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STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5546	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
45538.1.1	BRZ-2481(1)	PE	
45538.2.1		R/W & UTIL.	
46074.3.1		CONST.	

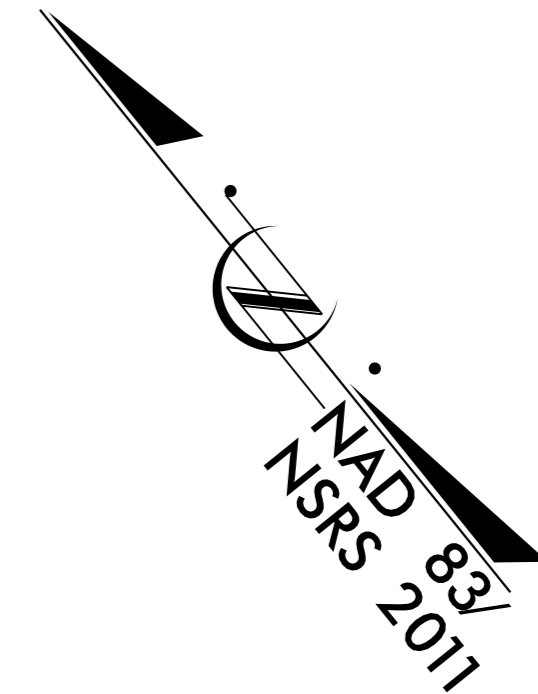
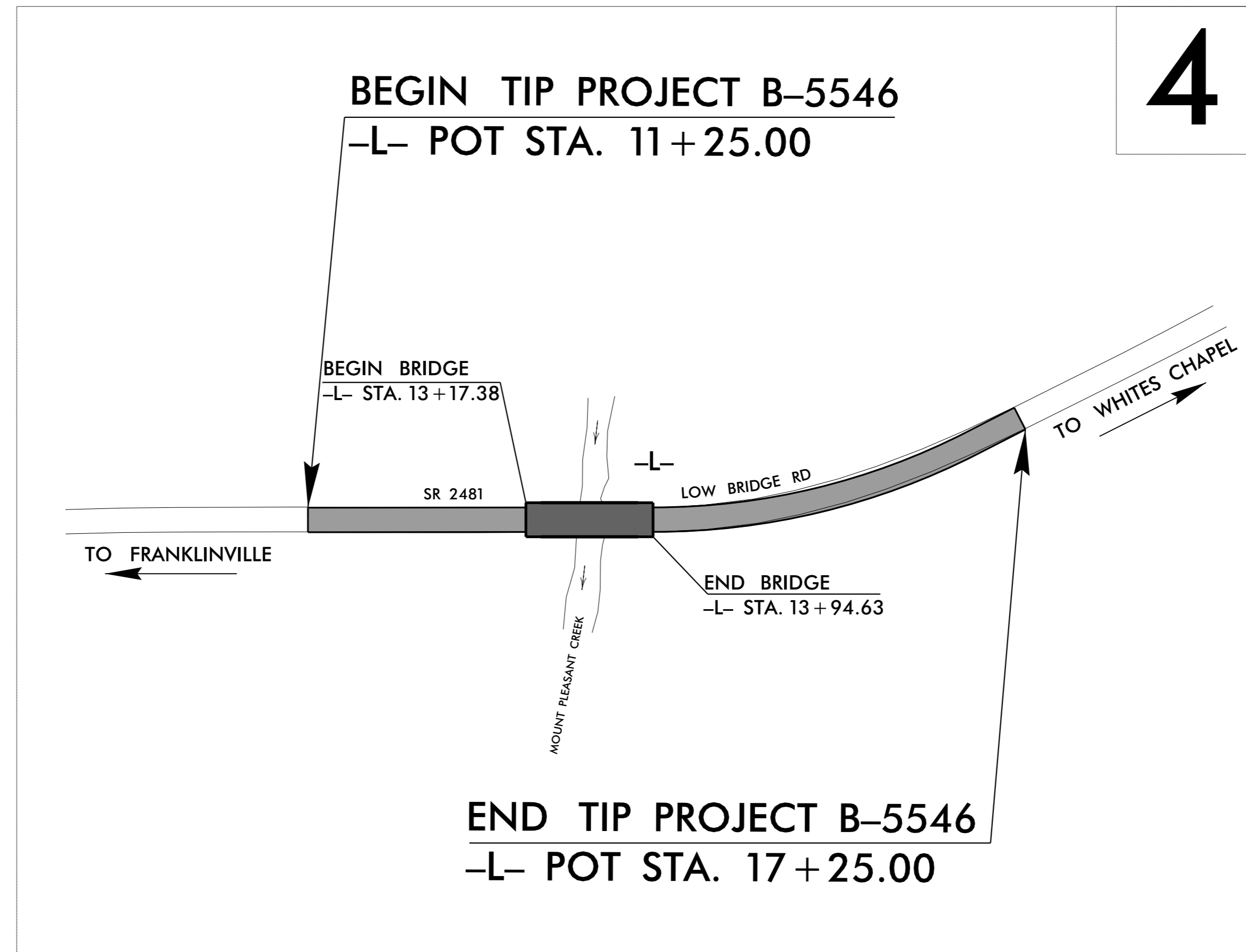
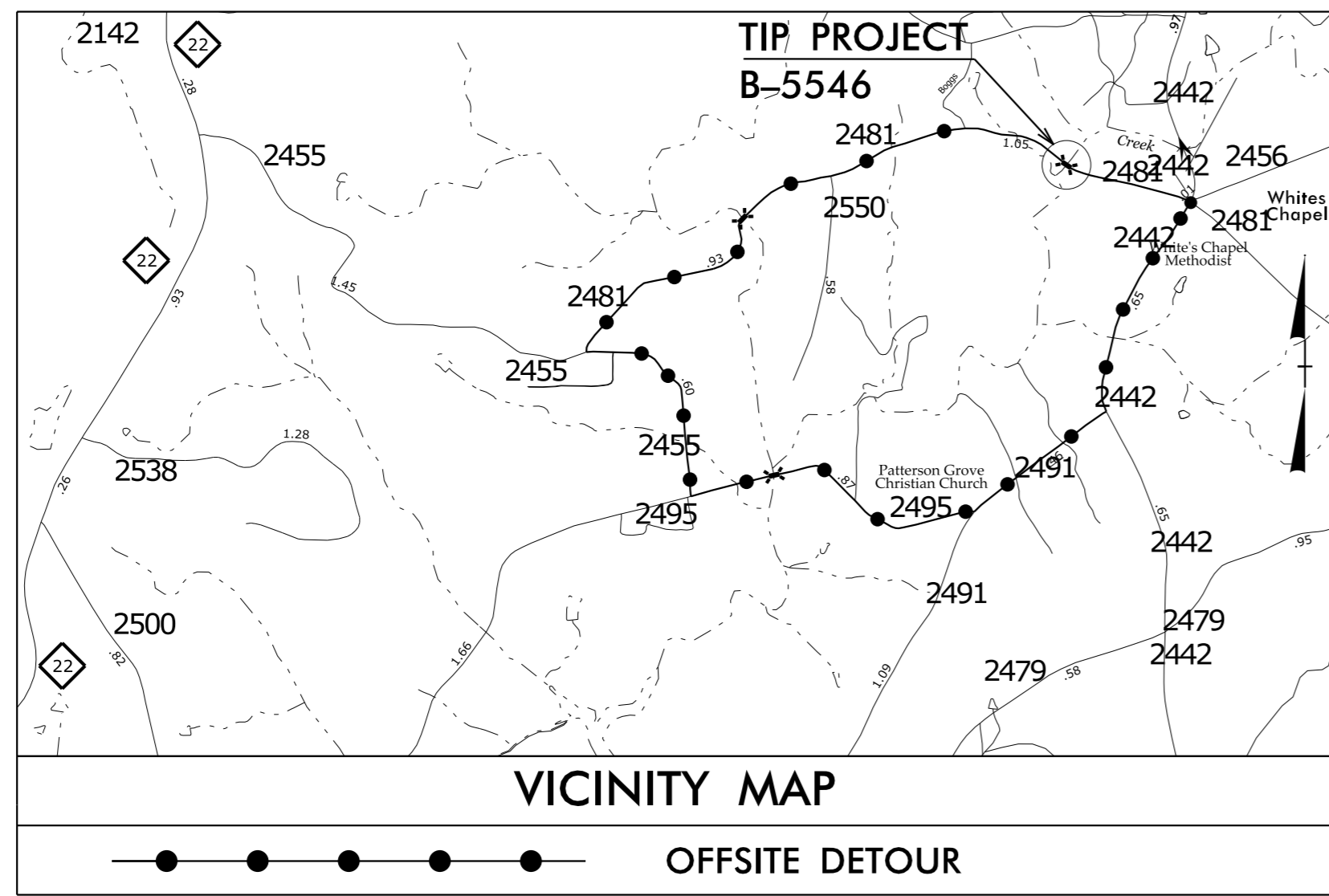
PART 2

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

RANDOLPH COUNTY

**LOCATION: BRIDGE NO. 307 OVER MOUNT PLEASANT CREEK
ON SR 2481 (LOW BRIDGE RD.)**

TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURE

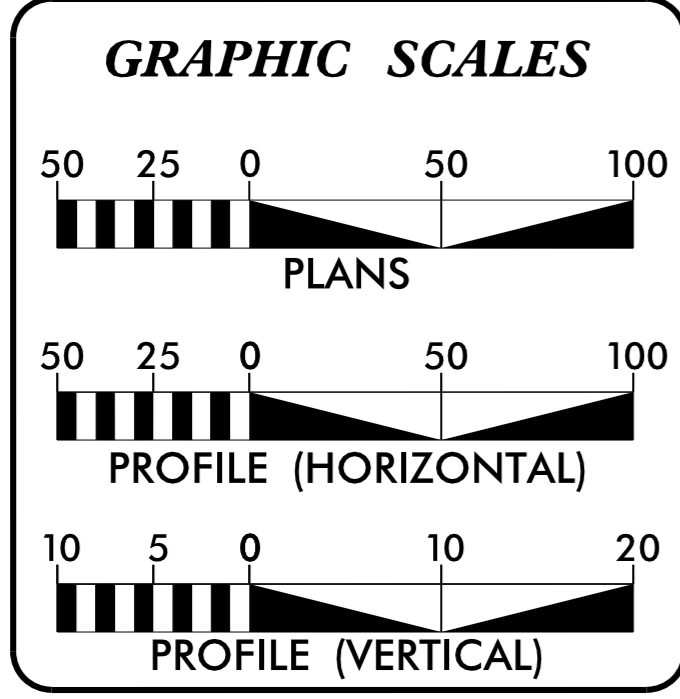


DESIGN EXCEPTION REQUIRED FOR SAG VERTICAL CURVE K FACTOR AND NIGHTTIME STOPPING SIGHT DISTANCE.

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

TIP PROJECT: B-5546

CONTRACT: C203805



DESIGN DATA

ADT 2014 =	400
ADT 2040 =	700
K =	13 %
D =	60 %
T =	9 % *
V =	40 MPH
*TTST =	1% DUAL=8%
FUNC CLASS =	RURAL, LOCAL
SUB REGIONAL TIER	

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-5546 =	0.099 MI
LENGTH STRUCTURE TIP PROJECT B-5546 =	0.015 MI
TOTAL LENGTH OF TIP PROJECT B-5546 =	0.114 MI

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

2012 STANDARD SPECIFICATIONS	
RIGHT OF WAY DATE: OCTOBER 6, 2015	JAMES A. SPEER, P.E. PROJECT ENGINEER
LETTING DATE: OCTOBER 18, 2016	NYA K. BOAYUE, PE PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

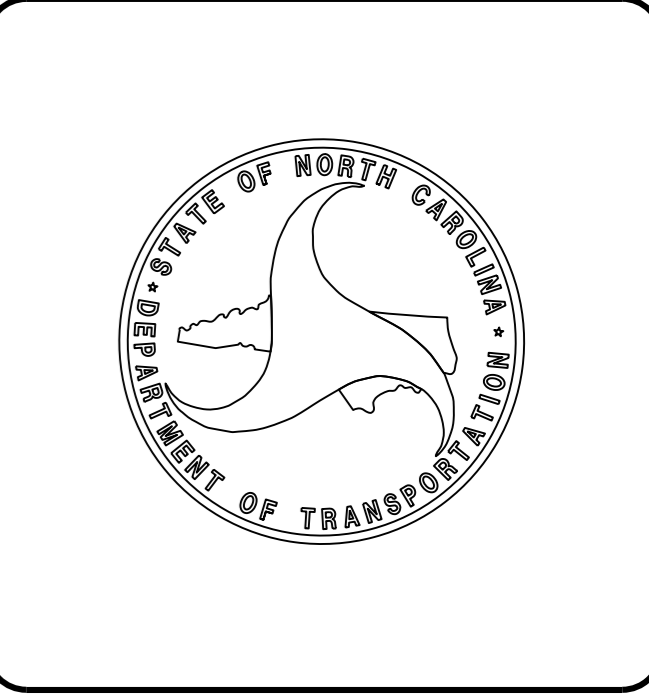
7/26/2016

DocuSigned by:
[Signature]
SIGNATURE

ROADWAY DESIGN ENGINEER

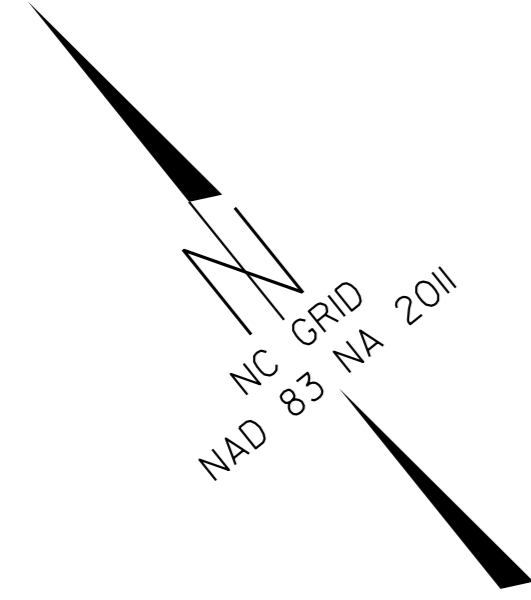
7/26/2016

DocuSigned by:
[Signature]
SIGNATURE



09/08/99
25-JUL-2016 16:09
R:\Roadway\Proj\B-5546_Rdy_Tsh.dgn
\$\$\$\$\$USERNAME\$\$\$\$\$

SURVEY CONTROL SHEET B-5546



LOCALIZED PROJECT COORDINATES
 -L- STA. 11+25.00 BEGIN TIP PROJECT B-5546
 N = 742367.5941
 E = 1807154.8694

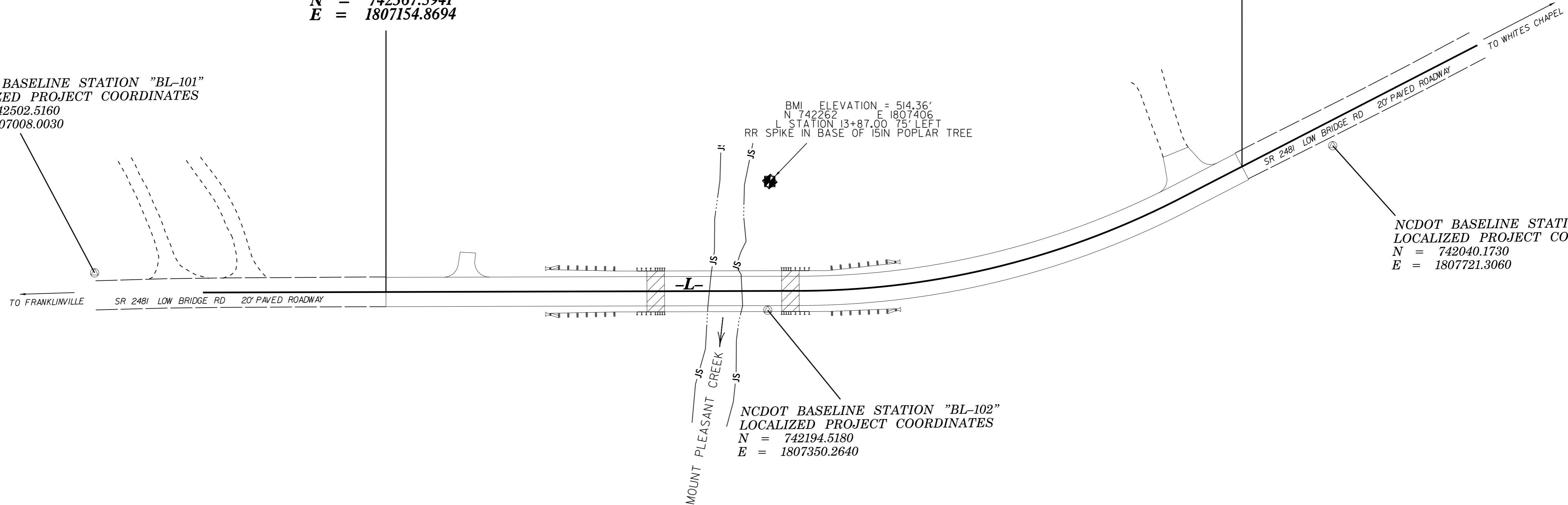
LOCALIZED PROJECT COORDINATES
 -L- STA. 17+25.00 END TIP PROJECT B-5546
 N = 742067.8834
 E = 1807664.1151

NCDOT BASELINE STATION "BL-101"
 LOCALIZED PROJECT COORDINATES
 N = 742502.5160
 E = 1807008.0030

NCDOT BASELINE STATION "BL-103"
 LOCALIZED PROJECT COORDINATES
 N = 742040.1730
 E = 1807721.3060

BMI ELEVATION = 514.36'
 N 742262 E 1807406
 L STATION 13+87.00 75' LEFT
 RR SPIKE IN BASE OF 15IN POPLAR TREE

NCDOT BASELINE STATION "BL-102"
 LOCALIZED PROJECT COORDINATES
 N = 742194.5180
 E = 1807350.2640



DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B5546-1" WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF NORTHING: 741985.730(±) EASTING: 1808002.531(±) ELEVATION: 559.113(±) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99989418 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B5546-1" TO -L- STATION 11+25.00 IS N 65° 44' 55.9" W 929.704' ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

NOTES:

1. THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:
[HTTPS://CONNECT.NCDOT.GOV/RESOURCES/LOCATION/](https://connect.ncdot.gov/resources/location/)

THE FILES TO BE FOUND ARE AS FOLLOWS:
 b5546_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.

⊙ 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.

BL POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
101	BL-101	742502.5160	1807008.0030	535.43	OUTSIDE PROJECT LIMITS	
102	BL-102	742194.5180	1807350.2640	518.11	13+85.70	13.12 RT
103	BL-103	742040.1730	1807721.3060	539.63	17+86.58	15.70 RT
.....						
BMI	ELEVATION = 514.36					
N 742262	E 1807406					
	L STATION 13+87.00 75' LEFT					
	RR SPIKE IN THE BASE OF 15 INCH POPLAR					
.....						

NOTE: DRAWING NOT TO SCALE

6/2/09

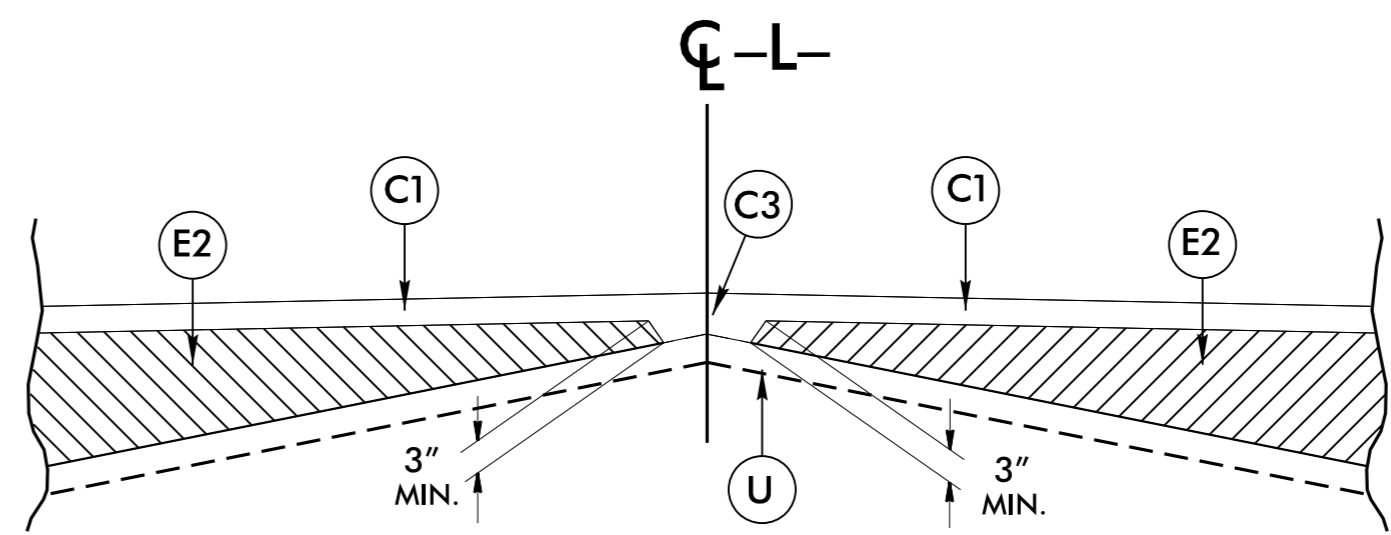
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PROJECT REFERENCE NO. B-5546	SHEET NO. 2A-1
ROADWAY DESIGN ENGINEER SEAL 020111 NORTH CAROLINA PROFESSIONAL ENGINEER CLARK K. BOATLE	PAVEMENT DESIGN ENGINEER SEAL 022896 NORTH CAROLINA PROFESSIONAL ENGINEER CLARK S. MORRISON
DocuSigned by: <i>Clark K. Boatle</i> 7/26/2016	DocuSigned by: <i>Clark S. Morrison</i> 7/29/2016

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

PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1 1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD.
C2	PROP. APPROX. 2 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1 1/2" IN DEPTH.
E1	PROP. APPROX. 5 1/2" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.
E2	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 3" IN DEPTH OR GREATER THAN 5 1/2" IN DEPTH.
R	CONCRETE SHOULDER BERM GUTTER.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE DETAIL)

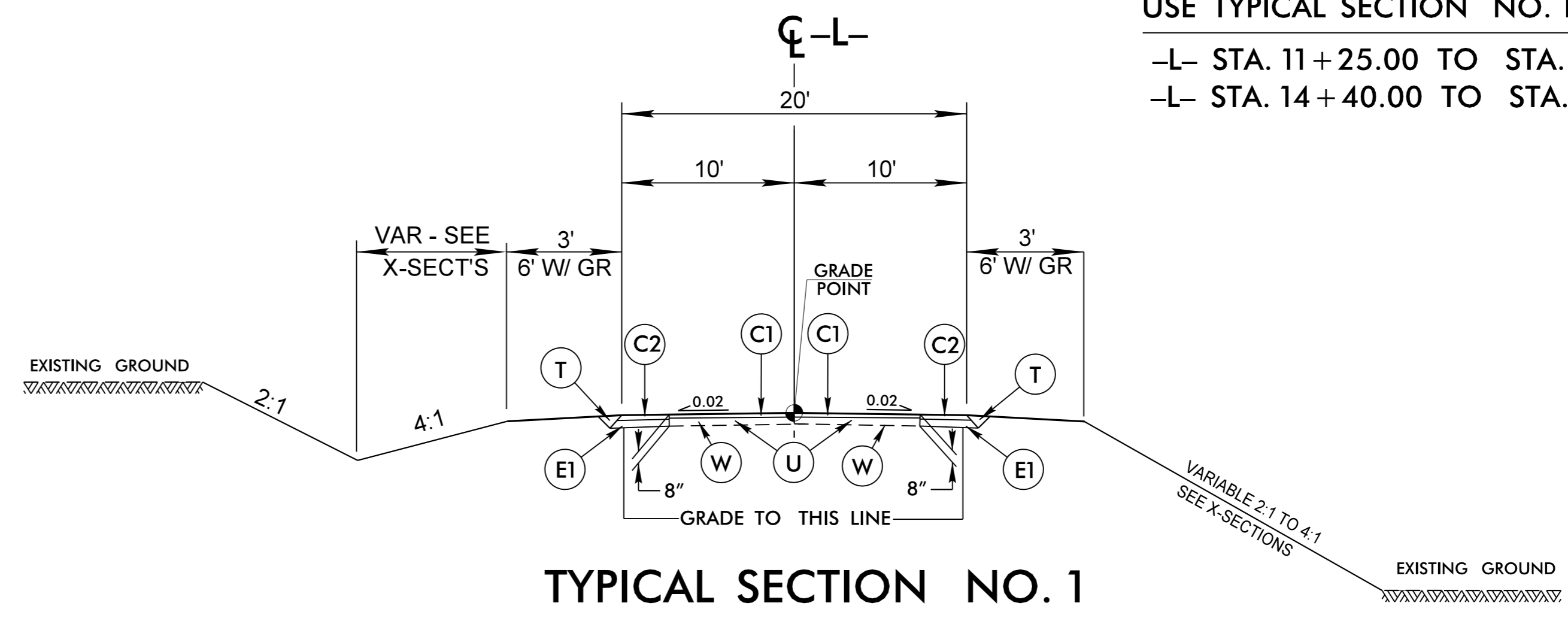
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE



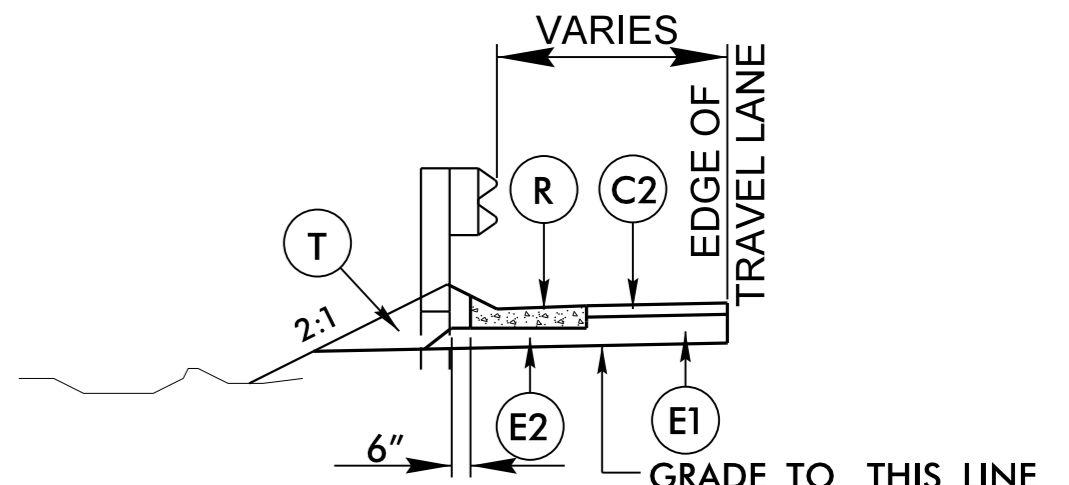
DETAIL SHOWING METHOD OF WEDGING

USE TYPICAL SECTION NO. 1 AS FOLLOWS:

- L- STA. 11+25.00 TO STA. 12+70.00
- L- STA. 14+40.00 TO STA. 17+25.00

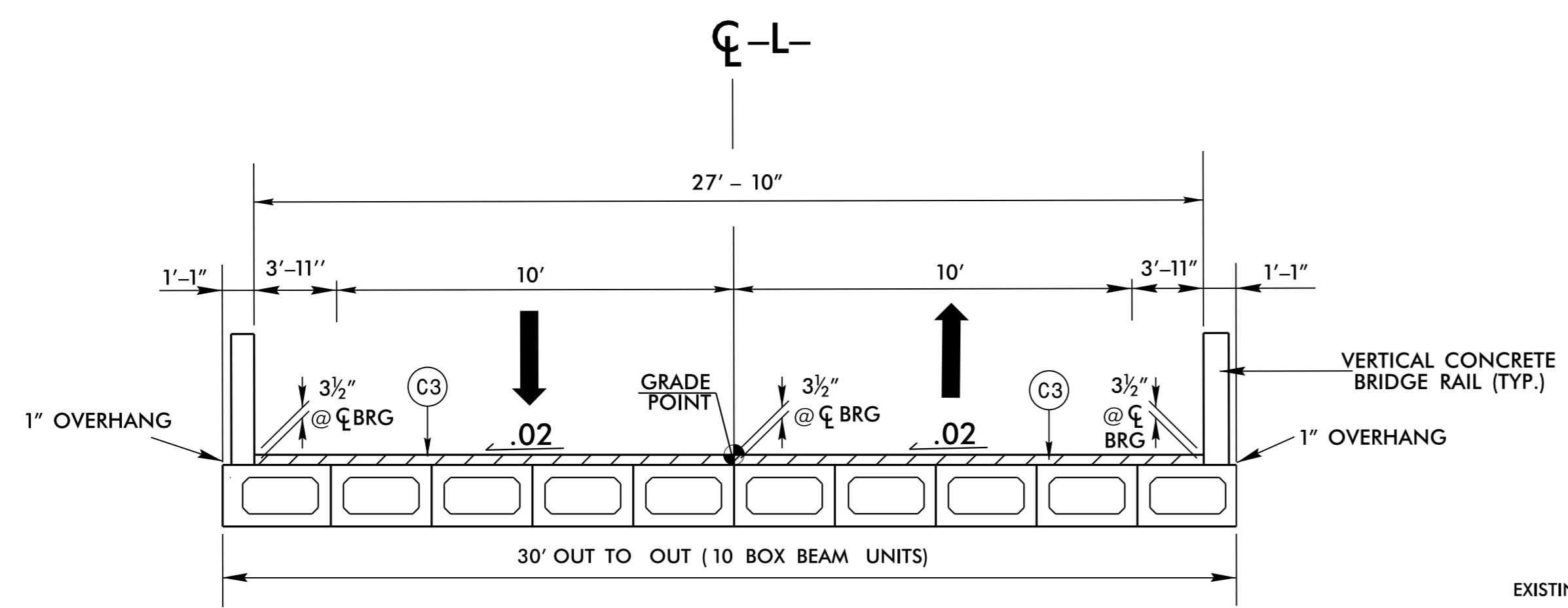


TYPICAL SECTION NO. 1



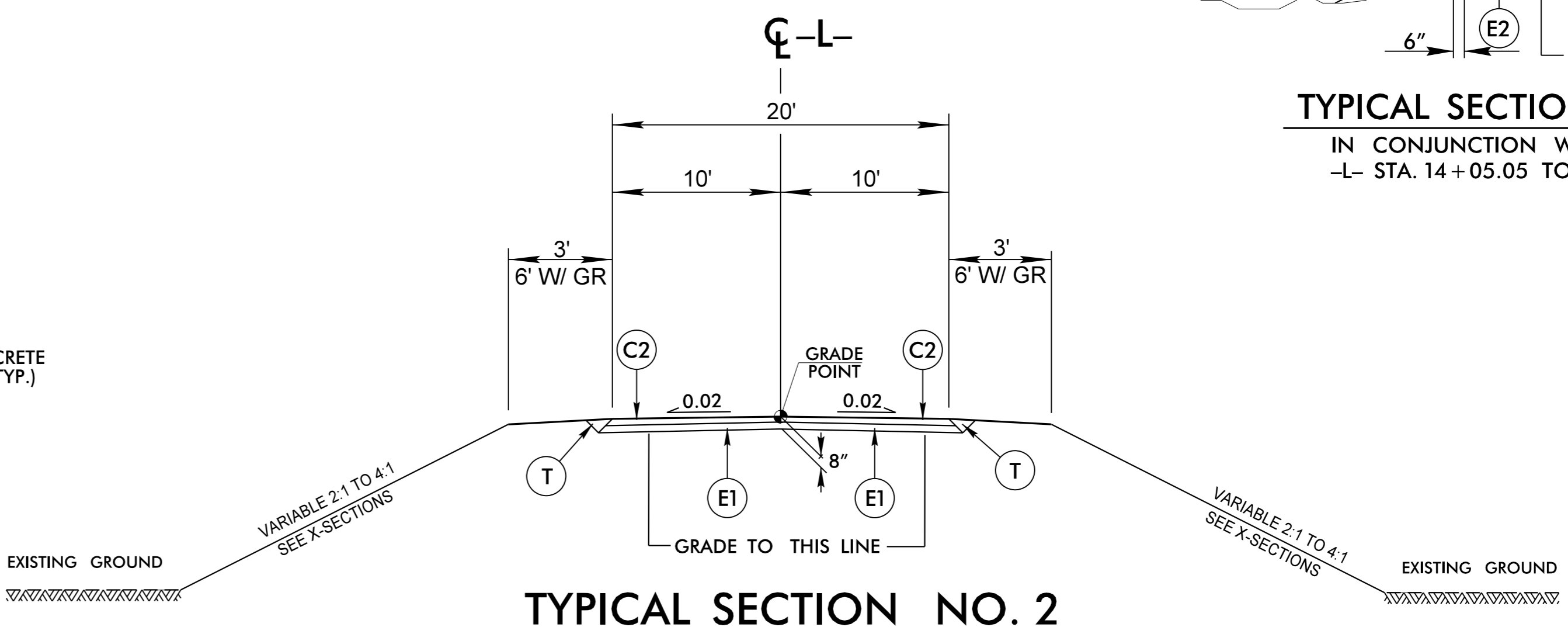
TYPICAL SECTION NO. 2A

IN CONJUNCTION WITH T.S. NO. 2
-L- STA. 14+05.05 TO 14+24.00 LT.



TYPICAL SECTION ON STRUCTURE

BEGIN BRIDGE -L- STA. 13+17.38 TO END BRIDGE -L- STA. 13+94.63



TYPICAL SECTION NO. 2

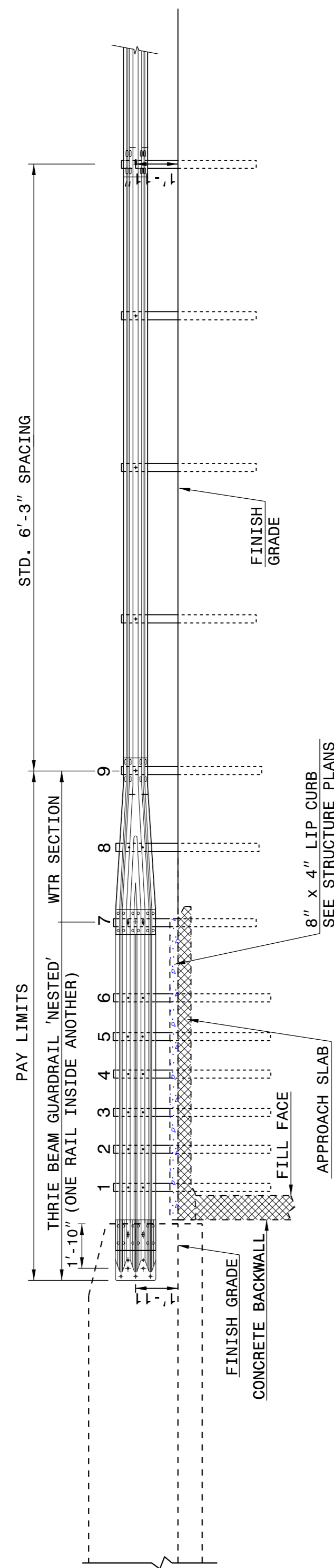
USE TYPICAL SECTION NO. 2 AS FOLLOWS:

- L- STA. 12+70.00 TO STA. 13+17.38 (BEGIN BRIDGE)
- L- STA. 13+94.63 (END BRIDGE) TO STA. 14+40.00

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

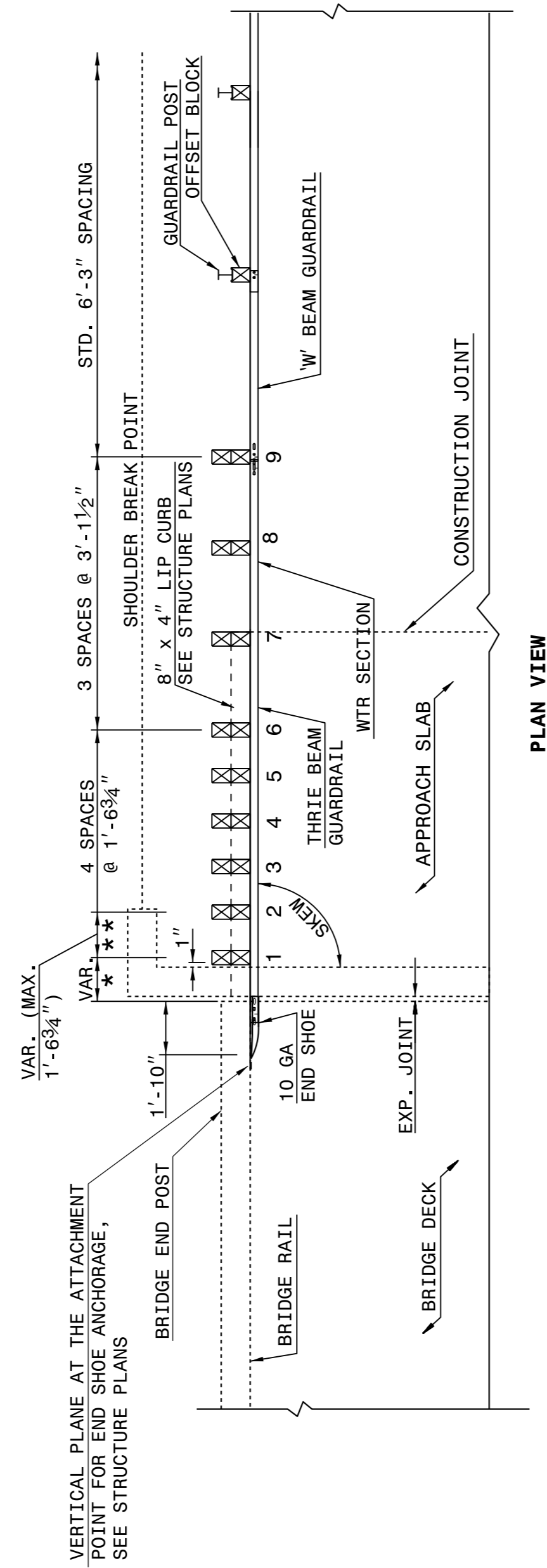
ENGLISH DETAIL DRAWING FOR
STRUCTURE ANCHOR UNITS
GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO
RAIL ON BRIDGE - SUB REGIONAL TIER

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 11½". IF CONCRETE BACKWALL IS NOT PRESENT.
 -SHOULDER BERM GUTTER MUST BE INSTALLED TO THE LIMITS 8" x 4" LIP CURB IS SHOWN IF ANCHOR UNIT IS NOT ADJACENT TO AN APPROACH SLAB.
 -MEASURE GUARDRAIL HEIGHT FROM THE TOP OF ADJACENT SURFACE (SHOULDER, BERM, OR GUTTER).
 -LAP JOINTS IN THE DIRECTION OF TRAFFIC FLOW.
 -SEE SHEET 3 FOR POST SECTIONS 1 THRU 9.



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

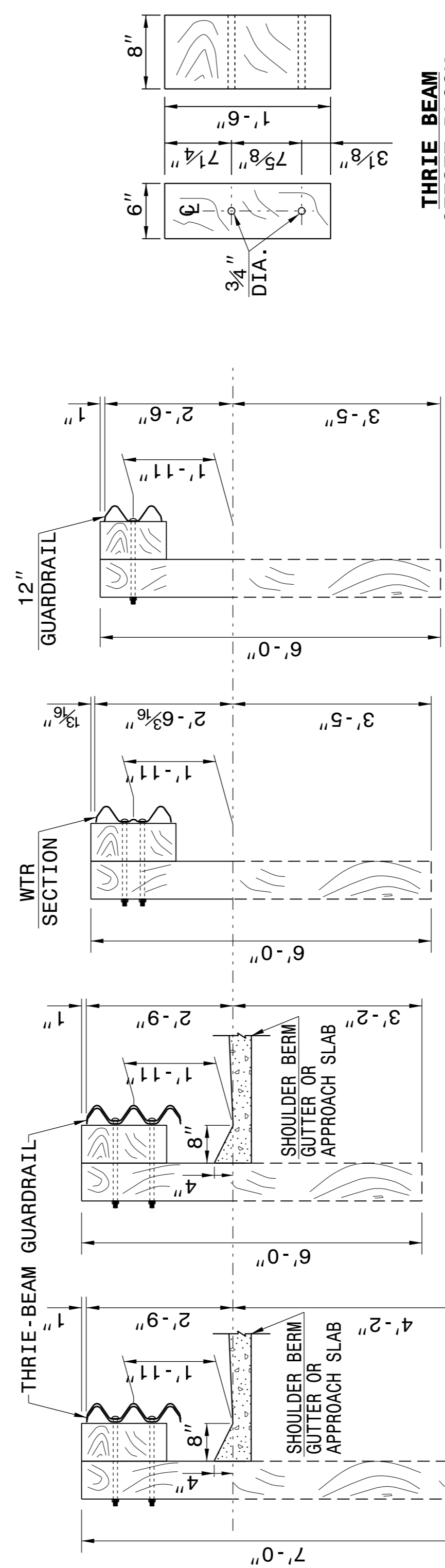
SHEET 2 OF 7
862d03

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 PLOTTED AT 200%
 PLOTTED DATE 07/26/2016 11:10 AM
 PLOTTED BY JHOWERTON

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



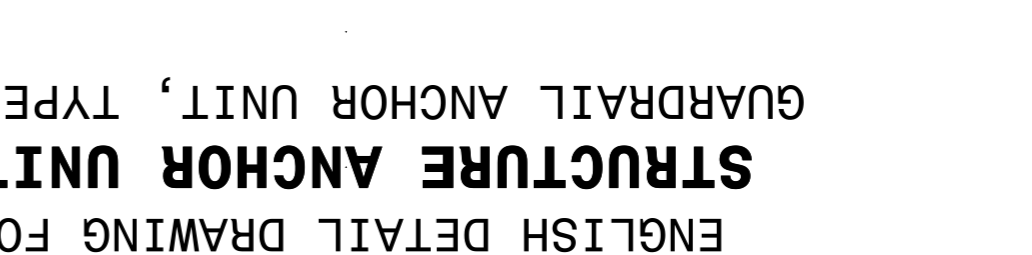
**SECTION OF THRRIE BEAM
POSTS 1 THRU 6**

**SECTION OF THRRIE
BEAM POST 7**

**SECTION OF WTR
BEAM POST 8**

**SECTION OF WTR
BEAM POST 9**

**THRRIE BEAM
OFFSET BLOCK**



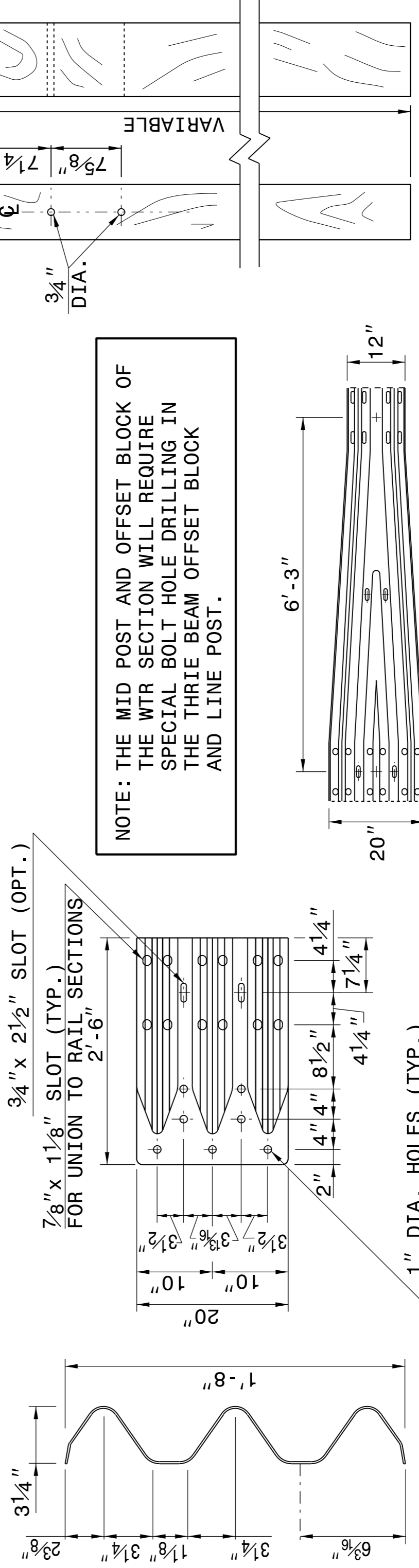
**SECTION OF THRRIE BEAM
POSTS 1 THRU 6**

**SECTION OF THRRIE
BEAM POST 7**

**SECTION OF WTR
BEAM POST 8**

**SECTION OF WTR
BEAM POST 9**

**THRRIE BEAM
OFFSET BLOCK**



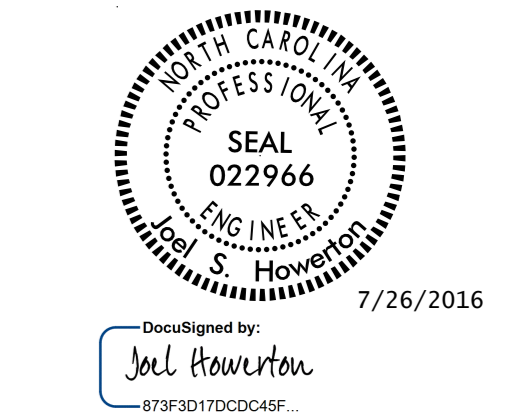
NOTE: THE MID POST AND OFFSET BLOCK OF THE WTR SECTION WILL REQUIRE SPECIAL BOLT HOLE DRILLING IN THE THRRIE BEAM OFFSET BLOCK AND LINE POST.

SHEET 3 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



7/26/2016

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**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:

COMPUTED BY: CAY DATE: 12/1/2014
 CHECKED BY: KBM DATE: 12/1/2014

PROJECT NO. SHEET NO.
 B-5546 3G-1

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 TONS	
			CONTINGENCY	ASU	12	100	200	200	0	0
			TOTAL CY/TONS/SY:			100	200	200**	0	0

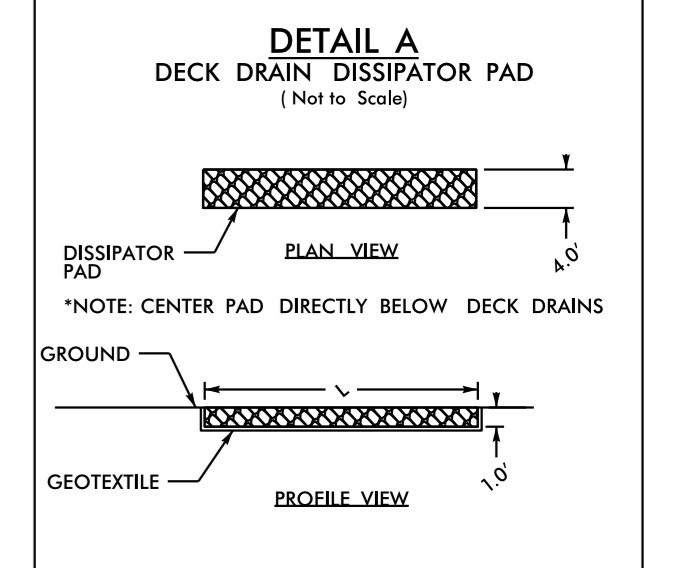
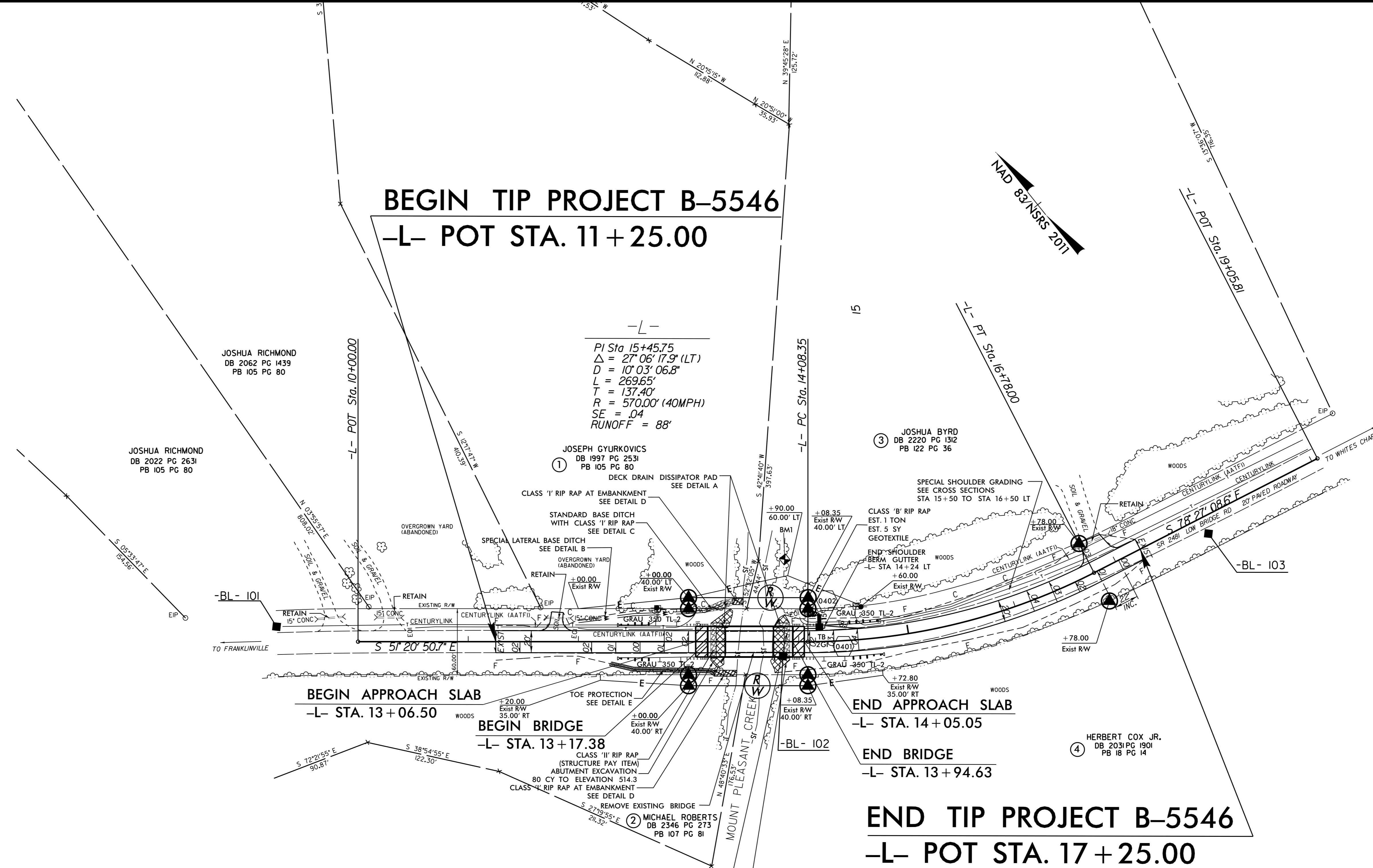
*ASU = Aggregate Subgrade

*AST = Aggregate Stabilization

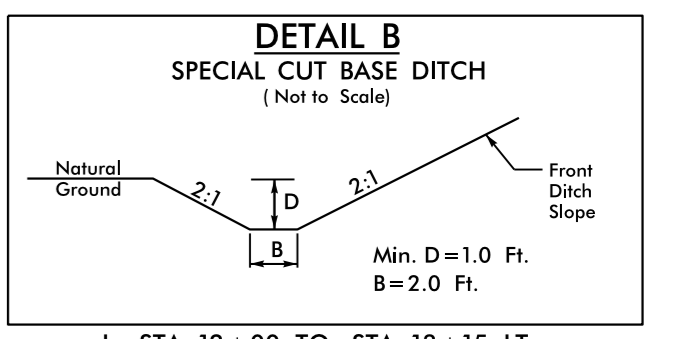
**Total square yards of "Geotextile for Soil Stabilization" is only the estimated quantity for ASU/AST and may only represent a portion of the geotextile quantity shown in the Item Sheets of the Proposal.

BEGIN TIP PROJECT B-5546
-L- POT STA. 11 + 25.00

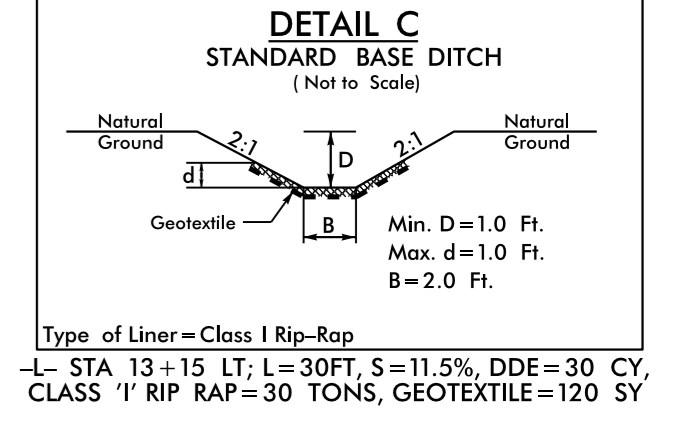
-L-
 $PI\ Sta\ 15+45.75$
 $\Delta = 27^{\circ}06'17.9" (LT)$
 $D = 10'03'06.8"$
 $L = 269.65'$
 $T = 137.40'$
 $R = 570.00' (40MPH)$
 $SE = .04$
 $RUNOFF = 88'$



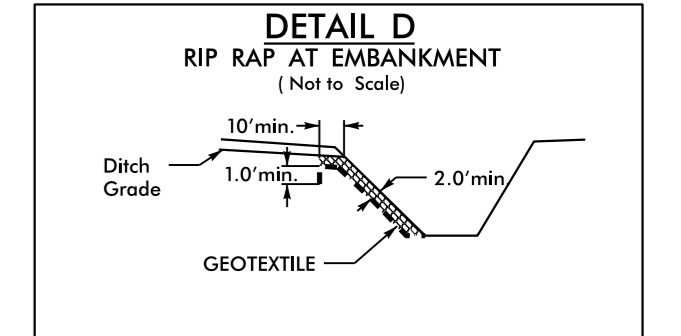
-L- STA 13+23.5 LT; L=17FT,
CLASS 'B' RIP RAP=4 TONS, GEOTEXTILE=80 SY
 -L- STA 13+76.5 LT; L=15FT,
CLASS 'B' RIP RAP=4 TONS, GEOTEXTILE=70 SY



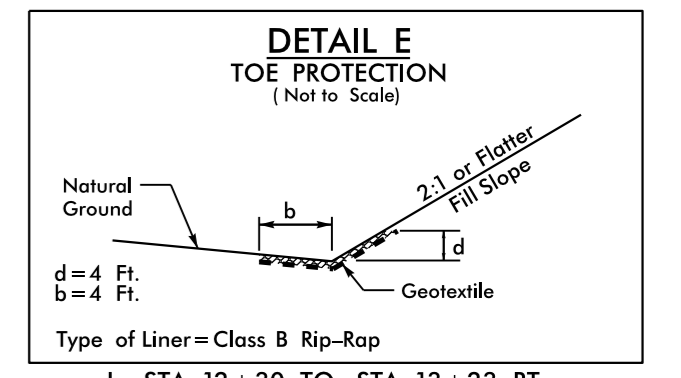
-L- STA 12+00 TO STA 13+15 LT



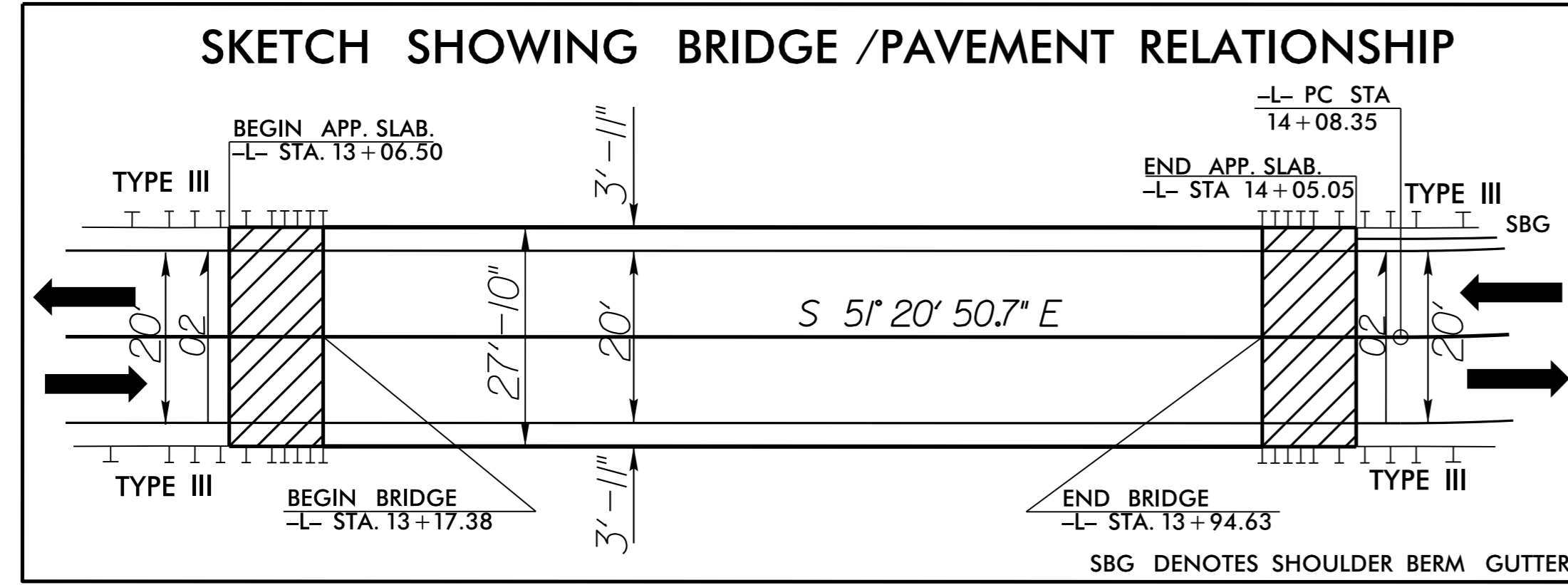
Type of Liner=Class I Rip-Rap
 -L- STA 13+15 LT; L=30FT, S=11.5%, DDE=30 CY,
CLASS 'I' RIP RAP=30 TONS, GEOTEXTILE=120 SY



-L- STA 13+23 RT; CLASS 'I' RIP RAP=15 TONS, GEOTEXTILE=90 SY
 -L- STA 13+40 LT; CLASS 'I' RIP RAP=7 TONS, GEOTEXTILE=50 SY



Type of Liner=Class B Rip-Rap
 -L- STA 12+30 TO STA 13+23 RT;
CLASS 'B' RIP RAP=70 TONS, GEOTEXTILE=400 SY



SEE SHEET 5 FOR -L- PROFILE
 SEE SHEETS S-23 THRU S-38 FOR STRUCTURE PLANS

REVISIONS

8/17/99

25 JUL-2016 16:13 A:\B-5546_RdL_psh.dgn
 9:54:05 AM

ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 020111 N. K. BOYAKU ENGINEER	HYDRAULICS ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 039168 C. W. HUBBARD ENGINEER
DocuSigned by: [Signature] 7/26/2016	DocuSigned by: [Signature] 7/26/2016

DITCH LEGEND
LEFT DITCH - - - - -

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	=	1,900	CFS
DESIGN FREQUENCY	=	25	YRS
DESIGN HW ELEVATION	=	516.8	FT
BASE DISCHARGE	=	2,801	CFS
BASE FREQUENCY	=	100	YRS
BASE HW ELEVATION	=	518.15	FT
OVERTOPPING DISCHARGE	=	6,000	CFS
OVERTOPPING FREQUENCY	=	500+	YRS
OVERTOPPING ELEVATION	=	520.9	FT

DATE OF SURVEY	=	SEP 13, 2014
W.S. ELEVATION AT DATE OF SURVEY	=	507.8 FT

BM#1
SEE SHEET IC-1

-L-

BEGIN GRADE
-L- STA. 11+25.00
ELEV. = 525.89'

END GRADE
-L- STA. 17+25.00
ELEV. = 535.29'

℄ STA 13+56 -L-
1@77'3" 33-INCH BOX BEAM
WITH 4-FOOT CAPS
GRADE POINT ELEVATION = 520.87
90-DEGREE SKEW

PI = 12+38.50
EL = 521.31'
VC = 120'
K = 33*
V = 25MPH*

PI = 15+30.00
EL = 520.23'
VC = 245'
K = 30*
V = 25MPH*

BEGIN DITCH LT
STA 12+00.00
ELEV = 520.53'

PI = 12+50.00
ELEV = 518.00'

END DITCH LT
STA 13+15.00
ELEV = 515.40'

ABUTMENT EXCAVATION (STR. PAY ITEM)
CLASS II RIP RAP (STR. PAY ITEM)

ABUTMENT EXCAVATION (STR. PAY ITEM)
CLASS II RIP RAP (STR. PAY ITEM)

*DESIGN EXCEPTION REQUIRED FOR
SAG VERTICAL CURVE, K FACTOR, AND
NIGHTTIME STOPPING SIGHT DISTANCE

SEE SHEET 4 FOR PLAN VIEW

