

09.08/2019

See Sheet 1A For Index of Sheets
See Sheet 1B For Conventional Symbols

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SAMPSON COUNTY

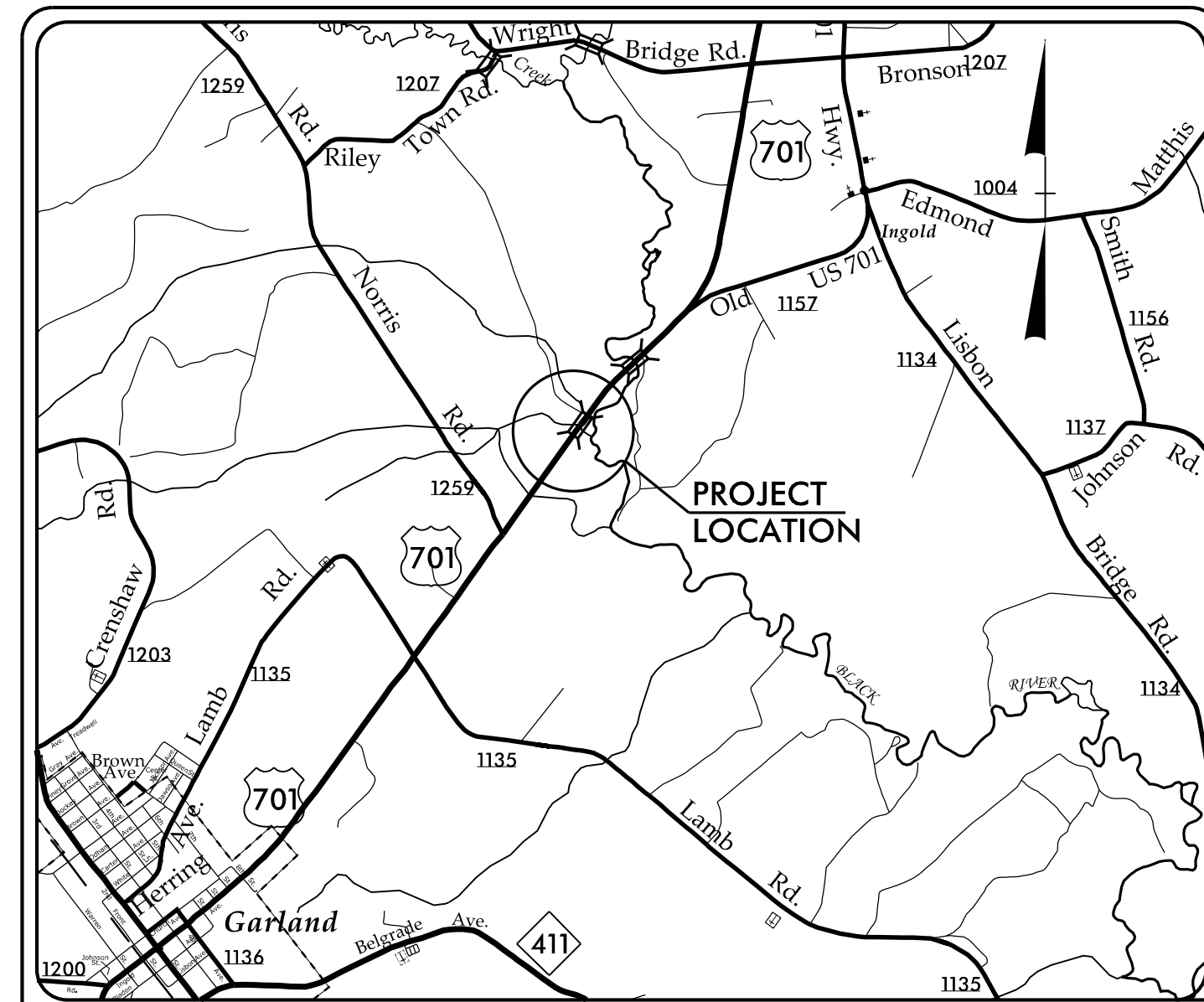
LOCATION: BRIDGE 810022 ON US 701 OVER
BILL'S SWAMP

TYPE OF WORK: GRADING, PAVING, DRAINAGE AND STRUCTURES

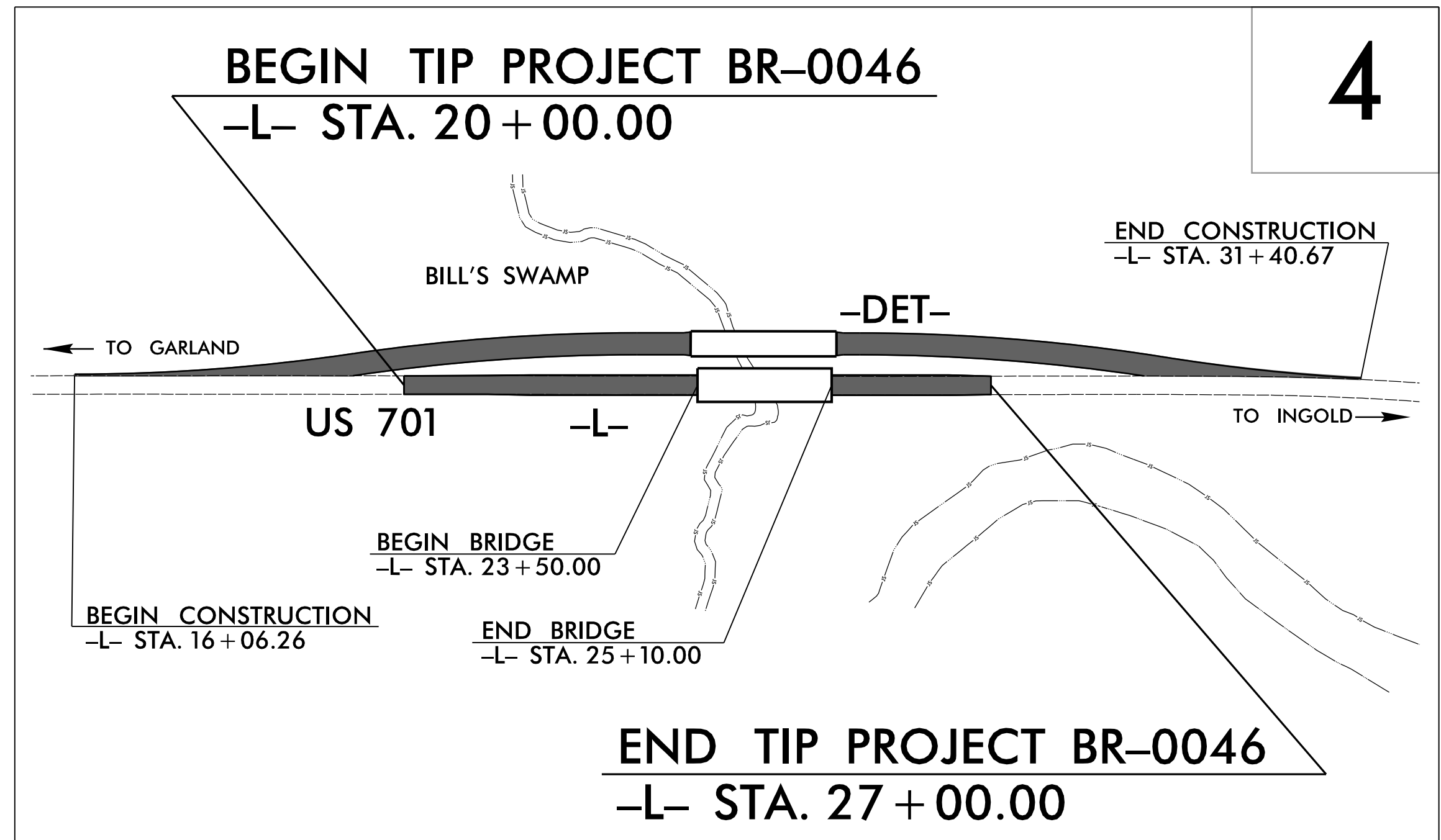
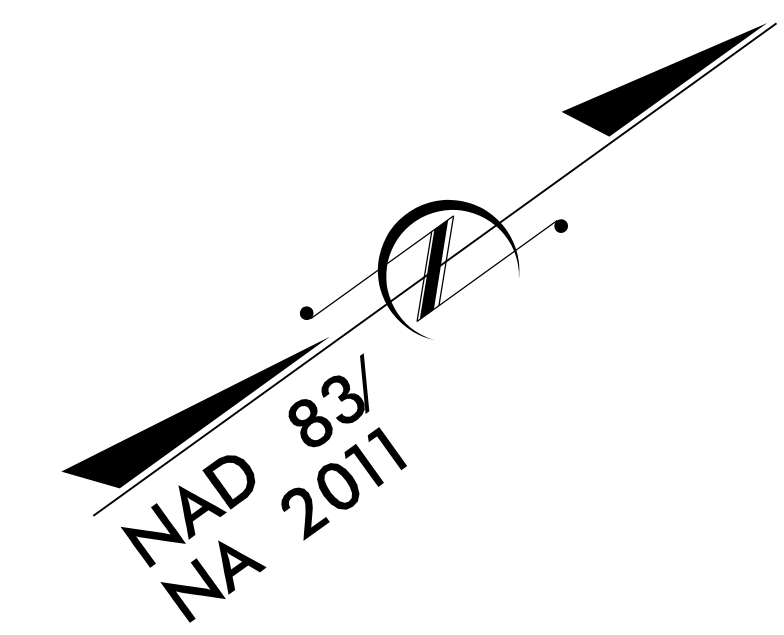
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BR-0046	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
67046.1.1		PE	
67046.2.1		RW & UTIL	
67046.3.1		CONS.	

TIP PROJECT: BR-0046

CONTRACT: C204831

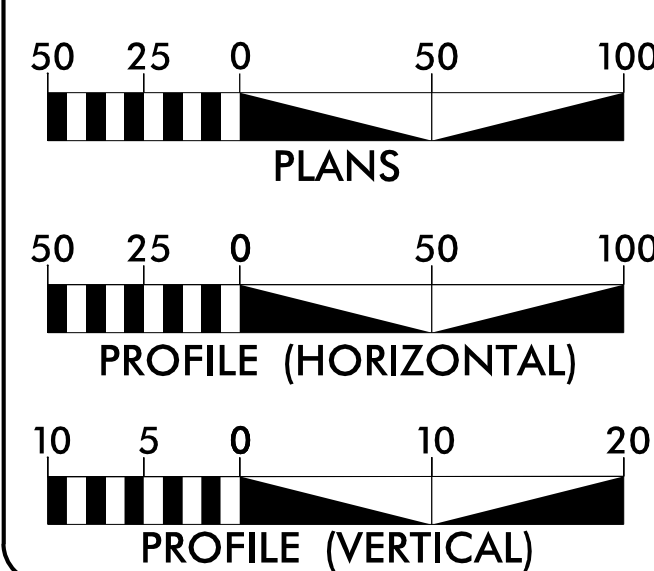


VICINITY MAP



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES



DESIGN DATA

ADT 2023 = 5,535
 ADT 2043 = 6,165
 K = 9 %
 D = 55 %
 T = 12 % *
 V = 60 MPH
 * (TTST 8%+ DUAL 4%)
 FUNC CLASS =
 MINOR ARTERIAL
 REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT BR-0046 = 0.103 MI
 LENGTH STRUCTURE TIP PROJECT BR-0046 = 0.030 MI
 TOTAL LENGTH OF TIP PROJECT BR-0046 = 0.133 MI

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

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
JULY 14, 2022

LETTING DATE:
DECEMBER 19, 2023

KIM L. GILLESPIE, PE
PROJECT MANAGER

DAVID J. CLODGO, PE

MATTHEW B. COPPLE, PE
PROJECT TEAM LEAD

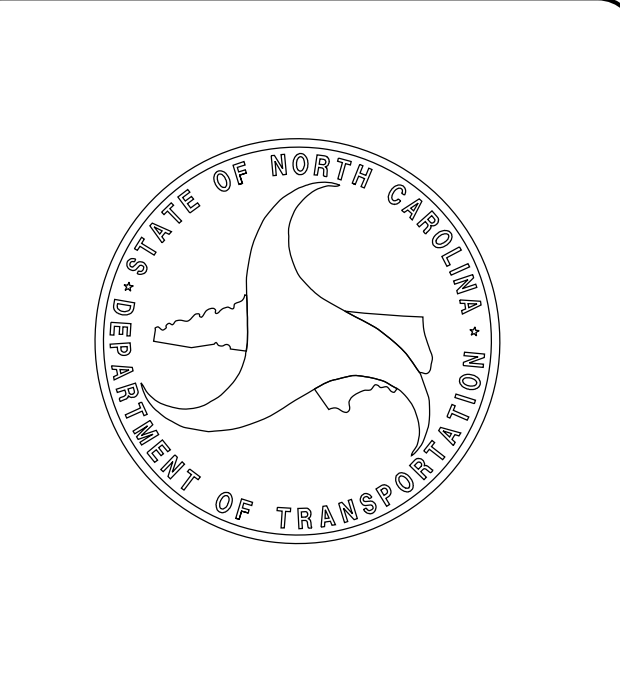
HYDRAULICS ENGINEER

DocuSigned by:
William G. Call
060707090411425

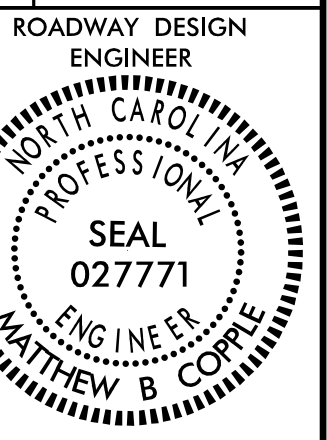
11/15/2023
SIGNATURE:

DocuSigned by:
Matthew B. Copple
18CE83C43884BA

11/15/2023
SIGNATURE:



20-SEP-2023 07:03
R:\Roadway\Proj\BR0046_Rdy_tsh.dgn
\$\$\$\$\$SERVNAME\$\$\$\$\$



DocuSigned by:
Matthew Copple
1BCEEB3C438848A

11/15/2023

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SHEET NUMBER	SHEET
1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES, AND STANDARD DRAWINGS
1B	CONVENTIONAL SYMBOLS
2A-1 THRU 2A-2	PAVEMENT SCHEDULE AND TYPICAL SECTIONS
2B-1 THRU 2B-2	ROADWAY DETAIL OF DETOUR
2C-1 THRU 2C-6	SPECIAL DETAILS FOR MODIFIED METHOD III CLEARING, ROCK PLATING, AT-1 ANCHOR UNIT, TYPE III ANCHOR UNIT, GUARDRAIL INSTALLATION, AND TYPE 1 BRIDGE APPROACH FILL
3B-1	ROADWAY SUMMARIES FOR EARTHWORK, SHOULDER BERM GUTTER, REMOVAL OF EXISTING ASPHALT PAVEMENT, AND GUARDRAIL
3D-1	DRAINAGE SUMMARY
3G-1	GEOTECHNICAL SUMMARY FOR SIDE DRAINS AND ROCK PLATING
4	PLAN SHEET
5 THRU 6	PROFILE SHEETS
TMP-1 THRU TMP-3	TRAFFIC MANAGEMENT PLANS
RW01 THRU RW04	SURVEY CONTROL SHEETS
PMP-1	PAVEMENT MARKING PLANS
EC-1 THRU EC-9	EROSION CONTROL PLANS
RF-1	REFORESTATION PLANS
UD-1 THRU UD-3	UTILITIES BY OTHERS PLANS
X-1 THRU X-1A	CROSS-SECTION INDEX AND SUMMARY SHEET
X-2 THRU X-10	CROSS-SECTIONS
S-1 THRU S-31	STRUCTURE PLANS

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-MOD

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.

DRIVEWAYS:
DRIVEWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. 848.03 AT LOCATIONS SHOWN ON PLANS OR AS 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.

SUBSURFACE PLANS:
ONLY STRUCTURE SUBSURFACE PLANS ARE AVAILABLE ON THIS PROJECT. THE CONTRACTOR SHOULD MAKE HIS OWN INVESTIGATION AS TO THE SUBSURFACE CONDITIONS FOR THE ROADWAY.

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.
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
EFF. 01-16-2018
REV.

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	
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
310.10	Driveway Pipe Construction
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method 1
DIVISION 6 - ASPHALT BASES AND PAVEMENTS	
654.01	Pavement Repairs
DIVISION 8 - INCIDENTALS	
806.01	Concrete Right-of-Way Marker
815.02	Subsurface Drain
840.00	Concrete Base Pad for Drainage Structures
840.18	Concrete Grated Drop Inlet Type 'B' - 12" thru 36" Pipe
840.24	Frames and Narrow Slot Sag Grates
840.25	Anchorage for Frames - Brick or Concrete or Precast
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 and Grates
840.45	Precast Drainage Structure
840.46	Traffic Bearing Precast Drainage Structure
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
862.04	Anchoring End of Guardrail - B-77 and B-83 Anchor Units
876.01	Rip Rap in Channels
876.02	Guide for Rip Rap at Pipe Outlets

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-☠
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	○
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	E
Proposed Temporary Drainage Easement	TDE
Proposed Permanent Drainage Easement	PDE
Proposed Permanent Drainage/Utility Easement	DUE
Proposed Permanent Utility Easement	PUE
Proposed Temporary Utility Easement	TUE
Proposed 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	□
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	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:

* 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	PH
H-Frame Pole	●
U/G Power Line Test Hole (SUE - LOS A)*	⊕
U/G Power Line (SUE - LOS B)*	P
U/G Power Line (SUE - LOS C)*	P
U/G Power Line (SUE - LOS D)*	P

TELEPHONE:

Existing Telephone Pole	●
Proposed Telephone Pole	○
Telephone Manhole	⊕
Telephone Pedestal	⊕
Telephone Cell Tower	⊕
U/G Telephone Cable Hand Hole	PH
U/G Telephone Test Hole (SUE - LOS A)*	⊕
U/G Telephone Cable (SUE - LOS B)*	T
U/G Telephone Cable (SUE - LOS C)*	T
U/G Telephone Cable (SUE - LOS D)*	T
U/G Telephone Conduit (SUE - LOS B)*	TC
U/G Telephone Conduit (SUE - LOS C)*	TC
U/G Telephone Conduit (SUE - LOS D)*	TC
U/G Fiber Optics Cable (SUE - LOS B)*	T FO
U/G Fiber Optics Cable (SUE - LOS C)*	T FO
U/G Fiber Optics Cable (SUE - LOS D)*	T FO

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	A/G Water

TV:

TV Pedestal	⊕
TV Tower	⊗
U/G TV Cable Hand Hole	PH
U/G TV Test Hole (SUE - LOS A)*	⊕
U/G TV Cable (SUE - LOS B)*	TV
U/G TV Cable (SUE - LOS C)*	TV
U/G TV Cable (SUE - LOS D)*	TV
U/G Fiber Optic Cable (SUE - LOS B)*	TV FO
U/G Fiber Optic Cable (SUE - LOS C)*	TV FO
U/G Fiber Optic Cable (SUE - LOS D)*	TV FO

GAS:

Gas Valve	◇
Gas Meter	⊕
U/G Gas Line Test Hole (SUE - LOS A)*	⊕
U/G Gas Line (SUE - LOS B)*	G
U/G Gas Line (SUE - LOS C)*	G
U/G Gas Line (SUE - LOS D)*	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 Force Main Line Test Hole (SUE - LOS A)*	⊕
SS Force Main Line (SUE - LOS B)*	FSS
SS Force Main Line (SUE - LOS C)*	FSS
SS Force Main Line (SUE - LOS D)*	FSS

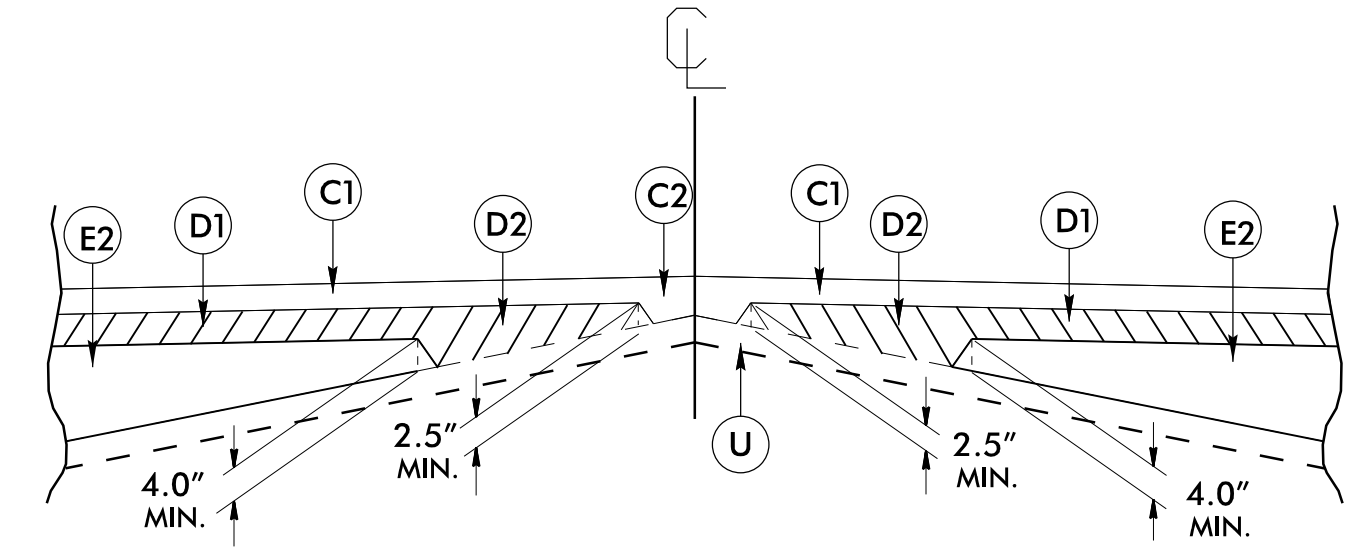
MISCELLANEOUS:

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

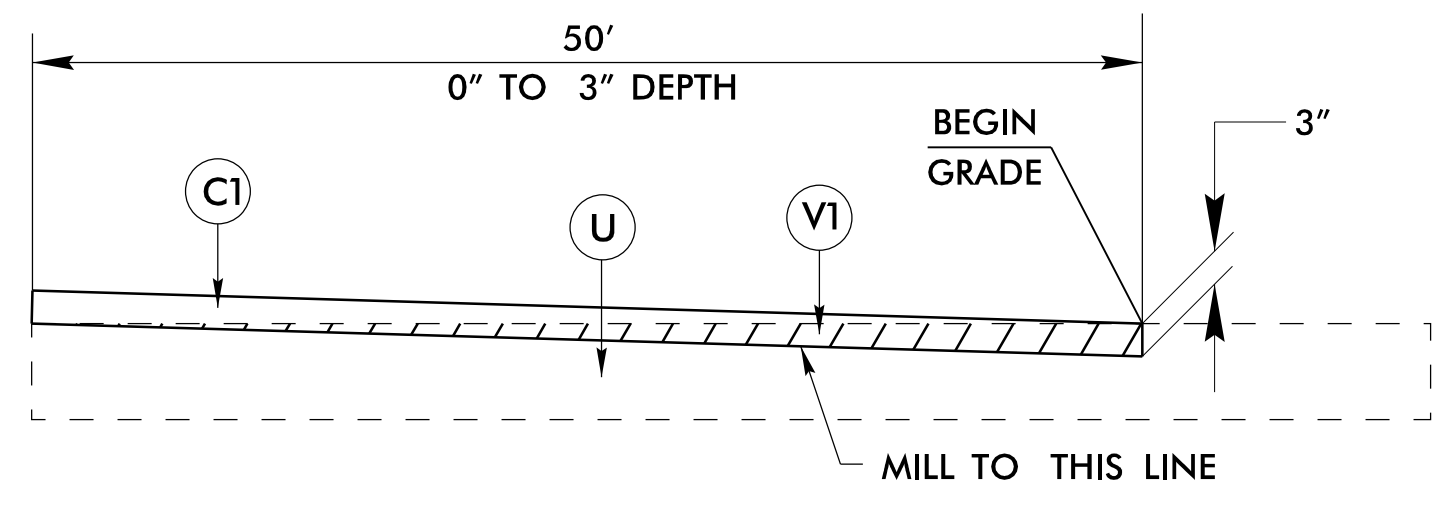
6/2/99

PAVEMENT SCHEDULE	
FINAL PAVEMENT DESIGN	
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. 2.5" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.
D2	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 GREATER THAN 5.5" IN DEPTH OR LESS THAN 3" IN DEPTH
J	PROP. 6" AGGREGATE BASE COURSE
P	PRIME COAT AT THE RATE OF .35 GAL PER SQ. YARD
R	SHOULDER BERM GUTTER
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	MILLING EXISTING ASPHALT PAVEMENT, VARIABLE DEPTH
V2	MILLING EXISTING ASPHALT PAVEMENT, 3" DEPTH
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE DETAIL SHOWING METHOD OF WEDGING)

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

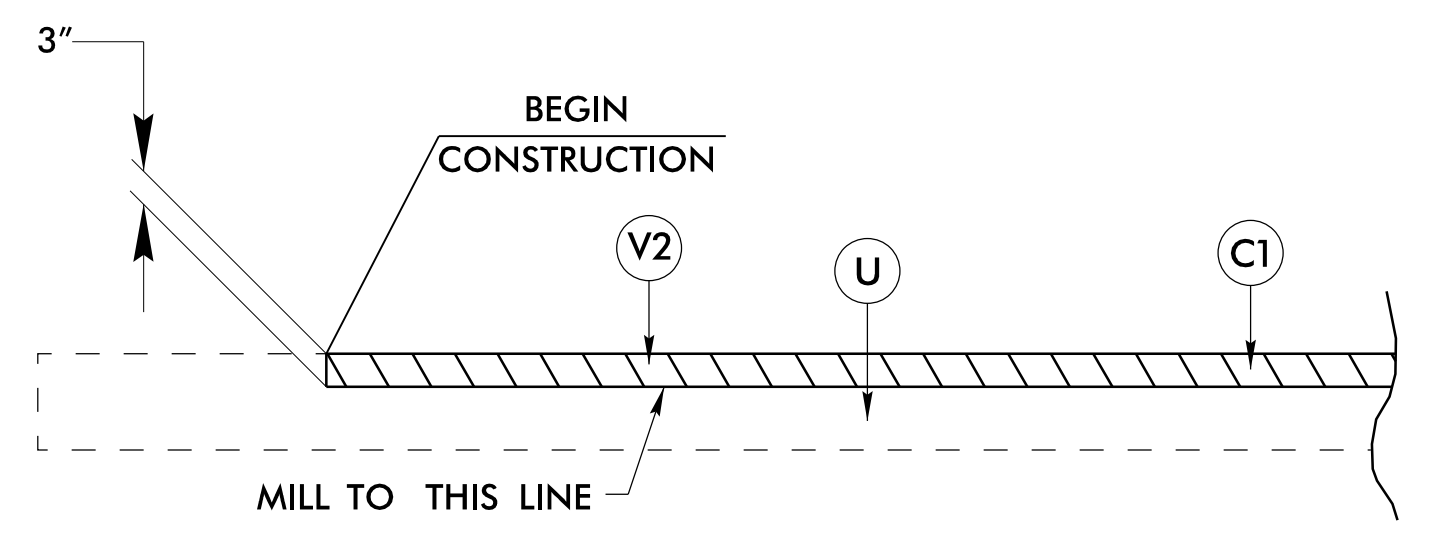


Detail Showing Method of Wedging



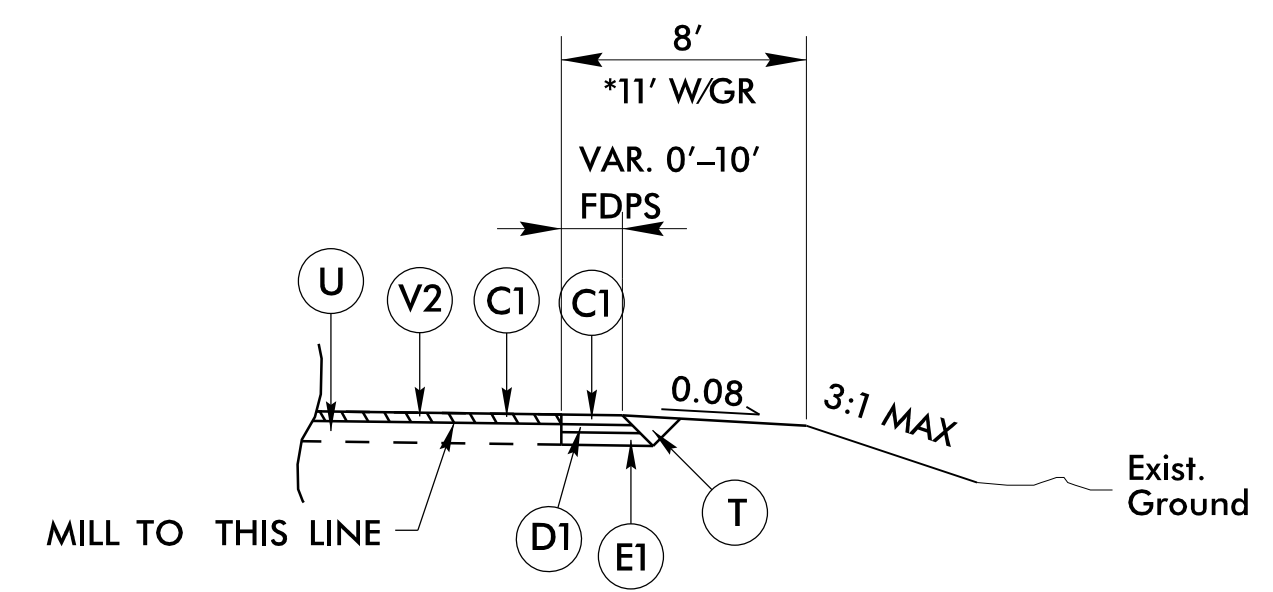
Detail of Incidental Milling at Pavement Tie-ins

-L- STA. 21+00.00 TO -L- STA. 21+50.00
 -L- STA. 26+50.00 TO -L- STA. 27+00.00



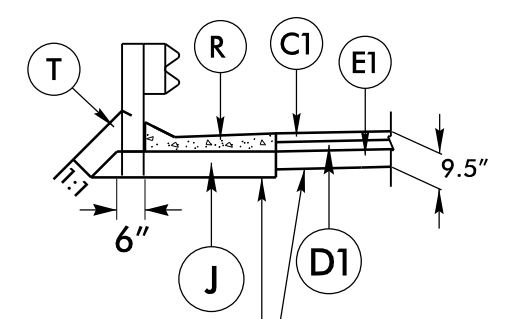
Milling Detail

-L- STA. 20+00.00 TO -L- STA. 21+00.00



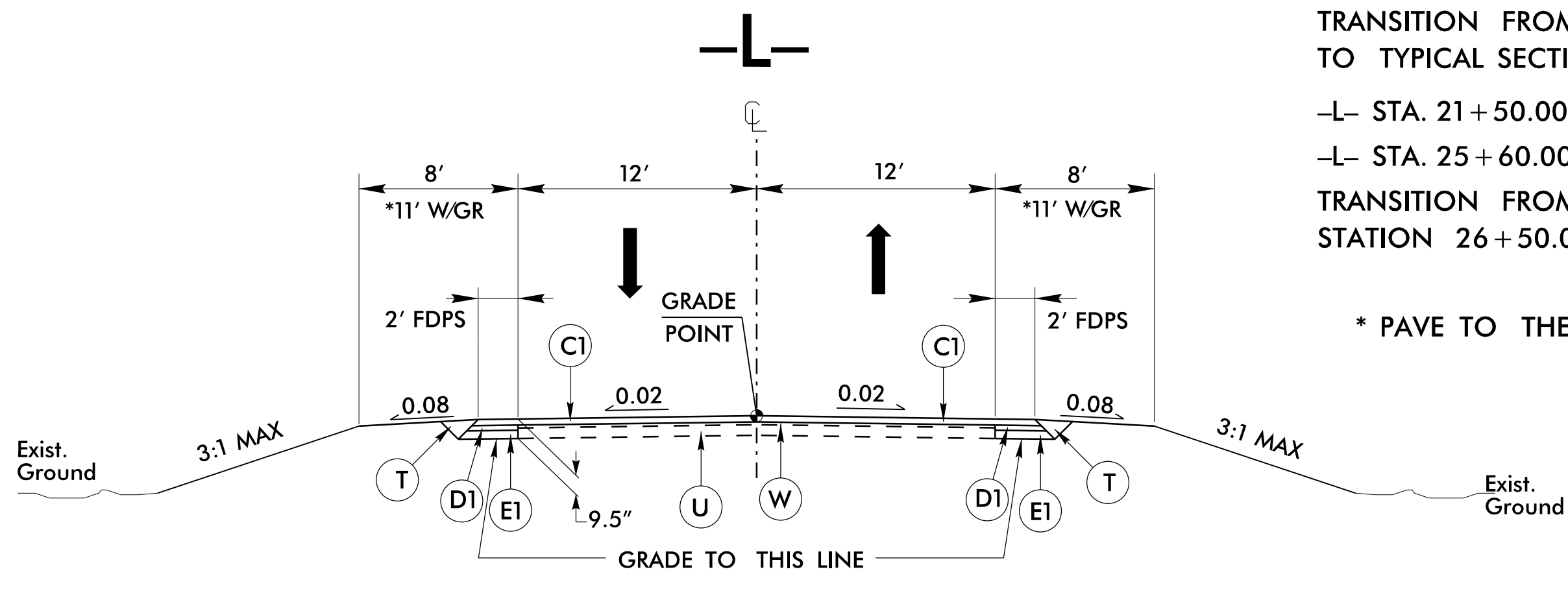
Shoulder Widening Detail

USE WITH MILLING DETAIL
 -L- STA. 20+00.00 TO 21+00.00



DETAIL SHOWING SHOULDER BERM GUTTER

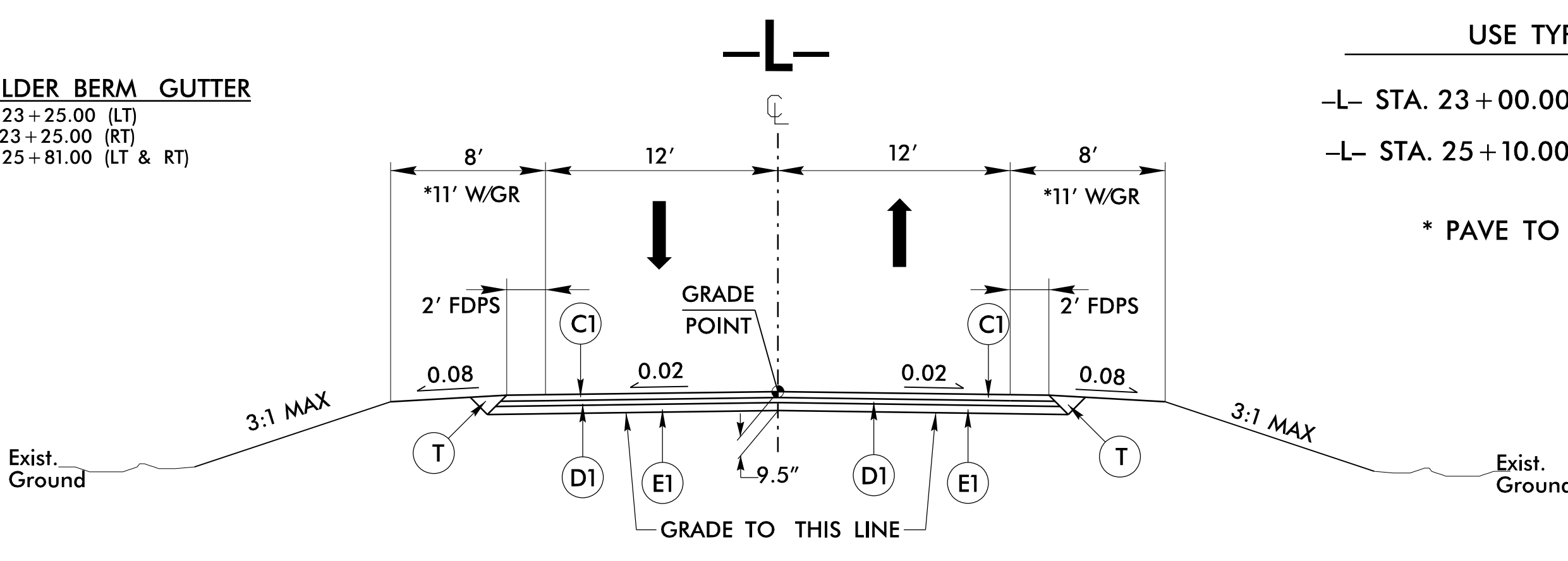
-L- STA. 22+84.00 TO -L- STA. 23+25.00 (LT)
 -L- STA. 21+30.00 TO -L- STA. 23+25.00 (RT)
 -L- STA. 25+35.00 TO -L- STA. 25+81.00 (LT & RT)



TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1
 TRANSITION FROM EXISTING AT -L- STATION 21+00.00 TO TYPICAL SECTION NO. 1 AT -L- STATION 21+50.00
 -L- STA. 21+50.00 TO -L- STA. 23+00.00
 -L- STA. 25+60.00 TO -L- STA. 26+50.00
 TRANSITION FROM TYPICAL SECTION No. 1 AT -L- STATION 26+50.00 TO EXISTING AT -L- STA. 27+00.00

* PAVE TO THE FACE OF GUARDRAIL



TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2
 -L- STA. 23+00.00 TO STA. 23+50.00 (BEGIN BRIDGE)
 -L- STA. 25+10.00 (END BRIDGE) TO -L- STA. 25+60.00

* PAVE TO THE FACE OF GUARDRAIL

PROJECT REFERENCE NO. BR-0046	SHEET NO. 2A-1
ROADWAY DESIGN ENGINEER MATTHEW B. COPPEL SEAL 027771 11/15/2023	PAVEMENT DESIGN ENGINEER ANDREW D. WARGO SEAL 044590 11/15/2023
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

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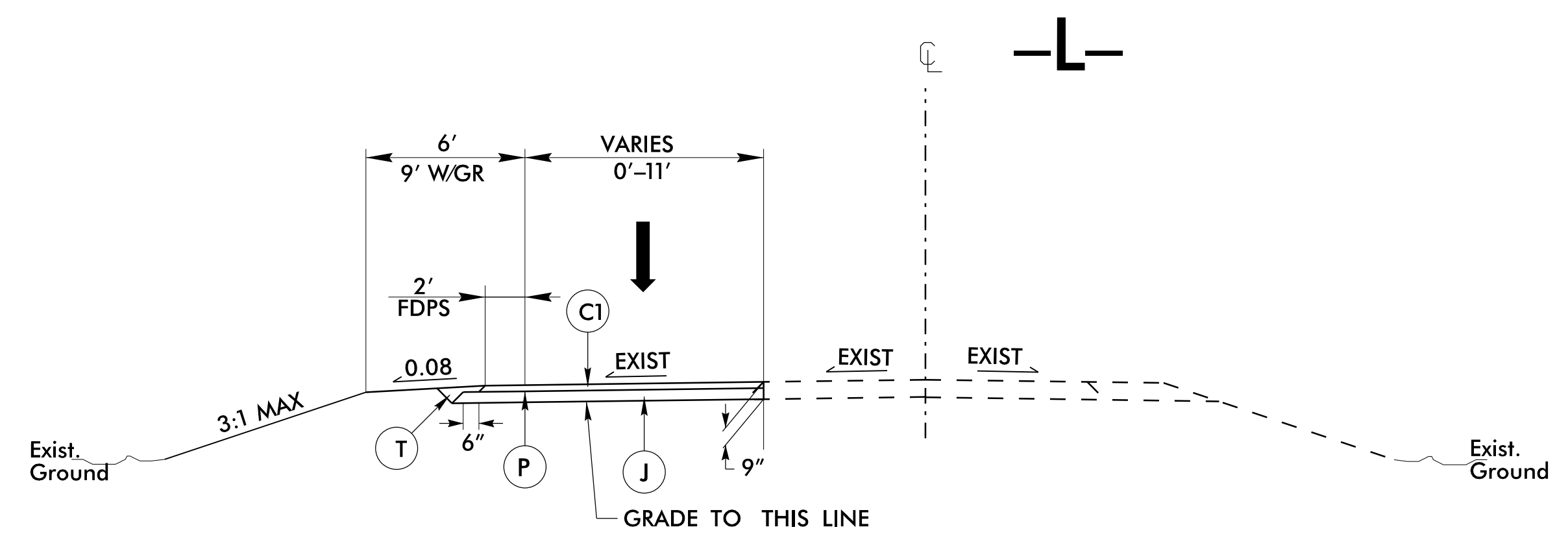
6/2/2019

PAVEMENT SCHEDULE	
FINAL PAVEMENT DESIGN	
C1	3.0" S9.5B
C2	VAR. S9.5B
D1	2.5" I19.0C
D2	VAR. I19.0C
E1	4.0" B25.0C
E2	VAR. B25.0C
J	6" ABC
P	PRIME COAT
R	SBG
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	WEDGING DETAIL

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

PROJECT REFERENCE NO. BR-0046	SHEET NO. 2A-2
ROADWAY DESIGN ENGINEER MATTHEW B. CORLE SEAL 027771 DATE: 11/15/2023	PAVEMENT DESIGN ENGINEER ANDREW D. WATTS SEAL 044590 DATE: 11/15/2023

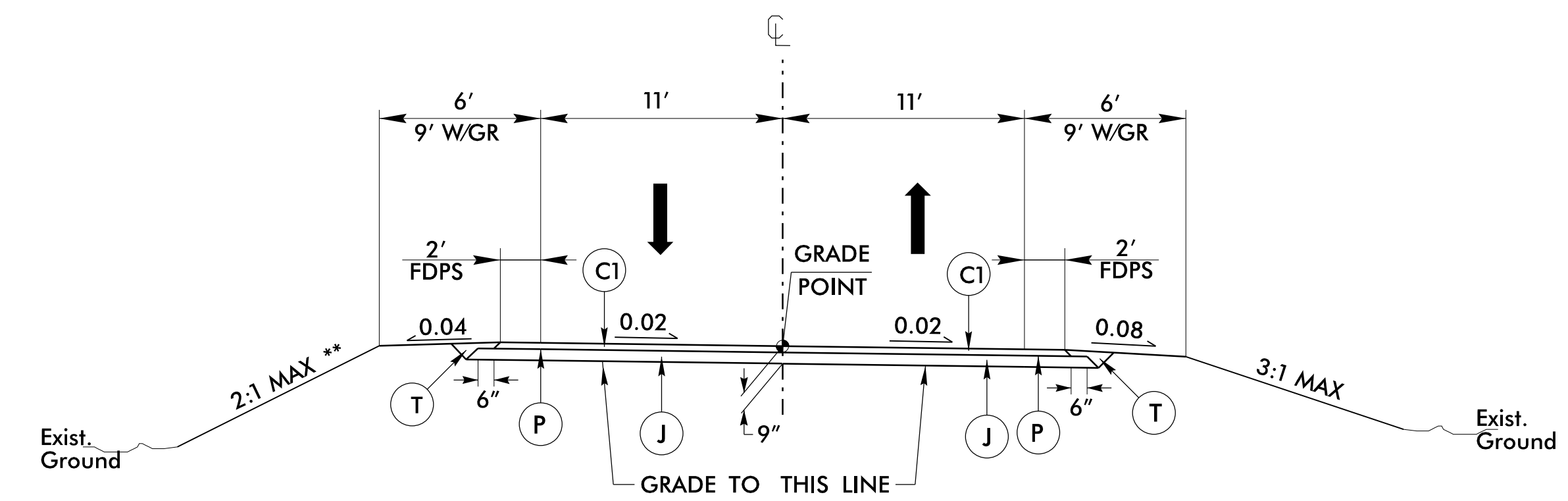
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TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3
 -DET- STA. 10+00.00 TO -DET- STA. 12+27.25
 -DET- STA. 23+74.05 TO -DET- STA. 25+39.61

-DET-



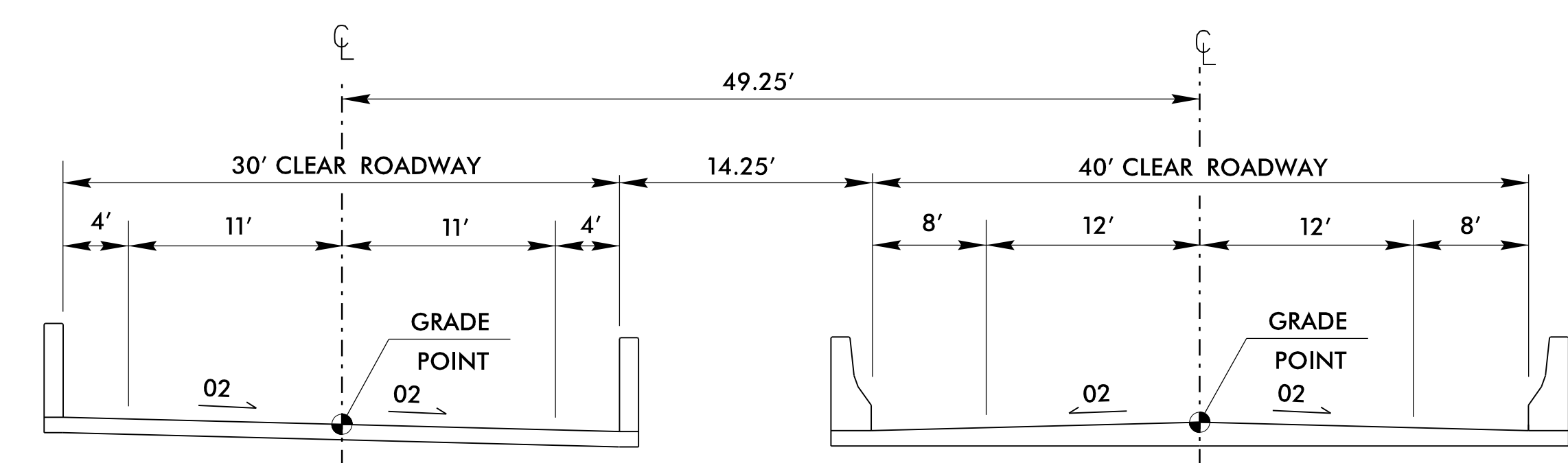
TYPICAL SECTION NO. 4

USE TYPICAL SECTION NO. 4
 -DET- STA. 12+27.25 TO STA. 17+38.00 (BEGIN BRIDGE)
 -DET- STA. 19+12.00 (END BRIDGE) TO -DET- STA. 23+74.05

** IN WETLAND AREAS THE FILL SLOPE SHOULD BE WRAPPED IN GEOTEXTILE FABRIC FROM TOE OF EXISTING SLOPE TO THE TEMPORARY SHOULDER POINT. KEY IN AT SHOULDER POINT.

-DET-

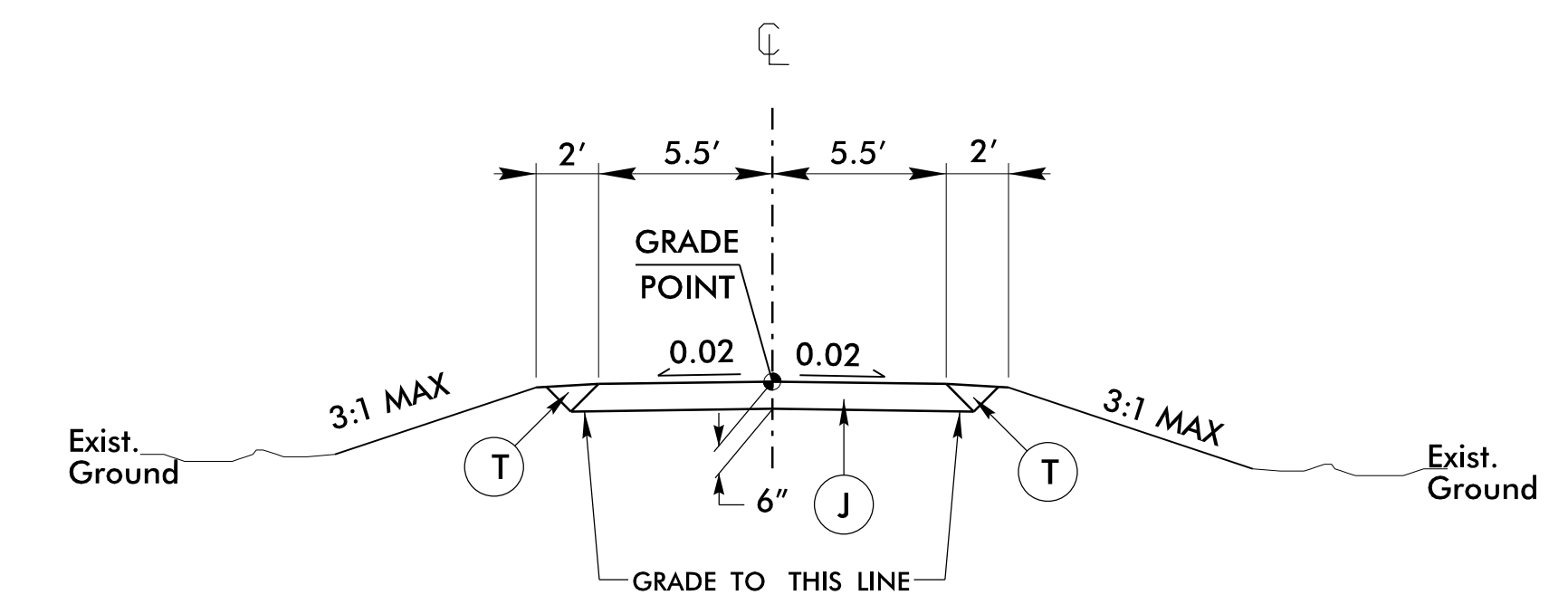
-L-



TYPICAL SECTION ON DETOUR BRIDGE

TYPICAL SECTION ON BRIDGE

-DR_DET-, -DR-



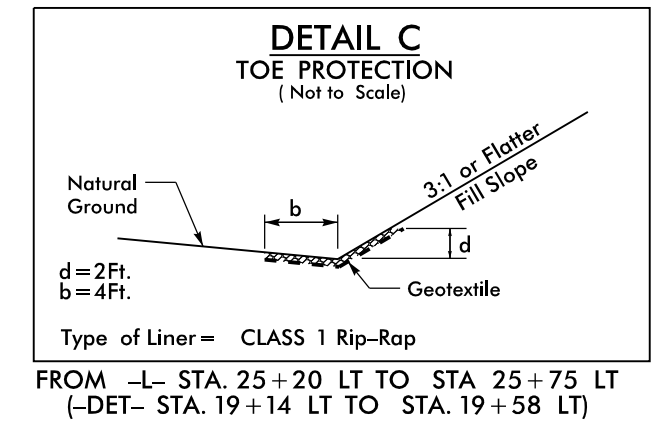
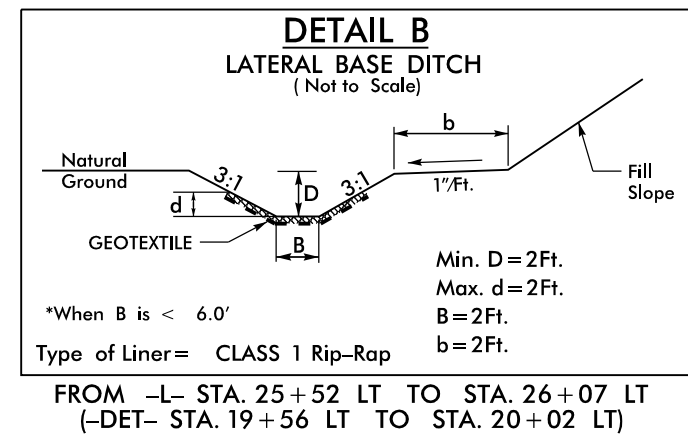
TYPICAL SECTION NO. 5

-DR_DET- STA. 10+15.00 TO 11+29.75
 -DR- STA. 10+50.00 TO 11+76.29

03-NOV-2023 08:07
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PROJECT REFERENCE NO. BR-0046	SHEET NO. 2B-1
RW SHEET NO.	
ROADWAY DESIGN ENGINEER JONATHAN B. MYERS SEAL 027771	HYDRAULICS ENGINEER WILLIAM G. GAIL SEAL 022000
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

DETOUR

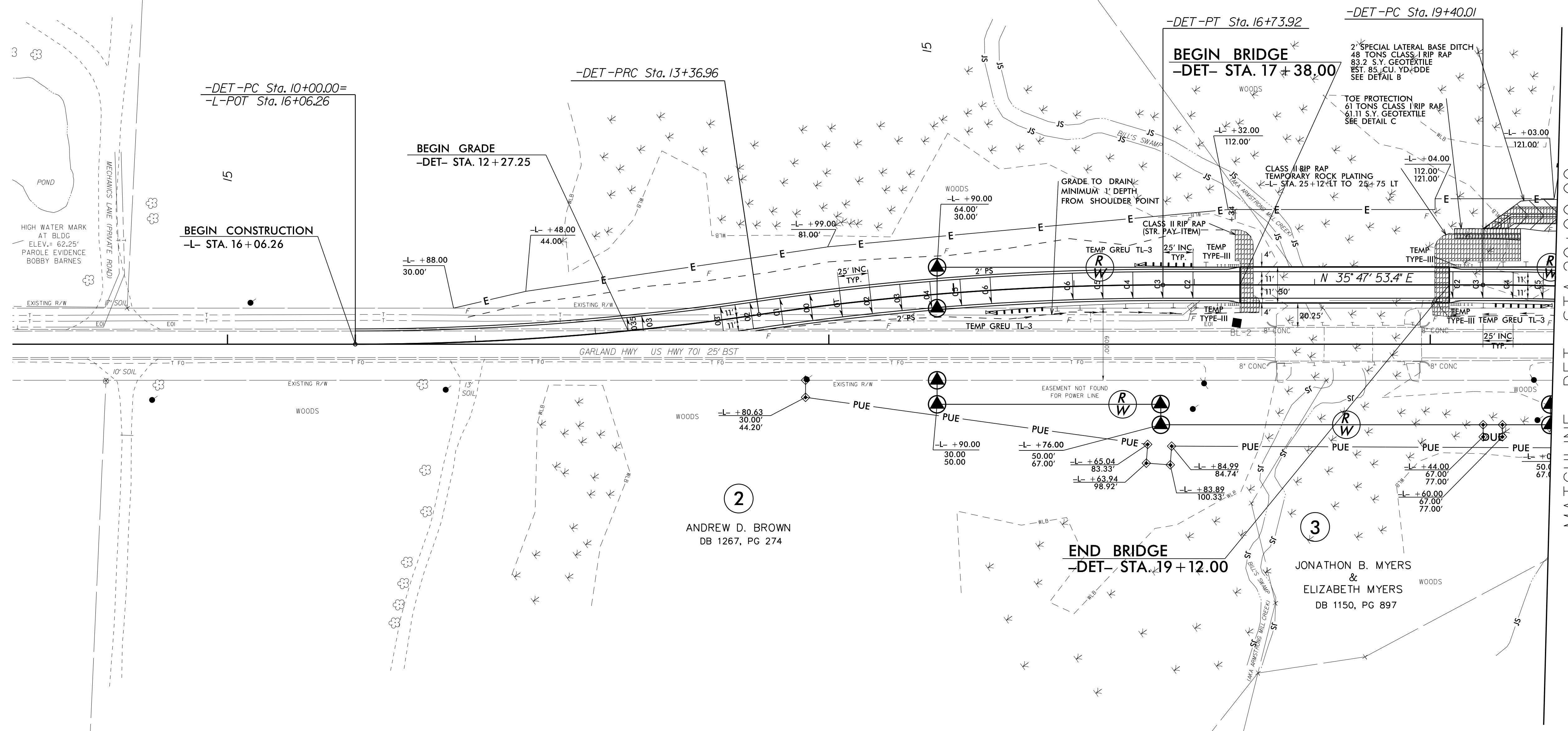


1
BOBBY L. BARNES
DB 2012, PG 336

3
JONATHAN B. MYERS
&
ELIZABETH MYERS
DB 1150, PG 897

2
ANDREW D. BROWN
DB 1267, PG 274

3
JONATHAN B. MYERS
&
ELIZABETH MYERS
DB 1150, PG 897



-DET-		
PI Sta 11+68.78	PI Sta 15+05.74	PI Sta 21+19.95
$\Delta = 8^\circ 23' 38.5" (LT)$	$\Delta = 8^\circ 23' 38.5" (RT)$	$\Delta = 8^\circ 56' 48.7" (RT)$
$D = 2^\circ 29' 28.0"$	$D = 2^\circ 29' 28.0"$	$D = 2^\circ 29' 28.0"$
$L = 336.96'$	$L = 336.96'$	$L = 359.15'$
$T = 168.78'$	$T = 168.78'$	$T = 179.94'$
$R = 2,300.00'$	$R = 2,300.00'$	$R = 2,300.00'$
$e = 0.035$	$e = 0.04$	$e = 0.04$
$RO = 100'$	$RO = 100'$	$RO = 100'$

MATCHLINE -DET- STA. 20+00.00
SEE SHEET 2B-2

FOR -DET- PROFILE, SEE SHEET 5

REVISIONS

8/17/99
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JONATHAN B. MYERS

8/17/99

REVISIONS

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REBECCA K. JOHNSON

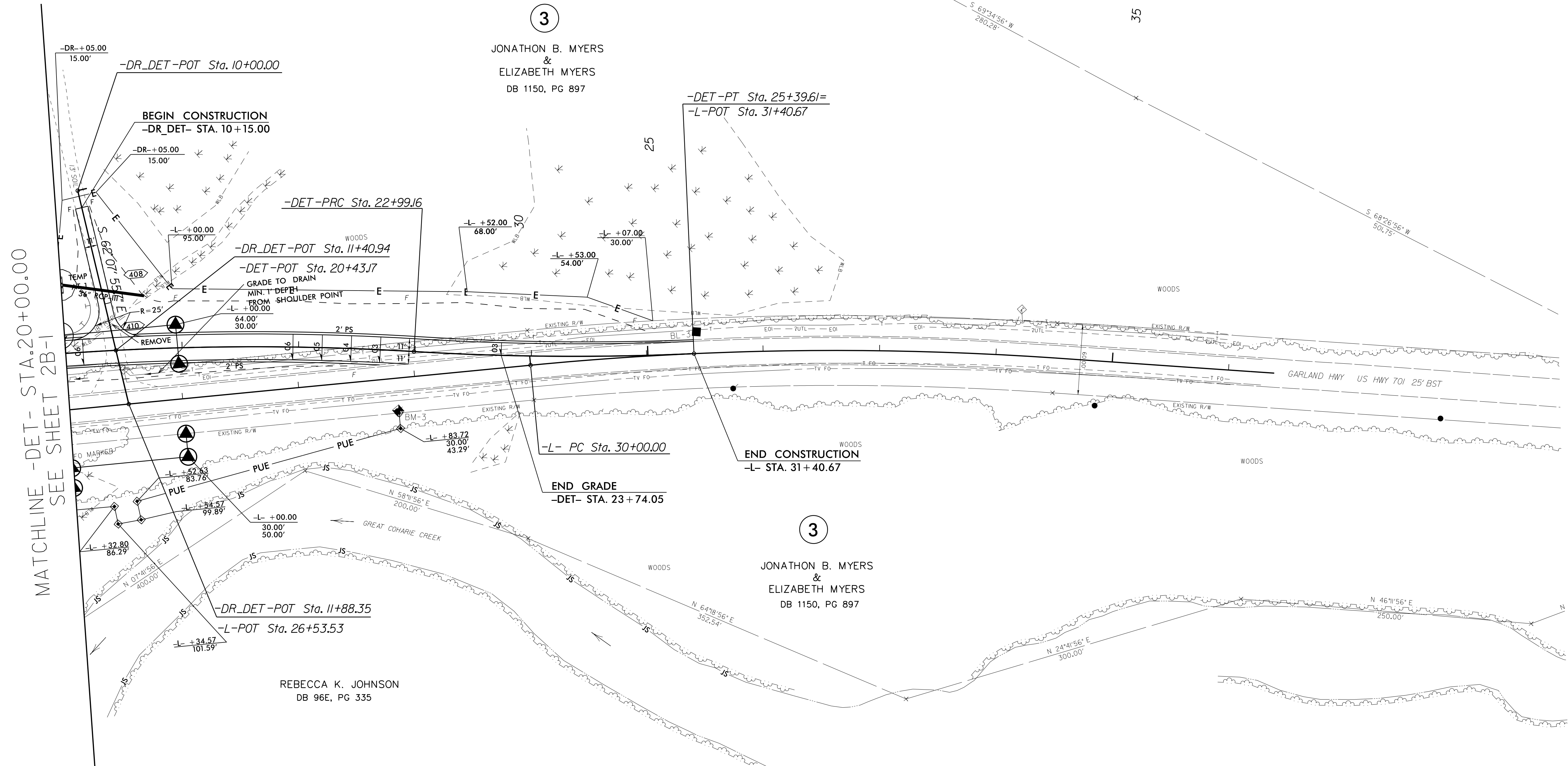
DETOUR



PROJECT REFERENCE NO. BR-0046	SHEET NO. 2B-2
RW SHEET NO.	
ROADWAY DESIGN ENGINEER SEAL 027771 MATTHEW B. CORLE 08/09/2023	HYDRAULICS ENGINEER SEAL 022000 WILLIAM G. CAL 08/09/2023
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

-DET-

PI Sta 21+19.95	PI Sta 24+19.50
$\Delta = 8^{\circ}56'48.7"$ (RT)	$\Delta = 5^{\circ}59'24.0"$ (LT)
$D = 2^{\circ}29'28.0"$	$D = 2^{\circ}29'28.0"$
$L = 359.15'$	$L = 240.45'$
$T = 179.94'$	$T = 120.34'$
$R = 2,300.00'$	$R = 2,300.00'$
$e = 0.04$	$e = 0.04$
$RO = 100'$	$RO = 100'$



3
JONATHON B. MYERS
&
ELIZABETH MYERS
DB 1150, PG 897

3
JONATHON B. MYERS
&
ELIZABETH MYERS
DB 1150, PG 897

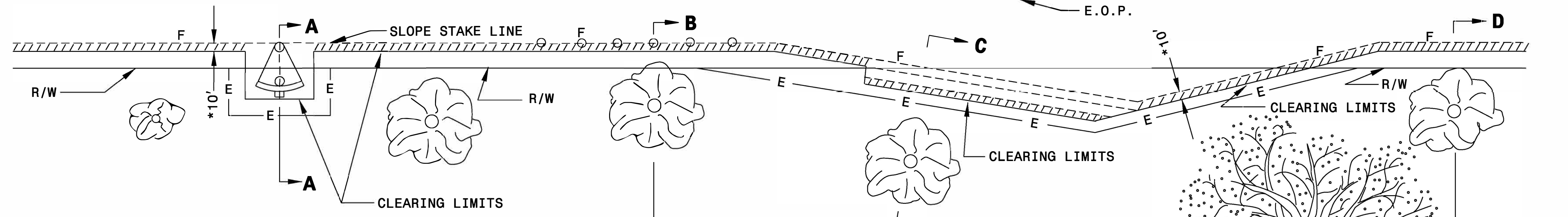
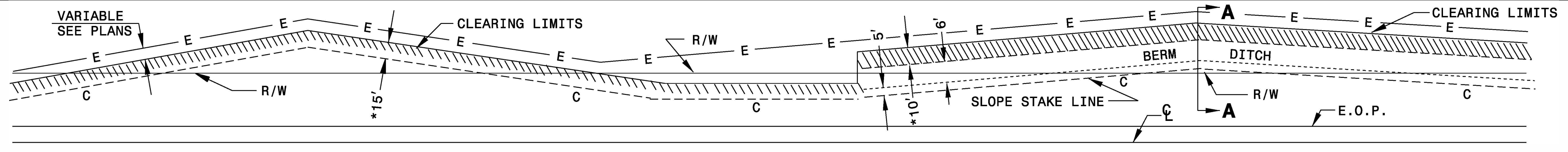
REBECCA K. JOHNSON
DB 96E, PG 335

FOR -DET- & -DR_DET- PROFILES,
SEE SHEETS 5 & 6

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

ENGLISH DETAIL DRAWING FOR
METHOD OF CLEARING
MODIFIED METHOD - III

SHEET 1 OF 1
200D03



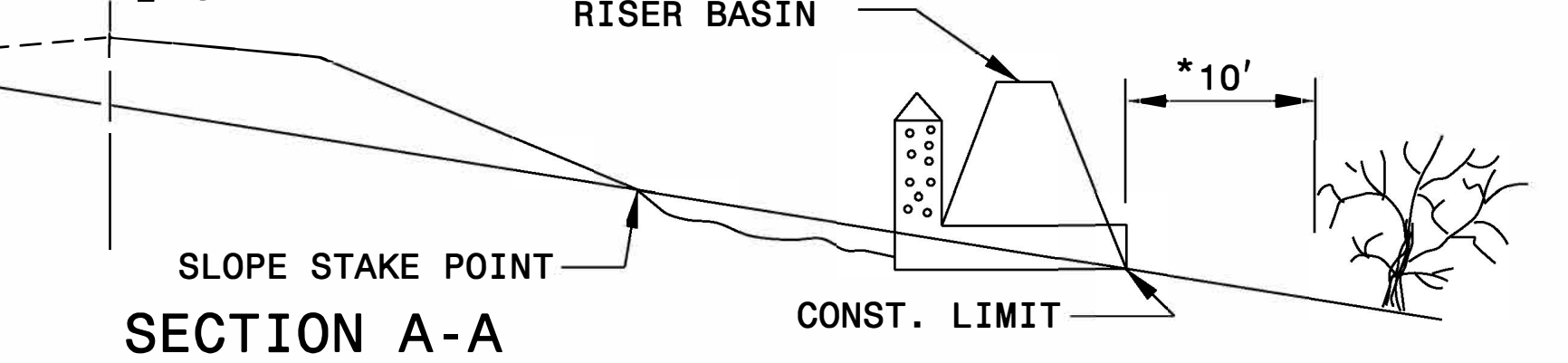
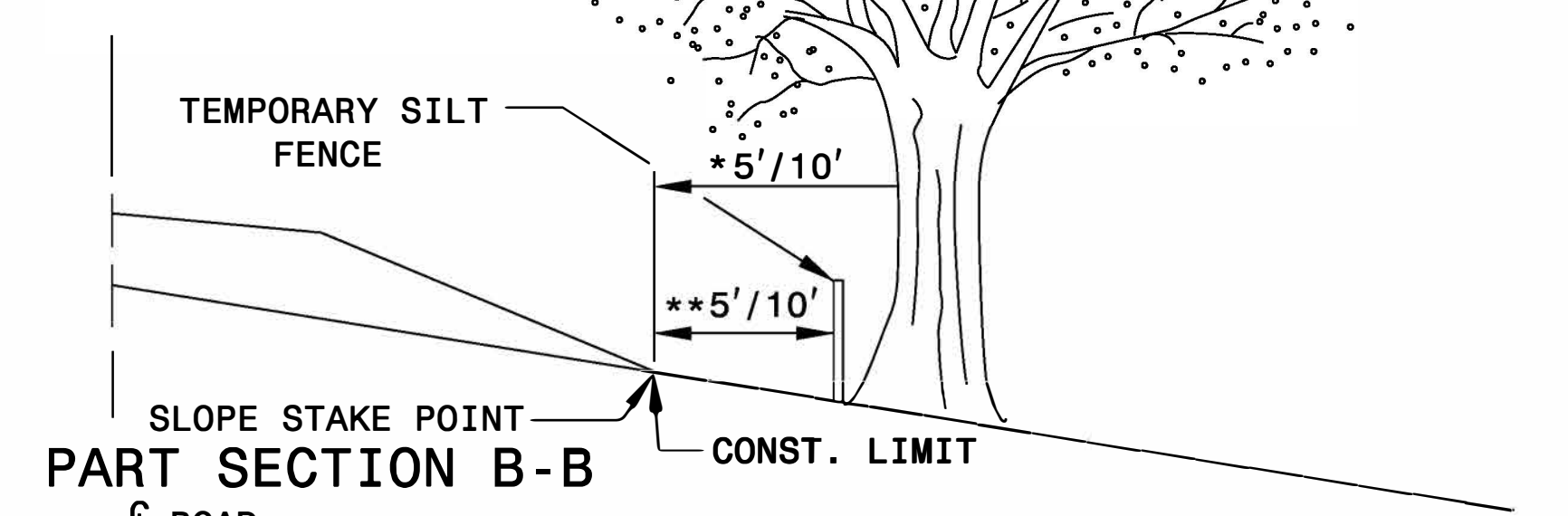
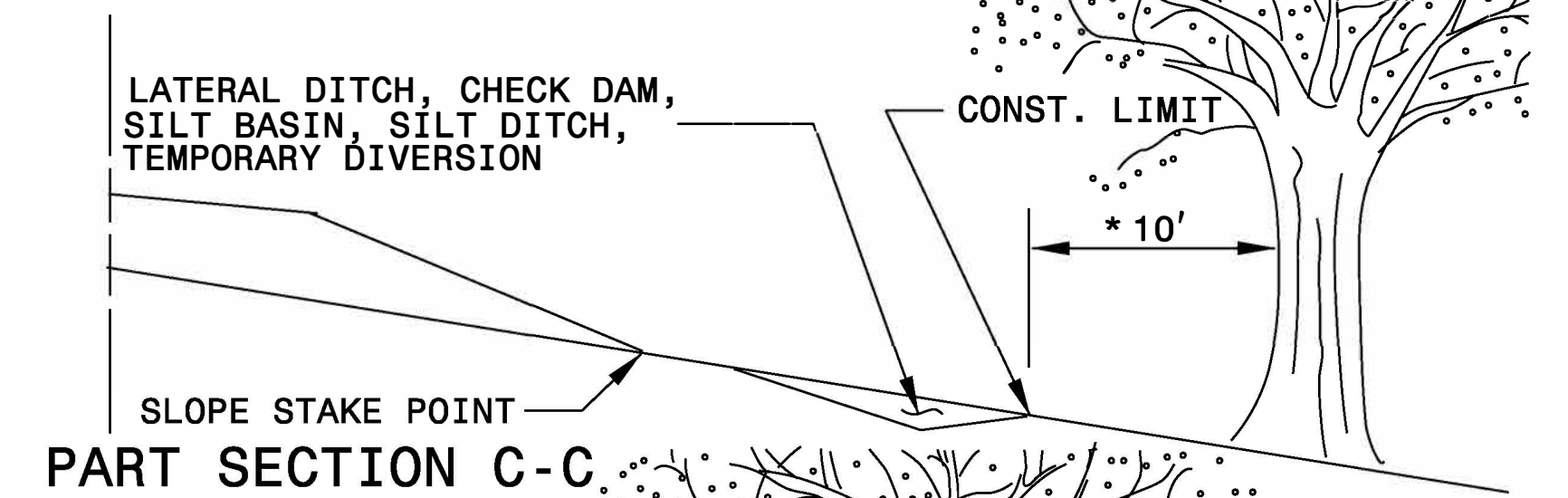
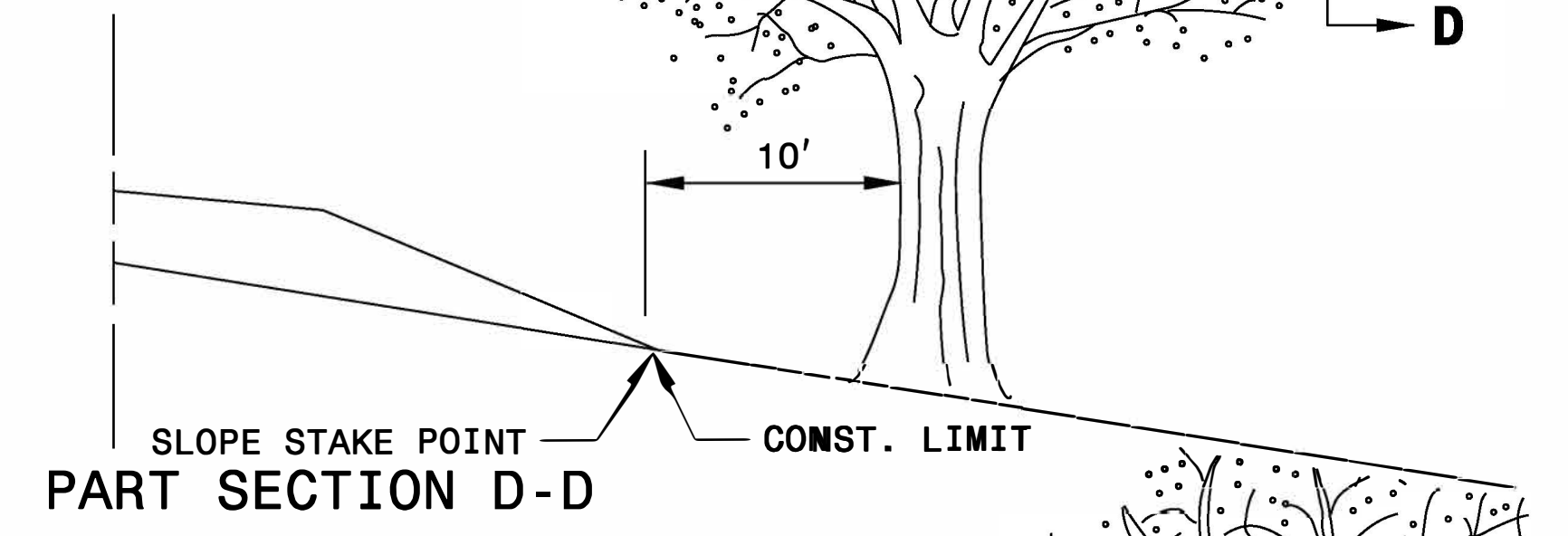
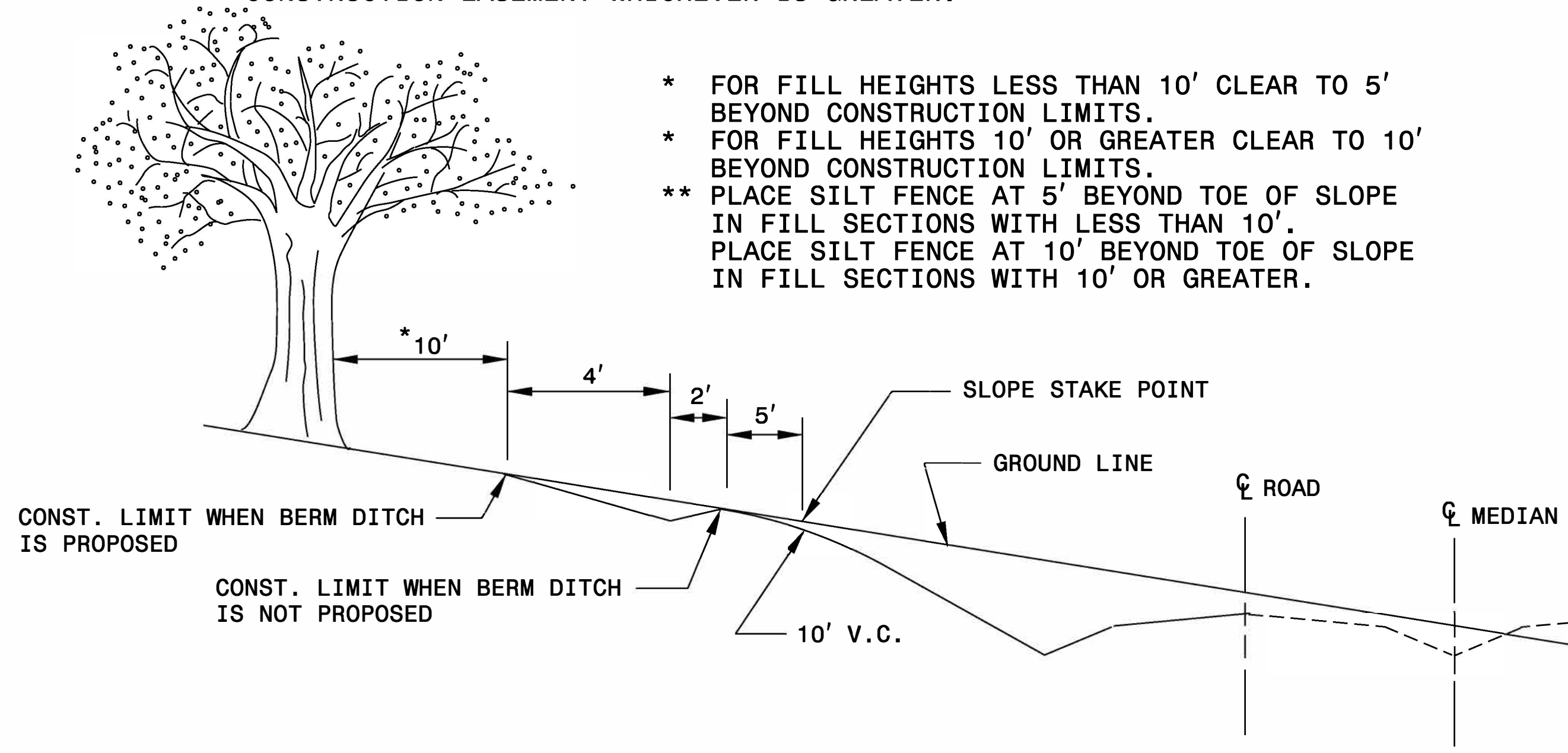
GENERAL NOTES:

1. REMOVE TREES OUTSIDE THE CLEARING LIMIT WHEN, IN THE OPINION OF THE ENGINEER, THE UTILITY OF A TREE WILL BE DESTROYED BY THE CONSTRUCTION OR THE CLEARING OPERATION.
2. CLEAR IN ACCORDANCE WITH THIS STANDARD EXCEPT WHERE ADDITIONAL CLEARING IS REQUIRED FOR SAFETY AS SHOWN ON THE PLANS.

METHOD III CLEARING LIMITS

- (A) CUTS -- CLEAR TO CONSTRUCTION LIMITS.
- (B) FILLS - CLEAR TO 5'/10' * BEYOND CONSTRUCTION LIMITS, UNLESS SPECIFIED OTHERWISE BY WETLAND PERMIT.
- (C) CUTS AND FILLS - WHEN THE CLEARING LIMITS (A AND B) EXCEED THE PROPOSED R/W OR PROPOSED CONSTRUCTION EASEMENTS, THEN CLEAR ONLY TO THE R/W OR CONSTRUCTION EASEMENT WHICHEVER IS GREATER.

- * FOR FILL HEIGHTS LESS THAN 10' CLEAR TO 5' BEYOND CONSTRUCTION LIMITS.
- * FOR FILL HEIGHTS 10' OR GREATER CLEAR TO 10' BEYOND CONSTRUCTION LIMITS.
- ** PLACE SILT FENCE AT 5' BEYOND TOE OF SLOPE IN FILL SECTIONS WITH LESS THAN 10'. PLACE SILT FENCE AT 10' BEYOND TOE OF SLOPE IN FILL SECTIONS WITH 10' OR GREATER.



STATE OF NORTH CAROLINA
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RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
METHOD OF CLEARING
MODIFIED METHOD - III

SHEET 1 OF 1
200D03

5/14/99
05-DEC-2017 10:31
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Jhowerston AT CSD-292595



DocuSigned by:
Nicole M. Hacker, P.E. 11/15/2023
58843203416455
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CONTRACT STANDARDS AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

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MODIFIED BY: K.A.K.	DATE: AUG. 2016
CHECKED BY:	DATE:
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DIVISION OF HIGHWAYS
RALEIGH, N.C.

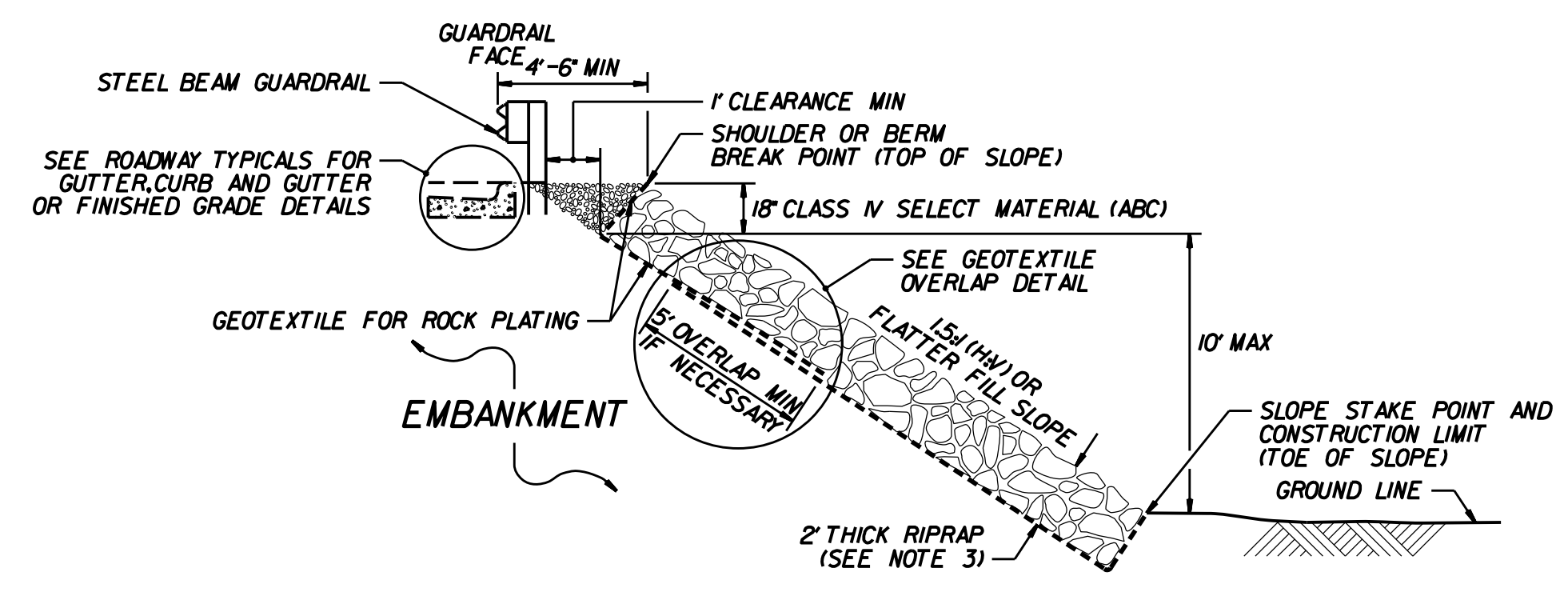
ROADWAY DETAIL DRAWING FOR
ROCK PLATING

SHEET 1 OF 1
275D01

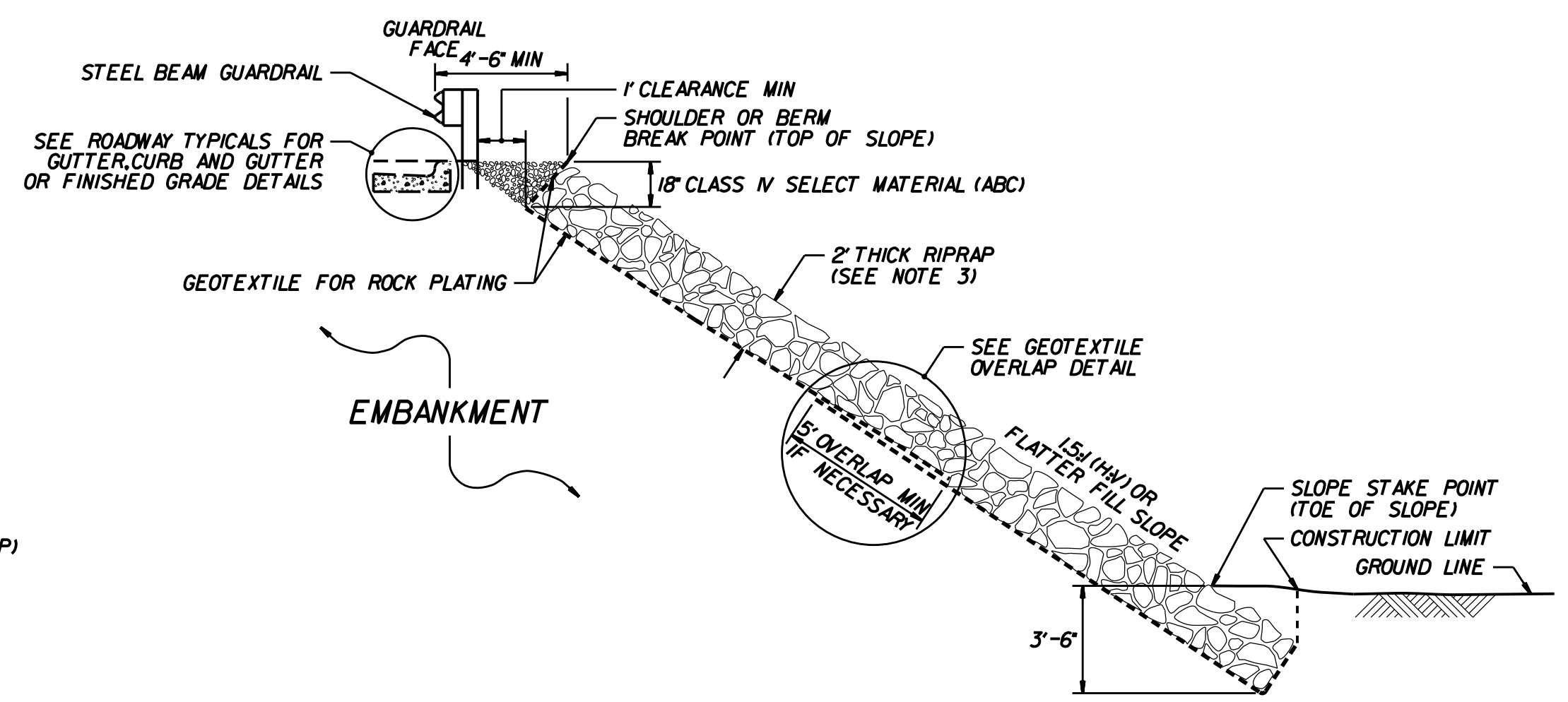
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR
ROCK PLATING

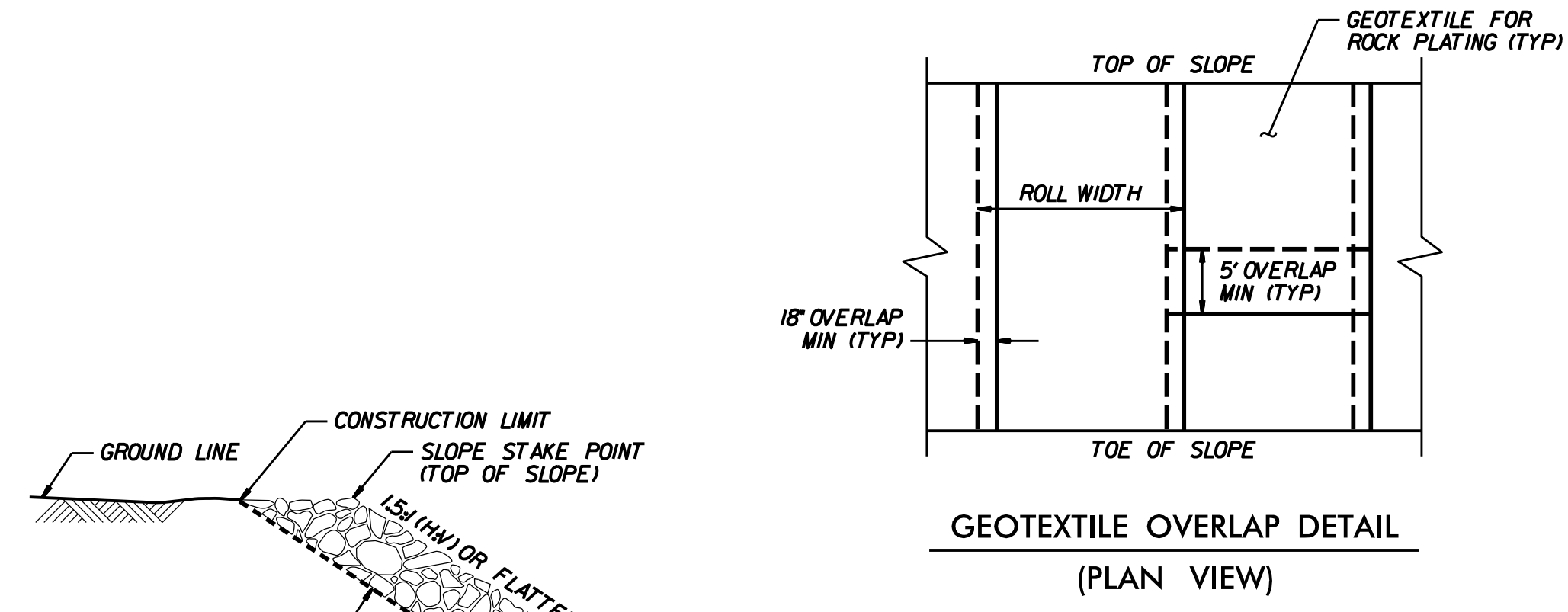
SHEET 1 OF 1
275D01



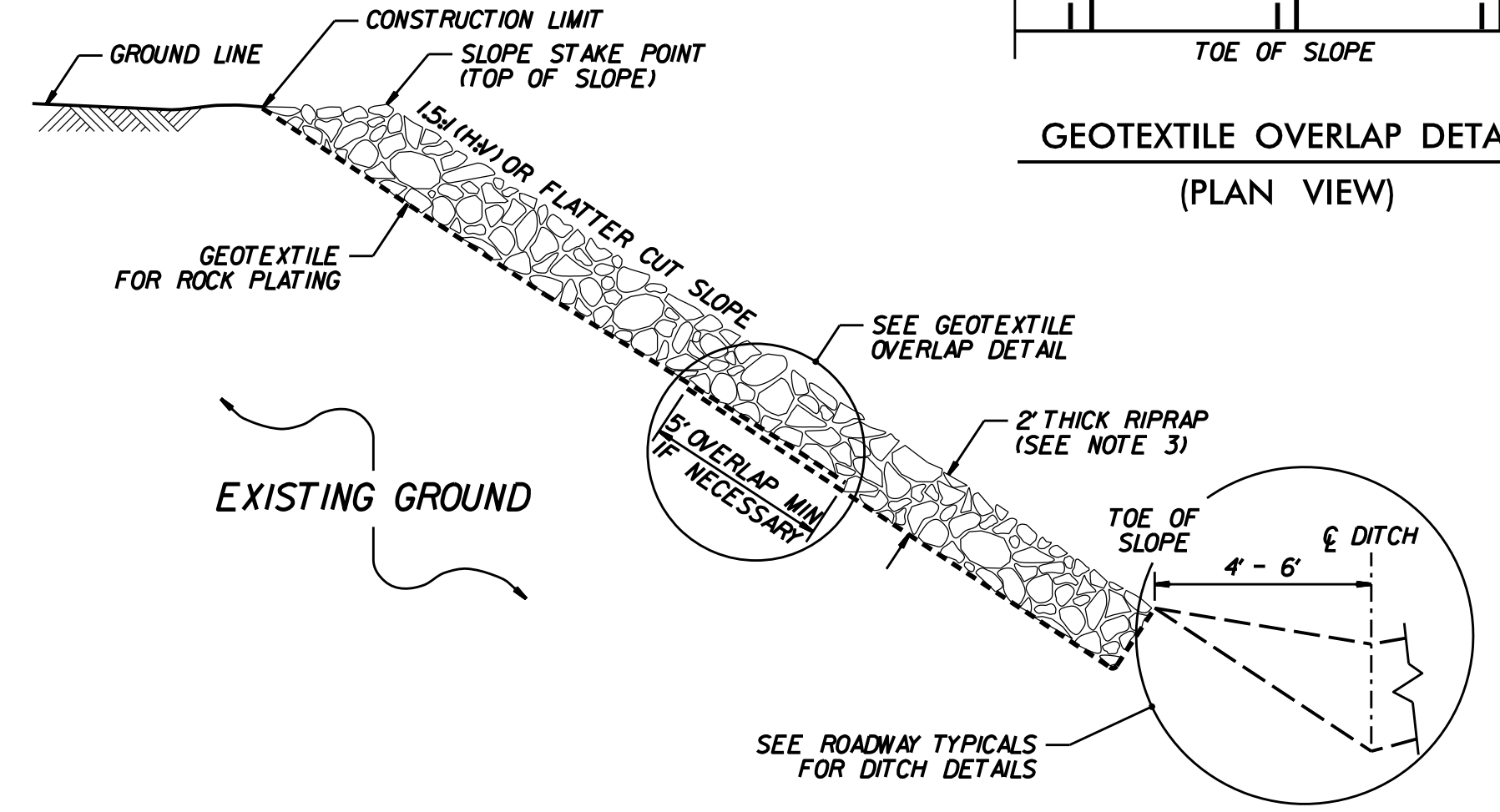
ROCK PLATING DETAIL NO. 1 - TYPICAL SECTION



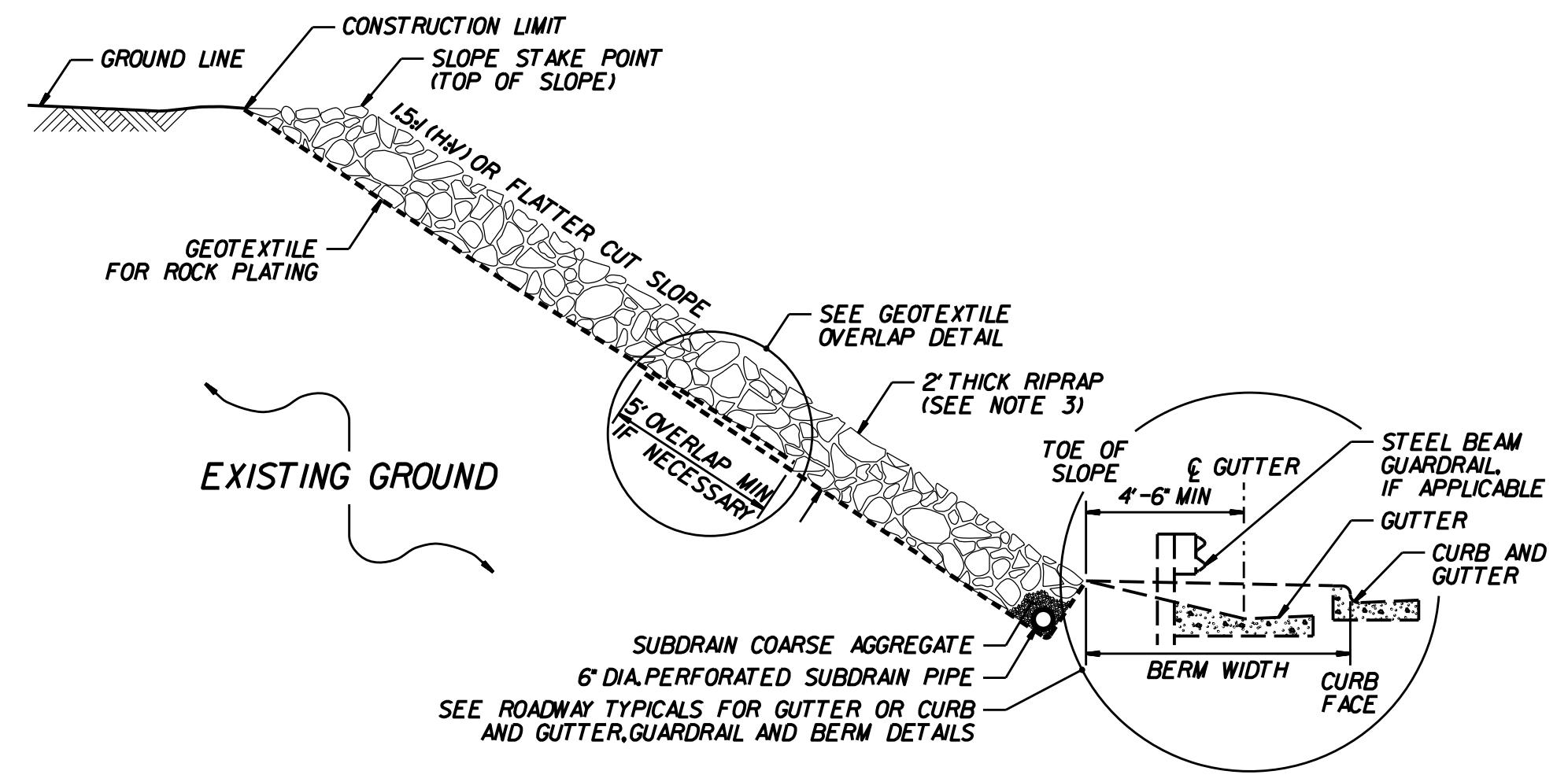
ROCK PLATING DETAIL NO. 2 - TYPICAL SECTION



GEOTEXTILE OVERLAP DETAIL (PLAN VIEW)

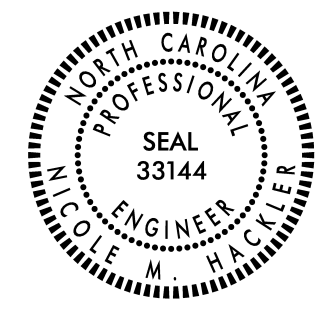


ROCK PLATING DETAIL NO. 3 - TYPICAL SECTION



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.



DocuSigned by:
Nicole M. Hecker, PE
11/15/2023

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ORIGINAL BY: S. HIDDEN	DATE: 03-11-22
MODIFIED BY:	DATE:
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DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

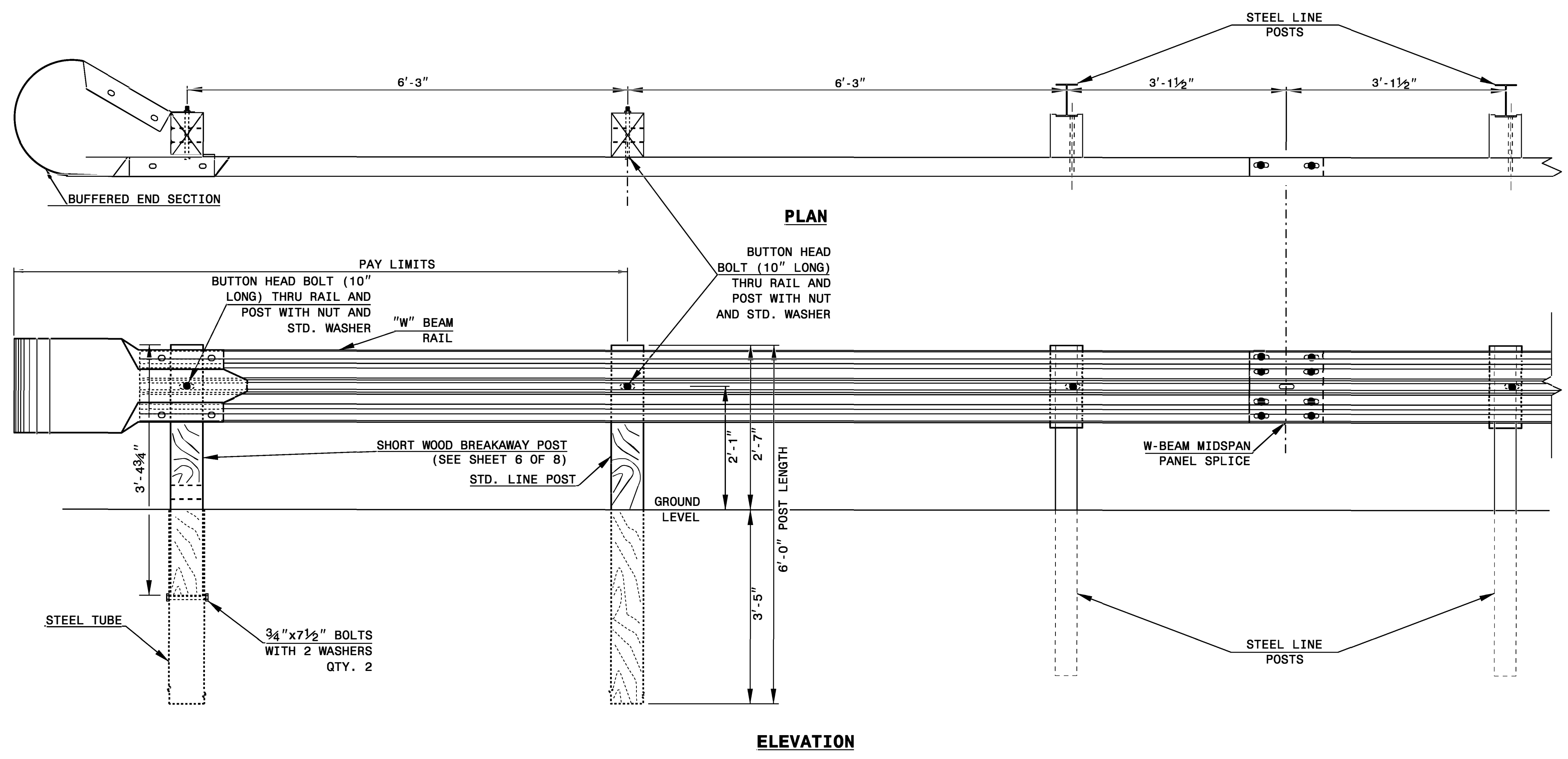
ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

SHEET OF

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

ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

SHEET OF



TRAILING END UNIT ASSEMBLY
A.T. - 1 SYSTEM



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Nicole M. Hacker, PE 3/15/2023
588492303416AC5

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AND DEVELOPMENT UNIT**
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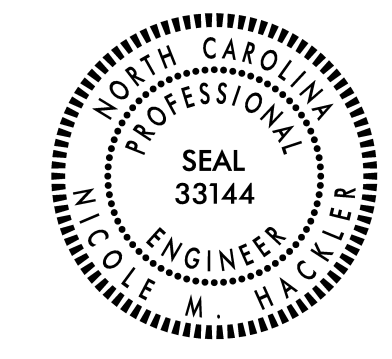
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STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.	ROADWAY DETAIL DRAWING FOR STRUCTURE ANCHOR UNITS GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO RAIL ON BRIDGE	SHEET 1 OF 7 862D03
<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> </div> <div style="width: 50%;"> <p>NOTE:</p> <ul style="list-style-type: none"> **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. </div> </div>		
GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO RAIL ON BRIDGE		

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
<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> </div> <div style="width: 50%;"> <p>NOTE:</p> <ul style="list-style-type: none"> **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. </div> </div>		
GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO RAIL ON BRIDGE - SUB REGIONAL TIER		



DocuSigned by:
Nicole M. Hecker, 12/25/2023
5884323034164C5

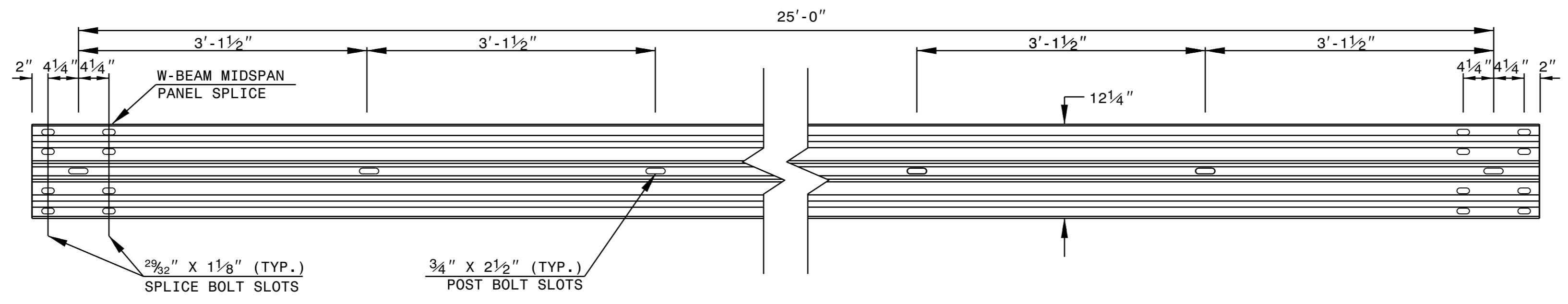
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MODIFIED BY:	DATE:
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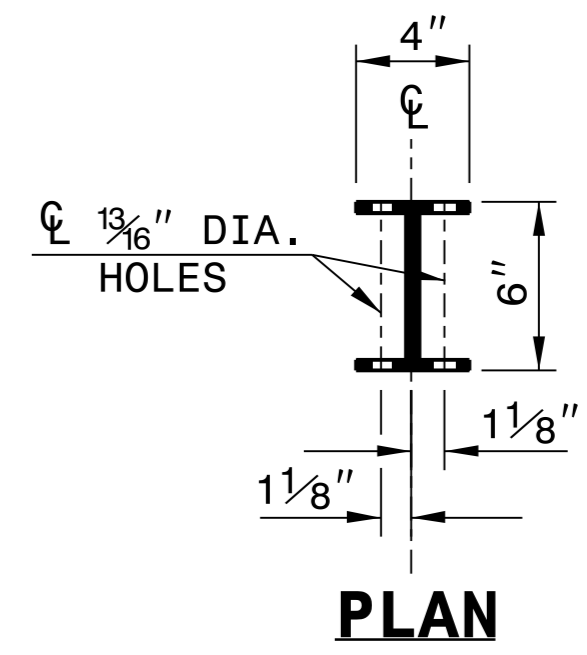
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

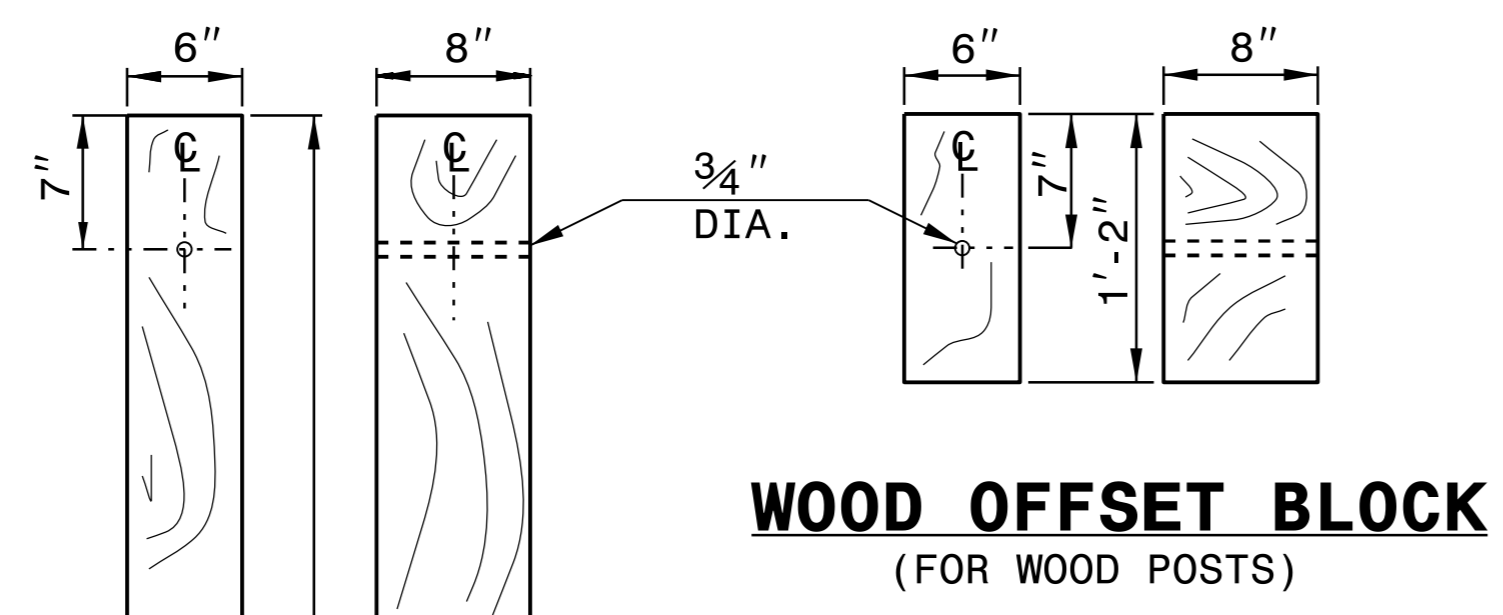
SHEET 6 OF 8
862D02



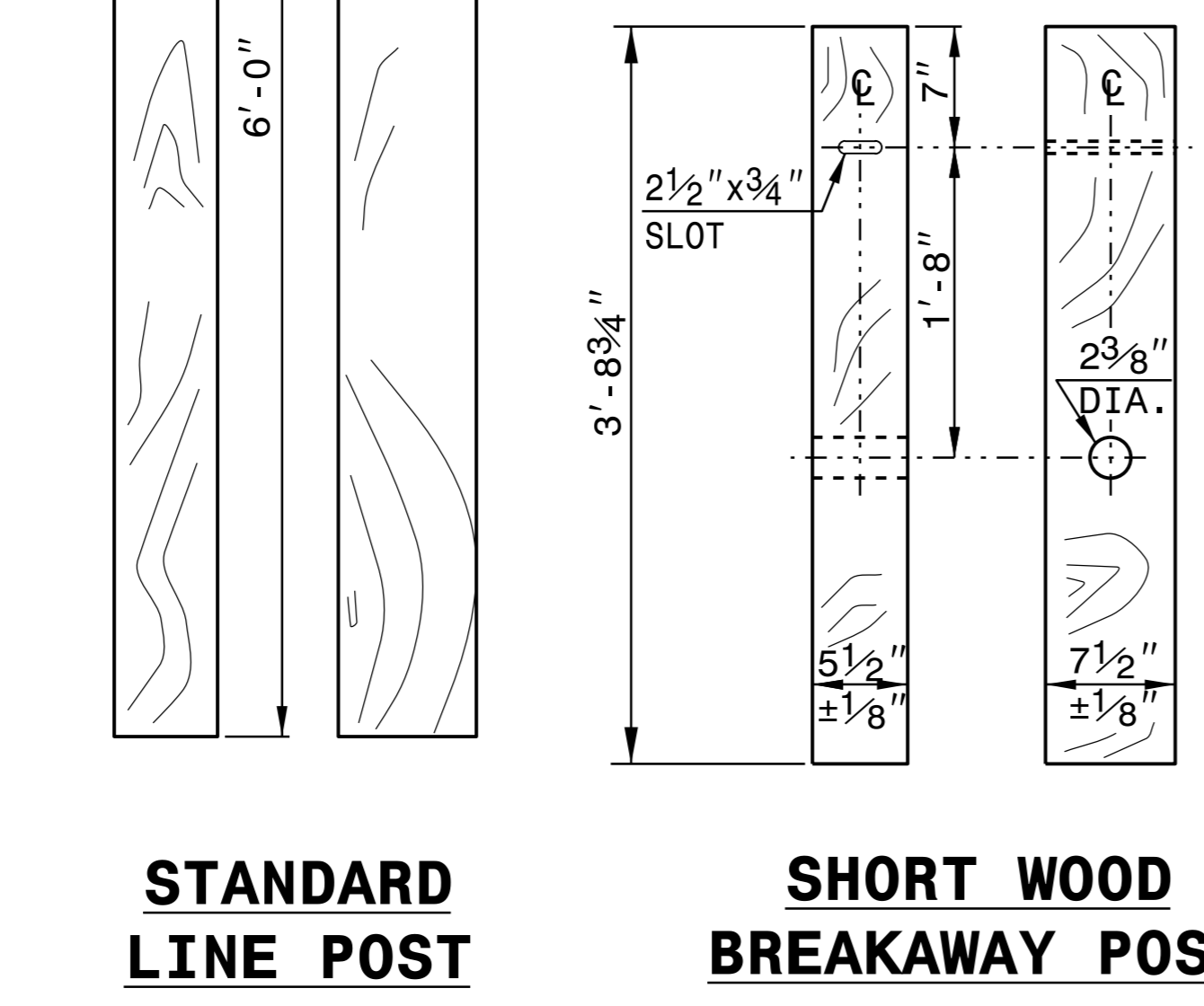
STANDARD W-BEAM GUARDRAIL



PLAN

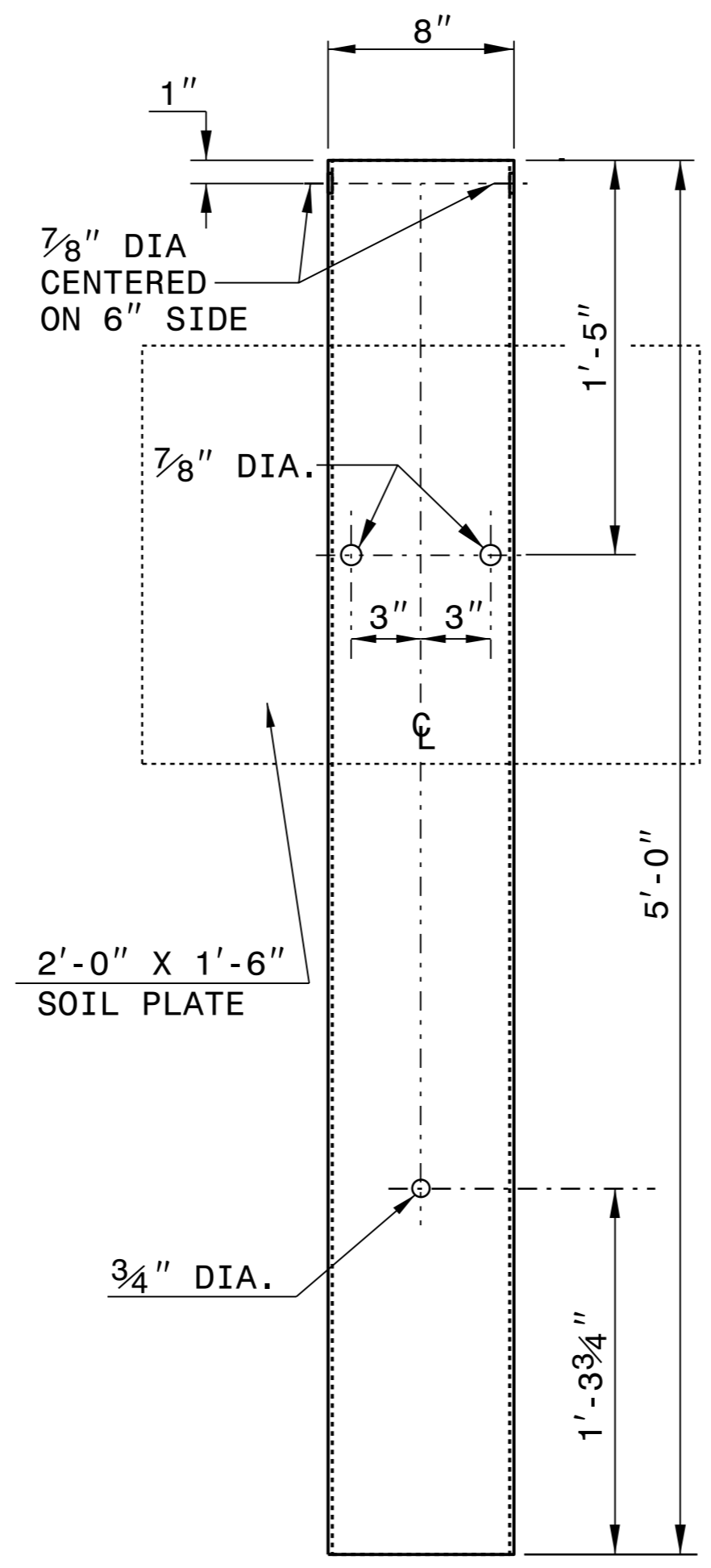


**WOOD OFFSET BLOCK
(FOR WOOD POSTS)**

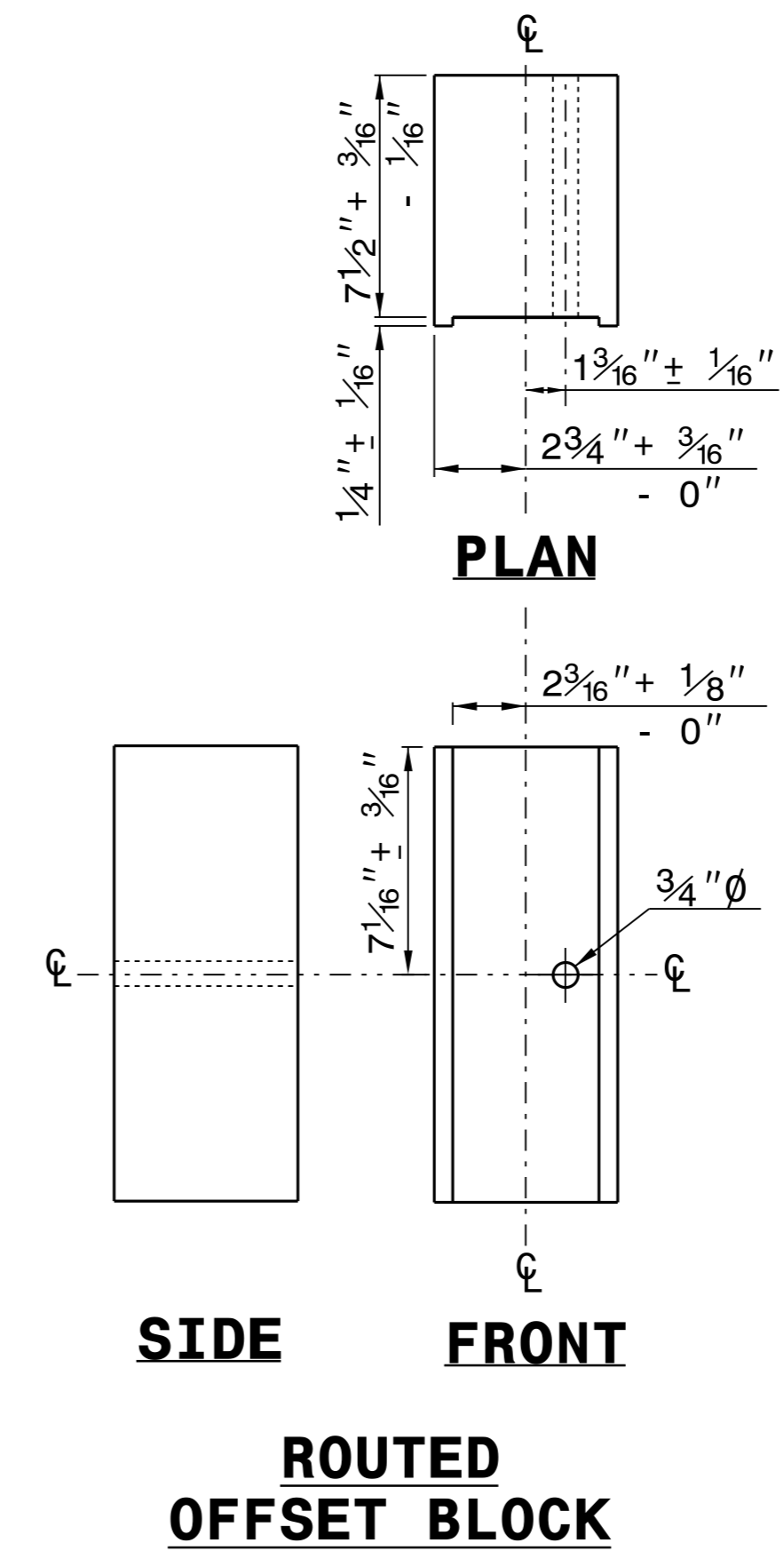


**STANDARD
LINE POST**

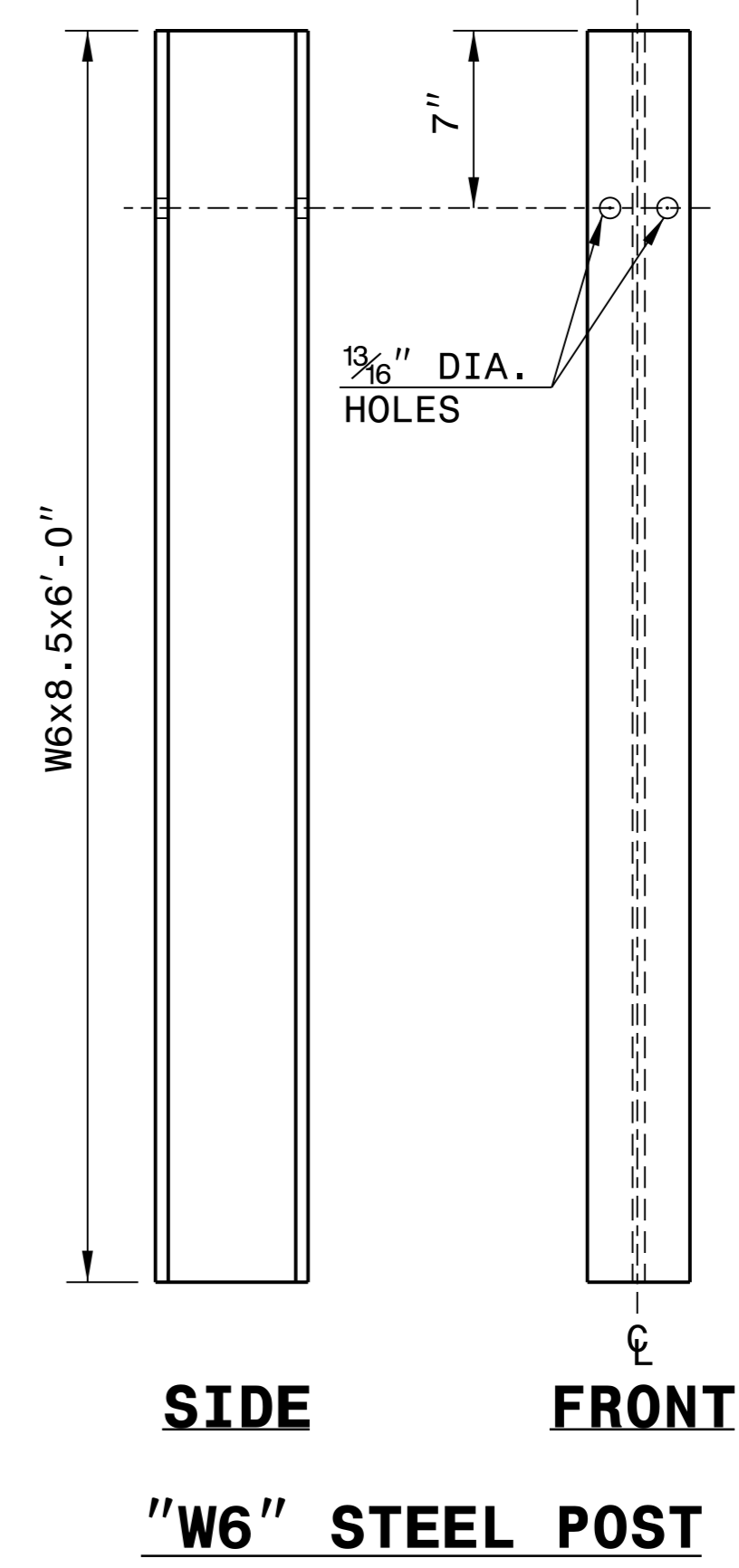
**SHORT WOOD
BREAKAWAY POST**



**STEEL TUBE
TS 6" x 8" x 0.1875"**



**ROUTED
OFFSET BLOCK**



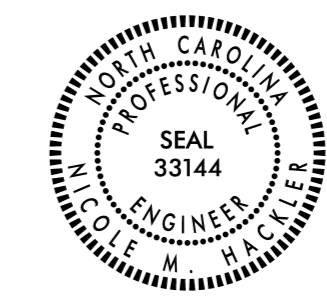
"W6" STEEL POST

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

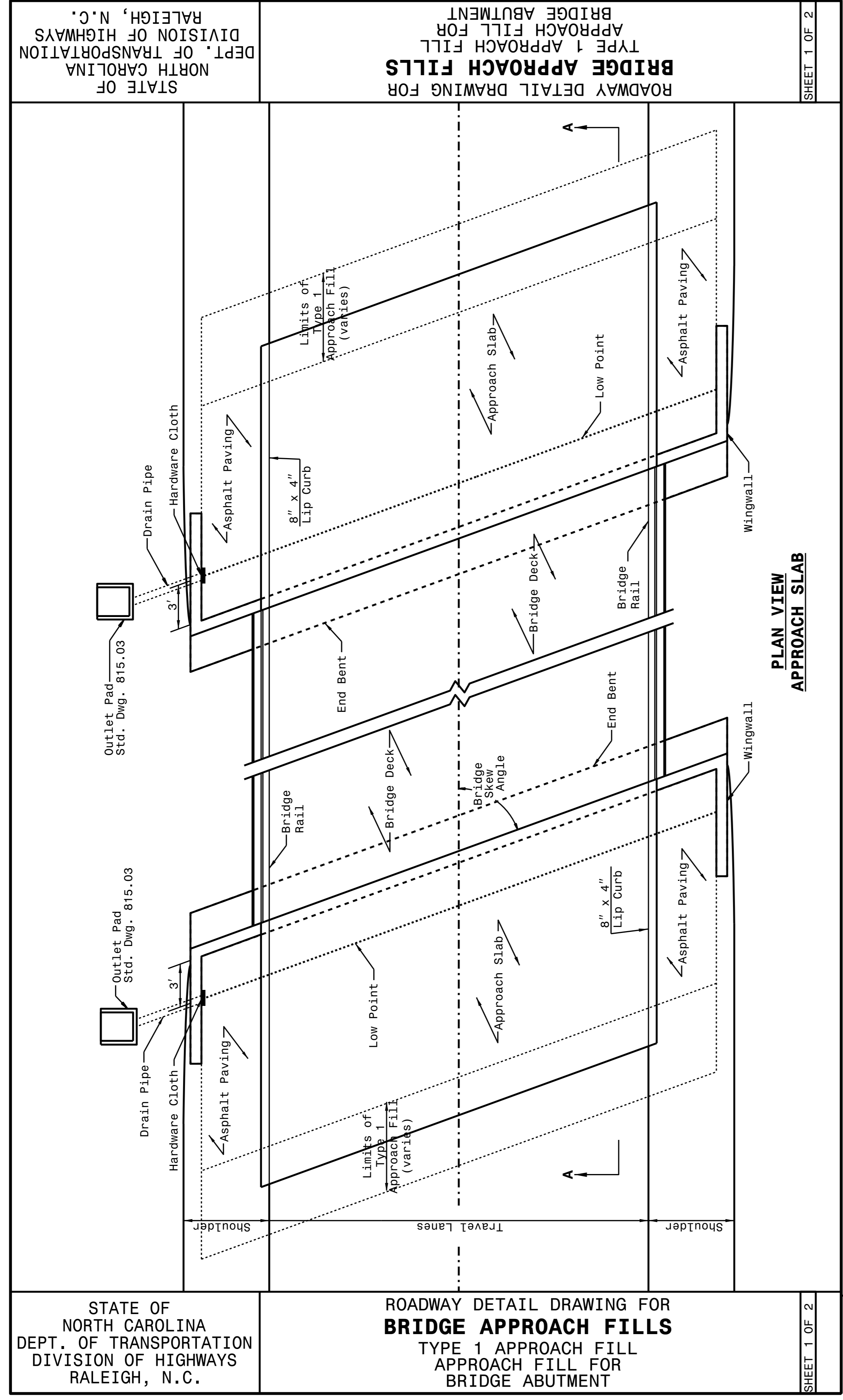


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Nicole M. Hecker, PE 3/25/2023
588432303419405

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

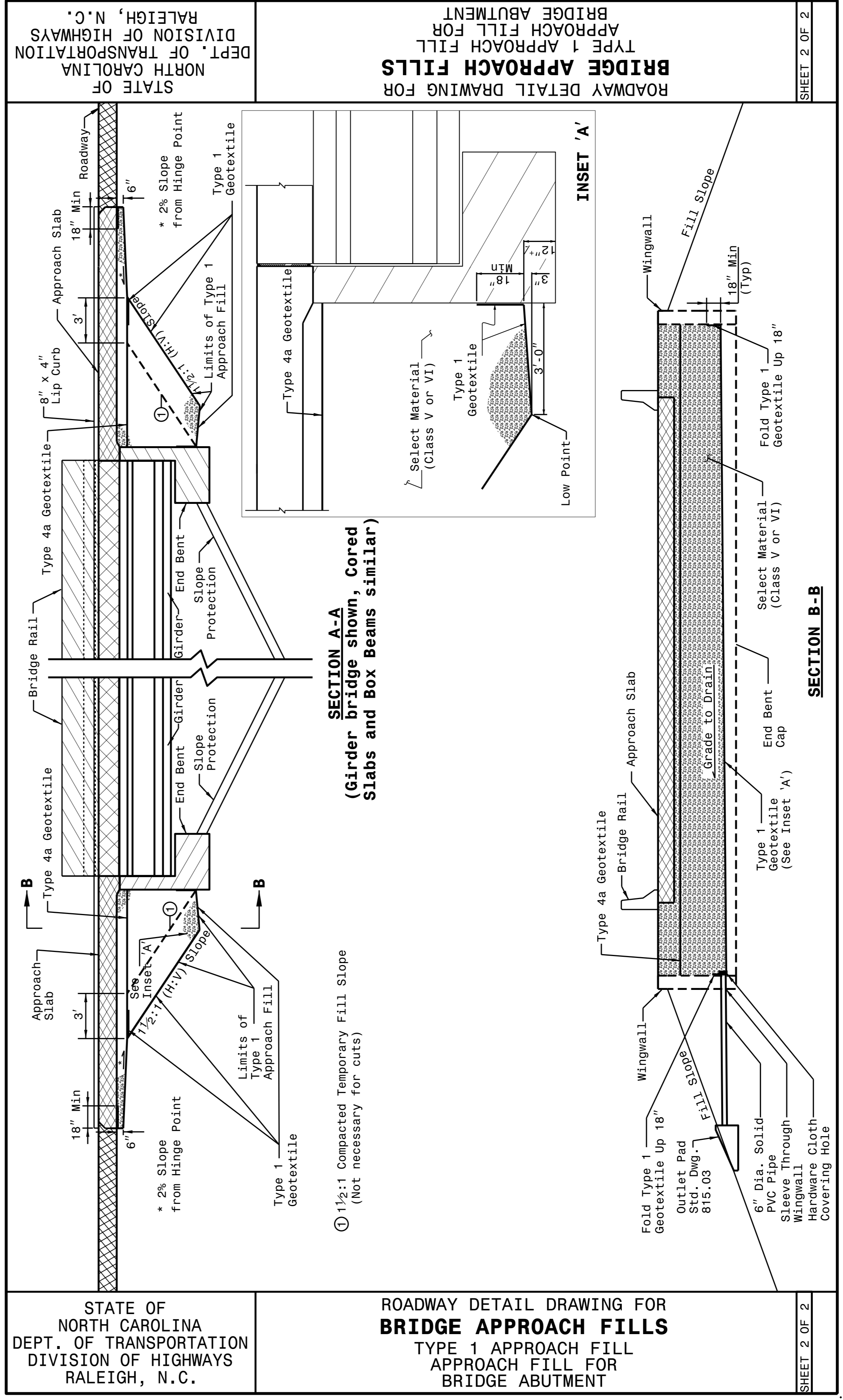
ROADWAY DETAIL DRAWING FOR
BRIDGE APPROACH FILLS
TYPE 1 APPROACH FILL
APPROACH FILL FOR
BRIDGE ABUTMENT

SHEET 1 OF 2

STATE OF NORTH CAROLINA
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RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR
BRIDGE APPROACH FILLS
TYPE 1 APPROACH FILL
APPROACH FILL FOR
BRIDGE ABUTMENT

SHEET 1 OF 2



STATE OF NORTH CAROLINA
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RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR
BRIDGE APPROACH FILLS
TYPE 1 APPROACH FILL
APPROACH FILL FOR
BRIDGE ABUTMENT

SHEET 2 OF 2

STATE OF NORTH CAROLINA
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RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR
BRIDGE APPROACH FILLS
TYPE 1 APPROACH FILL
APPROACH FILL FOR
BRIDGE ABUTMENT

SHEET 2 OF 2



DocuSigned by:
Scott A. Hidden
11/15/2023

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\$\$\$\$\$USERNAME\$\$\$\$\$

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

SUMMARY OF EARTHWORK

IN CUBIC YARDS

Station	Station	Uncl. Excav.	Embank. +%	Borrow	Waste
DETOUR					
-DET- 10+00.00	-DET- 17+30.00 (BB)	19	3,731	3,712	
-DET- 19+12.00 (EB)	-DET- 25+39.61	28	5,709	5,681	
MAINLINE					
-L- 20+00.00	-L- 23+50.00 (BB)	382	575	193	
-L- 25+10.00 (EB)	-L- 27+00.00	17	1,070	1,053	
-DR- 10+15.00	-DR- 11+29.75		635	635	
SUBTOTAL:		446	11,720	11,274	
DETOUR REMOVAL					
-L- 16+06.26	-L- 23+41.85 (BB)	3,315			3,315
-L- 25+15.85 (EB)	-L- 31+50.00	4,498			4,498
-DR- 10+50.00	-DR- 11+76.23	127			127
SUBTOTAL:		7,940			7,940
EST. 5% TO REPLACE TOP SOIL ON BORROW PIT				564	
PROJECT TOTALS:		8,386	11,720	11,838	7,940
SAY:		9,000		14,000	

EST. DDE = 90 CUBIC YARDS
 PER GEOTECH RECOMMENDATION, ESTIMATED 300 CUBIC YARDS OF UNDERCUT TO BE USED AT THE DISCRETION OF THE RESIDENT ENGINEER.

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.

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.

PAVEMENT REMOVAL SUMMARY

IN SQUARE YARDS

SURVEY LINE	Station	Station	LOCATION LT/RT/CL	ASPHALT REMOVAL	ASPHALT BREAKUP	CONCRETE REMOVAL	CONCRETE BREAKUP
-L-	23+00.00	23+71.00	CL	204.06			
-L-	24+93.00	25+60.00	CL	195.31			
-DET-	10+00.74	17+38	CL	1505.38			
-DET-	19+12	25+38.93	CL	1334.39			
TOTAL:				3239.13			
SAY:				3402			

SHOULDER BERM GUTTER SUMMARY

IN LINEAR FEET

LINE	Station	Station	LENGTH
-L- LT	22+84.00	23+25.00	41
-L- RT	21+30.00	23+25.00	195
-L- LT	25+35.00	25+81.00	46
-L- RT	25+35.00	25+81.00	46
TOTAL:			328
SAY:			328

GUARDRAIL SUMMARY

"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

LINE	BEG. STA.	END STA.	LOC.	LENGTH (FT.)			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHLDR WIDTH	FLARE LENGTH		W		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	GREU TL-2	TYPE B-77	TYPE AT-1	TEMP AT-1	TEMP GREU TL-3	TEMP TYPE III	EA	G			NG	
-L-	22+33.13	23+50.00	LT	116.87					23+50.00	8'	11'																
-L-	25+10.00	26+24.50	LT	105.54	36.2'				25+10.00	8'	11'																
-L-	20+70.63	23+50.00	RT	279.43					23+50.00	8'	11'																
-L-	25+10.00	26+30.47	RT	120.50					25+10.00	8'	11'																
SUB-TOTALS				622.34	36.2'																						
DEDUCTION FOR ANCHOR UNITS																											
		GREU TL-3 @ 50'	3	-150.00																							
		TYPE B-77 @ 22.875'	4	-91.50																							
		AT-1 @ 6.25'	1	-6.25																							
PROJECT TOTAL				374.59	36.2'																						
SAY				375.00	37.50																						

ADDITIONAL GUARDRAIL POSTS = 5 EA

TEMPORARY GUARDRAIL SUMMARY

LINE	BEG. STA.	END STA.	LOC.	LENGTH (FT.)	WARRANT POINT	"N" DIST. FROM E.O.L.	TOTAL SHLDR WIDTH	FLARE LENGTH	W	ANCHORS	IMP. ATTEN. TYPE 350	REMOVE EXISTING GUARDRAIL	REMARKS
-DET-	16+50.69	17+38.00	LT	87.50		4'	7'						
-DET-	19+12.00	20+17.43	LT	98.50		4'	7'						
-DET-	15+25.34	17+38.00	RT	211.60		4'	7'						
-DET-	19+12.00	19+98.05	RT	85.60		4'	7'						
SUB-TOTALS				483.20			43.86						
DEDUCTION FOR ANCHOR UNITS													
		GREU TL-3 @ 50'	3	-150.00									
		TYPE-III @ 18.75'	4	-75.00									
		AT-1 @ 6.25'	1	-6.25									
PROJECT TOTAL				251.95			43.86						
SAY				262.50			50.00						

COMPUTED BY: Tyler C. Bottoms DATE: 7/21/20
 CHECKED BY: Thein Tun Zan DATE: 3/18/2021

(5-15-18)

PROJECT NO.
BR-0046

SHEET NO.
3G-1

**STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS**

SUMMARY OF SUBSURFACE DRAINAGE

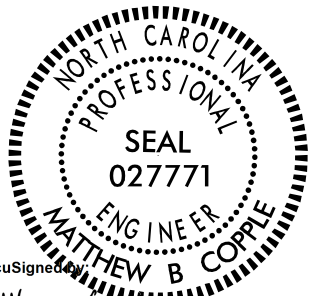

LINE	Station	Station	Location LT/RT/CL	Drain Type* UD/BD/SD	LF
CONTINGENCY				SD	200
				TOTAL LF:	200

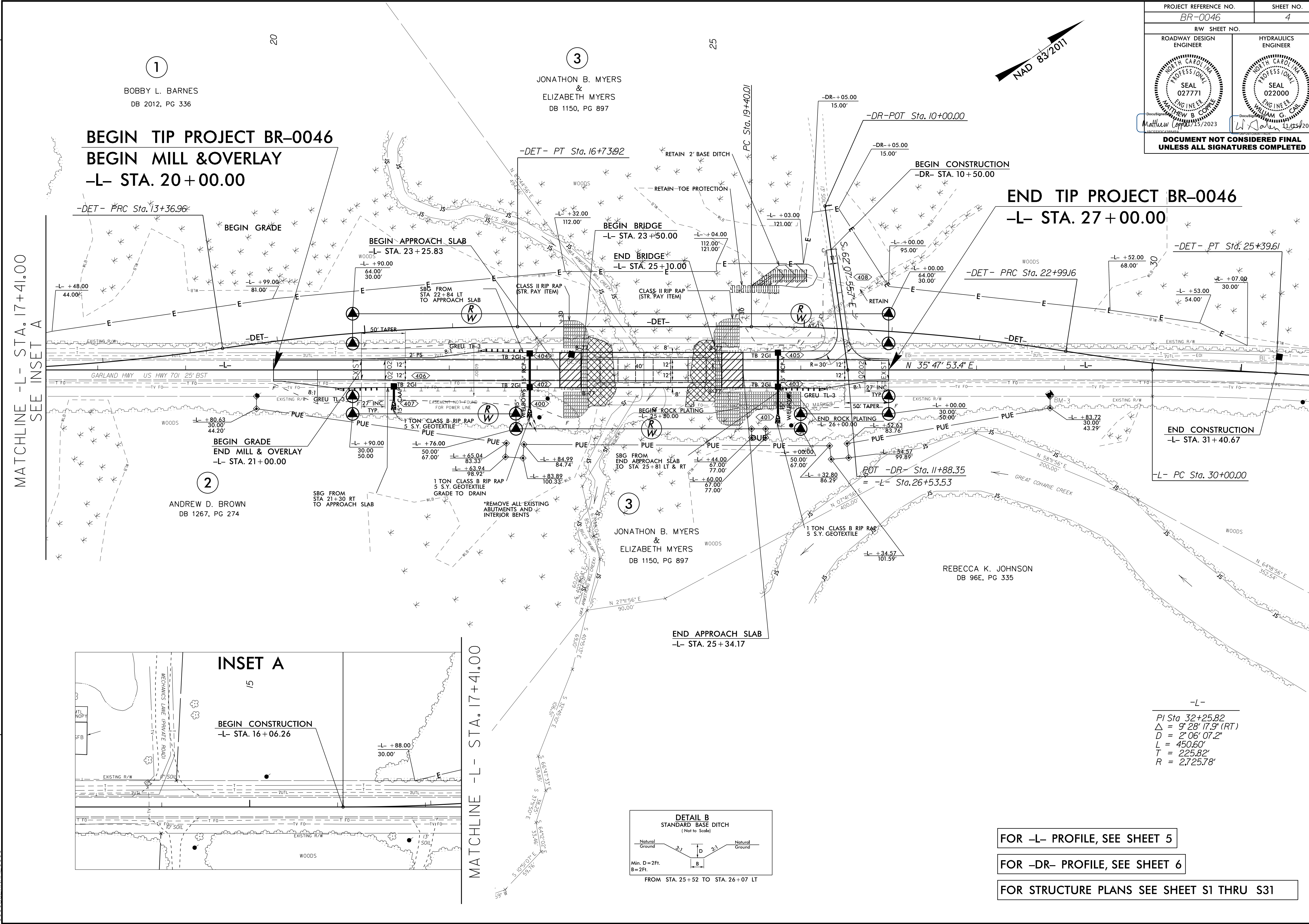
*UD = Underdrain
 *BD = Blind Drain
 *SD = Subsurface Drain

SUMMARY OF ROCK PLATING

LINE	Beginning Slope	Approx. Station	Ending Slope	Approx. Station	Location LT/RT	Rock Plating Detail No.	Riprap Class* 1/2/B	SY
-L-	2:1	25+12.00	2:1	25+75.00	LT	1	2	161
-L-	2:1	25+30.00	2:1	26+00.00	RT	1	2	171
							TOTAL SY:	332

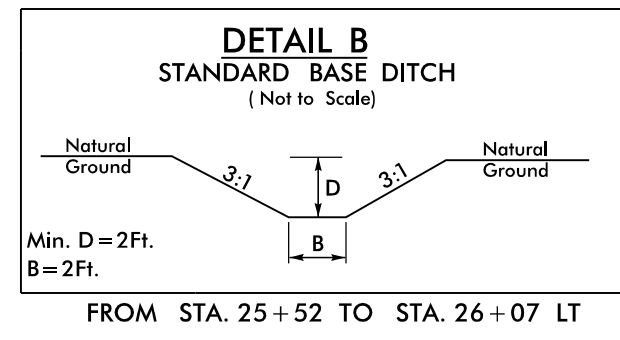
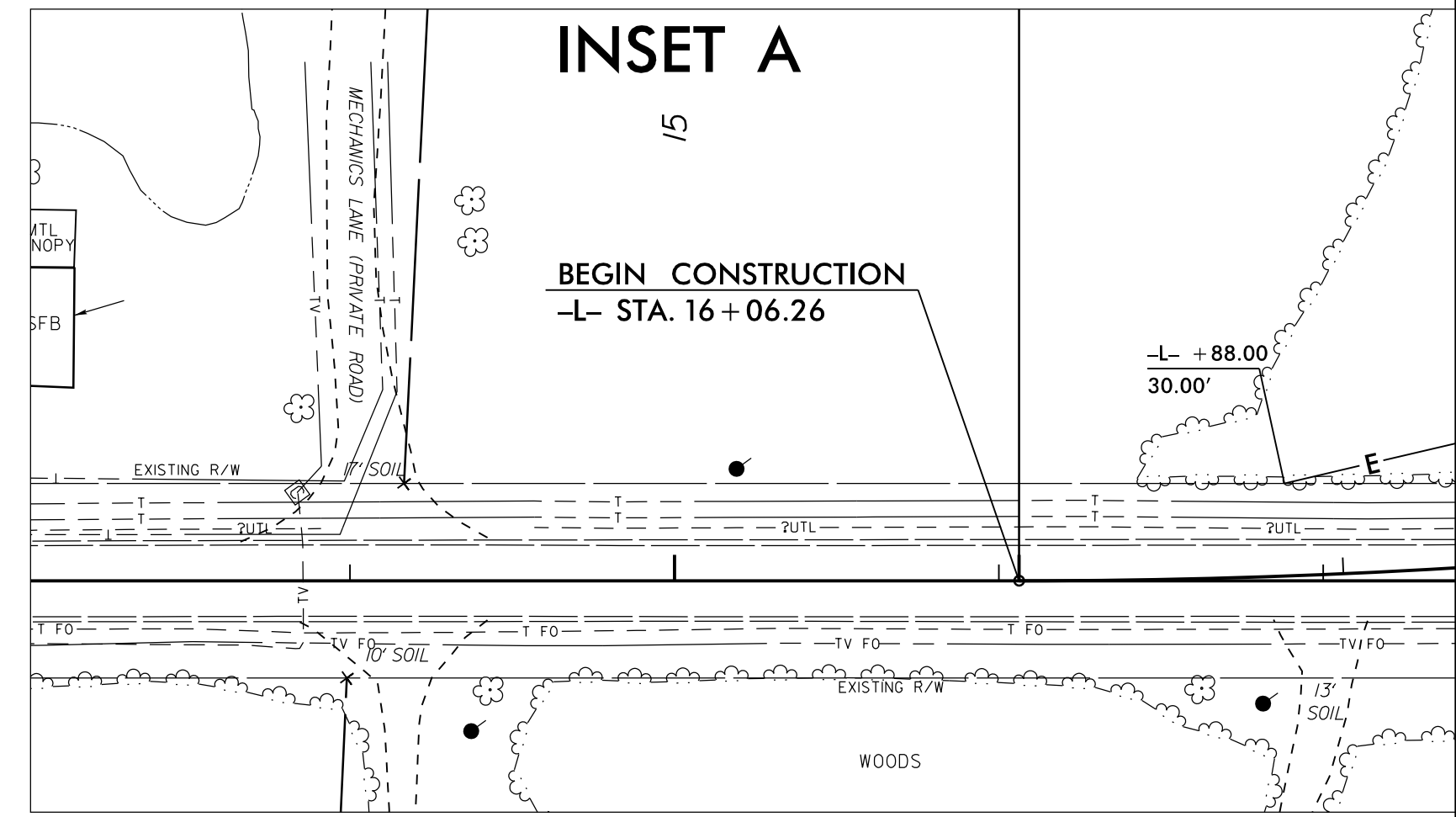
*Use Class 1, 2 or B riprap if riprap class is not shown for rock plating location.

PROJECT REFERENCE NO. BR-0046	SHEET NO. 4
R/W SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	SEAL 027771
 MATTHEW B. CORLE ENGINEER SEAL 027771 Documented 12/15/2023	 WILLIAM G. CANALE ENGINEER SEAL 022000 Documented 12/15/2023
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



MATCHLINE -L- STA. 17+41.00
SEE INSET A

MATCHLINE -L- STA. 17+41.00



-L-
 PI Sta 32+25.82
 $\Delta = 9' 28' 17.9''$ (RT)
 $D = 2' 06' 07.2''$
 $L = 450.60'$
 $T = 225.82'$
 $R = 2725.78'$

FOR -L- PROFILE, SEE SHEET 5
 FOR -DR- PROFILE, SEE SHEET 6
 FOR STRUCTURE PLANS SEE SHEET S1 THRU S31

BOBBY L. BARNES
 DB 2012, PG 336

JONATHON B. MYERS
 &
 ELIZABETH MYERS
 DB 1150, PG 897

ANDREW D. BROWN
 DB 1267, PG 274

JONATHON B. MYERS
 &
 ELIZABETH MYERS
 DB 1150, PG 897

REBECCA K. JOHNSON
 DB 96E, PG 335

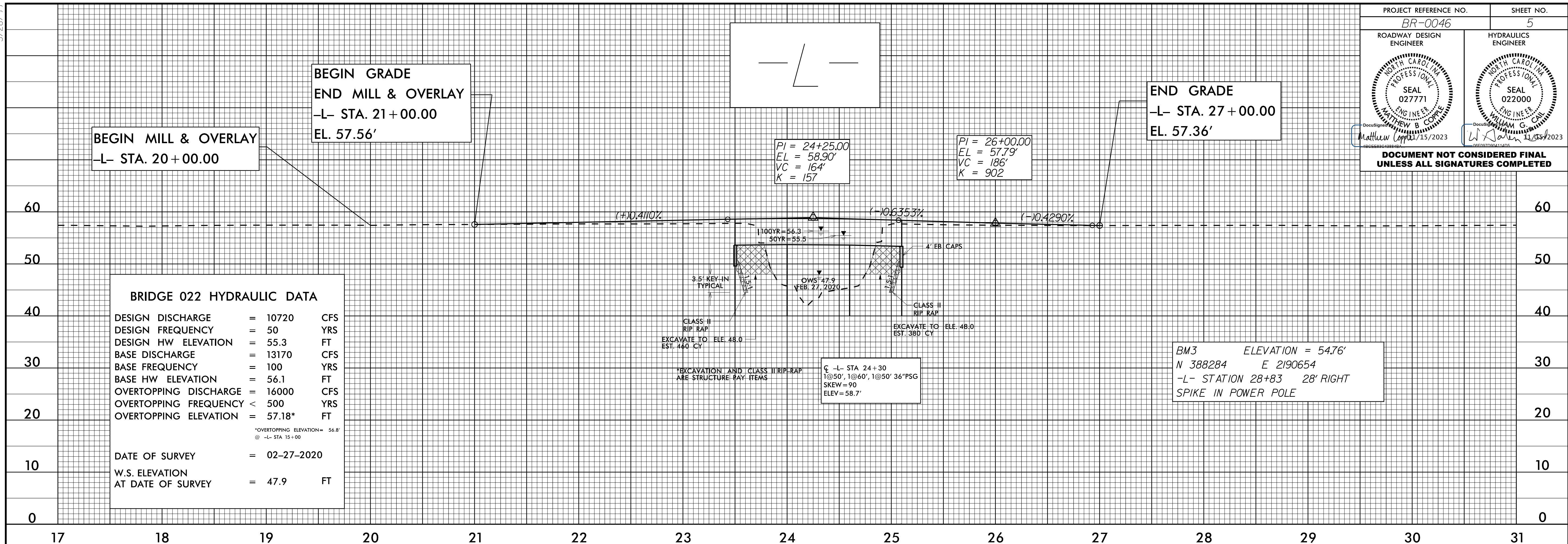
REVISIONS

8/17/99

26-SEP-2023 12:15
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5/28/99

PROJECT REFERENCE NO. <i>BR-0046</i>	SHEET NO. <i>5</i>
ROADWAY DESIGN ENGINEER <i>Matthew Copp</i>	HYDRAULICS ENGINEER <i>William G. Williams</i>
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

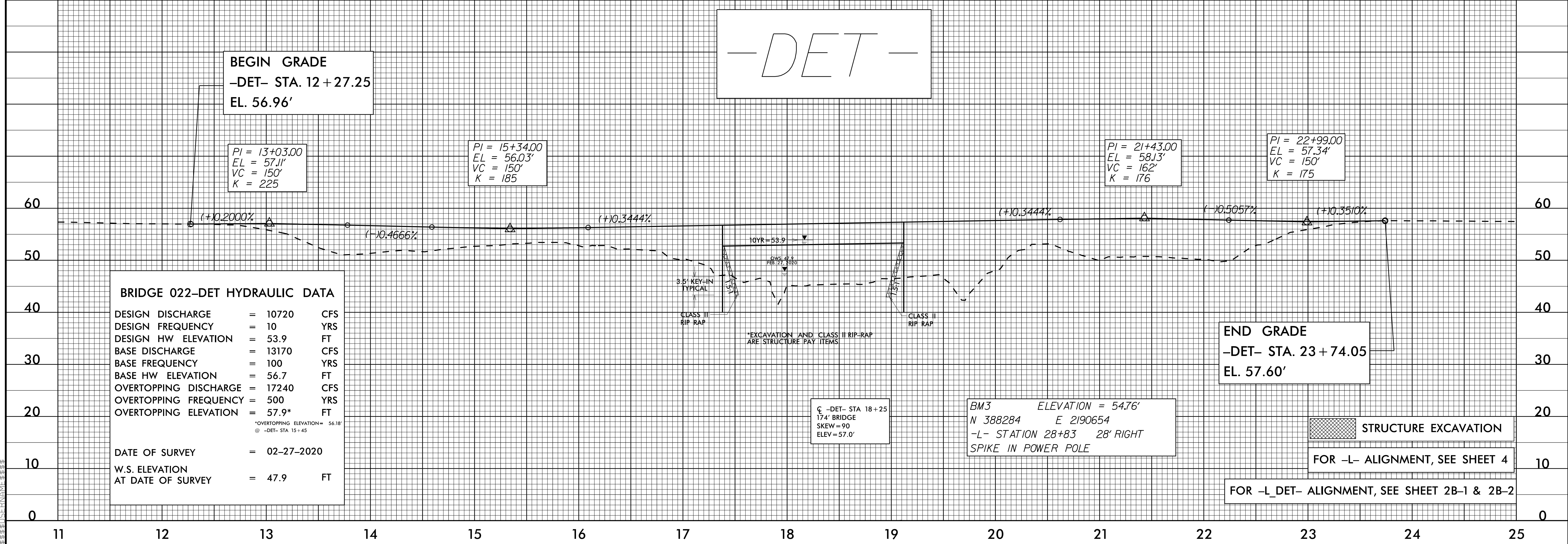


BRIDGE 022 HYDRAULIC DATA

DESIGN DISCHARGE	= 10720	CFS
DESIGN FREQUENCY	= 50	YRS
DESIGN HW ELEVATION	= 55.3	FT
BASE DISCHARGE	= 13170	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 56.1	FT
OVERTOPPING DISCHARGE	= 16000	CFS
OVERTOPPING FREQUENCY	< 500	YRS
OVERTOPPING ELEVATION	= 57.18*	FT
*OVERTOPPING ELEVATION = 56.8' @ -L- STA 15+00		
DATE OF SURVEY	= 02-27-2020	
W.S. ELEVATION AT DATE OF SURVEY	= 47.9	FT

BM3 ELEVATION = 54.76'
N 388284 E 2190654
-L- STATION 28+83 28' RIGHT
SPIKE IN POWER POLE

C -L- STA 24+30
1@50', 1@60', 1@50' 36" PSG
SKEW = 90
ELEV = 58.7'



BRIDGE 022-DET HYDRAULIC DATA

DESIGN DISCHARGE	= 10720	CFS
DESIGN FREQUENCY	= 10	YRS
DESIGN HW ELEVATION	= 53.9	FT
BASE DISCHARGE	= 13170	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 56.7	FT
OVERTOPPING DISCHARGE	= 17240	CFS
OVERTOPPING FREQUENCY	= 500	YRS
OVERTOPPING ELEVATION	= 57.9*	FT
*OVERTOPPING ELEVATION = 56.18' @ -DET- STA 15+45		
DATE OF SURVEY	= 02-27-2020	
W.S. ELEVATION AT DATE OF SURVEY	= 47.9	FT

END GRADE
-DET- STA. 23+74.05
EL. 57.60'

C -DET- STA 18+25
17' BRIDGE
SKEW = 90
ELEV = 57.0'

BM3 ELEVATION = 54.76'
N 388284 E 2190654
-L- STATION 28+83 28' RIGHT
SPIKE IN POWER POLE

STRUCTURE EXCAVATION
FOR -L- ALIGNMENT, SEE SHEET 4

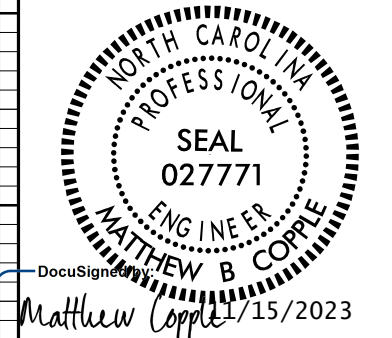
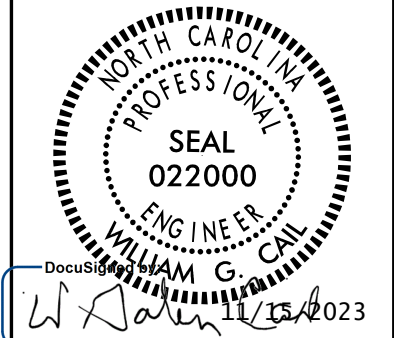
FOR -L_DET- ALIGNMENT, SEE SHEET 2B-1 & 2B-2

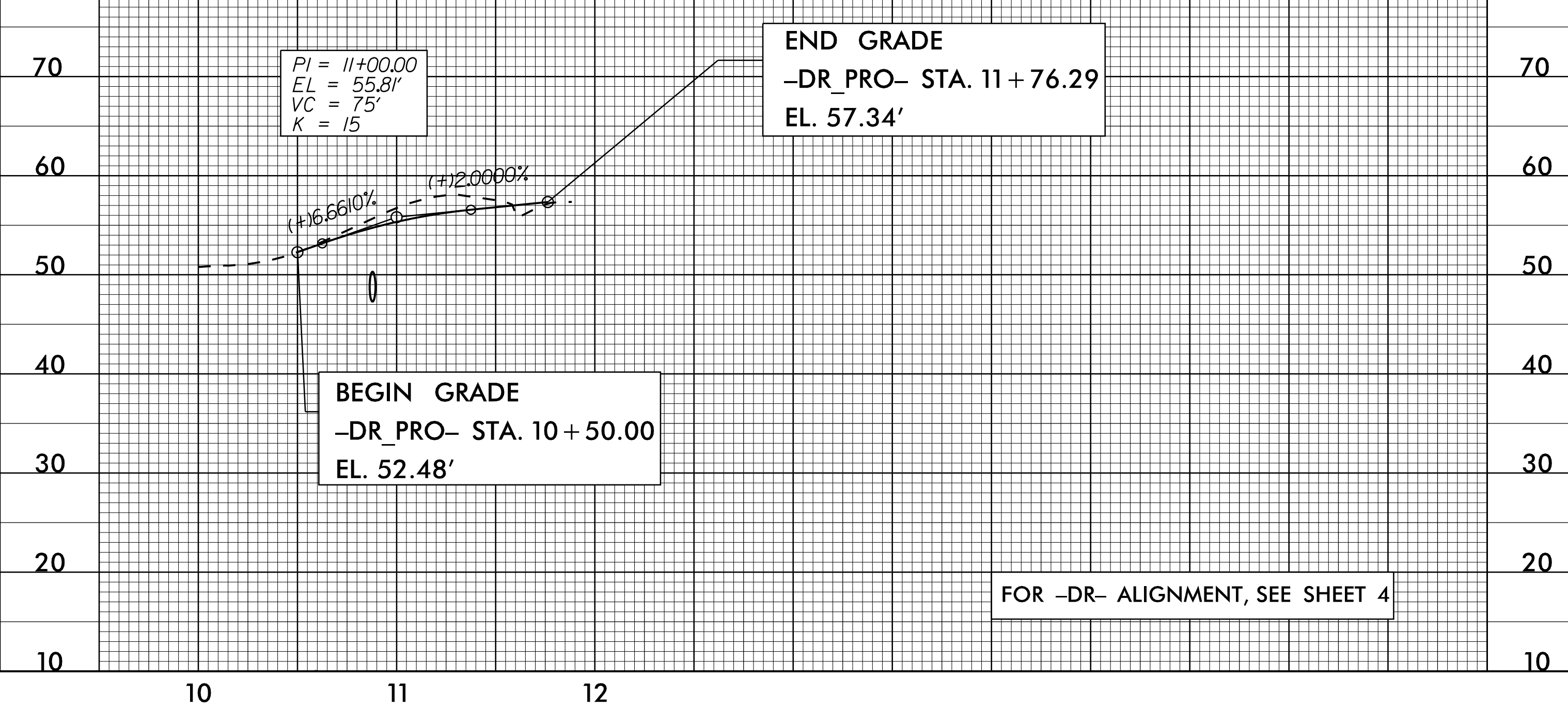
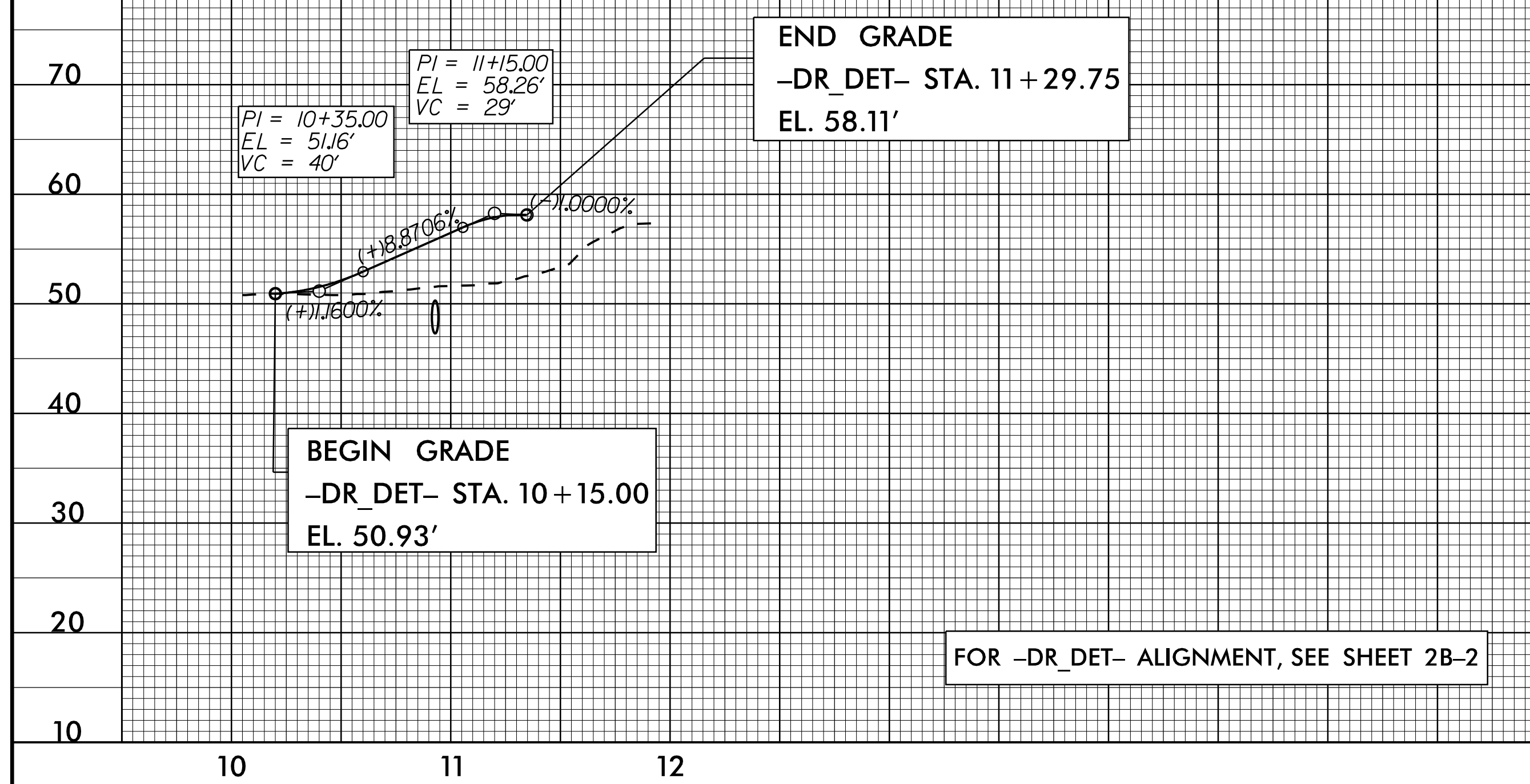
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5/28/99

-DR_DET-

-DR_PRO-

PROJECT REFERENCE NO. BR-0046	SHEET NO. 6
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
 MATTHEW B. COOPER ENGINEER SEAL 027771 NORTH CAROLINA PROFESSIONAL SEAL DocuSign Matthew Cooper 11/15/2023	 WILLIAM G. COLLINS ENGINEER SEAL 022000 NORTH CAROLINA PROFESSIONAL SEAL DocuSign William G. Collins 11/15/2023
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



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