

09/08/22

See Sheet 1A For Index of Sheets
See Sheet 1B For Symbology Sheet

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

ROCKINGHAM COUNTY

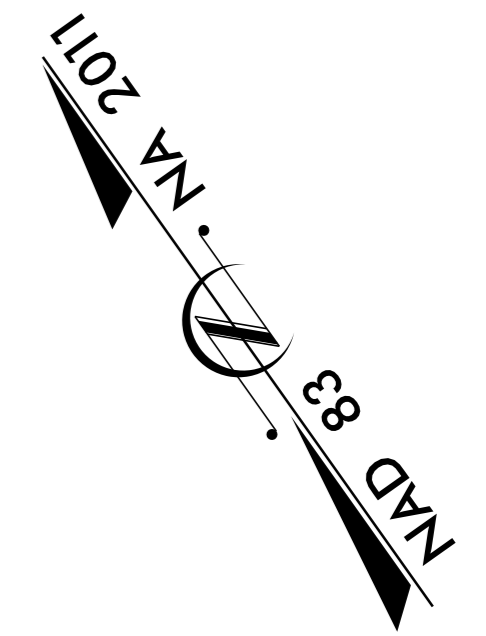
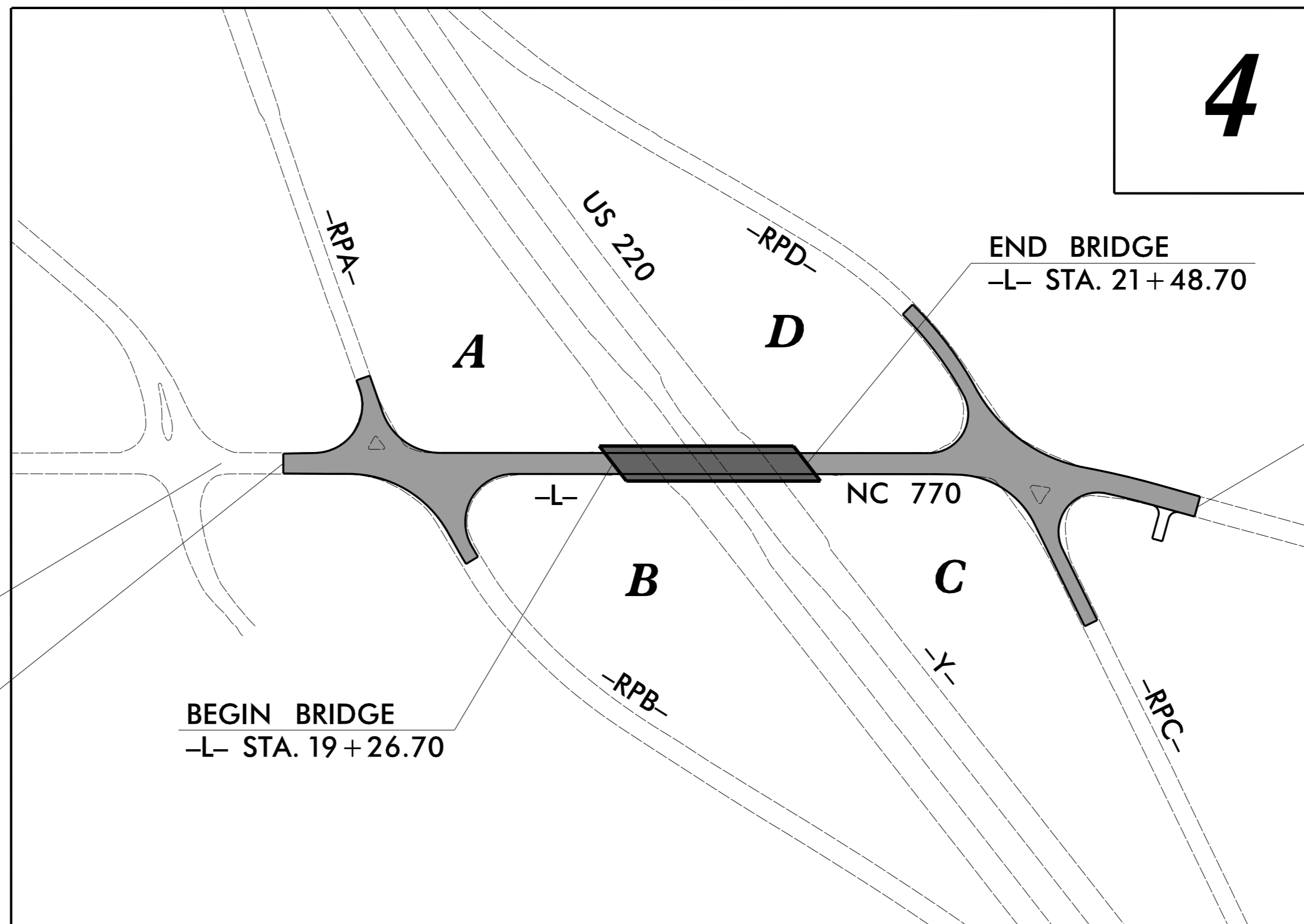
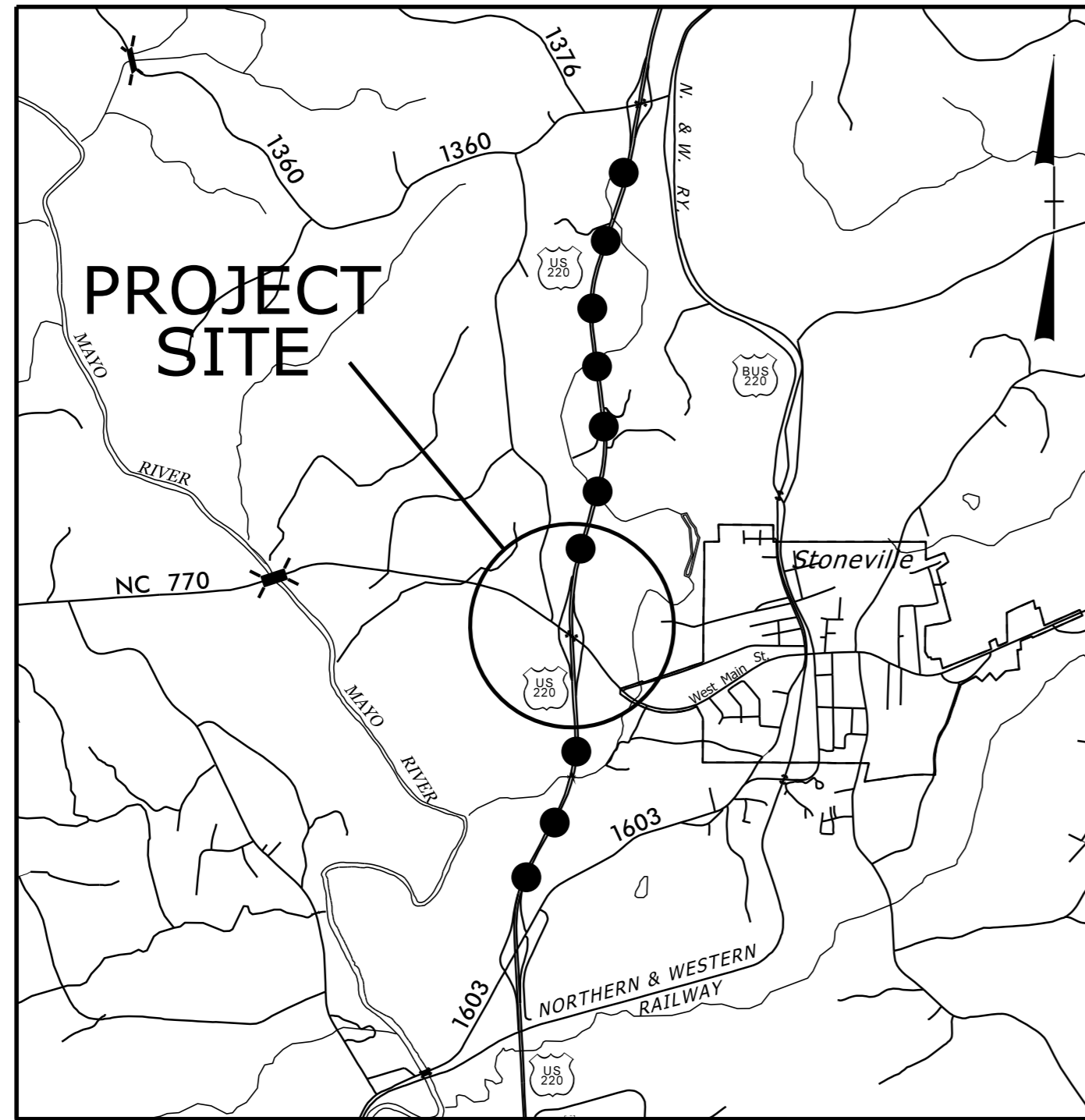
LOCATION: BRIDGE 780069 ON NC 770 OVER US 220

TYPE OF WORK: DRAINAGE, GRADING, PAVING, AND STRUCTURE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BR-0094	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
67094.1.1		PE	
67094.2.1		RW/UTIL	
67094.3.1		CONST	

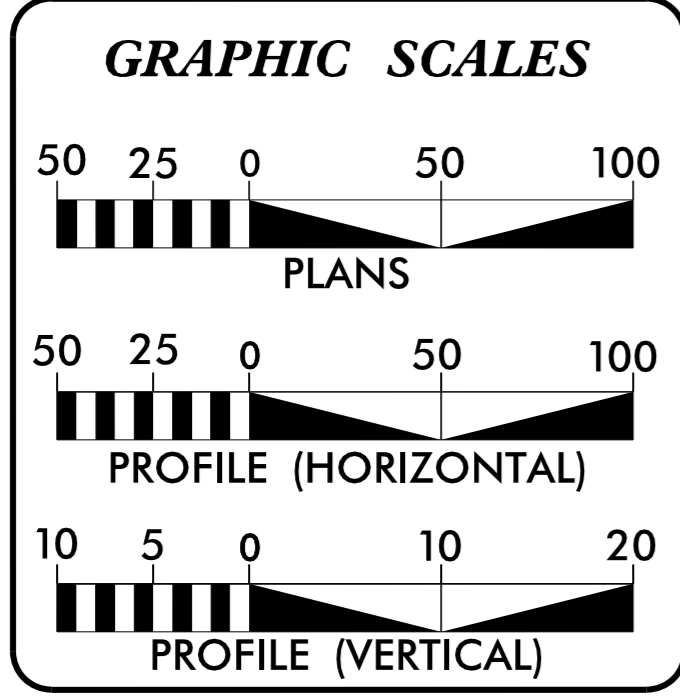
TIP PROJECT: BR-0094

CONTRACT: C204770



THIS IS A CONTROLLED ACCESS PROJECT WITH ACCESS BEING LIMITED TO INTERCHANGES.

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



DESIGN DATA

ADT 2023 =	3,554
ADT 2045 =	4,400
K =	9%
D =	75%
T =	10% *
V =	50 MPH
* TTST =	4% DUAL = 6%
FUNC CLASS =	MAJOR COLLECTOR
REGIONAL TIER	

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT BR-0094 =	0.157 MILES
LENGTH STRUCTURES TIP PROJECT BR-0094 =	0.042 MILES
TOTAL LENGTH TIP PROJECT BR-0094 =	0.199 MILES

Prepared in the Office of:
DIVISION OF HIGHWAYS
1000 Birch Ridge Dr., Raleigh NC, 27610

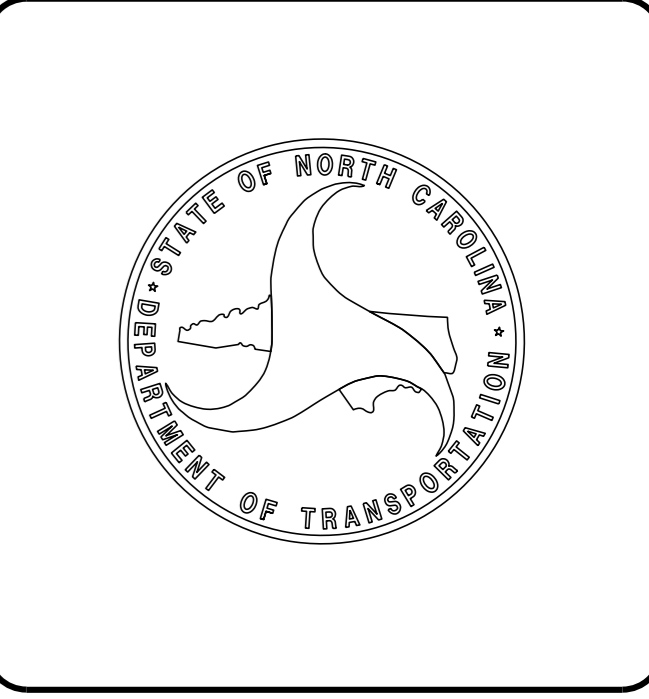
2018 STANDARD SPECIFICATIONS	KRISTY W. ALFORD, PE PROJECT MANAGER
RIGHT OF WAY DATE: JUNE 10, 2022	JORDAN A. WOODARD, PE ROADWAY GROUP LEAD
LETTING DATE: JANUARY 17, 2023	SHERRI E. CALHOUN, PE ROADWAY TEAM LEAD

HYDRAULICS ENGINEER

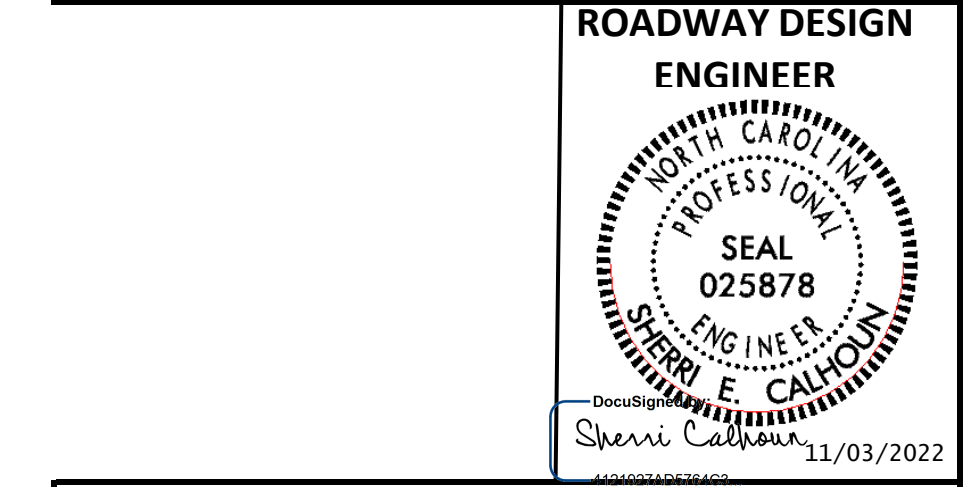
DocuSigned by:
Ernest J. Hahn
2088F87DF1E5431...
SIGNATURE: 10/24/2022

ROADWAY DESIGN ENGINEER

DocuSigned by:
Sherrin Calhoun
4121927AD5784C3...
SIGNATURE: 10/24/2022



11-OCT-2022 06:53
R:\Roadway\Proj\BR0094_Rdy_tsh.dgn
\$\$\$\$\$USERNAME\$\$\$\$\$



**DOCUMENT NOT CONSIDERED FINAL
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INDEX OF SHEETS

SHEET NO.	SHEET DESCRIPTION
1	Title Sheet
1A	Index of Sheets, General Notes and List of Standards
1B	Conventional Symbols
2A-1 thru 2A-2	Pavement Schedule and Typical Sections
2B-1	Intersection Detail
2C-1	Guardrail Installation Detail
3B-1	Roadway Summaries (Earthwork, Removal and Breaking of Existing Pavement, Chain Link Fence, Shoulder Berm Gutter, and Guardrail)
3D-1	Drainage Summary
3G-1	Geotechnical Summaries
4	Plan Sheet
5 thru 6	Profile Sheets
RW01 thru RW04	Right of Way Plans
TMP-1 thru TMP-3	Transportation Management Plans
PMP-1 thru PMP-2	Pavement Marking Plans
EC-1 thru EC-5	Erosion Control Plans
SIGN-1 thru SIGN-5	Signing Plans
X-1	Cross Section Index Sheet
X-1A	Cross Section Summary Sheet
X-2 thru X-12	Cross Sections
S-1 thru S-30	Structure Plans

GENERAL NOTES: 2018 SPECIFICATIONS

GRADING AND SURFACING OR RESURFACING AND WIDENING:

THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. WHERE NO GRADE LINES ARE SHOWN, THE PROFILES SHOWN DENOTE THE TOP ELEVATION OF THE EXISTING PAVEMENT ALONG THE CENTER LINE OF SURVEY ON WHICH THE PROPOSED RESURFACING WILL BE PLACED. GRADE LINES MAY BE ADJUSTED BY THE ENGINEER IN ORDER TO SECURE A PROPER TIE-IN.

CLEARING:

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.

SUPERELEVATION:

ALL CURVES ON THIS PROJECT SHALL BE SUPERELEVATED IN ACCORDANCE WITH STD. NO. 225.04 USING THE RATE OF SUPERELEVATION AND RUNOFF SHOWN ON THE PLANS. SUPERELEVATION IS TO BE REVOLVED ABOUT THE GRADE POINTS SHOWN ON THE TYPICAL SECTIONS.

SHOULDER CONSTRUCTION:

ASPHALT, EARTH, AND CONCRETE SHOULDER CONSTRUCTION ON THE HIGH SIDE OF SUPERELEVATED CURVES SHALL BE IN ACCORDANCE WITH STD. NO. 560.01

SIDE ROADS:

THE CONTRACTOR WILL BE REQUIRED TO DO ALL NECESSARY WORK TO PROVIDE SUITABLE CONNECTIONS WITH ALL ROADS, STREETS, AND DRIVES ENTERING THIS PROJECT. THIS WORK WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR THE PARTICULAR ITEMS INVOLVED.

SUBSURFACE DRAINS:

SUBSURFACE DRAINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 815.02 AT LOCATIONS DIRECTED BY THE ENGINEER.

GUARDRAIL:

THE GUARDRAIL LOCATIONS SHOWN ON THE PLANS MAY BE ADJUSTED DURING CONSTRUCTION AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHOULD CONSULT WITH THE ENGINEER PRIOR TO ORDERING GUARDRAIL MATERIAL.

TEMPORARY SHORING:

SHORING REQUIRED FOR THE MAINTENANCE OF TRAFFIC WILL BE PAID FOR AS "EXTRA WORK" IN ACCORDANCE WITH SECTION 104-7.

END BENTS:

THE ENGINEER SHALL CHECK THE STRUCTURE END BENT PLANS, DETAILS, AND CROSS-SECTION PRIOR TO SETTING OF THE SLOPE STAKES FOR THE EMBANKMENT OR EXCAVATION APPROACHING A BRIDGE.

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE DUKE ENERGY
ENERGY UNITED
TOWN OF STONEVILLE
LUMEN
CHARTER
MCNC COMMUNICATIONS

2018 ROADWAY ENGLISH STANDARD DRAWINGS

The following Roadway Standards as appear in "Roadway Standard Drawings" Highway Design Branch - 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
DIVISION 2 - EARTHWORK	
200.02	Method of Clearing - Method II
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation
DIVISION 4 - MAJOR STRUCTURES	
422.02	Bridge Approach Fills - Type II Modified Approach Fill
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
DIVISION 6 - ASPHALT BASES AND PAVEMENTS	
610.03	Guide for Paving Shoulders Under Bridges - Method III
654.01	Pavement Repairs
665.01	Asphalt Shoulders - Milled Rumble Strips
DIVISION 8 - INCIDENTALS	
815.02	Subsurface Drain
840.00	Concrete Base Pad for Drainage Structures
840.18	Concrete Grated Drop Inlet Type 'B' - 12" thru 36" Pipe
840.27	Brick Grated Drop Inlet Type 'B' - 12" thru 36" Pipe
840.29	Frames and Narrow Slot Flat Grates
840.72	Pipe Collar
846.01	Concrete Curb, Gutter and Curb & Gutter
846.04	Drop Inlet Installation in Shoulder Berm Gutter
852.01	Concrete Islands
862.01	Guardrail Placement
862.02	Guardrail Installation (Special Detail for Sheet 6 of 8)
862.04	Anchoring End of Guardrail - B-77 and B-83 Anchor Units
866.01	Chain Link Fence - 4', 5' and 6' High Fence
876.02	Guide for Rip Rap at Pipe Outlets
876.04	Drainage Ditches with Class 'B' Rip Rap

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS
CONVENTIONAL PLAN SHEET SYMBOLS

Note: Not to Scale

BOUNDARIES AND PROPERTY:

Table listing symbols for boundaries and property: State Line, County Line, Township Line, City Line, Reservation Line, Property Line, Existing Iron Pin (EIP), Computed Property Corner, Existing Concrete Monument (ECM), Parcel/Sequence Number, Existing Fence Line, Proposed Woven Wire Fence, Proposed Chain Link Fence, Proposed Barbed Wire Fence, Existing Wetland Boundary, Proposed Wetland Boundary, Existing Endangered Animal Boundary, Existing Endangered Plant Boundary, Existing Historic Property Boundary, Known Contamination Area: Soil, Potential Contamination Area: Soil, Known Contamination Area: Water, Potential Contamination Area: Water, Contaminated Site: Known or Potential.

BUILDINGS AND OTHER CULTURE:

Table listing symbols for buildings and other culture: Gas Pump Vent or U/G Tank Cap, Sign, Well, Small Mine, Foundation, Area Outline, Cemetery, Building, School, Church, Dam.

HYDROLOGY:

Table listing symbols for hydrology: Stream or Body of Water, Hydro, Pool or Reservoir, Jurisdictional Stream, Buffer Zone 1, Buffer Zone 2, Flow Arrow, Disappearing Stream, Spring, Wetland, Proposed Lateral, Tail, Head Ditch, False Sump.

RAILROADS:

Table listing symbols for railroads: Standard Gauge, RR Signal Milepost, Switch, RR Abandoned, RR Dismantled.

RIGHT OF WAY & PROJECT CONTROL:

Table listing symbols for right of way and project control: Primary Horiz Control Point, Primary Horiz and Vert Control Point, Secondary Horiz and Vert Control Point, Vertical Benchmark, Existing Right of Way Monument, Proposed Right of Way Monument (Rebar and Cap), Proposed Right of Way Monument (Concrete), Existing Permanent Easement Monument, Proposed Permanent Easement Monument (Rebar and Cap), Existing C/A Monument, Proposed C/A Monument (Rebar and Cap), Proposed C/A Monument (Concrete), Existing Right of Way Line, Proposed Right of Way Line, Existing Control of Access Line, Proposed Control of Access Line, Proposed ROW and CA Line, Existing Easement Line, Proposed Temporary Construction Easement, Proposed Temporary Drainage Easement, Proposed Permanent Drainage Easement, Proposed Permanent Drainage/Utility Easement, Proposed Permanent Utility Easement, Proposed Temporary Utility Easement, Proposed Aerial Utility Easement.

ROADS AND RELATED FEATURES:

Table listing symbols for roads and related features: Existing Edge of Pavement, Existing Curb, Proposed Slope Stakes Cut, Proposed Slope Stakes Fill, Proposed Curb Ramp, Existing Metal Guardrail, Proposed Guardrail, Existing Cable Guiderail, Proposed Cable Guiderail, Equality Symbol, Pavement Removal, VEGETATION: Single Tree, Single Shrub, Hedge.

Table listing symbols for woods, orchard, and vineyard: Woods Line, Orchard, Vineyard.

EXISTING STRUCTURES:

Table listing symbols for existing structures: MAJOR: Bridge, Tunnel or Box Culvert, Bridge Wing Wall, Head Wall and End Wall; MINOR: Head and End Wall, Pipe Culvert, Footbridge, Drainage Box: Catch Basin, DI or JB, Paved Ditch Gutter, Storm Sewer Manhole, Storm Sewer.

UTILITIES:

* SUE - Subsurface Utility Engineering
LOS - Level of Service - A,B,C or D (Accuracy)

POWER:

Table listing symbols for power: Existing Power Pole, Proposed Power Pole, Existing Joint Use Pole, Proposed Joint Use Pole, Power Manhole, Power Line Tower, Power Transformer, U/G Power Cable Hand Hole, H-Frame Pole, U/G Power Line Test Hole (SUE - LOS A)*, U/G Power Line (SUE - LOS B)*, U/G Power Line (SUE - LOS C)*, U/G Power Line (SUE - LOS D)*.

TELEPHONE:

Table listing symbols for telephone: Existing Telephone Pole, Proposed Telephone Pole, Telephone Manhole, Telephone Pedestal, Telephone Cell Tower, U/G Telephone Cable Hand Hole, U/G Telephone Test Hole (SUE - LOS A)*, U/G Telephone Cable (SUE - LOS B)*, U/G Telephone Cable (SUE - LOS C)*, U/G Telephone Cable (SUE - LOS D)*, U/G Telephone Conduit (SUE - LOS B)*, U/G Telephone Conduit (SUE - LOS C)*, U/G Telephone Conduit (SUE - LOS D)*, U/G Fiber Optics Cable (SUE - LOS B)*, U/G Fiber Optics Cable (SUE - LOS C)*, U/G Fiber Optics Cable (SUE - LOS D)*.

WATER:

Table listing symbols for water: Water Manhole, Water Meter, Water Valve, Water Hydrant, U/G Water Line Test Hole (SUE - LOS A)*, U/G Water Line (SUE - LOS B)*, U/G Water Line (SUE - LOS C)*, U/G Water Line (SUE - LOS D)*, Above Ground Water Line.

TV:

Table listing symbols for TV: TV Pedestal, TV Tower, U/G TV Cable Hand Hole, U/G TV Test Hole (SUE - LOS A)*, U/G TV Cable (SUE - LOS B)*, U/G TV Cable (SUE - LOS C)*, U/G TV Cable (SUE - LOS D)*, U/G Fiber Optic Cable (SUE - LOS B)*, U/G Fiber Optic Cable (SUE - LOS C)*, U/G Fiber Optic Cable (SUE - LOS D)*.

GAS:

Table listing symbols for gas: Gas Valve, Gas Meter, U/G Gas Line Test Hole (SUE - LOS A)*, U/G Gas Line (SUE - LOS B)*, U/G Gas Line (SUE - LOS C)*, U/G Gas Line (SUE - LOS D)*, Above Ground Gas Line.

SANITARY SEWER:

Table listing symbols for sanitary sewer: Sanitary Sewer Manhole, Sanitary Sewer Cleanout, U/G Sanitary Sewer Line, Above Ground Sanitary Sewer, SS Force Main Line Test Hole (SUE - LOS A)*, SS Force Main Line (SUE - LOS B)*, SS Force Main Line (SUE - LOS C)*, SS Force Main Line (SUE - LOS D)*.

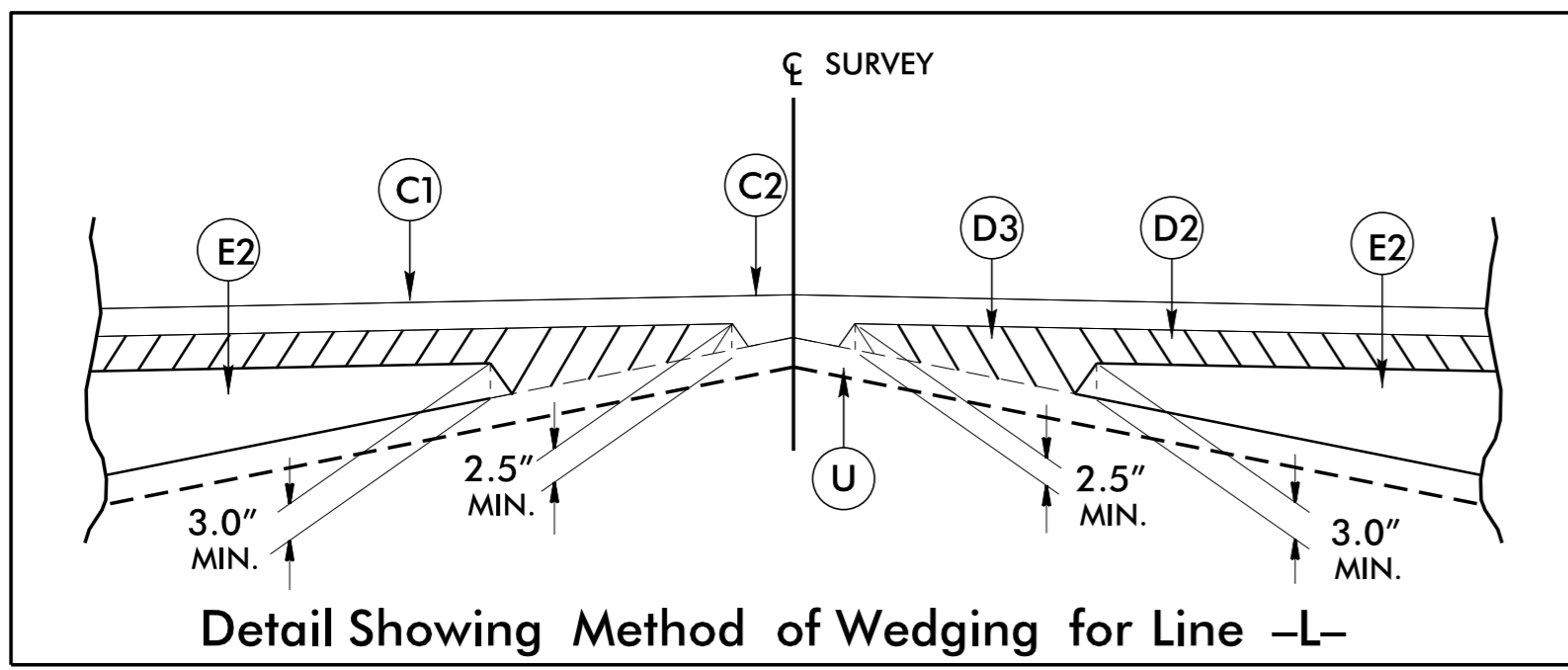
MISCELLANEOUS:

Table listing symbols for miscellaneous: Utility Pole, Utility Pole with Base, Utility Located Object, Utility Traffic Signal Box, Utility Unknown U/G Line (SUE - LOS B)*, U/G Tank; Water, Gas, Oil, Underground Storage Tank, Approx. Loc., A/G Tank; Water, Gas, Oil, Geoenvironmental Boring, Abandoned According to Utility Records, End of Information.

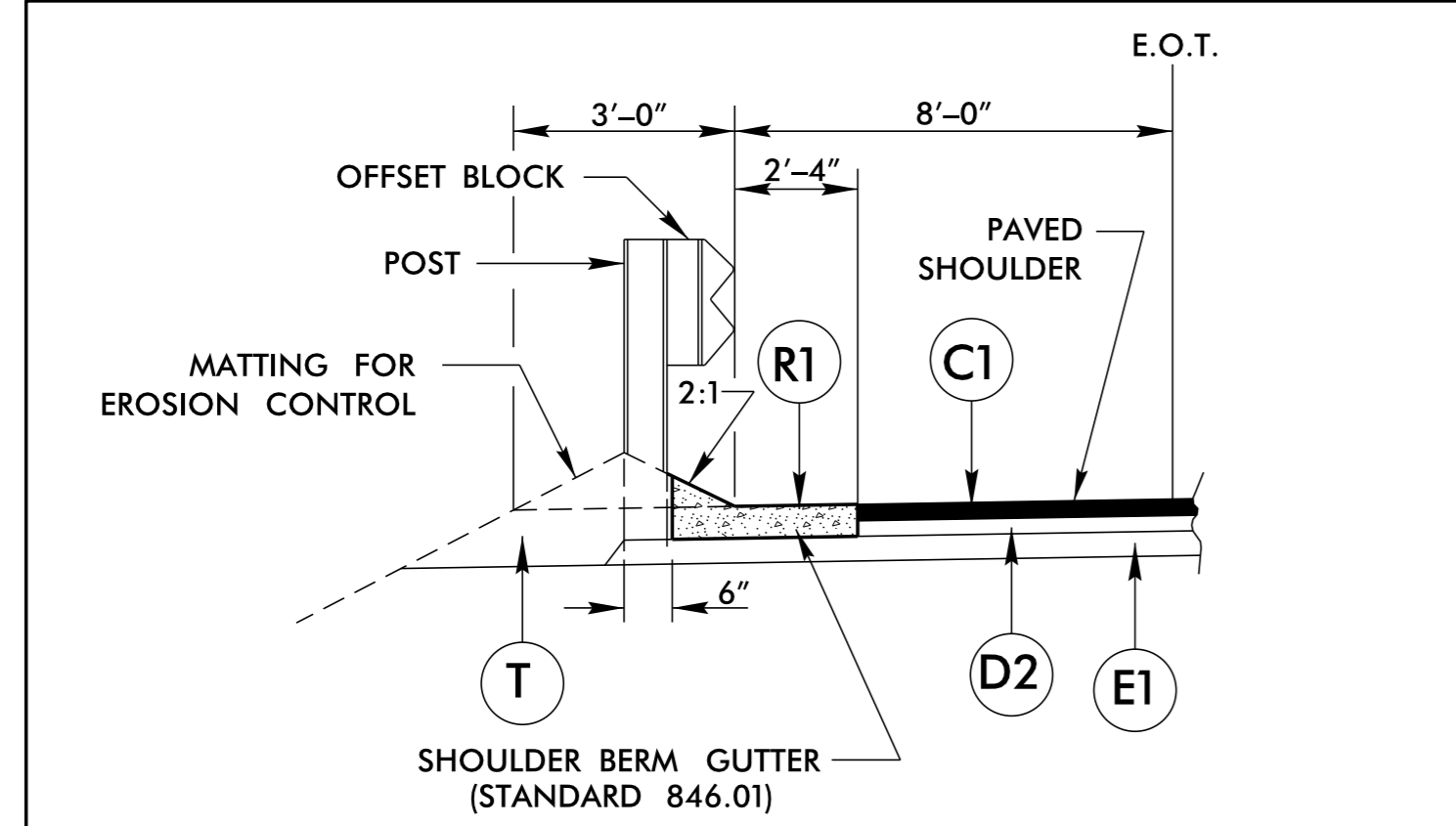
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FINAL PAVEMENT SCHEDULE	
C1	PROP. APPROX. 3.0" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1 1/2" IN DEPTH.
D1	PROP. APPROX. 2 1/2" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.
D2	PROP. APPROX. 4.0" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
D3	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 2 1/2" IN DEPTH OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 4.0" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5 1/2" IN DEPTH.
R1	SHOULDER BERM GUTTER.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
V	MILLING BITUMINOUS PAVEMENT. 1.5" DEPTH.
W	VARIABLE DEPTH ASPHALT PAVEMENT.

NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.



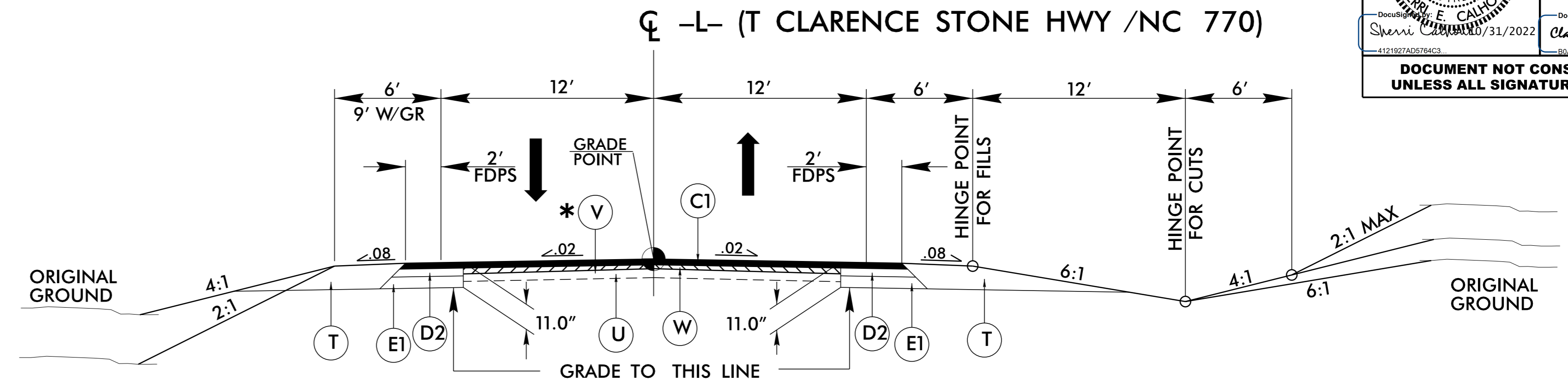
Detail Showing Method of Wedging for Line -L-



DETAIL SHOWING SHOULDER BERM GUTTER

USE WITH TYPICAL SECTION NO. 2
 -L- STA. 21+33.29 TO 21+70.00 LT
 -L- STA. 21+64.11 TO 22+00.00 RT

PROJECT REFERENCE NO. BR-0094	SHEET NO. 2A-1
ROADWAY DESIGN ENGINEER Sherrill C. ...	PAVEMENT DESIGN ENGINEER Clark S. Morrison
Professional Seal: SEAL 025878 Sherrill C. ... 10/31/2022	Professional Seal: SEAL 022896 Clark S. Morrison 1/02/2022
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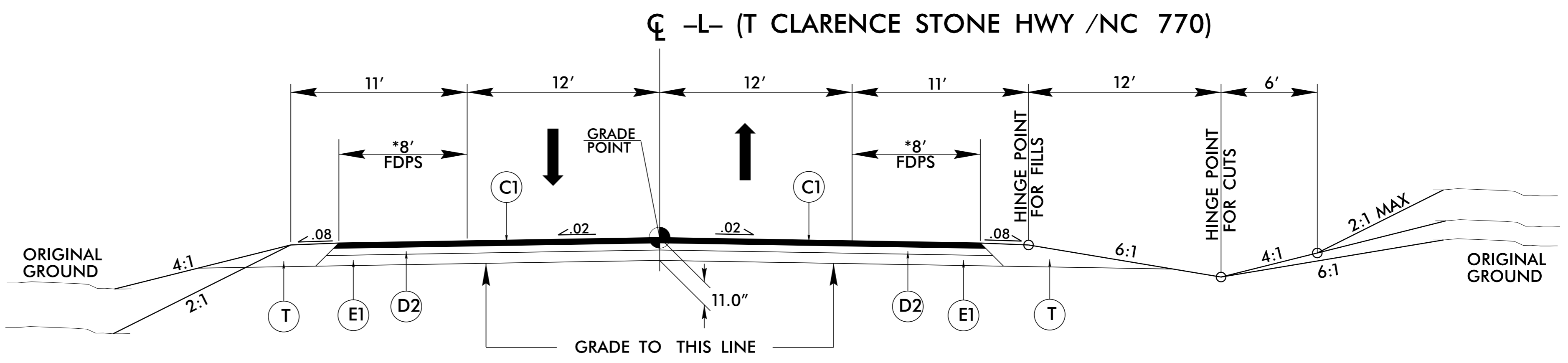


TYPICAL SECTION NO. 1

- L- STA. 15+50.00 TO -L- STA. 16+00.00
TRANSITION FROM EXISTING TO TYPICAL SECTION NO. 1
- L- STA. 16+00.00 TO -L- STA. 17+50.00
- L- STA. 23+25.00 TO -L- STA. 25+50.00
- L- STA. 25+50.00 TO -L- STA. 26+00.00
TRANSITION FROM TYPICAL SECTION NO. 1 TO EXISTING

*** MILLING LIMITS**

-L- STA. 15+50.00 TO STA. 16+51.89
 -L- STA. 25+72.23 TO STA. 26+00.00



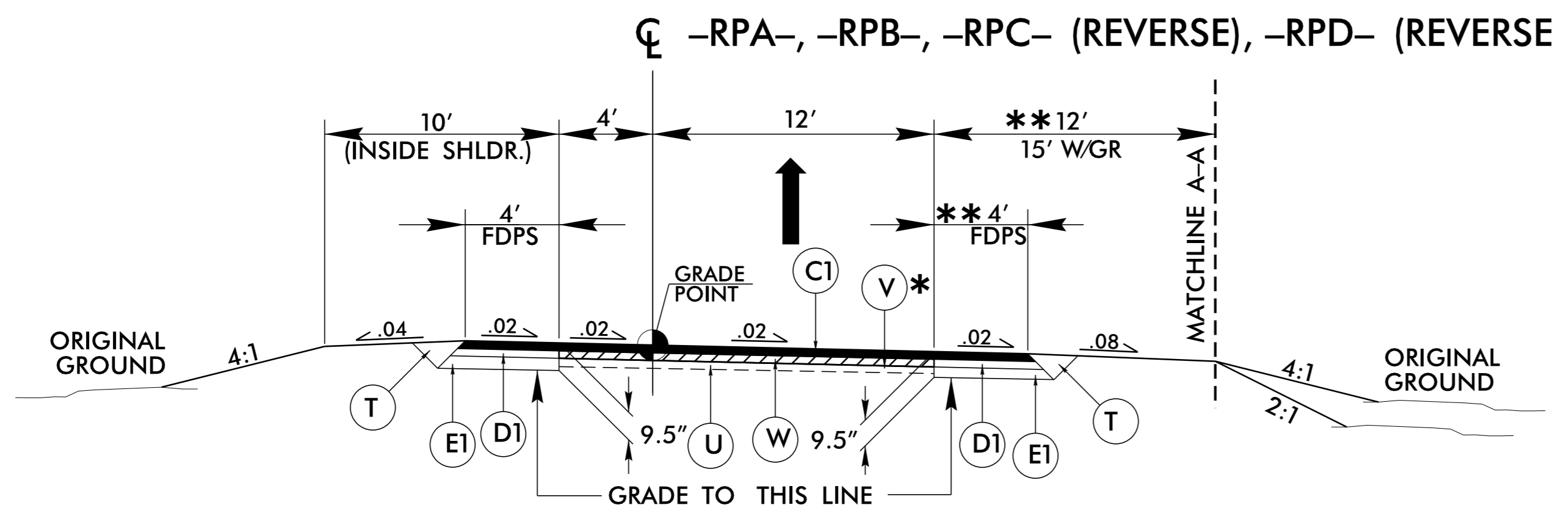
* PAVE TO FACE OF GUARDRAIL

TYPICAL SECTION NO. 2

- L- STA. 17+50.00 TO -L- STA. 19+26.70 (BEGIN BRIDGE)
- L- STA. 21+48.70 (END BRIDGE) TO -L- STA. 23+25.00

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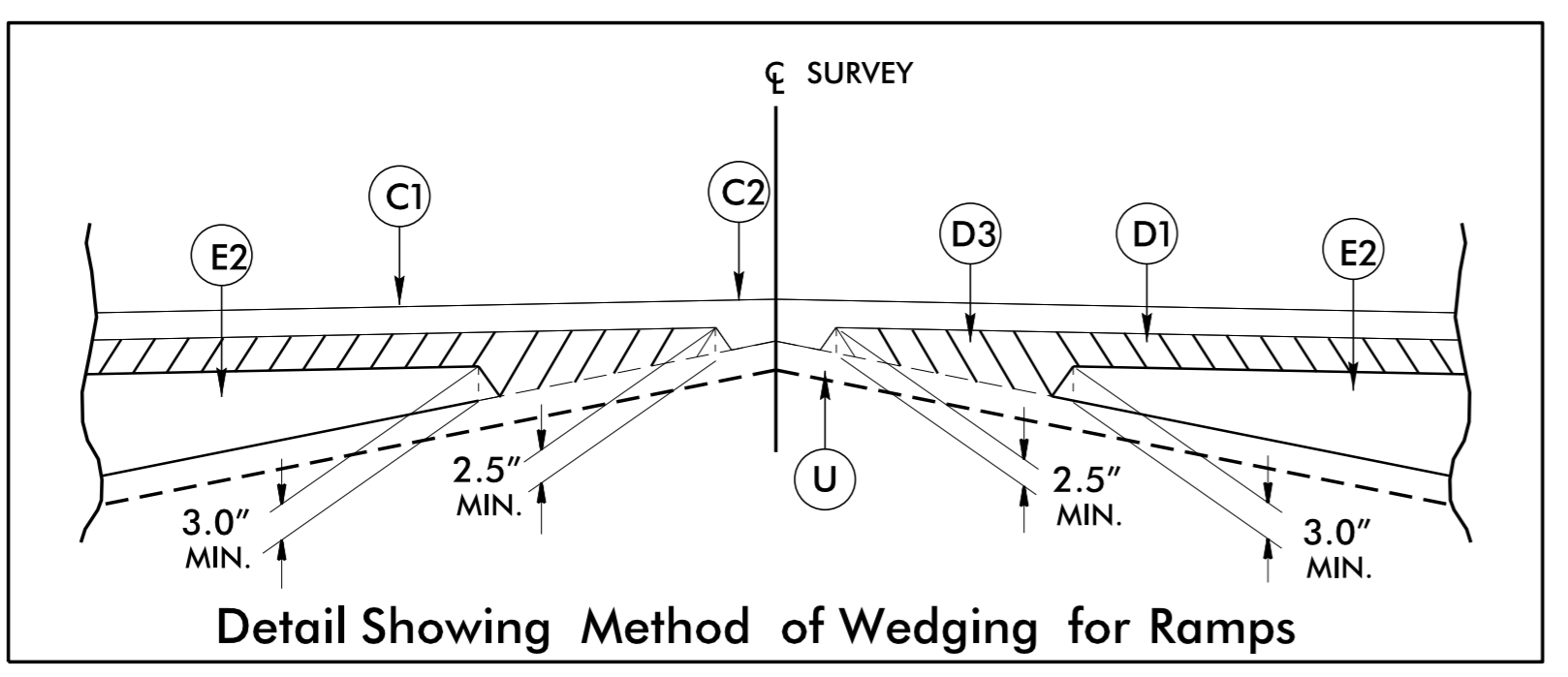
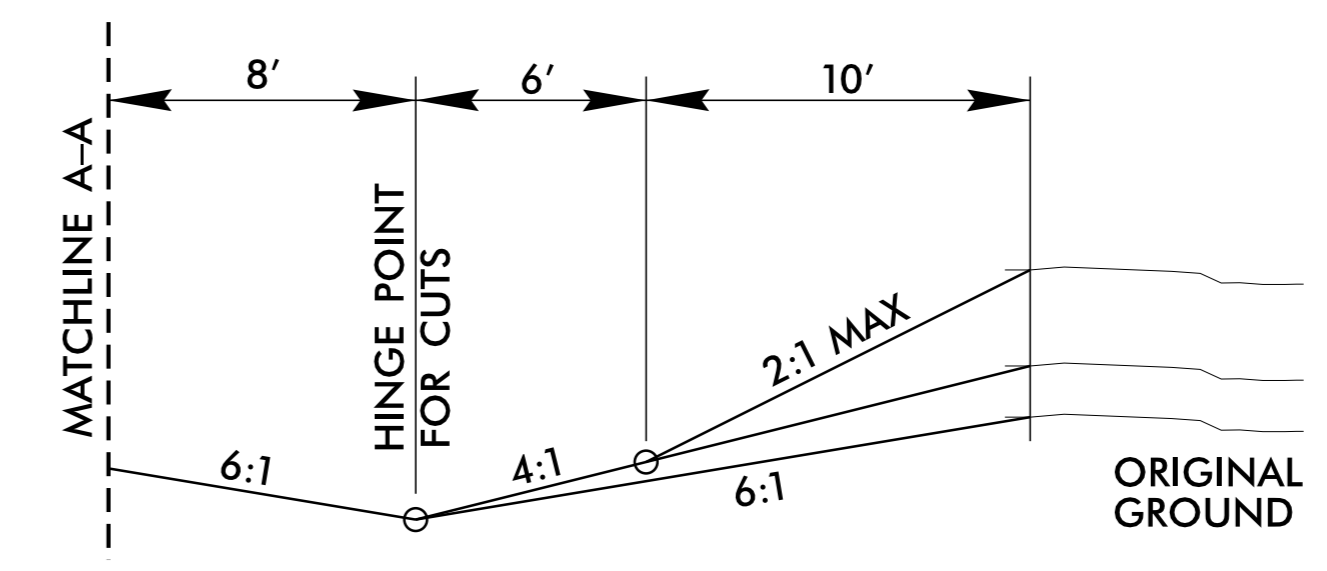


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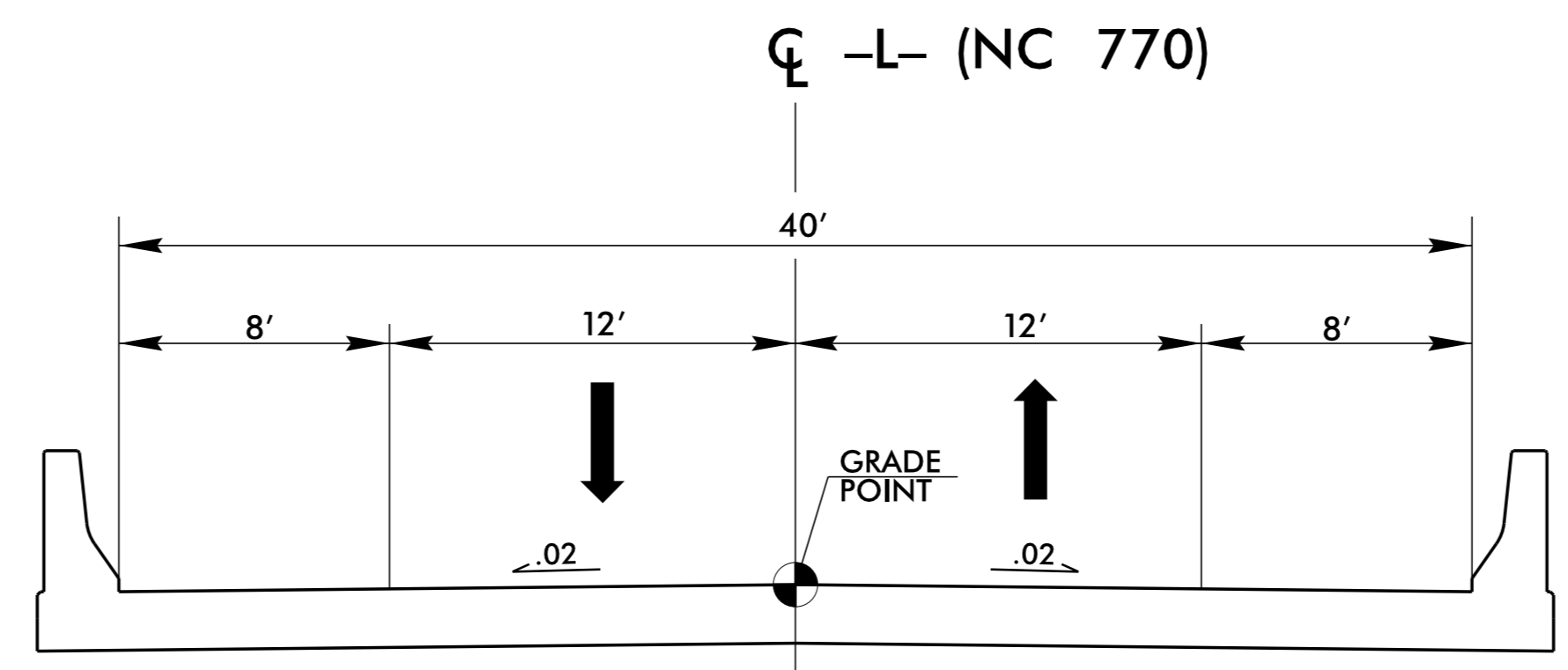
-RPA- STA. 15+25.00 TO STA. 16+17.59
 -RPB- STA. 10+13.77 TO STA. 11+25.00
 ** 14' SHOULDER, 12' FDPS
 -RPC- STA. 10+14.14 TO STA. 12+00.00 (REVERSE)
 -RPD- STA. 12+00.00 TO STA. 13+94.40 (REVERSE)
 ** 14' SHOULDER, 12' FDPS (REVERSE)

TYPICAL SECTION NO. 3A

-RPB- STA. 10+13.77 TO 10+50.00

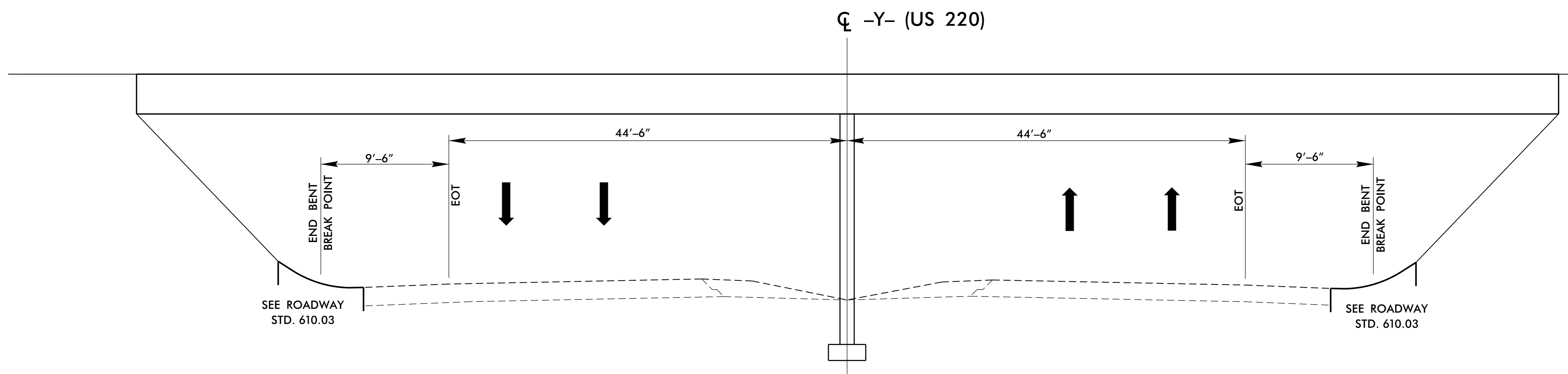


Detail Showing Method of Wedging for Ramps



TYPICAL SECTION ON STRUCTURE

*** MILLING LIMITS**
 -RPA- STA. 15+25.00 TO STA. 15+74.59
 -RPB- STA. 10+84.37 TO STA. 11+25.00
 -RPC- STA. 11+63.30 TO STA. 12+00.00
 -RPD- STA. 12+00.00 TO STA. 12+50.70

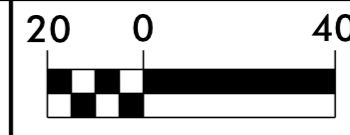


TYPICAL SECTION ON ROADWAY UNDER STRUCTURE

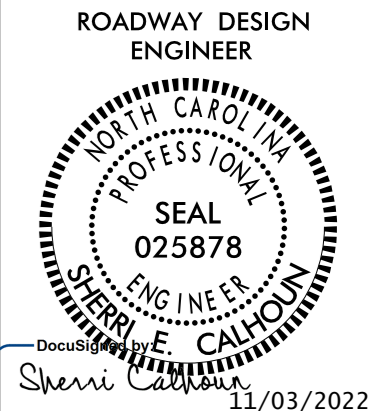
PROJECT REFERENCE NO. BR-0094	SHEET NO. 2A-2
ROADWAY DESIGN ENGINEER SEAL 025878 SHERI CALDWELL	PAVEMENT DESIGN ENGINEER SEAL 022896 CLARK S. MORRISON
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
FINAL PAVEMENT SCHEDULE	
C1	3.0" S9.5B
C2	VAR. S9.5B
D1	2.5" I19.5C
D3	VAR. I19.5C
E1	4.0" B25.0C
E2	VAR. B25.0C
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V	MILLING (1.5" DEPTH)
W	WEDGING

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 4121927AD5764C3
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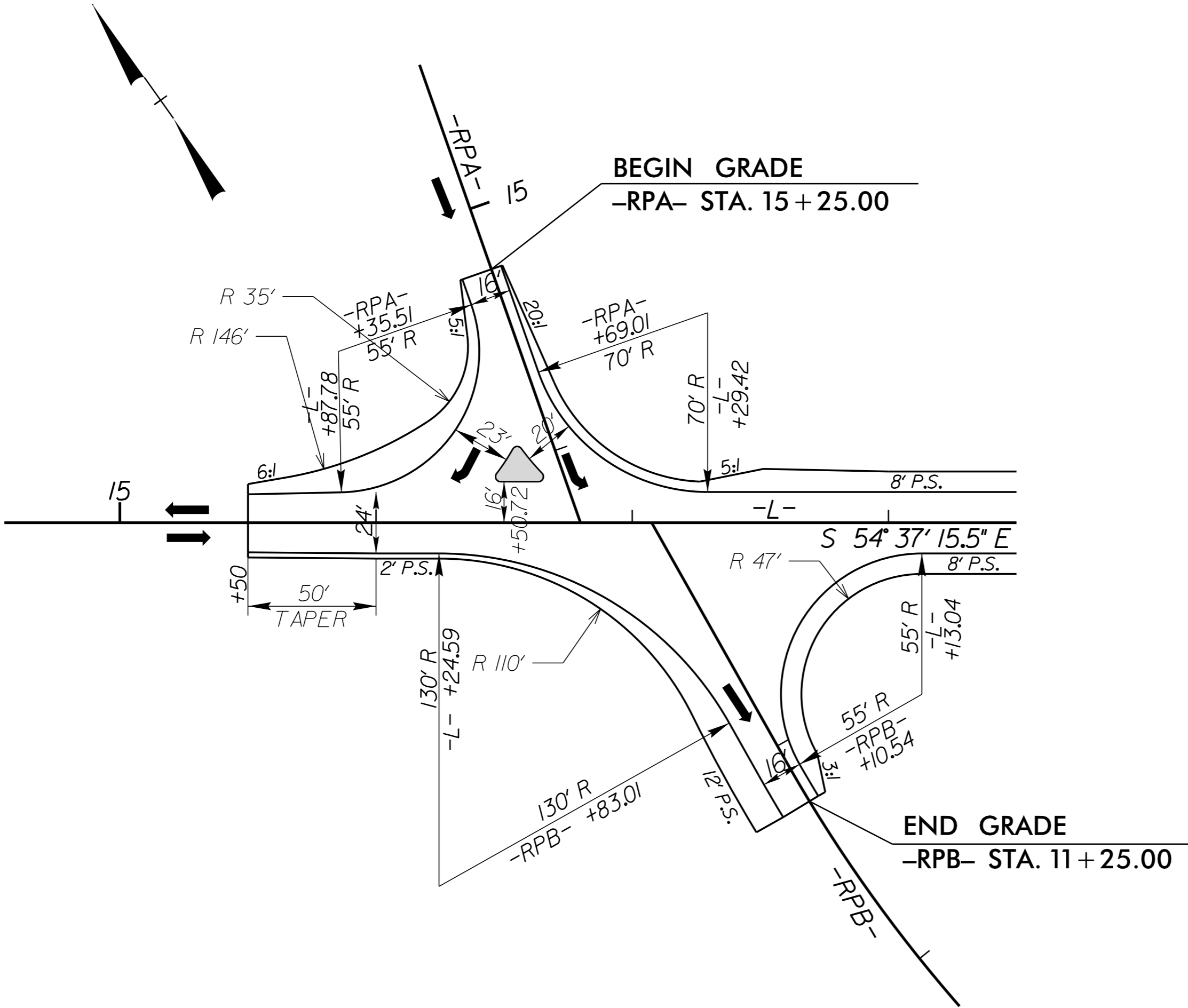
INTERSECTION DETAIL SHEET



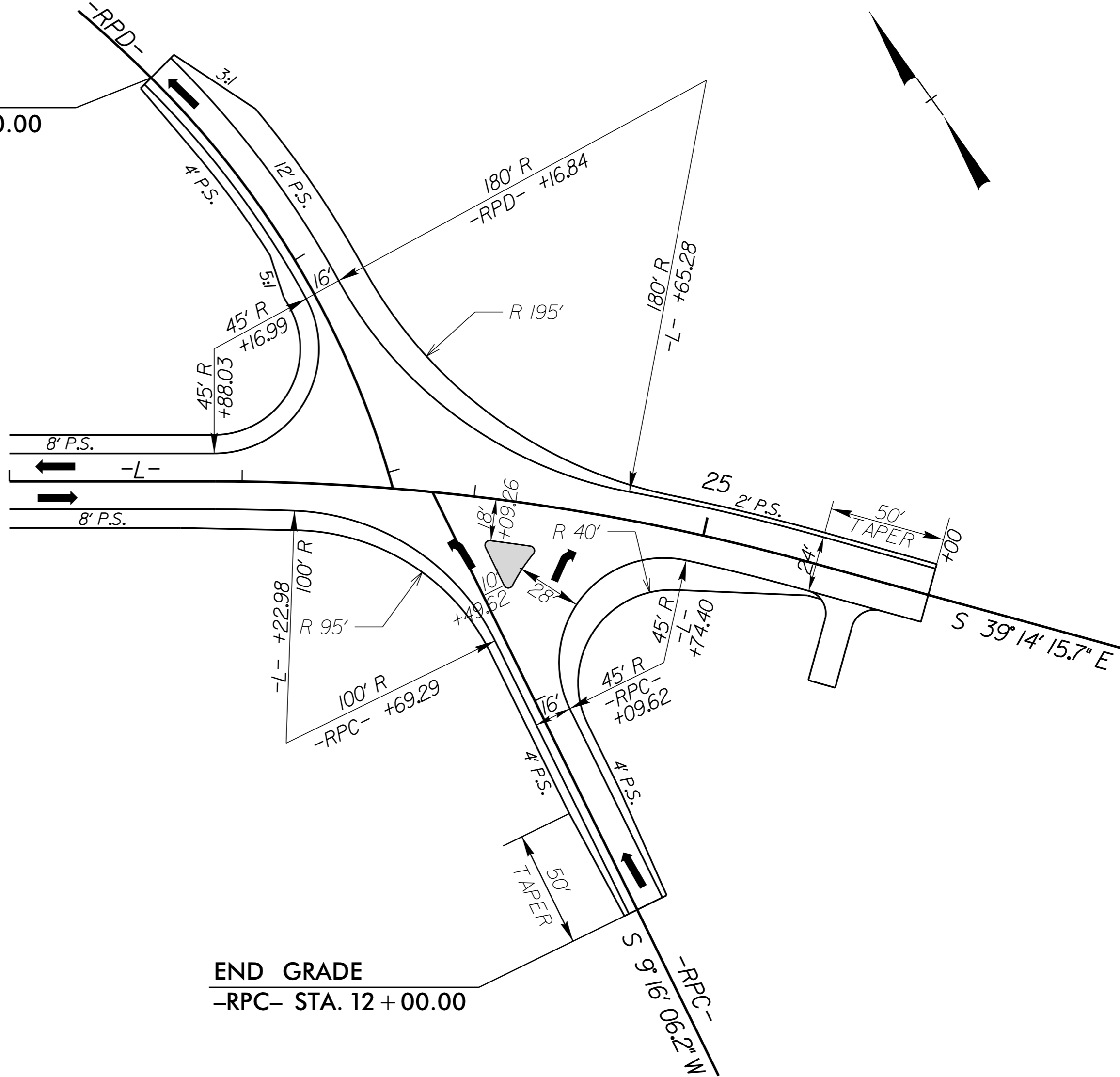
PROJECT REFERENCE NO. BR-0094	SHEET NO. 2B-1
R/W SHEET NO.	



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UNLESS ALL SIGNATURES COMPLETED



BEGIN GRADE
-RPD- STA. 12 + 00.00



END GRADE
-RPC- STA. 12 + 00.00

NOTE: ALL ISLAND RADII ARE 2'.

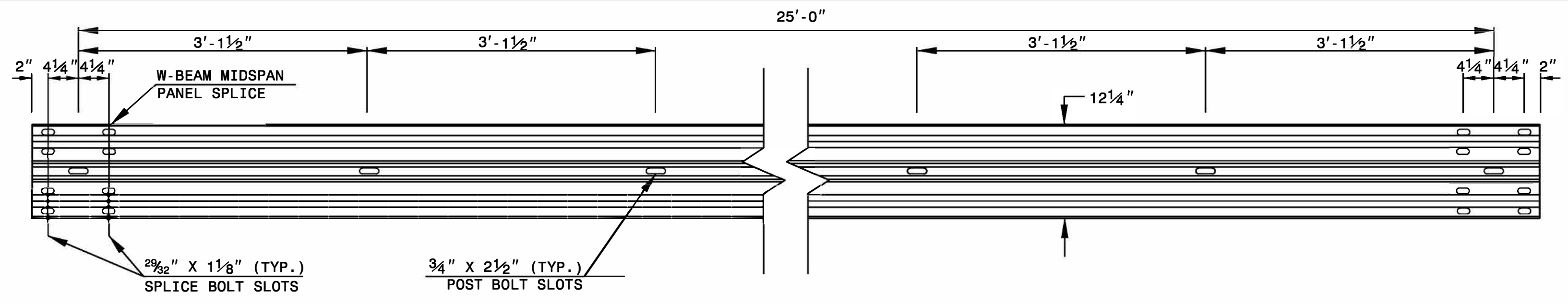
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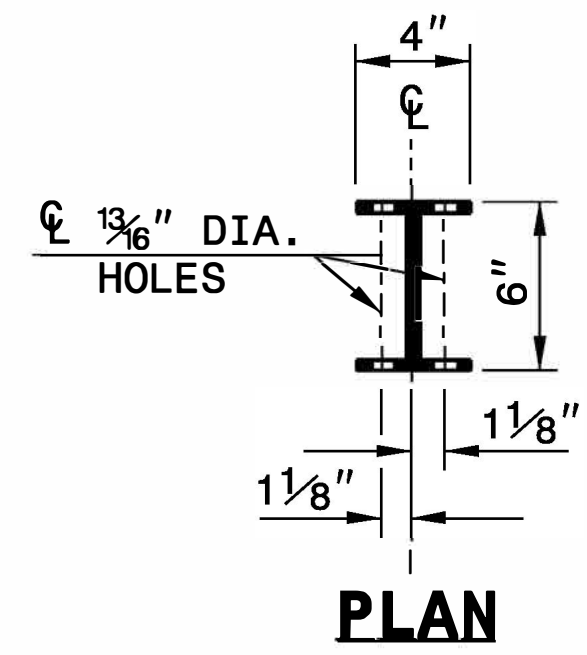
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

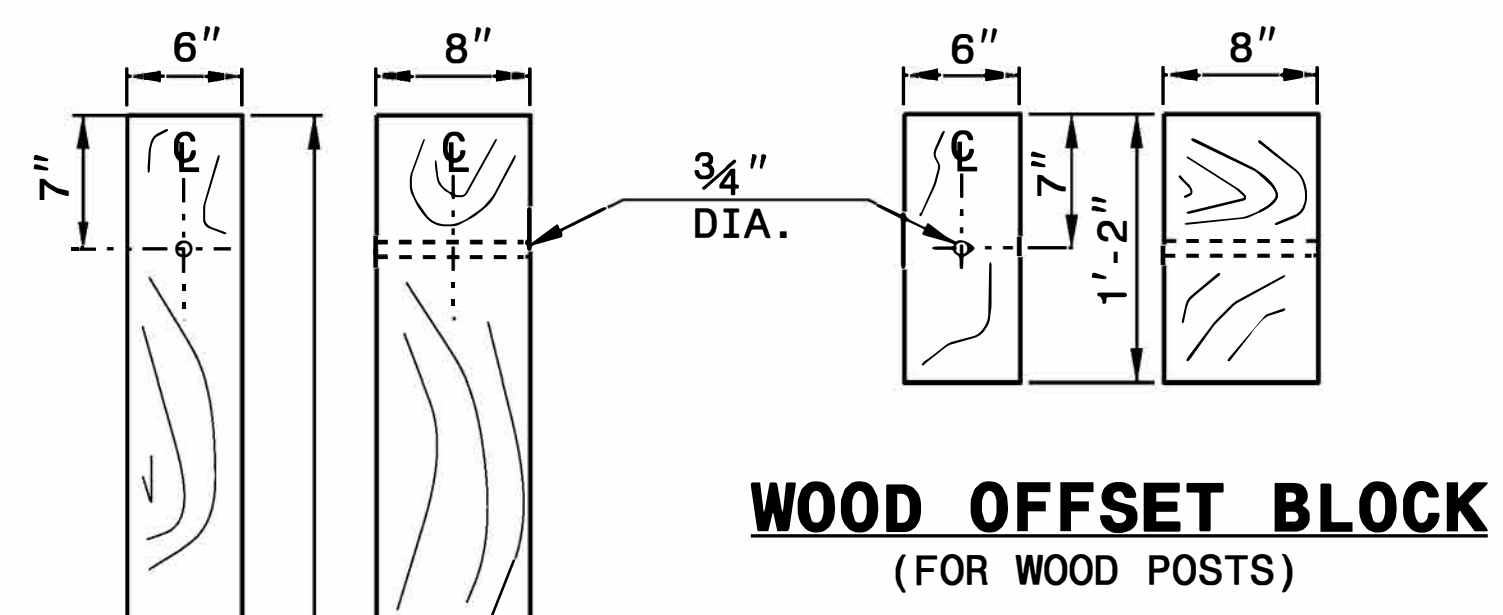
SHEET 6 OF 8
862D02



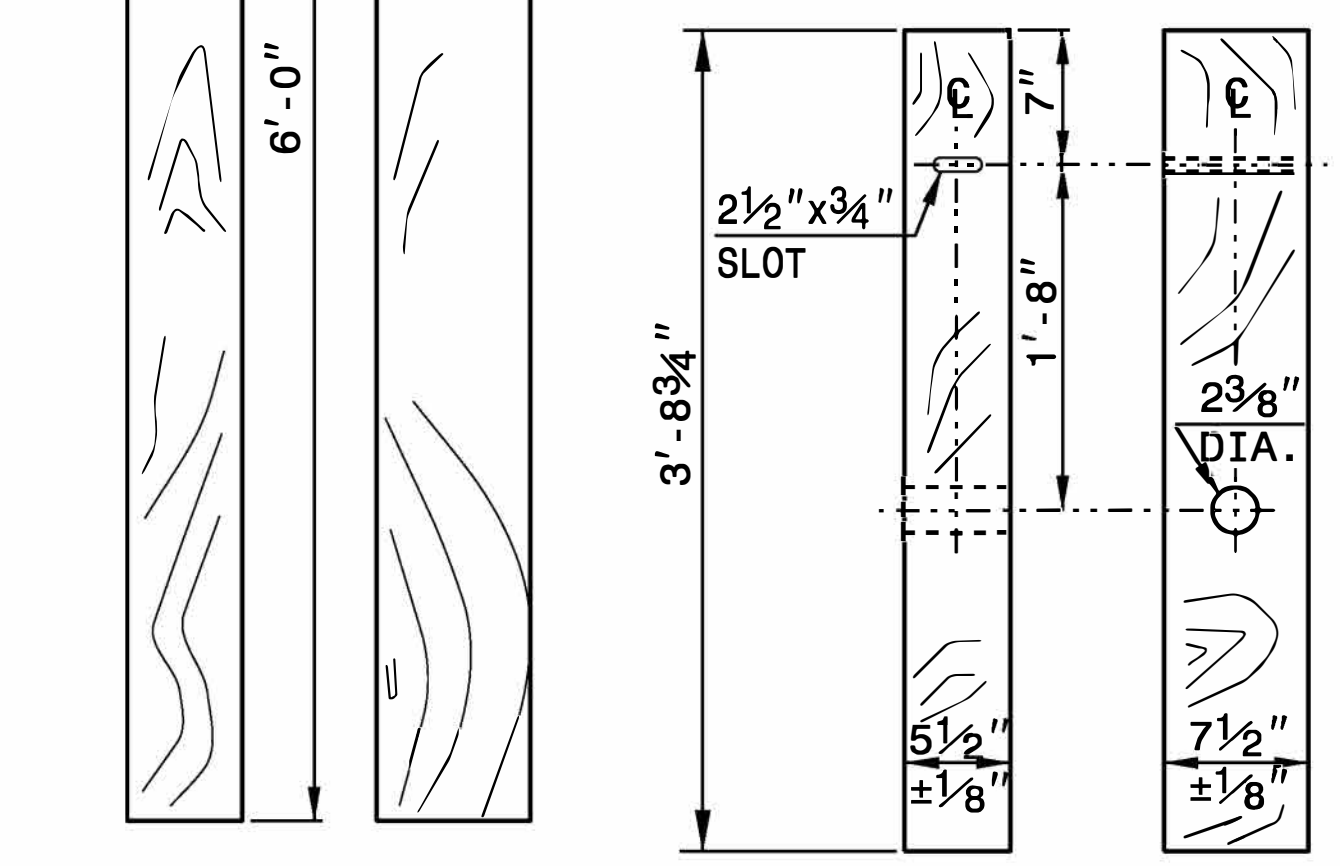
STANDARD W-BEAM GUARDRAIL



PLAN

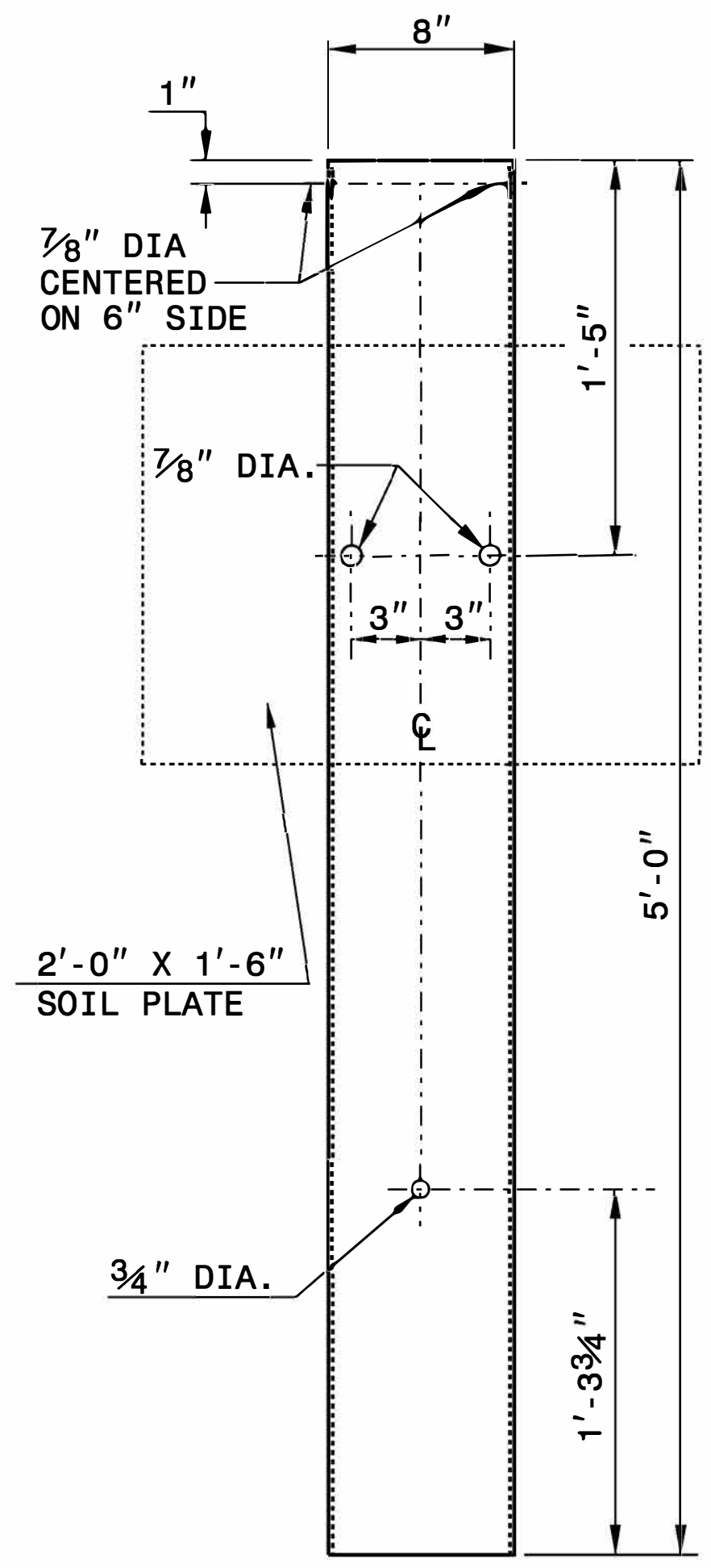


**WOOD OFFSET BLOCK
(FOR WOOD POSTS)**

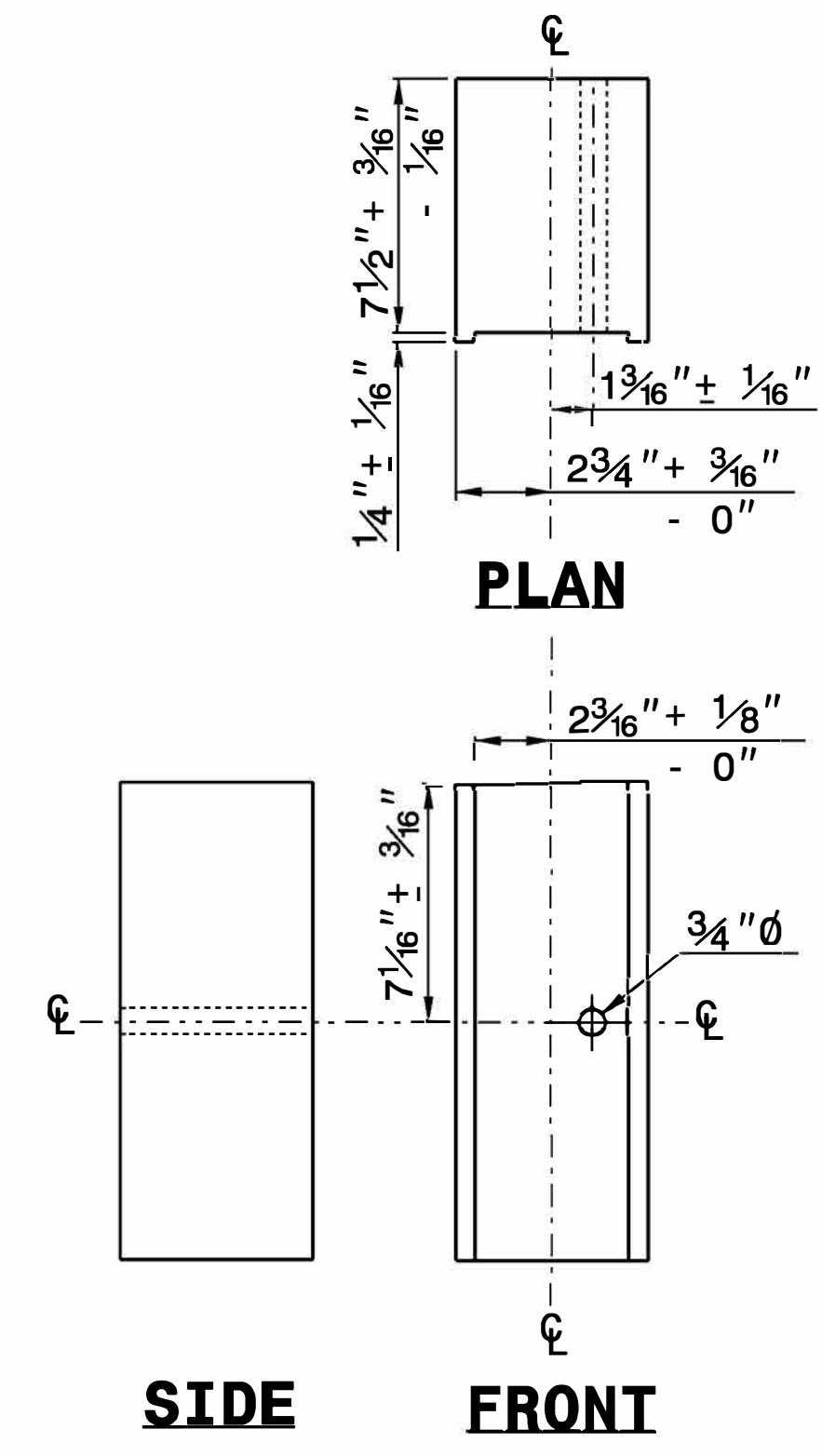


**STANDARD
LINE POST**

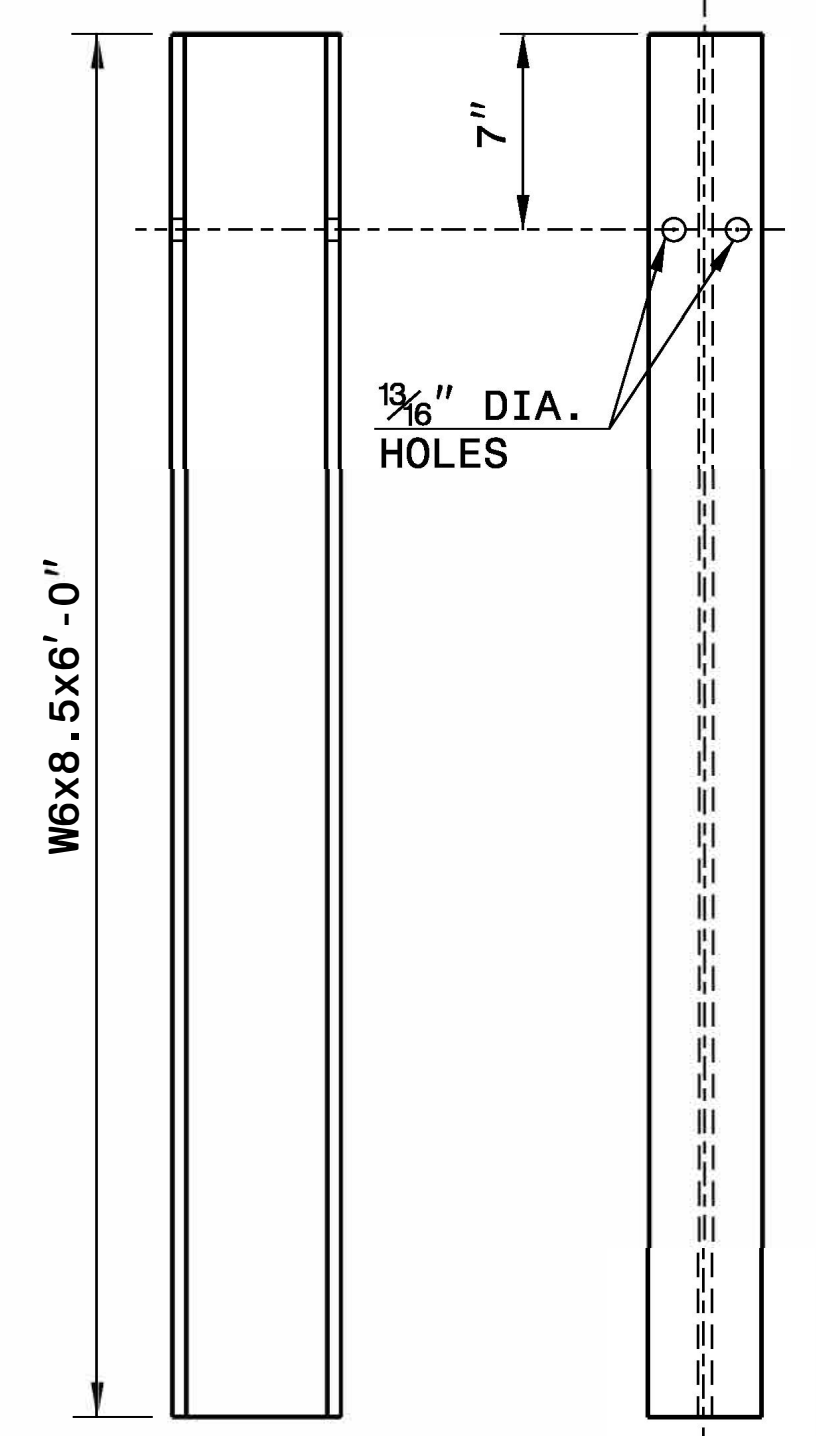
**SHORT WOOD
BREAKAWAY POST**



**STEEL TUBE
TS 6"x8"x0.1875"**



**ROUTED
OFFSET BLOCK
SIDE FRONT**



**"W6" STEEL POST
SIDE FRONT**

SYSTEM PARTS

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

ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

SHEET 6 OF 8
862D02



DocuSigned by:
Nicole Hecker
5884323034164CS

10/27/2022

**CONTRACTS STANDARDS
AND DEVELOPMENT UNIT**
Office 919-707-6950 FAX 919-250-4119

SEE TITLE BLOCK

ORIGINAL BY: J. HOWERTON	DATE: 3-7-2018
MODIFIED BY:	DATE:
CHECKED BY:	DATE:
FILE SPEC.:	

COMPUTED BY: KDA DATE: 9/30/22 CHECKED BY: SEC DATE: 10/10/22	PROJECT NO. BR-0094	SHEET NO. 3B-1
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STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

SUMMARY OF EARTHWORK

CUBIC YARDS				
Station to Station	Uncl. Exc. C.Y.	Embank. +% C.Y.	Borrow C.Y.	Waste C.Y.
SUMMARY NO. 1				
-L- STA. 15+50 TO 19+26.70 (BB)	137	1,759	1,622	
-L- STA. 21+48.70 (EB) TO 26+00	17	2,285	2,268	
SUMMARY NO. 1 TOTAL	154	4,044	3,890	
SUMMARY NO. 2				
-RPA- STA. 15+25.00 TO 16+17.59	8	31	23	
-RPB- STA. 10+13.77 TO 11+25.00	185	58		127
-RPC- STA. 10+14.14 TO 12+00.00	9	232	223	
-RPD- STA. 12+00.00 TO 13+94.40	18	334	316	
SUMMARY NO. 2 TOTAL	220	655	562	127
TOTAL	374	4,699	4,452	127
Shoulder Borrow		168	168	
Loss due to Clearing & Grubbing	-100		100	
Waste in Lieu Of Borrow			-127	-127
PROJECT TOTAL	274	4,867	4,593	
Est 5% To Replace Topsoil on Borrow Pit			230	
GRAND TOTAL	274	4,867	4,823	
SAY	300	4,900	4,900	

EST DDE = 2 CY
 TOTAL SHALLOW UNDERCUT = 200 CUBIC YARDS
 EST. CLASS IV SUBGRADE STABILIZATION = 400 TONS
 PER GEOTECH RECOMMENDATION, ESTIMATED 300 CUBIC YARDS OF UNDERCUT TO BE USED AT THE DISCRETION OF THE RESIDENT ENGINEER.

SUMMARY OF ASPHALT PAVEMENT REMOVAL

Station to Station	LOC LT/RT/CL	Asphalt Removal SQ. YDS.
-L- STA. 18+65.48 TO STA. 19+15.28	CL	136.68
-L- STA. 21+56.36 TO STA. 22+06.36	CL	140.14
PROJECT TOTAL		276.82
SAY		290

SUMMARY OF ASPHALT PAVEMENT BREAKING

Station to Station	LOC LT/RT/CL	Asphalt Breaking SQ. YDS.
-L- STA. 17+50.00 TO STA. 18+65.48	CL	307.46
-L- STA. 22+06.36 TO STA. 23+25.00	CL	316.37
PROJECT TOTAL		623.83
SAY		640

SUMMARY OF WOVEN WIRE FENCE

LINE	STATION TO STATION	SIDE	FABRIC (FT.)	4" POST (EA)	5" POST (EA)
-RPC-	11+08.85 TO 14+19.03	LT	310.26	20	4
-RPD-	10+61.05 TO 13+83.65	LT	372.60	24	4
PROJECT TOTAL			682.86	44	8
SAY			690	45	8

SUMMARY OF SHOULDER BERM GUTTER

Station to Station	LOC LT/RT/CL	Linear Feet
-L- STA. 21+33.29 TO STA. 21+70.00	LT	36.71
-L- STA. 21+64.11 TO STA. 22+00.00	RT	35.89
PROJECT TOTAL		72.60
SAY		73

Note: Earthwork quantities are calculated by the Roadway Design Unit. These earthwork quantities are based in part on subsurface data provided by the Geotechnical Engineering Unit.

APPROXIMATE QUANTITIES ONLY. UNCLASSIFIED EXCAVATION, BORROW EXCAVATION, FINE GRADING, CLEARING AND GRUBBING, REMOVAL OF EXISTING PAVEMENT AND BREAKING OF EXISTING PAVEMENT WILL BE PAID FOR AT THE LUMP SUM PRICE FOR "GRADING".

GUARDRAIL SUMMARY

"N" = DISTANCE FROM EDGE OF LANE TO FACE OF GUARDRAIL
 TOTAL SHOULDER WIDTH = DISTANCE FROM EDGE OF TRAVEL LANE TO SHOULDER FLARE LENGTH = DISTANCE FROM LAST SECTION OF PARALLEL GUARDRAIL TO END OF GUARDRAIL.
 W = TOTAL WIDTH OF FLARE FROM BEGINNING OF TAPER TO END OF GUARDRAIL
 G = GATING IMPACT ATTENUATOR TYPE 350
 NG = NON-GATING IMPACT ATTENUATOR TYPE 350

LINE	BEGIN STA.	END STA.	LOC.	LENGTH (FT.)			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHLDR WIDTH	FLARE LENGTH		W		ANCHORS			TEMPORARY ANCHORS			IMP. ATTEN. TYPE 350			REMOVE EXISTING GUARDRAIL	REMARKS
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPR. END	TRAIL. END			APPR. END	TRAIL. END	APPR. END	TRAIL. END	GREU TL-3	TYPE B-77	CAT-1	GREU TL-3	CAT-1	EA	G	NG			
-L-	17+50.00	19+11.21	LT	161.21'				18+50.00	8.0'	11.0'		50.00'		1.00'	1	1								79'	FILL WARRANT
-L-	21+33.29	23+15.62	LT	159.68'	76.57'		21+34.60		8.0'	11.0'						1	1							104'	BRIDGE WARRANT
-L-	17+72.81	19+42.19	RT	136.50'	94.26'		19+43.27		8.0'	11.0'							1	1						104'	BRIDGE WARRANT
-L-	21+64.11	23+25.00	RT	159.57'			22+50.00		8.0'	11.0'		50.00'		1.00'	1	1								80'	FILL WARRANT
-Y-	14+01.00	16+76.00	LT	275.00'														1	1					275'	EXIST. GUARDRAIL TO BE REMOVED ALONG US 220 MEDIAN
-Y-	13+24.00	15+98.00	RT	275.00'														1	1					275'	EXIST. GUARDRAIL TO BE REMOVED ALONG US 220 MEDIAN
-Y-			LT																					142'	EXISTING GUARDRAIL TO BE REMOVED ALONG US 220
-Y-			RT																					143'	EXISTING GUARDRAIL TO BE REMOVED ALONG US 220
SUB-TOTAL				1166.96'	170.82'										2	4	2		2	2				1202'	SUB-TOTAL
DEDUCTION FOR ANCHOR UNITS																									
				GREU TL-3 @ 50'	2	-100.00'																			
				B-77 @ 22.875'	4	-91.50'																			
				CAT-1 @ 6.25'	2	-12.50'																			
PROJECT TOTAL				962.96'	170.82'										2	4	2		2	2				1202'	PROJECT TOTAL
SAY				975.00'	171.00'																				

ADDITIONAL GUARDRAIL POSTS = 5 EA

COMPUTED BY: R. LAWRENCE DATE: 06-10-22
 CHECKED BY: R. LAWRENCE DATE: 06-10-22

(12-17-19)

PROJECT NO.
BR-0094

SHEET NO.
3G-1

**STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS**

SUMMARY OF SUBSURFACE DRAINAGE

LINE	Station	Station	Location LT/RT/CL	Drain Type* UD/BD/SD	LF
CONTINGENCY				SD	200
				TOTAL LF:	200

*UD = Underdrain
 *BD = Blind Drain
 *SD = Subsurface Drain

SUMMARY OF AGGREGATE SUBGRADE/STABILIZATION

LINE	Station	Station	Aggregate Type* ASU(1/2)/ AST	Aggregate Thickness INCHES [8" for ASU(2)]	Shallow Undercut CY	Class IV Subgrade Stabilization TONS	Geotextile for Soil Stabilization SY	Stabilizer Aggregate TONS	Class IV Aggregate Stabilization TONS
CONTINGENCY					200	400	600		
					TOTAL CY/TONS/SY:	200	400**	600**	0

*ASU(1/2) = Aggregate Subgrade (Type 1 or 2)

*AST = Aggregate Stabilization

**Total tons of "Class IV Subgrade Stabilization" and total square yards of "Geotextile for Soil Stabilization" are only the estimated quantities for ASU(1/2)/AST and may only represent a portion of the subgrade stabilization and geotextile quantities shown in the Item Sheets of the Proposal.

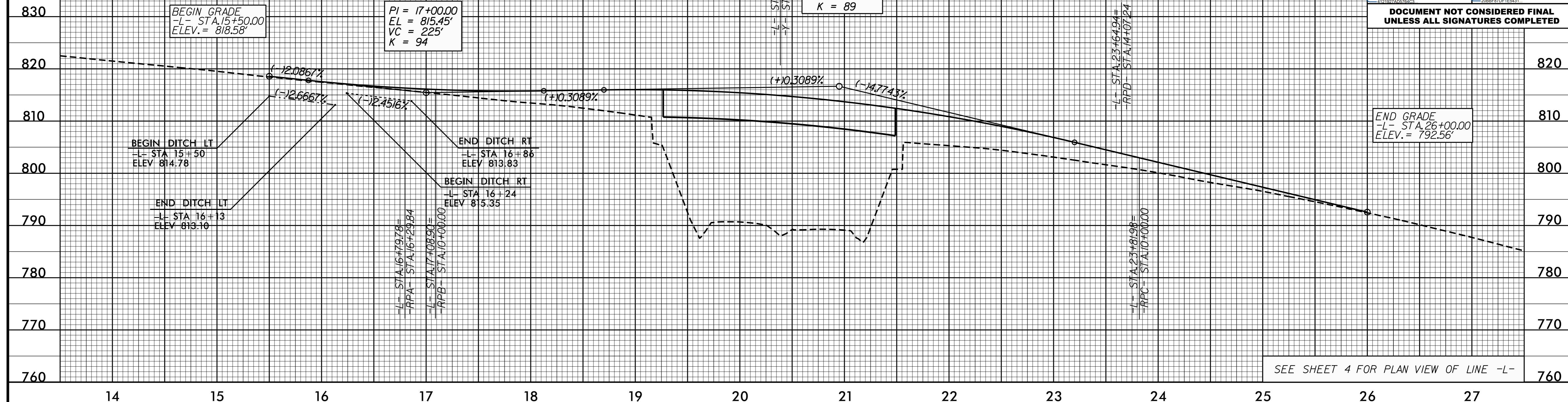
5/28/99

BM1 ELEVATION = 822.73
N 991015 E 1726704
BL STATION 9+80.00 79' LEFT
RR SPIKE IN 14' MAPLE TREE

BM2 ELEVATION = 774.15
N 989617 E 1727630
BL STATION 26+77.00 470' RIGHT
RR SPIKE IN 28' DBL CHERRY TREE

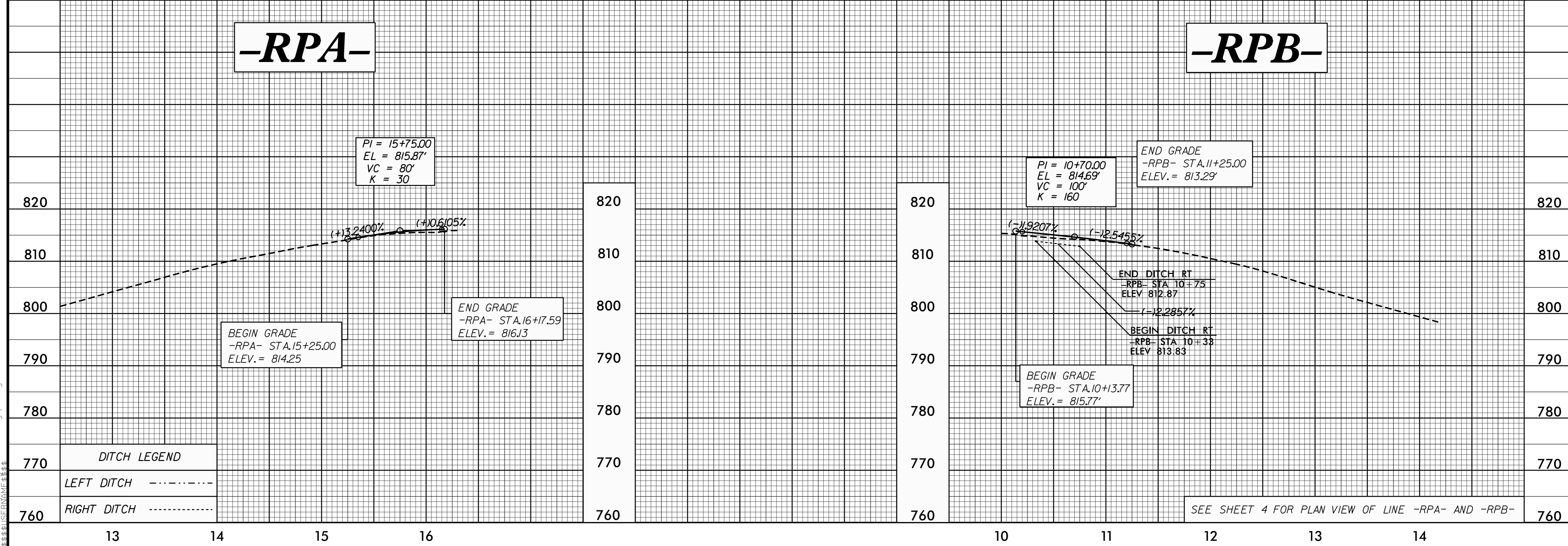
PROJECT REFERENCE NO. BR-0094	SHEET NO. 5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
10/31/2022	10/31/2022

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



-RPA-

-RPB-



DITCH LEGEND	
LEFT DITCH	-----
RIGHT DITCH	-----

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-RPC-

-RPD-

PI = 11+00.00
EL = 798.39'
VC = 100'
K = 91

PI = 13+30.00
EL = 805.22'
VC = 125'
K = 19

END GRADE
-RPC- STA.12+00.00
ELEV. = 793.22'

END GRADE
-RPD- STA.13+94.40
ELEV. = 804.58'

BEGIN DITCH LT
-RPC- STA.11+08
ELEV. 786.93

END DITCH LT
-RPC- STA.11+17
ELEV. 785.72

BEGIN GRADE
-RPC- STA.10+14.14
ELEV. = 801.89'

BEGIN GRADE
-RPD- STA.12+00.00
ELEV. = 798.06'

DITCH LEGEND

LEFT DITCH	-----
RIGHT DITCH	-----

SEE SHEET 4 FOR PLAN VIEW OF LINE -RPC- AND -RPD-

PROJECT REFERENCE NO. BR-0094	SHEET NO. 6
ROADWAY DESIGN ENGINEER SEAL 025878 SHERRILL E. CALTON 10/31/2022	HYDRAULICS ENGINEER SEAL 039168 JAMES J. HILTY 10/31/2022

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

10 OCT 2022 10:22
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