

09/08/15

**TIP PROJECT: 17BP.11.R.82**

**CONTRACT:**

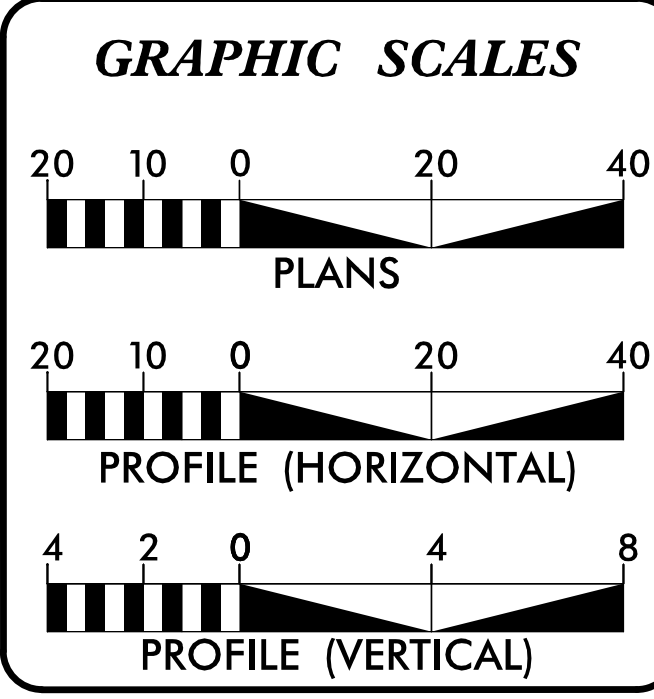
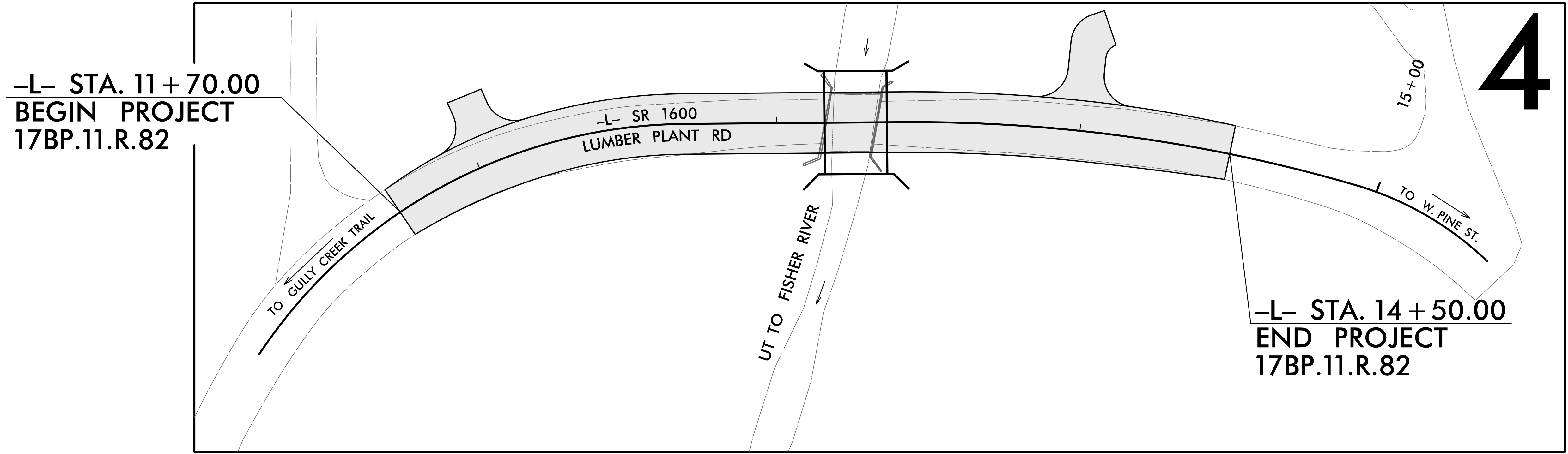
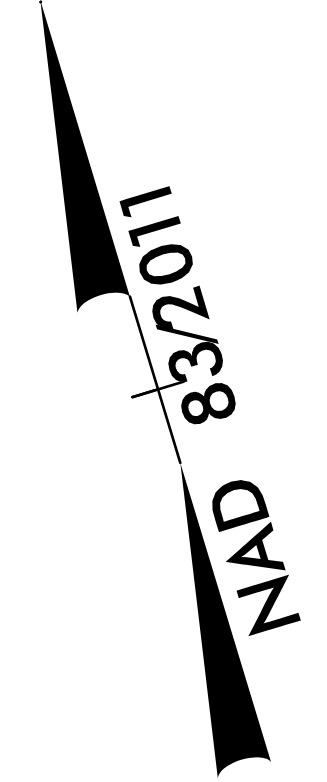
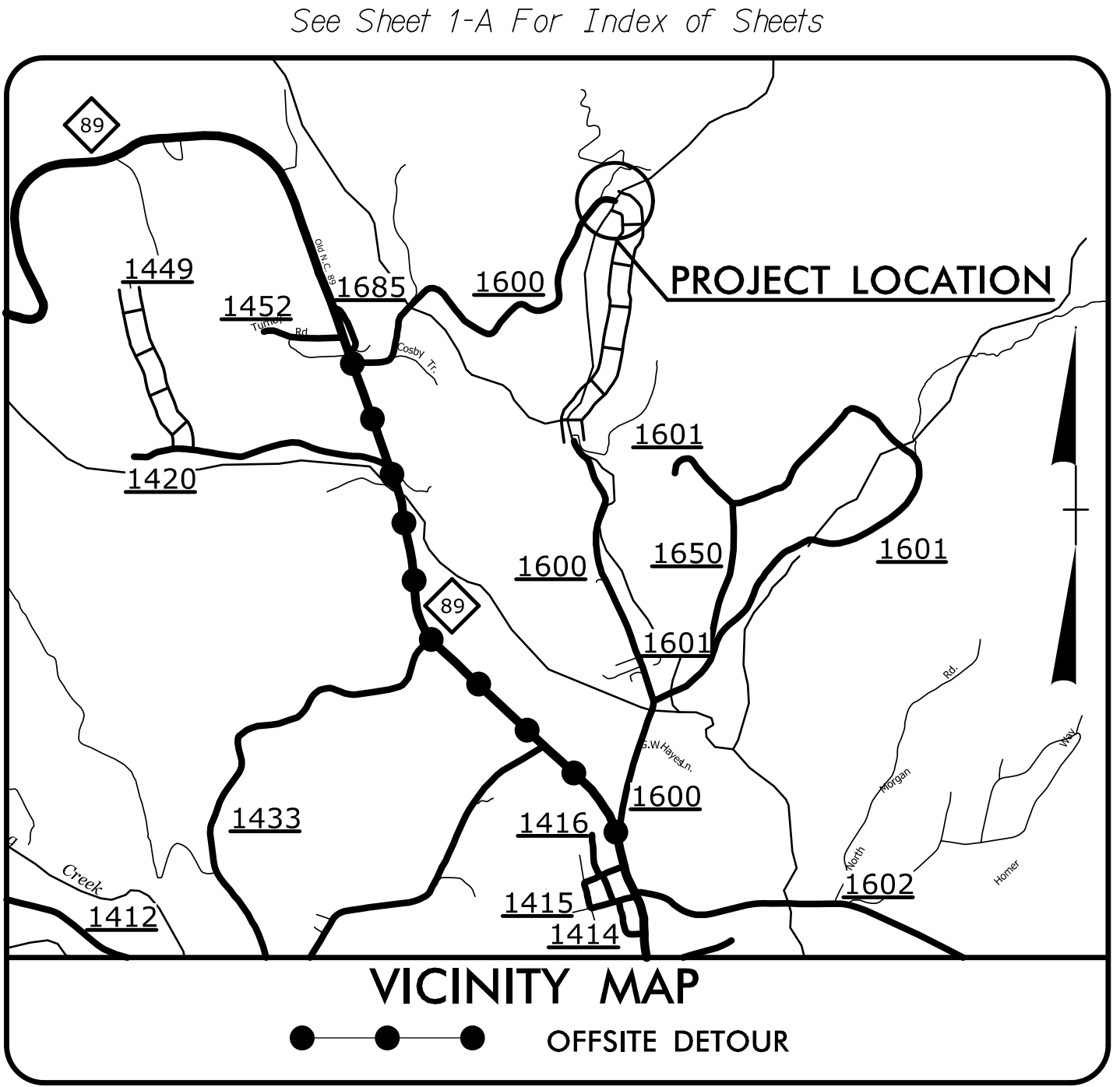
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**SURRY COUNTY**

**LOCATION: BRIDGE NO. 850298 OVER UT TO FISHER RIVER  
ON SR 1600 (LUMBER PLANT RD)**

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.11.R.82	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
17BP.11.R.82	N/A	PE	
17BP.11.R.82	N/A	RW & UTIL.	
17BP.11.R.82	N/A	CONSTR	



**DESIGN DATA**

ADT 2013 =	410
V =	25 MPH
T =	6 % *
(TTST 3% + DUALS 3%)	
FUNC CLASS =	RURAL LOCAL
SUB REGIONAL TIER	

**PROJECT LENGTH**

LENGTH TOTAL PROJECT 17BP.11.R.82 = 0.053 MILES

**NCDOT CONTACT: JAMI GUYNN**

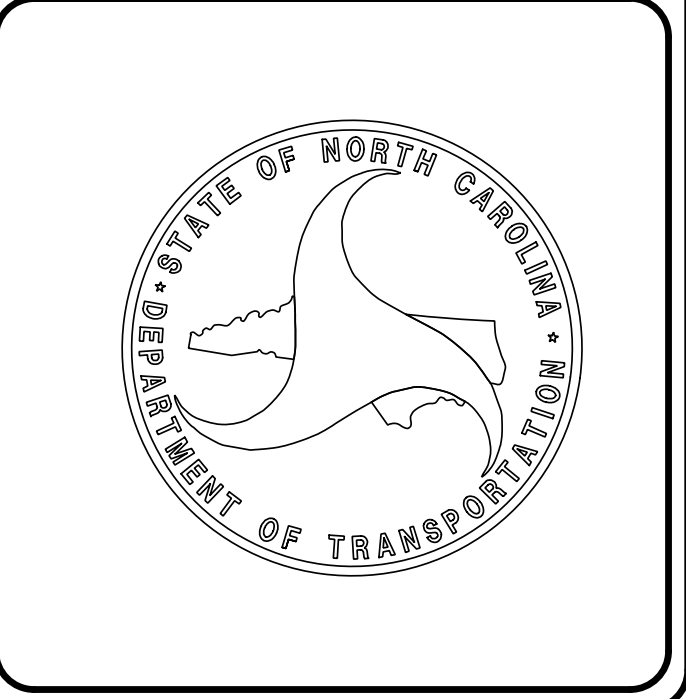
PLANS PREPARED BY:	PLANS PREPARED FOR:
<b>TGS ENGINEERS</b> 804-C N. LAFAYETTE ST SHELBY, NC 28150 PH (704) 476-0003 CORP. LICENSE NO. C-0275	DIVISION 11 801 STATESVILLE RD NORTH WILKESBORO, 28659
2012 STANDARD SPECIFICATIONS <b>RIGHT OF WAY DATE:</b> JANUARY 23, 2015 <b>LETTING DATE:</b>	<b>JIMMY TERRY, P.E.</b> PROJECT ENGINEER <b>TRAVIS COOK, E.I.</b> PROJECT DESIGN ENGINEER

**HYDRAULICS ENGINEER**

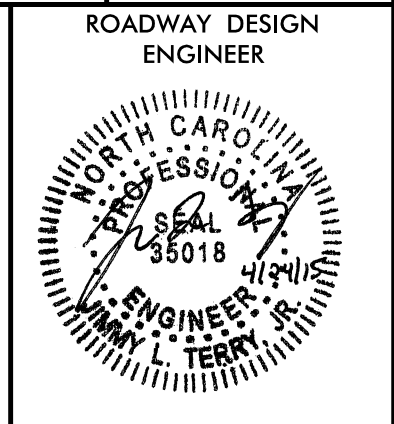
SIGNATURE: \_\_\_\_\_

**ROADWAY DESIGN ENGINEER**

SIGNATURE: \_\_\_\_\_



\$\$\$\$\$ SYSTEM \$\$\$\$\$\$  
\$\$\$\$\$ DCN \$\$\$\$\$\$  
\$\$\$\$\$ USERNAME \$\$\$\$\$\$



## INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
1B	CONVENTIONAL SYMBOLS
1C-1	SURVEY CONTROL SHEET
2A-1	PAVEMENT SCHEDULE, TYPICAL SECTION, AND WEDGING DETAIL
3B-1	SUMMARY OF EARTHWORK AND DRAINAGE SUMMARY
4	PLAN AND PROFILE SHEET
TMP-1 THRU TMP-3	TRAFFIC MANAGEMENT PLANS
PMP-1	PAVEMENT MARKING PLAN
EC-1 THRU EC-6	EROSION CONTROL PLANS
RF-1	REFORESTATION DETAIL SHEET
X-1 THRU X-2	CROSS-SECTIONS
C-1 THRU C-3	CULVERT PLANS

## GENERAL NOTES

**GENERAL NOTES:**

2012 SPECIFICATIONS  
EFFECTIVE: 01-17-12  
REVISED: 07/30/12

**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 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.

**SIDE ROADS:**

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

**SUBSURFACE PLANS:**

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

**UTILITIES:**

UTILITY OWNERS ON THIS PROJECT ARE DUKE POWER AND SURRY 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.

## STANDARD DRAWINGS

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
<b>DIVISION 2 - EARTHWORK</b>	
200.02	Method of Clearing - Method II Modified
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
<b>DIVISION 3 - PIPE CULVERTS</b>	
300.01	Method of Pipe Installation
310.10	Driveway Pipe Construction
<b>DIVISION 5 - SUBGRADE, BASES AND SHOULDERS</b>	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I

8/17/99















STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

# CONVENTIONAL PLAN SHEET SYMBOLS





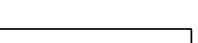
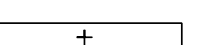



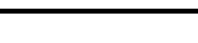

*Note: Not to Scale*

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











### BOUNDARIES AND PROPERTY:

State Line	_____
County Line	_____
Township Line	_____
City Line	_____
Reservation Line	_____
Property Line	_____
Existing Iron Pin	_____ 
Property Corner	_____ 
Property Monument	_____ 
Parcel/Sequence Number	_____ 
Existing Fence Line	_____ 
Proposed Woven Wire Fence	_____ 
Proposed Chain Link Fence	_____ 
Proposed Barbed Wire Fence	_____ 
Existing Wetland Boundary	_____ 
Proposed Wetland Boundary	_____ 
Existing Endangered Animal Boundary	_____ 
Existing Endangered Plant Boundary	_____ 
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	_____ 
Small Mine	_____ 
Foundation	_____ 
Area Outline	_____ 
Cemetery	_____ 
Building	_____ 
School	_____ 
Church	_____ 
Dam	_____ 


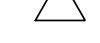






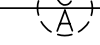

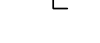







### HYDROLOGY:

Stream or Body of Water	_____
Hydro, Pool or Reservoir	_____ 
Jurisdictional Stream	_____ 
Buffer Zone 1	_____ 
Buffer Zone 2	_____ 
Flow Arrow	_____ 
Disappearing Stream	_____ 
Spring	_____ 
Wetland	_____ 
Proposed Lateral, Tail, Head Ditch	_____ 
False Sump	_____ 





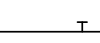
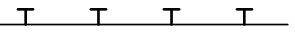
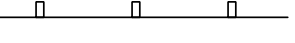
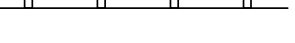







### RAILROADS:

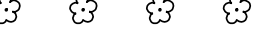
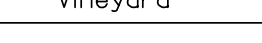
Standard Gauge	_____ 
RR Signal Milepost	_____ 
Switch	_____ 
RR Abandoned	_____ 
RR Dismantled	_____ 

### RIGHT OF WAY:

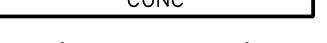

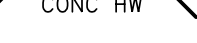
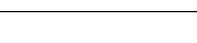

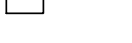



Baseline Control Point	_____ 
Existing Right of Way Marker	_____ 
Existing Right of Way Line	_____ 
Proposed Right of Way Line	_____ 
Proposed Right of Way Line with Iron Pin and Cap Marker	_____ 
Proposed Right of Way Line with Concrete or Granite RW Marker	_____ 
Proposed Control of Access Line with Concrete CA Marker	_____ 
Existing Control of Access	_____ 
Proposed Control of Access	_____ 
Existing Easement Line	_____ 
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:



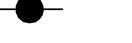





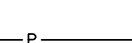
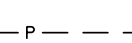

Existing Edge of Pavement	_____ 
Existing Curb	_____ 
Proposed Slope Stakes Cut	_____ 
Proposed Slope Stakes Fill	_____ 
Proposed Curb Ramp	_____ 
Existing Metal Guardrail	_____ 
Proposed Guardrail	_____ 
Existing Cable Guiderail	_____ 
Proposed Cable Guiderail	_____ 
Equality Symbol	_____ 
Pavement Removal	_____ 
VEGETATION:	
Single Tree	_____ 
Single Shrub	_____ 
Hedge	_____ 
Woods Line	_____ 

Orchard	_____ 
Vineyard	_____ 




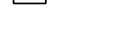

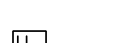
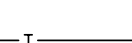
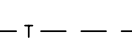
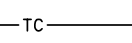
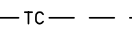
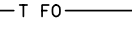
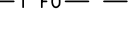

### EXISTING STRUCTURES:

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








### UTILITIES:

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	_____ 
End of Information	_____ 



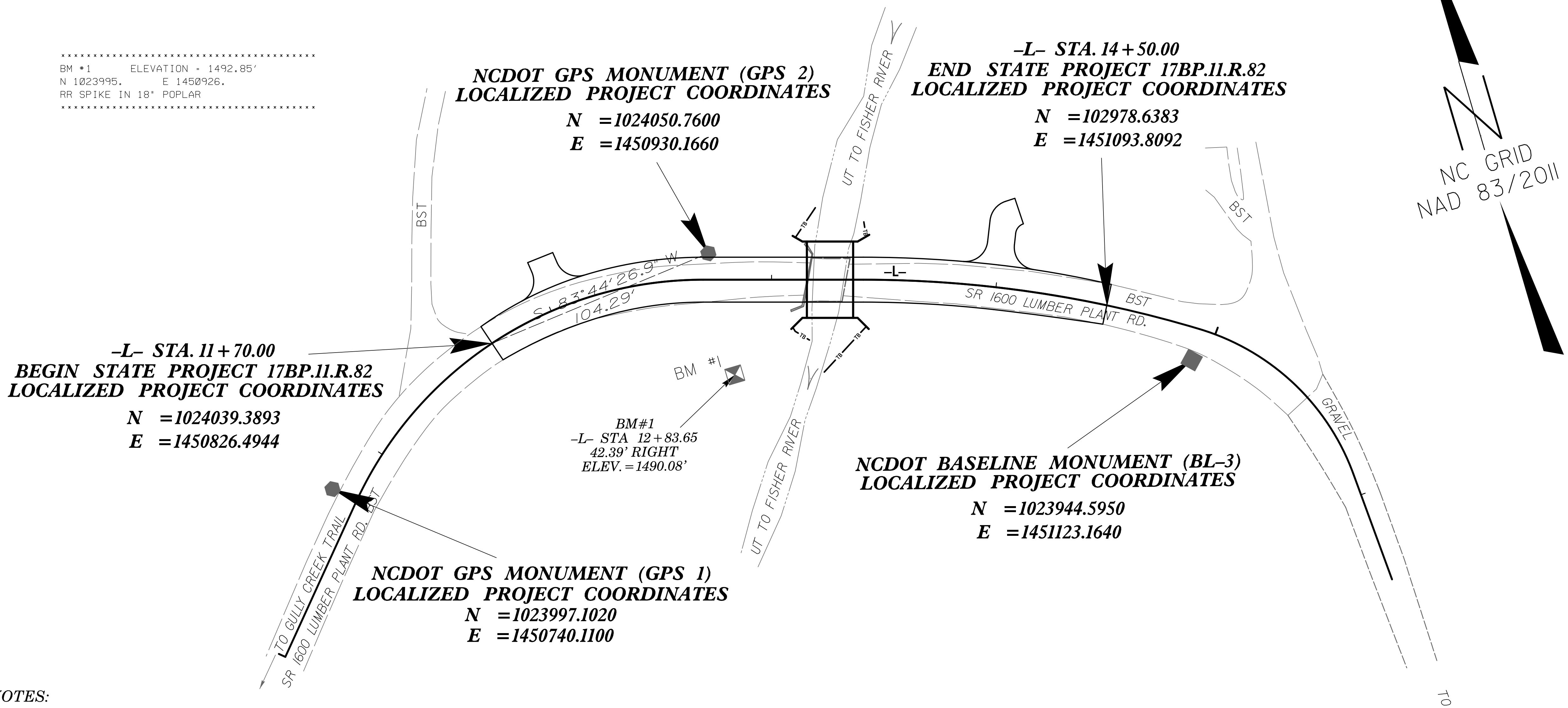
6/2/99

# SURVEY CONTROL SHEET 17BP.11.R.82

PROJECT REFERENCE NO.	SHEET NO.
17BP.11.R.82	1C-1
Location and Surveys	

BL POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
1	GPS-1	1023997.1020	1450740.1100	1493.92	10+76.58	11.95' LT
2	GPS-2	1024050.7600	1450930.1660	1493.77	12+71.88	11.76' LT
3	BL-3	1023944.5950	1451123.1640	1498.30	14+93.30	14.26' RT

.....  
 BM #1 ELEVATION = 1492.85'  
 N 1023995. E 1450926.  
 RR SPIKE IN 18" POPLAR  
 .....



**-L- STA. 11+70.00**  
**BEGIN STATE PROJECT 17BP.11.R.82**  
**LOCALIZED PROJECT COORDINATES**  
 N = 1024039.3893  
 E = 1450826.4944

**NCDOT GPS MONUMENT (GPS 2)**  
**LOCALIZED PROJECT COORDINATES**  
 N = 1024050.7600  
 E = 1450930.1660

**-L- STA. 14+50.00**  
**END STATE PROJECT 17BP.11.R.82**  
**LOCALIZED PROJECT COORDINATES**  
 N = 102978.6383  
 E = 1451093.8092

BM #1  
 -L- STA 12+83.65  
 42.39' RIGHT  
 ELEV. = 1490.08'

**NCDOT BASELINE MONUMENT (BL-3)**  
**LOCALIZED PROJECT COORDINATES**  
 N = 1023944.5950  
 E = 1451123.1640

**NCDOT GPS MONUMENT (GPS 1)**  
**LOCALIZED PROJECT COORDINATES**  
 N = 1023997.1020  
 E = 1450740.1100

**NOTES:**

SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

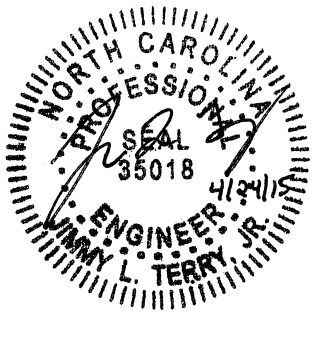

- ⊙ INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.
- PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.
- NETWORK ESTABLISHED FROM NGS ONLINE POSITIONING SERVICE (OPUS)
- SEE GPS CALIBRATION SHEET FOR HORIZONTAL AND VERTICAL COORDINATE VALUES.

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY MULKEY FOR MONUMENT "GPS-2"  
 WITH NAD 83/NSRS 2011 STATE PLANE GRID COORDINATES OF  
 NORTHING: 1024050.7600(±) EASTING: 1450930.1660(±)  
 ELEVATION: 1493.77(±)  
 THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 1.0000628  
 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "GPS-2" TO -L- STATION 11+70.00 IS  
 S 83°44'26.9" W 104.29'  
 ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES  
 VERTICAL DATUM USED IS NAVD 88

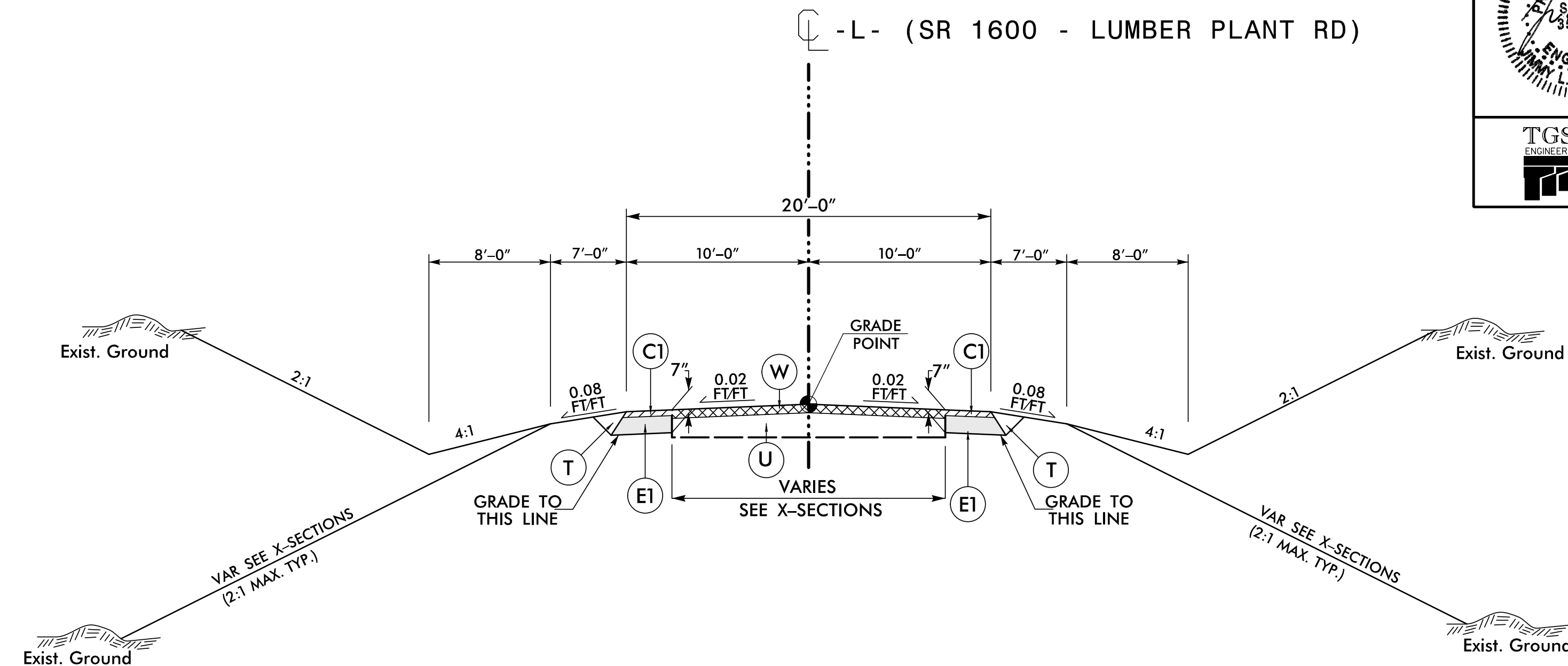
NOTE: DRAWING NOT TO SCALE

6/2/99

PROJECT REFERENCE NO. 17BP11R.82	SHEET NO. 2A-1
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
	
 <b>TGS ENGINEERS</b> 804-C N. LAFAYETTE ST SHELBY, NC 28150 PH (704) 476-0003 CORP. LICENSE NO.: C-0275	

PAVEMENT SCHEDULE	
C1	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 165 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 LESS THAN 1" IN DEPTH OR GREATER THAN 1.5" 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 5 1/2" IN DEPTH.
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAILS THIS SHEET)

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



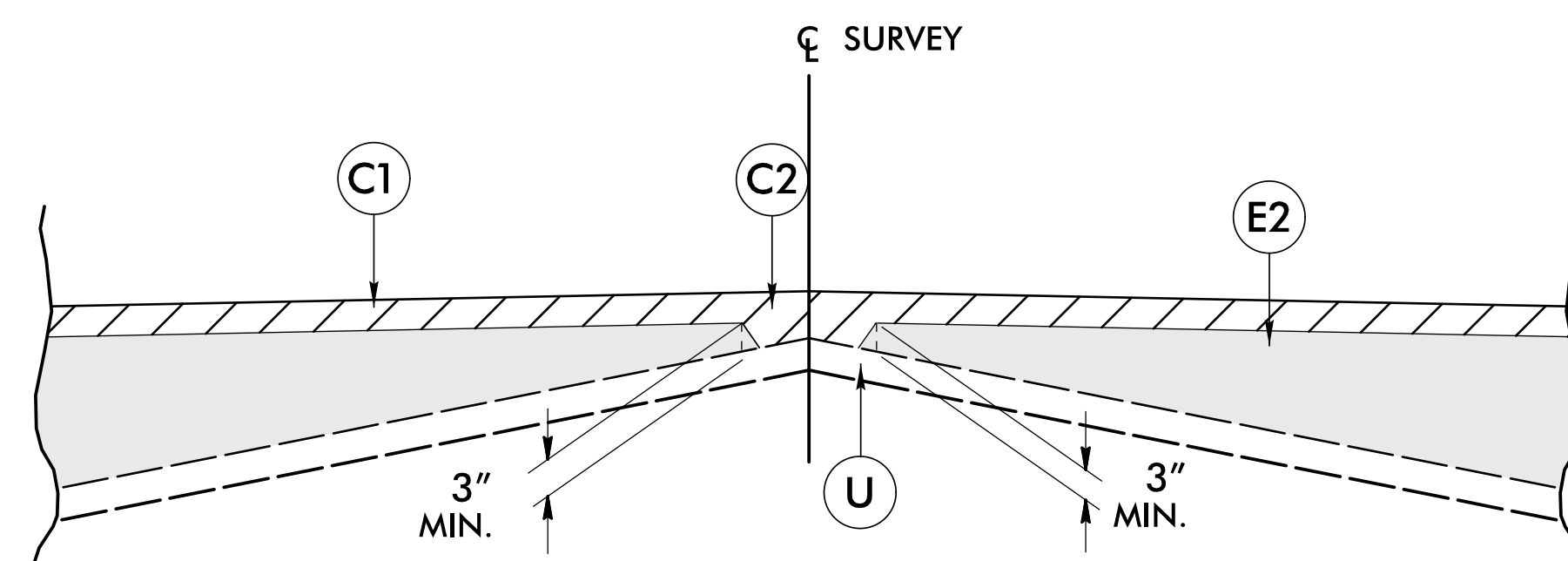
**TYPICAL SECTION NO. 1**

USE TYPICAL SECTION NO. 1  
-L- STA. 12+20.00 TO -L- STA. 14+00.00

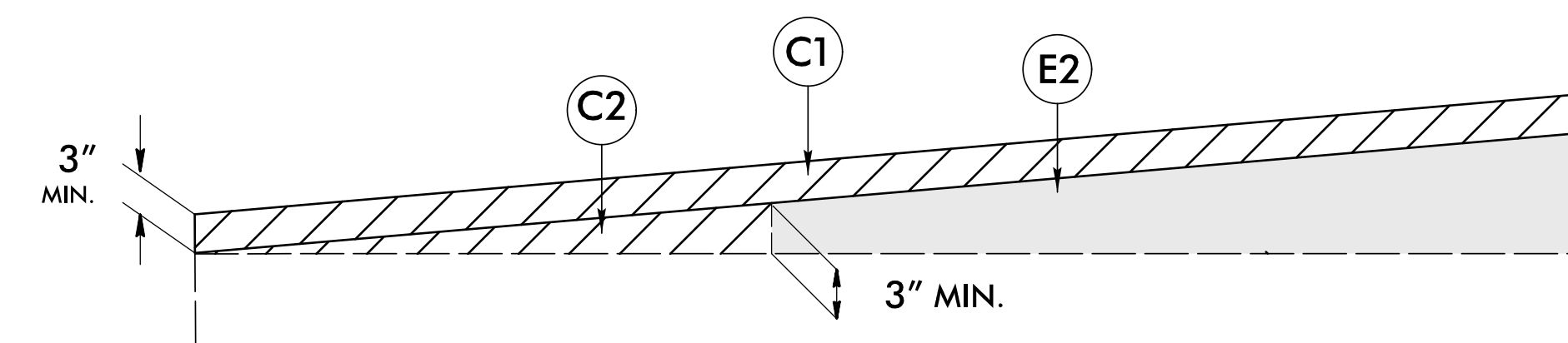
NOTE: TRANSITION BETWEEN EXISTING AND TYP. SECT. NO. 1 AS FOLLOWS:

-L- STA. 11+70.00 TO -L- STA. 12+20.00  
-L- STA. 14+00.00 TO -L- STA. 14+50.00

NOTE: USE FULL DEPTH PAVEMENT FROM -L- STA. 12+75+/- TO 13+75+/-.



Detail Showing Method of Wedging



Wedging Detail For Resurfacing

SYSTEMS DESIGN  
 CONSULTANTS  
 INC.

## STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

### SUMMARY OF EARTHWORK

Station	Station	Uncl. Excav.	Embank. +%	Borrow	Waste
-L- 11+70.00	-L- 14+50.00	20	166	146	
<b>TOTALS:</b>		20	166	146	0
EST. 5% TO REPLACE TOP SOIL ON BORROW PIT				7	
<b>PROJECT TOTALS:</b>		20	166	153	
<b>SAY:</b>		<b>50</b>		<b>170</b>	

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

COMPUTED BY: KPG DATE: 7/21/2014  
 CHECKED BY: DBP DATE: 7/25/2014

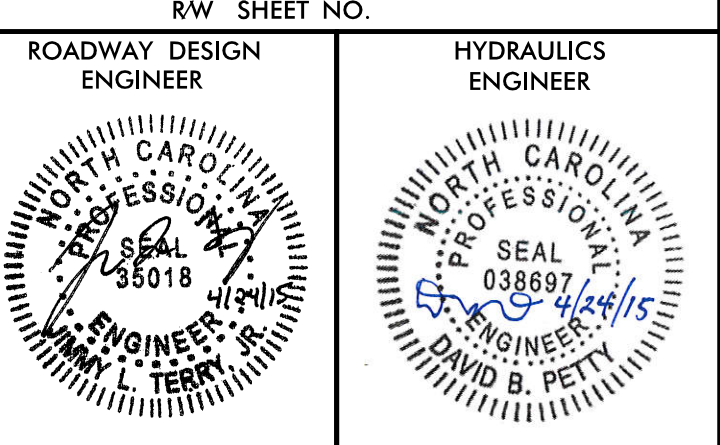
### LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48 INCHES & UNDER)

STATION	LOCATION (L.T, RT, OR C.J)	STRUCTURE NO.	TOP ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	DRAINAGE PIPE (RCP, CSP, CAAP, HDPE, or PVC)							ENDWALLS		QUANTITIES FOR DRAINAGE STRUCTURES	CONCRETE TRANSITIONAL SECTION	FRAME, GRATES, AND HOOD STANDARD 840.03	CATCH BASIN	SIDE DRAIN PIPE ELBOWS NO. & SIZE	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	CONC. COLLARS CL. "B" C.Y. STD. 840.72	PIPE REMOVAL LIN. FT.	REMARKS						
						12"	15"	18"	24"	30"	36"	42"	48"	DO NOT USE RCP										DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE	R.C.P.	C.S.P.	PER EACH (Ø THRU 5.0')
-L- 14+00	LT	0401			N		24																				20		
<b>TOTALS</b>							24																					20	

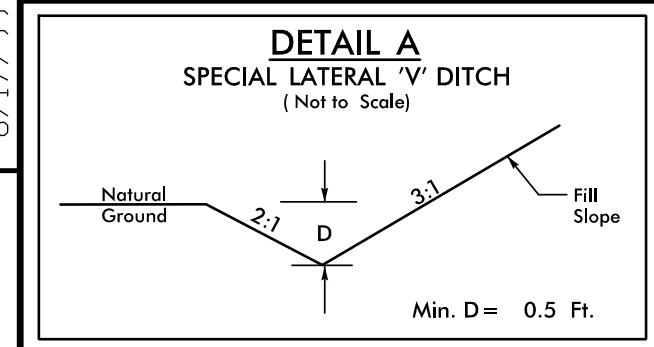
ABBREVIATIONS

C.B. CATCH BASIN  
 N.D.I. NARROW DROP INLET  
 D.I. DROP INLET  
 G.D.I. GRATED DROP INLET  
 (NARROW SLOT)  
 J.B. JUNCTION BOX  
 M.H. MANHOLE  
 T.B.D.I. TRAFFIC BEARING DROP INLET  
 T.B.J.B. TRAFFIC BEARING JUNCTION BOX

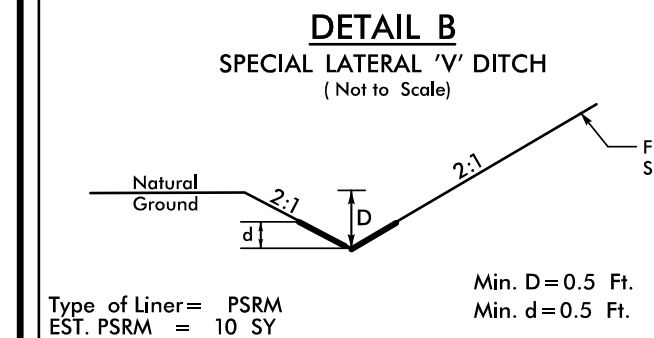




TGS ENGINEERS  
804-C N. LAFAYETTE ST  
SHELBY, NC 28150  
PH (704) 476-0003  
CORP. LICENSE NO.: C-0275



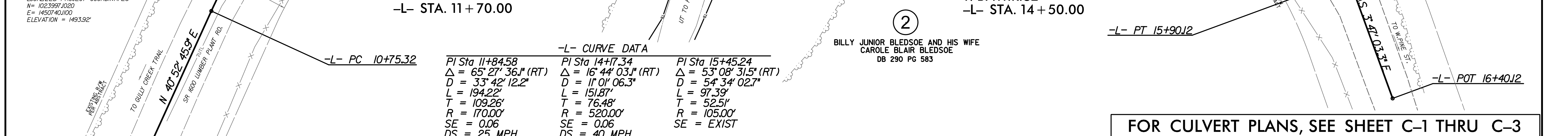
FROM -L- STA. 12+50 TO 13+15 LT  
SEE DITCH GRADE THIS SHEET



FROM -L- STA. 13+40 TO 13+70 LT  
SEE DITCH GRADE THIS SHEET

Type of Limer = PSRM  
EST. PSRM = 10 SY  
Min. D = 0.5 Ft.  
Min. d = 0.5 Ft.

GPS 1  
LOCALIZED PROJECT COORDINATES  
N = 1023991.020  
E = 1450740.100  
ELEVATION = 1493.92'



**BEGIN PROJECT**  
17BP.11.R.82  
-L- STA. 11+70.00

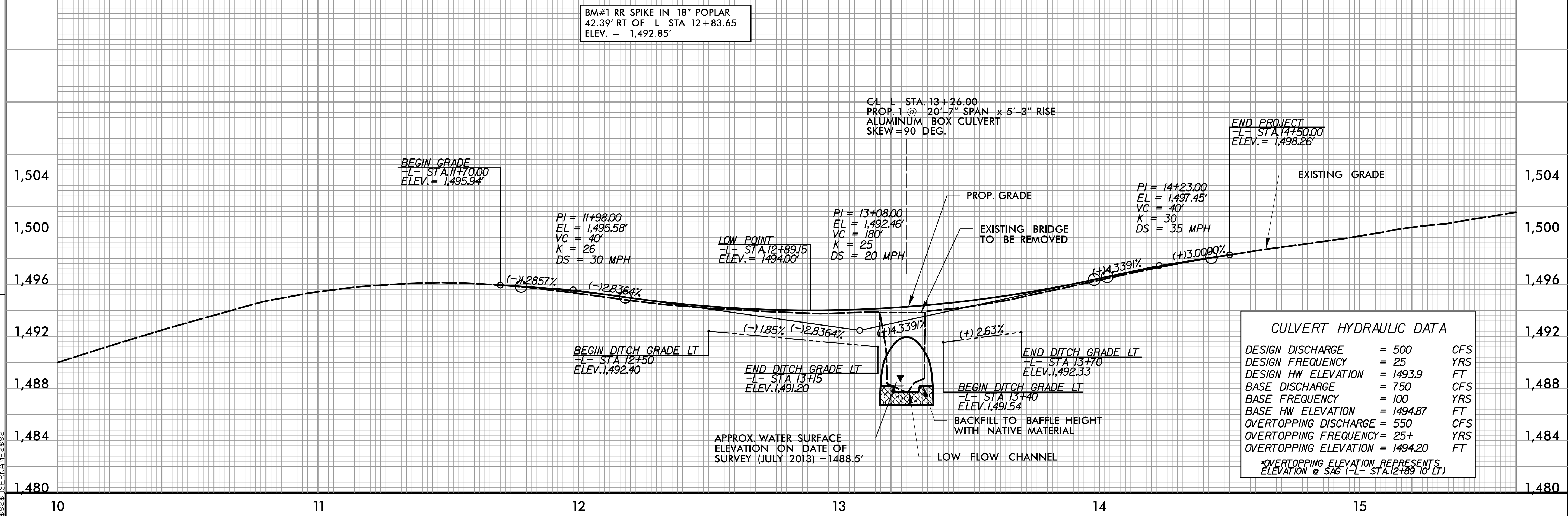
**END PROJECT**  
17BP.11.R.82  
-L- STA. 14+50.00

**-L- CURVE DATA**

PI Sta	Delta	D	L	T	R	SE	DS
11+84.58	65° 27' 36.1" (RT)	33' 42" 12.2"	194.22'	109.26'	170.00'	0.06	25 MPH
14+17.34	16° 44' 03.1" (RT)	11' 01" 06.3"	151.87'	76.48'	520.00'	0.06	40 MPH
15+45.24	53° 08' 31.5" (RT)	54' 34" 02.7"	97.39'	52.51'	105.00'	EXIST	

BM#1 RR SPIKE IN 18" POPLAR  
42.39' RT OF -L- STA 12+83.65  
ELEV. = 1,492.85'

**FOR CULVERT PLANS, SEE SHEET C-1 THRU C-3**



CL -L- STA. 13+26.00  
PROP. 1 @ 20'-7" SPAN x 5'-3" RISE  
ALUMINUM BOX CULVERT  
SKEW = 90 DEG.

**END PROJECT**  
-L- STA. 14+50.00  
ELEV. = 1,498.26'

**BEGIN GRADE**  
-L- STA. 11+70.00  
ELEV. = 1,495.94'

PI = 11+98.00  
EL = 1,495.58'  
VC = 40'  
K = 26  
DS = 30 MPH

**LOW POINT**  
-L- STA. 12+189.15  
ELEV. = 1,494.00'

PI = 13+08.00  
EL = 1,492.46'  
VC = 180'  
K = 25  
DS = 20 MPH

PI = 14+23.00  
EL = 1,497.45'  
VC = 40'  
K = 30  
DS = 35 MPH

**BEGIN DITCH GRADE LT**  
-L- STA 12+50  
ELEV. 1,492.40

**END DITCH GRADE LT**  
-L- STA 13+15  
ELEV. 1,491.20

**END DITCH GRADE LT**  
-L- STA 13+70  
ELEV. 1,492.33

**BEGIN DITCH GRADE LT**  
-L- STA 13+40  
ELEV. 1,491.54

APPROX. WATER SURFACE  
ELEVATION ON DATE OF  
SURVEY (JULY 2013) = 1488.5'

**CULVERT HYDRAULIC DATA**

DESIGN DISCHARGE	= 500	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 1493.9	FT
BASE DISCHARGE	= 750	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 1494.87	FT
OVERTOPPING DISCHARGE	= 550	CFS
OVERTOPPING FREQUENCY	= 25+	YRS
OVERTOPPING ELEVATION	= 1494.20	FT

\*OVERTOPPING ELEVATION REPRESENTS  
ELEVATION @ SAG (-L- STA 12+189 10' LT)

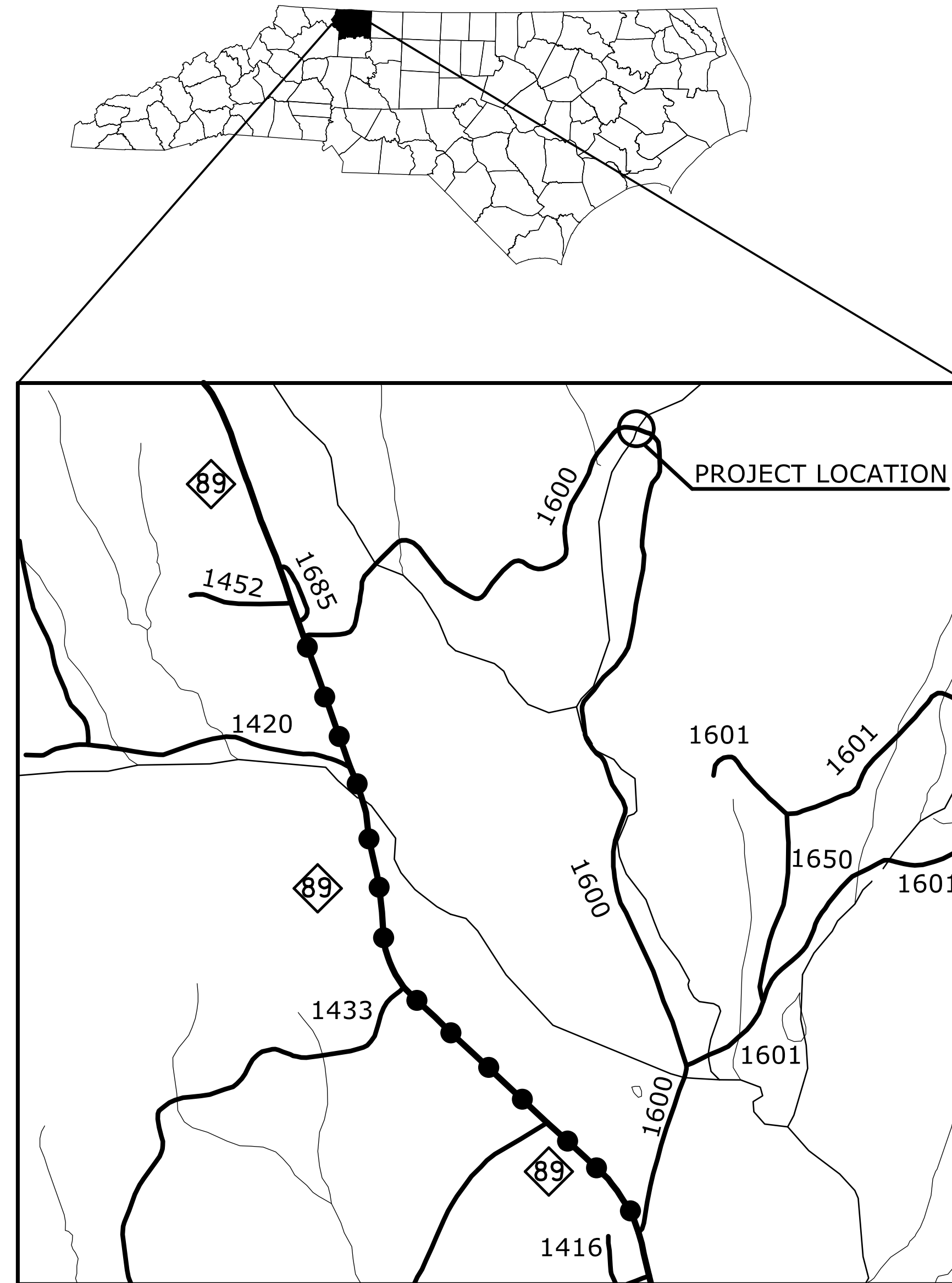
REVISIONS

8/17/99

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**TRANSPORTATION MANAGEMENT PLAN**

**SURRY COUNTY**

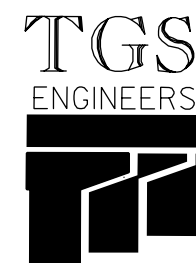
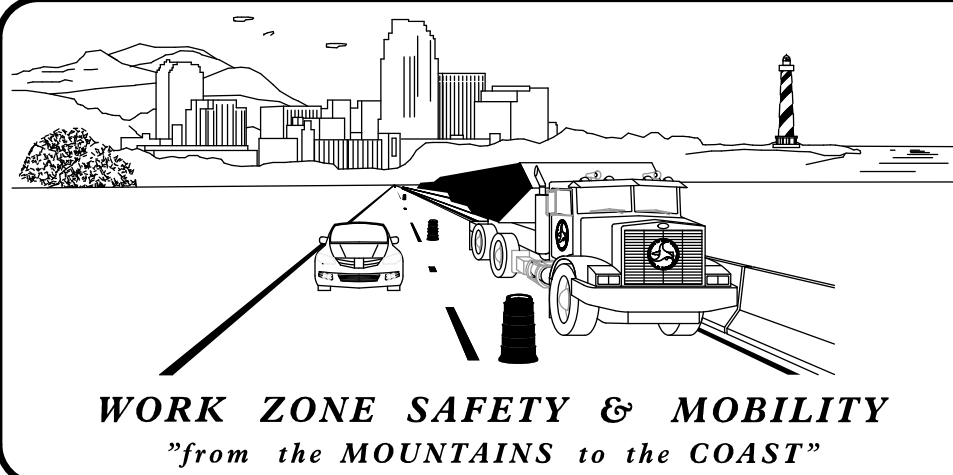


VICINITY MAP

●●●●●●●● OFFSITE DETOUR

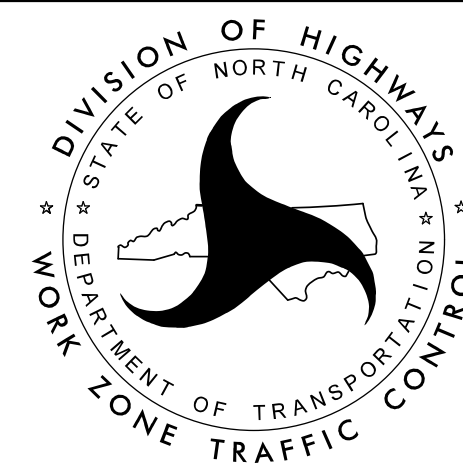
NCDOT CONTACT INFORMATION:  
Phone: 336 903 9220 Fax: 336 607 4549

JAMI GUYNN  
Division Bridge Project Manager



TGS ENGINEERS  
804-C N. LAFAYETTE ST.  
SHELBY, NC 28150  
PH (704) 476-0003  
CORP. LICENSE NO.: C-0275

JIMMY L. TERRY, PE PROJECT ENGINEER  
TRAVIS COOK, EI DESIGN TECHNICIAN



**INDEX OF SHEETS**

SHEET NO.	TITLE
TMP-1	TITLE SHEET AND INDEX OF SHEETS
TMP-1A	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS AND LEGEND
TMP-1B	TRANSPORTATION OPERATIONS PLAN: (MANAGEMENT STRATEGIES AND GENERAL NOTES)
TMP-1C	SPECIAL SIGN DESIGN
TMP-2	OVERVIEW AND PHASING
TMP-3	OFFSITE DETOUR LOCATION AND BARRICADE PLACEMENT
PMP-1	FINAL PAVEMENT MARKING PLAN AND SCHEDULE

SHEET NO.

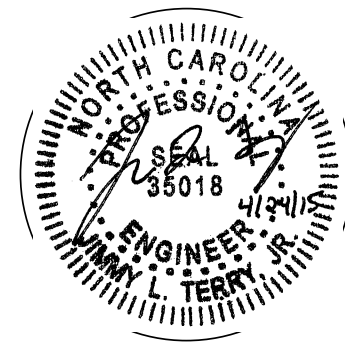
TMP-1

PROJECT: 17BP.11.R.82

CONTRACT:

APPROVED: \_\_\_\_\_  
DATE: \_\_\_\_\_

SEAL



\$\$\$\$\$SYSTIME\$\$\$\$\$  
\$\$\$\$\$ADON\$\$\$\$\$  
\$\$\$\$\$SERNAME\$\$\$\$\$



## 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:

<u>STD. NO.</u>	<u>TITLE</u>
1101.01	WORK ZONE ADVANCE WARNING SIGNS
1101.03	TEMPORARY ROAD CLOSURES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1130.01	DRUM
1145.01	BARRICADES
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO-LANE AND MULTI-LANE ROADWAYS
1264.01	OBJECT MARKERS - TYPES
1264.02	OBJECT MARKERS - INSTALLATION

## LEGEND

### GENERAL

- DIRECTION OF TRAFFIC FLOW
- DIRECTION OF PEDESTRIAN TRAFFIC FLOW
- EXIST. PVMT.
- NORTH ARROW
- PROPOSED PVMT.
- TEMP. SHORING (LOCATION PURPOSES ONLY)

- WORK AREA
- REMOVAL
- USER DEFINED (IF NEEDED)
- USER DEFINED (IF NEEDED)

### SIGNALS

- EXISTING
- PROPOSED
- TEMPORARY

### PAVEMENT MARKINGS

- EXISTING LINES
- TEMPORARY LINES

### TRAFFIC CONTROL DEVICES

- BARRICADE (TYPE III)
- CONE
- DRUM SKINNY DRUM TUBULAR MARKER
- TEMPORARY CRASH CUSHION
- FLASHING ARROW BOARD
- FLAGGER
- LAW ENFORCEMENT
- TRUCK MOUNTED ATTENUATOR (TMA)
- CHANGEABLE MESSAGE SIGN

### TEMPORARY SIGNING

- PORTABLE SIGN
- STATIONARY SIGN
- STATIONARY OR PORTABLE SIGN

### PAVEMENT MARKERS

- CRYSTAL/CRYSTAL
- CRYSTAL/RED
- YELLOW/YELLOW

### PAVEMENT MARKING SYMBOLS

- PAVEMENT MARKING SYMBOLS

\$\$\$ SYSTEM \$\$\$  
 \$\$\$ DATE: 11/15/11 \$\$\$  
 \$\$\$ USER: JLM \$\$\$  
 \$\$\$ PROJECT: 17BP.11.R.82 \$\$\$  
 \$\$\$ SHEET: TMP-1A \$\$\$  
 \$\$\$ END \$\$\$

**TGS ENGINEERS**  
 804-C N. LAFAYETTE ST.  
 SHELBY, NC 28150  
 PH (704) 476 0003  
 CORP. LICENSE NO.: C-0275

APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_

**ROADWAY STANDARD  
DRAWINGS & LEGEND**

**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 UNDESIRED 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 TWENTY ONE (21) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION.

**SIGNING**

- B) INSTALL ADVANCE WORK ZONE WARNING SIGNS WHEN WORK IS WITHIN 40 FT FROM THE EDGE OF TRAVEL LANE AND NO MORE THAN THREE (3) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.
- C) PROVIDE PERMANENT SIGNING.
- D) PROVIDE SIGNING AND DEVICES REQUIRED TO CLOSE THE ROAD ACCORDING TO THE ROADWAY STANDARD DRAWINGS AND TRAFFIC CONTROL PLANS.

PROVIDE SIGNING REQUIRED FOR THE OFF-SITE DETOUR ROUTE AS SHOWN IN THE TRAFFIC CONTROL PLANS.

- E) 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.

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

**TRAFFIC CONTROL DEVICES**

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

**PAVEMENT MARKINGS AND MARKERS**

- H) INSTALL PAVEMENT MARKINGS AND PAVEMENT MARKERS ON THE FINAL SURFACE AS SHOWN IN THE PAVEMENT MARKING PLAN.
- I) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.

**MANAGEMENT STRATEGIES**

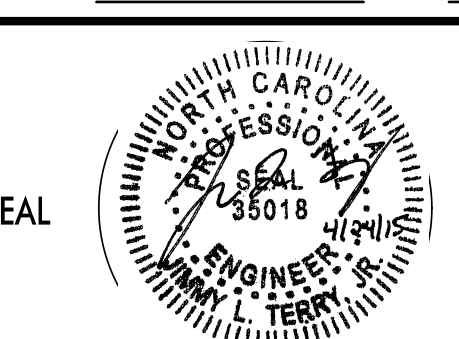
DURING CONSTRUCTION OF PROPOSED STRUCTURE, SR 1600 (LUMBER PLANT RD) WILL BE CLOSED TO THROUGH TRAFFIC. LUMBER PLANT RD TRAFFIC WILL BE MAINTAINED ON THE FOLLOWING OFFSITE DETOUR: NC 89

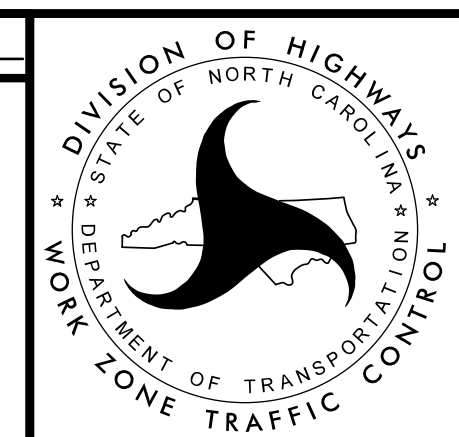
**LOCAL NOTES**

ACCESS TO ALL DRIVEWAYS MUST BE PROVIDED AT ALL TIMES WITHIN THE PROJECT LIMITS.

\$\$\$\$\$ SYSTEMS\$\$\$\$\$  
\$\$\$\$\$ DESIGN\$\$\$\$\$  
\$\$\$\$\$ DRAWING\$\$\$\$\$  
\$\$\$\$\$ FILE\$\$\$\$\$  
\$\$\$\$\$ SERIAL\$\$\$\$\$  
\$\$\$\$\$ NAME\$\$\$\$\$  
\$\$\$\$\$

**TGS ENGINEERS**  
804-C W. LAFAYETTE ST.  
SHELBY, NC 28150  
PH (704) 476 0003  
CORP. LICENSE NO.: C-0275

APPROVED: _____	DATE: _____
SEAL	
	



**TRANSPORTATION OPERATIONS PLAN**

<p>SIGN NUMBER: DET-1      BACKG COLOR: Fluorescent Orange          TYPE: STATIONARY      COPY COLOR: Black          QUANTITY: SEE PLANS          SIGN WIDTH: 3'-6"          HEIGHT: 3'-6"          TOTAL AREA: 12.3 Sq.Ft.          BORDER TYPE: INSET          RECESS: 0.75"          WIDTH: 0.75"          RADII: 3"          NO. Z BARS:          LENGTH:</p>	<table border="1"> <tr> <th>SYMBOL</th> <th>X</th> <th>Y</th> <th>WID</th> <th>HT</th> </tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </table> <p>MAT'L: 0.080" (2.0 mm) ALUMINUM</p>	SYMBOL	X	Y	WID	HT																																				<p>DESIGN BY: TBE      CHECKED BY: JLT      DATE: 8/1/2014          PROJECT ID: 17BP.11.R.82      DIV: 11</p>
SYMBOL	X	Y	WID	HT																																						

BORDER  
R=3"  
TH=0.75"  
IN=0.75"

Panel Style: Traffic Control.ssi  
M.U.T.C.D.: 2009 Edition

Spacing Factor is 1 unless specified otherwise

USE NOTES: 1,2

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

**LETTER POSITIONS**

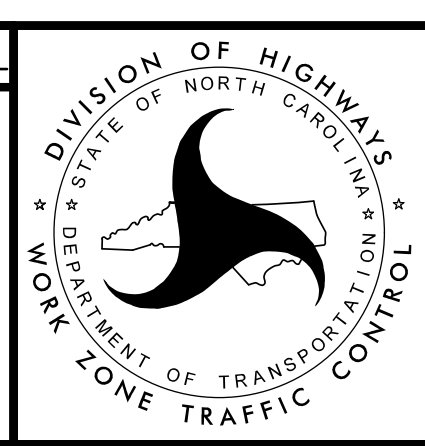
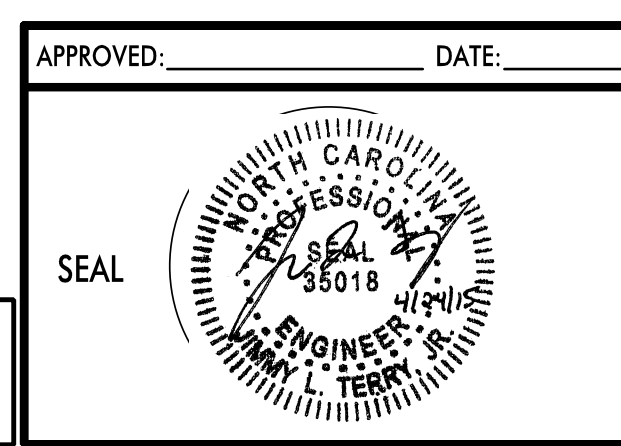
**Letter locations are panel edge to lower left corner**

Letter	X	Y	WID	HT	Series/Size
L	5.9	10.5	16.1	22.2	D 2000
U	10.5	18.2	24.2	29.2	D 2000
M	16.1	21	27		D 2000
B	22.2				D 2000
E	27.3				D 2000
R	32				D 2000
P	9.1	14.1	18.2	24.2	D 2000
L	14.1	21	27		D 2000
A	18.2				D 2000
N	24.2				D 2000
T	29.2				D 2000
R	11	15.9	21	27	D 2000
O	15.9				D 2000
A	21				D 2000
D	27				D 2000

FILENAME: LUMBER PLANT RD SIGN      NORTH CAROLINA D.O.T. SIGN DETAIL

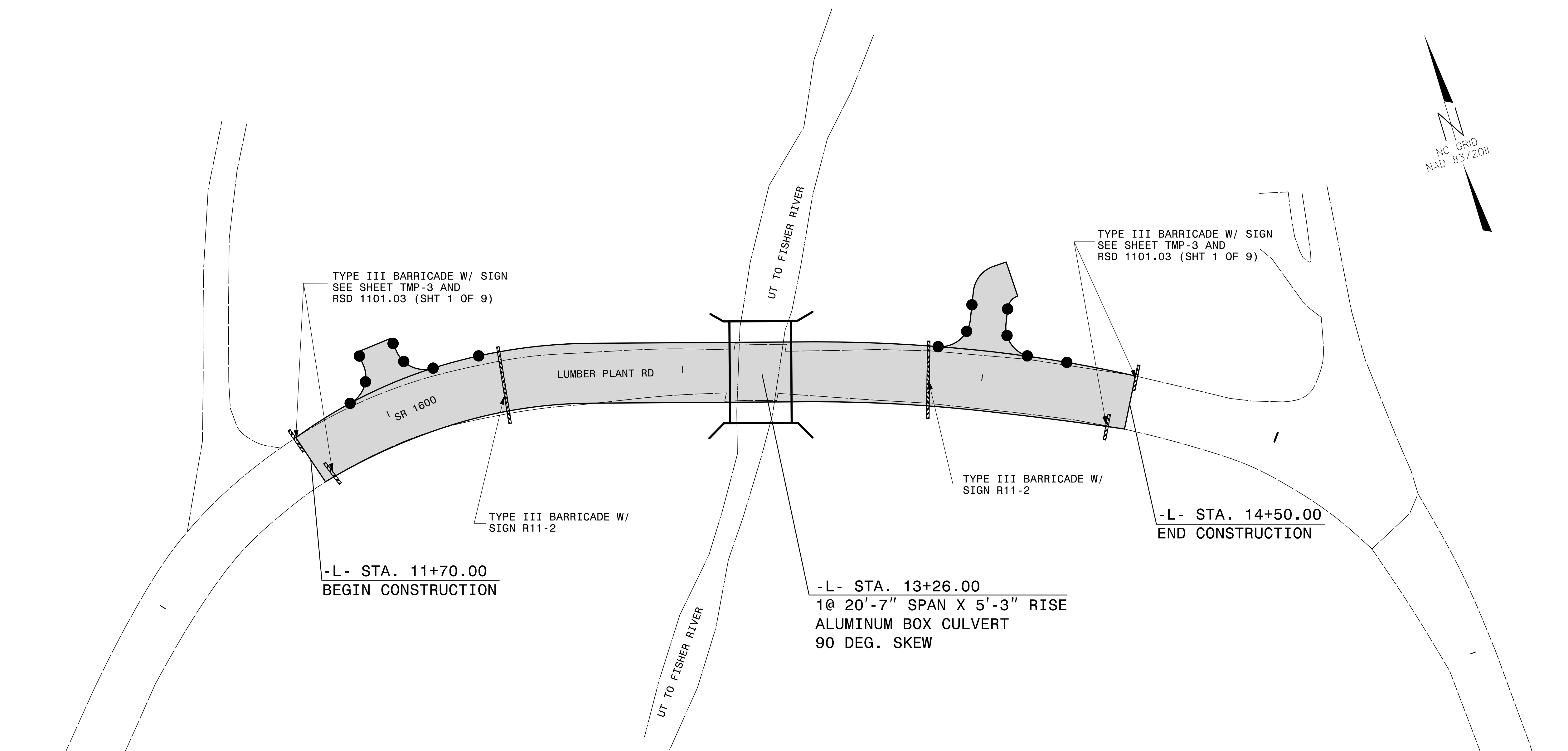
\*\*\*\*\*  
 SYSTEM TIME \*\*\*\*\*  
 \*\*\*\*\*  
 USER NAME \*\*\*\*\*  
 \*\*\*\*\*

TGS ENGINEERS  
 804-C N. LAFAYETTE ST  
 SHELBY, NC 28150  
 PH (704) 476-0003  
 CORP. LICENSE NO. C-0275



SPECIAL  
SIGN DESIGN





### PHASING NOTES

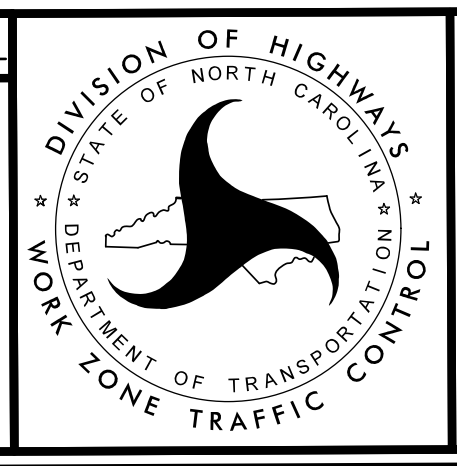
- STEP 1: INSTALL ALL DETOUR ROUTE SIGNS AS SHOWN ON SHEET TMP-3.
- STEP 2: INSTALL TYPE III BARRICADES AND SIGNS AND CLOSE SR 1600 (LUMBER PLANT RD) TO TRAFFIC AS SHOWN IN ROADWAY STANDARD DRAWING 1101.03 (SHEET 1 OF 9) AND ON SHEET TMP-2 AND TMP-3. PLACE TRAFFIC ON DETOUR ROUTE.
- STEP 3: DEMOLISH AND REMOVE THE EXISTING BRIDGE AND CONSTRUCT THE NEW CULVERT ON UT TO FISHER RIVER AT -L- STA. 13+26.00. CONSTRUCT SR 1600 (LUMBER PLANT ROAD) FROM -L- STA. 11+70.00 TO STA. 14+50.00, INCLUDING THE FINAL LAYER OF SURFACE COURSE.  
  
NOTE: MAINTAIN ACCESS TO ALL DRIVEWAYS AT ALL TIMES DURING CONSTRUCTION
- STEP 4: PLACE FINAL PAVEMENT MARKINGS FROM -L- STA 11+70.00 TO 14+50.00 AS INDICATED ON SHEET PMP-1.
- STEP 5: REMOVE BARRICADES, SIGNS, AND ALL OTHER TRAFFIC CONTROL DEVICES AND OPEN SR 1600 (LUMBER PLANT ROAD) TO TRAFFIC IN FINAL PATTERN.

\$\$\$\$\$SYTIME\$\$\$\$\$  
\$\$\$\$\$USERNAME\$\$\$\$\$

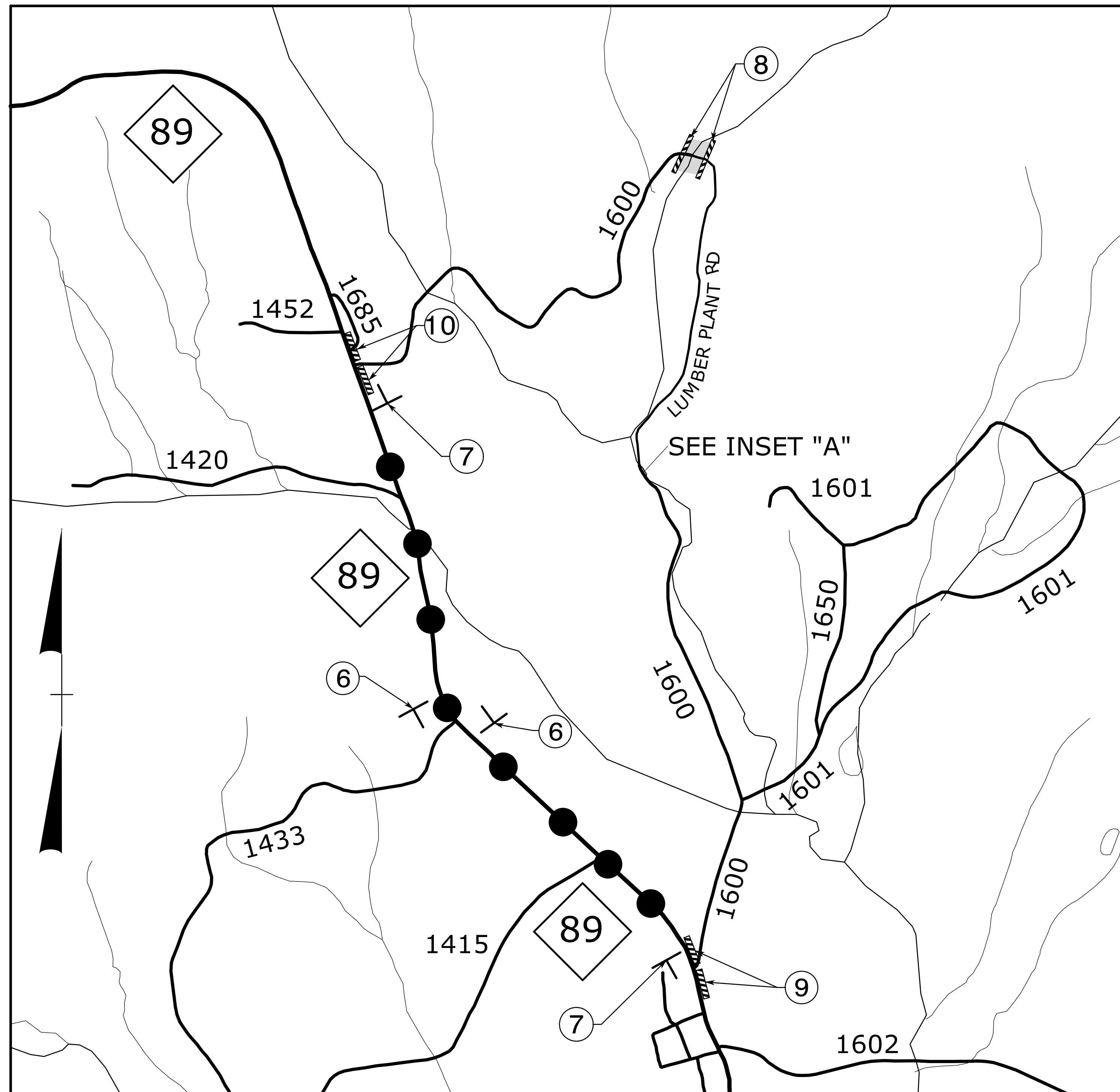
**TGS ENGINEERS**  
804-C N. LAFAYETTE ST  
SHELBY, NC 28150  
PH (704) 476-0003  
CORP. LICENSE NO.: C-0275

APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_

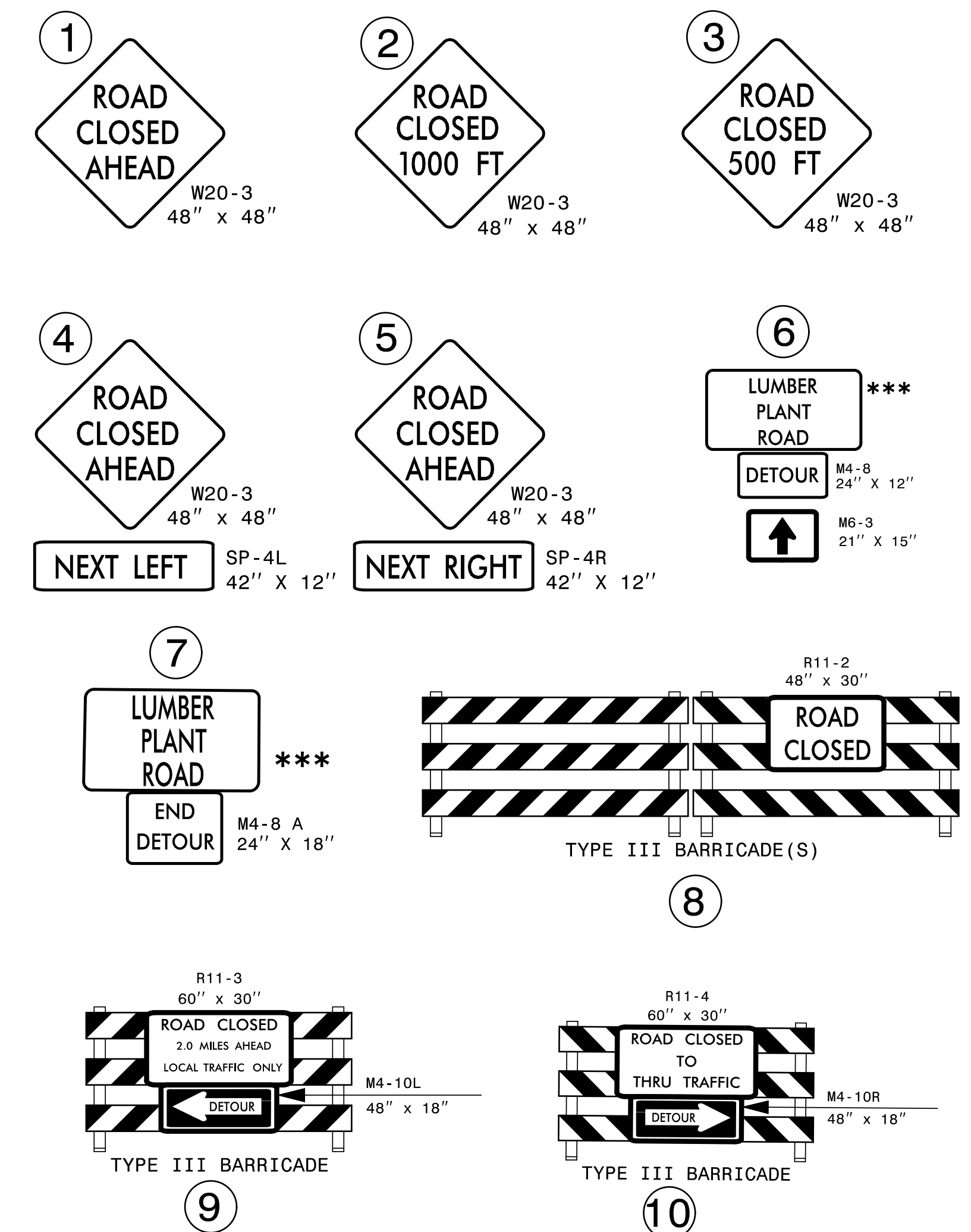
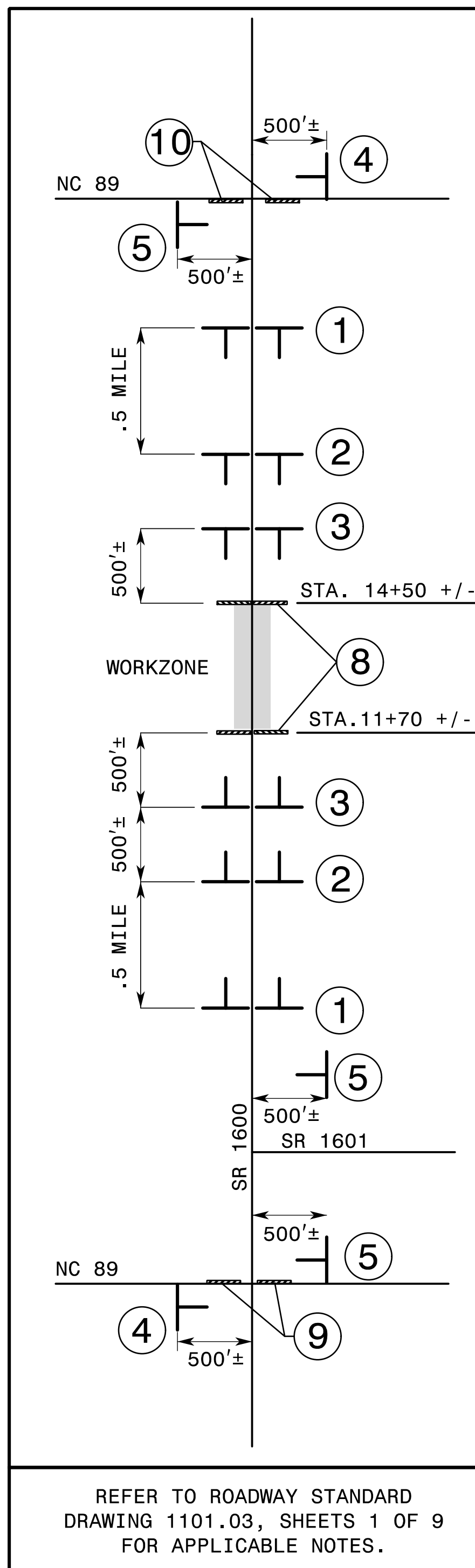
SEAL



## OVERVIEW AND PHASING



INSET "A"



CONSTRUCTION AREA

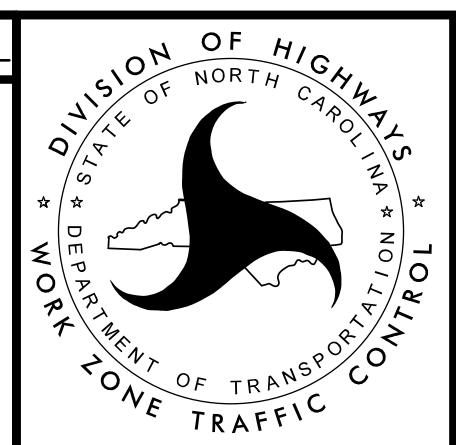
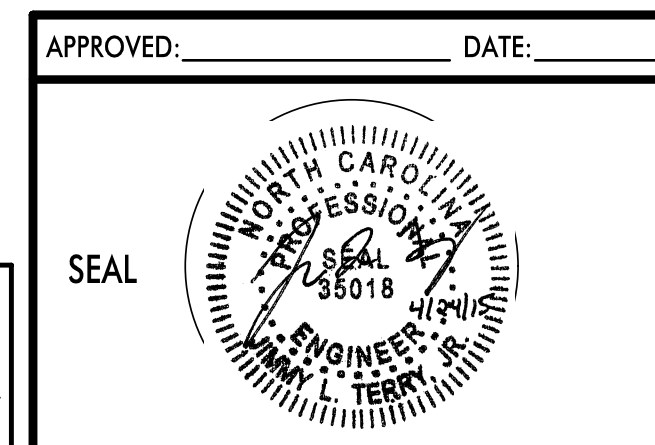
DETOUR ROUTE

\*\*\*SEE SHEET TMP-1C FOR SIGN DESIGN

REFER TO ROADWAY STANDARD  
DRAWING 1101.03, SHEETS 1 OF 9  
FOR APPLICABLE NOTES.

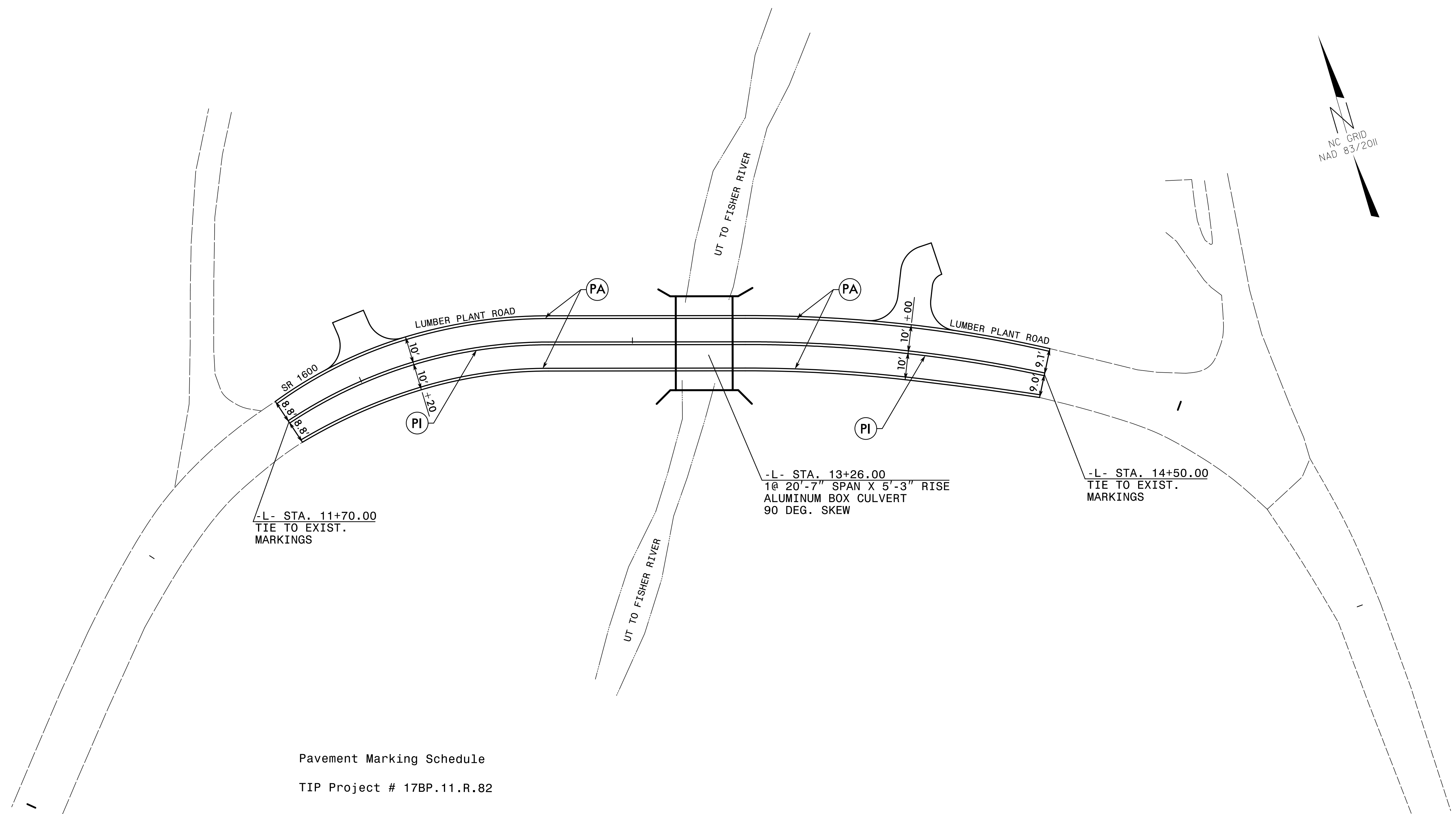
\$\$\$\$\$ SYSTEM TIME\$\$\$\$\$  
\$\$\$\$\$ USER: JLDON\$\$\$\$\$  
\$\$\$\$\$ USER: JLDON\$\$\$\$\$  
\$\$\$\$\$ USER: JLDON\$\$\$\$\$

TGS ENGINEERS  
804-C N. LAFAYETTE ST.  
SHELBY, NC 28150  
PH (704) 476 0003  
CORP. LICENSE NO.: C-0275



APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_

OFFSITE DETOUR ROUTE  
AND BARRICADE PLACEMENT



-L- STA. 11+70.00  
TIE TO EXIST.  
MARKINGS

-L- STA. 13+26.00  
1 @ 20'-7" SPAN X 5'-3" RISE  
ALUMINUM BOX CULVERT  
90 DEG. SKEW

-L- STA. 14+50.00  
TIE TO EXIST.  
MARKINGS

Pavement Marking Schedule  
TIP Project # 17BP.11.R.82

SYMB	DESCRIPTION	PAY ITEM	QUANTITY	TOTAL
	FINAL PAVEMENT MARKINGS			
	PAINT (4")			
PA	WHITE EDGELINE (2X)		1120 LF	
PI	YELLOW DOUBLE CENTER (2X)		1120 LF	
		TOTAL		2240 LF

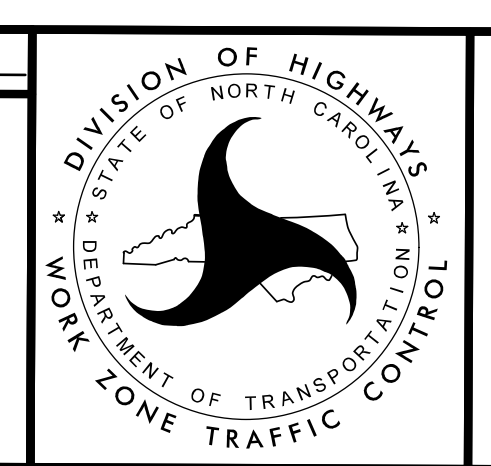
NOTE: FOR EACH PAINT PAVEMENT MARKING ITEM, 1X IMPLIES A SINGLE APPLICATION, 2X IMPLIES TWO APPLICATIONS, AND 3X IMPLIES THREE APPLICATIONS.

SYSTEMS  
 DESIGN  
 SERVICES

**TGS ENGINEERS**  
 304-C N. LAFAYETTE ST.  
 SHELBY, NC 28150  
 PH (704) 476 0003  
 CORP. LICENSE NO. C-0275

APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_

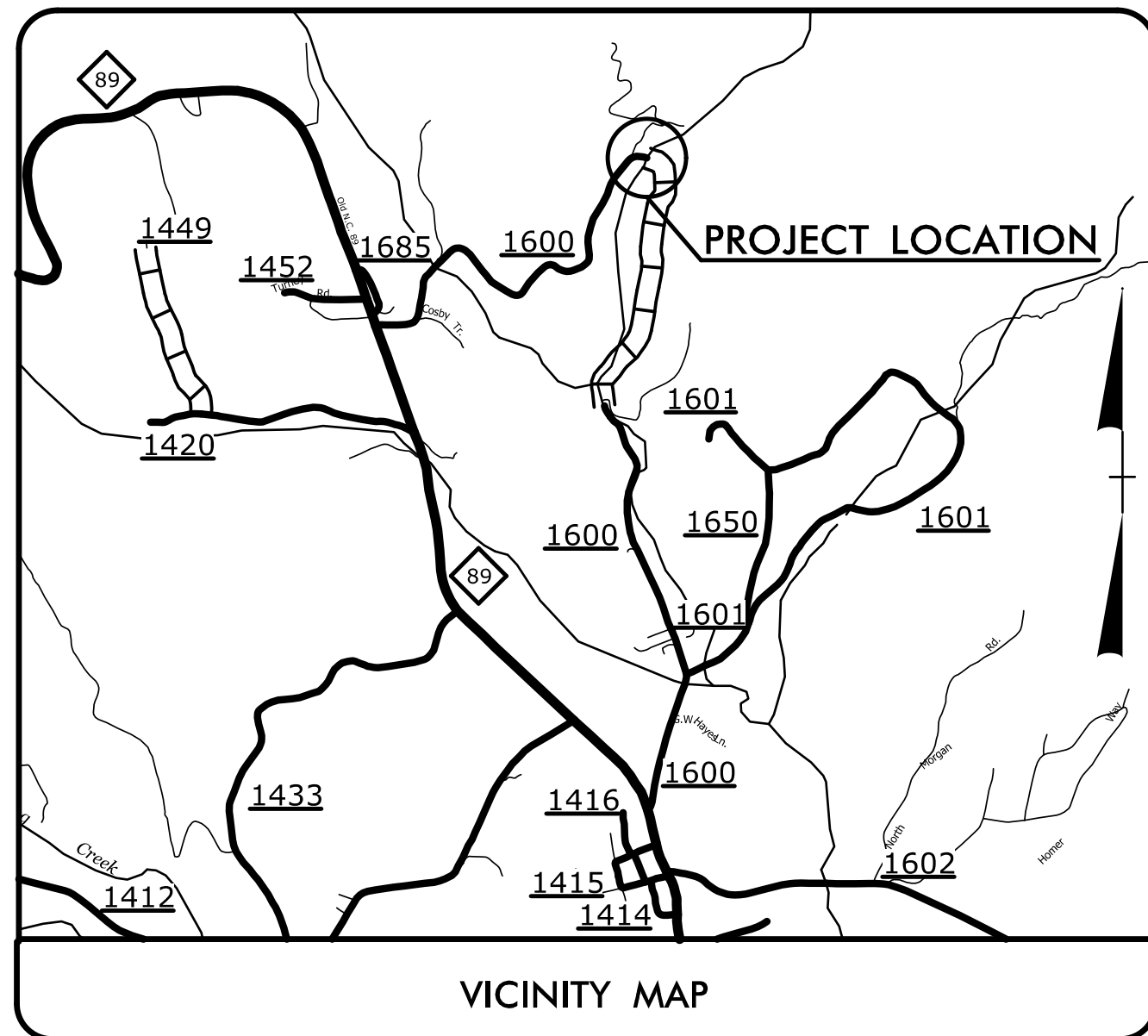
SEAL



**FINAL PAVEMENT  
MARKING PLAN  
AND SCHEDULE**



**PROJECT: 17BP.11.R.82**

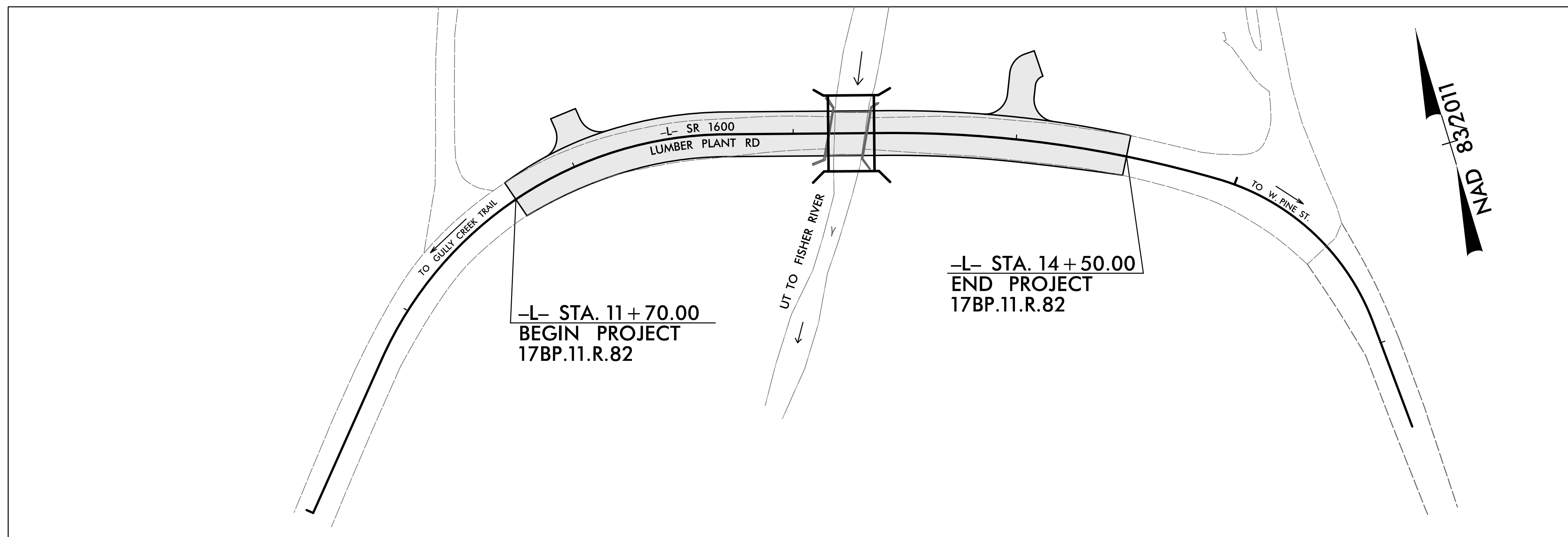


STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS  
PLAN FOR PROPOSED  
HIGHWAY EROSION CONTROL

SURRY COUNTY

**LOCATION: BRIDGE NO. 850298 OVER UT TO FISHER RIVER  
ON SR 1600 (LUMBER PLANT RD)**

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



STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.11.R.82	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
17BP.11.R.82		CONST.	

**EROSION AND SEDIMENT CONTROL MEASURES**

Std. #	Description	Symbol
1630.03	Temporary Silt Ditch	TD
1630.05	Temporary Diversion	TD
1605.01	Temporary Silt Fence	III III III
1606.01	Special Sediment Control Fence	▲▲▲▲▲
1622.01	Temporary Berms and Slope Drains	▲▲▲▲▲
1630.02	Silt Basin Type B	▨
1633.01	Temporary Rock Silt Check Type-A	▨
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	▨
1633.02	Temporary Rock Silt Check Type-B	▨
	Wattle / Coir Fiber Wattle	▨
	Wattle / Coir Fiber Wattle with Polyacrylamide (PAM)	▨
1634.01	Temporary Rock Sediment Dam Type-A	▨
1634.02	Temporary Rock Sediment Dam Type-B	▨
1635.01	Rock Pipe Inlet Sediment Trap Type-A	U
1635.02	Rock Pipe Inlet Sediment Trap Type-B	U
1630.04	Stilling Basin	▨
1630.06	Special Stilling Basin	▨
	Rock Inlet Sediment Trap:	
1632.01	Type A	A
1632.02	Type B	B
1632.03	Type C	C
	Skimmer Basin	▨
	Tiered Skimmer Basin	▨
	Infiltration Basin	▨

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

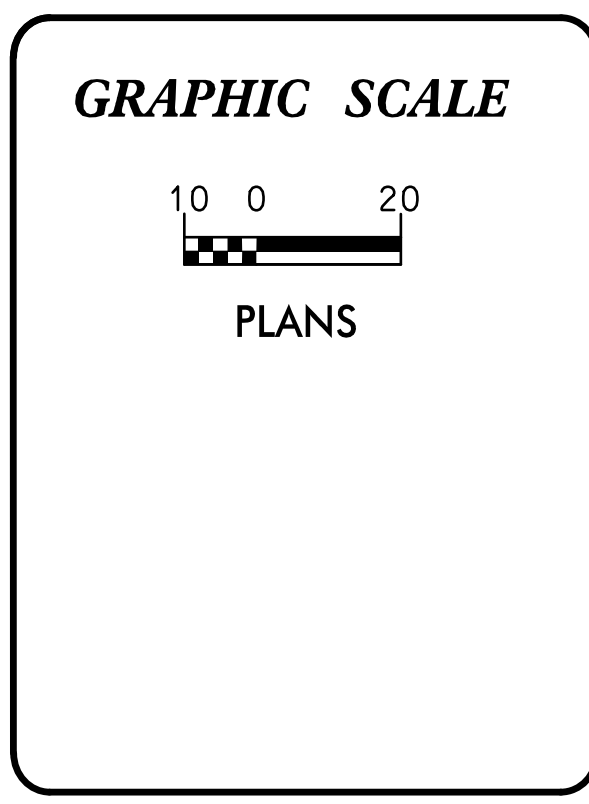
THIS PROJECT HAS  
BEEN DESIGNED TO  
SENSITIVE WATERSHED  
STANDARDS.

HIGH QUALITY WATER(S) EXIST  
ON THIS PROJECT

High Quality Water Zone(s) Exist  
From Sta. 11+70.00  
to Sta. 14+50.00  
Refer To E. C. Special Provisions  
for Special Considerations.

ENVIRONMENTALLY  
SENSITIVE AREA(S) EXIST  
ON THIS PROJECT

Refer To E. C. Special Provisions  
for Special Considerations.



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.

TGS  
ENGINEERS  
Plans Prepared By:  
TGS ENGINEERS  
804-C N. LAFAYETTE ST.  
SHELBY, NC 28150  
PH (704) 476-0003

2012 STANDARD SPECIFICATIONS

LETTING DATE:

NCDOT DIVISION II  
NCDOT Contact:  
JAMI GUYNN  
DIVISION BRIDGE  
PROJECT MANAGER

ANDREW H. COCHRANE, EI  
PROJECT ENGINEER  
LEVEL III CERTIFICATION  
NUMBER 3015

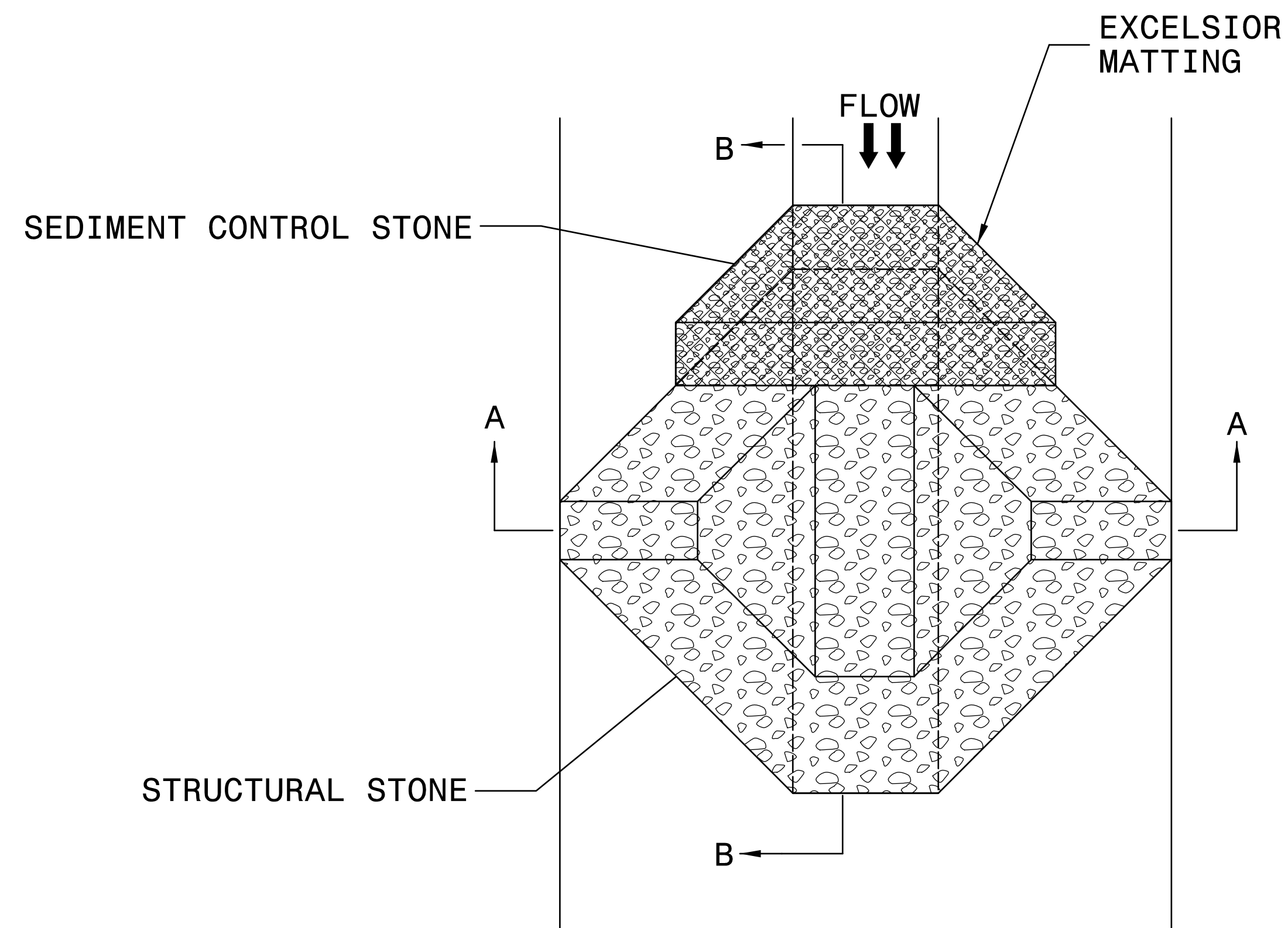
Roadway Standard Drawings

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	

PROJECT REFERENCE NO. 17BP11.R.82	SHEET NO. EC-2
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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



PLAN

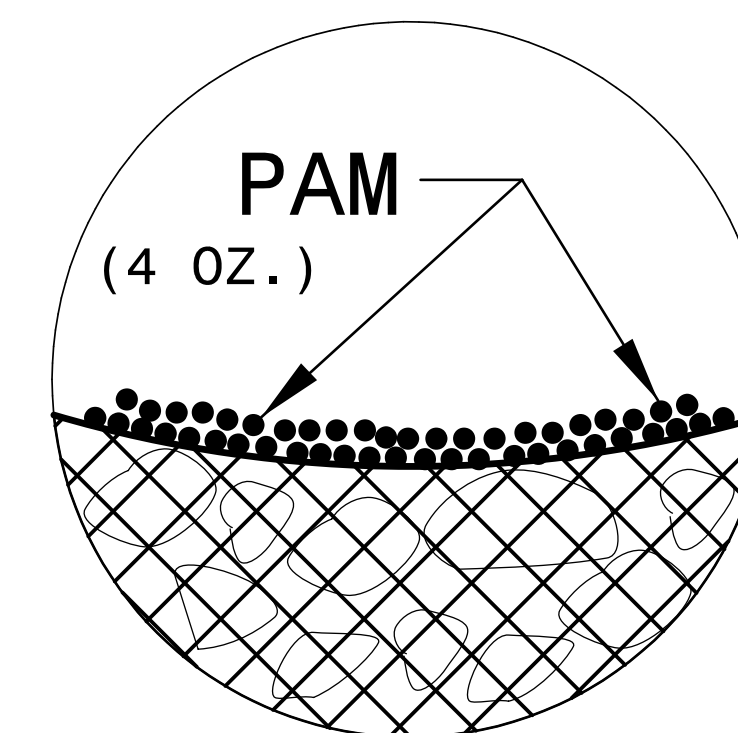
**NOTES:**

INSTALL TEMPORARY ROCK SILT CHECK TYPE A IN ACCORDANCE WITH ROADWAY STANDARD DRAWING NO. 1633.01.

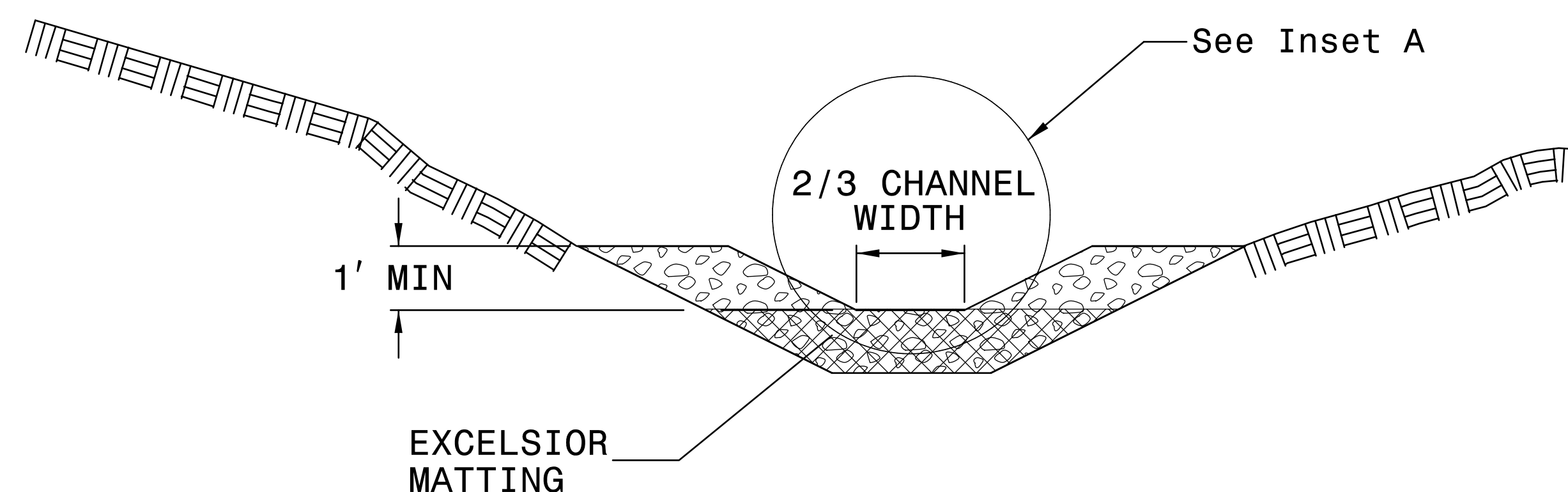
USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

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.

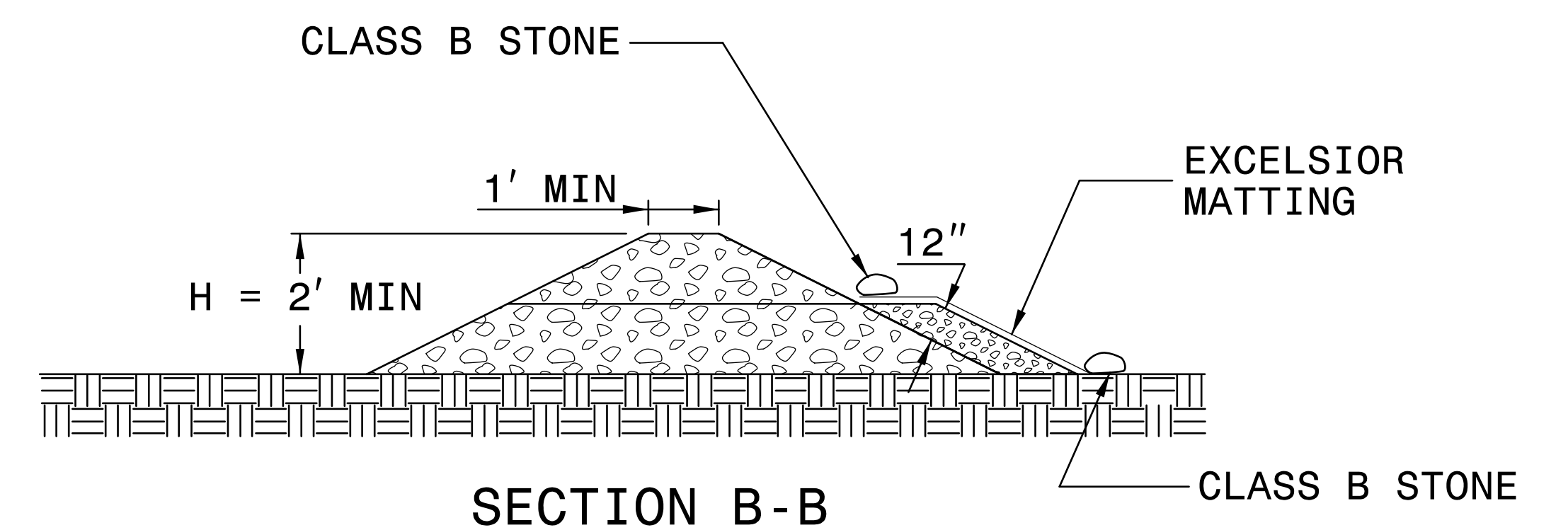
INITIALLY APPLY 4 OUNCES OF POLYACRYLAMIDE (PAM) TO TOP OF MATTING SECTION AND AFTER EVERY RAINFALL EVENT THAT EQUALS OR EXCEEDS 0.50 INCHES.



INSET A



SECTION A-A



SECTION B-B

NOT TO SCALE

DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA

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PROJECT REFERENCE NO. <i>17BPJLR.82</i>	SHEET NO. <i>EC-3</i>
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

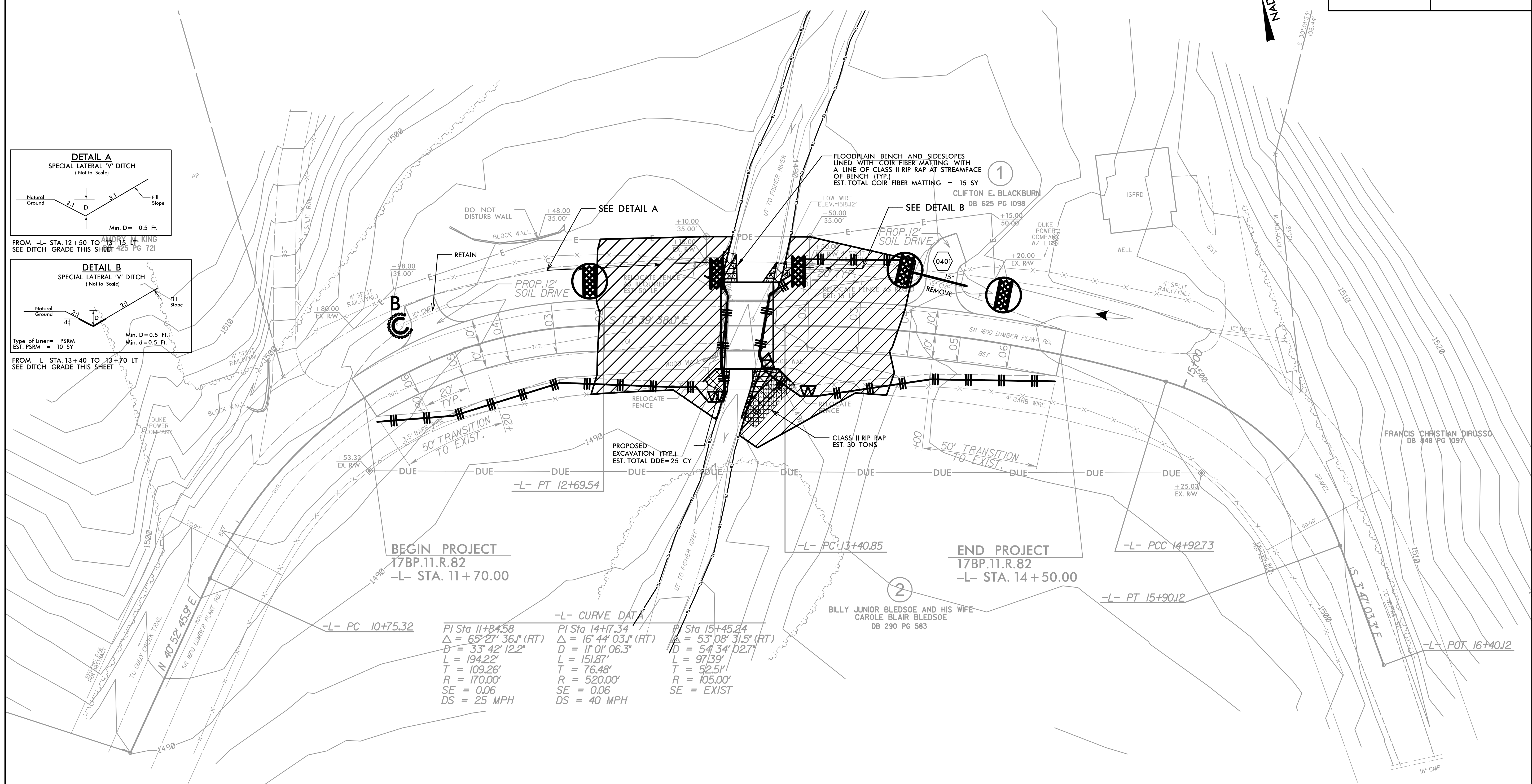
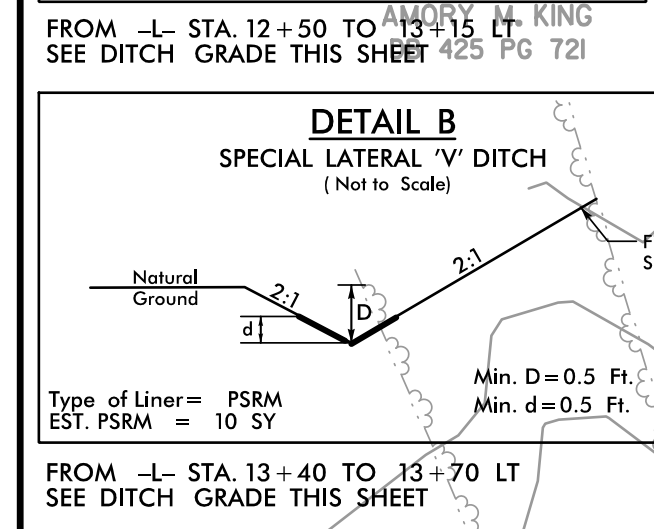
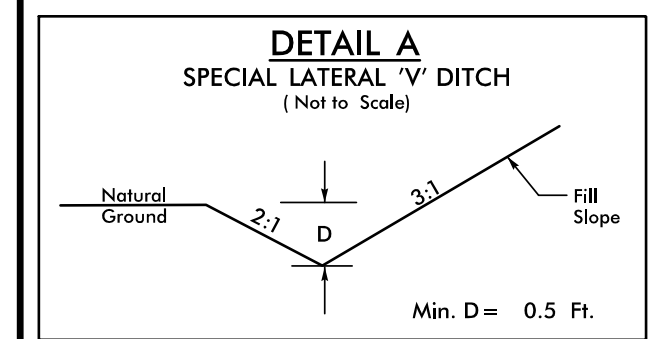
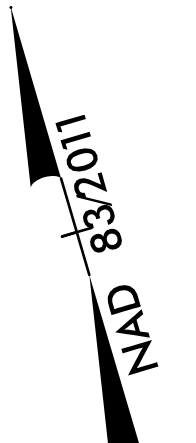
# ***SOIL STABILIZATION TIMEFRAMES***

<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.



**SURRY COUNTY  
BRIDGE #850298**

PROJECT REFERENCE NO. 17BP.11.R.82	SHEET NO. EC-4/CONST.4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



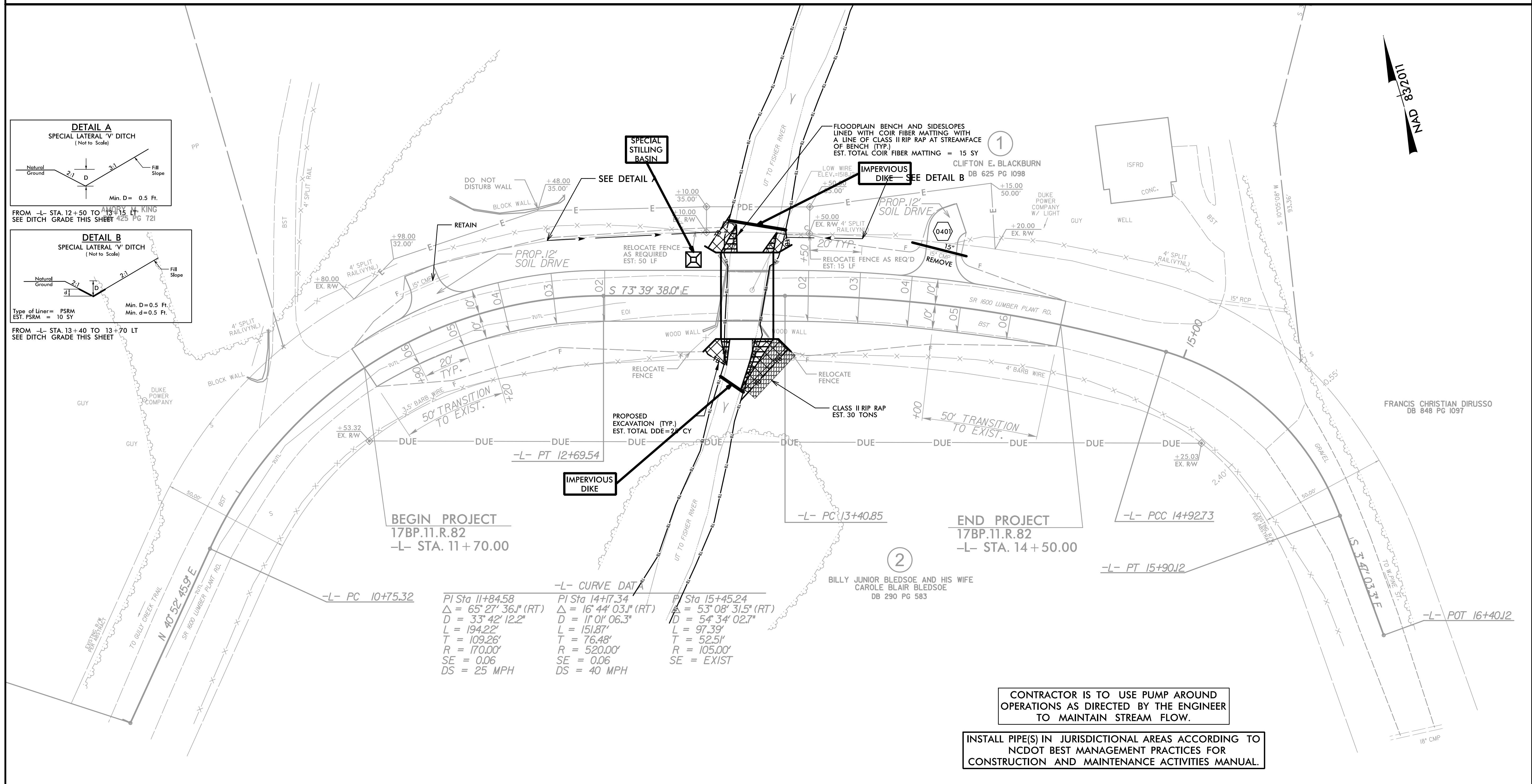
**ENVIRONMENTALLY SENSITIVE AREA  
SEE PROJECT SPECIAL PROVISIONS**

PROJECT REFERENCE NO. 17BP.11.R.82	SHEET NO. EC-5/CONST.4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

# CULVERT CONSTRUCTION SEQUENCE STA. 13+26 -L-

## PHASING

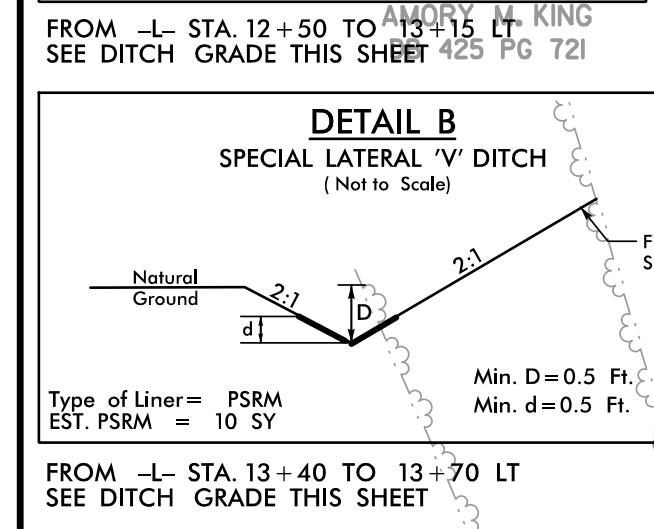
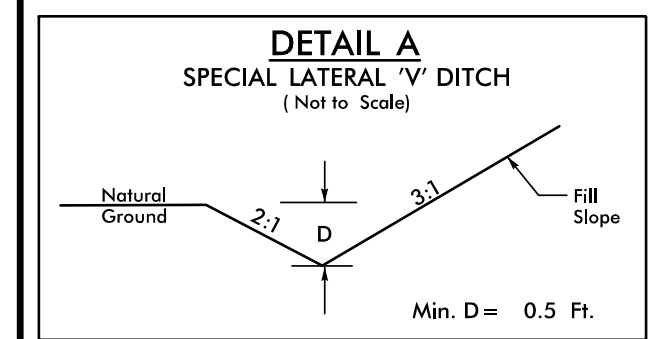
1. Close SR 1600 (Lumber Plant Road) to traffic as shown in traffic management plans.
2. Install perimeter erosion control devices as shown on EC-4.
3. Construct impervious dikes to restrain stream and begin pump around operations.
4. Remove existing bridge over Unnamed Tributary to Fisher River.
5. Install proposed 20'-7" Span x 5'-3" Rise Aluminum Box Culvert with aluminum headwalls and wingwalls.
6. Complete any necessary Inlet/Outlet channel improvements.
7. Remove impervious dikes and divert water into new culvert.
8. Complete roadway construction.



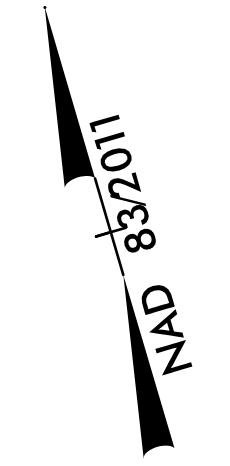
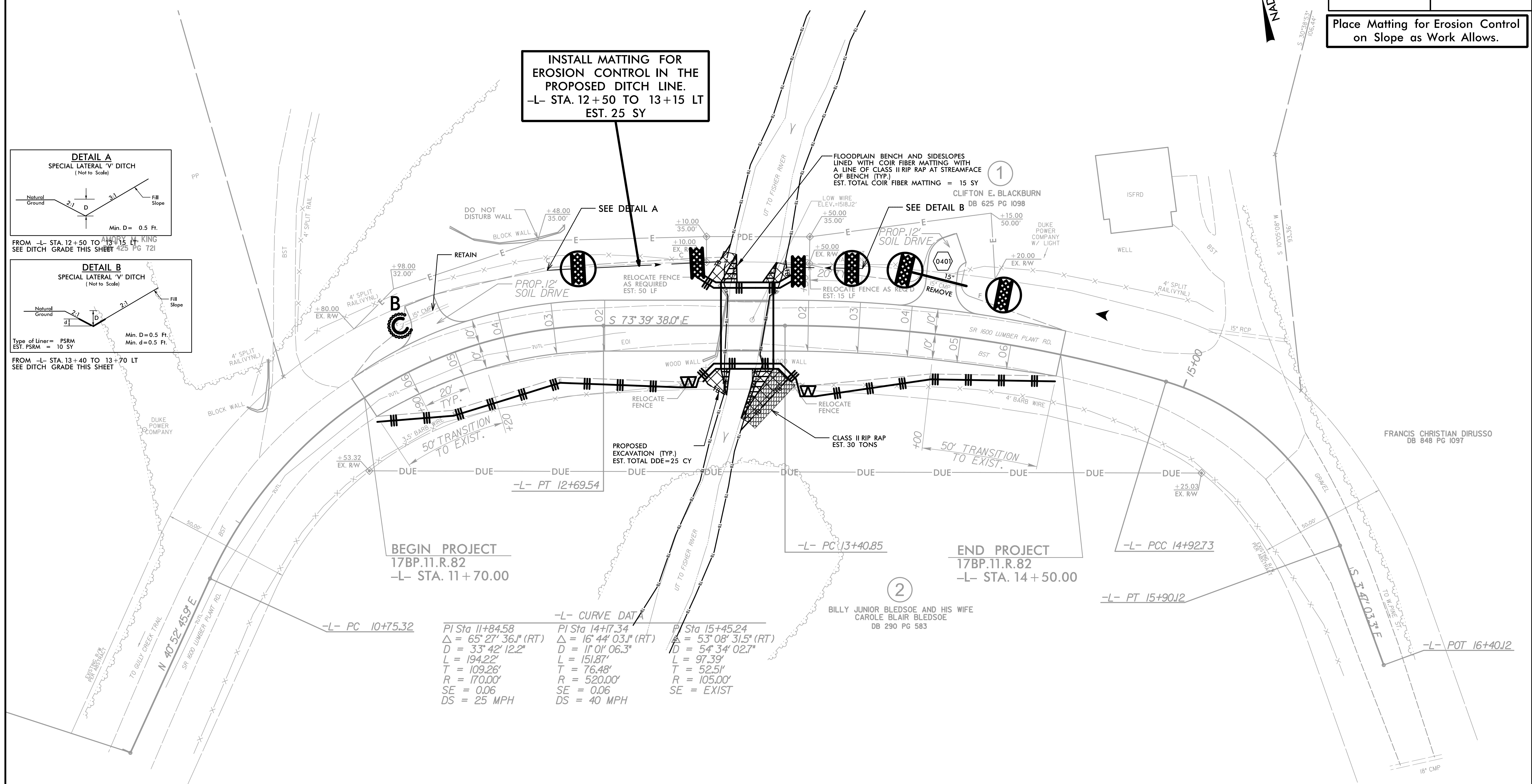
**SURRY COUNTY  
BRIDGE #850298**

PROJECT REFERENCE NO. 17BP.11.R.82	SHEET NO. EC-6/CONST.4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

Place Matting for Erosion Control on Slope as Work Allows.



**INSTALL MATTING FOR  
EROSION CONTROL IN THE  
PROPOSED DITCH LINE.**  
-L- STA. 12+50 TO 13+15 LT  
EST. 25 SY



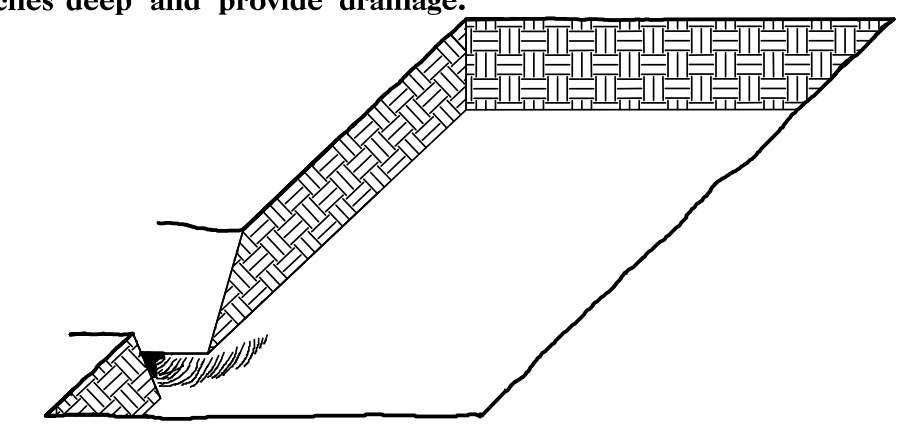


## PLANTING DETAILS

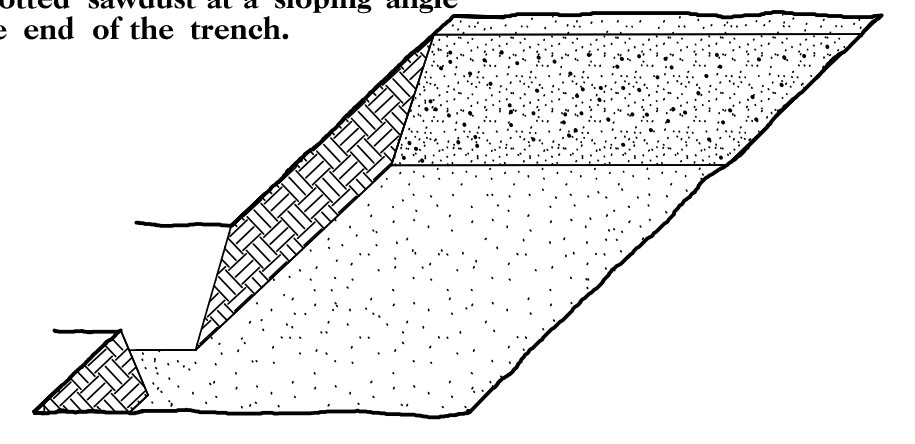
### SEEDLING / LINER BAREROOT PLANTING DETAIL

#### HEALING IN

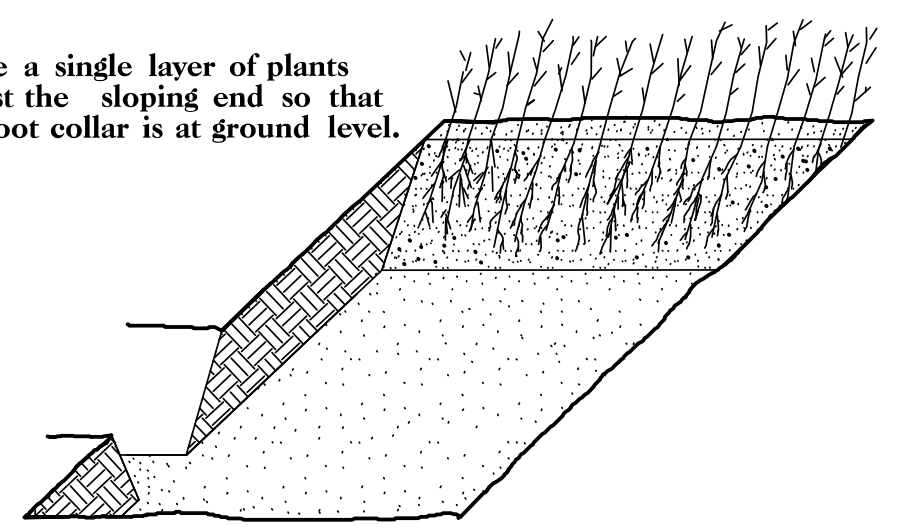
1. Locate a healing-in site in a shady, well protected area.
2. Excavate a flat bottom trench 12 inches deep and provide drainage.



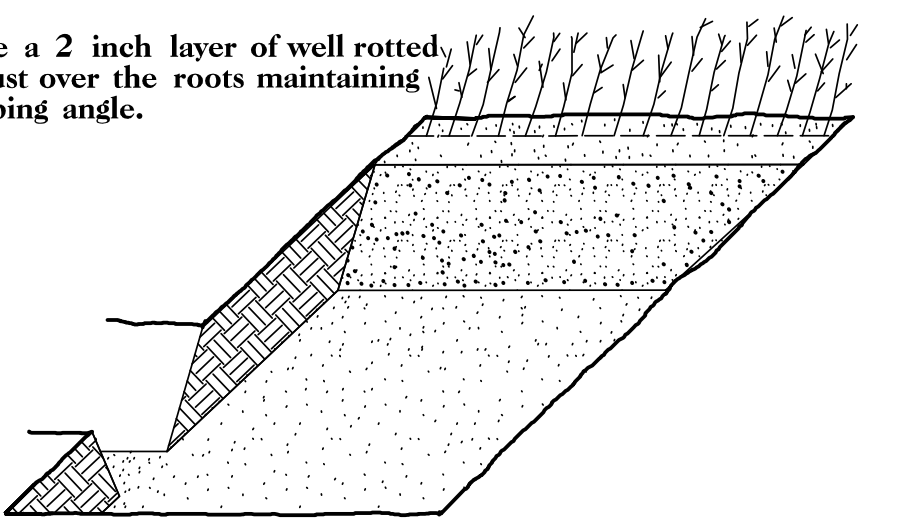
3. Backfill the trench with 2 inches well rotted sawdust. Place a 2 inch layer of well rotted sawdust at a sloping angle at one end of the trench.



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

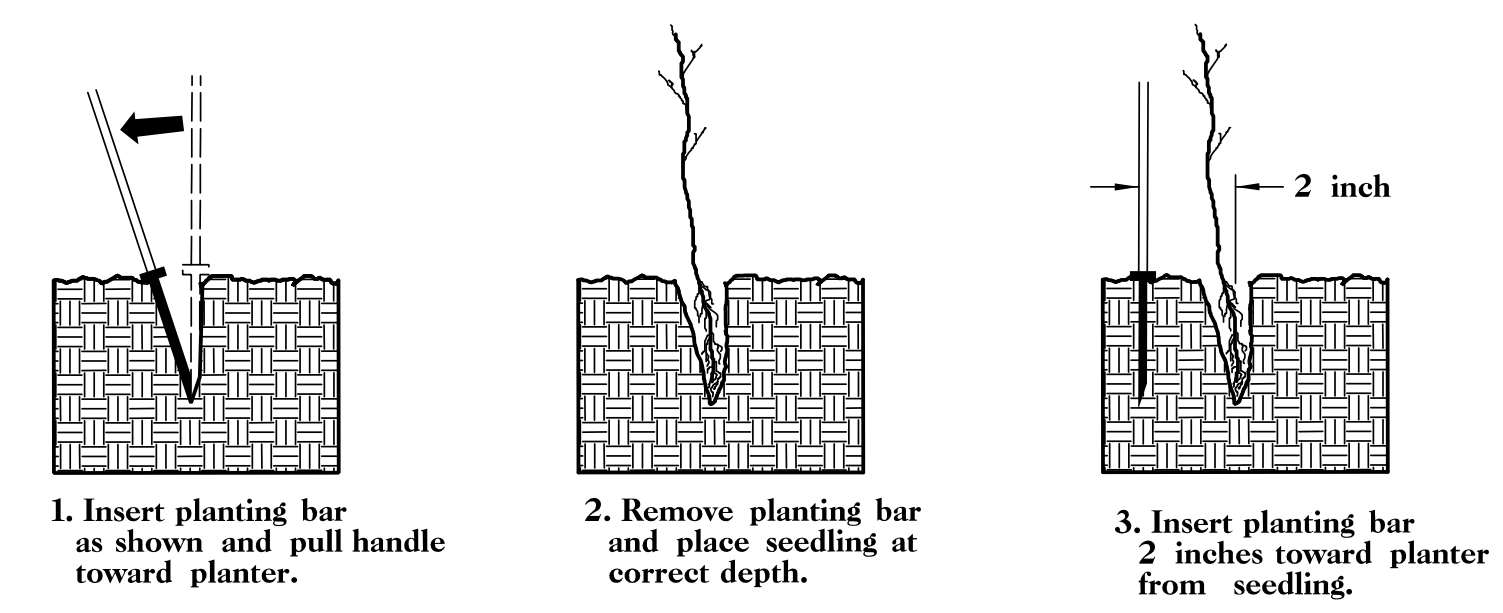


5. Place a 2 inch layer of well rotted sawdust over the roots maintaining a sloping angle.

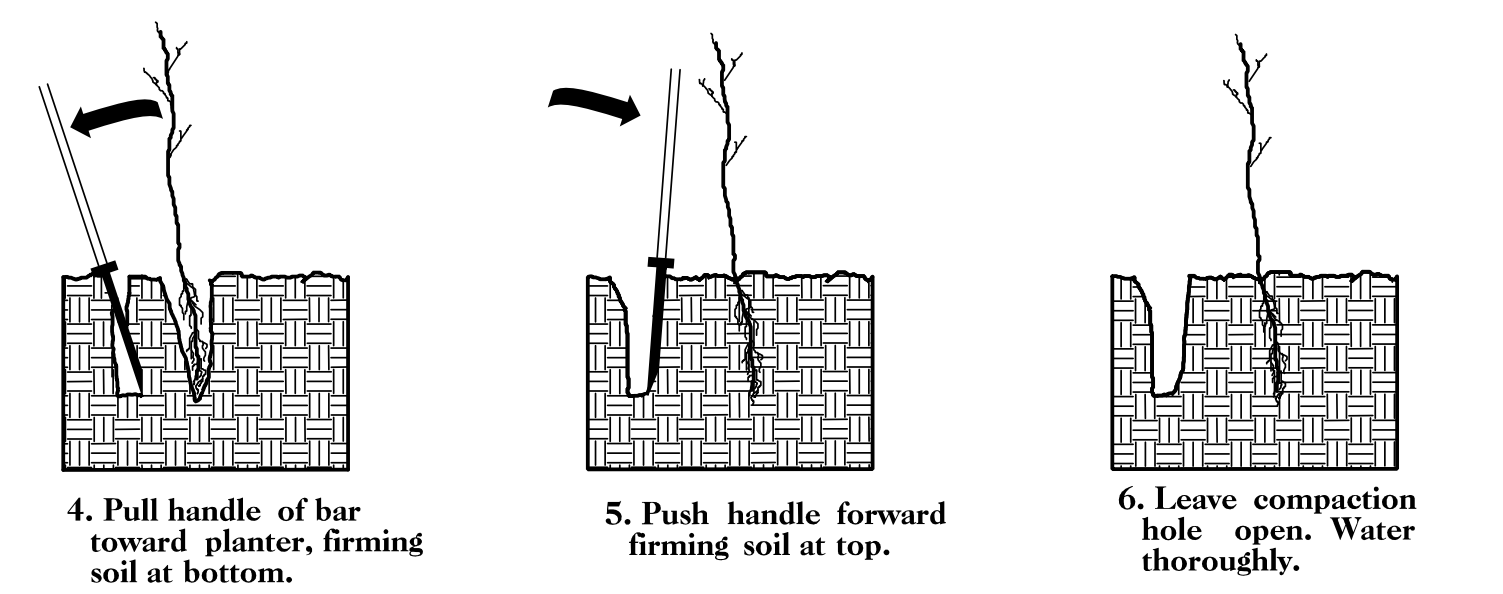


6. Repeat layers of plants and sawdust as necessary and water thoroughly.

#### 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.



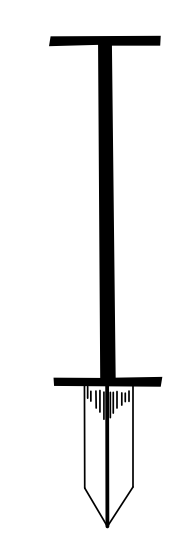
4. Pull handle of bar toward planter, firming soil at bottom.
5. Push handle forward firming soil at top.
6. Leave compaction hole open. Water thoroughly.

#### 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

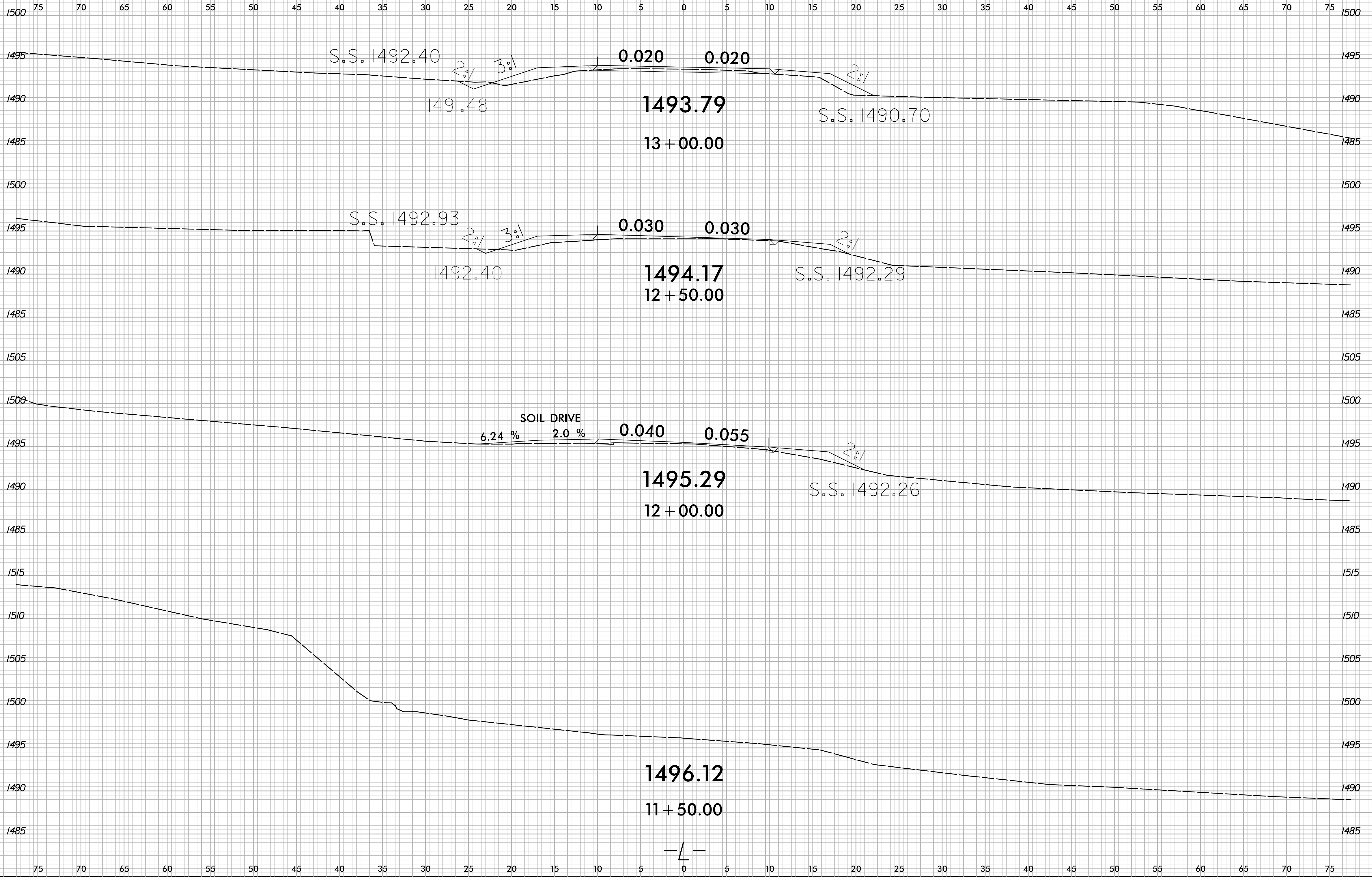
- TREE REFORESTATION SHALL BE PLANTED 6 FT. TO 10 FT. ON CENTER, RANDOM SPACING, AVERAGING 8 FT. ON CENTER, APPROXIMATELY 680 PLANTS PER ACRE.

#### REFORESTATION

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

25%	LIRIODENDRON TULIPIFERA	TULIP POPLAR	12 in - 18 in BR
25%	PLATANUS OCCIDENTALIS	SYCAMORE	12 in - 18 in BR
25%	FRAXINUS PENNSYLVANICA	GREEN ASH	12 in - 18 in BR
25%	BETULA NIGRA	RIVER BIRCH	12 in - 18 in BR

8/23/99



DATE TIME DRAWN BY

-L-

8/23/99



PROJ. REFERENCE NO.	SHEET NO.
17BP.11.R.82	X-2

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75



75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

11  
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11

**NOTES**

ASSUMED LIVE LOAD = HL-93 OR ALTERNATE LOADING.

DESIGN FILL = MAX. 2.53', MIN. 1.59'.

FOR CULVERT DIVERSION DETAILS AND PAY ITEM, SEE EROSION CONTROL PLANS.

MATERIALS SHALL MEET THE REQUIREMENTS OF THE NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES DATED JANUARY 2012.

THE DETAILS SHOWN ARE FOR GENERAL LAYOUT ONLY. THE SUPPLIER SHALL PROVIDE DESIGNS AND DETAILS THAT MEET THE REQUIREMENTS OF AASHTO SECTION 12 AND ARE SEALED BY A NORTH CAROLINA REGISTERED PROFESSIONAL ENGINEER.

UNLESS OTHERWISE INDICATED, THE SUPPLIER SHALL DESIGN, DETAIL, AND FURNISH ALL STRUCTURAL ELEMENTS AND HARDWARE.

FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE SHEET SN.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR FOUNDATION MATERIAL, SEE SPECIAL PROVISIONS.

FOR ALUMINUM BOX CULVERT, SEE SPECIAL PROVISIONS.

FOR CULVERT BACKFILL, SEE SPECIAL PROVISIONS.

THE RESIDENT ENGINEER SHALL CHECK THE LENGTH OF THE CULVERT BEFORE STAKING IT OUT TO MAKE CERTAIN THAT IT WILL PROPERLY TAKE CARE OF THE FILL.

THE EXISTING STRUCTURE CONSISTING OF (1) 17'-6" TIMBER FLOOR ON STEEL I-BEAM SPAN WITH A CLEAR ROADWAY WIDTH OF 17'-6" AND SUPPORTED ON END BENTS WITH TIMBER CAPS, TIMBER POST AND SILLS AND LOCATED AT THE PROPOSED STRUCTURE SHALL BE REMOVED.

REMOVAL OF THE EXISTING BRIDGE SHALL BE PERFORMED SO AS NOT TO ALLOW DEBRIS TO FALL INTO THE WATER. THE CONTRACTOR SHALL REMOVE THE BRIDGE AND SUBMIT PLANS FOR DEMOLITION IN ACCORDANCE WITH ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS.

INASMUCH AS THE PAINT SYSTEM ON THE EXISTING STRUCTURAL STEEL CONTAINS LEAD, THE CONTRACTOR'S ATTENTION IS DIRECTED TO ARTICLE 107-1 OF THE STANDARD SPECIFICATIONS. ANY COSTS RESULTING FROM COMPLIANCE WITH APPLICABLE STATE OR FEDERAL REGULATIONS PERTAINING TO HANDLING OF MATERIALS CONTAINING LEAD BASED PAINT SHALL BE INCLUDED IN THE BID PRICE FOR 'REMOVAL OF EXISTING STRUCTURE AT STATION 13+26 -L-'.

EXCAVATE ONE FOOT BELOW CULVERT AND REPLACE WITH FOUNDATION MATERIAL IN ACCORDANCE WITH ARTICLE 414 OF THE STANDARD SPECIFICATIONS AND THE 'FOUNDATION MATERIAL' SPECIAL PROVISIONS.

NO WORK SHALL BE DONE ON THE CULVERT AT STA. 13+26-L- UNTIL THE AREA OF THE BOX CULVERT HAS BEEN UNDERCUT TO ELEVATION 1485.70 AND UNSUITABLE MATERIAL REPLACED WITH SUITABLE MATERIAL, PROPERLY COMPACTED TO THE ELEVATION OF THE BOTTOM OF THE PROPOSED CULVERT. THE LIMITS OF THIS UNDERCUT EXCAVATION SHALL BE AT LEAST THE LIMITS OF THE BOX CULVERT INCLUDING THE WINGS. NO SEPARATE PAYMENT WILL BE MADE FOR ANY TEMPORARY SHEETING, UNDERCUT, OR UNSUITABLE MATERIAL REPLACEMENT AS REQUIRED TO CONSTRUCT THE PROPOSED CULVERT. PAYMENT IS INCLUDED IN THE LUMP SUM PRICE FOR CULVERT EXCAVATION.

NATIVE MATERIAL BETWEEN SILLS/BAFFLES IN THE CULVERT SHALL PROVIDE A CONTINUOUS LOW FLOW CHANNEL. NATIVE MATERIAL CONSISTS OF MATERIAL THAT IS EXCAVATED FROM THE STREAM BED OR FLOODPLAIN AT THE PROJECT SITE DURING CONSTRUCTION. ONLY MATERIAL EXCAVATED FROM THE STREAM BED MAY BE USED TO LINE THE LOW FLOW CHANNEL. RIP RAP MAY BE USED TO SUPPLEMENT THE NATIVE MATERIAL IN THE HIGH FLOW PORTION OF THE BARREL. IF RIP RAP IS USED, NATIVE MATERIAL SHALL BE PLACED ON TOP TO FILL THE VOIDS AND PROVIDE A FLAT SURFACE FOR ANIMAL PASSAGE. NATIVE MATERIAL IS SUBJECT TO APPROVAL BY THE ENGINEER AND MAY BE SUBJECT TO PERMIT CONDITIONS.

TOTAL STRUCTURE QUANTITIES	
REMOVAL OF EXISTING STRUCTURE @ STA. 13+26-L-	LUMP SUM
ALUMINUM BOX CULVERT @ STA. 13+26-L-	LUMP SUM
CULVERT EXCAVATION	LUMP SUM
FOUNDATION MATERIAL	55 TONS
CULVERT BACKFILL	230 TONS

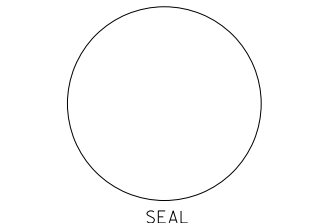
HYDRAULIC DATA:	
DESIGN DISCHARGE.....	500 CFS
FREQUENCY OF DESIGN DISCHARGE.....	25 YRS.
DESIGN HIGH WATER ELEVATION.....	1493.9'
DRAINAGE AREA.....	1.41 SQ. MI.
BASE DISCHARGE (Q100).....	750 CFS
BASE HIGH WATER ELEVATION.....	1494.87'

OVERTOPPING FLOOD DATA:	
OVERTOPPING DISCHARGE.....	550 CFS
FREQUENCY OF OVERTOPPING FLOOD.....	25+YRS.
OVERTOPPING FLOOD ELEVATION.....	1494.20'*

\* OVERTOPPING ELEVATION REPRESENTS ELEVATION @ SAG (-L- STA. 12+89.15 10.0' LT.)

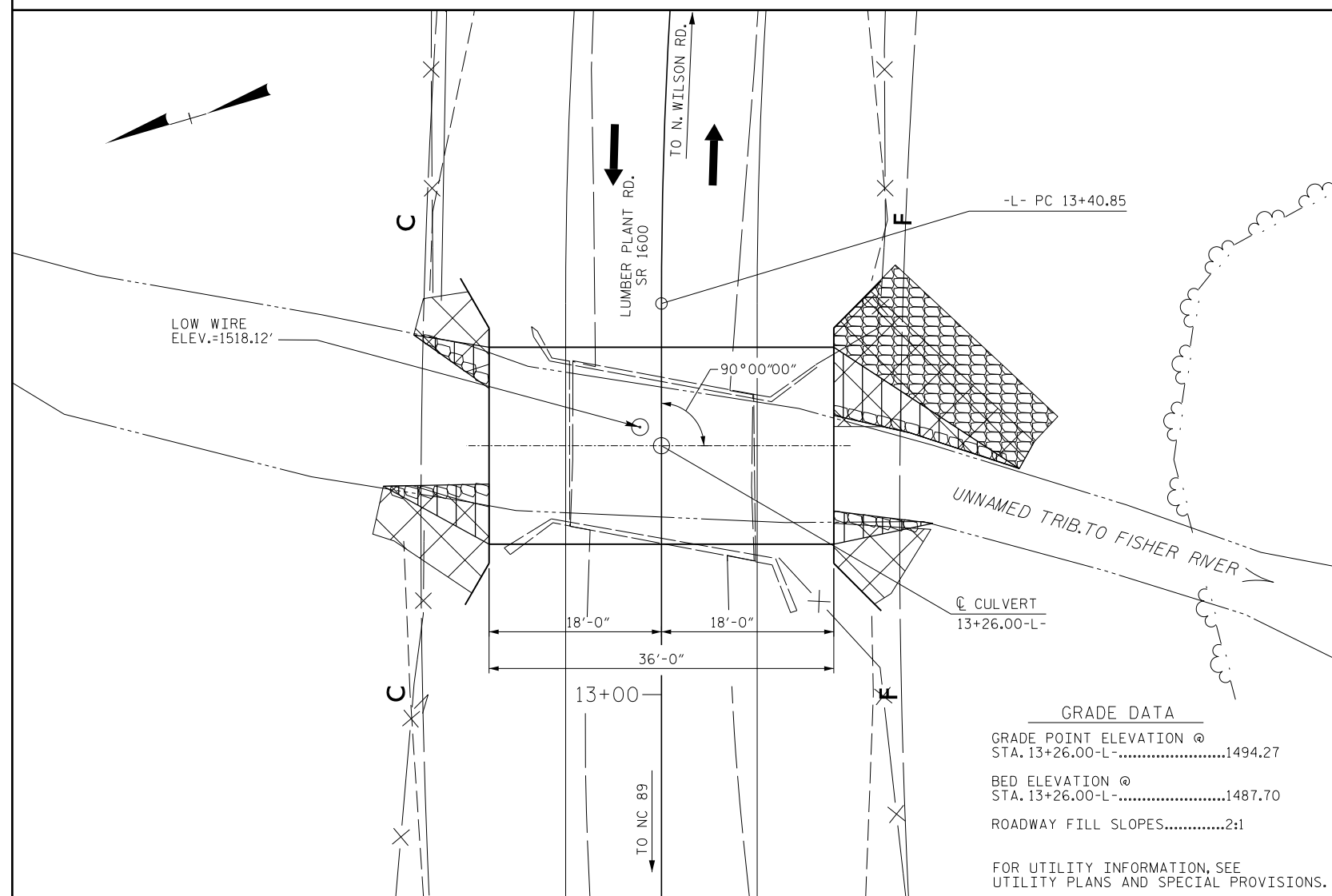
I HEREBY CERTIFY THESE PLANS ARE THE AS-BUILT PLANS.



PROJECT NO. 17BP.11.R.82  
 SURRY COUNTY  
 STATION: 13+26.00-L-  
 SHEET 1 OF 3 REPLACES BRIDGE NO. 298

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 SINGLE  
 20'-7" x 5'-3"  
 ALUMINUM BOX CULVERT  
 @ 90°

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	C-1
1			3			TOTAL SHEETS
2			4			3

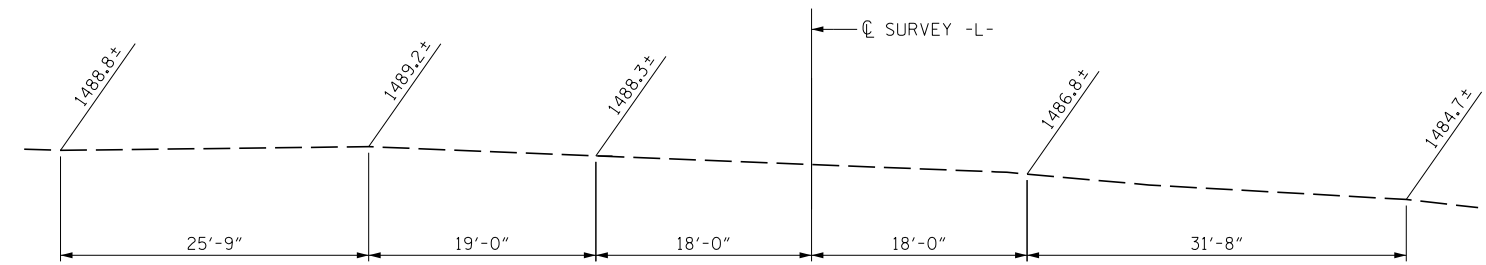


LOCATION SKETCH

**GRADE DATA**

GRADE POINT ELEVATION @ STA. 13+26.00-L-.....	1494.27
BED ELEVATION @ STA. 13+26.00-L-.....	1487.70
ROADWAY FILL SLOPES.....	2:1

FOR UTILITY INFORMATION, SEE UTILITY PLANS AND SPECIAL PROVISIONS.



PROFILE ALONG CULVERT

DRAWN BY : RTJ DATE : 9/14  
 CHECKED BY : JBW DATE : 9/14

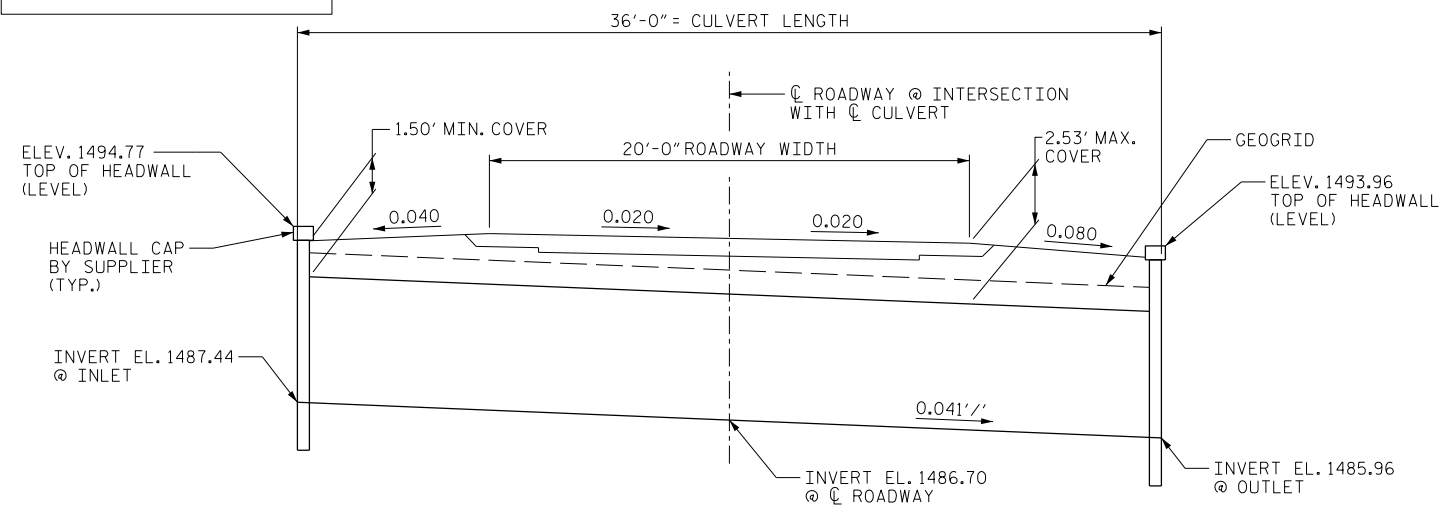
**RELEASED FOR CONSTRUCTION**

PREPARED BY  
 TGS ENGINEERS  
 107-A WICA AVENUE  
 MORGANTON, NC 28655

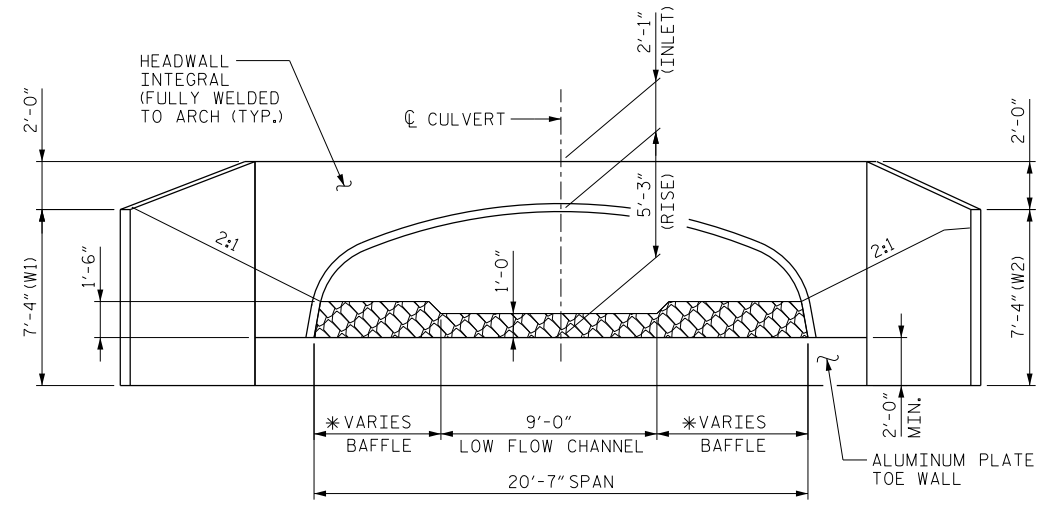
Professional Engineer Seal for Joshua B. White, No. 28885, State of North Carolina. Signature and date: 2/7/15.



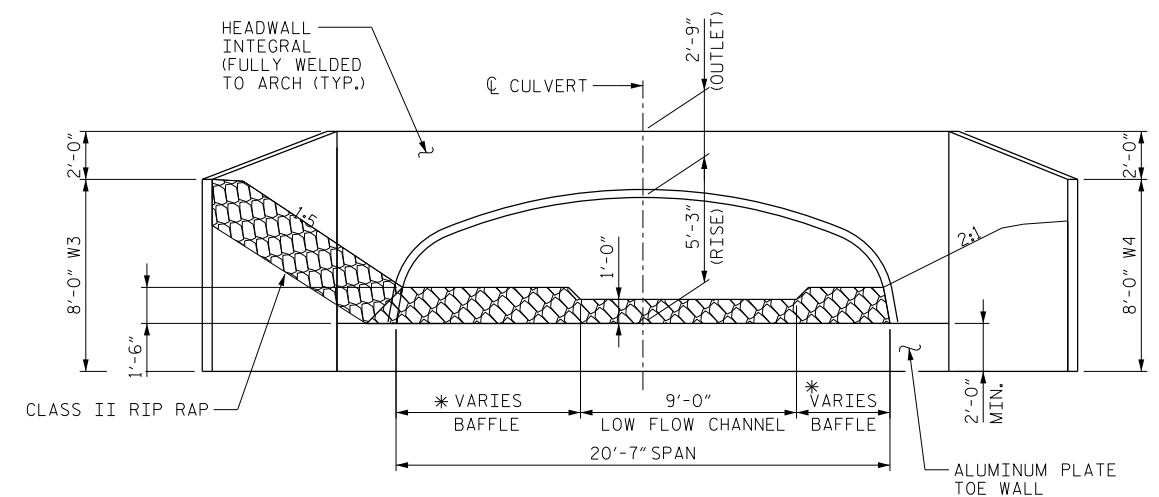
NOTE:  
HEADWALLS SHALL BE DESIGNED FOR LIVE LOAD.



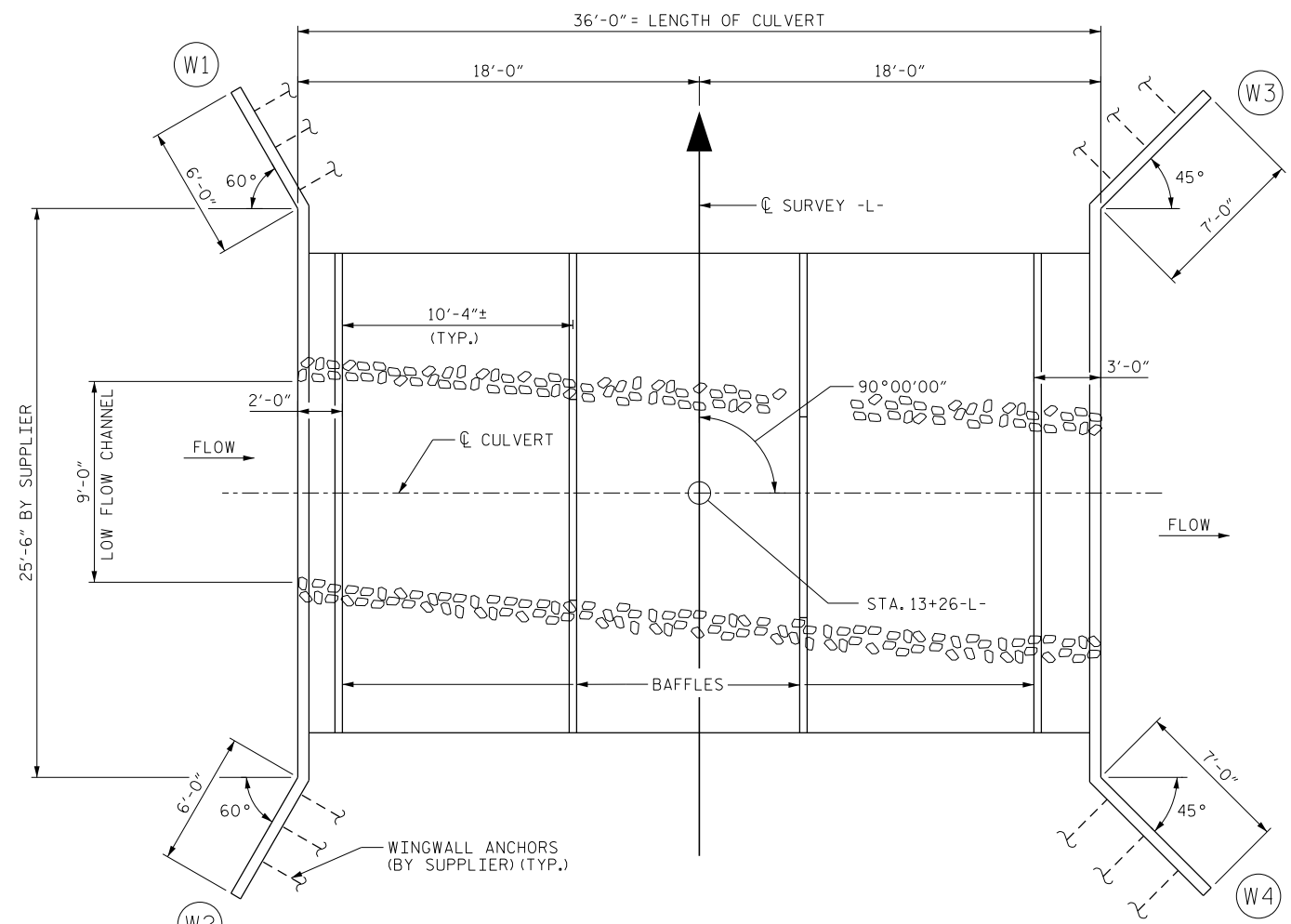
CULVERT SECTION NORMAL TO ROADWAY



END ELEVATION OF INLET - NORMAL TO SKEW  
(LOOKING DOWNSTREAM)

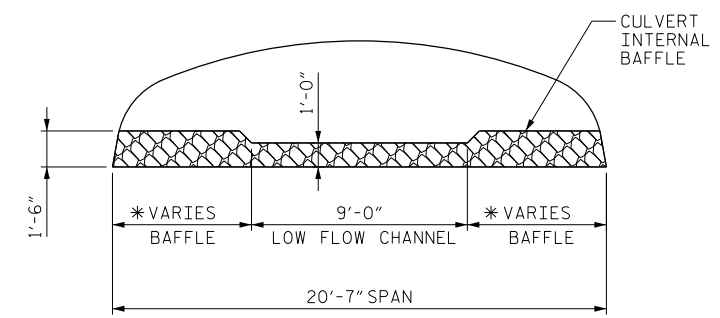


END ELEVATION OF OUTLET - NORMAL TO SKEW  
(LOOKING DOWNSTREAM)



PLAN OF ALUMINUM BOX CULVERT

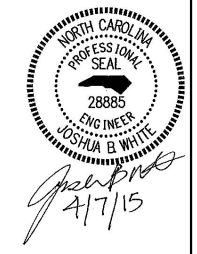
\* @ LOW FLOW CHANNEL TO BE LOCATED AT @ EXISTING STREAM BED AT INLET AND OUTLET OF CULVERT. LOW FLOW CHANNEL IN BAFFLES SHALL BE LOCATED IN A STRAIGHT LINE BETWEEN THE INLET AND OUTLET FLOW CHANNELS.



CULVERT INTERNAL SECTION  
(LOOKING DOWNSTREAM)

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PROJECT NO. 17BP.11.R.82  
SURREY COUNTY  
STATION: 13+26.00-L-  
SHEET 3 OF 3 REPLACES BRIDGE NO. 298

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
SINGLE  
20'-7" x 5'-3"  
ALUMINUM BOX CULVERT  
@ 90°

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	C-2
1			3			TOTAL SHEETS
2			4			3

DRAWN BY: RTJ DATE: 9/14  
CHECKED BY: JBW DATE: 9/14

## STANDARD NOTES

### DESIGN DATA:

SPECIFICATIONS	- - - - -	A.A.S.H.T.O. (CURRENT)
LIVE LOAD	- - - - -	SEE PLANS
IMPACT ALLOWANCE	- - - - -	SEE A.A.S.H.T.O.
STRESS IN EXTREME FIBER OF		
STRUCTURAL STEEL - AASHTO M270 GRADE 36	-	20,000 LBS. PER SQ. IN.
- AASHTO M270 GRADE 50W	-	27,000 LBS. PER SQ. IN.
- AASHTO M270 GRADE 50	-	27,000 LBS. PER SQ. IN.
REINFORCING STEEL IN TENSION		
GRADE 60	- -	24,000 LBS. PER SQ. IN.
CONCRETE IN COMPRESSION	- - - - -	1,200 LBS. PER SQ. IN.
CONCRETE IN SHEAR	- - - - -	SEE A.A.S.H.T.O.
STRUCTURAL TIMBER - TREATED OR		
UNTREATED - EXTREME FIBER STRESS	- - - - -	1,800 LBS. PER SQ. IN.
COMPRESSION PERPENDICULAR TO GRAIN		
OF TIMBER	- - - - -	375 LBS. PER SQ. IN.
EQUIVALENT FLUID PRESSURE OF EARTH	- - - - -	30 LBS. PER CU. FT.
		(MINIMUM)

### MATERIAL AND WORKMANSHIP:

EXCEPT AS MAY OTHERWISE BE SPECIFIED ON PLANS OR IN THE SPECIAL PROVISIONS, ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE 2012 "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" OF THE N. C. DEPARTMENT OF TRANSPORTATION.

STEEL SHEET PILING FOR PERMANENT OR TEMPORARY APPLICATIONS SHALL BE HOT ROLLED.

### CONCRETE:

UNLESS OTHERWISE REQUIRED ON PLANS, CLASS A CONCRETE SHALL BE USED FOR ALL PORTIONS OF ALL STRUCTURES WITH THE EXCEPTION THAT: CLASS AA CONCRETE SHALL BE USED IN BRIDGE SUPERSTRUCTURES, ABUTMENT BACKWALLS, AND APPROACH SLABS; AND CLASS B CONCRETE SHALL BE USED FOR SLOPE PROTECTION AND RIP RAP.

### CONCRETE CHAMFERS:

UNLESS OTHERWISE NOTED ON THE PLANS, ALL EXPOSED CORNERS ON STRUCTURES SHALL BE CHAMFERED 3/4" WITH THE FOLLOWING EXCEPTIONS: TOP CORNERS OF CURBS MAY BE ROUNDED TO 1-1/2" RADIUS WHICH IS BUILT INTO CURB FORMS; CORNERS OF TRANSVERSE FLOOR EXPANSION JOINTS SHALL BE ROUNDED WITH A 1/4" FINISHING TOOL UNLESS OTHERWISE REQUIRED ON PLANS; AND CORNERS OF EXPANSION JOINTS IN THE ROADWAY FACES AND TOPS OF CURBS AND SIDEWALKS SHALL BE ROUNDED TO A 1/4" RADIUS WITH A FINISHING STONE OR TOOL UNLESS OTHERWISE REQUIRED ON PLANS.

### DOWELS:

DOWELS WHEN INDICATED ON PLANS AS FOR CULVERT EXTENSIONS, SHALL BE EMBEDDED AT LEAST 12" INTO THE OLD CONCRETE AND GROUTED INTO PLACE WITH 1:2 CEMENT MORTAR.

### ALLOWANCE FOR DEAD LOAD DEFLECTION, SETTLEMENT, ETC. IN CASTING SUPERSTRUCTURES:

BRIDGES SHALL BE BUILT ON THE GRADE OR VERTICAL CURVE SHOWN ON PLANS. SLABS, CURBS AND PARAPETS SHALL CONFORM TO THE GRADE OR CURVE.  
 ALL DIMENSIONS WHICH ARE GIVEN IN SECTION AND ARE AFFECTED BY DEAD LOAD DEFLECTIONS ARE DIMENSIONS AT CENTER LINE OF BEARING UNLESS OTHERWISE NOTED ON PLANS. IN SETTING FORMS FOR STEEL BEAM BRIDGES AND PRESTRESSED CONCRETE GIRDER BRIDGES, ADJUSTMENTS SHALL BE MADE DUE TO THE DEAD LOAD DEFLECTIONS FOR THE ELEVATIONS SHOWN. WHERE BLOCKS ARE SHOWN OVER BEAMS FOR BUILDING UP TO THE SLAB, THE VERTICAL DIMENSIONS OF THE BLOCKS SHALL BE ADJUSTED BETWEEN BEARINGS TO COMPENSATE FOR DEAD LOAD DEFLECTIONS, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER. WHERE BOTTOM OF SLAB IS IN LINE WITH BOTTOM OF TOP FLANGES, DEPTH OF SLAB BETWEEN BEARINGS SHALL BE ADJUSTED TO COMPENSATE FOR DEAD LOAD DEFLECTION, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER.  
 IN SETTING FALSEWORK AND FORMS FOR REINFORCED CONCRETE SPANS, AN ALLOWANCE SHALL BE MADE FOR DEAD LOAD DEFLECTIONS, SETTLEMENT OF FALSEWORK, AND PERMANENT CAMBER WHICH SHALL BE PROVIDED FOR IN ADDITION TO THE ELEVATIONS SHOWN. AFTER REMOVAL OF THE FALSEWORK, THE FINISHED STRUCTURES SHALL CONFORM TO THE PROFILE AND ELEVATIONS SHOWN ON THE PLANS AND CONSTRUCTION ELEVATIONS FURNISHED BY THE ENGINEER.  
 DETAILED DRAWINGS FOR FALSEWORK OR FORMS FOR BRIDGE SUPERSTRUCTURE AND ANY STRUCTURE OR PARTS OF A STRUCTURE AS NOTED ON THE PLANS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE CONSTRUCTION OF THE FALSEWORK OR FORMS IS STARTED.

### REINFORCING STEEL:

ALL REINFORCING STEEL SHALL BE DEFORMED. DIMENSIONS RELATIVE TO PLACEMENT OF REINFORCING ARE TO CENTERS OF BARS UNLESS OTHERWISE INDICATED IN THE PLANS. DIMENSIONS ON BAR DETAILS ARE TO CENTERS OF BARS OR ARE OUT TO OUT AS INDICATED ON PLANS.  
 WIRE BAR SUPPORTS SHALL BE PROVIDED FOR REINFORCING STEEL WHERE INDICATED ON THE PLANS. WHEN BAR SUPPORT PIECES ARE PLACED IN CONTINUOUS LINES, THEY SHALL BE SO PLACED THAT THE ENDS OF THE SUPPORTING WIRES SHALL BE LAPPED TO LOCK LEGS ON ADJOINING PIECES.

### STRUCTURAL STEEL:

AT THE CONTRACTOR'S OPTION, HE MAY SUBSTITUTE 7/8" Ø SHEAR STUDS FOR THE 3/4" Ø STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" Ø STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF 7/8" Ø STUDS ALONG THE BEAM AS SHOWN FOR 3/4" Ø STUDS BASED ON THE RATIO OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" Ø STUDS. STUDS OF THE LENGTH SPECIFIED ON THE PLANS MUST BE PROVIDED. THE MAXIMUM SPACING SHALL BE 2'-0".  
 EXCEPT AT THE INTERIOR SUPPORTS OF CONTINUOUS BEAMS WHERE THE COVER PLATE IS IN CONTACT WITH BEARING PLATE, THE CONTRACTOR MAY, AT HIS OPTION, SUBSTITUTE FOR THE COVER PLATES DESIGNATED ON THE PLANS COVER PLATES OF THE EQUIVALENT AREA PROVIDED THESE PLATES ARE AT LEAST 5/16" IN THICKNESS AND DO NOT EXCEED A WIDTH EQUAL TO THE FLANGE WIDTH LESS 2" OR A THICKNESS EQUAL TO 2 TIMES THE FLANGE THICKNESS. THE SIZE OF FILLET WELDS SHALL CONFORM TO THE REQUIREMENTS OF THE CURRENT ANSI/AASHTO/AWS "BRIDGE WELDING CODE". ELECTROSLAG WELDING WILL NOT BE PERMITTED.  
 WITH THE SOLE EXCEPTION OF EDGES AT SURFACES WHICH BEAR ON OTHER SURFACES, ALL SHARP EDGES AND ENDS OF SHAPES AND PLATES SHALL BE SLIGHTLY ROUNDED BY SUITABLE MEANS TO A RADIUS OF APPROXIMATELY 1/16 INCH OR EQUIVALENT FLAT SURFACE AT A SUITABLE ANGLE PRIOR TO PAINTING, GALVANIZING, OR METALLIZING.

### HANDRAILS AND POSTS:

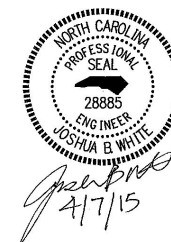
METAL STANDARDS AND FACES OF THE CONCRETE END POSTS FOR THE METAL RAIL SHALL BE SET NORMAL TO THE GRADE OF THE CURB, UNLESS OTHERWISE SHOWN ON PLANS. THE METAL RAIL AND TOPS OF CONCRETE POSTS USED WITH THE ALUMINUM RAIL SHALL BE BUILT PARALLEL TO THE GRADE OF THE CURB.  
 METAL HANDRAILS SHALL BE IN ACCORDANCE WITH THE PLANS. RAILS SHALL BE AS MANUFACTURED FOR BRIDGE RAILING. CASTINGS SHALL BE OF A UNIFORM APPEARANCE. FINS AND OTHER DEFORMATIONS RESULTING FROM CASTING OR OTHERWISE SHALL BE REMOVED IN A MANNER SO THAT A UNIFORM COLORING OF THE COMPLETED CASTING SHALL BE OBTAINED. CASTINGS WITH DISCOLORATIONS OR OF NON-UNIFORM COLORING WILL NOT BE ACCEPTED. CERTIFIED MILL REPORTS ARE REQUIRED FOR METAL RAILS AND POSTS.

### SPECIAL NOTES:

GENERALLY, IN CASE OF DISCREPANCY, THIS STANDARD SHEET OF NOTES SHALL GOVERN OVER THE SPECIFICATIONS, BUT THE REMAINDER OF THE PLANS SHALL GOVERN OVER NOTES HEREON, AND SPECIAL PROVISIONS SHALL GOVERN OVER ALL. SEE SPECIFICATIONS ARTICLE 105-4.

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MORGANTON, NC 28655



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SURRY COUNTY  
 STATION: 13+26.00-L-  
 SHEET 3 OF 3 REPLACES BRIDGE NO. 298

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
STANDARD NOTES					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					C-3
					TOTAL SHEETS 3