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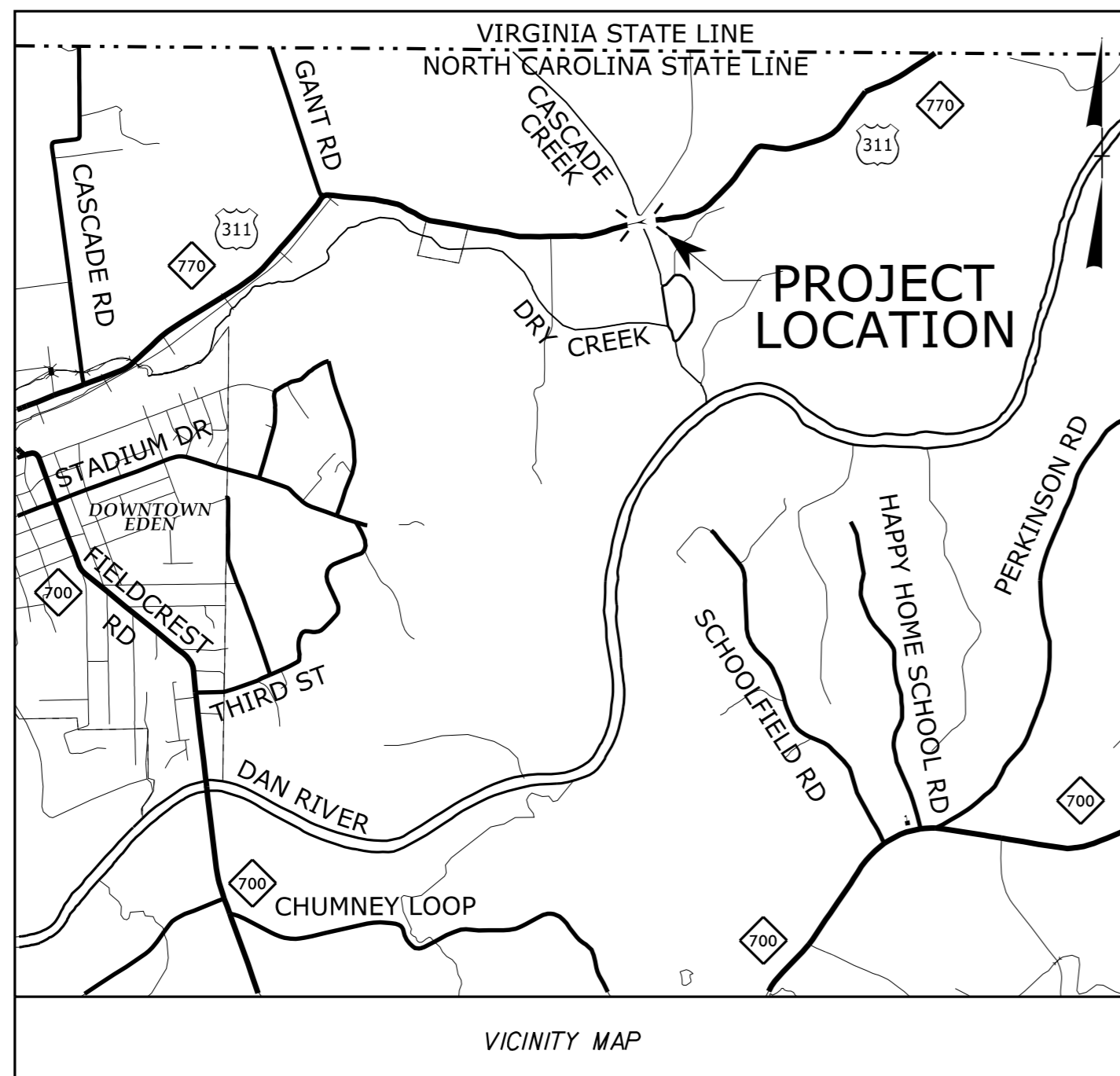
See Sheet 1A For Index of Sheets  
 See Sheet 1B For Conventional Symbols  
 See Sheet 1C-1 For Survey Control Sheet

STATE OF NORTH CAROLINA  
 DIVISION OF HIGHWAYS

**ROCKINGHAM COUNTY**

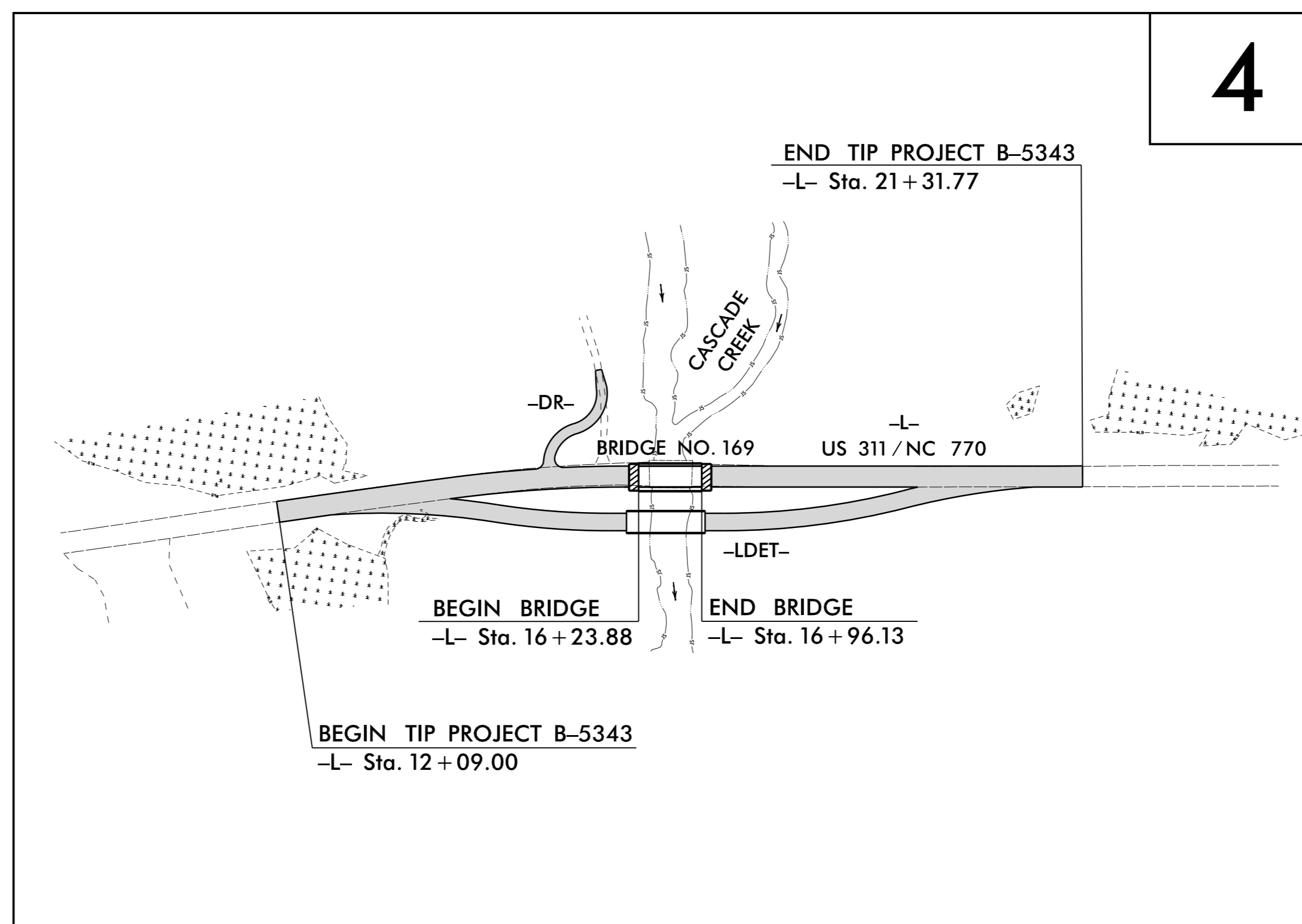
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5343	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
46057.1.1	BRSTP-0770(4)	P.E.	
46057.2.1		RIGHT-OF-WAY	
46057.2.1		UTILITIES	
46057.3.1		CONSTRUCTION	

**TIP PROJECT: B-5343**

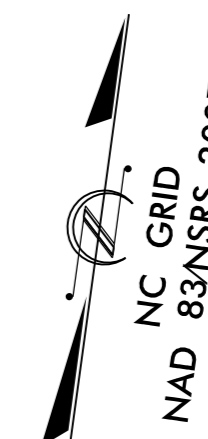


**LOCATION: BRIDGE NO. 169 OVER CASCADE CREEK  
 ON US 311 / NC 770**

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



**4**



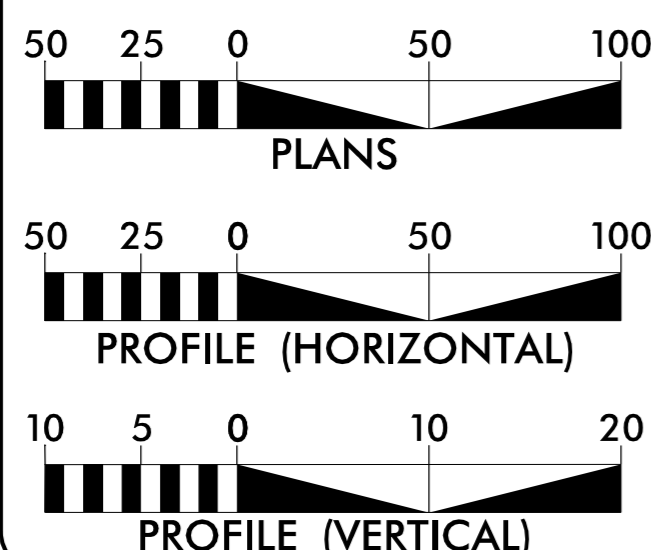
TO BUFFALO RD →

← TO EDEN

DOCUMENT NOT CONSIDERED FINAL  
 UNLESS ALL SIGNATURES COMPLETED

**CONTRACT: C203802**

**GRAPHIC SCALES**



**DESIGN DATA**

ADT 2016 = 2829 VPD  
 ADT 2040 = 4800 VPD  
 K = 10%  
 D = 55%  
 T = 11%\*  
 V = 60 MPH  
 V<sub>DET</sub> = 50 MPH  
 FUNCTIONAL CLASSIFICATION: RURAL MAJOR COLLECTOR  
 \* 8% TTST 3% DUAL SUB-REGIONAL TIER

**PROJECT LENGTH**

LENGTH ROADWAY TIP PROJECT B-5343 = 0.161 MILES  
 LENGTH STRUCTURE TIP PROJECT B-5343 = 0.014 MILES  
 TOTAL LENGTH TIP PROJECT B-5343 = 0.175 MILES

PLANS PREPARED FOR THE NCDOT BY:

**Kimley Horn**

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:

NOVEMBER 20, 2015

LETTING DATE:

NOVEMBER 15, 2016

**JEFFREY W. MOORE, P.E.**  
 PROJECT ENGINEER

**J. JASON PACE, P.E.**  
 PROJECT DESIGN ENGINEER

**BRENDA MOORE, P.E., CPM**  
 ASSISTANT STATE ROADWAY DESIGN ENGINEER

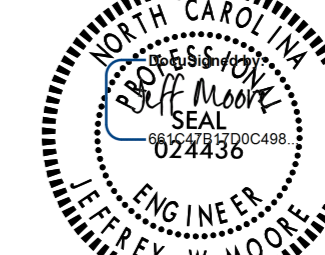
HYDRAULICS ENGINEER



10/7/2016

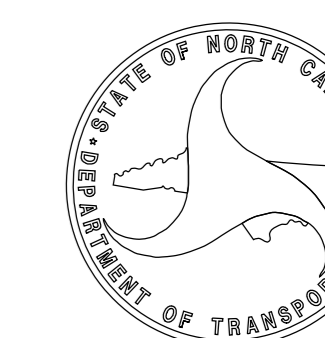
P.E.

**ROADWAY DESIGN ENGINEER**

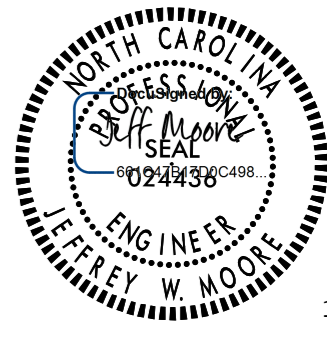


10/7/2016

P.E.



# STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

PROJECT REFERENCE NO. <i>B-5343</i>	SHEET NO. <i>1A</i>
ROADWAY DESIGN ENGINEER	
	
10/7/2016	
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	

GENERAL NOTES

2012 SPECIFICATIONS

EFFECTIVE: 01-17-12  
REVISED: 07/30/12

GRADE LINE:

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.

EFF. 01-17-2012  
REV. 10-30-2012

2012 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, 2012 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD.NO.                      TITLE

DIVISION 2 - EARTHWORK  
200.02 METHOD OF CLEARING - METHOD II  
225.02 GUIDE FOR GRADING SUBGRADE - SECONDARY AND LOCAL  
225.04 METHOD OF OBTAINING SUPERELEVATION - TWO LANE PAVEMENT

DIVISION 3 - PIPE CULVERTS  
300.01 METHOD OF PIPE INSTALLATION  
310.10 DRIVEWAY PIPE CONSTRUCTION

DIVISION 4 - MAJOR STRUCTURES  
422.11 BRIDGE APPROACH FILLS - SUB REGIONAL TIER

DIVISION 5 - SUBGRADE, BASES, AND SHOULDERS  
560.01 METHOD OF SHOULDER CONSTRUCTION - HIGH SIDE OF SUPERELEVATED CURVE - METHOD I

DIVISION 6 - ASPHALT BASES AND PAVEMENTS  
654.01 PAVEMENT REPAIRS

DIVISION 8 - INCIDENTALS  
840.00 CONCRETE BASE PAD FOR DRAINAGE STRUCTURES  
840.25 ANCHORAGE FOR FRAMES - BRICK OR CONCRETE OR PRECAST  
840.29 FRAMES AND NARROW SLOT FLAT GRATES  
840.35 TRAFFIC BEARING GRATED DROP INLET - FOR CAST IRON DOUBLE FRAME AND GRATES  
840.46 TRAFFIC BEARING PRECAST DRAINAGE STRUCTURE  
846.01 CONCRETE CURB, GUTTER AND CURB & GUTTER  
846.04 DROP INLET INSTALLATION IN SHOULDER BERM GUTTER  
862.01 GUARDRAIL PLACEMENT  
862.02 GUARDRAIL INSTALLATION  
866.02 WOVEN WIRE FENCE - WITH WOOD POST  
876.02 GUIDE FOR RIP RAP AT PIPE OUTLETS  
876.04 DRAINAGE DITCHES WITH CLASS 'B' RIP RAP

B-5343  
ROCKINGHAM COUNTY

INDEX OF SHEETS

SHEET NUMBER	SHEET
I	TITLE SHEET
IA	INDEX OF SHEETS, GENERAL NOTES, LIST OF ROADWAY STANDARD DRAWINGS
IB	CONVENTIONAL SYMBOLS SHEET
IC-1	SURVEY CONTROL SHEET
2A-1 THRU 2A-2	PAVEMENT SCHEDULE, TYPICAL SECTIONS, AND MISCELLANEOUS DETAILS
2C-1	DETAIL FOR TYPE III STRUCTURE ANCHOR UNITS
2G-1	DETAIL FOR STANDARD TEMPORARY SHORING
3B-1	SUMMARY OF EARTHWORK
3B-2	SUMMARIES OF GUARDRAIL, SHOULDER BERM GUTTER, AND REMOVAL OF EXISTING ASPHALT PAVEMENT
3D-1	SUMMARY OF DRAINAGE QUANTITIES
3G-1	GEOTECHNICAL SUMMARIES
4 THRU 5	PLAN SHEETS
6	PROFILE SHEET
TMP-1 THRU TMP-6	TRANSPORTATION MANAGEMENT PLANS
EC-1 THRU EC-6	EROSION CONTROL PLANS
RF-1	REFORESTATION PLANS
SIGN-1 THRU SIGN-2	SIGNING AND PAVEMENT MARKING PLANS
UO-1 THRU UO-2	UTILITIES BY OTHERS PLANS
X-1	CROSS-SECTION INDEX
X-1A	CROSS-SECTION SUMMARY SHEET
X-2 THRU X-11	CROSS-SECTIONS
S1 THRU S18	STRUCTURE PLANS

CLEARING:

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.

SUPERELEVATION:

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

SHOULDER CONSTRUCTION:

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

GUARDRAIL:

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

TEMPORARY SHORING:

SHORING REQUIRED FOR THE MAINTENANCE OF TRAFFIC NOT SHOWN ON THE PLANS WILL BE PAID FOR AT THE CONTRACT PRICE FOR "TEMPORARY SHORING".

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:  
CITY OF EDEN (SEWER)  
PIEDMONT NATURAL GAS (GAS)  
CENTURYLINK (TELEPHONE)

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

RIGHT-OF-WAY MARKERS:

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

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

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

### BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	○ EIP
Property Corner	-----
Property Monument	□ ECM
Parcel/Sequence Number	①23
Existing Fence Line	-x-x-x-
Proposed Woven Wire Fence	○
Proposed Chain Link Fence	□
Proposed Barbed Wire Fence	◇
Existing Wetland Boundary	-WLB-
Proposed Wetland Boundary	-WLB-
Existing Endangered Animal Boundary	-EAB-
Existing Endangered Plant Boundary	-EPB-
Existing Historic Property Boundary	-HPB-
Known Contamination Area: Soil	☠ ☠
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	-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:

Baseline Control Point	◆
Existing Right of Way Marker	△
Existing Right of Way Line	-----
Proposed Right of Way Line	○
Proposed Right of Way Line with Iron Pin and Cap Marker	○
Proposed Right of Way Line with Concrete or Granite RW Marker	○
Proposed Control of Access Line with Concrete C/A Marker	○
Existing Control of Access	○
Proposed Control of Access	○
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	-----
Proposed Permanent Easement with Iron Pin and Cap Marker	◆

### ROADS AND RELATED FEATURES:

Existing Edge of Pavement	-----
Existing Curb	-----
Proposed Slope Stakes Cut	-C-
Proposed Slope Stakes Fill	-F-
Proposed Curb Ramp	○
Existing Metal Guardrail	-----
Proposed Guardrail	-----
Existing Cable Guiderail	-----
Proposed Cable Guiderail	-----
Equality Symbol	○
Pavement Removal	-----

### VEGETATION:

Single Tree	○
Single Shrub	○
Hedge	-----
Woods Line	-----

Orchard	-----
Vineyard	-----

### EXISTING STRUCTURES:

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

### UTILITIES:

POWER:	
Existing Power Pole	●
Proposed Power Pole	○
Existing Joint Use Pole	●
Proposed Joint Use Pole	○
Power Manhole	○
Power Line Tower	□
Power Transformer	□
U/G Power Cable Hand Hole	○
H-Frame Pole	●
U/G Power Line LOS B (S.U.E.*)	-----
U/G Power Line LOS C (S.U.E.*)	-----
U/G Power Line LOS D (S.U.E.*)	-----

### TELEPHONE:

Existing Telephone Pole	●
Proposed Telephone Pole	○
Telephone Manhole	○
Telephone Pedestal	□
Telephone Cell Tower	○
U/G Telephone Cable Hand Hole	○
U/G Telephone Cable LOS B (S.U.E.*)	-----
U/G Telephone Cable LOS C (S.U.E.*)	-----
U/G Telephone Cable LOS D (S.U.E.*)	-----
U/G Telephone Conduit LOS B (S.U.E.*)	-----
U/G Telephone Conduit LOS C (S.U.E.*)	-----
U/G Telephone Conduit LOS D (S.U.E.*)	-----
U/G Fiber Optics Cable LOS B (S.U.E.*)	-----
U/G Fiber Optics Cable LOS C (S.U.E.*)	-----
U/G Fiber Optics Cable LOS D (S.U.E.*)	-----

### WATER:

Water Manhole	○
Water Meter	○
Water Valve	○
Water Hydrant	○
U/G Water Line LOS B (S.U.E.*)	-----
U/G Water Line LOS C (S.U.E.*)	-----
U/G Water Line LOS D (S.U.E.*)	-----
Above Ground Water Line	-----

### TV:

TV Pedestal	□
TV Tower	○
U/G TV Cable Hand Hole	○
U/G TV Cable LOS B (S.U.E.*)	-----
U/G TV Cable LOS C (S.U.E.*)	-----
U/G TV Cable LOS D (S.U.E.*)	-----
U/G Fiber Optic Cable LOS B (S.U.E.*)	-----
U/G Fiber Optic Cable LOS C (S.U.E.*)	-----
U/G Fiber Optic Cable LOS D (S.U.E.*)	-----

### GAS:

Gas Valve	◇
Gas Meter	◇
U/G Gas Line LOS B (S.U.E.*)	-----
U/G Gas Line LOS C (S.U.E.*)	-----
U/G Gas Line LOS D (S.U.E.*)	-----
Above Ground Gas Line	-----

### SANITARY SEWER:

Sanitary Sewer Manhole	○
Sanitary Sewer Cleanout	○
U/G Sanitary Sewer Line	-----
Above Ground Sanitary Sewer	-----
SS Forced Main Line LOS B (S.U.E.*)	-----
SS Forced Main Line LOS C (S.U.E.*)	-----
SS Forced Main Line LOS D (S.U.E.*)	-----

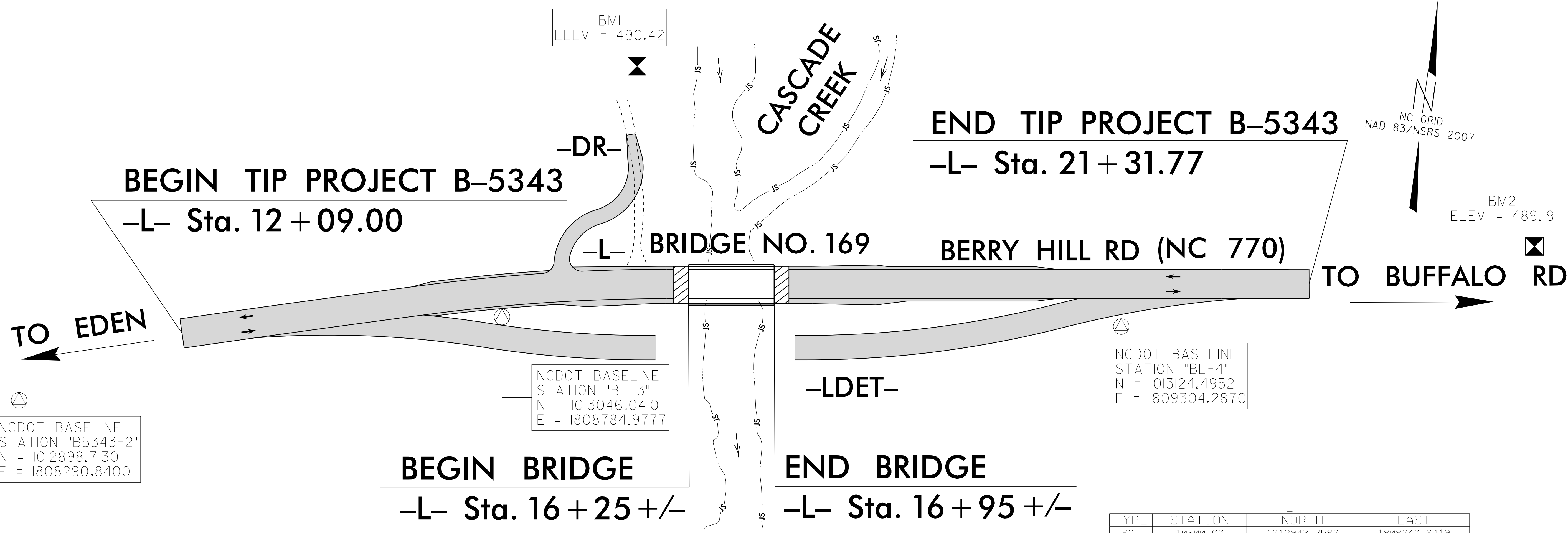
### MISCELLANEOUS:

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

12/01/2005

# B-5343 SURVEY CONTROL SHEET

PROJECT REFERENCE NO.	SHEET NO.
B-5343	1C-1
Location and Surveys	



### BASELINE DATA

BL POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
1	B5343-1	1012775.9310	1807503.7310	515.50	OUTSIDE PROJECT LIMITS	
2	B5343-2	1012898.7130	1808290.8400	491.43	OUTSIDE PROJECT LIMITS	
3	BL-3	1013046.0410	1808784.9777	487.78	14+56.40	21.43 RT
4	BL-4	1013124.4952	1809304.2870	487.39	19+83.95	21.51 RT

### BENCHMARK DATA

<b>BM1</b> ELEVATION = 490.42 N 1013268 E 1808880 -L- STATION 15+85.58 178' LEFT 600 NAIL IN BASE OF 24" OAK	<b>BM2</b> ELEVATION = 489.19 N 1013221 E 1809626 BL STATION 5+00.00 N 78°09'10.31" E DIST 2168.46 600 NAIL IN BASE OF 20" ASH
---	--

### NOTES

- THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:  
[HTTP://WWW.DOH.DOT.STATE.NC.US/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/](http://www.doh.dot.state.nc.us/preconstruct/highway/location/project/)  
THE FILES TO BE FOUND ARE AS FOLLOWS:  
*b5343\_ls\_control.txt*
- SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

### DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B5343-2" WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF NORTHING: 1012898.7130(ft) EASTING: 1808290.8400(ft) ELEVATION: 491.43'(ft)

THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 1.0001037555

THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B5343-2" TO -L- STATION 12+09.00 IS N 67°46'03" E 270.75'

ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

TYPE	STATION	NORTH	EAST
POT	10+00.00	1012943.2582	1808340.6419
PC	11+90.95	1012996.1653	1808524.1142
PCC	14+11.89	1013055.8177	1808736.8510
PT	16+07.08	1013094.7513	1808927.9773
PC	20+60.23	1013156.1421	1809376.9505
PT	21+35.48	1013166.5000	1809451.4855
POT	23+56.00	1013197.3307	1809669.8359

### -L- FINAL DRAINAGE UTILITY EASEMENT

ALIGN	STATION	OFFSET	NORTH	EAST
L	15+90.00	-45.00	1013136.8537	1808904.4632
L	17+15.00	-45.00	1013153.9567	1809028.8045
L	17+15.00	-31.43	1013140.5078	1809030.6435
L	16+07.08	-45.00	1013139.3364	1808921.8809
L	15+90.00	-32.26	1013124.2517	1808906.3328
L	15+90.00	27.74	1013064.9011	1809915.1377
L	15+90.00	45.00	1013047.8280	1808917.6706
L	16+07.08	45.00	1013050.1661	1808934.0737
L	17+15.00	45.00	1013064.7865	1809040.9973
L	17+15.00	28.58	1013081.0539	1809038.7730

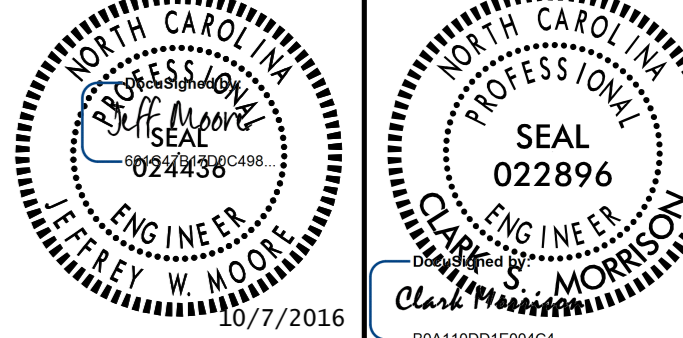
### -L- FINAL NEW PERMANENT DRAINAGE EASEMENT

ALIGN	STATION	OFFSET	NORTH	EAST
L	13+01.00	30.04	1012997.3478	1808638.0788
L	13+05.00	73.85	1012956.2371	1808653.7416
L	13+40.00	74.65	1012964.8223	1808687.5030
L	13+36.00	30.08	1013006.7019	1808671.7329

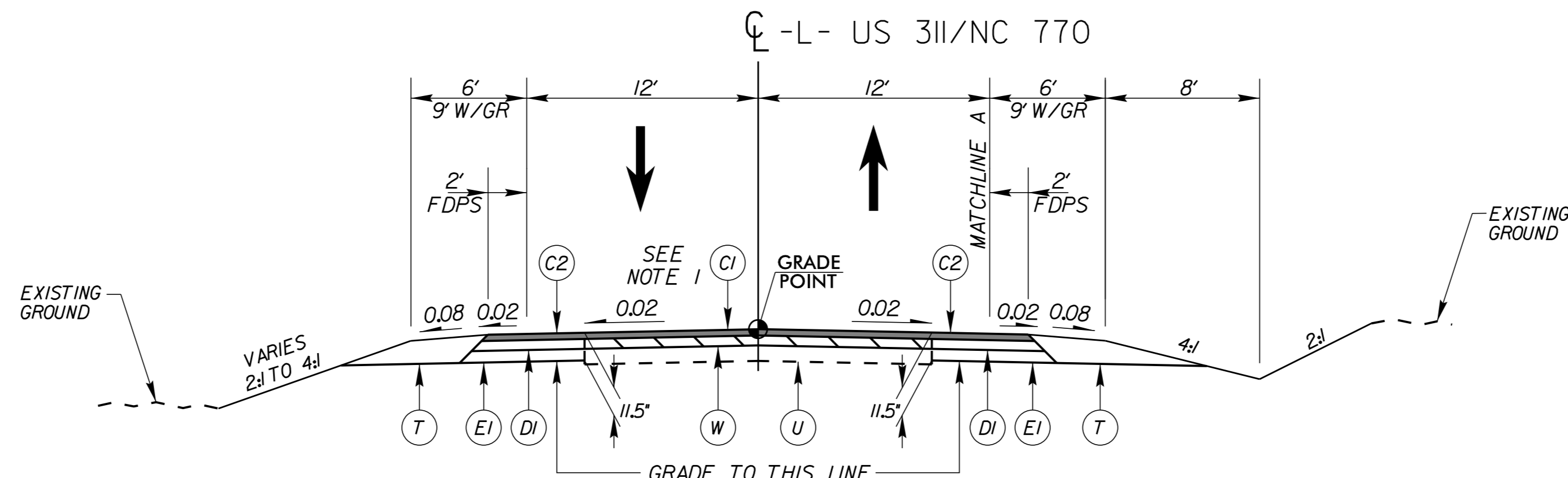
INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.  
PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.

NOTE: DRAWING NOT TO SCALE

27 JUN 2016 08:42 \\11036275 - B-5343\Roadway\Proj\B5343\_1s\_1c-1.dgn

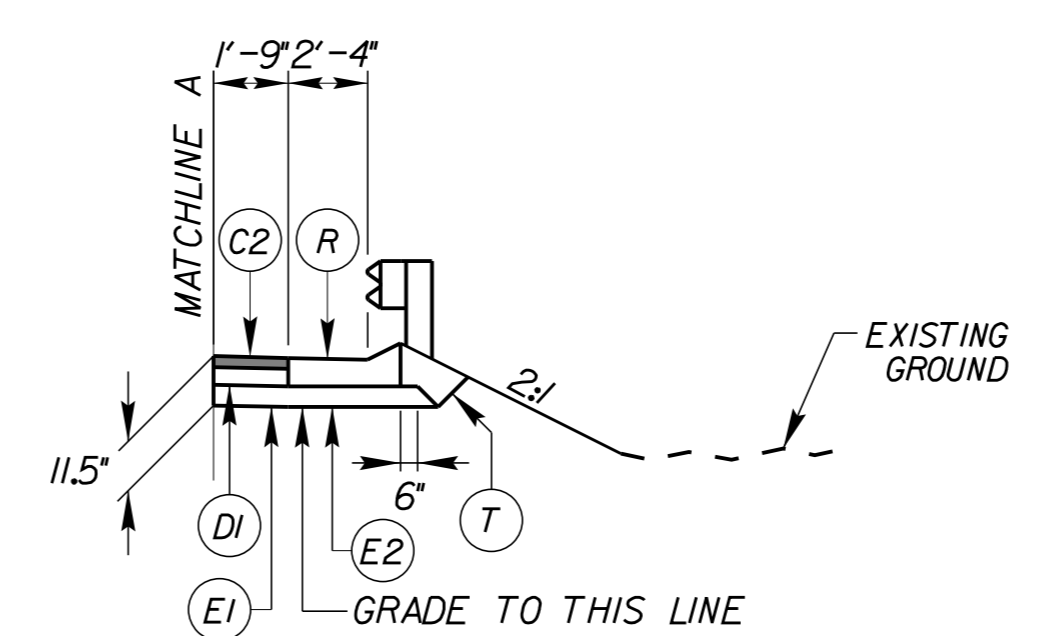


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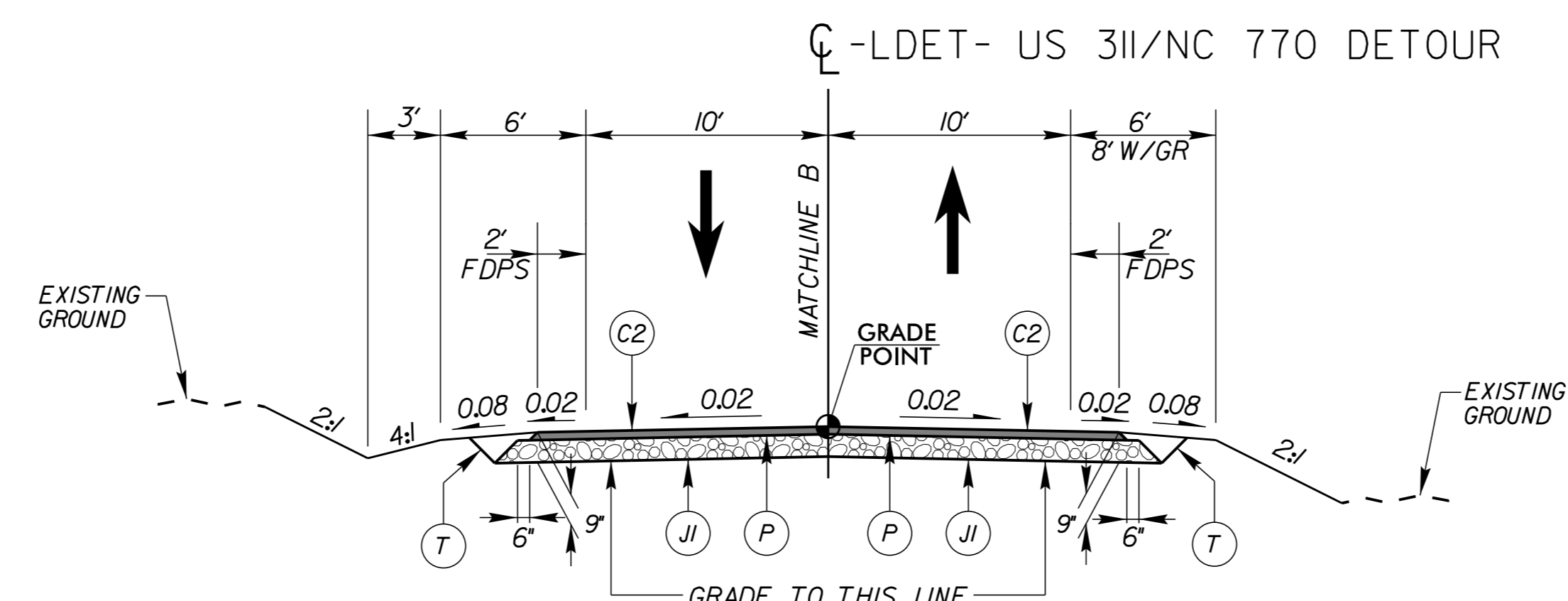
**TYPICAL SECTION NO. 1**

-L- STA 14+00.00 TO STA 16+23.88 (BEGIN BRIDGE)  
-L- STA 16+96.13 (END BRIDGE) TO 19+25.00



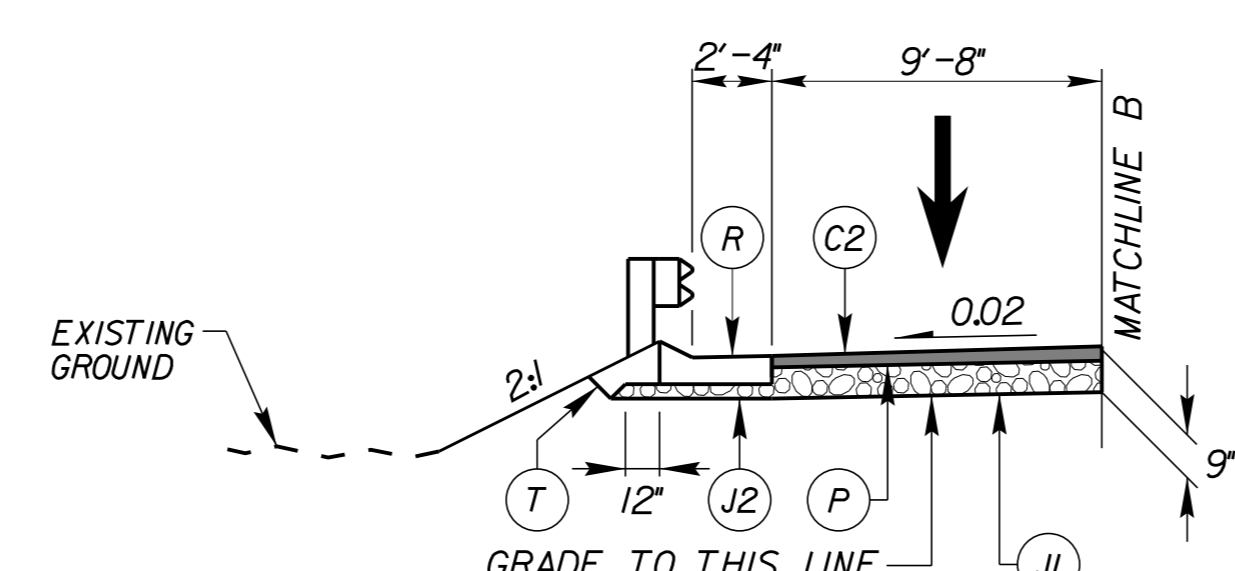
**TYPICAL SECTION NO. 1A**

-L- STA 15+93.00 TO STA 16+13.00 (RT)



**TYPICAL SECTION NO. 2**

-LDET- STA 11+44.96 TO STA 14+00.00 (BEGIN BRIDGE) (SEE NOTE 3)  
-LDET- STA 14+90.00 (END BRIDGE) TO 17+88.37 (SEE NOTE 4)

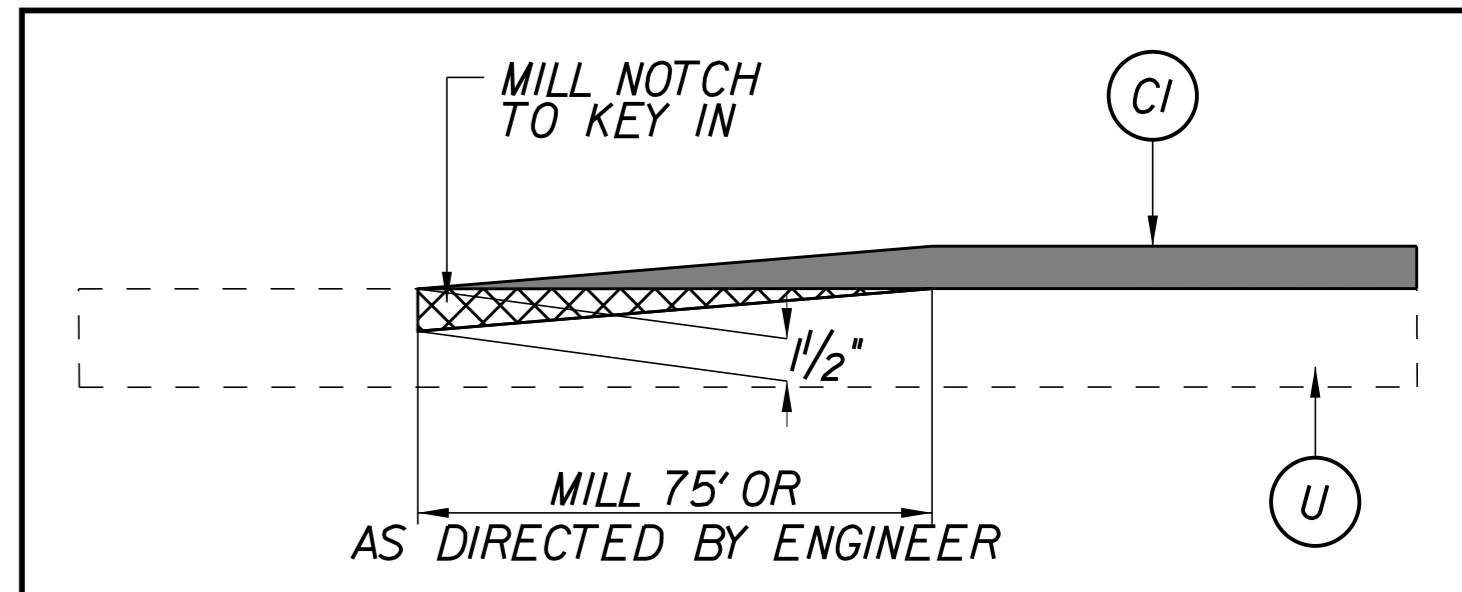


**TYPICAL SECTION NO. 2A**

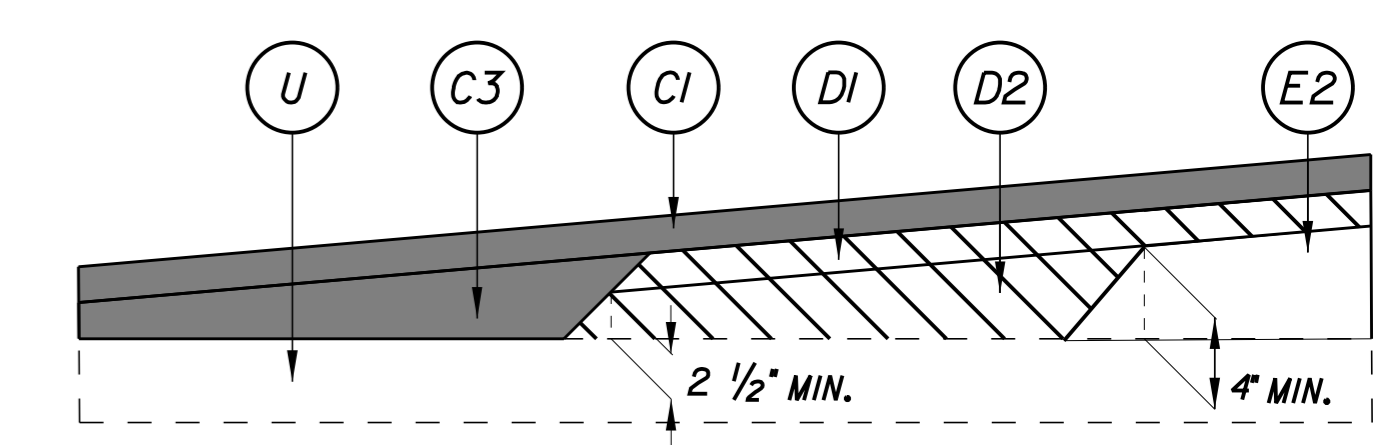
-LDET- STA 13+78.00 TO STA 14+00.00 (LT)

- NOTES:**
- OVERLAY FROM -L- STA 12+09.00 TO STA 14+00.00 AND FROM -L- STA 19+25.00 TO 21+31.77 (1.5" S9.5B)
  - MILL NOTCH TO KEY-IN S9.5B FROM -L- STA 12+09.00 TO STA 12+84.00 AND -L- STA 20+56.77 TO STA 21+31.77
  - TRANSITION FROM EXISTING TO TYPICAL SECTION NO. 2  
-LDET- Sta. 10+00.00 to 11+44.96
  - TRANSITION FROM TYPICAL SECTION NO. 2 TO EXISTING  
-LDET- Sta. 17+88.37 to 19+26.15
  - PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE

PAVEMENT SCHEDULE	
<b>C1</b>	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
<b>C2</b>	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS
<b>C3</b>	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT TO EXCEED 2" IN DEPTH
<b>D1</b>	PROP. APPROX. 3" ASPHALT CONCRETE INTERMEDIATE COURSE TYPE I19.0B, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD.
<b>D2</b>	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, 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
<b>E1</b>	PROP. APPROX. 5.5" ASPHALT CONCRETE BASE COURSE TYPE B25.0B, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.
<b>E2</b>	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 4" IN DEPTH OR GREATER THAN 5.5" IN DEPTH
<b>J1</b>	6" AGGREGATE BASE COURSE
<b>J2</b>	VAR. DEPTH AGGREGATE BASE COURSE
<b>P</b>	PRIME COAT AT THE RATE OF 0.35 GAL PER SQ. YD.
<b>R</b>	PROP. SHOULDER BERM GUTTER
<b>T</b>	EARTH MATERIAL
<b>U</b>	EXISTING PAVEMENT
<b>W</b>	VARIABLE DEPTH ASPHALT PAVEMENT (SEE DETAIL BELOW)



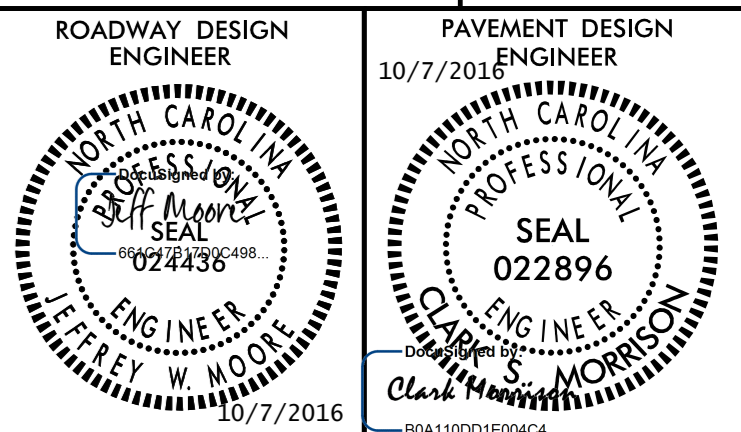
**PROFILE KEY-IN DETAIL**



**WEDGING DETAIL FOR RESURFACING**

REVISIONS

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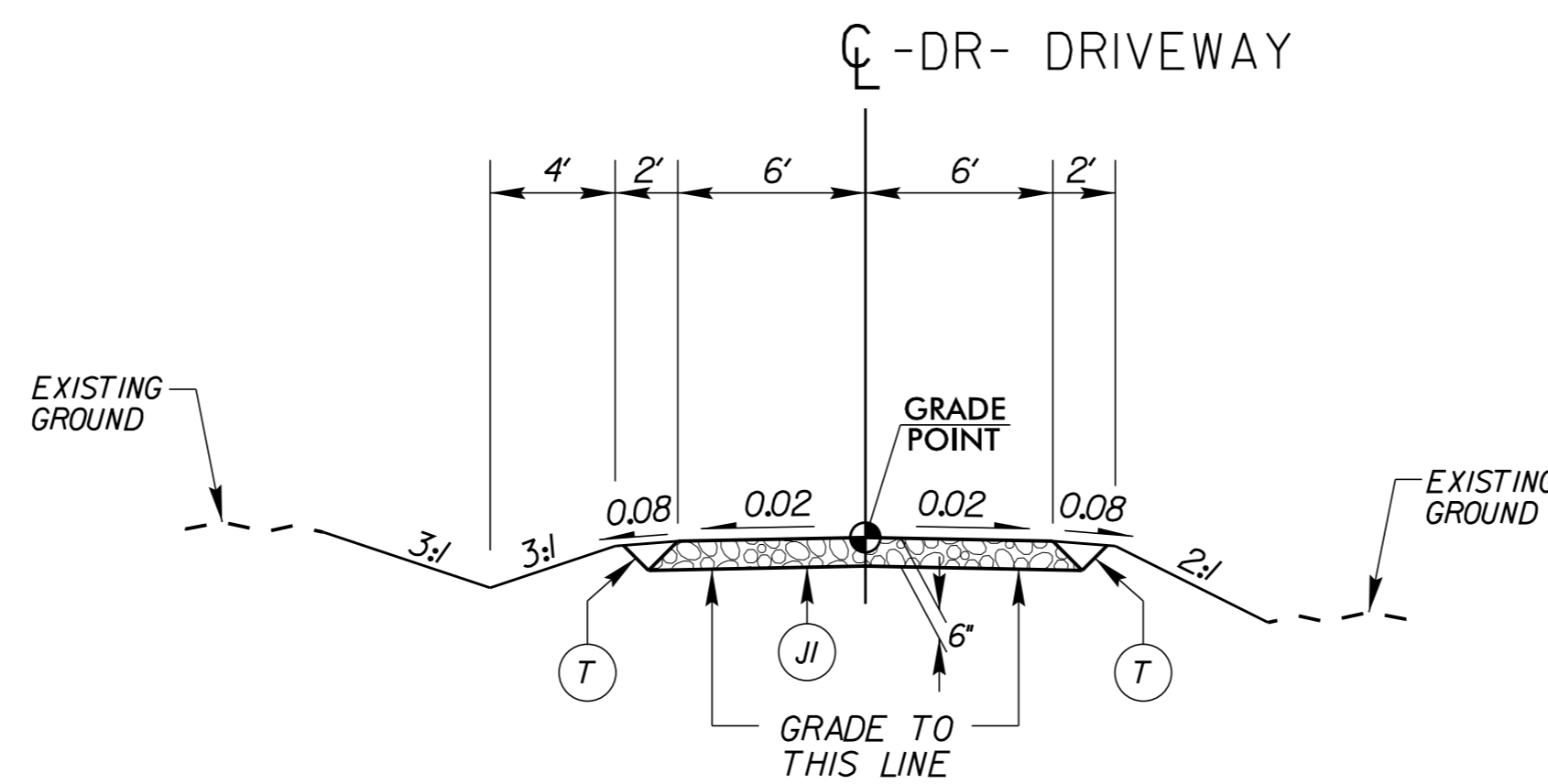


**DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED**

**PAVEMENT SCHEDULE**

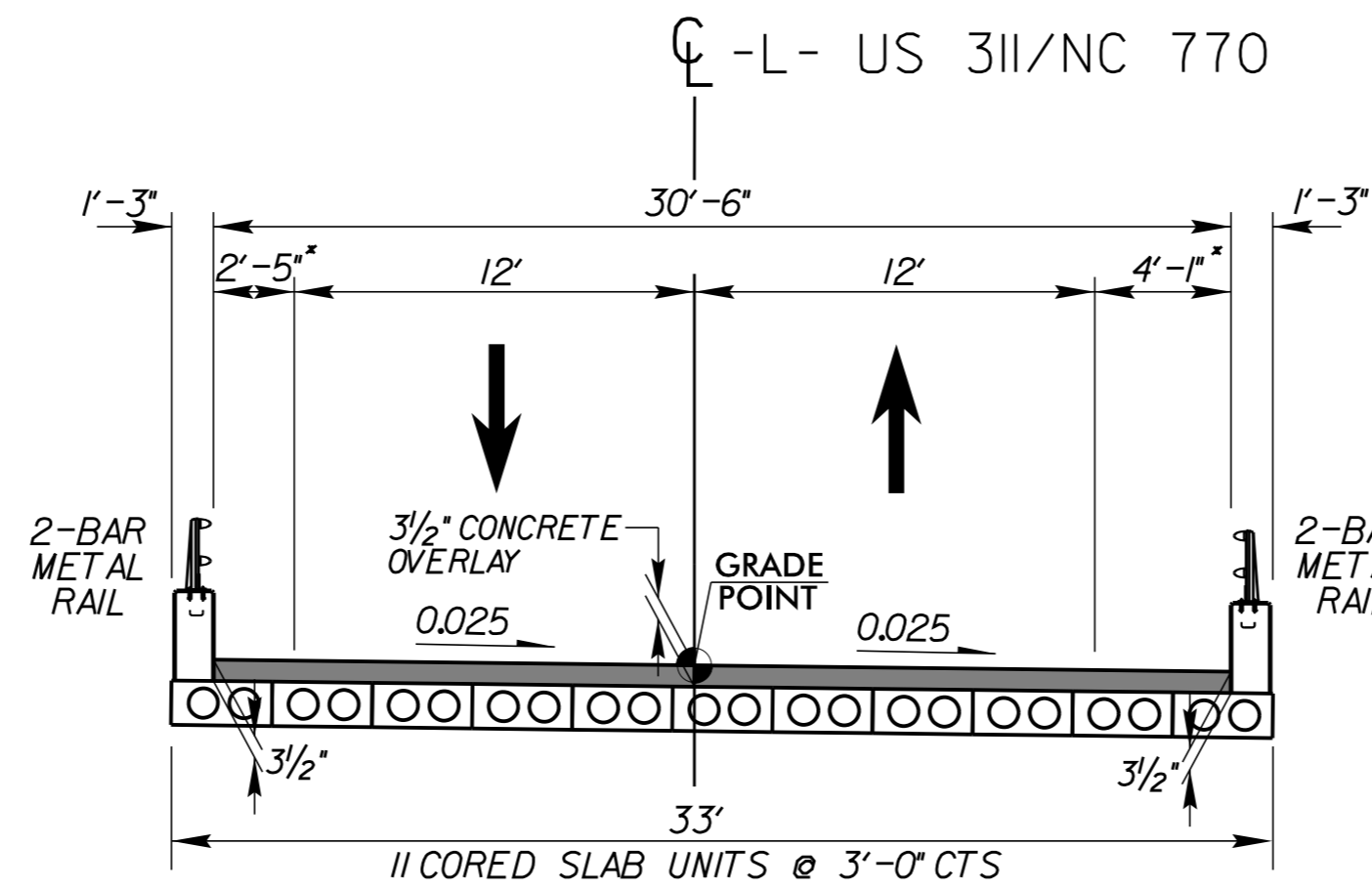
C1	1.5' S9.5B
C2	3' S9.5B
C3	VAR. DEPTH S9.5B
D1	3' I19.0B
D2	VAR. DEPTH I19.0B
E1	5.5' B25.0B
E2	VAR. DEPTH B25.0B
J1	6' AGGREGATE BASE COURSE
J2	VAR. DEPTH AGGREGATE BASE COURSE
P	PRIME COAT
R	SHOULDER BERM GUTTER
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	VARIABLE DEPTH ASPHALT PAVEMENT

REVISIONS



**TYPICAL SECTION NO. 3**

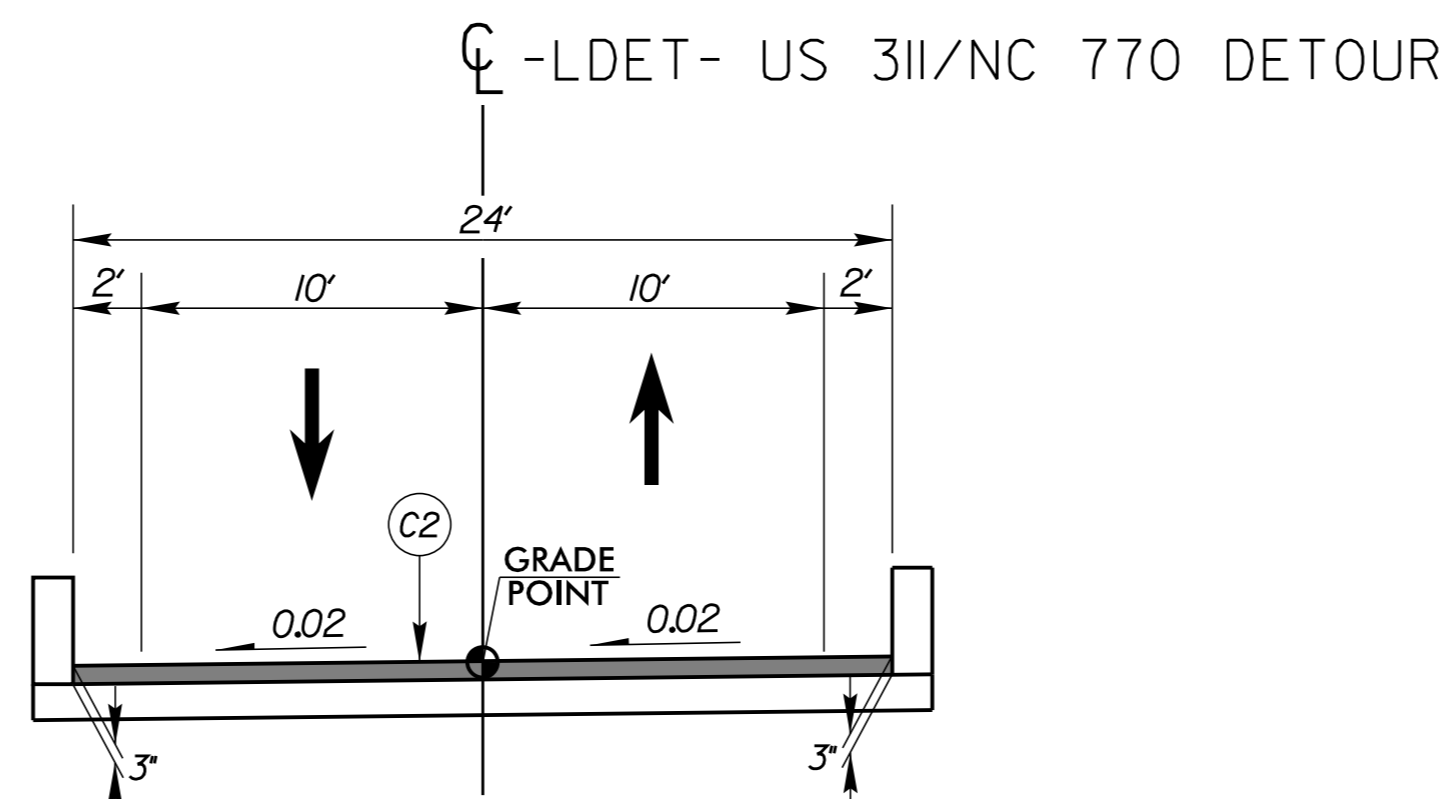
-DR- STA 10+12.00 TO STA 11+52.53



**BRIDGE TYPICAL SECTION NO. 1**

-L- STA 16+23.88 TO STA 16+96.13

\* ASYMMETRIC WIDENING DUE TO HYDRAULIC SPREAD



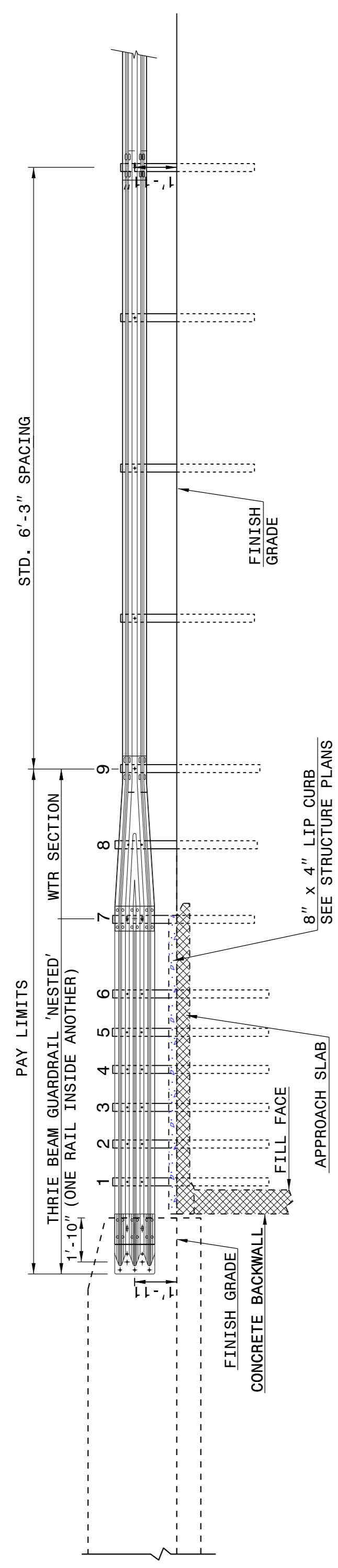
**BRIDGE TYPICAL SECTION NO. 2**

-LDET- STA 14+00.00 TO STA 14+90.00

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

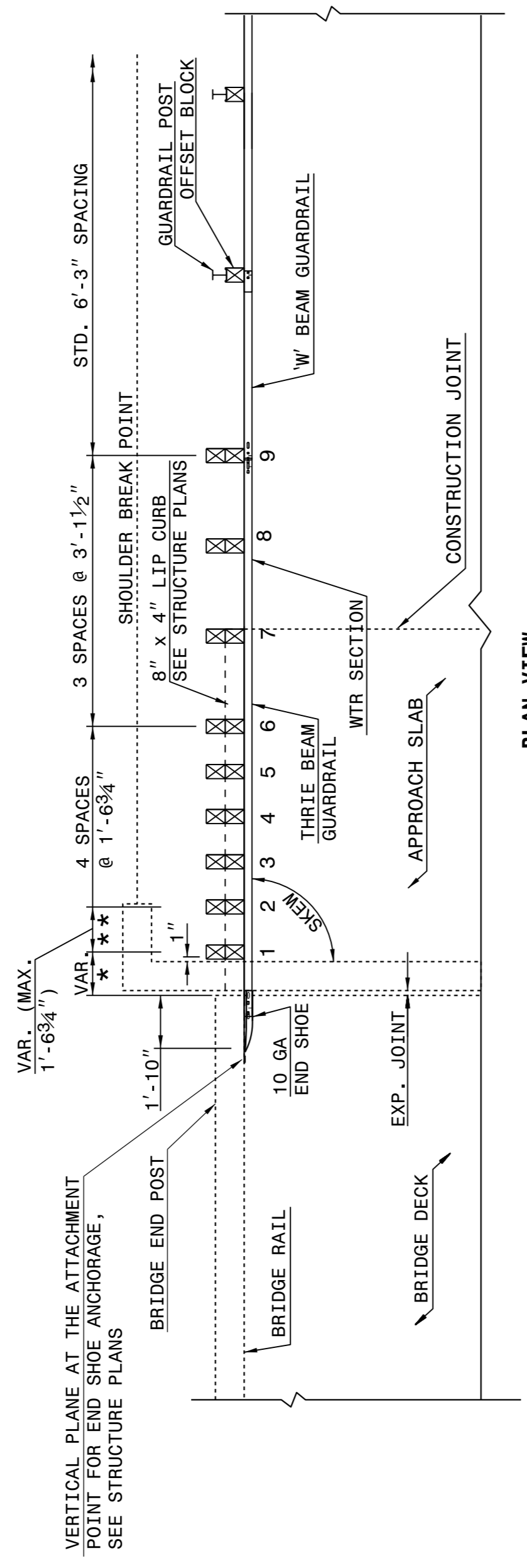
ENGLISH DETAIL DRAWING FOR STRUCTURE ANCHOR UNITS GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO RAIL ON BRIDGE - SUB REGIONAL TIER

SHEET 2 OF 7 862d03



ELEVATION

NOTE: \*\*POST NOT REQUIRED FOR SKEW ANGLES GREATER THAN 150° OR LESS THAN 30° UNLESS OTHERWISE DIRECTED BY THE ENGINEER. \*THE DISTANCE FROM END OF BRIDGE RAIL TO CENTER LINE OF THE FIRST POST SHOULD BE 11 1/2" IF CONCRETE BACKWALL IS NOT PRESENT. -SHOULDER BERM GUTTER MUST BE INSTALLED TO THE LIMITS 8" x 4" LIP CURB IS SHOWN IF ANCHOR UNIT IS NOT ADJACENT TO AN APPROACH SLAB. -MEASURE GUARDRAIL HEIGHT FROM THE TOP OF ADJACENT SURFACE (SHOULDER, BERM, OR GUTTER). -LAP JOINTS IN THE DIRECTION OF TRAFFIC FLOW. -SEE SHEET 3 FOR POST SECTIONS 1 THRU 9.



PLAN VIEW

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

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

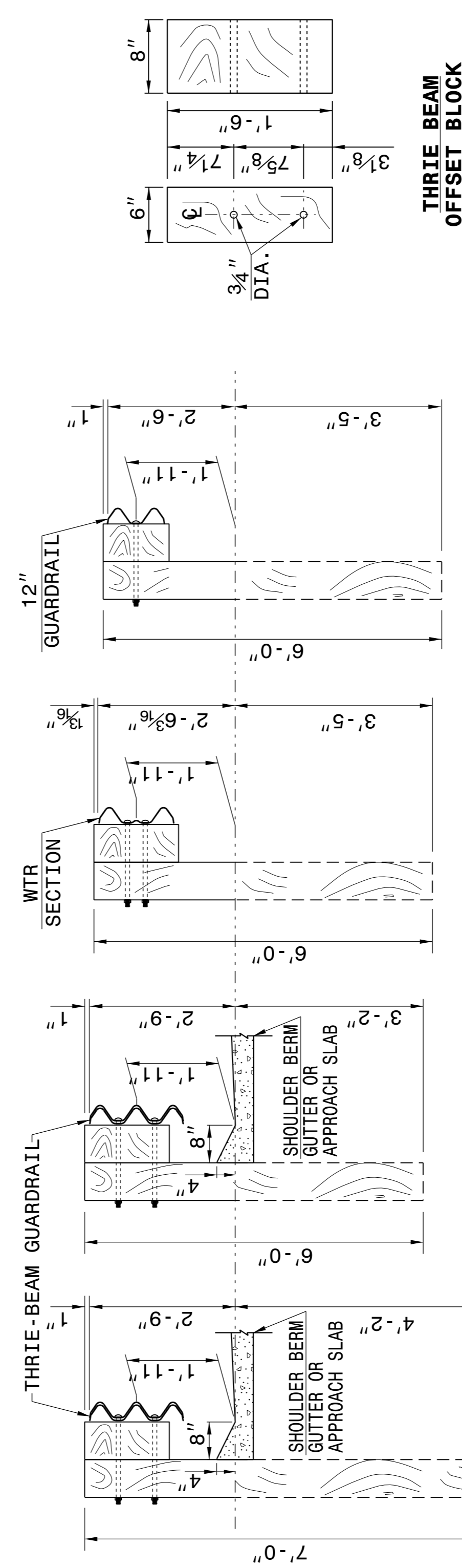
ENGLISH DETAIL DRAWING FOR STRUCTURE ANCHOR UNITS GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO RAIL ON BRIDGE - SUB REGIONAL TIER

SHEET 2 OF 7 862d03

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

ENGLISH DETAIL DRAWING FOR STRUCTURE ANCHOR UNITS GUARDRAIL ANCHOR UNIT, TYPE III

SHEET 3 OF 7 862d03

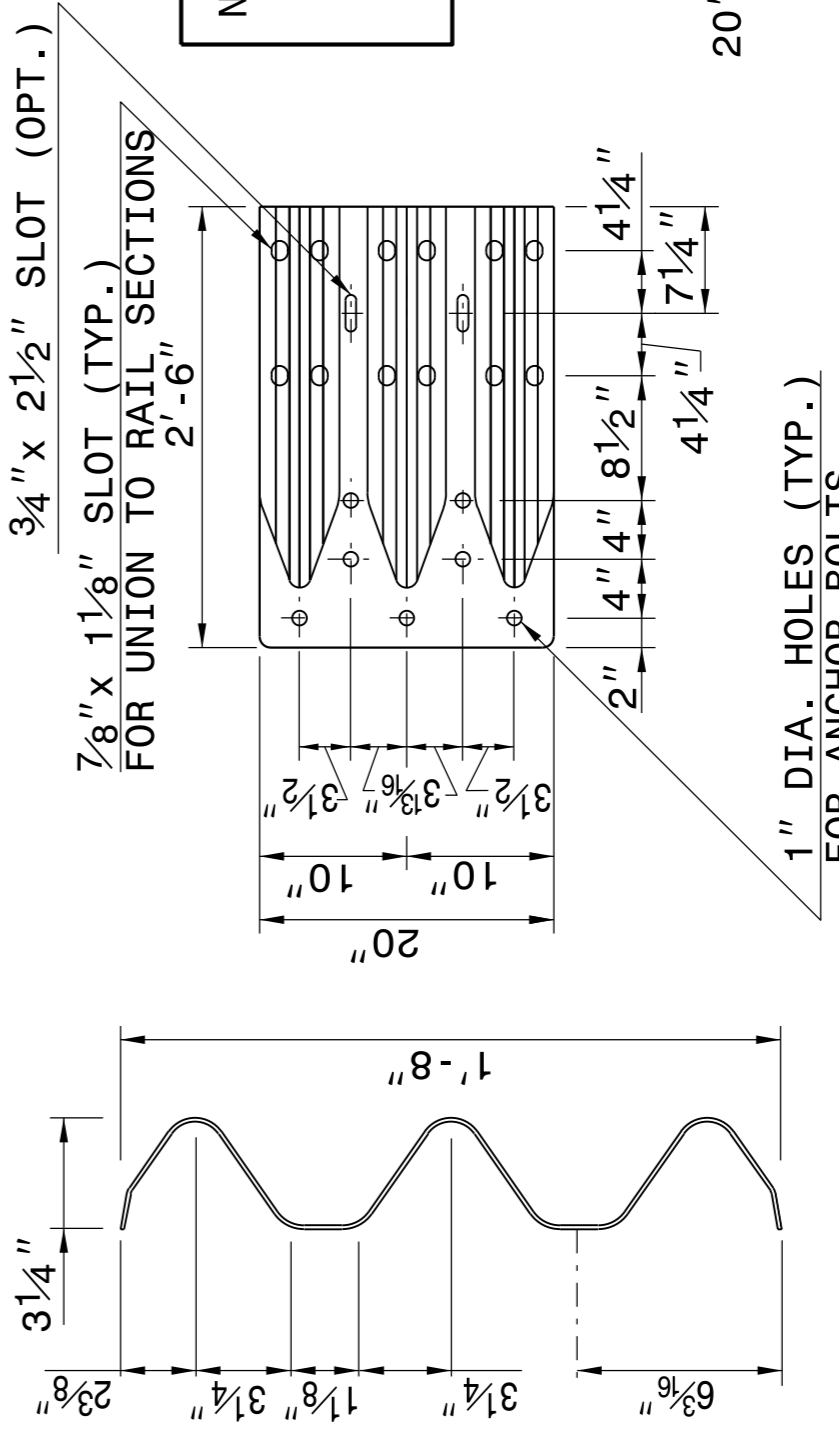


SECTION OF THRIE BEAM POSTS 1 THRU 6

SECTION OF THRIE BEAM POST 7

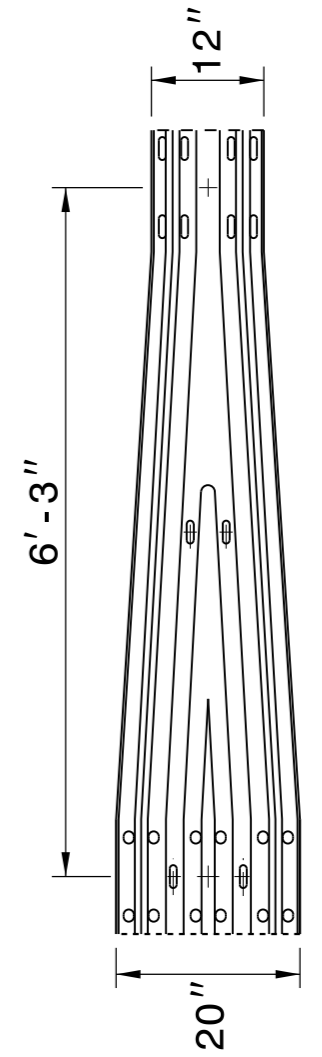
SECTION OF WTR BEAM POST 8

SECTION OF 'W' BEAM POST 9



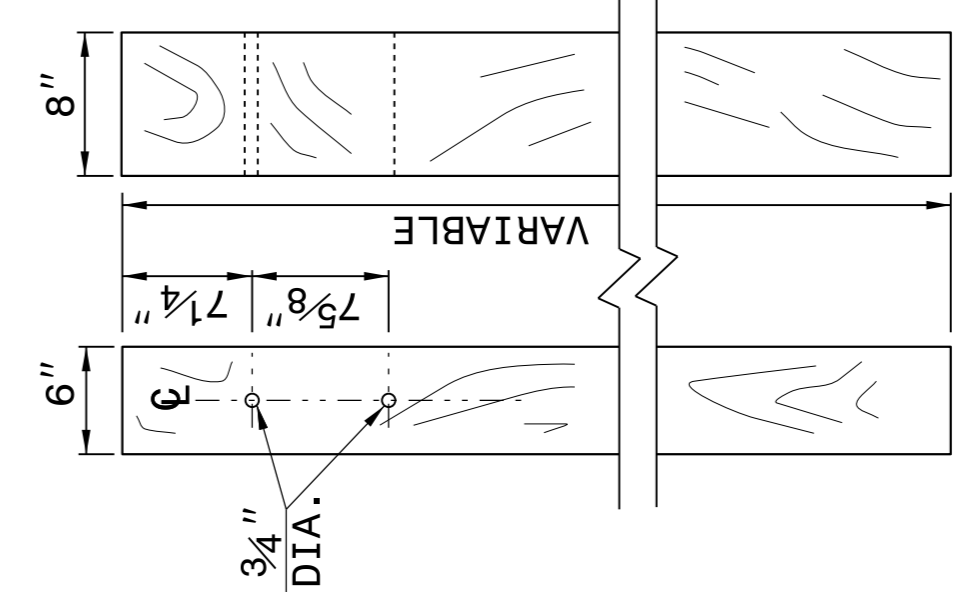
THRIE-BEAM SECTION

NOTE: THE MID POST AND OFFSET BLOCK OF THE WTR SECTION WILL REQUIRE SPECIAL BOLT HOLE DRILLING IN THE THRIE BEAM OFFSET BLOCK AND LINE POST.



WTR SECTION ELEVATION VIEW

THRIE BEAM OFFSET BLOCK



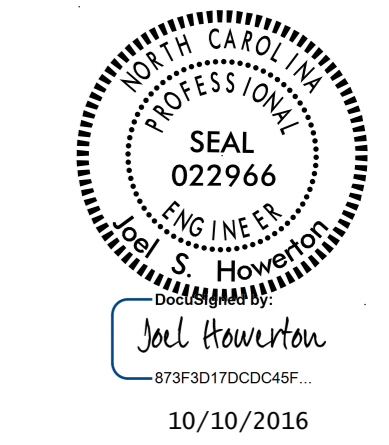
THRIE BEAM LINE POST

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

ENGLISH DETAIL DRAWING FOR STRUCTURE ANCHOR UNITS GUARDRAIL ANCHOR UNIT, TYPE III

SHEET 3 OF 7 862d03

Vertical text on the left margin: STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

SEE TITLE BLOCK

ORIGINAL BY: J. HOWERTON DATE: 06-22-12 MODIFIED BY: DATE: CHECKED BY: DATE: FILE SPEC.: DATE:



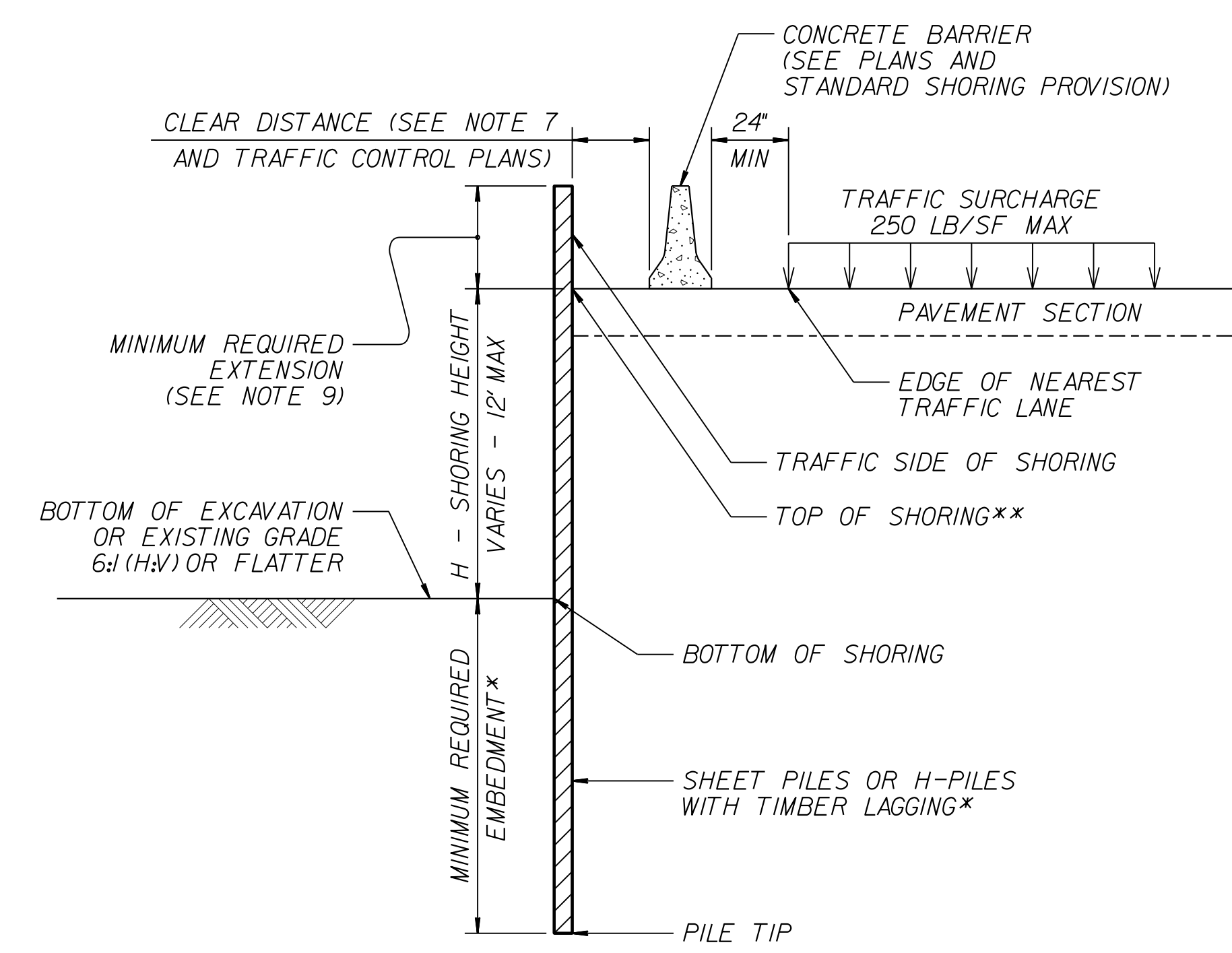
GROUNDWATER CONDITION (SEE NOTE 6)	H SHORING HEIGHT (FT)	SLOPE OR SURCHARGE CASE WITH NO TRAFFIC IMPACT					SURCHARGE CASE WITH TRAFFIC IMPACT				
		SHEET PILES		H-PILES WITH TIMBER LAGGING			SHEET PILES		H-PILES WITH TIMBER LAGGING		
		MINIMUM REQUIRED EMBEDMENT (FT)	MINIMUM REQUIRED SECTION MODULUS (IN <sup>3</sup> /FT)	MINIMUM REQUIRED EMBEDMENT* (FT) (SEE NOTE 10)			MINIMUM REQUIRED EMBEDMENT (FT)	MINIMUM REQUIRED SECTION MODULUS (IN <sup>3</sup> /FT)	MINIMUM REQUIRED EMBEDMENT* (FT) (SEE NOTE 10)		
			HP 10x42	HP 12x53	HP 14x73			HP 10x42	HP 12x53	HP 14x73	
GROUNDWATER ELEVATION BETWEEN BOTTOM OF SHORING AND PILE TIP	< 6	11.5	4.5	11.5	11.5	11.5	16.0	12.0	13.0	13.0	13.0
	7	13.0	7.0	13.0	13.0	13.0	17.0	14.5	14.5	14.5	14.5
	8	15.0	10.0	--	15.0	15.0	18.0	17.0	--	15.5	15.5
	9	17.0	14.0	--	17.0	17.0	19.0	20.0	--	17.0	17.0
	10	18.5	19.5	--	--	18.5	20.0	23.5	--	--	18.5
	11	20.5	26.0	--	--	--	21.0	28.0	--	--	20.0
12	22.5	33.0	--	--	--	22.0	33.0	--	--	21.5	
GROUNDWATER ELEVATION BELOW PILE TIP	< 6	7.5	3.0	8.0	8.0	8.0	11.0	10.0	9.5	9.5	9.5
	7	8.5	4.5	9.5	9.5	9.5	12.0	12.0	10.5	10.5	10.5
	8	10.0	6.5	10.5	10.5	10.5	12.5	14.0	11.5	11.5	11.5
	9	11.0	9.5	--	12.0	12.0	13.5	16.5	--	12.5	12.5
	10	12.5	13.0	--	--	13.5	14.0	19.5	--	13.5	13.5
	11	13.5	17.0	--	--	14.5	15.0	22.5	--	--	14.5
12	15.0	21.5	--	--	16.0	16.0	25.5	--	--	15.5	

**MINIMUM REQUIRED EMBEDMENT AND SECTION MODULUS**

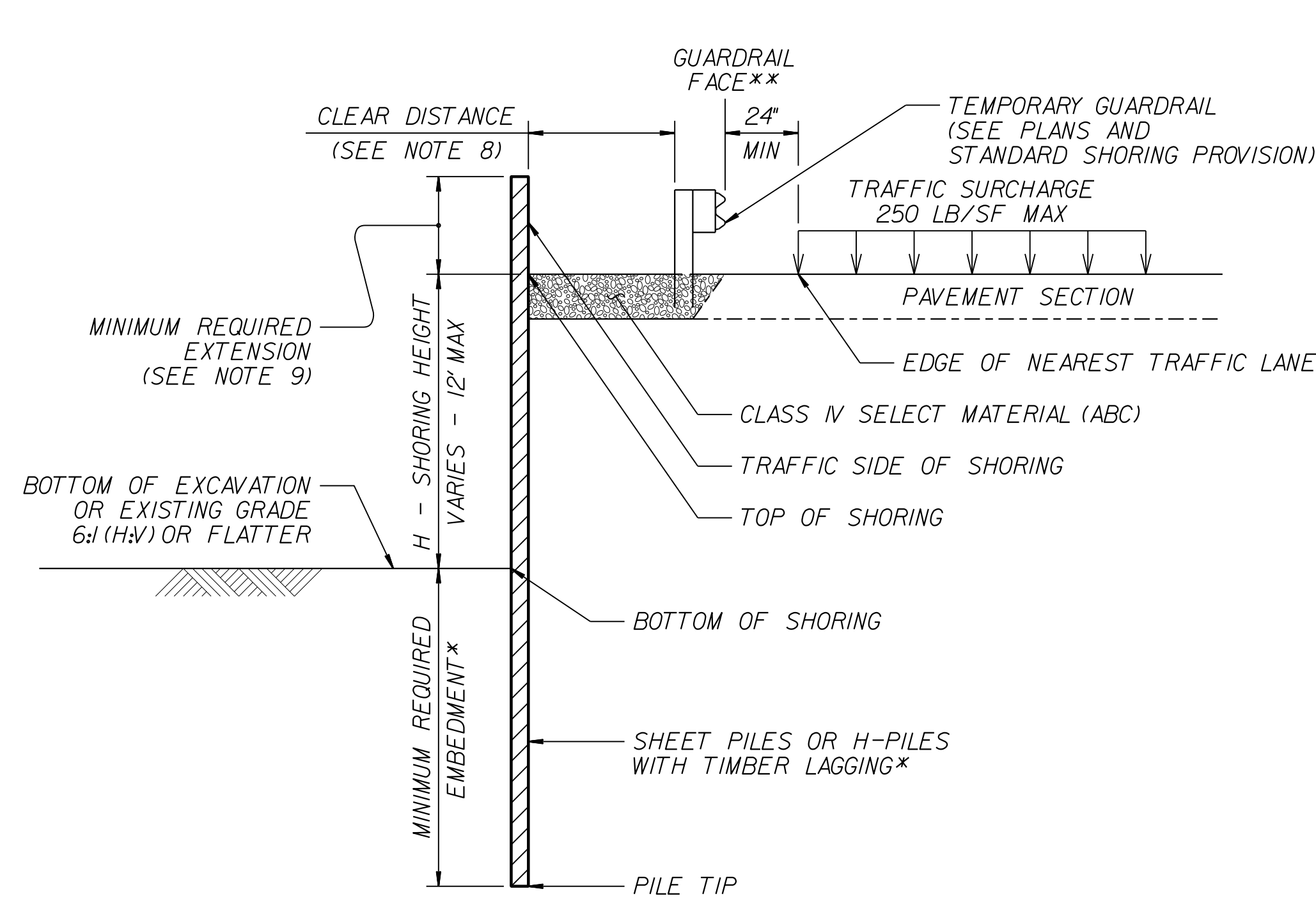
\*DO NOT USE H-PILES WITH TIMBER LAGGING FOR GROUNDWATER CONDITION, SHORING HEIGHT AND H-PILE SIZE SHOWN IF MINIMUM REQUIRED EMBEDMENT IS "--".

**NOTES:**

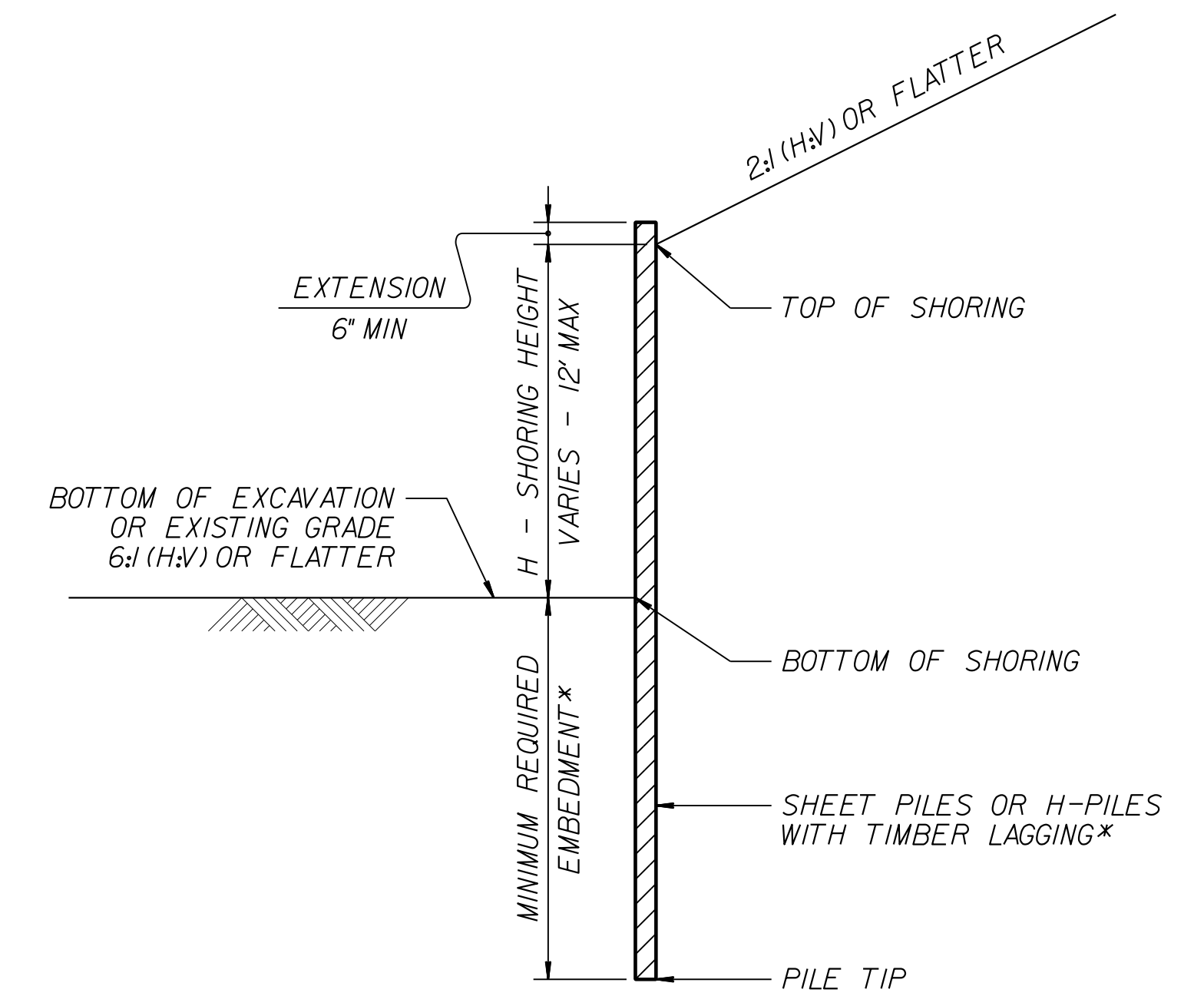
- AT THE CONTRACTOR'S OPTION, USE STANDARD TEMPORARY SHORING AS NOTED IN THE PLANS.
- FOR STANDARD TEMPORARY SHORING, SEE STANDARD SHORING PROVISION.
- STANDARD TEMPORARY SHORING IS BASED ON THE FOLLOWING IN-SITU ASSUMED SOIL PARAMETERS:  
UNIT WEIGHT,  $\gamma = 120$  LB/CF  
FRICTION ANGLE,  $\phi = 30$  DEGREES  
COHESION,  $c = 0$  LB/SF
- DO NOT USE STANDARD TEMPORARY SHORING IF ASSUMED SOIL PARAMETERS ARE NOT APPLICABLE.
- DO NOT USE STANDARD TEMPORARY SHORING WHEN VERY LOOSE OR SOFT SOIL OR MUCK IS WITHIN THE EMBEDMENT DEPTH.
- USE GROUNDWATER ELEVATION NOTED IN THE PLANS. IF NO GROUNDWATER ELEVATION IS SHOWN IN THE PLANS, USE "GROUNDWATER ELEVATION BETWEEN BOTTOM OF SHORING AND PILE TIP" FOR GROUNDWATER CONDITION. DO NOT USE STANDARD TEMPORARY SHORING IF GROUNDWATER IS ABOVE BOTTOM OF SHORING.
- AT THE CONTRACTOR'S OPTION OR IF AVAILABLE CLEAR DISTANCE IS LESS THAN THE MINIMUM REQUIRED FOR CONCRETE BARRIER, SET BARRIER NEXT TO AND UP AGAINST TRAFFIC SIDE OF PILES AND USE "SURCHARGE CASE WITH TRAFFIC IMPACT".
- AT THE CONTRACTOR'S OPTION OR IF AVAILABLE CLEAR DISTANCE IS LESS THAN 4' FOR TEMPORARY GUARDRAIL, ATTACH GUARDRAIL TO TRAFFIC SIDE OF PILES AS SHOWN IN THE PLANS AND USE "SURCHARGE CASE WITH TRAFFIC IMPACT".
- MINIMUM REQUIRED EXTENSION IS 6" FOR "SLOPE OR SURCHARGE CASE WITH NO TRAFFIC IMPACT" AND 32" FOR "SURCHARGE CASE WITH TRAFFIC IMPACT".
- MINIMUM REQUIRED EMBEDMENT FOR H-PILES WITH TIMBER LAGGING IS BASED ON DRIVEN H-PILES AT MAXIMUM 6' SPACING. AT THE CONTRACTOR'S OPTION, EMBEDMENT DEPTHS MAY BE REDUCED BY 25% FOR DRILLED-IN H-PILES.
- SUBMIT A "STANDARD TEMPORARY SHORING SELECTION FORM" AT LEAST 7 DAYS BEFORE STARTING TEMPORARY SHORING CONSTRUCTION. UP TO 3 SHORING LOCATIONS MAY BE INCLUDED ON EACH FORM. STANDARD SHORING SELECTION FORMS ARE AVAILABLE FROM:  
[connect.ncdot.gov/resources/Geological/Pages/Geotech\\_Forms\\_Details.aspx](http://connect.ncdot.gov/resources/Geological/Pages/Geotech_Forms_Details.aspx)
- CONTACT THE ENGINEER IF PILES DO NOT ATTAIN THE MINIMUM REQUIRED EMBEDMENT.



**CONCRETE BARRIER**  
\*\*TOP OF SHORING =  
EDGE OF PAVEMENT



**TEMPORARY GUARDRAIL**  
\*\*GUARDRAIL FACE =  
EDGE OF PAVEMENT



**STANDARD TEMPORARY SHORING**  
(SLOPE CASE)  
\*SEE TABLE ABOVE.

**STANDARD TEMPORARY SHORING**  
(SURCHARGE CASE)  
\*SEE TABLE ABOVE.



NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
  
**GEOTECHNICAL  
ENGINEERING UNIT**

STANDARD DETAIL NO. 1801.01

STANDARD  
TEMPORARY SHORING

STATE OF NORTH CAROLINA  
 DIVISION OF HIGHWAYS  
**SUMMARY OF EARTHWORK**  
 IN CUBIC YARDS

STATION	STATION	EXCAVATION		EMBANKMENT	BORROW	WASTE
		TOTAL UNCLASSIFIED	UNDERCUT	EMBANKMENT + %		TOTAL
PHASE I (MAINLINE LT AND DETOUR)						
SUMMARY NO. 1						
-L- 12+09.00 (LT)	-L- 16+23.88 (LT)	127		4		123
-L- 16+96.13 (LT)	-L- 21+31.77 (LT)	91		55		36
-LDET- 10+00.00	-LDET- 14+00.00	96		245	149	
-LDET- 14+90.00	-LDET- 19+26.15	18		937	919	
-DR- 10+13.37	-DR- 11+52.53	65		12		53
TOTAL SUMMARY NO. 1						
SUBTOTAL		397		1253	1068	212
PHASE II (MAINLINE RT)						
SUMMARY NO. 2						
-L- 12+09.00 (RT)	-L- 16+23.88 (RT)	110		13		97
-L- 16+96.13 (RT)	-L- 21+31.77 (RT)	20		4		16
TOTAL SUMMARY NO. 2						
SUBTOTAL		130		17		113
PHASE III (REMOVE DETOUR)						
SUMMARY NO. 3						
-LDET- 10+00.00	-LDET- 14+00.00	144		77		67
-LDET- 14+90.00	-LDET- 19+26.15	740		16		724
TOTAL SUMMARY NO. 3						
SUBTOTAL		884		93		791
SUMMARY TOTAL		1411		1363	1068	1116
EARTH WASTE TO REPLACE BORROW					-212	-212
ESTIMATED SHOULDER MATERIAL				98	98	
PROJECT TOTAL		1411		1461	954	904
EST. 5% TO REPLACE TOPSOIL ON BORROW PIT					48	
GRAND TOTAL		1411		1461	1002	904
SAY		1500			1100	
ESTIMATED SHALLOW UNDERCUT			100 CY			
ESTIMATED CLASS IV SUBGRADE STABILIZATION			200 TONS			
ESTIMATED UNDERCUT EXCAVATION			350 CY			
ESTIMATED SELECT GRANULAR MATERIAL			150 CY			
ESTIMATED GEOTEXTILE FOR SOIL STABILIZATION			150 SY			

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



STATE OF NORTH CAROLINA  
 DIVISION OF HIGHWAYS

"N" = DISTANCE FROM EDGE OF LANE TO FACE OF GUARDRAIL.  
 TOTAL SHOULDER WIDTH = DISTANCE FROM EDGE OF TRAVEL LANE TO SHOULDER BREAK POINT.  
 FLARE LENGTH = DISTANCE FROM LAST SECTION OF PARALLEL GUARDRAIL TO END OF GUARDRAIL.  
 W = TOTAL WIDTH OF FLARE FROM BEGINNING OF TAPER TO END OF GUARDRAIL.  
 G = GATING IMPACT ATTENUATOR TYPE 350  
 NG = NON-GATING IMPACT ATTENUATOR TYPE 350

**GUARDRAIL SUMMARY**

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHOULDER WIDTH	FLARE LENGTH		W		ANCHORS		IMPACT ATTENUATOR TYPE 350			TERMINAL SECTIONS	REMOVE EXISTING GUARDRAIL	REMOVE AND STOCKPILE EXISTING GUARDRAIL	REMARKS	
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	GRAU 350	TYPE III	EA	G	NG					
-L-	15+42.63	16+23.88	LT	81.25				16+23.88	2'-5"	9'		50		1	1	1								
-L-	15+42.63	16+23.88	RT	81.25			16+23.88		4'-1"	9'	50		1		1	1								
-L-	16+96.13	17+77.38	LT	81.25				16+96.13	2'-5"	9'		50		1	1	1								
-L-	16+96.13	17+77.38	RT	81.25			16+96.13		4'-1"	9'	50		1		1	1								
			<b>SUBTOTAL</b>	<b>325.00</b>																				
<b>LESS ANCHOR DEDUCTIONS</b>																								
	GRAU 350	4 @ 50'	=	200.00																				
	TYPE III	4 @ 18.75'	=	75.00																				
			<b>TOTAL</b>	<b>50.00</b>											<b>4</b>	<b>4</b>								
			<b>SAY</b>	<b>50</b>																				
-LDET-	13+18.75	14+00.00	LT	81.25				14+00.00	2'	8'		50		1	1	1							TEMPORARY GUARDRAIL	
-LDET-	13+18.75	14+00.00	RT	81.25			14+00.00		2'	8'	50		1		1	1							TEMPORARY GUARDRAIL	
-LDET-	14+90.00	15+71.25	LT	81.25				14+90.00	2'	8'		50		1	1	1							TEMPORARY GUARDRAIL	
-LDET-	14+90.00	15+71.25	RT	81.25			14+90.00		2'	8'	50		1		1	1							TEMPORARY GUARDRAIL	
			<b>SUBTOTAL</b>	<b>325.00</b>																				
<b>LESS ANCHOR DEDUCTIONS</b>																								
	TEMP GRAU 350	4 @ 50'	=	200.00																				
	TEMP TYPE III	4 @ 18.75'	=	75.00																				
			<b>TOTAL</b>	<b>50.00</b>											<b>4</b>	<b>4</b>								
			<b>SAY</b>	<b>50</b>																				

ADDITIONAL GUARDRAIL POSTS = 5 EA

LINE	STATION TO STATION	LOCATION	LENGTH (LF)
-L-	15+93 TO 16+13	RT	20
-LDET-	13+78 TO 14+00	LT	22
	<b>TOTAL</b>		<b>42</b>
	<b>SAY</b>		<b>45</b>

LINE	STATION TO STATION	LOCATION	SQ. YDS.
-L-	15+81 TO 16+13	LT	3
-L-	16+13 TO 16+36	LTRT	69
-L-	16+84 TO 17+07	LTRT	63
<b>TEMP PAVEMENT</b>			
-LDET-	10+15 TO 14+00	LTRT	702
-LDET-	14+90 TO 19+12	LTRT	825
	<b>TOTAL</b>		<b>1,662</b>
	<b>SAY</b>		<b>1,700</b>

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

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STATE OF NORTH CAROLINA  
 DIVISION OF HIGHWAYS



**SUMMARY OF AGGREGATE SUBGRADE / STABILIZATION**

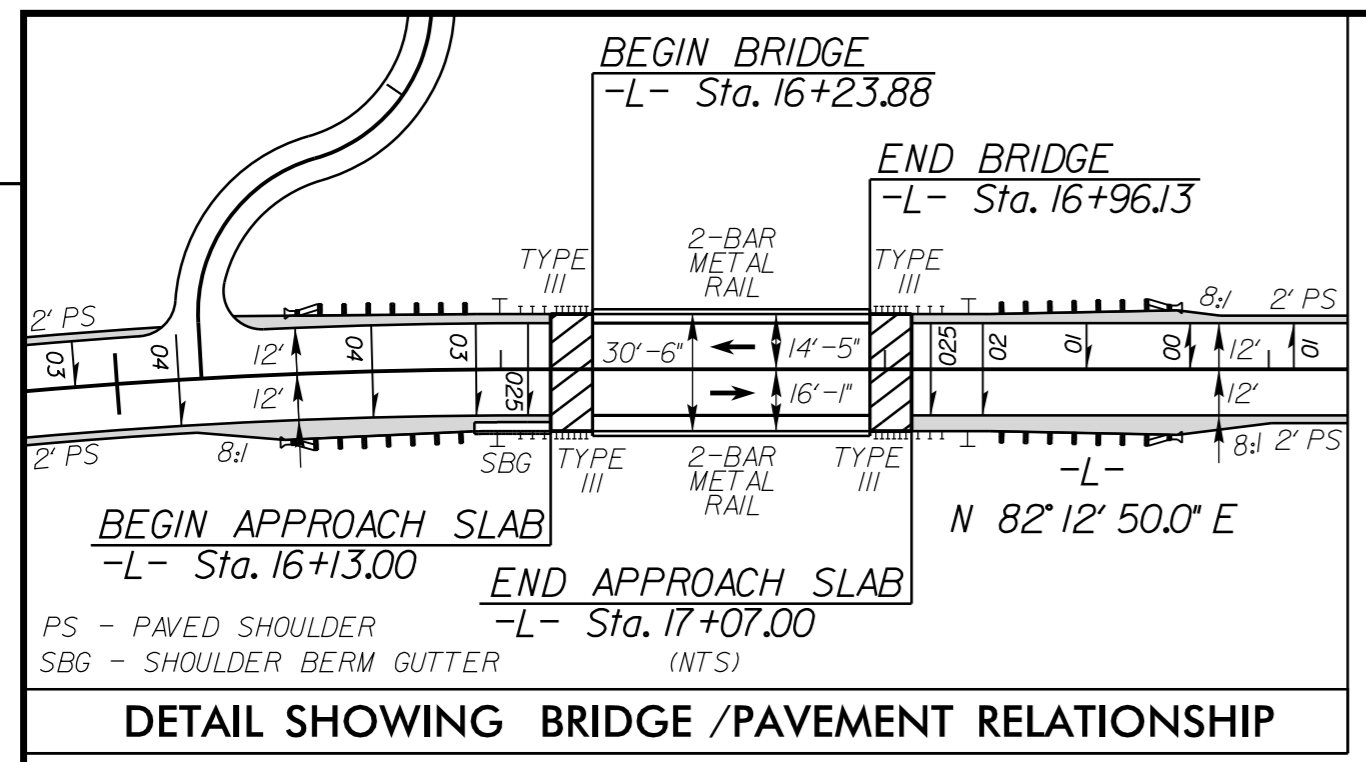
Line	Station	Station	Aggregate Type ASU/AST*	Aggregate Thickness INCHES	Shallow Undercut CY	Class IV Subgrade Stabilization TONS	Geotextile for Soil Stabilization SY	Stabilizer Aggregate TONS	Class IV Aggregate Stabilization SY
					100	200	150		
					100	200	150**	0	0

\*ASU = Aggregate Subgrade

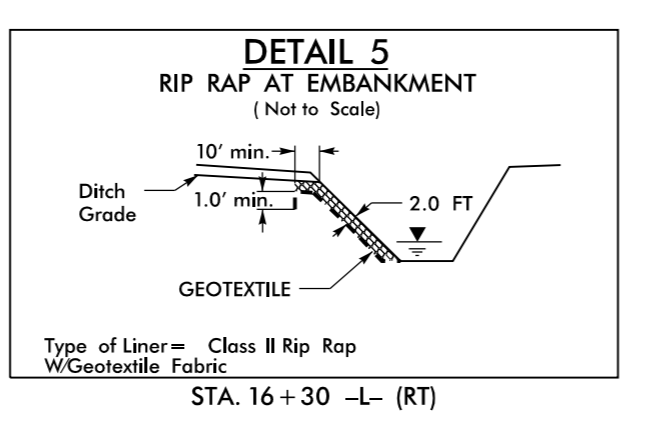
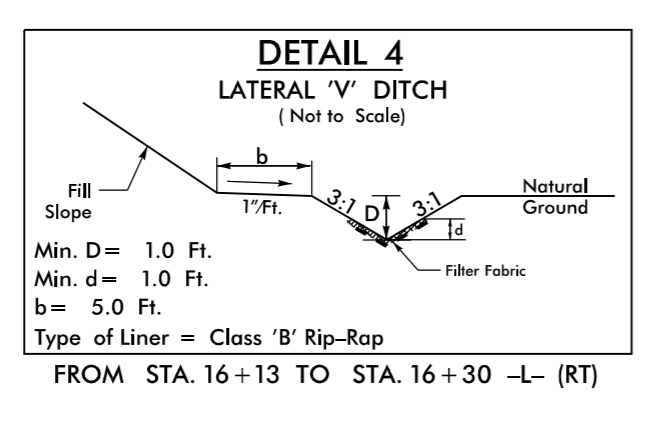
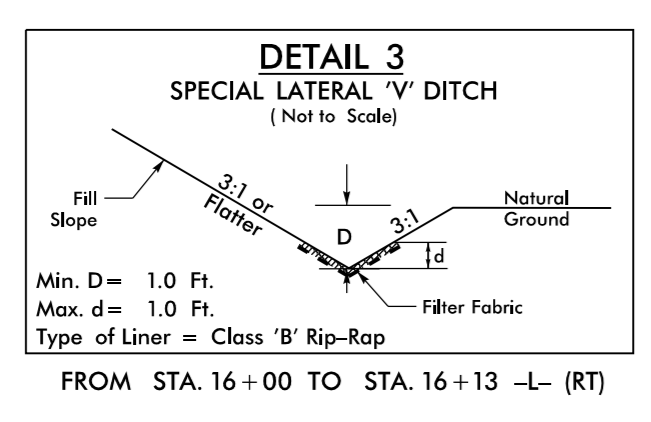
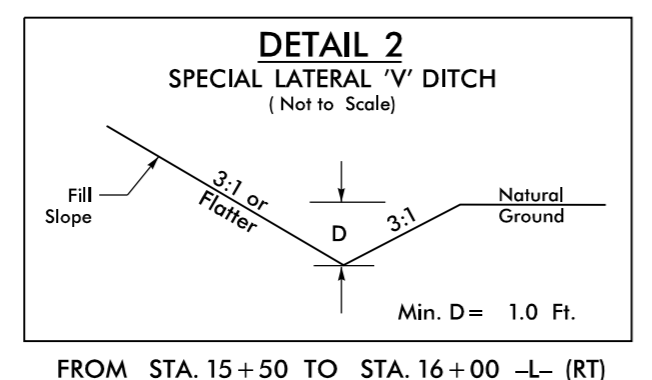
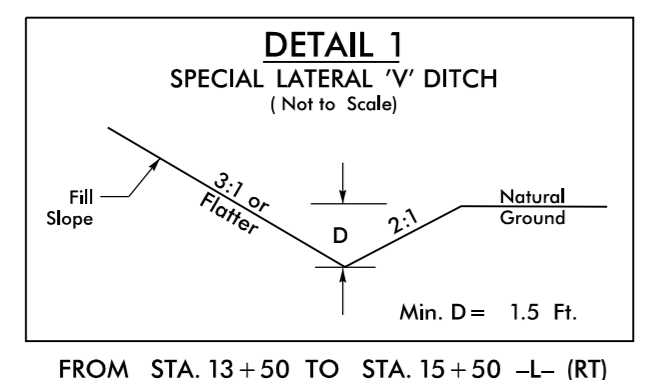
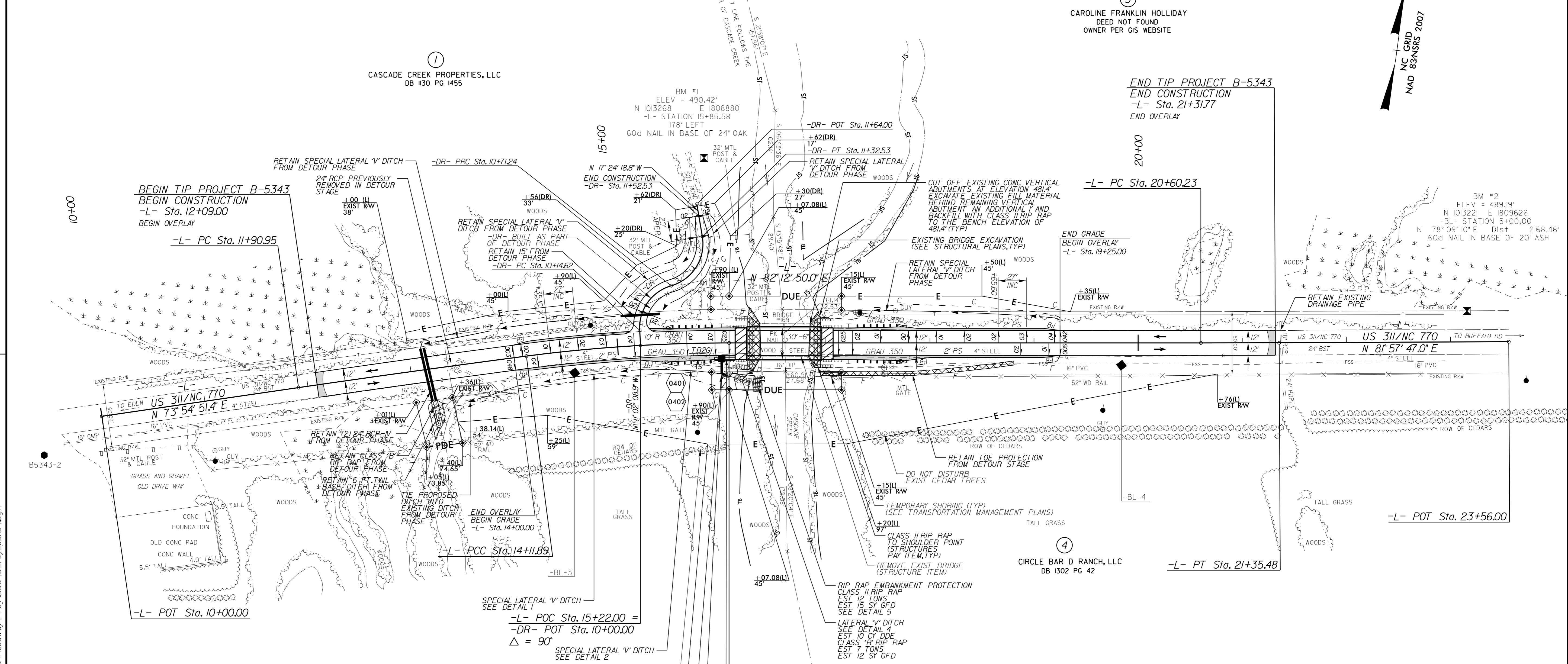
\*AST = Aggregate Stabilization

\*\*Total square yards of "Geotextile for Soil Stabilization" is only the estimated quantity for ASU/AST and may only represent a portion of the geotextile quantity shown in the Item Sheets of the Proposal.

PROJECT REFERENCE NO. B-5343	SHEET NO. 4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
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-L-		-DR-	
PI Sta 13+01.42	PI Sta 15+09.62	PI Sta 20+97.86	PI Sta 10+47.99
$\Delta = 0^{\circ} 50' 38.2\" (RT)$	$\Delta = 7^{\circ} 27' 20.4\" (RT)$	$\Delta = 0^{\circ} 15' 03.0\" (LT)$	$\Delta = 96^{\circ} 05' 57.3\" (RT)$
$D = 2^{\circ} 22' 55.1\"$	$D = 3^{\circ} 49' 11.0\"$	$D = 0^{\circ} 20' 00.0\"$	$D = 190^{\circ} 59' 09.4\"$
$L = 220.94'$	$L = 195.19'$	$L = 75.25'$	$L = 50.32'$
$T = 110.47'$	$T = 97.73'$	$T = 37.63'$	$T = 33.38'$
$R = 15,000.00'$	$R = 1,500.00'$	$R = 17,188.73'$	$R = 51.40'$
$DS = 60 \text{ MPH}$	$DS = 60 \text{ MPH}$	$DS = 60 \text{ MPH}$	$DS = 15 \text{ MPH}$
$SE = \text{EXIST}$	$SE = 0.04$	$SE = \text{EXIST}$	$SE = \text{NC}$
$RO = \text{EXIST}$	$RO = 108'$	$RO = \text{EXIST}$	$RO = \text{N/A}$

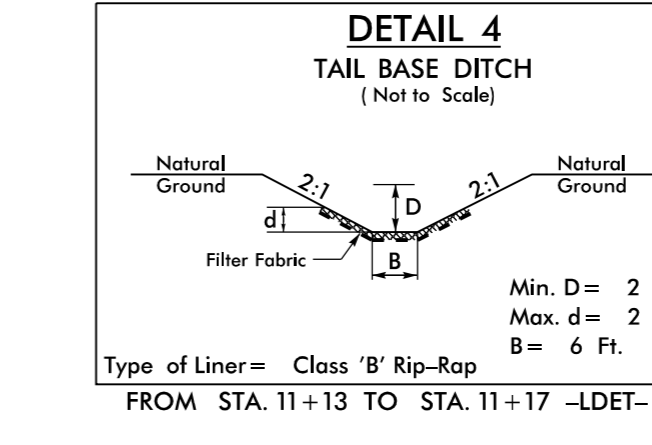
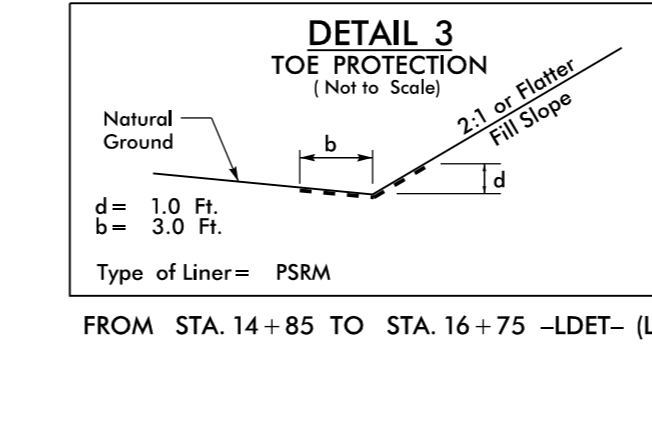
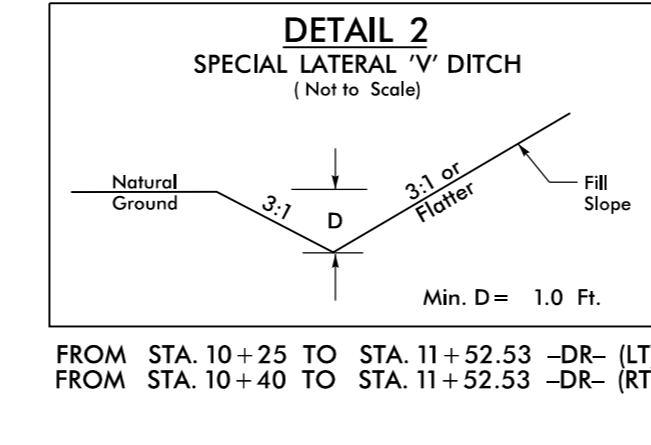
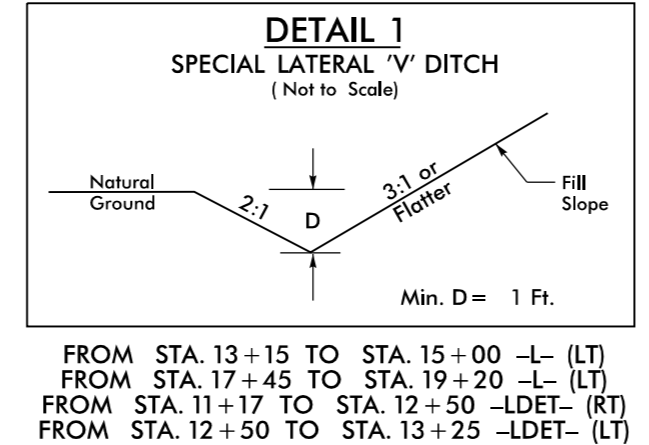
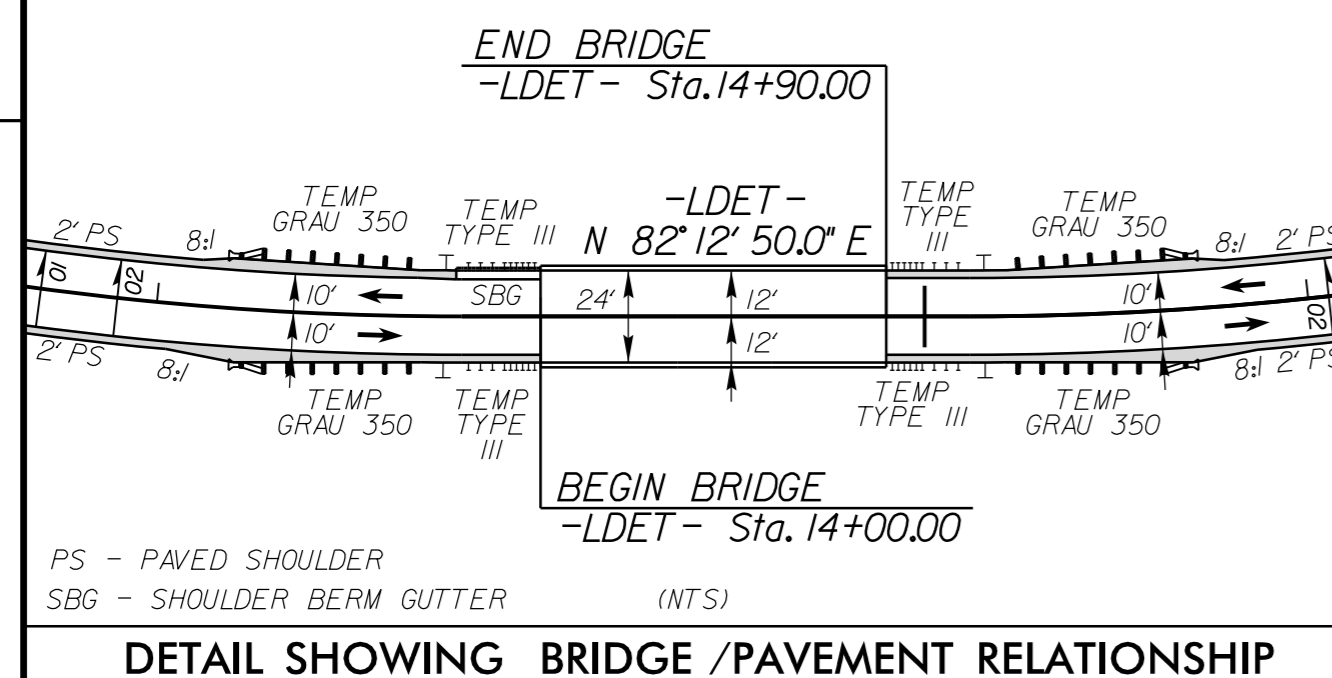


REVISIONS

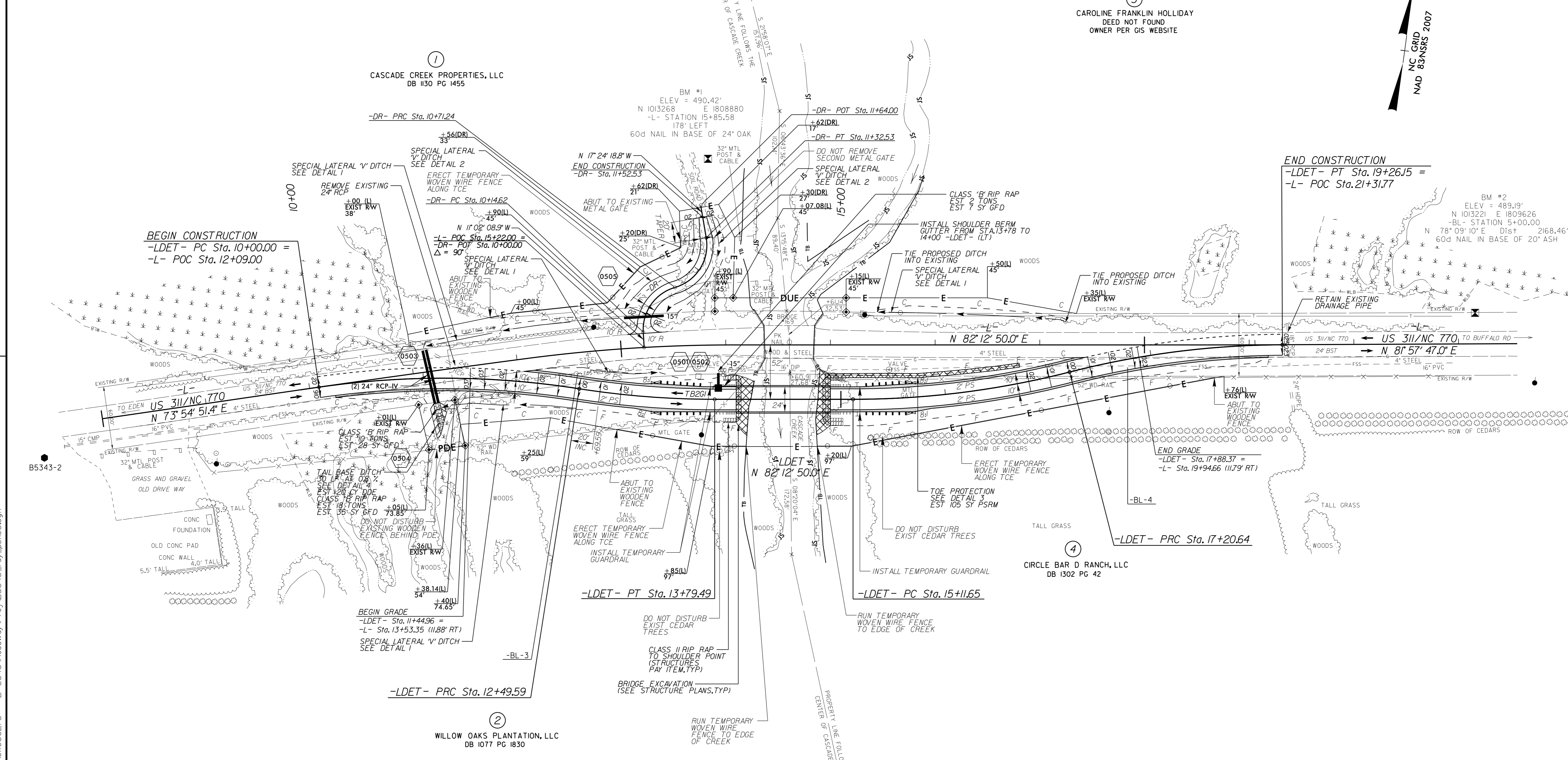
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SEE SHEET 6 FOR -L- PROFILE  
SEE SHEET 6 FOR -DR- PROFILE  
SEE SHEETS SITHRU SIB FOR STRUCTURE PLANS

PROJECT REFERENCE NO. B-5343	SHEET NO. 5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



REVISIONS



-LDET- (V<sub>DET</sub> = 50 MPH)

PI Sta 11+25.74 Δ = 17° 10' 03.0" (RT) D = 6' 52' 41.7" L = 249.59' T = 125.74' R = 833.00' DS = 50 MPH SE = RC RO = 40'	PI Sta 13+14.67 Δ = 8° 56' 05.3" (LT) D = 6' 52' 41.7" L = 129.90' T = 65.08' R = 833.00' DS = 50 MPH SE = RC RO = 40'	PI Sta 16+16.70 Δ = 14° 22' 28.1" (LT) D = 6' 52' 41.7" L = 208.98' T = 105.04' R = 833.00' DS = 50 MPH SE = RC RO = 40'	PI Sta 18+23.92 Δ = 14° 08' 09.7" (RT) D = 6' 52' 41.7" L = 205.52' T = 103.28' R = 833.00' DS = 50 MPH SE = RC RO = 40'
--	--	--	--

ALL TEMPORARY WOVEN WIRE FENCING TO BE INSTALLED BY ROADWAY CONTRACTOR

ALL TEMPORARY WOVEN WIRE FENCING TO BE REMOVED BY OTHERS

SEE SHEET 6 FOR -LDET- PROFILE

SEE SHEET 6 FOR -DR- PROFILE

SEE SHEETS SITHRU S18 FOR STRUCTURE PLANS

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5/14/99

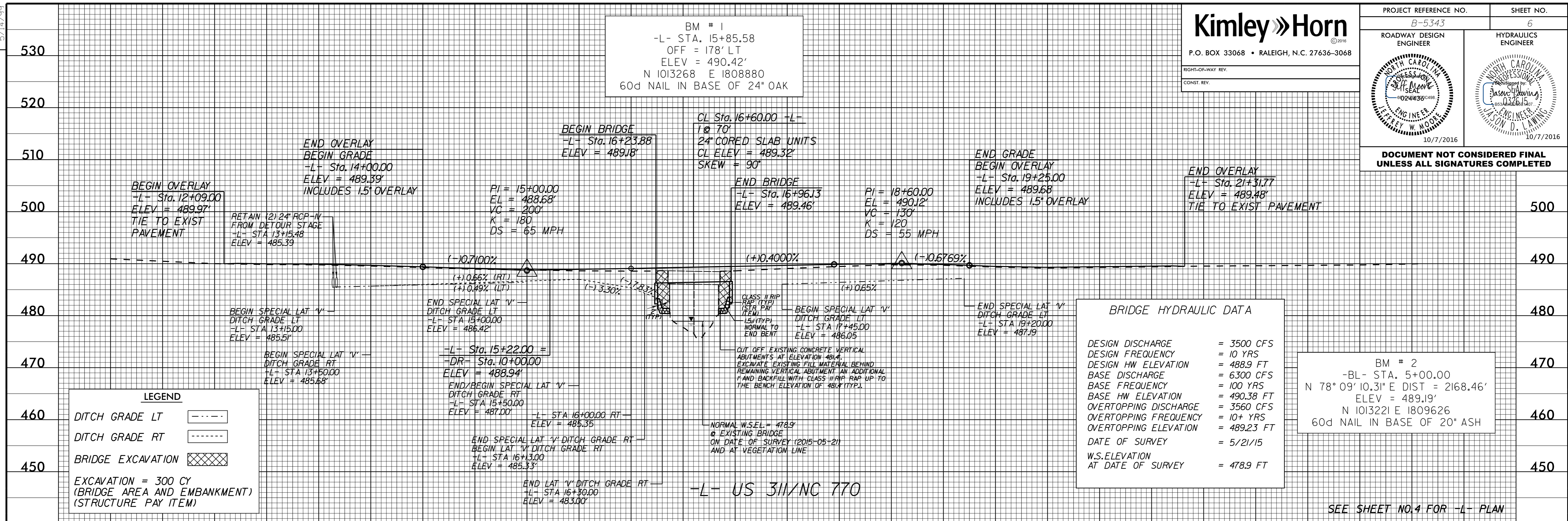
REVISIONS

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**Kimley Horn**  
 P.O. BOX 33068 • RALEIGH, N.C. 27636-3068  
 ROADWAY DESIGN ENGINEER  
 RIGHT-OF-WAY REV.  
 CONST. REV.

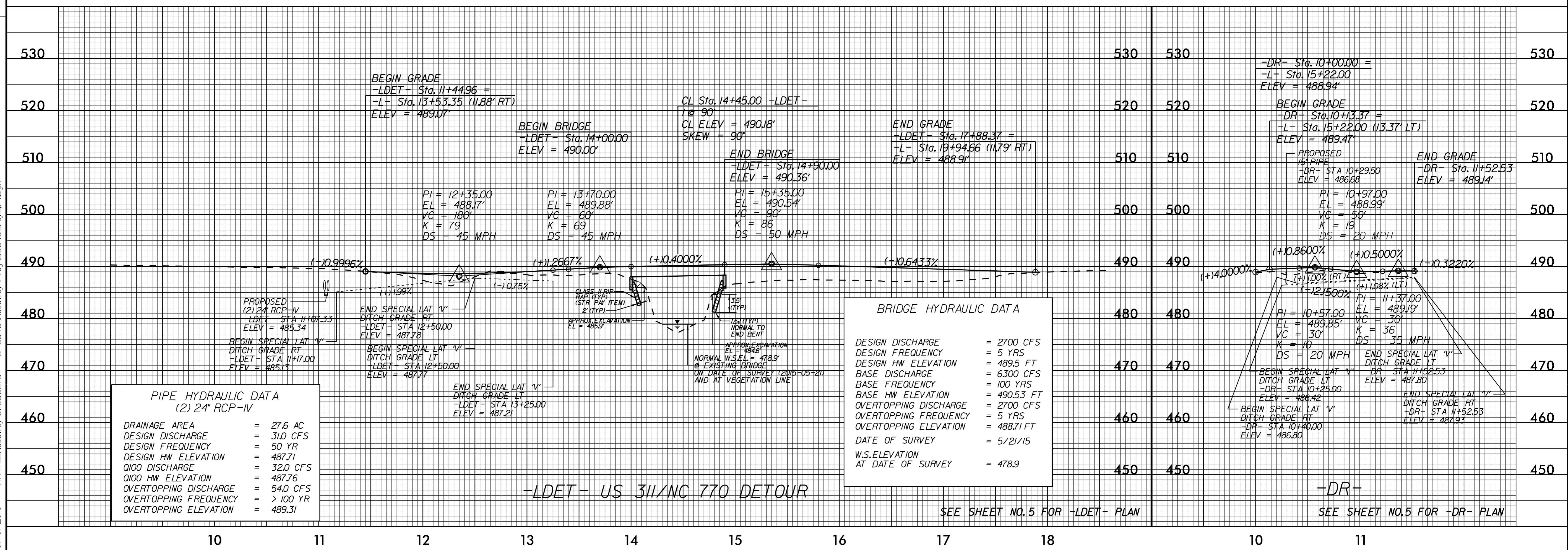
PROJECT REFERENCE NO. B-5343	SHEET NO. 6
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



**BM # 2**  
 -BL- STA. 5+00.00  
 N 78° 09' 10.3" E DIST = 2168.46'  
 ELEV = 489.19'  
 N 1013221 E 1809626  
 60d NAIL IN BASE OF 20" ASH

SEE SHEET NO.4 FOR -L- PLAN



SEE SHEET NO.5 FOR -LDET- PLAN

SEE SHEET NO.5 FOR -DR- PLAN