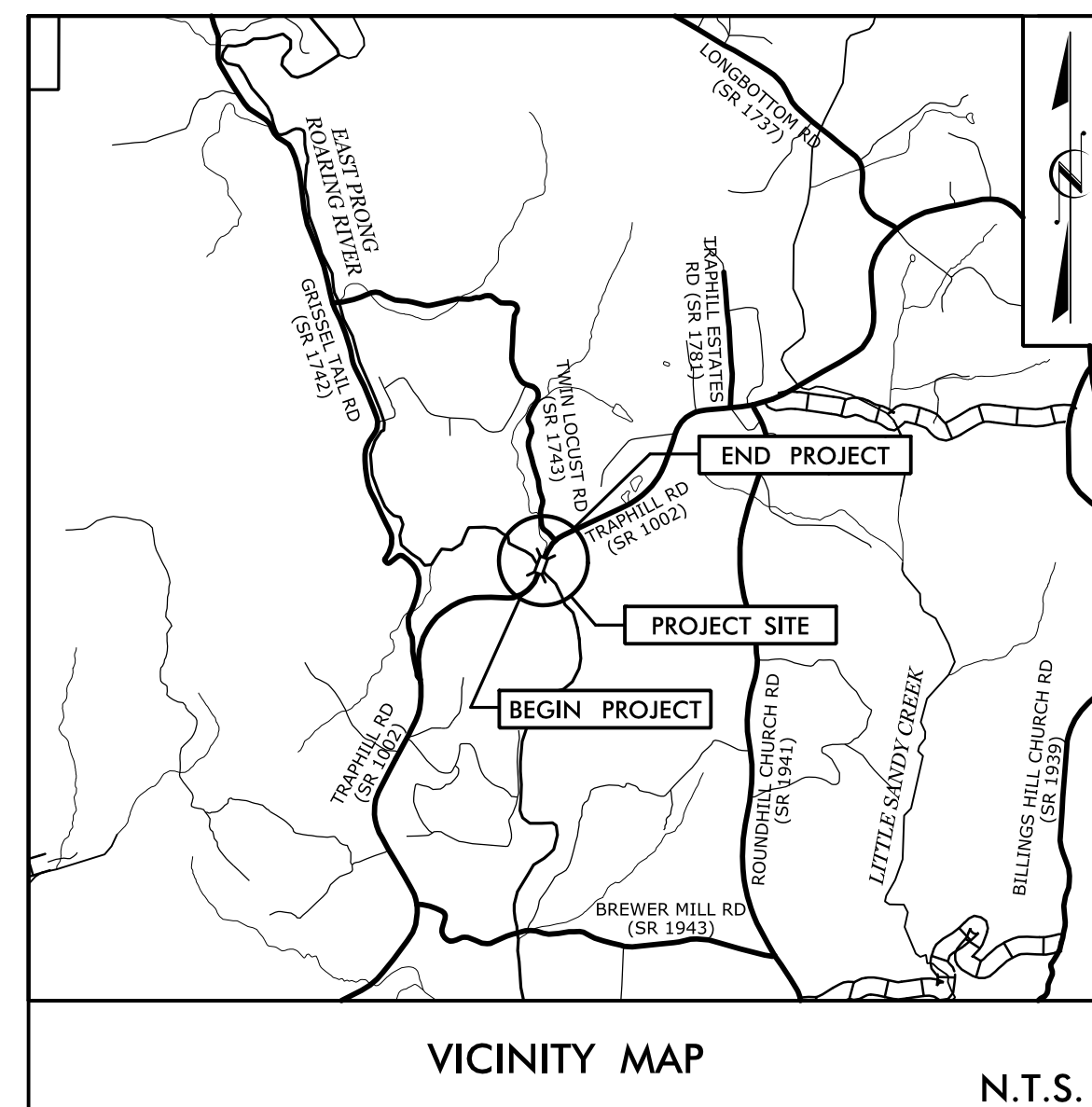


TIP PROJECT: BR-0125

CONTRACT: C204494

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



VICINITY MAP

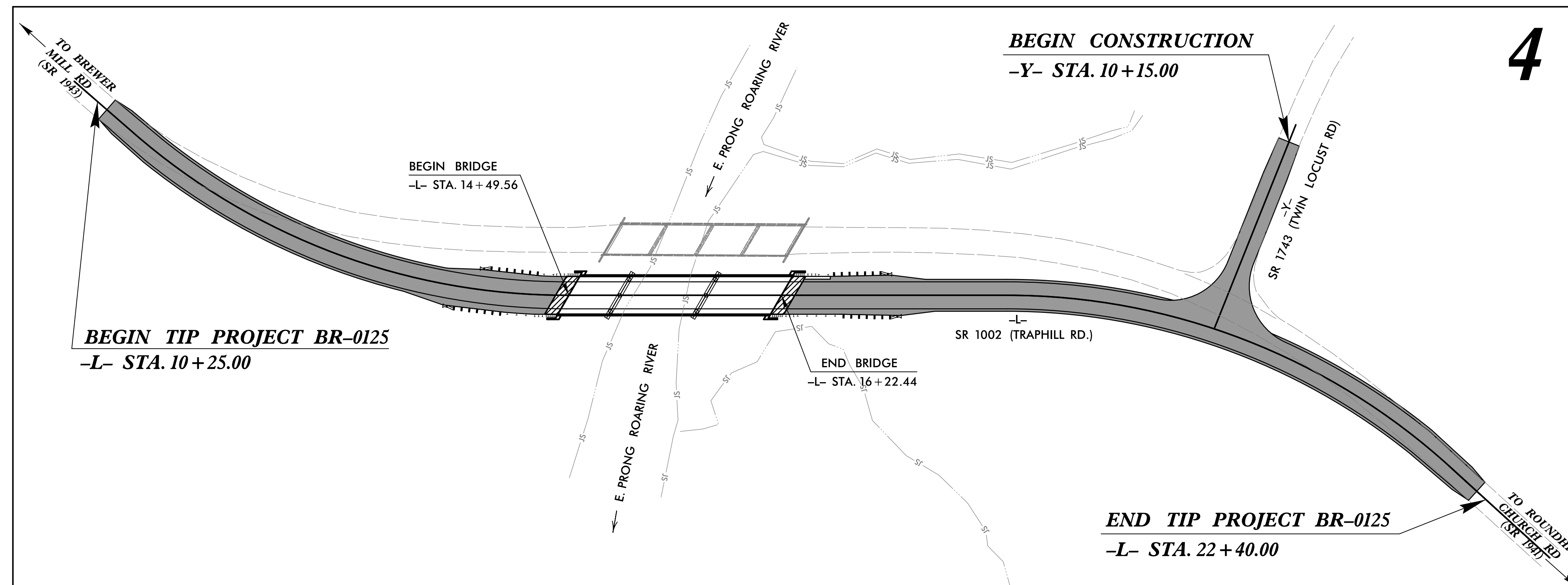
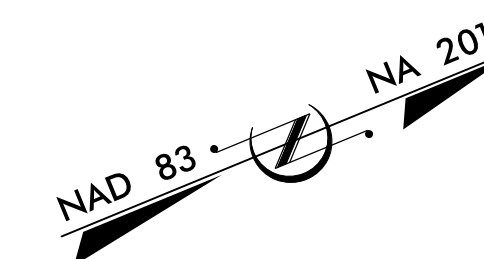
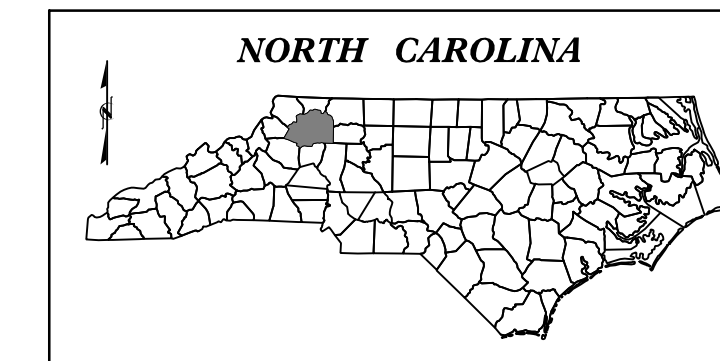
N.T.S.

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

WILKES COUNTY

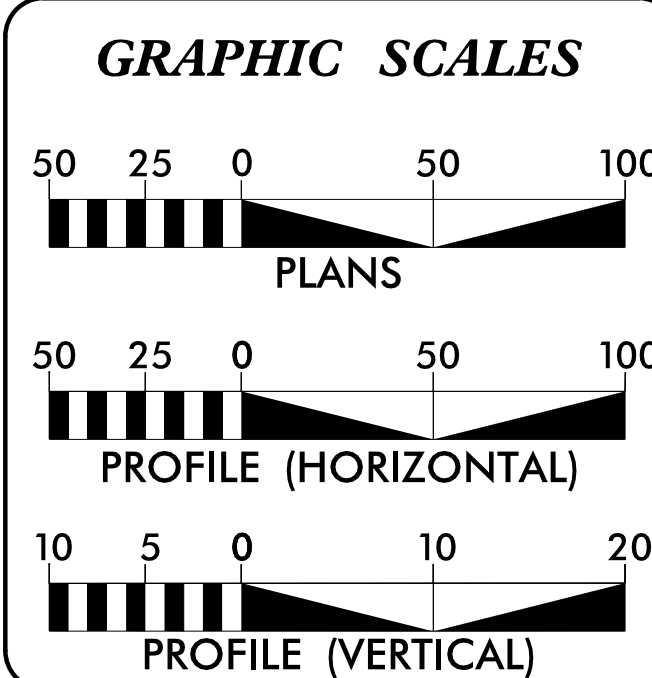
LOCATION: BRIDGE #663 OVER EAST PRONG ROARING RIVER ON SR 1002 (TRAPHILL RD)
TYPE OF WORK: GRADING, DRAINAGE, PAVING, & STRUCTURE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BR-0125	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
48834.1.1		P.E.	
48834.1.1		R.O. UTILITIES	
48834.1.1	2020001	CONSTRUCTION	



DESIGN EXCEPTION APPROVED FOR HORIZONTAL CURVE RADIUS AND VERTICAL CURVE K-VALUE & NIGHTTIME SSD. (11-06-2019)

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



DESIGN DATA

ADT 2016 =	1500
ADT 2040 =	2000
DHV =	N/A
D =	N/A
T =	N/A
V =	55 MPH

FUNC. CLASSIFICATION:
MAJOR COLLECTOR
SUB-REGIONAL TIER

PROJECT LENGTH

LENGTH OF ROADWAY TIP PROJECT BR-0125 =	0.197 MILES
LENGTH OF STRUCTURE TIP PROJECT BR-0125 =	0.033 MILES
TOTAL LENGTH OF TIP PROJECT BR-0125 =	0.230 MILES

NCDOT CONTACT: DAVID STUTTS, PE
Structures Management Unit

PLANS PREPARED FOR THE NCDOT BY:

STV 100 Years
STV Engineers, Inc.
900 West Trade St., Suite 715
Charlotte, NC 28202
NC License Number F-0991

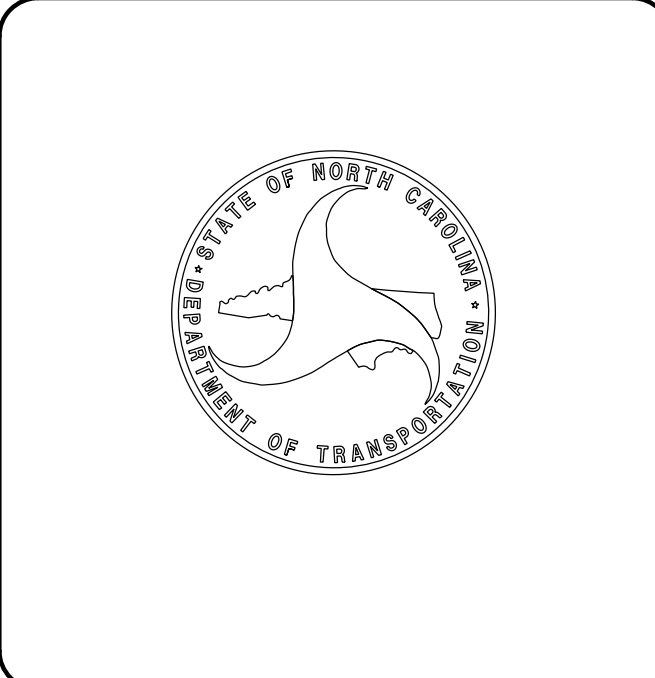
2018 STANDARD SPECIFICATIONS	
RIGHT OF WAY DATE: JANUARY 22, 2020	J. ADAM FREEMAN, PE PROJECT ENGINEER
LETTING DATE: DECEMBER 15, 2020	NARONG PHAL, PE PROJECT DESIGNER

HYDRAULICS ENGINEER
11/10/2020

DocuSigned by:
Edward J. Vance
0264F2B1B3DF494...
ENGINEER
EDWARD J. VANCE
P.E.

ROADWAY DESIGN ENGINEER
11/10/2020

DocuSigned by:
Joseph A. Freeman
175E020B9B584424...
ENGINEER
JOSEPH A. FREEMAN
P.E.





PROJECT REFERENCE NO. <i>BR-0125</i>	SHEET NO. <i>1A</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
1B	CONVENTIONAL SYMBOLS
2A-1 & 2A-2	TYPICAL SECTIONS SHEETS
2C-1 & 2C-2	GUARDRAIL DETAILS
3B-1	EARTHWORK, DRAINAGE SUMMARY, AND GUARDRAIL SUMMARY SHEET
3D-1	DRAINAGE SUMMARY SHEET
3G-1	GEOTECH RECOMMENDATIONS
4	PLAN SHEET
5	PROFILE SHEET
RW01 THRU RW04	RIGHT OF WAY PLANS
TMP-1 THRU TMP-6	TRANSPORTATION MANAGEMENT PLANS
EC-1 THRU EC-6	EROSION CONTROL PLANS
RF-1 THRU RF-3	REFORESTATION PLANS
UO-1 & UO-4	UTILITIES BY OTHERS PLANS
X-0 THRU X-17	CROSS-SECTIONS
S-1 THRU S-23	STRUCTURE PLANS

GENERAL NOTES

GENERAL NOTES: 2018 SPECIFICATIONS
EFFECTIVE: 01-01-2018

GRADE LINE:
GRADING AND SURFACING:
THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. GRADE LINES MAY BE ADJUSTED AT THEIR BEGINNING AND ENDING AND AT STRUCTURES AS DIRECTED 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 III.

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, CHARTER COMMUNICATIONS AND WILKES COMMUNICATIONS. ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS.

RIGHT-OF-WAY MARKERS:
ALL RIGHT-OF-WAY MARKERS ON THIS PROJECT SHALL BE PLACED BY STATE FORCES.

STANDARD DRAWINGS

2018 ROADWAY ENGLISH STANDARD DRAWINGS EFF. January, 2018

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	
200.03	Method of Clearing - Method III
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 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
840.35	Traffic Bearing Grated Drop Inlet - for Cast Iron Double Frame Grates
840.45	Precast Drainage Structure
840.46	Traffic Bearing Precast Drainage Structures
840.66	Drainage Structure Steps
846.01	Concrete Curb, Gutter and Curb & Gutter
846.04	Drop Inlet Installation in Shoulder Berm Gutter
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units
866.02	Woven Wire Fence- with Wood Post
876.01	Rip Rap in Channels
876.02	Guide for Rip Rap at Pipe Outlets
876.04	Drainage Ditches with Class 'B' Rip Rap

11/9/2020 R:\Roadway\Proj\SHR\BR-0125_rdy_psh01A.dgn phain

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

12/2/2016

BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	○ EIP
Computed Property Corner	✕
Property Monument	□ ECM
Parcel/Sequence Number	123
Existing Fence Line	---X---X---X---
Proposed Woven Wire Fence	○
Proposed Chain Link Fence	□
Proposed Barbed Wire Fence	◇
Existing Wetland Boundary	---WLB---
Proposed Wetland Boundary	---WLB---
Existing Endangered Animal Boundary	---EAB---
Existing Endangered Plant Boundary	---EPB---
Existing Historic Property Boundary	---HPB---
Known Contamination Area: Soil	☠ S ☠
Potential Contamination Area: Soil	☠ S ☠
Known Contamination Area: Water	☠ W ☠
Potential Contamination Area: Water	☠ W ☠
Contaminated Site: Known or Potential	☠ ?

BUILDINGS AND OTHER CULTURE:

Gas Pump Vent or U/G Tank Cap	○
Sign	○ S
Well	○ W
Small Mine	✕
Foundation	□
Area Outline	□
Cemetery	↑
Building	□
School	□
Church	□
Dam	□

HYDROLOGY:

Stream or Body of Water	~~~~~
Hydro, Pool or Reservoir	□
Jurisdictional Stream	---JS---
Buffer Zone 1	---BZ 1---
Buffer Zone 2	---BZ 2---
Flow Arrow	←
Disappearing Stream	→
Spring	○
Wetland	---WLB---
Proposed Lateral, Tail, Head Ditch	---FDW---
False Sump	▽

RAILROADS:

Standard Gauge	-----
RR Signal Milepost	○ MILEPOST 35
Switch	□ SWITCH
RR Abandoned	-----
RR Dismantled	-----

Note: Not to Scale *S.U.E. = Subsurface Utility Engineering

RIGHT OF WAY & PROJECT CONTROL:

Secondary Horiz and Vert Control Point	◆
Primary Horiz Control Point	○
Primary Horiz and Vert Control Point	●
Exist Permanent Easement Pin and Cap	◇
New Permanent Easement Pin and Cap	◇
Vertical Benchmark	⊠
Existing Right of Way Marker	△
Existing Right of Way Line	-----
New Right of Way Line	○ R/W
New Right of Way Line with Pin and Cap	○ R/W ▲
New Right of Way Line with Concrete or Granite R/W Marker	▲ R/W
New Control of Access Line with Concrete C/A Marker	▲ C/A
Existing Control of Access	○ C/A
New Control of Access	○ C/A
Existing Easement Line	---E---
New Temporary Construction Easement	---E---
New Temporary Drainage Easement	---TDE---
New Permanent Drainage Easement	---PDE---
New Permanent Drainage / Utility Easement	---DUE---
New Permanent Utility Easement	---PUE---
New Temporary Utility Easement	---TUE---
New Aerial Utility Easement	---AUE---

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	-----
Existing Curb	-----
Proposed Slope Stakes Cut	---C---
Proposed Slope Stakes Fill	---F---
Proposed Curb Ramp	○ CR
Existing Metal Guardrail	---T---
Proposed Guardrail	---T---
Existing Cable Guiderail	---T---
Proposed Cable Guiderail	---T---
Equality Symbol	⊕
Pavement Removal	⊗

VEGETATION:

Single Tree	☼
Single Shrub	☼

Hedge	~~~~~
Woods Line	~~~~~
Orchard	☼ ☼ ☼ ☼
Vineyard	□ Vineyard

EXISTING STRUCTURES:

MAJOR:	
Bridge, Tunnel or Box Culvert	□ CONC
Bridge Wing Wall, Head Wall and End Wall	} CONC HW {
MINOR:	
Head and End Wall	---CONC HW---
Pipe Culvert	-----
Footbridge	--->---
Drainage Box: Catch Basin, DI or JB	□ CB
Paved Ditch Gutter	-----
Storm Sewer Manhole	○ S
Storm Sewer	---S---

UTILITIES:

POWER:	
Existing Power Pole	●
Proposed Power Pole	○
Existing Joint Use Pole	●
Proposed Joint Use Pole	○
Power Manhole	○ P
Power Line Tower	⊠
Power Transformer	⊠
U/G Power Cable Hand Hole	○
H-Frame Pole	●
U/G Power Line LOS B (S.U.E.*)	---P---
U/G Power Line LOS C (S.U.E.*)	---P---
U/G Power Line LOS D (S.U.E.*)	---P---

TELEPHONE:

Existing Telephone Pole	●
Proposed Telephone Pole	○
Telephone Manhole	○ T
Telephone Pedestal	□ T
Telephone Cell Tower	⊕
U/G Telephone Cable Hand Hole	□ TH
U/G Telephone Cable LOS B (S.U.E.*)	---T---
U/G Telephone Cable LOS C (S.U.E.*)	---T---
U/G Telephone Cable LOS D (S.U.E.*)	---T---
U/G Telephone Conduit LOS B (S.U.E.*)	---TC---
U/G Telephone Conduit LOS C (S.U.E.*)	---TC---
U/G Telephone Conduit LOS D (S.U.E.*)	---TC---
U/G Fiber Optics Cable LOS B (S.U.E.*)	---TFO---
U/G Fiber Optics Cable LOS C (S.U.E.*)	---TFO---
U/G Fiber Optics Cable LOS D (S.U.E.*)	---TFO---

WATER:

Water Manhole	○ W
Water Meter	○
Water Valve	⊗
Water Hydrant	⊕
U/G Water Line LOS B (S.U.E.*)	---W---
U/G Water Line LOS C (S.U.E.*)	---W---
U/G Water Line LOS D (S.U.E.*)	---W---
Above Ground Water Line	---A/G Water---

TV:

TV Pedestal	□ TV
TV Tower	⊗
U/G TV Cable Hand Hole	□ TH
U/G TV Cable LOS B (S.U.E.*)	---TV---
U/G TV Cable LOS C (S.U.E.*)	---TV---
U/G TV Cable LOS D (S.U.E.*)	---TV---
U/G Fiber Optic Cable LOS B (S.U.E.*)	---TV FO---
U/G Fiber Optic Cable LOS C (S.U.E.*)	---TV FO---
U/G Fiber Optic Cable LOS D (S.U.E.*)	---TV FO---

GAS:

Gas Valve	◇
Gas Meter	⊕
U/G Gas Line LOS B (S.U.E.*)	---G---
U/G Gas Line LOS C (S.U.E.*)	---G---
U/G Gas Line LOS D (S.U.E.*)	---G---
Above Ground Gas Line	---A/G Gas---

SANITARY SEWER:

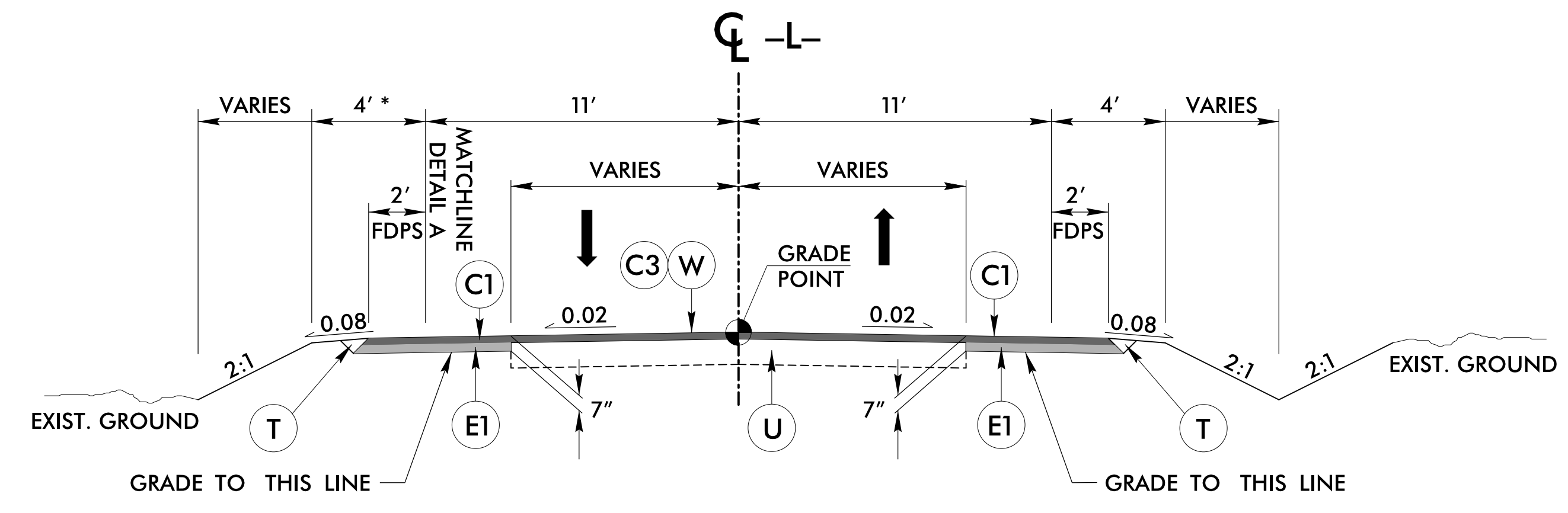
Sanitary Sewer Manhole	⊕
Sanitary Sewer Cleanout	⊕
U/G Sanitary Sewer Line	---SS---
Above Ground Sanitary Sewer	---A/G Sanitary Sewer---
SS Forced Main Line LOS B (S.U.E.*)	---FSS---
SS Forced Main Line LOS C (S.U.E.*)	---FSS---
SS Forced Main Line LOS D (S.U.E.*)	---FSS---

MISCELLANEOUS:

Utility Pole	●
Utility Pole with Base	□
Utility Located Object	○
Utility Traffic Signal Box	□
Utility Unknown U/G Line LOS B (S.U.E.*)	---TU/L---
U/G Tank; Water, Gas, Oil	□
Underground Storage Tank, Approx. Loc.	□ UST
A/G Tank; Water, Gas, Oil	□
Geoenvironmental Boring	⊕
U/G Test Hole LOS A (S.U.E.*)	⊕
Abandoned According to Utility Records	AATUR
End of Information	E.O.I.

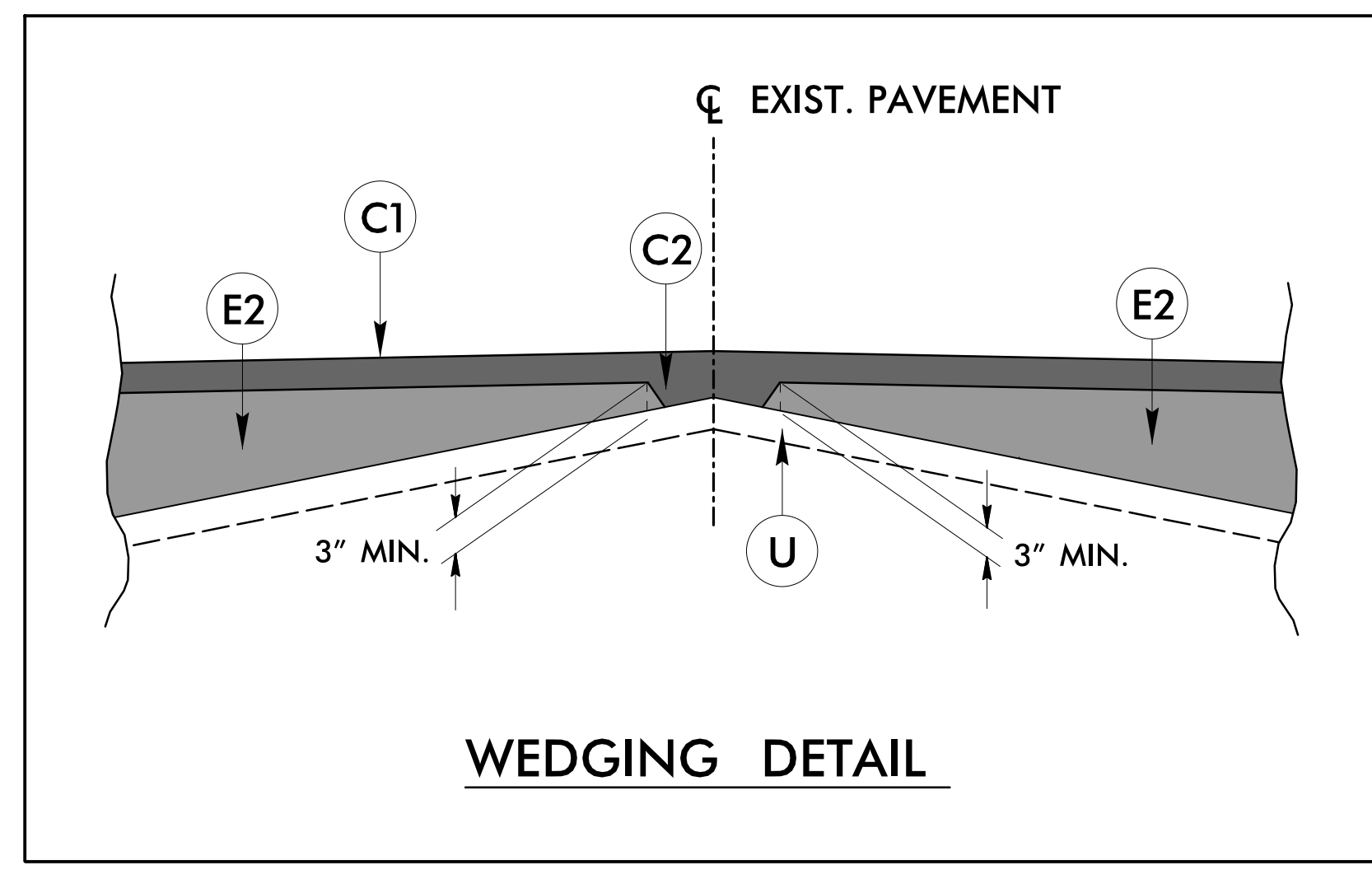
PAVEMENT SCHEDULE (FINAL)	
C1	PROP. APPROX. 3.0" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1.0" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 1.0" IN DEPTH OR GREATER THAN 1.5" IN DEPTH.
C3	PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.
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 1.0" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3.0" IN DEPTH OR GREATER THAN 5.5" IN DEPTH.
R	CONCRETE SHOULDER BERM GUTTER
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V	INCIDENTAL MILLING
W	PAVEMENT WEDGING

ALL PAVEMENT SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

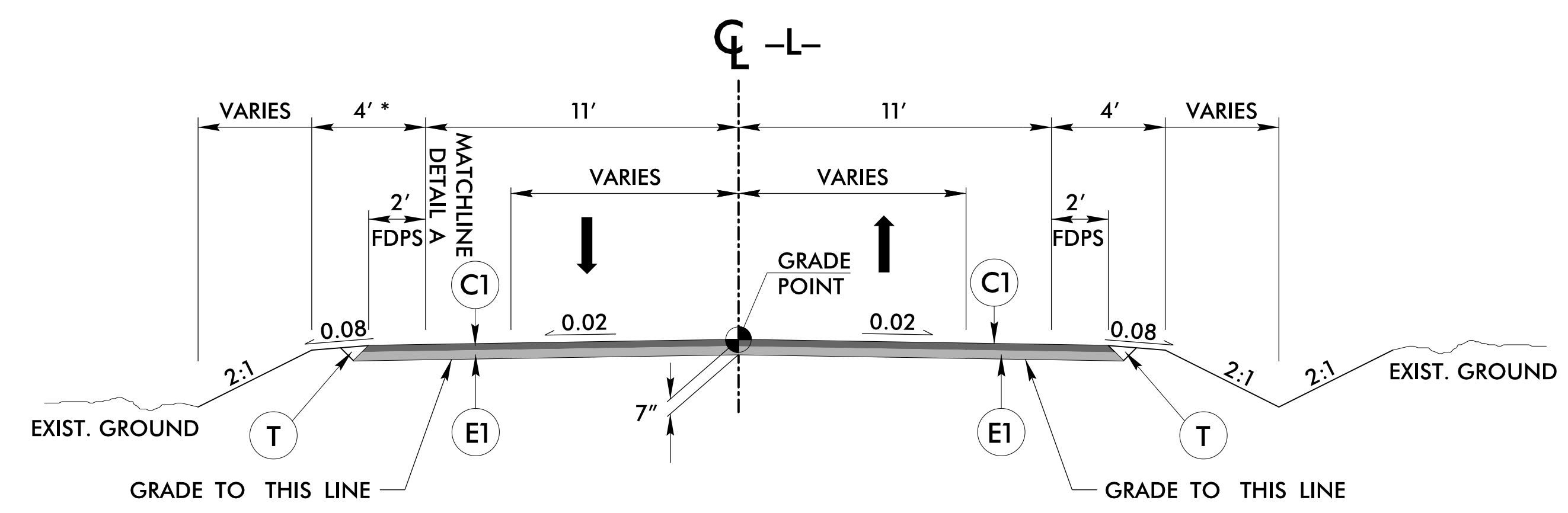


TYPICAL SECTION 1

* 7' WITH GUARDRAIL
 -L- STA. 10+35.00 TO 12+34.49
 -L- STA. 20+75.00 TO 22+30.00

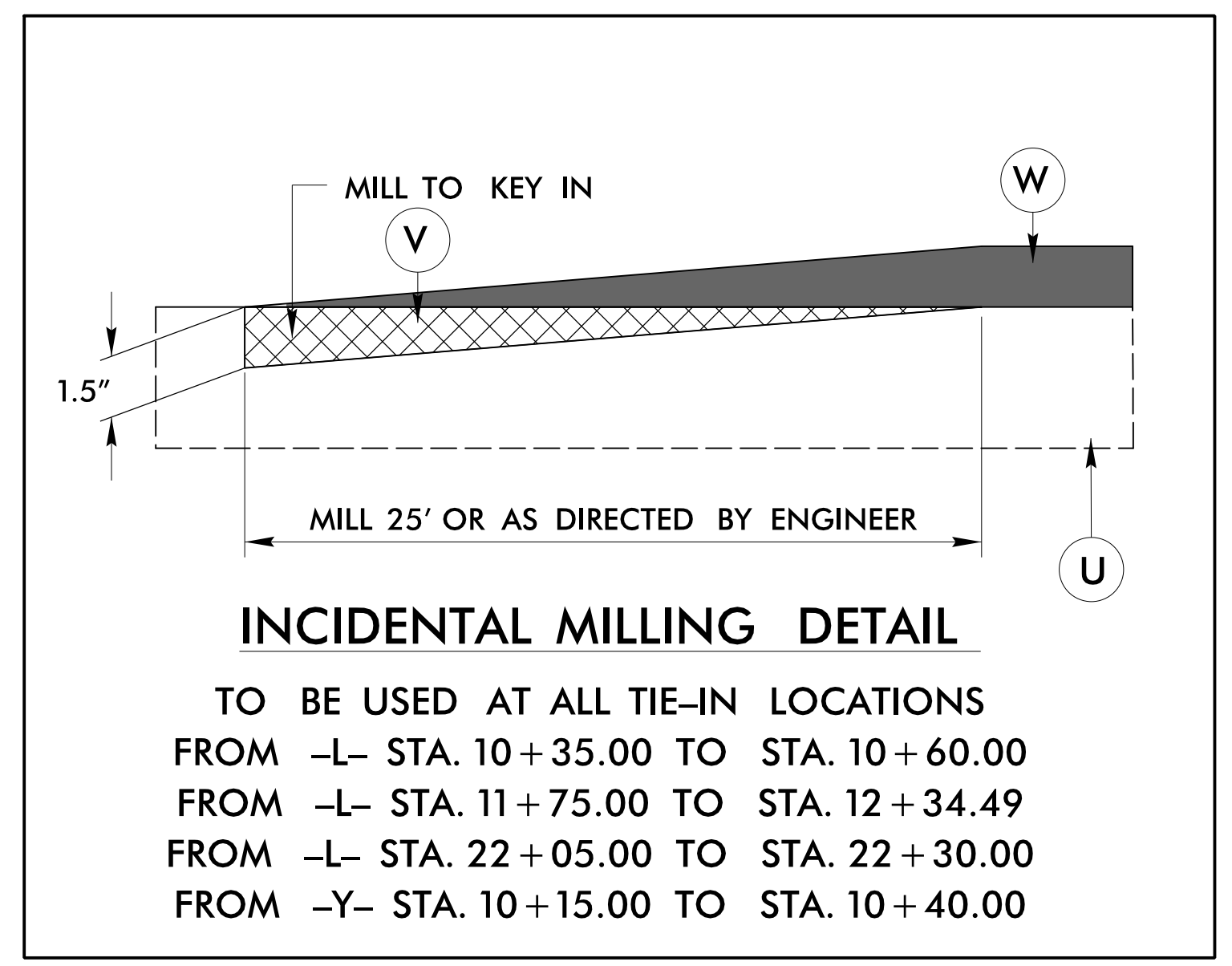


WEDGING DETAIL



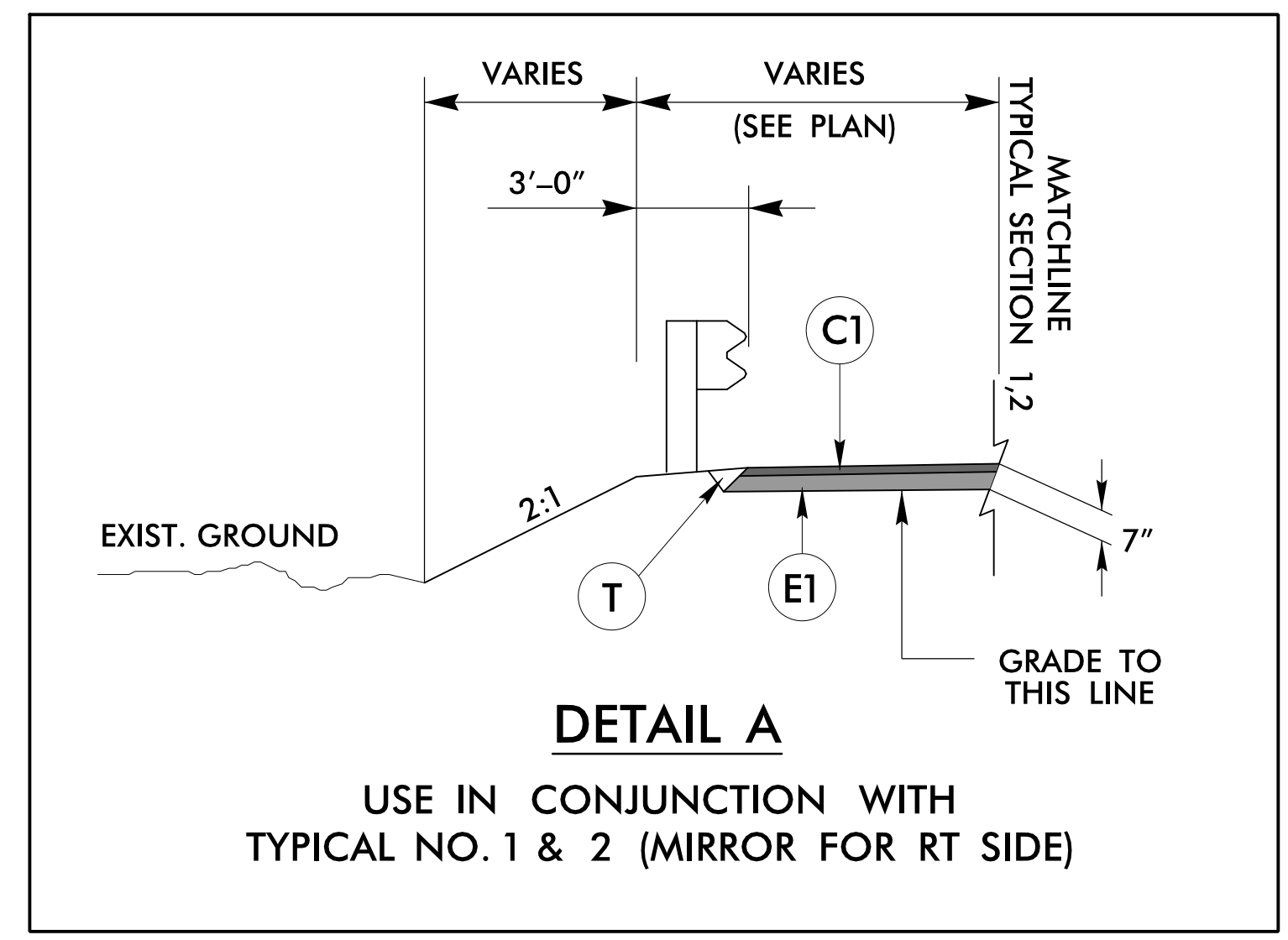
TYPICAL SECTION 2

* 7' WITH GUARDRAIL
 -L- STA. 12+34.49 TO 14+49.56 (BEGIN BRIDGE)
 -L- STA. 16+22.44 (END BRIDGE) TO 20+75.00



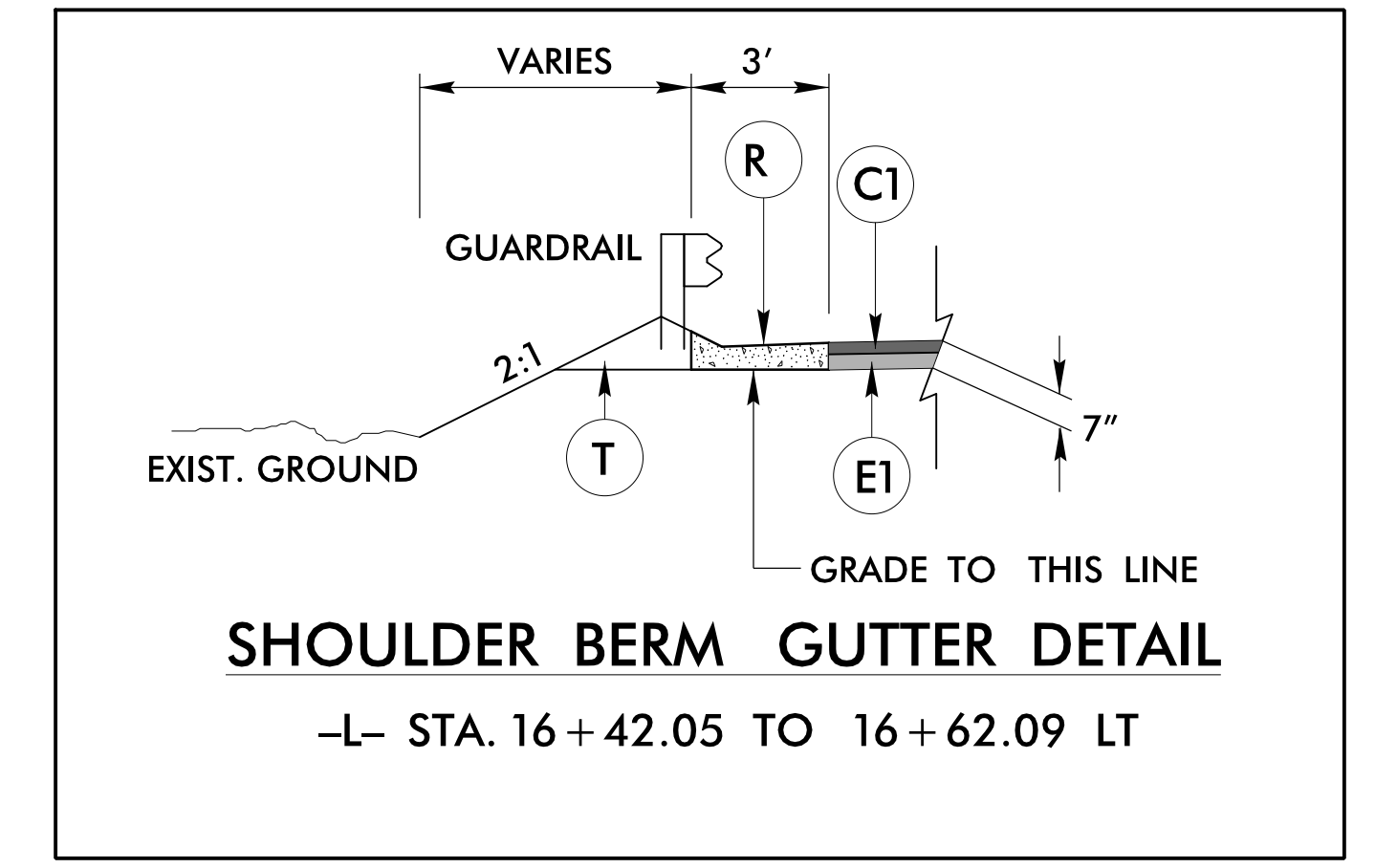
INCIDENTAL MILLING DETAIL

TO BE USED AT ALL TIE-IN LOCATIONS
 FROM -L- STA. 10+35.00 TO STA. 10+60.00
 FROM -L- STA. 11+75.00 TO STA. 12+34.49
 FROM -L- STA. 22+05.00 TO STA. 22+30.00
 FROM -Y- STA. 10+15.00 TO STA. 10+40.00



DETAIL A

USE IN CONJUNCTION WITH
 TYPICAL NO. 1 & 2 (MIRROR FOR RT SIDE)

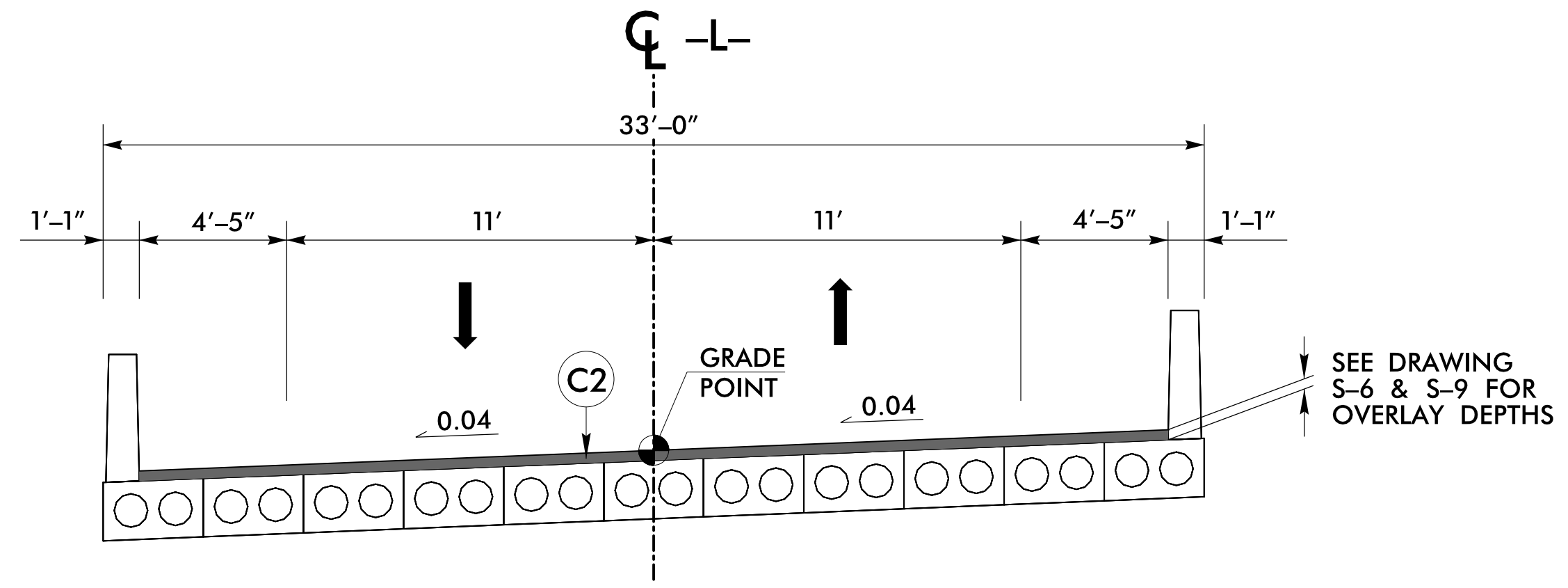


SHOULDER BERM GUTTER DETAIL

-L- STA. 16+42.05 TO 16+62.09 LT

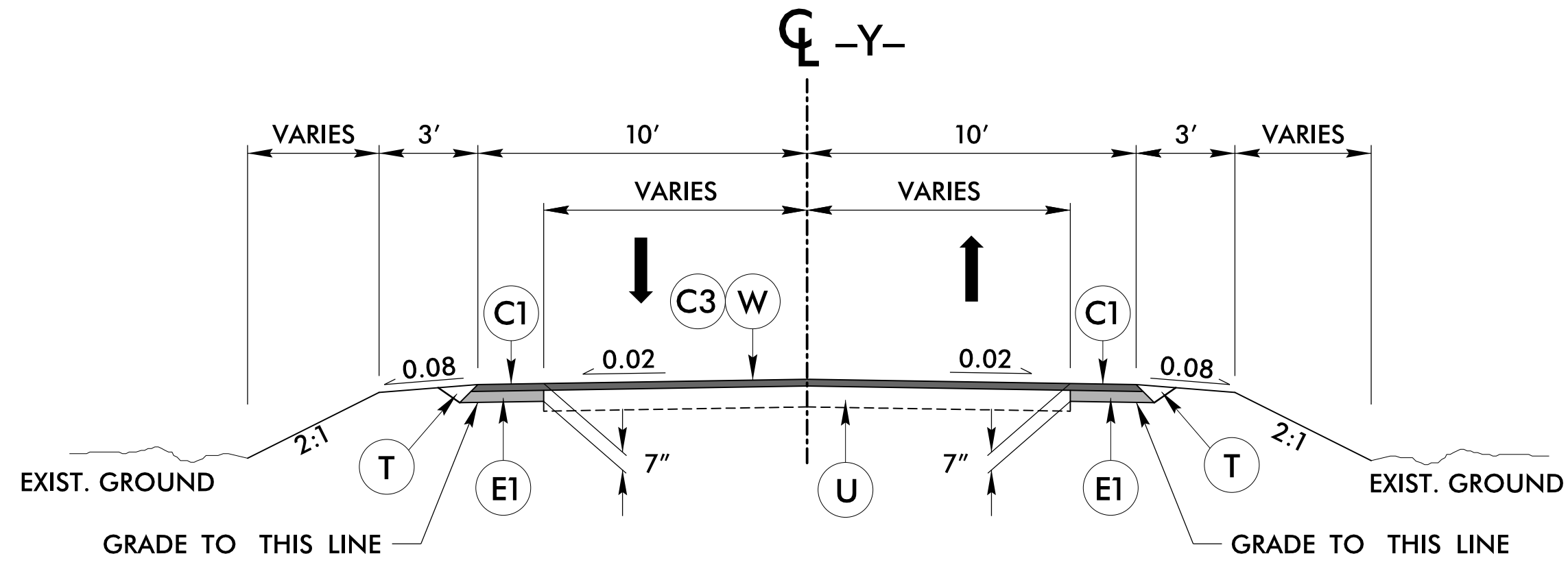
FINAL PAVEMENT SCHEDULE	
C1	3" SURFACE COURSE TYPE S9.5B
C2	VAR. SURFACE COURSE TYPE S9.5B
C3	1.5" SURFACE COURSE TYPE S9.5B
E1	4" BASE COURSE TYPE B25.0C
E2	VAR. BASE COURSE TYPE B25.0C
R	SHOULDER BERM GUTTER
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	PAVEMENT WEDGING

ALL PAVEMENT SLOPES ARE 1:1
UNLESS SHOWN OTHERWISE.



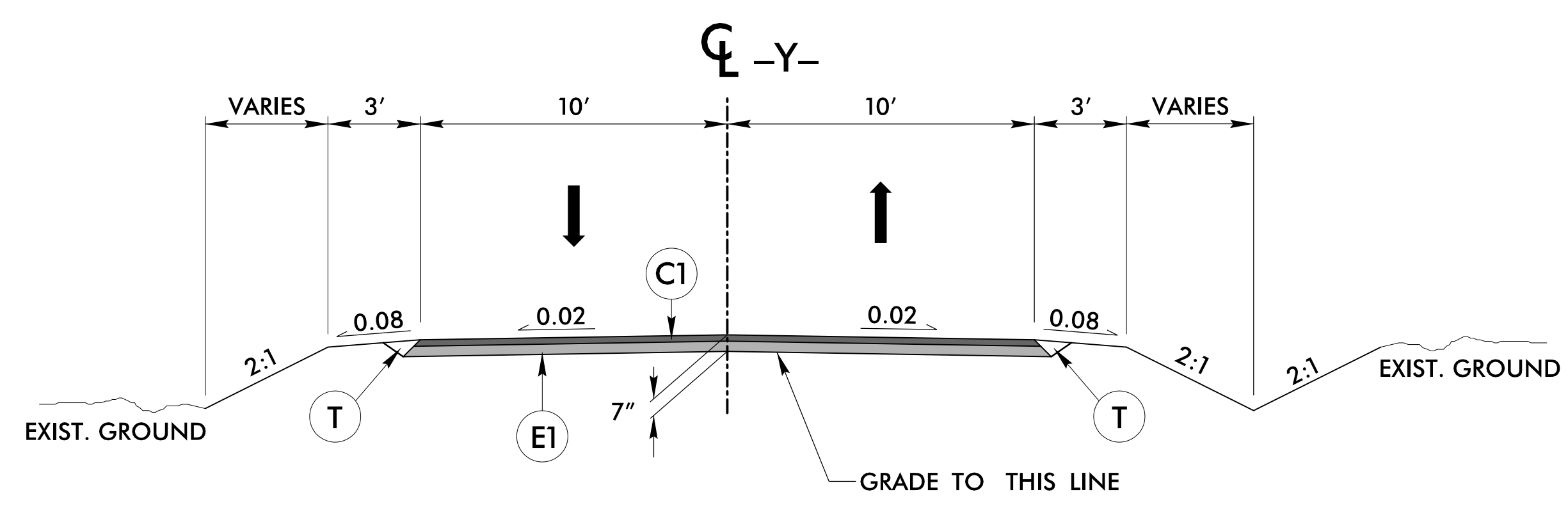
TYPICAL SECTION 3

STA. 14+49.56 (BEGIN BRIDGE) TO 16+22.44 (END BRIDGE)



TYPICAL SECTION 4

-Y- STA. 10+15.00 TO 10+75.00



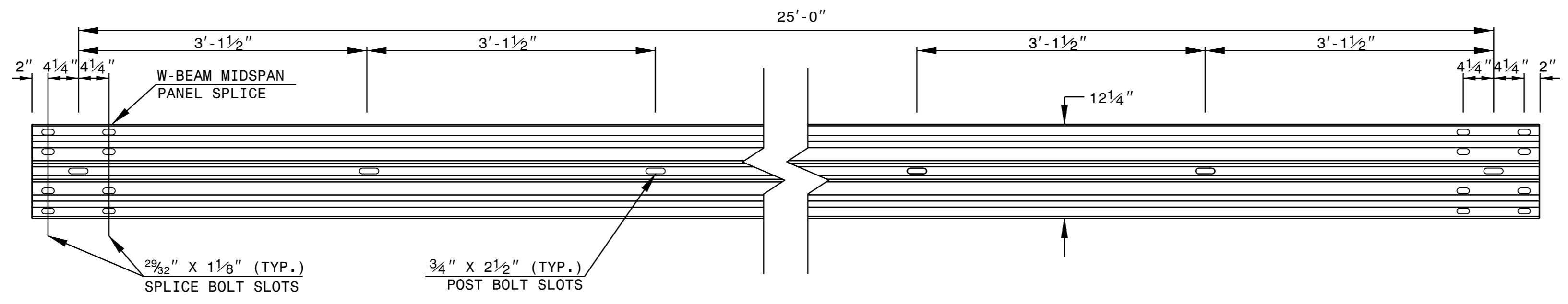
TYPICAL SECTION 5

-Y- STA. 10+75.00 TO 11+67.51

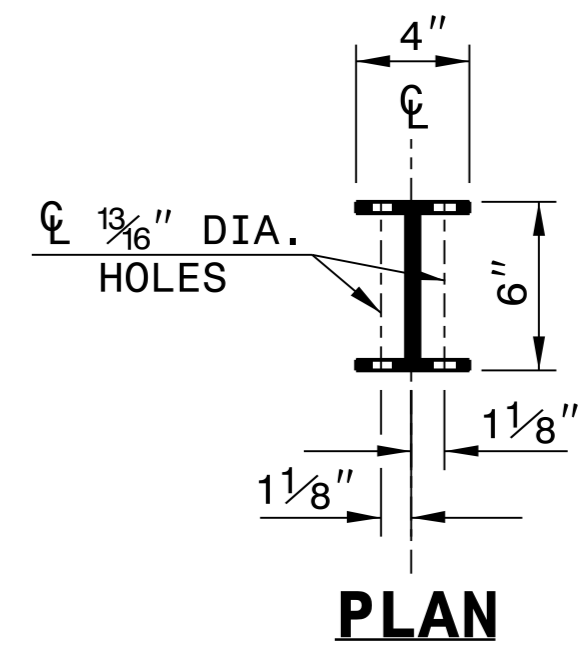
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

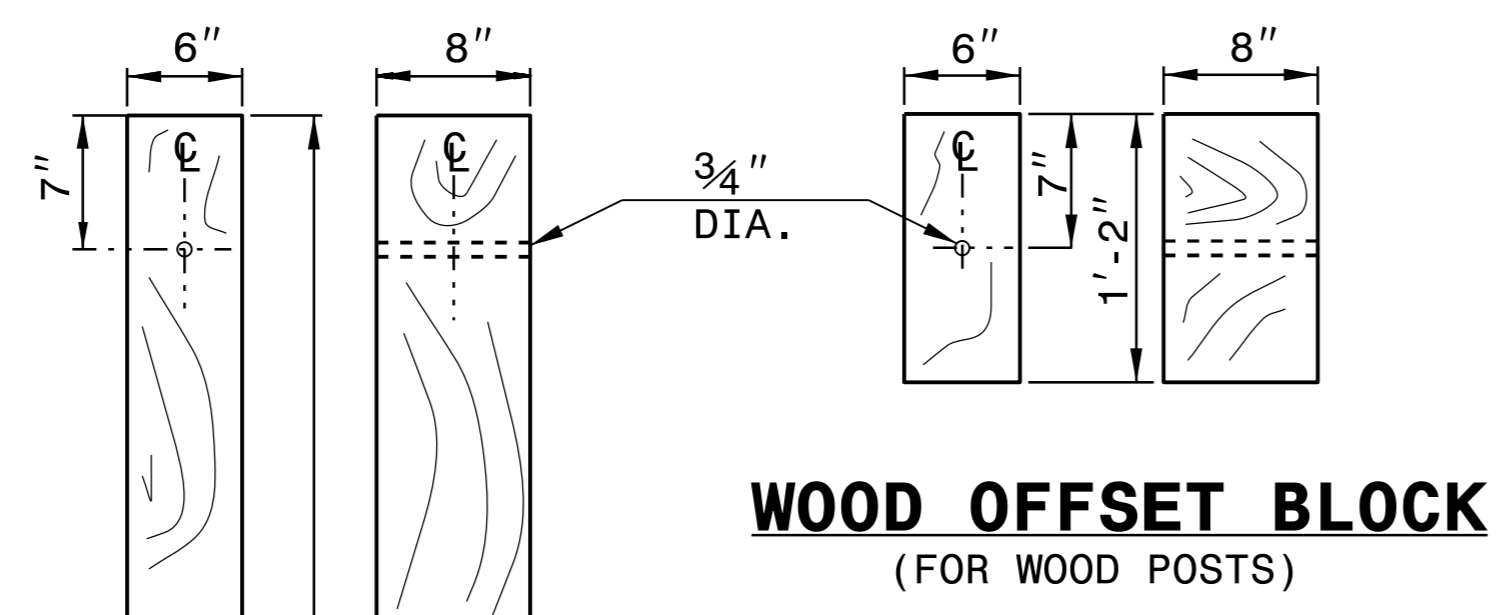
SHEET 6 OF 8
862D02



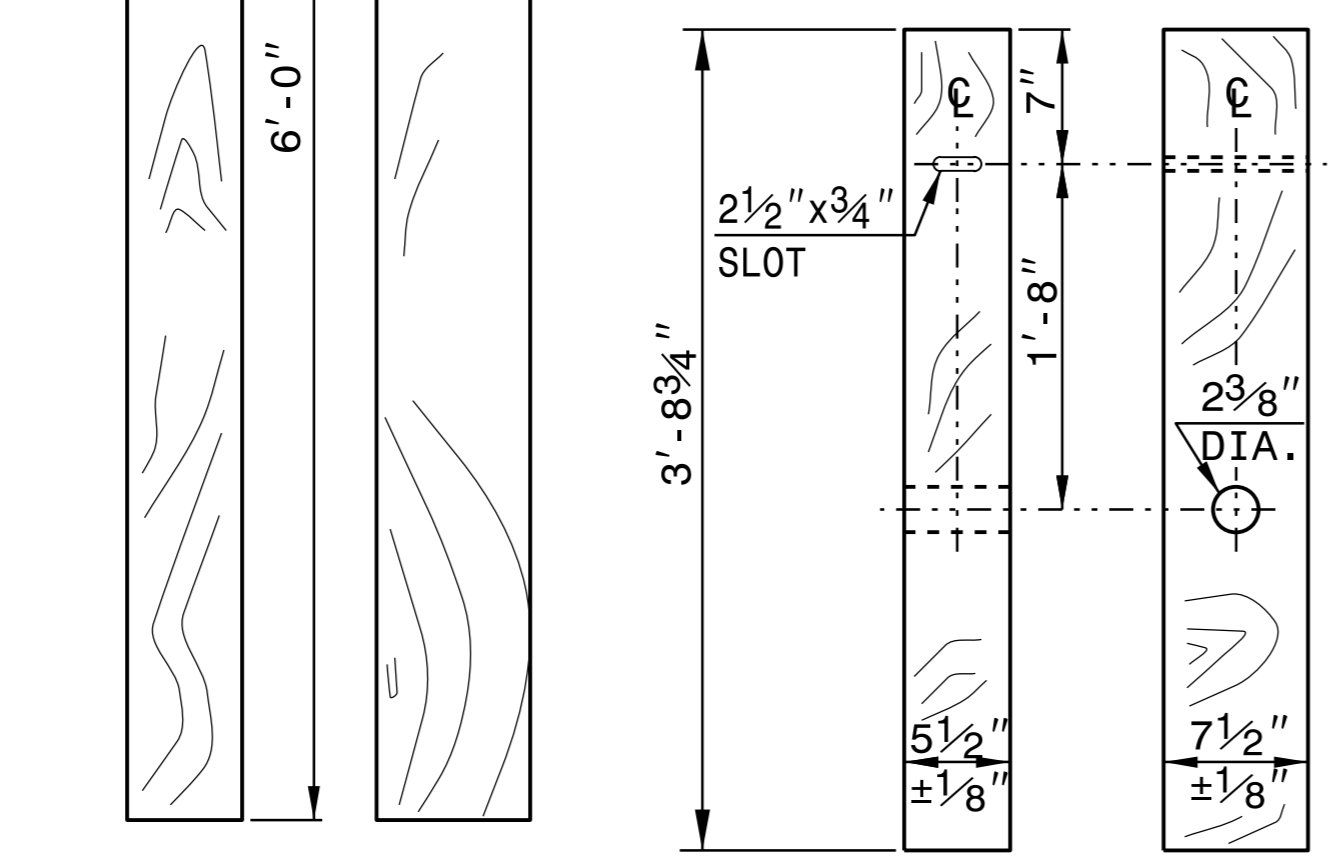
STANDARD W-BEAM GUARDRAIL



PLAN

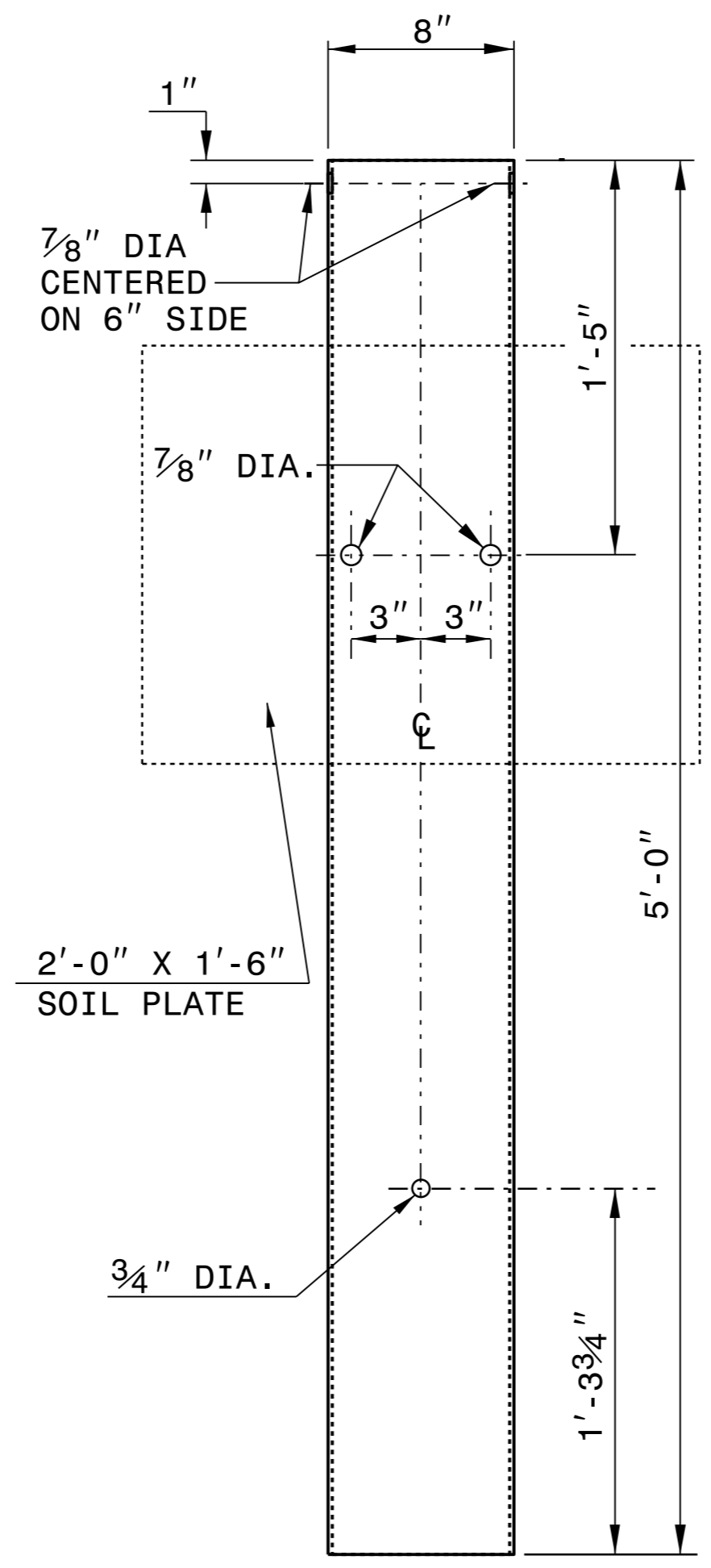


**WOOD OFFSET BLOCK
(FOR WOOD POSTS)**

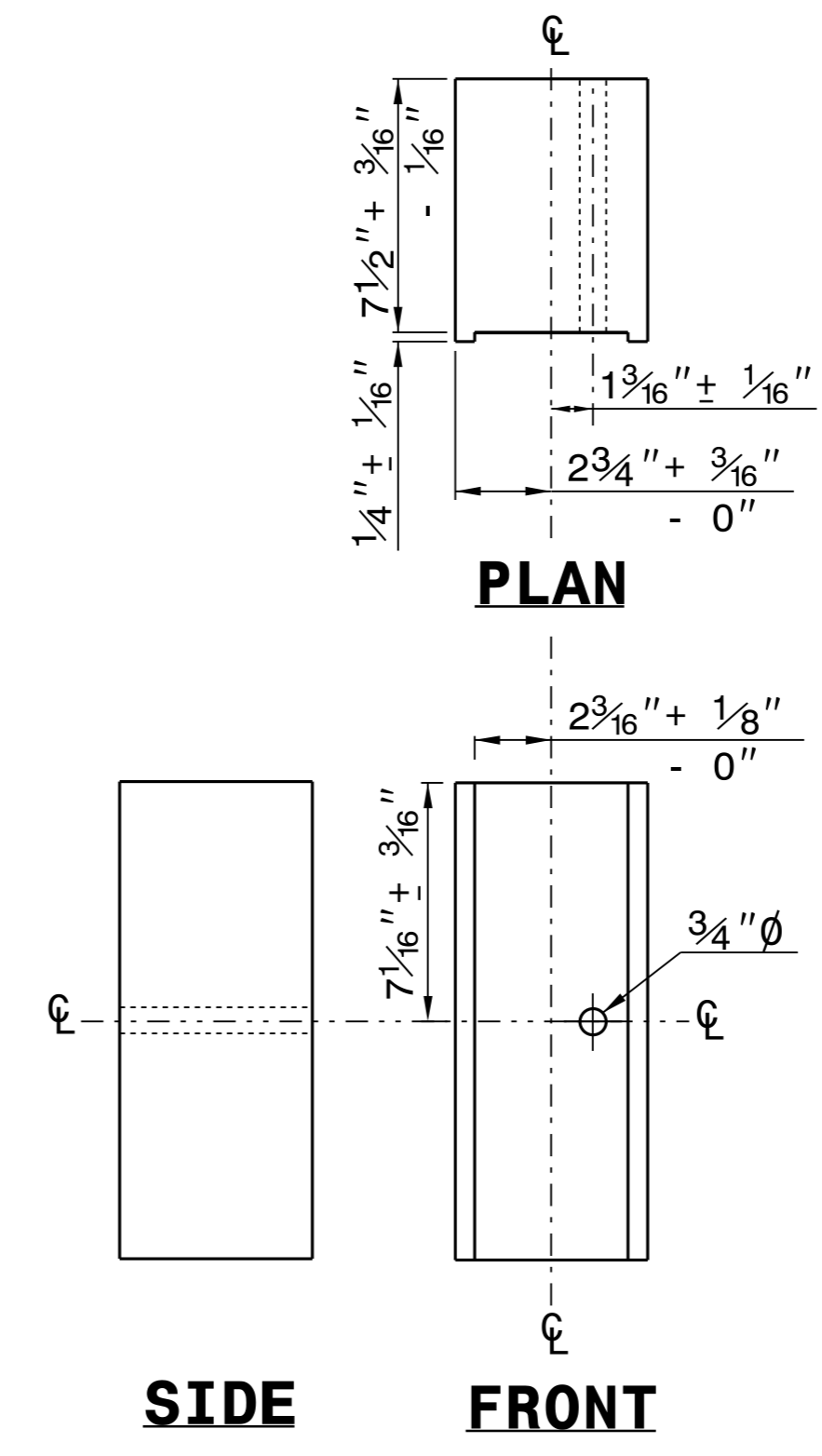


**STANDARD
LINE POST**

**SHORT WOOD
BREAKAWAY POST**



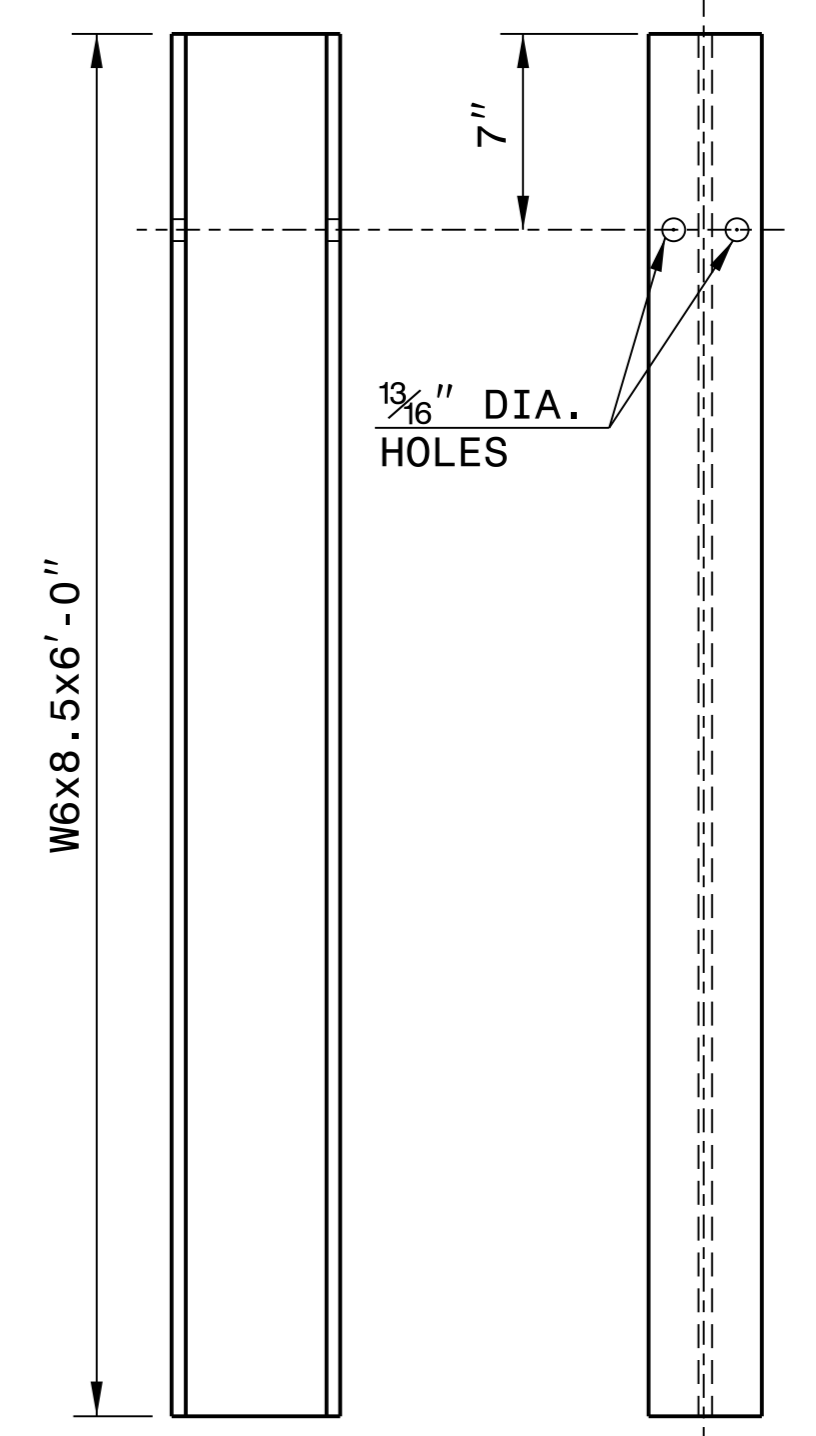
**STEEL TUBE
TS 6"x8"x0.1875"**



SIDE

FRONT

**ROUTED
OFFSET BLOCK**



SIDE

FRONT

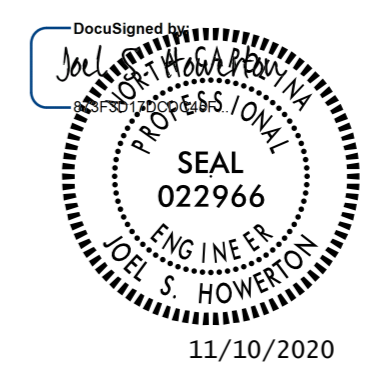
"W6" STEEL POST

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



11/10/2020

**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.:	

I4-DEC-2017 10:36 S:\Contracts\Projects\Special Details\Standard Drawings\Division 8\0862d0301.dgn Jhowerton AT:USD-292595

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

ROADWAY DETAIL DRAWING FOR
STRUCTURE ANCHOR UNITS
GUARDRAIL ANCHOR UNIT, TYPE III
FOR ATTACHMENT TO RAIL ON BRIDGE

SHEET 1 OF 7
862D03

SHEET 1 OF 7
862D03

NOTE:

- **POST NOT REQUIRED FOR SKEW ANGLES GREATER THAN 150° OR LESS THAN 30° UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
- *THE DISTANCE FROM END OF BRIDGE RAIL TO CENTER LINE OF THE FIRST POST SHOULD BE 11½" IF CONCRETE BACKWALL IS NOT PRESENT.
- SHOULDER BERM GUTTER MUST BE INSTALLED TO THE LIMITS 8" x 4" LIP CURB IS SHOWN IF ANCHOR UNIT IS NOT ADJACENT TO AN APPROACH SLAB.
- MEASURE GUARDRAIL HEIGHT FROM THE TOP OF ADJACENT SURFACE (SHOULDER, BERM, OR GUTTER).
- LAP JOINTS IN THE DIRECTION OF TRAFFIC FLOW.
- SEE SHEET 3 FOR POST SECTIONS 1 THRU 9.

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

ROADWAY DETAIL DRAWING FOR
STRUCTURE ANCHOR UNITS
GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO
RAIL ON BRIDGE - SUB REGIONAL TIER

SHEET 1 OF 7
862D03

SHEET 2 OF 7
862D03

NOTE:

- **POST NOT REQUIRED FOR SKEW ANGLES GREATER THAN 150° OR LESS THAN 30° UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
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- MEASURE GUARDRAIL HEIGHT FROM THE TOP OF ADJACENT SURFACE (SHOULDER, BERM, OR GUTTER).
- LAP JOINTS IN THE DIRECTION OF TRAFFIC FLOW.
- SEE SHEET 3 FOR POST SECTIONS 1 THRU 9.

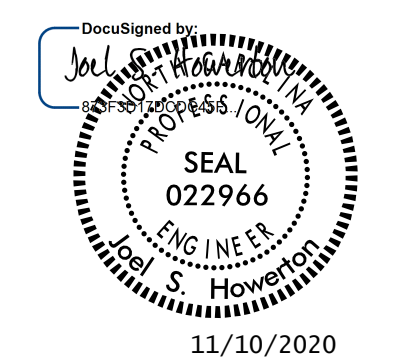
CONTRACT STANDARDS AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

SEE TITLE BLOCK

ORIGINAL BY: J HOWERTON
MODIFIED BY:
CHECKED BY:
FILE SPEC.:

DATE: 06-22-12
DATE:
DATE:
DATE:

11/10/2020



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA



PROJECT REFERENCE NO. <i>BR-0125</i>	SHEET NO. <i>3B-1</i>
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EARTHWORK SUMMARY (IN CUBIC YARDS)

CHAIN	FROM STATION	TO STATION	SIDE	UNCL. EXCAVATION	EMBT + %	BORROW	WASTE
-L-	10 + 35.00	14 + 49.56	LT & RT	814	2,022	1,208	
-L-	16 + 22.44	22 + 30.00	LT & RT	3,007	1,468		1,539
-Y-	10 + 15.00	11 + 50.00	LT & RT	13	143	130	
TOTAL				3,834	3,633	1,338	1,539
ROCK WASTE IN LIEU OF BORROW						-202	-202
ADJUST FOR ROCK SWELL					-61	-61	
ELIMINATE EARTH SHRINKAGE FACTOR FOR ROCK					-39	-39	
WASTE IN LIEU OF BORROW						-1,036	-1,036
PROJECT TOTAL				3,834	3,533		301
ESTIMATE 5% FOR TOPSOIL ON BORROW PITS							
GRAND TOTAL				3,834	3,533		301
SAY				3,900			

NOTE: Approximate quantities only. Unclassified Excavation, Borrow Excavation, Fine Grading, Clearing and Grubbing, and Removal of Existing Pavement will be paid for at the contract lump sum price for "Grading."

DDE: 1420 CY
CONTINGENCY UNDERCUT EXCAVATION: 450 CY
CONTINGENCY SELECT GRANULAR MATERIAL: 400 CY

ASPHALT PAVEMENT REMOVAL SUMMARY

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	YD'
REMOVAL OUTSIDE SLOPE STAKES				
-L-	10 + 97	14 + 25	LT	479.53
-L-	17 + 02	21 + 10	LT	505.90
REMOVAL WITHIN PROPOSED PAVEMENT				
-L-	19 + 46	20 + 75	LT	77.18
-Y-	10 + 75	11 + 67	LT/RT	289.64
TOTAL:				1,352.24
SAY:				1,360

PAVEMENT MARKING DETAIL

MARKING TYPE	CHAIN	FROM STATION	TO STATION	LENGTH (LF)
P1	-L- (LT)	10 + 35.00	22 + 30.00	2390.00
	-L- (RT)	10 + 35.00	22 + 30.00	2390.00
	-Y- (LT)	10 + 15.00	11 + 67.51	305.02
	-Y- (RT)	10 + 15.00	11 + 67.51	305.02
	P13	-L-	10 + 35.00	22 + 30.00
	-Y-	10 + 15.00	11 + 67.51	610.04
TOTAL:				10,780.08
SAY:				10,790

P1: 4" White Edge Lines (Two Layers of Paint with Line Factor 1)
P13 : 4" Yellow Double Center Lines (Two Layers of Paint with Line Factor 2)

* W MEASURED FROM "N" AT THE BEGINNING OF THE ANCHOR TO "N" AT THE END OF THE ANCHOR.
"N" = DISTANCE FROM EDGE OF LANE TO FACE OF GUARDRAIL.
TOTAL SHOULDER WIDTH = DISTANCE FROM EDGE OF TRAVEL LANE TO SHOULDER BREAK POINT.
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

GUARDRAIL SUMMARY

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH (LF)			WARRANT POINT		"N" DIST. FROM E.O.L. (LF)	TOTAL SHOUL. WIDTH (LF)	FLARE LENGTH (LF)		W* (LF)		ANCHORS								IMPACT ATTENUATOR TYPE 350 EA G NG	SINGLE FACED GUARDRAIL	REMOVE EXISTING GUARDRAIL	REMOVE AND STOCKPILE EXISTING GUARDRAIL	REMARKS								
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	XI MOD	B-77	GREU TL-3	GREU TL-2	TYPE III	CAT-1	VI MOD	BIC	AT-1														
-L-	13 + 75.06	14 + 58.46	LT	81.25				14 + 58.46	4.36 - 5.36	7.36-8.36	50		1.0					1																	
-L-	13 + 49.86	14 + 40.85	RT	93.75			14 + 40.85		5.02 - 6.02	8.02-9.02	50		1.0					1																	
-L-	16 + 31.34	17 + 12.08	LT	81.25			16 + 31.34		4.42 - 5.42	7.42-8.42	50		1.0					1																	
-L-	16 + 13.54	17 + 19.79	RT	106.25			16 + 13.54		4.42 - 5.42	7.42-8.42	50		1.0					1																	
TOTAL:				362.50																															
ANCHOR LENGTH DEDUCTIONS:																																			
GREU TL-3 (4 @ 50')				200.00																															
TYPE-III (4 @ 18.75')				75.00																															
TOTAL ANCHOR LENGTH (DEDUCTIONS):				275.00																															
TOTAL GUARDRAIL LENGTH:				87.50																															
SAY:				87.50				5 ADDITIONAL G/R POSTS											4 EA			4 EA													

11/9/2020 R:\Roadway\Proj\SH\BR-0125_rdy_psh03B-1.dgn

COMPUTED BY: JCK DATE: August 10, 2019
 CHECKED BY: SCC DATE: August 10, 2019

(5-15-18)

PROJECT NO.
BR-0125

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			ASU 1	12	100	200	500		
TOTAL CY/TONS/SY:					100	200**	500**	0	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.

SUMMARY OF PRE-SPLITTING OF ROCK

LINE	Beginning Rock Cut Slope (H:V)	Approx. Station	Ending Rock Cut Slope (H:V)	Approx. Station	Location LT/RT	Pre-splitting of Rock SY
-L-	0.5:1	18+00	0.5:1	20+00	RT	225
TOTAL SY:						225

SUMMARY OF BRIDGE WAITING PERIODS

Bridge Description	End Bent/ Bent No.	MONTHS
Bridge No. 663 on SR 1002 over East Prong Roaring River	EB 1 & 2	2

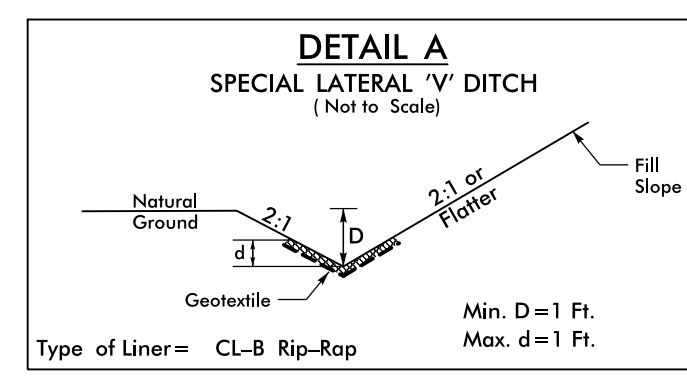
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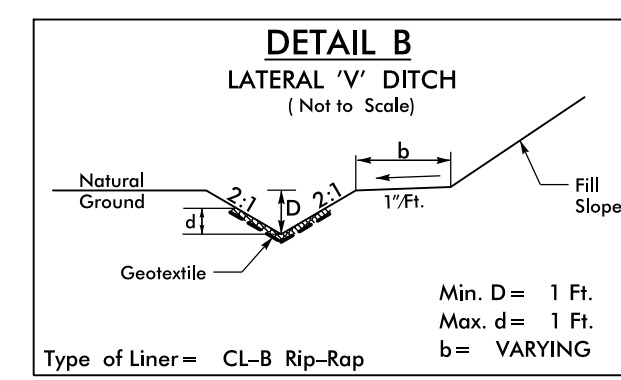


Professional Engineer seals for Joseph A. Freeman and Edward J. Varns

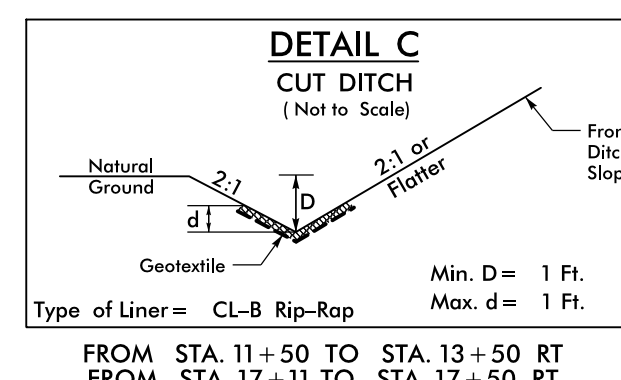
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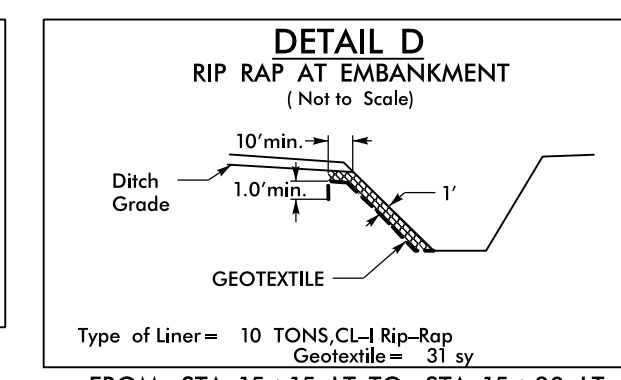
FROM STA. 10+35 RT TO STA. 11+50 RT
FROM STA. 13+50 RT TO STA. 14+00 RT
FROM STA. 20+33 RT TO STA. 22+30 RT



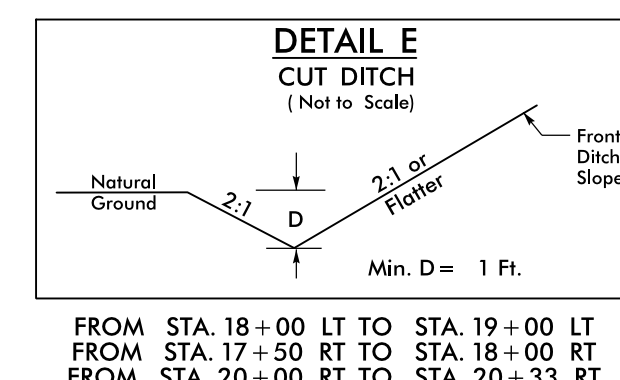
FROM STA. 14+50 RT TO STA. 15+15 LT
FROM STA. 14+00 RT TO STA. 14+61 RT
FROM STA. 16+71 RT TO STA. 17+11 RT
FROM STA. 15+76 LT TO STA. 16+92 LT



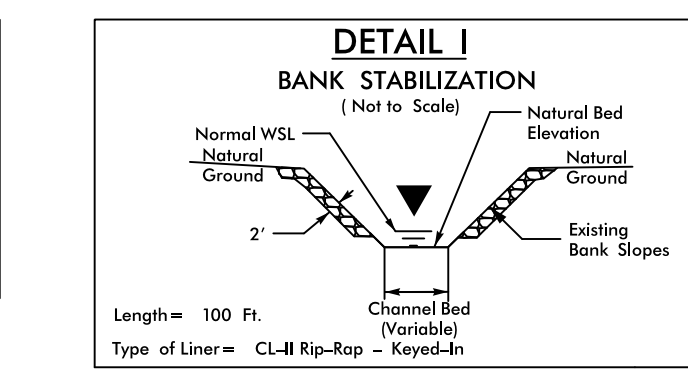
FROM STA. 11+50 TO STA. 13+50 RT
FROM STA. 17+11 TO STA. 17+50 RT



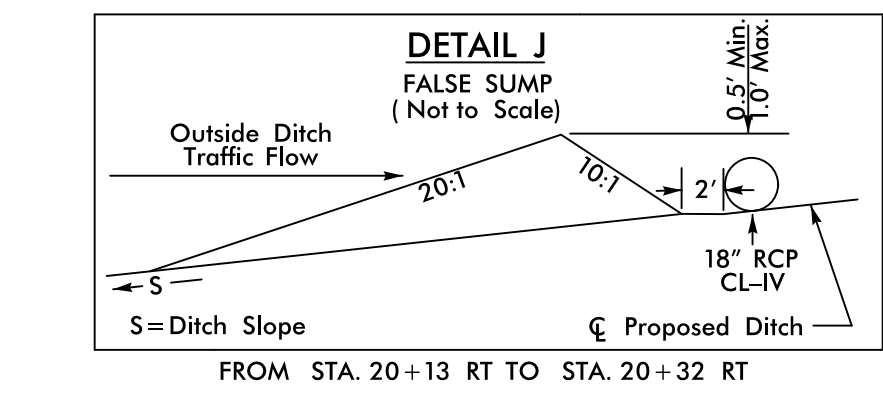
FROM STA. 15+15 LT TO STA. 15+30 LT
FROM STA. 15+60 LT TO STA. 15+76 LT
FROM STA. 14+61 RT TO STA. 14+73 RT



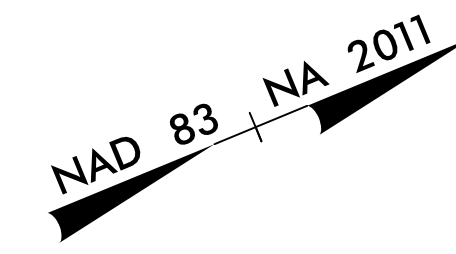
FROM STA. 18+00 LT TO STA. 19+00 LT
FROM STA. 17+50 RT TO STA. 18+00 RT
FROM STA. 20+00 RT TO STA. 20+33 RT



Length = 100 Ft.
Type of Liner = CL-B Rip-Rap - Keyed-In



FROM STA. 20+13 RT TO STA. 20+32 RT



BEGIN TIP PROJECT BR-0125
-L- POT STA. 10+25.00

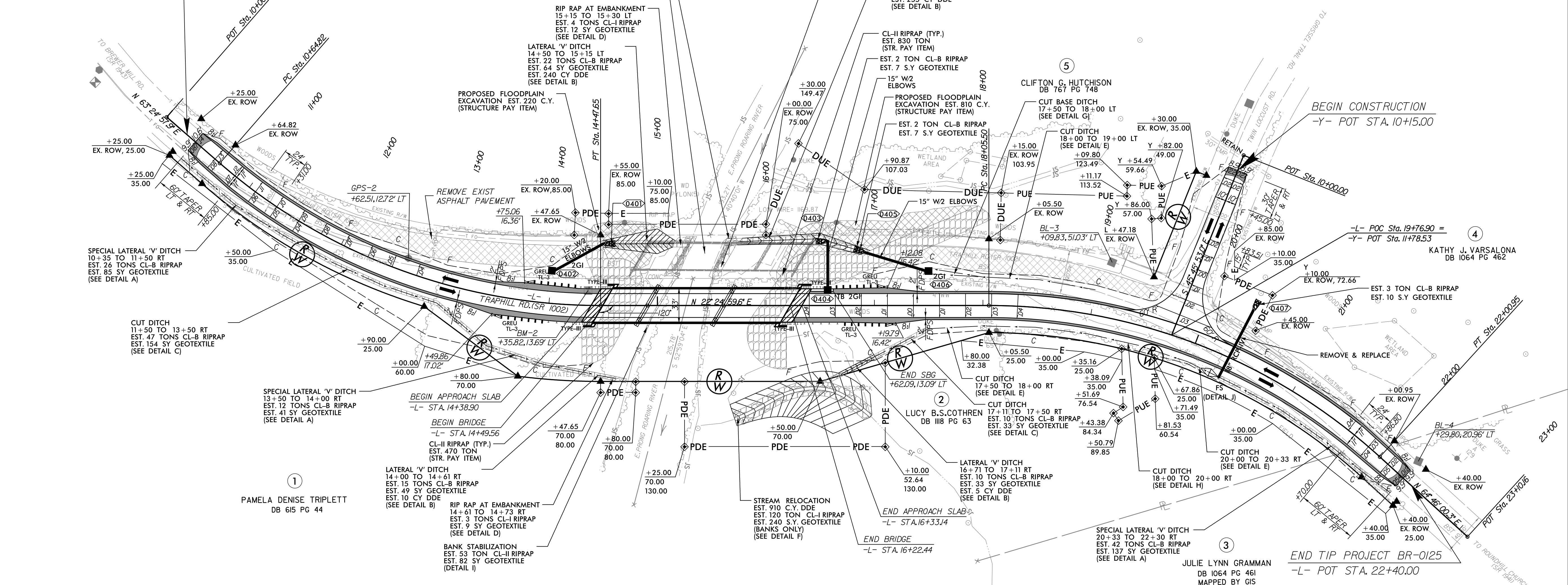
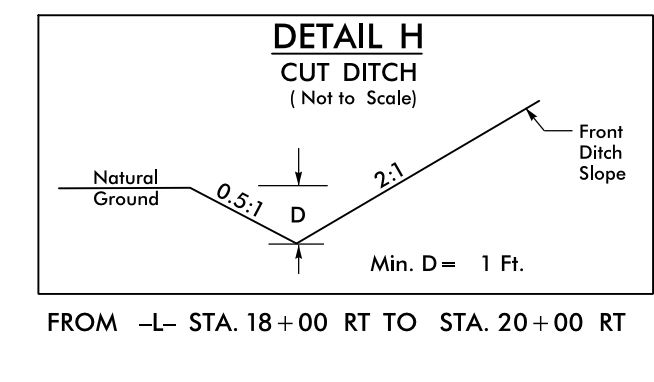
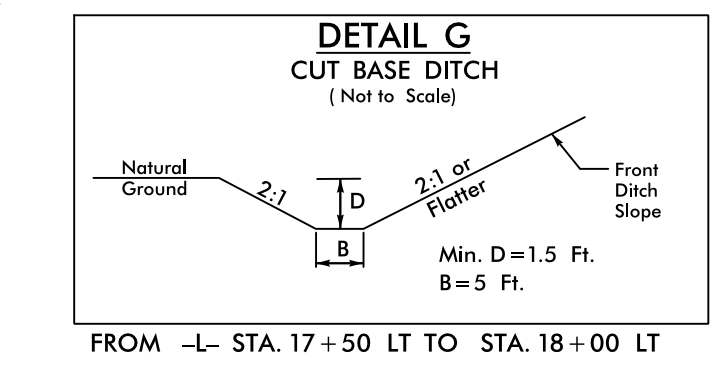
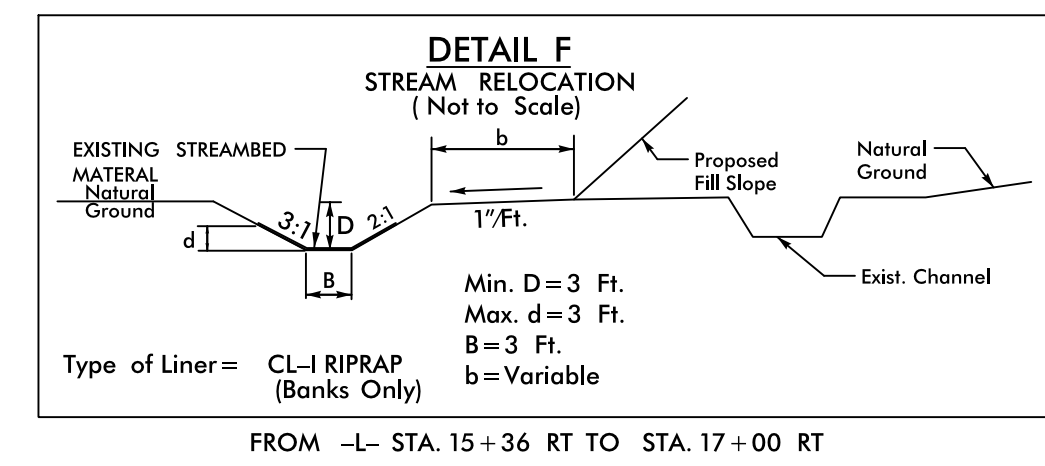


Table with 2 columns: Station, Curve Data (Delta, D, L, T, R, DS, SE)



NOTE: - SEE STRUCTURE PLANS S-1 THRU S-23
- INCIDENTAL MILL APPROXIMATELY 25' AT EACH END TO PROVIDE A SMOOTH TRANSITION TO THE EXISTING PAVEMENT.

* DESIGN EXCEPTION REQUIRED FOR HORIZONTAL CURVE RADIUS.

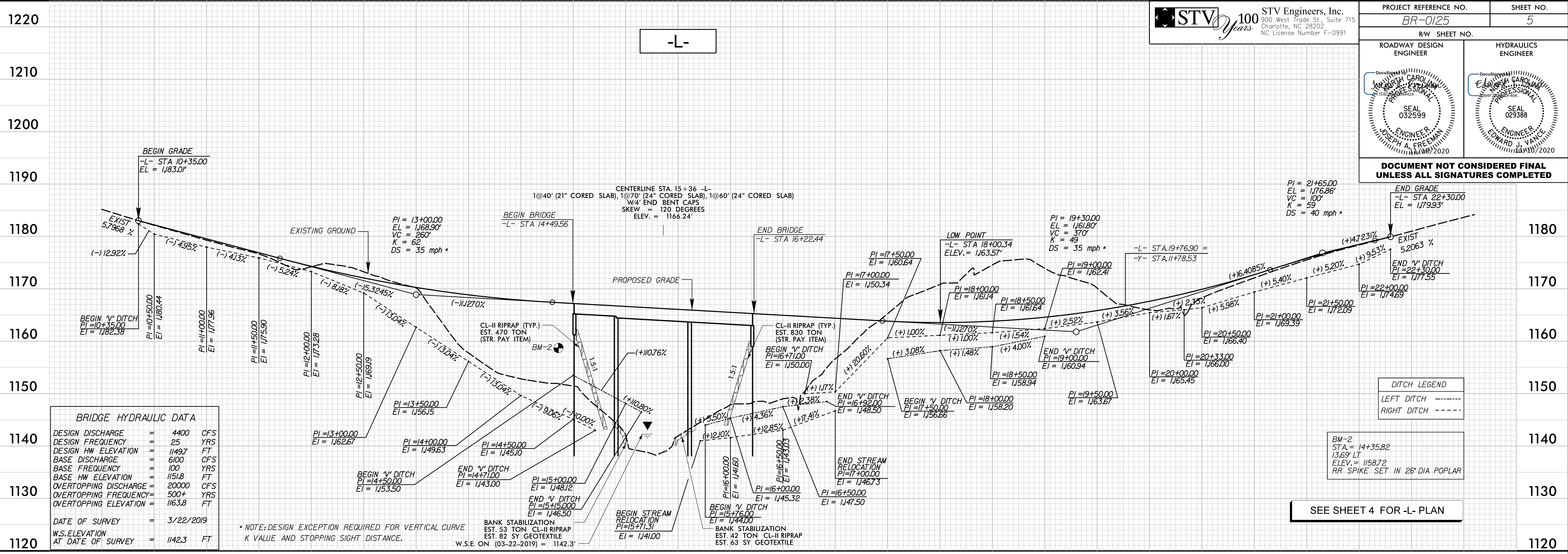
SEE SHEET 5 FOR -L- & -Y- PROFILE

8/17/19



Professional Engineer seals for Joseph A. Freeman and Edward J. Van...

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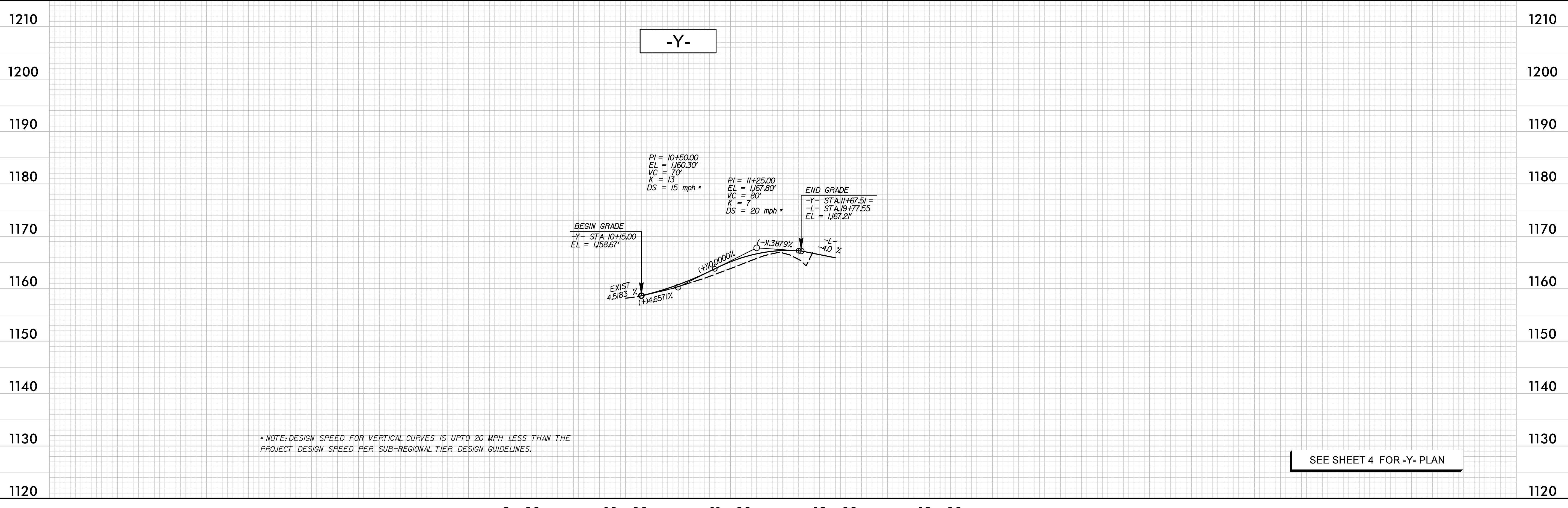
BRIDGE HYDRAULIC DATA table with columns for design discharge, frequency, elevation, etc.

* NOTE: DESIGN EXCEPTION REQUIRED FOR VERTICAL CURVE K VALUE AND STOPPING SIGHT DISTANCE.

BANK STABILIZATION EST. 82 SY GEOTEXTILE W.S.E. ON (03-22-2019) = 1142.3'

SEE SHEET 4 FOR -L- PLAN

-Y-



* NOTE: DESIGN SPEED FOR VERTICAL CURVES IS UPTO 20 MPH LESS THAN THE PROJECT DESIGN SPEED PER SUB-REGIONAL TIER DESIGN GUIDELINES.

SEE SHEET 4 FOR -Y- PLAN

1/10/2020 1:41:00 PM \\P\proj\SH\T\BR-0125_rdy_psh05pfl.dgn