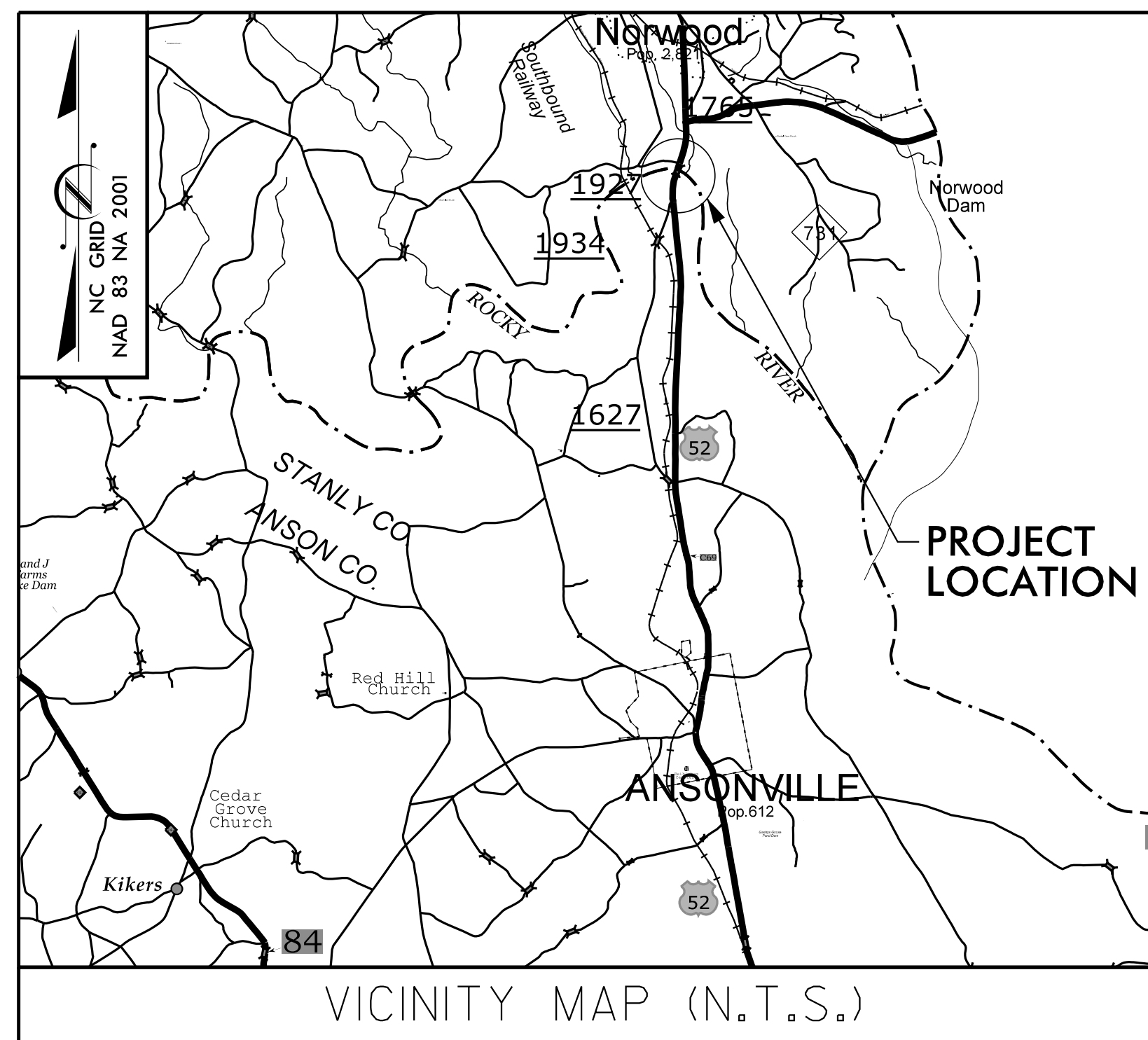
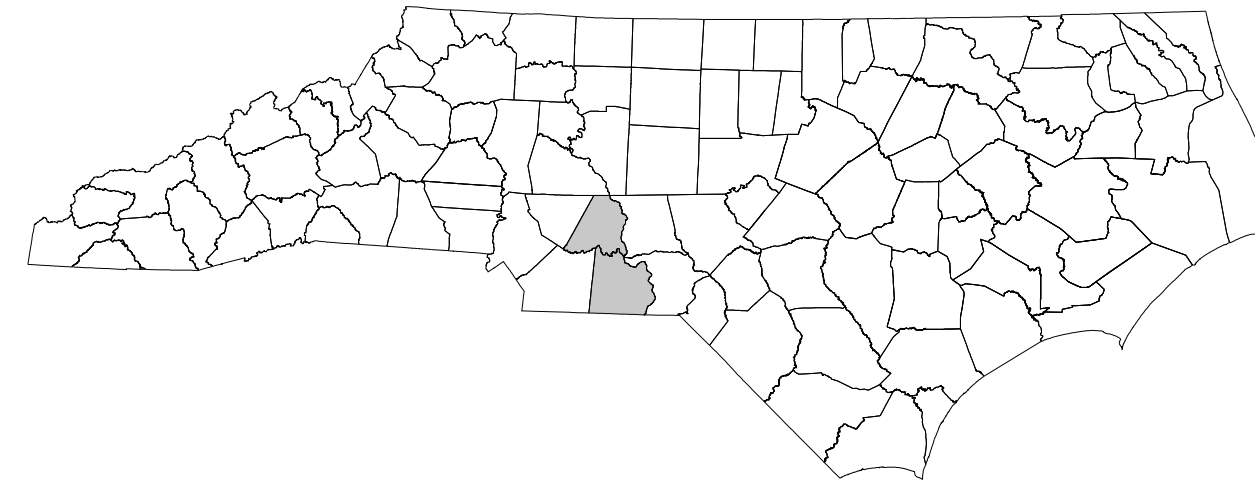


STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

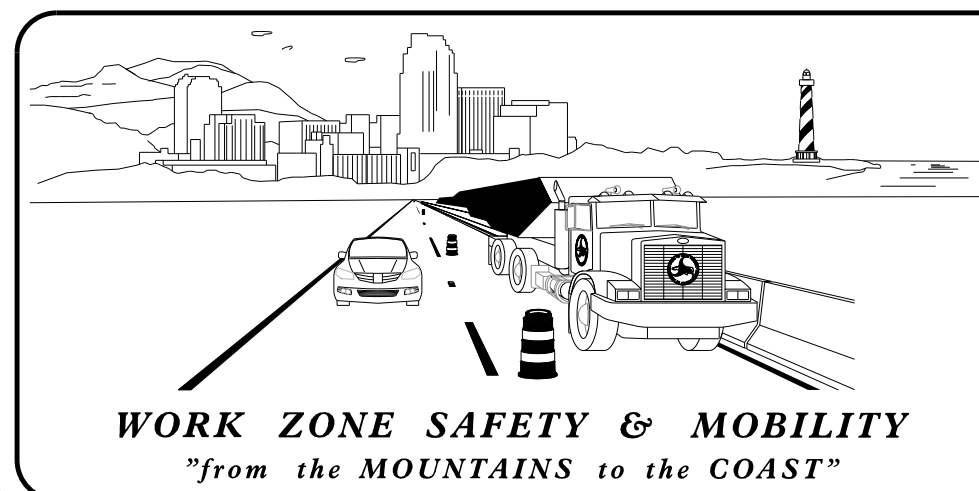
**ANSON /STANLY COUNTIES
DIVISION 10**



**LOCATION: BRIDGE NO. 030070 OVER
ROCKY RIVER ON US-52**

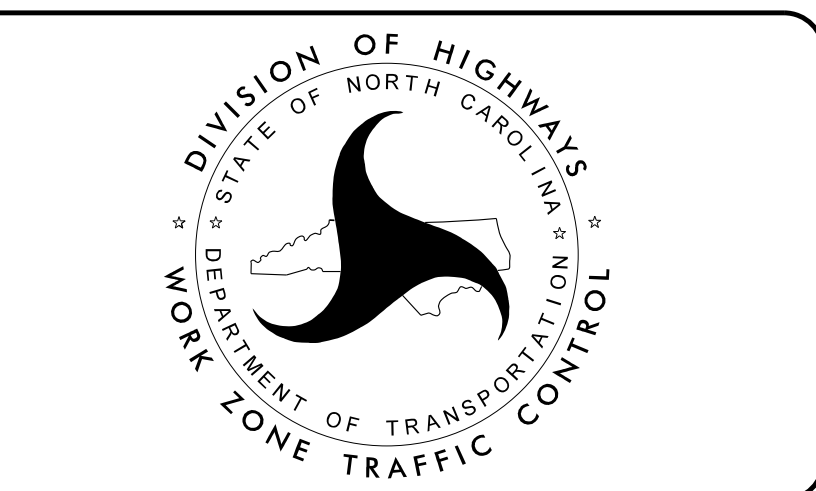
<u>INDEX OF SHEETS</u>	
SHEET NO.	TITLE
TMP-1	TITLE SHEET, AND INDEX OF SHEETS
TMP-1A	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, LEGEND, AND TEMPORARY PAVEMENT MARKING
TMP-1B	TRANSPORTATION OPERATIONS PLAN: (GENERAL NOTES AND LOCAL NOTES)
TMP-2	TEMPORARY TRAFFIC CONTROL PHASING
TMP-2A	PORTABLE CONCRETE BARRIER AT TEMPORARY SHORING LOCATIONS DETAILS
TMP-2B	GEOTECHNICAL RECOMMENDATIONS FOR TEMPORARY SHORING
TMP-2C THRU TMP-2E	STANDARD TEMPORARY WALL
TMP-3	SPECIAL SIGN DESIGN FOR RIVERVIEW RD.
TMP-4	PHASE II OFFSITE DETOUR FOR RIVERVIEW RD.
TMP-5 THRU TMP-7	TEMPORARY TRAFFIC CONTROL PHASE I DETAIL
TMP-8 THRU TMP-10	TEMPORARY TRAFFIC CONTROL PHASE II DETAIL

SHEET NO.
TMP-1



PLANS PREPARED BY:
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User:samfitzpatrick

PROJECT: B-4407

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS SHOWN IN "ROADWAY STANDARD DRAWINGS" - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2018 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
1101.05	WORK ZONE VEHICLE ACCESS
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1135.01	CONES
1145.01	BARRICADES
1150.01	FLAGGING DEVICES
1160.01	TEMPORARY CRASH CUSHION
1170.01	PORTABLE CONCRETE BARRIER
1180.01	SKINNY-DRUM
1205.01	PAVEMENT MARKINGS - LINE TYPES & OFFSETS
1205.02	PAVEMENT MARKINGS - TWO LANE & MULTILANE ROADWAYS
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.12	PAVEMENT MARKINGS - BRIDGES
1261.01	GUARDRAIL & BARRIER DELINEATOR SPACING
1261.02	GUARDRAIL & BARRIER DELINEATOR TYPES
1262.01	GUARDRAIL END DELINEATION

LEGEND

GENERAL

- DIRECTION OF TRAFFIC FLOW
- DIRECTION OF PEDESTRIAN TRAFFIC FLOW
- EXIST. PVMT.
- NORTH ARROW
- PROPOSED PVMT.
- WORK AREA
- TEMPORARY PAVEMENT
- WEDGING
- PAVEMENT REMOVAL

TEMPORARY PAVEMENT MARKING

SYMBOL	DESCRIPTION
P1	WHITE EDGELINE (4")
P5	2 FT.-6 FT./SP WHITE MINISKIP (4")
P13	YELLOW DOUBLE CENTER (4")

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
- PORTABLE TRAFFIC SIGNAL

PAVEMENT MARKINGS

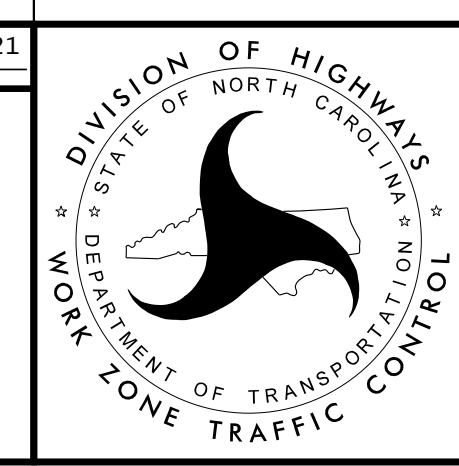
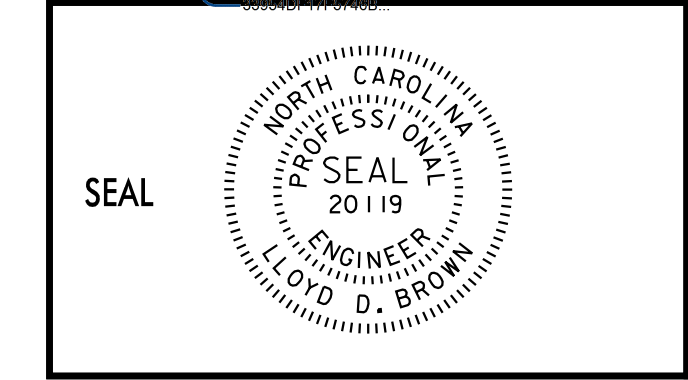
- EXISTING LINES
- TEMPORARY LINES

PAVEMENT MARKING SYMBOLS

- PAVEMENT MARKING SYMBOLS

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APPROVED: DATE: 4/9/2021



ROADWAY STANDARD
DRAWINGS & LEGEND

GENERAL NOTES / LOCAL 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.

LANE AND SHOULDER CLOSURE REQUIREMENTS

- A) 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
- B) 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.
- C) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO AN UNDIVIDED FACILITY AND WITHIN 5 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.
- D) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN A LANE OF TRAVEL OF AN UNDIVIDED OR DIVIDED FACILITY, CLOSE THE LANE ACCORDING TO THE TRAFFIC CONTROL PLANS, ROADWAY STANDARD DRAWINGS, OR AS DIRECTED BY THE ENGINEER. CONDUCT THE WORK SO THAT ALL PERSONNEL AND/OR EQUIPMENT REMAIN WITHIN THE CLOSED TRAVEL LANE.
- E) DO NOT WORK SIMULTANEOUSLY WITHIN 15 FT ON BOTH SIDES OF AN OPEN TRAVELWAY, RAMP, OR LOOP WITHIN THE SAME LOCATION UNLESS PROTECTED WITH GUARDRAIL OR BARRIER.
- F) DO NOT INSTALL MORE THAN ONE LANE CLOSURE IN ANY ONE DIRECTION ON US 52.

PAVEMENT EDGE DROP OFF REQUIREMENTS

- G) 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.
- H) DO NOT EXCEED A DIFFERENCE OF 2 INCHES IN ELEVATION BETWEEN OPEN LANES OF TRAFFIC FOR NOMINAL LIFTS OF 1.5 INCHES. INSTALL ADVANCE WARNING "UNEVEN LANES" SIGNS (W8-11) 500 FT IN ADVANCE AND A MINIMUM OF EVERY HALF MILE THROUGHOUT THE UNEVEN AREA.

TRAFFIC PATTERN ALTERATIONS

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

SIGNING

- J) 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.
- K) PROVIDE SIGNING REQUIRED FOR THE OFFSITE FETOUR ROUTE AS SHOWN IN THE TRAFFIC CONTROL PLANS.
- L) COVER OR REMOVE ALL SIGNS REQUIRED FOR THE OFFSITE DETOUR WHEN DETOUR NOT IN OPERATION
- M) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

TRAFFIC BARRIER

- N) INSTALL BLACK ON ORANGE "DIP" SIGNS (W8-2) AND/OR "BUMP" SIGNS (W8-1) 100 FT IN ADVANCE OF THE UNEVEN AREA, OR AS DIRECTED BY THE ENGINEER.
- O) 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.

- P) 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.

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.

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: (SEE ALSO 1101.05)

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

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

PAVEMENT MARKINGS

- S) INSTALL TEMPORARY PAVEMENT MARKINGS ON INTERIM LAYERS OF PAVEMENT AS FOLLOWS:

ROAD NAME	MARKING	MARKER
US 52	PAINT	TEMPORARY RAISED
ALL OTHER ROADS	PAINT	NONE

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

MISCELLANEOUS

- W) IN THE EVENT A TIE-IN CANNOT BE MADE IN ONE DAY'S TIME, BRING THE TIE-IN AREA TO AN APPROPRIATE ROADWAY ELEVATION AS DETERMINED BY THE ENGINEER. PLACE BLACK ON ORANGE "LOOSE GRAVEL" SIGNS (W8-7) AND BLACK ON ORANGE "PAVEMENT ENDS" SIGNS (W8-3) 100 FT AND 200 FT RESPECTIVELY IN ADVANCE OF THE UNEVEN AREAS. USE DRUMS TO DELINEATE THE EDGE OF ROADWAY ALONG UNPAVED AREAS.

LOCAL NOTES

- LOCAL NOTES:
- 1) EMERGENCY VEHICLE ACCESS MUST BE MAINTAINED AT ALL TIMES.
 - 2) NOTIFY THE ANSON COUNTY AND STANLY COUNTY SCHOOL BOARDS 30 DAYS PRIOR TO ANY LANE CLOSURES.
 - 3) MAINTAIN ACCESS TO DRIVEWAYS DURING CONSTRUCTION

MANAGEMENT STRATEGIES

PHASE I DEPICTS US 52 TRAFFIC TO BE MAINTAINED ON THE EXISTING ROAD AS THE NEW -L- ALIGNMENT IS CONSTRUCTED.

PHASE II DEPICTS US 52 VEHICLES SHIFTED ONTO THE NEW -L- ALIGNMENT IN A TWO-LANE TWO-WAY TRAFFIC PATTERN USING TRAFFIC CONTROL DEVICES AND PAVEMENT MARKINGS AS THE REMAINDER OF THE PROPOSED -L- SIDE SLOPES ARE CONSTRUCTED. DURING THIS PHASE -Y2- RIVERVIEW ROAD IS TO BE CLOSED TO TRAFFIC WHILE THE NEW ALIGNMENT IS CONSTRUCTED.

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APPROVED: DATE: 4/9/2021 <small>EXP. DATE: 1/25/2022</small>		
<h3 style="margin: 0;">TRANSPORTATION OPERATIONS PLAN</h3> <p style="margin: 0; font-weight: bold; font-size: small;">(MANAGEMENT STRATEGIES & GENERAL NOTES)</p>		

PROJECT PHASING

PHASE I

- STEP 1: - ERECT WORK ZONE ADVANCED WARNING SIGNS USING DETAIL DRAWINGS FOR WORK ZONE SIGNS AND ROADWAY STANDARD DRAWINGS NO. 1101.01, SHEET 3 OF 3.
- STEP 2: - USING ROADWAY STANDARD DRAWINGS NO. 1101.02, SHEET 1 OF 14 AND FLAGGERS AS NECESSARY PERFORM THE FOLLOWING ON US 52 AWAY FROM TRAFFIC:
- INSTALL TRAFFIC BARRELS AS SHOWN IN PHASE I (SEE SHEET TMP-5 THROUGH TMP-7).
 - INSTALL TEMPORARY PAVEMENT (SEE SHEETS TMP-5 THROUGH TMP-7).
 - INSTALL PORTABLE CONCRETE BARRIERS AND TEMPORARY SHORING ALONG EXISTING ROAD (SEE SHEET TMP-5 THROUGH TMP-7) (SEE SHEETS TMP-2A THRU TMP-2E FOR TEMPORARY SHORING DETAILS).
 - INSTALL TEMPORARY PROTECTIVE CANOPY ALONG RIVER ACCESS TRAIL (SEE SPECIAL PROVISIONS)
- STEP 3: - CONSTRUCT BRIDGE PER THE STRUCTURAL PLANS
- CONSTRUCT -L- US 52 FROM STA 11+50 TO 45+65 UP TO BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE
- STEP 4: - AWAY FROM TRAFFIC CONSTRUCT -Y2- (SEE SHEET TMP-7)
- NOTE: COORDINATE WITH THE PROPERTY OWNER OF PARCEL 4 (TOWN OF NORWOOD) PRIOR TO CONSTRUCTING -Y2-. WORK MAY NEED TO BE COMPLETED UNDER A NIGHT CLOSURE.


- STEP 5: - USING ROADWAY STANDARD DRAWINGS NO. 1101.02, SHEET 1 OF 14, AND FLAGGERS AS NECESSARY PLACE THE FINAL LAYER OF SURFACE COURSE AND THE FINAL PAVEMENT MARKINGS ON THE ENTIRE PROJECT (SEE PMP PLANS).
- STEP 6: - USING ROADWAY STANDARD DRAWINGS NO. 1101.02, SHEET 1 OF 14, AND FLAGGERS AS NECESSARY, REMOVE ALL TEMPORARY TRAFFIC CONTROL DEVICES PLACED DURING PHASE I AND PHASE II. OPEN -L- US 52 AND ALL -Y- LINES TO THEIR FINAL TRAFFIC PATTERN.

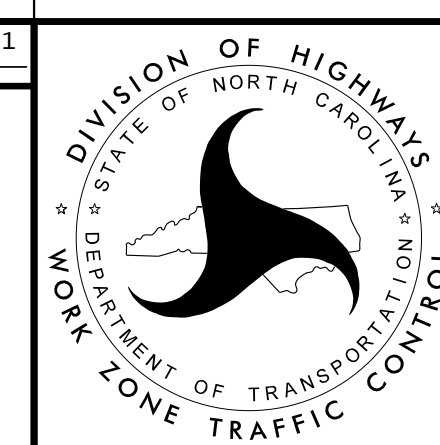
PHASE II

- NOTE: STEP 1 SHALL BE COMPLETED IN A CONTINUOUS OPERATION.
- STEP 1: - USING ROADWAY STANDARD DRAWINGS NO. 1101.02, SHEET 1 OF 14 AND FLAGGERS AS NECESSARY, PERFORM THE FOLLOWING:
- PLACE ALL ROAD CLOSURE TRAFFIC CONTROL DEVICES AS SHOWN ON TMP-4
 - PLACE PORTABLE CONCRETE BARRIER FROM -L- STA. 20+97 +/- (RT) TO -L- STA. 27+50 +/- (RT) (SEE SHEETS TMP-8 THRU TMP-9).
 - INSTALL TEMPORARY PAVEMENT ALONG -L- (SEE SHEETS TMP-8 THRU TMP-9).
 - CLOSE SR 1934 TO ALL TRAFFIC. PLACE TRAFFIC ON DETOUR ROUTE SHOWN ON TMP-4.
NOTE: ROAD CLOSURE DURATION IS LIMITED TO 7 CONSECUTIVE CALENDAR DAYS. SEE INTERMEDIATE CONTRACT TIME AND LIQUIDATED DAMAGES.
 - SHIFT TRAFFIC INTO A TEMPORARY TWO-LANE TWO-WAY TRAFFIC PATTERN ON PROPOSED -L- (SEE SHEET TMP-8 THRU TMP-9).
- STEP 2: - AWAY FROM TRAFFIC AND UNDER ROAD CLOSURE, CONSTRUCT -Y3- UP TO BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE
- STEP 3: - AFTER CONSTRUCTION OF -Y3- REMOVE ALL DETOUR TRAFFIC CONTROL DEVICES PLACED DURING STEP 1 AND OPEN THE INTERSECTION TO TRAFFIC.
- STEP 4: - USING ROADWAY STANDARD DRAWINGS NO. 1101.02, SHEET 1 OF 14, AND FLAGGERS AS NECESSARY PERFORM THE FOLLOWING ON -L- US 52:
- REMOVE ALL EXISTING ASPHALT PAVEMENT AS SHOWN ON TMP-8 THROUGH TMP-10
 - REMOVE EXISTING BRIDGE ALONG -L- US 52.
 - REMOVE ALL TEMPORARY SHORING, PORTABLE CONCRETE BARRIERS, AND TEMPORARY PAVEMENT PLACED DURING PHASE 1.
 - WEDGE EXISTING PAVEMENT AS SHOWN ON TMP-8 THRU TMP-10
 - CONSTRUCT ALL PROPOSED DITCHES AND FINAL SIDE SLOPES ON -L- US 52.
 - REMOVE TEMPORARY PROTECTIVE CANOPY PLACED DURING PHASE 1.
 - SHIFT TRAFFIC INTO ITS FINAL PATTERN ALONG -L-.
 - REMOVE TEMPORARY PAVEMENT PLACED DURING PHASE II STEP 1

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TEMPORARY TRAFFIC
CONTROL PHASING

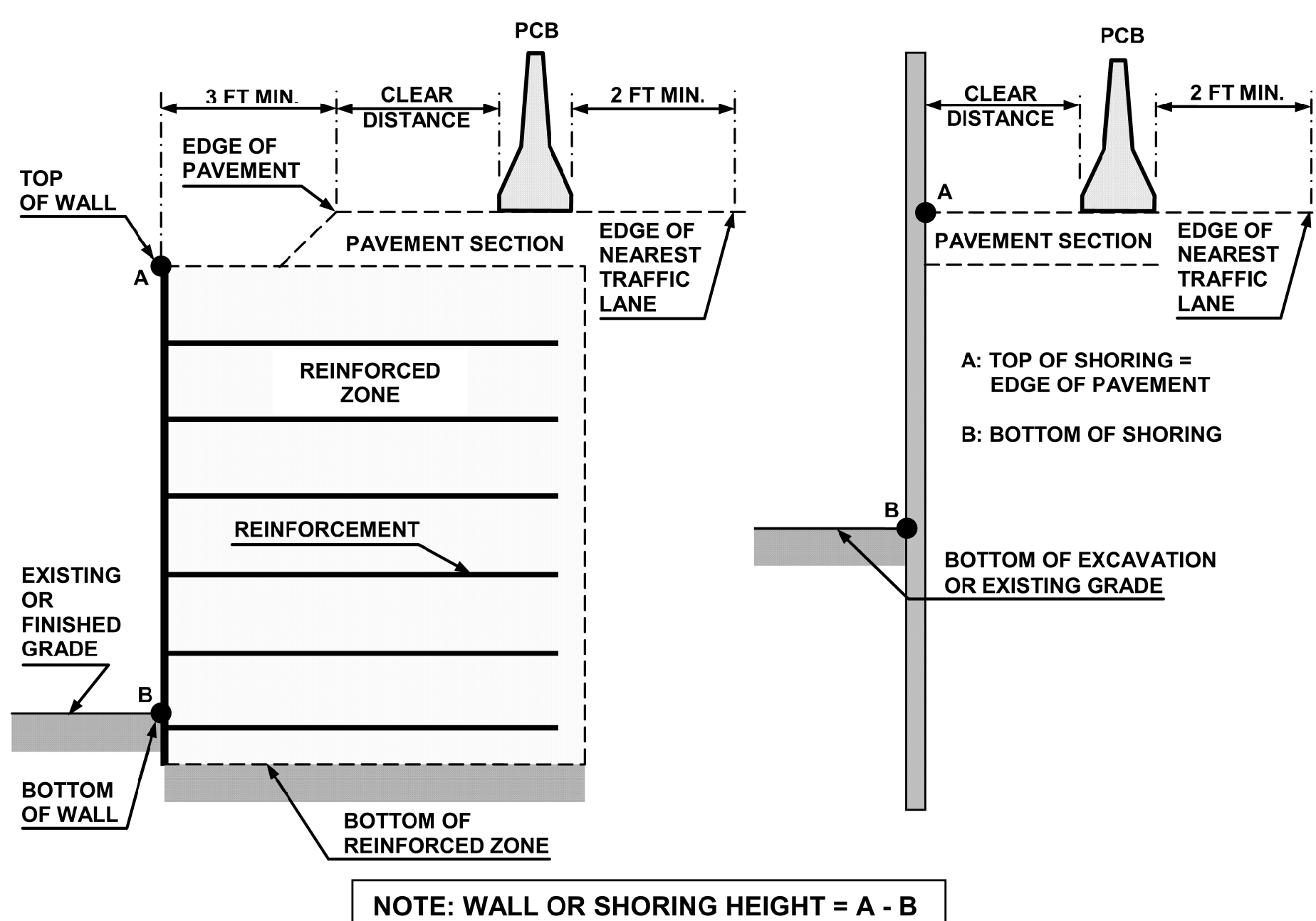


FIGURE A

NOTES

- REFER TO THE TRAFFIC CONTROL PLANS FOR TEMPORARY SHORING LOCATIONS AND NOTES.
- REFER TO THE "TEMPORARY SHORING" PROJECT SPECIAL PROVISION FOR INFORMATION ABOUT TEMPORARY SHORING AND PORTABLE CONCRETE BARRIER (PCB).
- PCB IS REQUIRED IF TEMPORARY SHORING IS LOCATED WITHIN THE CLEAR ZONE IN ACCORDANCE WITH 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).
- BASED ON THE CLEAR DISTANCE, OFFSET, DESIGN SPEED AND PAVEMENT TYPE, CHOOSE AN UNANCHORED OR ANCHORED PCB FROM THE TABLE SHOWN IN FIGURE B. CLEAR DISTANCE IS DEFINED AS SHOWN IN FIGURE A AND OFFSET IS DEFINED AS SHOWN IN FIGURE B.
- AT THE CONTRACTOR'S OPTION OR IF THE MINIMUM REQUIRED CLEAR DISTANCE IS NOT AVAILABLE, SET PCB NEXT TO AND UP AGAINST THE TRAFFIC SIDE OF THE TEMPORARY SHORING EXCEPT FOR BARRIER ABOVE TEMPORARY WALLS. PCB WITH THE MINIMUM REQUIRED CLEAR DISTANCE IS REQUIRED ABOVE TEMPORARY WALLS.
- USE NCDOT PORTABLE CONCRETE BARRIER (PCB) IN ACCORDANCE WITH ROADWAY STANDARD DRAWING NO. 1170.01 AND SECTION 1170 OF THE STANDARD SPECIFICATIONS.
- PCB REQUIREMENTS FOR TEMPORARY WALLS APPLY TO TEMPORARY MECHANICALLY STABILIZED EARTH (MSE) WALLS AND TEMPORARY SOIL NAIL WALLS.
- SET PCB WITH A MINIMUM HORIZONTAL DISTANCE OF 2 FT BETWEEN THE FRONT FACE OF THE BARRIER AND THE EDGE OF THE NEAREST TRAFFIC LANE AS SHOWN IN FIGURE A UNLESS OTHERWISE SHOWN IN THE PLANS AND OR AS APPROVED BY THE ENGINEER.
- FOR PCB ABOVE AND BEHIND TEMPORARY 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 FT 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	Asphalt	All Offsets	24 for All Design Speeds					
Anchored PCB	Concrete (including bridge approach slabs)	All Offsets	12 for All Design Speeds					

* See Figure Below

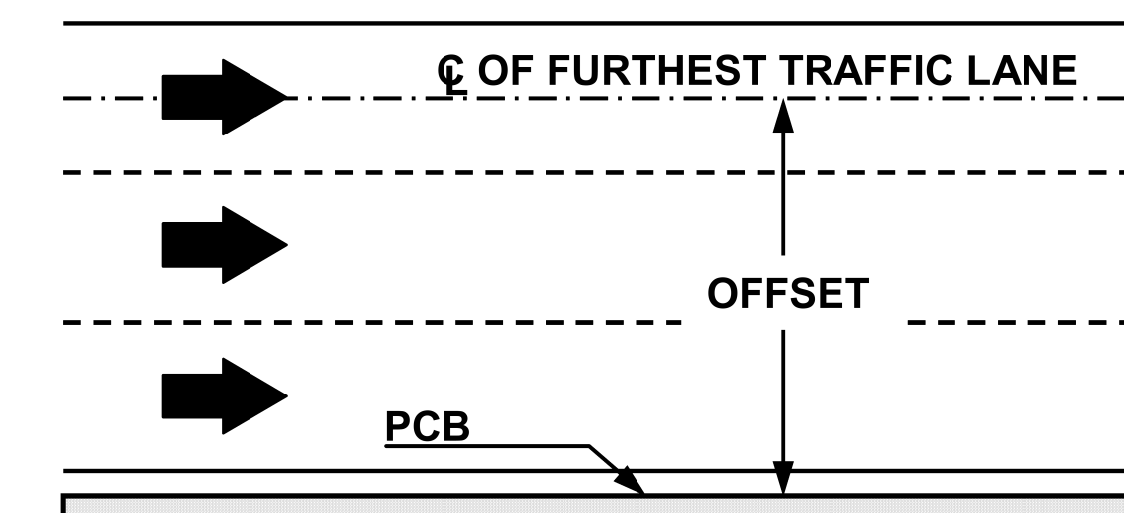


FIGURE B

APPROVED: *Lloyd D. Brown*
 DATE: 4/9/2021

SEAL
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 ENGINEER
 LLOYD D. BROWN

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

**PORTABLE CONCRETE
 BARRIER
 AT
 TEMPORARY SHORING
 LOCATIONS**

38356.1.2 (B-4407)

Shoring Location No. 1 and 2

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 -L- ±21+50, ±2' LT, TO STATION -L- ±26+00, ±19' LT, AND FROM STATION -L- ±39+00, ±21.5' LT TO STATION, -L- ±40+02, ±15.5' LT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

- UNIT WEIGHT (γ) = 120 PCF
- FRICTION ANGLE (ϕ) = 30 DEGREES
- COHESION (c) = 0 PSF
- GROUNDWATER ELEVATION = N/A FT

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM STATION -L- ±21+50, ±2' LT, TO STATION -L- ±26+00, ±19' LT, AND FROM STATION -L- ±39+00, ±21.5' LT TO STATION, -L- ±40+02, ±15.5' LT. THE INFORMATION PROVIDED FOR TEMPORARY SHORING DESIGN WAS ASSUMED AND MAY NOT BE APPLICABLE TO THE ACTUAL SITE CONDITIONS ENCOUNTERED DURING CONSTRUCTION.

Shoring Location No. 3 and 4

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 -L- ±29+33, ±24.5' LT, TO STATION -L- ±29+77, ±24.5' LT, AND FROM STATION -L- ±34+86, ±24.5' LT TO STATION, -L- ±35+28, ±24.5' LT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

- UNIT WEIGHT (γ) = 120 PCF
- FRICTION ANGLE (ϕ) = 30 DEGREES
- COHESION (c) = 0 PSF
- GROUNDWATER ELEVATION = N/A FT

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM STATION -L- ±29+33, ±24.5' LT, TO STATION -L- ±29+77, ±24.5' LT, AND FROM STATION -L- ±34+86, ±24.5' LT TO STATION, -L- ±35+28, ±24.5' LT. THE INFORMATION PROVIDED FOR TEMPORARY SHORING DESIGN WAS ASSUMED AND MAY NOT BE APPLICABLE TO THE ACTUAL SITE CONDITIONS ENCOUNTERED DURING CONSTRUCTION.

IT MAY BE PREFERRED TO USE A TEMPORARY SOIL NAIL WALL FOR TEMPORARY SHORING FROM STATION -L- ±29+33, ±24.5' LT, TO STATION -L- ±29+77, ±24.5' LT, AND FROM STATION -L- ±34+86, ±24.5' LT TO STATION, -L- ±35+28, ±24.5' LT. FOR TEMPORARY SOIL NAIL WALLS, SEE TEMPORARY SOIL NAIL WALLS PROVISION.

38356.1.2 (B-4407)

Shoring Location No. 5 and 6

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 -L- ±29+31, ±20' LT, TO STATION -L- ±29+69, ±20' LT, AND FROM STATION ±34+94, ±20' LT TO STATION, -L- ±35+67, ±20' LT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

- UNIT WEIGHT (γ) = 120 PCF
- FRICTION ANGLE (ϕ) = 30 DEGREES
- COHESION (c) = 0 PSF
- GROUNDWATER ELEVATION = N/A FT

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM STATION -L- ±29+31, ±20' LT, TO STATION -L- ±29+69, ±20' LT, AND FROM STATION ±34+94, ±20' LT TO STATION, -L- ±35+67, ±20' LT. THE INFORMATION PROVIDED FOR TEMPORARY SHORING DESIGN WAS ASSUMED AND MAY NOT BE APPLICABLE TO THE ACTUAL SITE CONDITIONS ENCOUNTERED DURING CONSTRUCTION.

WHEN BACKFILL FOR RETAINING WALLS and/or BRIDGE APPROACH FILLS OVERLAPS WITH THE REINFORCED ZONE OF TEMPORARY WALLS, USE SHORING BACKFILL OR BACKFILL MATERIAL REQUIRED FOR RETAINING WALLS and/or BRIDGE APPROACH FILLS, WHICHEVER IS BETTER, IN THE REINFORCED ZONE OF TEMPORARY WALLS.

The GEU recommends including the Temporary Shoring and Temporary Soil Nail Walls provisions in the contract for the referenced project. Please contact Michael Stephens, PE or Shane Clark, PE at (704) 455-8902 if there are any questions concerning this memorandum.



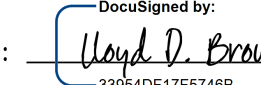
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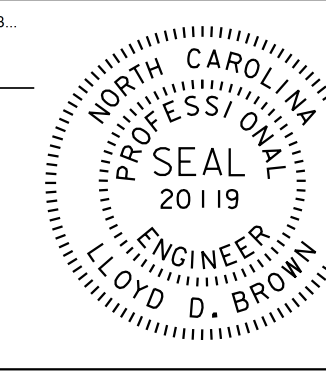
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Michael H. Stephens, P.E.
Geotechnical Design Engineer
NCDOT Geotechnical Engineering Unit – Western Region

JLP/ENW/SCC/MHS
SCC

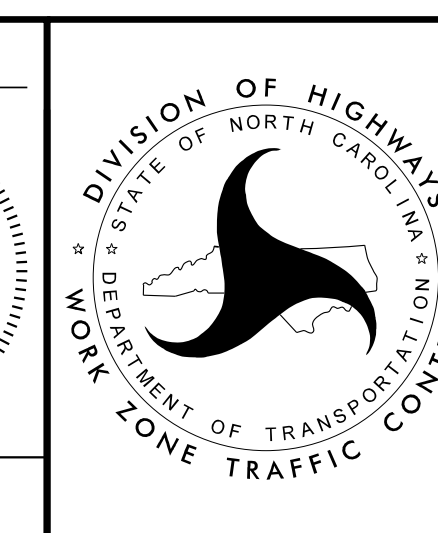
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APPROVED: 
DATE: 4/9/2021

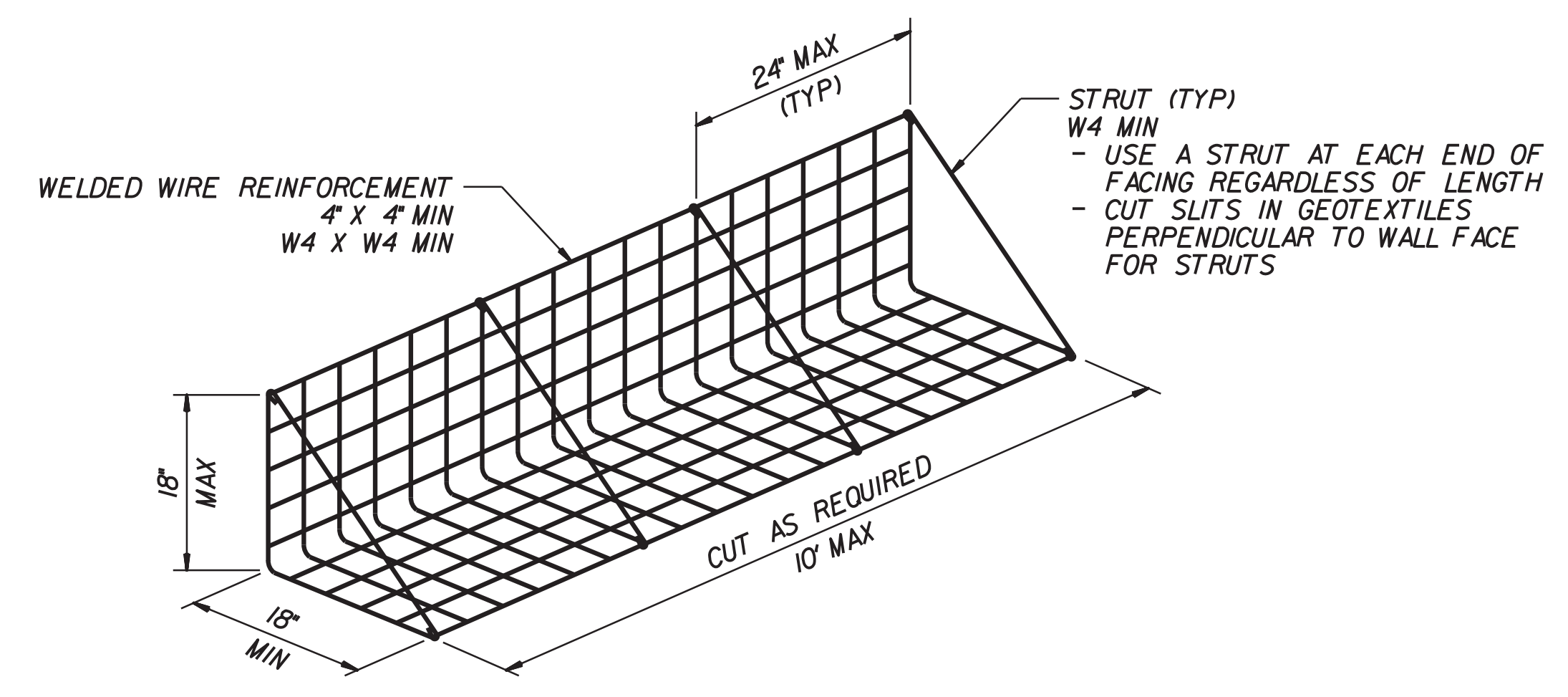
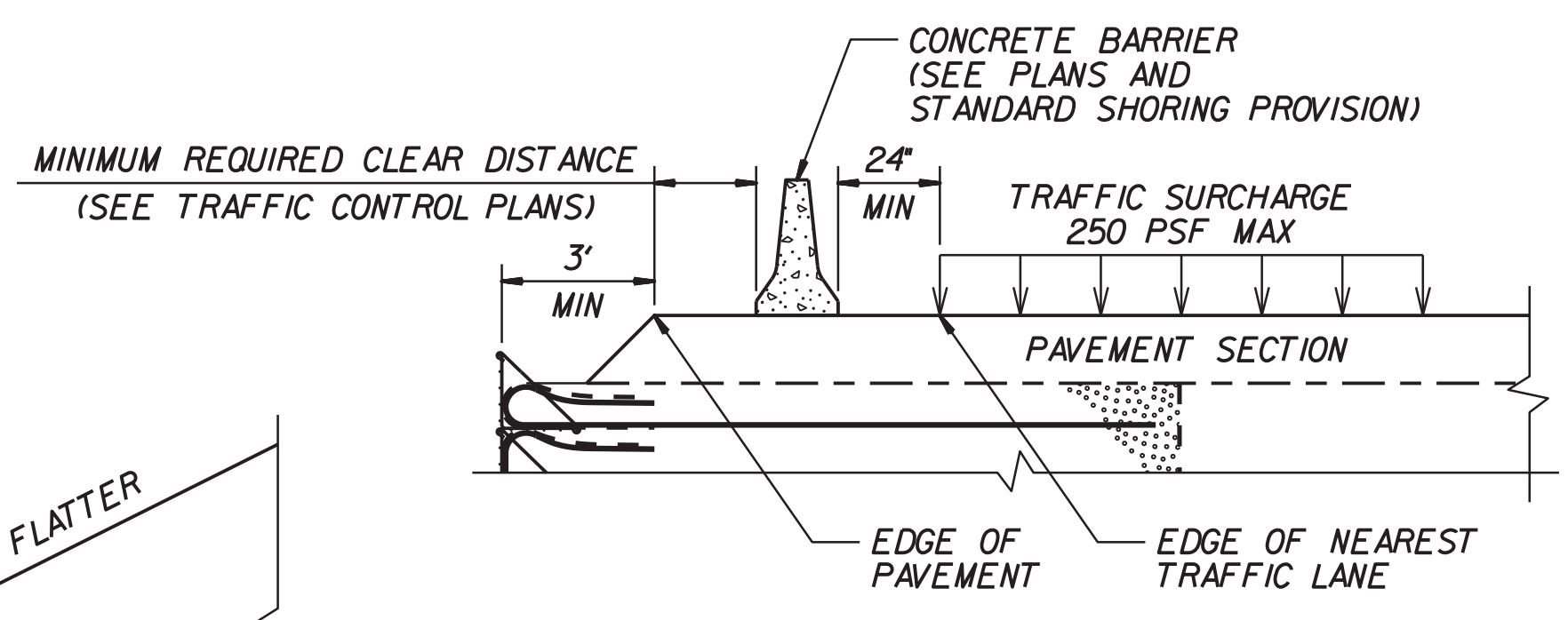
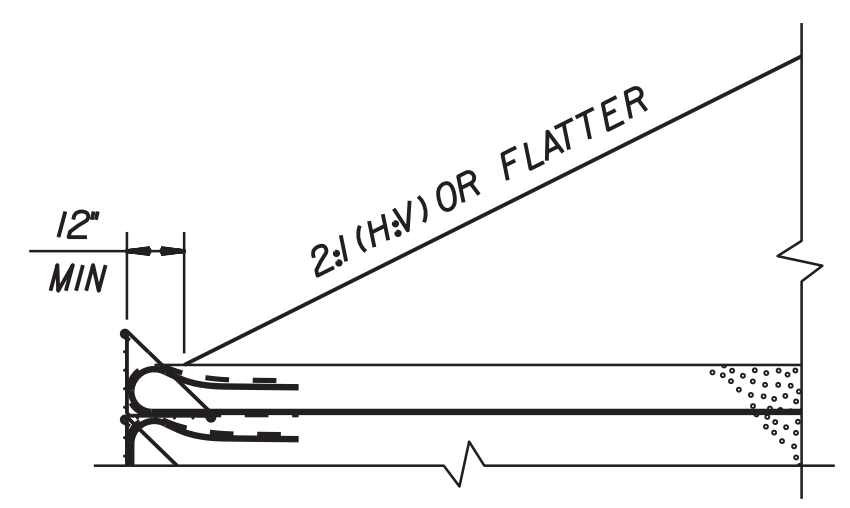


**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**



**GEOTECHNICAL
RECOMMENDATIONS
FOR TEMPORARY
SHORING**

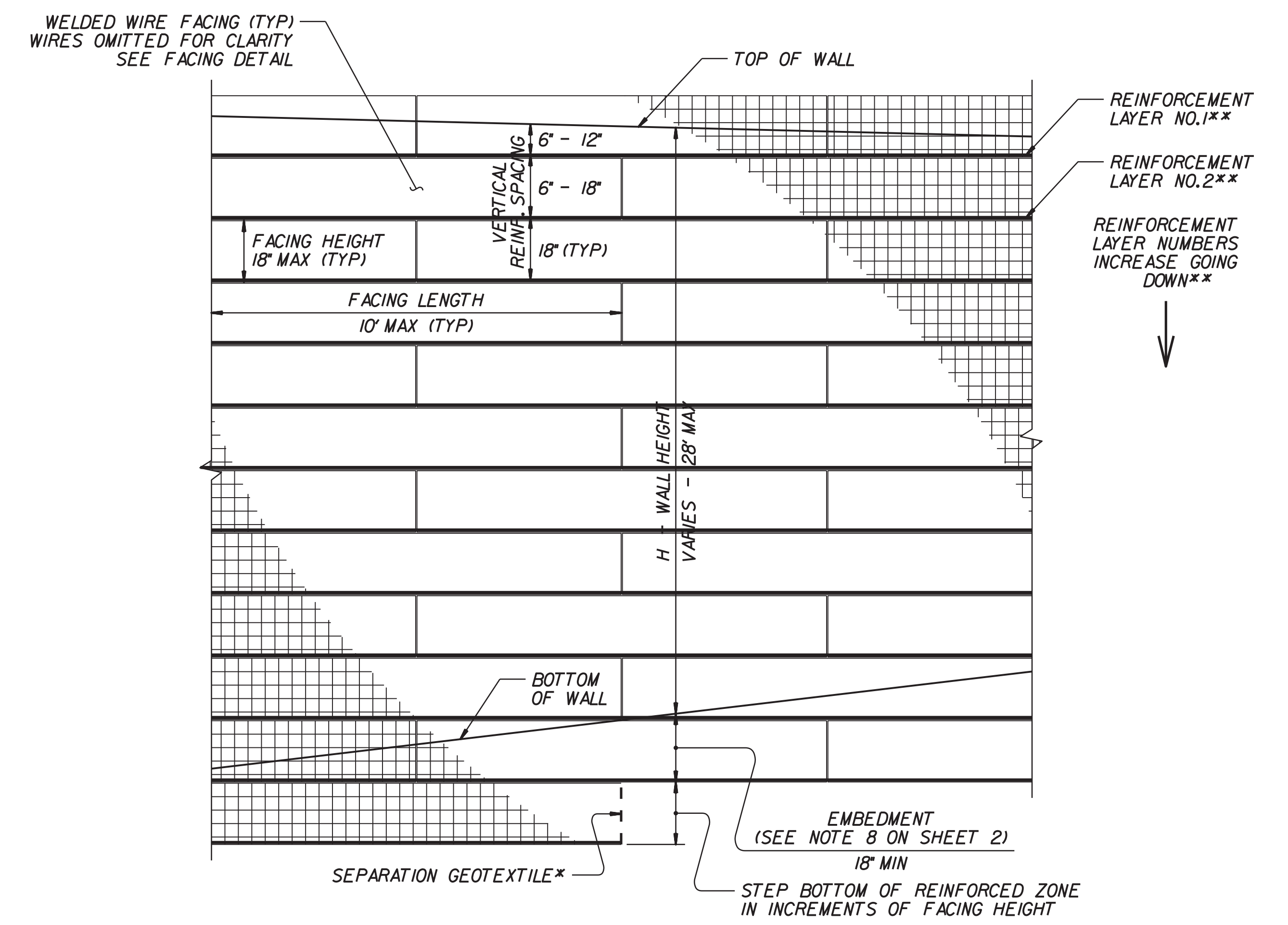
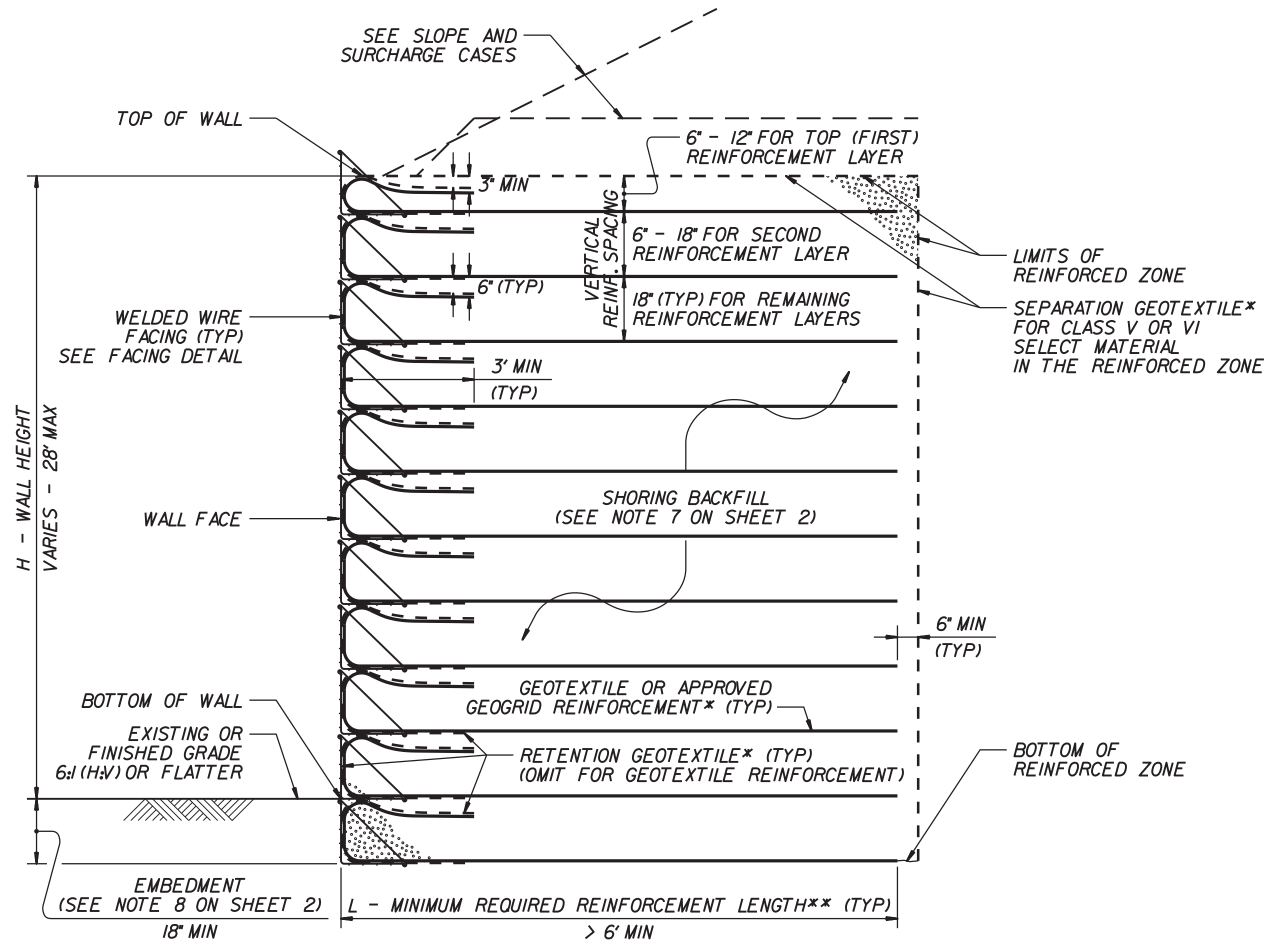
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GEO TECHNICAL ENGINEER		TRAFFIC CONTROL ENGINEER	
		DocuSigned by: Lloyd D. Brown 4/9/2021	
		SIGNATURE DATE 33854DF E8E8A8B8E DATE	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			



SLOPE CASE

SURCHARGE CASE

FACING DETAIL



STANDARD TEMPORARY WALL

(FOR STANDARD TEMPORARY WALLS ON STRUCTURES, SEE TEMPORARY WALL ON STRUCTURE DETAIL ON SHEET 2.)

*SEE GEOSYNTHETIC PLACEMENT DETAILS ON SHEET 2.

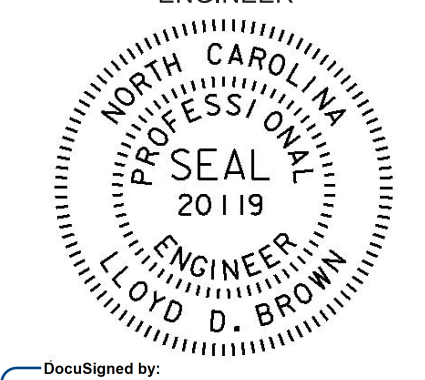
**SEE REINFORCEMENT TABLES ON SHEET 3.

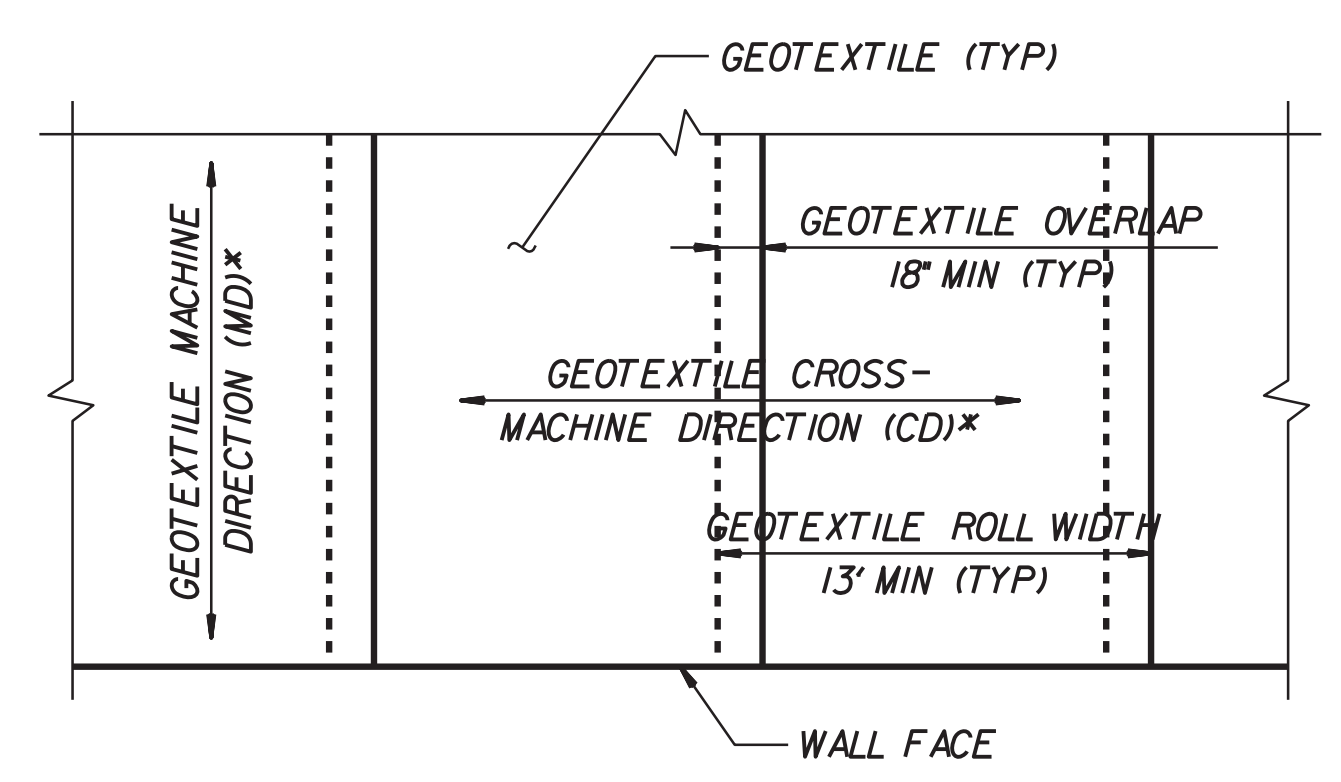
STANDARD TEMPORARY WALL - PARTIAL ELEVATION

*SEE GEOSYNTHETIC PLACEMENT DETAILS ON SHEET 2.

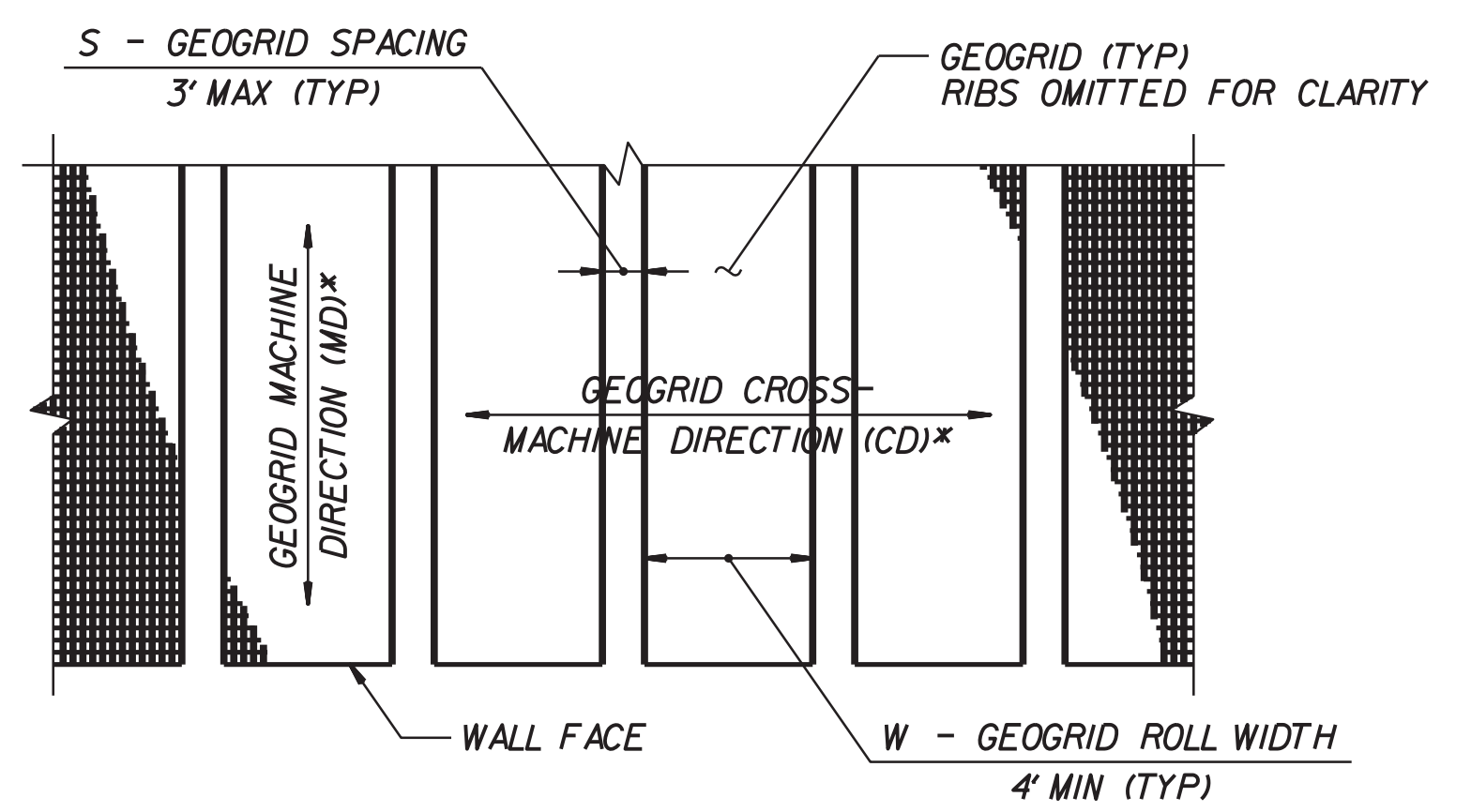
**SEE REINFORCEMENT TABLES ON SHEET 3.

<p>NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS</p> <p>GEO TECHNICAL ENGINEERING UNIT</p>	STANDARD DETAIL NO. 1801.02
	<p>STANDARD TEMPORARY WALL SHEET 1 OF 3</p> <p>DATE: 11-19-13</p>

PROJECT REFERENCE NO. B-4407		SHEET NO. TMP-2D	
GEOTECHNICAL ENGINEER 		TRAFFIC CONTROL ENGINEER Lloyd D. Brown 4/9/2021	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

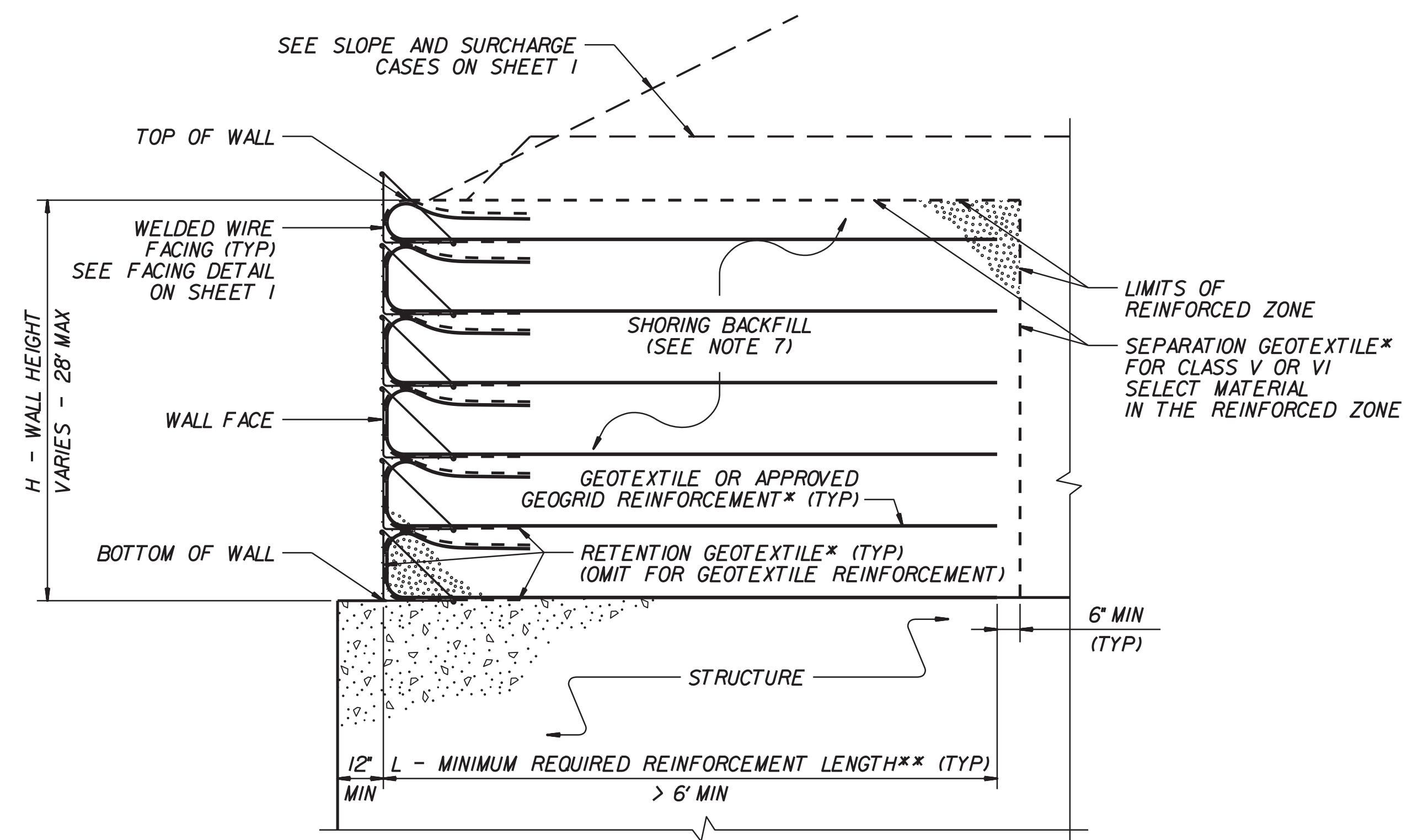


GEOTEXTILE PLACEMENT
(100% COVERAGE MIN FOR GEOTEXTILE REINFORCEMENT)



GEOGRID PLACEMENT
(80% COVERAGE MIN FOR GEOGRID REINFORCEMENT - $\frac{W}{W+S} \times 100 \geq 80\%$, SEE NOTE 11)

GEOSYNTHETIC PLACEMENT DETAILS
(PLAN VIEW)
*SEE NOTE 12.




TEMPORARY WALL ON STRUCTURE DETAIL
*SEE GEOSYNTHETIC PLACEMENT DETAILS.
**SEE REINFORCEMENT TABLES ON SHEET 3.

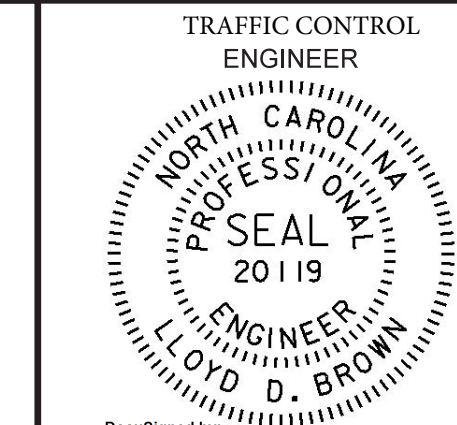
NOTES:

- AT THE CONTRACTOR'S OPTION, USE STANDARD TEMPORARY WALLS AS NOTED IN THE PLANS.
- FOR STANDARD TEMPORARY WALLS, SEE STANDARD SHORING PROVISION.
- STANDARD TEMPORARY WALLS ARE BASED ON THE FOLLOWING IN-SITU ASSUMED SOIL PARAMETERS:
UNIT WEIGHT, $\gamma = 120$ PCF
FRICTION ANGLE, $\phi = 30$ DEGREES
COHESION, $c = 0$ PSF
- DO NOT USE STANDARD TEMPORARY WALLS IF ASSUMED SOIL PARAMETERS ARE NOT APPLICABLE.
- DO NOT USE STANDARD TEMPORARY WALLS WHEN VERY LOOSE OR SOFT SOIL OR MUCK IS BELOW TEMPORARY WALLS.
- USE GROUNDWATER ELEVATION NOTED IN THE PLANS. IF NO GROUNDWATER ELEVATION IS SHOWN IN THE PLANS, ASSUME GROUNDWATER DEPTH IS LESS THAN 7' BELOW BOTTOM OF REINFORCED ZONE. DO NOT USE STANDARD TEMPORARY WALLS IF GROUNDWATER IS ABOVE BOTTOM OF REINFORCED ZONE.
- DO NOT USE A-2-4 SOIL FOR STANDARD TEMPORARY WALLS AROUND CULVERTS OR IN THE REINFORCED ZONE OF STANDARD TEMPORARY WALLS FOR SLOPE CASES. DO NOT USE CLASS VI SELECT MATERIAL IN THE REINFORCED ZONE OF STANDARD TEMPORARY WALLS WITH GEOTEXTILE REINFORCEMENT.
- EMBEDMENT IS NOT REQUIRED FOR STANDARD TEMPORARY WALLS ON STRUCTURES OR ROCK AS DETERMINED BY THE ENGINEER.
- DO NOT USE MORE THAN 4 DIFFERENT REINFORCEMENT STRENGTHS FOR EACH STANDARD TEMPORARY WALL.
- GEOGRIDS ARE TYPICALLY APPROVED FOR ULTIMATE TENSILE STRENGTHS IN THE MACHINE DIRECTION (MD) AND CROSS-MACHINE DIRECTION (CD) OR SHORT-TERM DESIGN STRENGTHS FOR A 3-YEAR DESIGN LIFE IN THE MD BASED ON MATERIAL TYPE. THE LIST OF APPROVED GEOGRIDS WITH DESIGN STRENGTHS IS AVAILABLE FROM:
connect.ncdot.gov/resources/Materials/Pages/Materials-Manual-by-Manual.aspx
DEFINE MATERIAL TYPE FROM THE WEBSITE ABOVE FOR SHORING BACKFILL AS FOLLOWS:

MATERIAL TYPE	SHORING BACKFILL
BORROW	A-2-4 SOIL
FINE AGGREGATE	CLASS II, TYPE I OR CLASS III SELECT MATERIAL
COARSE AGGREGATE	CLASS V OR VI SELECT MATERIAL

- IF THE WEBSITE DOES NOT LIST A SHORT-TERM DESIGN STRENGTH FOR AN APPROVED GEOGRID, USE A SHORT-TERM DESIGN STRENGTH EQUAL TO THE ULTIMATE TENSILE STRENGTH DIVIDED BY 3.5 FOR THE GEOGRID REINFORCEMENT.
- FOR GEOGRID REINFORCEMENT WITH LESS THAN 100% COVERAGE, STAGGER REINFORCEMENT SO GEOGRIDS ARE CENTERED OVER GAPS IN THE REINFORCEMENT LAYER BELOW.
 - AT THE CONTRACTOR'S OPTION, REINFORCEMENT MAY BE INSTALLED WITH THE MD PARALLEL TO THE WALL FACE IF BOTH OF THE FOLLOWING CONDITIONS OCCUR:
- W (REINFORCEMENT ROLL WIDTH) \geq (MINIMUM REQUIRED REINFORCEMENT LENGTH) + 4.5' AND
- REINFORCEMENT STRENGTH IN CD \geq MINIMUM REQUIRED REINFORCEMENT STRENGTH IN MD.
 - SUBMIT A "STANDARD TEMPORARY WALL SELECTION FORM" AT LEAST 7 DAYS BEFORE STARTING TEMPORARY WALL CONSTRUCTION. STANDARD SHORING SELECTION FORMS ARE AVAILABLE FROM:
connect.ncdot.gov/resources/Geological/Pages/Geotech_Forms_Details.aspx
 - DO NOT PLACE SHORING BACKFILL OR REINFORCEMENT UNTIL EXCAVATION DIMENSIONS AND FOUNDATION MATERIAL ARE APPROVED.
 - FOR STANDARD TEMPORARY WALLS WITH PILE FOUNDATIONS IN THE REINFORCED ZONE, DRIVE PILES THROUGH REINFORCEMENT AFTER CONSTRUCTING TEMPORARY WALLS.
 - DO NOT SPLICE OR OVERLAP REINFORCEMENT SO SEAMS ARE PARALLEL TO THE WALL FACE.
 - CONTACT THE ENGINEER WHEN EXISTING OR FUTURE OBSTRUCTIONS SUCH AS FOUNDATIONS, PAVEMENTS, PIPES, INLETS OR UTILITIES WILL INTERFERE WITH REINFORCEMENT.
 - FOR STANDARD TEMPORARY WALLS WITH INTERIOR ANGLES LESS THAN 90 DEGREES, WRAP GEOSYNTHETICS AT ACUTE CORNERS AS DIRECTED BY THE ENGINEER.
 - FOR STANDARD TEMPORARY WALLS WITH TOP OF WALL WITHIN 5' OF FINISHED GRADE, REMOVE TOP FACING AND INCORPORATE TOP REINFORCEMENT LAYER INTO FILL WHEN PLACING FILL IN FRONT OF WALL.

 NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS GEOTECHNICAL ENGINEERING UNIT	STANDARD DETAIL NO. 1801.02
	STANDARD TEMPORARY WALL SHEET 2 OF 3 DATE: 11-19-13

PROJECT REFERENCE NO. B-4407	SHEET NO. TMP-2E
GEOTECHNICAL ENGINEER _____ SIGNATURE DATE	TRAFFIC CONTROL ENGINEER  Lloyd D. Brown 4/9/2021 _____ SIGNATURE DATE
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

SLOPE OR SURCHARGE CASE	GROUNDWATER DEPTH BELOW BOTTOM OF REINFORCED ZONE (SEE NOTE 6 ON SHEET 2) (FT)	SHORING BACKFILL TYPE IN THE REINFORCED ZONE (SEE NOTE 7 ON SHEET 2)	H - WALL HEIGHT (FT)																									
			< 4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	
SLOPE CASE	> 0	CLASS II, TYPE I, CLASS III, CLASS V OR CLASS VI SELECT MATERIAL	6	6	7	8	9	11	12	13	13	14	15	16	17	18	19	20	21	22	23	24	24	25	26	27	27	
SURCHARGE CASE	> 0 TO 7 FOR H < 20' > 0 TO 10 FOR H ≥ 20'	ALL SHORING BACKFILL TYPES	6	7	7	8	8	9	9	10	11	11	12	12	13	14	14	15	16	17	17	18	19	19	20	21	22	
		A-2-4 SOIL	6	6	7	8	8	9	9	10	11	11	12	12	13	14	14	15	16	16	17	18	18	19	20	20	21	
		CLASS II, TYPE I OR CLASS III SELECT MATERIAL	6	6	7	7	8	8	9	10	10	11	11	12	12	13	14	15	15	16	16	17	17	18	18	19	20	
	> 7 FOR H < 20' > 10 FOR H ≥ 20'	CLASS V OR CLASS VI SELECT MATERIAL	6	6	7	7	7	8	8	9	9	10	10	11	12	13	13	14	14	15	15	16	17	17	18	19	19	

L - MINIMUM REQUIRED REINFORCEMENT LENGTH (FT)
(FOR ALL REINFORCEMENT TYPES)

WALL HEIGHT (H) + EMBEDMENT (FT)	NUMBER OF REINFORCEMENT LAYERS*
2.5 - 4	3
4 - 5.5	4
5.5 - 7	5
7 - 8.5	6
8.5 - 10	7
10 - 11.5	8
11.5 - 13	9
13 - 14.5	10
14.5 - 16	11
16 - 17.5	12
17.5 - 19	13
19 - 20.5	14
20.5 - 22	15
22 - 23.5	16
23.5 - 25	17
25 - 26.5	18
26.5 - 28	19
28 - 29.5	20

*BASED ON VERTICAL REINFORCEMENT SPACING SHOWN ON SHEET 1.

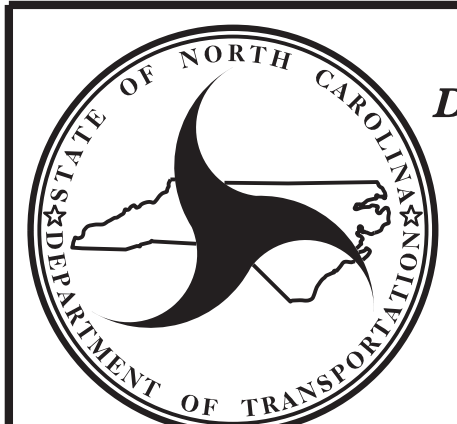
REINFORCEMENT LAYER NUMBER*	SHORING BACKFILL TYPE IN THE REINFORCED ZONE (SEE NOTE 7 ON SHEET 2)				
	SLOPE CASE		SURCHARGE CASE		
	CLASS II, TYPE I OR CLASS III SELECT MATERIAL	CLASS V SELECT MATERIAL	A-2-4 SOIL	CLASS II, TYPE I OR CLASS III SELECT MATERIAL	CLASS V SELECT MATERIAL
1	2400	2400	2400	2400	2400
2	2400	2400	2400	2400	2400
3	2400	2400	2400	2400	2400
4	2400	2400	2500	2400	2400
5	2500	2400	3000	2400	2400
6	3000	2400	3500	2800	2400
7	3500	2700	4000	3200	2600
8	4000	3100	4500	3600	2900
9	4500	3500	5000	4000	3200
10	5000	3900	5500	4400	3500
11	5500	4300	6000	4800	3800
12	6000	4700	6500	5200	4100
13	6500	5100	7000	5600	4400
14	7000	5400	7500	6000	4700
15	7500	5800	8000	6400	5000
16	8000	6200	8500	6800	5300
17	8500	6600	9000	7200	5600
18	9000	7000	9500	7600	5900
19	9500	7400	10000	8000	6200
20	10000	7800	10500	8400	6500

GEOTEXTILE REINFORCEMENT
ULTIMATE TENSILE STRENGTH (LB/FT)

REINFORCEMENT LAYER NUMBER*	SHORING BACKFILL TYPE IN THE REINFORCED ZONE (SEE NOTE 7 ON SHEET 2)				
	SLOPE CASE		SURCHARGE CASE		
	CLASS II, TYPE I OR CLASS III SELECT MATERIAL	CLASS V OR CLASS VI SELECT MATERIAL	A-2-4 SOIL	CLASS II, TYPE I OR CLASS III SELECT MATERIAL	CLASS V OR CLASS VI SELECT MATERIAL
1	240	200	340	290	240
2	380	310	520	430	350
3	530	420	700	570	460
4	690	550	870	720	570
5	860	690	1050	860	680
6	1030	830	1220	1000	790
7	1200	970	1400	1150	900
8	1370	1110	1580	1290	1010
9	1550	1240	1750	1430	1120
10	1720	1380	1930	1580	1230
11	1890	1520	2100	1720	1340
12	2060	1660	2280	1860	1450
13	2240	1800	2450	2010	1560
14	2410	1940	2630	2150	1670
15	2580	2080	2800	2290	1780
16	2750	2220	2980	2440	1890
17	2930	2360	3160	2580	2000
18	3100	2500	3330	2720	2110
19	3270	2640	3510	2860	2220
20	3440	2780	3690	3000	2330

GEOGRID REINFORCEMENT
SHORT-TERM DESIGN STRENGTH (LB/FT)
(SEE NOTE 10 ON SHEET 2.)

MINIMUM REQUIRED REINFORCEMENT STRENGTH IN MD
(SEE NOTE 9 ON SHEET 2.)
*SEE PARTIAL ELEVATION ON SHEET 1 FOR REINFORCEMENT LAYER NUMBERING.



NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

**GEOTECHNICAL
ENGINEERING UNIT**

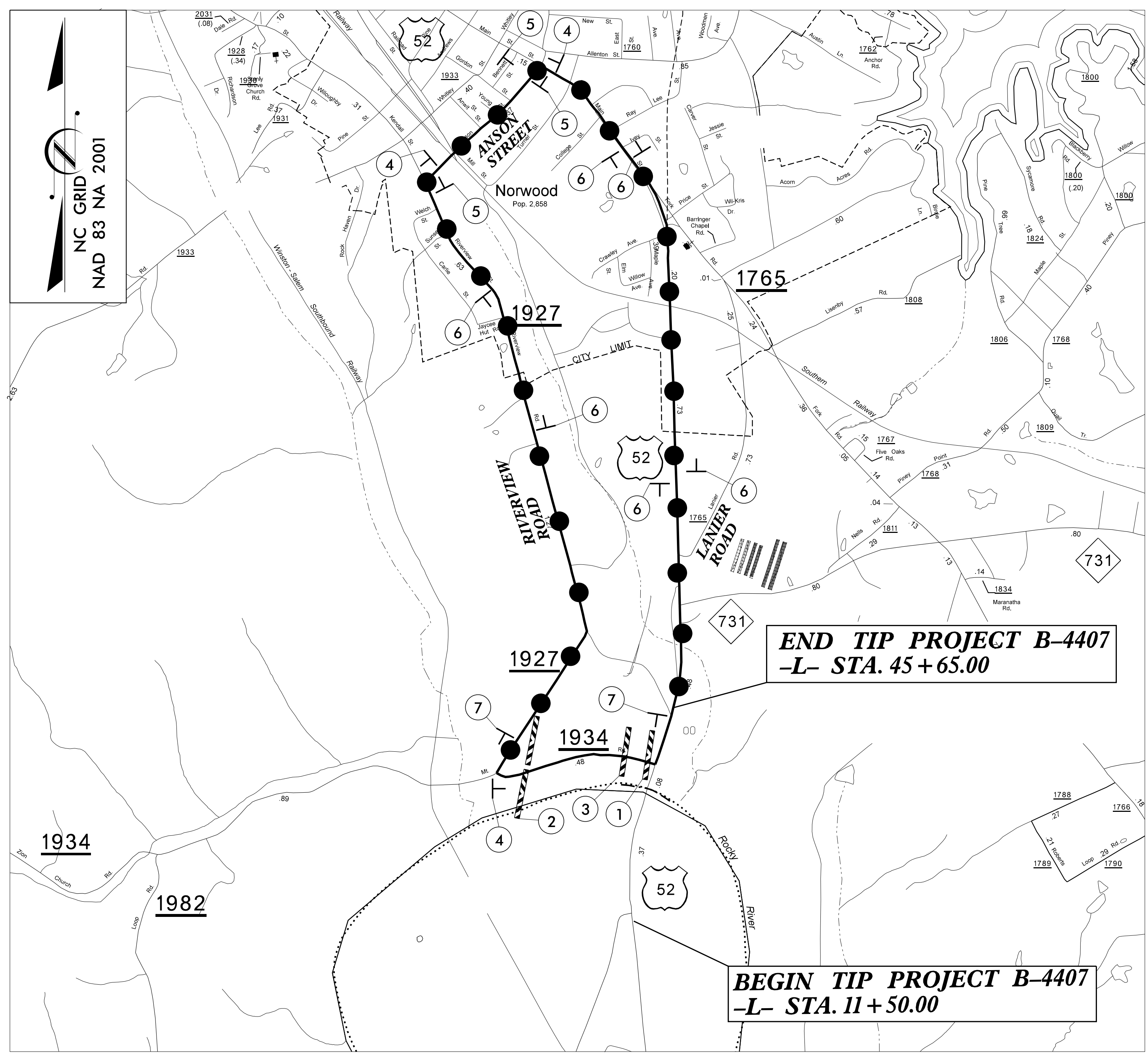
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STANDARD
TEMPORARY WALL
SHEET 3 OF 3

DATE: 11-19-13

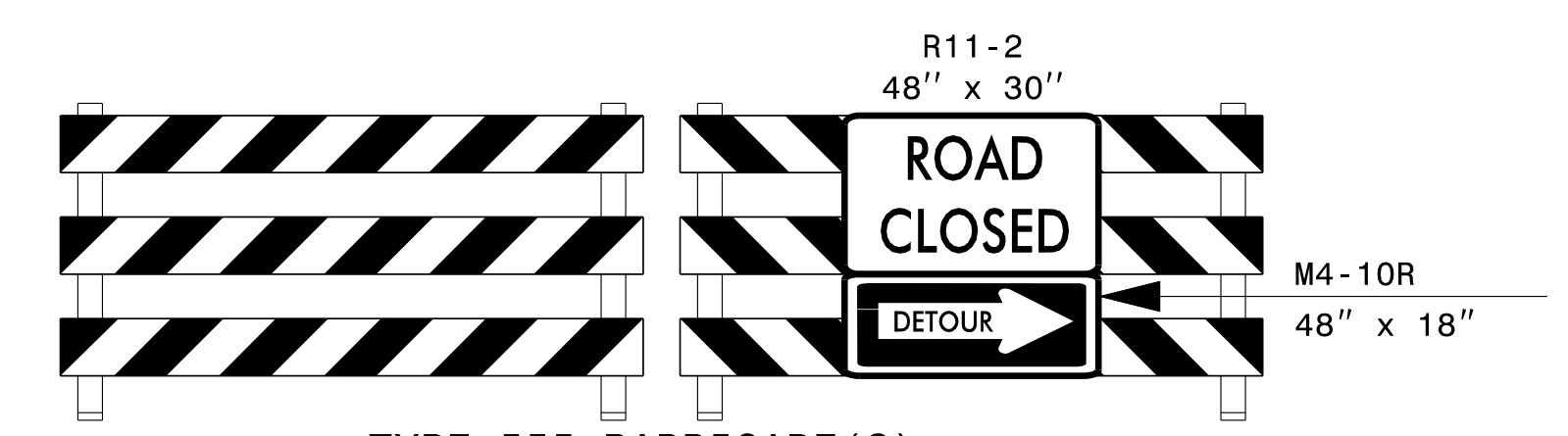
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USE NOTES: 1,2 1. Legend and border shall be direct applied black non-reflective sheeting. 2. Background shall be NC grade B fluorescent orange retroreflective sheeting																																																																			
LETTER POSITIONS Letter spacings are to start of next letter																																																																			
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FILENAME: SPECIAL_SIGN_DESIGN																																																																			

APPROVED: <u>Lloyd D. Brown</u> DATE: 4/9/2021 		SPECIAL SIGN DESIGN
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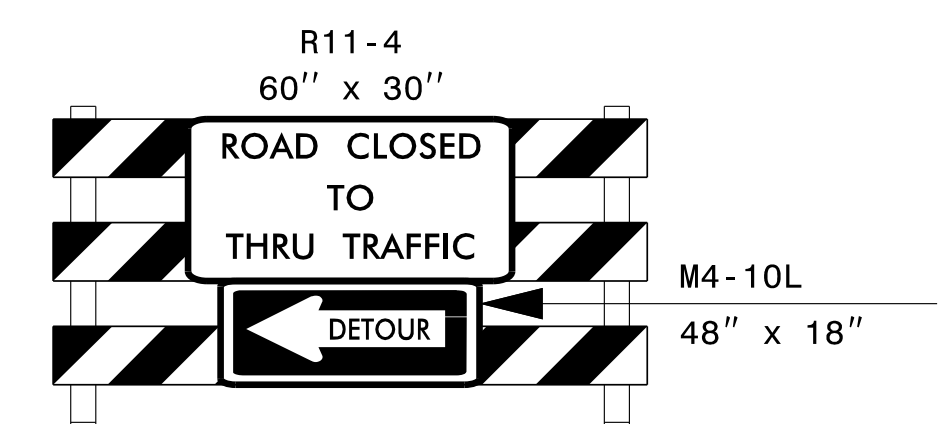
 DETOUR ROUTE (4.5 MI. +/-)

- NOTES:
- SEE NCDOT ROADWAY STANDARD DRAWING NO. 1101.03 SHEETS 1 AND 2 OF 9 FOR ADDITIONAL WORK ZONE TRAFFIC CONTROL DEVICES.
 - PLACE DETOUR SIGN EVERY MILE ALONG ROUTE
 - SEE ICT #1 FOR DETOUR DURATION



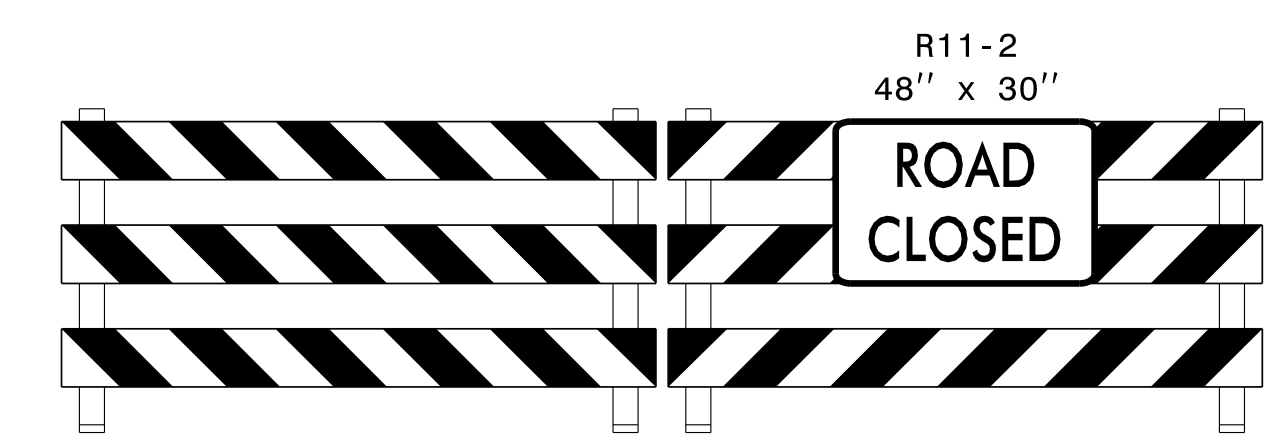
TYPE III BARRICADE(S)

1



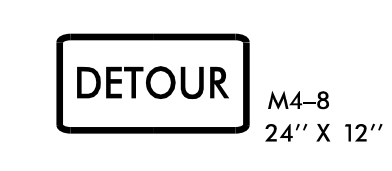
TYPE III BARRICADE

2

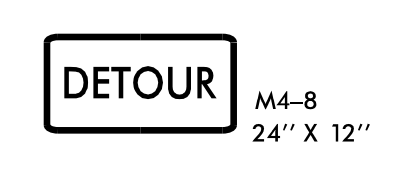


TYPE III BARRICADE(S)

3



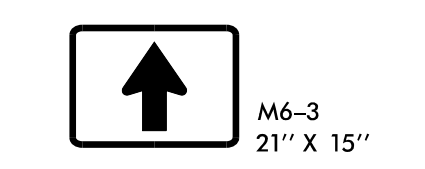
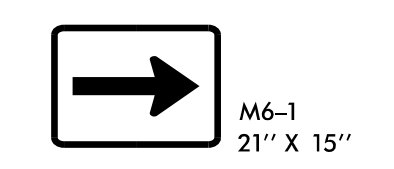
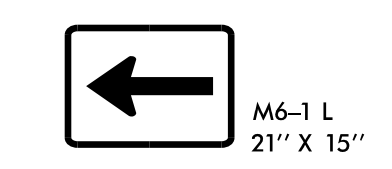
4



5

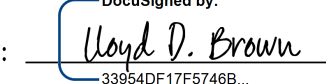


6




7

4/7/2021 11:32:39 PM
 ...B4407_TMP-4.dgn
 User:cmf11zpoffrick

APPROVED: 
 DATE: 4/9/2021

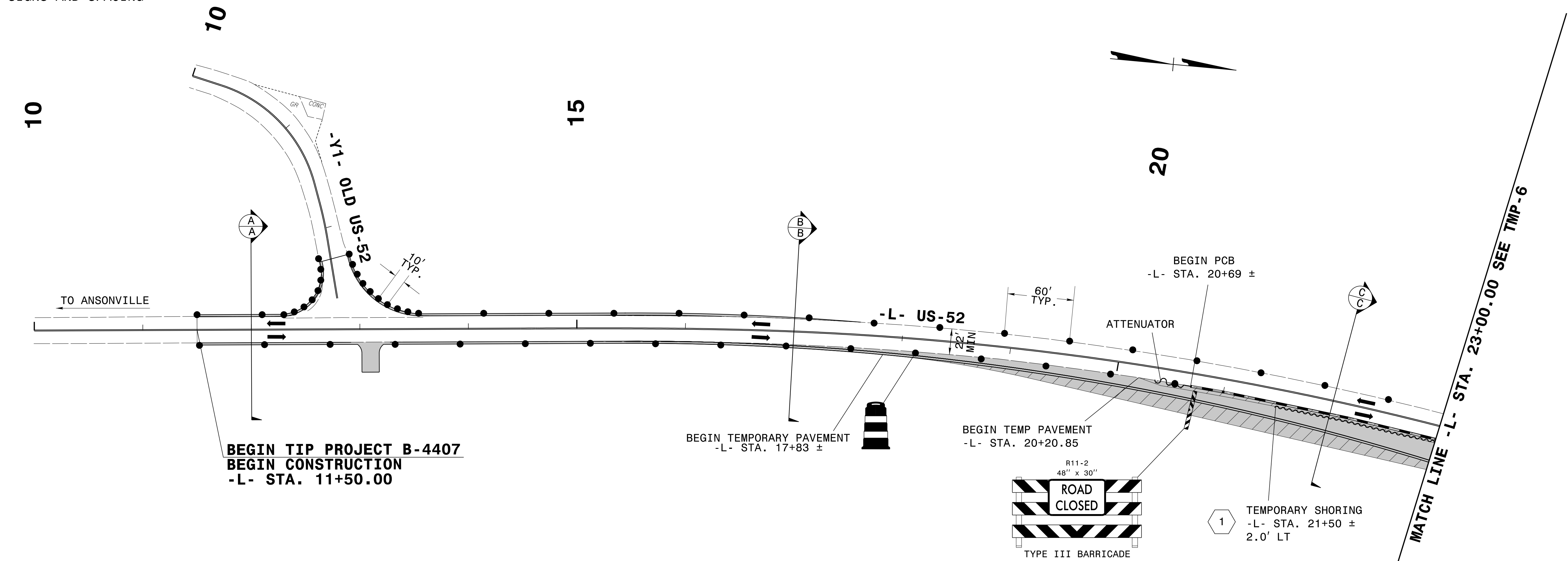
SEAL

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



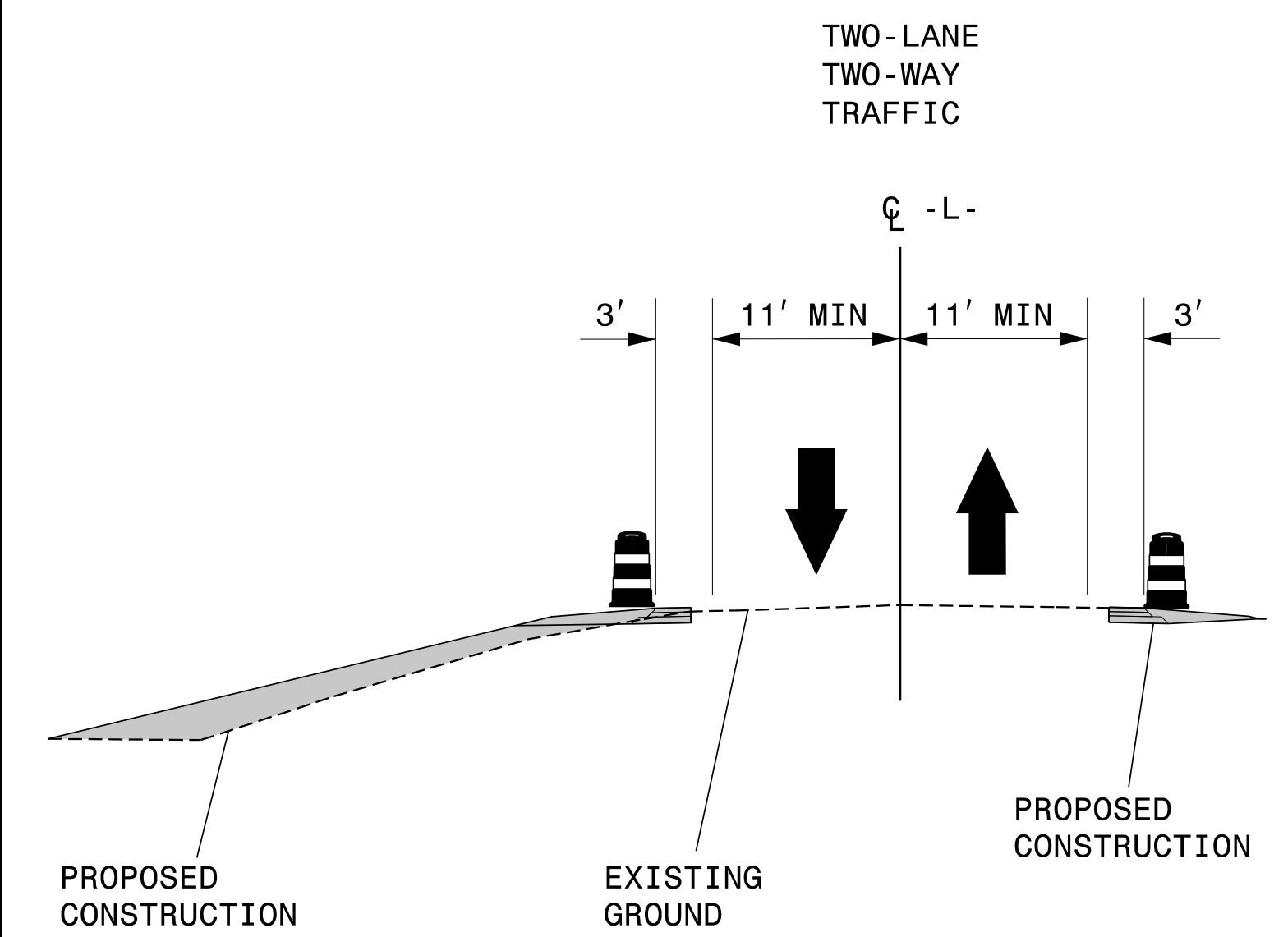
PHASE 2 DETOUR
RIVERVIEW ROAD

NOTE: SEE RSD 1101.01 SHEET 3 OF 3 FOR ADVANCED WARNING SIGNS AND SPACING



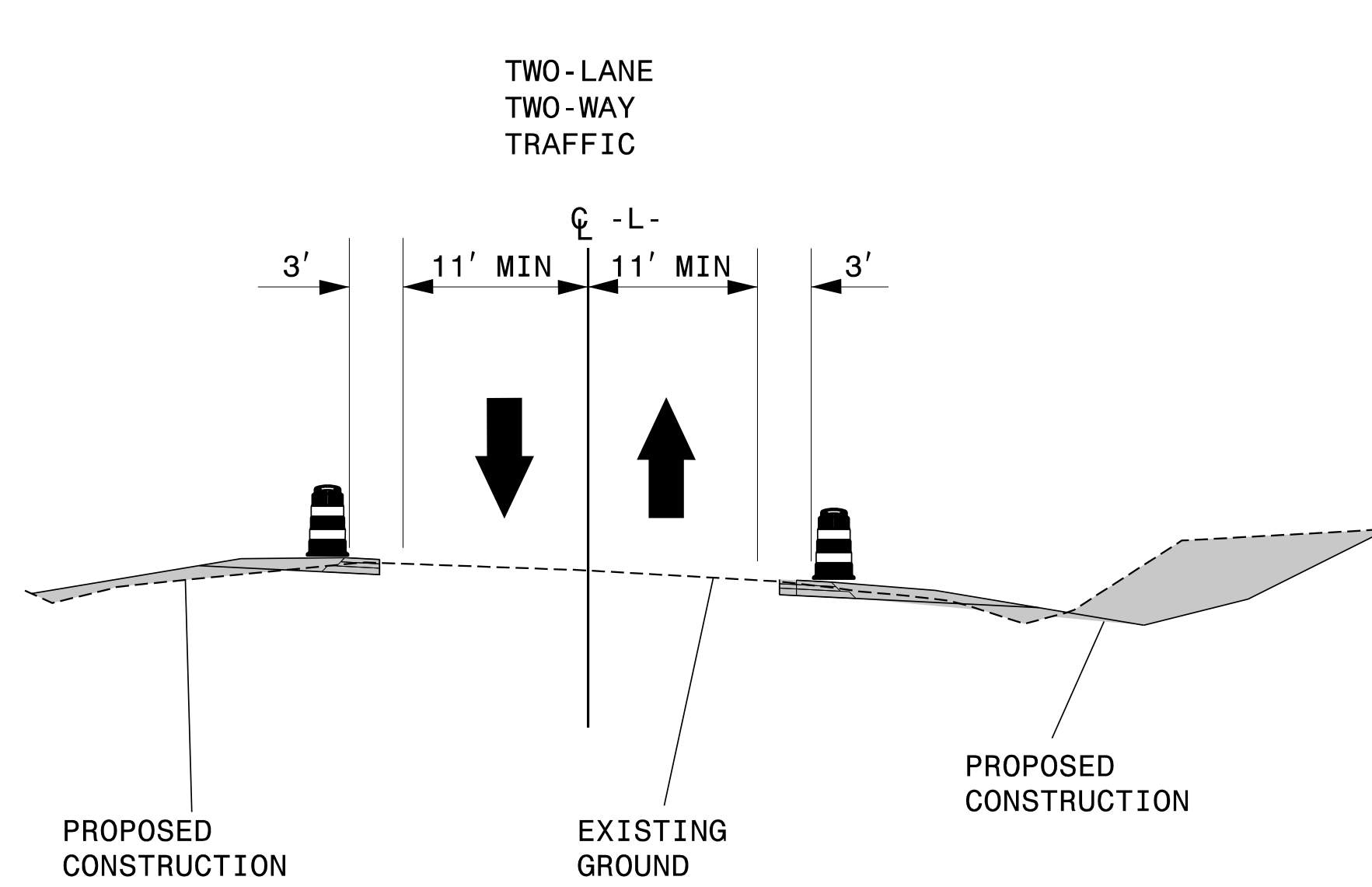
SECTION A-A

12+00



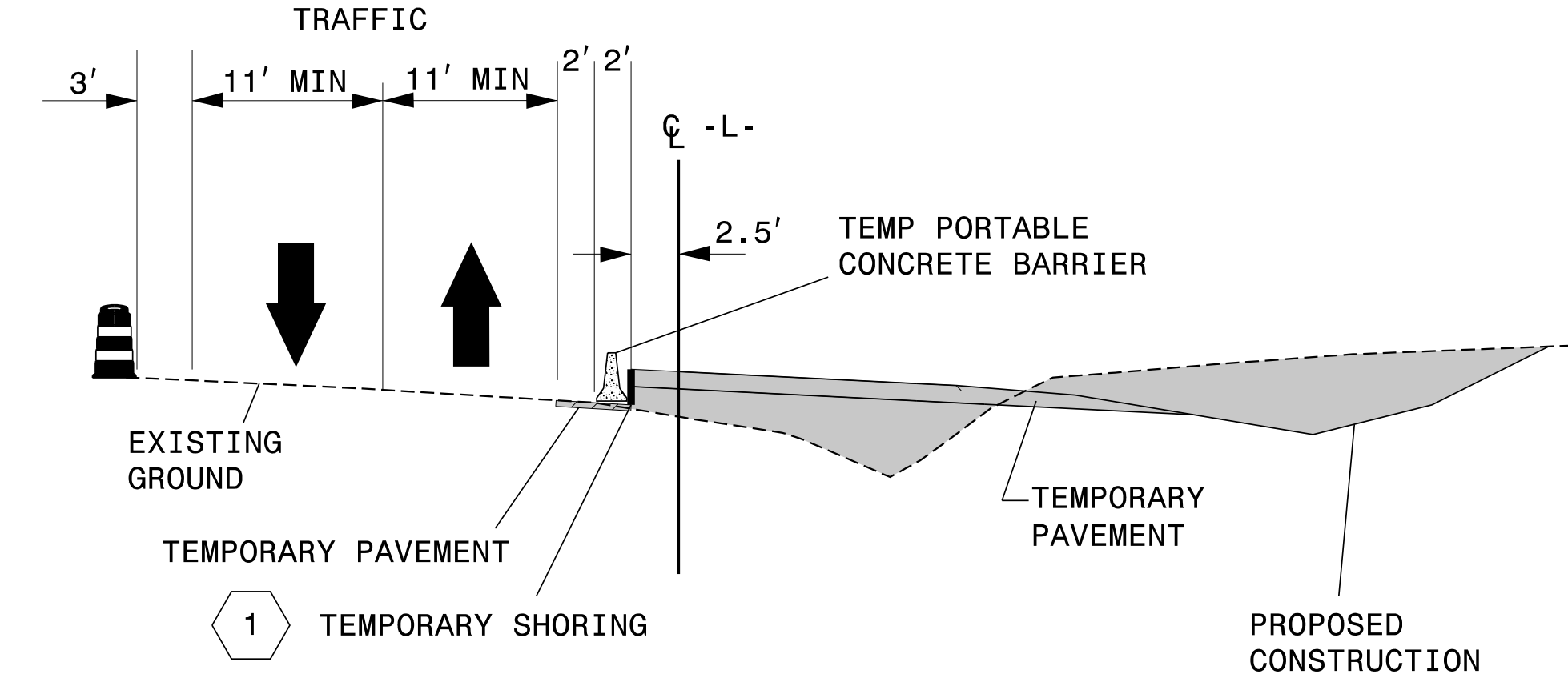
SECTION B-B

17+00



SECTION C-C

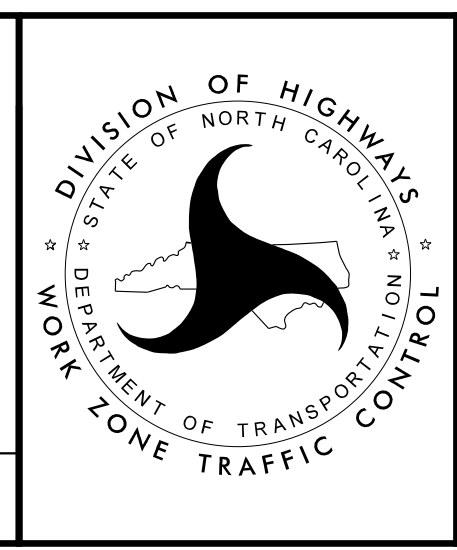
22+00



APPROVED: *Lloyd D. Brown*
33854DF17F5748B...
 DATE: 4/9/2021

SEAL

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

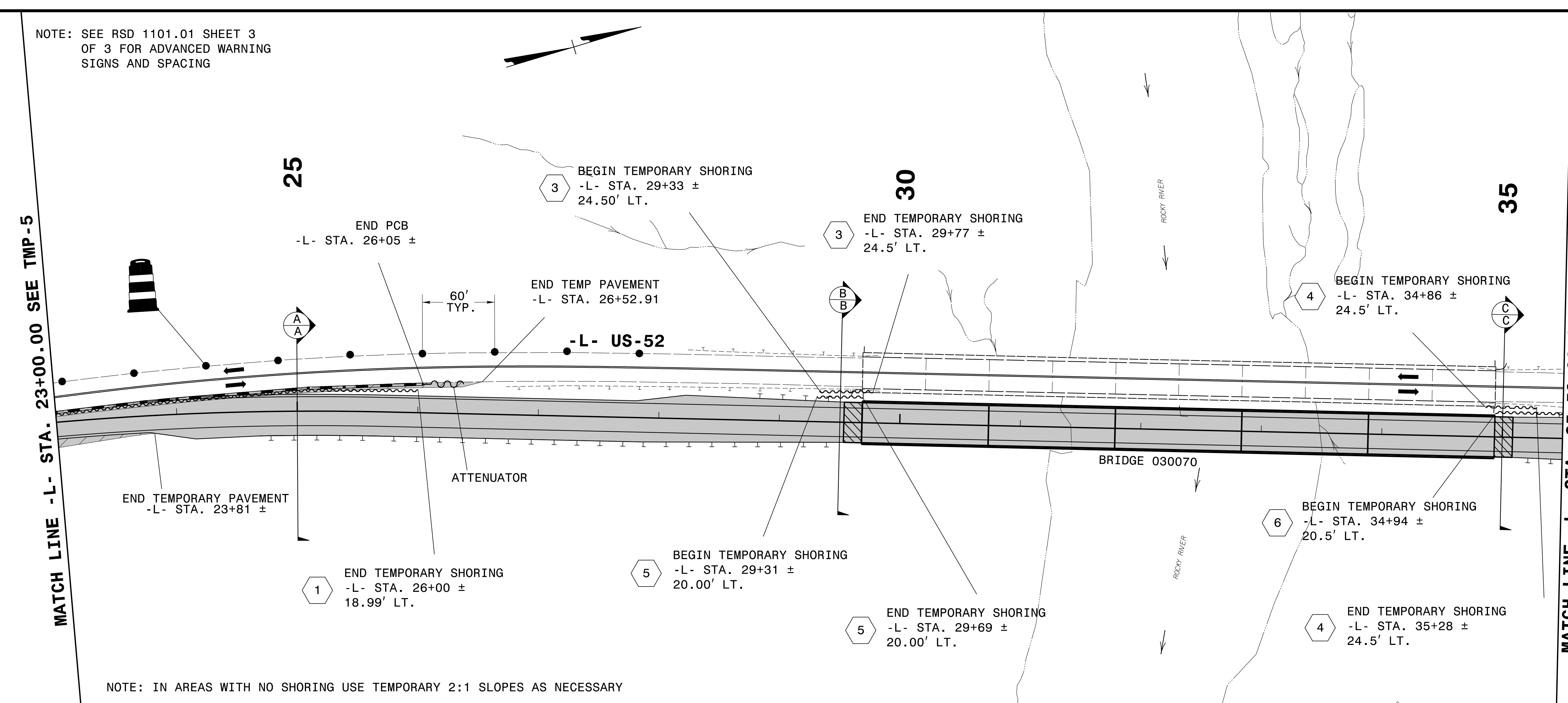


TEMPORARY TRAFFIC CONTROL PHASE I DETAIL

4/9/2021 12:50:34 PM
 ...B4407_TMP-5.dgn
 User: samfitzpatrick

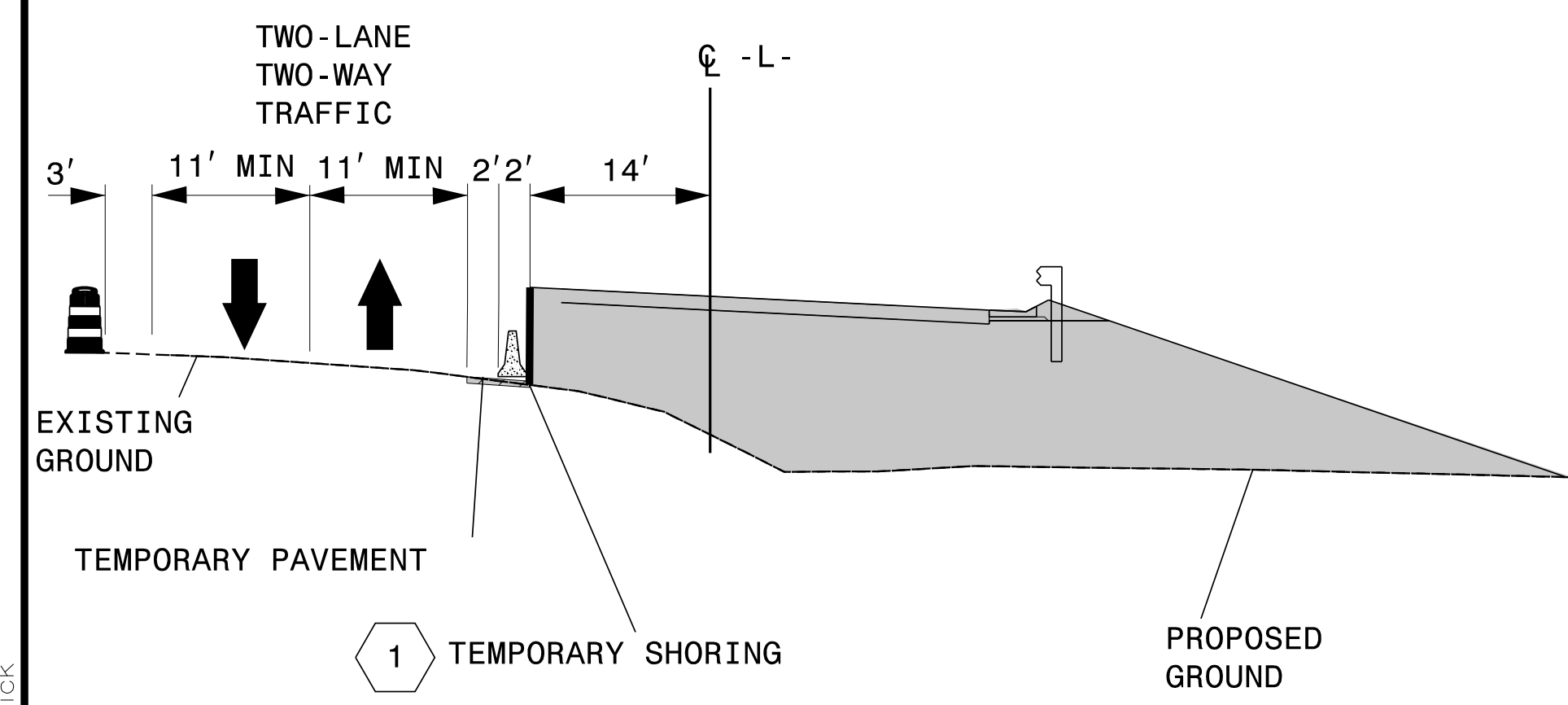
PROJ. REFERENCE NO.	SHEET NO.
B-4407	TMP-6

NOTE: SEE RSD 1101.01 SHEET 3 OF 3 FOR ADVANCED WARNING SIGNS AND SPACING

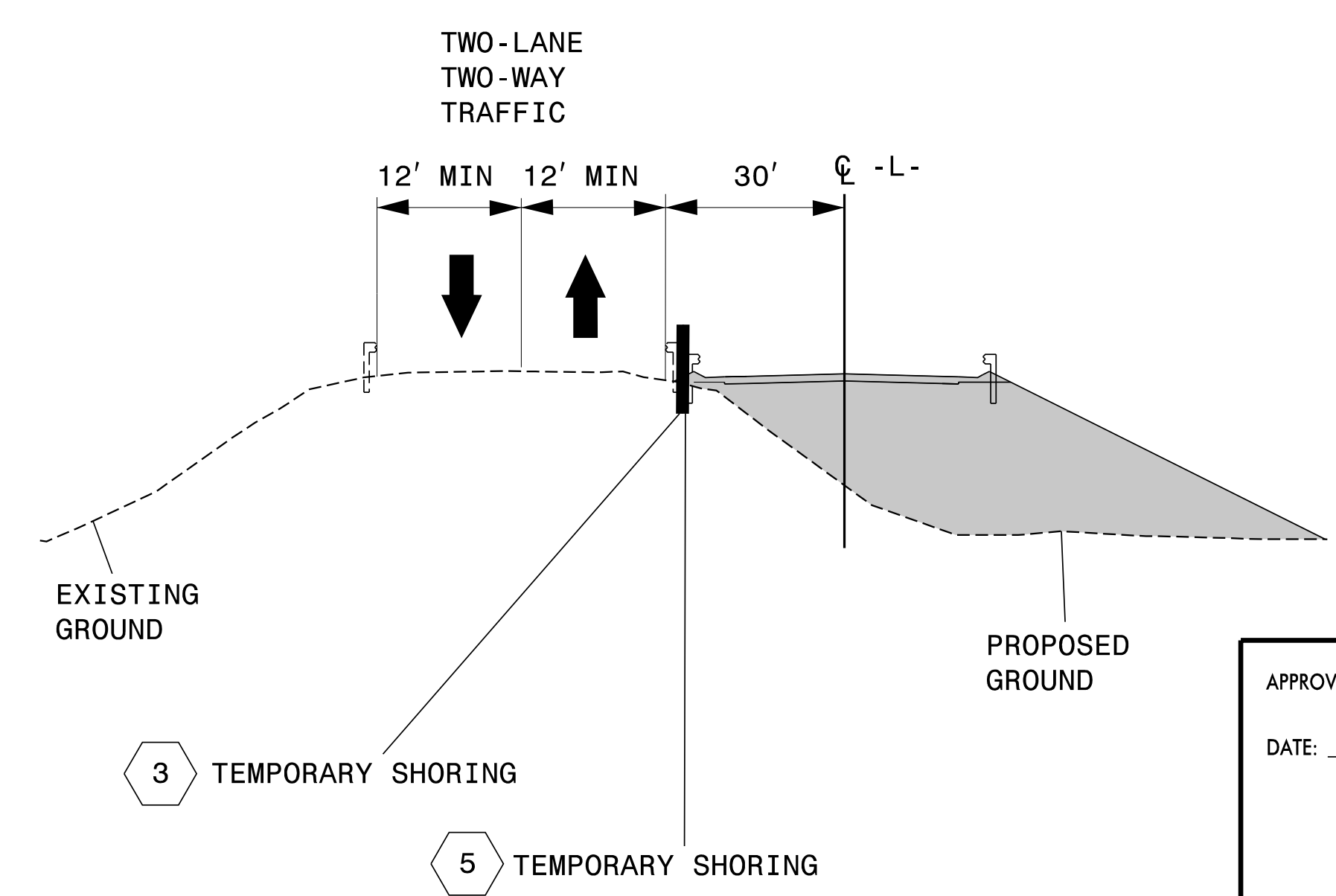


NOTE: IN AREAS WITH NO SHORING USE TEMPORARY 2:1 SLOPES AS NECESSARY

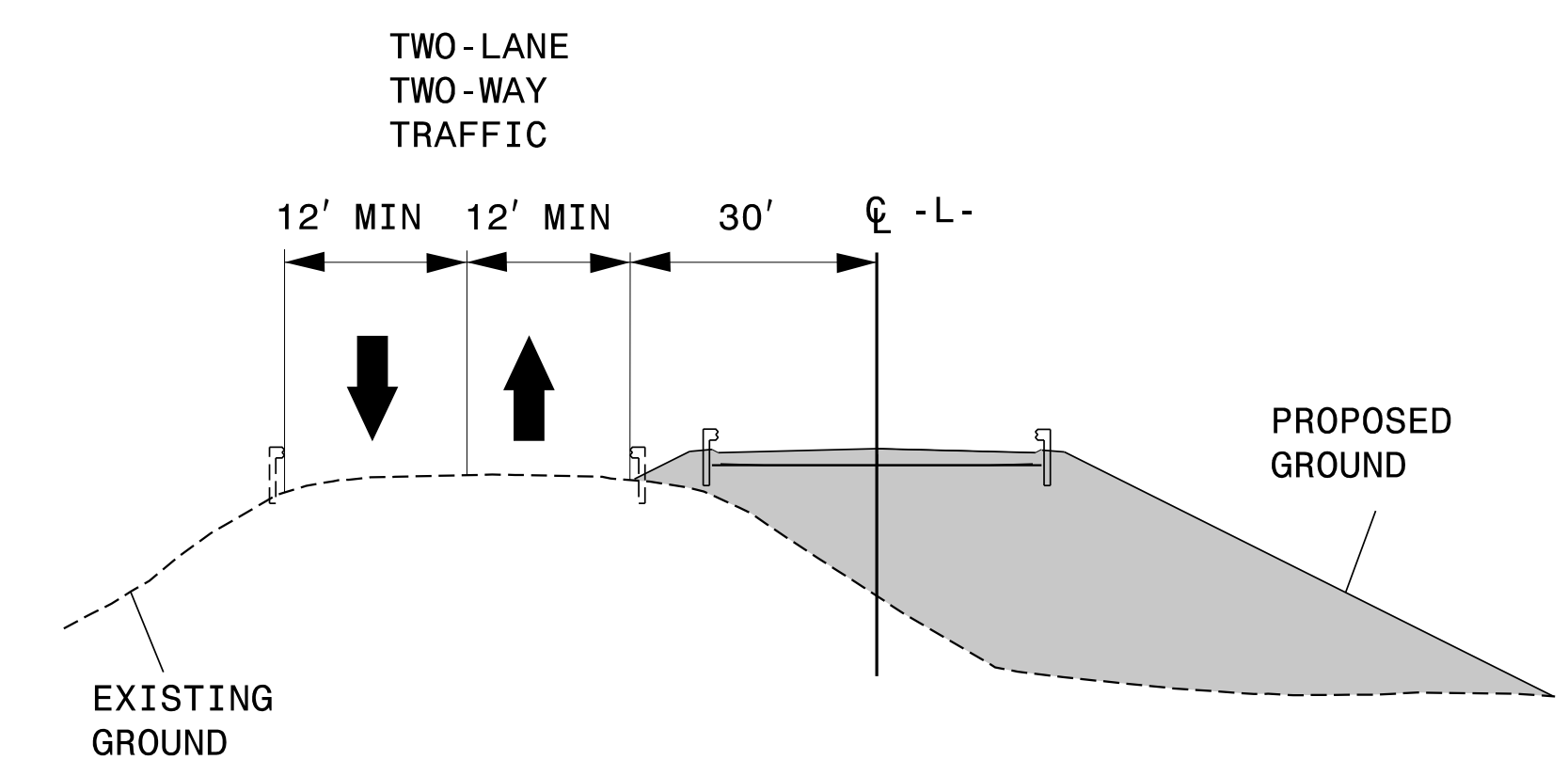
SECTION A-A 25+00



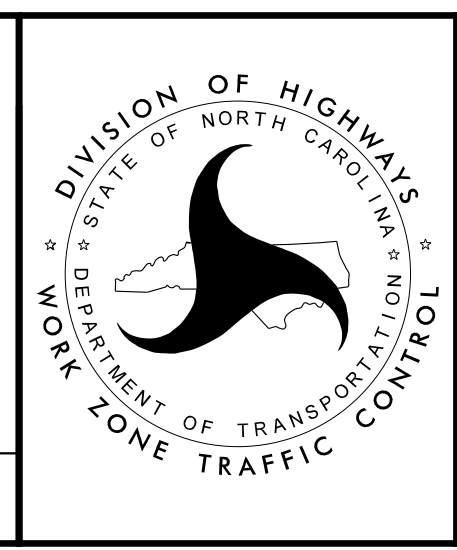
SECTION B-B 29+50



SECTION C-C 35+00

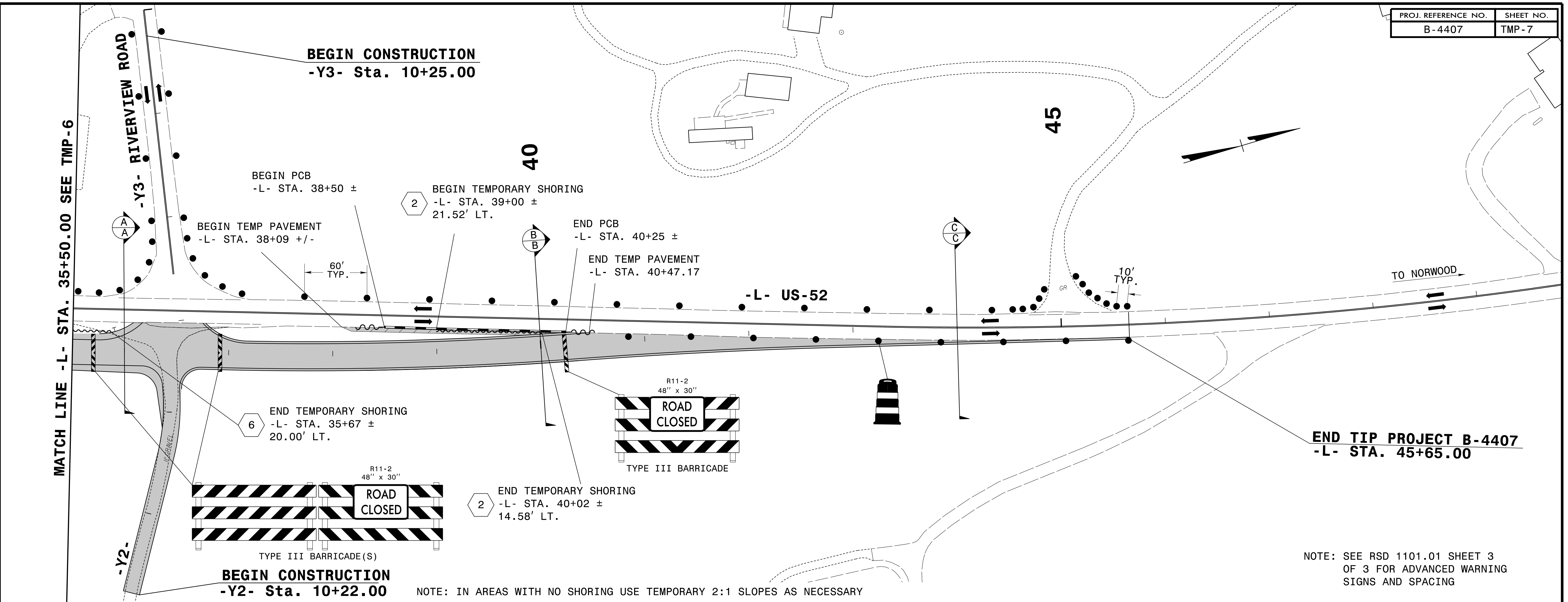


APPROVED: *Lloyd D. Brown*
 DATE: 4/9/2021
 SEAL
 NORTH CAROLINA PROFESSIONAL ENGINEER
 LLOYD D. BROWN
 33054DF17F9748B



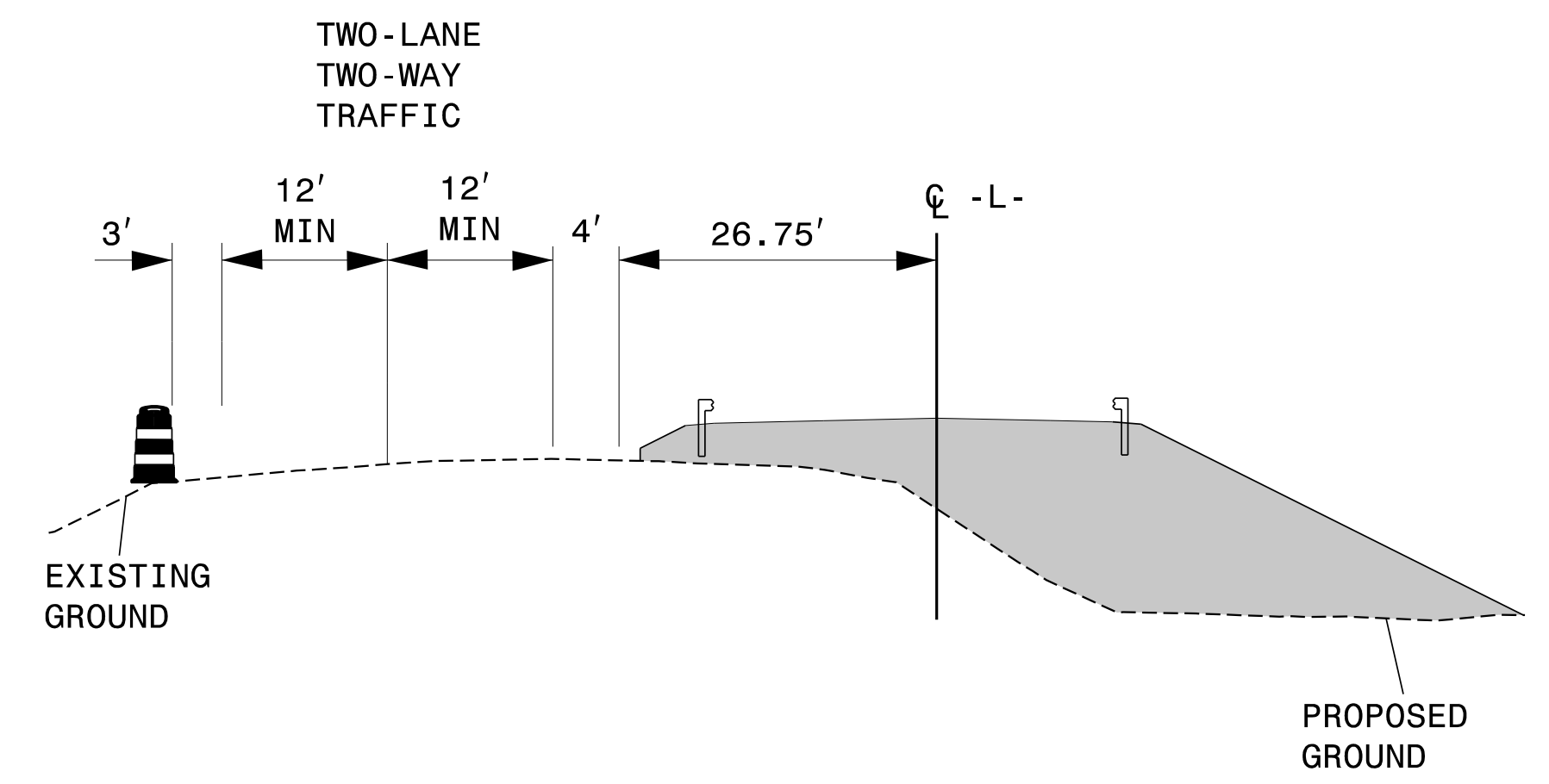
TEMPORARY TRAFFIC CONTROL PHASE I DETAIL

4/9/2021 12:55:47 PM
 ...B4407_TMP-6.dgn
 User:cmf11zpatrick



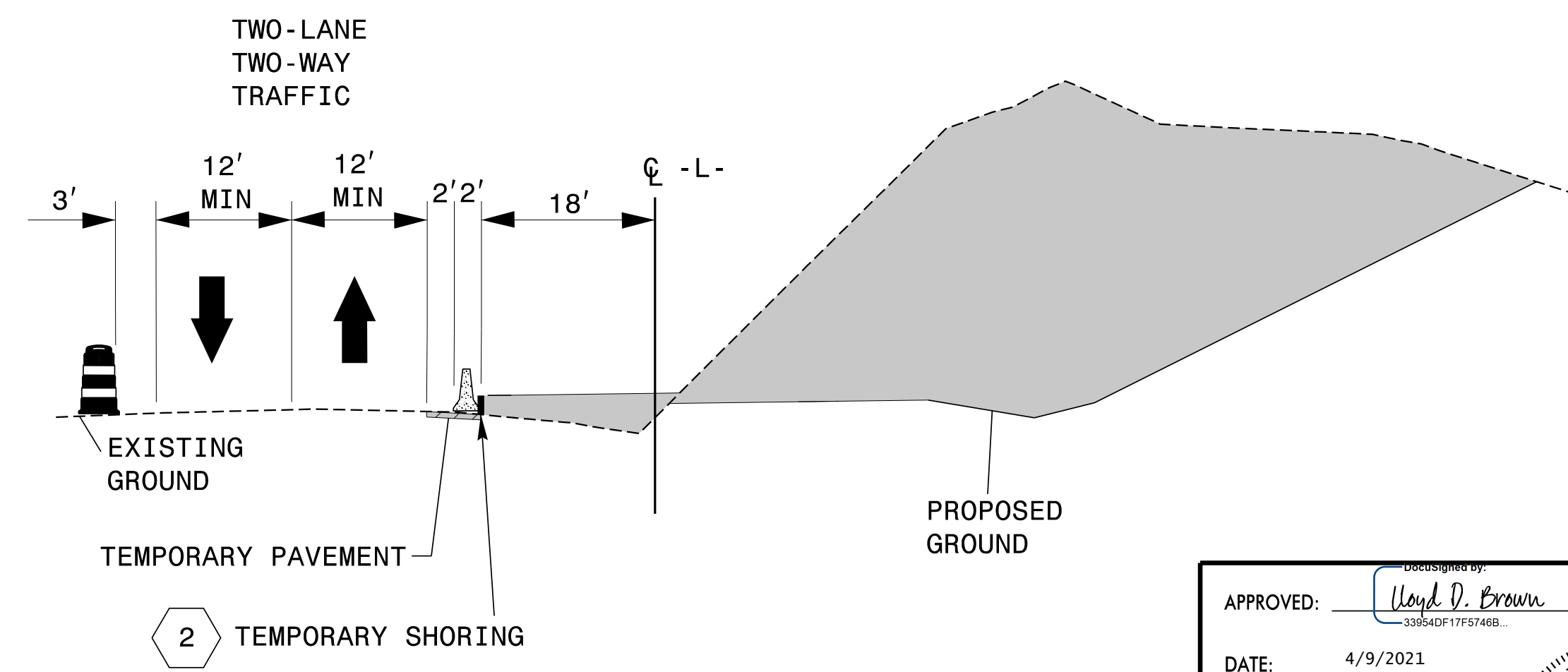
SECTION A-A

36+00



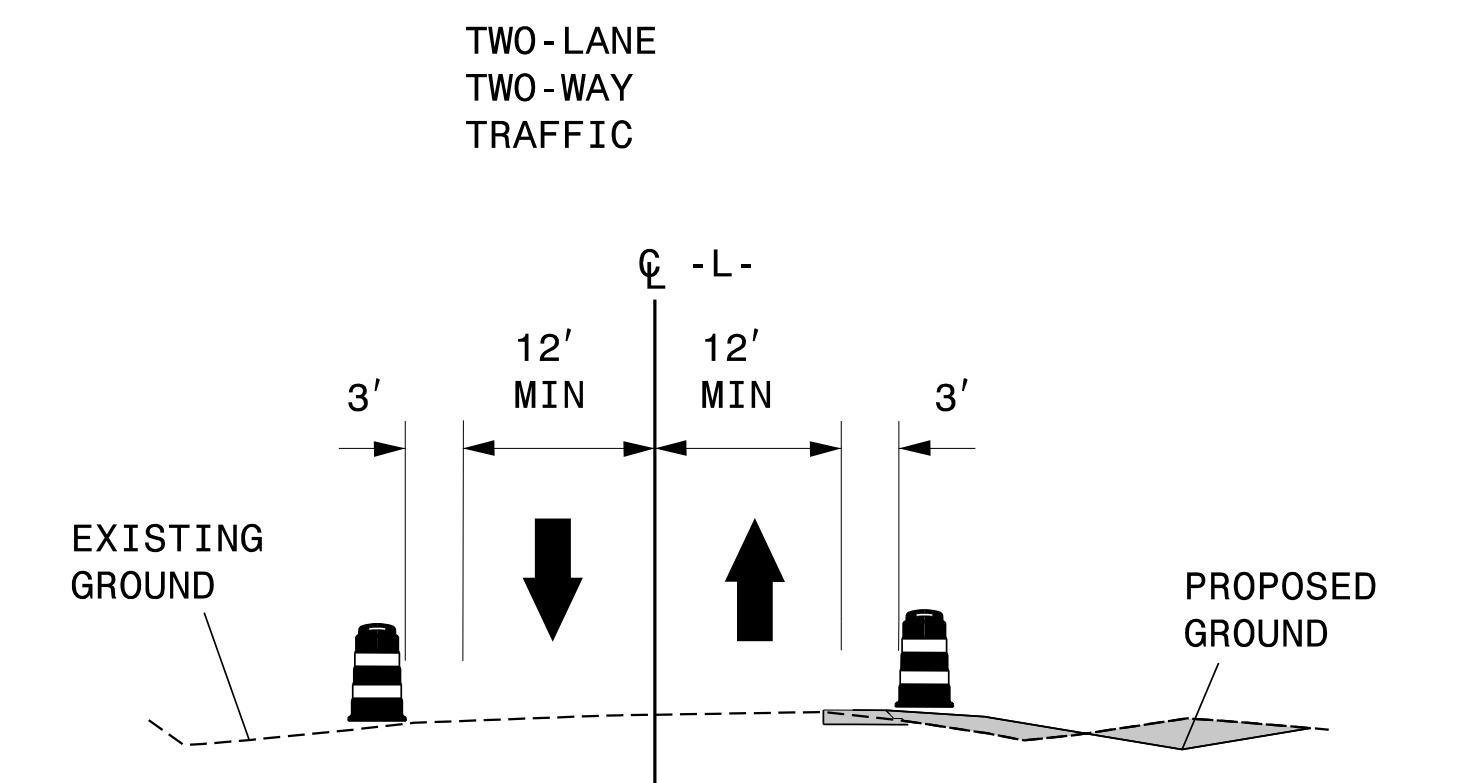
SECTION B-B

40+00



SECTION C-C

44+00



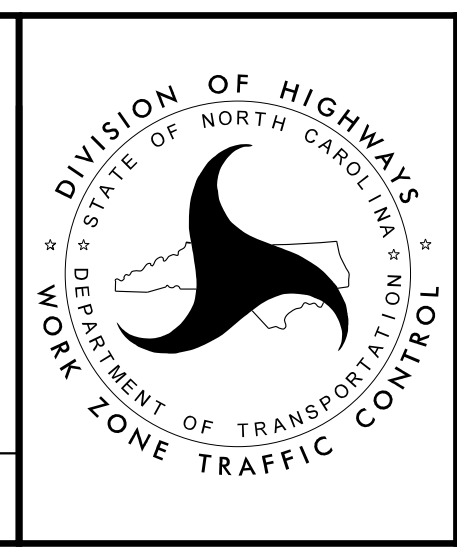
4/9/2021 10:00:39 PM
 ...B4407-TMP-7.dgn
 User: samfitzpatrick

APPROVED: *Lloyd D. Brown*
 DATE: 4/9/2021

SEAL

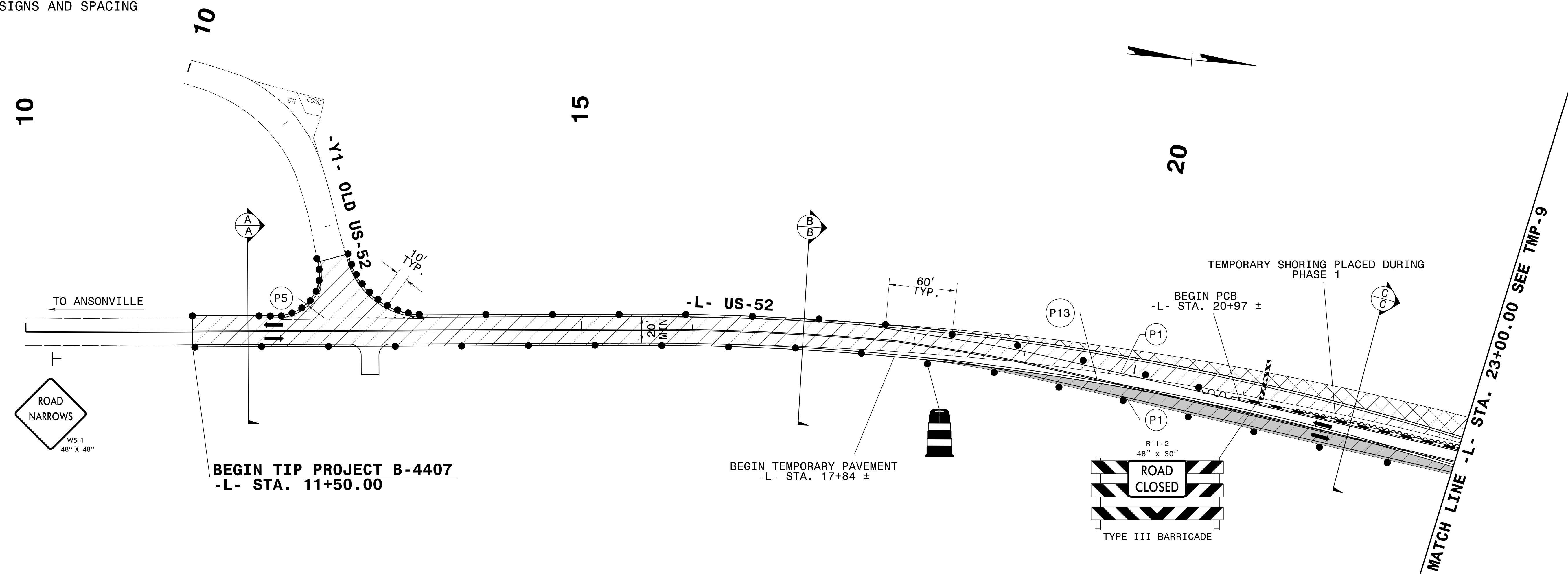
PROFESSIONAL SEAL
 20119
 ENGINEER
 LLOYD D. BROWN

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TEMPORARY TRAFFIC CONTROL PHASE I
 DETAIL

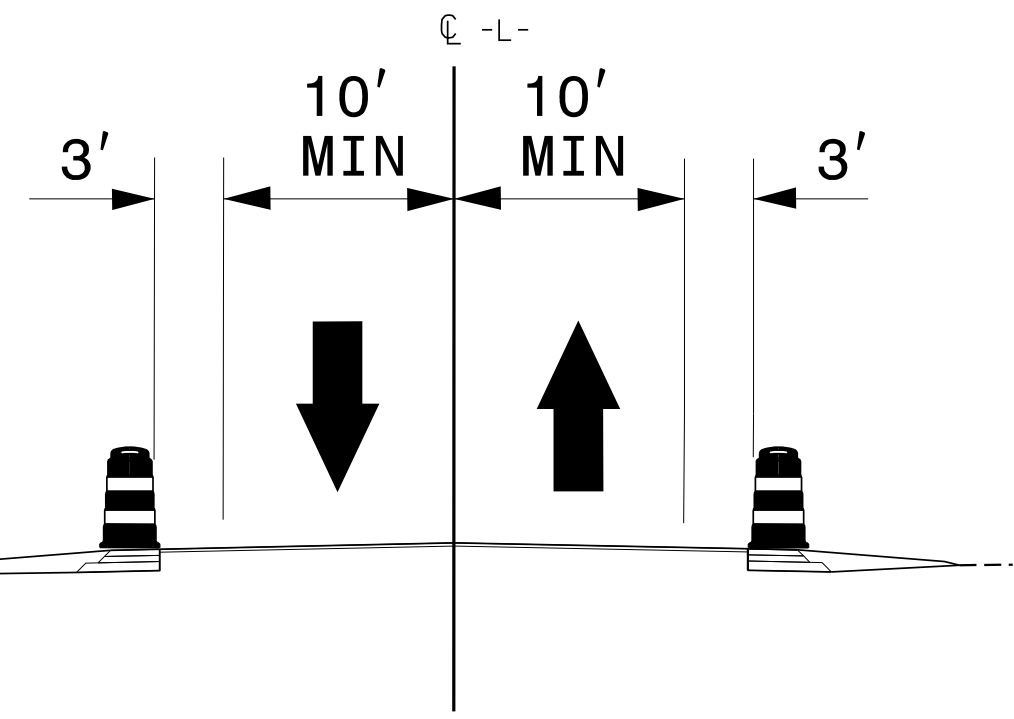
NOTE: SEE RSD 1101.01 SHEET 3
OF 3 AND RSD 1101.11 SHEET
4 OF 4 FOR ADVANCED WARNING
SIGNS AND SPACING



SECTION A-A

12+00

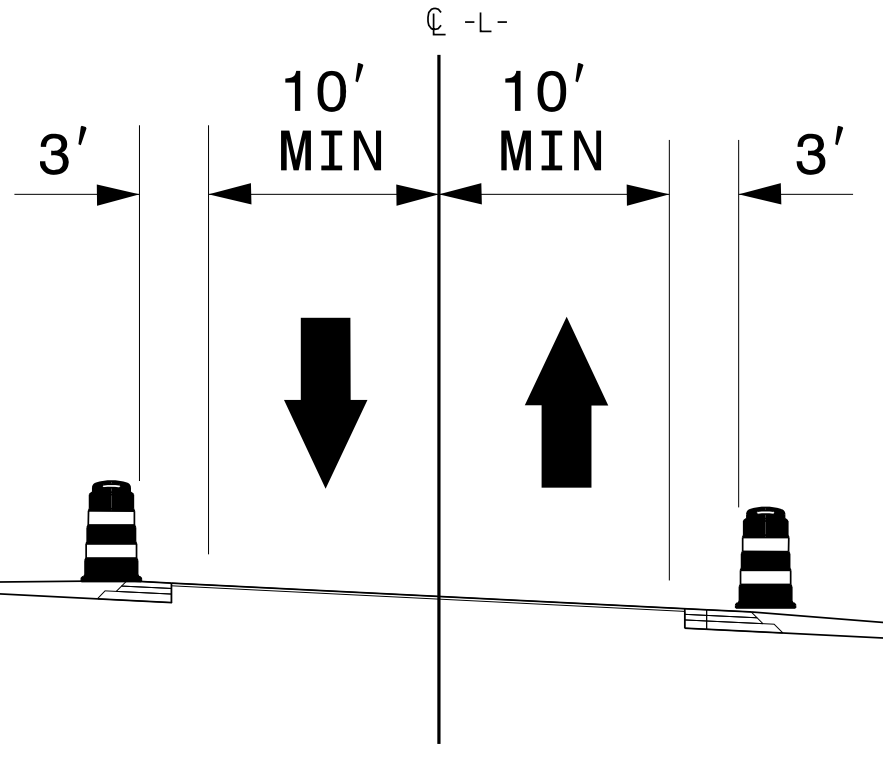
TWO-LANE
TWO-WAY
TRAFFIC



SECTION B-B

17+00

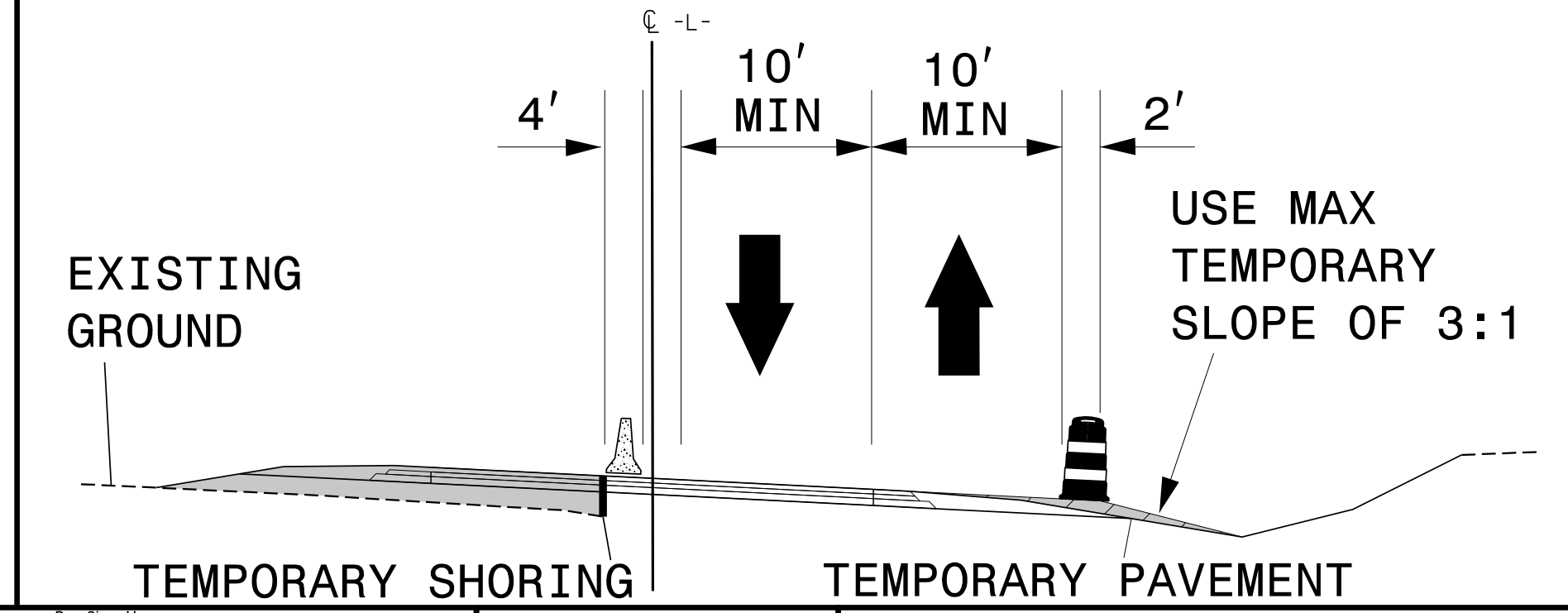
TWO-LANE
TWO-WAY
TRAFFIC



SECTION C-C

22+00

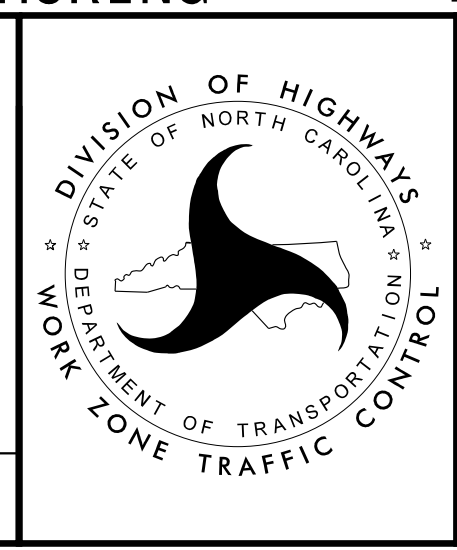
TWO-LANE
TWO-WAY
TRAFFIC



APPROVED: *Lloyd D. Brown*
DATE: 4/9/2021

SEAL

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



TEMPORARY TRAFFIC CONTROL PHASE II DETAIL

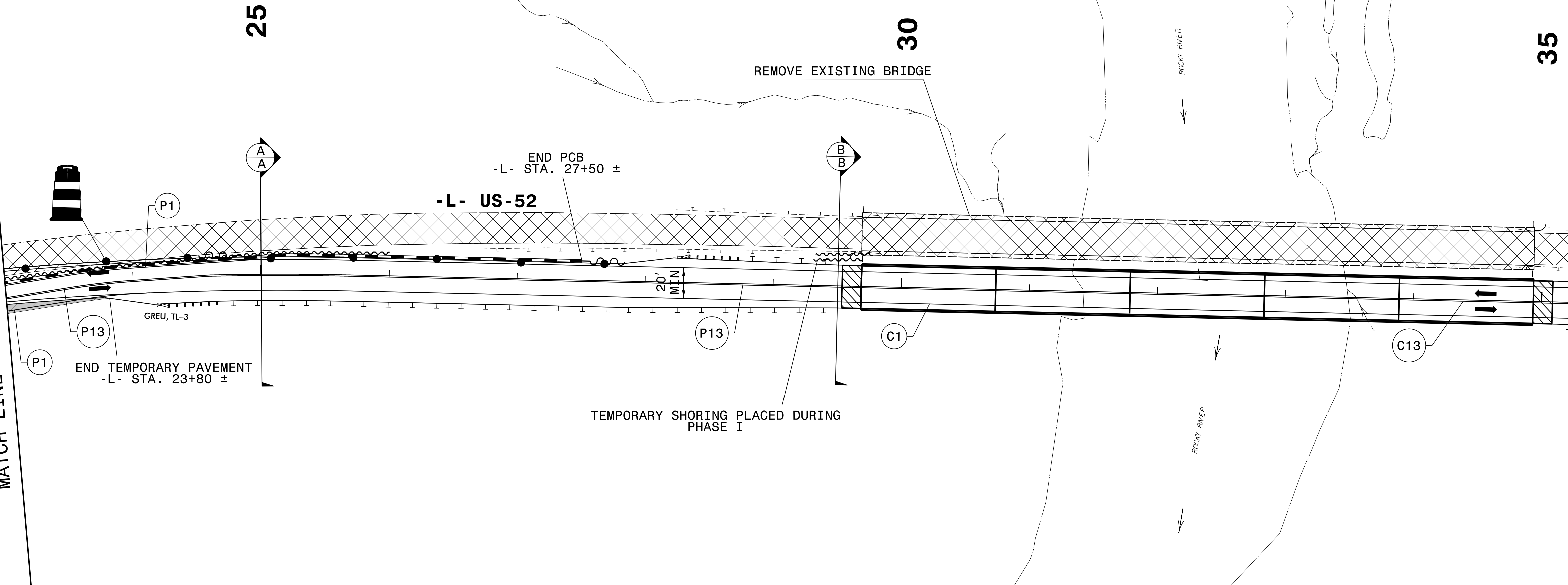
4/9/2021 2:30:18 PM
...B4407_TMP-8.dgn
User:cmfitzpatrick

NOTE: SEE RSD 1101.01 SHEET 3 OF 3 FOR ADVANCED WARNING SIGNS AND SPACING

PROJ. REFERENCE NO.	SHEET NO.
B-4407	TMP-9

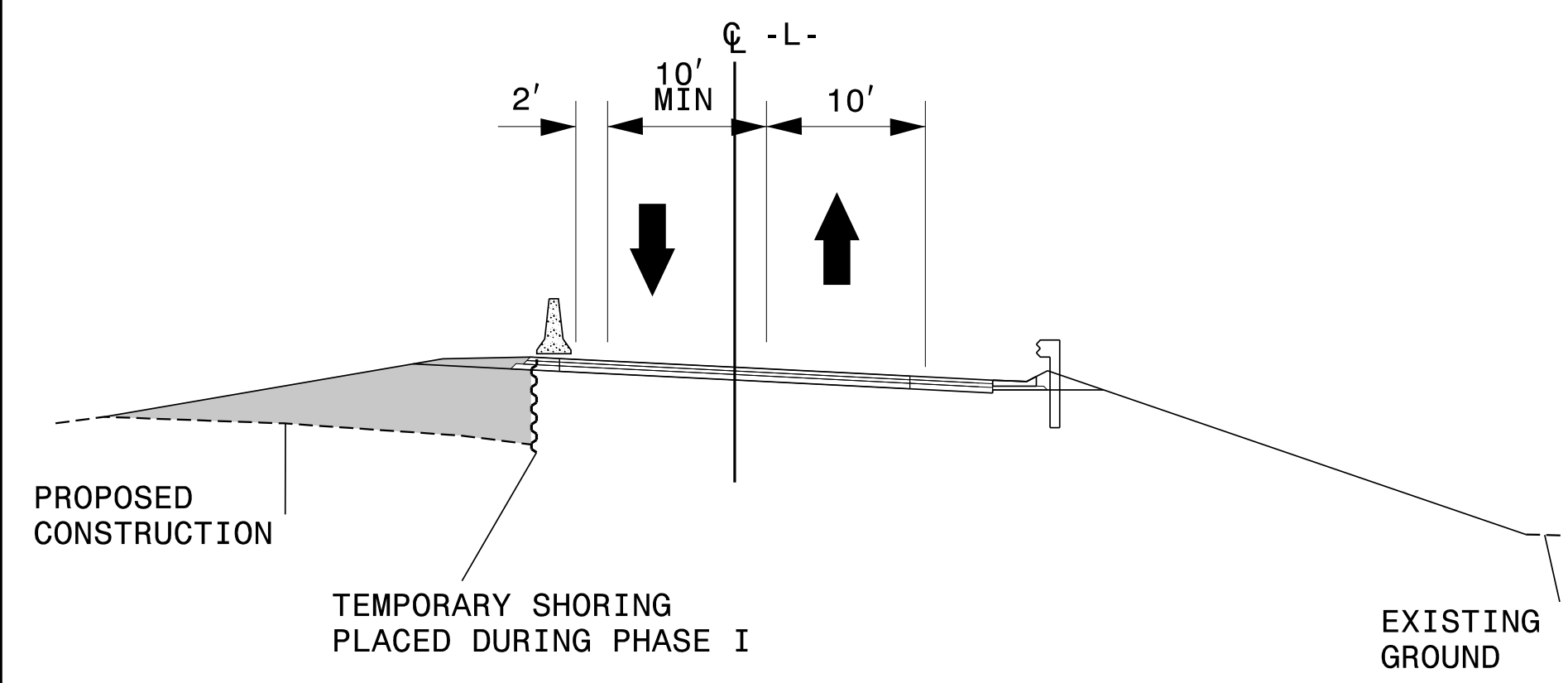
MATCH LINE -L- STA. 23+00.00 SEE TMP-8

MATCH LINE -L- STA. 35+50.00 SEE TMP-10



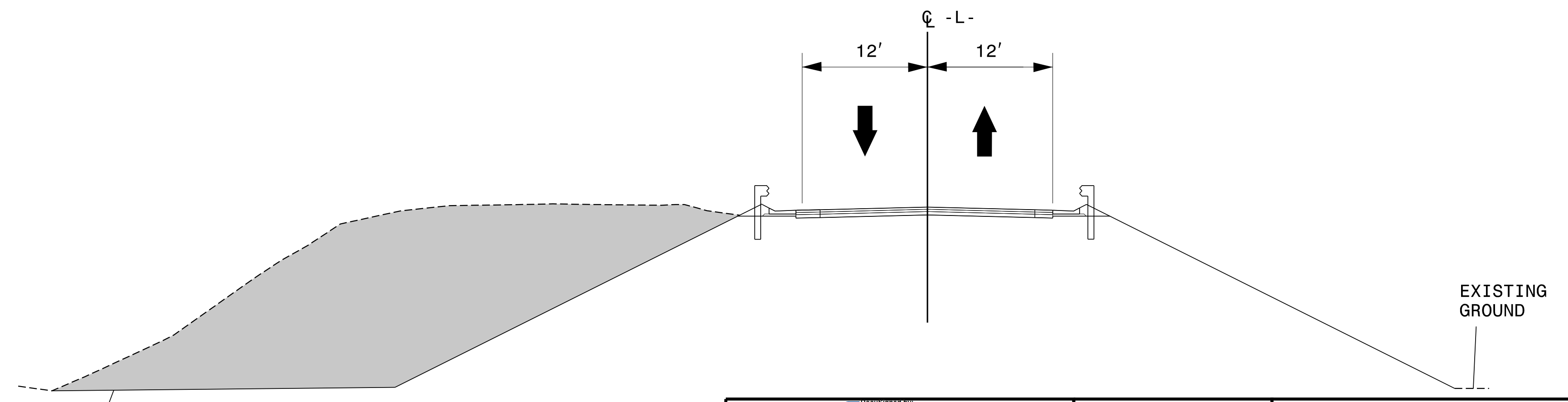
SECTION A-A

25+00



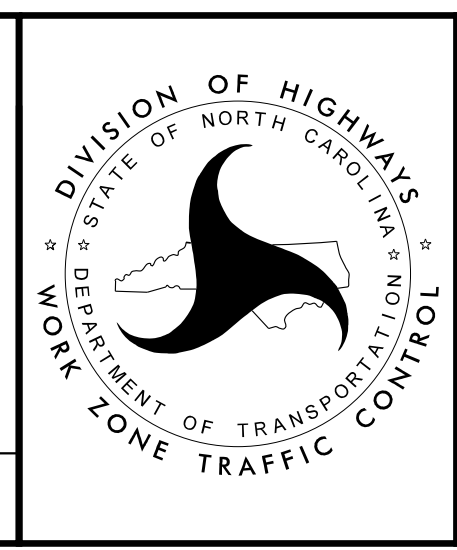
SECTION B-B

29+50



4/9/2021 10:32:26 PM
...B4407_TMP-9.dgn
User:cmfitzpattick

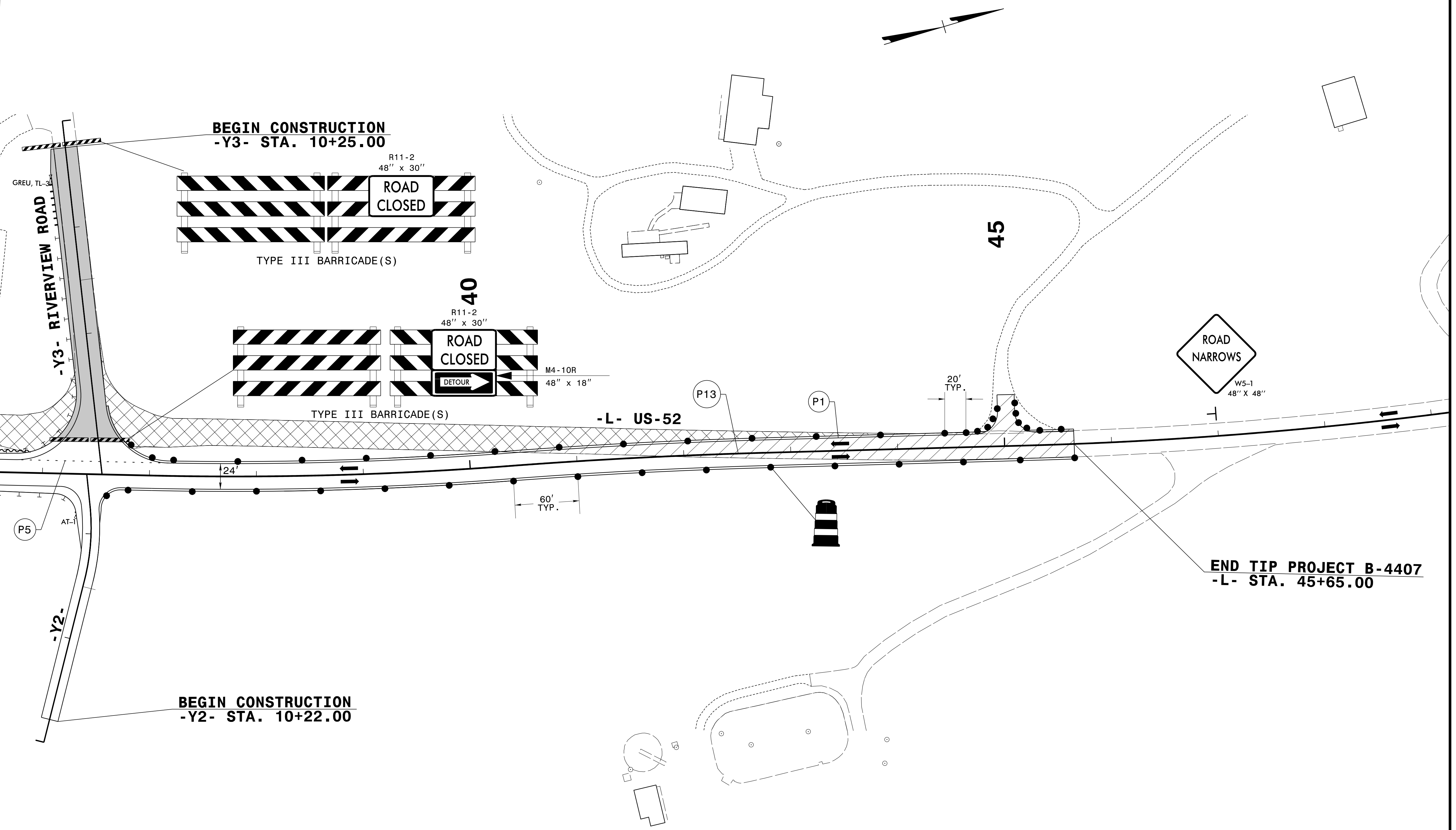
APPROVED: *Lloyd D. Brown*
 DATE: 4/9/2021
 SEAL
 DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



TEMPORARY TRAFFIC CONTROL PHASE II DETAIL

NOTE: SEE RSD 1101.01 SHEET 3
OF 3 AND RSD 1101.11 SHEET
4 OF 4 FOR ADVANCED WARNING
SIGNS AND SPACING

MATCH LINE -L- STA. 35+50.00 SEE TMP-9



BEGIN CONSTRUCTION
-Y2- STA. 10+22.00

BEGIN CONSTRUCTION
-Y3- STA. 10+25.00

END TIP PROJECT B-4407
-L- STA. 45+65.00

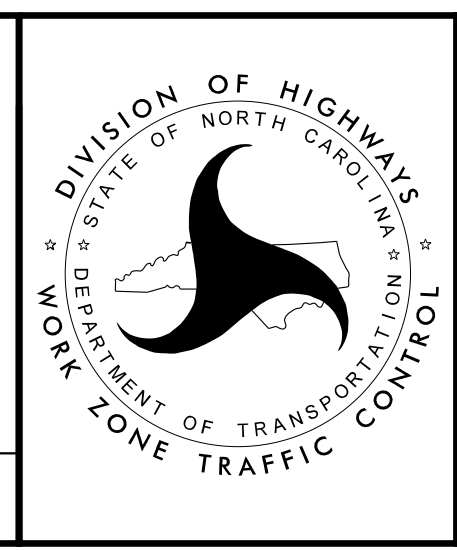
NOTE: SEE SHEET TMP-3 AND TMP-4
FOR OFFSITE DETOUR SIGNING

4/9/2021 2:34:02 PM
...B4407-TMP-10.dgn
User:cmfitzpatrick

APPROVED: *Lloyd D. Brown*
DATE: 4/9/2021

SEAL

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UNLESS ALL SIGNATURES COMPLETED



TEMPORARY TRAFFIC
CONTROL PHASE II
DETAIL