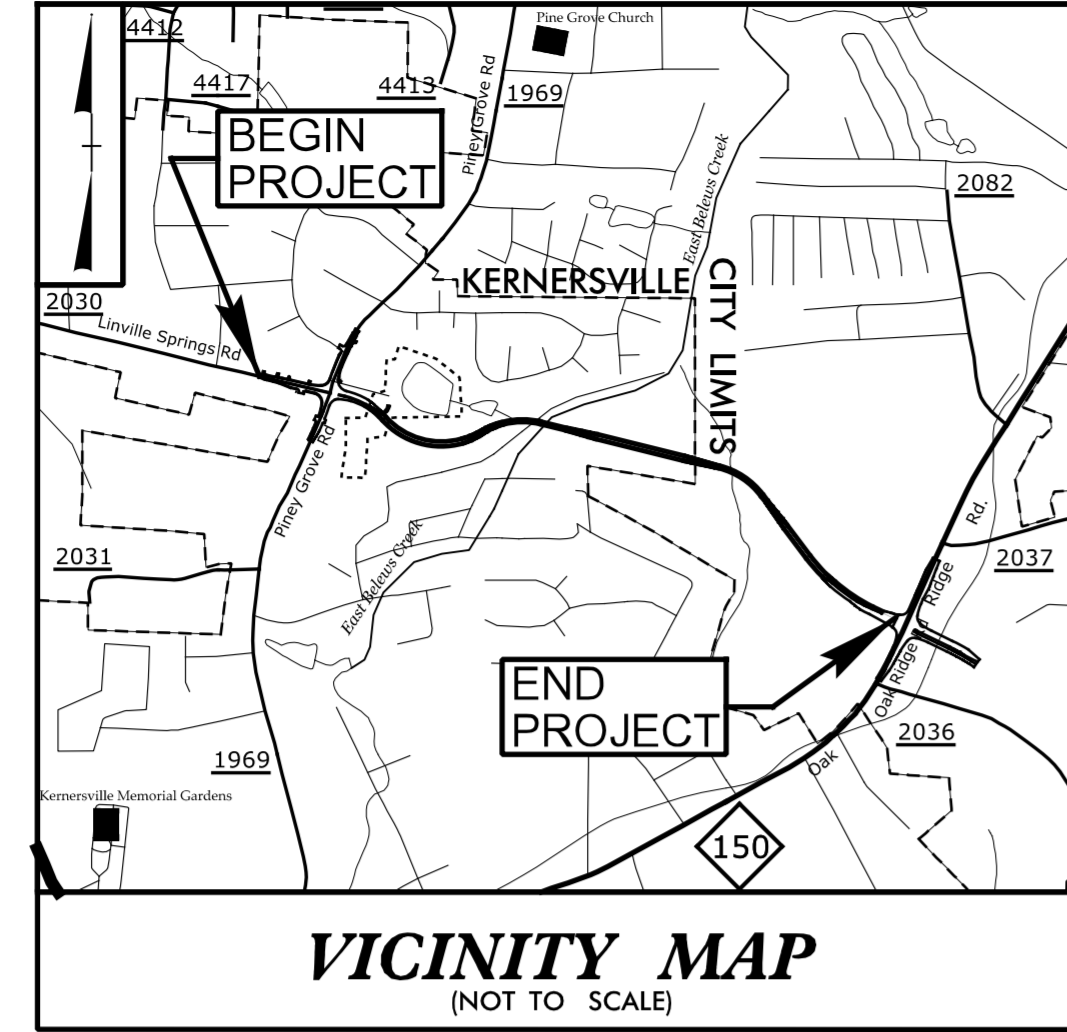


See Sheet 1A For Index of Sheets  
See Sheet 1B For Conventional Symbols

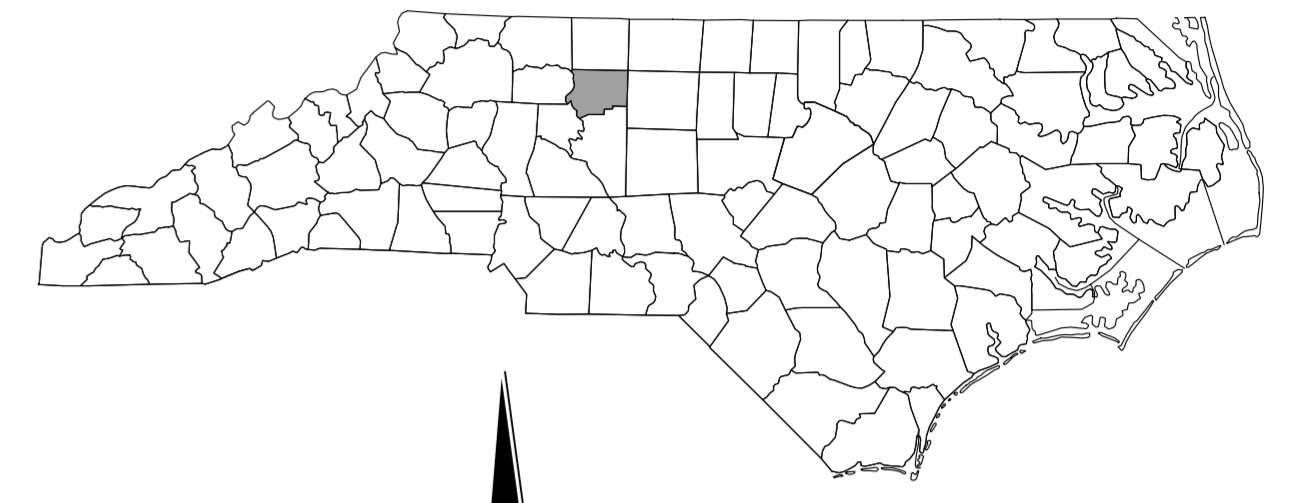


STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS  
**FORSYTH COUNTY**

**LOCATION: KERNERSVILLE - KERNERSVILLE LOOP  
FROM SR 1969 (PINEY GROVE RD) TO NC 150  
(N. MAIN ST.)**

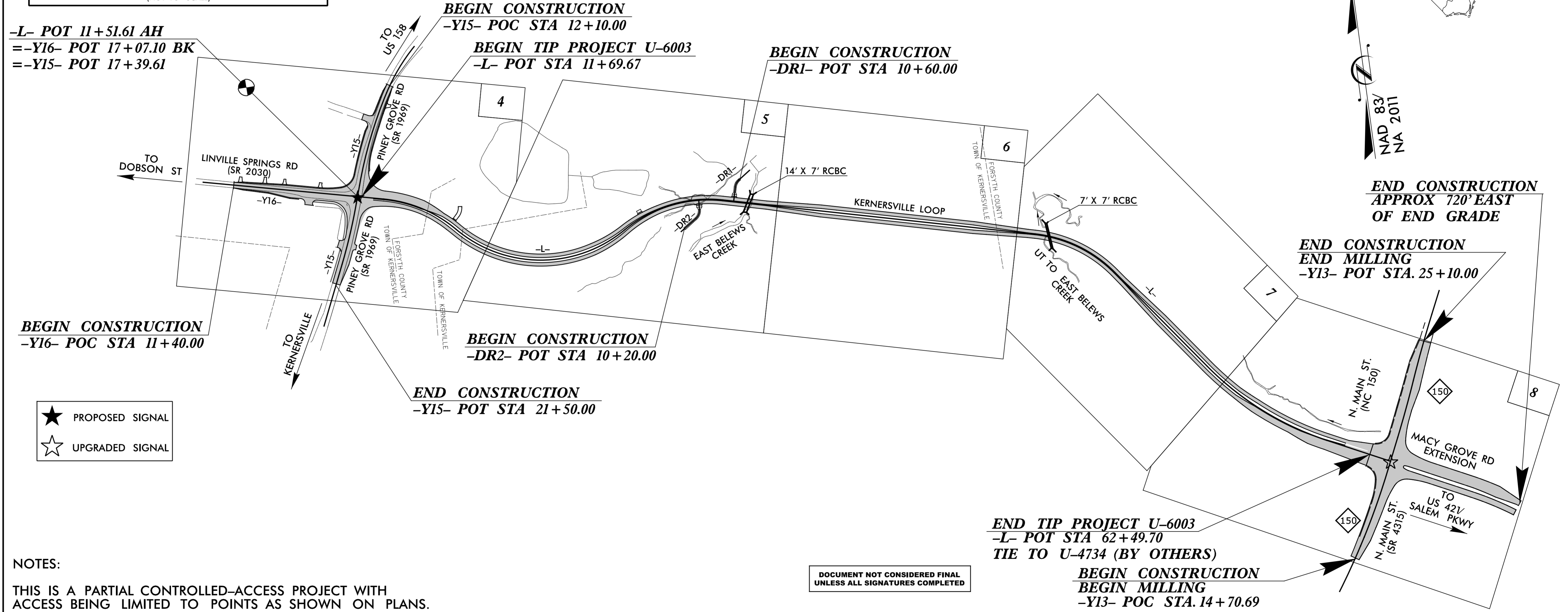
**TYPE OF WORK: GRADING, PAVING, SIGNALS, DRAINAGE AND  
STRUCTURES**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-6003	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
47138.1.1		PE	
47138.2.1		RWUTILS	
47138.3.1		CONST	



**TIP PROJECT: U-6003**

**CONTRACT: C204880**



**-L- POT 11+51.61 AH**  
=-Y16- POT 17+07.10 BK  
=-Y15- POT 17+39.61

**BEGIN CONSTRUCTION**  
-Y15- POC STA 12+10.00

**BEGIN TIP PROJECT U-6003**  
-L- POT STA 11+69.67

**BEGIN CONSTRUCTION**  
-DRI- POT STA 10+60.00

**BEGIN CONSTRUCTION**  
-Y16- POC STA 11+40.00

**BEGIN CONSTRUCTION**  
-DR2- POT STA 10+20.00

**END CONSTRUCTION**  
-Y15- POT STA 21+50.00

**END CONSTRUCTION**  
APPROX 720° EAST  
OF END GRADE

**END CONSTRUCTION**  
END MILLING  
-Y13- POT STA. 25+10.00

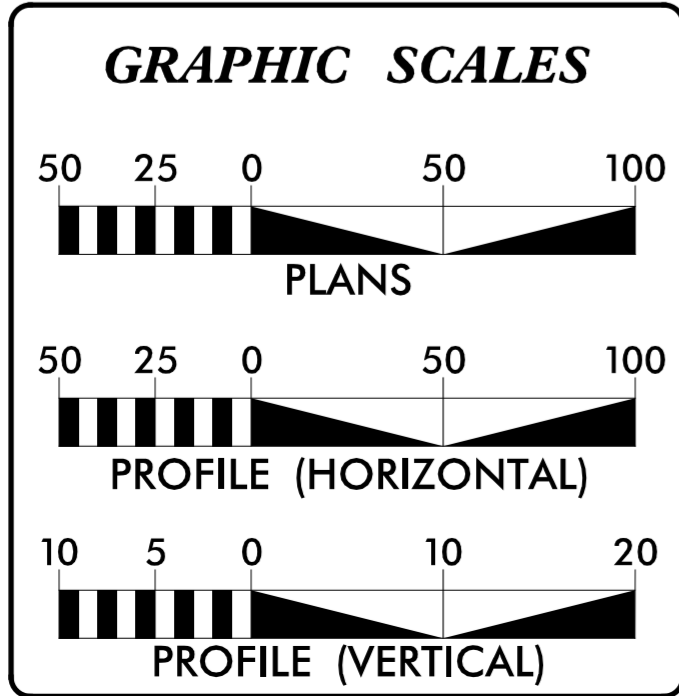
**END TIP PROJECT U-6003**  
-L- POT STA 62+49.70  
TIE TO U-4734 (BY OTHERS)

**BEGIN CONSTRUCTION**  
BEGIN MILLING  
-Y13- POC STA. 14+70.69

**NOTES:**

THIS IS A PARTIAL CONTROLLED-ACCESS PROJECT WITH ACCESS BEING LIMITED TO POINTS AS SHOWN ON PLANS.

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED



**DESIGN DATA**

ADT (2023)=	6,360
ADT (2043)=	11,060
K =	10 %
D =	55 %
T =	3 % *
V =	40 MPH
* TTST = 1% DUAL 2%	
FUNC CLASS =	ARTERIAL REGIONAL TIER

**PROJECT LENGTH**

LENGTH ROADWAY TIP PROJECT U-6003 =	0.962 MILES
TOTAL LENGTH TIP PROJECT U-6003 =	0.962 MILES

Prepared in the Office of:  
**HDR** HDR Engineering, Inc. of the Carolinas  
555 Fayetteville St, Suite 900 Raleigh, N.C. 27601  
N.C.B.E.L.S. License Number: F-0116

2018 STANDARD SPECIFICATIONS

**RIGHT OF WAY DATE:**  
NOVEMBER 29, 2018

**LETTING DATE:**  
NOVEMBER 21, 2023

<b>PHILLIP E. ROGERS, PE</b> PROJECT ENGINEER
<b>ALEXANDER D. SNIDER, PE</b> PROJECT DESIGN ENGINEER
<b>CONNIE JAMES, PE</b> NCDOT CONTACT

**HYDRAULICS ENGINEER**  
9/12/2023

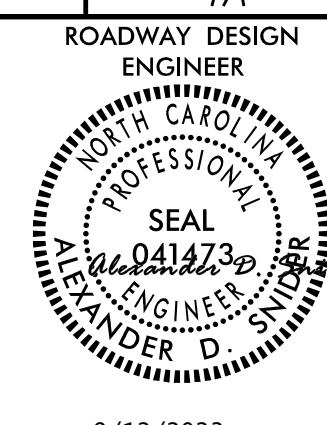
**ROADWAY DESIGN ENGINEER**  
9/12/2023

Signature: Alexander D. Snider

**DIVISION OF HIGHWAYS**

STATE OF NORTH CAROLINA

8/17/99

PROJECT REFERENCE NO. <i>U-6003</i>	SHEET NO. <i>1A</i>
ROADWAY DESIGN ENGINEER	
	
9/12/2023	
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	

2018 SPECIFICATIONS

EFFECTIVE: 01-16-2018  
REVISED:

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:

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	ROADWAY DETAILS
2C-1 THRU 2C-4	SPECIAL DETAILS
3B-1 THRU 3B-2	ROADWAY SUMMARIES
3D-1 THRU 3D-4	DRAINAGE SUMMARIES
3G-1	GEOTECHNICAL SUMMARIES
3P-1	PARCEL INDEX SHEET
4 THRU 11	PLAN AND PROFILE SHEET
RW01 THRU RW08	ROW PLAN SHEETS
TMP-1 THRU TMP-5	TRANSPORTATION MANAGEMENT PLAN SHEETS
PMP-1 THRU PMP-6	PAVEMENT MARKING PLAN SHEETS
EC-1 THRU EC-13	EROSION CONTROL PLAN SHEETS
SIGN-1 THRU SIGN-5	SIGNING PLAN SHEETS
SIG-1.0 THRU SIG-4.2	SIGNAL PLAN SHEETS
M1 THRU M8	METAL POLE SHEETS
SCP-1 THRU SCP-6	SIGNAL COMMUNICATION PLAN SHEETS
UC-1 THRU UC-9	UTILITY CONSTRUCTION PLAN SHEETS
UD-1 THRU UD-6	UTILITY BY OTHERS PLAN SHEETS
X-0	CROSS-SECTION SUMMARY SHEET
X-1 THRU X-39	CROSS-SECTIONS
14' X 7' CULVERT S-1 THRU S-4	STRUCTURE PLAN SHEETS
7' X 7' CULVERT S-1 THRU S-4	STRUCTURE PLAN SHEETS

GENERAL NOTES:

**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. 225.05 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 & NO. 560.02

**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.

**BERM DITCHES:**  
BERM DITCHES SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 240.01 AT LOCATIONS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

**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. 848.02 USING 3 FOOT RADII OR RADII AS SHOWN ON THE PLANS. LOCATIONS OF DRIVES WILL BE AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER. DRIVEWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. 848.03 AT LOCATIONS SHOWN ON PLANS OR AS DIRECTED BY THE ENGINEER.

**STREET TURNOUT:**  
STREET RETURNS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 848.04 USING THE RADII NOTED ON PLANS.

**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.

**SUBSURFACE PLANS:**  
NO SUBSURFACE PLANS ARE AVAILABLE ON THIS PROJECT. THE CONTRACTOR SHOULD MAKE HIS OWN INVESTIGATION AS TO THE SUBSURFACE CONDITIONS.

**UTILITIES:**  
UTILITY OWNERS ON THIS PROJECT ARE DUKE ENERGY, BRIGHTSPEED, LUMOS, SPECTRUM, PIEDMONT NATURAL GAS  
ANY RELOCATION OF EXISTING 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 CONTRACT.

**CURB RAMPS**  
CURB RAMPS ARE SHOWN ON THE PLANS AT APPROXIMATE LOCATIONS.  
CONSTRUCT ALL CURB RAMPS ACCORDANCE WITH STD 848.05 and/or 848.06.

STD.NO.	TITLE
<b>DIVISION 2 - EARTHWORK</b>	
200.03	Method of Clearing - Method III
225.02	Guide for Grading Subgrade - Secondary and Local
225.05	Method of Obtaining Superelevation - Divided Highways
225.06	Method of Grading Sight Distance at Intersections
<b>DIVISION 3 - PIPE CULVERTS</b>	
300.01	Method of Pipe Installation
310.02	Parallel Pipe End Section - Precast Concrete Section for 15" to 24" Pipe
310.03	Cross Pipe End Section - Precast Concrete Section for 18" to 30" Pipe
310.04	Parallel Pipe End Section - Prefabricated Steel Section for 15" to 24" Pipe
310.05	Cross Pipe End Section - Prefabricated Steel Section for 18" to 30" Pipe
310.10	Driveway Pipe Construction
<b>DIVISION 5 - SUBGRADE, BASES AND SHOULDERS</b>	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
560.02	Method of Shoulder Construction - High Side of Superelevated Curve - Method II
<b>DIVISION 6 - ASPHALT BASES AND PAVEMENTS</b>	
654.01	Pavement Repairs
<b>DIVISION 8 - INCIDENTALS</b>	
806.01	Concrete Right-of-Way Marker
806.03	Concrete Control of Access Marker
815.02	Subsurface Drain
838.01	Concrete Endwall for Single and Double Pipe Culverts - 15" thru 48" Pipe 90 Skew
838.11	Brick Endwall for Single and Double Pipe Culverts - 15" thru 48" Pipe 90 Skew
840.00	Concrete Base Pad for Drainage Structures
840.01	Brick Catch Basin - 12" thru 54" Pipe
840.02	Concrete Catch Basin - 12" thru 54" Pipe
840.03	Frame, Grates and Hood - for Use on Standard Catch Basin
840.14	Concrete Drop Inlet - 12" thru 30" Pipe
840.15	Brick Drop Inlet - 12" thru 30" Pipe
840.16	Drop Inlet Frame and Grates - for use with Std. Dwg 840.14 and 840.15
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
840.31	Concrete Junction Box - 12" thru 66" Pipe
840.32	Brick Junction Box - 12" thru 66" Pipe
840.54	Manhole Frame and Cover
840.66	Drainage Structure Steps
846.01	Concrete Curb, Gutter and Curb & Gutter
848.01	Concrete Sidewalk
848.02	Driveway Turnout - Radius Type
848.05	Curb Ramp - Proposed Curb & Gutter
850.10	Guide for Berm Drainage Outlet - 15" and 18" Pipe
852.01	Concrete Islands
852.04	Method for Placement of Drop Inlets in Grassed Median - Using 1'-6" Curb and Gutter
852.05	Median Curb for Catch Basin - for Use with 1'-6" Curb and Gutter
852.06	Method for Placement of Drop Inlets in Concrete Islands
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units
866.02	Woven Wire Fence - with Wood Post
876.01	Rip Rap in Channels
876.02	Guide for Rip Rap at Pipe Outlets
876.04	Drainage Ditches with Class 'B' Rip Rap

9/12/2023 11:21:41 AM

# 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	(23)
Existing Fence Line	-x-x-x-
Proposed Woven Wire Fence	-o-o-o-
Proposed Chain Link Fence	-□-□-□-
Proposed Barbed Wire Fence	-◇-◇-◇-
Existing Wetland Boundary	-NLB-
Proposed Wetland Boundary	-NLB-
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	_____
Permanent Easement 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	CR
Existing Metal Guardrail	T T T T
Proposed Guardrail	T T T 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	⊕
H-Frame Pole	●
U/G Power Line Test Hole (SUE - LOS A)*	⊕
U/G Power Line (SUE - LOS B)*	-F-
U/G Power Line (SUE - LOS C)*	-F-
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	⊕
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)*	-W-
U/G Water Line (SUE - LOS C)*	-W-
U/G Water Line (SUE - LOS D)*	-W-
Above Ground Water Line	A/G Water

### 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)*	-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:

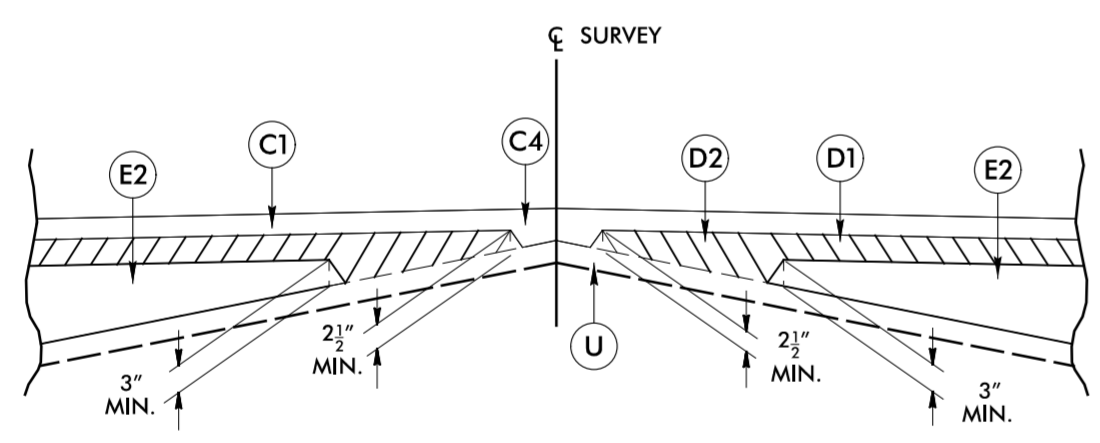
Utility Pole	●
Utility Pole with Base	⊕
Utility Located Object	○
Utility Traffic Signal Box	⊕
Utility Unknown U/G Line (SUE - LOS B)*	-UTL-
U/G Tank; Water, Gas, Oil	▭
Underground Storage Tank, Approx. Loc.	(UST)
A/G Tank; Water, Gas, Oil	▭
Geoenvironmental Boring	⊕
Abandoned According to Utility Records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

6/2/2023

9/25/2023 P:\06003.r\dj\_tup.dgn  
17:35:33

FINAL PAVEMENT SCHEDULE (BASED ON U-6003 PAVEMENT DESIGN; JULY 31, 2023)	
C1	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. IN ONE LAYER.
C2	PROP. APPROX. 2.0" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C3	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C4	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1 1/2" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 1" IN DEPTH OR GREATER THAN 1 1/2" IN DEPTH.
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 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" 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 1/2" IN DEPTH.
K	12" CLASS IV SUBGRADE STABILIZATION
N	GEOTEXTILE FOR SOIL STABILIZATION
R1	PROP. 2'-6" CONCRETE CURB & GUTTER
R2	PROP. 2'-9" CONCRETE CURB & GUTTER
R3	PROP. 5" MONOLITHIC CONCRETE ISLAND (KEYED-IN) (SEE PLANS FOR LOCATION)
S	4" CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	1.5" MILLING
V2	4" MILLING
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL ON THIS PAGE.)

NOTE: ALL PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE  
 NOTE: USE I19.0C INTERMEDIATE COURSE FOR 2' X 4' BENCH MILL PAVING IN FRONT OF PROPOSED CURB & GUTTER

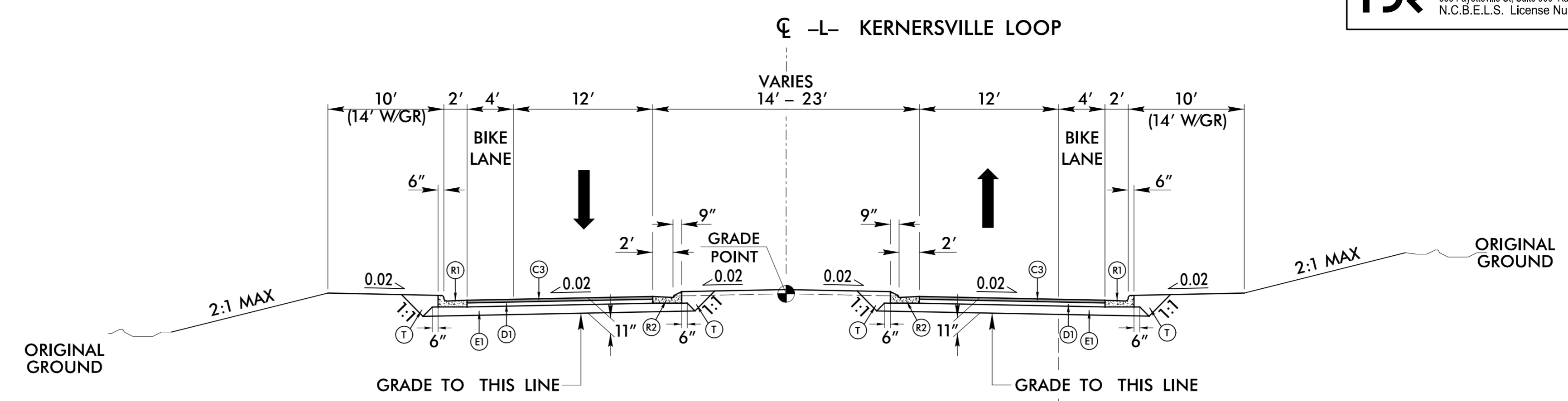


**W** Detail Showing Method of Wedging  
FOR -Y15- & -Y16-

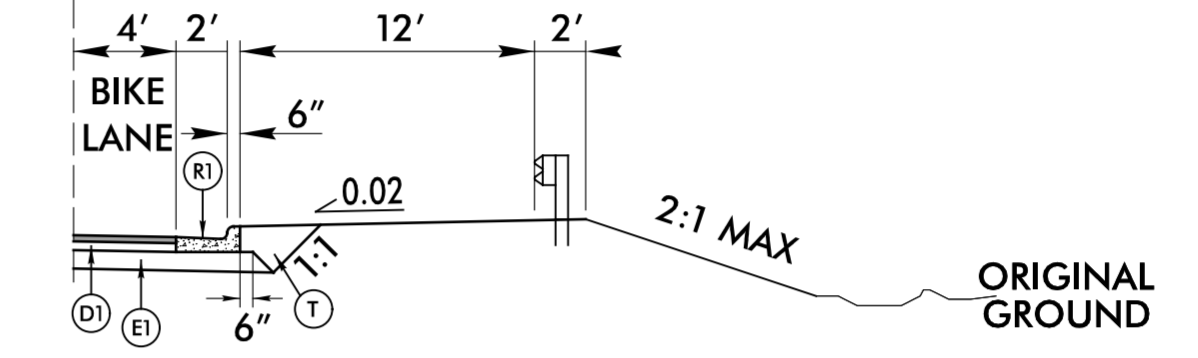
**HDR** HDR Engineering, Inc. of the Carolinas  
555 Fayetteville St., Suite 900, Raleigh, N.C. 27601  
N.C.B.E.L.S. License Number: F-0116

PROJECT REFERENCE NO. <b>U-6003</b>	SHEET NO. <b>2A-1</b>
ROADWAY DESIGN ENGINEER <i>Alexander D. Sander</i> 041473 9/25/2023	PAVEMENT DESIGN ENGINEER <i>Connie K. James</i> 018969 9/25/2023

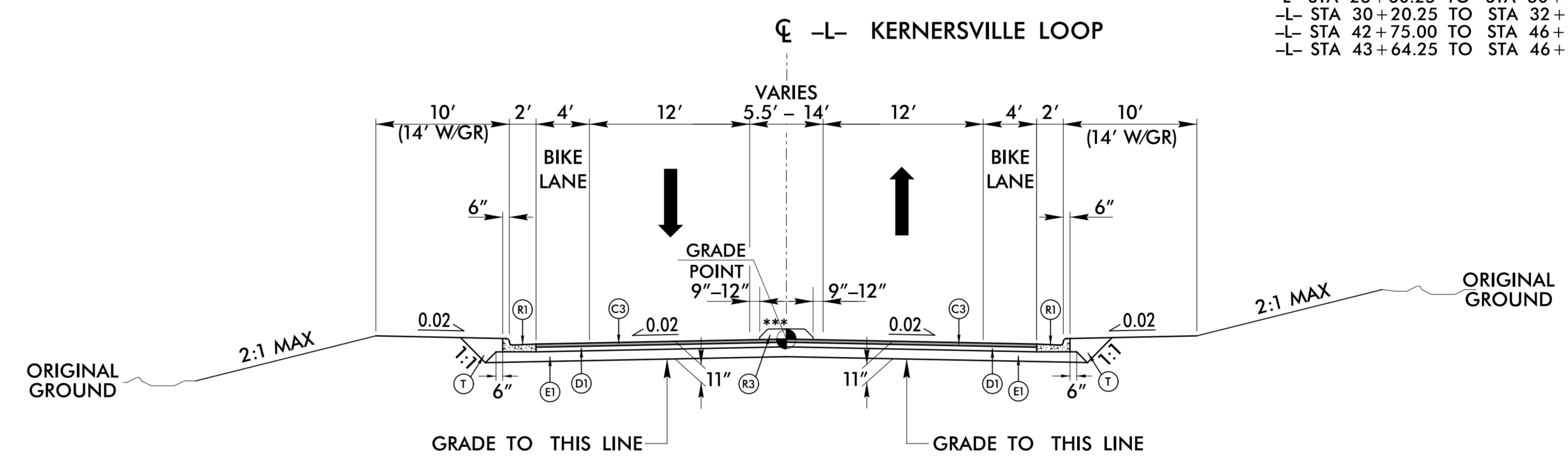
**DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED**



**TYPICAL SECTION NO. 1**



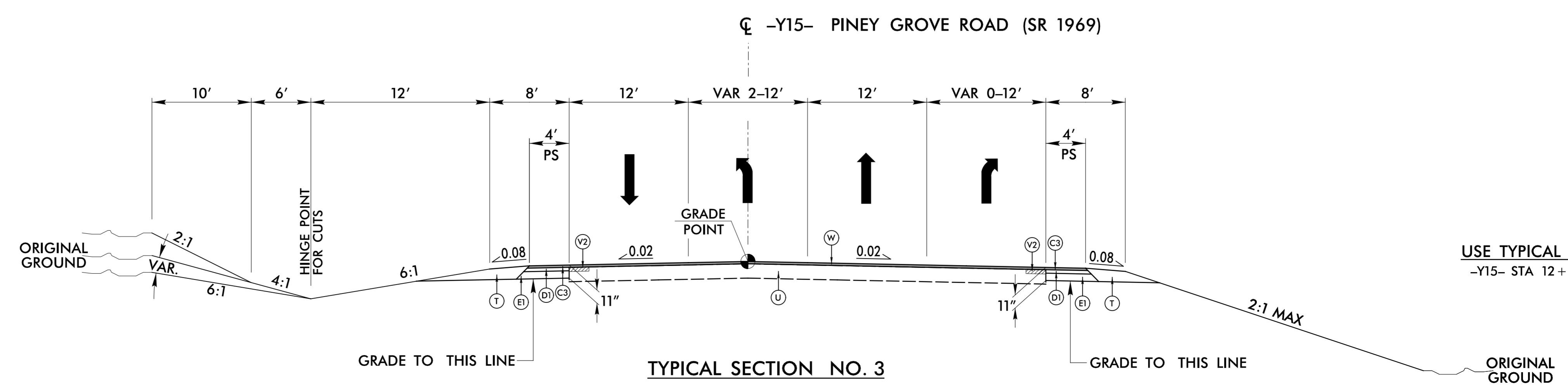
USE GUARDRAIL DETAIL  
 -L- STA 21+50.00 TO STA 28+16.50 (RT)  
 -L- STA 26+52.75 TO STA 29+84.00 (LT)  
 -L- STA 28+60.25 TO STA 30+72.75 (RT)  
 -L- STA 30+20.25 TO STA 32+51.50 (LT)  
 -L- STA 42+75.00 TO STA 46+12.50 (RT)  
 -L- STA 43+64.25 TO STA 46+01.75 (LT)



**TYPICAL SECTION NO. 2**

USE TYPICAL SECTION NO. 2 FOR:  
 -L- STA 12+24.00 TO STA 15+08.61  
 -L- STA 24+80.04 TO STA 32+71.46  
 -L- STA 42+28.54 TO STA 49+71.47  
 -L- STA 61+27.97 TO STA 62+49.70

\*\*\* ALL CONC. ISLANDS TO BE KEYED-IN



**TYPICAL SECTION NO. 3**

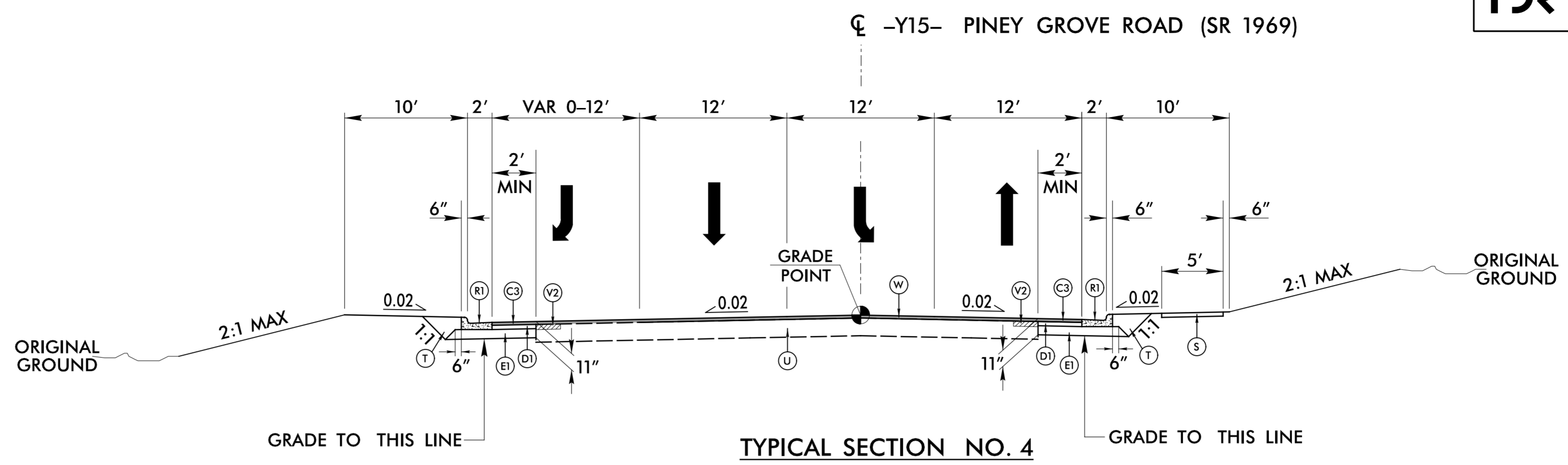
USE TYPICAL SECTION NO. 3 FOR:  
 -Y15- STA 12+10.00 TO STA 17+39.61

6/22/99

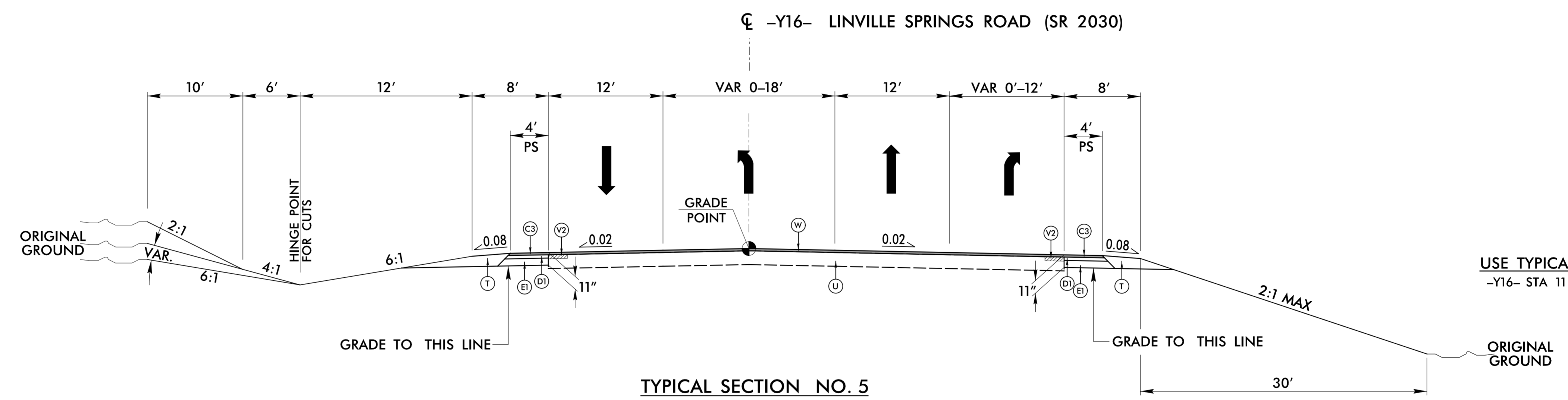
PROJECT REFERENCE NO. <i>U-6003</i>	SHEET NO. <i>2A-2</i>
ROADWAY DESIGN ENGINEER 	PAVEMENT DESIGN ENGINEER 

**DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED**

**USE TYPICAL SECTION NO. 4 FOR:  
-Y15- STA 17+39.61 TO STA 21+50.00**

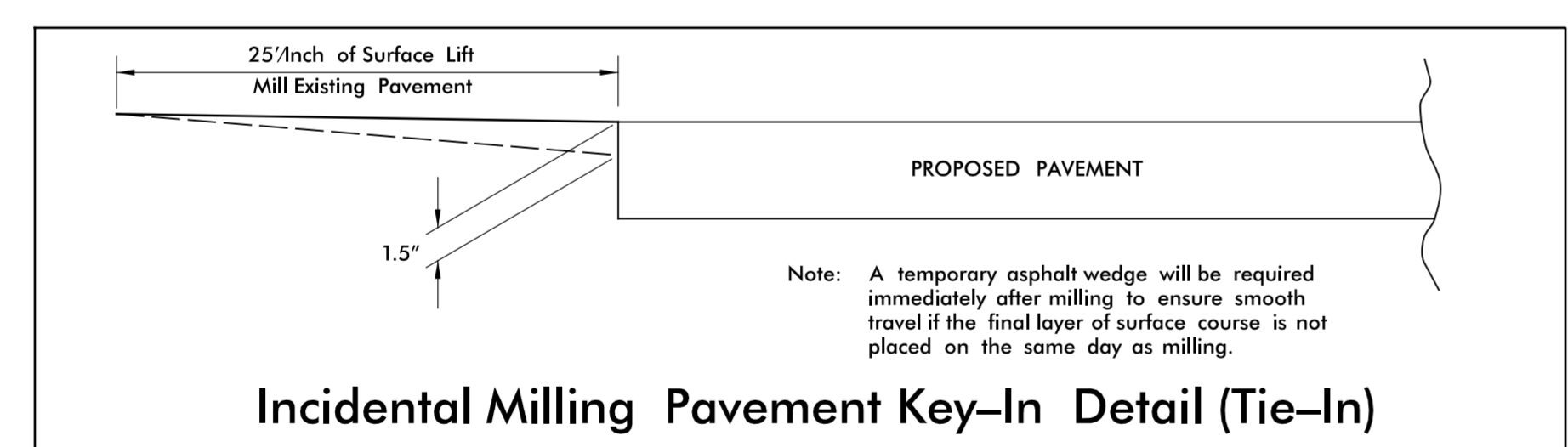


**TYPICAL SECTION NO. 4**

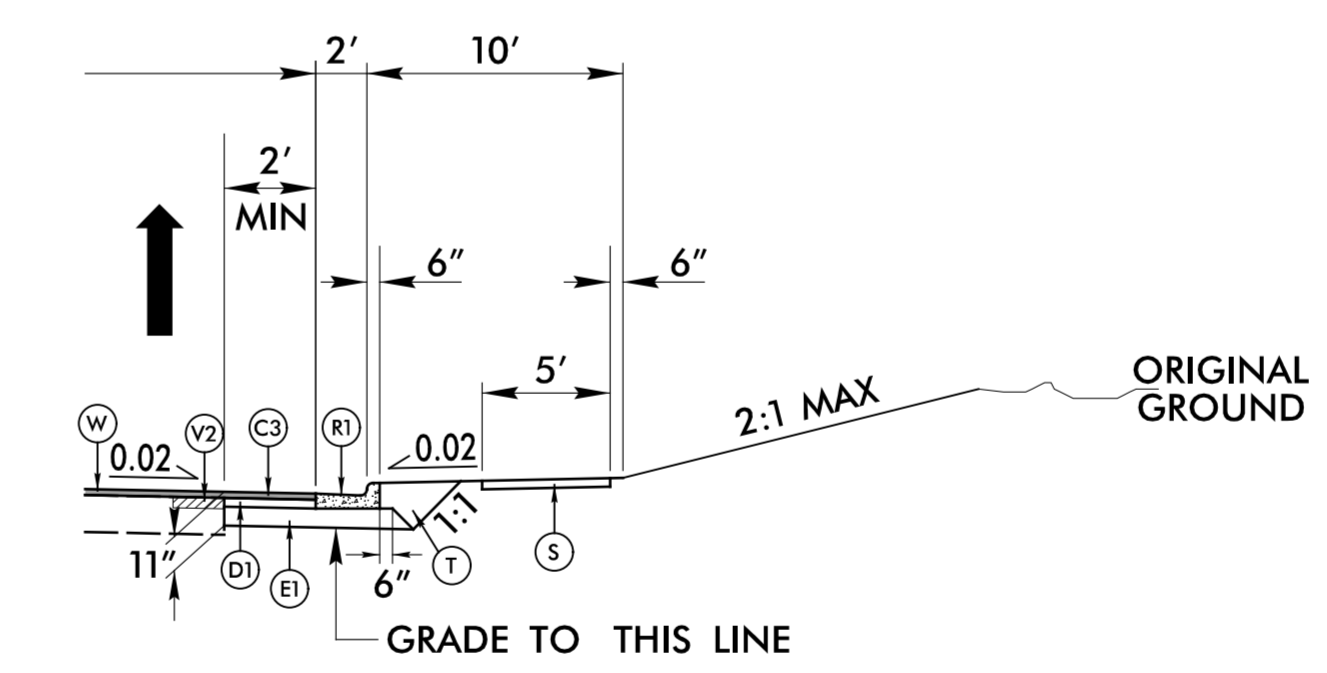


**TYPICAL SECTION NO. 5**

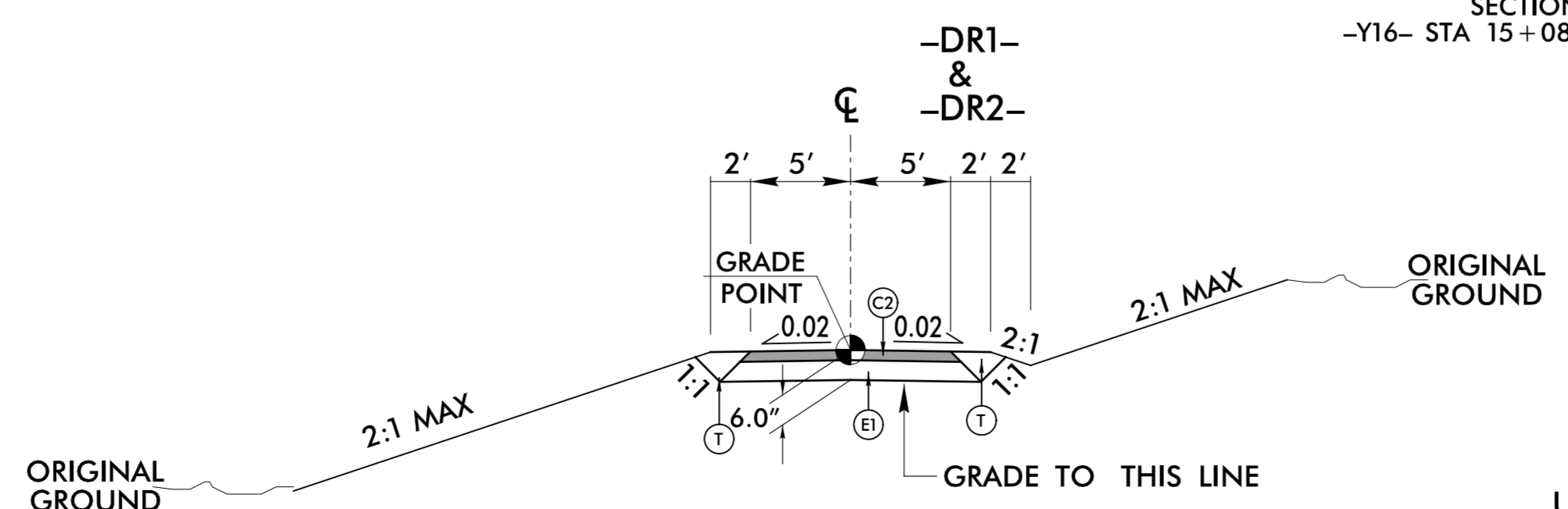
**USE TYPICAL SECTION NO. 5 FOR:  
-Y16- STA 11+40.00 TO STA 16+77.00**



**Incidental Milling Pavement Key-In Detail (Tie-In)**



**PARTIAL TYPICAL SECTION NO. 5A**  
USE PARTIAL TYPICAL SECTION NO. 4A IN CONJUNCTION WITH TYPICAL SECTION NO. 4 AS FOLLOWS:  
-Y16- STA 15+08.64 TO -Y16- STA 16+77.00 RT



**TYPICAL SECTION NO. 6**

**USE TYPICAL SECTION NO. 6 FOR:  
-DR1- STA 10+60.00 TO STA 11+27.63  
-DR2- STA 10+20.00 TO STA 11+37.76**

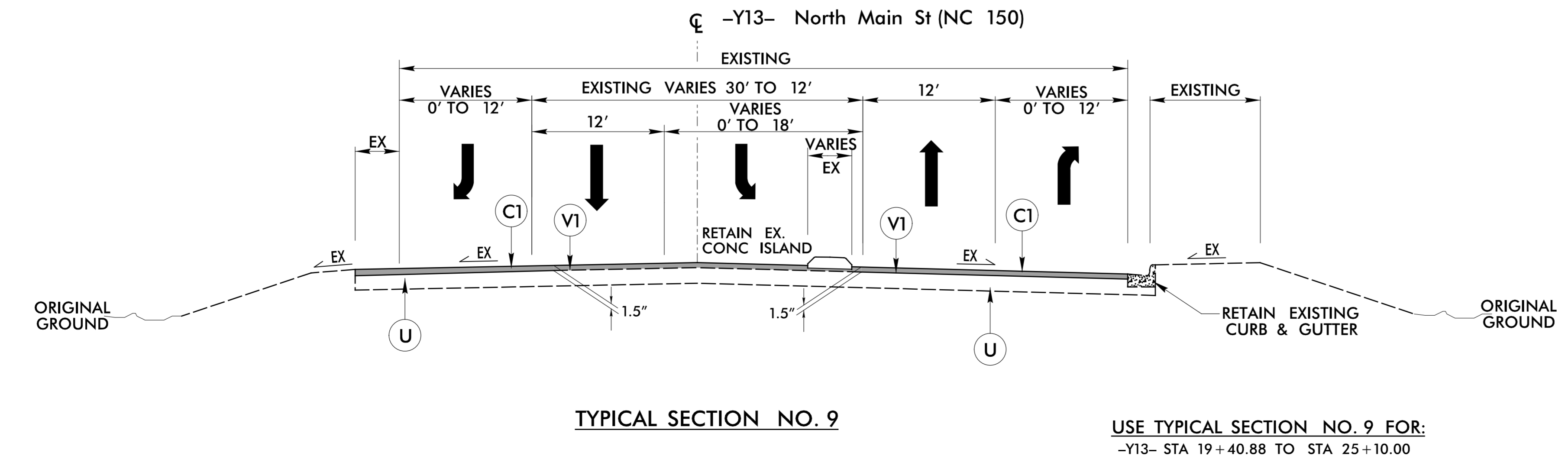
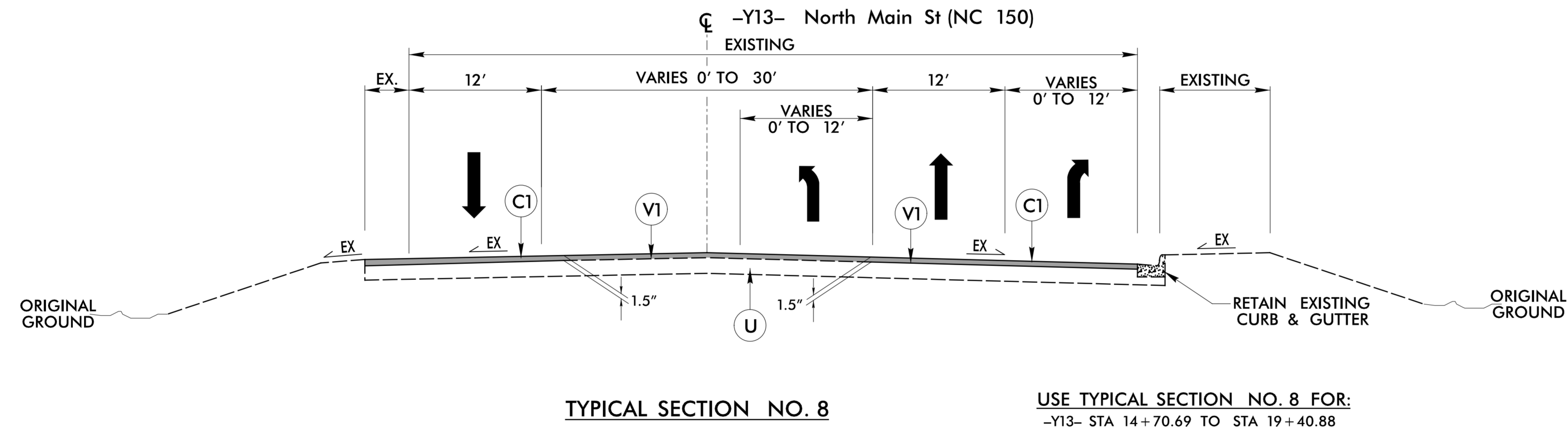
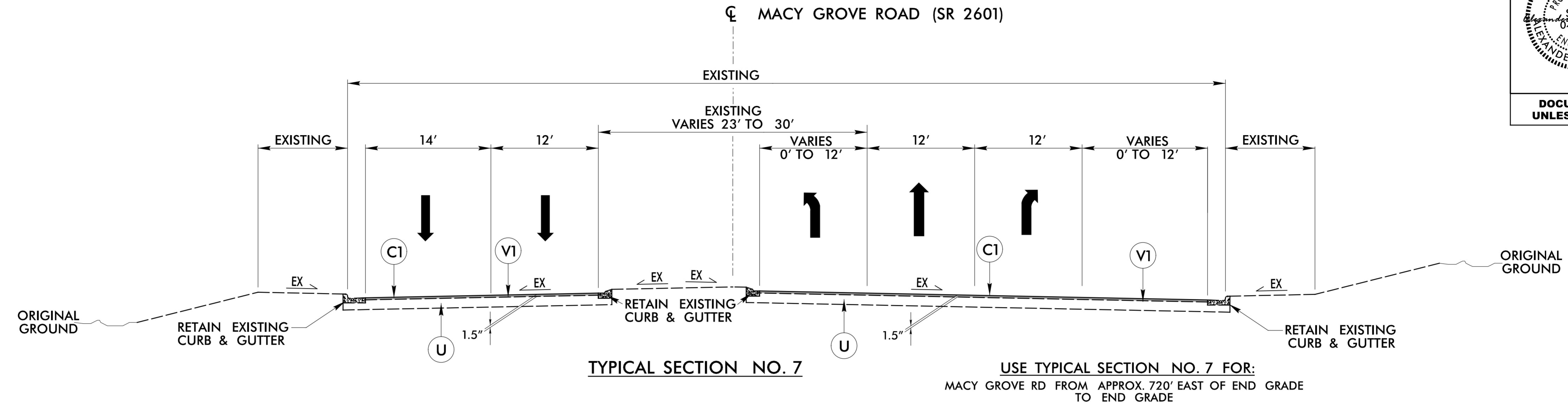
FINAL PVMT SCHEDULE	
C1	1.5" S9.5B
C2	2" S9.5B
C3	3" S9.5B
C4	VAR S9.5B
D1	4" I19.0C
D2	VAR I19.0C
E1	4" B25.0C
E2	VAR B25.0C
K	SUBGRADE STABILIZATION
N	GEOTEXTILE
R1	2'-6" C&G
R2	2'-9" C&G
R3	5" MONO. CONC. ISLAND
S	4" SIDEWALK
T	EARTH MATERIAL
U	EXIST. PAVEMENT
V1	1.5" MILLING
V2	4" MILLING
W	VAR WEDGING

9/25/2023 10:25:49 AM P:\00\106003.r.dwg - tjp.dgn

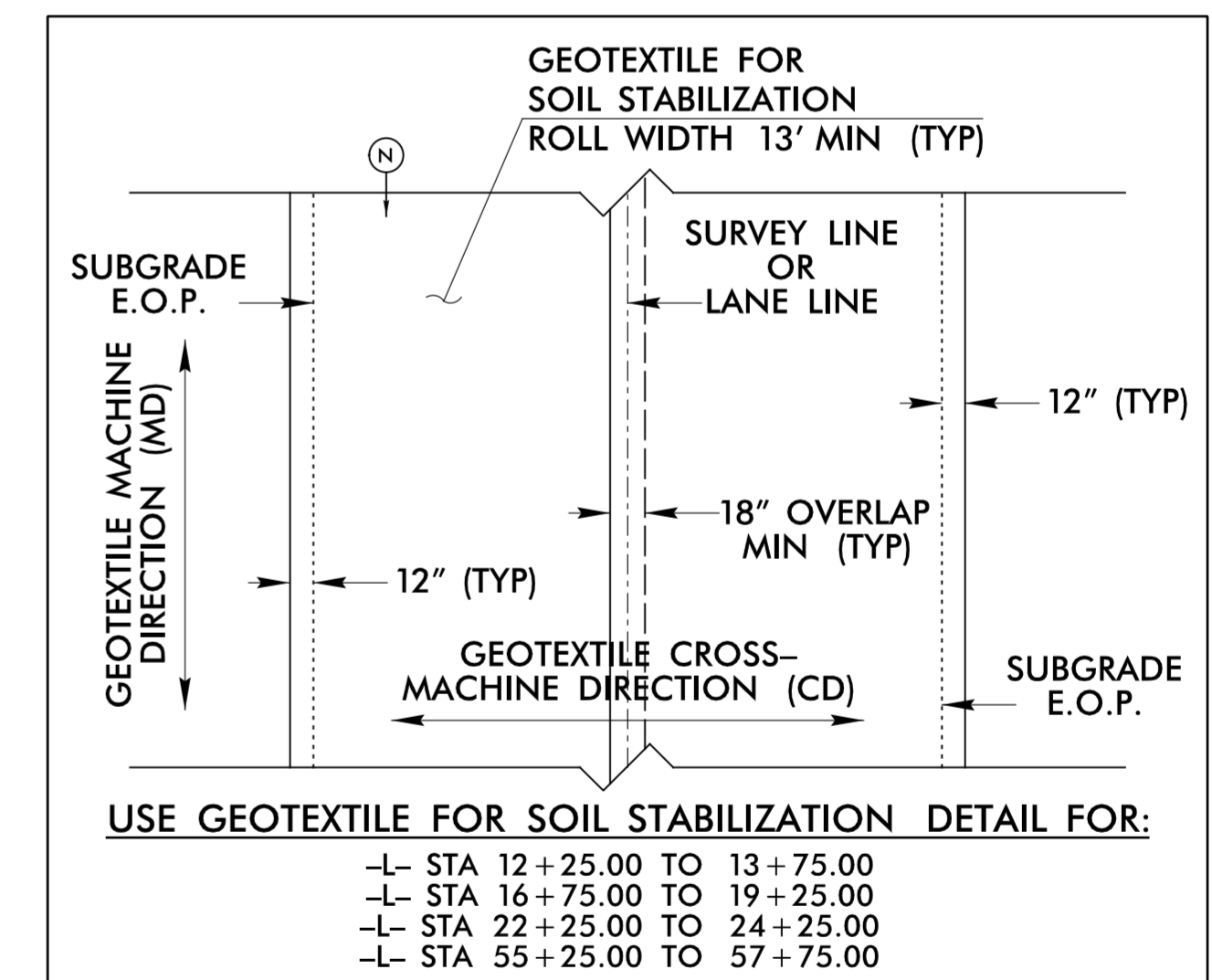
6/2/2023

PROJECT REFERENCE NO. <b>U-6003</b>	SHEET NO. <b>2A-3</b>
ROADWAY DESIGN ENGINEER 	PAVEMENT DESIGN ENGINEER 

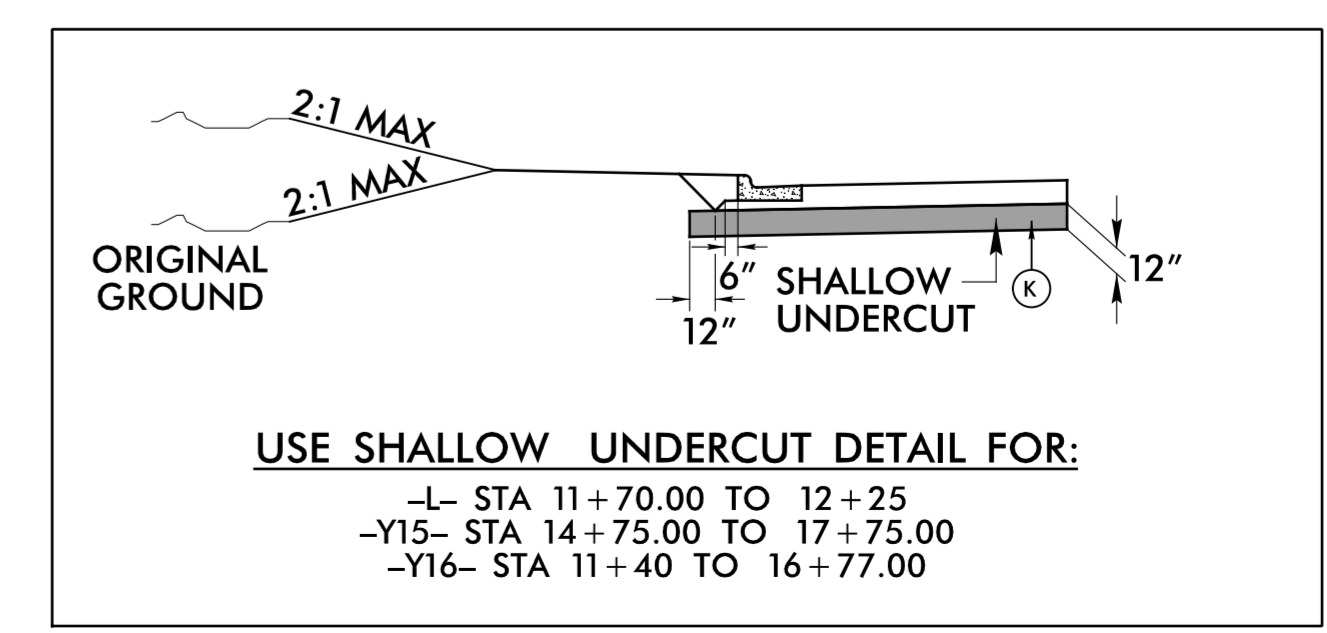
**DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED**



**GEOTEXTILE FOR SOIL STABILIZATION (PLAN VIEW)**  
**100% COVERAGE**



**DETAIL FOR SHALLOW UNDERCUT**



**FINAL PVMT SCHEDULE**

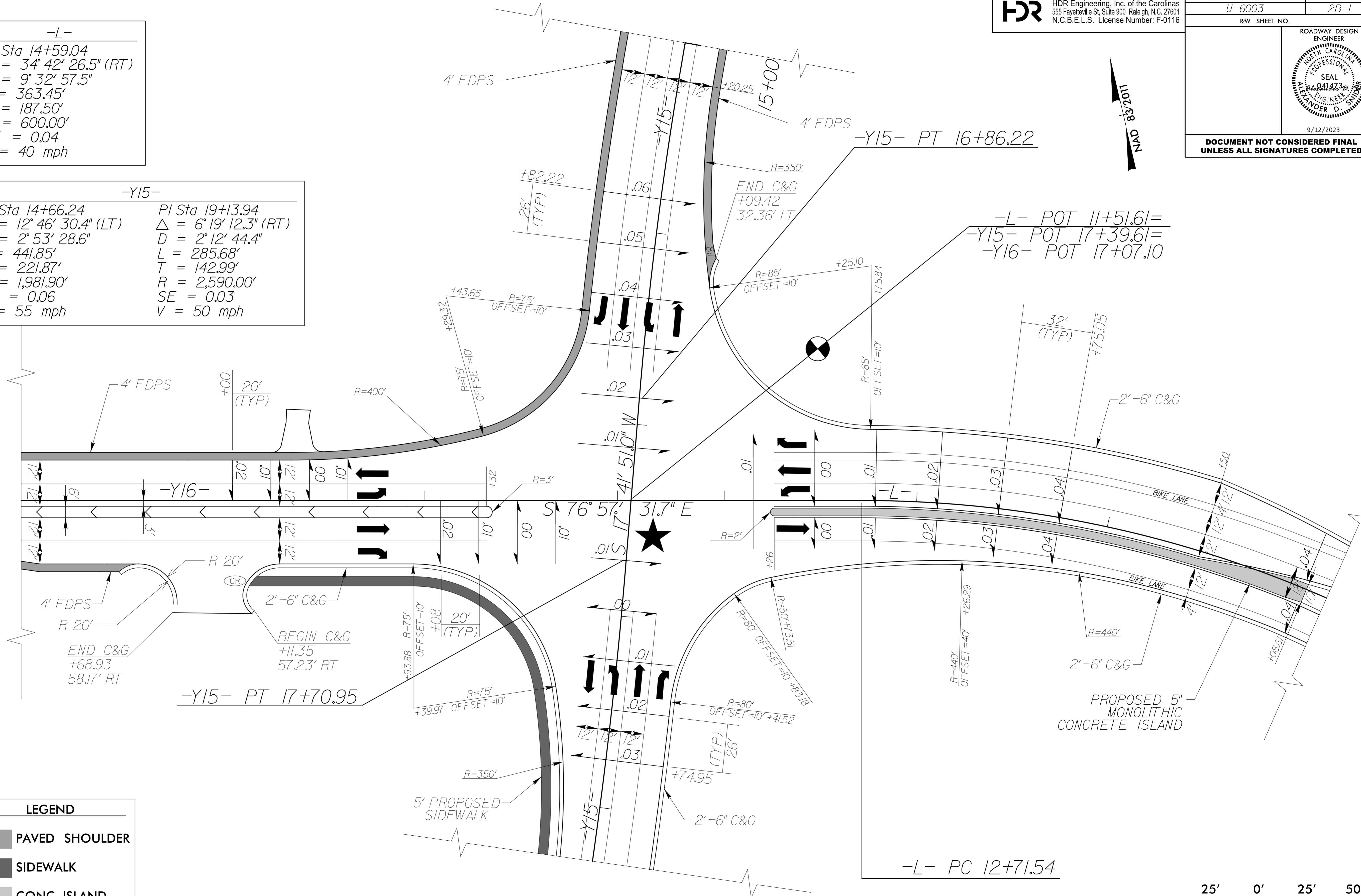
C1	1.5" S9.5B
C2	2" S9.5B
C3	3" S9.5B
C4	VAR S9.5B
D1	4" I19.0C
D2	VAR I19.0C
E1	4" B25.0C
E2	VAR B25.0C
K	SUBGRADE STABILIZATION
N	GEOTEXTILE
R1	2'-6" C&G
R2	2'-9" C&G
R3	5" MONO. CONC. ISLAND
S	4" SIDEWALK
T	EARTH MATERIAL
U	EXIST. PAVEMENT
V1	1.5" MILLING
V2	4" MILLING
W	VAR WEDGING

9/25/2023  
\\h01\p01\proj\1062023-r.djv-typ.dgn  
10:25:53 AM





**-L-**  
 PI Sta 14+59.04  
 $\Delta = 3^\circ 42' 26.5''$  (RT)  
 $D = 9^\circ 32' 57.5''$   
 $L = 363.45'$   
 $T = 187.50'$   
 $R = 600.00'$   
 $SE = 0.04$   
 $V = 40$  mph

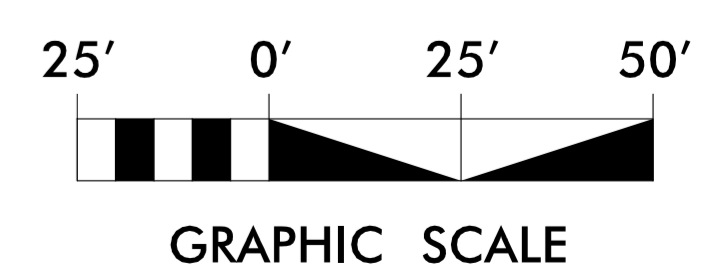
**-Y15-**

PI Sta 14+66.24	PI Sta 19+13.94
$\Delta = 12^\circ 46' 30.4''$ (LT)	$\Delta = 6^\circ 19' 12.3''$ (RT)
$D = 2^\circ 53' 28.6''$	$D = 2^\circ 12' 44.4''$
$L = 441.85'$	$L = 285.68'$
$T = 221.87'$	$T = 142.99'$
$R = 1,981.90'$	$R = 2,590.00'$
$SE = 0.06$	$SE = 0.03$
$V = 55$ mph	$V = 50$ mph



**LEGEND**

-  PAVED SHOULDER
-  SIDEWALK
-  CONC. ISLAND
-  PROPOSED SIGNAL



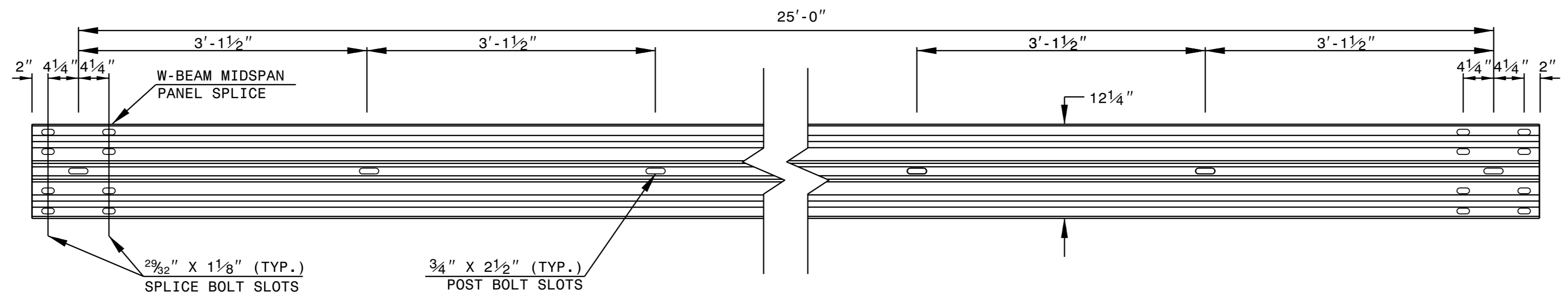
**DETAIL OF INTERSECTION -L-, -Y15-, & -Y16-**

FOR FULL VIEW OF THIS AREA, SEE PLAN SHEET 4

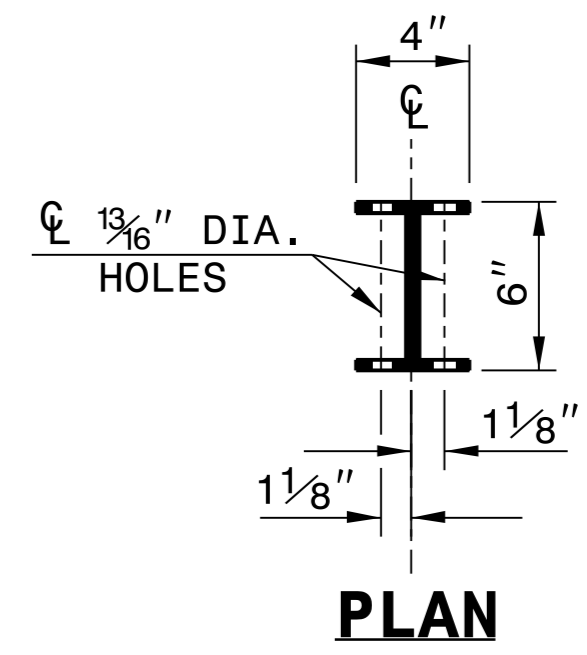
STATE OF NORTH CAROLINA  
DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR  
**GUARDRAIL INSTALLATION**

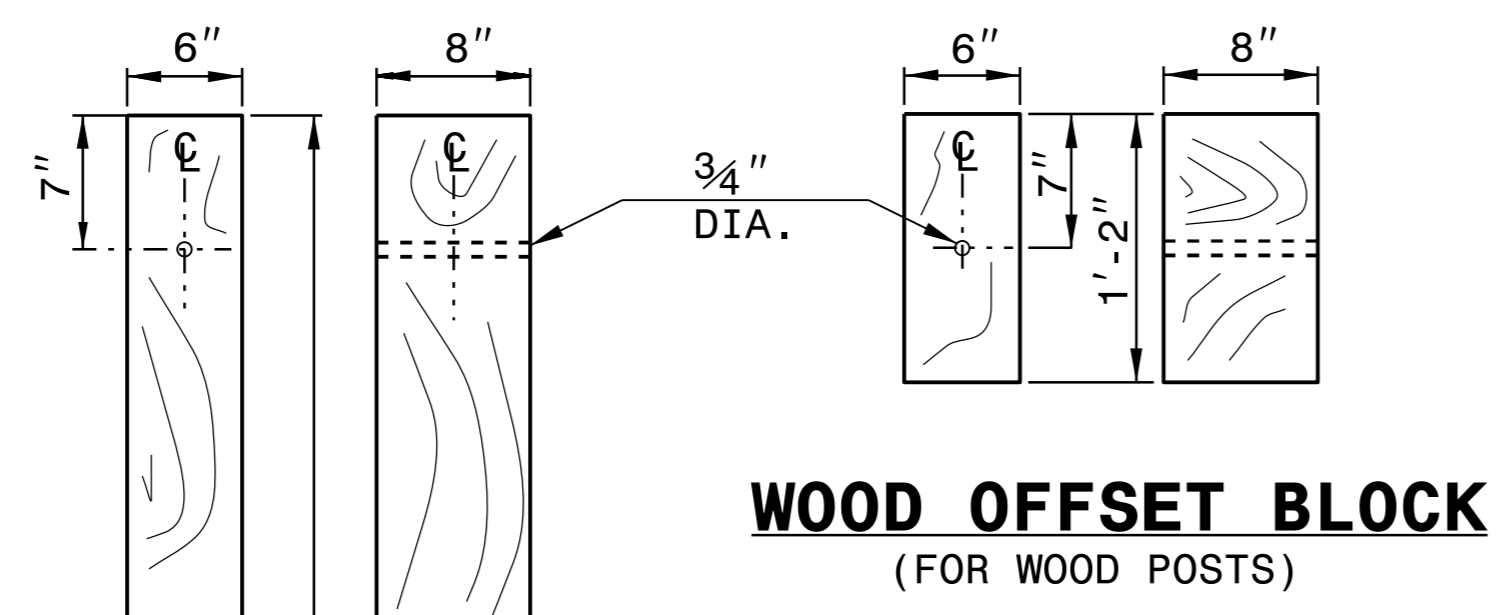
SHEET 6 OF 8  
**862D02**



**STANDARD W-BEAM GUARDRAIL**



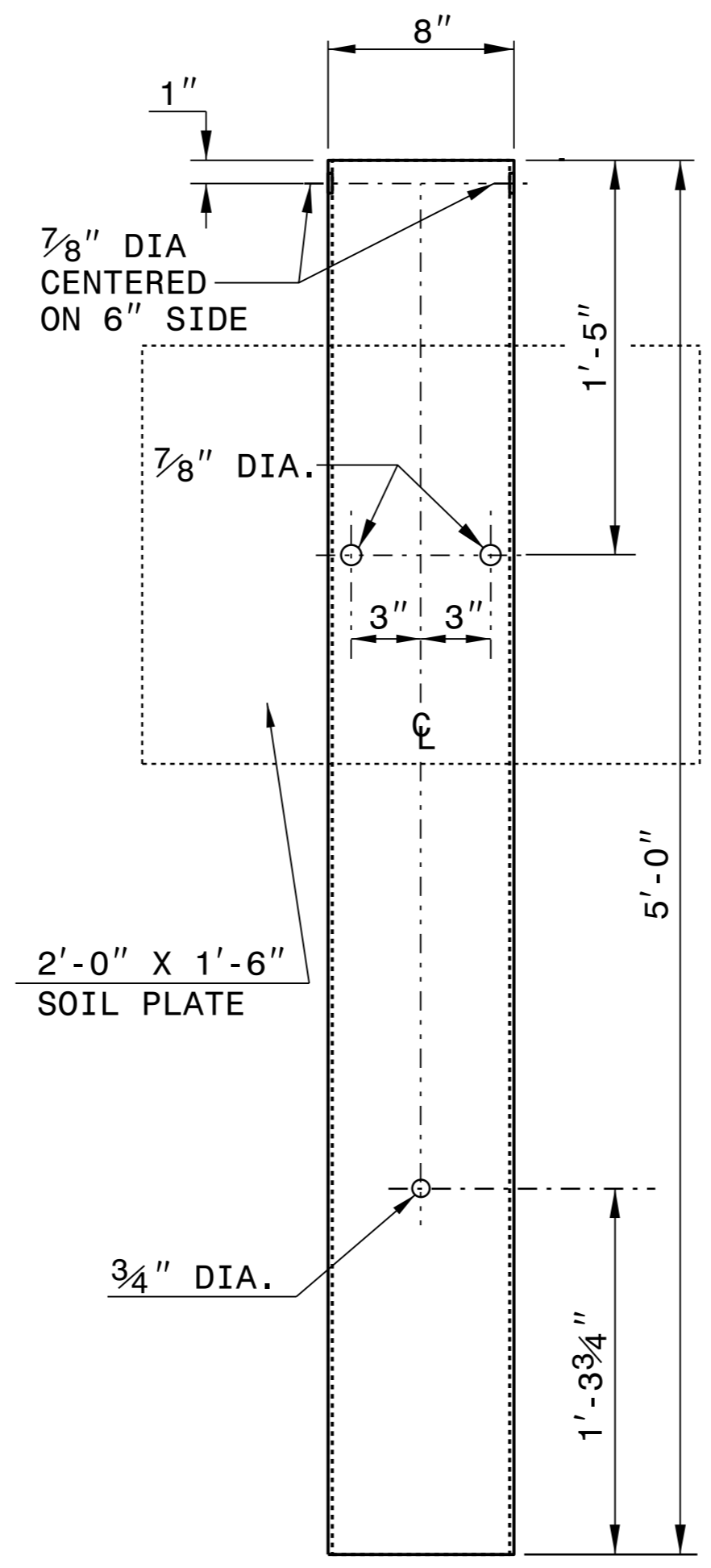
**PLAN**



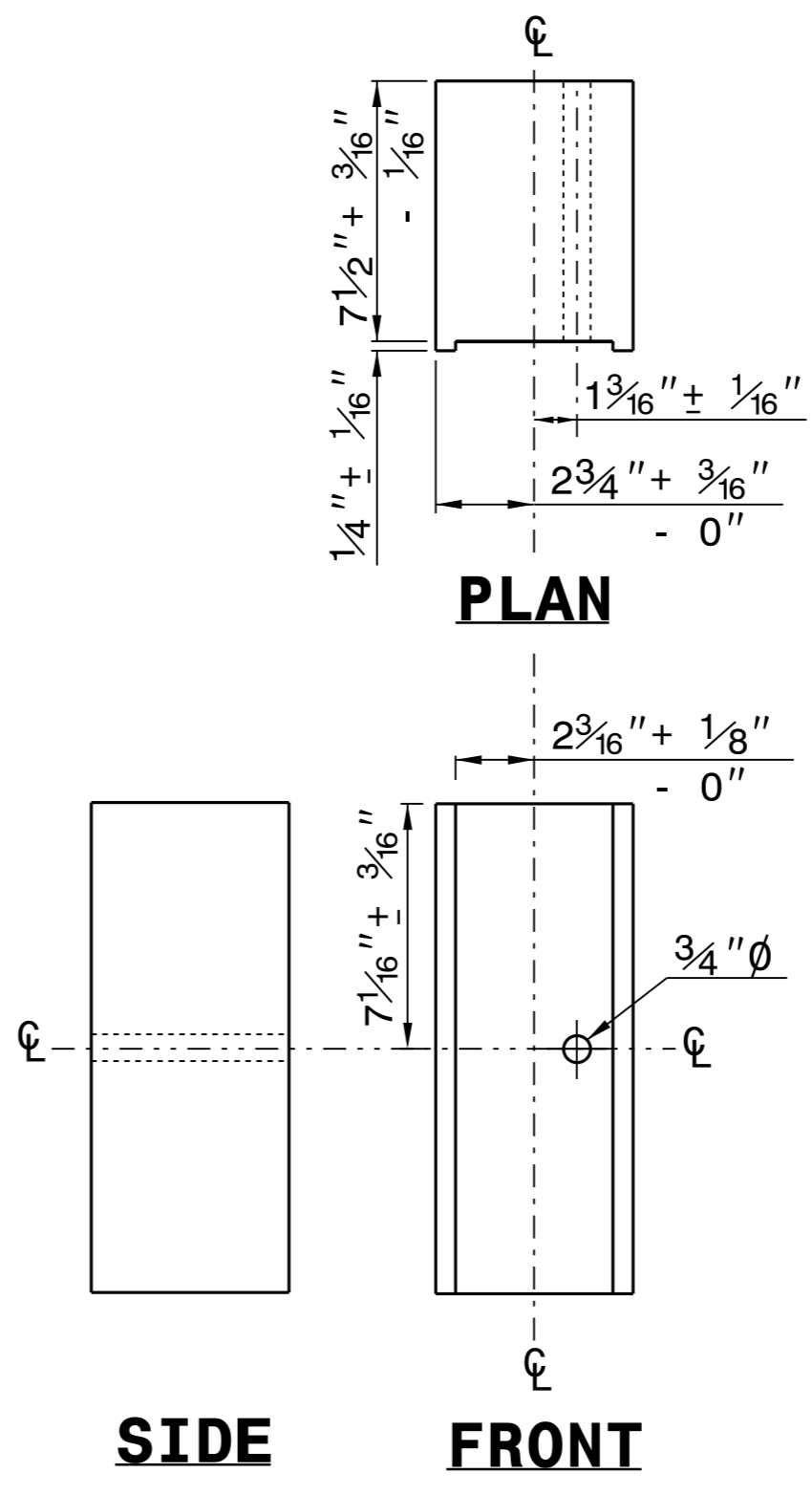
**WOOD OFFSET BLOCK  
(FOR WOOD POSTS)**

**STANDARD  
LINE POST**

**SHORT WOOD  
BREAKAWAY POST**



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

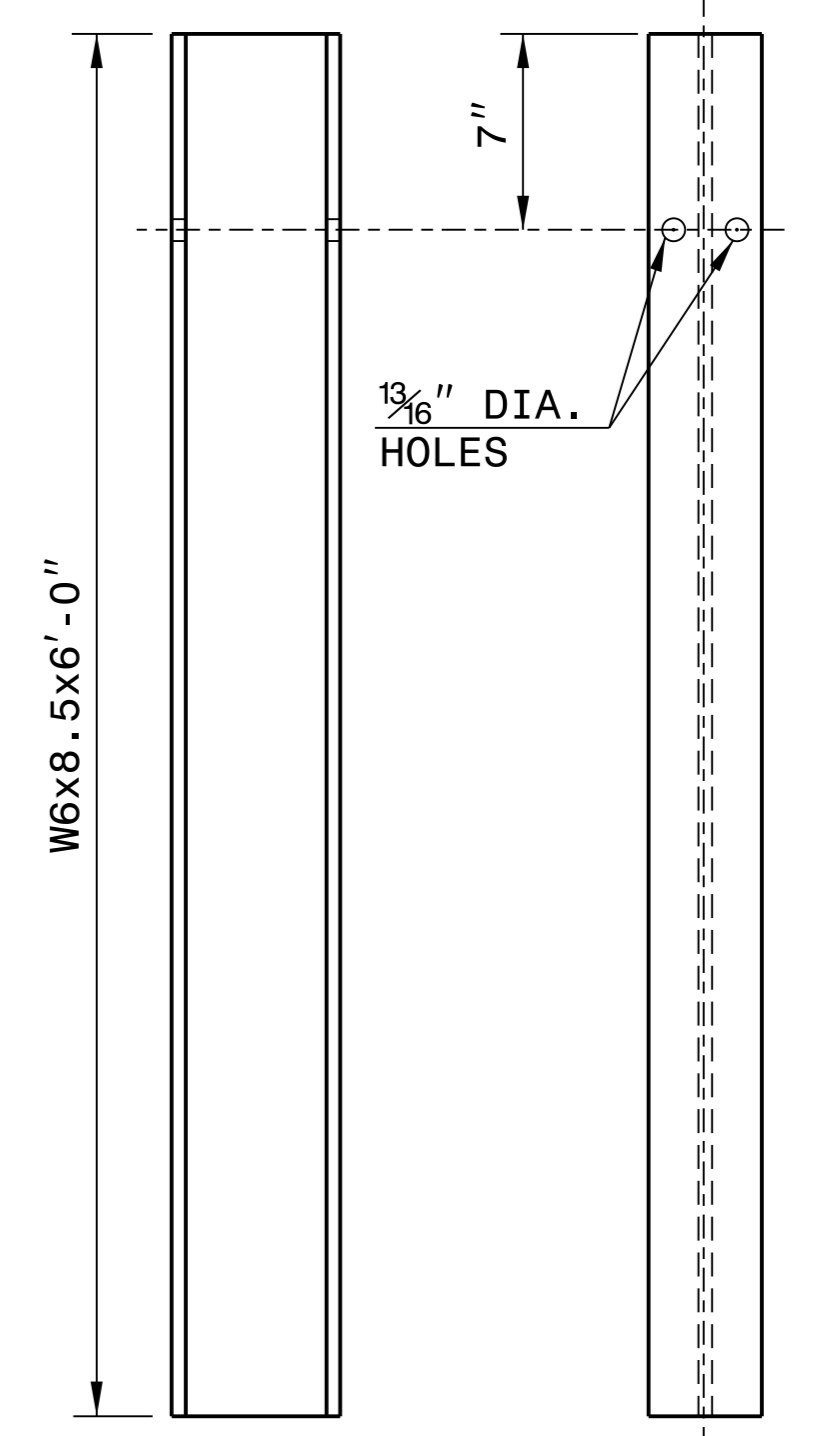


**PLAN**

**SIDE**

**FRONT**

**ROUTED  
OFFSET BLOCK**



**SIDE**

**FRONT**

**"W6" STEEL POST**

**SYSTEM PARTS**

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

ROADWAY DETAIL DRAWING FOR  
**GUARDRAIL INSTALLATION**

SHEET 6 OF 8  
**862D02**



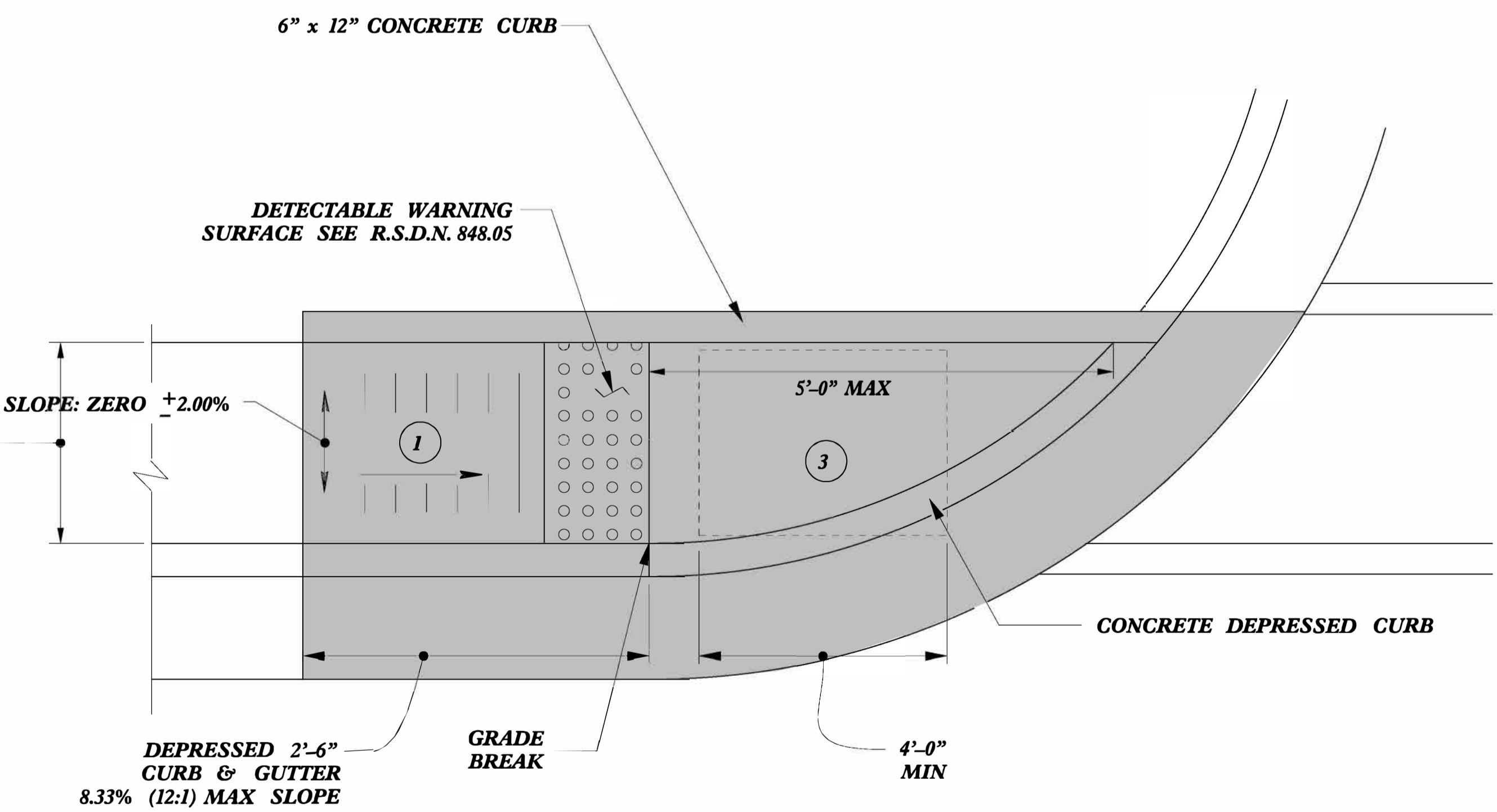
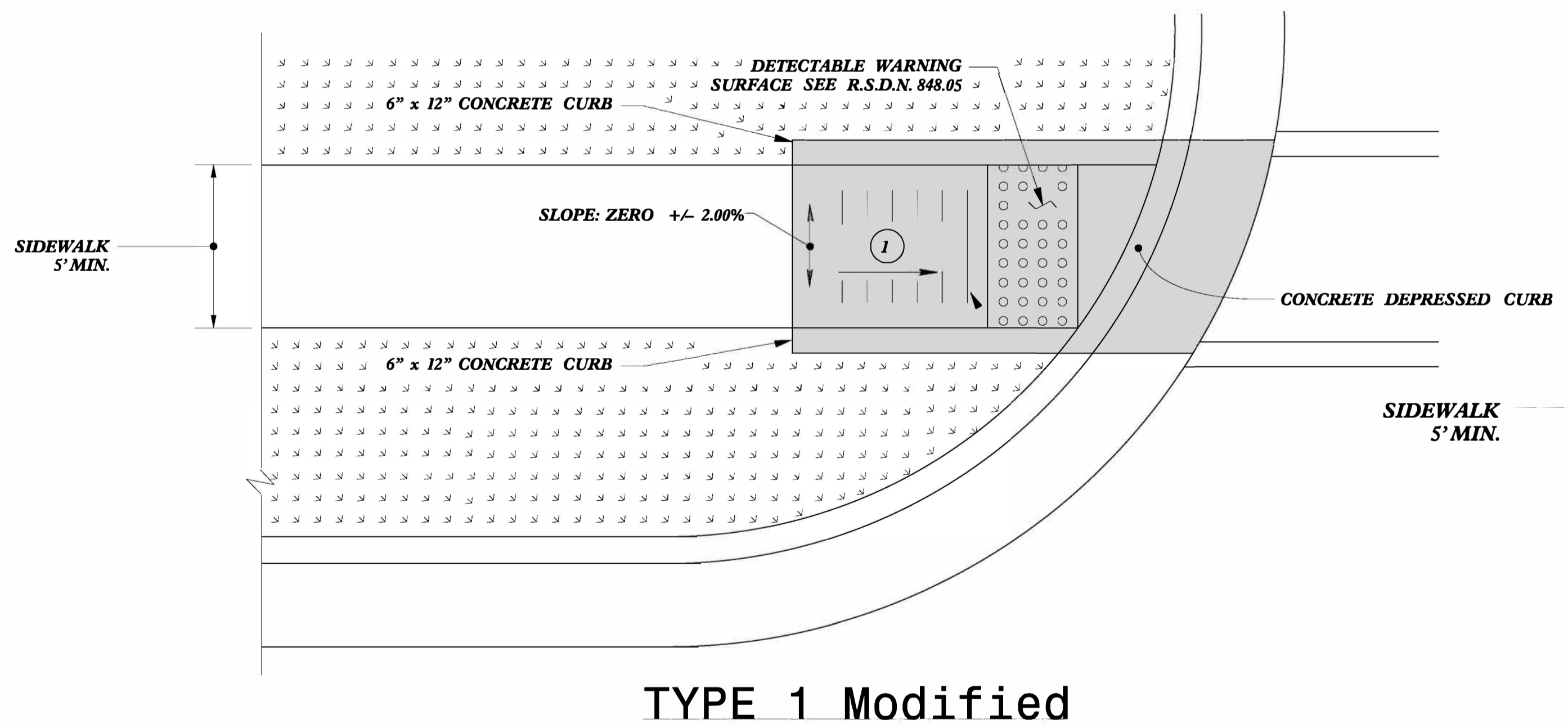
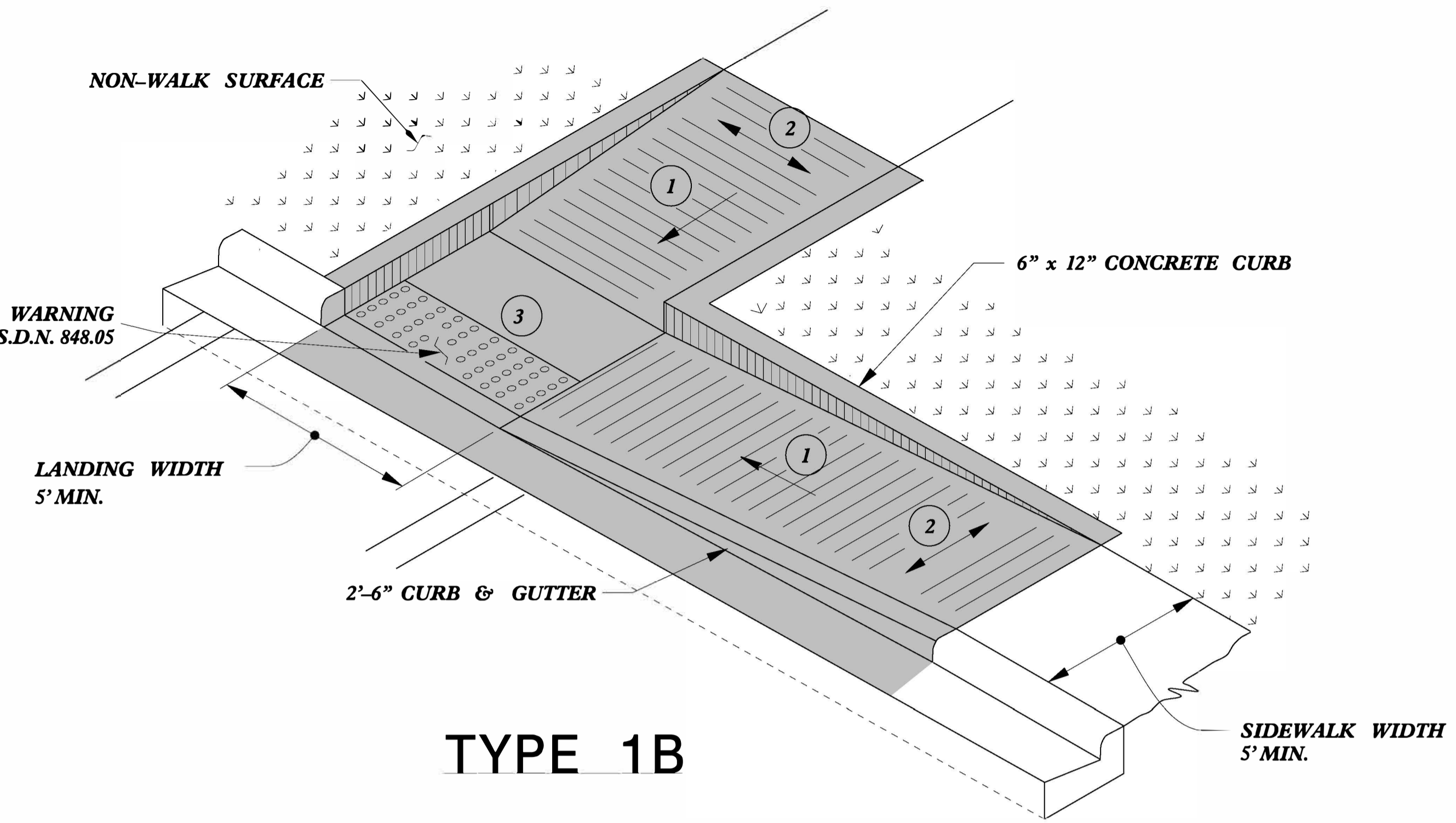
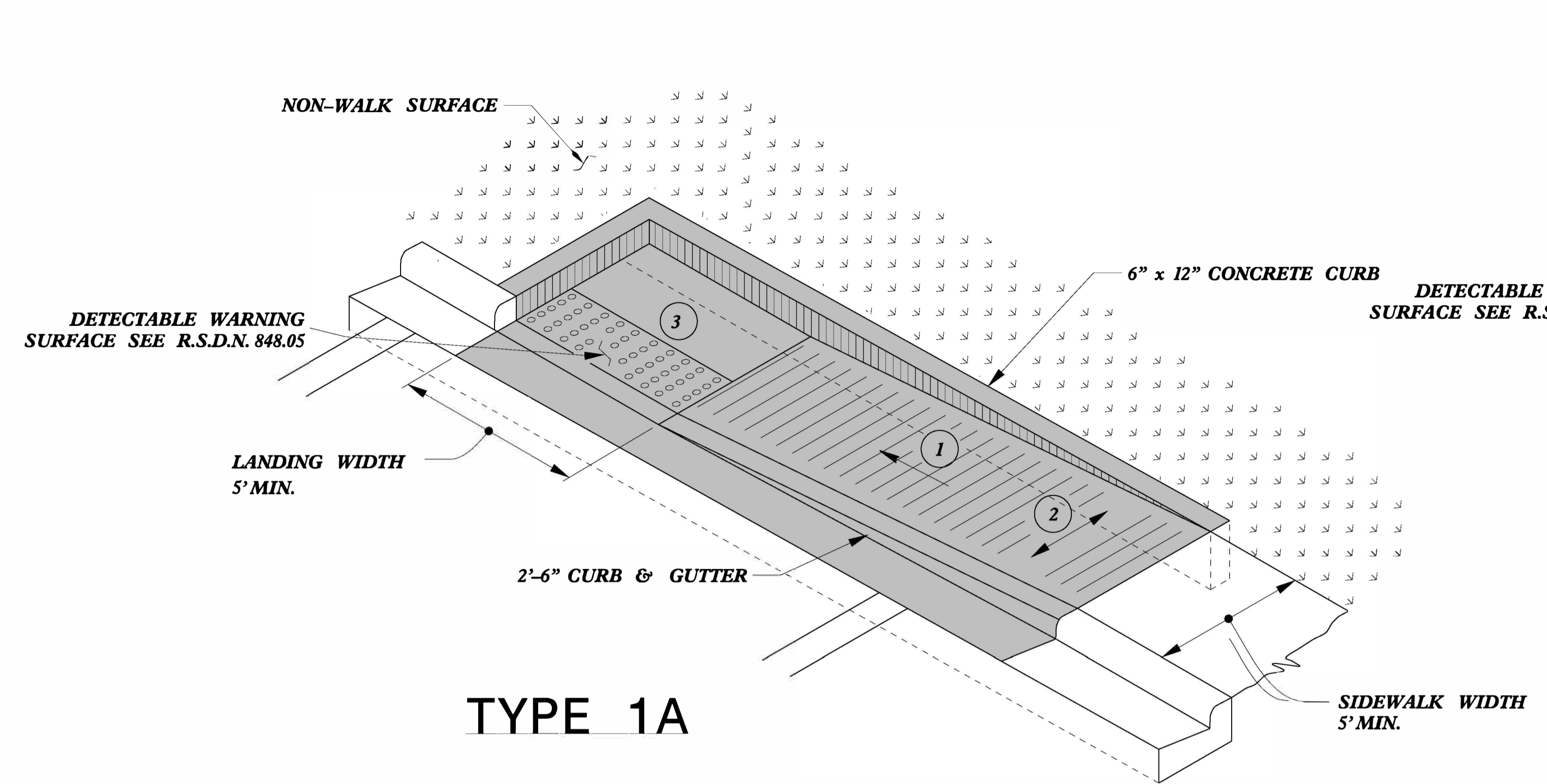
9/7/2023

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

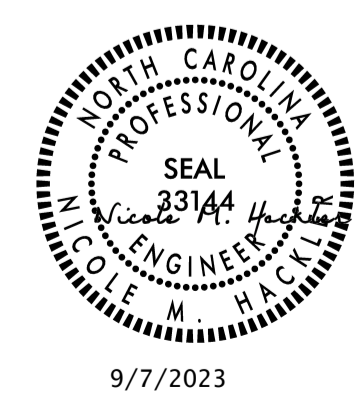




- 1 8.33% (12:1) MAX RAMP SLOPE
- 2 CROSS SLOPE: 2.00%
- 3 CURB RAMPS REQUIRE A (4'-0") MINIMUM LANDING WITH A MAXIMUM CROSS SLOPE AND LONGITUDINAL SLOPE OF 2.00% WHERE PEDESTRIANS PERFORM TURNING MANEUVERS. SLOPE TO DRAIN TO CURB.

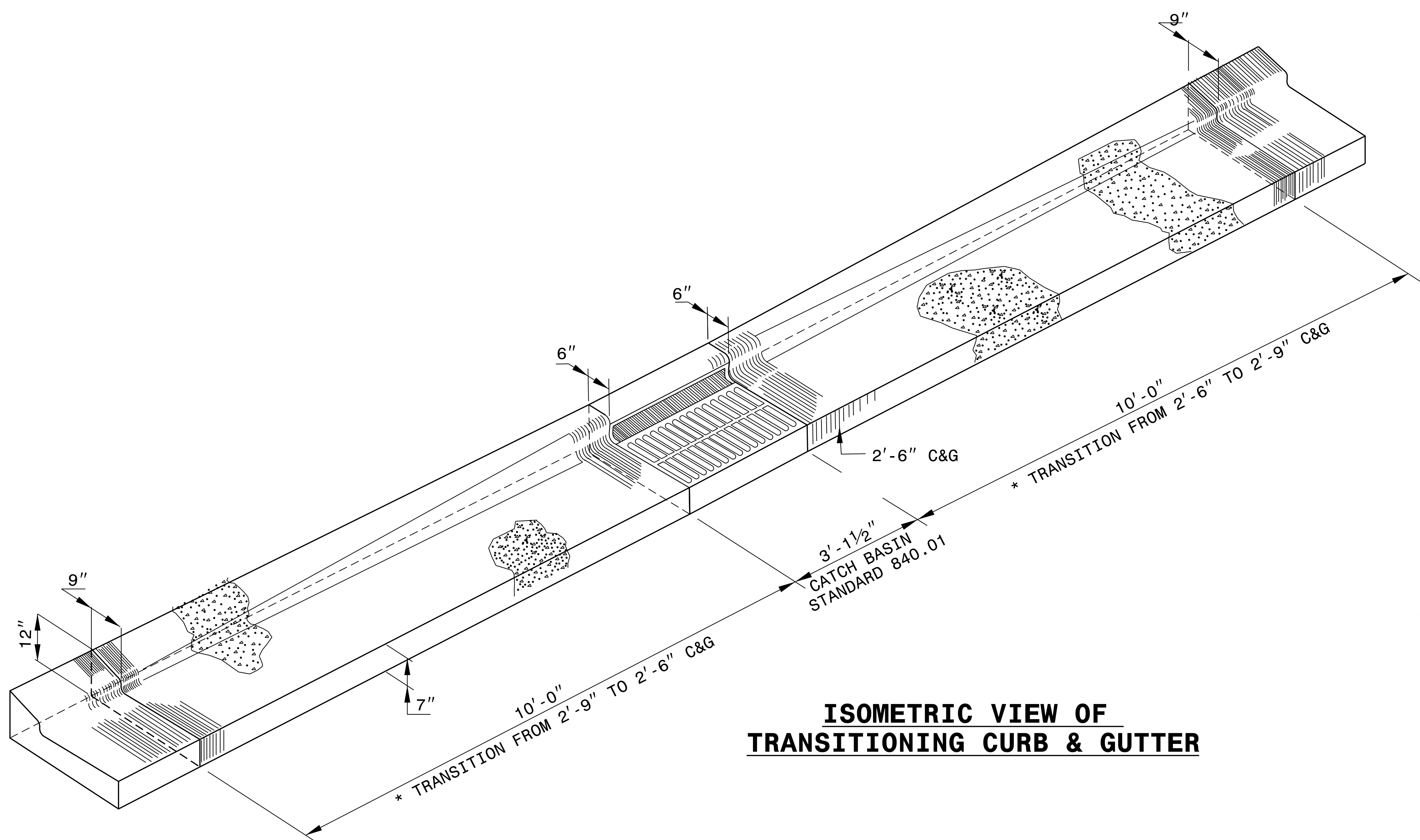
PAY LIMITS FOR 1 CURB RAMP

REFER TO ROADWAY STANDARD DRAWING NUMBER 848.05 SHEET 3 OF 3 FOR ALL RAMP NOTES

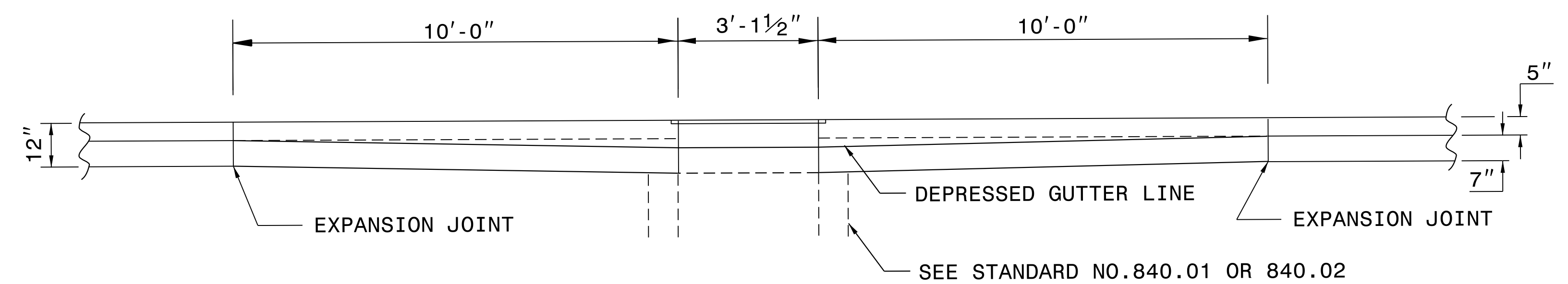
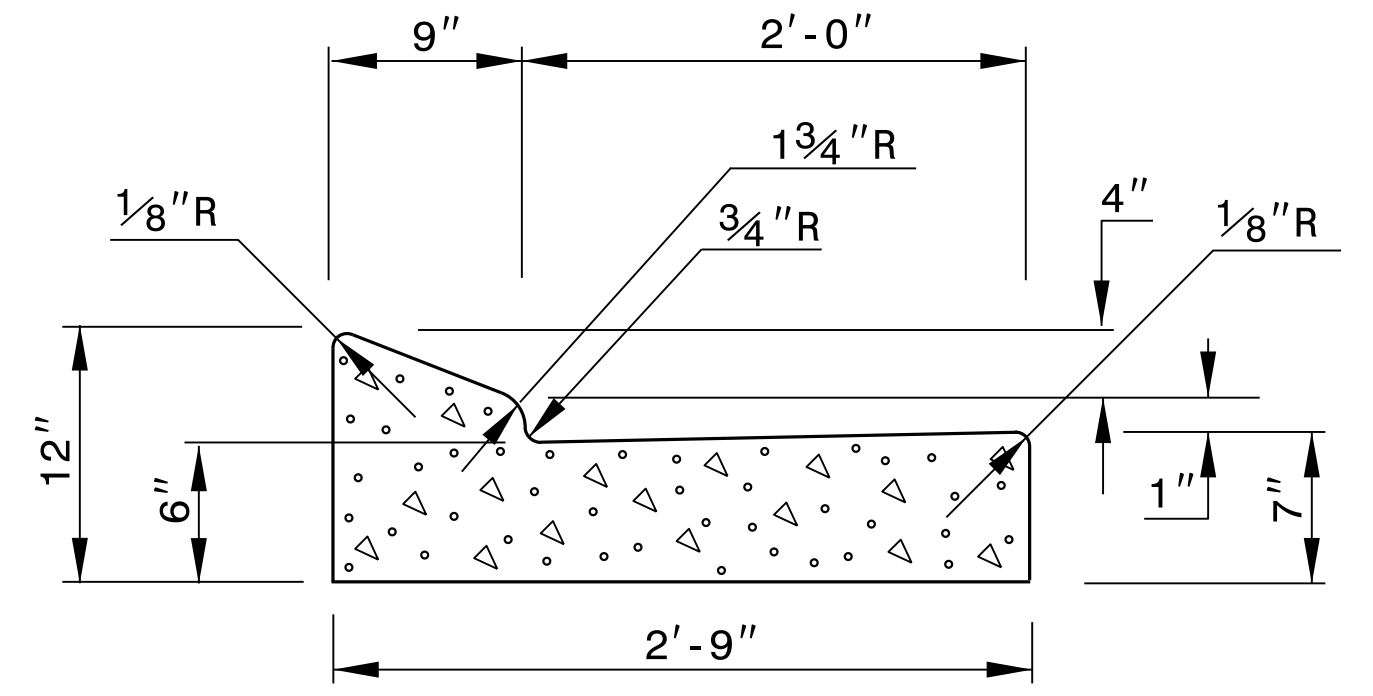


DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

<b>CONTRACT STANDARDS AND DEVELOPMENT UNIT</b>	
Office 919-707-6950	FAX 919-250-4119
<b>CURB RAMPS</b>	
Directional Ramps	
ORIGINAL BY: J.S. HOWERTON	DATE: 7/7/11
MODIFIED BY:	DATE:
CHECKED BY:	DATE:
FILE SPEC. stds/2012CurbRamp/CurbRampDetails.dgn	



NOTE: SEE STD.DWG. 846.01 FOR  
2'-6" CURB AND GUTTER  
INFORMATION.



\* MAINTAIN THE EDGE OF PAVEMENT. TRANSITION THE CURB ALONG THE  
BACK OF THE CURB.



9/7/2023

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

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

**DETAIL OF 2'-9"  
TO 2'-6" CURB & GUTTER  
TRANSITION SECTION**

ORIGINAL BY:	DATE:
MODIFIED BY: tspell	DATE: july 14,2009
CHECKED BY:	DATE:
FILE SPEC.: s:eric/usr/details/stand/cqtranst.dgn	

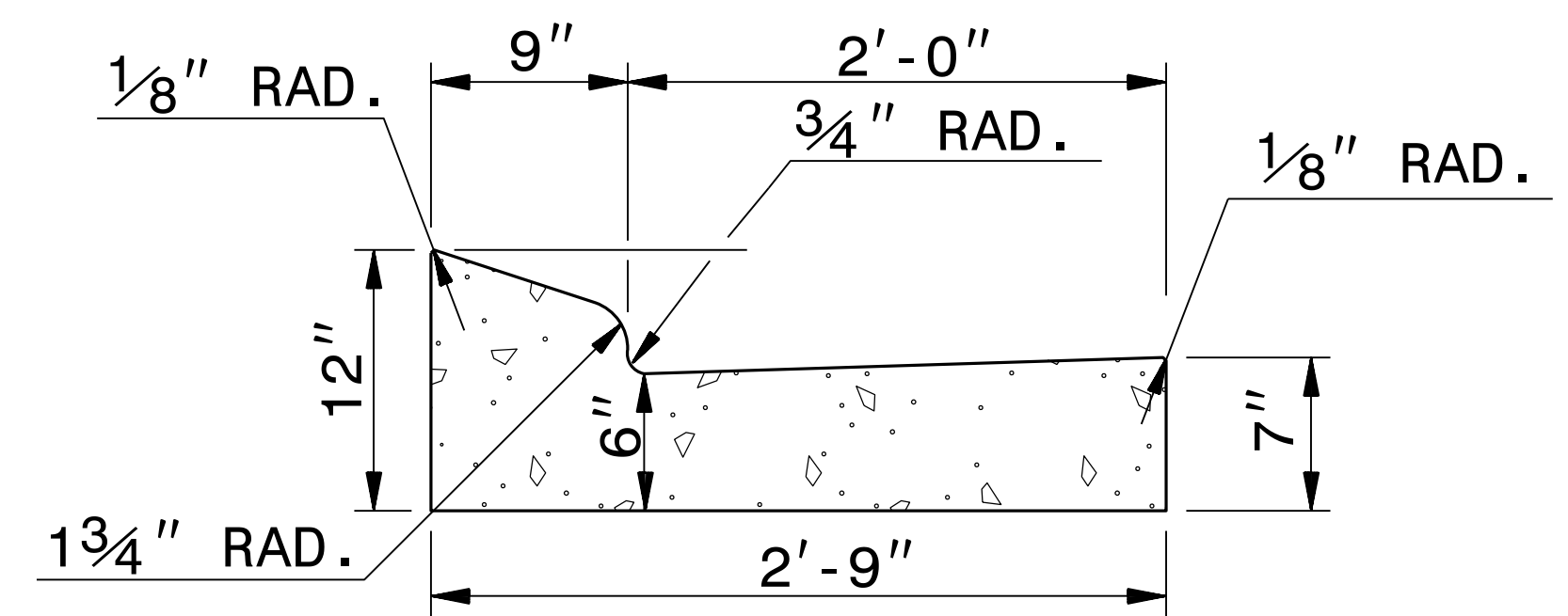
24-APR-2018 11:11 S:\Contracts\Special Details\ericward\usr\details\stand\c&g transition sections.dgn Jhowerston AT USD-292595

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

ENGLISH DETAIL DRAWING FOR  
**2'-9" CONCRETE CURB & GUTTER**

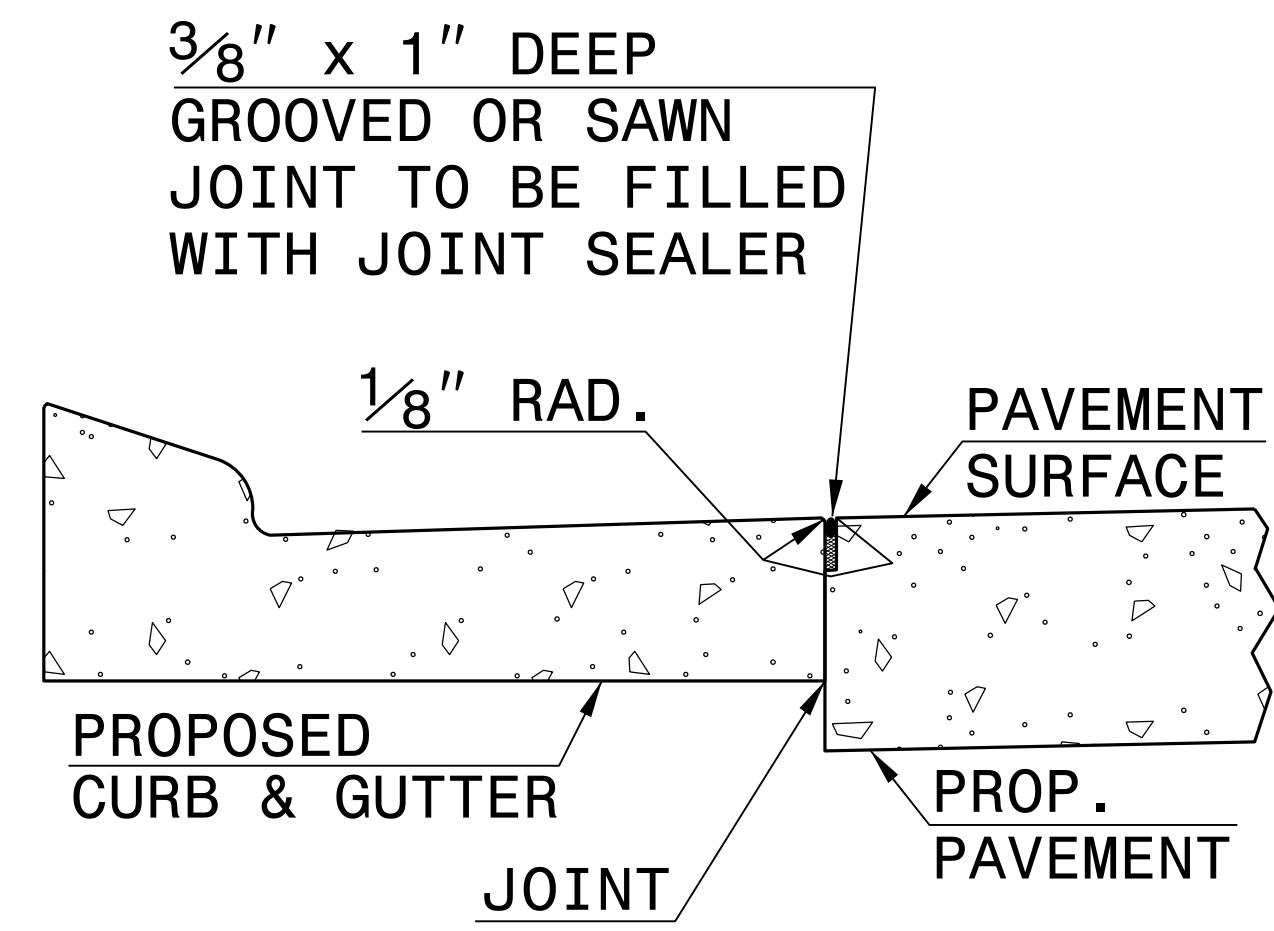
SHEET 1 OF 1  
**846D01**

- GENERAL NOTES:
- PLACE CONTRACTION JOINTS AT 10' INTERVALS, EXCEPT THAT A 15' SPACING MAY BE USED WHEN A MACHINE IS USED OR WHEN SATISFACTORY SUPPORT FOR THE FACE FORM CAN BE OBTAINED WITHOUT THE USE OF TEMPLATES AT 10' INTERVALS.
  - JOINT SPACING MAY BE ALTERED IF REQUIRED BY THE ENGINEER.
  - CONTRACTION JOINTS MAY BE INSTALLED WITH THE USE OF TEMPLATES OR FORMED BY OTHER APPROVED METHODS. MAKE NON-TEMPLATE FORMED JOINTS A MIN. OF 1½" DEEP.
  - FILL ALL CONSTRUCTION JOINTS WITH JOINT FILLER AND SEALER.
  - SPACE EXPANSION JOINTS AT 90' INTERVALS AND ADJACENT TO ALL RIGID OBJECTS.
  - SEE RDWY. STD. DWG. NO. 846.01, SHEET 2 OF 3 FOR PLACEMENT IN SUPERELEVATIONS. (USE 2'-6" CURB AND GUTTER RATES)

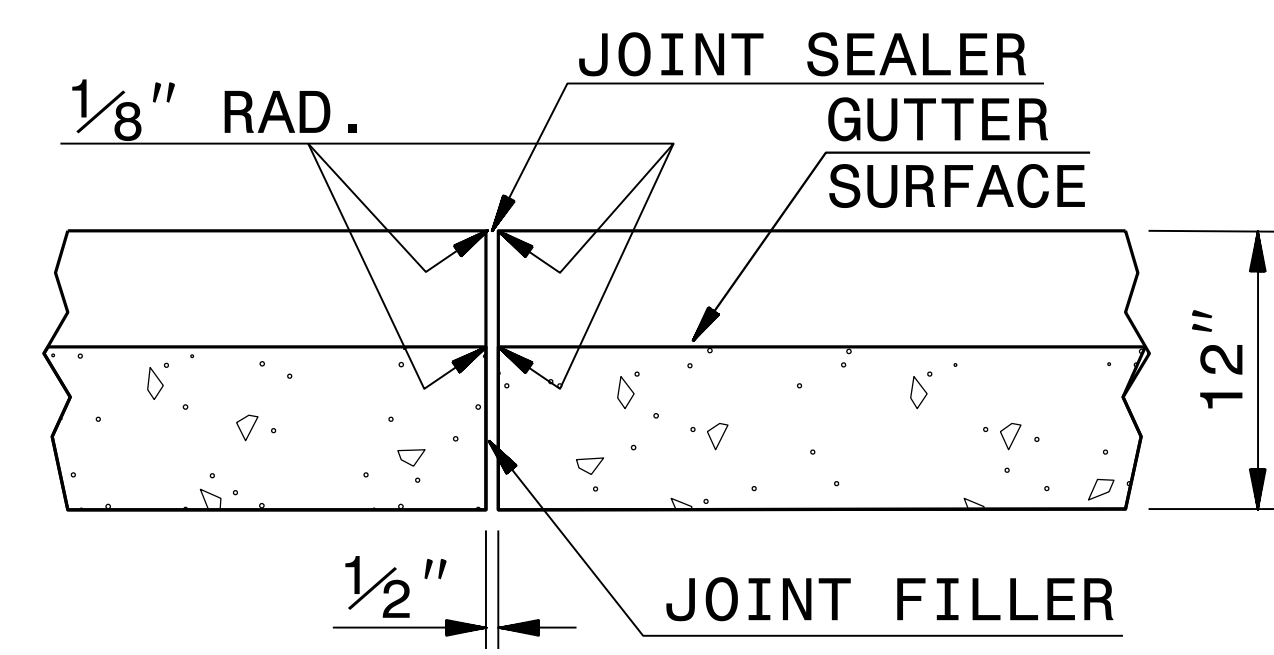


**2'-9" CURB AND GUTTER**

**SECTION VIEW OF CURB AND GUTTER**



**LONGITUDINAL JOINT**



**TRANSVERSE EXPANSION JOINT IN CURB AND GUTTER**

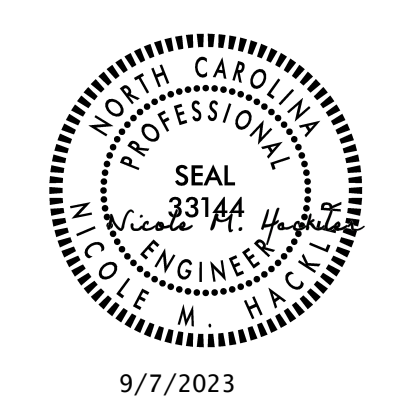
**SECTION VIEW OF JOINTS**

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

ENGLISH DETAIL DRAWING FOR  
**2'-9" CONCRETE CURB & GUTTER**

SHEET 1 OF 1  
**846D01**

J:\AUG-2017\1146 S:\Contracts\Contract\Special\Details\vertical\usr\stand\c&g2'-9.dgn  
J:\power\ton AT\_CSD-2\2595



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

**SEE PLATE FOR TITLE**

ORIGINAL BY: STD. 846.01 DATE: \_\_\_\_\_  
 MODIFIED BY: E.E. WARD DATE: 8-15-00  
 CHECKED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
 FILE SPEC.: /usr/details/stand/c&g2'-9.dgn

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED



COMPUTED BY: JRC DATE: 9/08/2023

PROJECT NUMBER

SHEET NUMBER

U-6003

3B-2

# STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

## SUMMARY OF EARTHWORK

RD.

CHAIN	BEGINNING STATION	ENDING STATION	UNCL. EXCA. C.Y.	UNDERCUT C.Y.	EMBANK. +% C.Y.	BORROW C.Y.	WASTE C.Y.
<b>SUMMARY 1</b>							
-L-	12+00.00	42+00.00	90,002	5,300	44,598		50,704
<b>SUBTOTAL</b>			<b>90,002</b>	<b>5,300</b>	<b>44,598</b>		<b>50,704</b>
<b>SUMMARY 2</b>							
-L-	42+00.00	62+00.00	76,228	1,000	10,261		66,967
<b>SUBTOTAL</b>			<b>76,228</b>	<b>1,000</b>	<b>10,261</b>		<b>66,967</b>
<b>SUMMARY 3</b>							
-Y15-	12+50.00	21+00.00	616		1,063	1,063	616
<b>SUBTOTAL</b>			<b>616</b>		<b>1,063</b>	<b>1,063</b>	<b>616</b>
<b>SUMMARY 4</b>							
-Y16-	11+50.00	16+50.00	597		507	507	597
<b>SUBTOTAL</b>			<b>597</b>		<b>507</b>	<b>507</b>	<b>597</b>
<b>SUMMARY 5</b>							
-DR1-	10+75.00	11+27.63	3		133	130	
<b>SUBTOTAL</b>			<b>3</b>		<b>133</b>	<b>130</b>	
<b>SUMMARY 6</b>							
-DR2-	10+25.00	11+00.00	7		44	37	
<b>SUBTOTAL</b>			<b>7</b>		<b>44</b>	<b>37</b>	
<b>SHEET TOTALS</b>			<b>167,453</b>	<b>6,300</b>	<b>56,606</b>	<b>1,737</b>	<b>118,884</b>
<b>LOSS DUE TO CLEARING AND GRUBBING</b>			<b>-16,000</b>				<b>-16,000</b>
<b>ADDITIONAL UNDERCUT</b>				<b>2,500</b>	<b>920</b>	<b>920</b>	<b>2,500</b>
<b>EARTH WASTE IN LIEU OF BORROW</b>						<b>-2,657</b>	<b>-2,657</b>
<b>GRAND TOTAL</b>			<b>151,453</b>	<b>8,800</b>	<b>57,526</b>		<b>102,727</b>
<b>SAY</b>			<b>151,460</b>				
<b>DRAINAGE DITCH EXCAVATION = 1213 C.Y.</b>							
<b>SHOULDER BORROW = 270 C.Y.</b>							
<b>ESTIMATED SHALLOW UNDERCUT = 1000 C.Y.</b>							
<b>SELECT GRANULAR MATERIAL = 18000 C.Y.</b>							
<b>ACCEPTABLE UNCLASSIFIED EXCAVATION = 26000 C.Y. NOT TO BE USED IN TOP 3' OF EMBANKMENT OR BACKFILL:</b>							
-L-	31+25.00	33+25.00	4,333				
-L-	34+75.00	39+25.00	4,333				
-L-	46+75.00	51+25.00	4,333				
-L-	55+25.00	55+75.00	4,333				
-L-	57+25.00	59+25.00	4,333				
-L-	60+75.00	62+49.70	4,333				

CHAIN	BEGINNING STATION	ENDING STATION	UNCL. EXCA. C.Y.	UNDERCUT C.Y.	EMBANK. +% C.Y.	BORROW C.Y.	WASTE C.Y.
<b>Note: Approximate quantities only. Unclassified Excavation, Borrow Excavation, Shoulder Borrow, Fine Grading, Clearing and Grubbing, Breaking of Existing Pavement, and Removal of Existing Pavement will be paid for at the contract lump sum price for "Grading."</b>							
<b>Note: Earthwork quantities are calculated by the Roadway Designer. These earthwork quantities are based in part on subsurface data provided by the Geotechnical Engineering Unit.</b>							

27K3270657

COMPUTED BY: KBH DATE: 11/19/2018
CHECKED BY: NSW DATE: 09/01/2023

PROJECT NO. U-6003 SHEET NO. 3D-1

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

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

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48 INCHES & UNDER)

Table with columns for LINE & STATION, OFFSET, STRUCTURE NUMBER, ELEVATIONS, PIPE SIZES (12-48 inches), ENDWALLS, DRAINAGE STRUCTURES, FRAME/GRATES, and REMARKS. Includes a SHEET TOTALS row at the bottom.

ABBREVIATIONS table listing symbols like C.A.A., C.B., C.S., D.I., G.D.I., H.D.P.E., J.B., M.H., N.S., P.V.C., R.C., T.B.D.I., T.B.J.B., W.S. and their corresponding material descriptions.

PIPE REMOVAL LIN. FT.

Table for PIPE REMOVAL with columns for REMARKS and LIN. FT. values for various pipe sizes.

Table with 4 columns: COMPUTED BY, DATE, CHECKED BY, DATE. Values: KBH, 11/19/2018, NSW, 09/01/2023

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS

Table with 2 columns: PROJECT NO., SHEET NO. Values: U-6003, 3D-2

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

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48 INCHES & UNDER)

Main data table with columns for LINE & STATION, OFFSET, STRUCTURE NUMBER, ELEVATIONS, SLOPE, PIPE SPECIFICATIONS, QUANTITIES, and REMARKS. Includes a SHEET TOTALS row at the bottom.

ABBREVIATIONS table listing terms like C.A.A., C.B., C.S., D.I., etc. with their corresponding material descriptions.

PIPE REMOVAL

REMARKS







COMPUTED BY: S. YANG DATE: 8/10/2023  
 CHECKED BY: S. CLARK DATE: 8/10/2023

(2-3-23)

PROJECT NO. 47138.1.1(U-6003)	SHEET NO. 3G-1
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**STATE OF NORTH CAROLINA  
 DIVISION OF HIGHWAYS**

**SUMMARY OF SUBSURFACE DRAINAGE**

LINE	Station	Station	Location LT/RT/CL	Drain Type* UD/BD/SD	LF
L	3125	3325	LT/RT	SD	500
CONTINGENCY					500
<b>TOTAL LF:</b>					1000

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

**SUMMARY OF AGGREGATE SUBGRADE/STABILIZATION**

LINE	Station	Station	Aggregate Type* ASU(1/2)/ AST	Aggregate Thickness INCHES [8" for ASU(2)]	Shallow Undercut CY	Class IV Subgrade Stabilization TONS	Geotextile for Subgrade Stabilization SY	Stabilizer Aggregate TONS	Class IV Aggregate Stabilization TONS	
VARIES	VARIES	VARIES	ASU1	12	800	2100	3200			
CONTINGENCY					200	400	600			
<b>TOTAL CY/TONS/SY:</b>						1000	2500**	3800**	0	0

\*ASU(1/2) = Aggregate Subgrade (Type 1 or 2)  
 \*AST = Aggregate Stabilization  
 \*\*Total tons of "Class IV Subgrade Stabilization" and total square yards of "Geotextile for Subgrade Stabilization" are only the estimated quantities for ASU(1/2)/AST and may only represent a portion of the subgrade stabilization and geotextile quantities shown in the Item Sheets of the Proposal.



RW SHEET NO.

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
9/21/2023	9/22/2023

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

**ADT 2019 9,600**  
**ADT 2039 12,700**

**DETAIL A**  
SPECIAL CUT DITCH (Not to Scale)

**DETAIL B**  
SPECIAL CUT DITCH (Not to Scale)

**DETAIL C**  
TOE PROTECTION (Not to Scale)

FROM STA. 15+00 TO STA. 16+50 -Y16- LT  
FROM STA. 11+19 TO STA. 14+50 -Y16- RT  
FROM STA. 12+10 TO STA. 13+61 -Y15- RT  
FROM STA. 14+13 TO STA. 16+82 -Y15- RT  
FROM STA. 16+00 TO STA. 16+55 -Y15- LT

FROM STA. 11+84 TO STA. 15+00 -Y16- LT

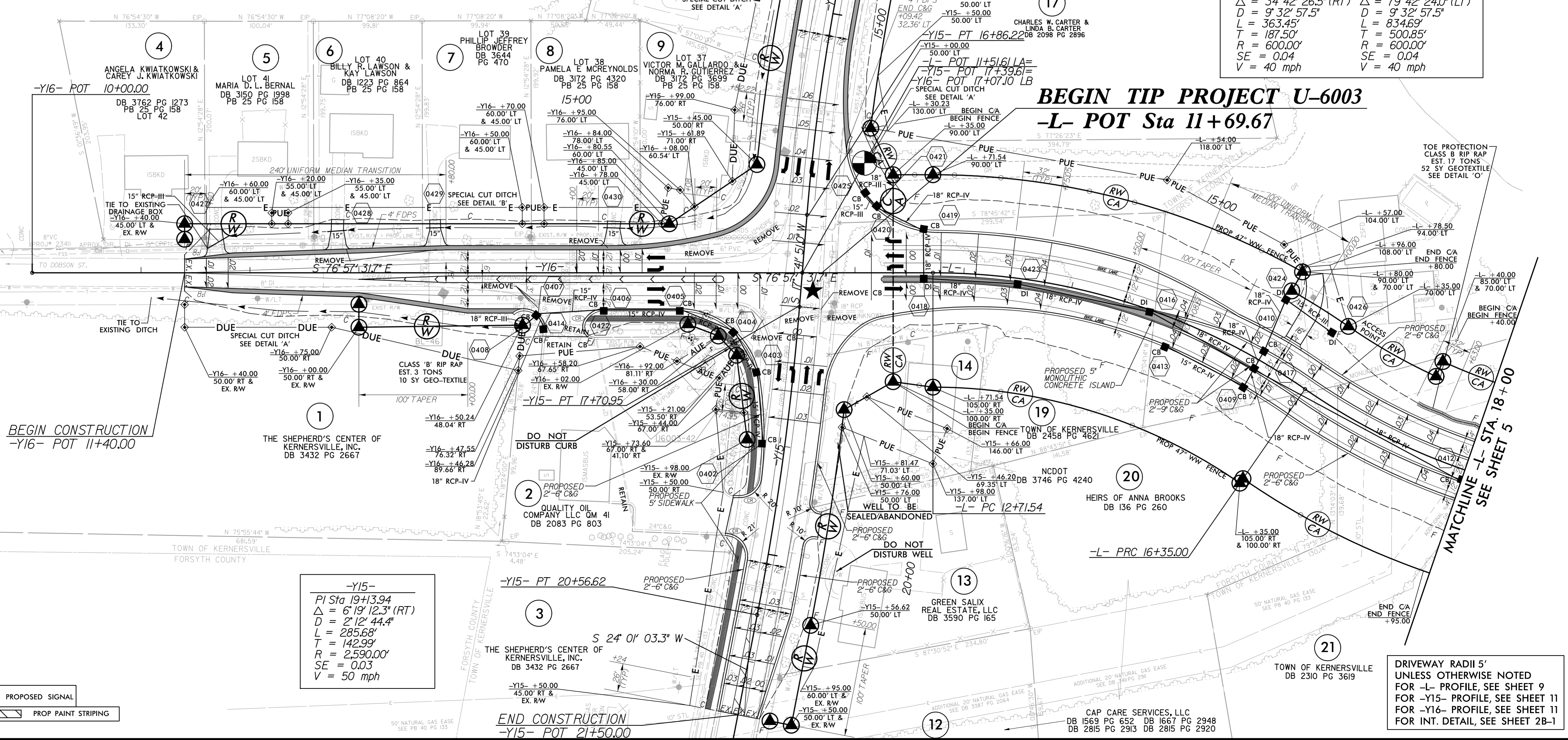
FROM STA. 17+50 TO STA. 18+00 -L- LT

**-Y15-**

PI Sta 11+23.06 Δ = 16° 04' 52.0" (LT) D = 6' 34" 50.4" L = 244.37' T = 123.06' R = 871.15' SE = SEE PLANS V = 45 mph	PI Sta 14+66.24 Δ = 12° 46' 30.4" (LT) D = 2' 53" 28.6" L = 441.85' T = 221.87' R = 1981.90' SE = 0.06 V = 55 mph
--	--

**-Y16-**

PI Sta 19+13.94 Δ = 6° 19' 12.3" (RT) D = 2' 12" 44.4" L = 285.68' T = 142.99' R = 2590.00' SE = 0.03 V = 50 mph
---



★ PROPOSED SIGNAL

▨ PROP PAINT STRIPING

DRIVEWAY RADII 5' UNLESS OTHERWISE NOTED FOR -L- PROFILE, SEE SHEET 9 FOR -Y15- PROFILE, SEE SHEET 11 FOR -Y16- PROFILE, SEE SHEET 11 FOR INT. DETAIL, SEE SHEET 2B-1

9/21/2023 10:03:00 03\_r-dj\_l-PSH04.dgn

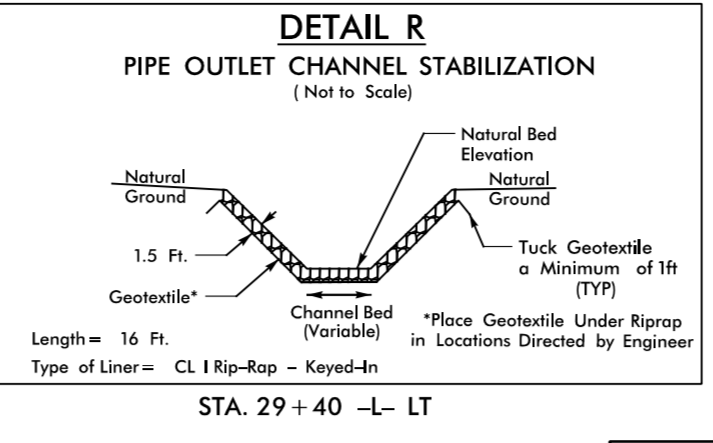
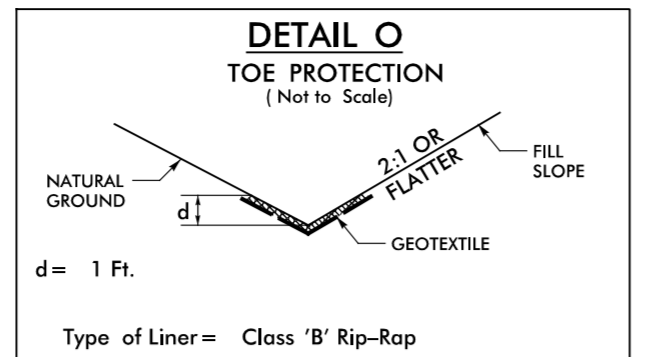
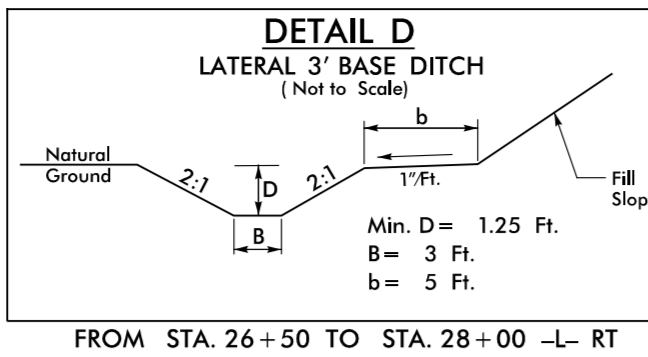
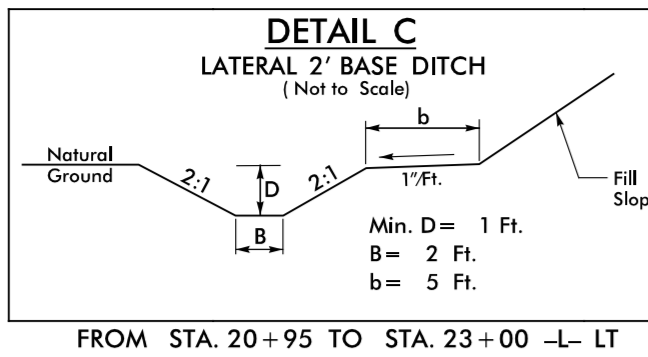
8/17/19

ROADWAY DESIGN ENGINEER  
HYDRAULICS ENGINEER

SEAL 041473  
ALEXANDER D. JAMES R. RICE

9/12/2023 9/12/2023

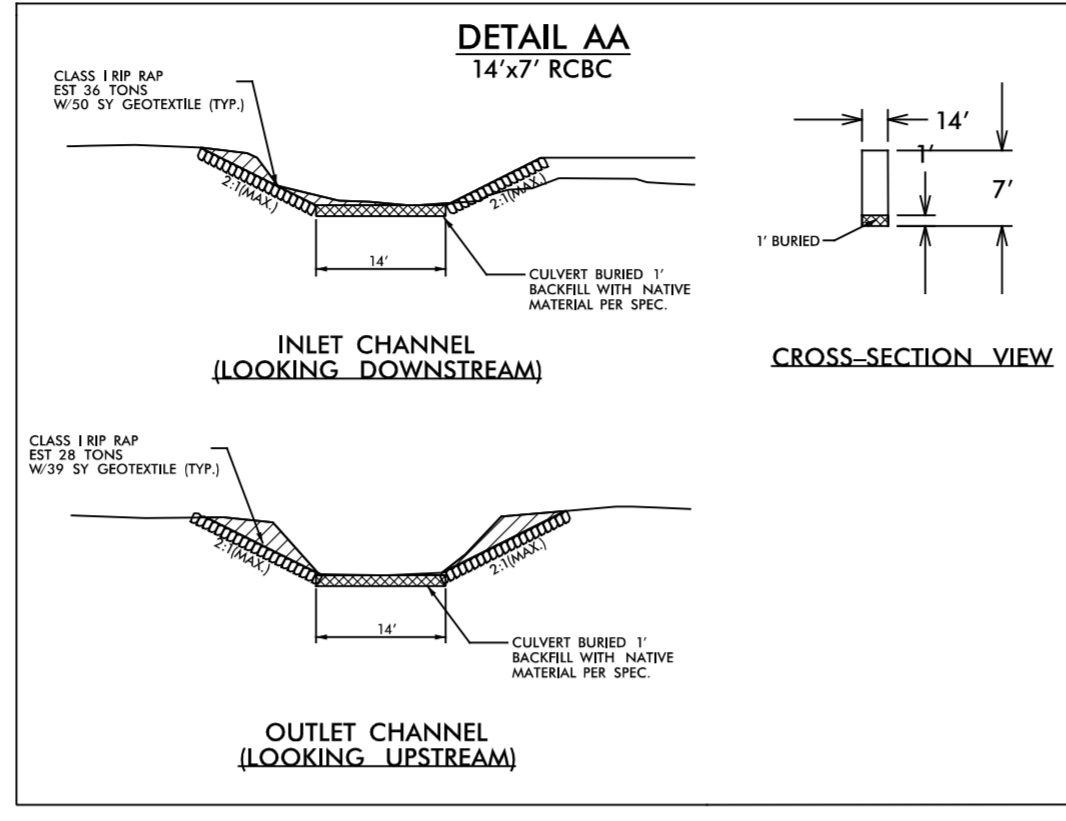
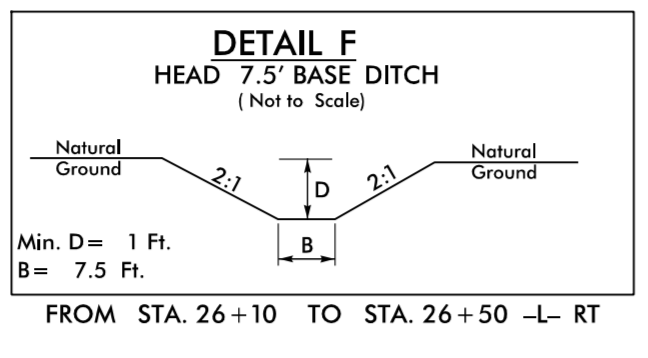
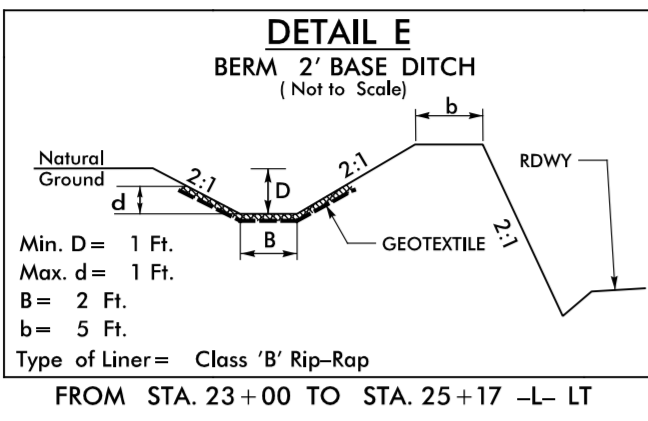
DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED



**-L-**

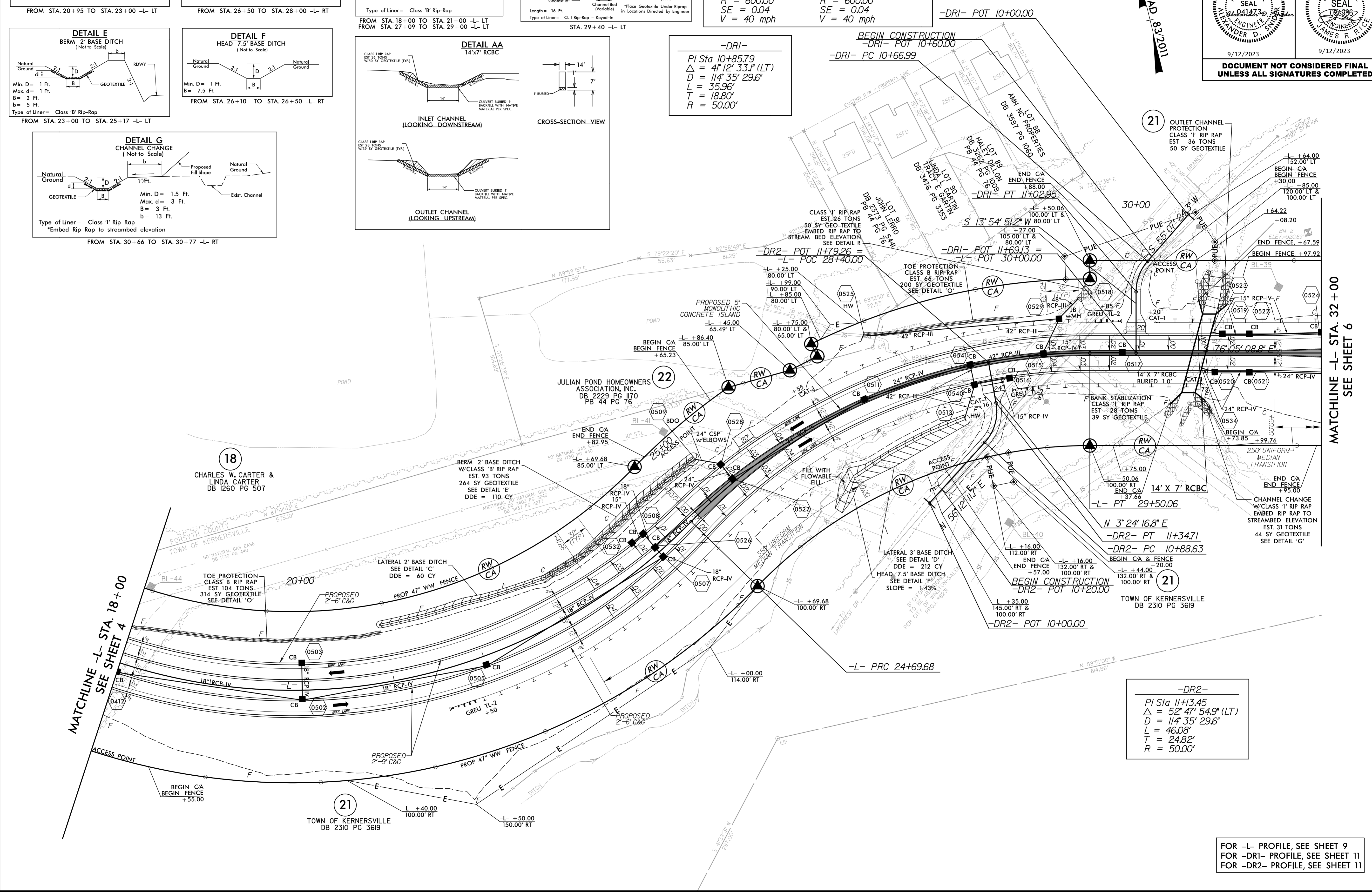
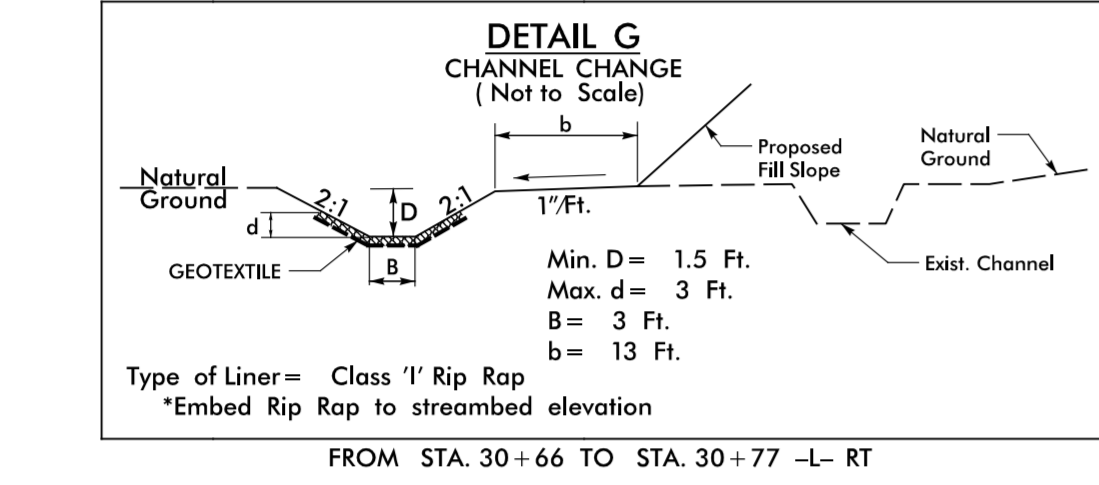
PI Sta 21+35.84  
 $\Delta = 79^\circ 42' 24.0''$  (LT)  
D = 9' 32' 57.5"  
L = 834.69'  
T = 500.85'  
R = 600.00'  
SE = 0.04  
V = 40 mph

PI Sta 27+23.58  
 $\Delta = 45^\circ 52' 20.5''$  (RT)  
D = 9' 32' 57.5"  
L = 480.37'  
T = 253.90'  
R = 600.00'  
SE = 0.04  
V = 40 mph



**-DRI-**

PI Sta 10+85.79  
 $\Delta = 41^\circ 12' 33.1''$  (LT)  
D = 114' 35' 29.6"  
L = 35.96'  
T = 18.80'  
R = 50.00'

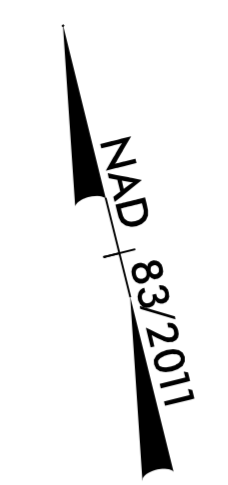
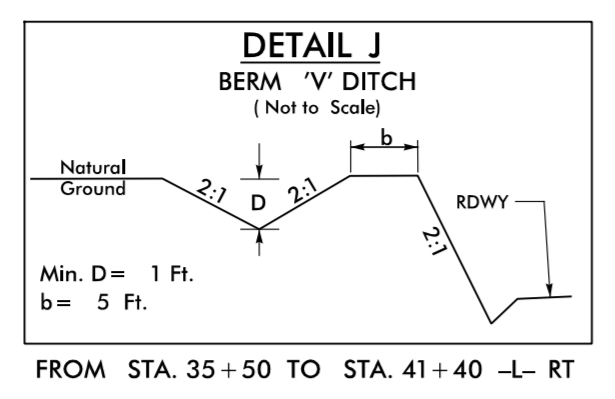


**-DR2-**

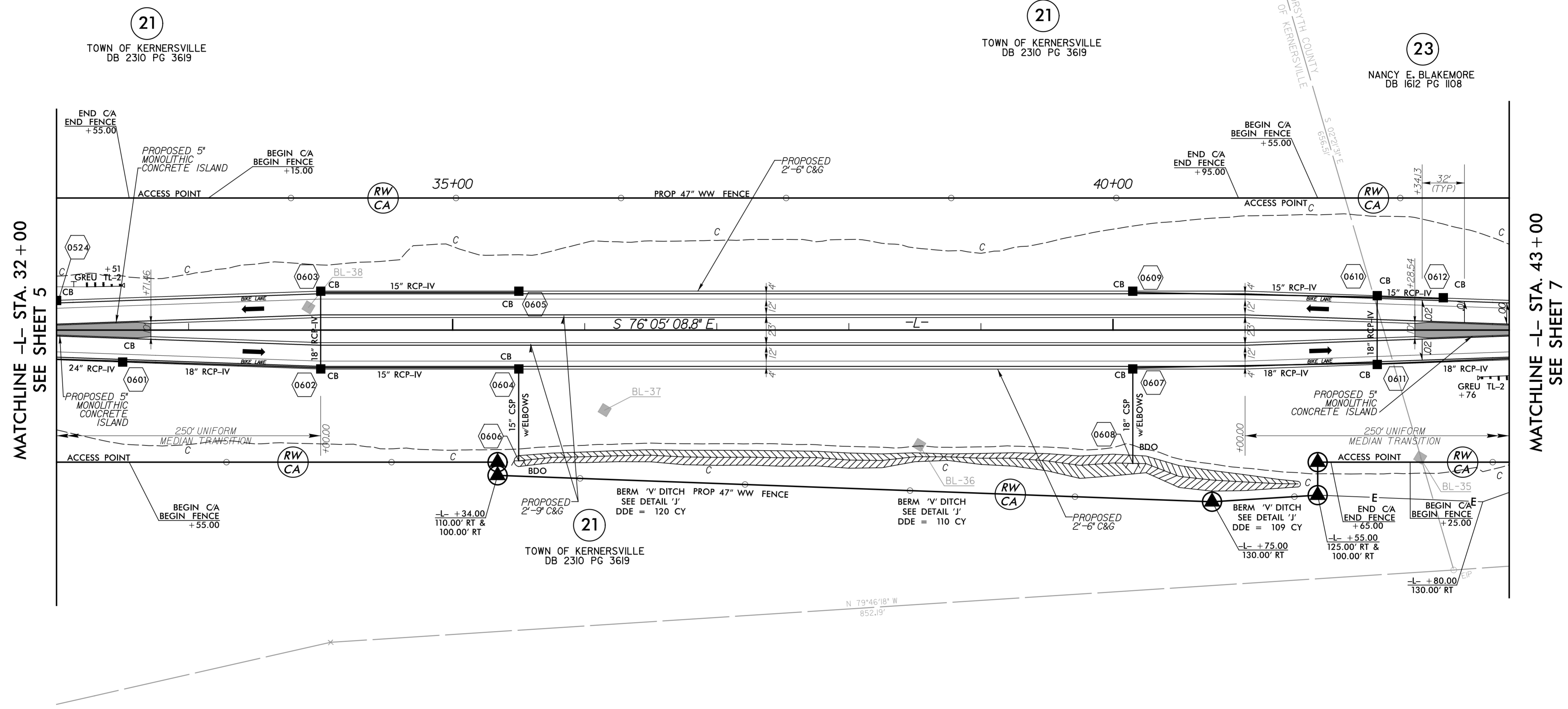
PI Sta 11+13.45  
 $\Delta = 52^\circ 47' 54.9''$  (LT)  
D = 114' 35' 29.6"  
L = 46.08'  
T = 24.82'  
R = 50.00'

FOR -L- PROFILE, SEE SHEET 9  
FOR -DRI- PROFILE, SEE SHEET 11  
FOR -DR2- PROFILE, SEE SHEET 11

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ROADWAY DESIGN ENGINEER <i>Alexander D. Rice</i> PROFESSIONAL SEAL 041473 ALEXANDER D. RICE 9/12/2023	HYDRAULICS ENGINEER <i>James R. Rice</i> PROFESSIONAL SEAL 053366 JAMES R. RICE 9/12/2023
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	



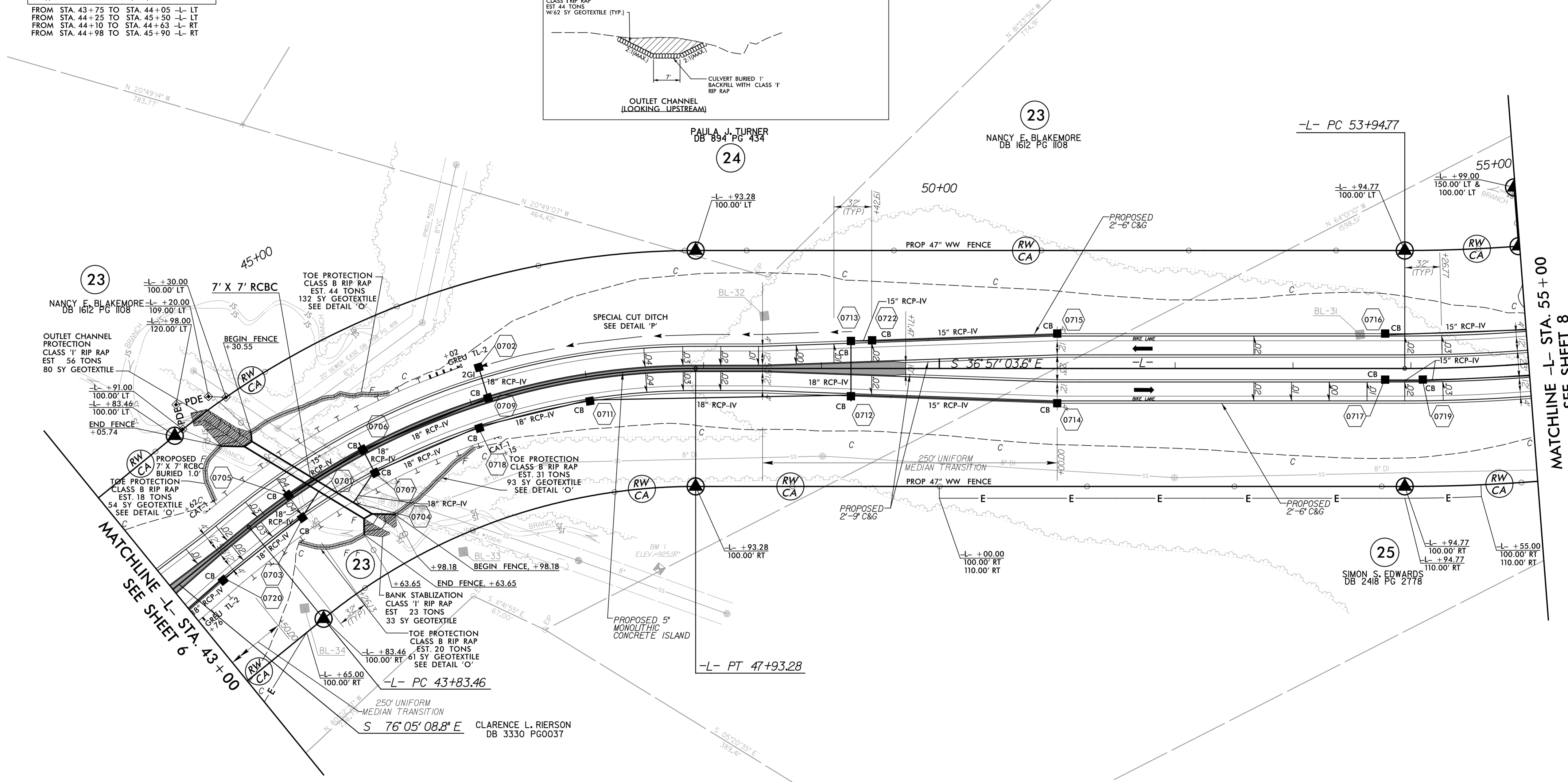
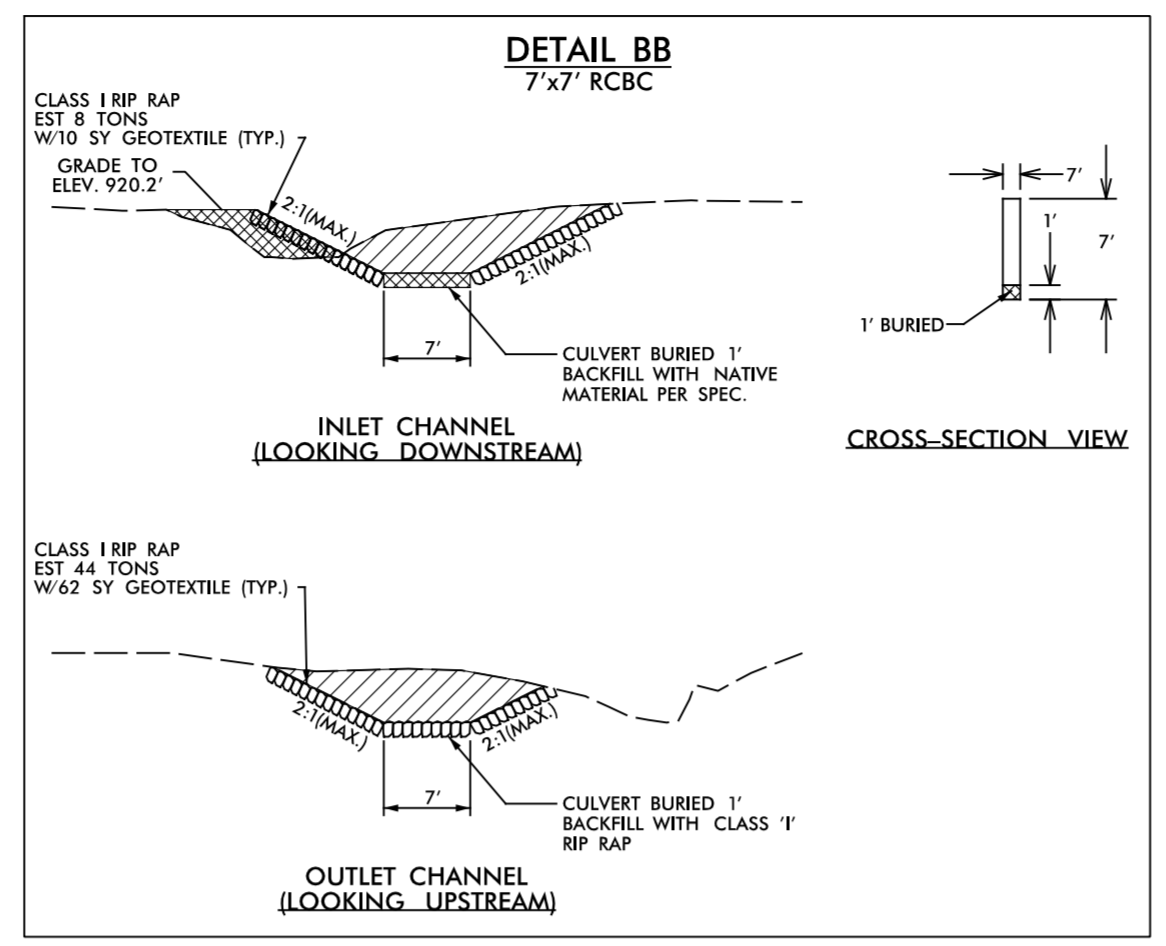
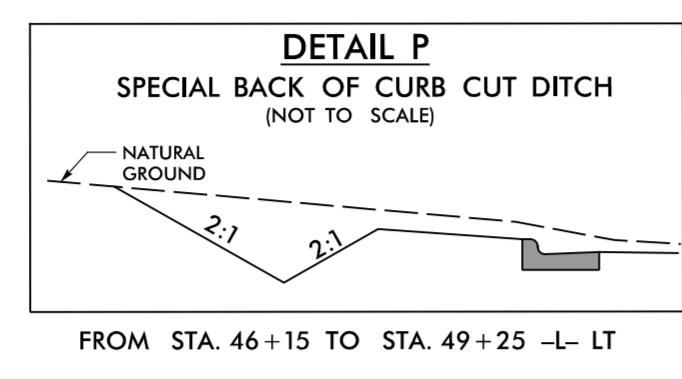
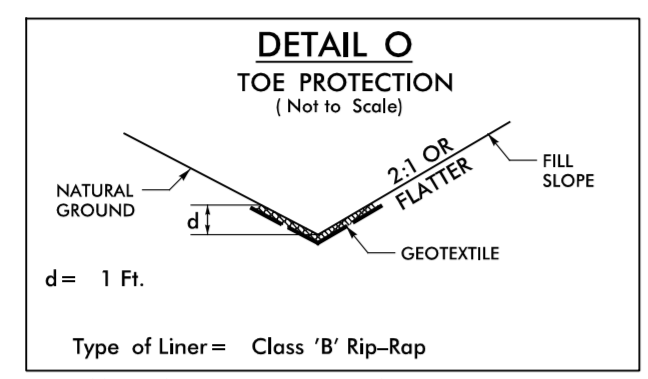
MATCHLINE -L- STA. 32 + 00  
SEE SHEET 5

MATCHLINE -L- STA. 43 + 00  
SEE SHEET 7

ROADWAY DESIGN ENGINEER <i>William C. Edwards, Jr.</i>	HYDRAULICS ENGINEER <i>James R. Rice</i>

**DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED**

**-L-**  
 PI Sta 45+96.73  
 $\Delta = 39^{\circ} 08' 05.1''$  (RT)  
 $D = 9^{\circ} 32' 57.5''$   
 $L = 409.82'$   
 $T = 213.27'$   
 $R = 600.00'$   
 $SE = 0.04$   
 $V = 40$  mph



23  
 NANCY F. BLAKEMORE  
 DB 1612 PG 1108

24  
 PAULA J. TURNER  
 DB 894 PG 434

23  
 NANCY F. BLAKEMORE  
 DB 1612 PG 1108

25  
 SIMON S. EDWARDS  
 DB 2418 PG 2178

CLARENCE L. RIERSON  
 DB 3330 PG0037

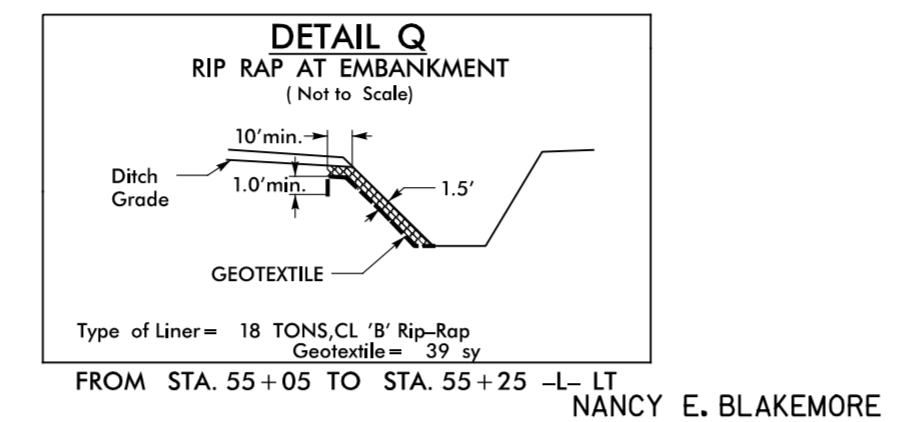
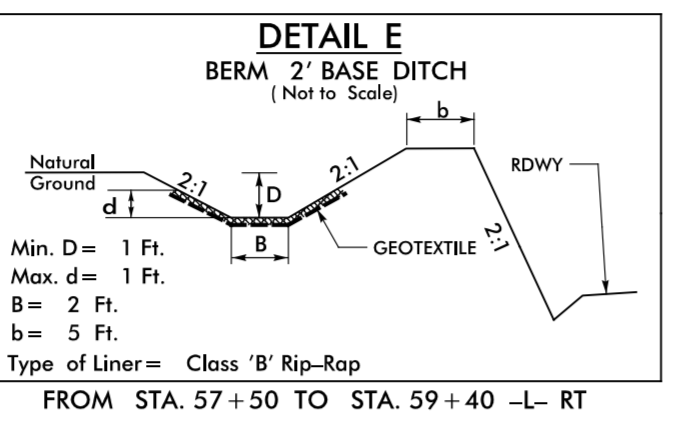
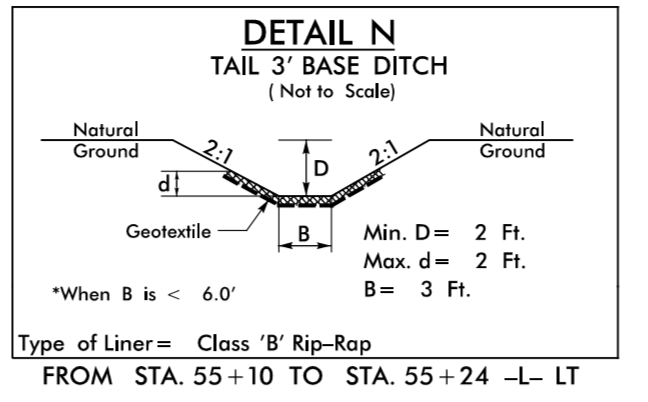
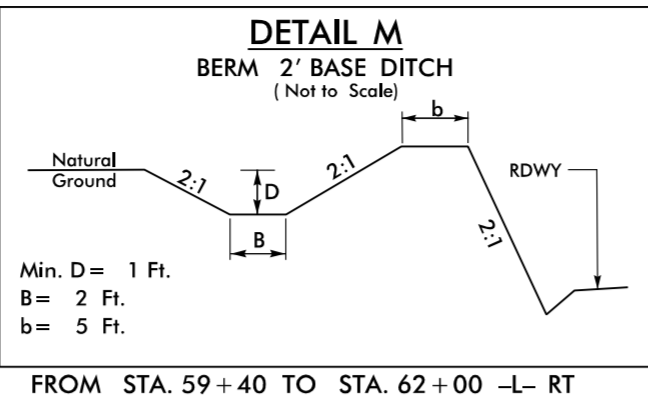
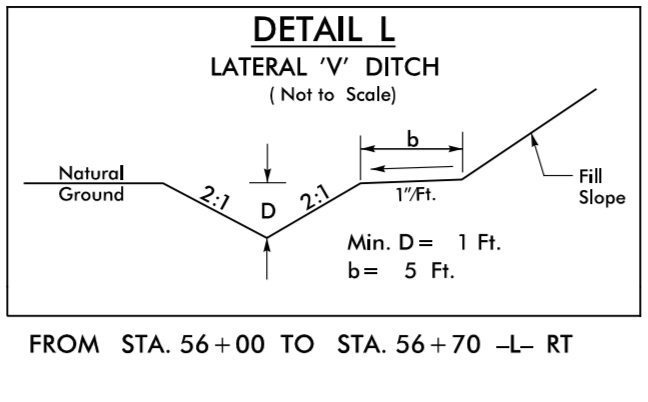
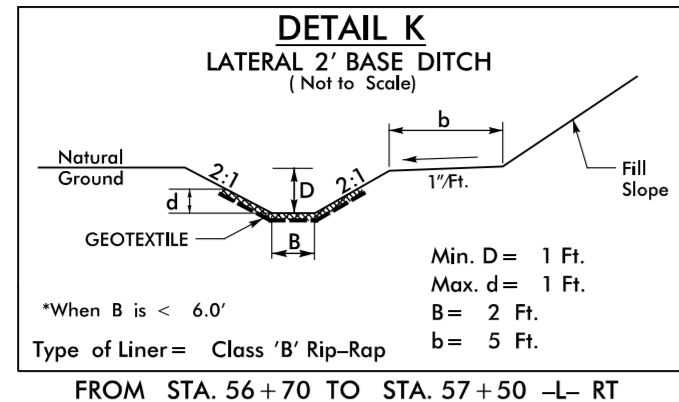
WILLIAM C. EDWARDS, JR.  
 DB 2078 PG 0625

MATCHLINE -L- STA. 55+00  
SEE SHEET 8

MATCHLINE -L- STA. 43+00  
SEE SHEET 6

FOR -L- PROFILE, SEE SHEET 10

8/17/19



RW SHEET NO. ROADWAY DESIGN ENGINEER HYDRAULICS ENGINEER

PROFESSIONAL SEAL  
ALEXANDER D. ...  
9/12/2023

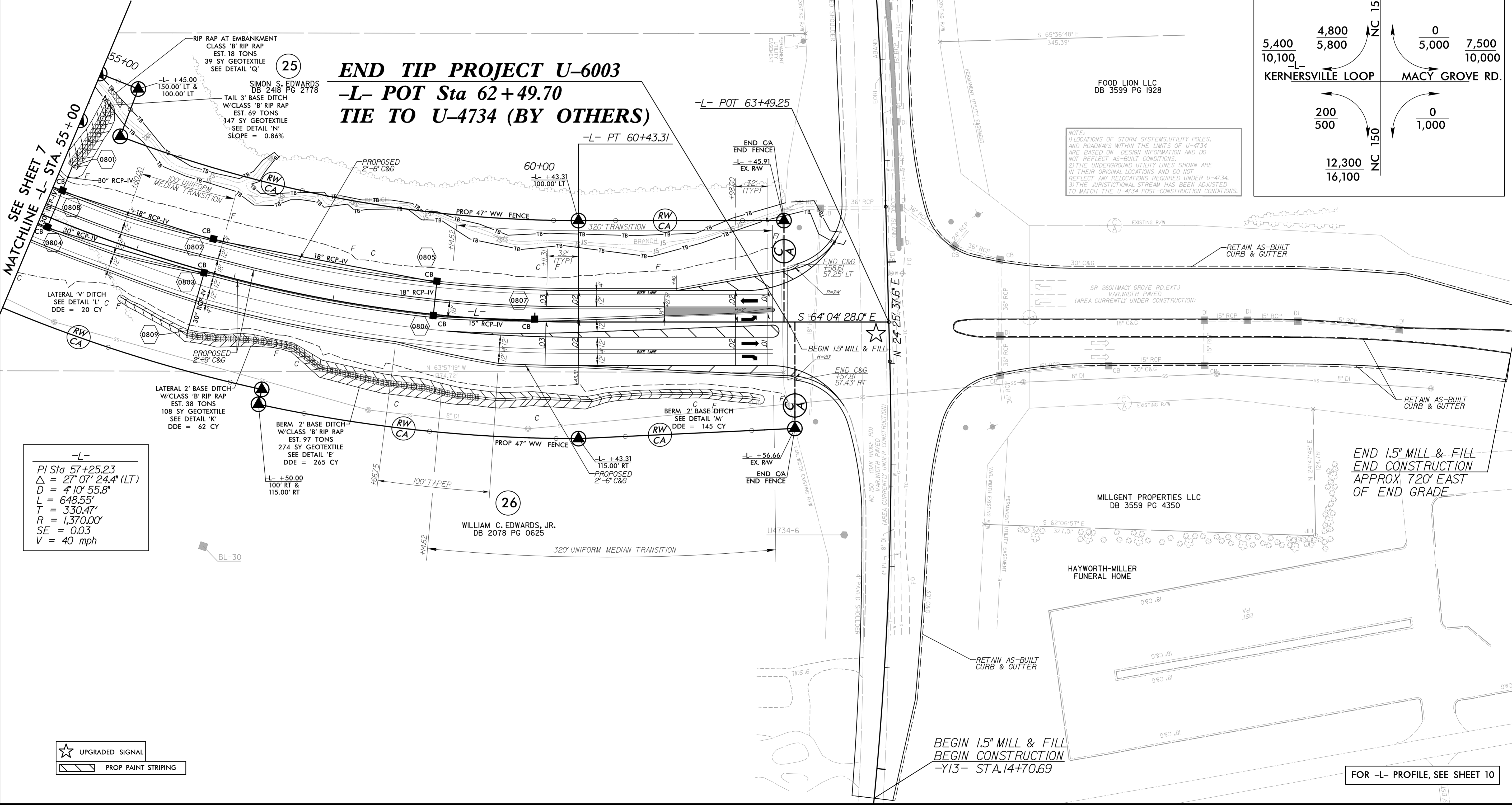
PROFESSIONAL SEAL  
JAMES R. ...  
9/12/2023

**DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED**

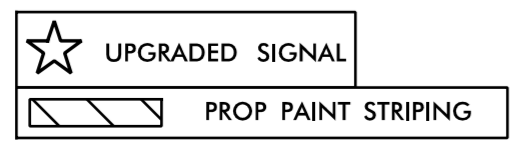
### END TIP PROJECT U-6003 -L- POT Sta 62+49.70 TIE TO U-4734 (BY OTHERS)

ADT 2019	17,200
ADT 2039	25,500
5,400	4,800
10,100	5,800
KERNERSVILLE LOOP	
200	0
500	1,000
MACY GROVE RD.	
12,300	0
16,100	7,500
10,000	

NOTE: 1) LOCATIONS OF STORM SYSTEMS, UTILITY POLES, AND ROADWAYS WITHIN THE LIMITS OF U-4734 ARE BASED ON DESIGN INFORMATION AND DO NOT REFLECT AS-BUILT CONDITIONS. 2) THE UNDERGROUND UTILITY LINES SHOWN ARE IN THEIR ORIGINAL LOCATIONS AND DO NOT REFLECT ANY RELOCATIONS REQUIRED UNDER U-4734. 3) THE JURISDICTIONAL STREAM HAS BEEN ADJUSTED TO MATCH THE U-4734 POST-CONSTRUCTION CONDITIONS.



-L-  
PI Sta 57+25.23  
Δ = 27° 07' 24.4" (LT)  
D = 4' 10" 55.8"  
L = 648.55'  
T = 330.47'  
R = 1,370.00'  
SE = 0.03  
V = 40 mph

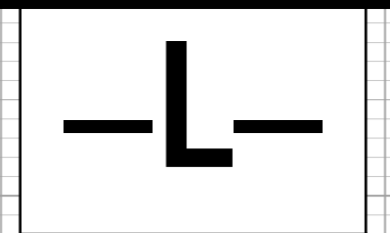


FOR -L- PROFILE, SEE SHEET 10

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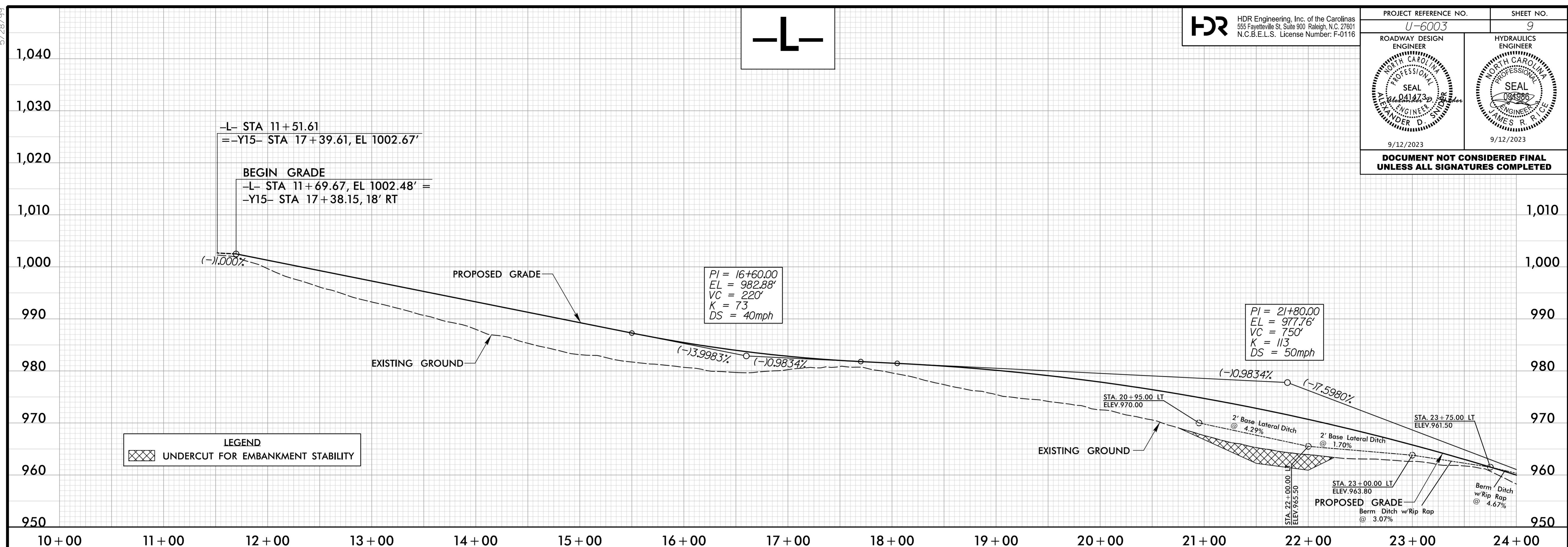
5/28/99



HDR HDR Engineering, Inc. of the Carolinas  
555 Fayetteville St. Suite 900 Raleigh, N.C. 27601  
N.C.B.E.L.S. License Number: F-0116

PROJECT REFERENCE NO. <i>U-6003</i>	SHEET NO. 9
ROADWAY DESIGN ENGINEER <i>Alexander D. Smith</i>	HYDRAULICS ENGINEER <i>James R. Rife</i>
PROFESSIONAL SEAL ALEXANDER D. SMITH 041473	PROFESSIONAL SEAL JAMES R. RIFE 043986
9/12/2023	9/12/2023

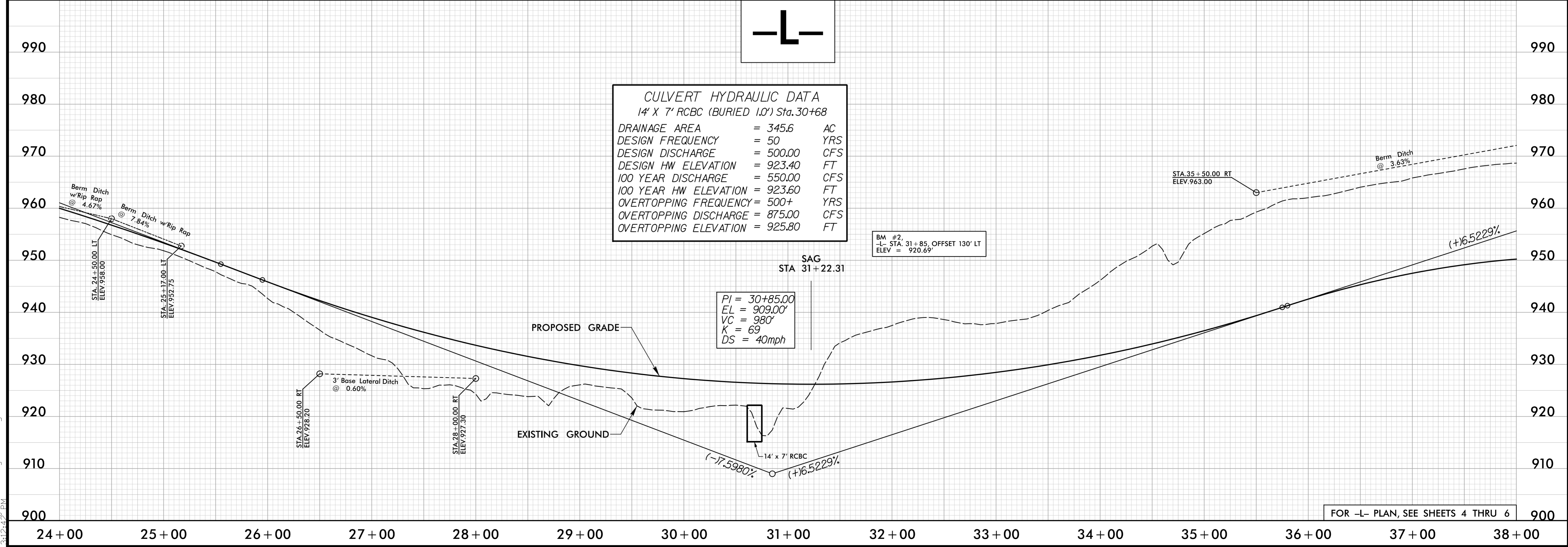
**DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED**



**LEGEND**  
 UNDERCUT FOR EMBANKMENT STABILITY

**CULVERT HYDRAULIC DATA**  
 14' X 7' RCBC (BURIED 1.0') Sta. 30+68

DRAINAGE AREA	= 345.6	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 500.00	CFS
DESIGN HW ELEVATION	= 923.40	FT
100 YEAR DISCHARGE	= 550.00	CFS
100 YEAR HW ELEVATION	= 923.60	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 875.00	CFS
OVERTOPPING ELEVATION	= 925.80	FT



FOR -L- PLAN, SEE SHEETS 4 THRU 6

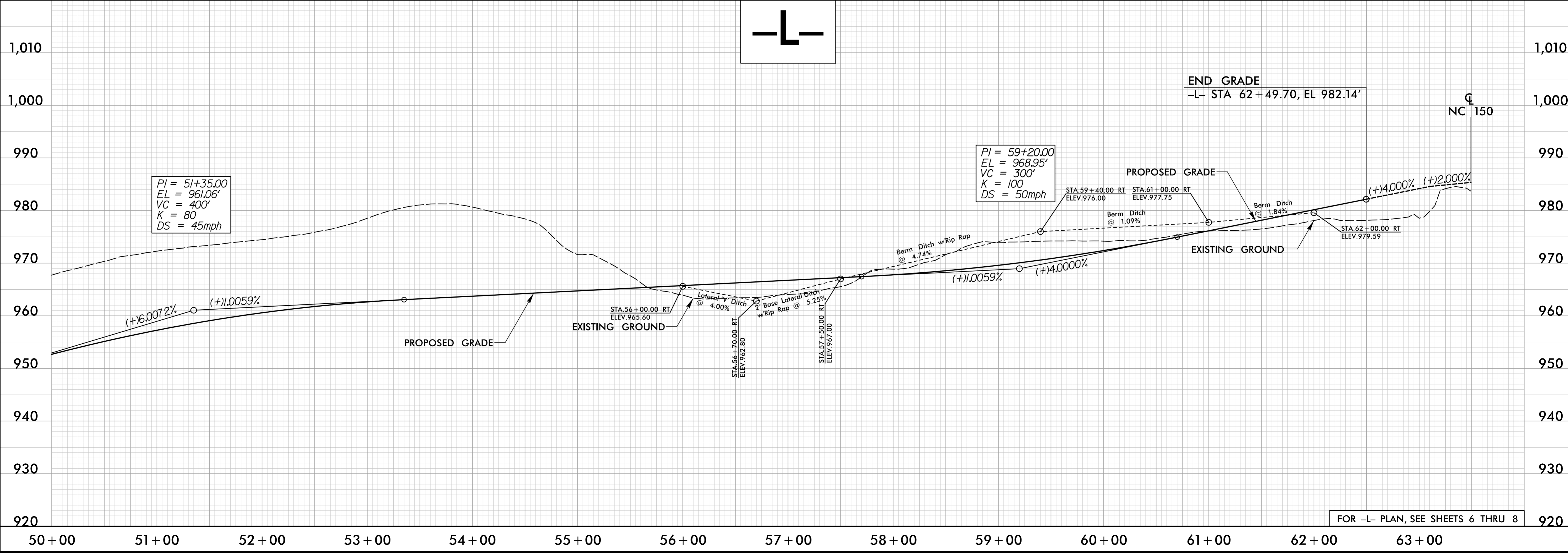
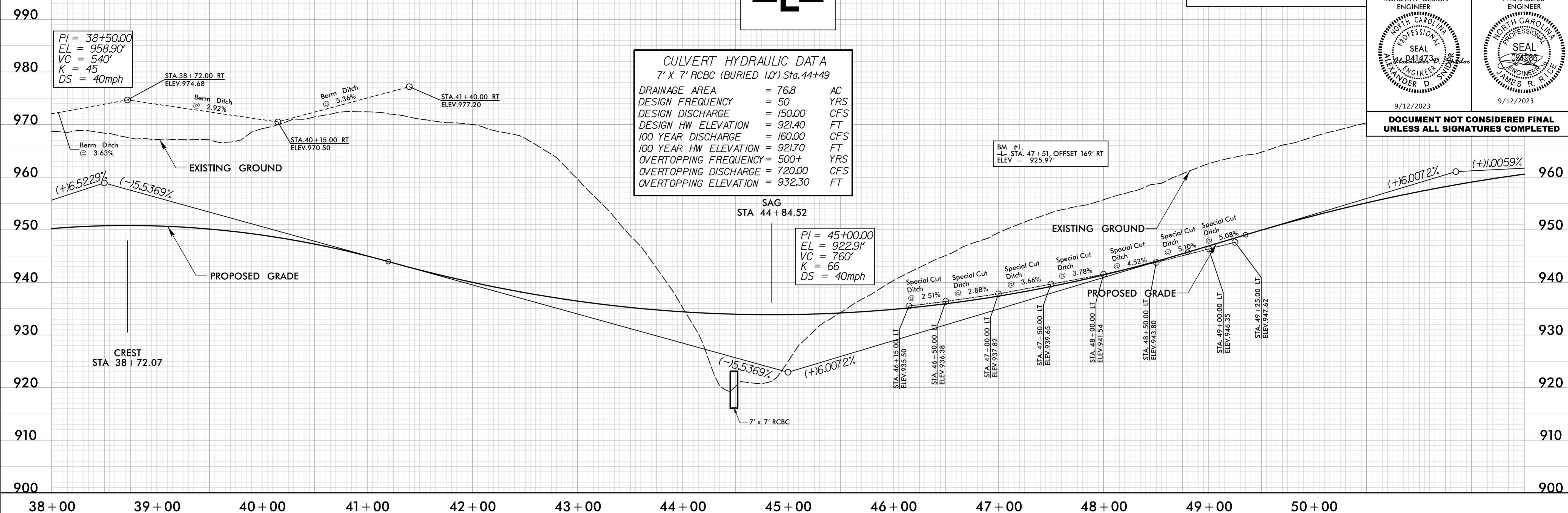
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5/28/23

PROJECT REFERENCE NO. <b>U-6003</b>	SHEET NO. <b>10</b>
ROADWAY DESIGN ENGINEER <b>ALEXANDER D. SMITH</b>	HYDRAULICS ENGINEER <b>JAMES R. RILEY</b>
SEAL 041473	SEAL 081986
9/12/2023	9/12/2023

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UNLESS ALL SIGNATURES COMPLETED**

CULVERT HYDRAULIC DATA	
7' X 7' RCBC (BURIED 1.0') Sta. 44+49	
DRAINAGE AREA	= 76.8 AC
DESIGN FREQUENCY	= 50 YRS
DESIGN DISCHARGE	= 150.00 CFS
DESIGN HW ELEVATION	= 921.40 FT
100 YEAR DISCHARGE	= 160.00 CFS
100 YEAR HW ELEVATION	= 921.70 FT
OVERTOPPING FREQUENCY	= 500+ YRS
OVERTOPPING DISCHARGE	= 720.00 CFS
OVERTOPPING ELEVATION	= 932.30 FT



8/10/2023 003\_r.dwg\_PSH10.dwg

FOR -L- PLAN, SEE SHEETS 6 THRU 8

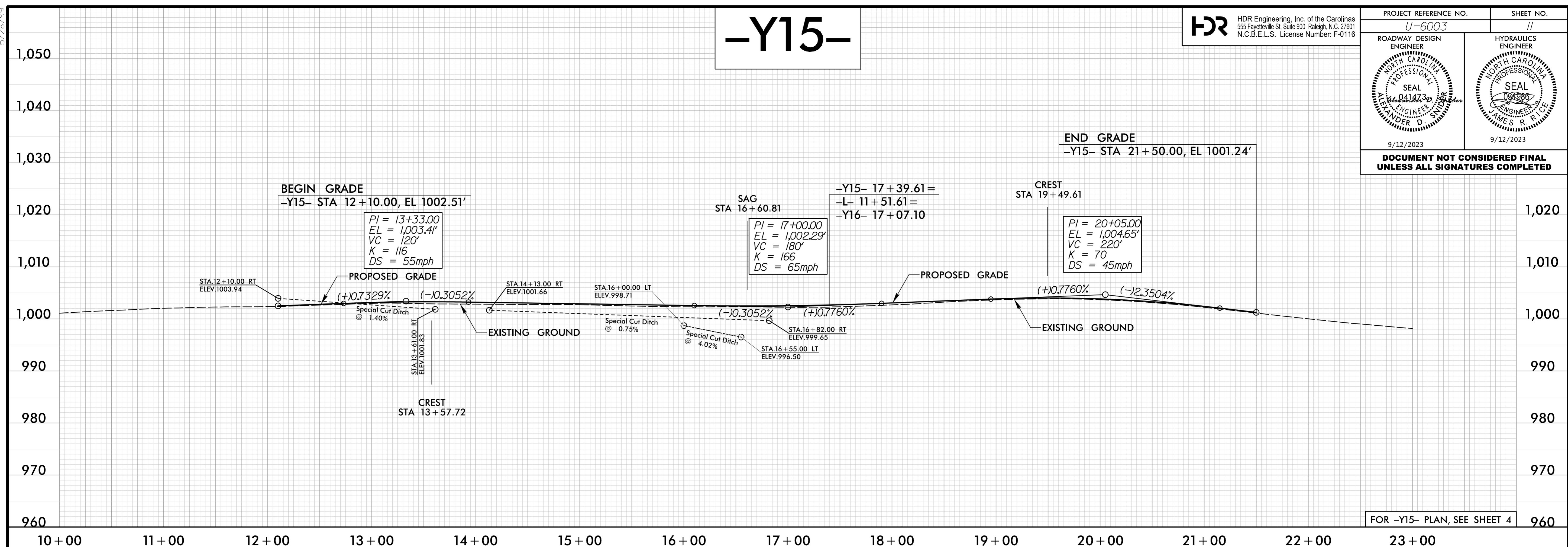
5/28/23

# -Y15-



PROJECT REFERENCE NO. <b>U-6003</b>	SHEET NO. <b>11</b>
ROADWAY DESIGN ENGINEER 	HYDRAULICS ENGINEER 
9/12/2023	9/12/2023

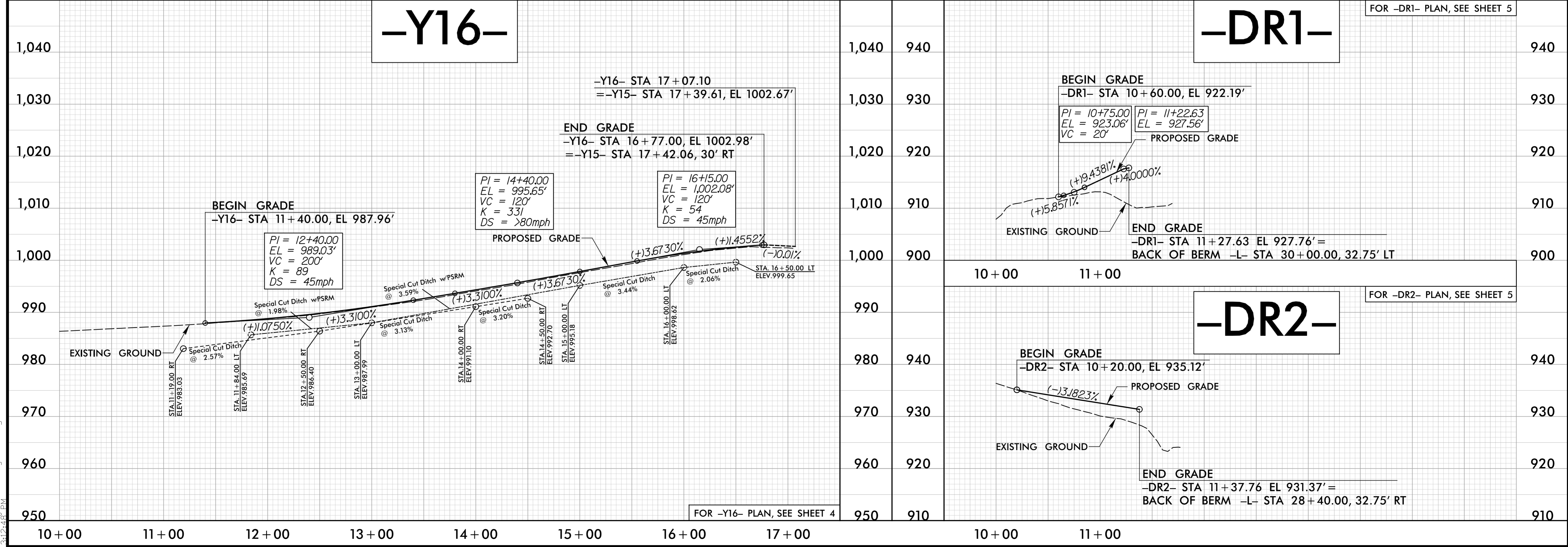
**DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED**



FOR -Y15- PLAN, SEE SHEET 4

# -Y16-

# -DR1-



FOR -DR1- PLAN, SEE SHEET 5

FOR -DR2- PLAN, SEE SHEET 5

8/10/2023 0003\_r.dwg\_PSH11.dgn