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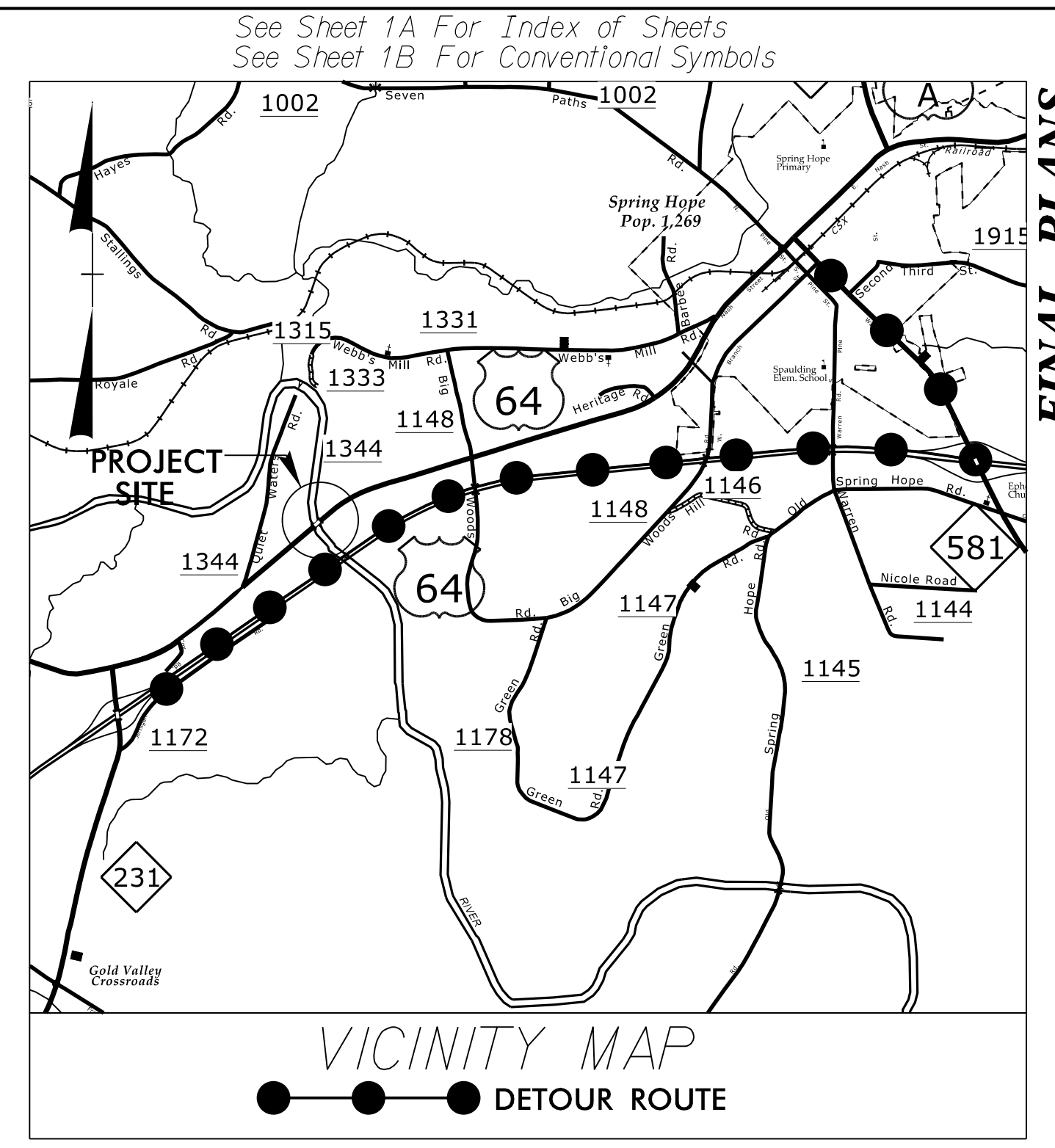
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09_08/2019

TIP PROJECT: B-5670

CONTRACT: C204478



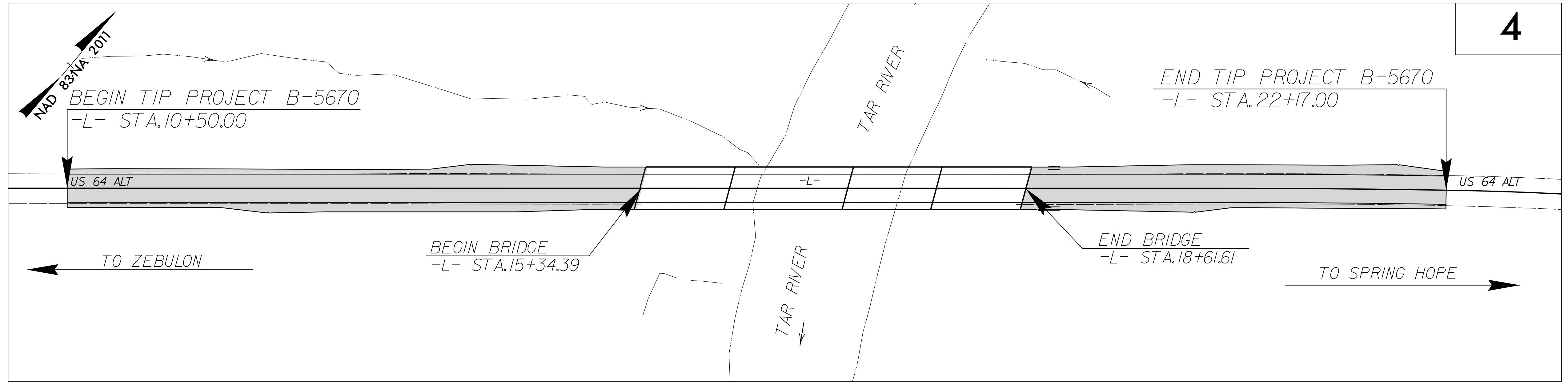
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

NASH COUNTY

**LOCATION: REPLACE BRIDGE NO. 29 OVER
TAR RIVER ON US 64 ALT**

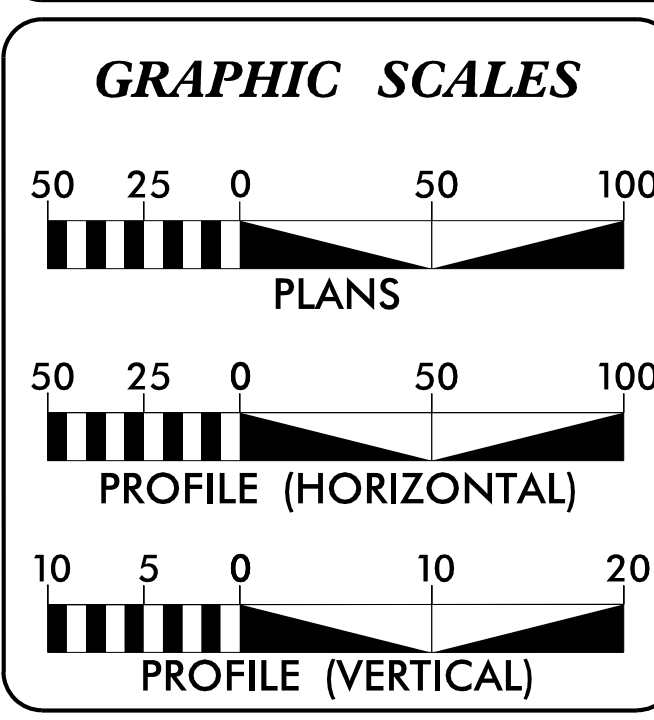
TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5670	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
45625.1.1		P.E.	
45625.2.1		ROWUTIL	
45625.3.1		CONSTR.	



A DESIGN EXCEPTION WILL BE REQUIRED FOR MAXIMUM GRADE.

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



DESIGN DATA

ADT 2022 =	2652
ADT 2042 =	3261
K =	8 %
D =	55 %
T =	6 % *
V =	60 MPH
* TTST =	2% DUAL = 4%
MAJOR COLLECTOR	
REGIONAL TIER	

PROJECT LENGTH

LENGTH OF ROADWAY TIP PROJECT B-5670	=	.159 MILES
LENGTH OF STRUCTURE TIP PROJECT B-5670	=	.062 MILES
TOTAL LENGTH OF TIP PROJECT B-5670	=	.221 MILES

Prepared in the Office of:

KCI
KCI Associates of N.C., P.A.
4505 Falls of Neuse Road, Suite 400
Raleigh, NC 27609
Phone (919) 783-9214
Fax (919) 783-9266

Plans Prepared For:

DIVISION OF HIGHWAYS
1000 Birch Ridge Dr.
Raleigh NC, 27610

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
DEC. 21, 2021

LETTING DATE:
NOV. 15, 2022

NCDOT CONTACT:

DEWAYNE L. SYKES, P.E.
PROJECT ENGINEER

BRYAN E. HOUGH, P.E.
PROJECT DESIGN ENGINEER

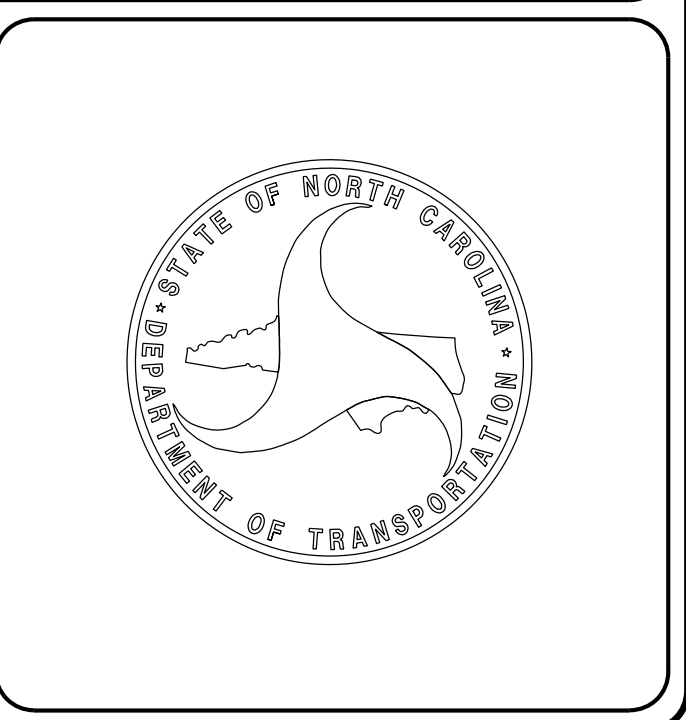
KRISTY ALFORD, P.E.
STRUCTURES MANAGEMENT UNIT

HYDRAULICS ENGINEER

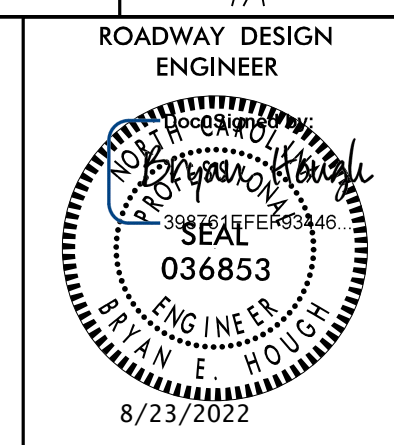
DocuSigned by:
Sawyer Walters
B8396EC4825646B...
P.E. 8/16/2022

ROADWAY DESIGN ENGINEER

DocuSigned by:
Bryan Hough
398761EF93446...
P.E. 8/16/2022



16-AUG-2022 12:41
M:\2018\1261601945\23 B-5670\Roadway\Proj\B-5670_Rdy_r.fsh.dgn
\$\$\$\$\$SERNAME\$\$\$\$\$



EFF. 01-16-2018

SHEET NUMBER	SHEET
1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES, AND STANDARD DRAWINGS
1B	CONVENTIONAL SYMBOLS
2A-1	TYPICAL SECTIONS, PAVEMENT SCHEDULE, WEDGING DETAIL, AND INCIDENTAL MILLING DETAIL
2C-1	GUARDRAIL INSTALLATION
2C-2	ROCK PLATING
3B-1	SUMMARY OF EARTHWORK, SUMMARY OF SHOULDER BERM GUTTER, SUMMARY OF PAVEMENT REMOVAL, SUMMARY OF BREAKING OF EXISTING PAVEMENT, AND SUMMARY OF GUARDRAIL
3D-1	SUMMARY OF DRAINAGE QUANTITIES
3G-1	SUMMARY OF GEOTECHNOCAL ITEMS
4	PLAN SHEET
5	PROFILE SHEET
RW01 TO RW04	RIGHT OF WAY SHEETS
TMP-1 TO TMP-4	TRANSPORTATION MANAGEMENT PLANS
PMP-1 TO PMP-2	PAVEMENT MARKING PLANS
EC-1 TO EC-5	EROSION CONTROL PLANS
RF-1	REFORESTATION PLANS
U0-1 TO U0-2	UTILITIES BY OTHERS PLANS
X-1	CROSS SECTION SUMMARY
X-2 TO X-13	CROSS-SECTIONS
S-1 TO S-40	STRUCTURE PLANS

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

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 CENTURYLINK (COMMUNICATIONS) AND CHARTER (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 OTHERS.

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 (Use Special Detail)
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation
DIVISION 4 - MAJOR STRUCTURES	
422.01	Bridge Approach Fills - Type I Standard Approach Fill
422.03	Reinforced Bridge Approach Fills - Type A Alternate Approach Fill for Integral Abutment
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
840.25	Anchorage for Frames - Brick or Concrete or Precast
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
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
862.04	Anchoring End of Guardrail - B-77 and B-83 Anchor Units
876.01	Rip Rap in Channels
876.02	Guide for Riprap at Pipe Outlets
876.04	Drainage Ditches with Class 'B' Rip Rap

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

Note: Not to Scale

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	(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-S-
Potential Contamination Area: Soil	-S-S-
Known Contamination Area: Water	-W-W-
Potential Contamination Area: Water	-W-W-
Contaminated Site: Known or Potential	☠ ?

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:

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	○
Switch	□
RR Abandoned	-----
RR Dismantled	-----

RIGHT OF WAY & 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:

Existing Edge of Pavement	-----
Existing Curb	-----
Proposed Slope Stakes Cut	-C-
Proposed Slope Stakes Fill	-F-
Proposed Curb Ramp	-----
Existing Metal Guardrail	-----
Proposed Guardrail	-----
Existing Cable Guiderail	-----
Proposed Cable Guiderail	-----
Equality Symbol	⊕
Pavement Removal	-----
VEGETATION:	
Single Tree	○
Single Shrub	○
Hedge	-----

Woods Line	-----
Orchard	-----
Vineyard	-----

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:	
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:	
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:

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:

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:

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:

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:

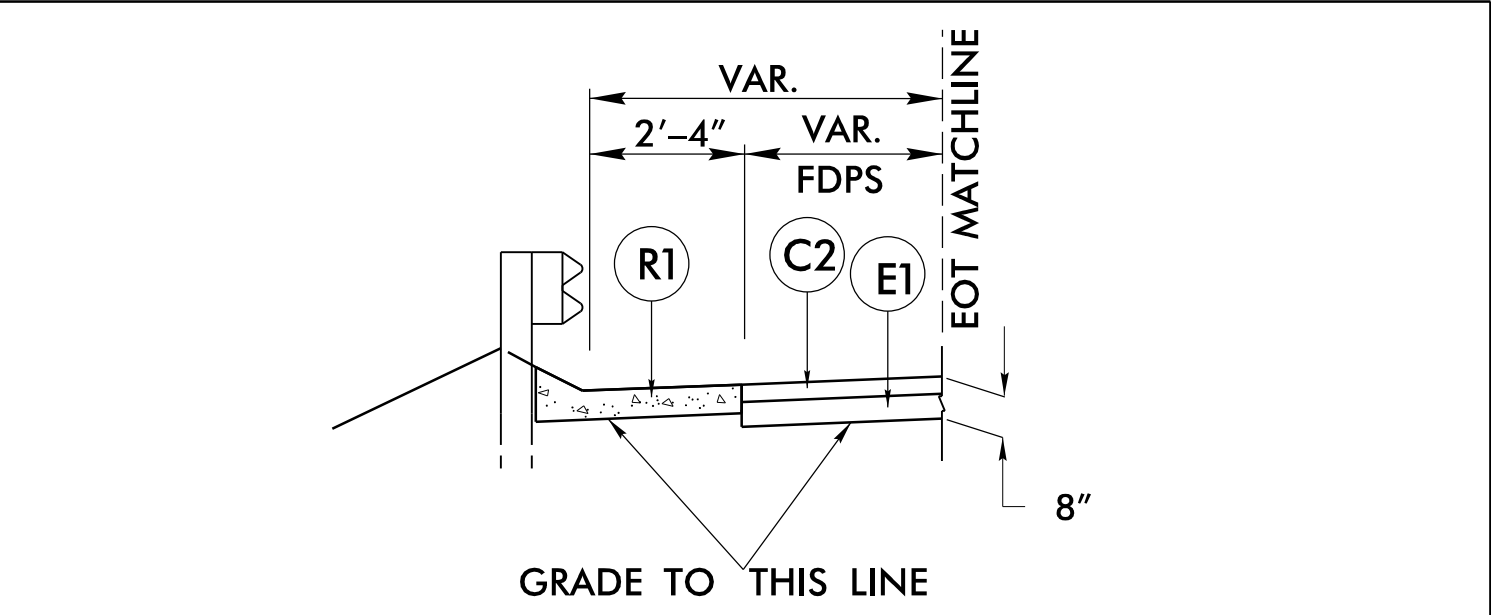
Utility Pole	●
Utility Pole with Base	□
Utility Located Object	○
Utility Traffic Signal Box	⊕
Utility Unknown U/G Line (SUE - LOS B)*	-----
U/G Tank; Water, Gas, Oil	-----
Underground Storage Tank, Approx. Loc.	-----
A/G Tank; Water, Gas, Oil	-----
Geoenvironmental Boring	⊕
Abandoned According to Utility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

12/2/2016

6/2/2022

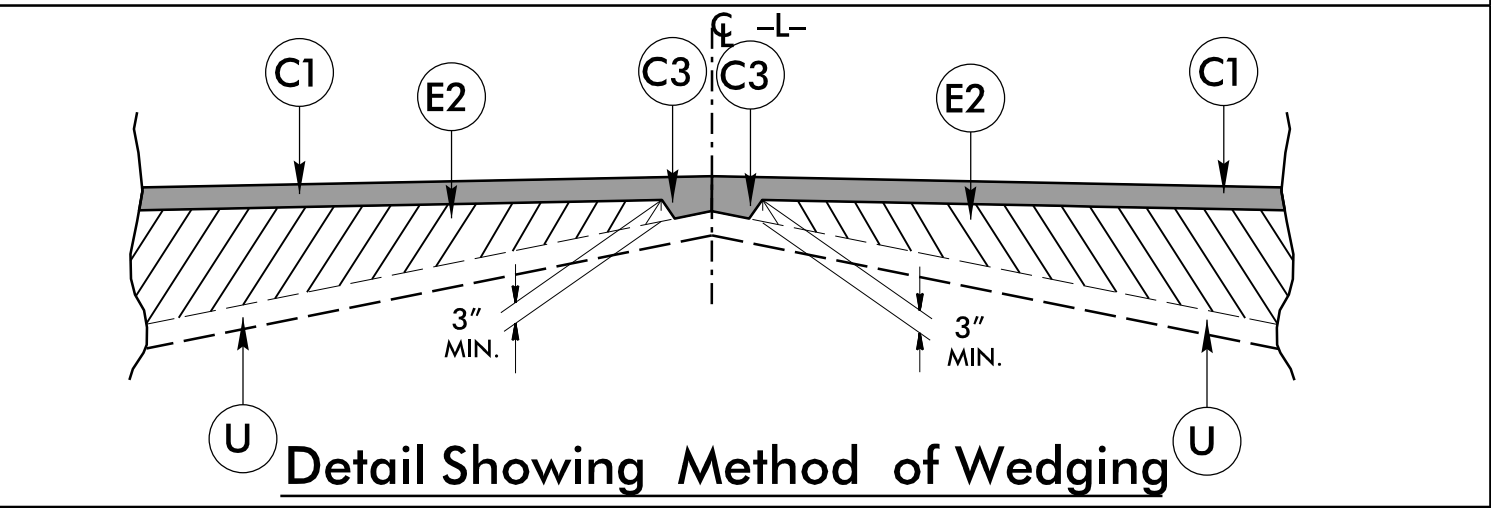
FINAL PAVEMENT SCHEDULE
ALL PAVEMENT EDGE SLOPES ARE 1:1 UNLESS OTHERWISE NOTED.

C1	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165.0 LBS. PER SQ. YD.
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165.0 LBS. PER SQ. YD. IN EACH OF TWO LAYERS
C3	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 1.5" IN DEPTH.
E1	PROP. APPROX. 5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 570 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.
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE DETAIL SHOWING METHOD OF WEDGING).

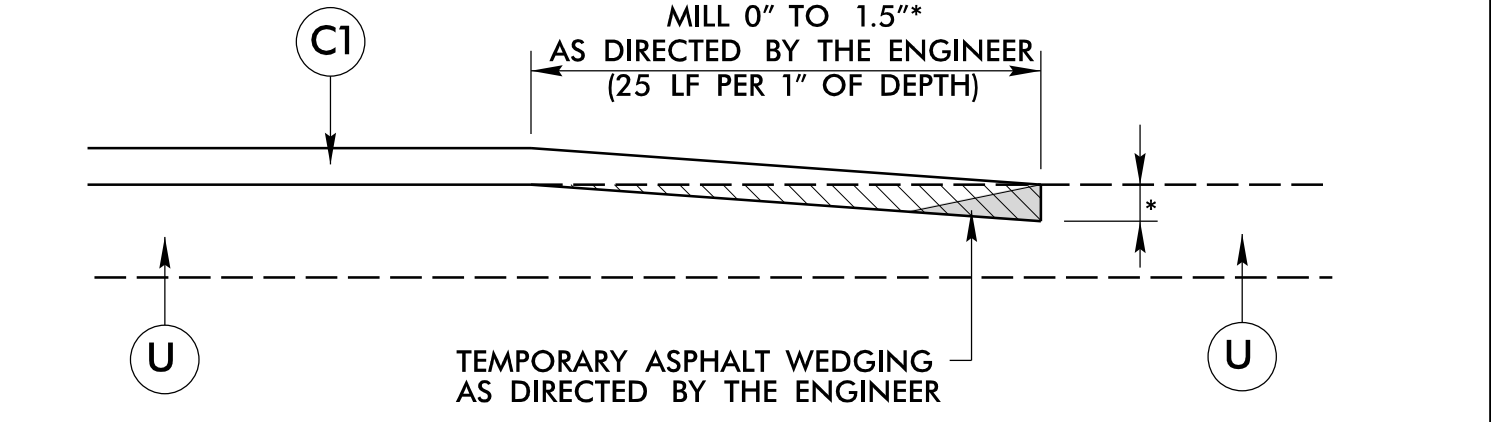


DETAIL SHOWING SHOULDER BERM GUTTER (SBG) ON TOP OF SUBGRADE
(USE WITH TYPICAL SECTION NO. 2)

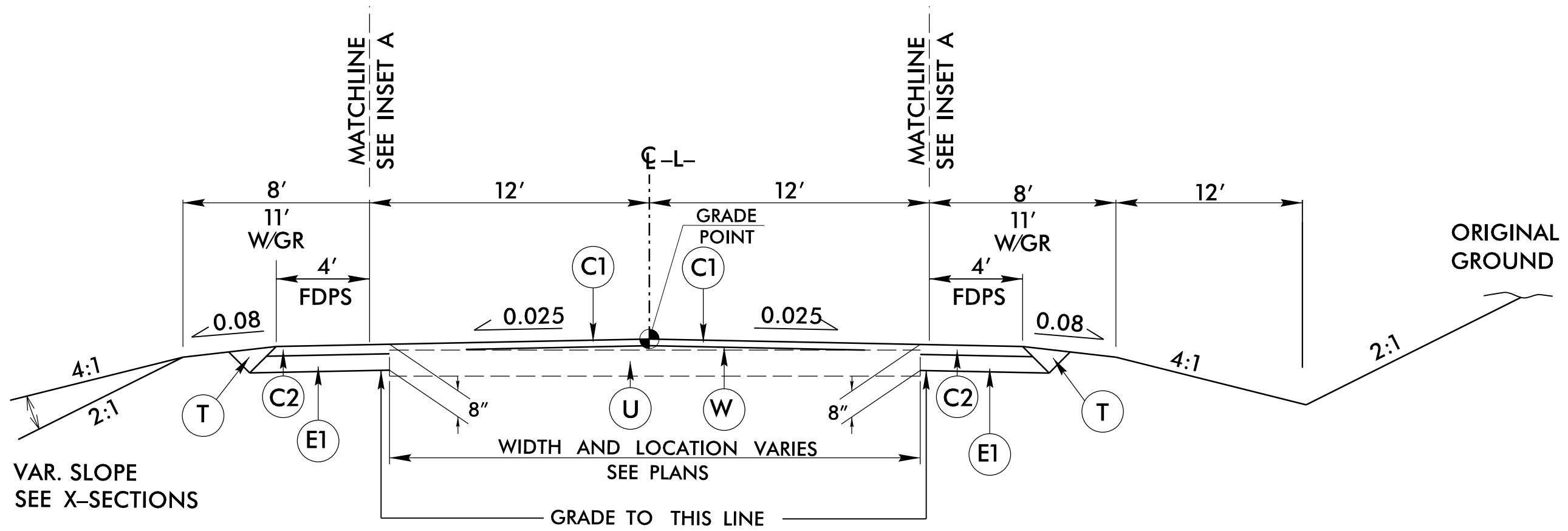
-L- STA. 18+80.07 (END APPR. SLAB) TO -L- STA. 18+90.00 LT
-L- STA. 18+71.63 (END APPR. SLAB) TO -L- STA. 18+90.00 RT



INCIDENTAL MILLING DETAIL

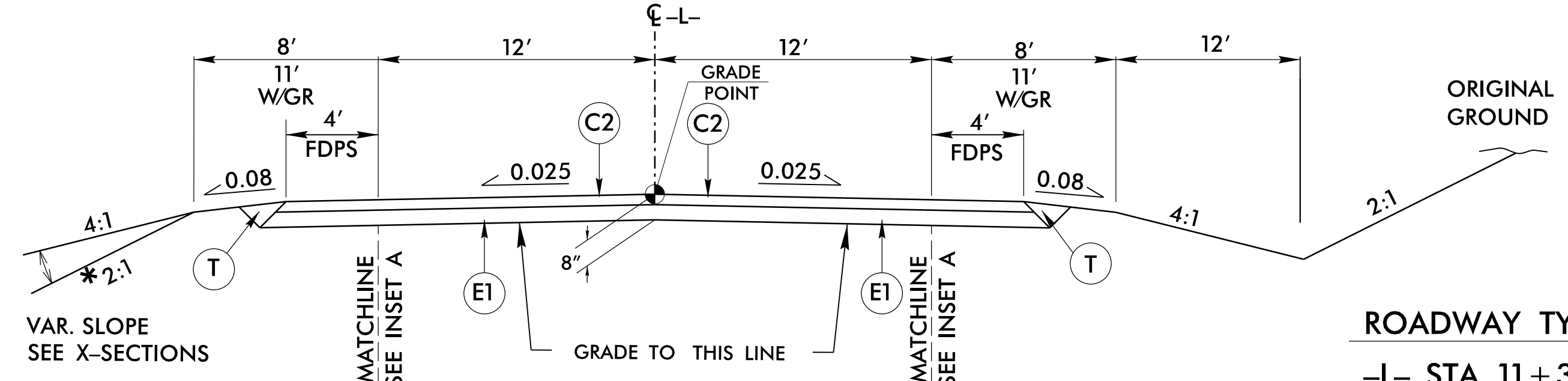


* MILL DEPTH AS SHOWN ON PLANS OR AS DIRECTED BY THE ENGINEER
** SEE TYPICALS FOR MIX TYPE



ROADWAY TYPICAL SECTION NO. 1

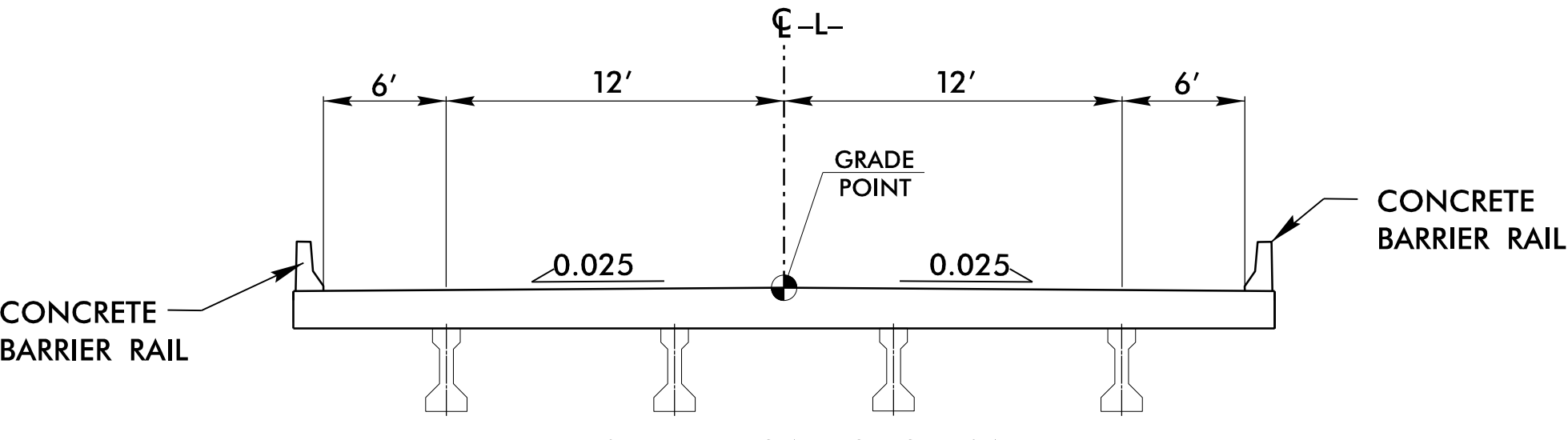
ROADWAY TYPICAL SECTION NO. 1
-L- STA. 10+50.00 TO STA. 11+39.00
-L- STA. 20+00.00 TO STA. 22+17.00



ROADWAY TYPICAL SECTION NO. 2

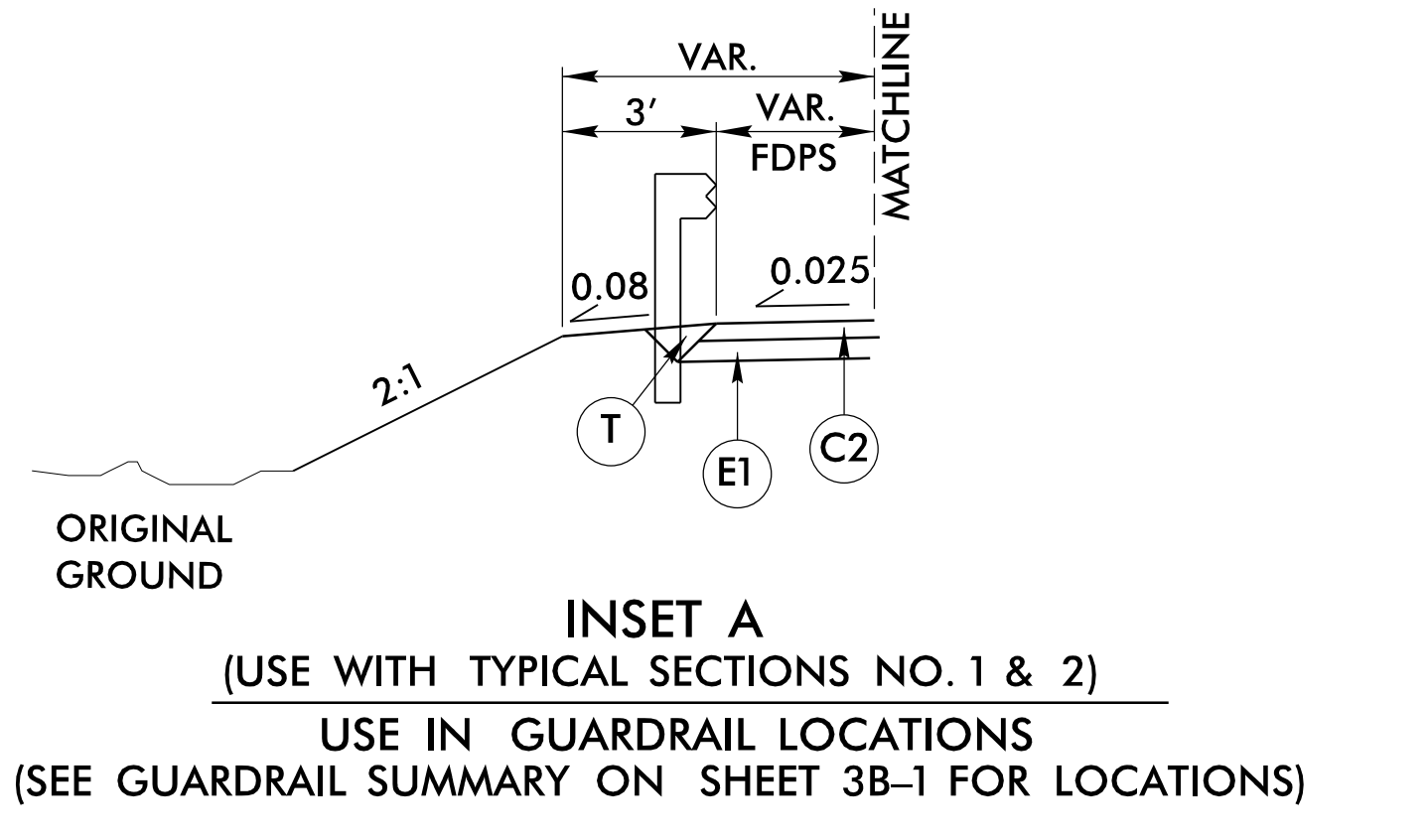
ROADWAY TYPICAL SECTION NO. 2
-L- STA. 11+39.00 TO STA. 15+34.39 (BEGIN BRIDGE)
-L- STA. 18+61.61 (END BRIDGE) TO STA. 20+00.00

* NOTE: 1.5:1 SLOPES MAY BE USED WITH ROCK PLATED REINFORCED SLOPES



BRIDGE TYPICAL SECTION

BRIDGE TYPICAL SECTION
-L- STA. 15+34.39 (BEGIN BRIDGE) TO STA. 18+61.61 (END BRIDGE)



INSET A
(USE WITH TYPICAL SECTIONS NO. 1 & 2)
USE IN GUARDRAIL LOCATIONS
(SEE GUARDRAIL SUMMARY ON SHEET 3B-1 FOR LOCATIONS)

PROJECT REFERENCE NO. B-5670	SHEET NO. 2A-1
ROADWAY DESIGN ENGINEER <i>[Signature]</i> SEAL NO. 036853 8/25/2022	PAVEMENT DESIGN ENGINEER <i>[Signature]</i> SEAL NO. 022896 8/30/2022
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
KCI Engineers • Planners • Scientists • Construction Managers 4505 Falls of Neuse Road, Suite 400 Raleigh, NC 27609 Phone (919) 783-9214 • Fax (919) 783-9266	

P:\AUG-2022\1337\RF-2018\23 B-5670\Roadway\Proj\B-5670_Rdy_tup.dgn
 23 B-5670\Roadway\Proj\B-5670_Rdy_tup.dgn
 23 B-5670\Roadway\Proj\B-5670_Rdy_tup.dgn
 23 B-5670\Roadway\Proj\B-5670_Rdy_tup.dgn

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

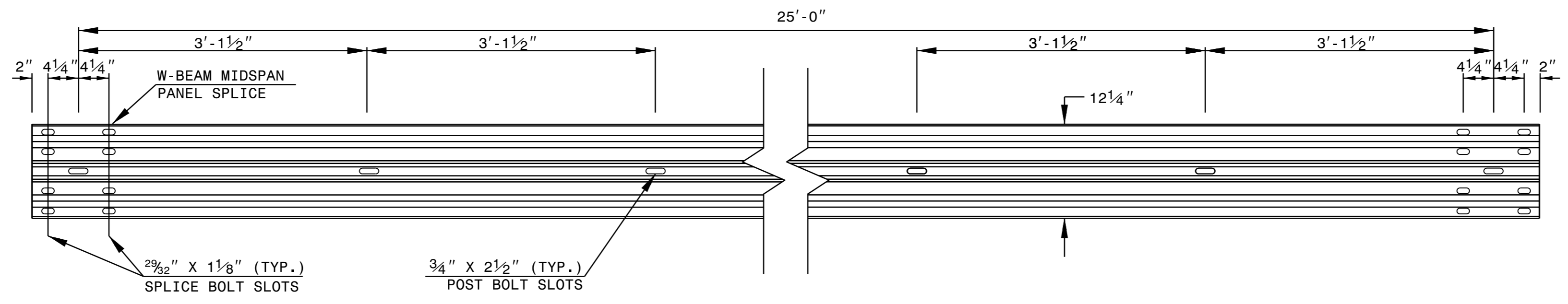
ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

SHEET 6 OF 8
862D02

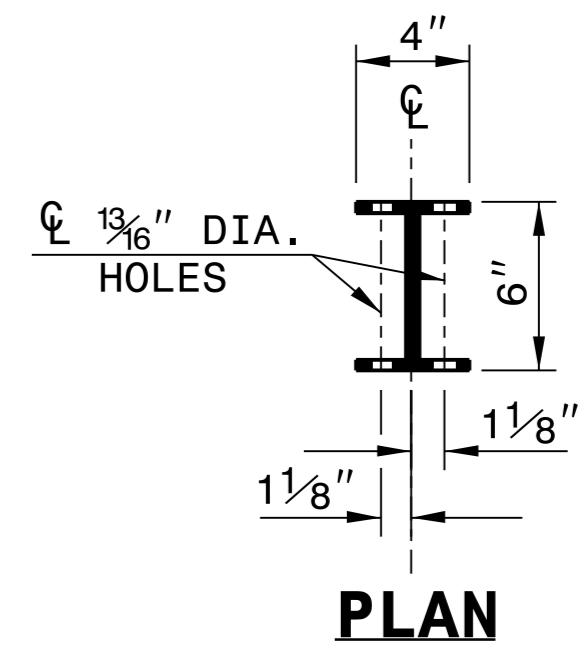
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

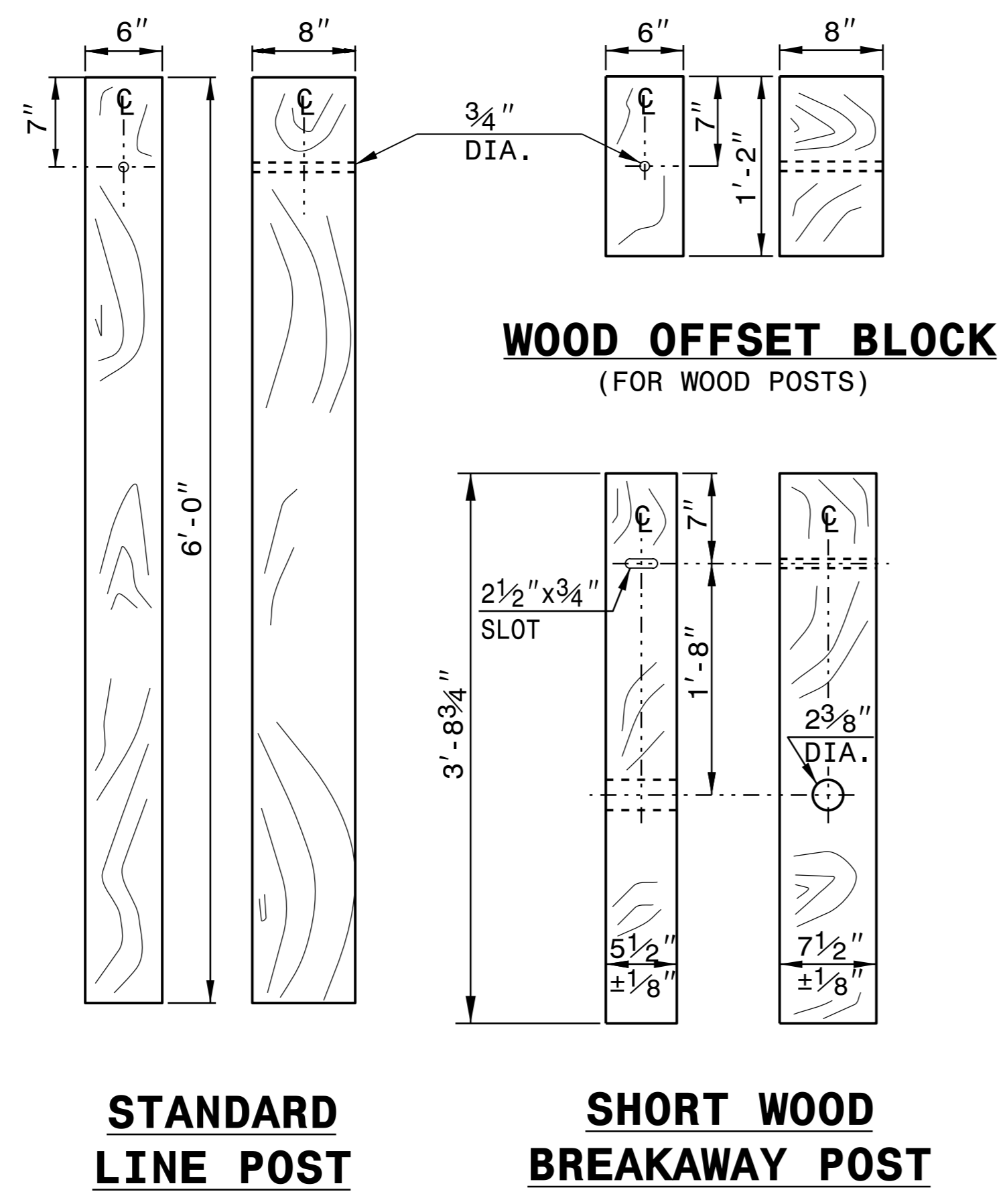
SHEET 6 OF 8
862D02



STANDARD W-BEAM GUARDRAIL



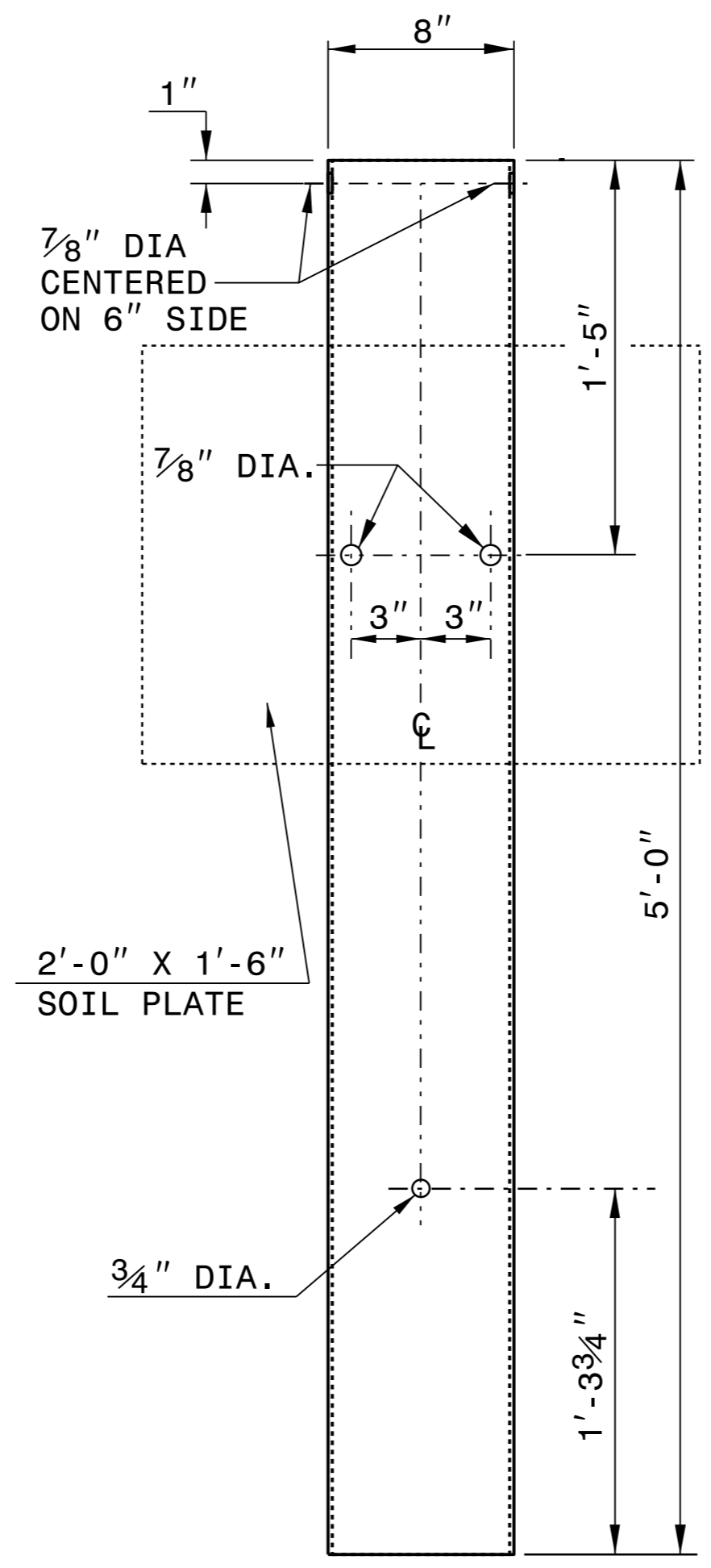
PLAN



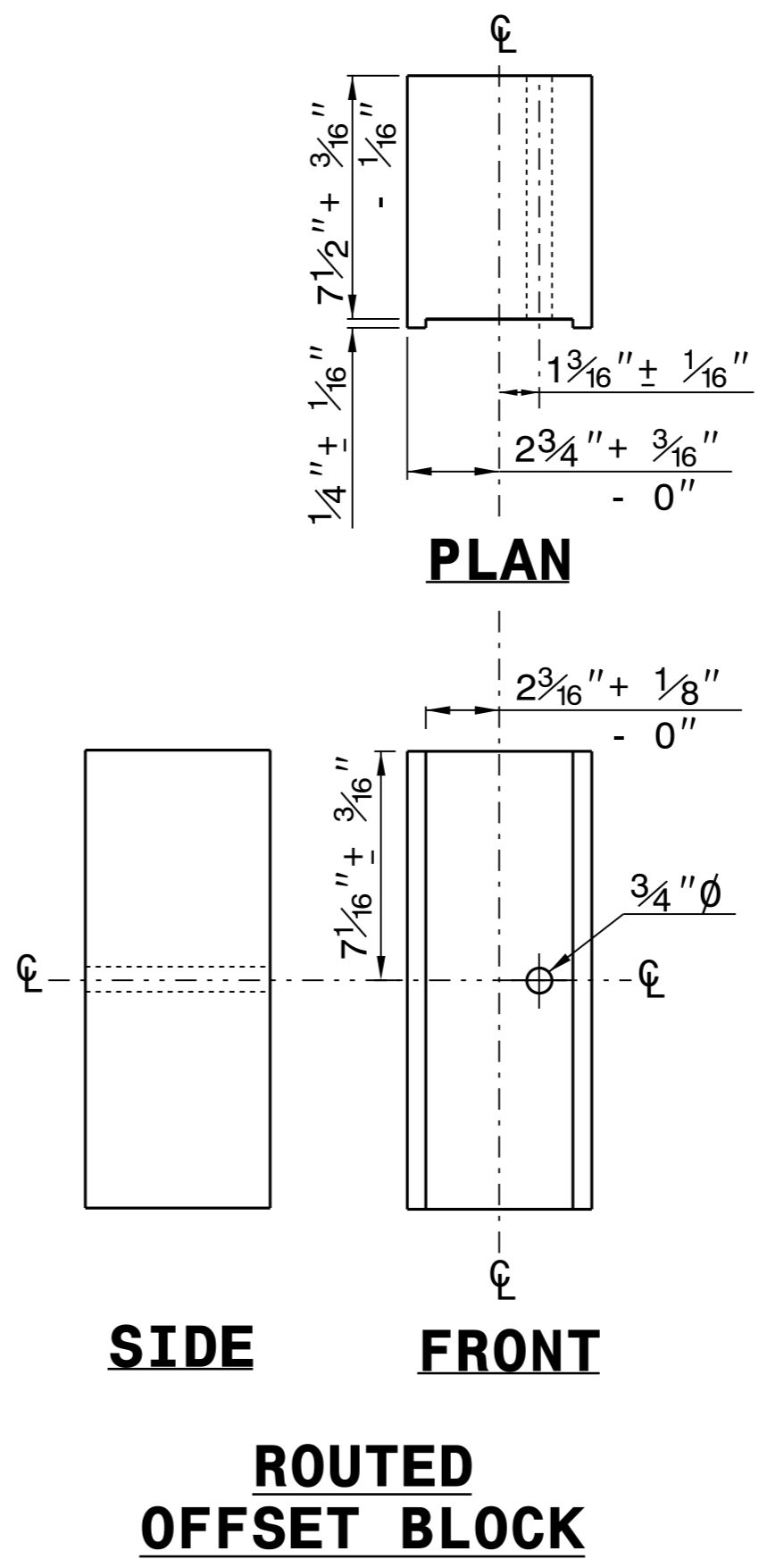
**WOOD OFFSET BLOCK
(FOR WOOD POSTS)**

**STANDARD
LINE POST**

**SHORT WOOD
BREAKAWAY POST**



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

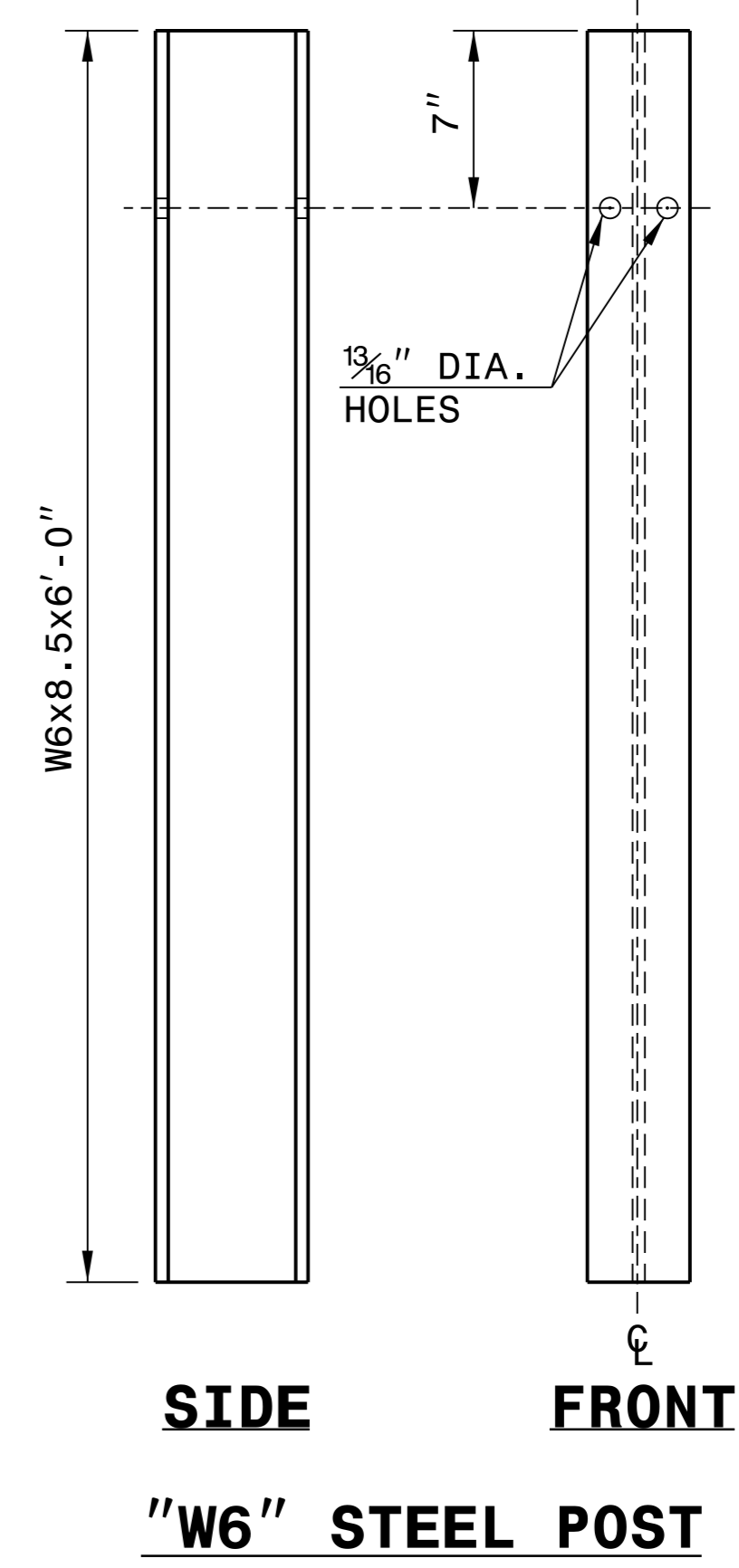


PLAN

SIDE

FRONT

**ROUTED
OFFSET BLOCK**



SIDE

FRONT

"W6" STEEL POST

SYSTEM PARTS



8/16/2022

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

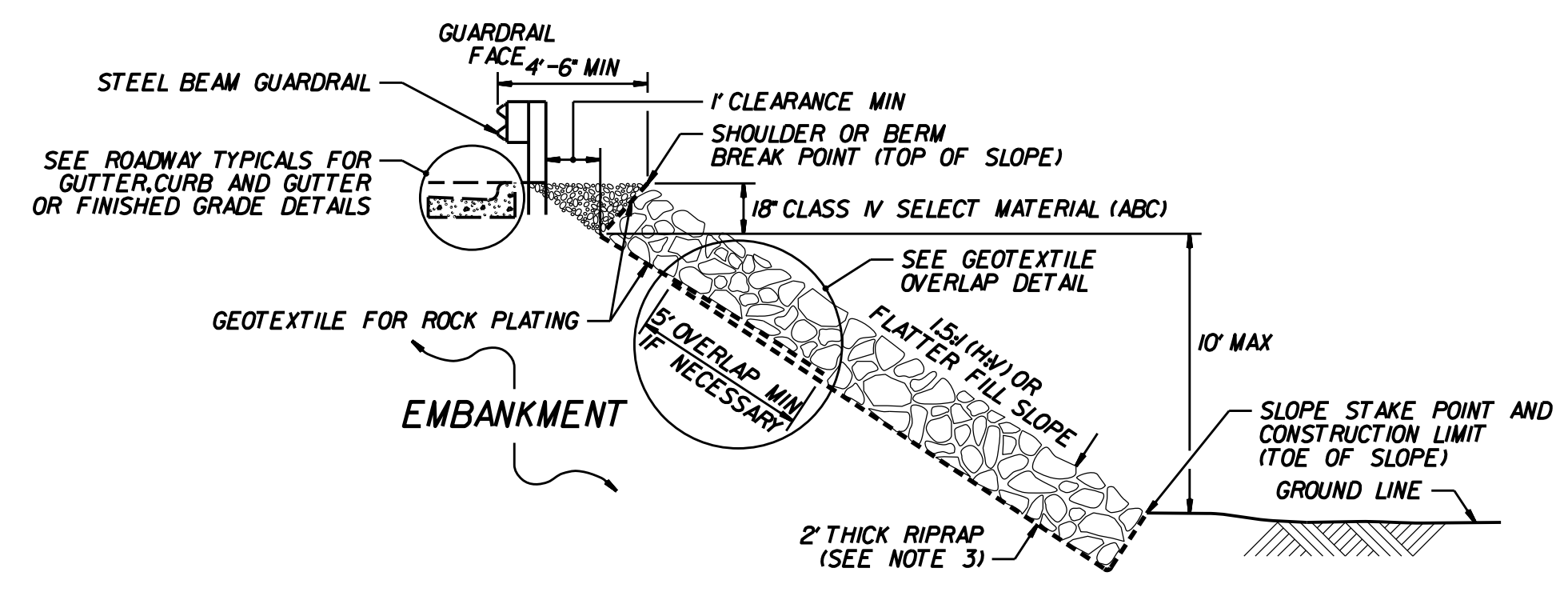
SEE TITLE BLOCK

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

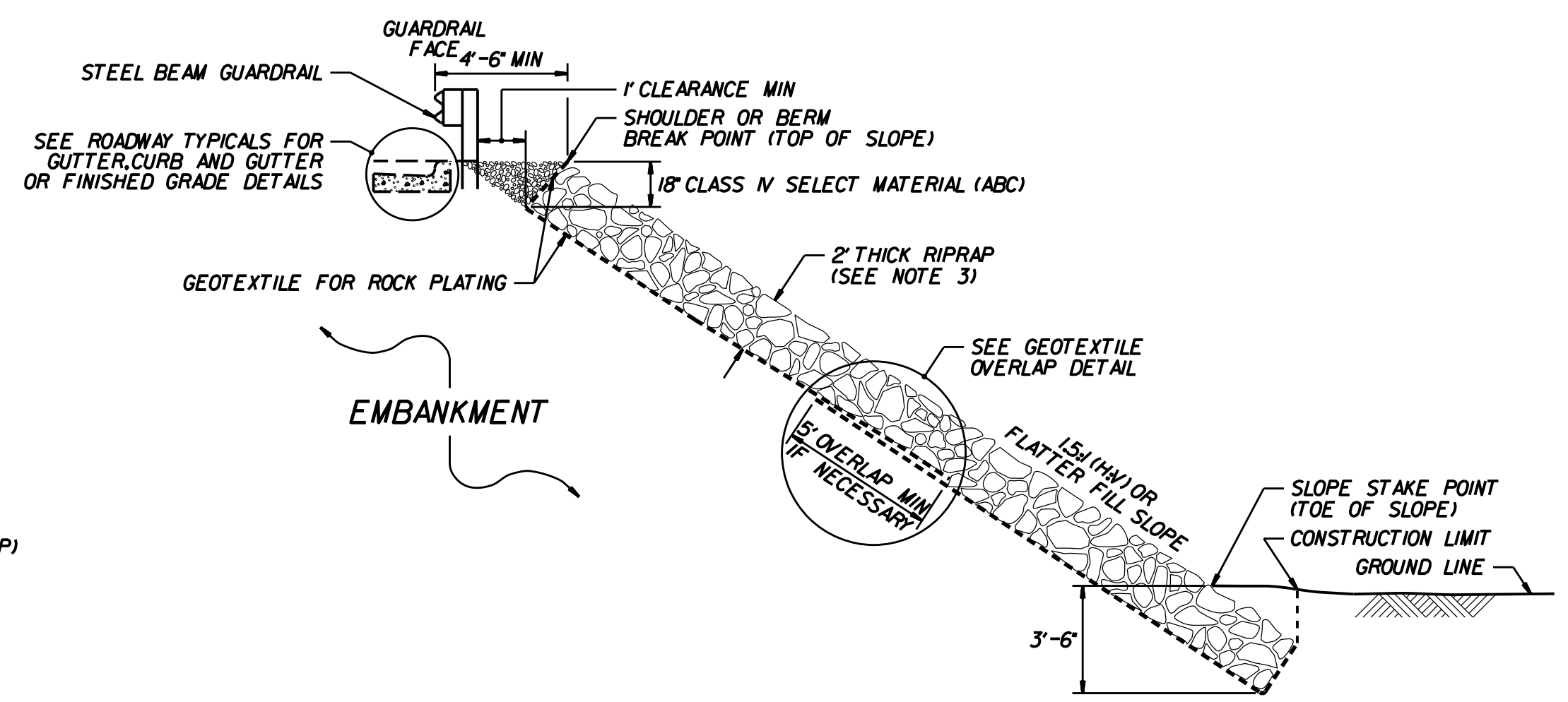
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR
ROCK PLATING

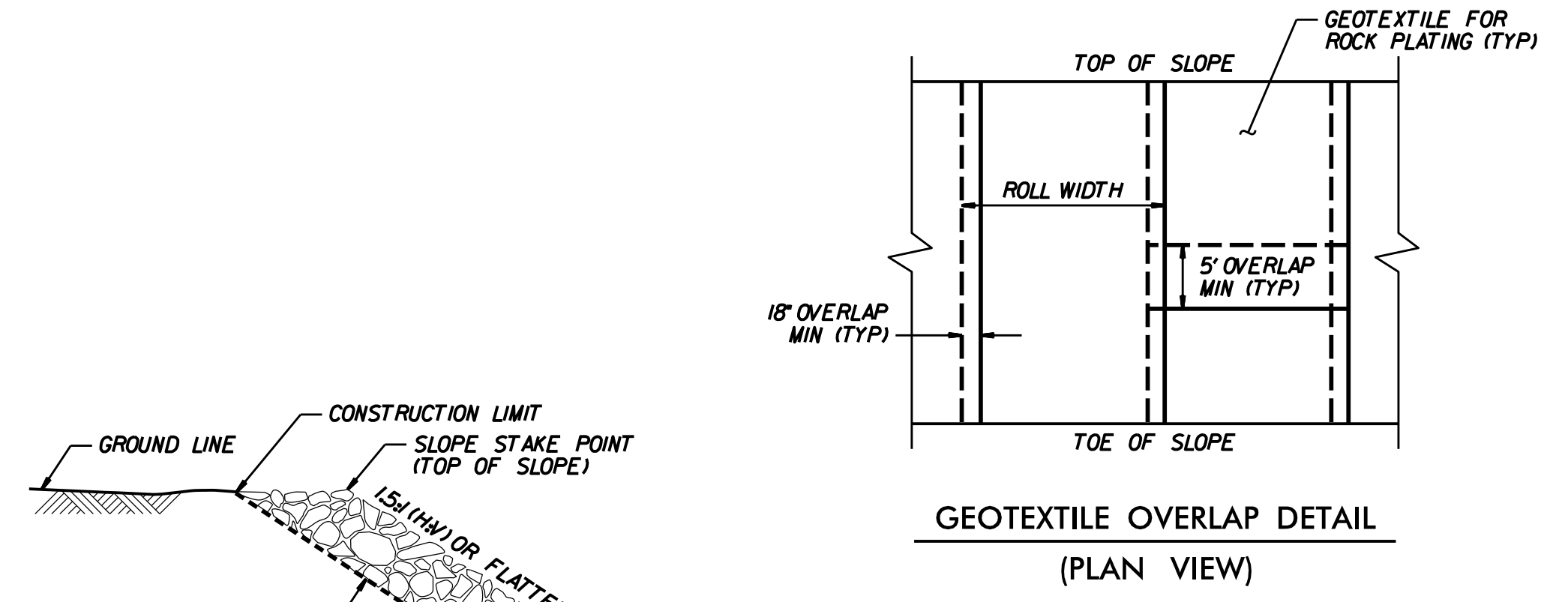
SHEET 1 OF 1
275D01



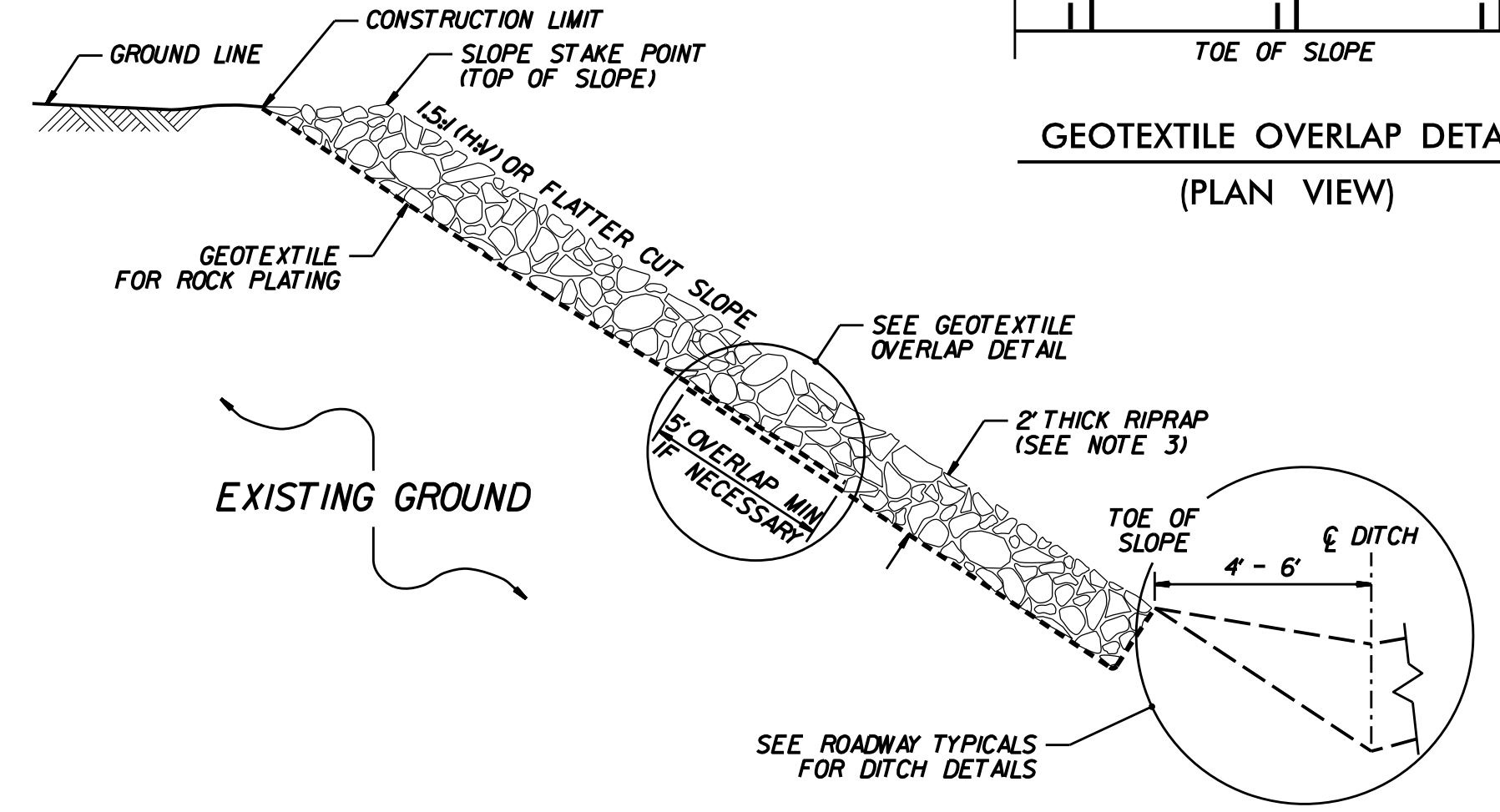
ROCK PLATING DETAIL NO. 1 - TYPICAL SECTION



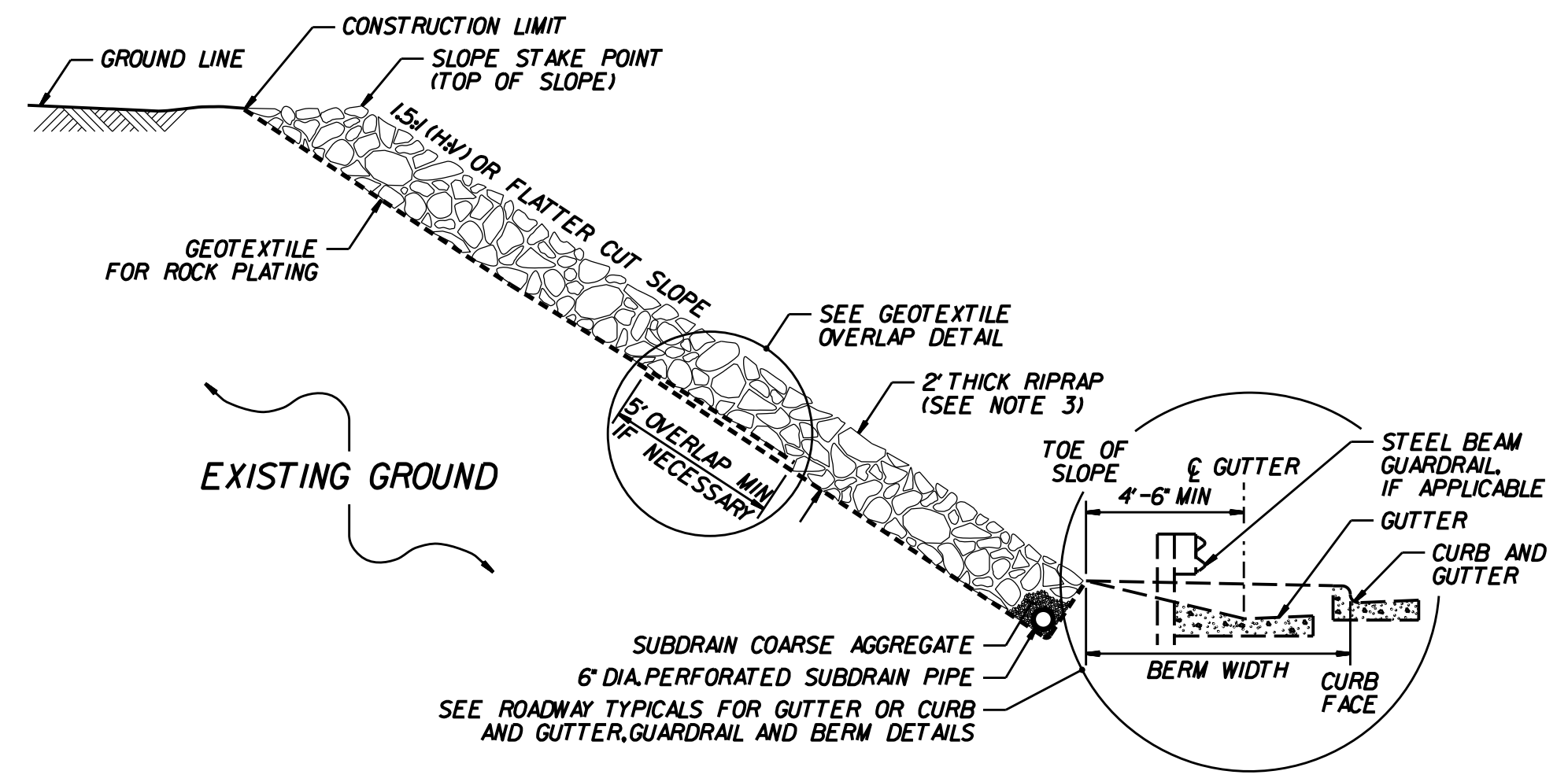
ROCK PLATING DETAIL NO. 2 - TYPICAL SECTION



GEOTEXTILE OVERLAP DETAIL (PLAN VIEW)



ROCK PLATING DETAIL NO. 3 - TYPICAL SECTION



ROCK PLATING DETAIL NO. 4 - TYPICAL SECTION

- NOTES:**
- SEE ROADWAY PLANS AND SUMMARY SHEETS FOR ROCK PLATING LOCATIONS.
 - FOR ROCK PLATING, SEE SECTION 275 OF THE STANDARD SPECIFICATIONS.
 - USE CLASS I, 2 OR B RIPRAP UNLESS REQUIRED OTHERWISE IN THE ROADWAY SUMMARY SHEETS.

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

ROADWAY DETAIL DRAWING FOR
ROCK PLATING

SHEET 1 OF 1
275D01



CONTRACT STANDARDS AND DEVELOPMENT UNIT
Office 919-707-6900 FAX 919-250-4119

SEE TITLE BLOCK

ORIGINAL BY: S. HIDDEN DATE: 03-11-22
 MODIFIED BY: DATE:
 CHECKED BY: DATE:
 FILE SPEC.:

SYTIME\$\$\$\$\$
 U99\$\$\$\$\$
 C:\PROGRAMS\DWG\DESIGN\$\$\$\$\$
 USERNAME\$\$\$\$\$

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA

SUMMARY OF EARTHWORK IN CUBIC YARDS

STATION	STATION	UNCL. EXCAV.	UNDERCUT EXCAV.	EMBANK. +%	BORROW	WASTE
-L- 10 + 50.00	15 + 34.39	912		2,183	1,271	
-L- 18 + 61.61	22 + 17.00	43		1,434	1,391	
SUBTOTAL:		955		3,617	2,662	
TOTALS:		955		3,617	2,662	
PROJECT TOTAL:		955		3,617	2,662	
EST 5% TO REPLACE TOP SOIL ON BORROW PIT					133	
GRAND TOTAL:		955		3,617	2,795	
SAY:		960		3,620	2,850	

EST. DDE = 5,000 CY
PER GEOTECH RECOMMENDATION: EST. SELECT GRANULAR MATERIAL: 200 CY
PER GEOTECH RECOMMENDATION: EST. UNDERCUT = 200 CY

SHOULDER BERM GUTTER

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	LF
-L-	18 + 80.07	18 + 90.00	LT	9.93
-L-	18 + 71.63	18 + 90.00	RT	18.37
			TOTAL:	28.3
			SAY:	32

REMOVAL OF EXISTING ASPHALT PAVEMENT

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	YD'
-L-	11 + 39.00	12 + 35.00	CL	347.88
-L-	18 + 56.95	20 + 03.00	CL	500.16
			TOTAL:	848.04
			SAY:	935

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

BREAKING OF EXISTING PAVEMENT

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	YD'
-L-	12 + 35.00	15 + 40.07	CL	1,091.89
			TOTAL:	1,091.89
			SAY:	1,202.00

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

THESE EARTHWORK QUANTITIES ARE BASED IN PART ON SUBSURFACE DATA
PROVIDED BY THE GEOTECHNICAL ENGINEERING UNIT.

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		WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHOULDER WIDTH	FLARE LENGTH		ANCHORS									TEMP. CRASH CUSHIONS			SINGLE FACED GUARDRAIL	REMOVE EXISTING GUARDRAIL	REMOVE AND STOCKPILE EXISTING GUARDRAIL	REMARKS													
										APPROACH END	TRAILING END	APPROACH END	TRAILING END	XI MOD	B-77	GREU 350	M-350	TEMP. W-BEAM RETROFIT	TYPE III	VI MOD	GREU TL-3	AT-1	EA					G	NG											
-L-	13 + 91.59	15 + 39.46 (BR.)	LEFT	147.875'			15 + 39.46 (BR.)	6.00'	9.00'		50'		1.0'																											
-L-	12 + 19.45	15 + 29.82 (BR.)	RIGHT	310.375'			15 + 29.82 (BR.)	6.00'	9.00'		50'		1.0'																											
-L-	18 + 56.54 (BR.)	20 + 04.42	RIGHT	147.875'			18 + 56.54 (BR.)	6.00'	9.00'		50'		1.0'																											
-L-	18 + 66.18 (BR.)	21 + 76.56	LEFT	310.875'			18 + 66.18 (BR.)	6.00'	9.00'		50'		1.0'																											
SUBTOTAL				917.00'																																				
LESS ANCHOR DEDUCTIONS:																																								
GREU TL-3 4 @ 50.00' =				-200.00'																																				
B-77 4 @ 22.875' =				-91.50'																																				
ANCHOR DEDUCTION TOTAL:				-291.50'																																				
PROJECT TOTAL				625.50'																																				
SAY				637.5'																																				
ADDITIONAL GUARDRAIL POST =				5 EA																																				

COMPUTED BY: Jinyoung Park DATE: 08/23/22
 CHECKED BY: Jamey Batts DATE: 8/23/22

(12-17-19)

PROJECT NO.	SHEET NO.
B-5670	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-	2:1	14+50.00	1.5:1	15+26.30	LT	2	2	260
							TOTAL SY:	260

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

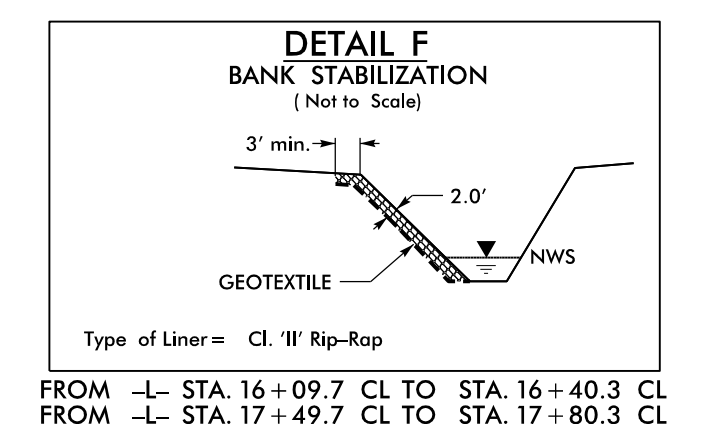
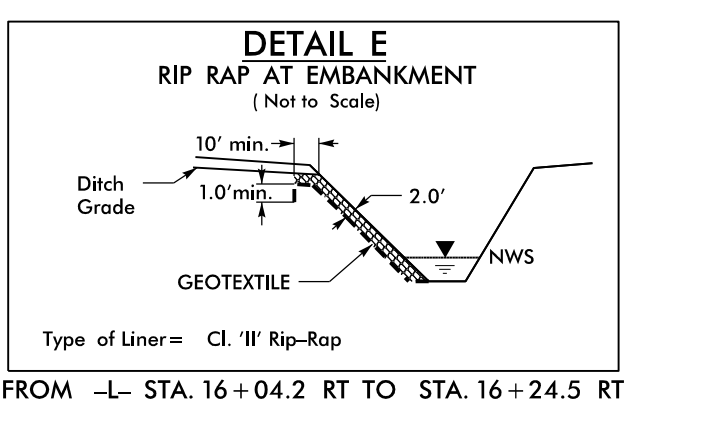
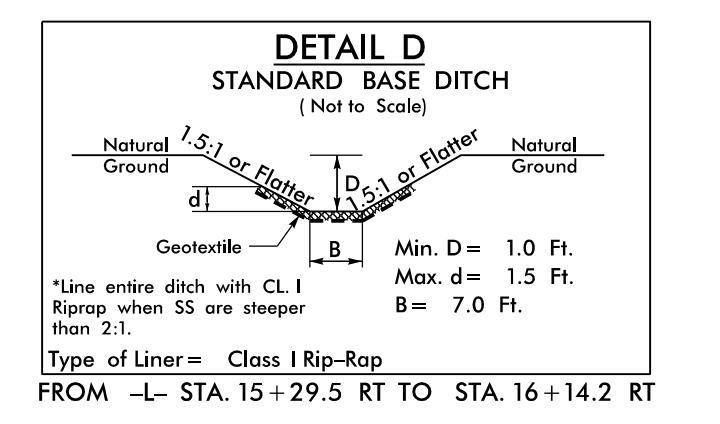
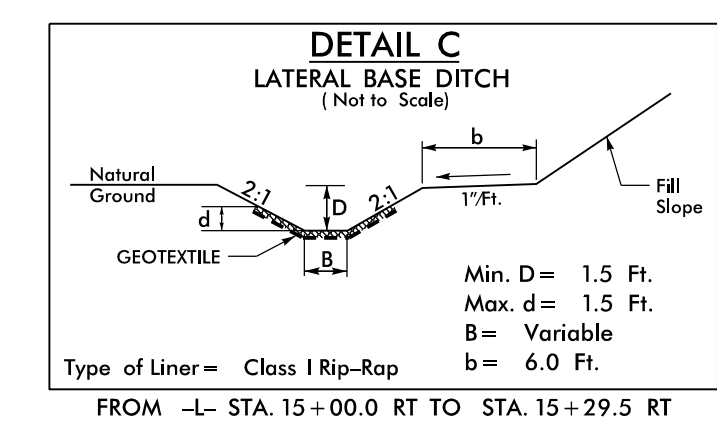
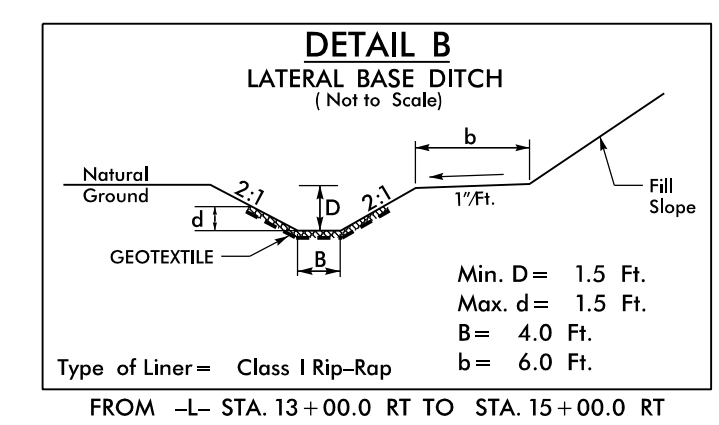
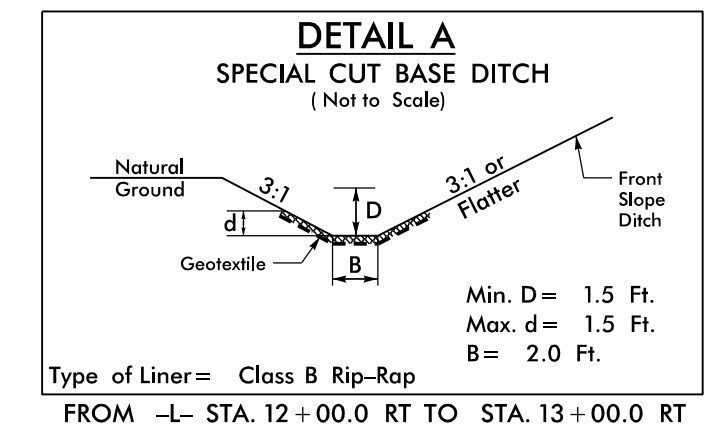
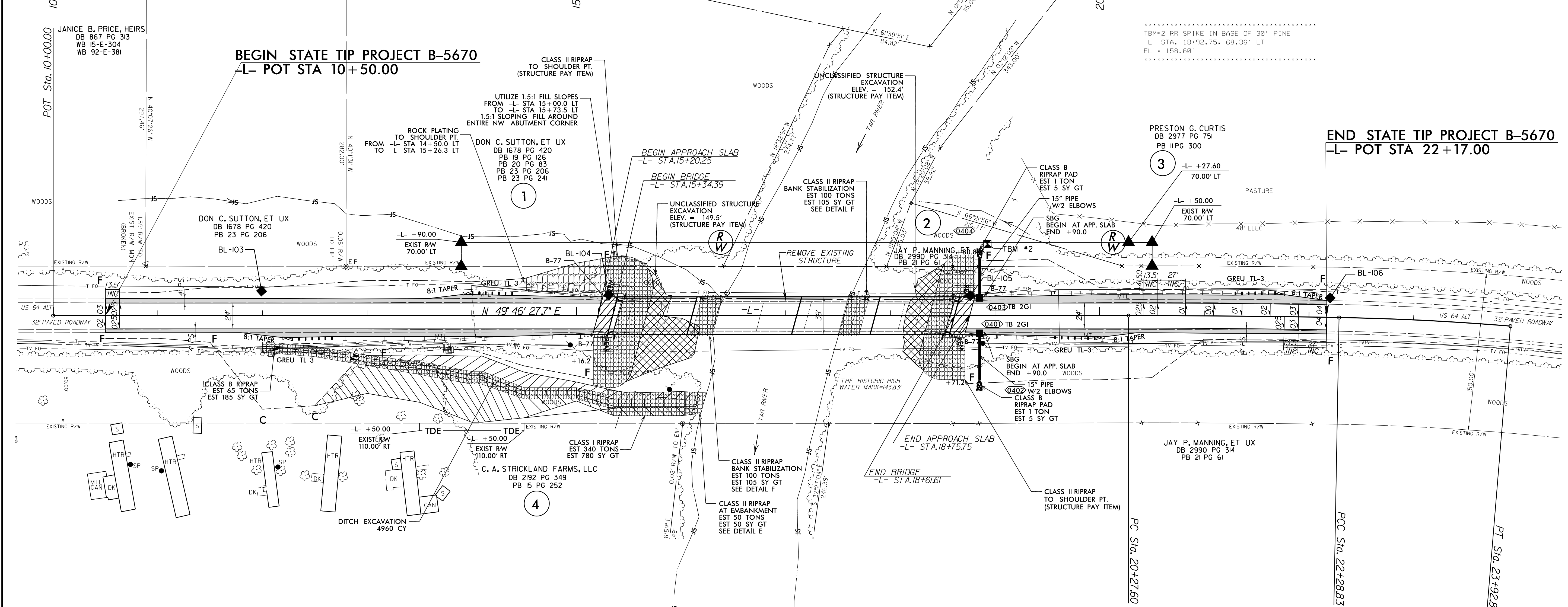
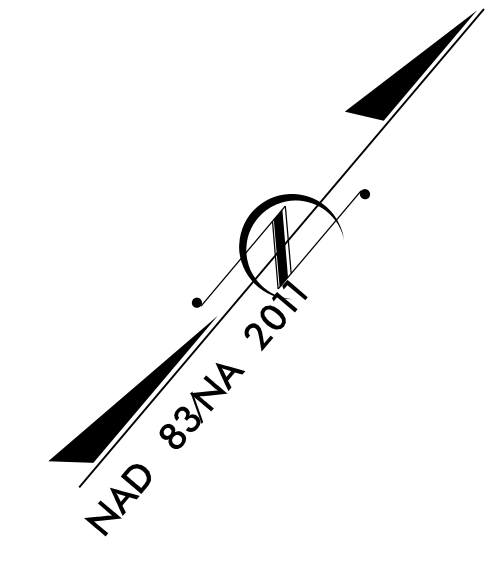
SUMMARY OF BRIDGE WAITING PERIODS

Bridge Description	End Bent/ Bent No.	MONTHS
Bridge No. 29 on US 64 Alt. over Tar River	End Bent 1	1

8/17/99

PROJECT REFERENCE NO. B-5670	SHEET NO. 4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER <i>[Signature]</i> 036853	HYDRAULICS ENGINEER <i>[Signature]</i> 052488
8/16/2022	8/16/2022
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
KCI Engineers • Planners • Scientists • Construction Managers 4505 Falls of Neuse Road, Suite 400 Raleigh, NC 27609 Phone (919) 783-9214 • Fax (919) 783-9266	

PI Sta 21+28.22 PI Sta 23+10.84
 $\Delta = 1'02'' 19.3'' (RT)$ $\Delta = 3'40'' 54.6'' (RT)$
 $D = 0'30'' 58.2''$ $D = 2'14'' 43.6''$
 $L = 201.23'$ $L = 163.97'$
 $T = 100.62'$ $T = 82.01'$
 $R = 11,000.00'$ $R = 2,551.64'$
 $RO = 67.5'$
 $e = .04$



FOR -L- PROFILE SEE SHEET 5
FOR STRUCTURE PLANS SEE SHEETS S-1 THRU S-40

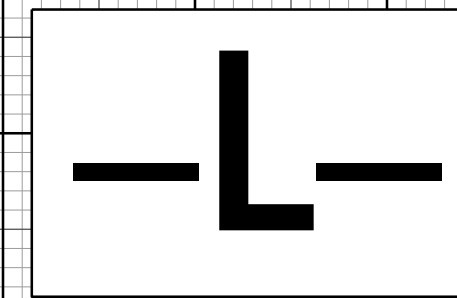
REVISIONS

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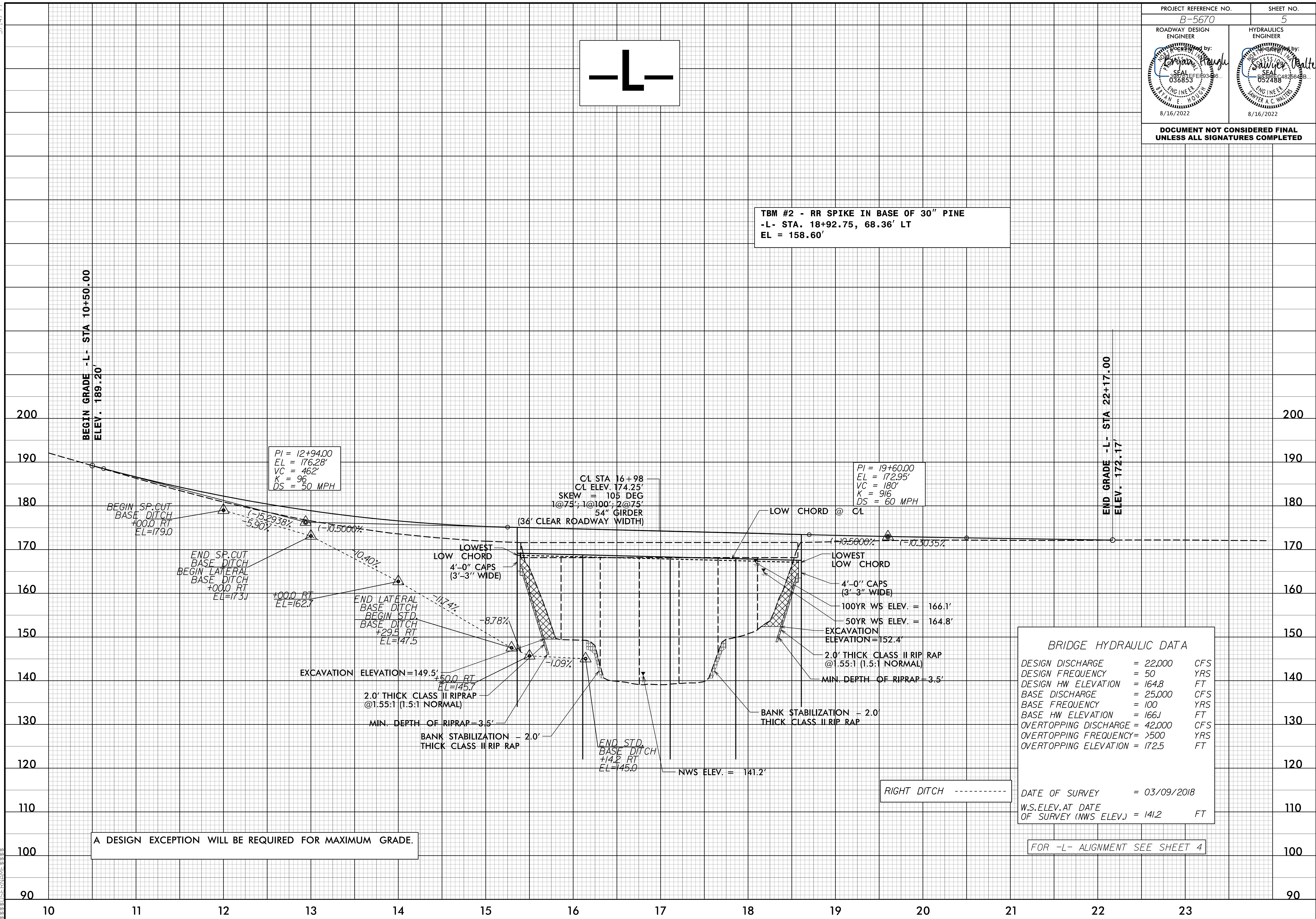
5/14/99

PROJECT REFERENCE NO. B-5670	SHEET NO. 5
ROADWAY DESIGN ENGINEER <i>[Signature]</i>	HYDRAULICS ENGINEER <i>[Signature]</i>
SEAL 036853 8/16/2022	SEAL 052488 8/16/2022

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



TBM #2 - RR SPIKE IN BASE OF 30" PINE
-L- STA. 18+92.75, 68.36' LT
EL = 158.60'



BRIDGE HYDRAULIC DATA		
DESIGN DISCHARGE	= 22,000	CFS
DESIGN FREQUENCY	= 50	YRS
DESIGN HW ELEVATION	= 164.8	FT
BASE DISCHARGE	= 25,000	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 166.1	FT
OVERTOPPING DISCHARGE	= 42,000	CFS
OVERTOPPING FREQUENCY	= >500	YRS
OVERTOPPING ELEVATION	= 172.5	FT
DATE OF SURVEY	= 03/09/2018	
W.S.ELEV. AT DATE OF SURVEY (NWS ELEV.)	= 141.2	FT

FOR -L- ALIGNMENT SEE SHEET 4

A DESIGN EXCEPTION WILL BE REQUIRED FOR MAXIMUM GRADE.

15-AUG-2022 10:47 AM
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