO.	SHEET NO.
I-4413	TMP-3

PHASING

MAINTAIN DRIVEWAY ACCESS THROUGHOUT THE ENTIRE PROJECT.
MAINTAIN EXISTING SIGNAGE INDCLUDING LOGO SIGNS.

PHASE I

STEP 1: USING ROADWAY STANDARD DRAWING (RSD) 1101.01 SHEET 1 AND SHEET 3 OF 3, INSTALL ADVANCE WARNING SIGNS ON I-95, FAYETTEVILLE ROAD, AND DAWN DRIVE.

STEP 2: BEGIN RELOCATION OF SIGNAL POLES TO FACILITATE CONSTRUCTION.

STEP 3: USING RSD 1101.02 SHEET 4 OF 15 INSTALL LANE CLOSURES AS NEEDED, AND PERFORM THE FOLLOWING:
-FROM -Y1- STA 39+05 TO 47+90 REMOVE EXISTING PAVEMENT MARKINGS AND MARKERS. PLACE TEMPORARY PAVEMENT MARKINGS AND MARKERS AS SHOWN ON TMP-5 AND IN ACCORDANCE WITH RSD 1250.01 AND THE TEMPORARY PAVEMENT MARKING SCHEDULE ON TMP-1A. INSTALL THE TWO W24-1aR SIGNS AS SHOWN ON TMP-4 AND SHIFT I-95 TRAFFIC TO THE TEMPORARY PATTERN.
-INSTALL PORTABLE CONCRETE BARRIER (PCB) ALONG I-95 AS SHOWN ON TMP-5.
-INSTALL TEMPORARY SHORING AT THE FOLLOWING LOCATIONS:
LOCATION 5 -Y1- STA 42+57, 11 FT RIGHT TO 43+22, 11 FT RIGHT
LOCATION 6 -Y1- STA 42+57, 11 FT LEFT TO 43+22, 11 FT LEFT
LOCATION 7 -Y1- STA 43+80, 11 FT RIGHT TO 44+45, 11 FT RIGHT
LOCATION 8 -Y1- STA 43+80, 11 FT LEFT TO 44+45, 11 FT LEFT
-BEGIN CONSTRUCTION OF THE MEDIAN CENTER BENT LEFT OF -L-, INCLUDING PROPOSED CONCRETE BARRIER WALL AND PAVED MEDIAN SHOULDER.
-REMOVE PCB ONCE THE HAZARD IS NO LONGER PRESENT.

STEP 4: PLACE TRAFFIC CONTROL DEVICES AS SHOWN ON TMP-5.

STEP 5: COMPLETE RELOCATION OF SIGNAL POLES.
USING RSD 1101.02 SHEET 1 OF 15 AND FLAGGERS AS NECESSARY, BEGIN CONSTRUCTION OF THE ROADWAY SECTIONS SHOWN ON TMP-4 AND TMP-5 UP TO BUT NOT INCLUDING THE FINAL SURFACE LAYER. REMOVE EXISTING GUARDRAIL PORTIONS THAT CONFLICT WITH CONSTRUCTION AND INSTALL TEMPORARY ANCHOR UNITS GRAU-350.
ENSURE THAT RUNOFF DRAINS AND THAT PONDING IS PREVENTED.

STEP 6: INSTALL TEMPORARY SHORING LOCATION 3 FROM -L- STA 20+70, 19 FT LEFT TO 21+35, 19 FT LEFT AND TEMPORARY SHORING LOCATION 4 FROM -L- STA 23+10, 19 FT LEFT TO 23+75, 19 FT LEFT.
CONSTRUCT RETAINING WALLS THAT ARE PARALLEL TO I-95 FROM LEFT OF -L- TO THE TEMPORARY SHORING. TO CONSTRUCT THE FILL SECTION BEHIND THE RETAINING WALLS, USE REMAIN-IN-PLACE SHORING AS FOLLOWS:
LOCATION 1 -L- STA 20+65, 22.5 FT LEFT TO 21+25, 22.5 FT LEFT
LOCATION 2 -L- STA 23+15, 22.5 FT LEFT TO 24+50, 22.5 FT LEFT

STEP 7: CONSTRUCT THE BRIDGE LEFT OF -L- INCLUDING TEMPORARY GUARDRAIL AND COMPLETE CONSTRUCTION OF THE MEDIAN CENTER BENT LEFT OF -L-. USING RSD 1101.03 SHEET 7 OF 9, DETOUR I-95 TRAFFIC AS SHOWN ON TMP-14 FOR OVERHEAD WORK. IF LAW ENFORCEMENT IS USED TO DIRECT TRAFFIC AT THE RAMP INTERSECTIONS, PLACE EXISTING SIGNALS IN FLASH OR CAUTION MODE DURING HOURS OF OPERATION.

STEP 8: USING RSD 1101.02 SHEET 1 OF 15 AND FLAGGERS AS NECESSARY, PERFORM THE FOLLOWING IN A CONTINUOUS MANNER:
-CONSTRUCT A TIE IN FROM THE EXISTING ROADWAY TO THE BRIDGE LEFT OF -L- AS SHOWN ON TMP-10 USING WEDGING AS NECESSARY. INSTALL NEW SIGNAL LOOPS FOR THE TEMPORARY CONDITION.
-PLACE TEMPORARY PAVEMENT MARKINGS AS SHOWN ON TMP-10 AND IN ACCORDANCE WITH THE TEMPORARY PAVEMENT MARKING SCHEDULE ON TMP-1A. REMOVE CONFLICTING MARKINGS. PLACE TEMPORARY MARKERS IN ACCORDANCE WITH RSD 1250.01.
-PLACE TRAFFIC CONTROL DEVICES AS SHOWN ON TMP-10, INCLUDING THE TWO W24-1 SIGNS.
-SHIFT TRAFFIC TO A 2-LANE, 2-WAY PATTERN ON THE BRIDGE LEFT OF -L- AS SHOWN ON TMP-10.
-COMPLETE GUARDRAIL INSTALLATION FROM -L- STA 19+96 8 FT LEFT TO 20+65 28 FT LEFT.

PHASE II

STEP 1: REMOVE THE EXISTING BRIDGE, DETOURING I-95 TRAFFIC AS SHOWN ON TMP-14 AND USING RSD 1101.03 SHEET 7 OF 9, AS NECESSARY.

STEP 2: REMOVE OVERHEIGHT DETECTORS AND ASSOCIATED SIGNAGE.

STEP 3: BEGIN CONSTRUCTION OF THE REMAINING RETAINING WALLS PARALLEL TO I-95 AND REMOVE TEMPORARY SHORING LOCATIONS 3 & 4. BEGIN CONSTRUCTION OF THE MEDIAN CENTER BENT RIGHT OF -L-.

STEP 4: CONSTRUCT THE BRIDGE RIGHT OF -L- AND COMPLETE CONSTRUCTION OF THE RETAINING WALLS AND THE MEDIAN CENTER BENT, INCLUDING PROPOSED CONCRETE BARRIER WALL AND PAVED MEDIAN SHOULDER USING RSD 1101.02 SHEET 4 OF 15 AS NEEDED.

STEP 5: ONCE THE HAZARD IS NO LONGER PRESENT IN THE I-95 MEDIAN, USE RSD 1101.02 SHEET 4 OF 15 AS NEEDED TO:
-REMOVE THE PCB.
-REMOVE THE TEMPORARY PAVEMENT MARKINGS AND MARKERS FROM -Y1- STA 39+05 TO 47+90.
-PLACE PERMANENT MARKERS AND THERMOPLASTIC PAVEMENT MARKINGS FROM -Y1- STA 39+05 TO 47+90 IN THE PRECONSTRUCTION LOCATIONS. AS DEPICTED ON THE PAVEMENT MARKING PLANS.
-COVER OR REMOVE THE TWO W24-1aR SIGNS.
-SHIFT I-95 TRAFFIC TO THE PRECONSTRUCTION PATTERN.

STEP 6: USING RSD 1101.02 SHEET 1 OF 15 AND FLAGGERS AS NECESSARY, COMPLETE CONSTRUCTION OF THE ROADWAY SECTIONS SHOWN ON TMP-10 UP TO BUT NOT INCLUDING THE FINAL SURFACE LAYER.

STEP 7: USING RSD 1101.02 SHEET 1 OF 15 AND FLAGGERS AS NECESSARY, PERFORM THE FOLLOWING IN A CONTINUOUS MANNER:
-CONSTRUCT TIE INS FROM THE CURRENT TRAFFIC PATTERNS TO THE PATTERNS SHOWN ON TMP-13, USING WEDGING AS NECESSARY.
-PLACE TEMPORARY PAVEMENT MARKINGS IN THE SAME LOCATION AS THE PERMANENT PAVEMENT MARKINGS SHOWN ON THE PAVEMENT MARKING PLANS. REMOVE CONFLICTING MARKINGS.
-PLACE TRAFFIC CONTROL DEVICES AS SHOWN ON TMP-13.
-COVER OR REMOVE THE TWO W24-1 SIGNS.
-COVER OR REMOVE EXISTING RAMP INTERSECTION SIGNALS AND ACTIVATE NEW SIGNALS.
-SHIFT TRAFFIC TO THE FINAL PATTERN AS SHOWN ON TMP-13.

PHASE III

STEP 1: USING RSD 1101.02 SHEET 1 OF 15 AND FLAGGERS AS NECESSARY, REMOVE PAVEMENT AS SHOWN ON TMP-13 AND COMPLETE ALL ROADWAY CONSTRUCTION UP TO BUT NOT INCLUDING THE FINAL SURFACE LAYER.

STEP 2: USING RSD 1101.02 SHEET 1 OF 15 AND FLAGGERS AS NECESSARY, PLACE THE FINAL SURFACE LAYER AND FINAL PAVEMENT MARKINGS AS SHOWN ON THE PAVEMENT MARKING PLANS.

STEP 3: REMOVE ALL TRAFFIC CONTROL DEVICES.

APPROVED: [signature] DATE: 5-14-12

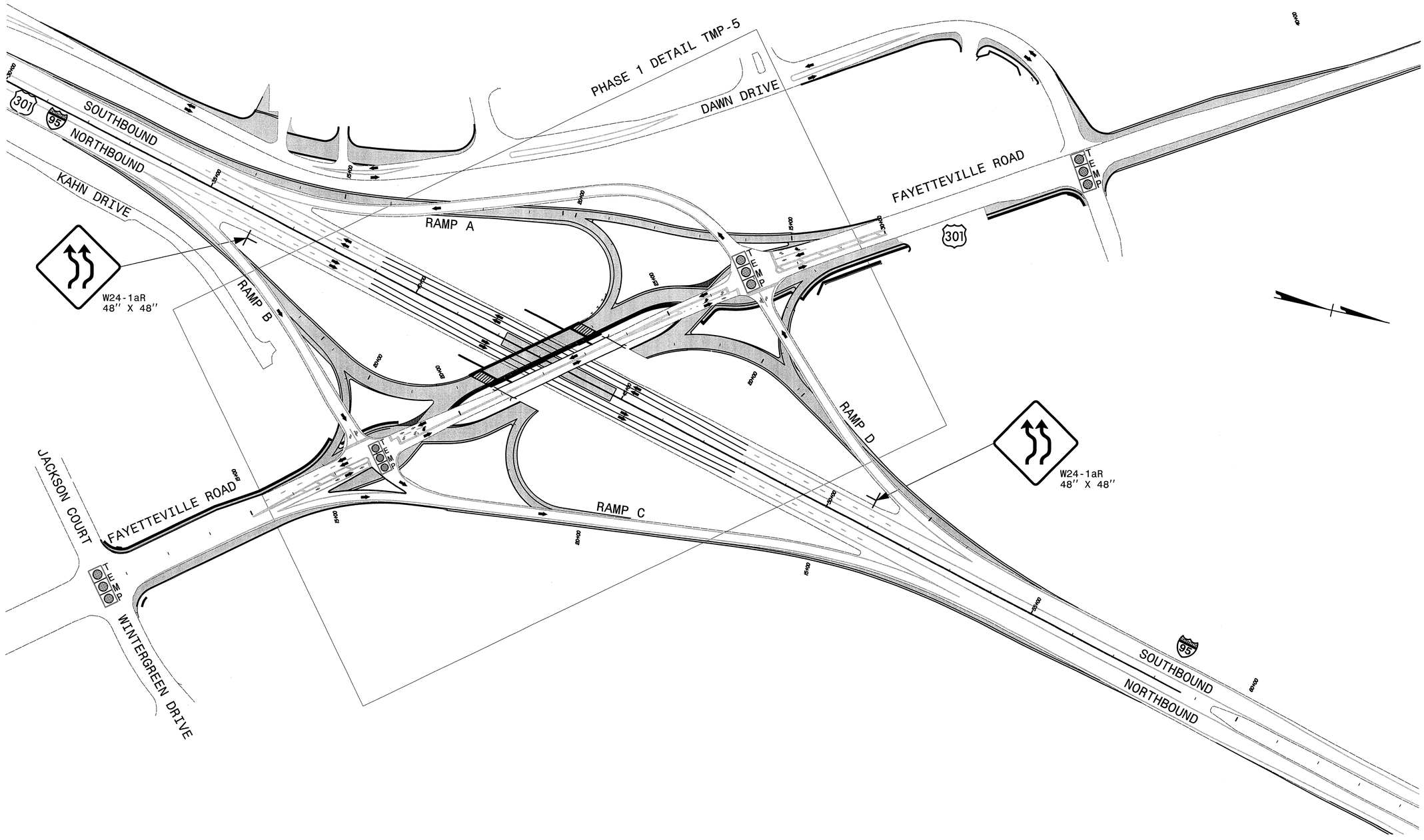
SEAL

NORTH CAROLINA PROFESSIONAL SEAL 037026 ENGINEER STEVEN D. MILLER

DIVISION OF HIGHWAYS * STATE OF NORTH CAROLINA * DEPARTMENT OF TRANSPORTATION * WORK ZONE TRAFFIC CONTROL

PHASING

PROJ. REFERENCE NO.	SHEET NO.
I-4413	TMP-4



APPROVED: [signature] DATE: 5-1-12

SEAL

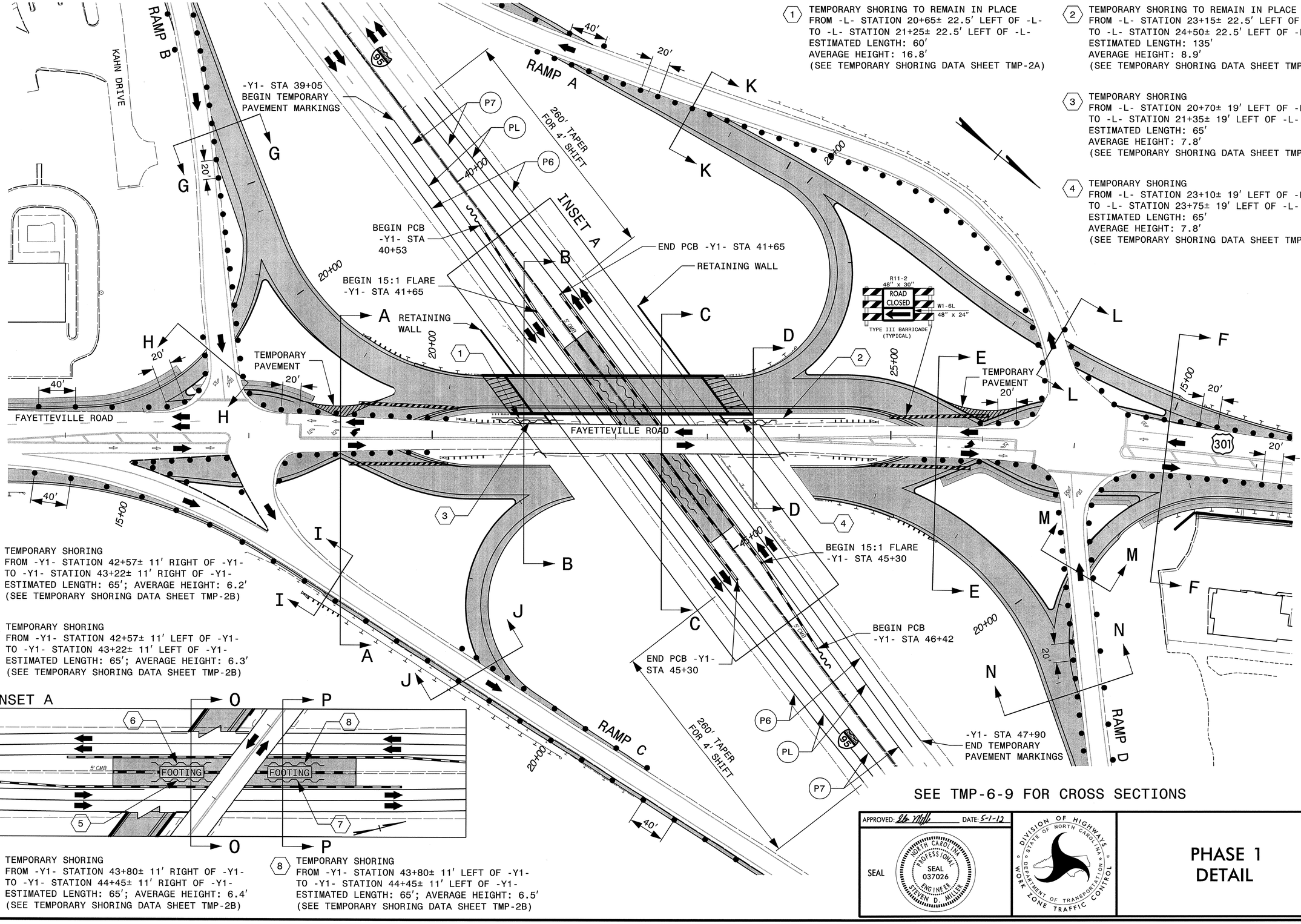
NORTH CAROLINA PROFESSIONAL SEAL 037026 ENGINEER STEVEN D. MILLER

DIVISION OF HIGHWAYS • STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION • WORK ZONE TRAFFIC CONTROL

PHASE 1 OVERVIEW

$$$$$$$SYSTIME$$$$$$
$$$$$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$
$$$$$$$USERNAME$$$$

PROJ. REFERENCE NO.	SHEET NO.
I-4413	TMP-5



1 TEMPORARY SHORING TO REMAIN IN PLACE
FROM -L- STATION 20+65± 22.5′ LEFT OF -L-
TO -L- STATION 21+25± 22.5′ LEFT OF -L-
ESTIMATED LENGTH: 60′
AVERAGE HEIGHT: 16.8′
(SEE TEMPORARY SHORING DATA SHEET TMP-2A)

2 TEMPORARY SHORING TO REMAIN IN PLACE
FROM -L- STATION 23+15± 22.5′ LEFT OF -L-
TO -L- STATION 24+50± 22.5′ LEFT OF -L-
ESTIMATED LENGTH: 135′
AVERAGE HEIGHT: 8.9′
(SEE TEMPORARY SHORING DATA SHEET TMP-2A)

3 TEMPORARY SHORING
FROM -L- STATION 20+70± 19′ LEFT OF -L-
TO -L- STATION 21+35± 19′ LEFT OF -L-
ESTIMATED LENGTH: 65′
AVERAGE HEIGHT: 7.8′
(SEE TEMPORARY SHORING DATA SHEET TMP-2A)

4 TEMPORARY SHORING
FROM -L- STATION 23+10± 19′ LEFT OF -L-
TO -L- STATION 23+75± 19′ LEFT OF -L-
ESTIMATED LENGTH: 65′
AVERAGE HEIGHT: 7.8′
(SEE TEMPORARY SHORING DATA SHEET TMP-2A)

5 TEMPORARY SHORING
FROM -Y1- STATION 42+57± 11′ RIGHT OF -Y1-
TO -Y1- STATION 43+22± 11′ RIGHT OF -Y1-
ESTIMATED LENGTH: 65′; AVERAGE HEIGHT: 6.2′
(SEE TEMPORARY SHORING DATA SHEET TMP-2B)

6 TEMPORARY SHORING
FROM -Y1- STATION 42+57± 11′ LEFT OF -Y1-
TO -Y1- STATION 43+22± 11′ LEFT OF -Y1-
ESTIMATED LENGTH: 65′; AVERAGE HEIGHT: 6.3′
(SEE TEMPORARY SHORING DATA SHEET TMP-2B)

7 TEMPORARY SHORING
FROM -Y1- STATION 43+80± 11′ RIGHT OF -Y1-
TO -Y1- STATION 44+45± 11′ RIGHT OF -Y1-
ESTIMATED LENGTH: 65′; AVERAGE HEIGHT: 6.4′
(SEE TEMPORARY SHORING DATA SHEET TMP-2B)

8 TEMPORARY SHORING
FROM -Y1- STATION 43+80± 11′ LEFT OF -Y1-
TO -Y1- STATION 44+45± 11′ LEFT OF -Y1-
ESTIMATED LENGTH: 65′; AVERAGE HEIGHT: 6.5′
(SEE TEMPORARY SHORING DATA SHEET TMP-2B)

SEE TMP-6-9 FOR CROSS SECTIONS

APPROVED: [signature] DATE: 5-1-12

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 037026 ENGINEER STEVEN D. MILLER

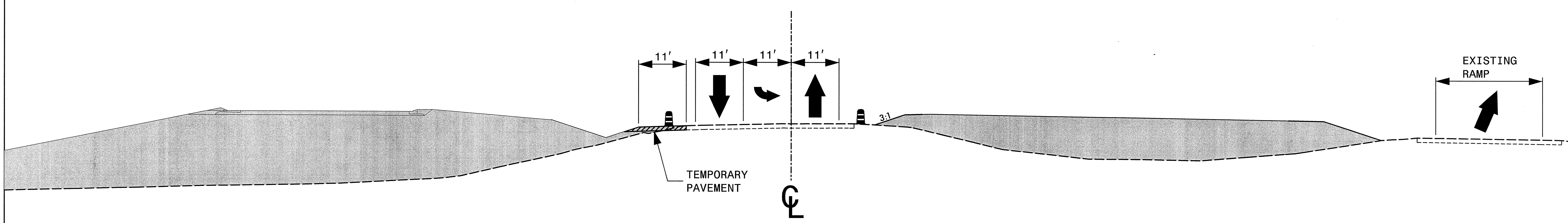
DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

PHASE 1 DETAIL

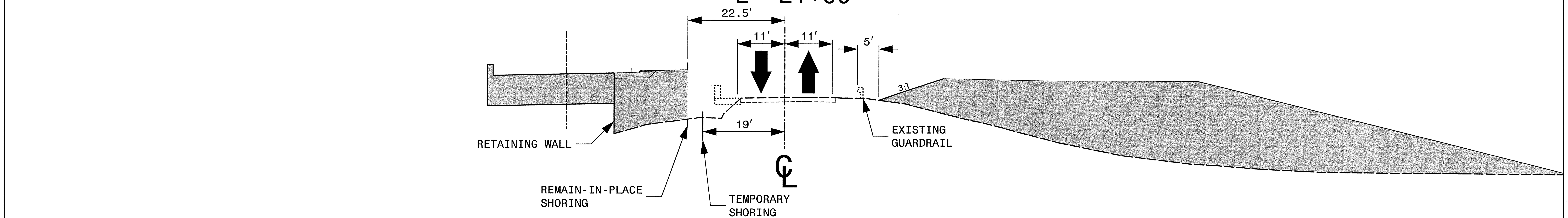
$$$$$$$SYSTIME$$$$$$
$$$$$$$USERNAME$$$$$

PROJ. REFERENCE NO.	SHEET NO.
I-4413	TMP-6

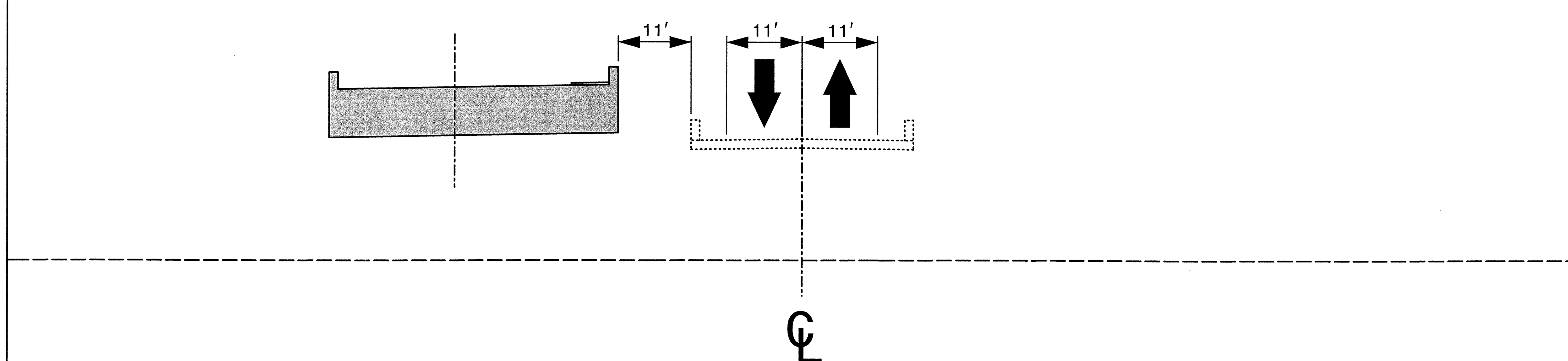
A-A
-L- 19+00



B-B
-L- 21+00



C-C
-L- 22+50



APPROVED: [signature] DATE: 5-1-12

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 037026 ENGINEER STEVEN D. MILLER

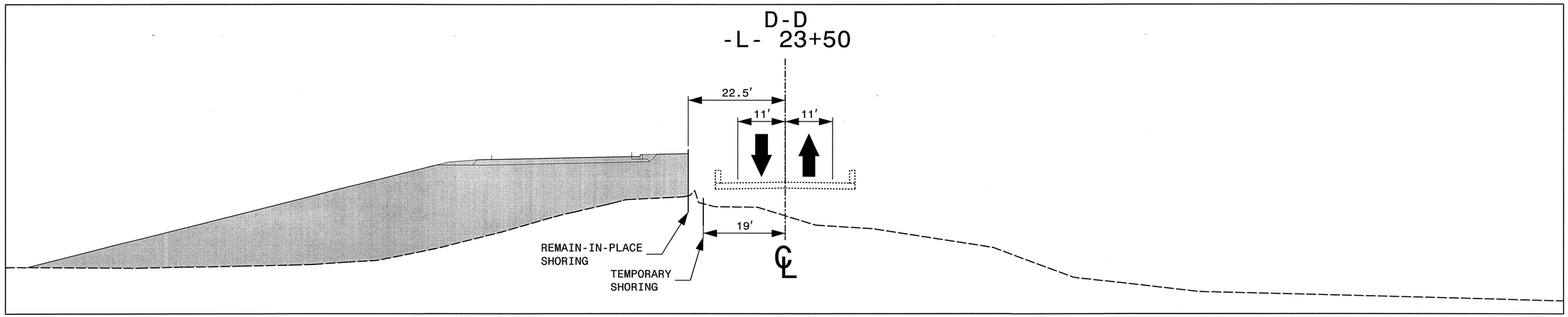
DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION WORK ZONE TRAFFIC CONTROL

PHASE 1
CROSS SECTIONS

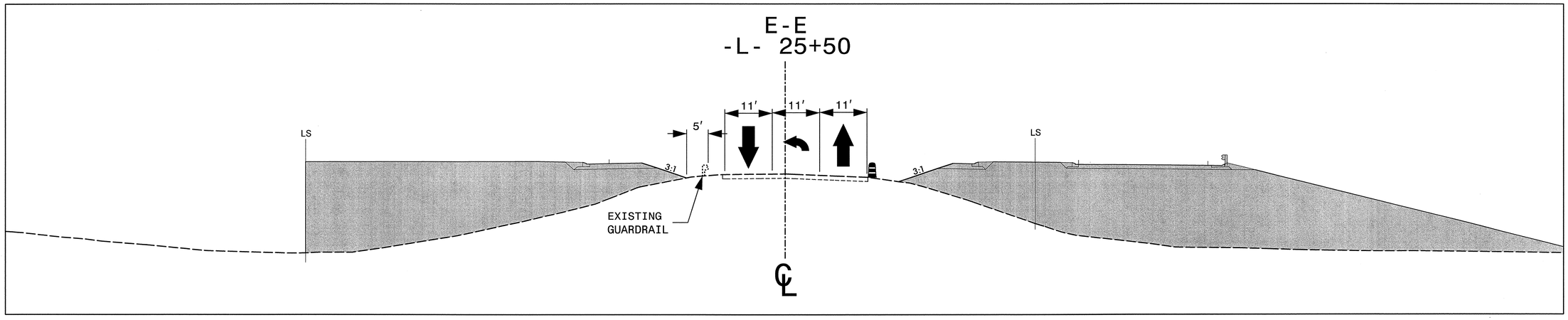
$$$$$SYSTIME$$$$$
$$$$$$$$DGN$$$$$$$$$$$$$$$$$
$$$USERNAME$$$$

PROJ. REFERENCE NO.	SHEET NO.
I-4413	TMP-7

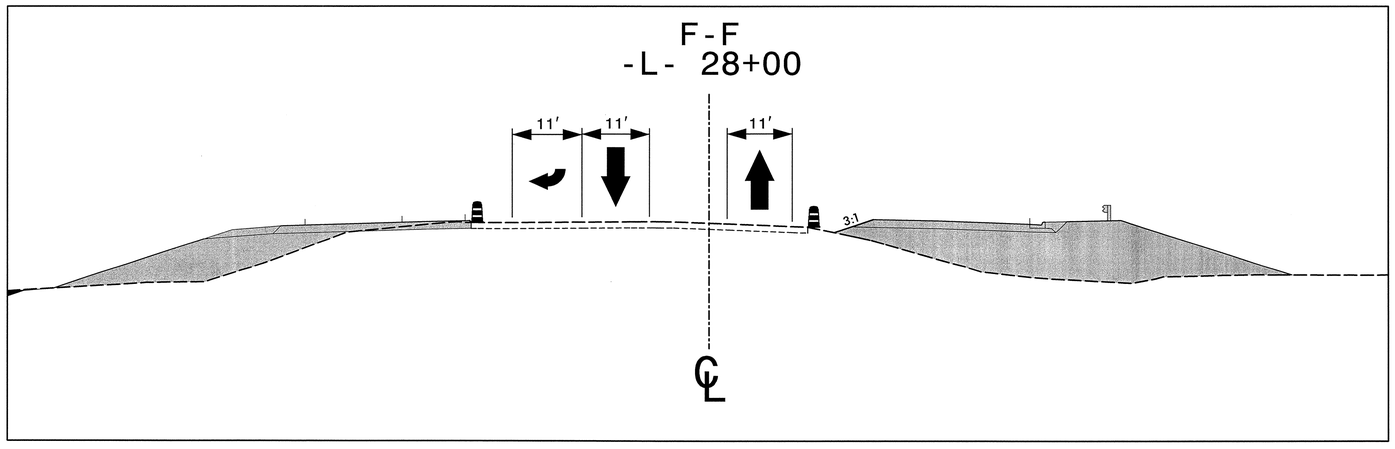
D-D
-L- 23+50



E-E
-L- 25+50



F-F
-L- 28+00



APPROVED: _____ DATE: 5-1-12

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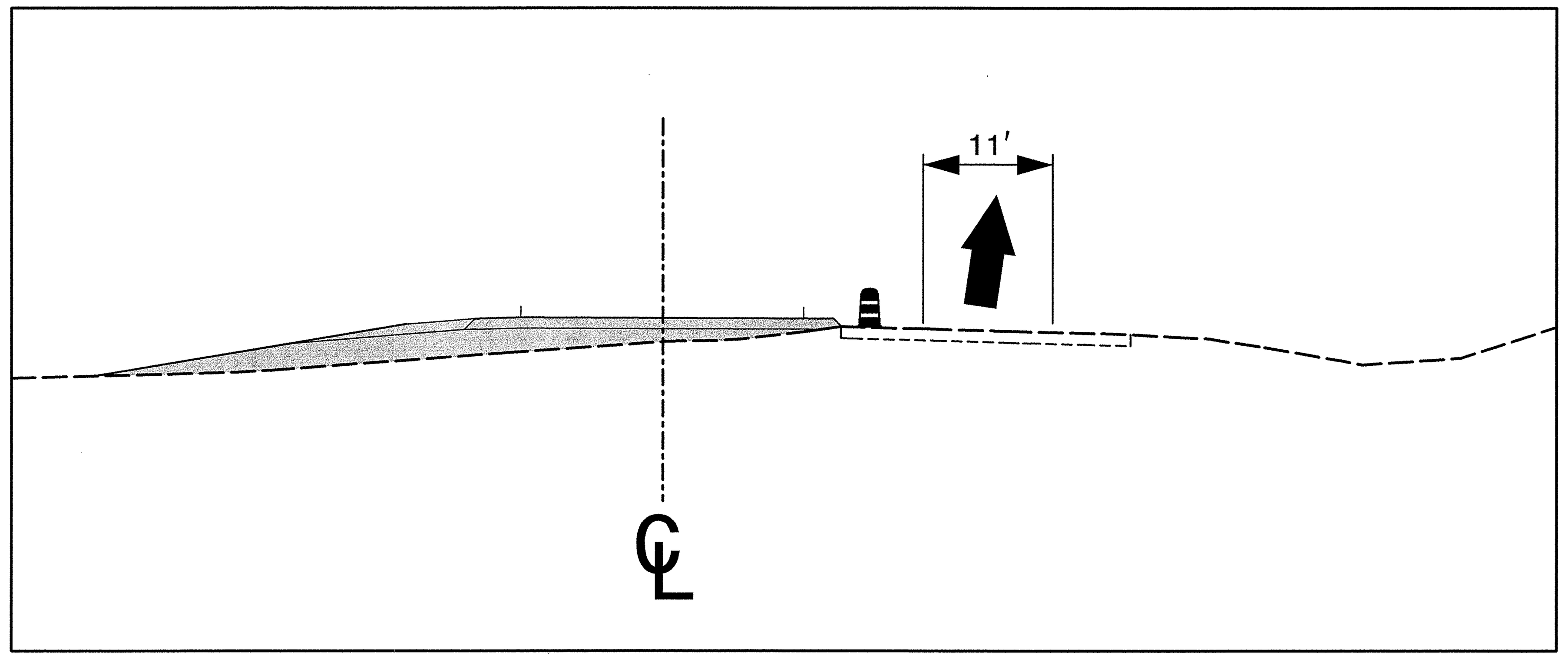
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
WORK ZONE TRAFFIC CONTROL

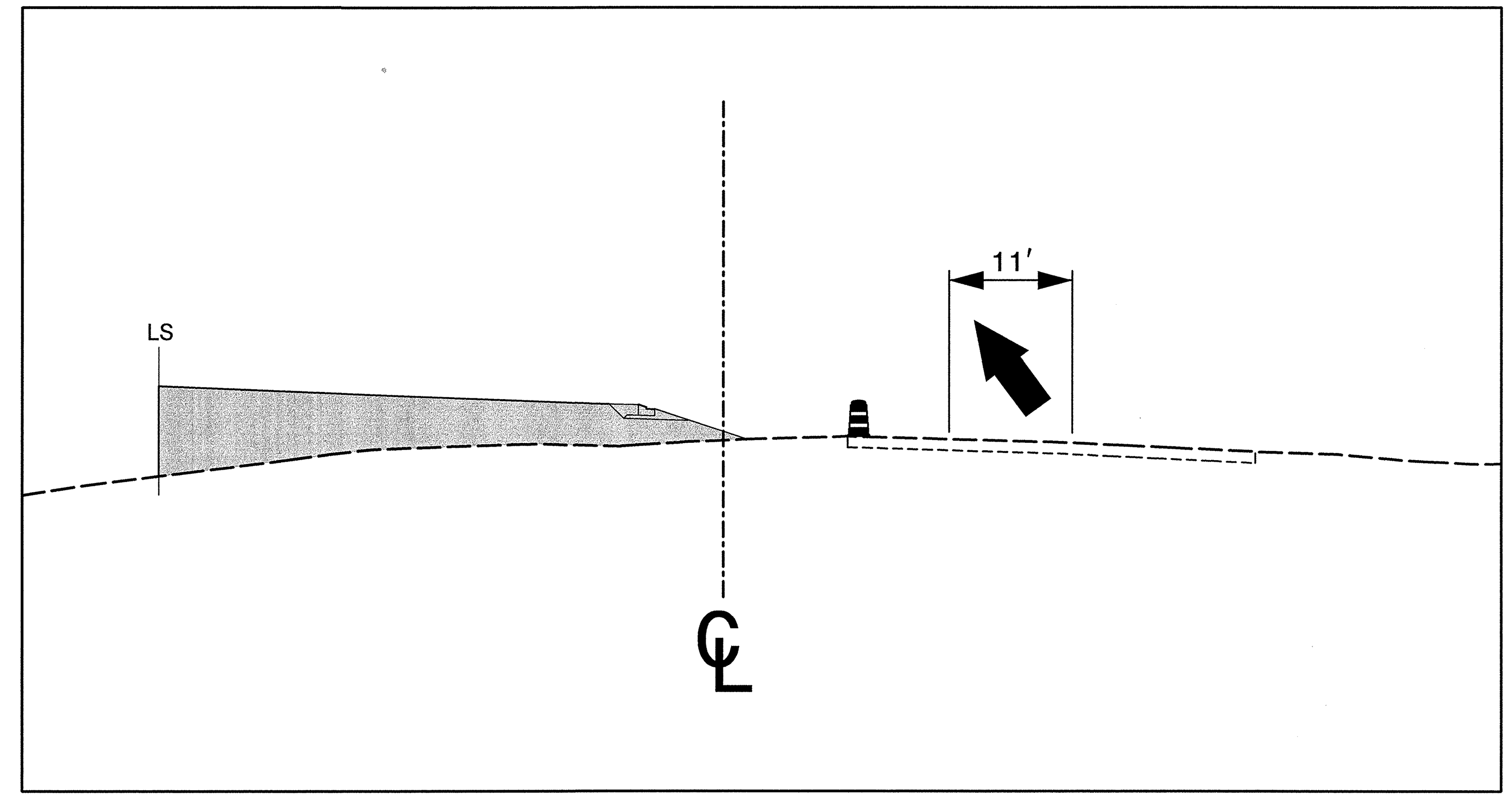
PHASE 1
CROSS SECTIONS

$$$$$$$SYSTIME$$$$$
$$$$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$

PROJ. REFERENCE NO.	SHEET NO.
I-4413	TMP-8



G-G RAMP B 18+00



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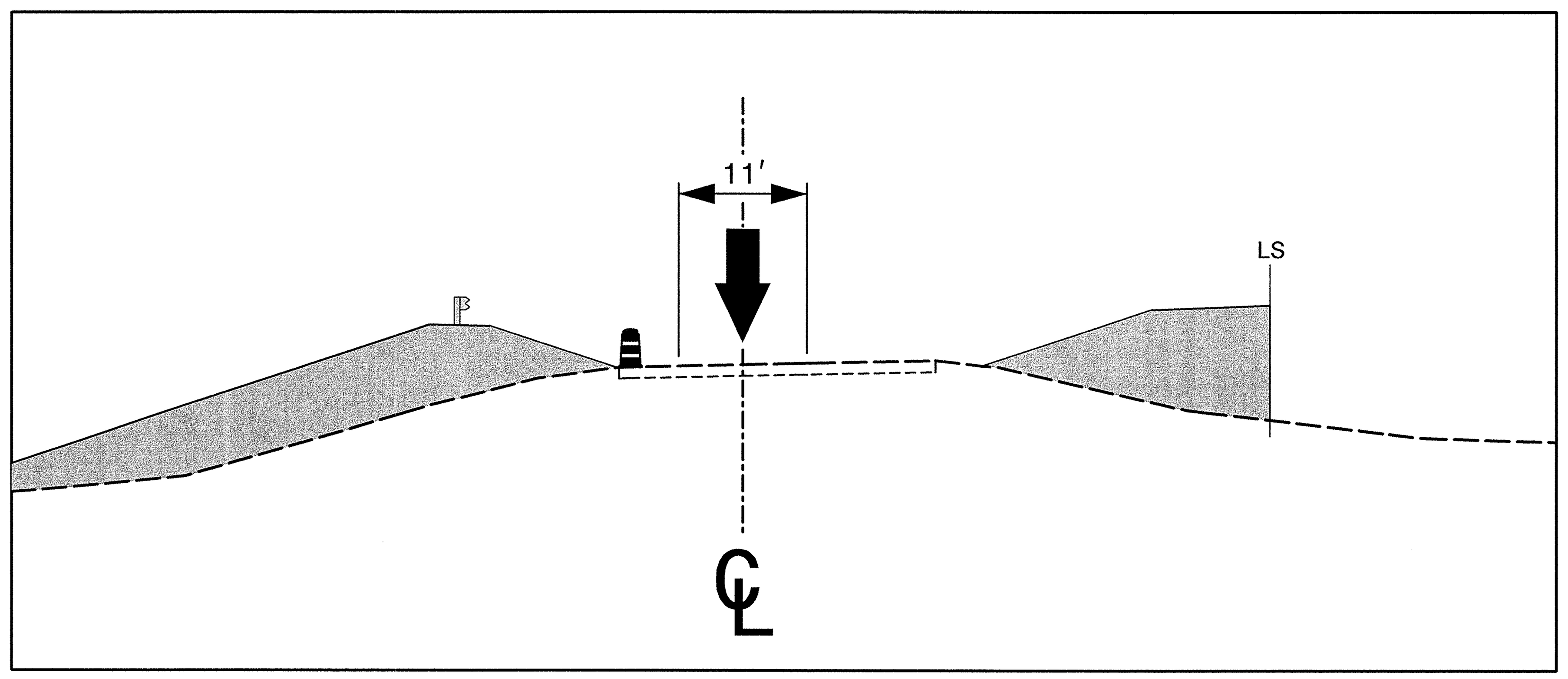

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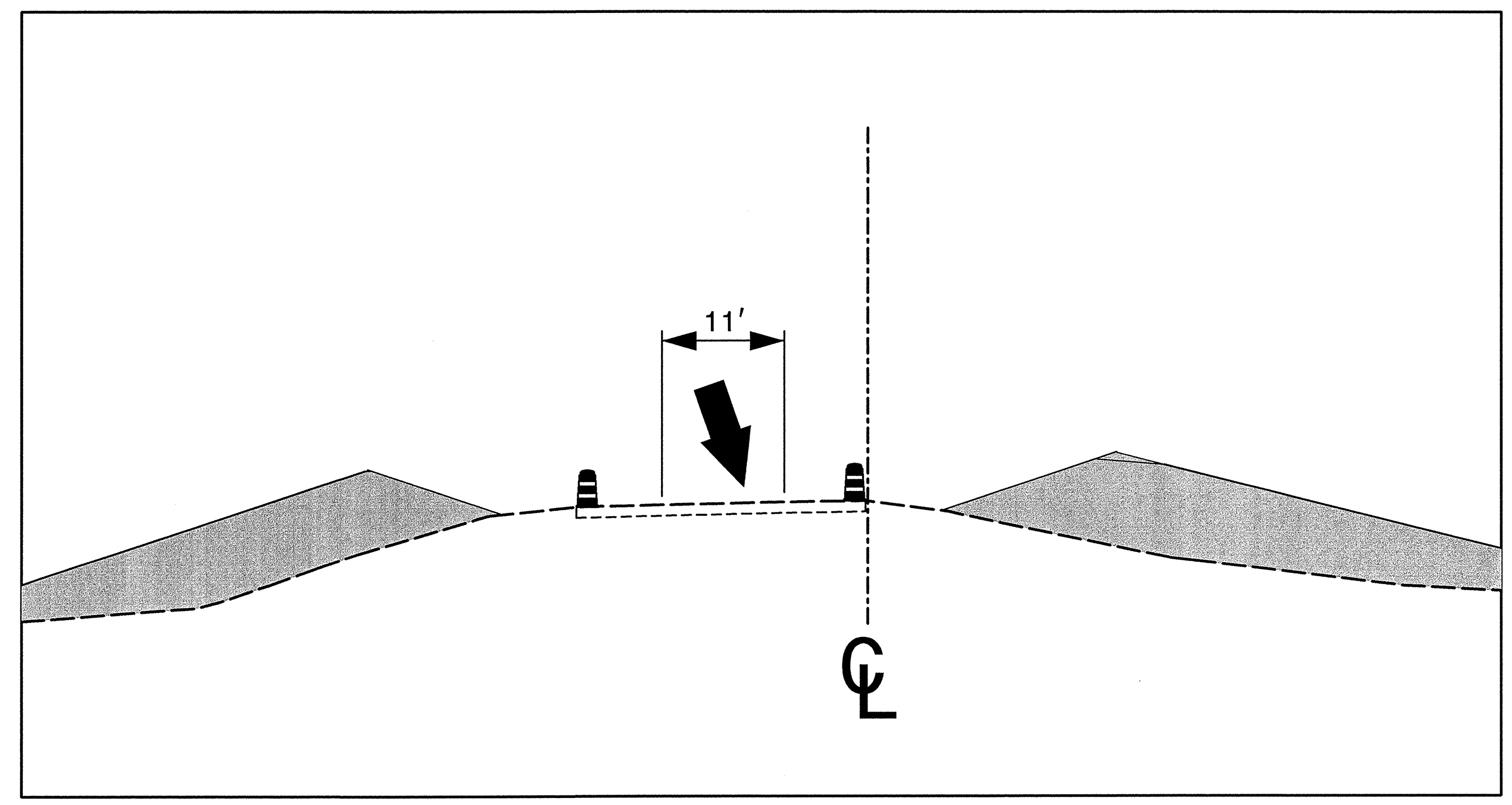

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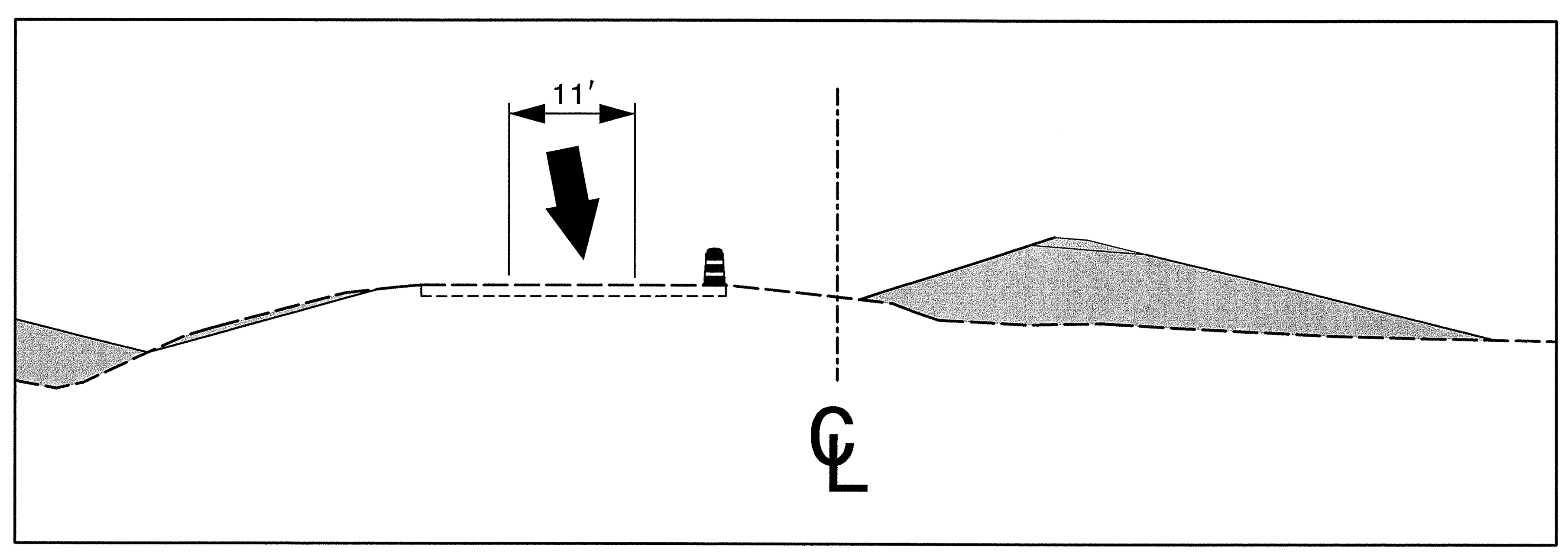

K-K RAMP A 18+50

APPROVED: [signature] DATE: 5-1-12

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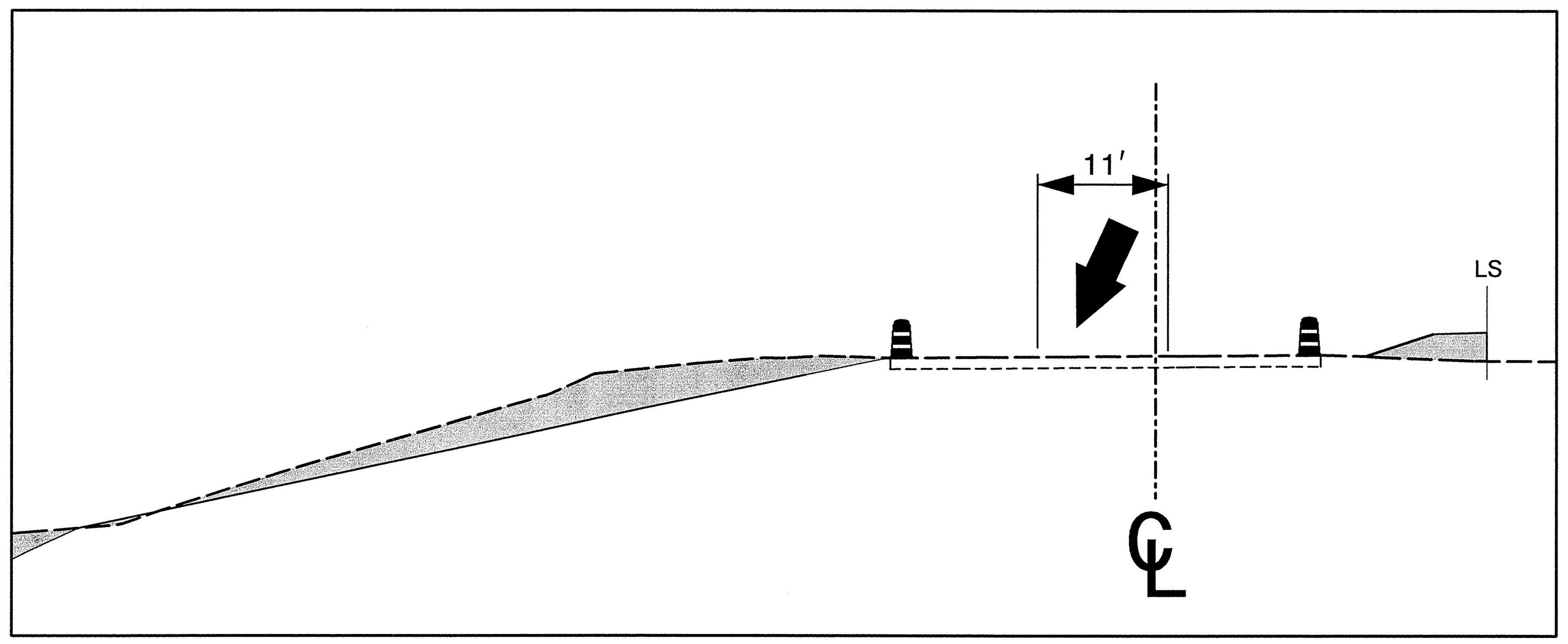
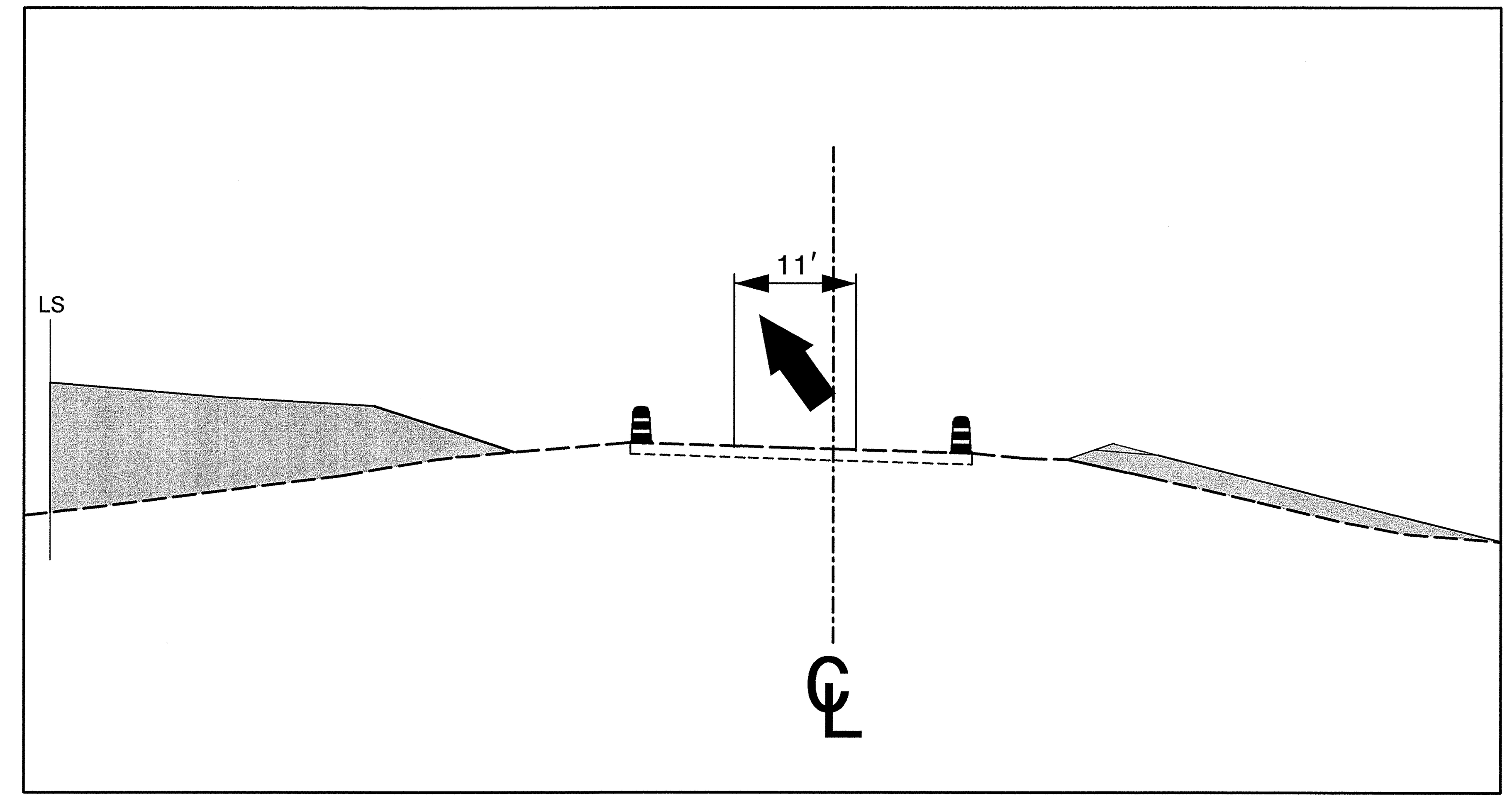
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
WORK ZONE TRAFFIC CONTROL

PHASE 1
CROSS SECTIONS

PROJ. REFERENCE NO.	SHEET NO.
I-4413	TMP-9



L-L SPUR A 13+50



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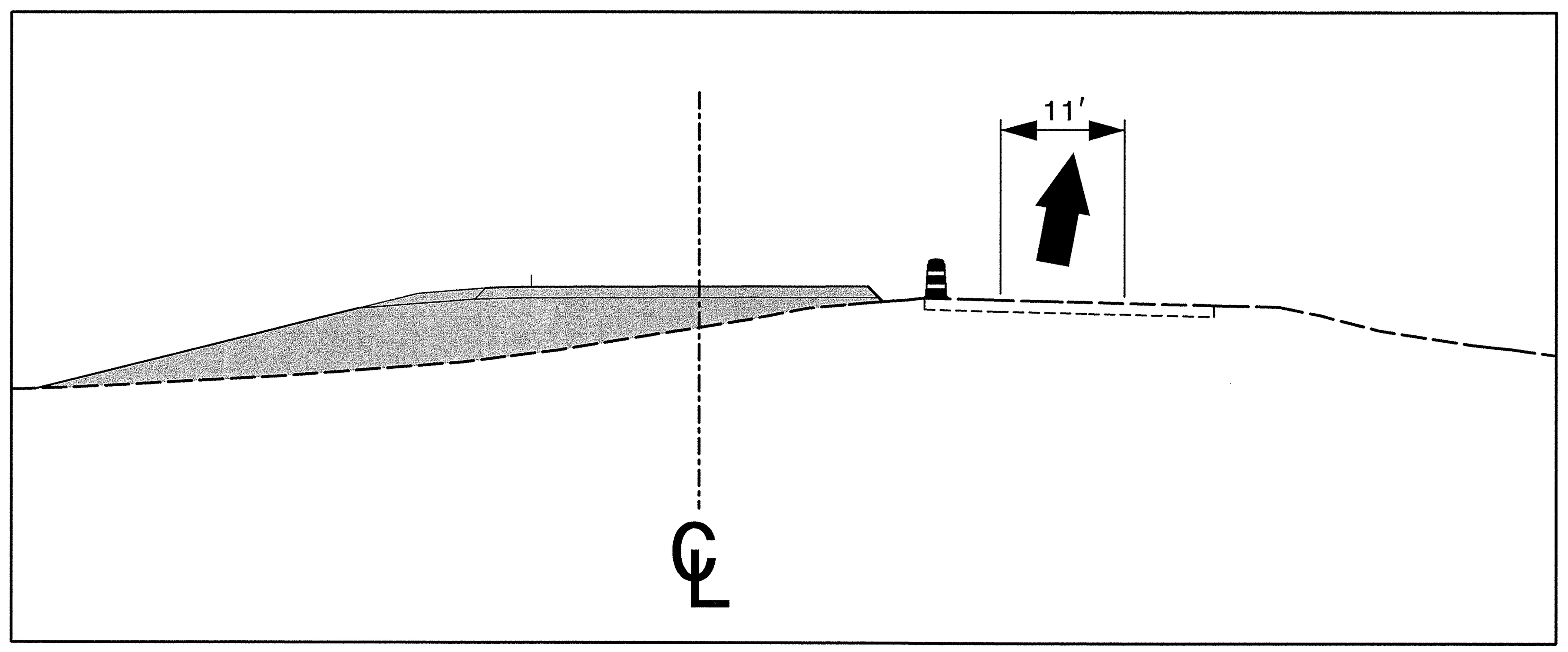

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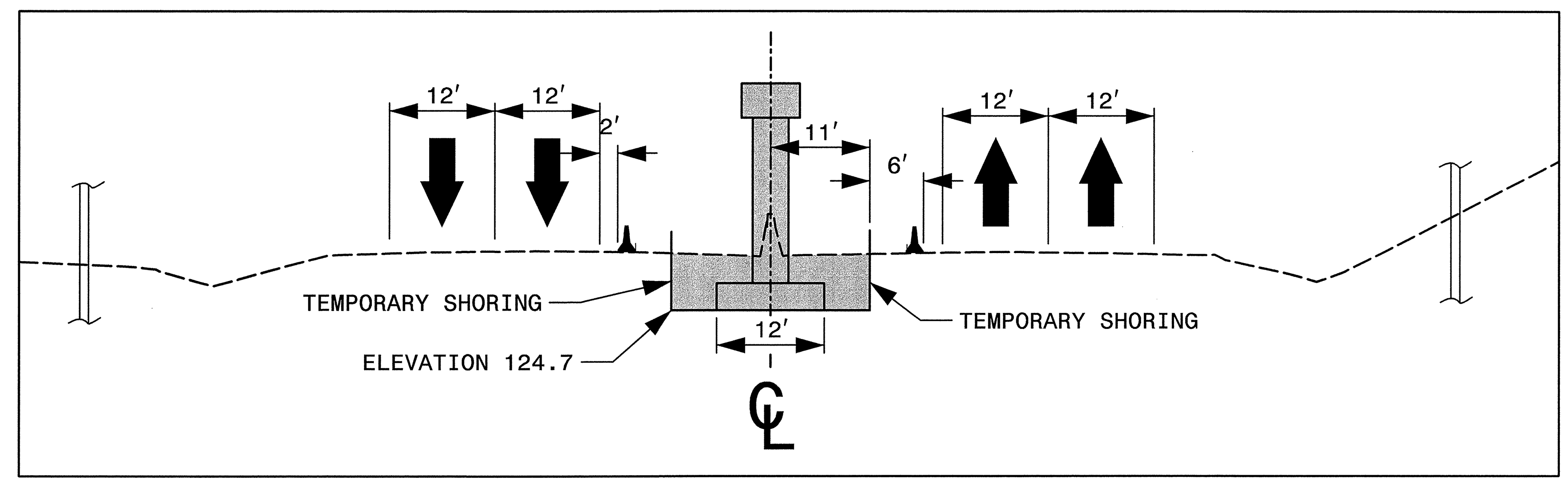
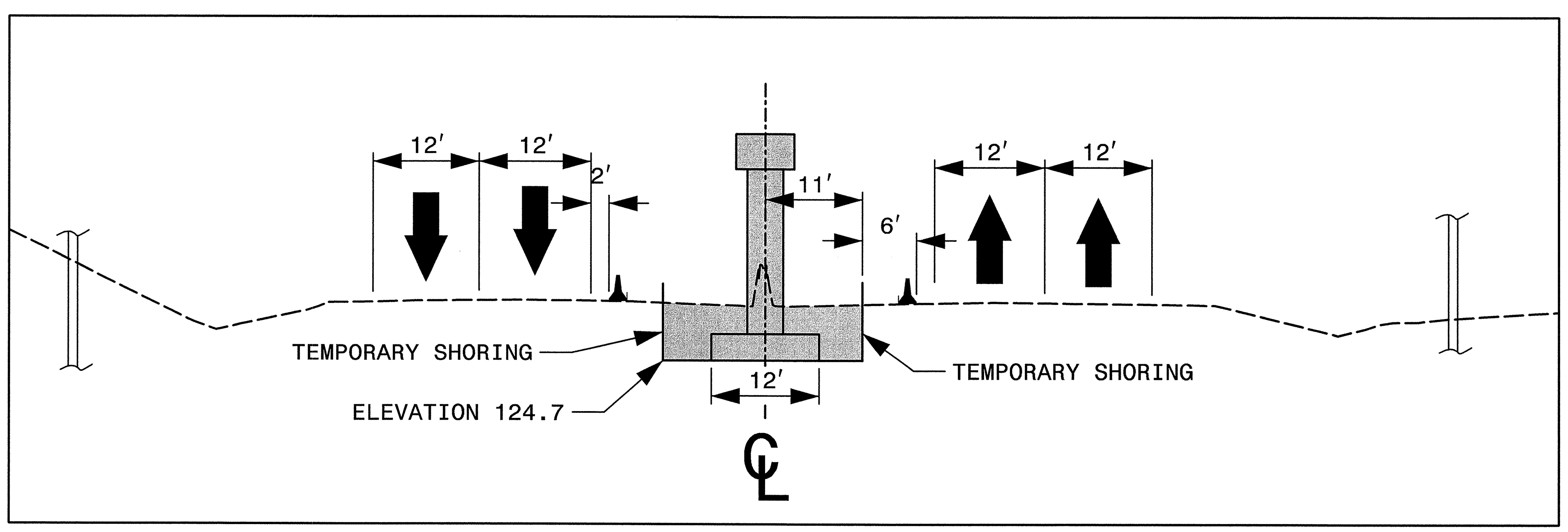


O-O -Y1- 43+00



P-P -Y1- 44+00

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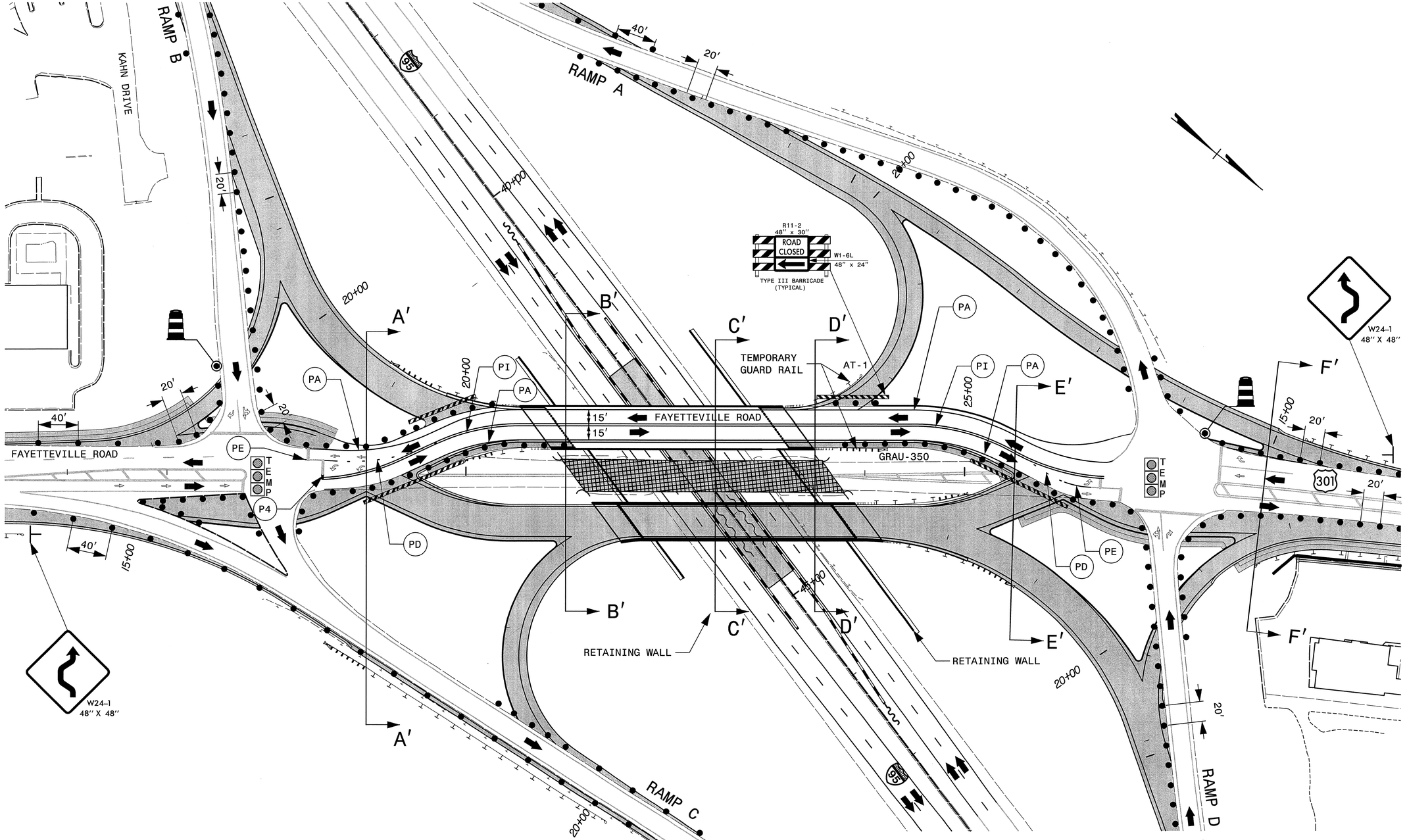
DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION WORK ZONE TRAFFIC CONTROL

PHASE 1
CROSS SECTIONS

PROJ. REFERENCE NO.	SHEET NO.
I-4413	TMP-10



SEE TMP-11-12 FOR CROSS SECTIONS

APPROVED: [signature] DATE: 5-1-12

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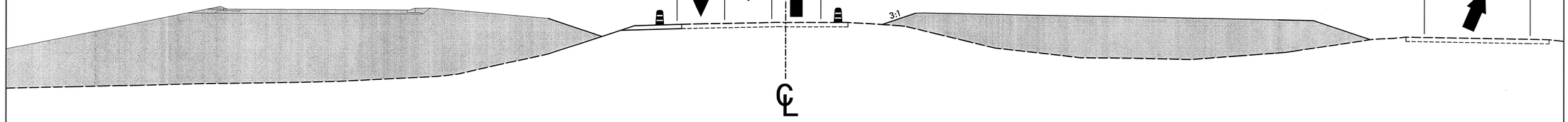
DEPARTMENT OF TRANSPORTATION
WORK ZONE TRAFFIC CONTROL

PHASE 2 DETAIL

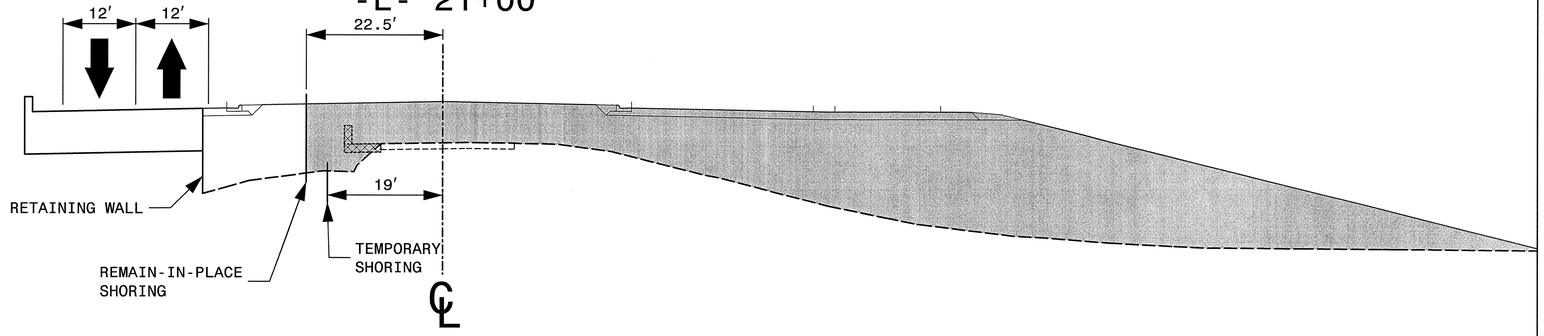
$$$$$SYSTIME$$$$$
$$$$$USERNAME$$$$$

PROJ. REFERENCE NO.	SHEET NO.
I-4413	TMP-11

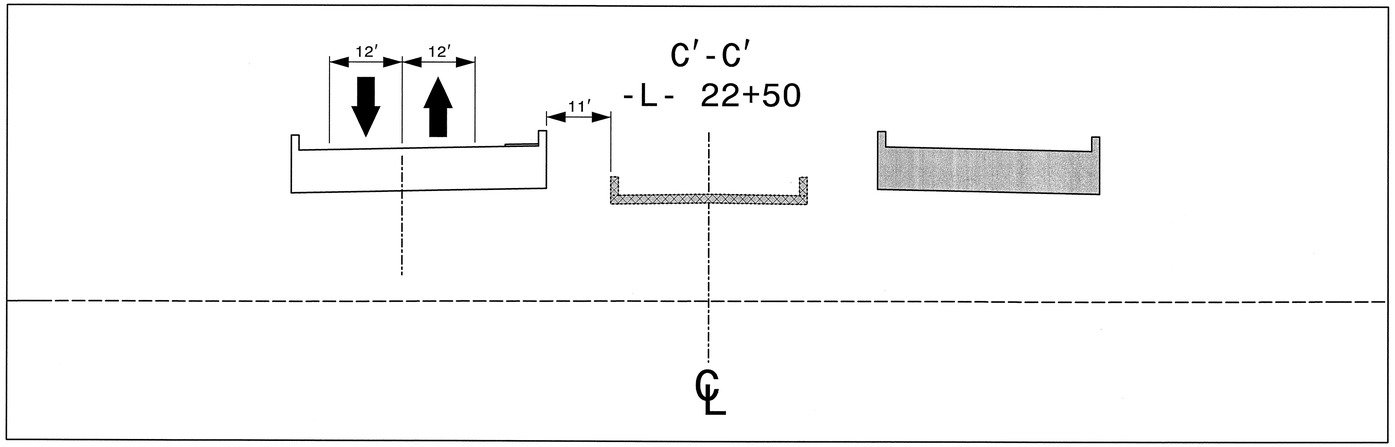
A′-A′
-L- 19+00



B′-B′
-L- 21+00



C′-C′
-L- 22+50



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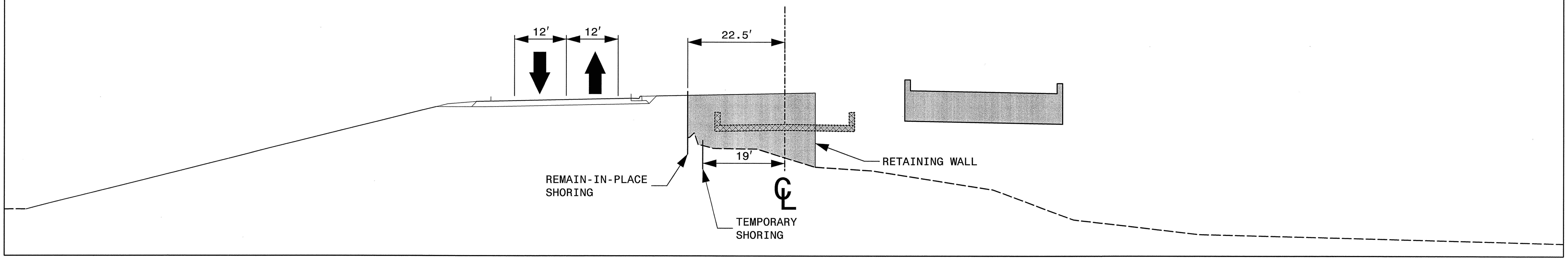
WORK ZONE TRAFFIC CONTROL

PHASE 2
CROSS SECTIONS

$$$$$SYSTIME$$$$
$$$$$USERNAME$$$$
$$$$$DGN$$$$

PROJ. REFERENCE NO.	SHEET NO.
I-4413	TMP-12

D′-D′
-L- 23+50



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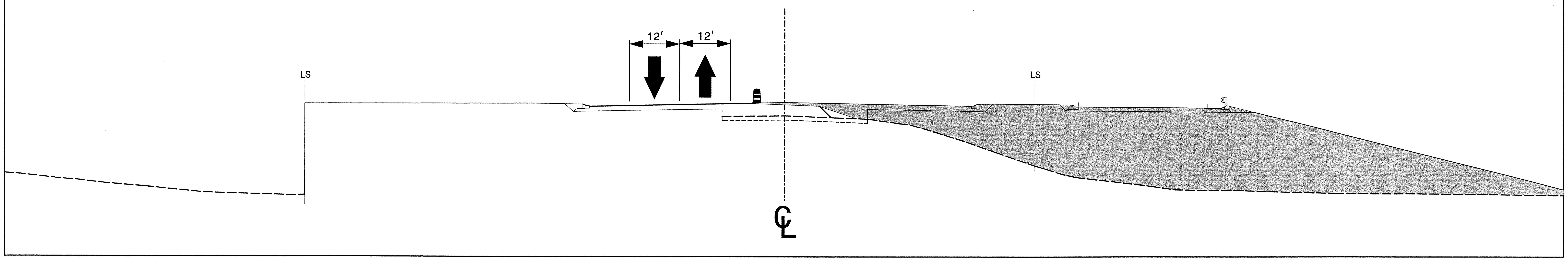
-L- 25+50



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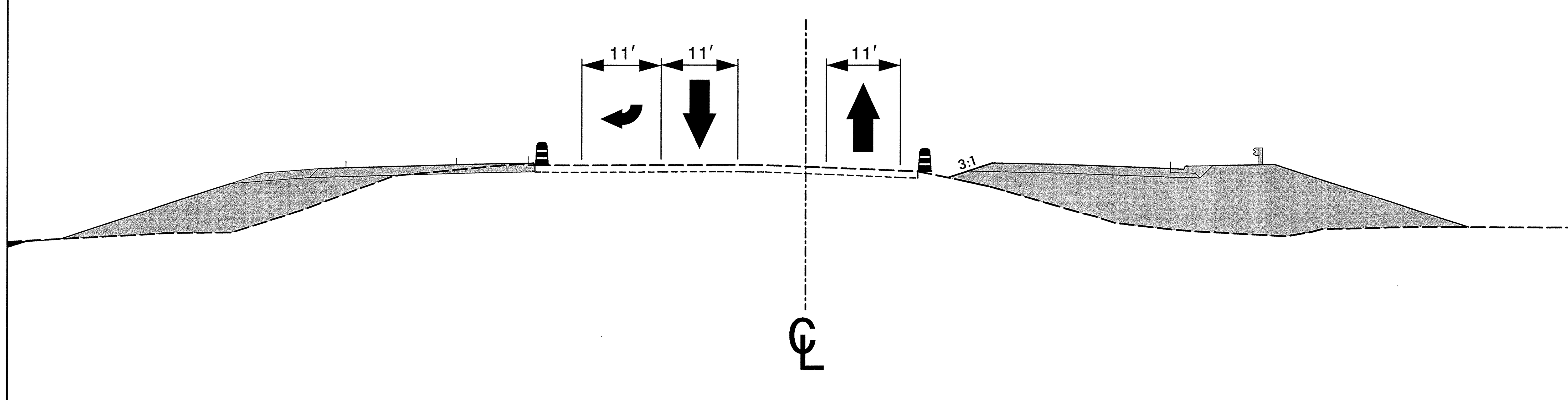

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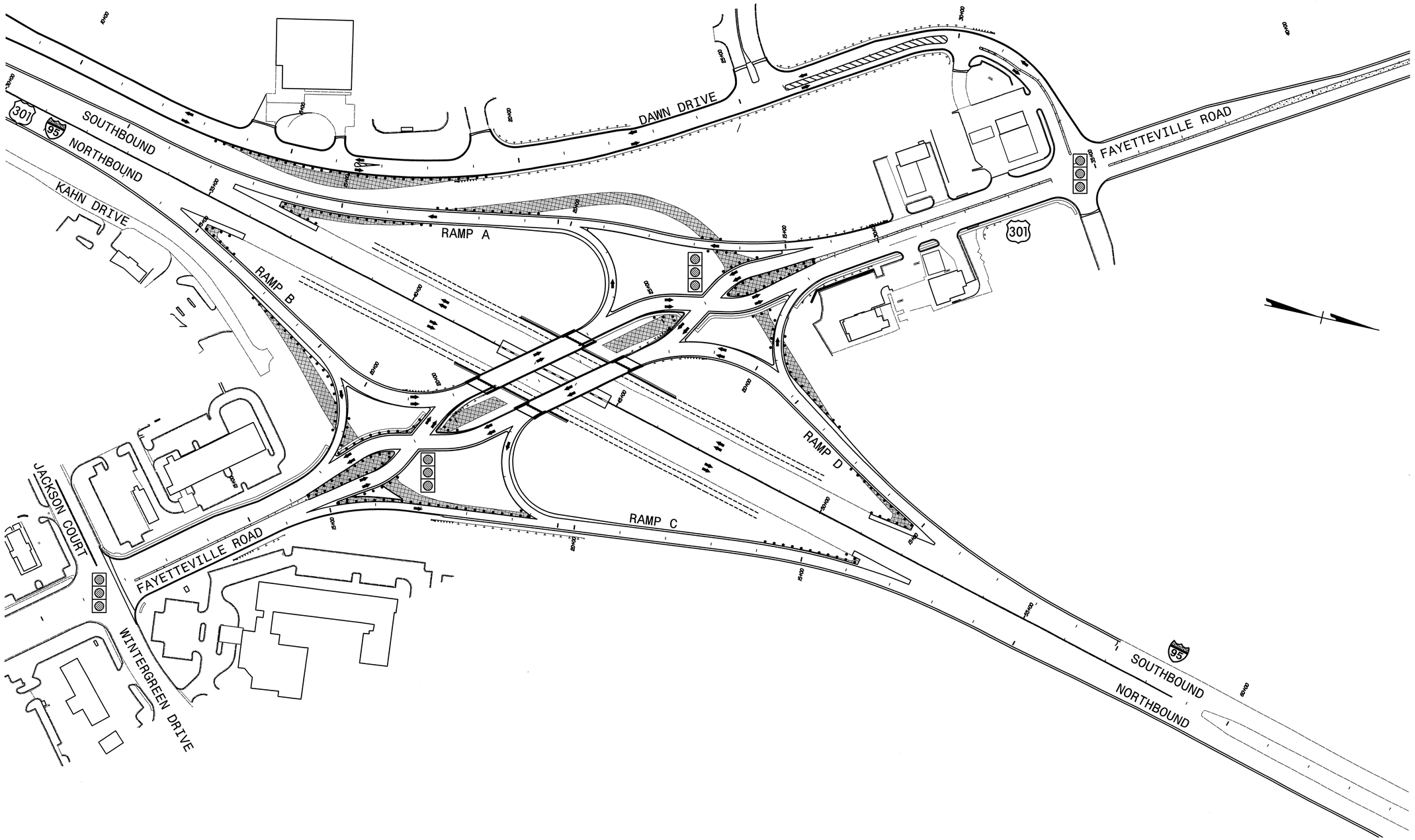
PHASE 2
CROSS SECTIONS

$$$$$SYSTIME$$$$$
$$$$$$$$$$$DGN$$$$$$$$$$$$$$
$$$$USERNAME$$$$

PROJ. REFERENCE NO.	SHEET NO.
I-4413	TMP-13



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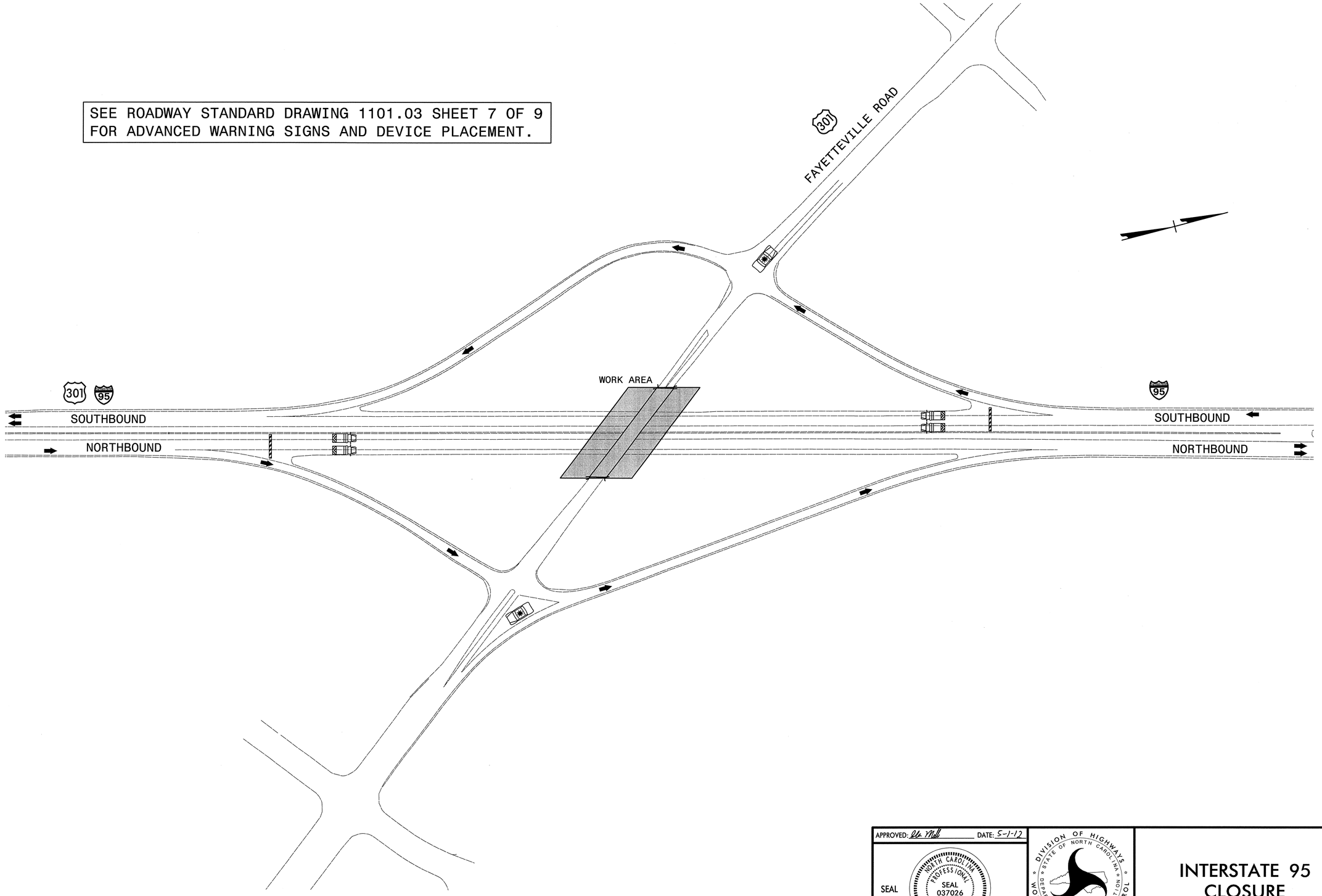
PHASE 3 OVERVIEW

$$$$$$$SYSTIME$$$$$
$$$$$$$USERNAME$$$$

PROJ. REFERENCE NO.	SHEET NO.
I-4413	TMP-14

SEE ROADWAY STANDARD DRAWING 1101.03 SHEET 7 OF 9
FOR ADVANCED WARNING SIGNS AND DEVICE PLACEMENT.



APPROVED: [signature] DATE: 5-1-12

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INTERSTATE 95 CLOSURE

$$$$$$$SYSTIME$$$$$
$$$$$$$USERNAME$$$$
$$$$$$$DGN$$$$$$$$$