

See Sheet 1-A For Index of Sheets  
See Sheet 1-B For Symbology

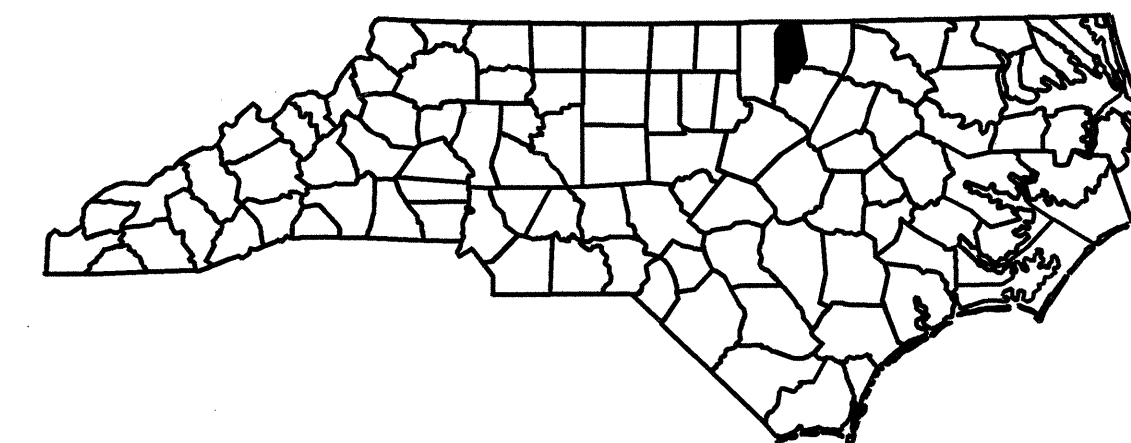
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4827	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
38597.1.1	FSTR BRZ-1523(6)	P.E.	
38597.2.1	BRZ-1523(6)	ROW & UTIL	
38597.3.FD1	BRZ-1523(6)	CONSTRUCTION	

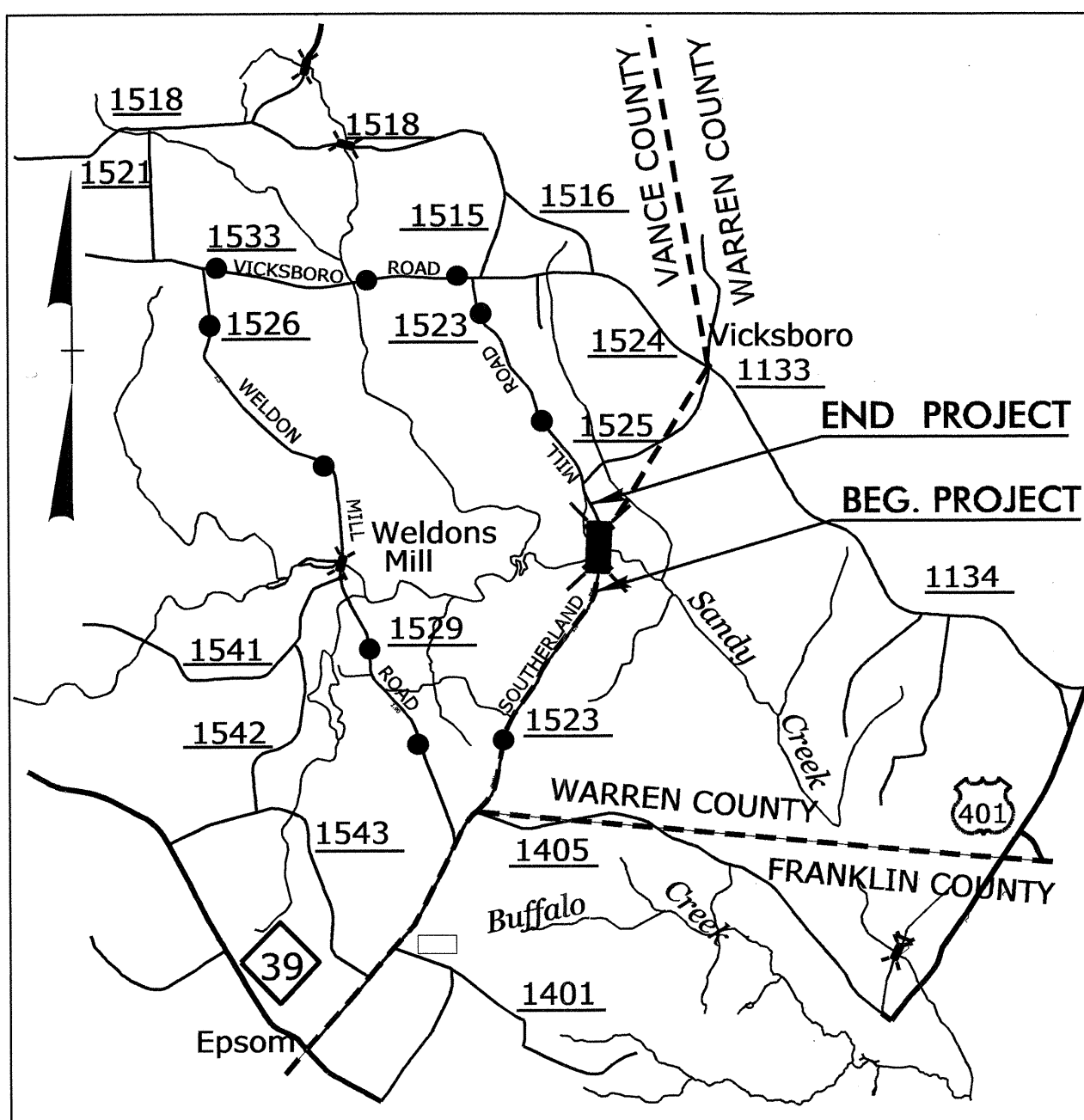
**VANCE & WARREN COUNTY**

LOCATION: BRIDGE NO. 53 OVER SANDY CREEK  
ON SR 1523 (SOUTHERLAND MILL RD.)

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

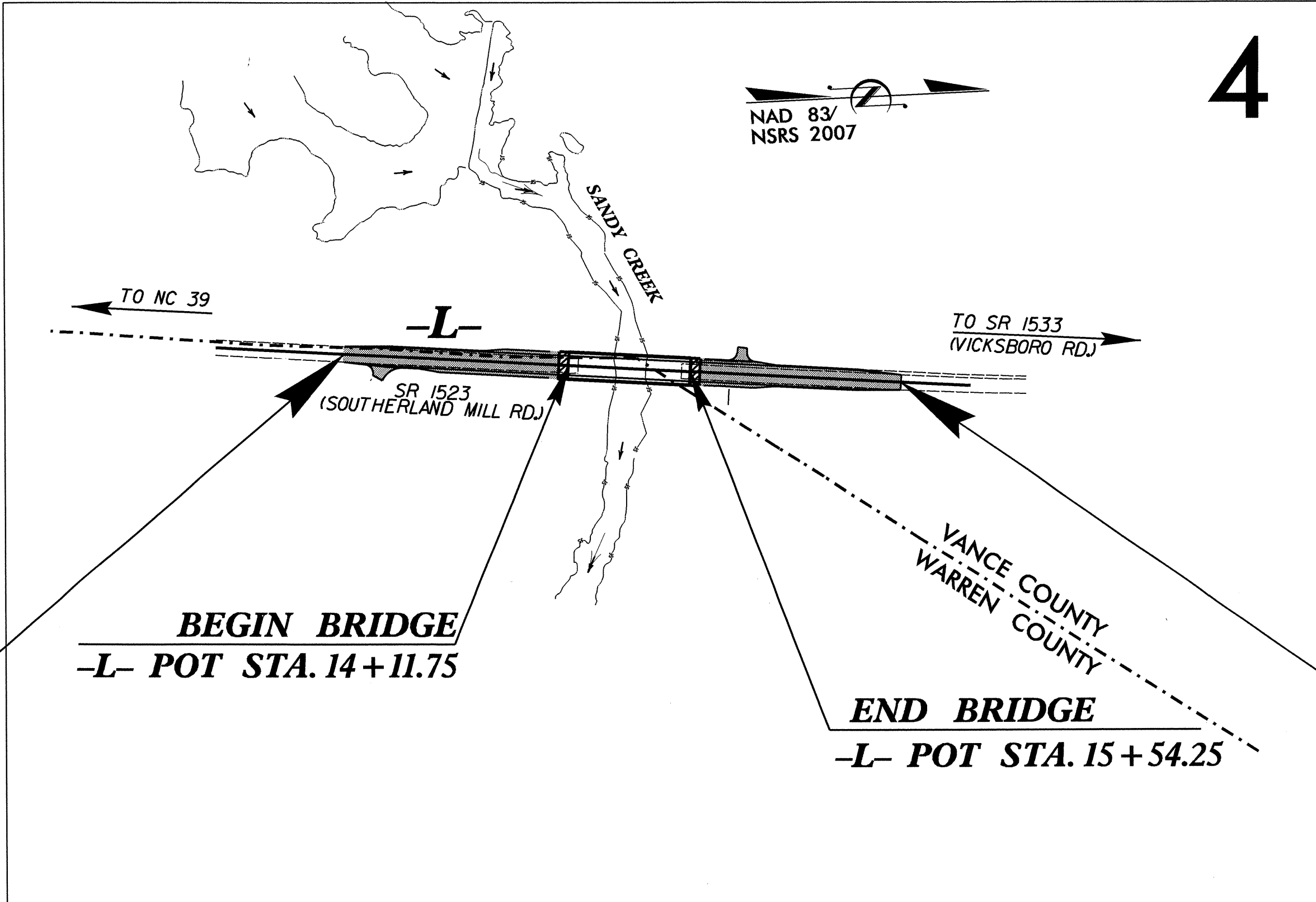


TIP PROJECT: B-4827



VICINITY MAP SHOWING LOCATION OF PROJECT B-4827

●●● OFFSITE DETOUR



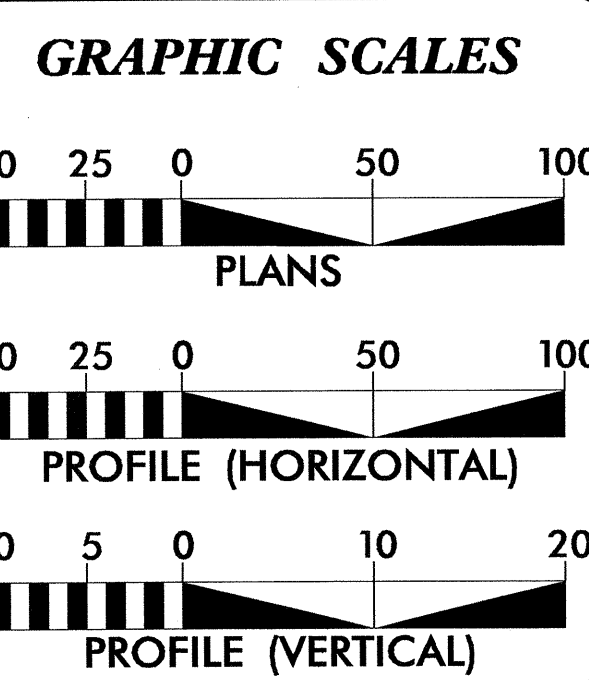
BEGIN TIP PROJECT B-4827  
-L- POT STA. 11 + 50.00

BEGIN BRIDGE  
-L- POT STA. 14 + 11.75

END BRIDGE  
-L- POT STA. 15 + 54.25

END TIP PROJECT B-4827  
-L- POT STA. 18 + 00.00

CONTRACT: C203350



**DESIGN DATA**

ADT 2013	= 1,054
ADT 2033	= 1,670
DHV	= 11 %
D	= 55 %
T	= 8 % *
V	= 50 MPH

\* (TTST 2% + DUAL 6%)

FUNC CLASS = RURAL COLLECTOR  
SUB REGIONAL TIER

**PROJECT LENGTH**

LENGTH ROADWAY TIP PROJECT B-4827	= 0.096 MILES
LENGTH STRUCTURE TIP PROJECT B-4827	= 0.027 MILES
TOTAL LENGTH TIP PROJECT B-4827	= 0.123 MILES

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

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: DECEMBER 18, 2012

LETTING DATE: FEBRUARY 18, 2014

TONY HOUSER, PE  
PROJECT ENGINEER

LEE ANN MOORE  
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

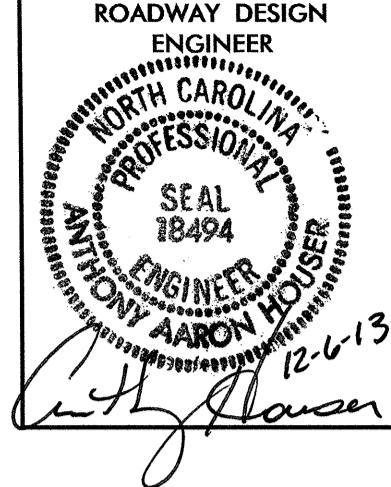
ROADWAY DESIGN ENGINEER

12/3/15

12-3-13

DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA

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INDEX OF SHEETS

2012 ROADWAY ENGLISH STANDARD DRAWINGS

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

GENERAL NOTES:

2012 SPECIFICATIONS  
EFFECTIVE: 01-17-2012  
REVISED: 07-30-2012

SHEET NUMBER	SHEET
1	TITLE SHEET
1-A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
1-B	CONVENTIONAL SYMBOLS
1C	SURVEY CONTROL SHEETS
2	PAVEMENT SCHEDULE, TYPICAL SECTIONS, WEDGING DETAIL, AND PAVED SHOULDER IN RELATION TO GUARDRAIL DETAIL
2-A	STRUCTURE ANCHOR UNITS DETAIL
3A	SUMMARY OF EXISTING ASPHALT PAVEMENT REMOVAL SUMMARY OF GUARDRAIL SUMMARY OF EARTHWORK SUMMARY OF SHOULDER BERM GUTTER
3-B	SUMMARY OF DRAINAGE
4	PLAN SHEET
5	PROFILE SHEET
TMP-1 THRU TMP-3	TRANSPORTATION MANAGEMENT PLANS
PMP-1	PAVEMENT MARKING PLANS
EC-1 THRU EC-5/CONST.4	EROSION CONTROL PLANS
RF-1	REFORESTATION PLANS
UO-1 THRU UO-2	UTILITIES BY OTHER PLANS
X-A THRU X-7	CROSS-SECTIONS
S-1 THRU S-20	STRUCTURE PLANS

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	
200.03	Method of Clearing - Method III
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
DIVISION 4 - MAJOR STRUCTURES	
422.11	Reinforced 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 8 - INCIDENTALS	
806.01	Concrete Right-of-Way Marker
806.02	Granite Right-of-Way Marker
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
876.01	Rip Rap in Channels
876.02	Guide for Rip Rap at Pipe Outlets
876.04	Drainage Ditches with Class 'B' Rip Rap

GRADE LINE:  
GRADING AND SURFACING:

THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. GRADE LINES MAY BE ADJUSTED AT THEIR BEGINNING AND ENDING AND AT STRUCTURES AS DIRECTED 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. 225.04 USING THE RATE OF SUPERELEVATION AND RUNOFF SHOWN ON THE PLANS. SUPERELEVATION IS TO BE REVOLVED ABOUT THE GRADE POINTS SHOWN ON THE TYPICAL SECTIONS.

SHOULDER CONSTRUCTION:

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

SIDE ROADS:

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

GUARDRAIL:

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

TEMPORARY SHORING:

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

END BENTS:

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

UTILITIES:

- UTILITY OWNERS ON THIS PROJECT ARE
- PROGRESS ENERGY - POWER (DISTRIBUTION)
- C.T. & T. - TELEPHONE
- CENTURY LINK - TELEPHONE
- ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS.

RIGHT-OF-WAY MARKERS:

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

8/17/99

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STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

Note: Not to Scale

\*S.U.E. = Subsurface Utility Engineering

# CONVENTIONAL PLAN SHEET SYMBOLS

## BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	○ EP
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-
Known Soil Contamination: Area or Site	☠ ☠
Potential Soil Contamination: Area or Site	☠ ?

## BUILDINGS AND OTHER CULTURE:

Gas Pump Vent or U/G Tank Cap	○
Sign	○
Well	○ W
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	○ MILEPOST 35
Switch	□ 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 CA Marker	○
Existing Control of Access	○
Proposed Control of Access	○
Existing Easement Line	-E-
Proposed Temporary Construction Easement	-E-
Proposed Temporary Drainage Easement	-TDE-
Proposed Permanent Drainage Easement	-PDE-
Proposed Permanent Drainage / Utility Easement	-DUE-
Proposed Permanent Utility Easement	-PUE-
Proposed Temporary Utility Easement	-TUE-
Proposed Aerial Utility Easement	-AUE-
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	○ CR
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	□ CB
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	●
Recorded U/G Power Line	-----
Designated U/G Power Line (S.U.E.*)	-----

## TELEPHONE:

Existing Telephone Pole	●
Proposed Telephone Pole	○
Telephone Manhole	⊕
Telephone Booth	⊕
Telephone Pedestal	⊕
Telephone Cell Tower	⊕
U/G Telephone Cable Hand Hole	○
Recorded U/G Telephone Cable	-----
Designated U/G Telephone Cable (S.U.E.*)	-----
Recorded U/G Telephone Conduit	-----
Designated U/G Telephone Conduit (S.U.E.*)	-----
Recorded U/G Fiber Optics Cable	-----
Designated U/G Fiber Optics Cable (S.U.E.*)	-----

## WATER:

Water Manhole	⊕
Water Meter	○
Water Valve	⊕
Water Hydrant	⊕
Recorded U/G Water Line	-----
Designated U/G Water Line (S.U.E.*)	-----
Above Ground Water Line	-----

## TV:

TV Satellite Dish	⊕
TV Pedestal	⊕
TV Tower	⊕
U/G TV Cable Hand Hole	○
Recorded U/G TV Cable	-----
Designated U/G TV Cable (S.U.E.*)	-----
Recorded U/G Fiber Optic Cable	-----
Designated U/G Fiber Optic Cable (S.U.E.*)	-----

## GAS:

Gas Valve	◇
Gas Meter	⊕
Recorded U/G Gas Line	-----
Designated U/G Gas Line (S.U.E.*)	-----
Above Ground Gas Line	-----

## SANITARY SEWER:

Sanitary Sewer Manhole	⊕
Sanitary Sewer Cleanout	⊕
U/G Sanitary Sewer Line	-----
Above Ground Sanitary Sewer	-----
Recorded SS Forced Main Line	-----
Designated SS Forced Main Line (S.U.E.*)	-----

## MISCELLANEOUS:

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



3/13/13

B-4827

# SURVEY CONTROL SHEET B-4827

## VANCE /WARREN COUNTY

LOCATION: BRIDGE NO. 53 OVER SANDY CREEK  
ON SR 1523 (SOUTHERLAND MILL ROAD)

PROJECT REFERENCE NO.	SHEET NO.
B-4827	1C
Location and Surveys	



ROW MARKER CONCRETE OR GRANITE -E

ALIGN	STATION	OFFSET	NORTH	EAST
L	12+36.33	-30.00	925050.6925	2208931.2229
L	13+78.56	-50.00	925194.2007	2208925.3281
L	16+70.00	-50.00	925494.2279	2208954.0318
L	17+25.00	-30.00	925536.9908	2208979.3514

ALIGNMENT DATA

TYPE	STATION	NORTH	EAST
POT	10+00.00	924812.5609	2208937.8018
POT	18+81.57	925689.8426	2209024.6256

ROW MARKER PERMANENT EASEMENT -E

ALIGN	STATION	OFFSET	NORTH	EAST
L	16+24.00	-62.00	925439.6334	2208937.5597
L	16+24.00	-50.00	925438.4516	2208949.5014
L	16+70.00	-50.00	925484.2279	2208954.0318

NCDOT GPS STATION B4827-1  
LOCALIZED PROJECT COORDINATES  
N=923177.52  
E=2208507.36

○ B4827-1

■ BL-3

■ BL-4

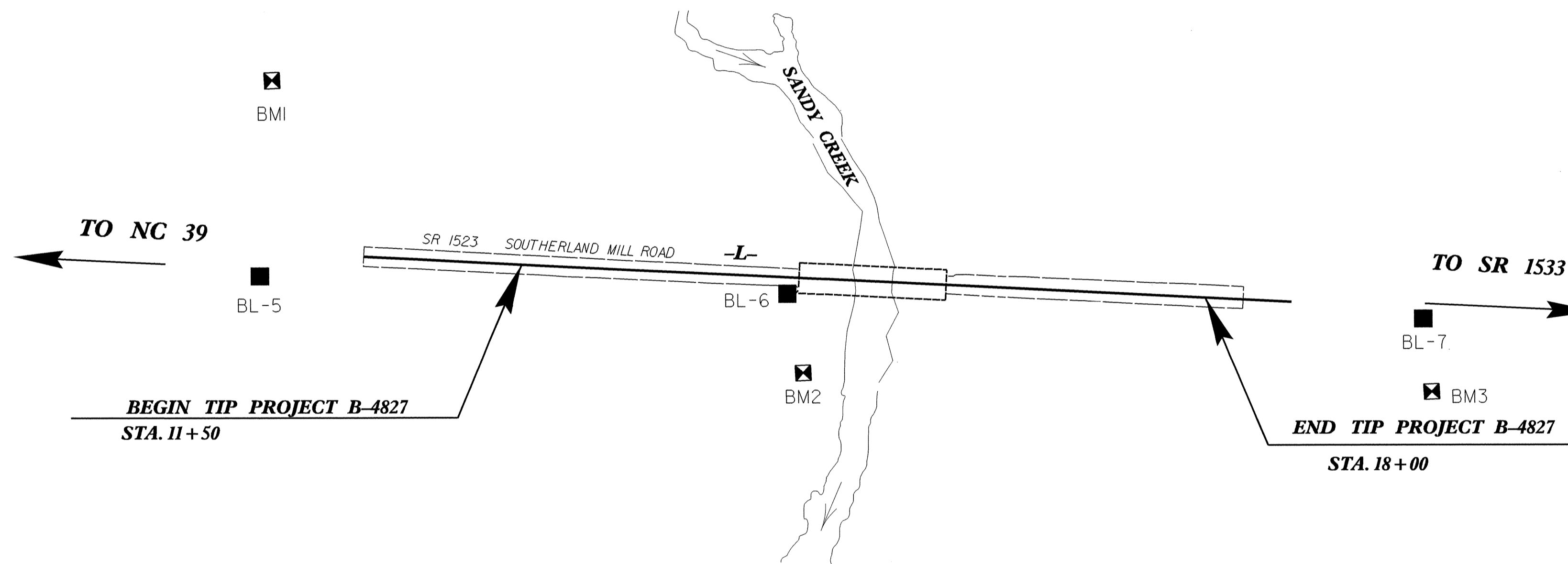
⊠ BM1

■ BL-5

⊠ BM2

■ BL-7

⊠ BM3



**CONTROL DATA**

BL	POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
	2	B4827-2	922189.2600	2207655.4760	395.54	OUTSIDE PROJECT LIMITS	
	1	B4827-1	923177.5200	2208507.3630	390.86	OUTSIDE PROJECT LIMITS	
	3	BL-3	923695.9671	2208758.7769	363.38	OUTSIDE PROJECT LIMITS	
	4	BL-4	924216.4319	2208870.6402	333.43	OUTSIDE PROJECT LIMITS	
	5	BL-5	924713.3937	2208951.4412	306.80	OUTSIDE PROJECT LIMITS	
	6	BL-6	925212.2538	2208993.0848	302.84	14+03.19	15.65 RT
	7	BL-7	925813.8605	2209046.8367	326.65	OUTSIDE PROJECT LIMITS	

**BENCHMARK DATA**

BM1 ELEVATION = 304.60 N 924735 E 2208767 L STATION 10+00.00 S 65° 33' 43" W 187.75' SURVEY BENCH TIE NAIL IN BASE OF 18" MAPLE	BM3 ELEVATION = 328.60 N 925818 E 2209117 L STATION 18+00.00 N 25° 28' 59" E 232.29' SURVEY BENCH TIE NAIL IN BASE OF 17" PINE
BM2 ELEVATION = 294.78 N 925224 E 2209069 L STATION 14+22.00 90 RIGHT SURVEY BENCH TIE NAIL IN BASE OF 17" HICKORY	

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "B4827-1" WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF NORTHING: 923177.5201(±) EASTING: 2208507.3631(±) ELEVATION: 390.86(±±)

THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 1.00002099

THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B4827-1" TO -L- STATION 11+50 IS N 14° 00' 36" E 1839.02'

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:  
[HTTP://CONNECT.NCDOT.GOV/RESOURCES/LOCATIONPAGES](http://connect.ncdot.gov/resources/locationpages)
- THE FILES TO BE FOUND ARE AS FOLLOWS:  
B4827\_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.  
NETWORK ESTABLISHED FROM EXISTING HARN MONUMENTATION  
SEE GPS CALIBRATION SHEET FOR HORIZONTAL AND VERTICAL COORDINATE VALUES.

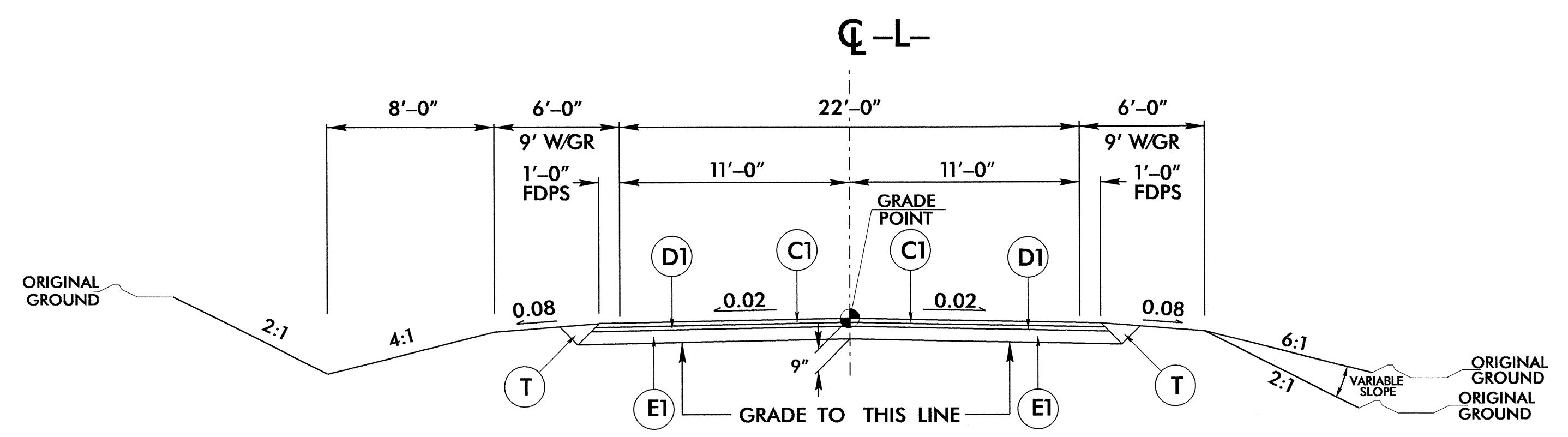
NOTE: DRAWING NOT TO SCALE

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PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN)	
C1	PROP. APPROX. 2½" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C2	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 1½" IN DEPTH.
D1	PROP. APPROX. 2½" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.
D2	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 2½" IN DEPTH OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 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 5½" IN DEPTH.
R	SHOULDER BERM GUTTER
T	EARTH MATERIAL.
W	VARIABLE DEPTH ASPHALT PAVEMENT (WEDGING DETAIL)

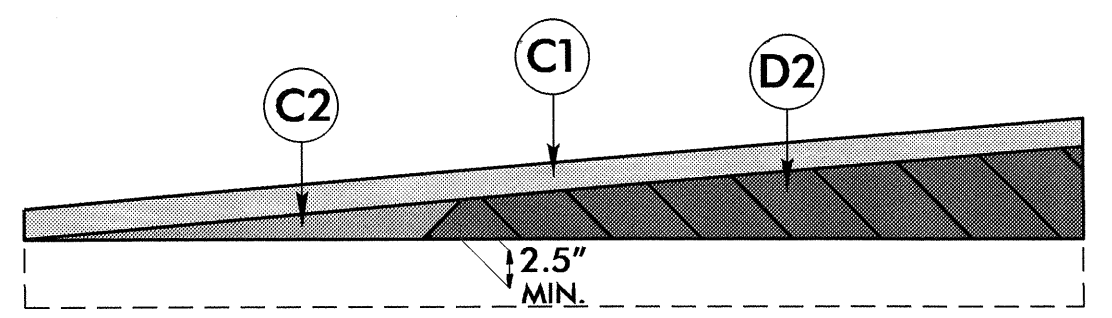
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.



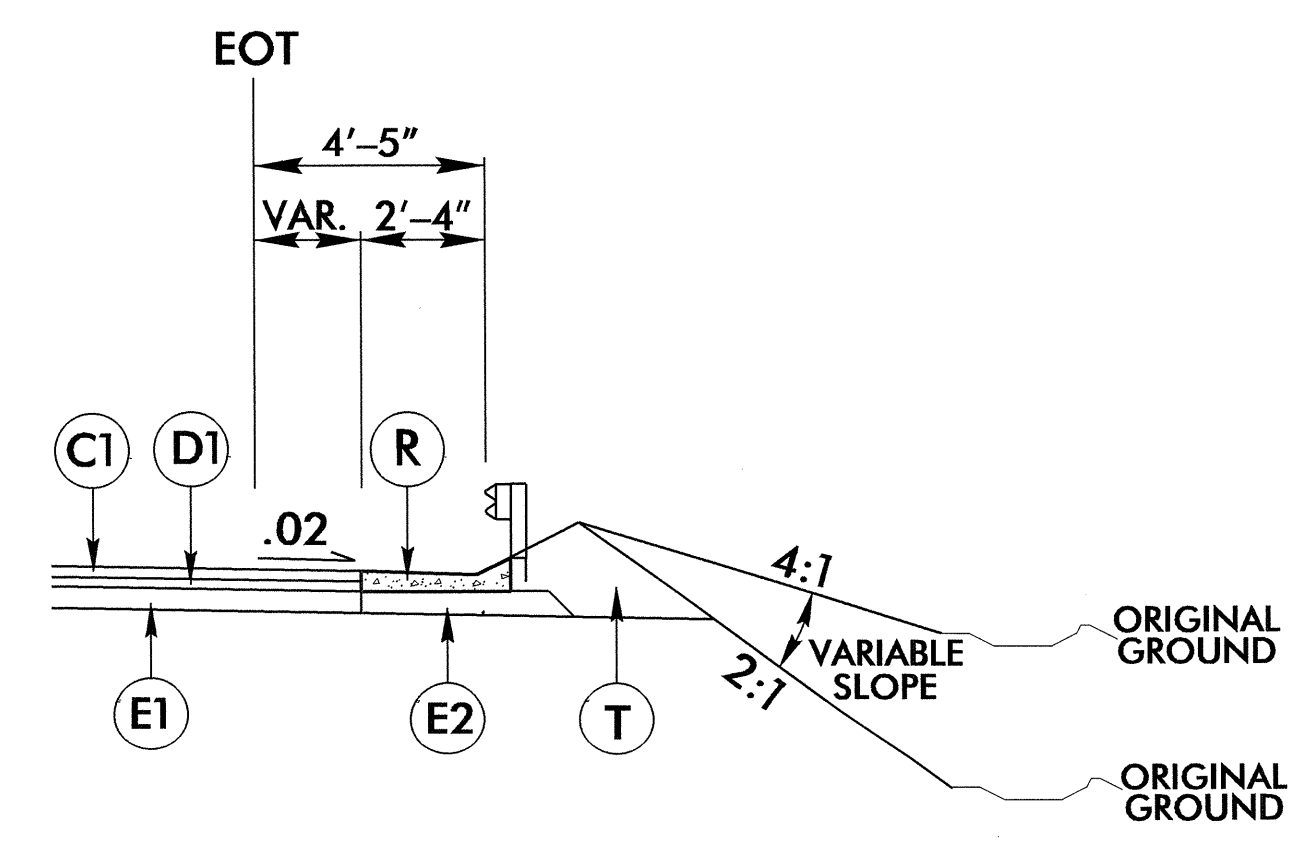
TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1

-L- STA. 11+50.00 TO -L- STA. 14+11.75 (BEGIN BRIDGE)  
-L- STA. 15+54.25 (END BRIDGE) TO -L- STA. 18+00.00



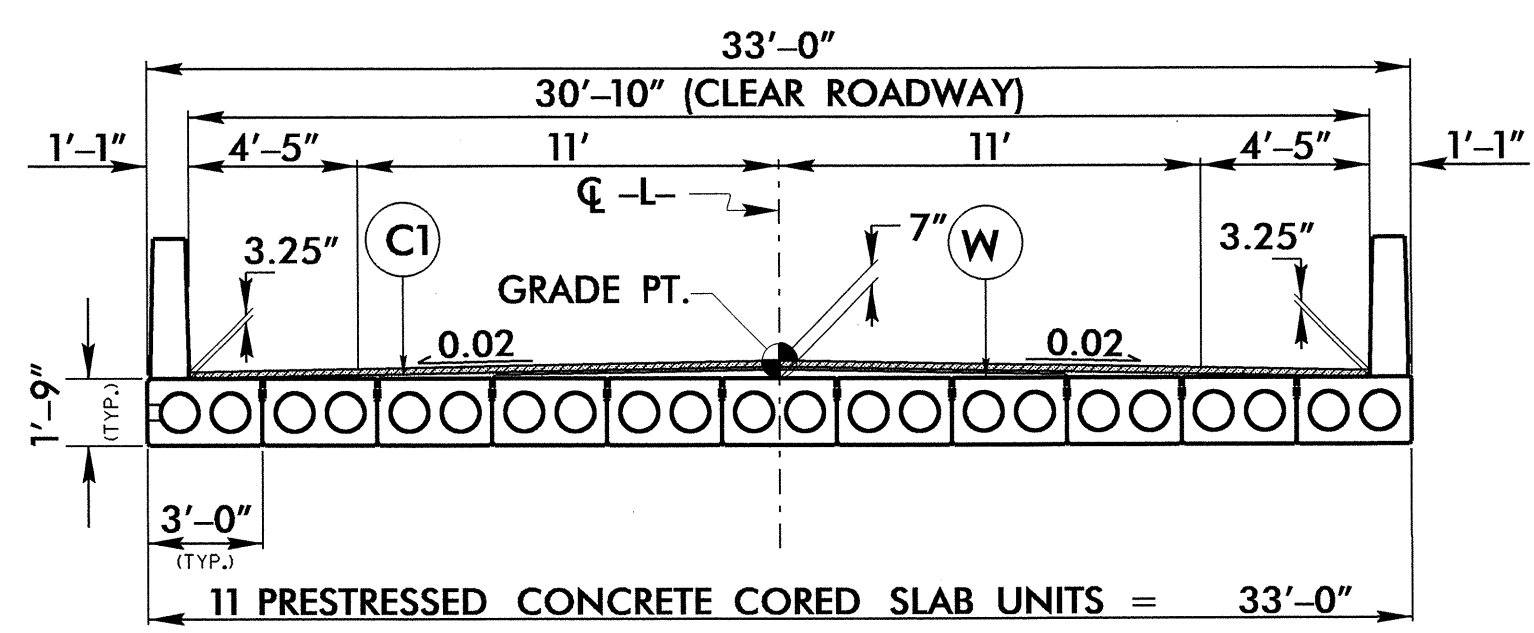
WEDGING DETAIL ON BRIDGE



DETAIL SHOWING PAVED SHOULDER IN RELATION TO GUARDRAIL

USE SHOULDER BERM GUTTER:

-L- STA. 13+90.00 TO -L- STA. 14+00.75 (BEG. APPROACH SLAB) LT  
-L- STA. 13+90.00 TO -L- STA. 14+00.75 (BEG. APPROACH SLAB) RT  
-L- STA. 15+65.25 (END APPROACH SLAB) TO -L- STA. 15+70.25 LT  
-L- STA. 15+65.25 (END APPROACH SLAB) TO -L- STA. 15+70.25 RT



BRIDGE TYPICAL SECTION

USE BRIDGE TYPICAL SECTION

-L- STA. 14+11.75 TO -L- STA. 15+54.25

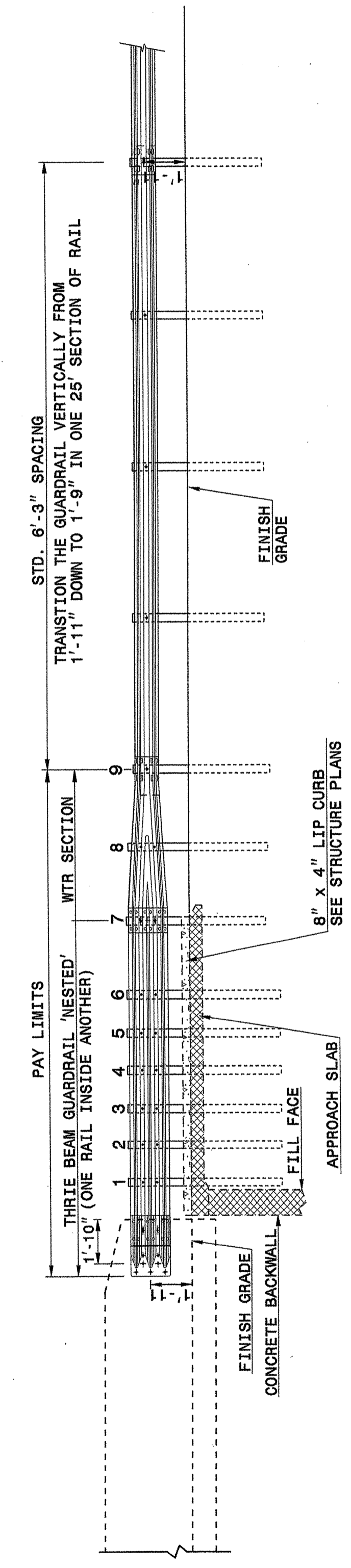
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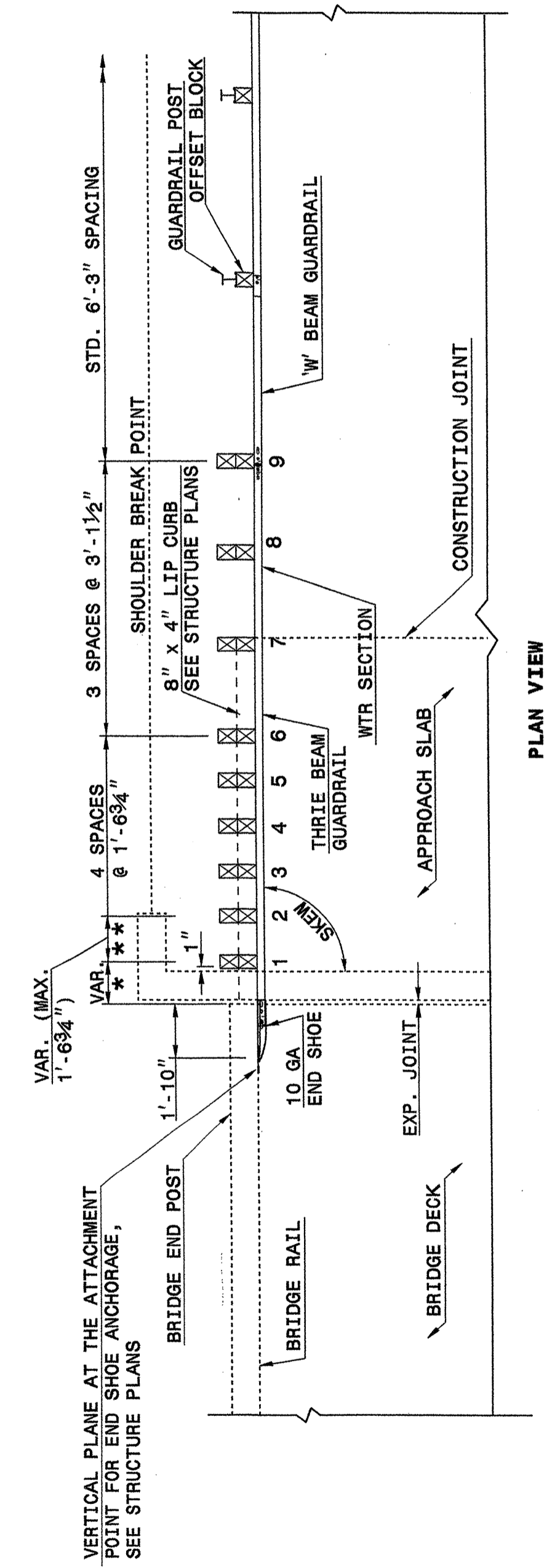
STATE OF NORTH CAROLINA  
DEPT. OF TRANSPORTATION  
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR  
**STRUCTURE ANCHOR UNITS**  
RAIL ON BRIDGE - SUB REGIONAL TIER

SHEET 2 OF 7  
**862d03**



**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 5 FOR POST SECTIONS 1 THRU 9.



**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.

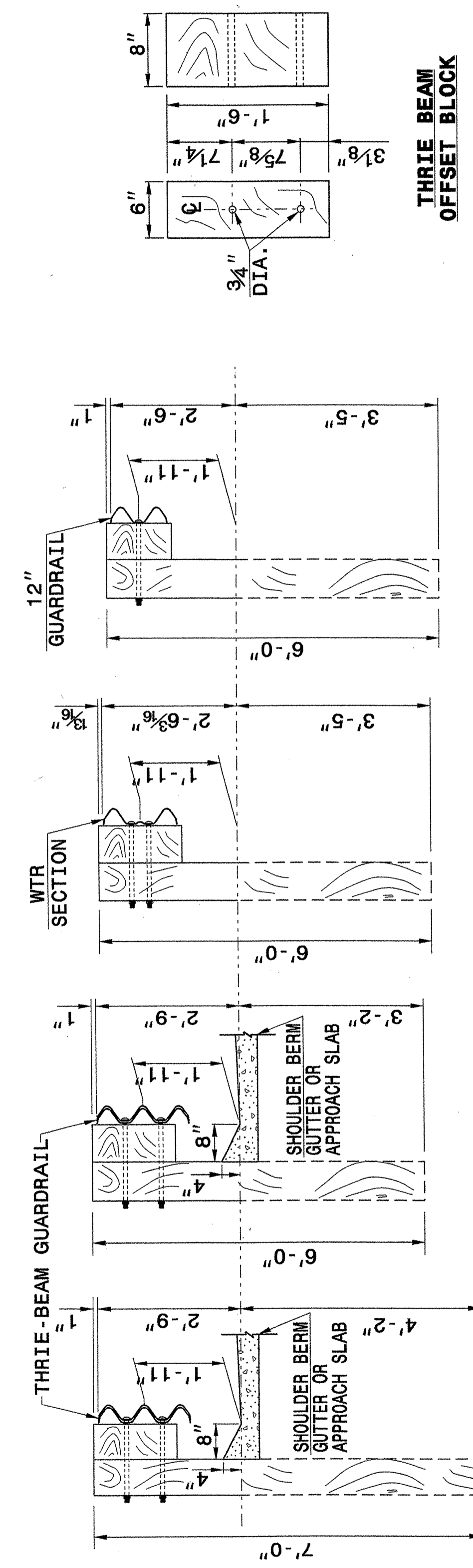
ENGLISH DETAIL DRAWING FOR  
**STRUCTURE ANCHOR UNITS**  
GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO RAIL ON BRIDGE - SUB REGIONAL TIER

SHEET 2 OF 7  
**862d03**

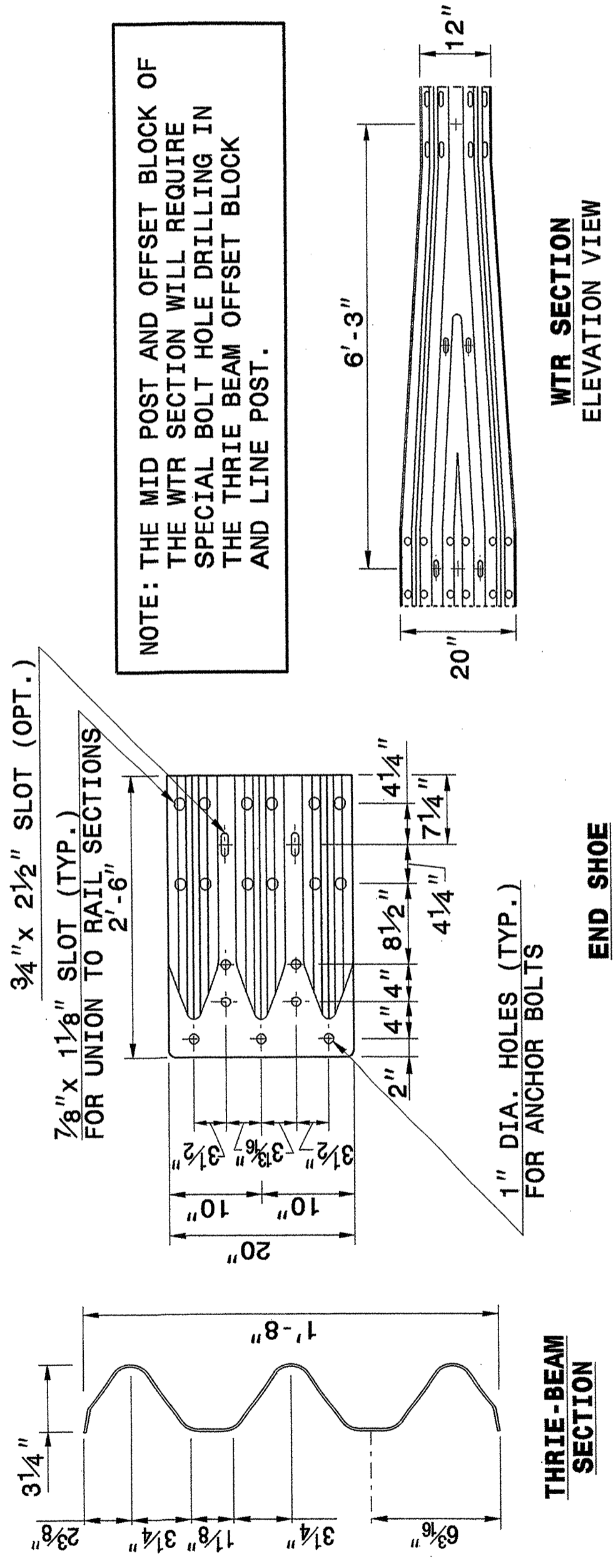
STATE OF NORTH CAROLINA  
DEPT. OF TRANSPORTATION  
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR  
**STRUCTURE ANCHOR UNITS**  
RAIL ON BRIDGE - SUB REGIONAL TIER

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 WTR BEAM POST 9**



**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.

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

SHEET 3 OF 7  
**862d03**

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

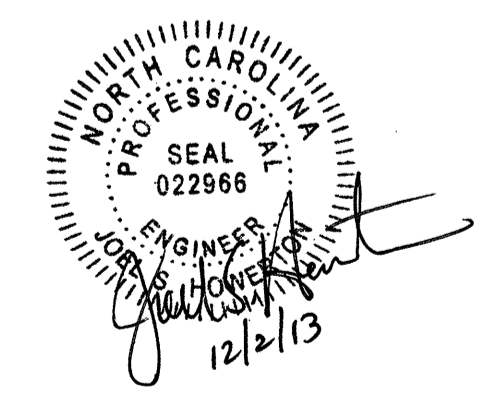
ENGLISH DETAIL DRAWING FOR  
**STRUCTURE ANCHOR UNITS**  
GUARDRAIL ANCHOR UNIT, TYPE III

SHEET 3 OF 7  
**862d03**

**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: [Signature] DATE: [Blank]  
 CHECKED BY: [Signature] DATE: 11/13/12  
 FILE SPEC.: [Blank]





COMPUTED BY: T.R. HOWELL	DATE: 12/13/2012
CHECKED BY: J. Braxton	DATE: 1/4/2013

### STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
B-4827	3A

#### SUMMARY OF EARTHWORK (IN CUBIC YARDS)

STATION	STATION	UNCL. EXCAV.	EMBANK. +%	BORROW	WASTE
-L- 11+50.00	-L- 14+11.75(Beg. BR.)	179	22	0	157
-L- 15+54.25(End BR.)	-L- 18+00.00	83	271	188	0
<b>TOTAL:</b>		262	293	188	157
<b>Waste in Liew of borrow</b>				-157	-157
<b>PROJECT TOTALS:</b>		262	293	31	
EST. 5% TO REPLACE TOP SOIL ON BORROW PIT				2	
<b>GRAND TOTALS:</b>		262	293	33	
SAY:		270		40	
*Select Granular Material		200 CY			
*UNDERCUT FOR EMBANK. STABILIZATION		100 CY			
*UNDERCUT FOR SUBGRADE STABILIZATION		100 CY			
*GEOTEXTILE FOR SOIL STABILIZATION		200 SY			
DRAINAGE DITCH EXCAVATION		10 CY			

\*RECOMMENDED FOR INCLUSION IN THE CONTRACT AS A CONTINGENCY ITEM PER GEOTECHNICAL'S LETTER DATED NOVEMBER 4, 2011

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.

Note: Approximate quantities only. Unclassified Excavation, Borrow, Fine Grading, Clearing and Grubbing, and Removal of Existing Pavement will be paid for at the contract lump sum price for "Grading."

#### SHOULDER BERM GUTTER SUMMARY

SURVEY LINE	STATION	STATION	LENGTH
-L-, LT	13+90.00	14+00.75	10.75
-L-, RT	13+90.00	14+00.75	10.75
-L-, LT	15+65.25	15+70.25	5.00
-L-, RT	15+65.25	15+70.25	5.00
<b>TOTAL:</b>			31.50
SAY:			32.00

#### REMOVAL OF EXISTING ASPHALT PAVEMENT SUMMARY

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	YD
-L-	11+50.00	14+23.23	CL	535.55
-L-	15+43.70	18+00.00	CL	561.50
<b>TOTAL:</b>				1,097.05
SAY:				1,100.00

"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

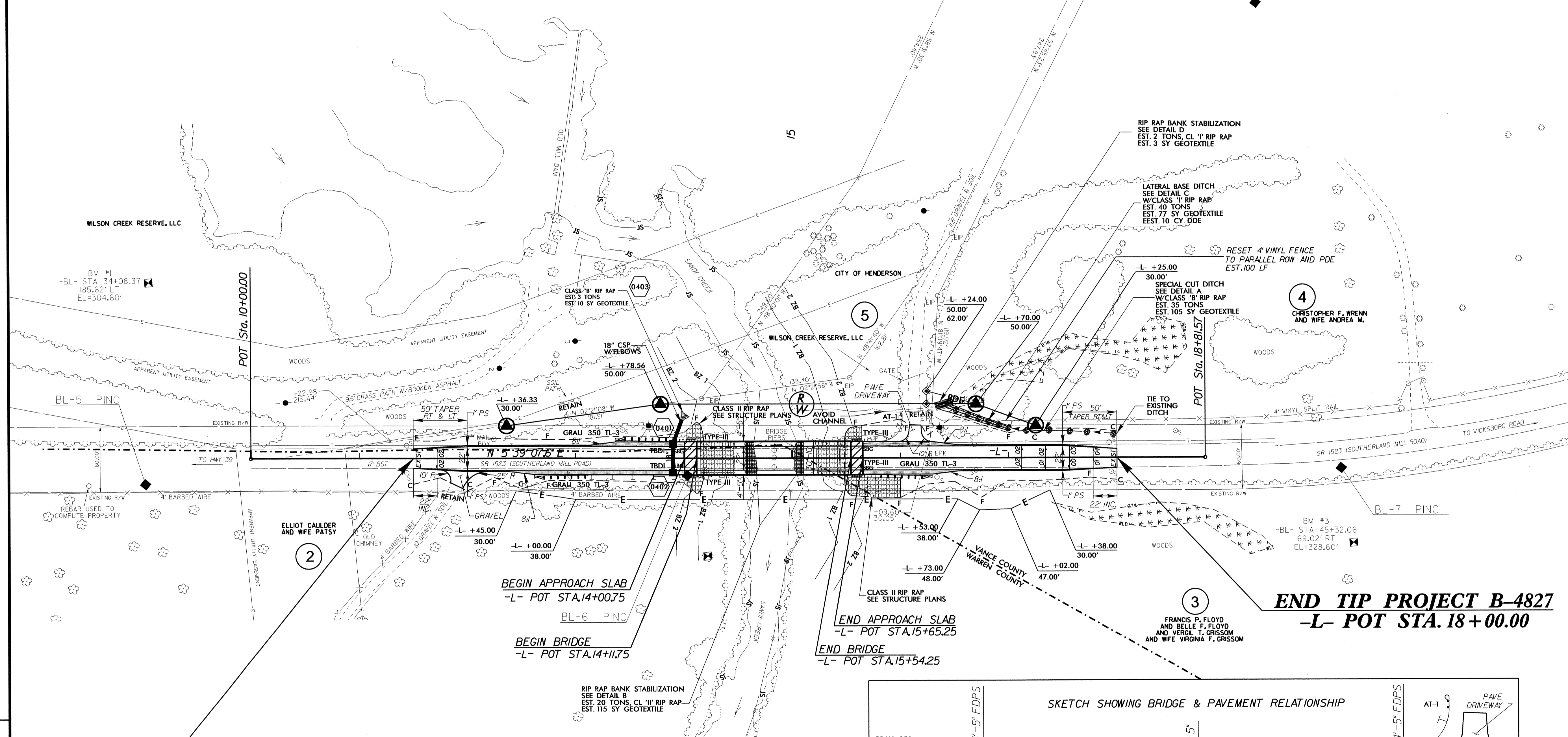
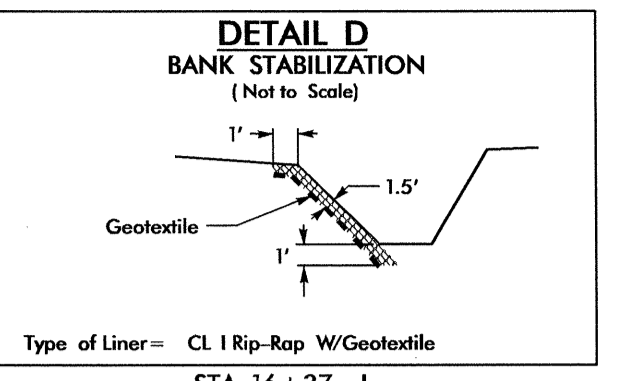
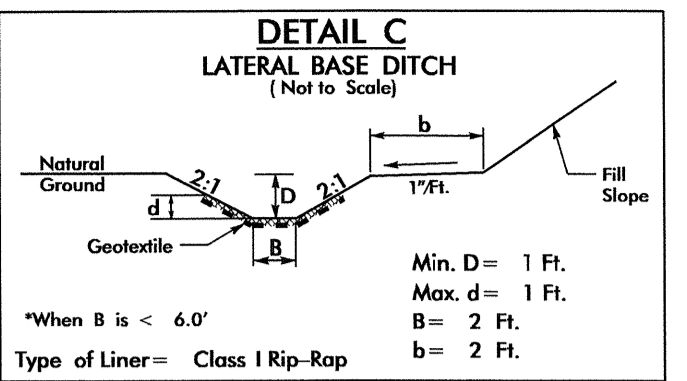
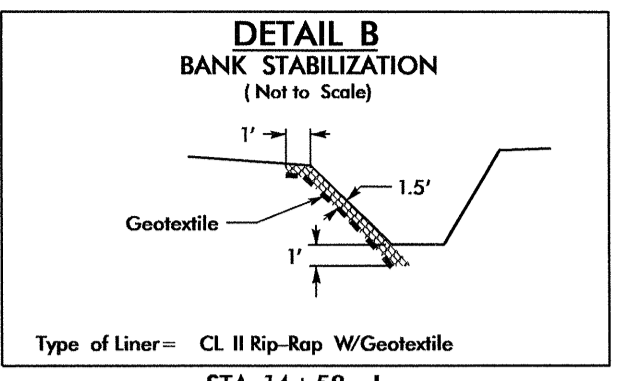
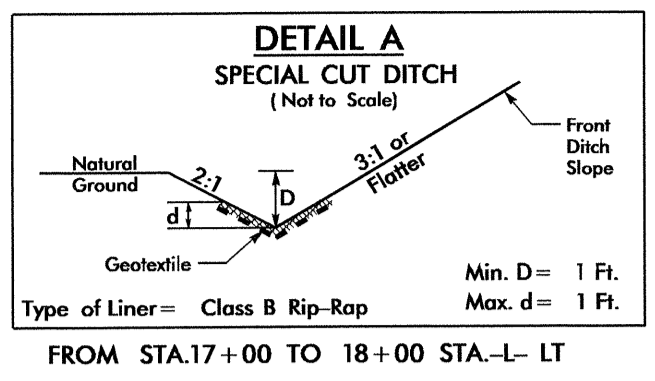
#### GUARDRAIL SUMMARY

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHOUL. WIDTH	FLARE LENGTH		W		ANCHORS									IMPACT ATTENUATOR TYPE 350			SINGLE FACED GUARDRAIL	REMOVE EXISTING GUARDRAIL	REMOVE AND STOCKPILE EXISTING GUARDRAIL	REMARKS							
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	XI MOD	XI	GRAU 350	M-350	TYPE III	CAT-1	VI MOD	BIC	AT-1	EA	G	NG													
				ANCHOR DEDUCTION:																																	
-L-	13+36.75	14+11.75(BR)	LT	75.00'				14+11.75(BR)	4.42'	9'																											
-L-	15+54.25(BR)	16+00.73	LT	33.82'	31.41'			15+54.25(BR)	4.42'	9'																											
-L-	12+61.75	14+11.75(BR)	RT	150.00'				14+11.75(BR)	4.42'	9'																											
-L-	15+54.25(BR)	16+29.25	RT	75.00'				15+54.25(BR)	4.42'	9'																											
<b>SUBTOTAL:</b>				333.82'																																	
ANCHOR DEDUCTION:				-231.25'																																	
<b>TOTAL:</b>				102.57'	31.41'																																
SAY:				112.50'	37.50'																																
												ANCHOR DEDUCTION:																									
																					GRAU-350: 3 @ 50 = 150																
																					TYPE-III: 4 @ 18.75 = 75			} 231.25													
																					AT-1: 1 @ 6.25 = 6.25																
																					ADDITIONAL POSTS: = 5																





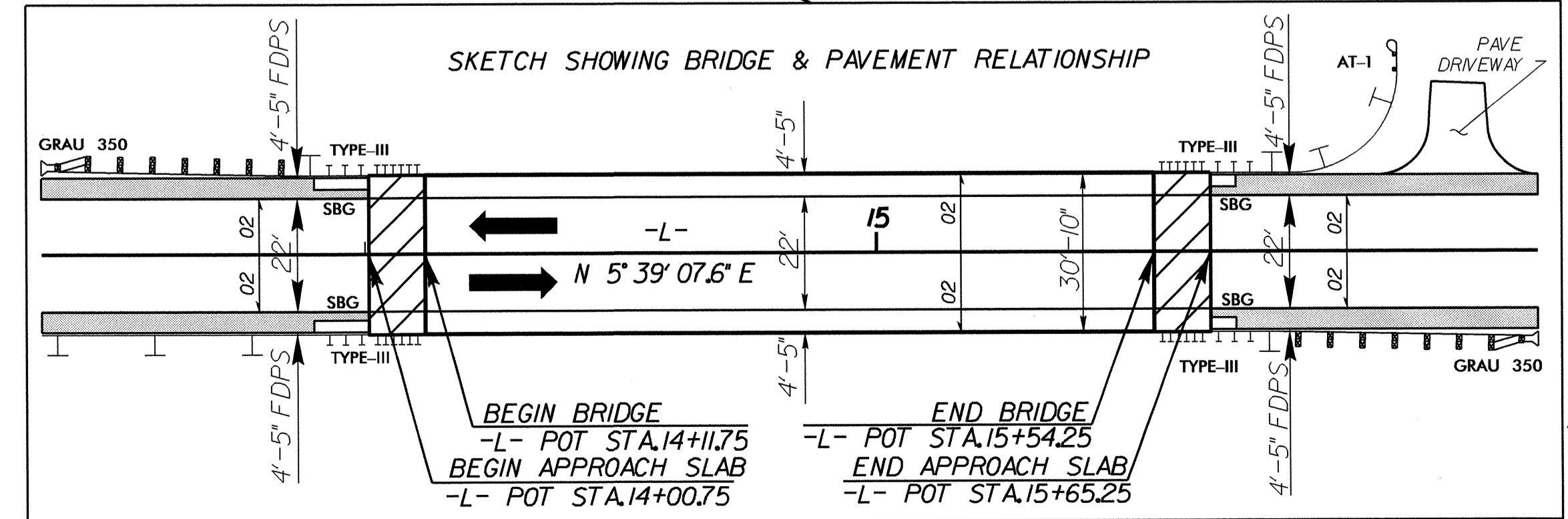
NAD 83/NSRS 2007



**BEGIN TIP PROJECT B-4827**  
-L- POT STA. 11+50.00

**END TIP PROJECT B-4827**  
-L- POT STA. 18+00.00

SHOULDER BERM GUTTER LOCATIONS	
-L-	FROM STA. 13+90.00 TO STA. 14+00.75 (BEGIN APPROACH SLAB) LT
-L-	FROM STA. 13+90.00 TO STA. 14+00.75 (BEGIN APPROACH SLAB) RT
-L-	FROM STA. 15+65.25 (END APPROACH SLAB) TO STA. 15+70.25 LT
-L-	FROM STA. 15+65.25 (END APPROACH SLAB) TO STA. 15+70.25 RT



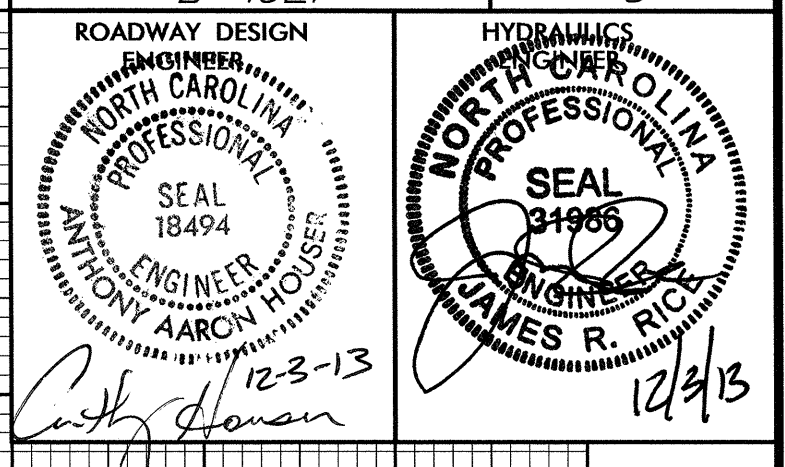
FOR -L- PROFILE, SEE SHEET NO. 5  
FOR STRUCTURE PLANS, SEE SHEET NO. S-1 TO S-20

REVISIONS

26-NOV-2013 JH-45  
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JH-45



5/14/99

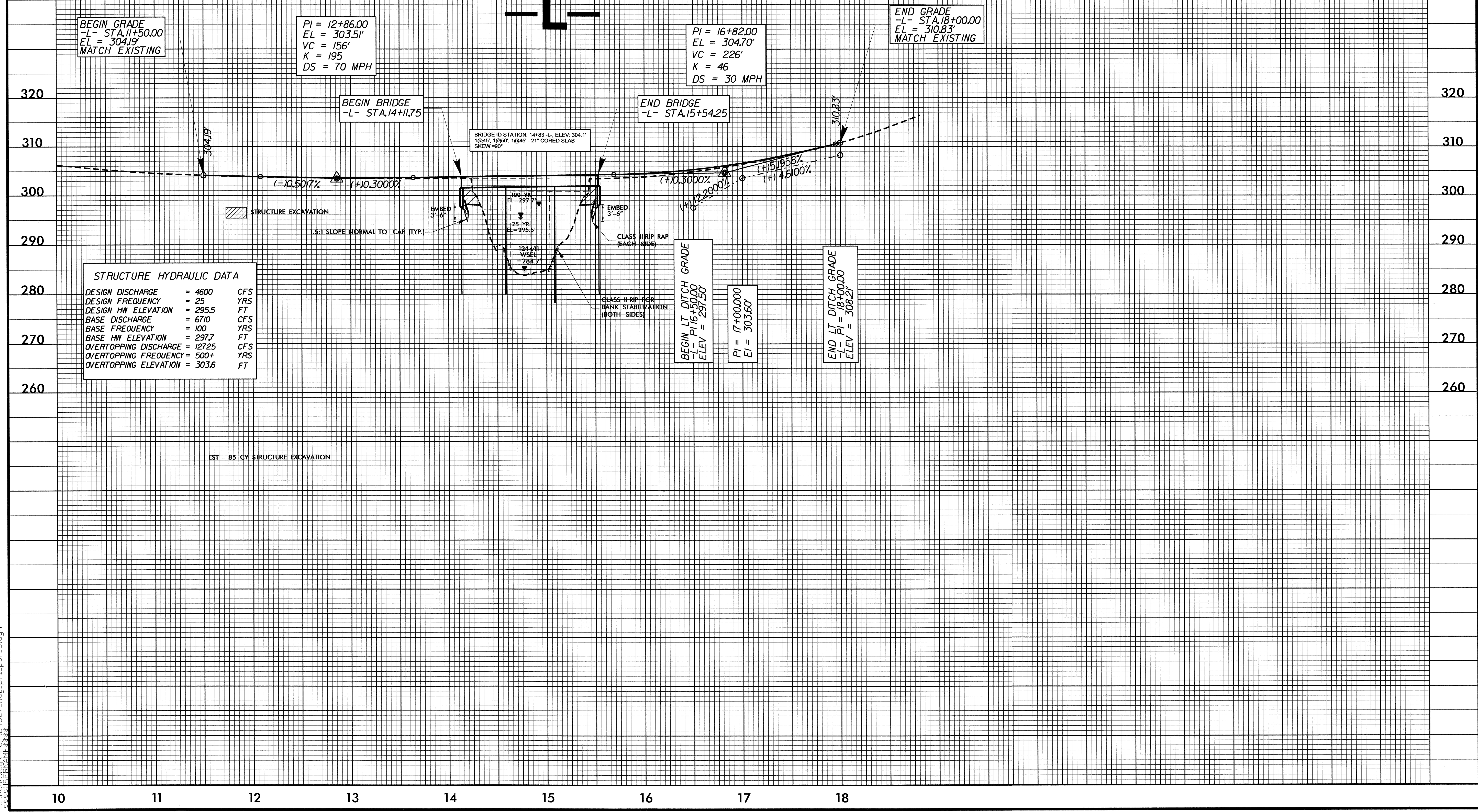


BM 1  
ELEV. = 304.60'  
N = 924,735 E = 2,208,767  
-BL- STA. 34+08.37 185.62' LT  
SURVEY BENCH TIE NAIL IN  
BASE OF 18" MAPLE

BM 2  
ELEV. = 294.78'  
N = 925,224 E = 2,209,069  
-L- STA. 14+21.86 89.92' RT  
-BL- STA. 39+35.33 74.45' RT  
SURVEY BENCH TIE NAIL IN  
BASE OF 17" HICKORY

BM 3  
ELEV. = 328.60'  
N = 925,818 E = 2,209,117  
-BL- STA. 45+32.06 69.02' RT  
SURVEY BENCH TIE NAIL IN  
BASE OF 17" PINE

FOR -L- PLAN VIEW, SEE SHEET NO. 4



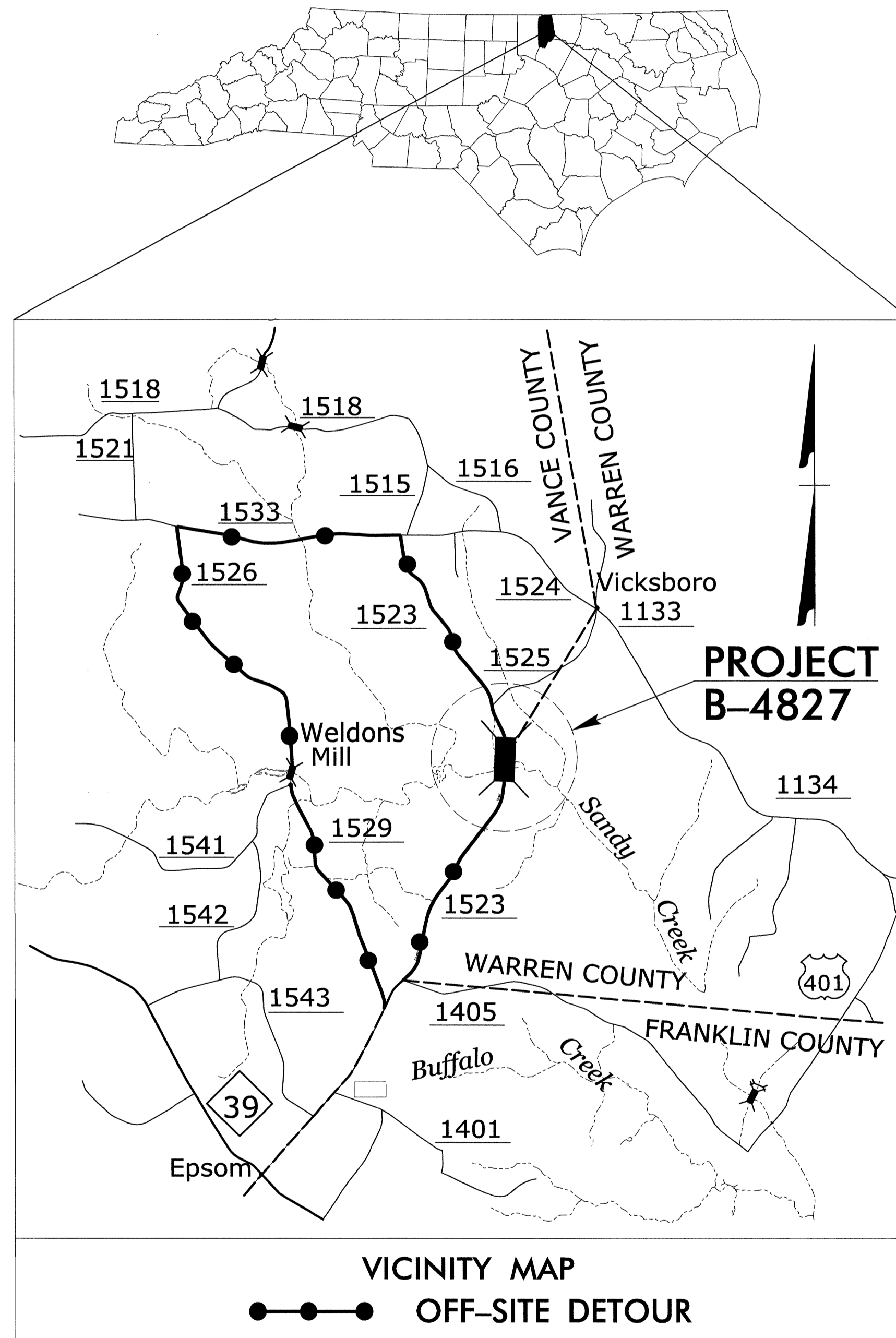
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R:\Roadway\Projects\B4827-Rdy-pf1-psh-5.dgn



STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**TRANSPORTATION MANAGEMENT PLAN**

**VANCE COUNTY**



**INDEX OF SHEETS**

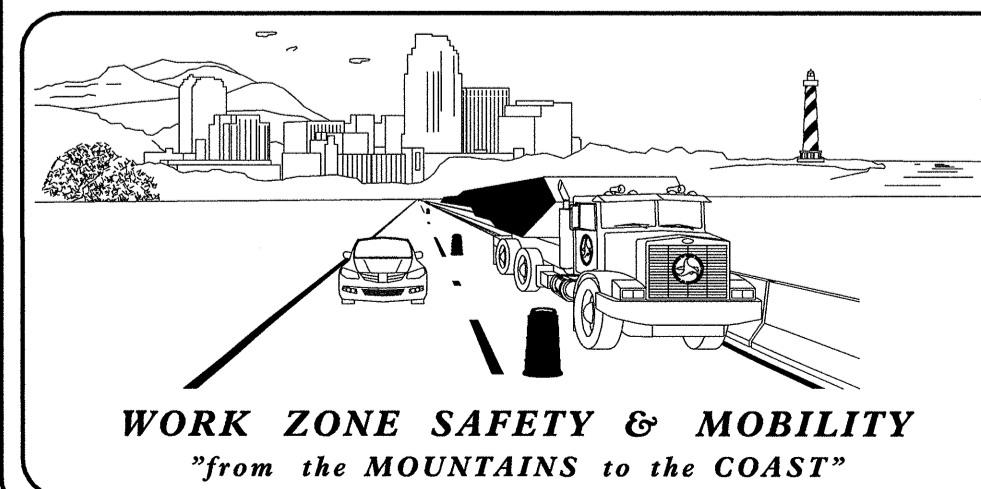
SHEET NO.	TITLE
TMP-1	TITLE SHEET, VICINITY MAP AND INDEX OF SHEETS
TMP-1A	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS AND LEGEND
TMP-1B	TRANSPORTATION OPERATIONS PLAN: (MANAGEMENT STRATEGIES, GENERAL NOTES AND PHASING)
TMP-2	OFF-SITE DETOUR ROUTE AND BARRICADE PLACEMENT
TMP-3	SPECIAL SIGN DESIGN

SHEET NO.  
TMP-1

**B-4827**

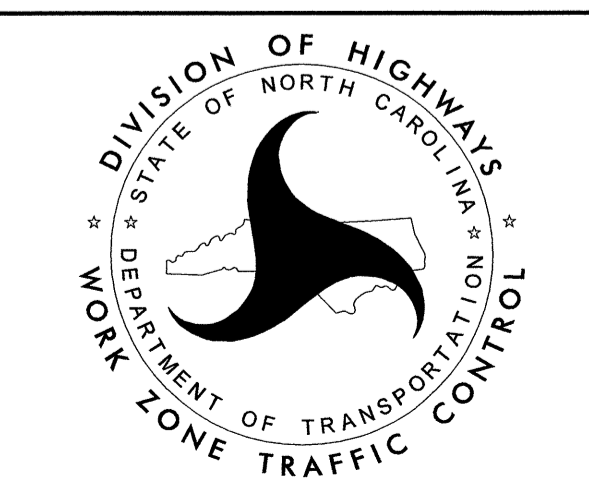
**TIP PROJECT:**

9/12/2013 R:\TIP\Projects-B\B4827\TrafficControl\TCP\B-4827\_TC\_TMP\_01.dgn User:tdkennedy



**N.C.D.O.T. WORK ZONE TRAFFIC CONTROL**  
1561 MAIL SERVICE CENTER (MSC) RALEIGH, NC 27699-1561  
750 N. GREENFIELD PARKWAY, GARNER, NC 27529 (DELIVERY)  
PHONE: (919) 773-2800 FAX: (919) 771-2745

J. S. BOURNE, P.E. STATE TRAFFIC MANAGEMENT ENGINEER  
JOSEPH ISHAK, P.E. TRAFFIC CONTROL PROJECT ENGINEER  
MICHAEL STEELMAN TRAFFIC CONTROL PROJECT DESIGN ENGINEER  
DURWOOD KENNEDY, P.E. TRAFFIC CONTROL DESIGN ENGINEER



APPROVED: \_\_\_\_\_  
DATE: 9/13/13

SEAL

## ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS SHOWN IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - 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
1101.01	WORK ZONE ADVANCE WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
1101.03	TEMPORARY ROAD CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1101.05	WORK ZONE VEHICLE ACCESSES
1101.06	WARNING SIGNS FOR BLASTING ZONES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1115.01	FLASHING ARROW BOARDS
1130.01	DRUM
1135.01	CONES
1145.01	BARRICADES
1150.01	FLAGGING DEVICES
1160.01	TEMPORARY CRASH CUSHION
1165.01	WORK VEHICLE LIGHTING SYSTEMS AND TMA DELINEATION
1170.01	POSITIVE PROTECTION
1180.01	SKINNY-DRUM
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO-LANE AND MULTI-LANE ROADWAYS
1205.03	PAVEMENT MARKINGS - EXITS AND ENTRANCE RAMP
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.05	PAVEMENT MARKINGS - TURN LANES
1205.06	PAVEMENT MARKINGS - LANE DROPS
1205.07	PAVEMENT MARKINGS - PEDESTRIAN CROSSWALKS
1205.08	PAVEMENT MARKINGS - SYMBOLS AND WORD MESSAGES
1205.09	PAVEMENT MARKINGS - PAINTED ISLANDS
1205.10	PAVEMENT MARKINGS - SCHOOL AREAS
1205.11	PAVEMENT MARKINGS - RAILROAD CROSSINGS
1205.12	PAVEMENT MARKINGS - BRIDGES
1205.13	PAVEMENT MARKINGS - LANE REDUCTIONS
1250.01	RAISED PAVEMENT MARKERS - INSTALLATION SPACING
1251.01	RAISED PAVEMENT MARKERS - PERMANENT AND TEMPORARY
1261.01	GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATORS - TYPES AND MOUNTING
1262.01	GUARDRAIL END DELINEATION
1264.01	OBJECT MARKERS - TYPES
1264.02	OBJECT MARKERS - INSTALLATION

## LEGEND

### GENERAL

- DIRECTION OF TRAFFIC FLOW
- EXIST. PVMT.
- NORTH ARROW
- PROPOSED PVMT.
- WORK AREA

### TRAFFIC CONTROL DEVICES

- BARRICADE (TYPE III)
- CONE
- DRUM    SKINNY DRUM    TUBULAR MARKER
- FLASHING ARROW PANEL (TYPE C)
- FLAGGER
- TRUCK MOUNTED IMPACT ATTENUATOR (TMIA)
- CHANGEABLE MESSAGE SIGN

### TEMPORARY SIGNING

- PORTABLE SIGN
- STATIONARY SIGN
- STATIONARY OR PORTABLE SIGN

### TEMPORARY PAVEMENT MARKINGS

- 24" WHITE STOP BAR

9/12/2013 R:\IP\Projects-B\B4827\Traffic\TrafficControl\TCP\B-4827\_TC\_TMP\_01.dgn User:tdkennedy

APPROVED: _____ DATE: _____ 		<h3>ROADWAY STANDARD DRAWINGS &amp; LEGEND</h3>
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## MANAGEMENT STRATEGIES

DURING REPLACEMENT OF THE EXISTING BRIDGE No.53 OVER SANDY CREEK, SR-1523 (SOUTHERLAND MILL RD.) WILL BE CLOSED TO THROUGH TRAFFIC. THE SOUTHERLAND MILL ROAD TRAFFIC WILL BE DETOURED OFF-SITE.

## PHASING

### STEP 1:

PROVIDE AND MAINTAIN CHANGEABLE MESSAGE SIGNS AT EACH END OF SR-1523 (SOUTHERLAND MILL RD.) OR AS DIRECTED BY THE ENGINEER FOR FOURTEEN (14) CALENDAR DAYS PRIOR TO ROAD CLOSURE, AS SHOWN ON SHEET TMP-2.

USING ROADWAY STANDARD DRAWING (RSD) 1101.03, SHEET 1 OF 9, SHEETS TMP-2, AND TMP-3, MAY BEGIN INSTALLATION OF ROAD CLOSURE AND DETOUR SIGNS. COVER SIGNS UNTIL READY TO CLOSE THE ROAD.

USING RSD 1101.02, SHEET 1 OF 15, RSD 1205.01, SHEET 1 OF 2, RSD 1205.04, SHEET 2 OF 2, AND SHEET TMP-2, INSTALL R1-1 (STOP) SIGNS AND STOP BARS AT THE INTERSECTION OF SR-1523 AND SR-1529.

### STEP 2:

USING RSD 1101.03, SHEET 1 OF 9, SHEETS TMP-2 AND TMP-3, INSTALL / UNCOVER ROAD CLOSURE AND DETOUR SIGNS. PLACE TYPE III BARRICADES TO CLOSE SR-1523 (SOUTHERLAND MILL RD.) TO THROUGH TRAFFIC, AND DETOUR TRAFFIC OFF-SITE. CHANGEABLE MESSAGE SIGNS MAY BE REMOVED.

### STEP 3:

AWAY FROM TRAFFIC, COMPLETE THE FOLLOWING:

SEE ROADWAY AND STRUCTURE PLANS.

- REMOVE EXISTING STRUCTURE No.53, AND CONSTRUCT THE PROPOSED STRUCTURE.
- CONSTRUCT PROPOSED ROADWAY UP THROUGH THE FINAL LAYER OF SURFACE COURSE FROM -L- STA.11+50+/- TO -L- STA.18+00+/- . USING FINAL PAVEMENT MARKING PLAN, PLACE FINAL PAVEMENT MARKINGS AND MARKERS FROM -L- STA.11+50+/- TO -L- STA.18+00+/- , AND TIE INTO EXISTING PAVEMENT MARKINGS.

### STEP 4:

REMOVE ALL ROAD CLOSURE SIGNING / DEVICES AND DETOUR SIGNING. R1-1 AND R1-2 SIGNS ARE TO REMAIN IN PLACE AFTER PROJECT'S COMPLETION. OPEN SR-1523 (SOUTHERLAND MILL RD.) TO PROPOSED TRAFFIC PATTERN.

## GENERAL NOTES

CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSIONS IN THE DETAIL DRAWINGS, STANDARD DETAILS AND ROADWAY DETAILS ARE NOT ATTAINABLE TO MEET FIELD CONDITIONS, OR RESULT IN DUPLICATE, OR UNDESIRE OVERLAPPING OF DEVICES. MODIFICATION MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING OR REMOVAL OF DEVICES, AS DIRECTED BY THE ENGINEER.

THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT, EXCEPT WHEN OTHERWISE NOTED IN THE PLAN, OR DIRECTED BY THE ENGINEER.

### TRAFFIC PATTERN ALTERATIONS

A) NOTIFY THE ENGINEER THIRTY (30) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION.

THE NCDOT RESIDENT ENGINEER WILL NOTIFY THE VANCE COUNTY SCHOOLS TRANSPORTATION DIRECTOR AT (252) 492-2127 AND THE DIRECTOR OF THE VANCE COUNTY EMERGENCY MANAGEMENT SERVICES (EMS) AT (252) 438-8264 OF THE BRIDGE REMOVAL THIRTY (30) CALENDAR DAYS PRIOR TO THE ROAD CLOSURE.

### SIGNING

B) PROVIDE PERMANENT SIGNING.

C) PROVIDE SIGNING AND DEVICES REQUIRED TO CLOSE THE ROAD ACCORDING TO THE ROADWAY STANDARD DRAWINGS AND TRANSPORTATION MANAGEMENT PLAN.

PROVIDE SIGNING REQUIRED FOR THE OFF-SITE DETOUR ROUTE AS SHOWN IN THE TRANSPORTATION MANAGEMENT PLAN.

D) COVER OR REMOVE ALL SIGNS AND DEVICES REQUIRED TO CLOSE THE ROAD WHEN ROAD CLOSURE IS NOT IN OPERATION.

COVER OR REMOVE ALL SIGNS REQUIRED FOR THE OFF-SITE DETOUR WHEN THE DETOUR IS NOT IN OPERATION.

E) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

### TRAFFIC CONTROL DEVICES

F) PLACE TYPE III BARRICADES, WITH "ROAD CLOSED" SIGN R11-2 ATTACHED, OF SUFFICIENT LENGTH TO CLOSE ENTIRE ROADWAY.

### PAVEMENT MARKINGS AND MARKERS

G) INSTALL PAVEMENT MARKINGS AND PAVEMENT MARKERS ON THE FINAL SURFACE AS SHOWN IN THE PAVEMENT MARKING PLAN.

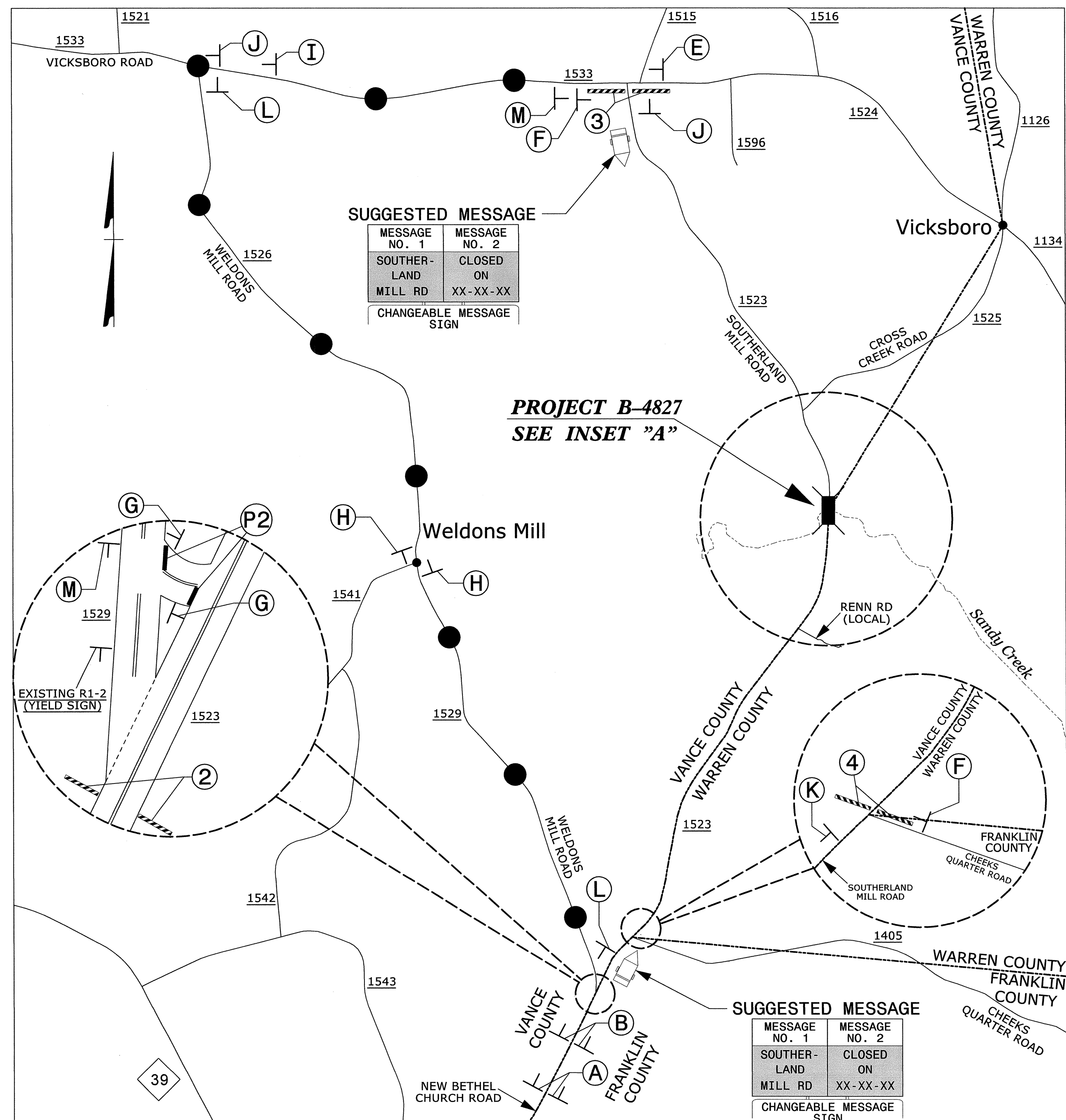
H) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.

12/12/2013  
 R:\TIP\Projects-B\B4827\Traffic\TrafficControl\TCP\B-4827\_TC\_TMP\_01.dgn  
 User:drkennedy

APPROVED:  DATE: _____		
<h2 style="margin: 0;">TRANSPORTATION OPERATION PLAN</h2>		



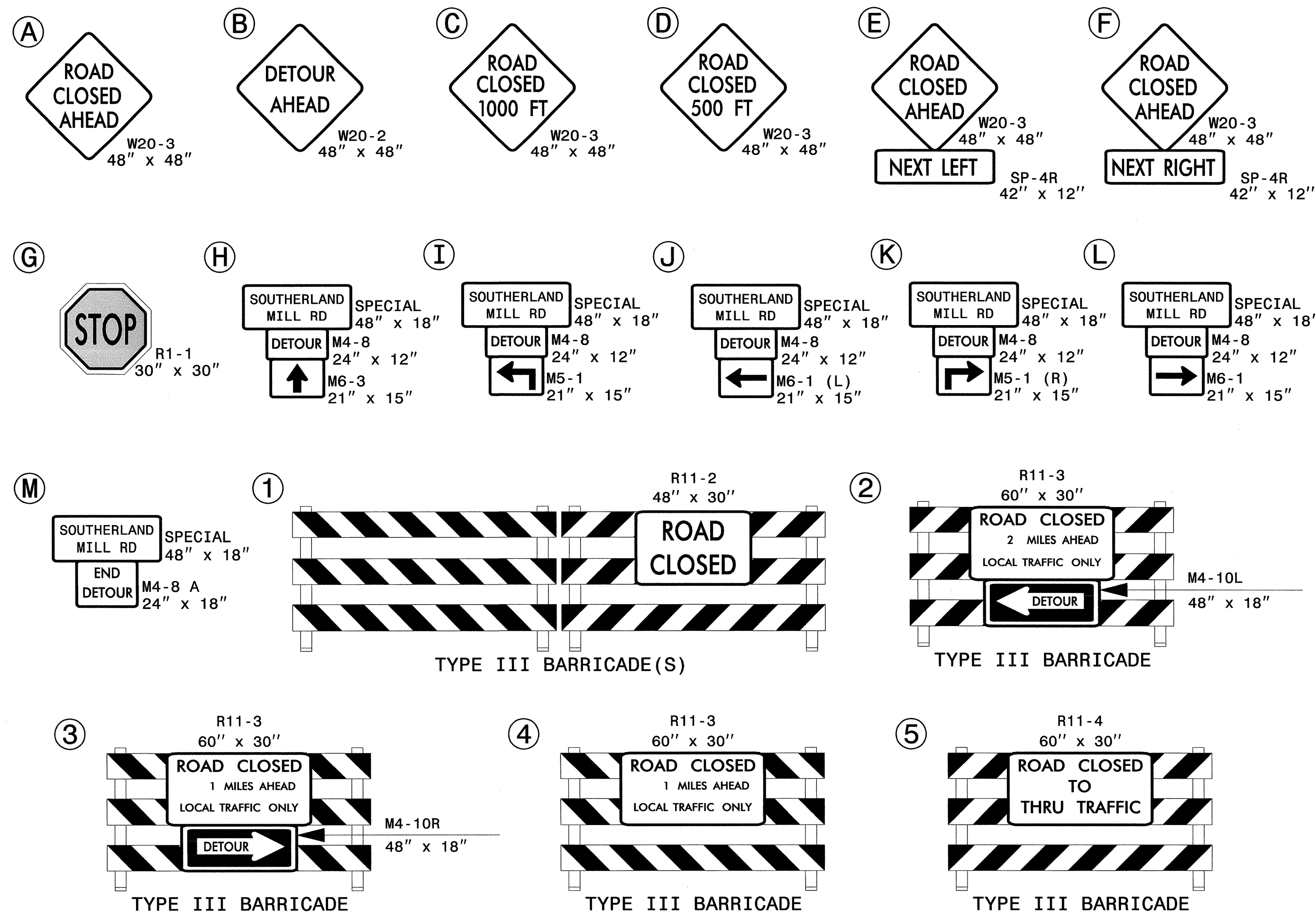
VICINITY MAP: VANCE COUNTY



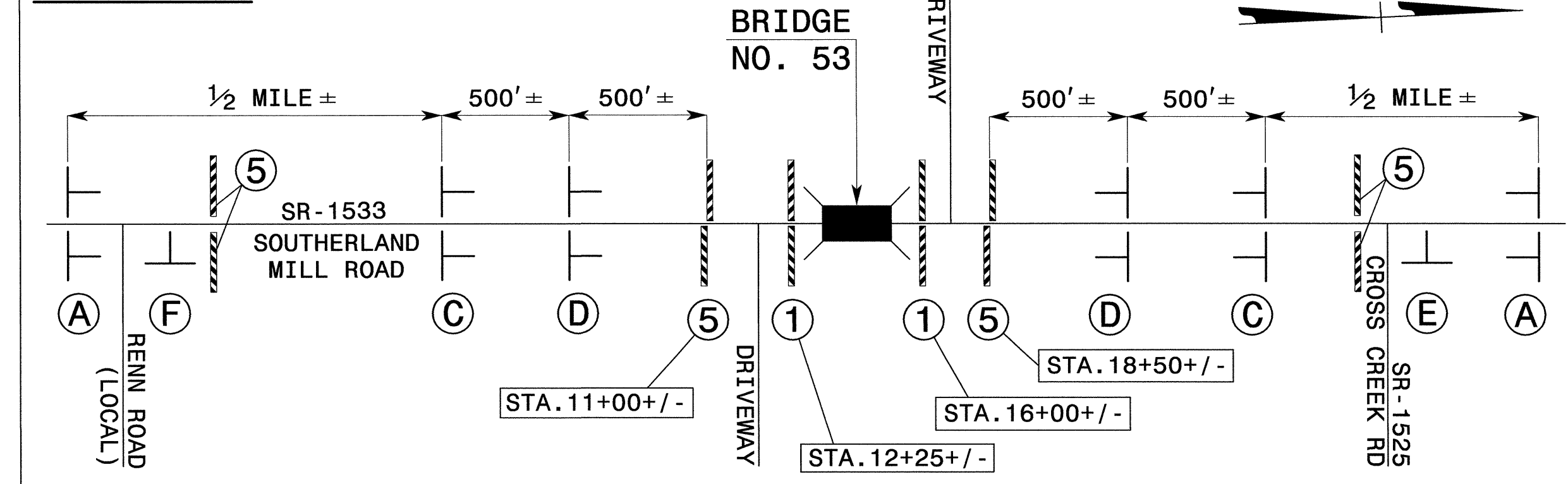
PROJECT B-4827  
SEE INSET "A"

NOTES:

- REFER TO SHEET TMP-3 FOR SIGN DESIGN.
- REFER TO RSD 1101.03, SHEET 1 OF 9, FOR ROAD CLOSURE SIGN DISTANCES AND APPLICABLE NOTES.
- INSTALL DETOUR SIGNS AND PLACE STOP BARS AS DIRECTED BY THE ENGINEER.
- EXISTING R1-2 SIGN LOCATED AT INTERSECTION OF SR-1523 AND SR-1529 IS TO REMAIN IN PLACE AND BE MAINTAINED THROUGHOUT THE PROJECT'S DURATION. R1-1 AND R1-2 SIGNS ARE TO REMAIN IN PLACE AFTER PROJECT'S COMPLETION.
- LOCATE AND INSTALL CMS TO BE LEVEL AS DIRECTED BY THE ENGINEER.
- CMS(S) SHALL BE USED TO PROVIDE FOURTEEN (14) CALENDAR DAYS OF ADVANCE WARNING OF ROAD CLOSURE. CMS(S) SHOULD BE REMOVED AFTER ROAD IS CLOSED, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
- AT STA.11+00+/- AND STA.18+50+/-, STAGGER BARRICADES IN ROAD TO ALLOW ACCESS TO EXISTING DRIVEWAYS DURING CONSTRUCTION, AS DIRECTED BY THE ENGINEER.

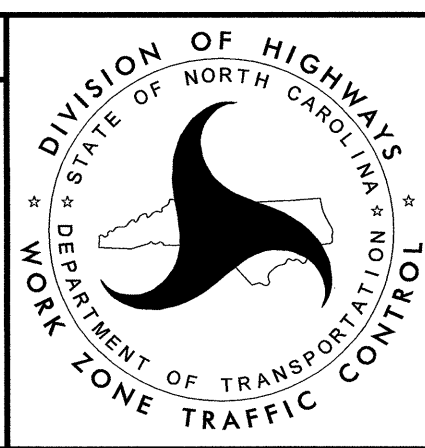


INSET "A"



OFF-SITE DETOUR = ● — ● — ● OFF-SITE DETOUR ROUTE:  
FROM SR-1523 TO SR-1529 (WHICH BECOMES SR-1526) TO SR-1533 BACK TO SR-1523

APPROVED: [Signature] DATE: [Blank]  
SEAL: [Seal of Joseph Ishak, Engineer, No. 028380, dated 9/12/2013]



OFF-SITE DETOUR AND BARRICADE PLACEMENT

SIGN NUMBER: WZ-1      BACKG COLOR: Fluorescent Orange  
 TYPE: STATIONARY      COPY COLOR: Black  
 QUANTITY: SEE PLANS

SYMBOL	X	Y	WID	HT

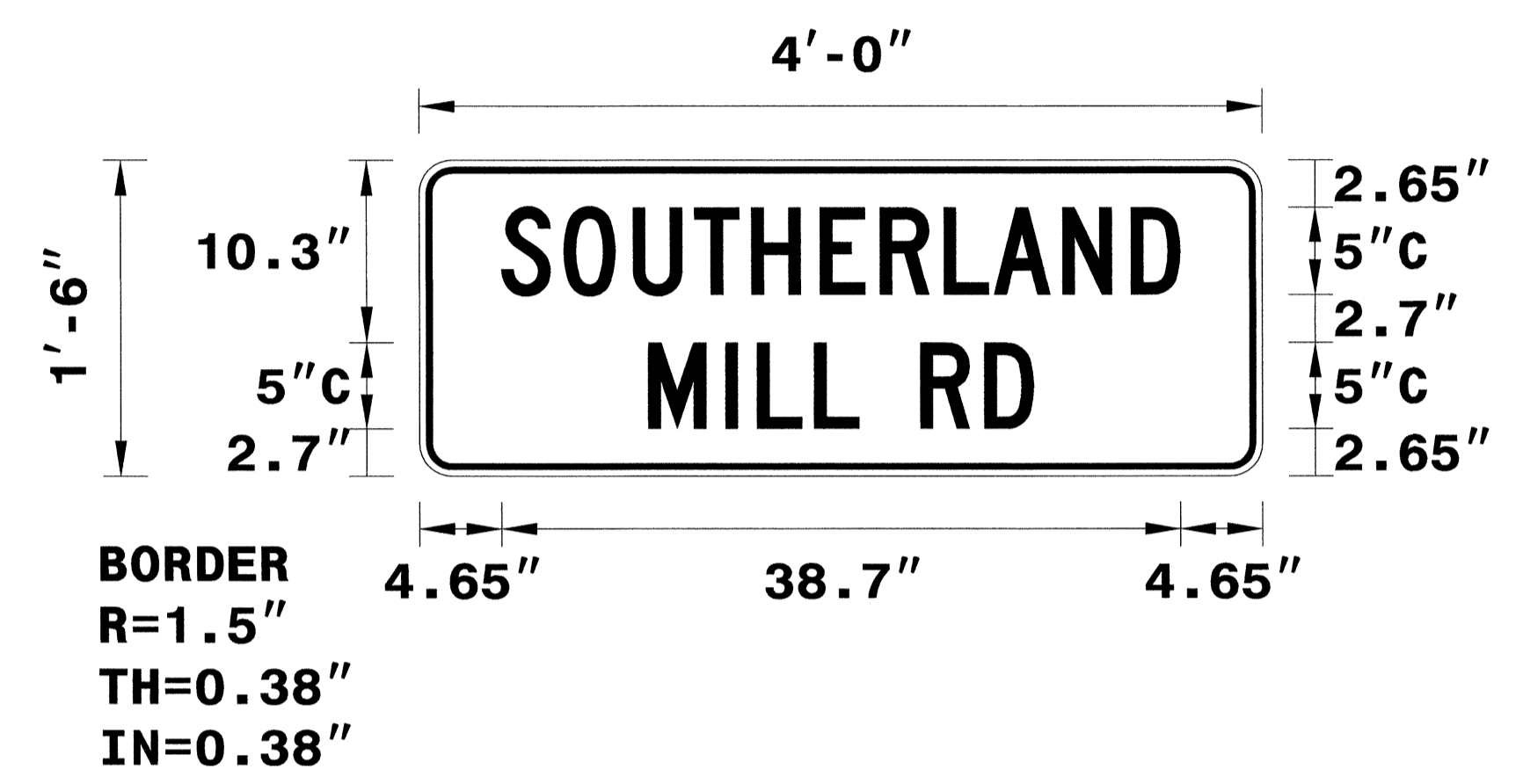
SIGN WIDTH: 4'-0"  
 HEIGHT: 1'-6"  
 TOTAL AREA: 6.0 Sq.Ft.

BORDER TYPE: INSET  
 RECESS: 0.38"  
 WIDTH: 0.38"  
 RADII: 1.5"

MAT'L: 0.080" (2.0 mm) ALUMINUM

NO. Z BARS:  
 LENGTH:

DESIGN BY: A. GRADY      CHECKED BY: S. KUNZ      DATE: Jul 15, 2013  
 PROJECT ID: B-4827      DIV: 5



USE NOTES: 1,2

- Legend and border shall be direct applied black non-reflective sheeting.
- Background shall be NC GRADE B fluorescent orange retroreflective sheeting.

Spacing Factor is 1 unless specified otherwise

LETTER POSITIONS

**Letter spacings are to start of next letter**

	S	O	U	T	H	E	R	L	A	N	D								Series/Size
	4.7	3.6	3.9	3.5	3.3	3.9	3.4	3.7	2.9	3.9	2.8	4.7							C 2000
																			38.7
		M	I	L	L		R	D											C 2000
	13	4.4	1.8	3.3	2.6	3.5	3.7	2.8	13										22

FILENAME: TC DESIGN

NORTH CAROLINA D.O.T. SIGN DETAIL

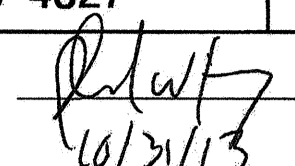

9/12/2013  
 R:\TIP\Projects\B-4827\TrafficControl\TCP\B-4827\_TC\_TMP\_03.dgn  
 User: rdkennedy

APPROVED: DATE: 9/10/13 		<p style="text-align: center;">SPECIAL SIGN DESIGN</p>
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STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKING PLAN  
VANCE COUNTY

LOCATION: BRIDGE No. 53 OVER SANDY CREEK ON SR 1523

TIP NO. B-4827	SHEET NO. PMP-1
APPROVED: 	
DATE: 10/21/13	
SEAL	
	

T.I.P.: B-4827

CONTRACT: C203350

ROADWAY STANDARD DRAWING

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - 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
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO-LANE AND MULTILANE ROADWAYS
1205.12	PAVEMENT MARKINGS - BRIDGES
1261.01	GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATORS - TYPES AND MOUNTING
1262.01	GUARDRAIL END DELINEATION

PAVEMENT MARKING SCHEDULE

SYMBOL	DESCRIPTION
	PAINT (4")
PI	YELLOW DOUBLE CENTER
PA	WHITE EDGELINE

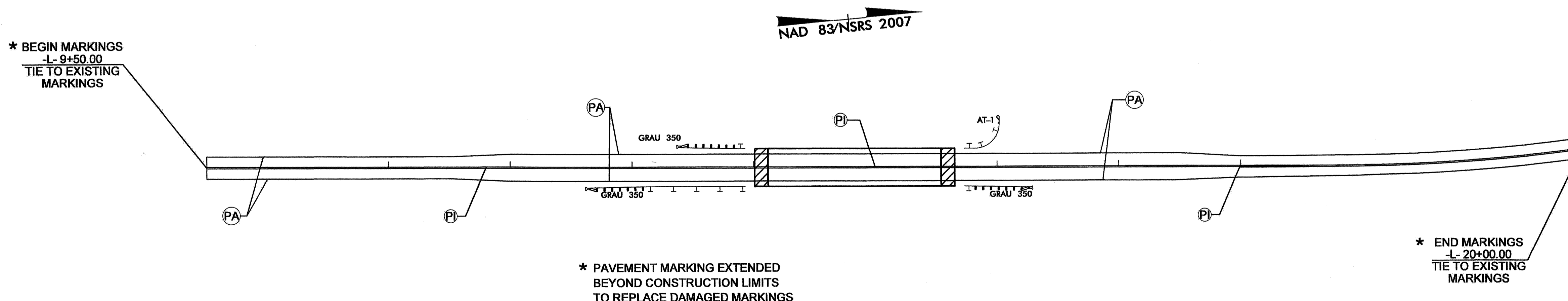
GENERAL NOTES

THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT, EXCEPT WHEN OTHERWISE NOTED IN THE PLAN, OR DIRECTED BY THE ENGINEER.

- A) INSTALL PAVEMENT MARKINGS AND PAVEMENT MARKERS ON THE FINAL SURFACE AS FOLLOWS:

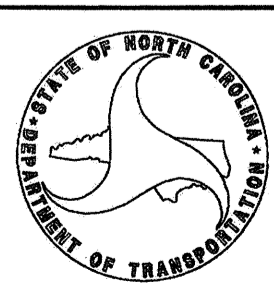
ROAD NAME	MARKING	MARKER
SR 1523	PAINT	NONE
- B) PLACE TWO APPLICATIONS OF PAINT PAVEMENT MARKINGS ON THE FINAL WEARING SURFACE. PLACE THE SECOND APPLICATION OF PAINT UPON SUFFICIENT DRYING TIME OF THE FIRST.
- C) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
- D) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS.
- E) PASSING ZONES WILL BE DETERMINED IN THE FIELD AND MUST BE APPROVED BY THE ENGINEER.
- F) MARKERS ARE TO BE PLACED ACCORDING TO THE ROADWAY STANDARD DRAWINGS.

PAVEMENT MARKING DETAIL



PLAN PREPARED BY: N.C.D.O.T. SIGNING AND DELINEATION UNIT

SUSAN B. KUNZ SIGNING & DELINEATION REGIONAL ENGINEER  
ADAM GRADY SIGNING & DELINEATION PROJECT DESIGN ENGINEER/TECHNICIAN





**TIP PROJECT: B-4827**

STATE OF NORTH CAROLINA  
 DIVISION OF HIGHWAYS  
 PLAN FOR PROPOSED  
 HIGHWAY EROSION CONTROL  
**VANCE & WARREN COUNTY**

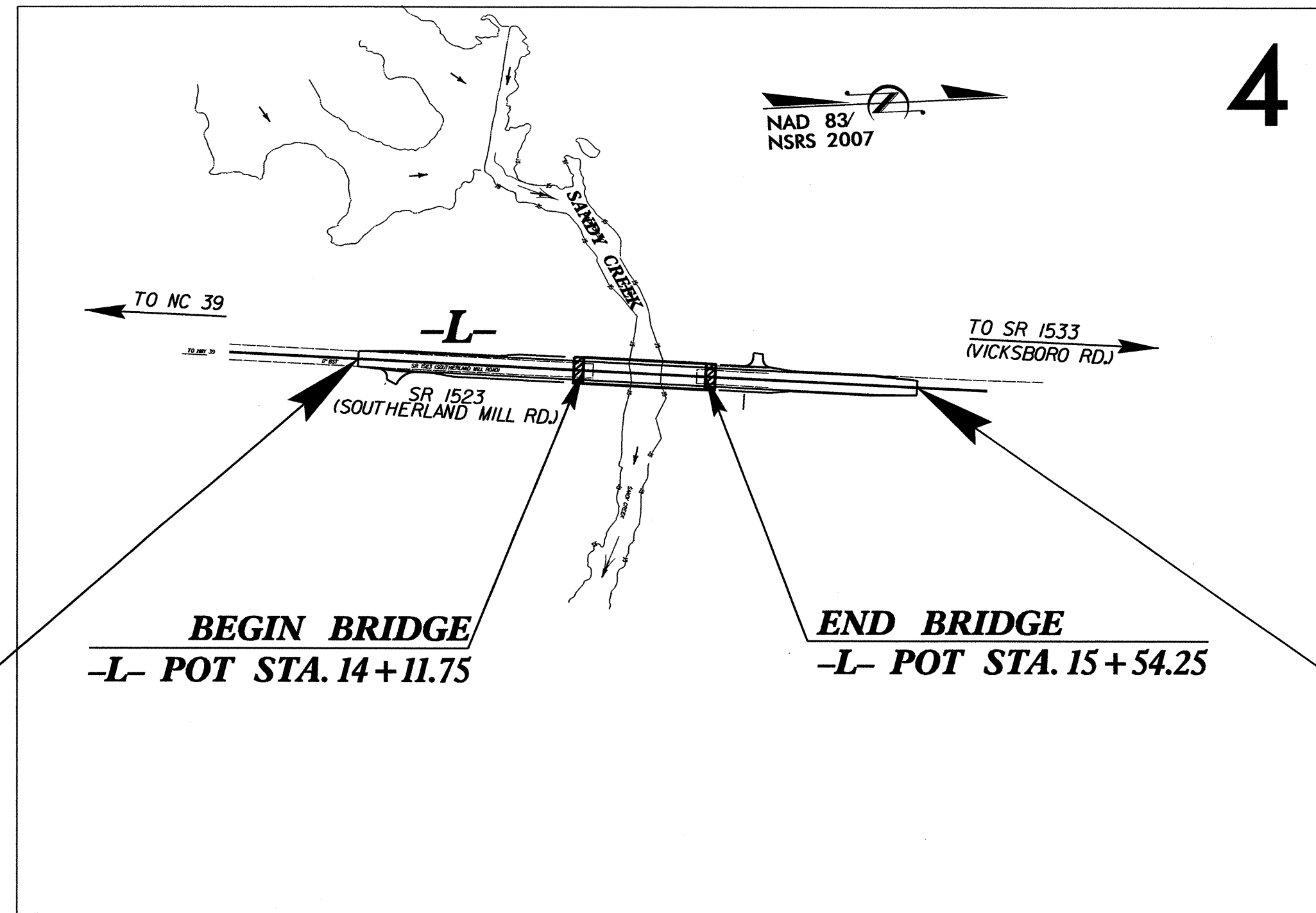
**LOCATION: BRIDGE NO. 53 OVER SANDY CREEK  
 ON SR 1523 (SOUTHERLAND MILL RD.)**

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4827	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	

**EROSION AND SEDIMENT CONTROL MEASURES**

Std. #	Description	Symbol
1630.05	Temporary Silt Ditch	TD
1630.05	Temporary Diversion	TD
1605.01	Temporary Silt Fence	III III III
1606.01	Special Sediment Control Fence	III III III
1622.01	Temporary Berms and Slope Drains	TD
1630.02	Silt Basin Type B	SB
1635.01	Temporary Rock Silt Check Type-A	RS
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	RS
1633.02	Temporary Rock Silt Check Type-B	RS
	Wattle/Coir Fiber Wattle	W
	Wattle/Coir Fiber Wattle with Polyacrylamide (PAM)	W
1634.01	Temporary Rock Sediment Dam Type-A	RD
1634.02	Temporary Rock Sediment Dam Type-B	RD
1635.01	Rock Pipe Inlet Sediment Trap Type-A	RPI
1635.02	Rock Pipe Inlet Sediment Trap Type-B	RPI
1630.04	Stilling Basin	SB
1630.06	Special Stilling Basin	SB
	Rock Inlet Sediment Trap:	
1632.01	Type A	A
1632.02	Type B	B
1632.03	Type C	C
	Skimmer Basin	SK
	Tiered Skimmer Basin	SK
	Infiltration Basin	IB



**BEGIN TIP PROJECT B-4827**  
 -L- POT STA. 11 + 50.00

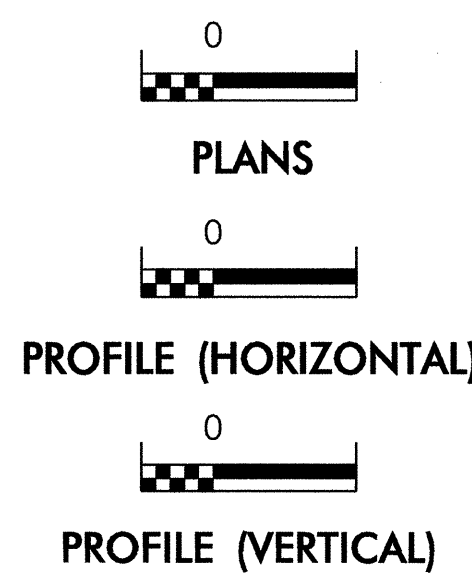
**END TIP PROJECT B-4827**  
 -L- POT STA. 18 + 00.00

THIS PROJECT CONTAINS  
 EROSION CONTROL PLANS  
 FOR CLEARING AND  
 GRUBBING PHASE OF  
 CONSTRUCTION.

THIS PROJECT HAS  
 BEEN DESIGNED TO  
 SENSITIVE WATERSHED  
 STANDARDS.

ENVIRONMENTALLY  
 SENSITIVE AREA(S) EXIST  
 ON THIS PROJECT  
 Refer To E. C. Special Provisions  
 for Special Considerations.

**GRAPHIC SCALE**



ROADSIDE ENVIRONMENTAL UNIT  
 DIVISION OF HIGHWAYS  
 STATE OF NORTH CAROLINA

THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY  
 WITH THE REGULATIONS SET FORTH BY THE  
 NCG-010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE AUGUST 3, 2011  
 ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND  
 NATURAL RESOURCES DIVISION OF WATER QUALITY.

Prepared in the Office of:  
**ROADSIDE ENVIRONMENTAL UNIT**  
 1 South Wilmington St.  
 Raleigh, NC 27611  
**2012 STANDARD SPECIFICATIONS**

Roadway Standard Drawings

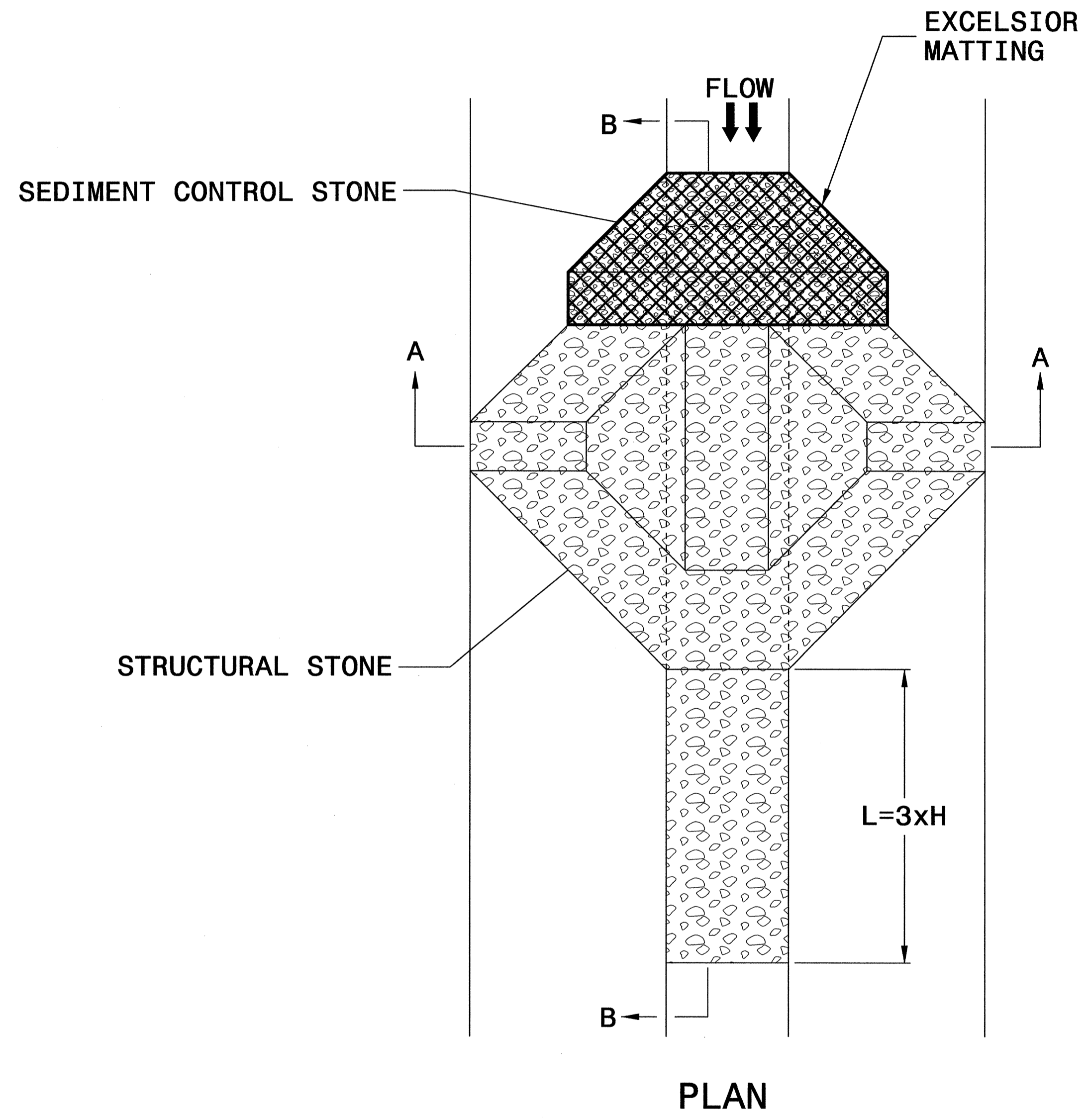
The following roadway english standards as appear in "Roadway Standard Drawings"- Roadway Design Unit - N. C. Department of Transportation - Raleigh, N. C., dated January 2012 and the latest revision thereto are applicable to this project and by reference hereby are considered a part of these plans.

1604.01 Railroad Erosion Control Detail	1632.01 Rock Inlet Sediment Trap Type A
1605.01 Temporary Silt Fence	1632.02 Rock Inlet Sediment Trap Type B
1606.01 Special Sediment Control Fence	1632.03 Rock Inlet Sediment Trap Type C
1607.01 Gravel Construction Entrance	1633.01 Temporary Rock Silt Check Type A
1622.01 Temporary Berms and Slope Drains	1633.02 Temporary Rock Silt Check Type B
1630.01 Riser Basin	1634.01 Temporary Rock Sediment Dam Type A
1630.02 Silt Basin Type B	1634.02 Temporary Rock Sediment Dam Type B
1630.03 Temporary Silt Ditch	1635.01 Rock Pipe Inlet Sediment Trap Type A
1630.04 Stilling Basin	1635.02 Rock Pipe Inlet Sediment Trap Type B
1630.05 Temporary Diversion	1640.01 Coir Fiber Baffle
1630.06 Special Stilling Basin	1645.01 Temporary Stream Crossing
1631.01 Matting Installation	

PL 05-NOV-2013 08:42:42  
 W:\p\hand\ec\B-4827-EC-1.dgn  
 W:\p\hand\ec\B-4827-EC-1.dgn

PROJECT REFERENCE NO. B-4827	SHEET NO. EC-2
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

# TEMPORARY ROCK SILT CHECK TYPE 'A' WITH EXCELSIOR MATTING AND POLYACRYLAMIDE (PAM)

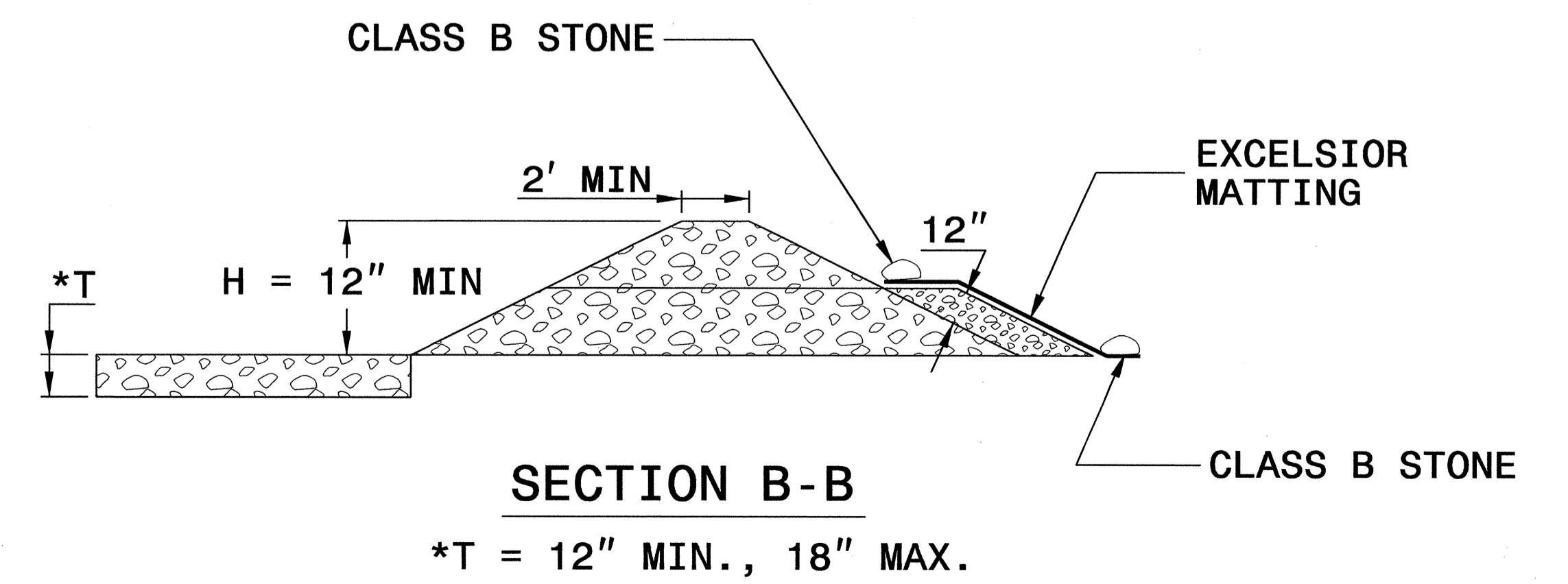
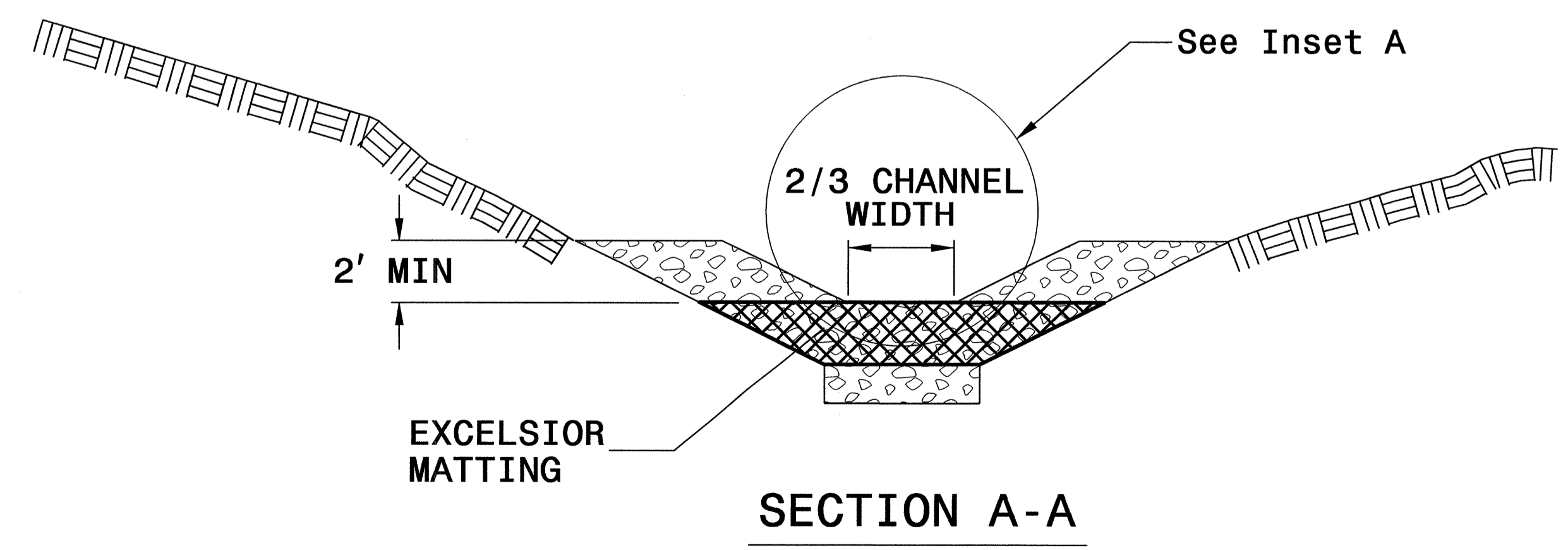
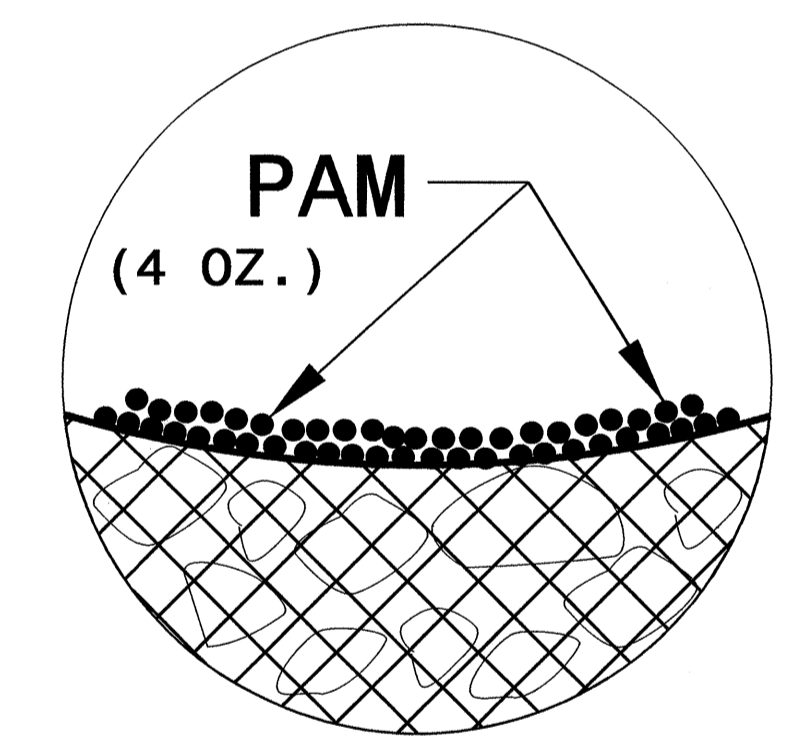


## NOTES

USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

PRIOR TO POLYACRYLAMIDE (PAM) APPLICATION, OBTAIN A SOIL SAMPLE FROM PROJECT LOCATION, AND FROM OFFSITE MATERIAL, AND ANALYZE FOR APPROPRIATE PAM FLOCCULANT TO BE APPLIED TO EACH ROCK SILT CHECK.

INITIALLY APPLY 4 OUNCES OF POLYACRYLAMIDE (PAM) TO TOP OF MATTING SECTION AND AFTER EVERY RAINFALL EVENT THAT EQUALS OR EXCEEDS 0.50 INCHES.



NOT TO SCALE



DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA

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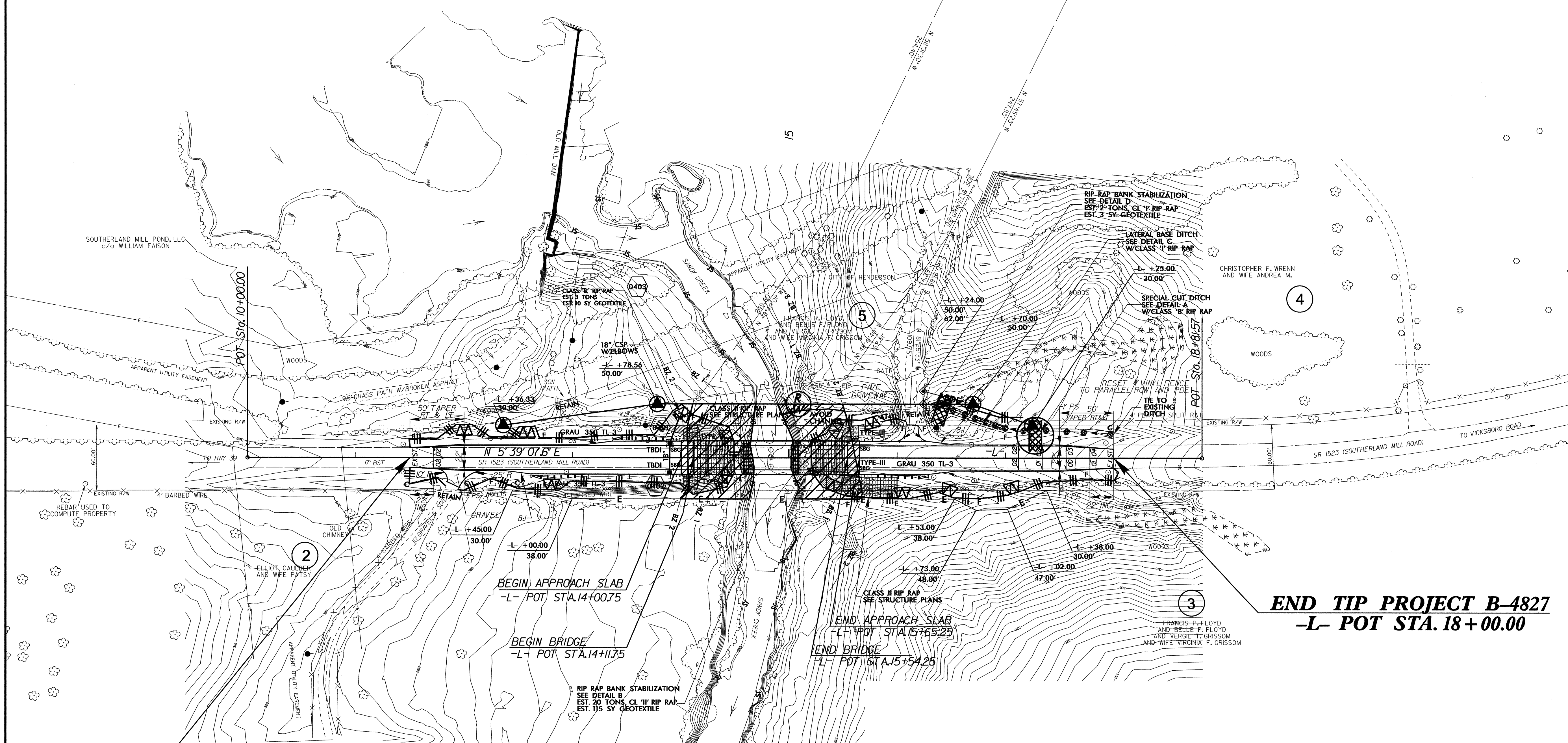
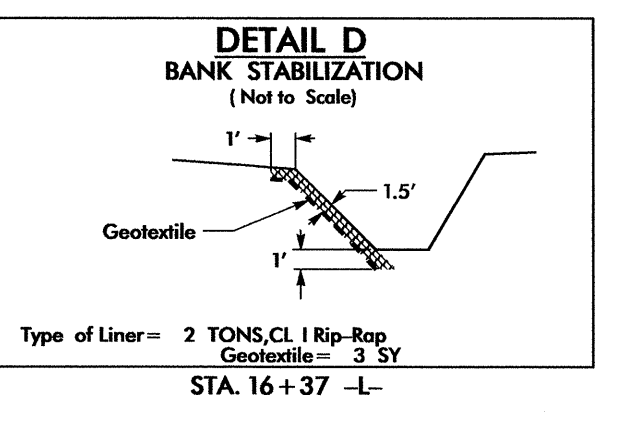
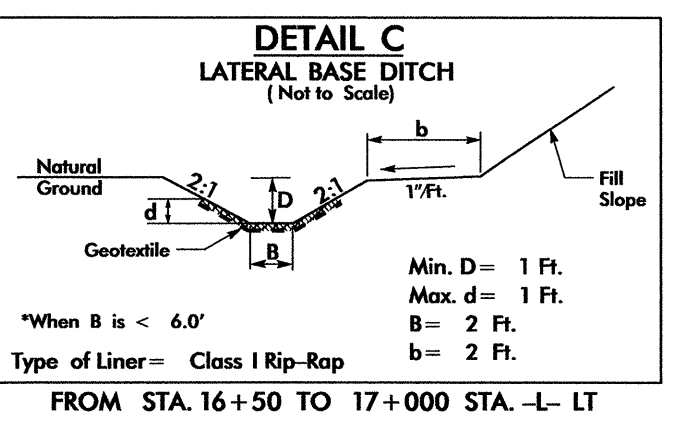
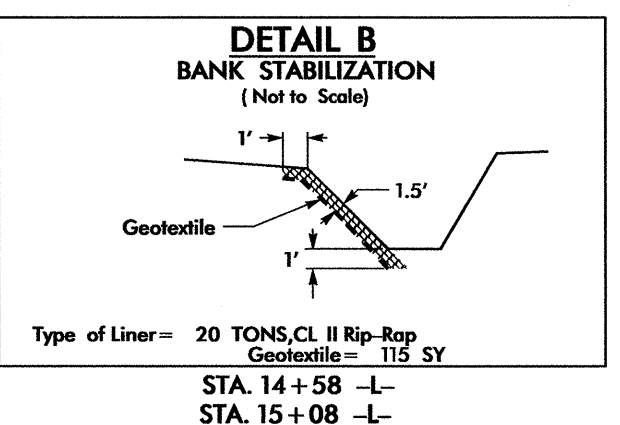
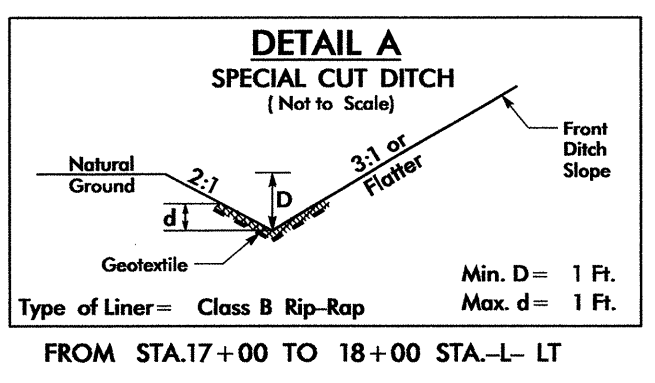
PROJECT REFERENCE NO. <i>B-4827</i>	SHEET NO. <i>EC-3</i>
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

# ***SOIL STABILIZATION TIMEFRAMES***

<i>SITE DESCRIPTION</i>	<i>STABILIZATION TIME</i>	<i>TIMEFRAME EXCEPTIONS</i>
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES 3:1 OR FLATTER	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50' IN LENGTH.
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE, EXCEPT FOR PERIMETERS AND HQW ZONES.

PROJECT REFERENCE NO. B-4827	SHEET NO. EC-4/CONST.4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NAD 83/NSRS 2007



**BEGIN TIP PROJECT B-4827**  
-L- POT STA. 11+50.00

**END TIP PROJECT B-4827**  
-L- POT STA. 18+00.00

SHOULDER BERM GUTTER LOCATIONS

-L- FROM STA. 13+90.00 TO STA. 14+00.75 (BEGIN APPROACH SLAB) LT
-L- FROM STA. 13+90.00 TO STA. 14+00.75 (BEGIN APPROACH SLAB) RT
-L- FROM STA. 15+65.25 (END APPROACH SLAB) TO STA. 15+70.25 LT
-L- FROM STA. 15+65.25 (END APPROACH SLAB) TO STA. 15+70.25 RT

NOTE: UTILIZE SPECIAL STILLING BASIN(S) AS STILLING BASIN WHERE APPLICABLE.

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 4

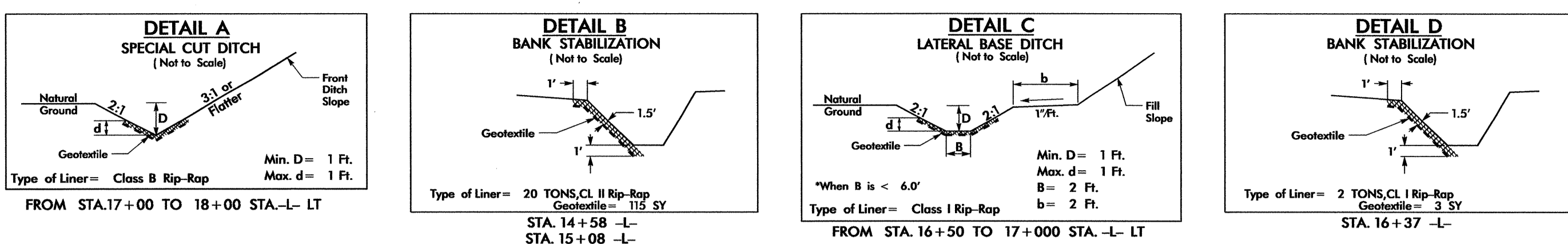
NOTE: PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B AND TEMPORARY ROCK SILT CHECKS TYPE - A AT DRAINAGE OUTLETS.

 ENVIRONMENTALLY SENSITIVE AREA SEE PROJECT SPECIAL PROVISIONS

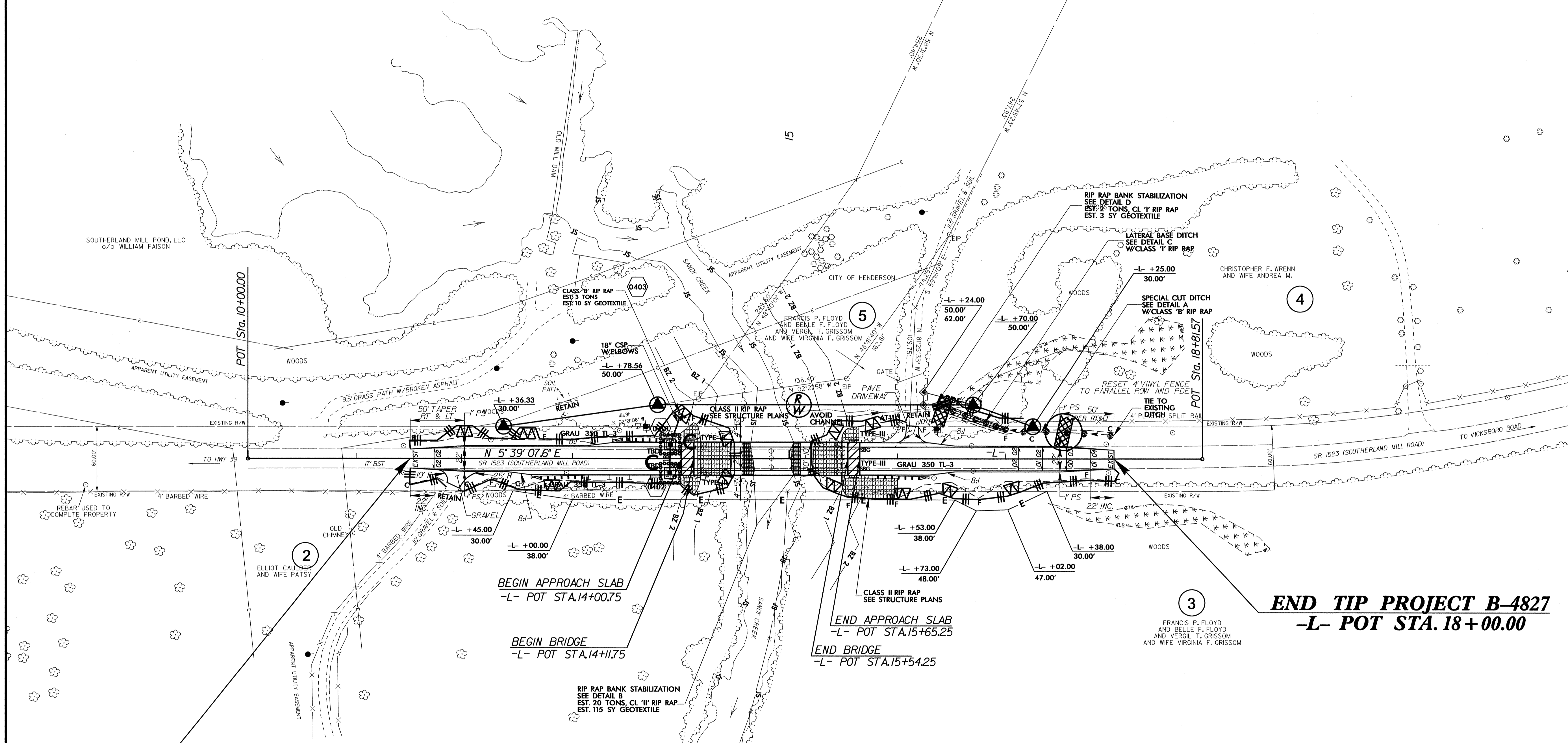
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SUBMITTED AT RENV27416



PROJECT REFERENCE NO.		SHEET NO.	
B-4827		EC-5/CONST.4	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	



NAD 83/NSRS 2007



**BEGIN TIP PROJECT B-4827**  
**-L- POT STA. 11+50.00**

**END TIP PROJECT B-4827**  
**-L- POT STA. 18+00.00**

SHOULDER BERM GUTTER LOCATIONS	
-L-	FROM STA. 13+90.00 TO STA. 14+00.75 (BEGIN APPROACH SLAB) LT
-L-	FROM STA. 13+90.00 TO STA. 14+00.75 (BEGIN APPROACH SLAB) RT
-L-	FROM STA. 15+65.25 (END APPROACH SLAB) TO STA. 15+70.25 LT
-L-	FROM STA. 15+65.25 (END APPROACH SLAB) TO STA. 15+70.25 RT

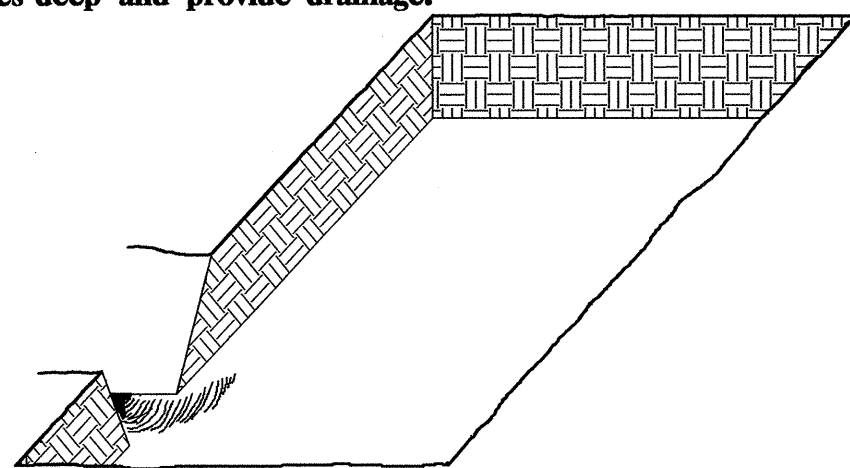
**NOTE:**  
 UTILIZE SPECIAL STILLING BASIN(S) AS STILLING BASIN WHERE APPLICABLE.

## PLANTING DETAILS

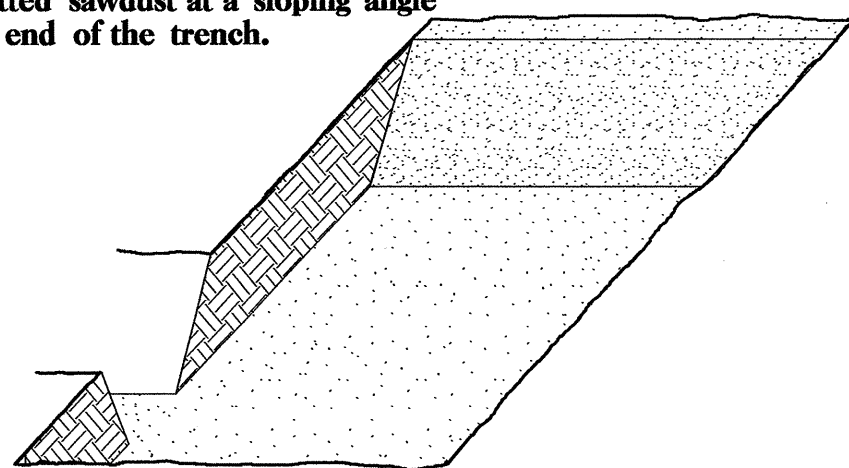
### SEEDLING / LINER BAREROOT PLANTING DETAIL

#### HEALING IN

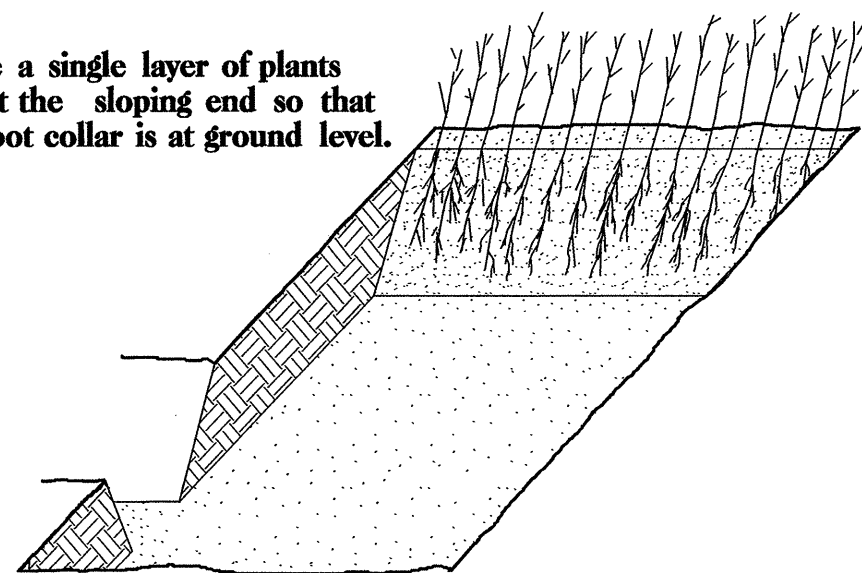
1. Locate a healing-in site in a shady, well protected area.
2. Excavate a flat bottom trench 12 inches deep and provide drainage.



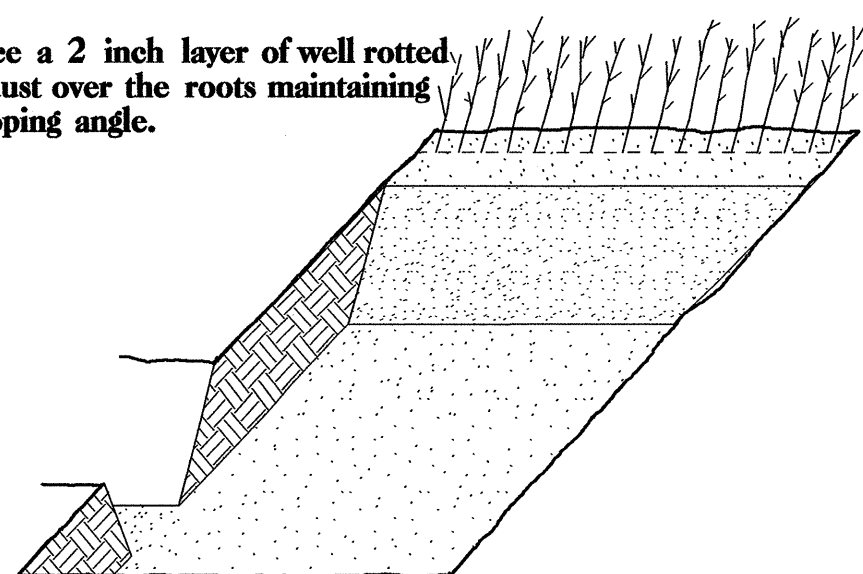
3. Backfill the trench with 2 inches well rotted sawdust. Place a 2 inch layer of well rotted sawdust at a sloping angle at one end of the trench.



4. Place a single layer of plants against the sloping end so that the root collar is at ground level.

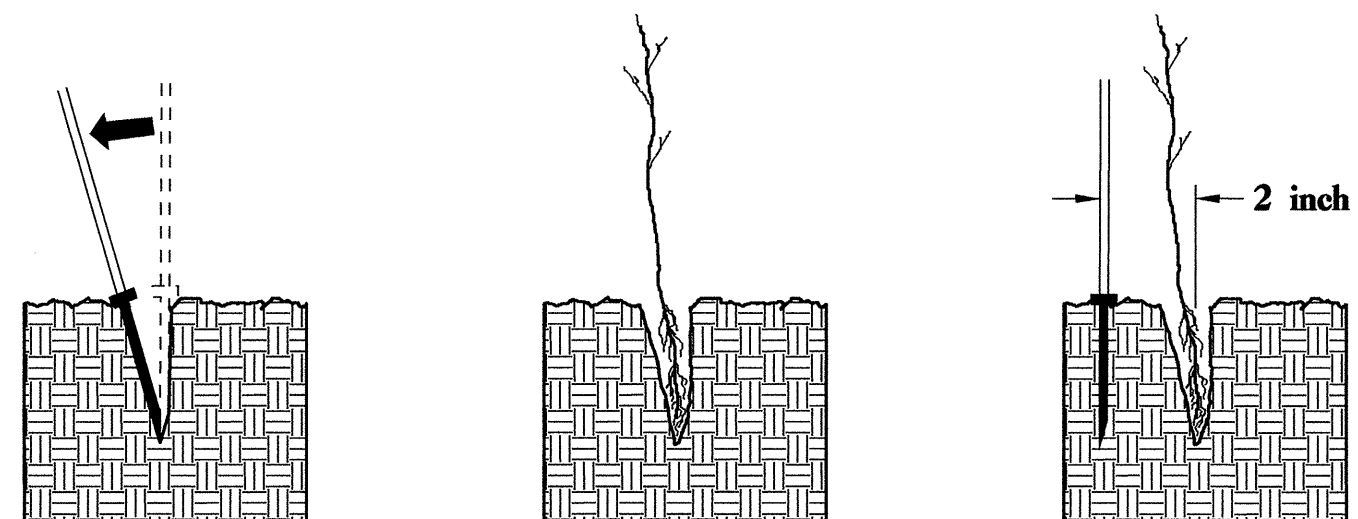


5. Place a 2 inch layer of well rotted sawdust over the roots maintaining a sloping angle.

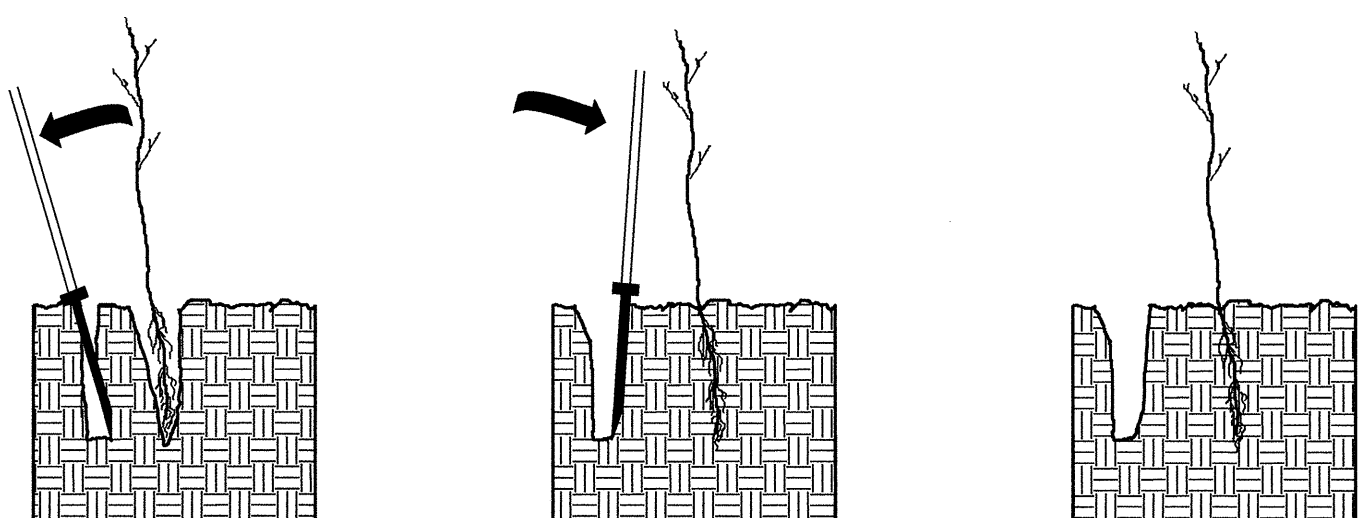


6. Repeat layers of plants and sawdust as necessary and water thoroughly.

#### DIBBLE PLANTING METHOD USING THE KBC PLANTING BAR



1. Insert planting bar as shown and pull handle toward planter.
2. Remove planting bar and place seedling at correct depth.
3. Insert planting bar 2 inches toward planter from seedling.



4. Pull handle of bar toward planter, firming soil at bottom.
5. Push handle forward firming soil at top.
6. Leave compaction hole open. Water thoroughly.

#### PLANTING NOTES:

**PLANTING BAG**  
During planting, seedlings shall be kept in a moist canvas bag or similar container to prevent the root systems from drying.



**KBC PLANTING BAR**  
Planting bar shall have a blade with a triangular cross section, and shall be 12 inches long, 4 inches wide and 1 inch thick at center.



**ROOT PRUNING**  
All seedlings shall be root pruned, if necessary, so that no roots extend more than 10 inches below the root collar.

## REFORESTATION

- TREE REFORESTATION SHALL BE PLANTED 6 FT. TO 10 FT. ON CENTER, RANDOM SPACING, AVERAGING 8 FT. ON CENTER, APPROXIMATELY 680 PLANTS PER ACRE.

#### REFORESTATION

MIXTURE, TYPE, SIZE, AND FURNISH SHALL CONFORM TO THE FOLLOWING:

30% PLATANUS OCCIDENTALIS	AMERICAN SYCAMORE	12 in - 18 in BR
30% LIRIODENDRON TULIPIFERA	YELLOW POPLAR	12 in - 18 in BR
40% BETULA NIGRA	RIVER BIRCH	12 in - 18 in BR

## REFORESTATION DETAIL SHEET

N.C.D.O.T. - ROADSIDE ENVIRONMENTAL UNIT



T.I.P. NO.	SHEET NO.
B-4827	UO-1

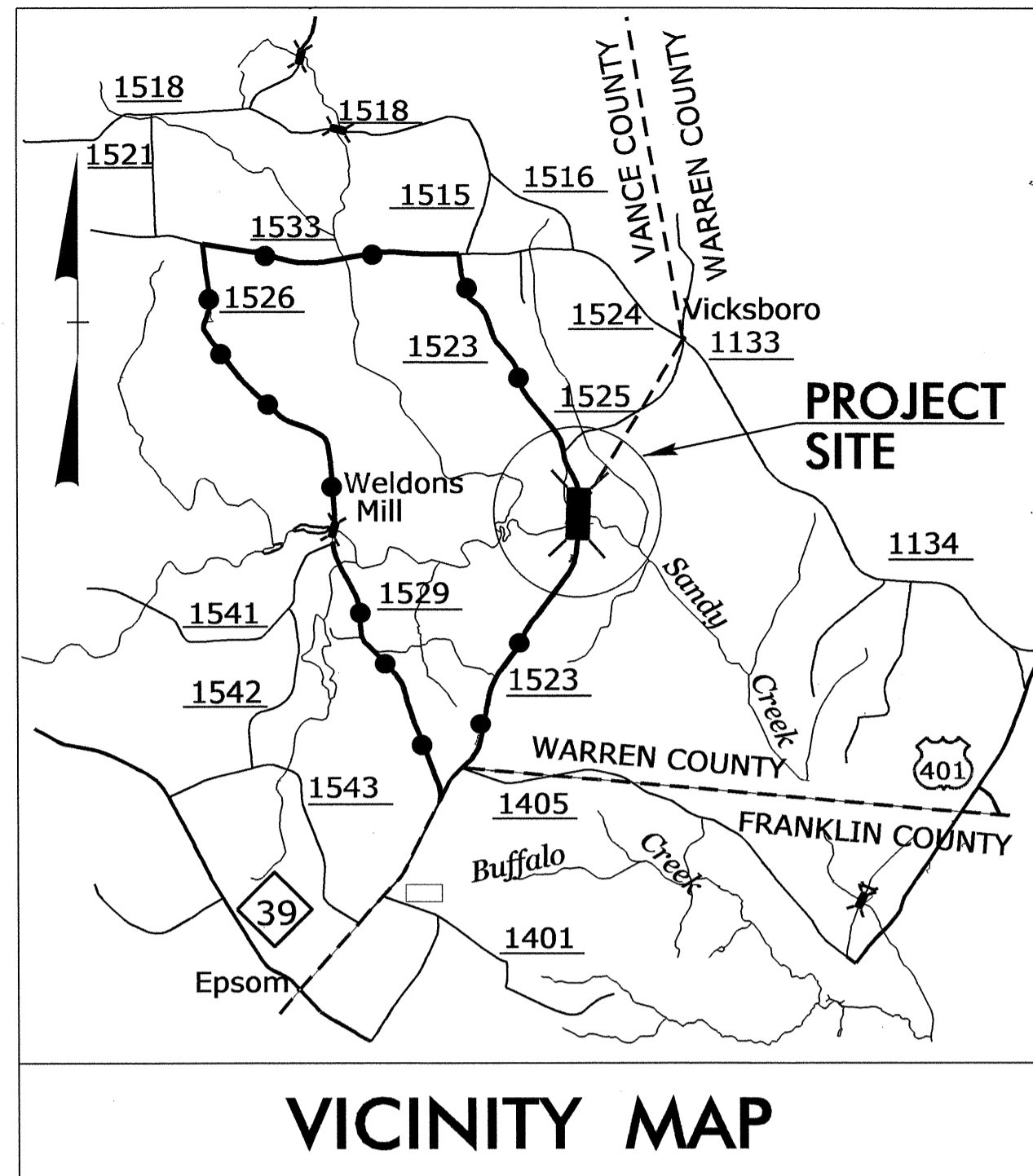
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**UTILITIES BY OTHERS PLANS  
VANCE COUNTY**

**LOCATION: BRIDGE NO. 53 OVER SANDY CREEK ON SR 1523**

**TYPE OF WORK: UNDERGROUND TELEPHONE**

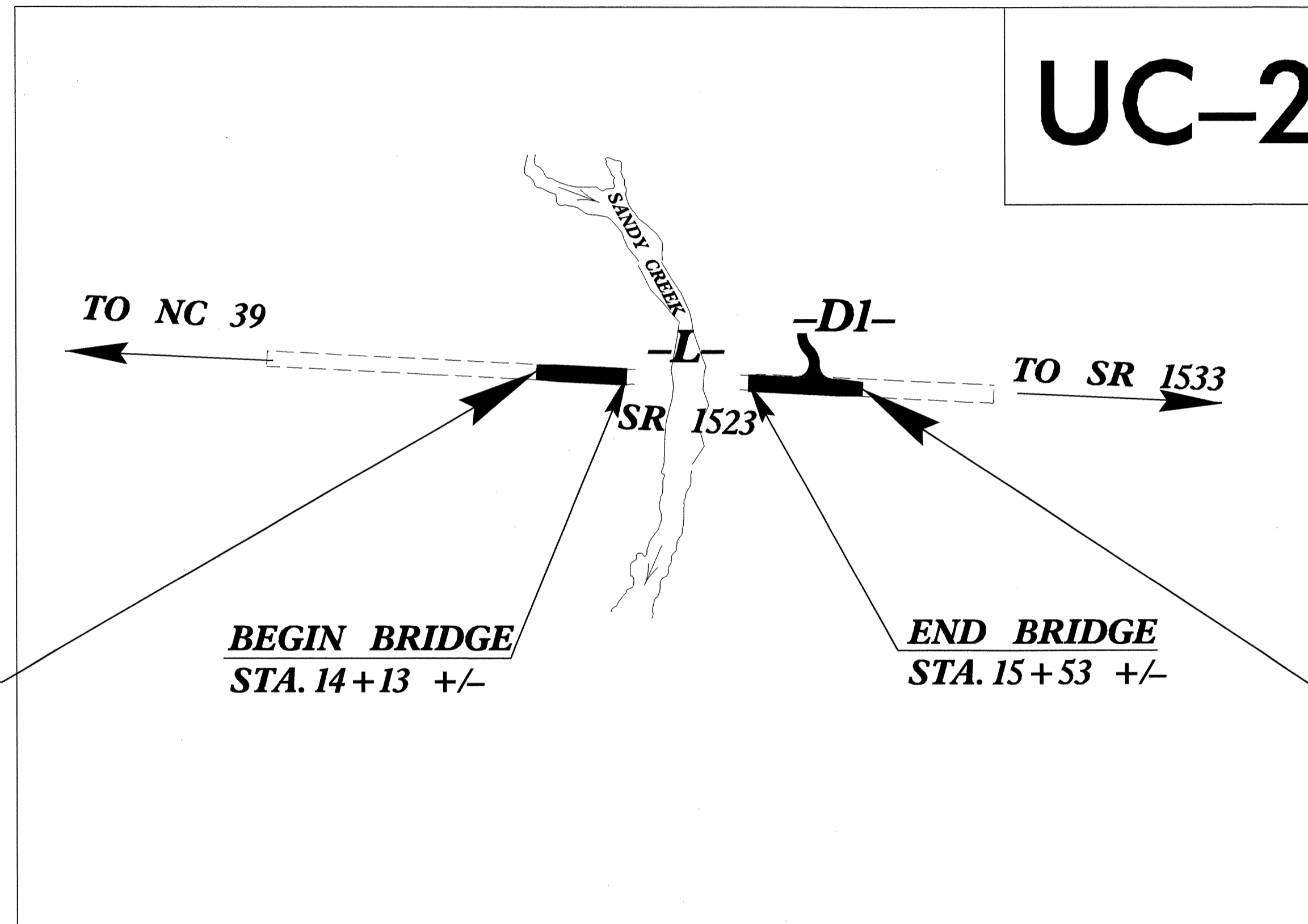
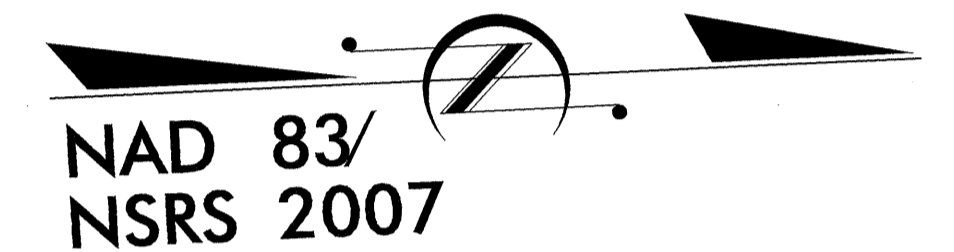
**TIP PROJECT: B-4827**



**VICINITY MAP**

●-●-● OFFSITE DETOUR

**UC-2**



**STA. 13 + 10.00**

**-L- BEGIN TIP PROJECT B-4827**

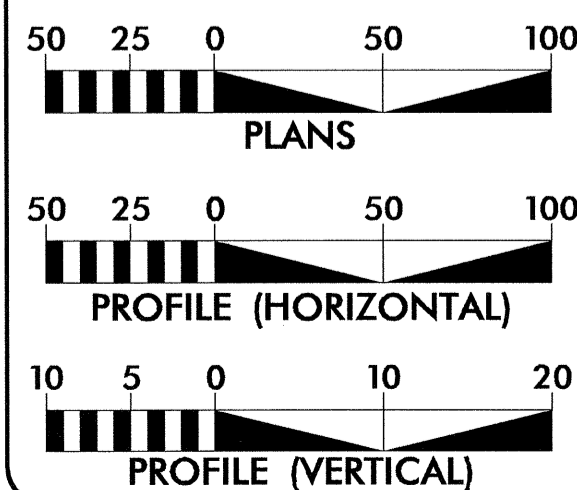
**BEGIN BRIDGE  
STA. 14 + 13 +/-**

**END BRIDGE  
STA. 15 + 53 +/-**

**STA. 16 + 85.00**

**-L- END TIP PROJECT B-4827**

**GRAPHIC SCALES**

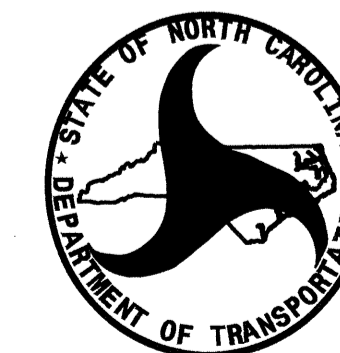


**INDEX OF SHEETS**

SHEET NO.	DESCRIPTION
UO-1	TITLE SHEET
UO-2	UTILITY BY OTHERS PLAN SHEETS

**UTILITY OWNERS ON PROJECT**

(A) TELEPHONE - C. T. & T.



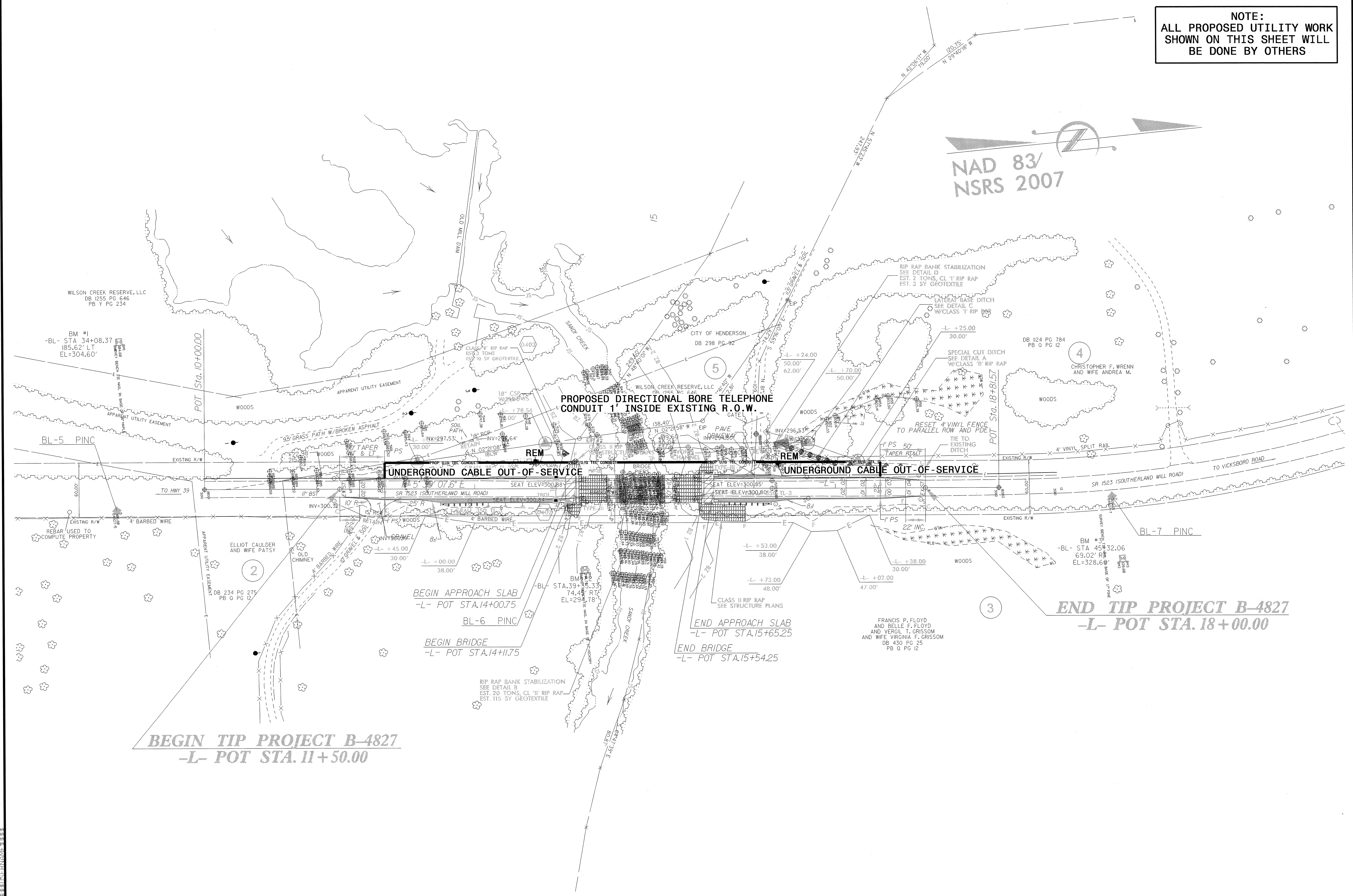
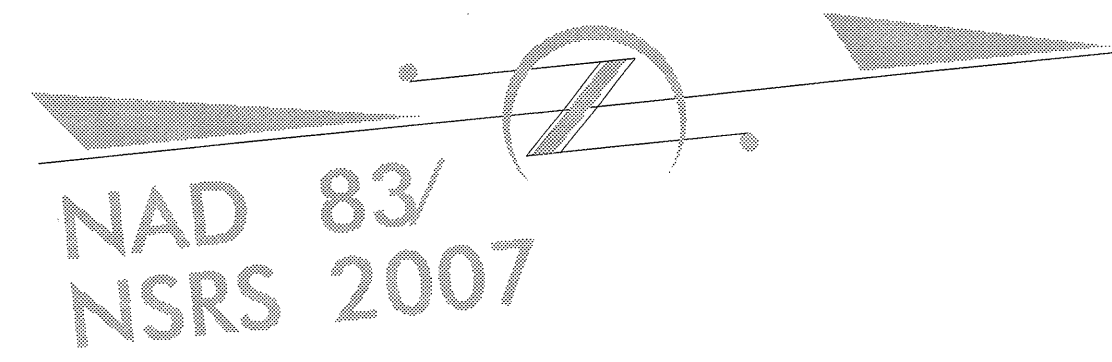
PREPARED IN THE OFFICE OF:  
DIVISION OF HIGHWAYS  
UTILITIES UNIT

1591 MAIL SERVICES CENTER  
RALEIGH, NC 27699-1591  
PHONE (919) 767-6690  
FAX (919) 250-4151

**Roger Worthington, P.E.** UTILITIES SECTION ENGINEER  
**Steve McKee, P.E.** UTILITIES SQUAD LEADER PROJECT ENGINEER  
**John A. Nigro, P.E.** UTILITIES PROJECT DESIGNER

### UTILITIES BY OTHERS

**NOTE:**  
ALL PROPOSED UTILITY WORK  
SHOWN ON THIS SHEET WILL  
BE DONE BY OTHERS



**BEGIN TIP PROJECT B-4827**  
-L- POT STA. 11+50.00

**END TIP PROJECT B-4827**  
-L- POT STA. 18+00.00

5/14/99

04-NOV-2013 16:07:00 ProJ\B4827\_Ut\_4\_U02\_psh.dgn



12/06/07

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
B-4827	X-A

# ***CROSS SECTION INDEX***

	<b><i>X-SECTION EARTHWORK SUMMARY</i></b>	<b><i>X-B</i></b>
<b><i>-L-</i></b>	<b><i>11+25.00 TO 18+25.00</i></b>	<b><i>X-1 - X-7</i></b>

PROJ. REFERENCE NO.	SHEET NO.
B-4827	X-B

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

NOTE: EMBANKMENT COLUMN INCLUDES BACKFILL FOR UNDERCUT

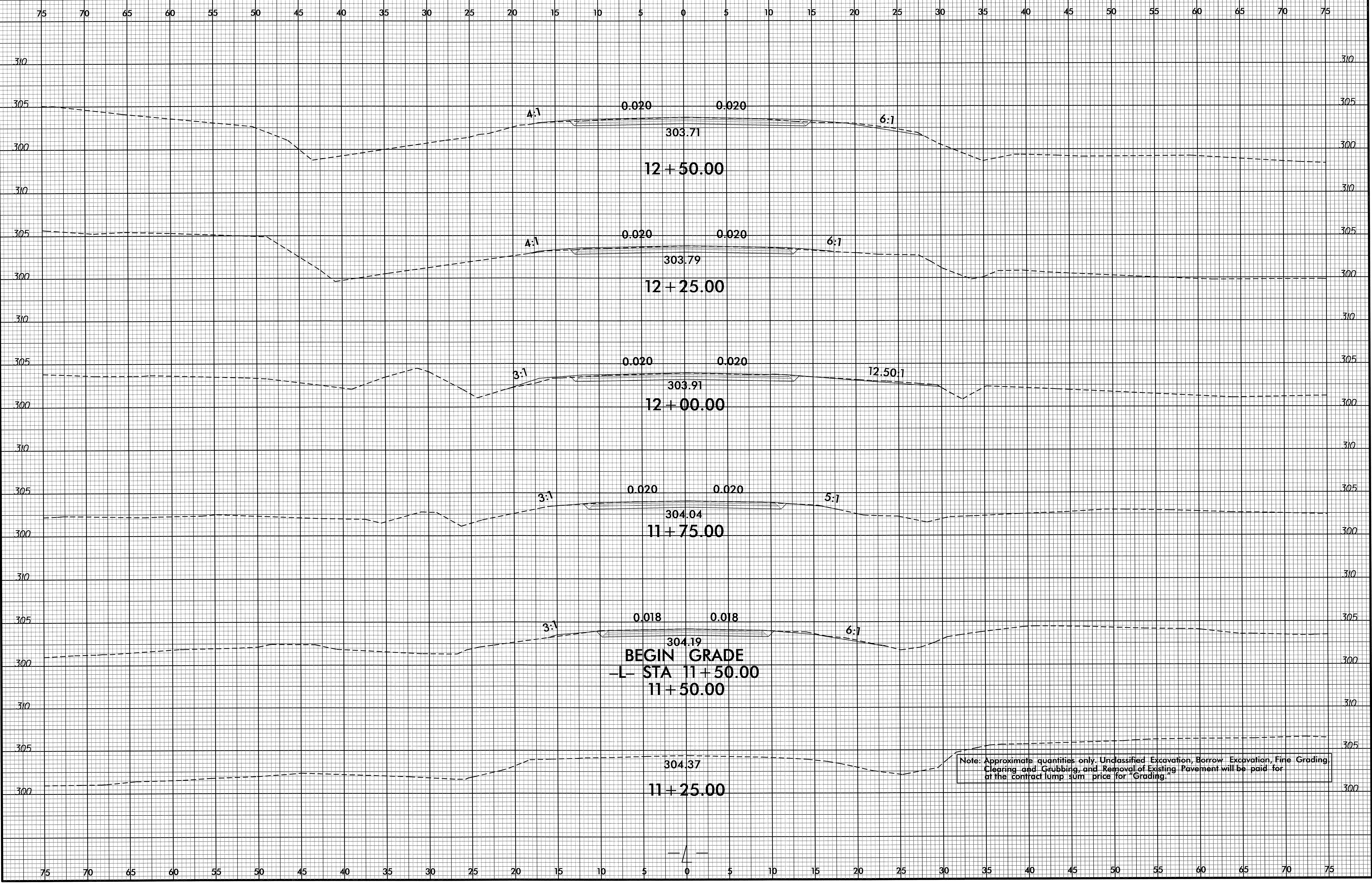
CROSS-SECTION SUMMARY

Station	Uncl. Exc.	Embt																	
L	(cu. yd.)	(cu. yd.)																	
11+50.00	0	0																	
11+75.00	15	0																	
12+00.00	17	1																	
12+25.00	17	1																	
12+50.00	18	1																	
12+75.00	19	1																	
13+00.00	19	1																	
13+25.00	19	1																	
13+50.00	18	1																	
13+75.00	15	2																	
14+00.00	15	2																	
14+11.75	7	7																	
Station	Uncl. Exc.	Embt																	
L	(cu. yd.)	(cu. yd.)																	
15+54.25	0	0																	
15+75.00	0	35																	
16+00.00	1	43																	
16+25.00	3	28																	
16+50.00	5	31																	
16+75.00	7	43																	
17+00.00	10	22																	
17+25.00	12	8																	
17+50.00	14	7																	
17+75.00	15	6																	
18+00.00	16	3																	
Station	Uncl. Exc.	Embt																	
L DDE	(cu. yd.)	(cu. yd.)																	
16+50.00	0	0																	
16+75.00	5	0																	
17+00.00	3	0																	

Approximate quantities only. Unclassified excavation, borrow excavation, fine grading, clearing and grubbing, and removal of existing pavement will be paid for at the lump sum price for "Grading".



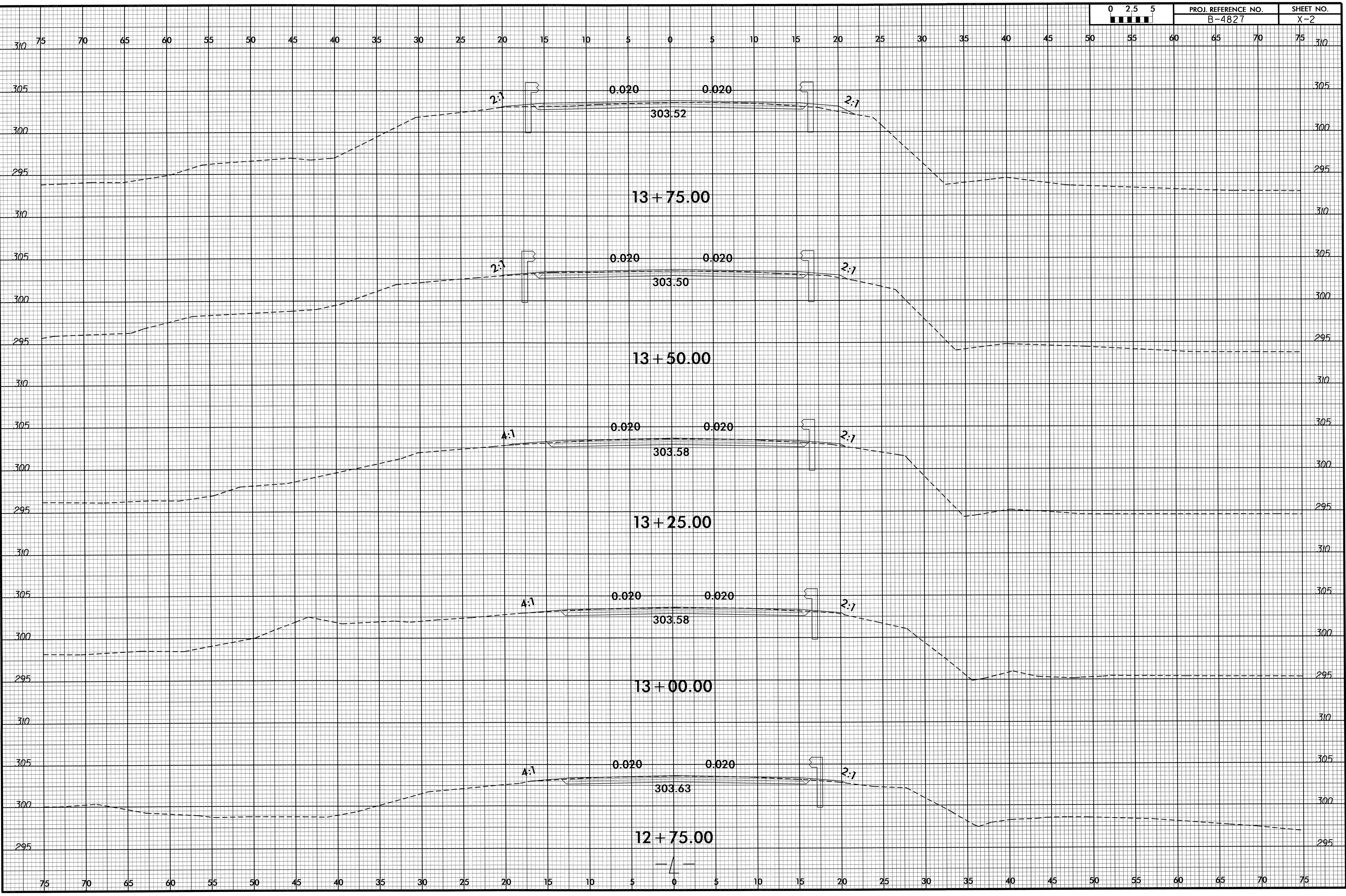
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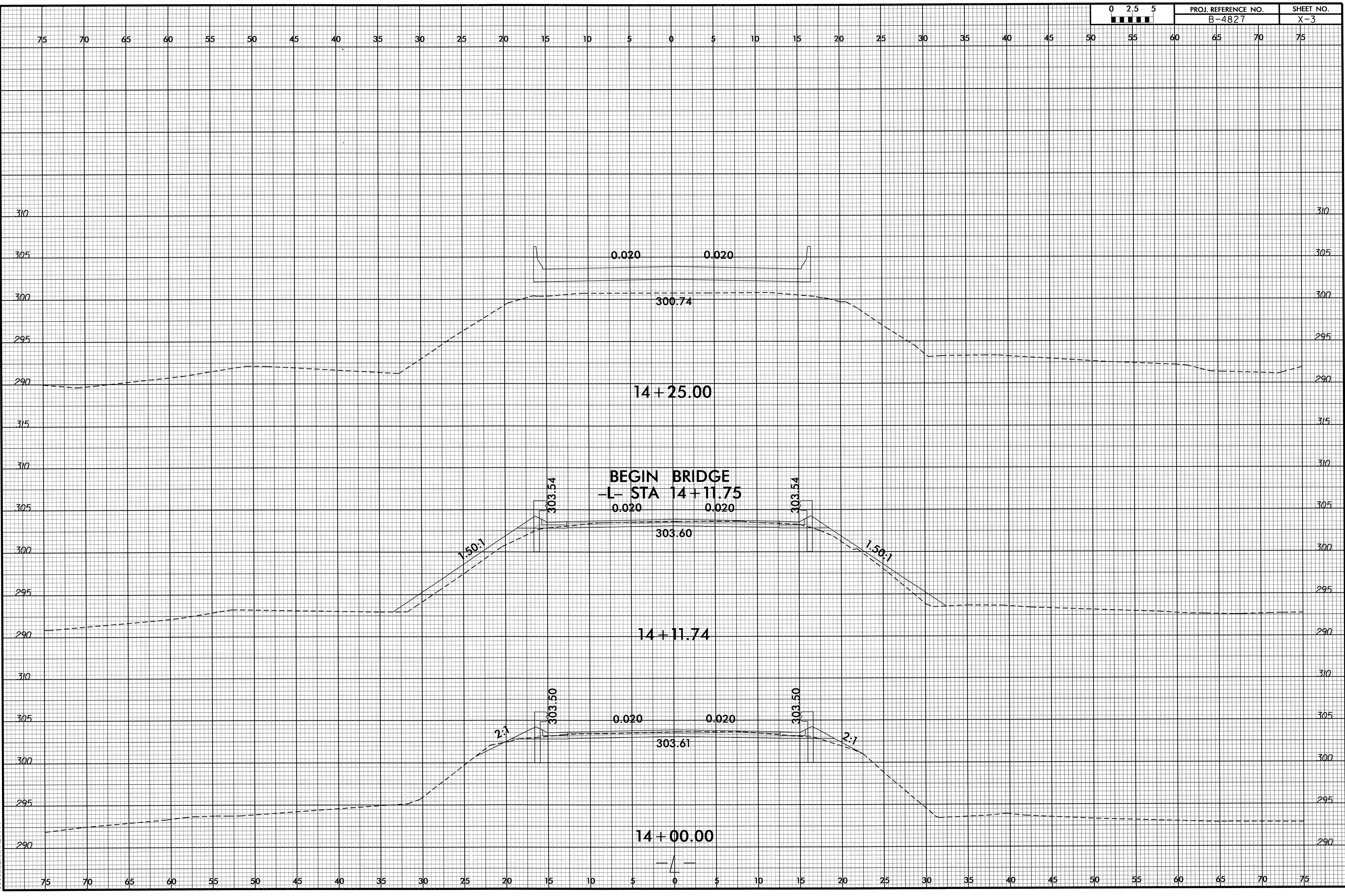


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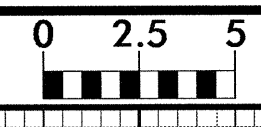
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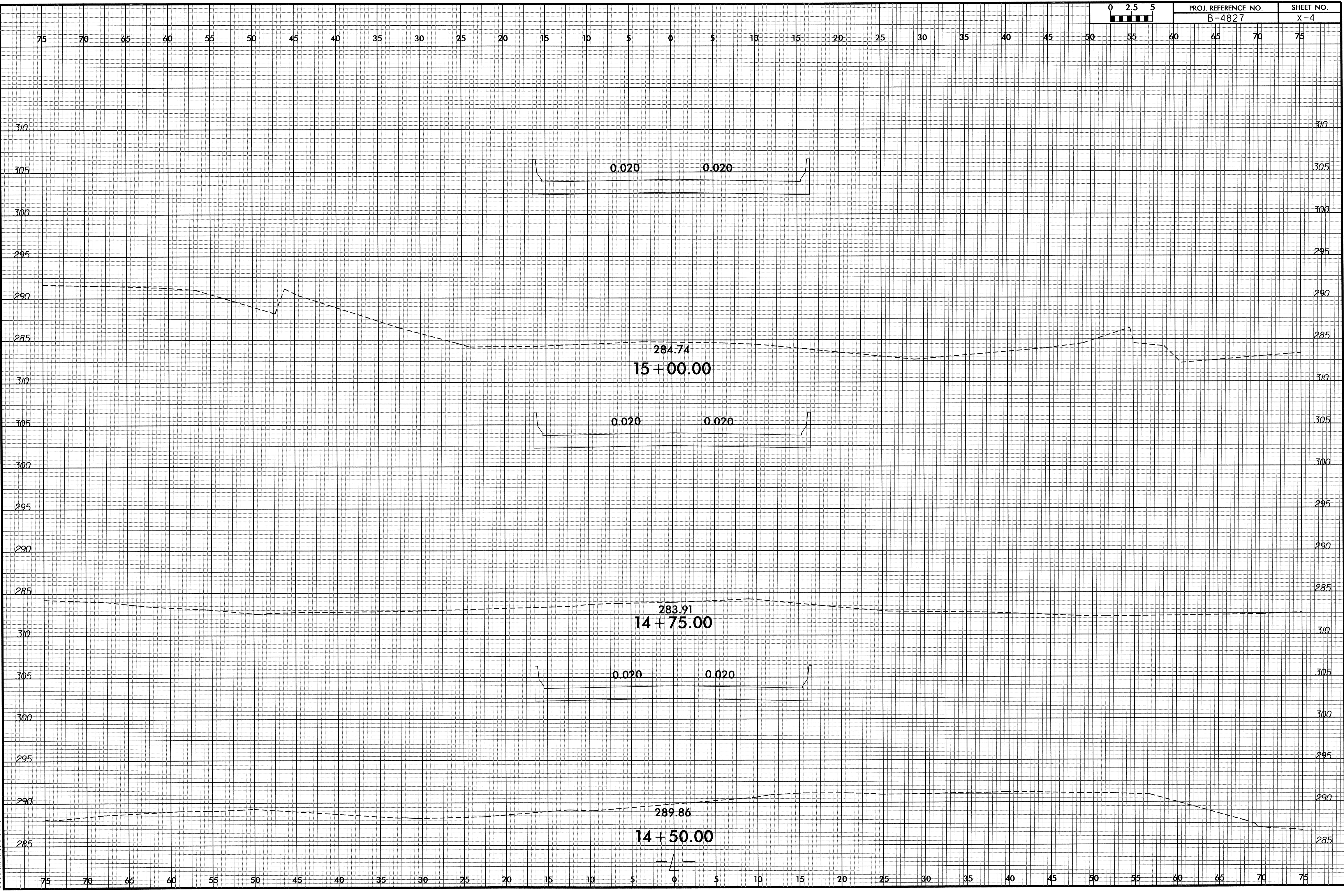


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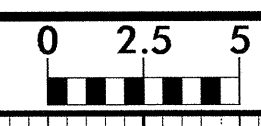
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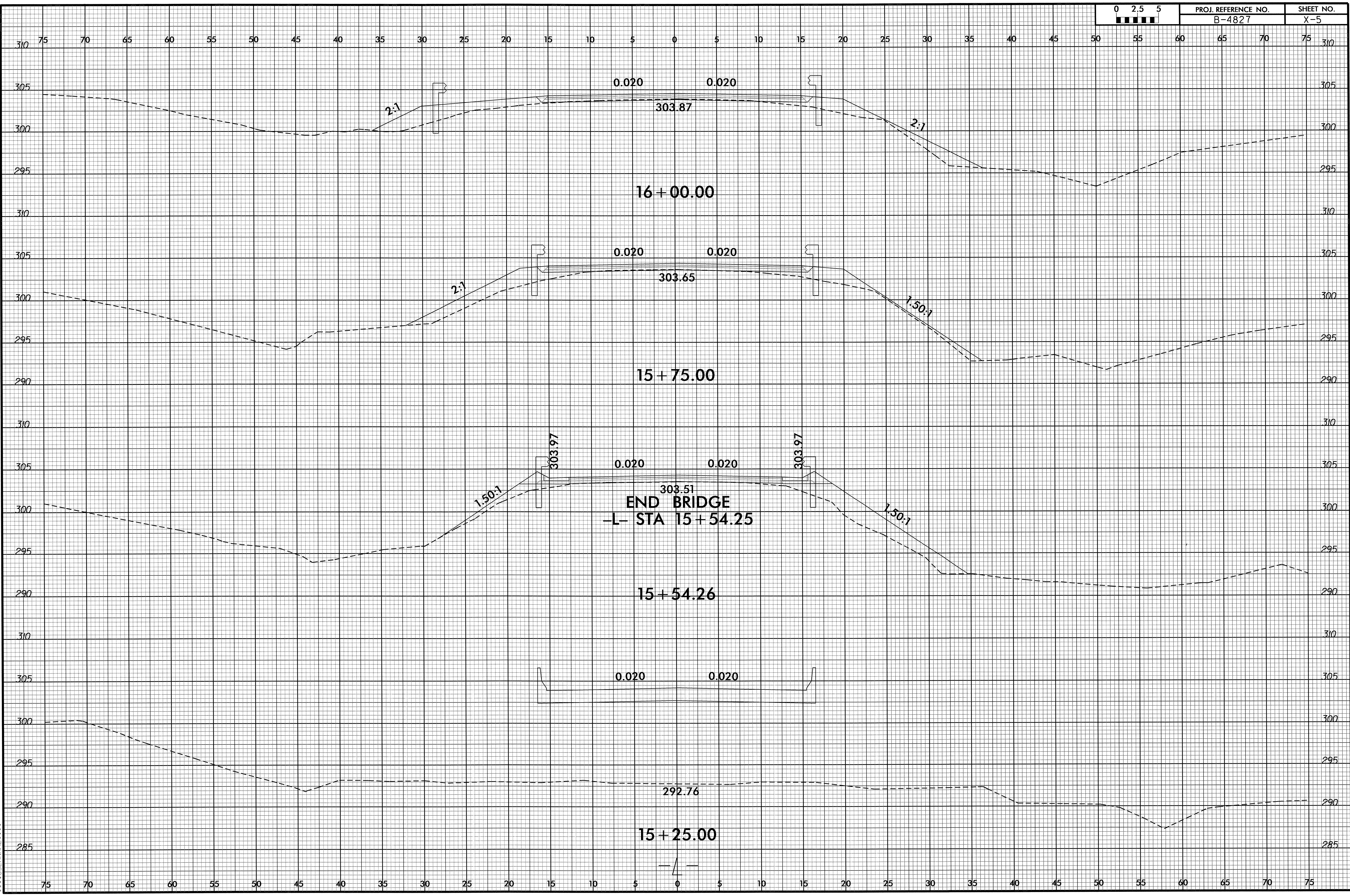
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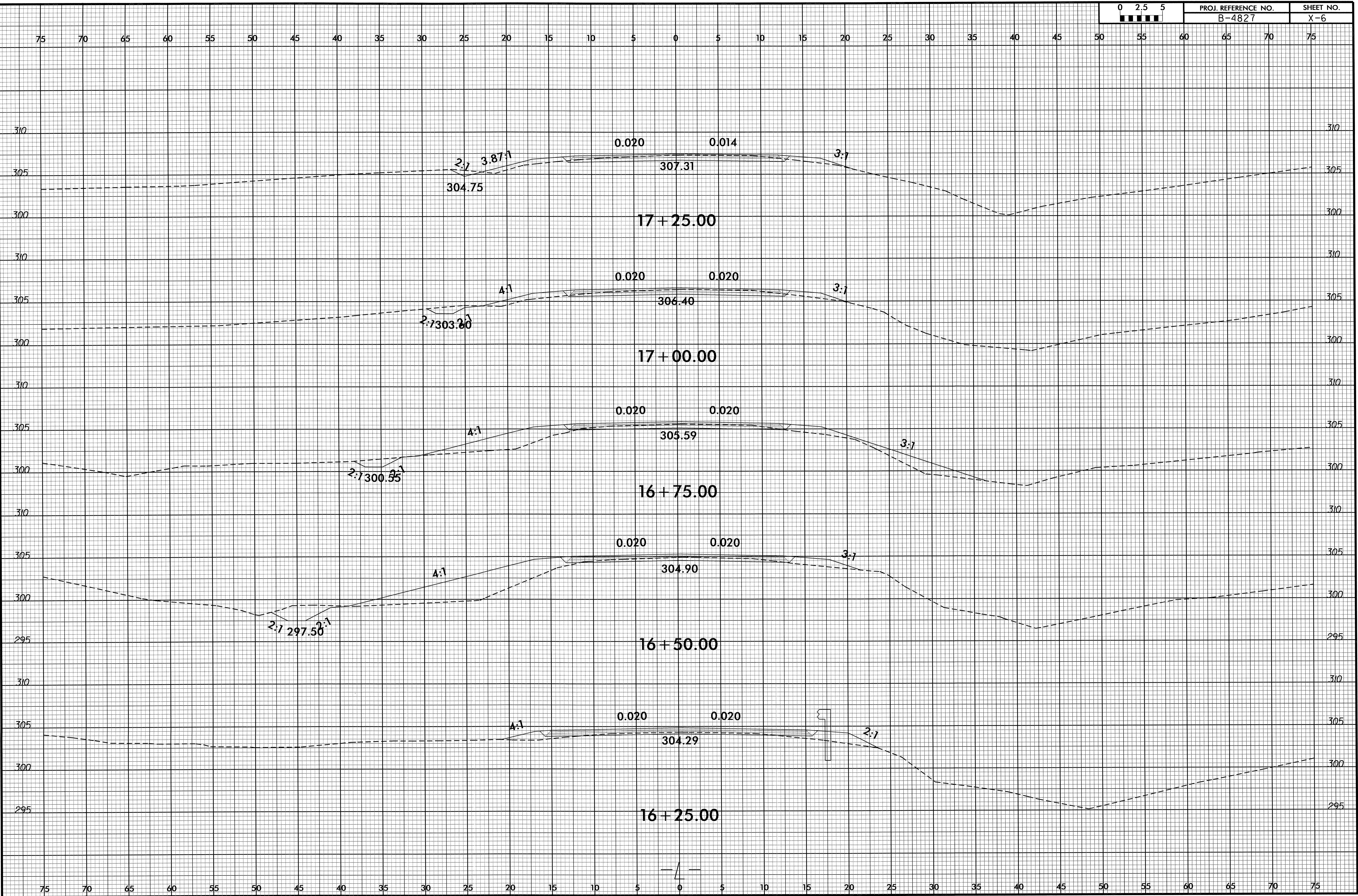
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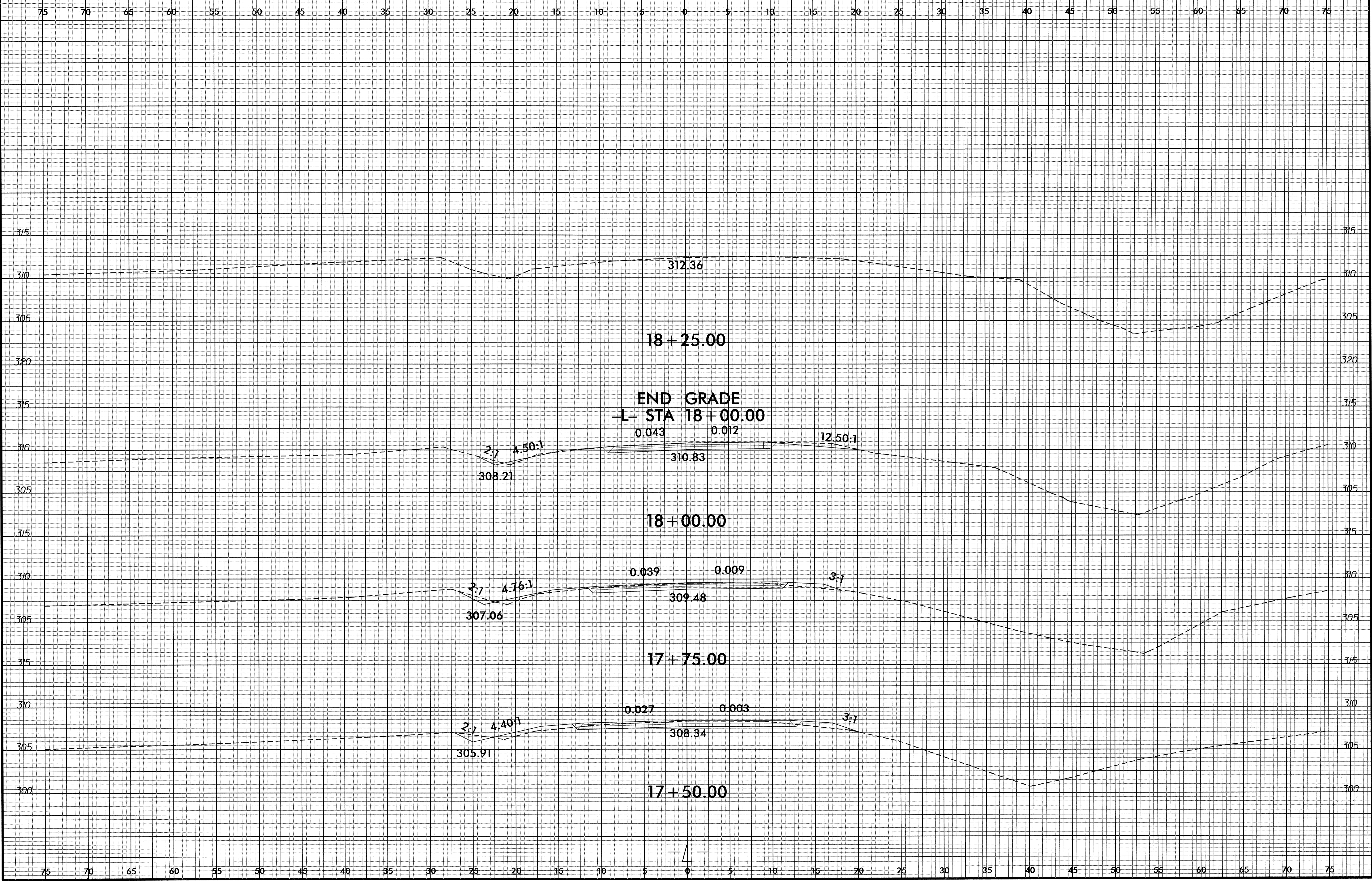
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