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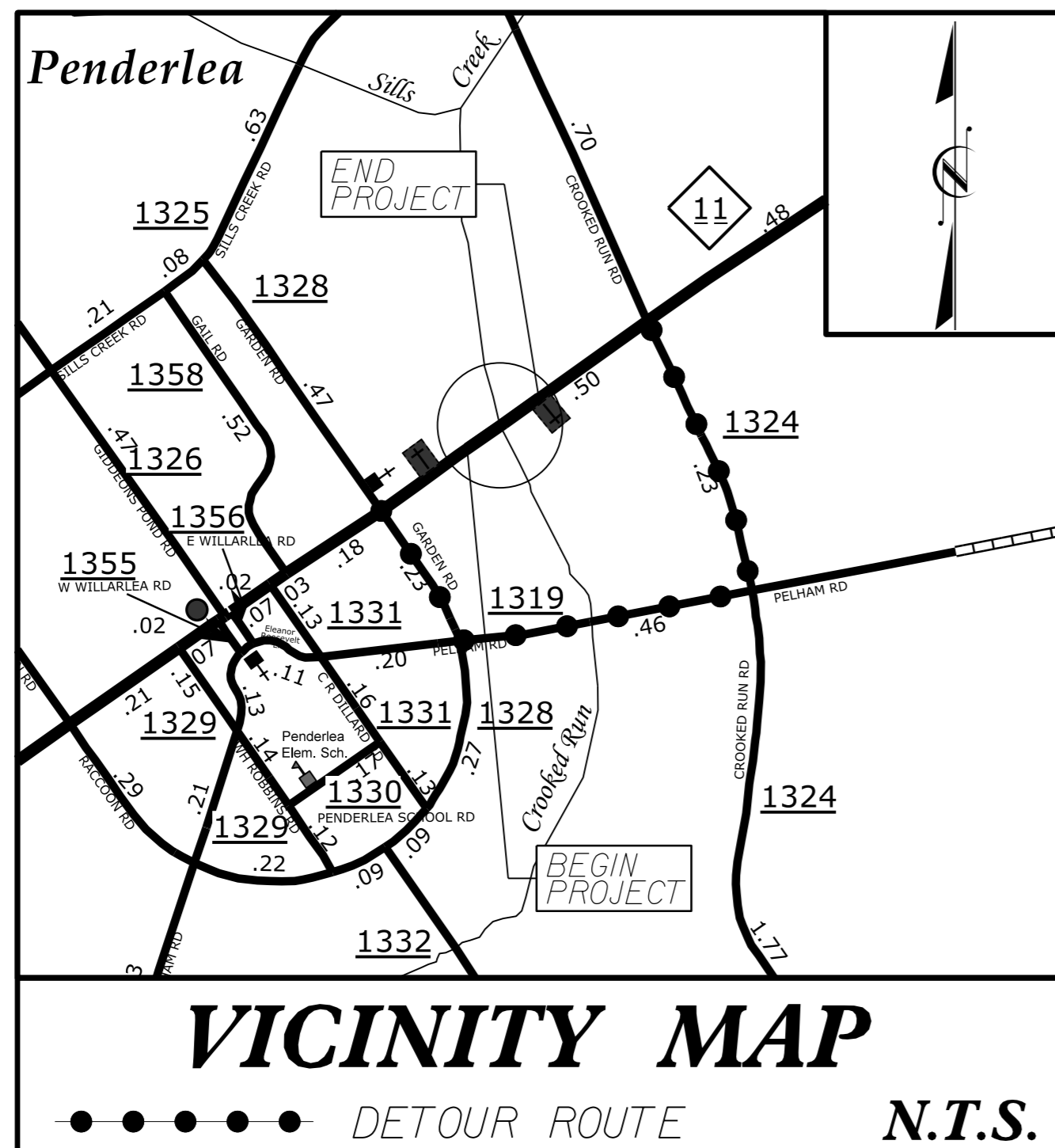
09/08/19

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

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS  
**PENDER COUNTY**

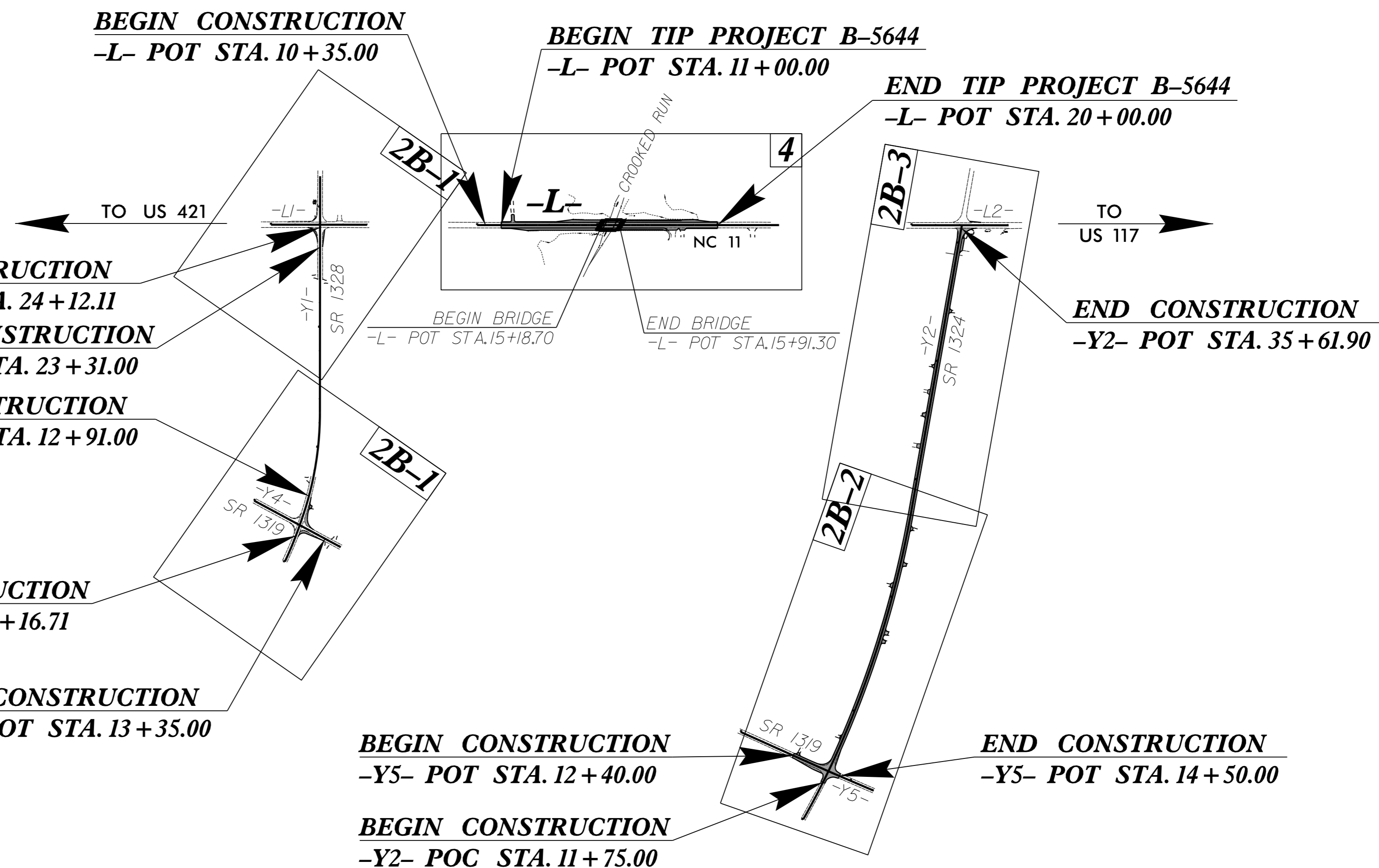
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	<b>B-5644</b>	<b>1</b>	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
45599.1.1	N/A	P.E.	
45599.2.1	N/A	UTIL./ROW	
45599.3.1	N/A	CONST.	

**TIP PROJECT: B-5644**



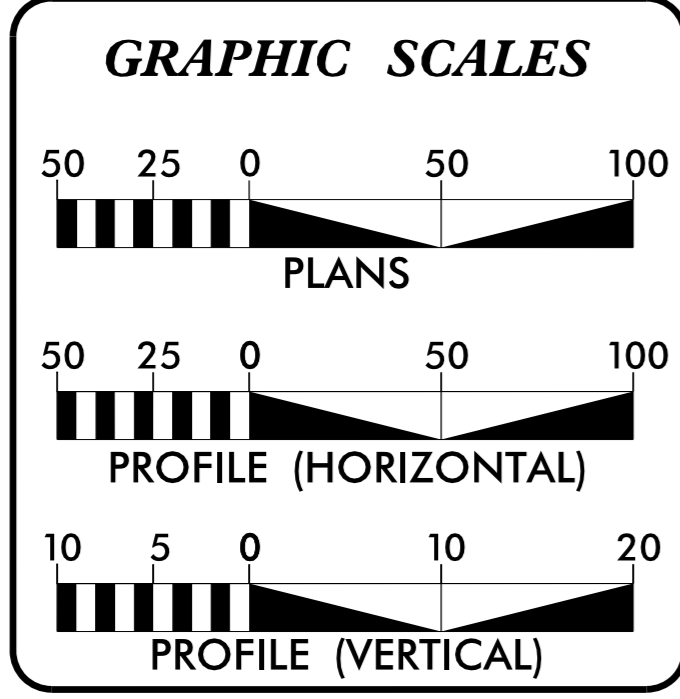
**LOCATION: REPLACE BRIDGE NO.15 OVER CROOKED RUN ON NC 11**

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



**CONTRACT: C204435**

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED



**DESIGN DATA**

ADT 2022 =	2,100 VPD
ADT 2040 =	2,700 VPD
K =	10%
D =	65%
T =	4%
V =	50 MPH
TTST =	1% DUALS = 3%
FUNC CLASS =	MAJOR COLLECTOR REGIONAL TIER

**PROJECT LENGTH**

LENGTH ROADWAY TIP PROJECT B-5644	=	0.156 MILES
LENGTH BRIDGE TIP PROJECT B-5644	=	0.014 MILES
<b>TOTAL LENGTH TIP PROJECT B-5644</b>	<b>=</b>	<b>0.170 MILES</b>

Prepared in the Office of:  
**CDM Smith**  
CDM Smith Inc.  
5400 Glenwood Avenue  
Suite 400  
Raleigh, NC 27612-3228  
NC CDA No. F-1255

**FOR THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION**  
2018 STANDARD SPECIFICATIONS

**RIGHT OF WAY DATE:**  
NOVEMBER 23, 2021

**LETTING DATE:**  
DECEMBER 20, 2022

**DAVID Z. KEISER, PE**  
PROJECT ENGINEER

**ADAM M. CONRAD, PE**  
PROJECT DESIGN ENGINEER

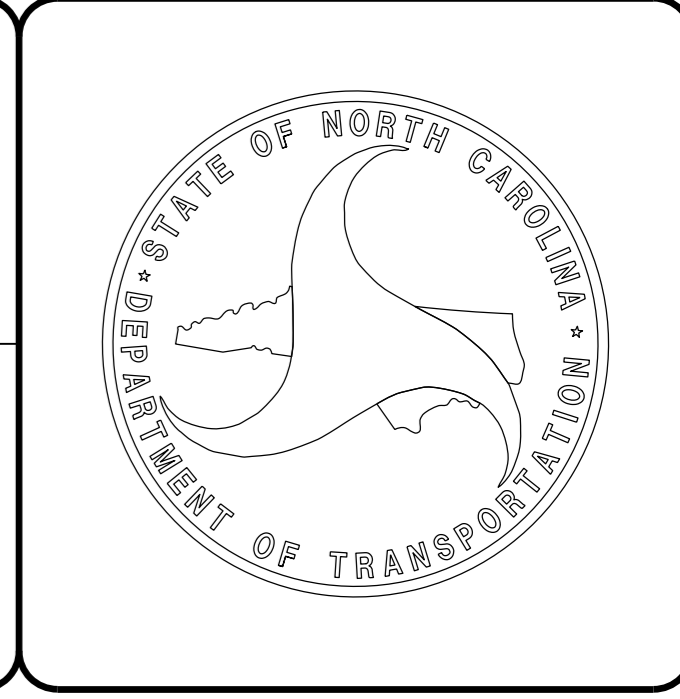
**DAVID STUTTS, PE**  
NCDOT CONTACT

**HYDRAULICS ENGINEER**

DocuSigned by:  
Jesse Dalton  
1089ADBC14994C3...  
SIGNATURE: \_\_\_\_\_ P.E.

**ROADWAY DESIGN ENGINEER**

DocuSigned by:  
David Z. Keiser  
E0F45808E3D4E6C...  
SIGNATURE: \_\_\_\_\_ P.E.



SHEET NUMBER	SHEET
1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES AND STANDARD DRAWINGS
1B	CONVENTIONAL SYMBOLS
2A-1 THRU 2A-3	PAVEMENT SCHEDULE AND TYPICAL SECTIONS
2B-1 THRU 2B-3	ROADWAY DETAILS
2C-1 THRU 2C-5	SPECIAL DETAILS
3B-1	ROADWAY SUMMARIES
3D-1	DRAINAGE SUMMARY
3G-1	GEO TECHNICAL SUMMARY
4	PLAN AND PROFILE SHEET
RW-01 THRU RW-04	SURVEY CONTROL, EXIST. CENTERLINES, ROW, EASEMENT, & PROPERTY TIES
TMP-1 THRU TMP-2	TRANSPORTATION MANAGEMENT PLANS
PMP-1 THRU PMP-4	PAVEMENT MARKING PLANS
EC-1 THRU EC-8	EROSION CONTROL PLANS
SIGN-1 THRU SIGN-2	SIGNING PLANS
UC-1 THRU UC-4	UTILITY CONSTRUCTION PLANS
UO-1 THRU UO-2	UTILITY BY OTHERS PLANS
X-1 THRU X-28	CROSS-SECTION INDEX SHEET, SUMMARY AND CROSS-SECTIONS
S-1 THRU S-19	STRUCTURE PLANS

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	
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
310.10	Driveway Pipe Construction
DIVISION 4 - MAJOR STRUCTURES	
422.02	Bridge Approach Fills - Type II Modified Approach Fill
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
DIVISION 8 - INCIDENTALS	
815.02	Subsurface Drain
840.00	Concrete Base Pad for Drainage Structures
840.18	Concrete Grated Drop Inlet Type 'B' - 12" thru 36" Pipe
840.25	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
840.45	Precast Drainage Structure
840.66	Drainage Structure Steps
846.04	Drop Inlet Installation in Shoulder Berm Gutter
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units
876.02	Guide for Rip Rap at Pipe Outlets
876.04	Drainage Ditches with Class 'B' Rip Rap

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 MODIFIED METHOD III.

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

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

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

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

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

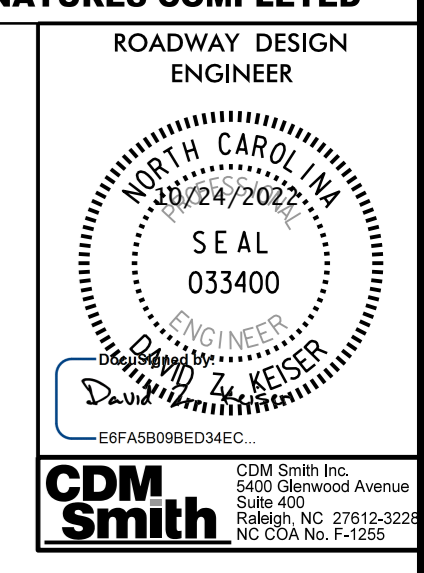
TEMPORARY SHORING:  
  
SHORING REQUIRED FOR THE MAINTENANCE OF TRAFFIC WILL BE PAID FOR AS "EXTRA WORK" IN ACCORDANCE WITH SECTION 104-7.

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

UTILITIES:  
  
UTILITY OWNERS ON THIS PROJECT ARE  
  
DUKE ENERGY  
SPECTRUM  
CENTURYLINK  
PENDER COUNTY

ANY RELOCATION OF UTILITIES WILL BE ACCOMPLISHED BY OTHERS, EXCEPT AS SHOWN ON THE PLANS.

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



# 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	-----
Proposed Wetland Boundary	-----
Existing Endangered Animal Boundary	-----
Existing Endangered Plant Boundary	-----
Existing Historic Property Boundary	-----
Known Contamination Area: Soil	-----
Potential Contamination Area: Soil	-----
Known Contamination Area: Water	-----
Potential Contamination Area: Water	-----
Contaminated Site: Known or Potential	☠ ?

### BUILDINGS AND OTHER CULTURE:

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	-----
Buffer Zone 1	-----
Buffer Zone 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	-----
Proposed Slope Stakes Fill	-----
Proposed Curb Ramp	-----
Existing Metal Guardrail	-----
Proposed Guardrail	-----
Existing Cable Guiderail	-----
Proposed Cable Guiderail	-----
Equality Symbol	⊕
Pavement Removal	-----
VEGETATION:	
Single Tree	☼
Single Shrub	☼
Hedge	-----

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:

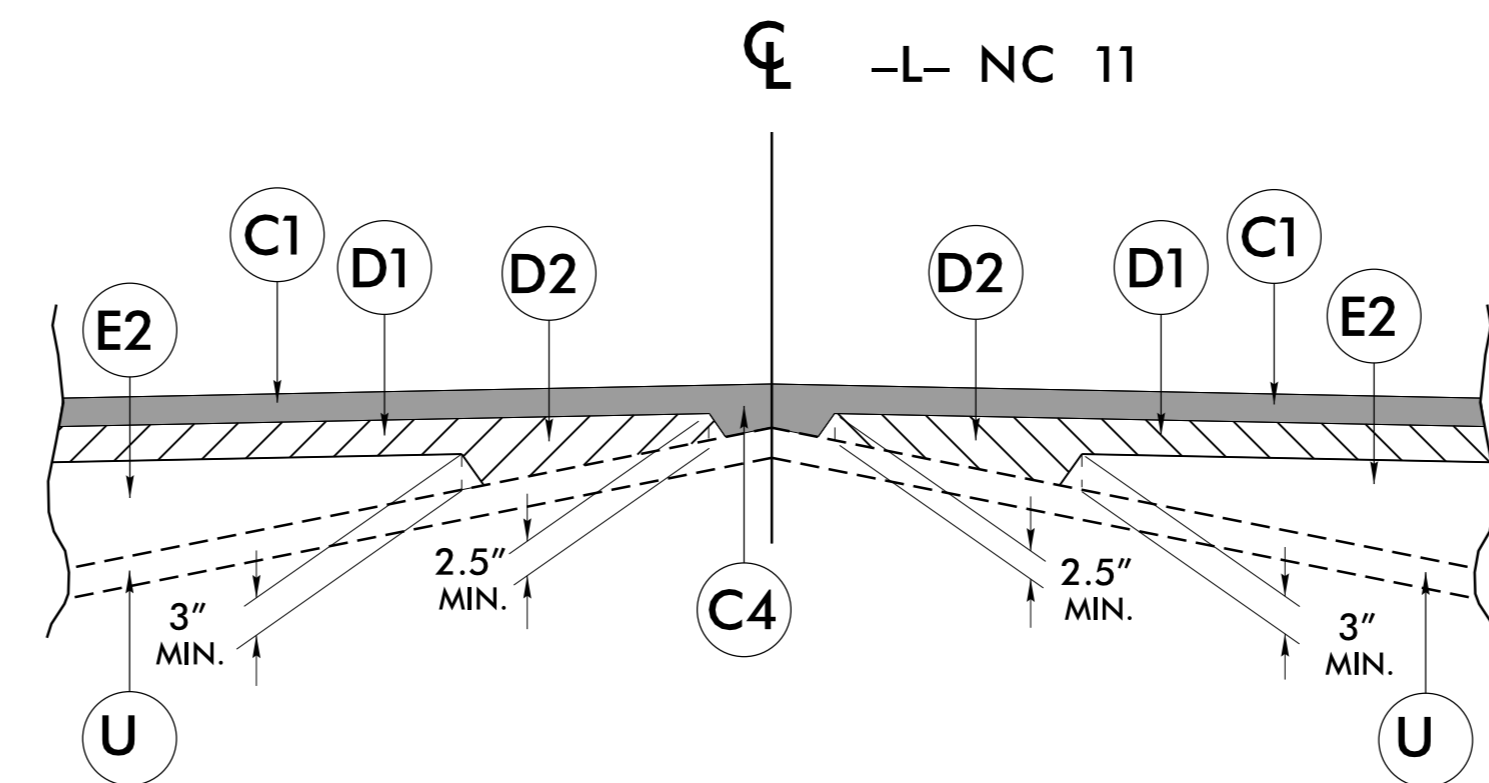
Utility Pole	●
Utility Pole with Base	⊕
Utility Located Object	○
Utility Traffic Signal Box	⊕
Utility Unknown U/G Line (SUE - LOS B)*	-----
U/G Tank; Water, Gas, Oil	-----
Underground Storage Tank, Approx. Loc.	-----
A/G Tank; Water, Gas, Oil	-----
Geoenvironmental Boring	⊕
Abandoned According to Utility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

6/2/99

PAVEMENT SCHEDULE <i>(FINAL PAVEMENT DESIGN)</i>	
C1	PROP. APPROX. 1.25" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD.
C2	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.
C3	PROP. APPROX. 2.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C4	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 LESS THAN 1" IN DEPTH OR GREATER THAN 1.5" 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 2.5" IN DEPTH OR GREATER THAN 4.0" IN DEPTH.
E1	PROP. APPROX. 4.0" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5.5" IN DEPTH.
J1	PROP. 8" AGGREGATE BASE COURSE
R1	SHOULDER BERM GUTTER
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V	INCIDENTAL MILLING
V1	6.5" MILLING
V2	9" MILLING
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE -L- WEDGING DETAIL)

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

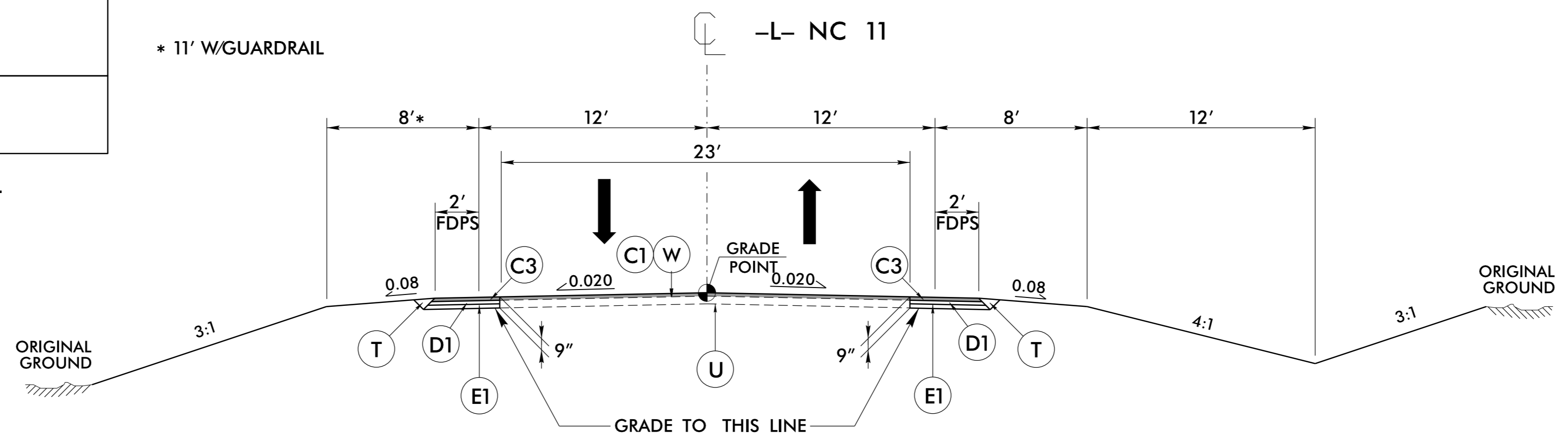
PROJECT REFERENCE NO. B-5644	SHEET NO. 2A-1
ROADWAY DESIGN ENGINEER	
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	



Detail Showing Method of Wedging - W

**MILLING DETAIL**  
**INCIDENTAL MILLING AT BEGIN/END FOR TIE-INS**

-L- STA. 11+00.00 TO STA. 11+31.25  
 -L- STA. 19+68.75 TO STA. 20+00.00  
 -Y2- STA. 11+75.00 TO STA. 12+12.50  
 -Y2- STA. 35+24.40 TO STA. 35+61.90  
 -Y5- STA. 12+40.00 TO STA. 12+77.50  
 -Y5- STA. 14+12.50 TO STA. 14+50.00

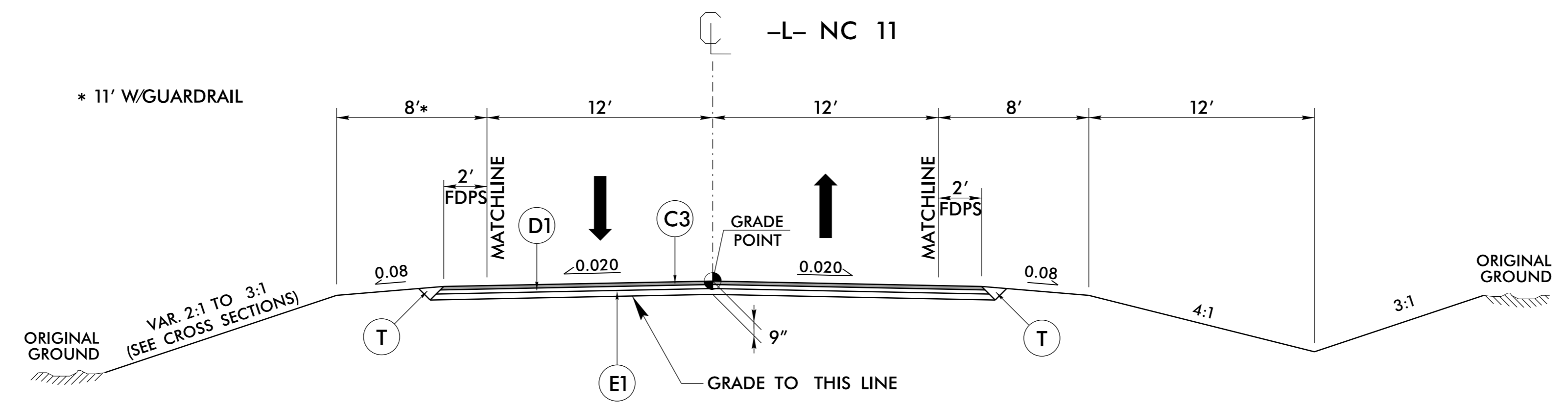


**TYPICAL SECTION NO. 1**

USE TYPICAL SECTION NO. 1  
 -L- STA. 11+00.00 TO STA. 13+24.24  
 -L- STA. 16+91.30 TO STA. 20+00.00

-SYSTEM- N:\P\_05\B5644\_Rdy\_tup.dgn  
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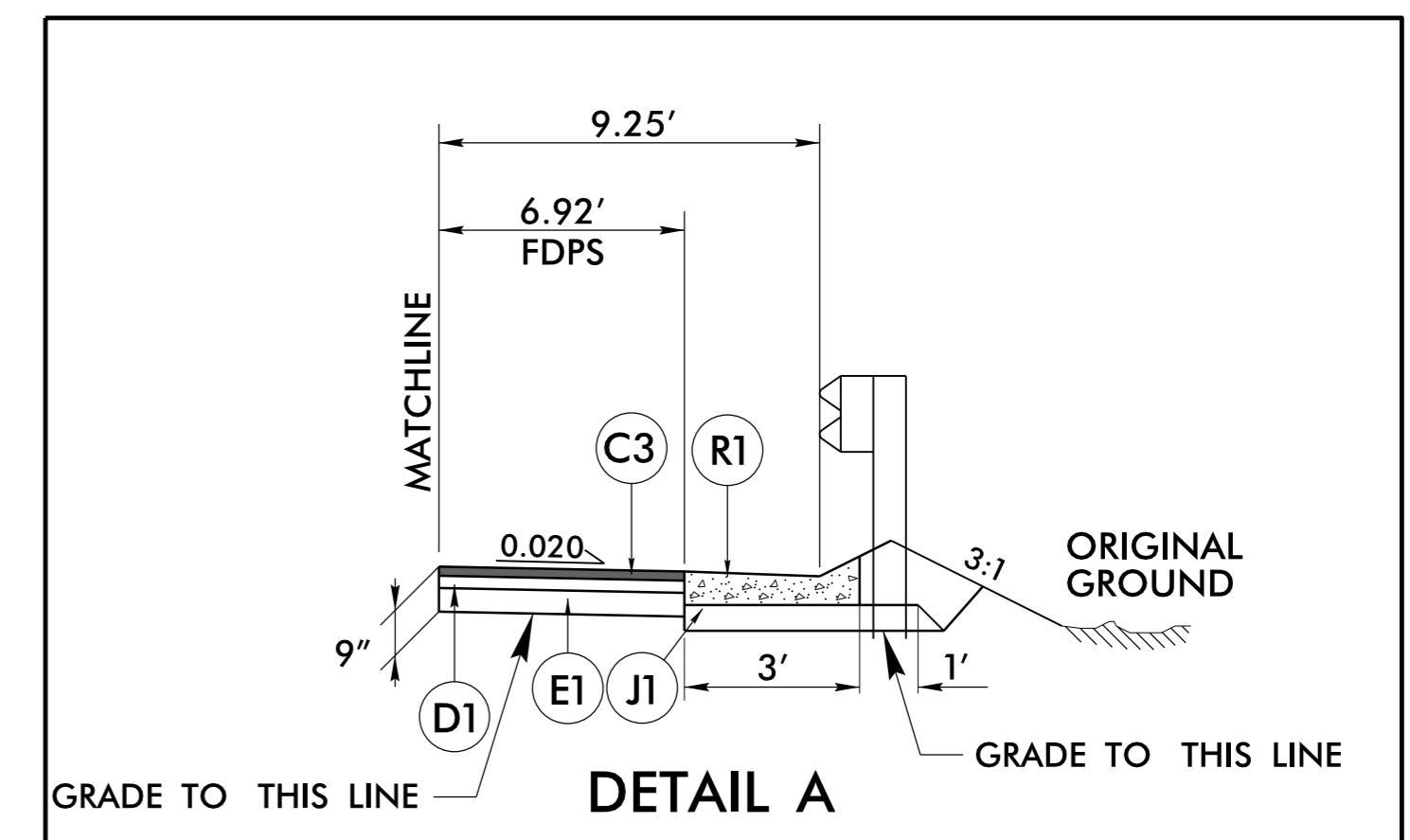
PROJECT REFERENCE NO. B-5644	SHEET NO. 2A-2
ROADWAY DESIGN ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



NOTE: 2:1 SLOPES USED WITH ROCK PLATING

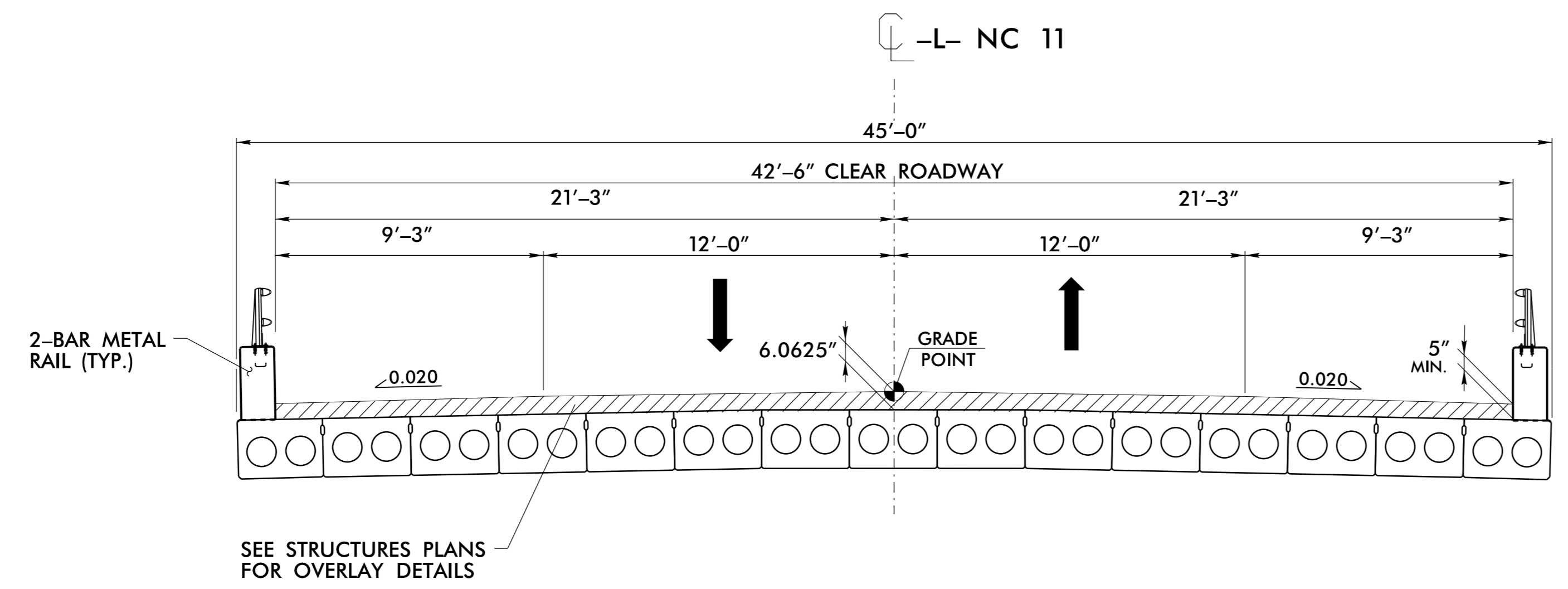
**TYPICAL SECTION NO. 2**

USE TYPICAL SECTION NO. 2  
 -L- STA. 13+24.24 TO STA. 15+18.70 (BEGIN BRIDGE)  
 -L- STA. 15+91.30 (END BRIDGE) TO STA. 16+91.30



**USE DETAIL A IN CONJUNCTION WITH TYPICAL SECTION NO. 2**

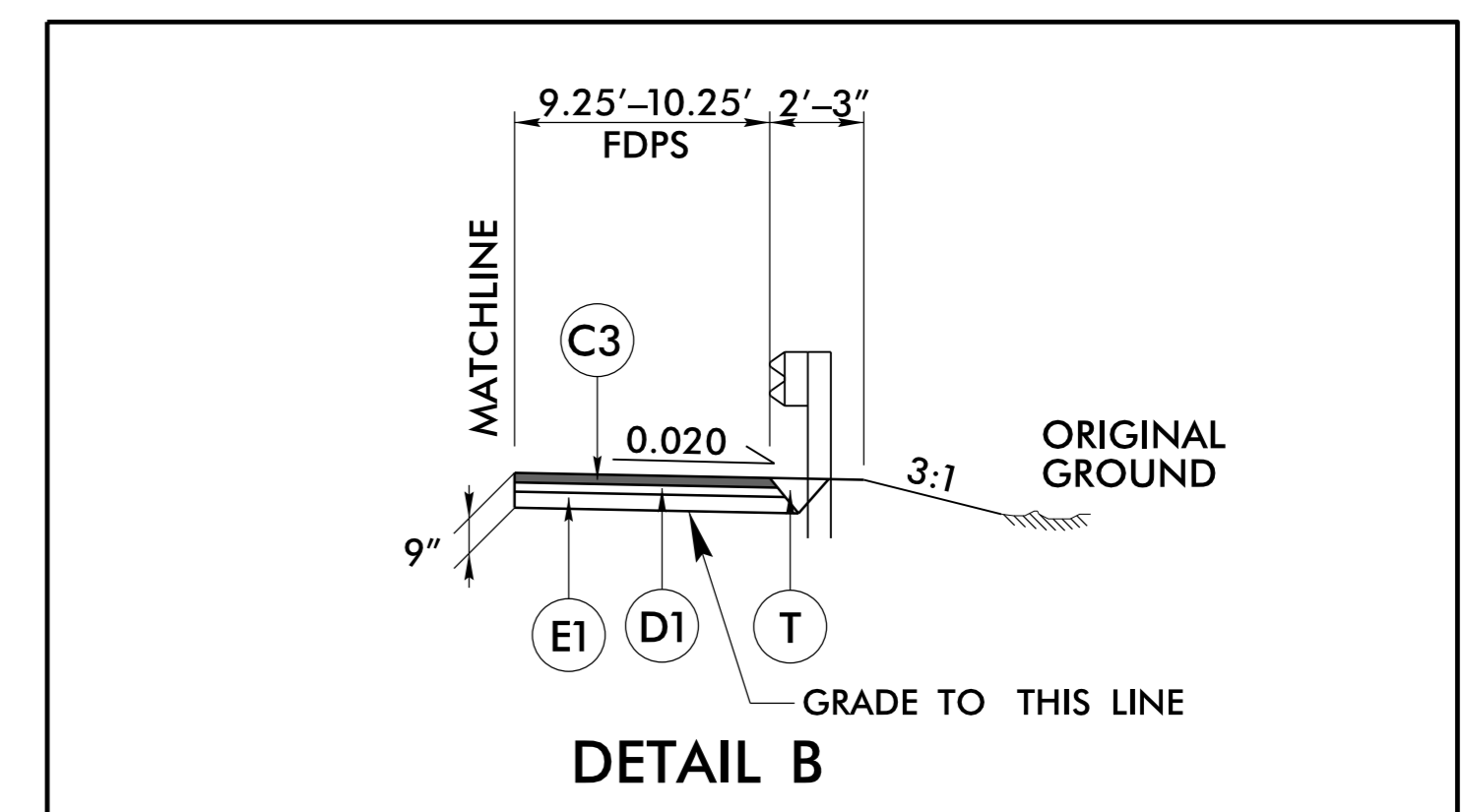
-L- STA. 16+16 +/- TO STA. 18+50 +/- (LT)  
 -L- STA. 15+93 +/- TO STA. 17+75 +/- (RT)



SEE STRUCTURES PLANS FOR OVERLAY DETAILS

**TYPICAL SECTION NO. 3**

USE BRIDGE TYPICAL SECTION NO. 3  
 -L- STA. 15+18.70 (BEGIN BRIDGE) TO STA. 15+91.30 (END BRIDGE)



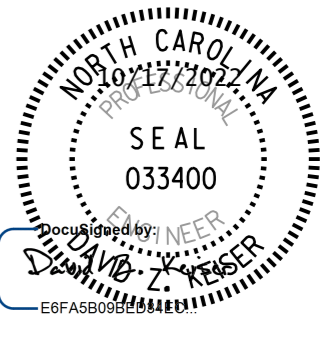

**USE DETAIL B IN CONJUNCTION WITH TYPICAL SECTION NO. 2**

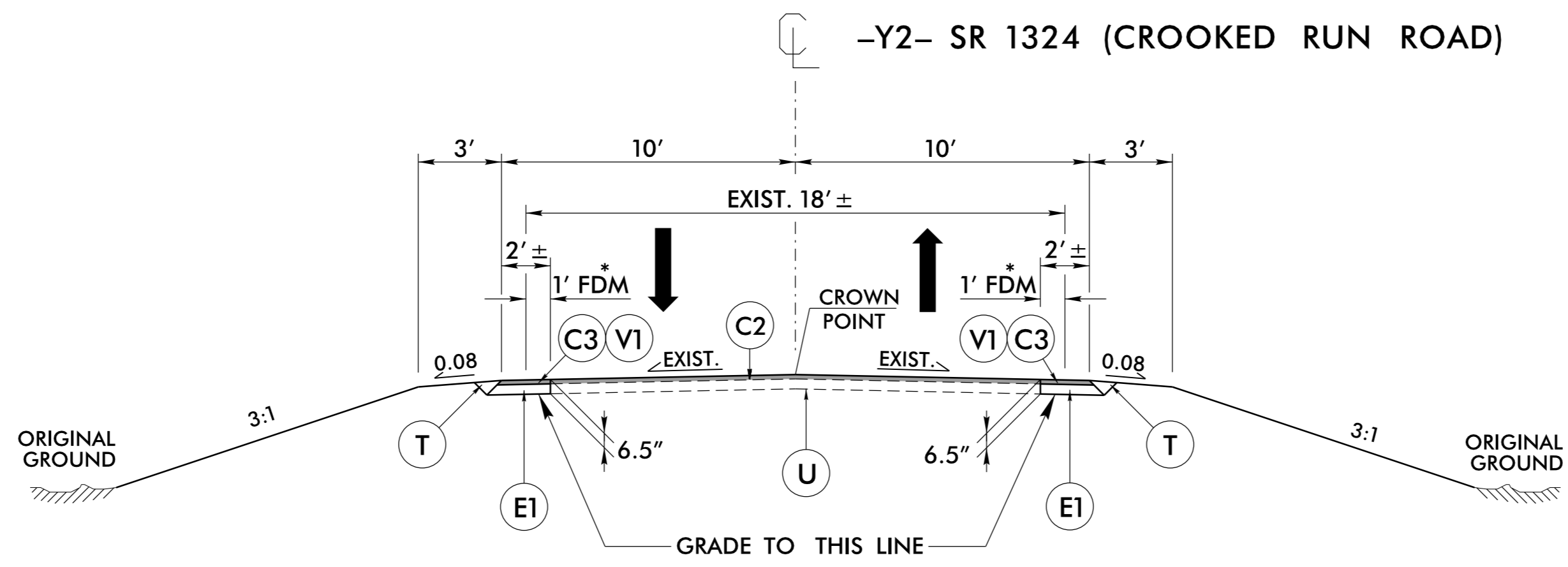
-L- STA. 12+06 +/- TO STA. 15+06 +/- (RT)  
 -L- STA. 13+93 +/- TO STA. 15+30 +/- (LT)  
 -L- STA. 18+50 +/- TO STA. 19+03 +/- (LT)

PAVEMENT SCHEDULE	
FINAL PAVEMENT DESIGN	
C1	1.25" S9.5B
C2	1.5" S9.5B
C3	2.5" S9.5B
C4	VAR. S9.5B
D1	2.5" I19.0C
D2	VAR. I19.0C
E1	4.0" B25.0C
E2	VAR. B25.0C
J1	8" ABC
R1	SBG
T	EARTH MATERIAL
U	EXIST. PAVEMENT
V	INCIDENTAL MILLING
V1	6.5" MILLING
V2	9" MILLING
W	WEDGING

PAVEMENT EDGESLOPES 1:1 UNLESS NOTED OTHERWISE

6/2/99

PROJECT REFERENCE NO. B-5644	SHEET NO. 2A-3
ROADWAY DESIGN ENGINEER	
	
	
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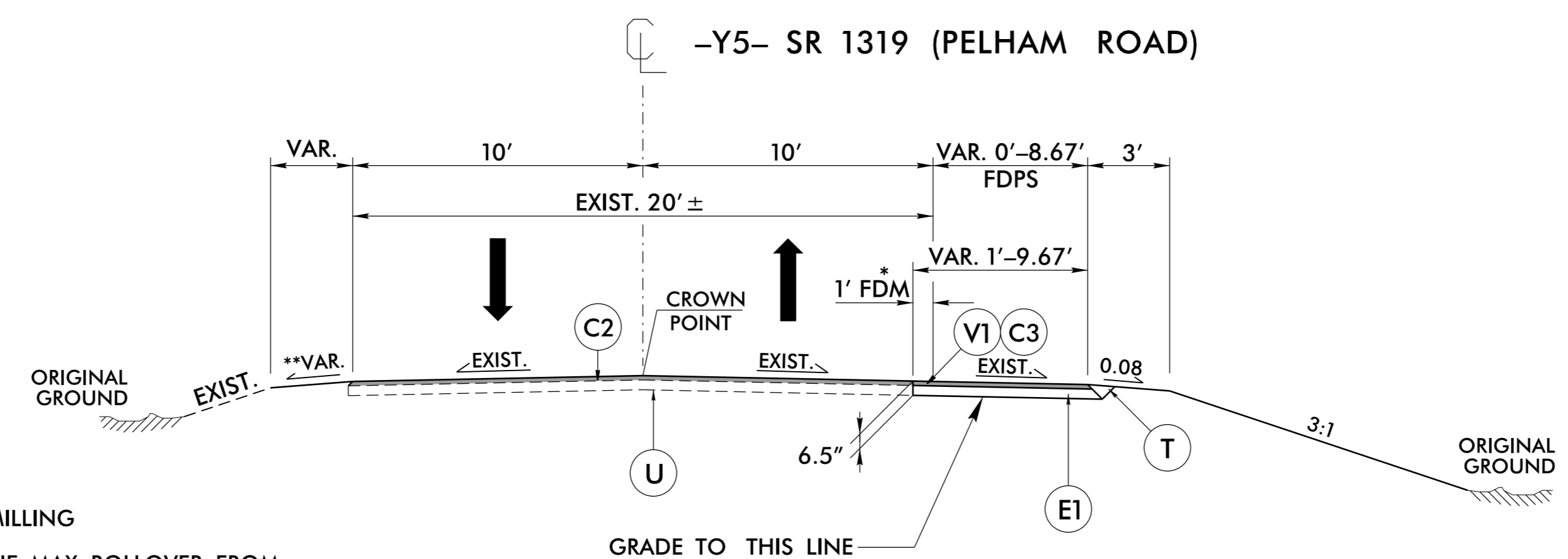


\* FULL DEPTH MILLING

**TYPICAL SECTION NO. 4**

USE TYPICAL SECTION NO. 4

-Y2- STA. 11+75.00 TO STA. 35+61.90



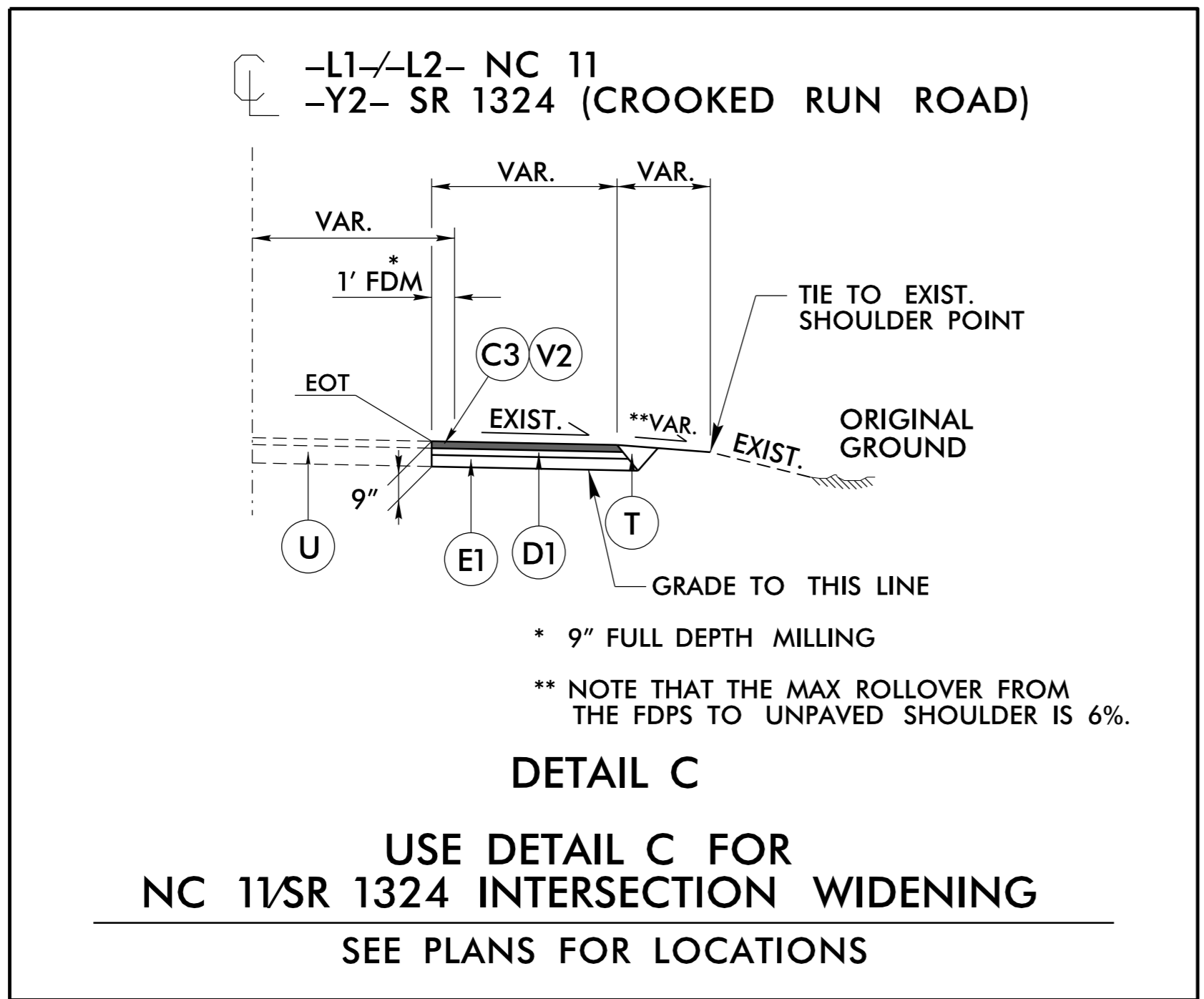
\* FULL DEPTH MILLING

\*\* NOTE THAT THE MAX ROLLOVER FROM THE FDPS TO UNPAVED SHOULDER IS 6%.

**TYPICAL SECTION NO. 5**

USE TYPICAL SECTION NO. 5

-Y5- STA. 12+40.00 TO STA. 14+50.00

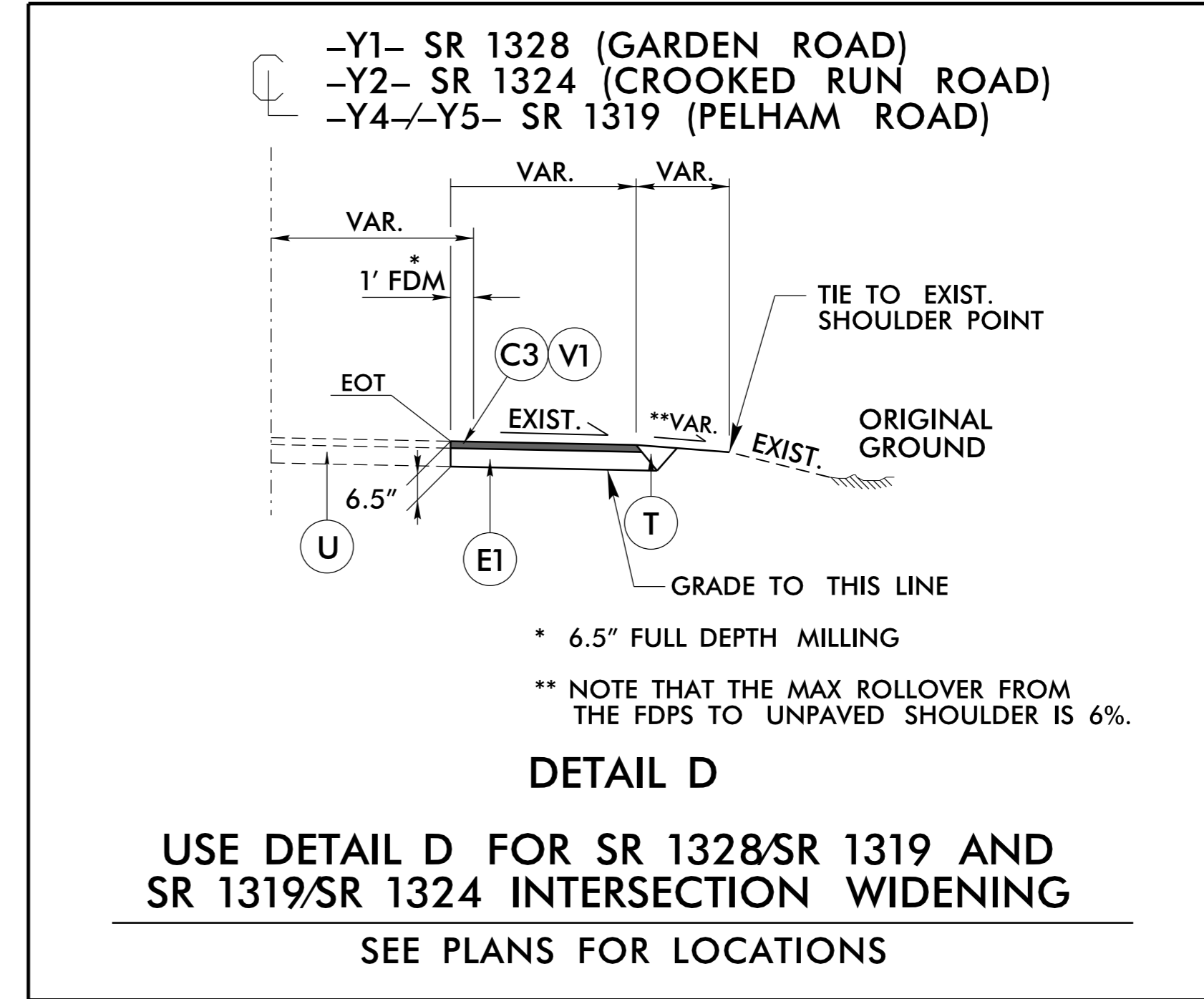


\* 9" FULL DEPTH MILLING

\*\* NOTE THAT THE MAX ROLLOVER FROM THE FDPS TO UNPAVED SHOULDER IS 6%.

**DETAIL C**

USE DETAIL C FOR  
NC 11/SR 1324 INTERSECTION WIDENING  
SEE PLANS FOR LOCATIONS



\* 6.5" FULL DEPTH MILLING

\*\* NOTE THAT THE MAX ROLLOVER FROM THE FDPS TO UNPAVED SHOULDER IS 6%.

**DETAIL D**

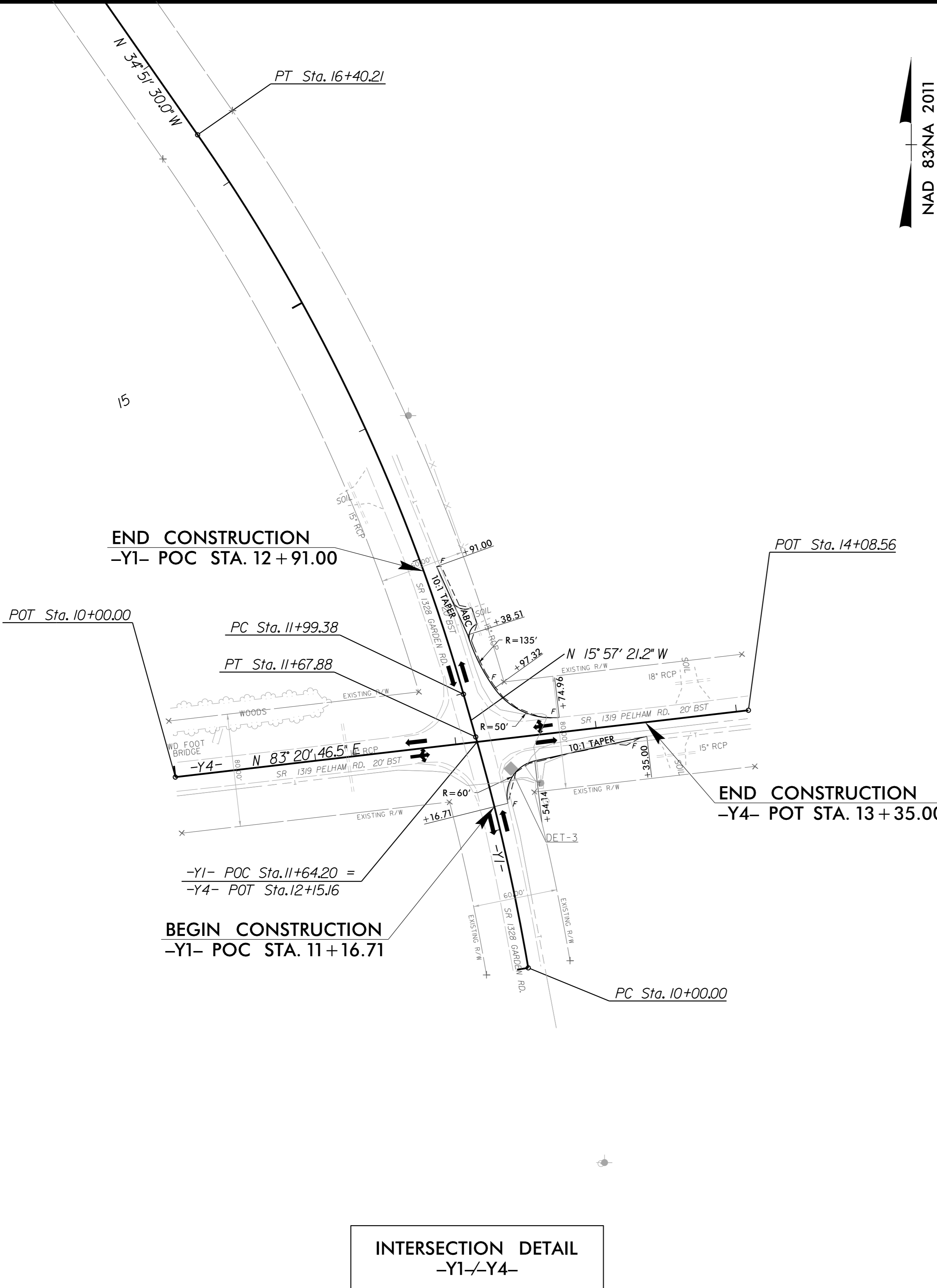
USE DETAIL D FOR SR 1328/SR 1319 AND  
SR 1319/SR 1324 INTERSECTION WIDENING  
SEE PLANS FOR LOCATIONS

PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN)	
C1	1.25" S9.5B
C2	1.5" S9.5B
C3	2.5" S9.5B
C4	VAR. S9.5B
D1	2.5" I19.0C
D2	VAR. I19.0C
E1	4.0" B25.0C
E2	VAR. B25.0C
J1	8" ABC
R1	SBG
T	EARTH MATERIAL
U	EXIST. PAVEMENT
V	INCIDENTAL MILLING
V1	6.5" MILLING
V2	9" MILLING
W	WEDGING

PAVEMENT EDGESLOPES 1:1 UNLESS NOTED OTHERWISE

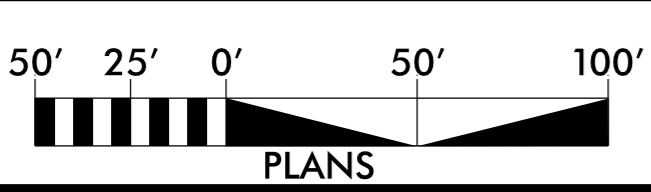
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8/17/99



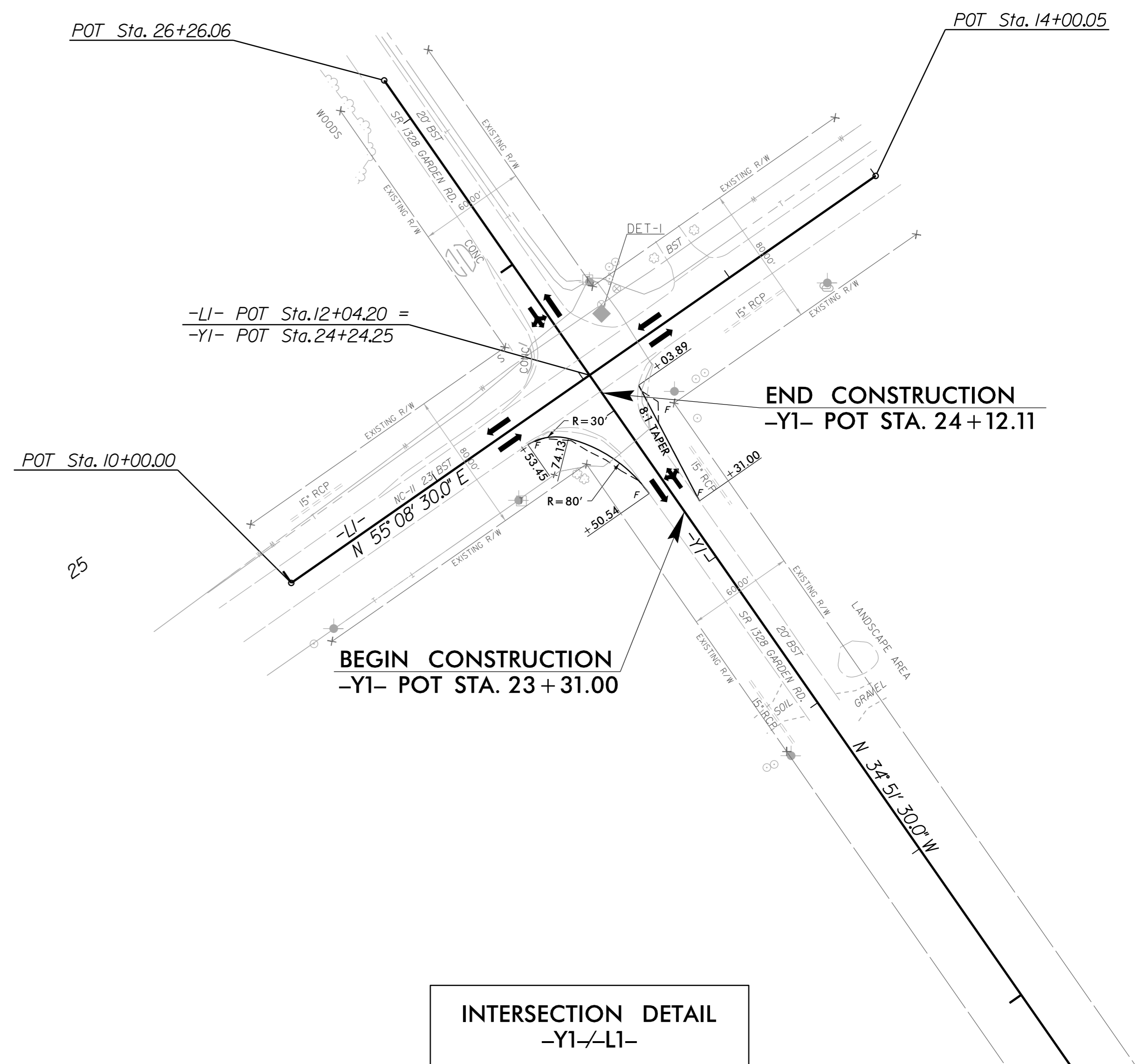
INTERSECTION DETAIL  
-Y1/-Y4-

- NOTES:**
1. ALL ABC DRIVEWAY RADII EQUAL 10' UNLESS OTHERWISE NOTED.
  2. CONTRACTOR SHALL WORK AROUND UTILITIES AS NEEDED TO COMPLETE IMPROVEMENTS



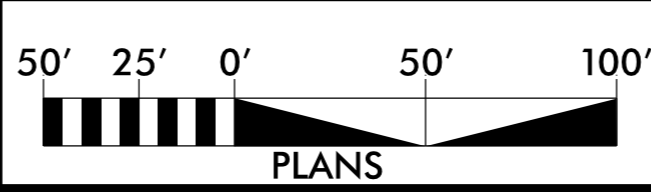
-Y1-	
PI Sta 10+84.02	PI Sta 14+21.82
$\Delta = 6' 17'' 41.6''$ (LT)	$\Delta = 18' 54'' 08.8''$ (LT)
D = 3' 44' 58.8"	D = 4' 17' 16.7"
L = 167.88'	L = 440.83'
T = 84.02'	T = 222.43'
R = 1,528.02'	R = 1,336.20'
e = Exist.	e = Exist.
RO = Exist.	RO = Exist.
DS = Exist.	DS = Exist.

PROJECT REFERENCE NO. B-5644	SHEET NO. 2B-1
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



INTERSECTION DETAIL  
-Y1/-L1-

- NOTE:**
1. CONTRACTOR SHALL WORK AROUND UTILITIES AS NEEDED TO COMPLETE IMPROVEMENTS

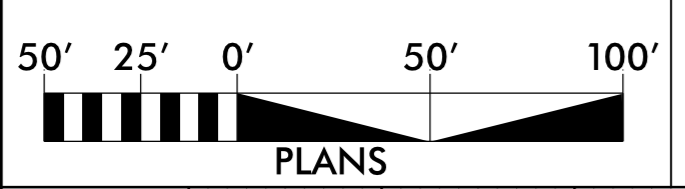
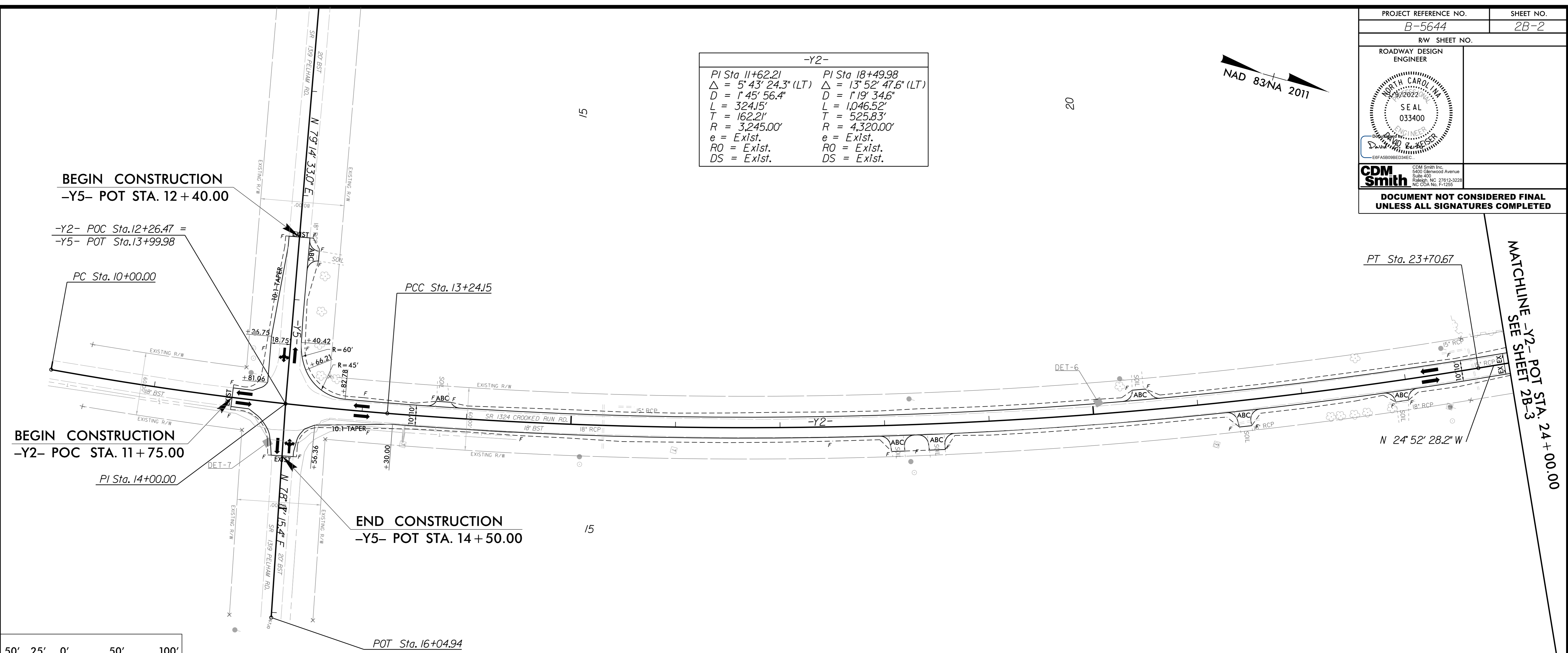
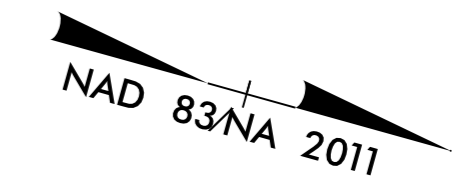


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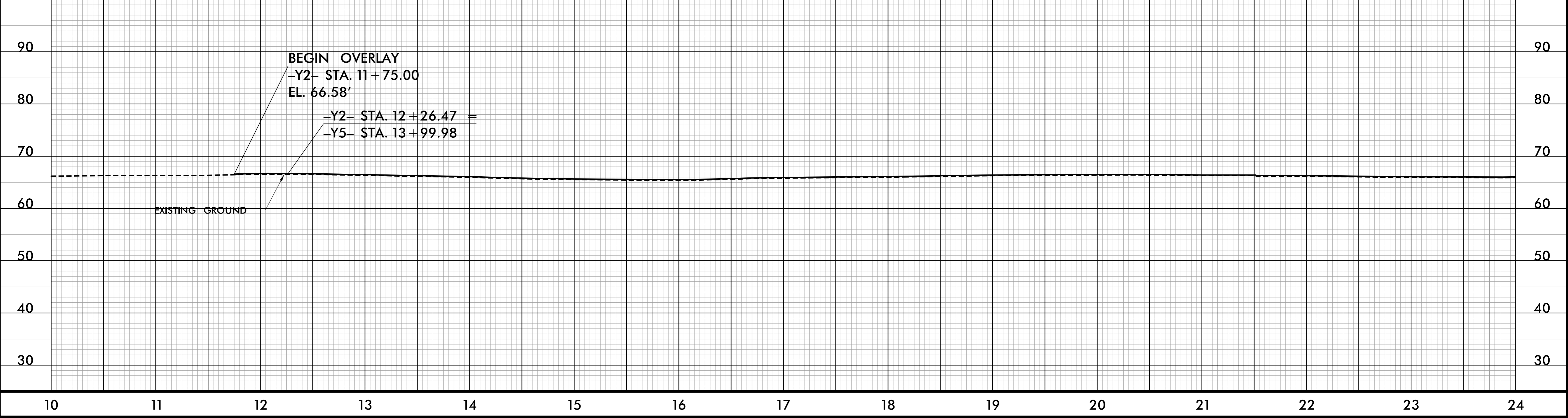


PROJECT REFERENCE NO. B-5644	SHEET NO. 2B-2
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

-Y2-	
PI Sta 11+62.21	PI Sta 18+49.98
$\Delta = 5^{\circ}43'24.3"$ (LT)	$\Delta = 13^{\circ}52'47.6"$ (LT)
$D = 1^{\circ}45'56.4"$	$D = 1^{\circ}19'34.6"$
$L = 324.15'$	$L = 1,046.52'$
$T = 162.21'$	$T = 525.83'$
$R = 3,245.00'$	$R = 4,320.00'$
$e = \text{Exlst.}$	$e = \text{Exlst.}$
$RO = \text{Exlst.}$	$RO = \text{Exlst.}$
$DS = \text{Exlst.}$	$DS = \text{Exlst.}$



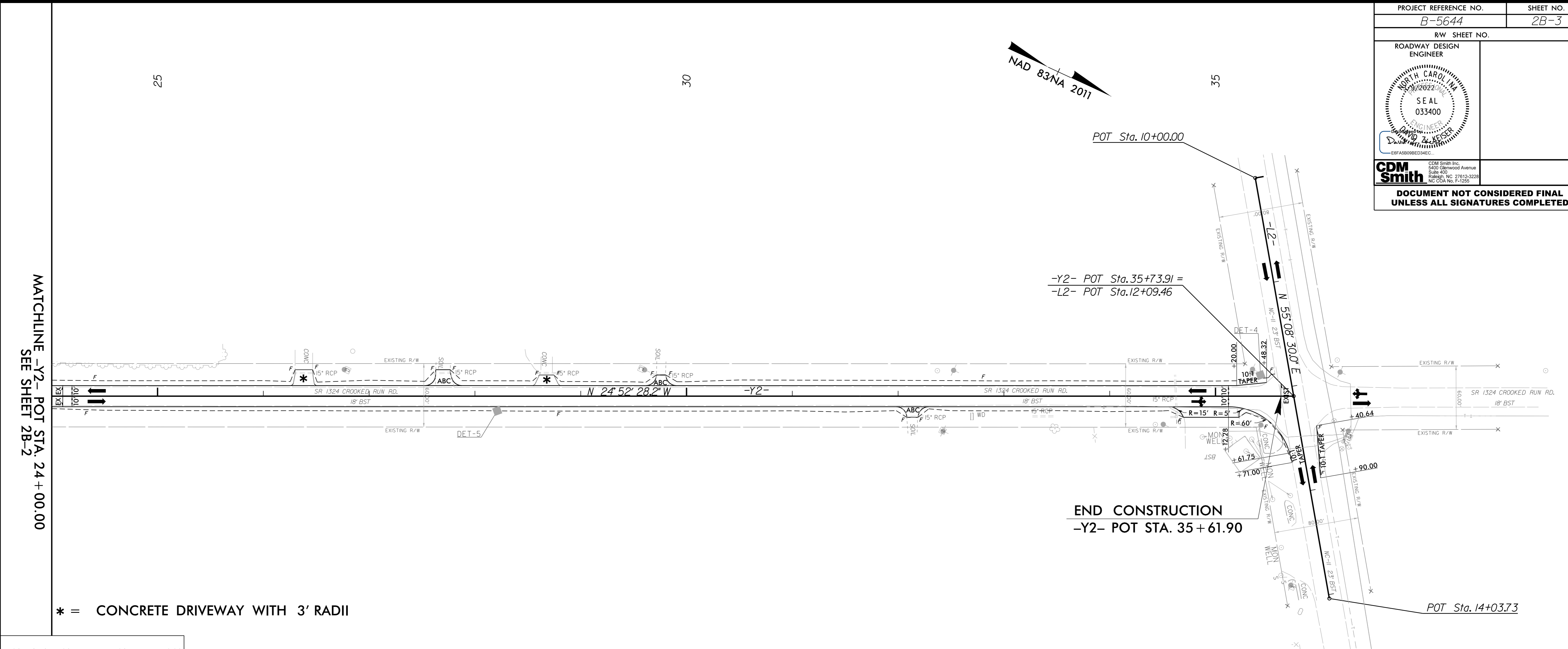
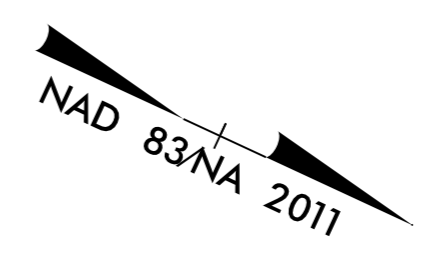
NOTE: ALL ABC DRIVEWAY RADII EQUAL 10' UNLESS OTHERWISE NOTED.



REVISIONS

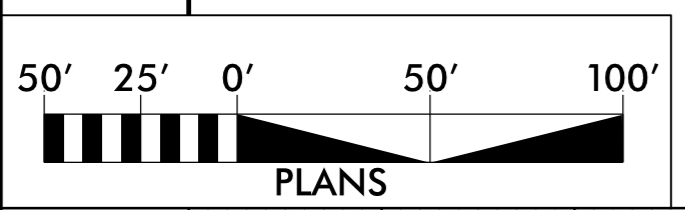
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11/15/2022 10:00 AM

PROJECT REFERENCE NO. B-5644	SHEET NO. 2B-3
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	
<small>CDM Smith Inc. 3400 Greenway Avenue Suite 400 Raleigh, NC 27612-3228 NC COA No. P-1255</small>	
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	

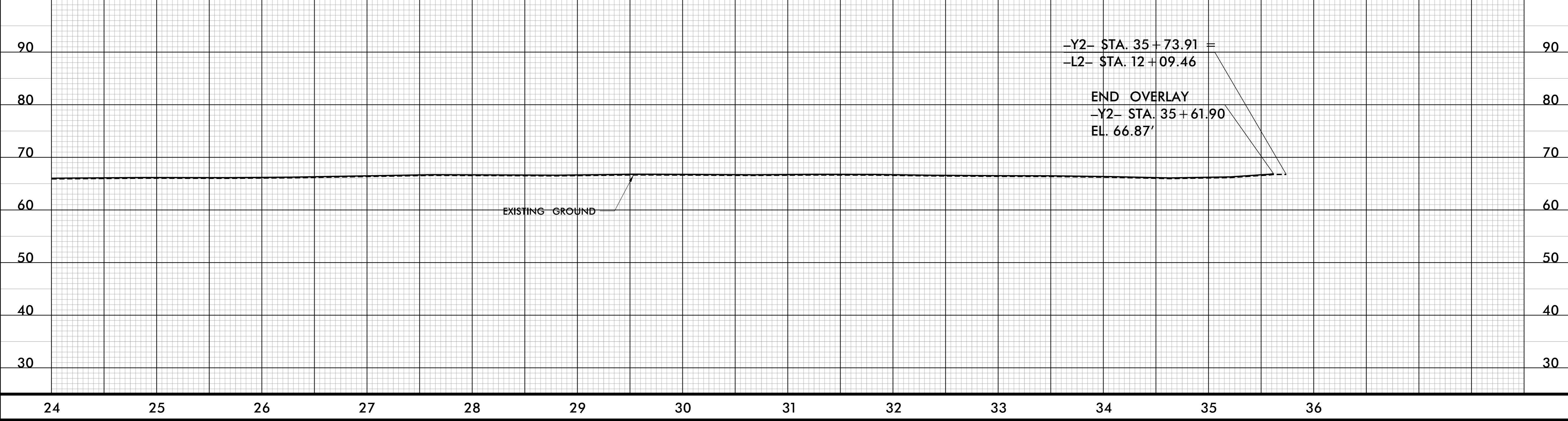


MATCHLINE -Y2- POT STA. 24 + 00.00  
SEE SHEET 2B-2

\* = CONCRETE DRIVEWAY WITH 3' RADII



NOTE: ALL ABC DRIVEWAY RADII EQUAL 10' UNLESS OTHERWISE NOTED.



REVISIONS

-SYSTEM: B6644\_Prd1.psh\_2B3.dgn  
11/15/2022 10:00 AM

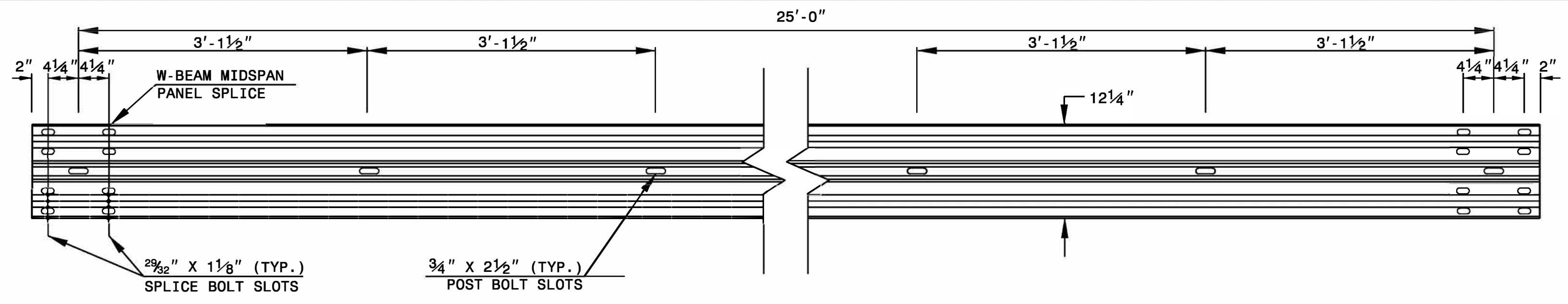




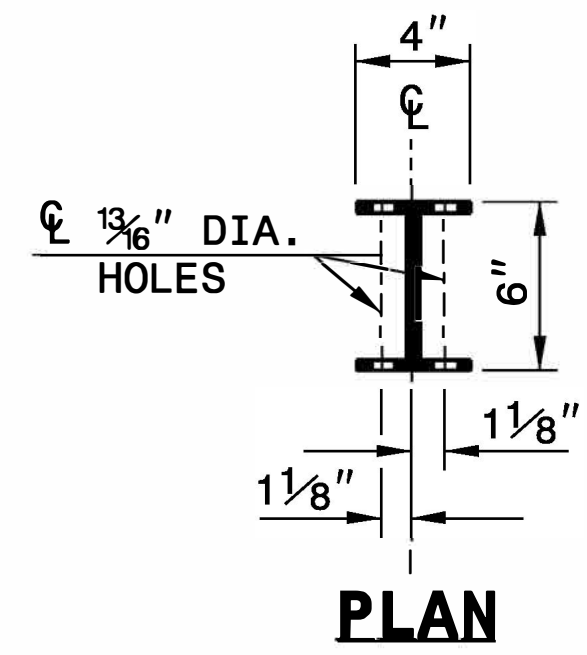
STATE OF NORTH CAROLINA  
DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR  
**GUARDRAIL INSTALLATION**

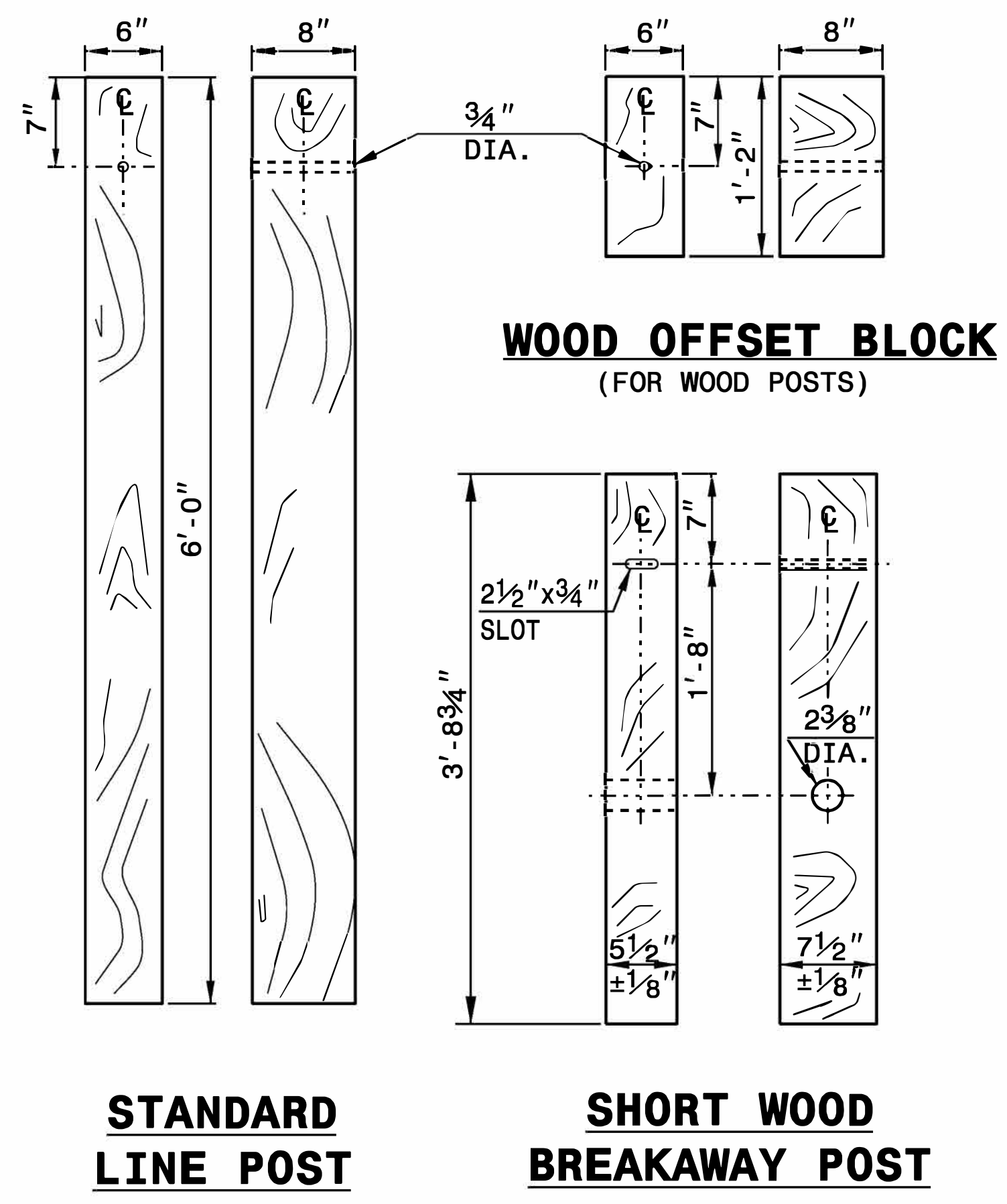
SHEET 6 OF 8  
**862D02**



**STANDARD W-BEAM GUARDRAIL**



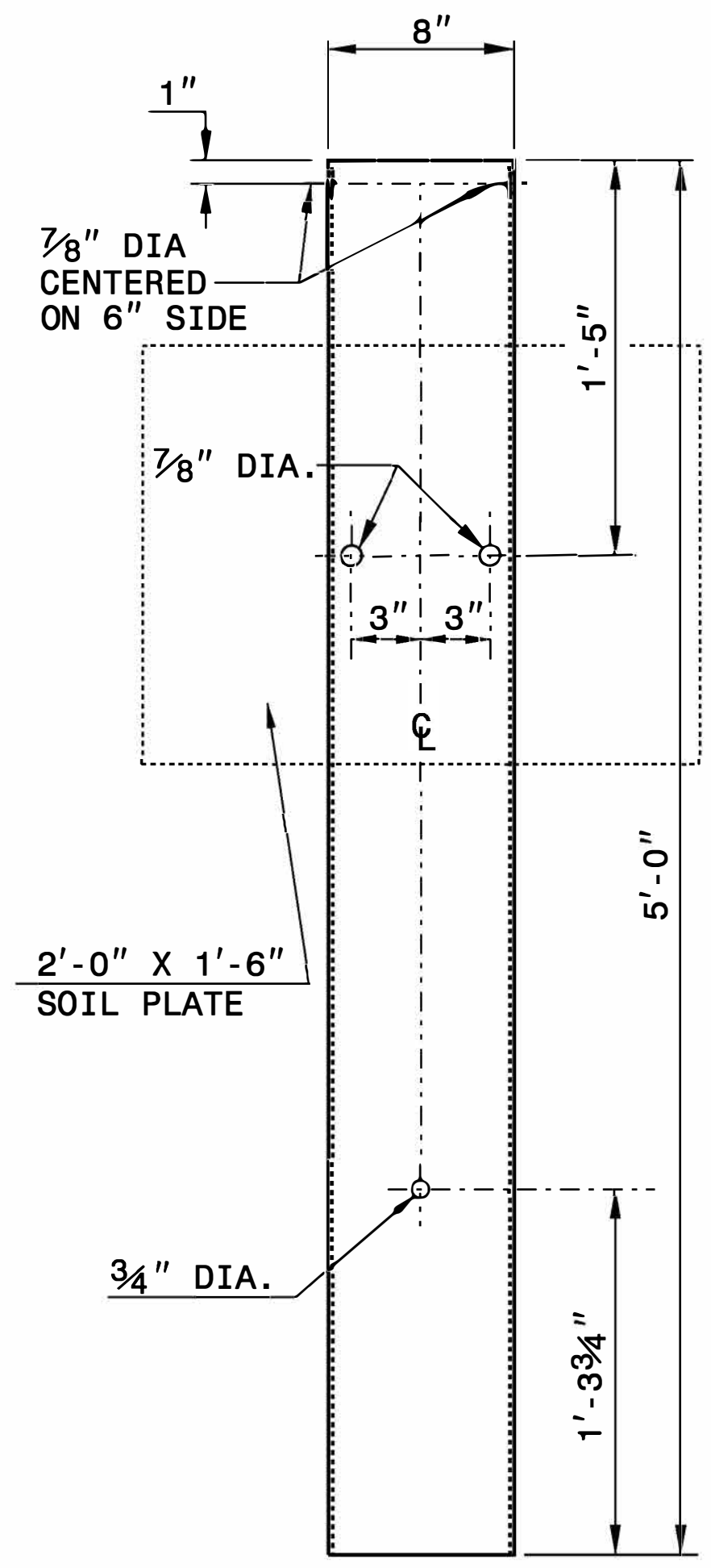
**PLAN**



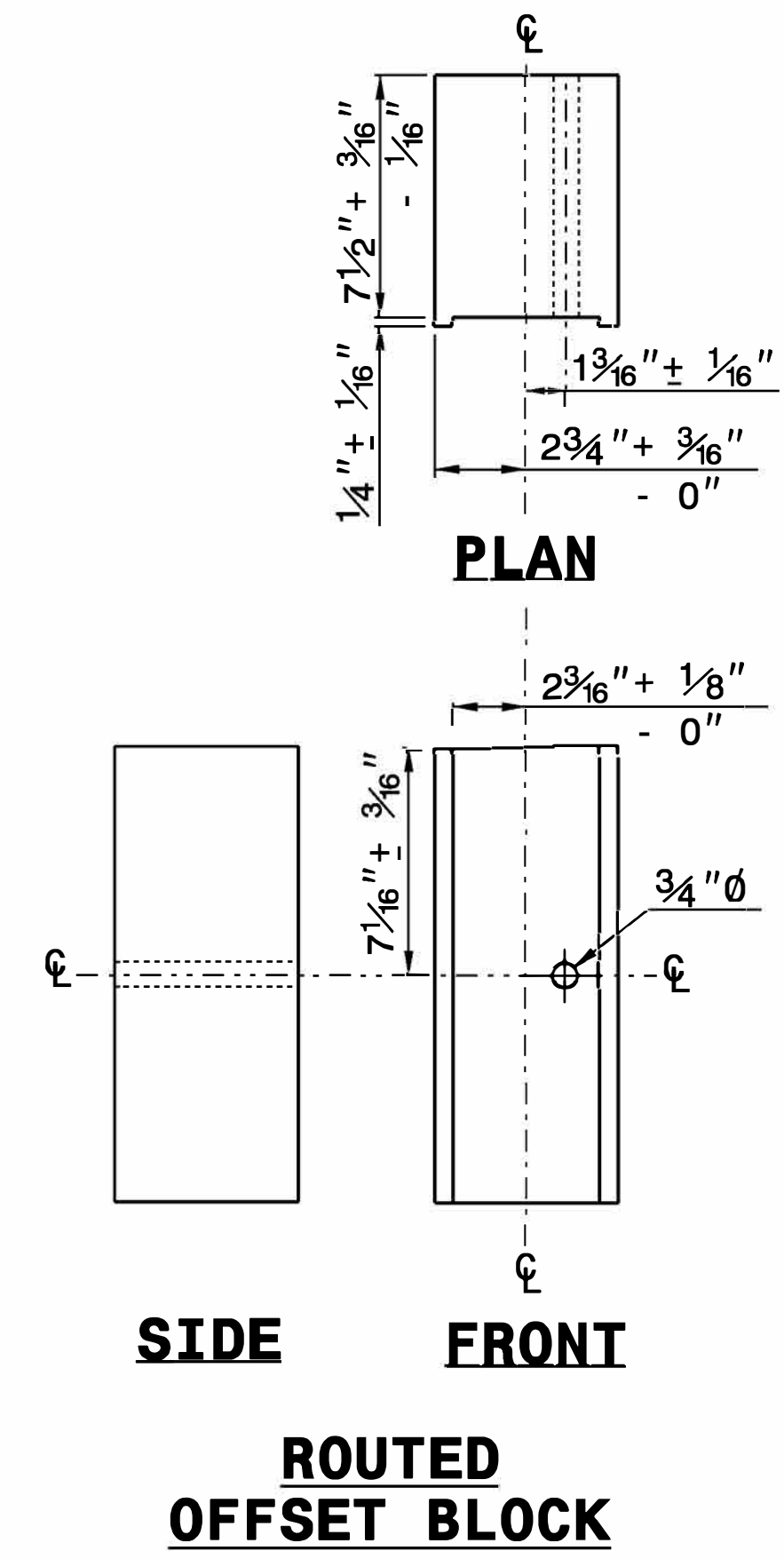
**WOOD OFFSET BLOCK  
(FOR WOOD POSTS)**

**STANDARD  
LINE POST**

**SHORT WOOD  
BREAKAWAY POST**



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

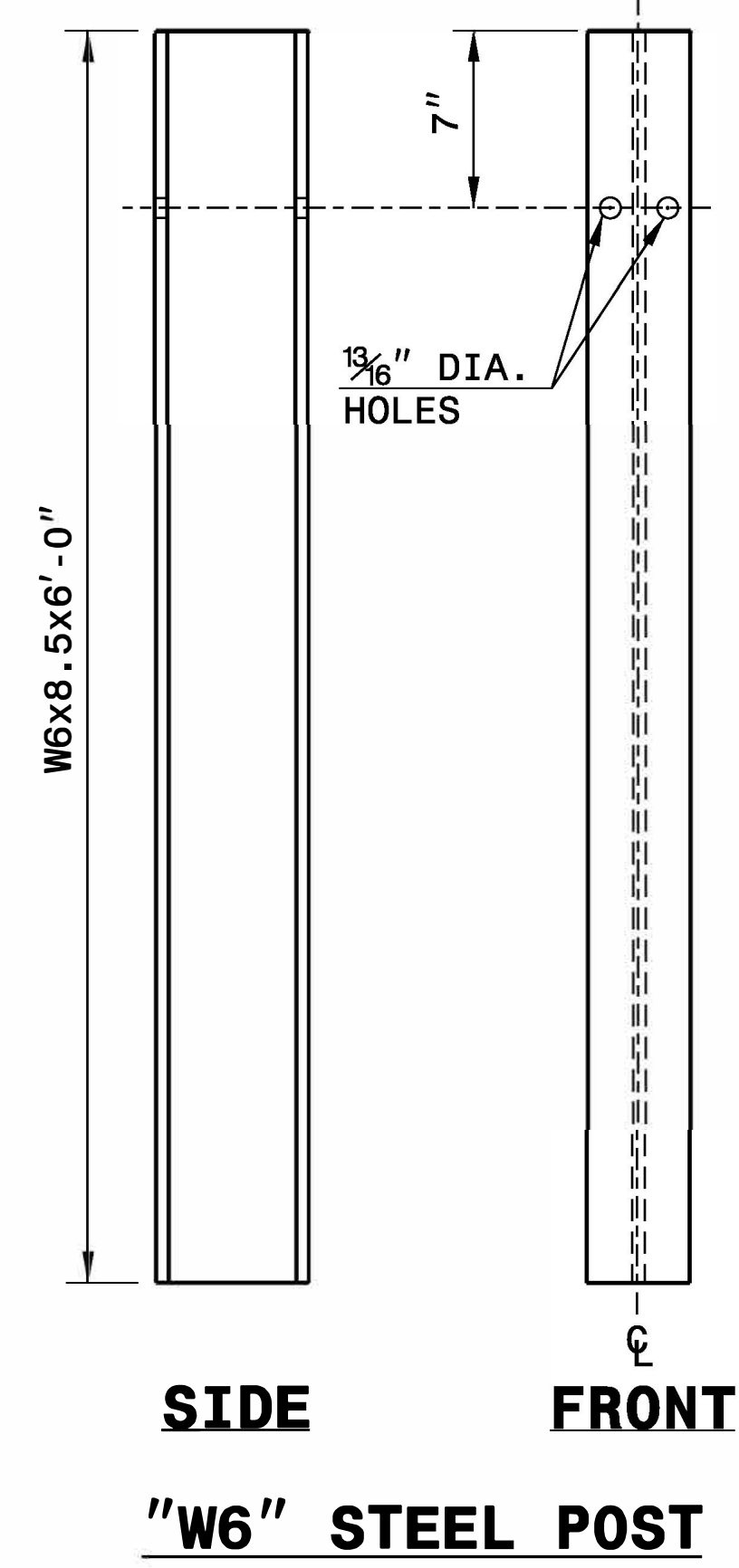


**PLAN**

**SIDE**

**FRONT**

**ROUTED  
OFFSET BLOCK**



**SIDE**

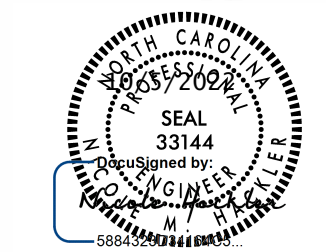
**FRONT**

**"W6" STEEL POST**

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.: \_\_\_\_\_

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

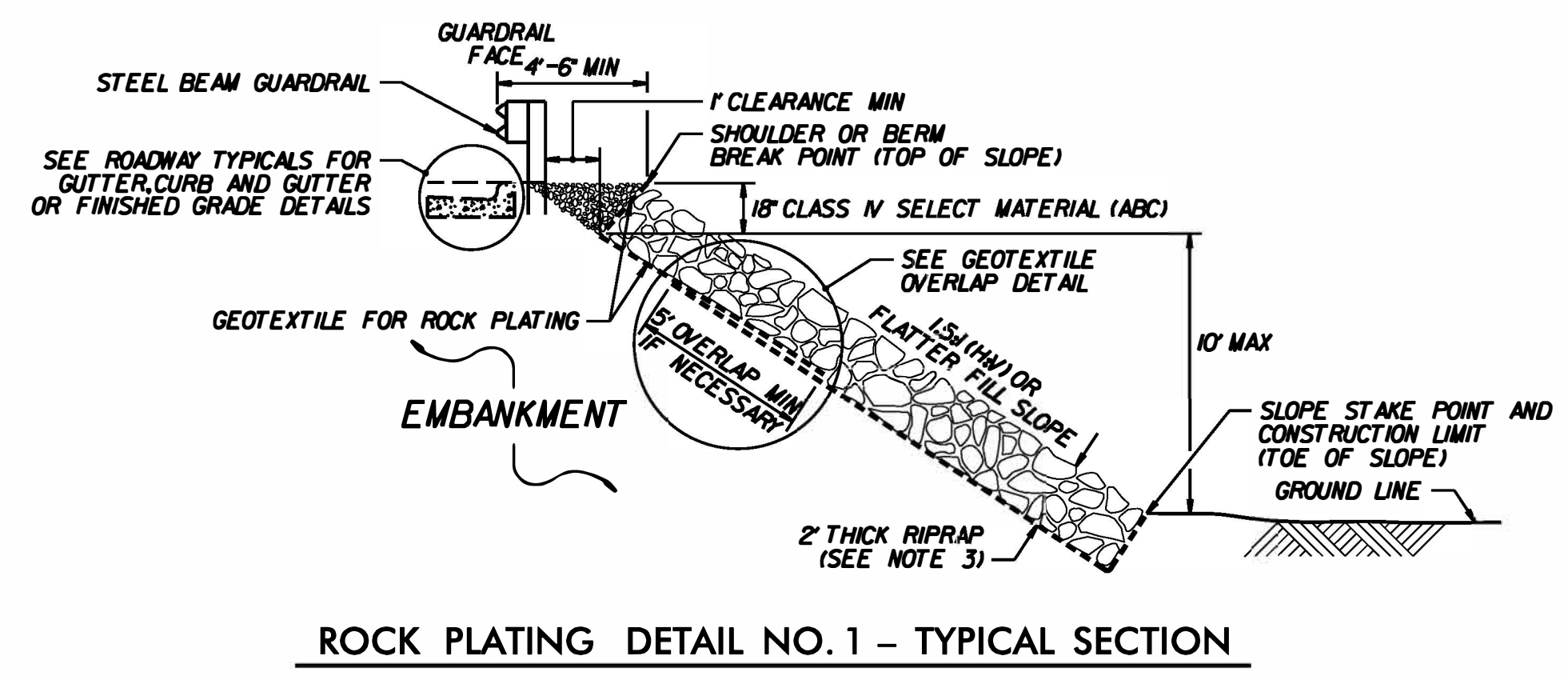
ROADWAY DETAIL DRAWING FOR  
**ROCK PLATING**

SHEET 1 OF 1  
**275D01**

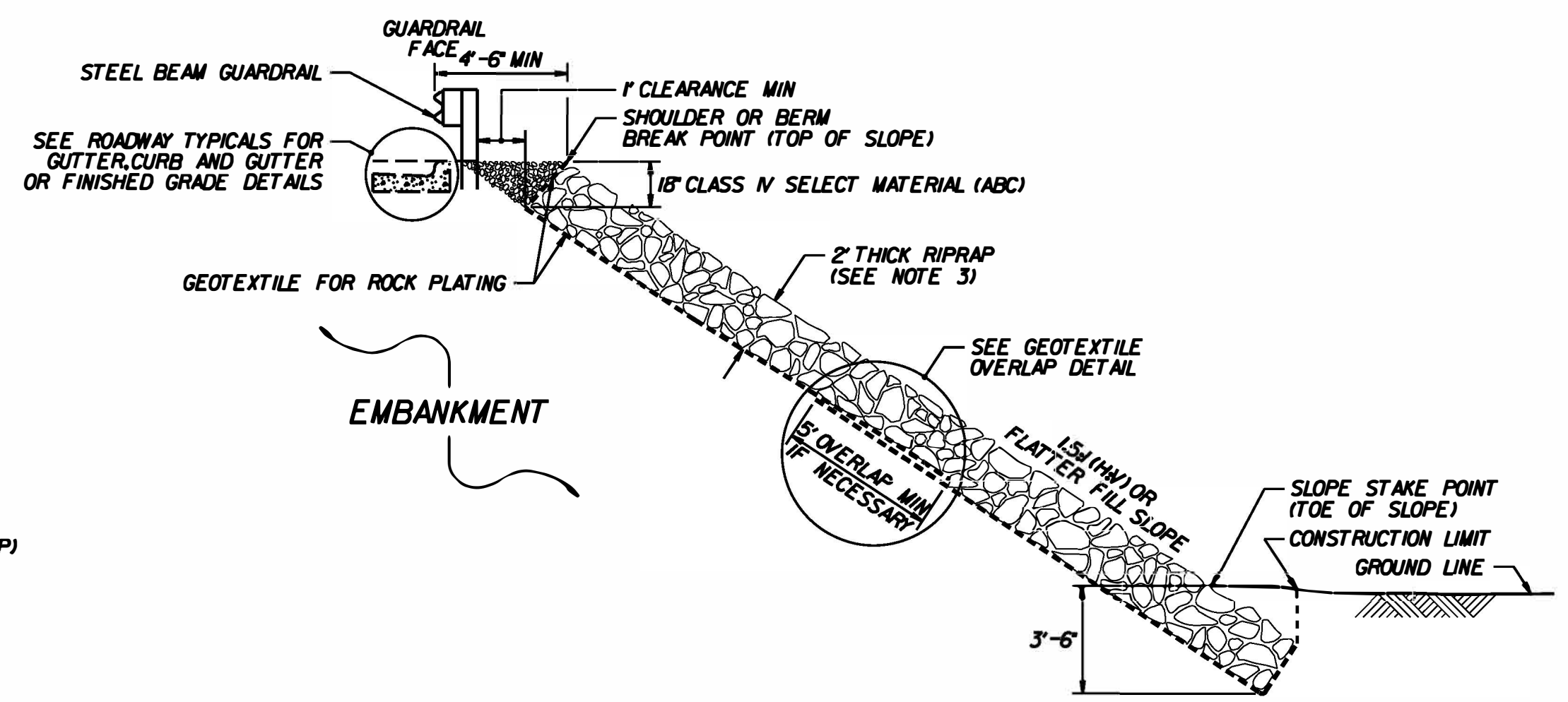
STATE OF NORTH CAROLINA  
DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR  
**ROCK PLATING**

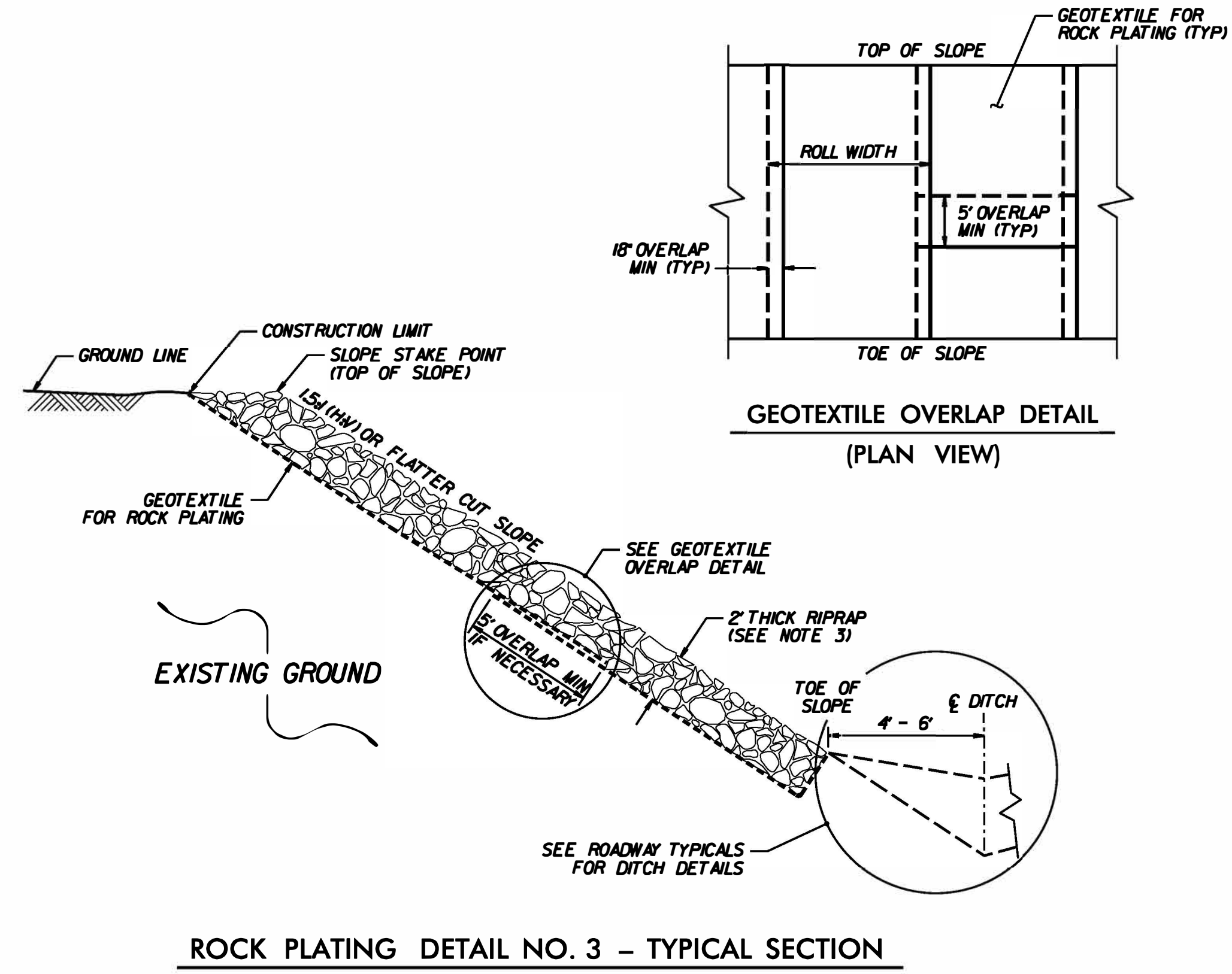
SHEET 1 OF 1  
**275D01**



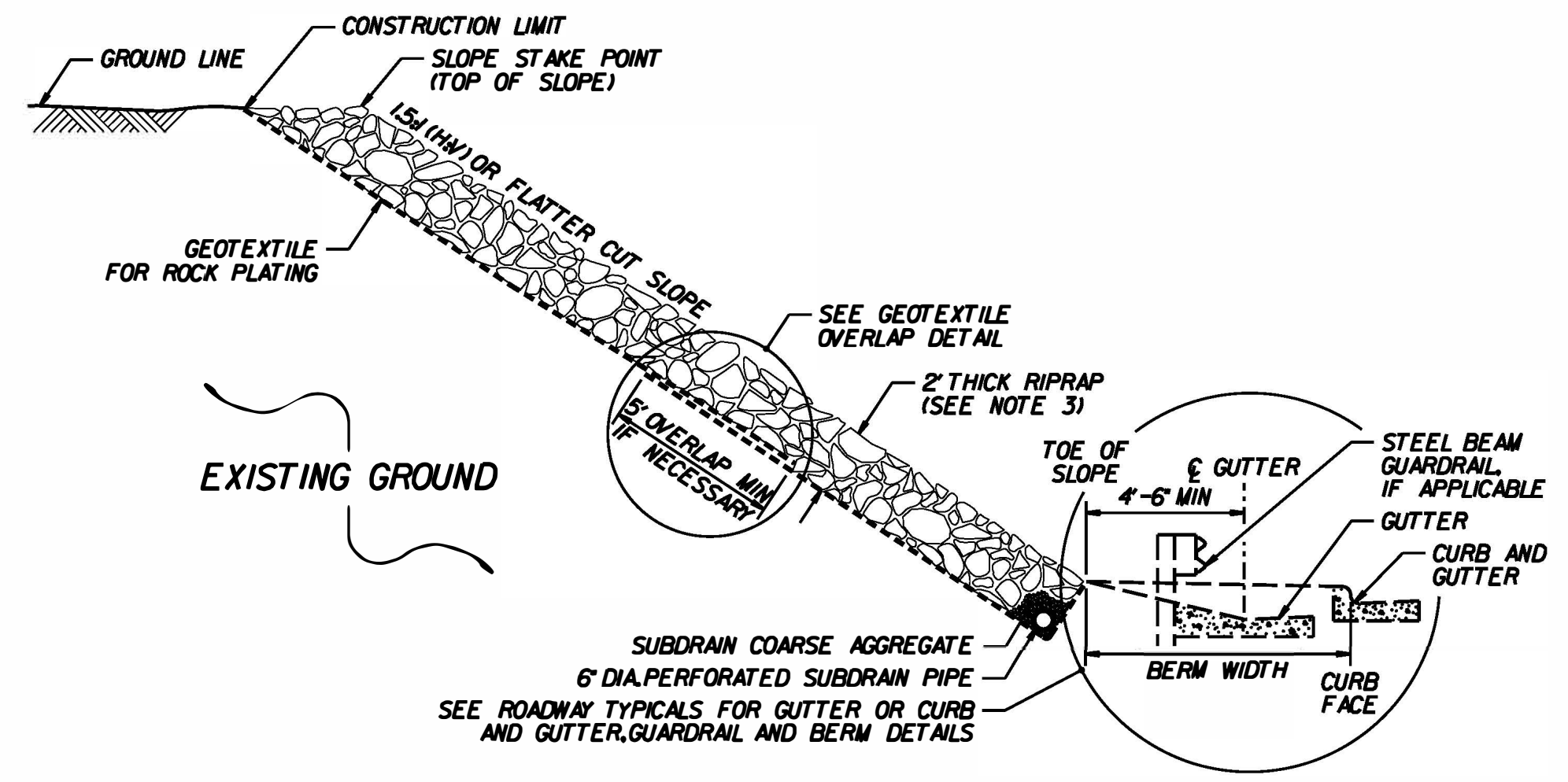
**ROCK PLATING DETAIL NO. 1 - TYPICAL SECTION**



**ROCK PLATING DETAIL NO. 2 - TYPICAL SECTION**

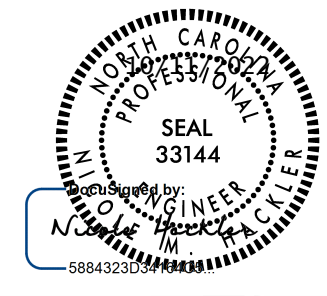


**ROCK PLATING DETAIL NO. 3 - TYPICAL SECTION**



**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.



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

**SEE TITLE BLOCK**

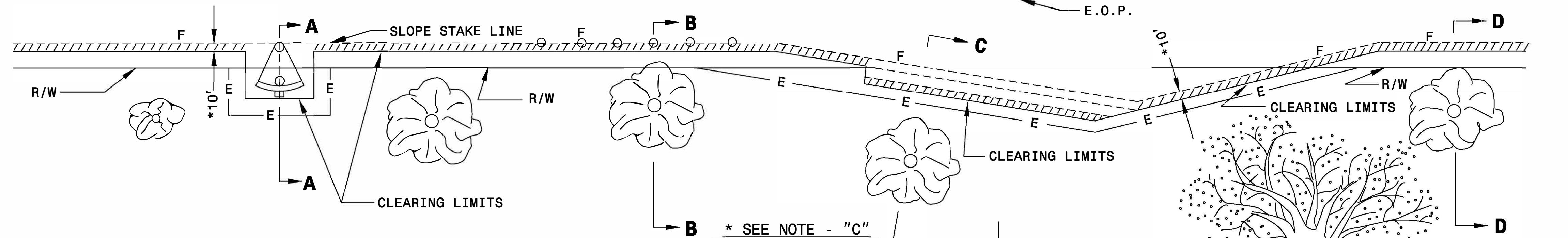
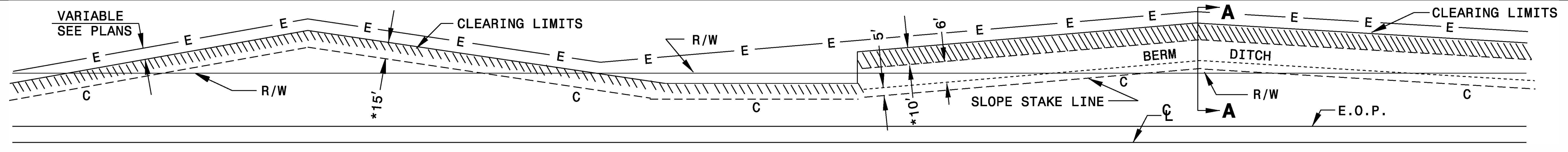
ORIGINAL BY: S. HIDDEN DATE: 03-11-22  
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 CHECKED BY: DATE: \_\_\_\_\_  
 FILE SPEC.: \_\_\_\_\_

SYSTEM GENERATED USER NAME

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

ENGLISH DETAIL DRAWING FOR METHOD OF CLEARING MODIFIED METHOD - III

SHEET 1 OF 1 200D03



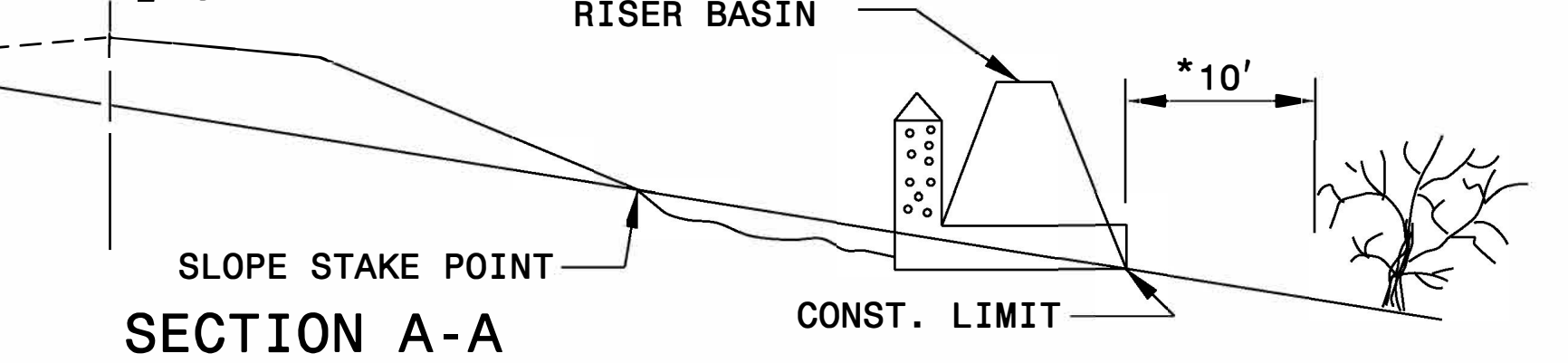
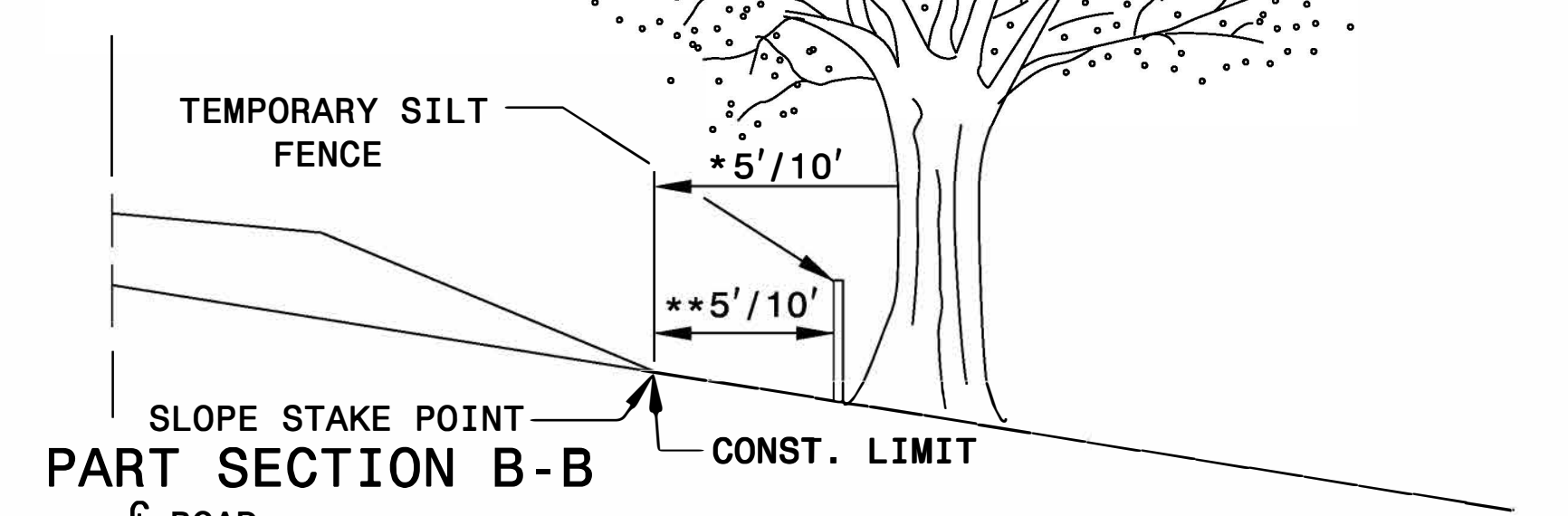
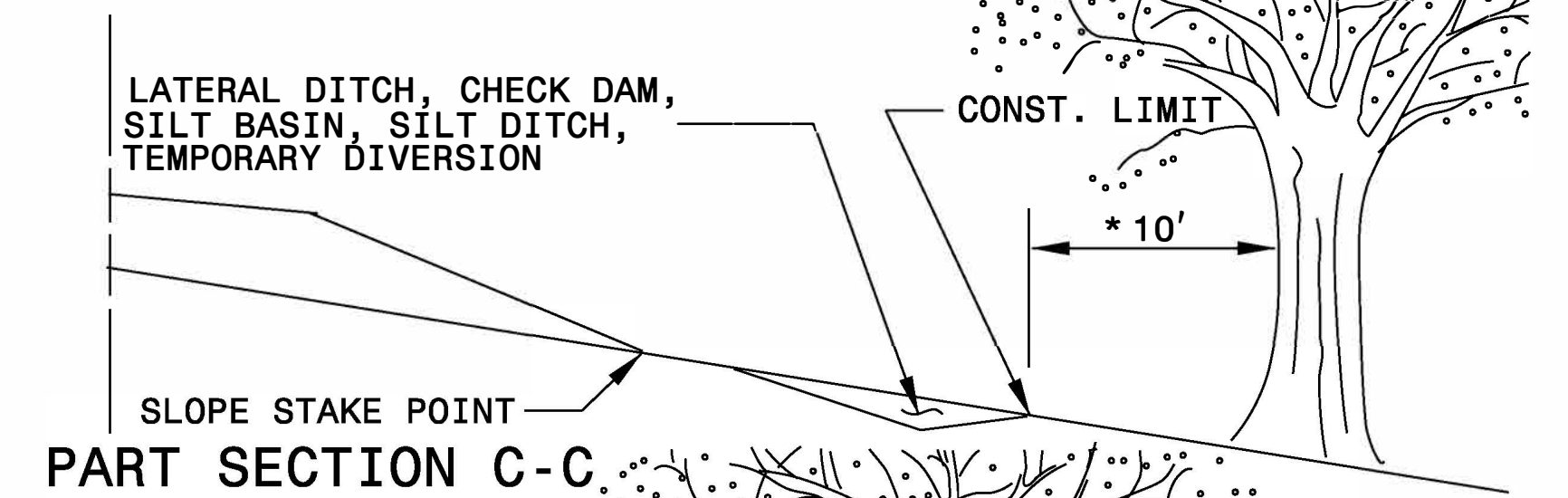
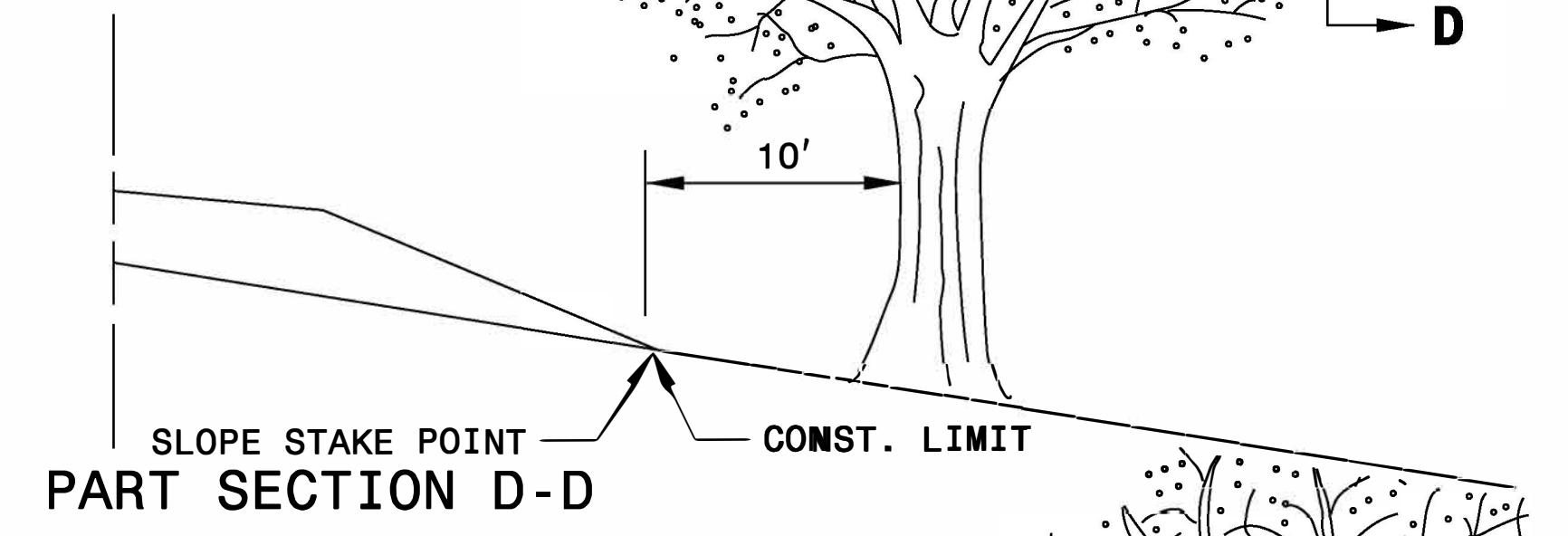
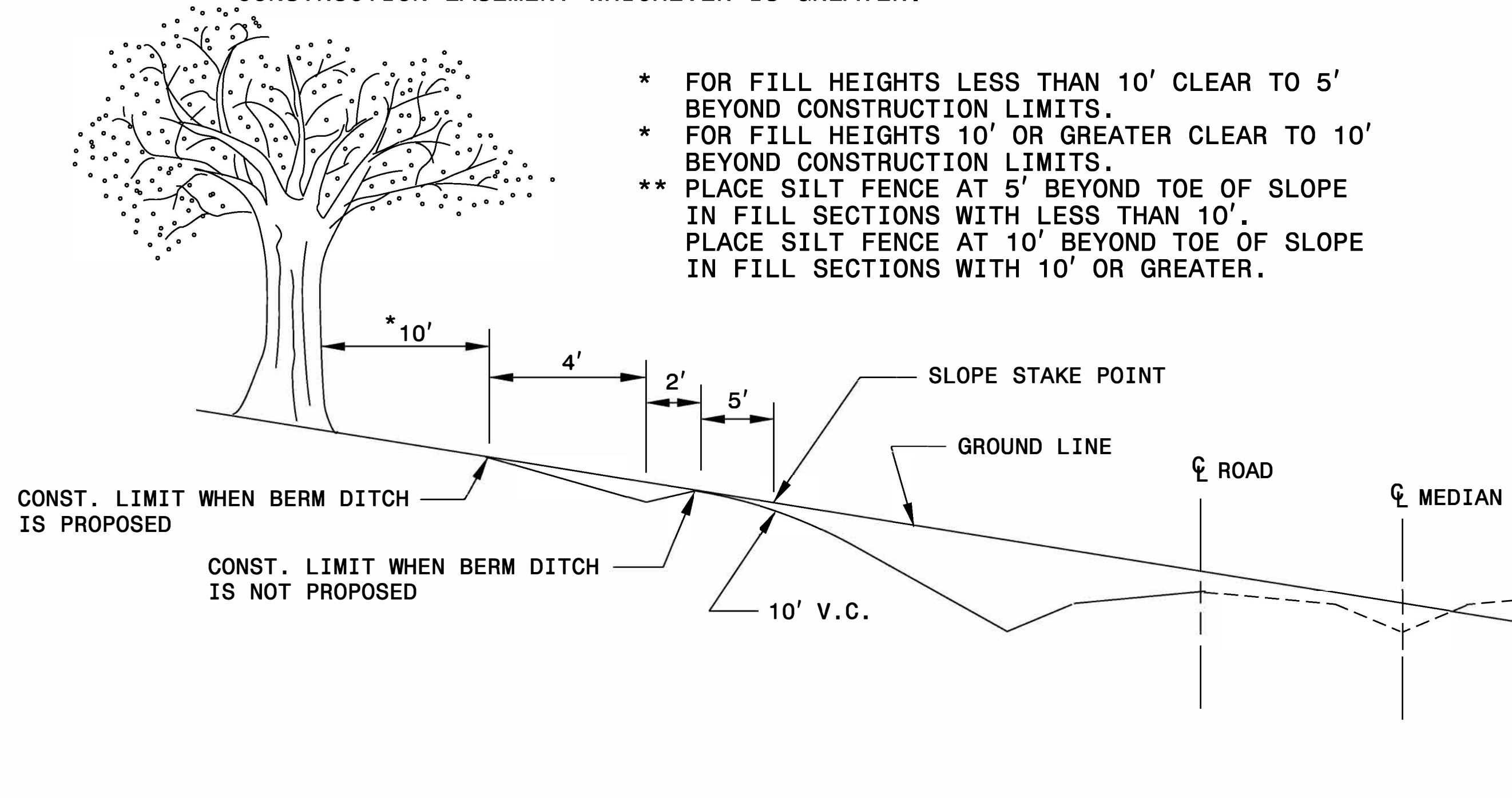
GENERAL NOTES:

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.

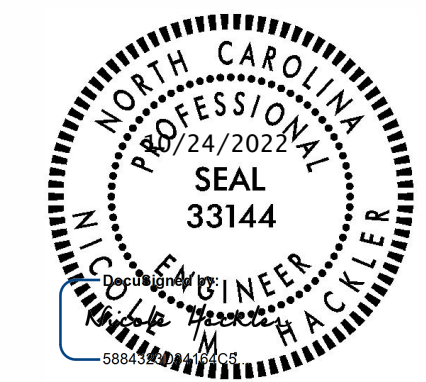


STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR METHOD OF CLEARING MODIFIED METHOD - III

SHEET 1 OF 1 200D03

05-DEC-2017 10:31 S:\Contracts\Contractors\Special\_Details\kkempf\english\0200D0301\_modified\_method III\_CandG.dgn Jhower-ton AT CSD-292595



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

**SEE TITLE BLOCK**

ORIGINAL BY: T.S.S. DATE: FEB. 2000  
 MODIFIED BY: K.A.K. DATE: AUG. 2016  
 CHECKED BY: DATE:  
 FILE SPEC.: kkempf/engLish/0200d301.dgn

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED







**SUMMARY OF SUBSURFACE DRAINAGE (LF)**

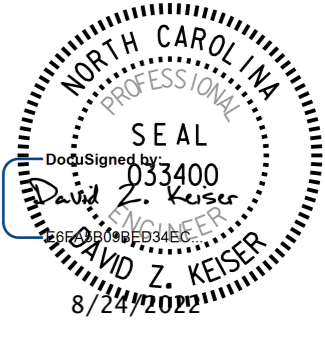
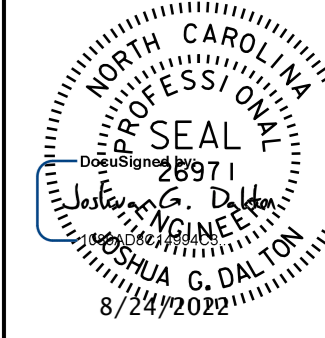


LINE	STATION	STATION	LOCATION	DRAIN TYPE	LENGTH (LF)
			CONTINGENCY	SD*	200
			SAY		200

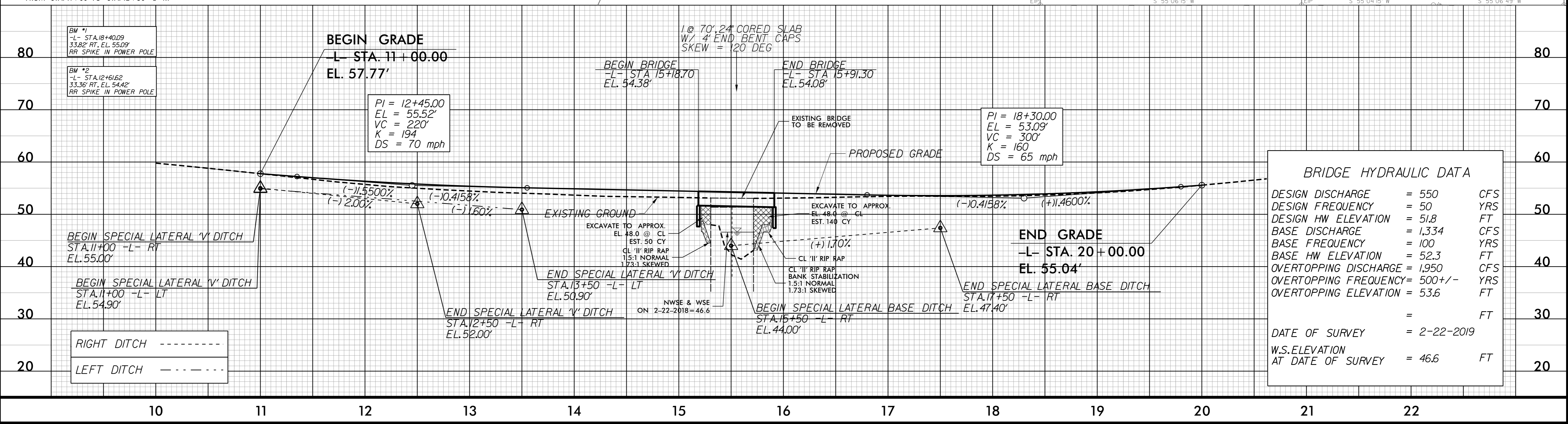
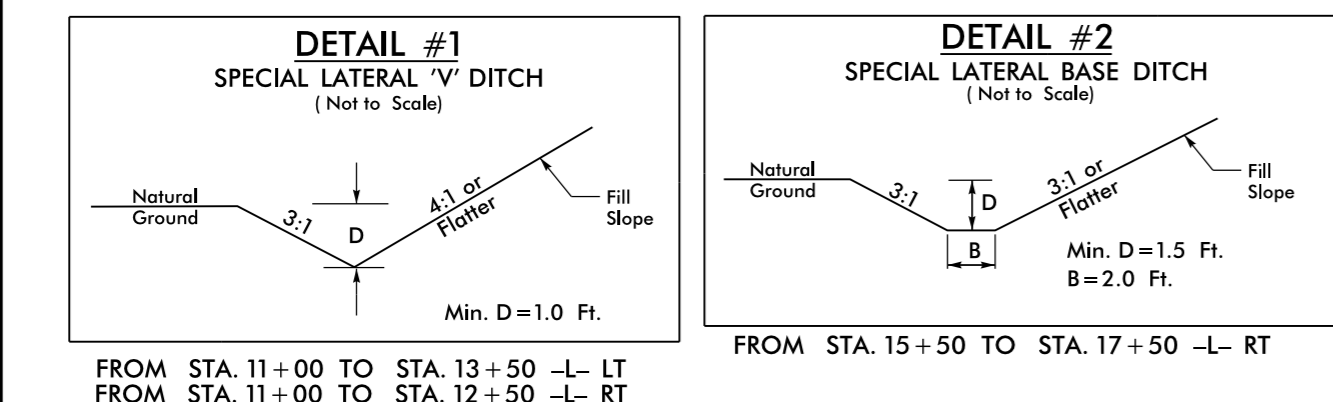
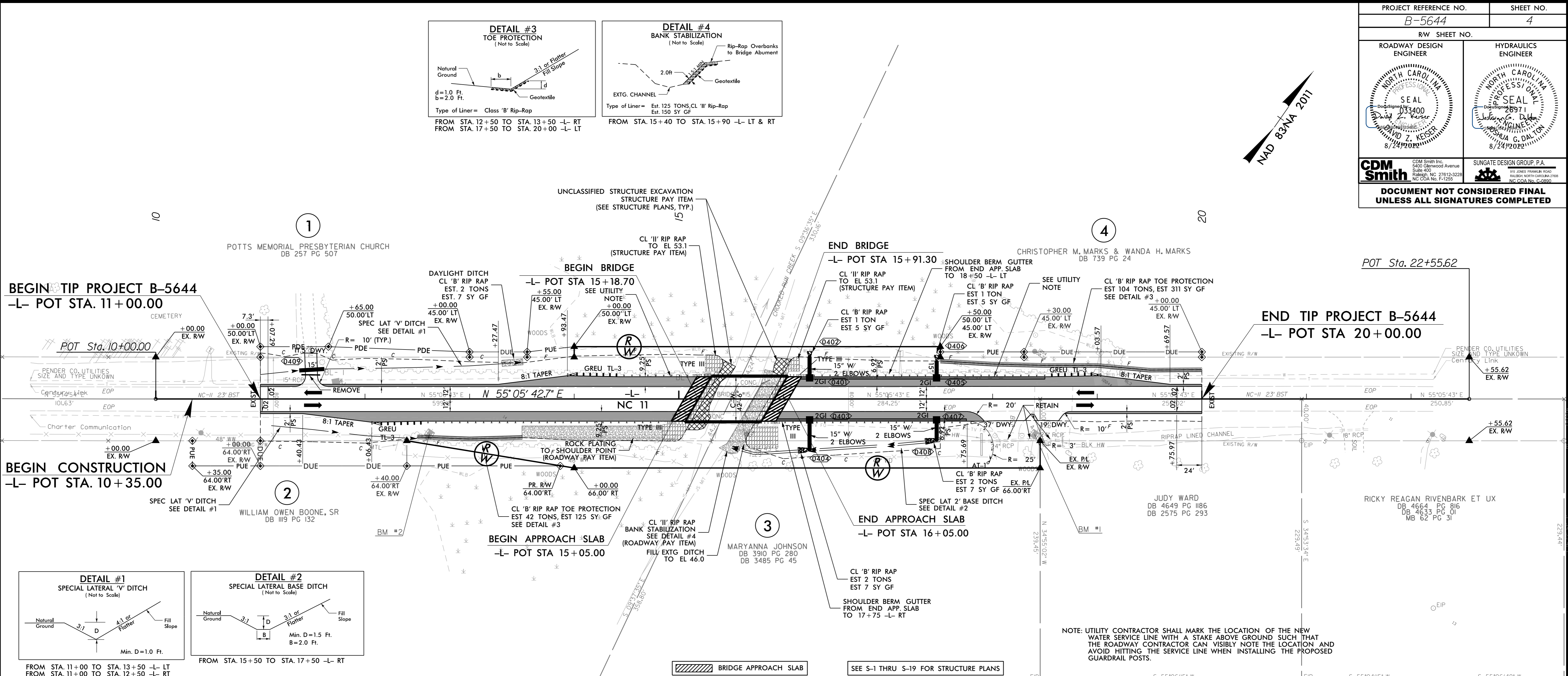
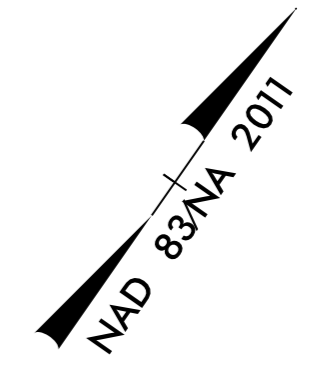
\*SD = SUBSURFACE DRAIN

**SUMMARY OF ROCK PLATING (SY)**

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	13+50 +/-	2:1	14+85 +/-	RT	1		230
							TOTAL SY	230

\*USE CLASS 1, 2, OR B RIPRAP IF RIPRAP CLASS IS NOT SHOWN FOR ROCK PLATING LOCATION.  
 SEE RSD 275.01 FOR ROCK PLATING DETAILS.

PROJECT REFERENCE NO. B-5644	SHEET NO. 4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
	
	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



DESIGN DISCHARGE	= 550	CFS
DESIGN FREQUENCY	= 50	YRS
DESIGN HW ELEVATION	= 51.8	FT
BASE DISCHARGE	= 1,334	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 52.3	FT
OVERTOPPING DISCHARGE	= 1,950	CFS
OVERTOPPING FREQUENCY	= 500 +/-	YRS
OVERTOPPING ELEVATION	= 53.6	FT
	=	FT
DATE OF SURVEY	= 2-22-2019	
W.S. ELEVATION AT DATE OF SURVEY	= 46.6	FT

REVISIONS

-SYSTEM: B644\_Pd1.psh\_04.dgn  
DATE: 2/22/2019 11:58:00 AM