

09/28/2019


See Sheet 1A For Index of Sheets
 See Sheet 1B For Conventional Symbols
 See Sheet RW01 TO RW04 For Survey Control Sheets

STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS

HALIFAX COUNTY

**LOCATION: BRIDGE NO. 410115 OVER ROCKY SWAMP
 ON SR 1601 (SLEDGE RD.)**

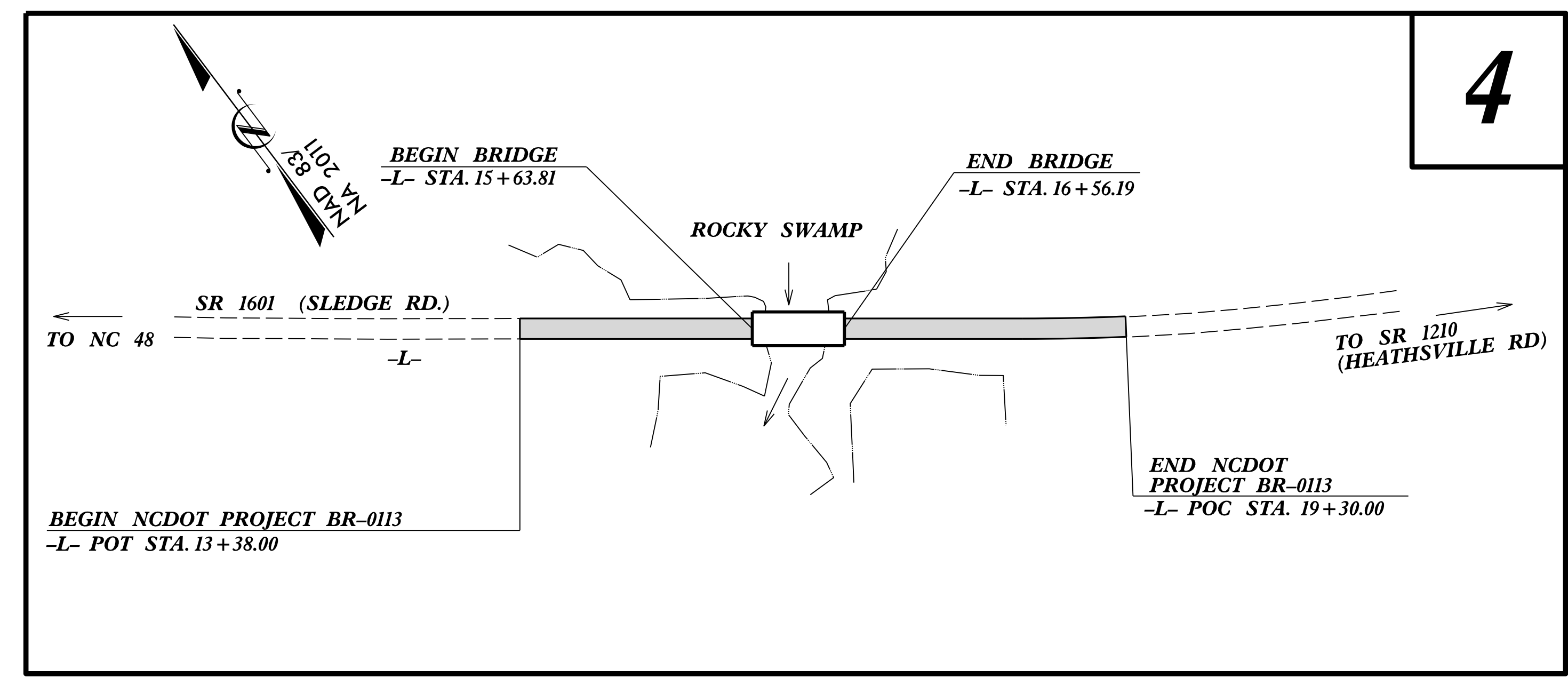
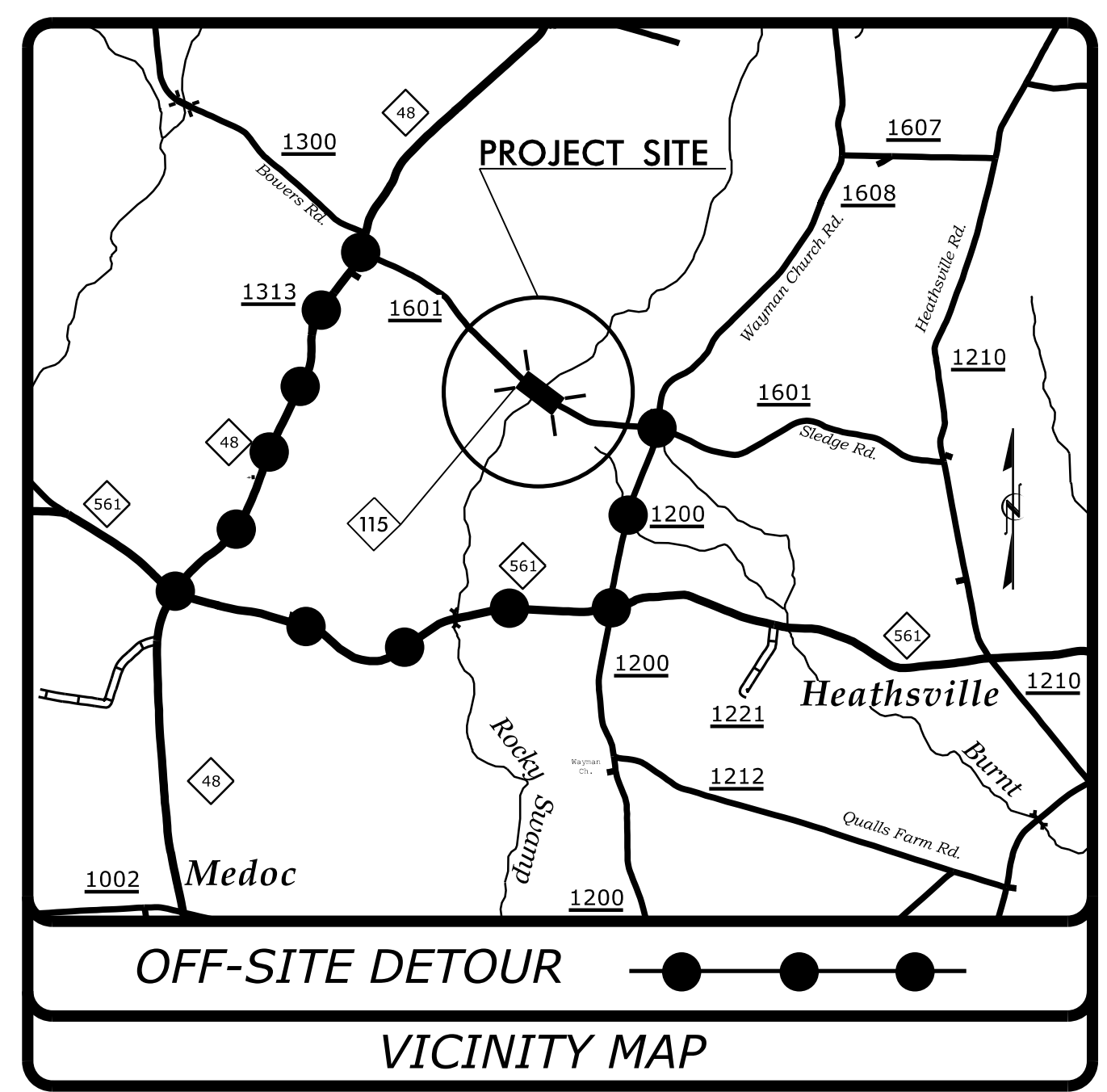
TYPE OF WORK: GRADING, DRAINAGE, PAVING & STRUCTURE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BR-0113	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
48822.1.1		PE	
48822.2.1		ROW, UTIL.	
48822.3.1	2020001	CONST.	
 1223 Jones Franklin Rd. Raleigh, N.C. 27606 License No. F-0377 Bus: 919 851 8077 Fax: 919 851 8107			
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION			

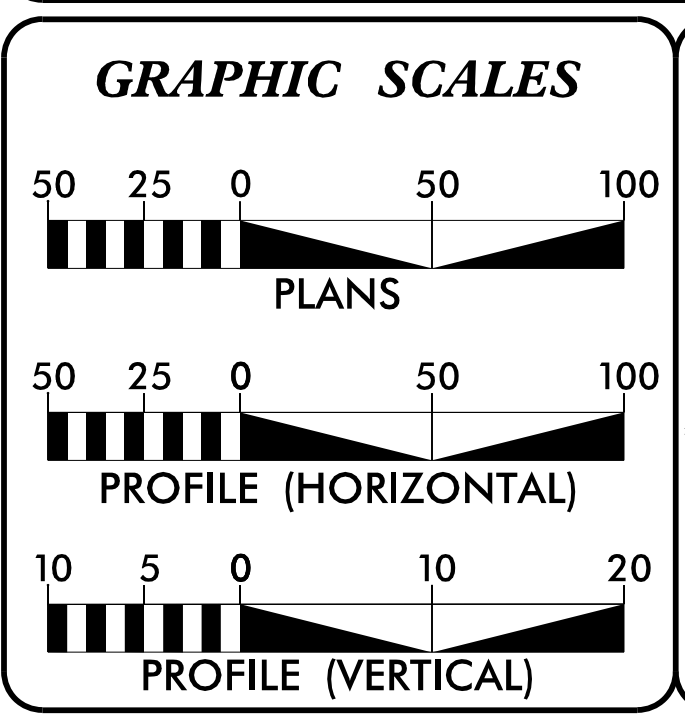
BRIDGE #410115

PROJECT: BR-0113

CONTRACT: C204531



DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED



DESIGN DATA
 ADT 2019 = 340

T = 6 % *

V = 55 MPH

* (TTST = 3% +
 DUAL = 3%)

FUNC CLASS =
 RURAL LOCAL
 SUBREGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY PROJECT BR-0113 =	0.095 MILES
LENGTH STRUCTURE PROJECT BR-0113 =	0.017 MILES
TOTAL LENGTH PROJECT BR-0113 =	0.112 MILES

NCDOT CONTACT: **DAVID STUTTS, PE**
 PROJECT ENGINEER - PEP/PROGRAM MGT.

Prepared for:
DIVISION OF HIGHWAYS
STRUCTURES MANAGEMENT UNIT
 1000 BIRCH RIDGE DRIVE RALEIGH NC, 27610

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: **EDWARD G. WETHERILL, PE**
 PROJECT ENGINEER
 JULY 24, 2019

LETTING DATE: **GREG S. PURVIS, PE**
 PROJECT DESIGN ENGINEER
 JANUARY 19, 2021

HYDRAULICS ENGINEER
 8/25/2020 | 11:21:24 PDT

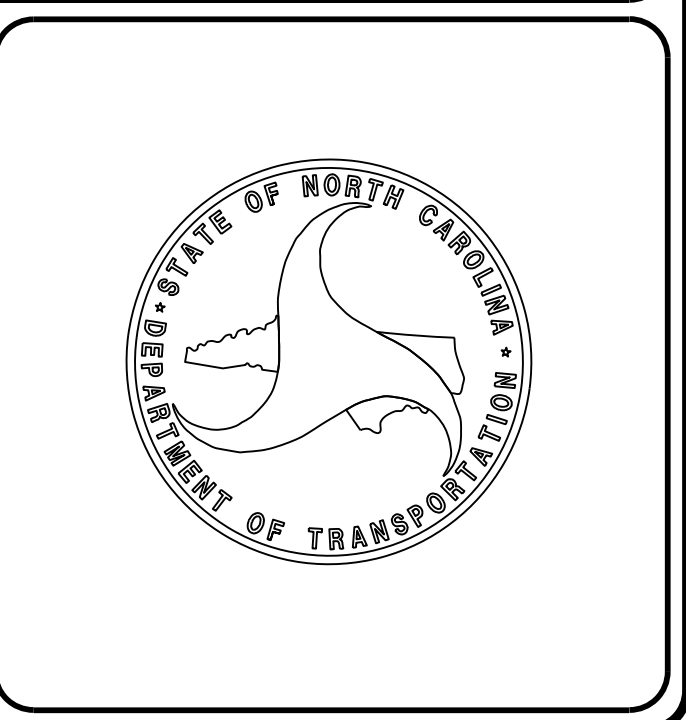
SEAL 31977

EDWARD G. WETHERILL, PE
 P.E.

ROADWAY DESIGN ENGINEER
 8/25/2020 | 11:21:24 PDT

SEAL 022999

GREG S. PURVIS, PE
 P.E.



GENERAL NOTES

GENERAL NOTES: 2018 SPECIFICATIONS
 EFFECTIVE: 01-16-2018
 REVISED:

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 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

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

N/A

RIGHT-OF-WAY MARKERS:

ALL RIGHT-OF-WAY MARKERS ON THIS PROJECT SHALL BE PLACED BY OTHERS.

2018 ROADWAY ENGLISH STANDARD DRAWINGS

EFF. 01-16-2018
 REV.



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	
200.03	Method of Clearing - Method III
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
275.01	Rock Plating
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	
840.00	Concrete Base Pad for Drainage Structures
840.29	Frames and Narrow Slot Flat Grates
840.35	Traffic Bearing Grated Drop Inlet - for Cast Iron Double Frame and Grates
840.46	Traffic Bearing Precast Drainage Structure
840.66	Drainage Structure Steps
846.01	Concrete Curb, Gutter and Curb & Gutter
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units
876.02	Guide for Rip Rap at Pipe Outlets

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	TYPICAL SECTIONS, PAVEMENT SCHEDULE, & MISCELLANEOUS DETAILS
2C-1	DETAIL FOR TYPE III STRUCTURE ANCHOR UNIT
2C-2	DETAIL FOR GUARDRAIL INSTALLATION
3B-1	SUMMARY OF DRAINAGE QUANTITIES, GUARDRAIL SUMMARY, EARTHWORK SUMMARY, PAVEMENT REMOVAL SUMMARY, AND SHOULDER BERM GUTTER SUMMARY
3G-1	SUMMARY OF ROCK PLATING
4	PLAN AND PROFILE SHEET
RW01 THRU RW04	SURVEY CONTROL SHEETS
TMP-1 THRU TMP-4	TRANSPORTATION MANAGEMENT PLAN
PMP-1 THRU PMP-2	PAVEMENT MARKING PLAN
EC-1 THRU EC-4	EROSION CONTROL PLANS
RF-1	REFORESTATION DETAIL
X-1A	CROSS SECTION SUMMARY SHEET
X-1 THRU X-5	CROSS SECTIONS
S-1 THRU S-18	STRUCTURE PLANS
SN	STRUCTURE NOTES

PROJECT REFERENCE NO. <i>BR-0113</i>	SHEET NO. <i>1A</i>
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	ROADWAY DESIGN ENGINEER <i>4/23/2020</i>
 W. CHESTNELL ENGINEERS 1025 JONES BRIDGE RD. RALEIGH, NC 27609 PHONE: 919.853.8000 FAX: 919.853.8007	
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN CIVIL/SITE DESIGN - SURVEYING - CONSTRUCTION ADMINISTRATION	

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

BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	○ EP
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	▽
Proposed Lateral, Tail, Head Ditch	-----
False Sump	▽

RAILROADS:

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

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	-----
Proposed Guardrail	-----
Existing Cable Guiderail	-----
Proposed Cable Guiderail	-----
Equality Symbol	⊕
Pavement Removal	⊗

VEGETATION:

Single Tree	☼
Single Shrub	☼

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

Hedge	-----
Woods Line	-----
Orchard	☼ ☼ ☼ ☼
Vineyard	□ Vineyard

EXISTING STRUCTURES:

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

UTILITIES:

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 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	⊙
Telephone Pedestal	⊠
Telephone Cell Tower	⊠
U/G Telephone Cable Hand Hole	-----
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.*)	---T FO---
U/G Fiber Optics Cable LOS C (S.U.E.*)	---T FO---
U/G Fiber Optics Cable LOS D (S.U.E.*)	---T FO---

WATER:

Water Manhole	⊙
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 Tower	⊗
U/G TV Cable Hand Hole	-----
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---

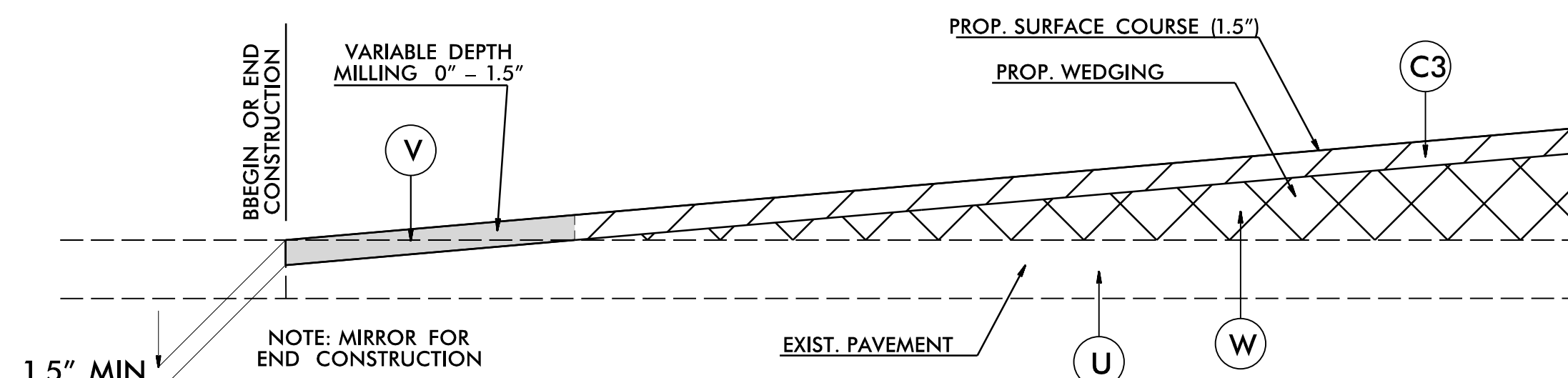
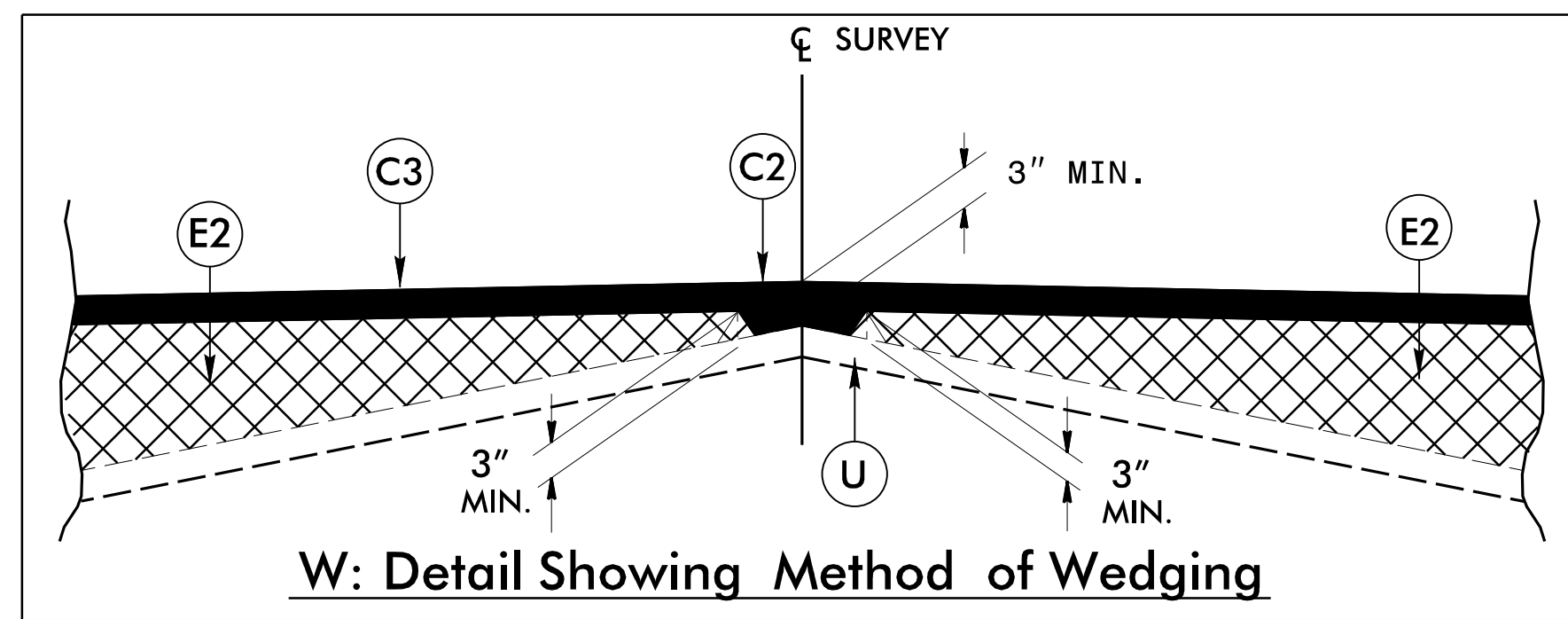
MISCELLANEOUS:

Utility Pole	●
Utility Pole with Base	⊠
Utility Located Object	○
Utility Traffic Signal Box	⊠
Utility Unknown U/G Line LOS B (S.U.E.*)	---ZUTL---
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.

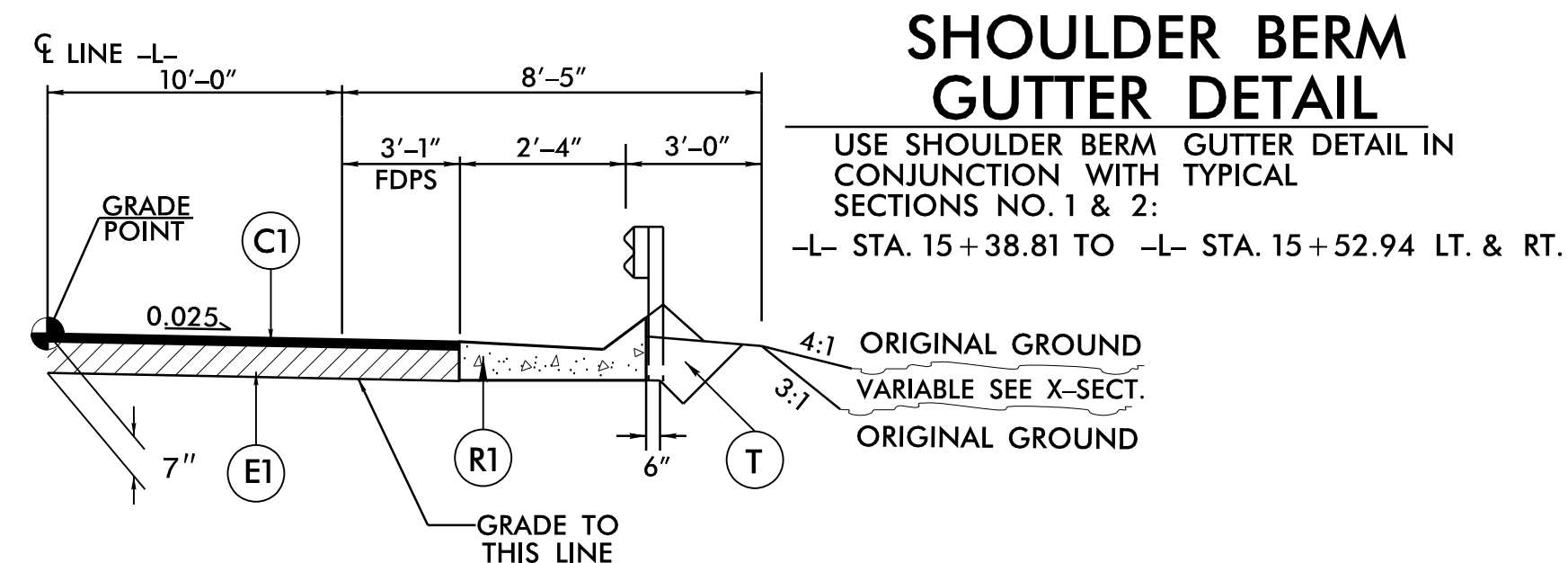
6/2/2020

FINAL PAVEMENT SCHEDULE	
C1	PROP. APPROX. 3" 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.
C3	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.
E1	PROP. APPROX. 4" 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 5.5" IN DEPTH.
R1	SHOULDER BERM GUTTER
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
V	MILLING BITUMINOUS PAVEMENT. (SEE MILLING DETAIL)
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL)

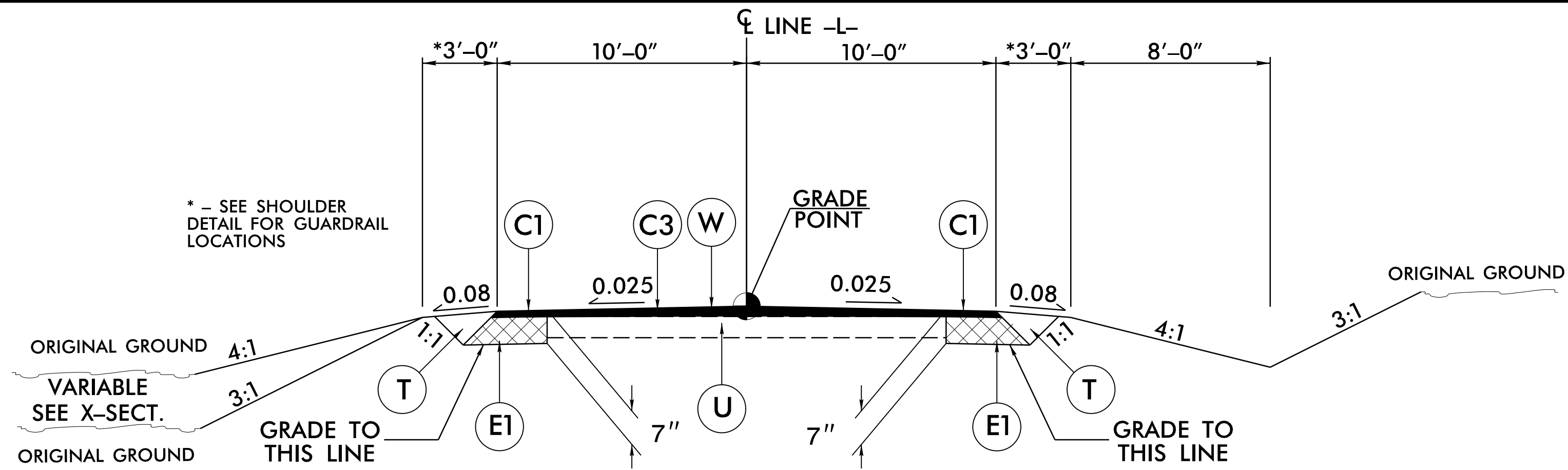
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.



—L- STA. 13+38.00 TO —L- STA. 13+85.00
 —L- STA. 18+92.50 TO —L- STA. 19+30.00

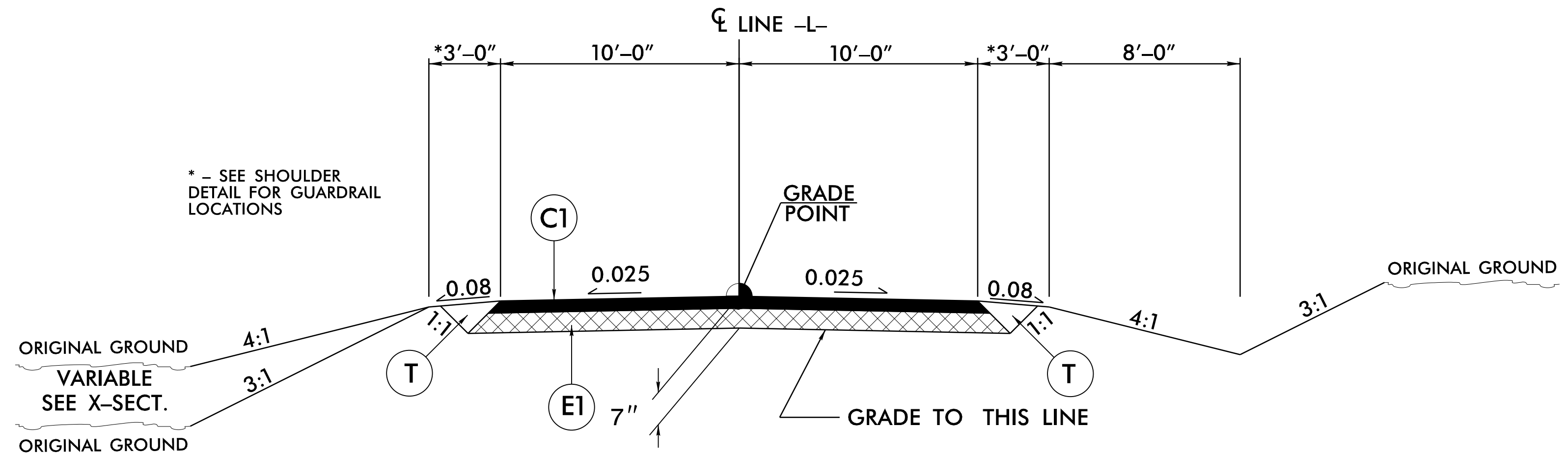


USE SHOULDER BERM GUTTER DETAIL IN CONJUNCTION WITH TYPICAL SECTIONS NO. 1 & 2:
 —L- STA. 15+38.81 TO —L- STA. 15+52.94 LT. & RT.



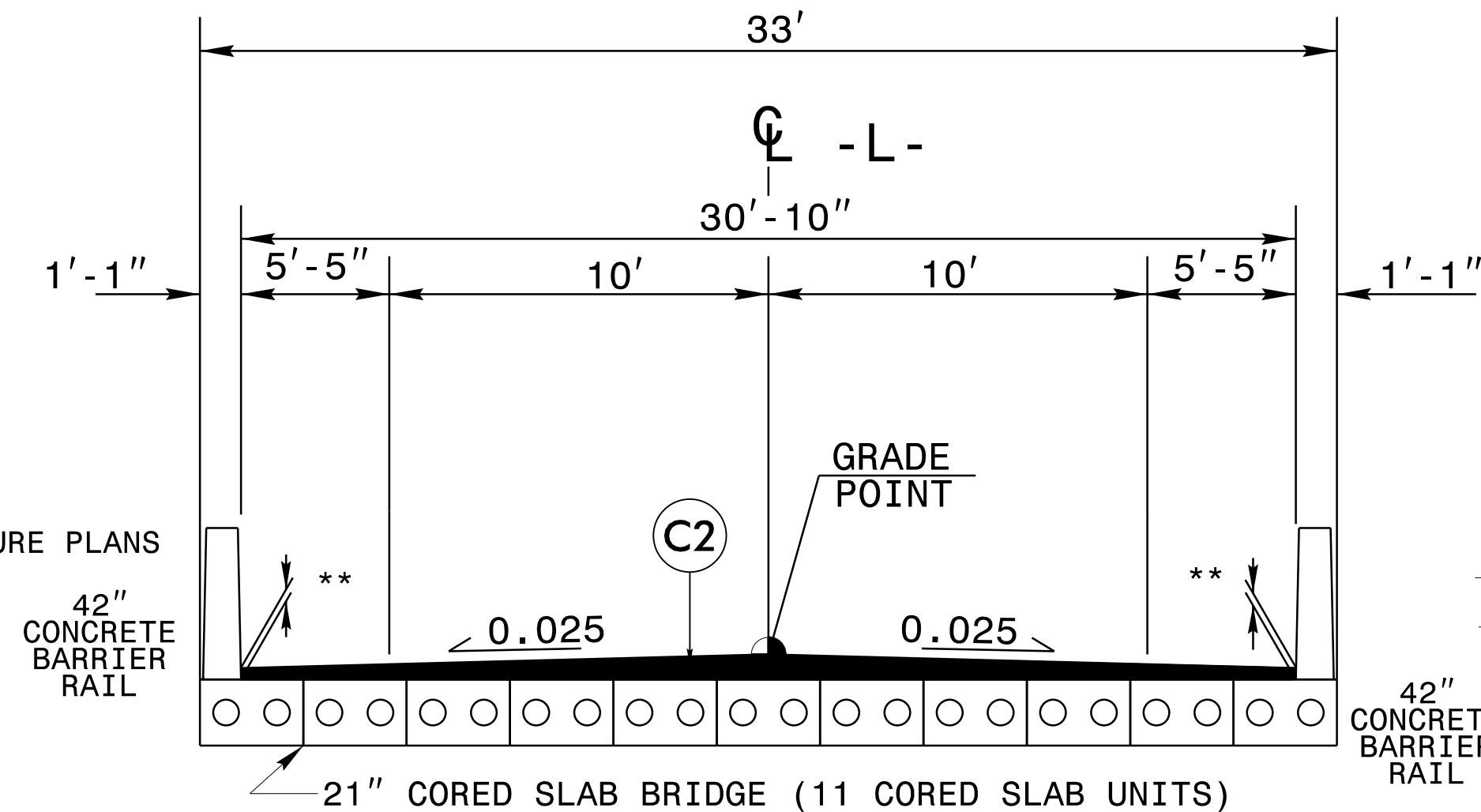
TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1 AS FOLLOWS:
 —L- STA. 13+38.00 TO —L- STA. 15+13.81
 —L- STA. 17+06.19 TO —L- STA. 19+30.00



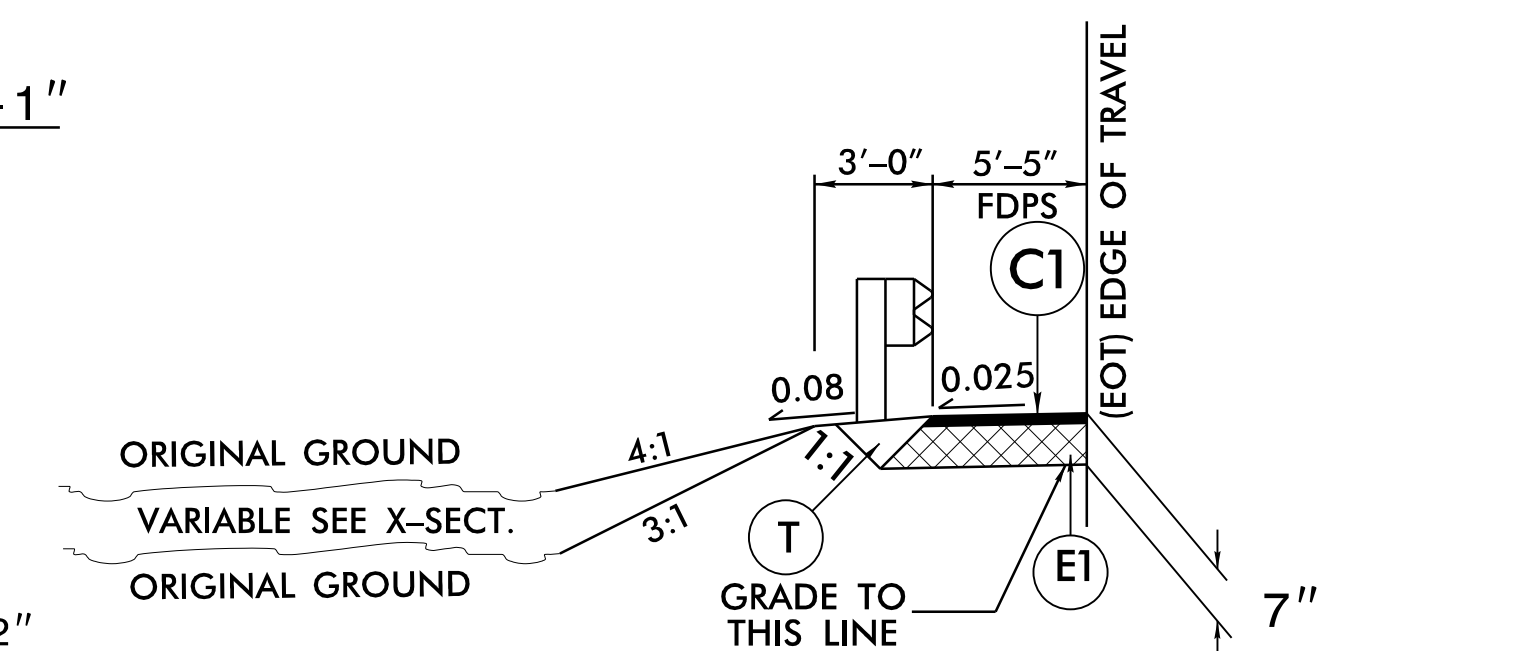
TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2 AS FOLLOWS:
 —L- STA. 15+13.81 TO —L- STA. 15+63.81 (BEGIN BRIDGE)
 —L- STA. 16+56.19 (END BRIDGE) TO —L- STA. 17+06.19



TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3 AS FOLLOWS:
 —L- STA. 15+63.81 (BEGIN BRIDGE) TO —L- STA. 16+56.19 (END BRIDGE)



USE SHOULDER DETAIL IN CONJUNCTION WITH TYPICAL SECTIONS NO. 1 & 2:
 —L- STA. 14+88.81 TO —L- STA. 15+63.81 LT. & RT.
 —L- STA. 16+56.19 TO —L- STA. 17+31.19 LT. & RT.

PROJECT REFERENCE NO. BR-0113	SHEET NO. 2A-1
ROADWAY DESIGN ENGINEER 1/29/2020 	PAVEMENT DESIGN ENGINEER 1/29/2020
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION	

BRIDGE #410115

1/2/2020 BR-0113_Rdptyp.dgn

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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

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

ELEVATION

PLAN VIEW

**GUARDRAIL ANCHOR UNIT, TYPE III
FOR ATTACHMENT TO RAIL ON BRIDGE**

SHEET 1 OF 7
862D03

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

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 2 OF 7
862D03

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

ELEVATION

PLAN VIEW

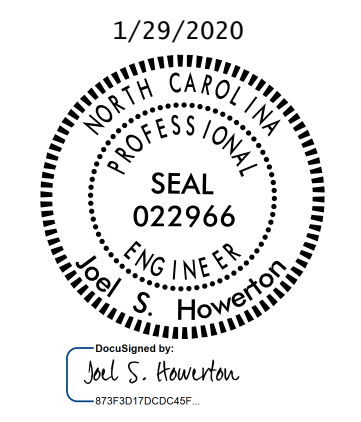
**GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO
RAIL ON BRIDGE - SUB REGIONAL TIER**

SHEET 2 OF 7
862D03

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

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 11 1/2" 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.

NOTE:
 **POST NOT REQUIRED FOR SKEW ANGLES GREATER THAN 150° OR LESS THAN 30° UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
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 -LAP JOINTS IN THE DIRECTION OF TRAFFIC FLOW.
 -SEE SHEET 3 FOR POST SECTIONS 1 THRU 9.



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UNLESS ALL SIGNATURES COMPLETED

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

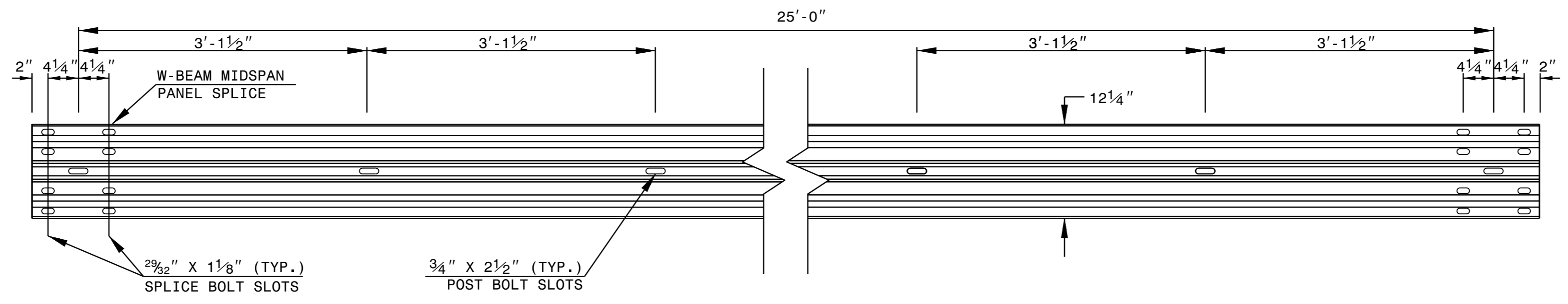
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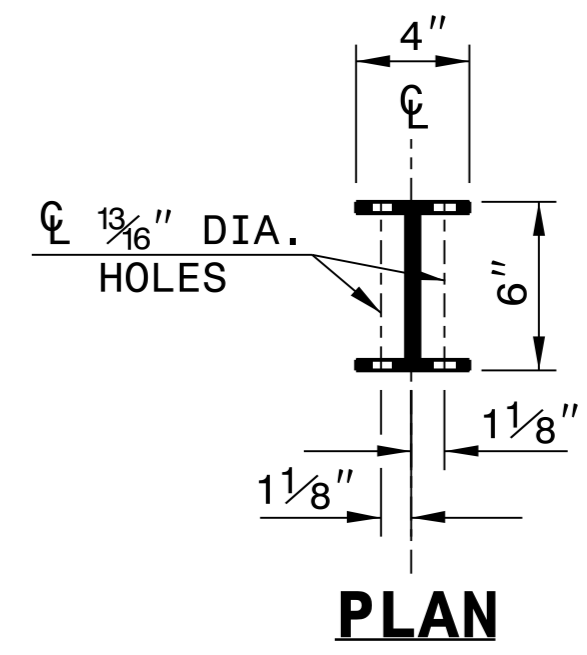
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

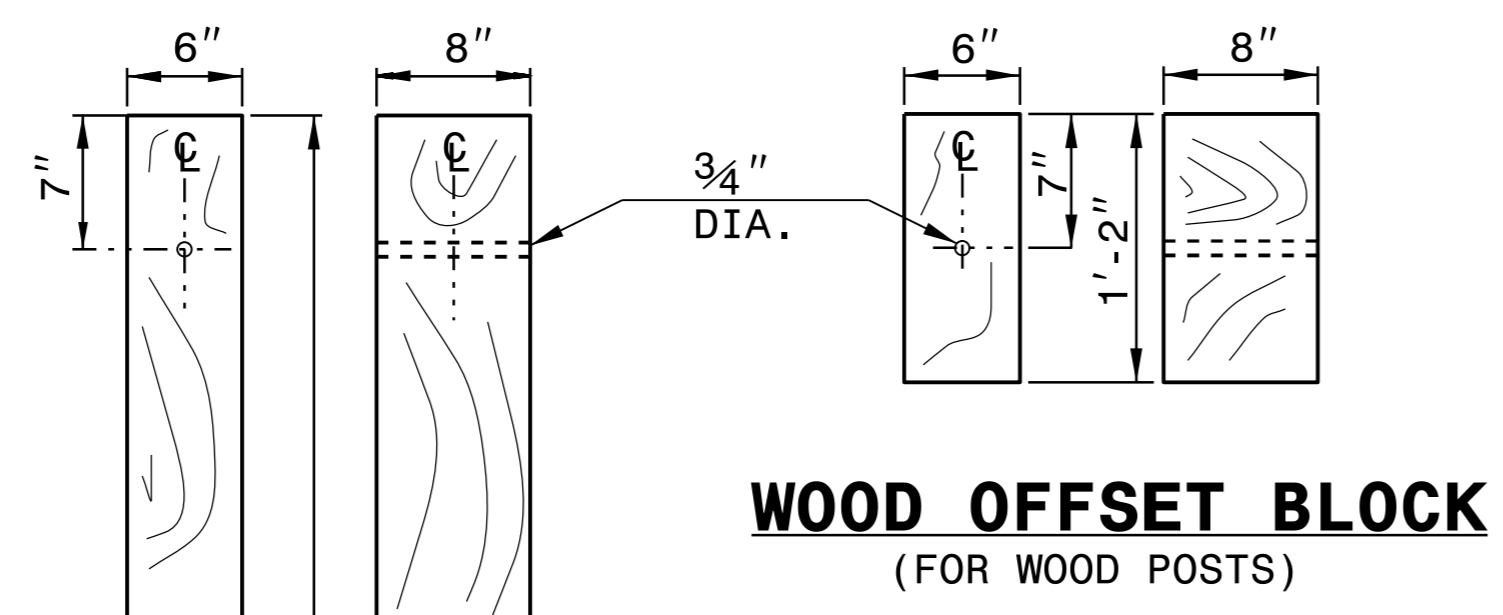
SHEET 6 OF 8
862D02



STANDARD W-BEAM GUARDRAIL



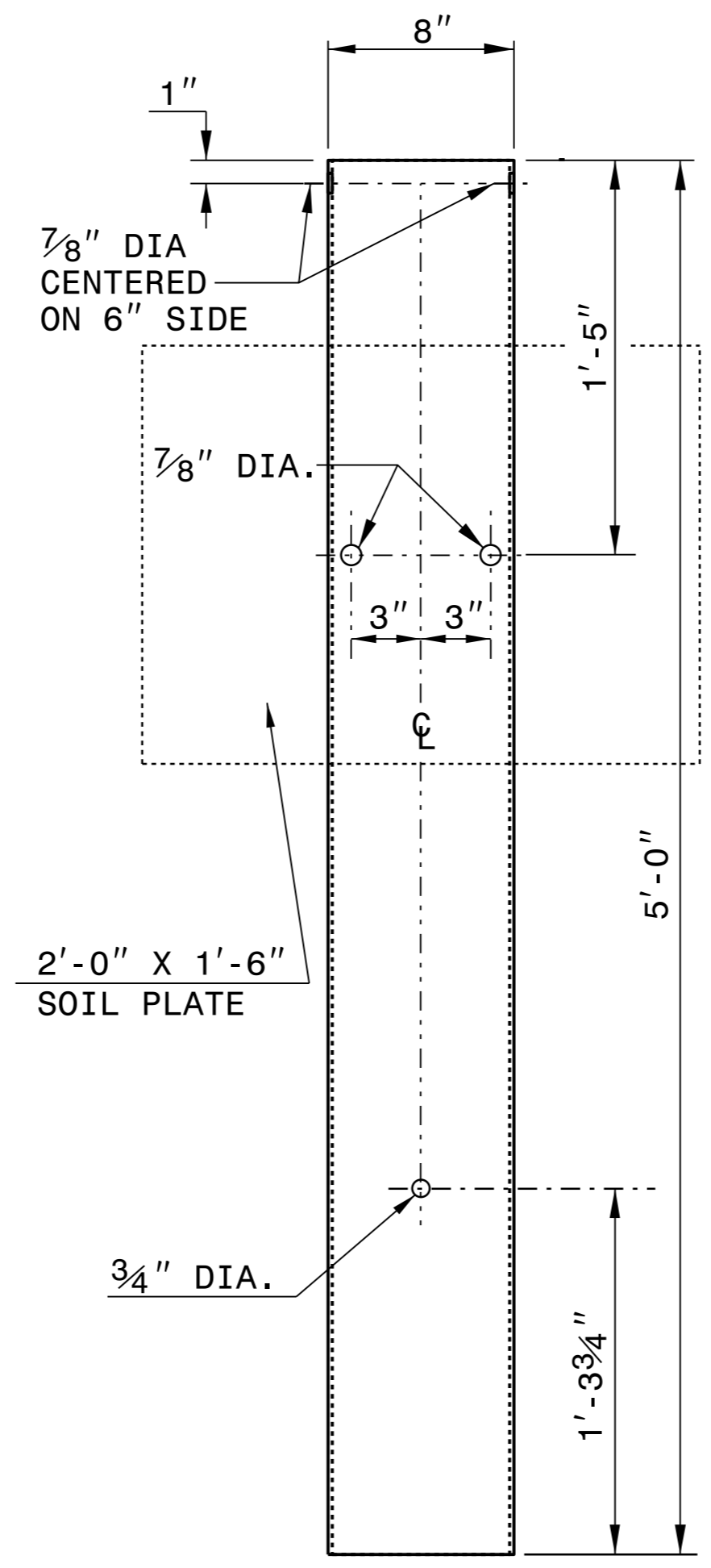
PLAN



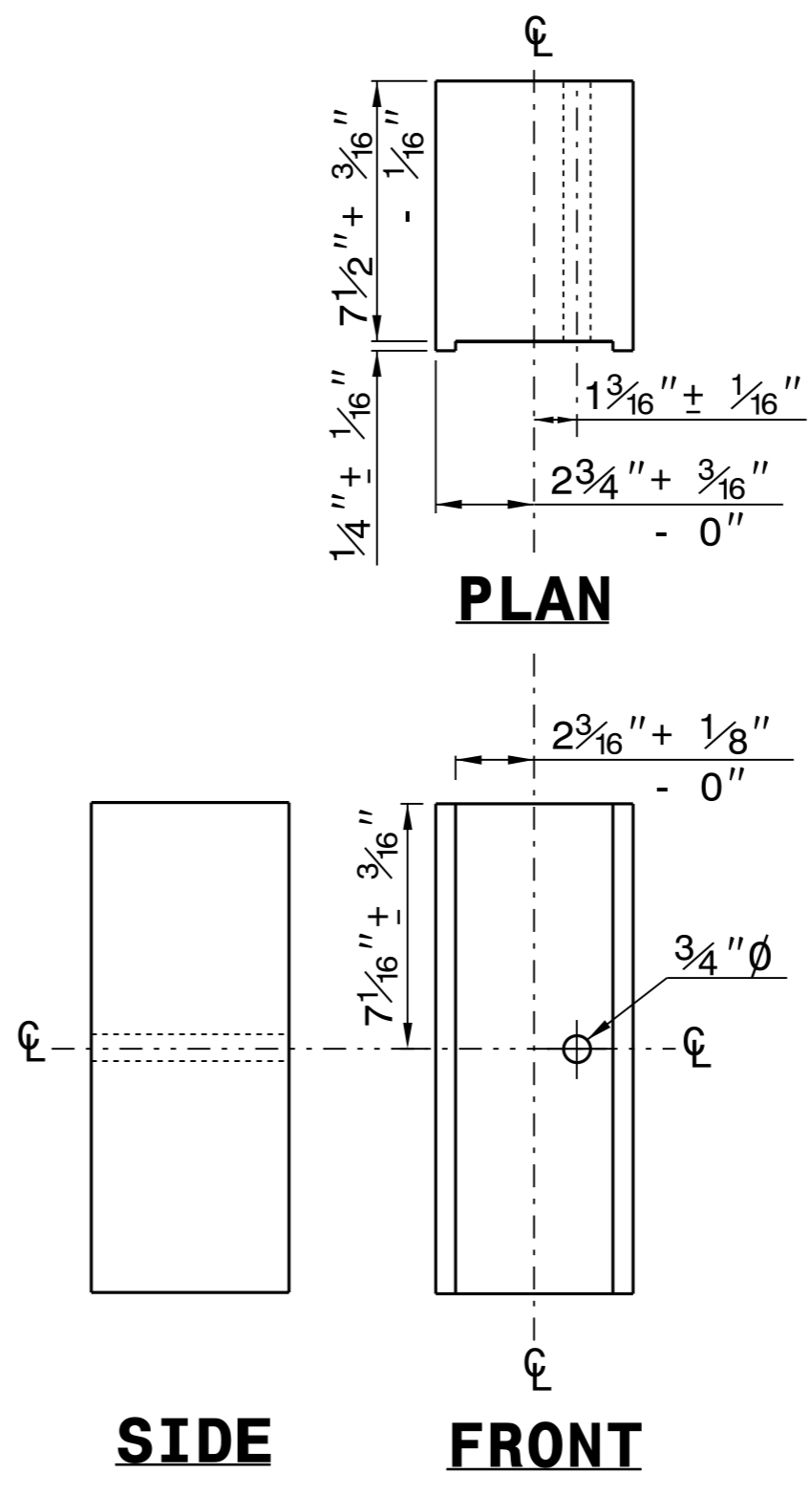
**WOOD OFFSET BLOCK
(FOR WOOD POSTS)**

**STANDARD
LINE POST**

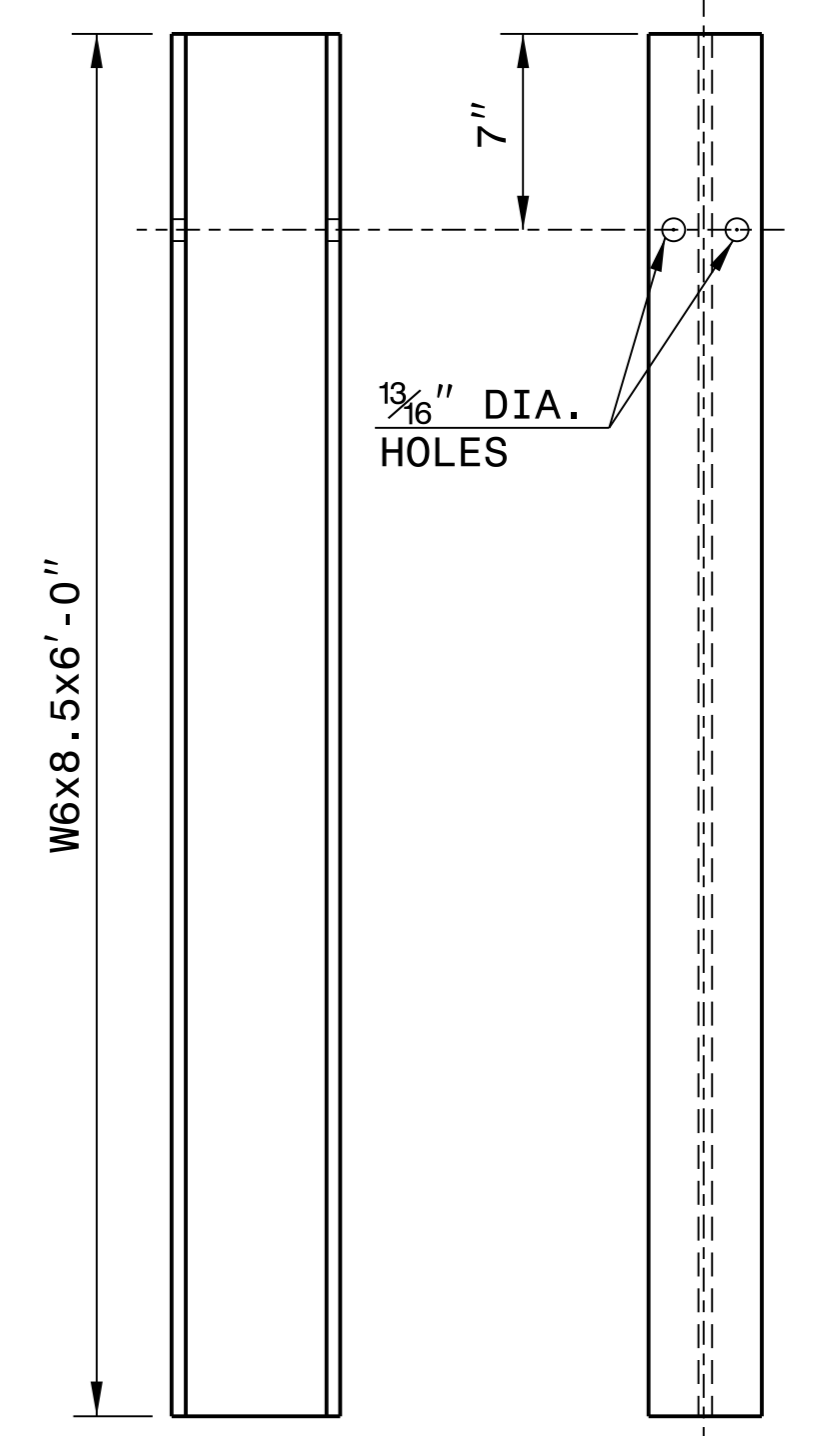
**SHORT WOOD
BREAKAWAY POST**



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



**ROUTED
OFFSET BLOCK**



"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



**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.: _____

12/06/07

COMPUTED BY: SLK DATE: 01/08/19
CHECKED BY: GSP DATE: 01/08/19

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

BRIDGE #410115 PROJECT REFERENCE NO. BR-0113 SHEET NO. 3B-1

SUMMARY OF EARTHWORK

Table with columns: STATION, STATION, UNCL. EXCAV. (CY), EMBANK. +% (CY), BORROW (CY), WASTE (CY). Rows include station ranges and subtotals.

PER GEOTECH RECOMMENDATIONS:
UNDERCUT EXCAVATION = 300 CY
GEOTEXTILE FOR SOIL STABILIZATION = 300 SY
SELECT GRANULAR MATERIAL = 300 CY

NOTE: Earthwork quantities are calculated by the Roadway Engineer. 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, and removal of existing pavement will be paid for at the lump sum price for "Grading".

ASPHALT PAVEMENT
REMOVAL SUMMARY

Table with columns: SURVEY LINE, STATION, STATION, LOCATION LT/RT/CL, YD'. Rows show station ranges and a total of 320.98 YD'.

SHOULDER BERM GUTTER SUMMARY

Table with columns: SURVEY LINE, STATION, STATION, LENGTH. Rows show station ranges and a total length of 28.26'.

ETHERILL ENGINEERING logo and contact information: 1223 Jones Franklin Rd, Raleigh, N.C. 27606, License No. F-0377, Bus: 919 851 8077, Fax: 919 851 8107.

SUB-REGIONAL & REGIONAL
LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48" & UNDER)

NOTE: Invert Elevations are for Bid Purposes only and shall not be used for project construction stakeout. See "Standard Specifications For Roads and Structures, Section 300-5".

Main table for pipes and endwalls with columns for station, structure no., elevation, pipe type, size, and various specifications.

"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

Table for guardrail summary with columns: SURVEY LINE, BEG. STA., END STA., LOCATION, LENGTH, WARRANT POINT, FLARE LENGTH, W, ANCHORS, IMPACT ATTENUATOR, SINGLE FACED GUARDRAIL, REMOVE EXISTING GUARDRAIL, REMOVE AND STOCKPILE EXISTING GUARDRAIL, REMARKS.

4/2/2008 BR-0113_Rdy_sum.dgn

COMPUTED BY: Jinyoung Park DATE: 9/3/19
CHECKED BY: _____ DATE: _____

(5-15-18)

PROJECT NO.	SHEET NO.
BR-0113	3G-1

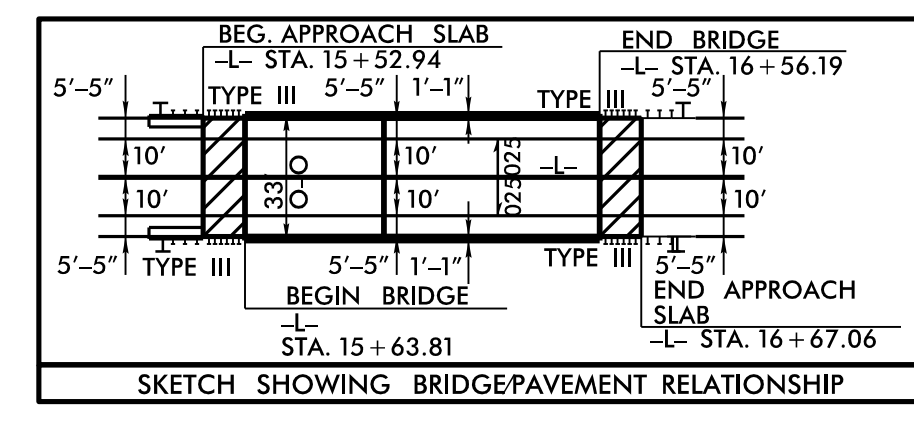
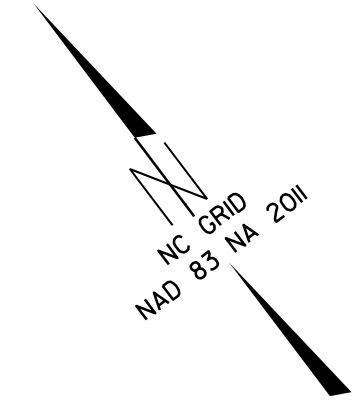
**STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS**

SUMMARY OF ROCK PLATING

LINE	Beginning Slope (H:V)	Approx. Station	Ending Slope (H:V)	Approx. Station	Location LT/RT	Rock Plating Detail No. 1/2/3/4	Riprap Class* 1/2/B	Rock Plating SY
-L-	2.5:1	14+75	1.5:1	15+53	LT	1	-	65
-L-	1.5:1	16+67	2.5:1	17+15	LT	1	-	35
							TOTAL SY:	100

*Use Class 1, 2 or B riprap if riprap class is not shown for rock plating location.

8/17/19



DWIGHT A. KING
DB 2458 PG 319

NOTE:
BEGIN S/BG
STA. 15+38.81 LT. & RT.
END S/BG
STA. 15+52.94 LT. & RT.



1223 Jones Franklin Rd.
Raleigh, N.C. 27606
License No. F-0377
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Fax: 919 851 8107

PROJECT REFERENCE NO.	SHEET NO.
BR-0113	4

RW SHEET NO.

ROADWAY DESIGN 4/23/2020 ENGINEER	HYDRAULICS 4/23/2020 ENGINEER
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Professional Engineer seals for Gary S. Purvis (Seal 022999) and Kevin B. Ford (Seal 31977).

MARTHA LANE
DB 931 PG 40

PI Sta 19+84.36
 $\Delta = 7' 18" 32.2" (LT)$
 $D = 2' 20" 48.7"$
 $L = 311.44'$
 $T = 155.93'$
 $R = 2,441.38'$
 $DS = 55MPH$
 $SE = SEE PLANS$

-L- POT Sta. 10+00.00

BEGIN NCDOT PROJECT BR-0113
-L- POT STA. 13+38.00

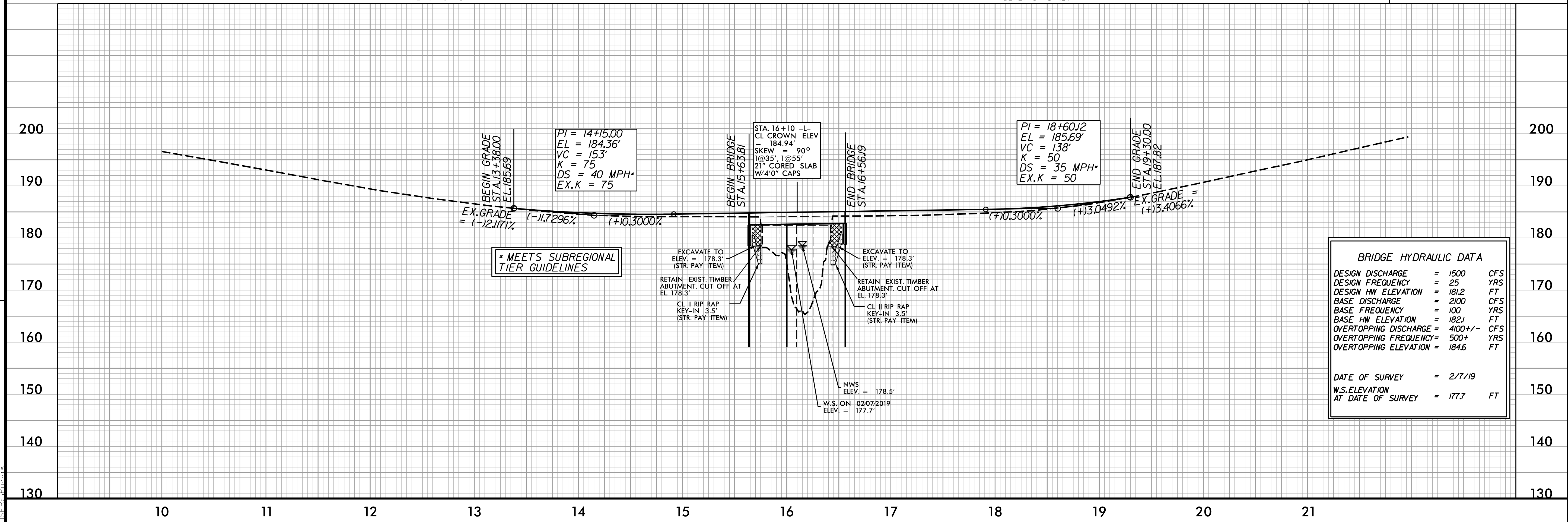
PHENIOUS SMITH
DB 2140 PG 143

PRINCE ALBERT CARROLL
DB 2446 PG 427

END NCDOT
PROJECT BR-0113
-L- POC STA. 19+30.00

SEE RSD 275.01 FOR
ROCK PLATING

SEE SHEETS S-1 THRU S-18
FOR STRUCTURE PLANS



BRIDGE HYDRAULIC DATA	
DESIGN DISCHARGE	= 1500 CFS
DESIGN FREQUENCY	= 25 YRS
DESIGN HW ELEVATION	= 181.2 FT
BASE DISCHARGE	= 2100 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 182J FT
OVERTOPPING DISCHARGE	= 4100 +/- CFS
OVERTOPPING FREQUENCY	= 500+ YRS
OVERTOPPING ELEVATION	= 184.6 FT
DATE OF SURVEY	= 2/7/19
W.S. ELEVATION AT DATE OF SURVEY	= 177.7 FT

REVISIONS

4/22/2020
11:58:10 AM
BR-0113_rdy_psh.dgn