

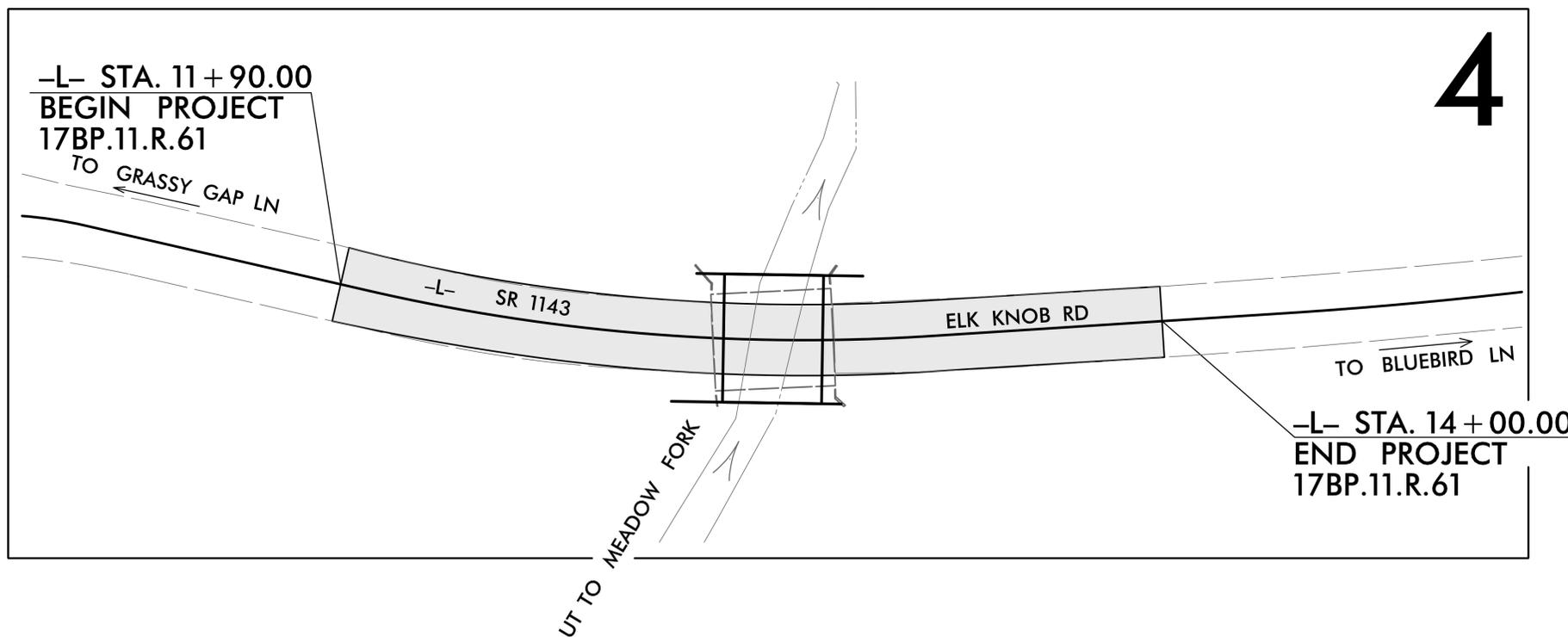
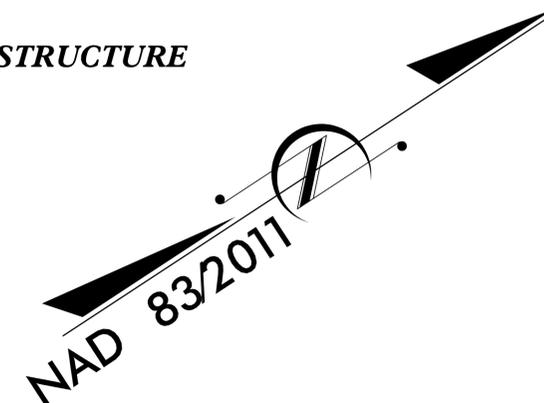
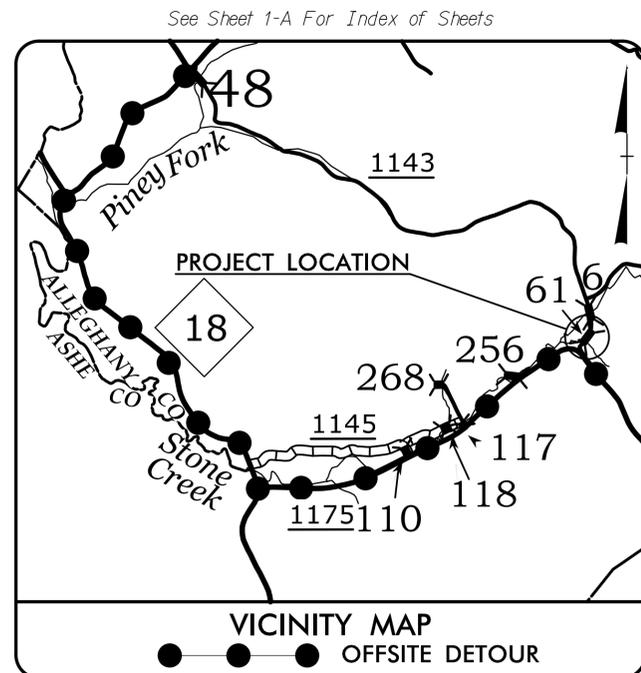
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.11.R.61	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
17BP.11.R.61		PE	
17BP.11.R.61		RW, UTIL	
17BP.11.R.61		CONST.	

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

ALLEGHANY COUNTY

LOCATION: BRIDGE NO. 020061 OVER UT TO MEADOW FORK
ON SR 1143 (ELK KNOB RD)

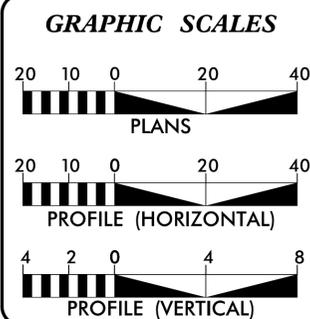
TYPE OF WORK: GRADING, DRAINAGE, PAVING, AND STRUCTURE



4

TIP PROJECT: 17BP.11.R.61

CONTRACT:



DESIGN DATA

ADT 2012 = 210
V = 55 MPH
T = 6 % *
*(TTST 3% + DUALS 3%)
FUNC CLASS =
RURAL LOCAL
SUB REGIONAL TIER

PROJECT LENGTH

LENGTH TOTAL PROJECT 17BP.11.R.61 = 0.040 MILES

NCDOT CONTACT: JAMI GUYNN

PLANS PREPARED BY:	PLANS PREPARED FOR:
TGS ENGINEERS 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	
RIGHT OF WAY DATE: JULY 15, 2014	JIMMY TERRY, P.E. PROJECT ENGINEER
LETTING DATE:	TRAVIS COOK, E.I. PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: _____

ROADWAY DESIGN ENGINEER

SIGNATURE: _____



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



INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES, LIST OF STANDARD DRAWINGS, AND SUMMARY OF EARTHWORK
1B	CONVENTIONAL SYMBOLS
1C	SURVEY CONTROL SHEET
2A	PAVEMENT SCHEDULE, TYPICAL SECTION, AND WEDGING DETAIL
4	PLAN AND PROFILE SHEET
TMP-1 THRU TMP-3	TRAFFIC MANAGEMENT PLANS
PMP-1	PAVEMENT MARKING PLAN
EC-1 THRU EC-5	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: 01-17-2012
REVISED: 07-30-2012

**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 AND/OR STD. NO. 225.05 USING THE RATE OF SUPERELEVATION AND RUNOFF SHOWN ON THE PLANS. SUPERELEVATION IS TO BE REVOLVED ABOUT THE GRADE POINTS SHOWN ON THE TYPICAL SECTIONS.

SHOULDER CONSTRUCTION:

ASPHALT, EARTH, AND CONCRETE SHOULDER CONSTRUCTION ON THE HIGH SIDE OF SUPERELEVATED CURVES SHALL BE IN ACCORDANCE WITH STD. NO. 560.01 AND/OR STD. NO. 560.02

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 SKYLINE TELEPHONE MEMBERSHIP CORPORATION
ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS.

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
DIVISION 2 - EARTHWORK	
200.02	Method of Clearing - Method II
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I

SUMMARY OF EARTHWORK

Station	Station	Uncl. Excav.	Embank. +%	Borrow	Waste
-L- 11+90.00	-L- 14+00.00	2	401	399	
PROJECT TOTALS:		2	401	399	
EST. 5% TO REPLACE TOP SOIL ON BORROW PITS				20	
GRAND TOTALS:		2	401	419	
SAY:		10		470	

Note: Not to Scale

*S.U.E. = Subsurface Utility Engineering

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

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	_____ 

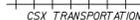
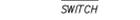
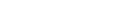
BUILDINGS AND OTHER CULTURE:

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	_____ 

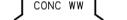
ROADS AND RELATED FEATURES:

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	_____ 
Single Tree	_____ 
Single Shrub	_____ 
Hedge	_____ 
Woods Line	_____ 

VEGETATION:

Orchard	_____ 
Vineyard	_____ 

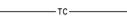
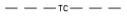
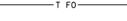
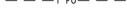
EXISTING STRUCTURES:

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	_____ 

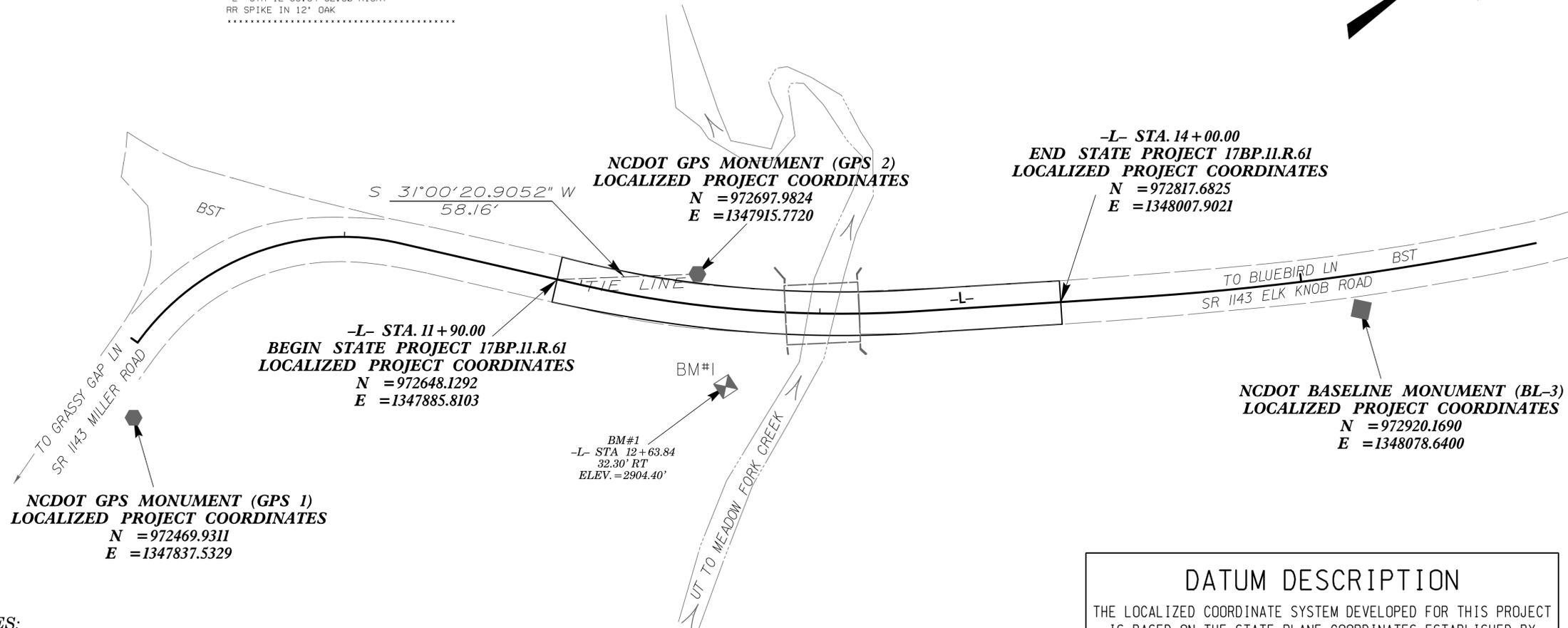
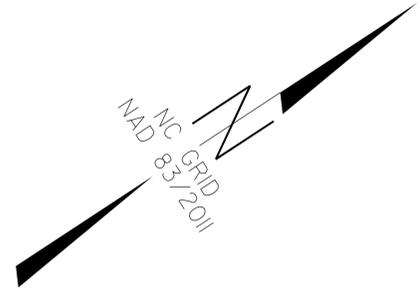
6/2/99

SURVEY CONTROL SHEET 17BP.11.R.61

PROJECT REFERENCE NO.	SHEET NO.
17BP.11.R.61	1C
Location and Surveys	

BL	POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
	1	GPS 1	972469.9311	1347837.5329	2905.69	OUTSIDE PROJECT LIMITS	
	2	GPS 2	972697.9824	1347915.7720	2904.84	12+47.52	12.68 LT
	3	BM#1	972682.	1347961.	2904.40	12+63.84	32.30 RT
	4	BL-3	972920.1690	1348078.6400	2911.68	OUTSIDE PROJECT LIMITS	

.....
 BM #1 ELEVATION - 2904.40'
 N 972682. E 1347961.
 -L- STA 12+63.84 32.30 RIGHT
 RR SPIKE IN 12" OAK



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 83/2011 STATE PLANE GRID COORDINATES OF
 NORTHING: 972697.9824(±) EASTING: 1347915.7720(±)
 ELEVATION: 2904.84(±)

THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99994017

THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "GPS-2" TO -L- STATION 11+90.00 IS
 S 31°00'20.9" W 58.16'

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

NOTE: DRAWING NOT TO SCALE

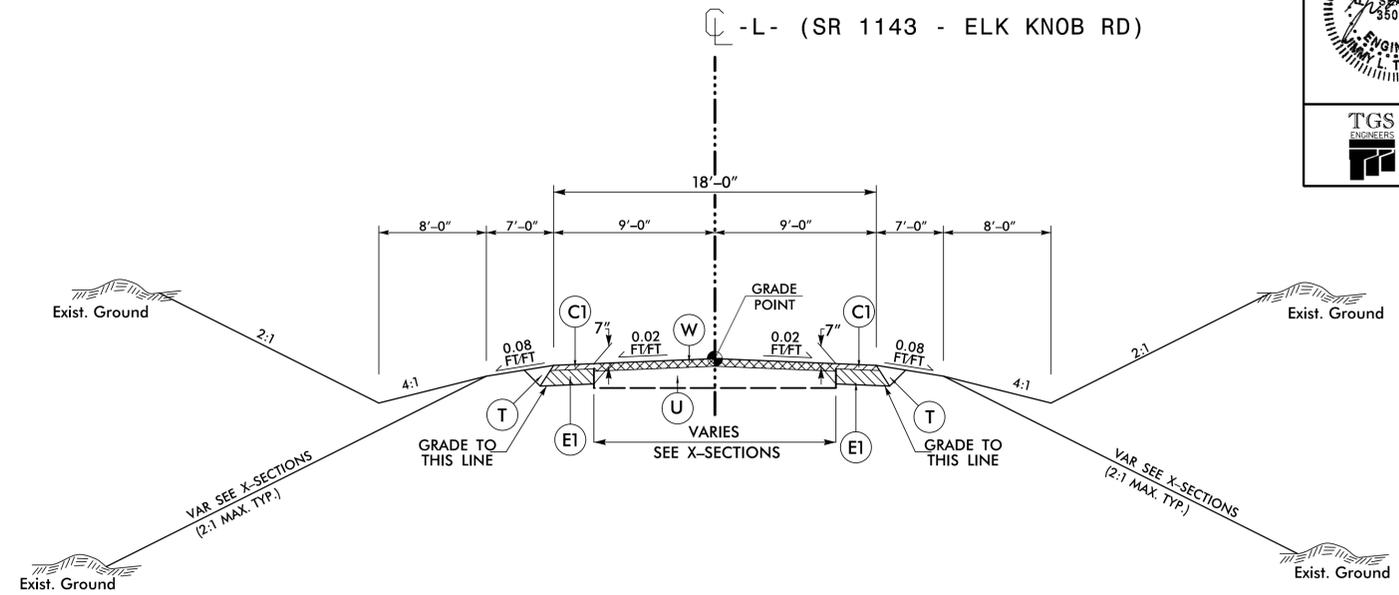
17BP.11.R.61-1C
 6/2/99
 17BP.11.R.61-1C
 6/2/99

6/2/99

PROJECT REFERENCE NO. 17BP.JI.R.61	SHEET NO. 2A
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
	
 TGS ENGINEERS 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 S9.5A, 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.



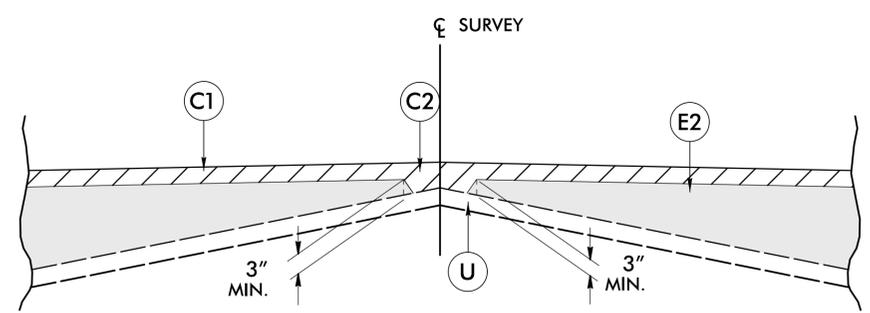
TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1
-L- STA. 12+40.00 TO -L- STA. 13+50.00

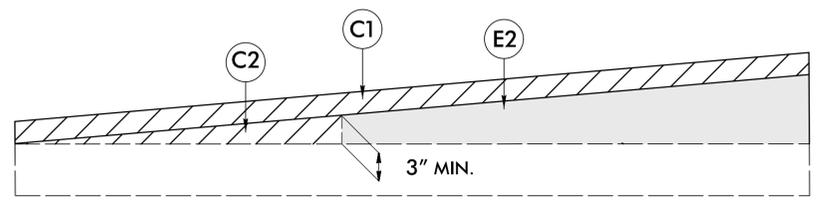
NOTE: TRANSITION BETWEEN EXISTING AND TYP. SECT. NO. 1 AS FOLLOWS:

- L- STA. 11+90.00 TO -L- STA. 12+40.00
- L- STA. 13+50.00 TO -L- STA. 14+00.00

NOTE: USE FULL DEPTH PAVEMENT FROM -L- STA. 12+75+/- TO -L- STA. 13+25+/-



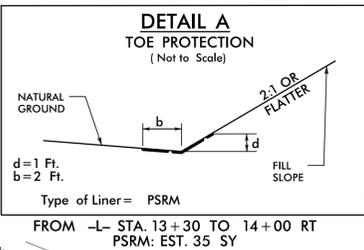
Detail Showing Method of Wedging



Wedging Detail For Resurfacing

6/2/99
 11
 10
 9
 8
 7
 6
 5
 4
 3
 2
 1

8/17/99



①
 US DEPARTMENT OF THE INTERIOR
 NATIONAL PARK SERVICE
 BLUE RIDGE PARKWAY
 DRAWING NO: PKY BR-2C 2052A SHEET 16 OF 19

FLOODPLAIN BENCH
 AND SIDESLOPE
 LINED WITH COIR FIBER
 MATTING (TYP.)
 EST. TOTAL COIR FIBER
 MATTING = 60 SY

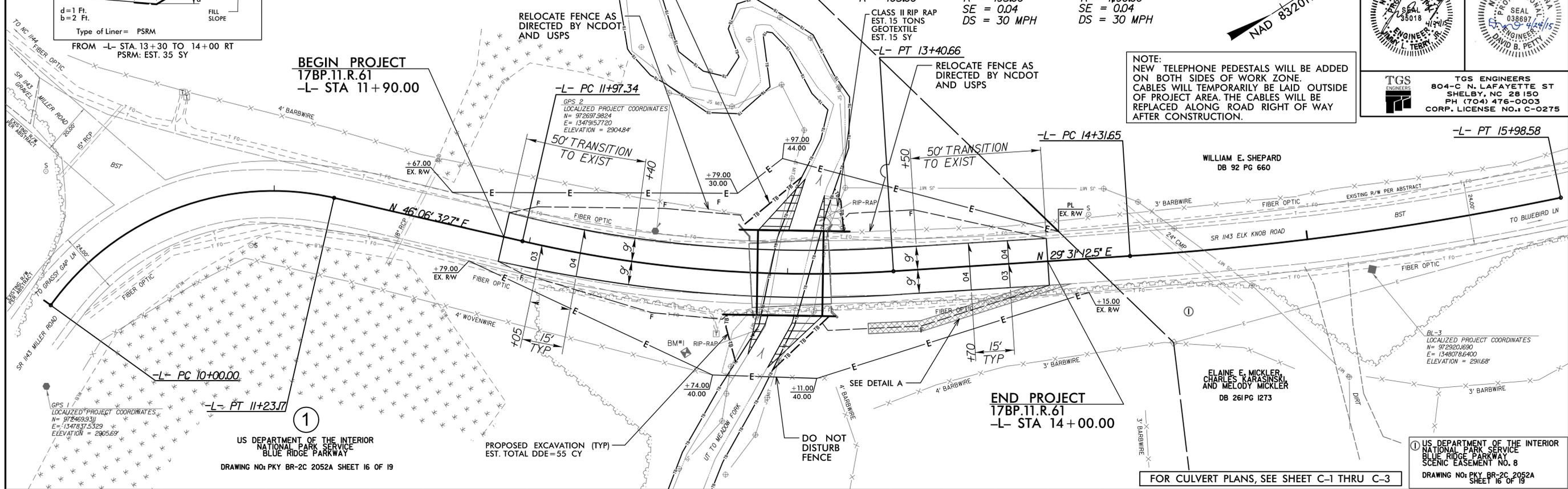
-L- CURVE DATA

PI Sta 10+69.78 Δ = 67° 12' 41.6" (RT) D = 54' 34' 02.7" L = 123.17' T = 69.78' R = 105.00'	PI Sta 12+69.50 Δ = 16' 35' 20.2" (LT) D = 11' 34' 29.7" L = 143.32' T = 72.16' R = 495.00'	PI Sta 15+15.25 Δ = 8' 02' 15.5" (LT) D = 4' 48' 53.2" L = 166.94' T = 83.61' R = 1,190.00'
CLASS II RIP RAP EST. 15 TONS GEOTEXTILE EST. 15 SY	SE = 0.04 DS = 30 MPH	SE = 0.04 DS = 30 MPH

ALLEGHANY COUNTY
 BRIDGE #020061
 NAD 83/2011

PROJECT REFERENCE NO. 17BP.11.R.61	SHEET NO. 4
ROADWAY DESIGN ENGINEER DAVID L. TERRY	HYDRAULICS ENGINEER DAVID B. PETTY
TGS ENGINEERS 804-C N. LAFAYETTE ST SHELBY, NC 28150 PH (704) 476-0003 CORP. LICENSE NO.: C-0275	

NOTE:
 NEW TELEPHONE PEDESTALS WILL BE ADDED ON BOTH SIDES OF WORK ZONE. CABLES WILL TEMPORARILY BE LAID OUTSIDE OF PROJECT AREA. THE CABLES WILL BE REPLACED ALONG ROAD RIGHT OF WAY AFTER CONSTRUCTION.



①
 US DEPARTMENT OF THE INTERIOR
 NATIONAL PARK SERVICE
 BLUE RIDGE PARKWAY
 DRAWING NO: PKY BR-2C 2052A SHEET 16 OF 19

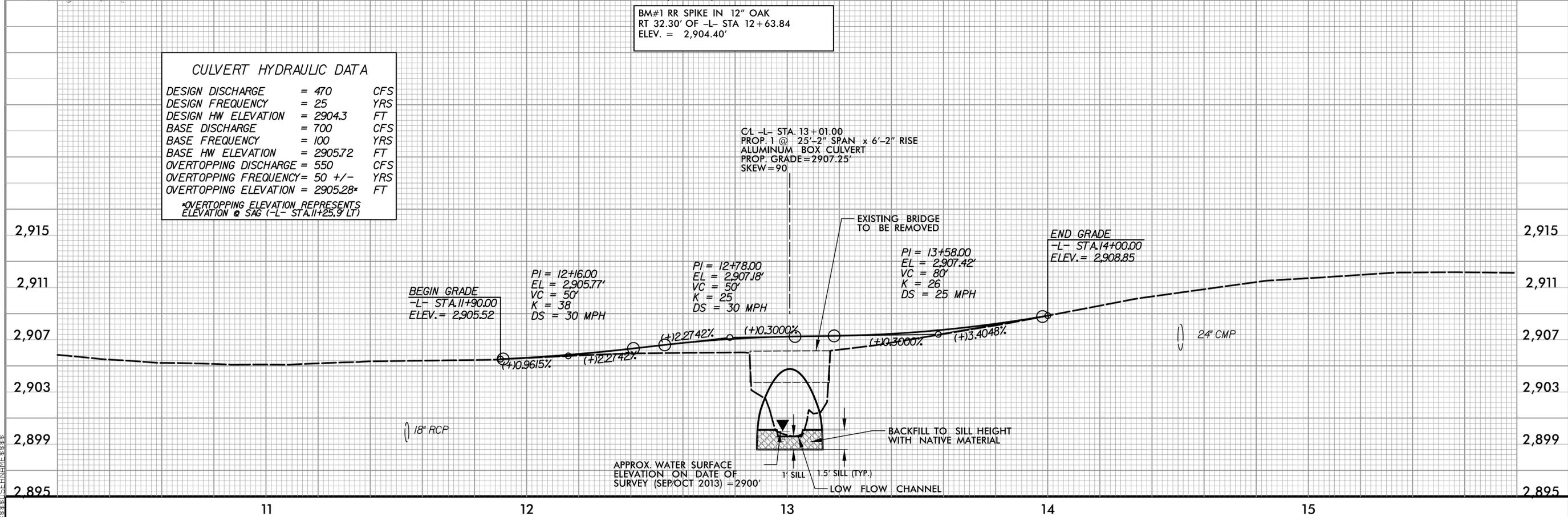
① US DEPARTMENT OF THE INTERIOR
 NATIONAL PARK SERVICE
 BLUE RIDGE PARKWAY
 SCENIC EASEMENT NO. 8
 DRAWING NO: PKY BR-2C 2052A
 SHEET 16 OF 19

CULVERT HYDRAULIC DATA

DESIGN DISCHARGE	= 470	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 2904.3	FT
BASE DISCHARGE	= 700	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 2905.72	FT
OVERTOPPING DISCHARGE	= 550	CFS
OVERTOPPING FREQUENCY	= 50 +/-	YRS
OVERTOPPING ELEVATION	= 2905.28*	FT

*OVERTOPPING ELEVATION REPRESENTS ELEVATION @ SAG (-L- STA. 11+25.9' LT)

BM#1 RR SPIKE IN 12" OAK
 RT 32.30' OF -L- STA 12+63.84
 ELEV. = 2,904.40'



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

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
1101.03	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.61 \$\$\$
 \$\$\$ SHEET: TMP-1A \$\$\$
 \$\$\$ END \$\$\$

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

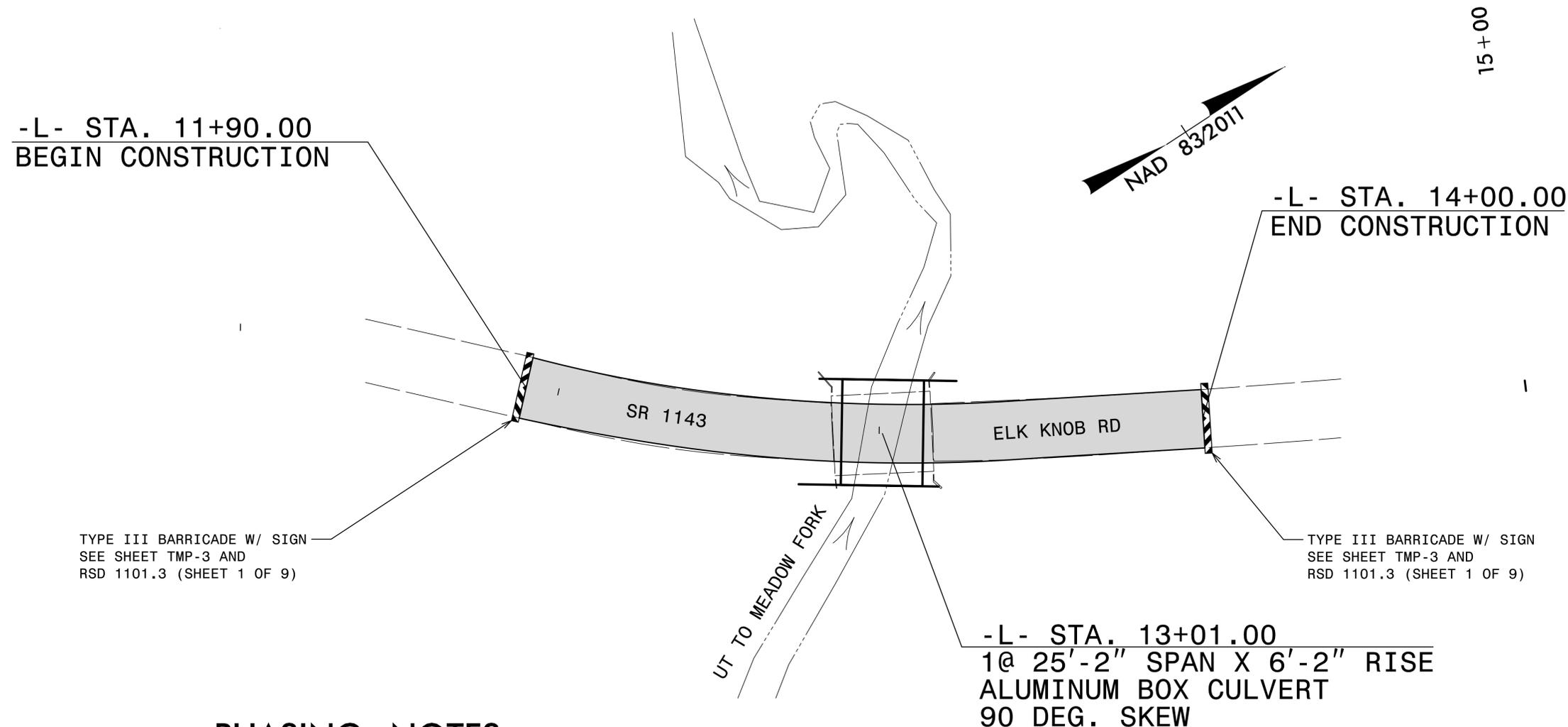
APPROVED: _____ DATE: _____

SEAL




ROADWAY STANDARD
DRAWINGS & LEGEND

NOTE: SEE TMP-1C & TMP-3 FOR DETOUR LOCATION AND SIGNING.



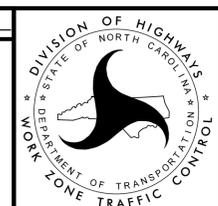
PHASING NOTES

- STEP 1: INSTALL ALL DETOUR ROUTE SIGNS AS SHOWN ON SHEET TMP-3.
- STEP 2: INSTALL TYPE III BARRICADES AND SIGNS AND CLOSE SR 1143 (ELK KNOB 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 MEADOW FORK AT -L- STA. 13+01.00. CONSTRUCT SR 1143 (ELK KNOB RD) FROM -L- STA. 11+90.00 TO STA. 14+00.00, INCLUDING THE FINAL LAYER OF SURFACE COURSE
- STEP 4: PLACE FINAL PAVEMENT MARKINGS FROM -L- STA 11+90.00 TO 14+00.00 AS INDICATED ON SHEET PMP-1.
- STEP 5: REMOVE BARRICADES, SIGNS, AND ALL OTHER TRAFFIC CONTROL DEVICES AND OPEN SR 1143 (ELK KNOB RD) TO TRAFFIC IN FINAL PATTERN.

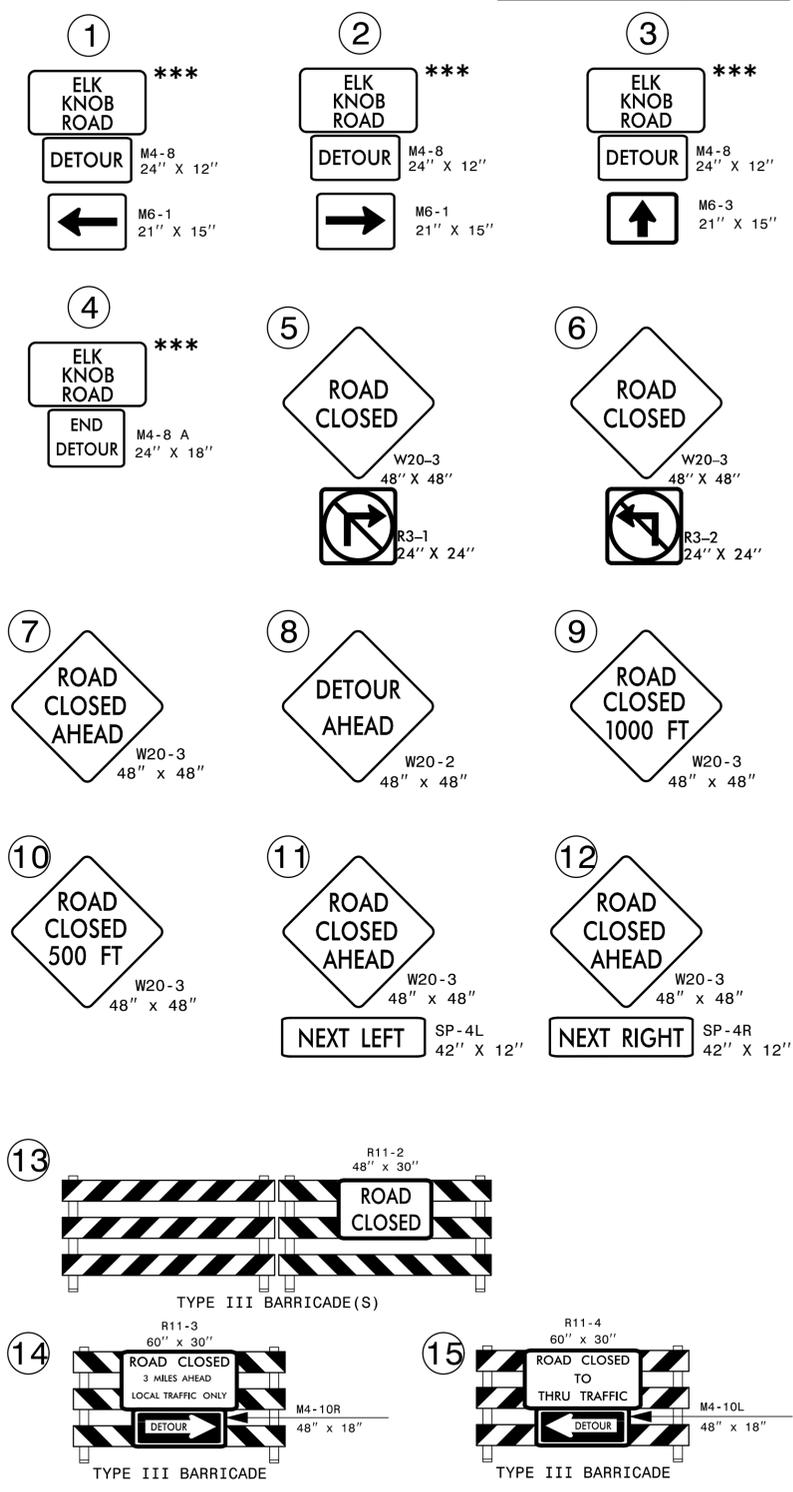
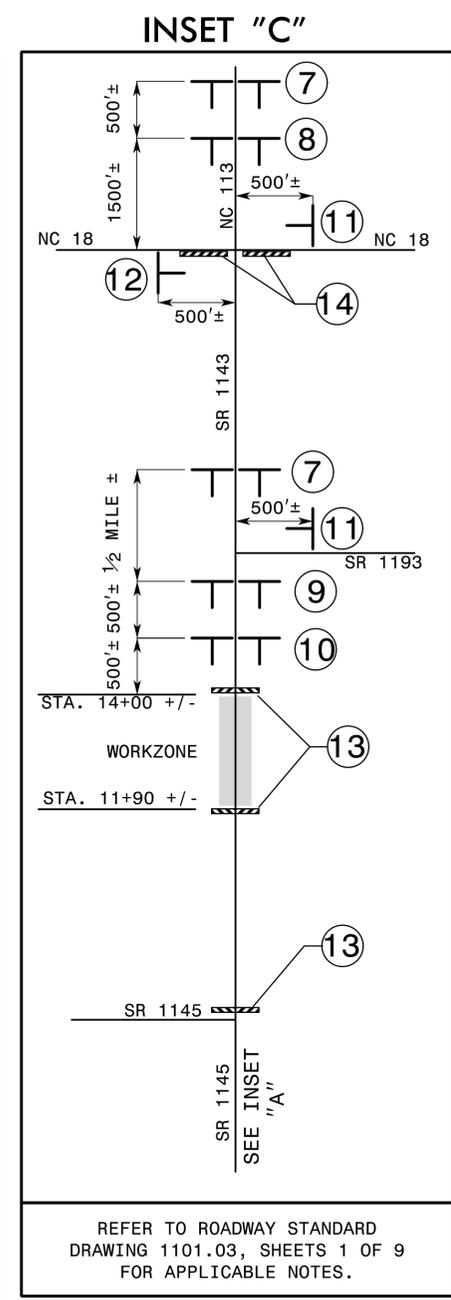
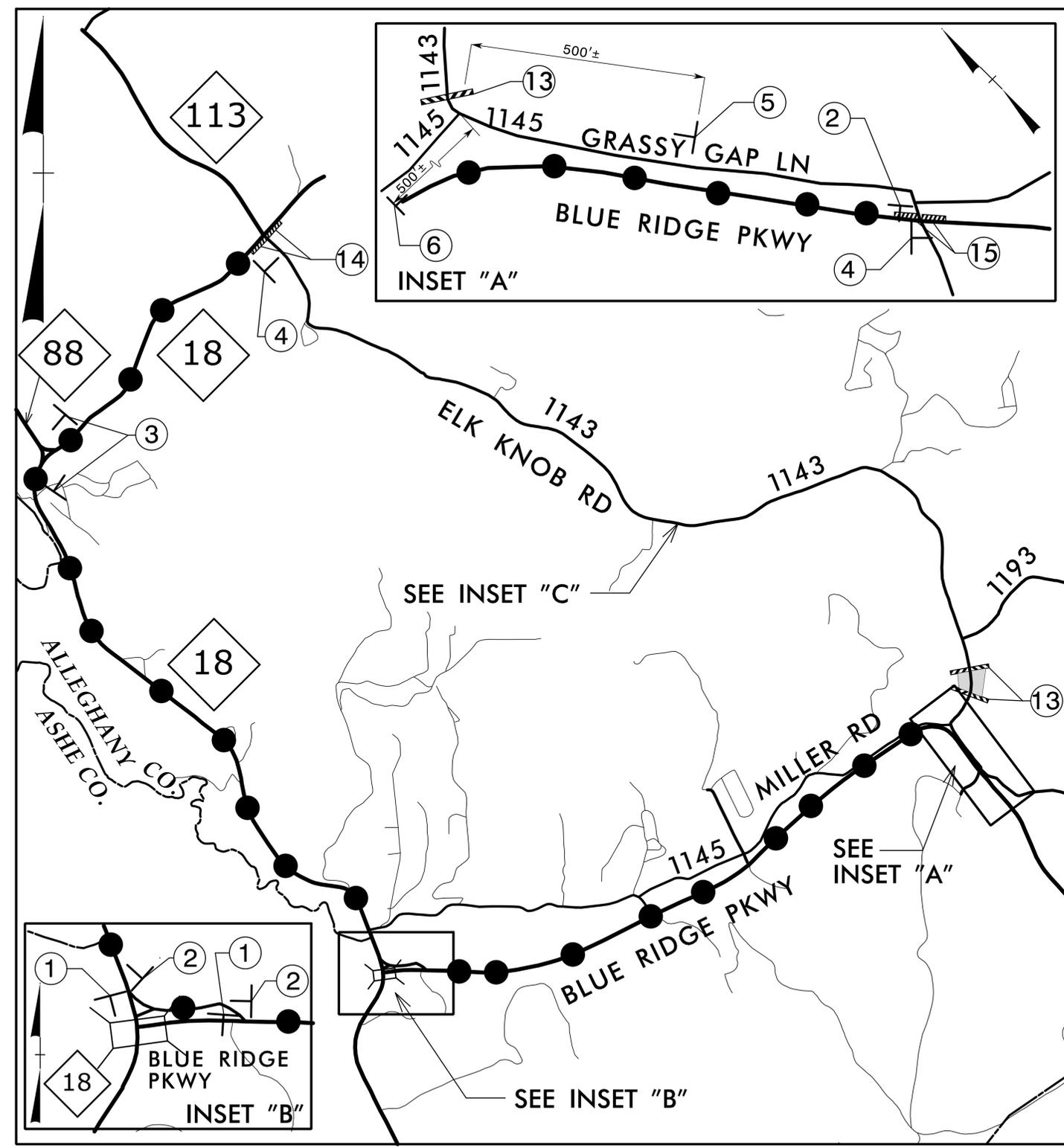
\$\$\$ SYSTEMS \$\$\$
 \$\$\$ DESIGN \$\$\$
 \$\$\$ DRAWING \$\$\$
 \$\$\$ CHECKING \$\$\$
 \$\$\$ REVISIONS \$\$\$
 \$\$\$ DATE \$\$\$
 \$\$\$ USER NAME \$\$\$
 \$\$\$ 01/01/00 \$\$\$

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

APPROVED: _____	DATE: _____



OVERVIEW
 AND PHASING

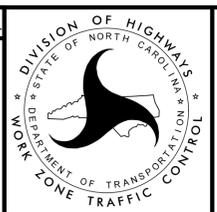


CONSTRUCTION AREA
 DETOUR ROUTE
 *** SEE SHEET TMP-1C FOR SIGN DESIGN

SYSTEMS DESIGN
 USER NAME

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

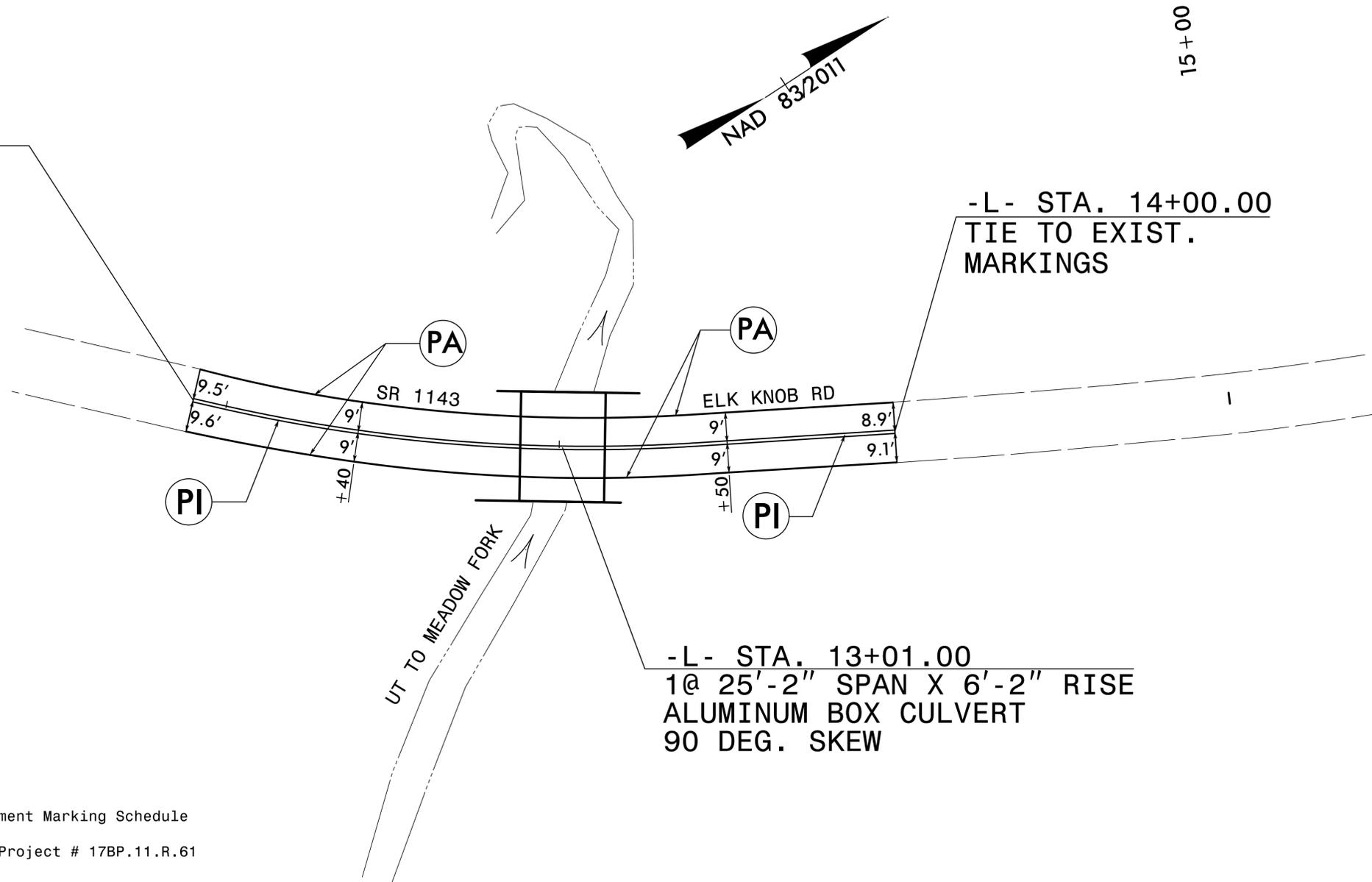
APPROVED: _____ DATE: _____



**OFFSITE DETOUR ROUTE
AND BARRICADE PLACEMENT**

-L- STA. 11+90.00
TIE TO EXIST.
MARKINGS

-L- STA. 14+00.00
TIE TO EXIST.
MARKINGS

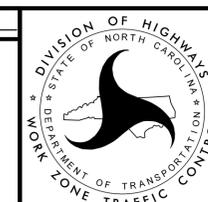
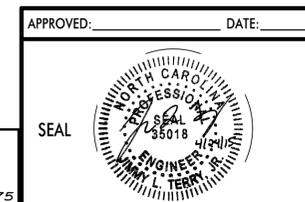


Pavement Marking Schedule
TIP Project # 17BP.11.R.61

SYMB	DESCRIPTION	PAY ITEM	QUANTITY	TOTAL
	FINAL PAVEMENT MARKINGS			
	PAINT(4")			
PA	WHITE EDGELINE (2X)	840 LF		
PI	YELLOW DOUBLE CENTER (2X)	840 LF		
		TOTAL	1680 LF	

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

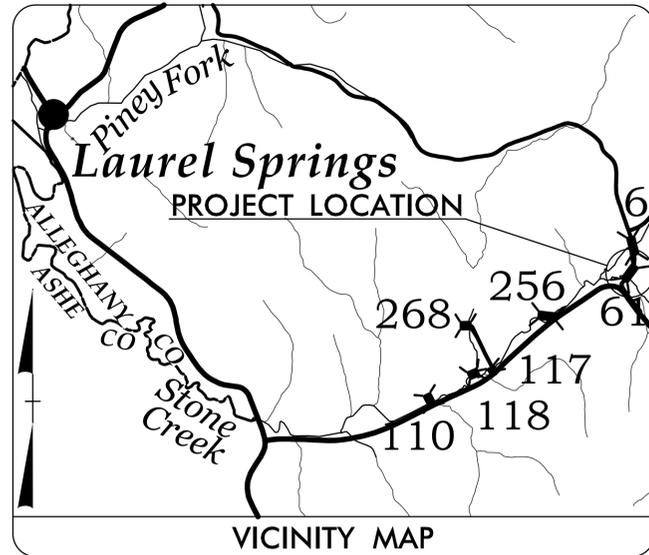
TGS ENGINEERS
804-C W. LAFAYETTE ST.
SHELBY, NC 28150
PH (704) 476 0003
CORP. LICENSE NO.: C-0275



FINAL PAVEMENT
MARKING PLAN
AND SCHEDULE

\$\$\$\$\$ SYSTEM \$\$\$\$\$\$
\$\$\$\$\$ ADDONS \$\$\$\$\$\$
\$\$\$\$\$ USER NAME \$\$\$\$\$\$
\$\$\$\$\$

PROJECT: 17BP.11.R.61

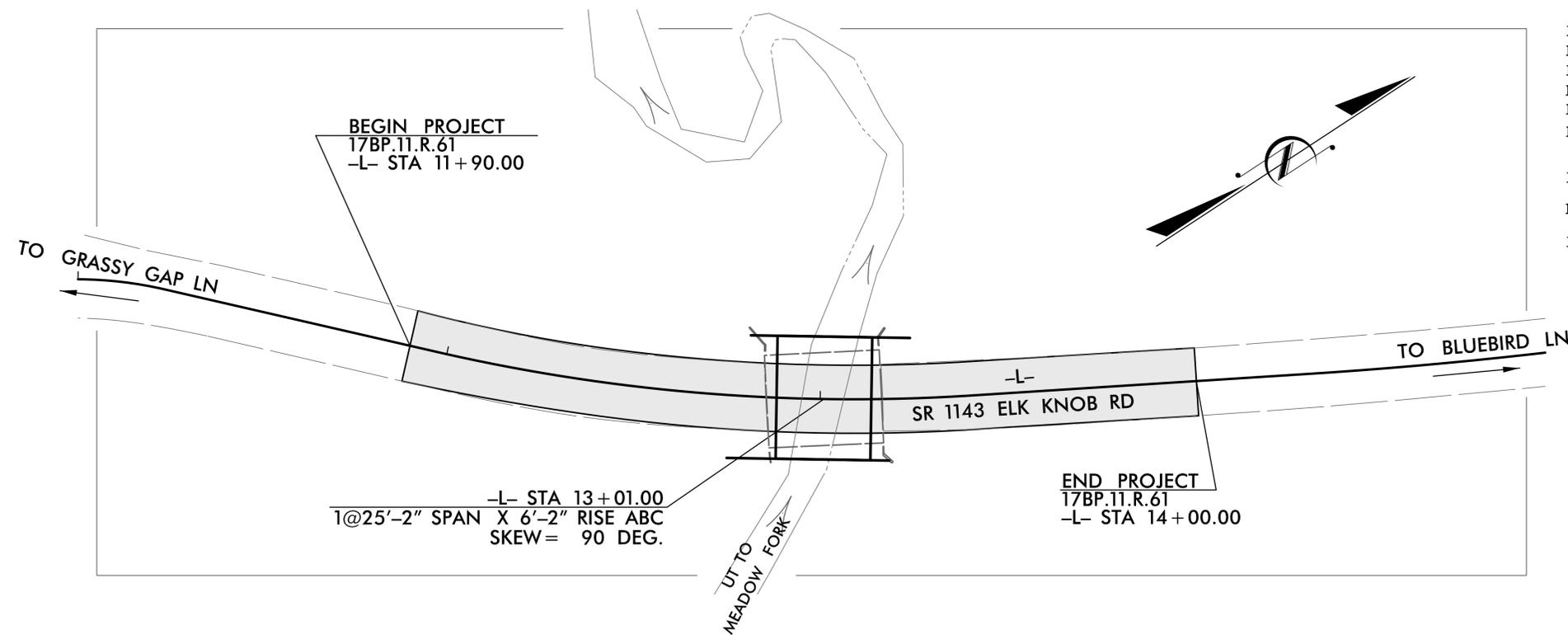


STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS
 PLAN FOR PROPOSED
 HIGHWAY EROSION CONTROL

ALLEGHANY COUNTY

LOCATION: BRIDGE NO. 020061 OVER UT
 TO MEADOW FORK ON SR 1143 (ELK KNOB RD)

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



STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.11.R.61	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
17BP.11.R.61		CONST.	

EROSION AND SEDIMENT CONTROL MEASURES

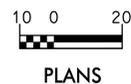
Std. #	Description	Symbol
1630.03	Temporary Silt Ditch	—
1630.05	Temporary Diversion	— TD —
1605.01	Temporary Silt Fence	— III — III — III —
1606.01	Special Sediment Control Fence	— X — X — X —
1622.01	Temporary Berms and Slope Drains	— T —
1630.02	Silt Basin Type B	— [Symbol] —
1633.01	Temporary Rock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

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.

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

JIMMY L. TERRY, PE
 PROJECT ENGINEER
 LEVEL III CERTIFICATION
 NUMBER 3145

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		

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

PROJECT REFERENCE NO.	SHEET NO.
<i>17BP11.R.61</i>	<i>EC-2</i>
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

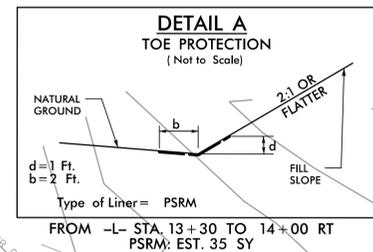
SOIL STABILIZATION TIMEFRAMES

<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.

ALLEGHANY COUNTY
BRIDGE #020061



PROJECT REFERENCE NO. 17BP.11.R.61	SHEET NO. EC-3/CONST.4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



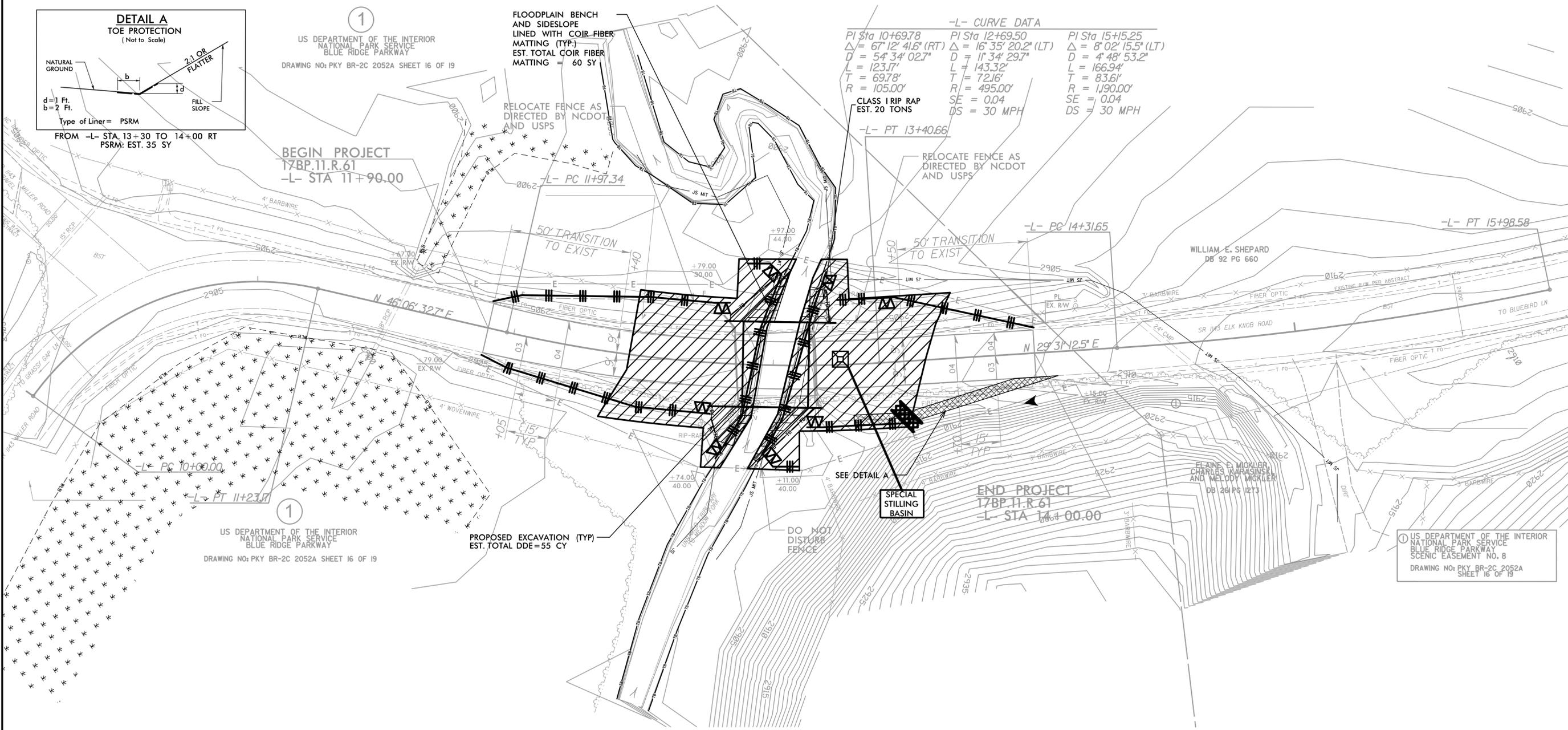
1
US DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
BLUE RIDGE PARKWAY
DRAWING NO: PKY BR-2C 2052A SHEET 16 OF 19

FLOODPLAIN BENCH AND SIDESLOPE LINED WITH COIR FIBER MATTING (TYP.) EST. TOTAL COIR FIBER MATTING = 60 SY

-L- CURVE DATA

PI Sta 10+69.78	PI Sta 12+69.50	PI Sta 15+15.25
$\Delta = 67^{\circ}12'41.6"$ (RT)	$\Delta = 16^{\circ}35'20.2"$ (LT)	$\Delta = 8^{\circ}02'15.5"$ (LT)
$D = 54^{\circ}34'02.7"$	$D = 11^{\circ}34'29.7"$	$D = 4^{\circ}48'53.2"$
$L = 123.17'$	$L = 143.32'$	$L = 166.94'$
$T = 69.78'$	$T = 72.16'$	$T = 83.61'$
$R = 105.00'$	$R = 495.00'$	$R = 1,190.00'$
$SE = 0.04$	$SE = 0.04$	$SE = 0.04$
$DS = 30$ MPH	$DS = 30$ MPH	$DS = 30$ MPH

CLASS I RIP RAP EST. 20 TONS



1
US DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
BLUE RIDGE PARKWAY
DRAWING NO: PKY BR-2C 2052A SHEET 16 OF 19

1
US DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
BLUE RIDGE PARKWAY
SCENIC EASEMENT NO. 8
DRAWING NO: PKY BR-2C 2052A SHEET 16 OF 19

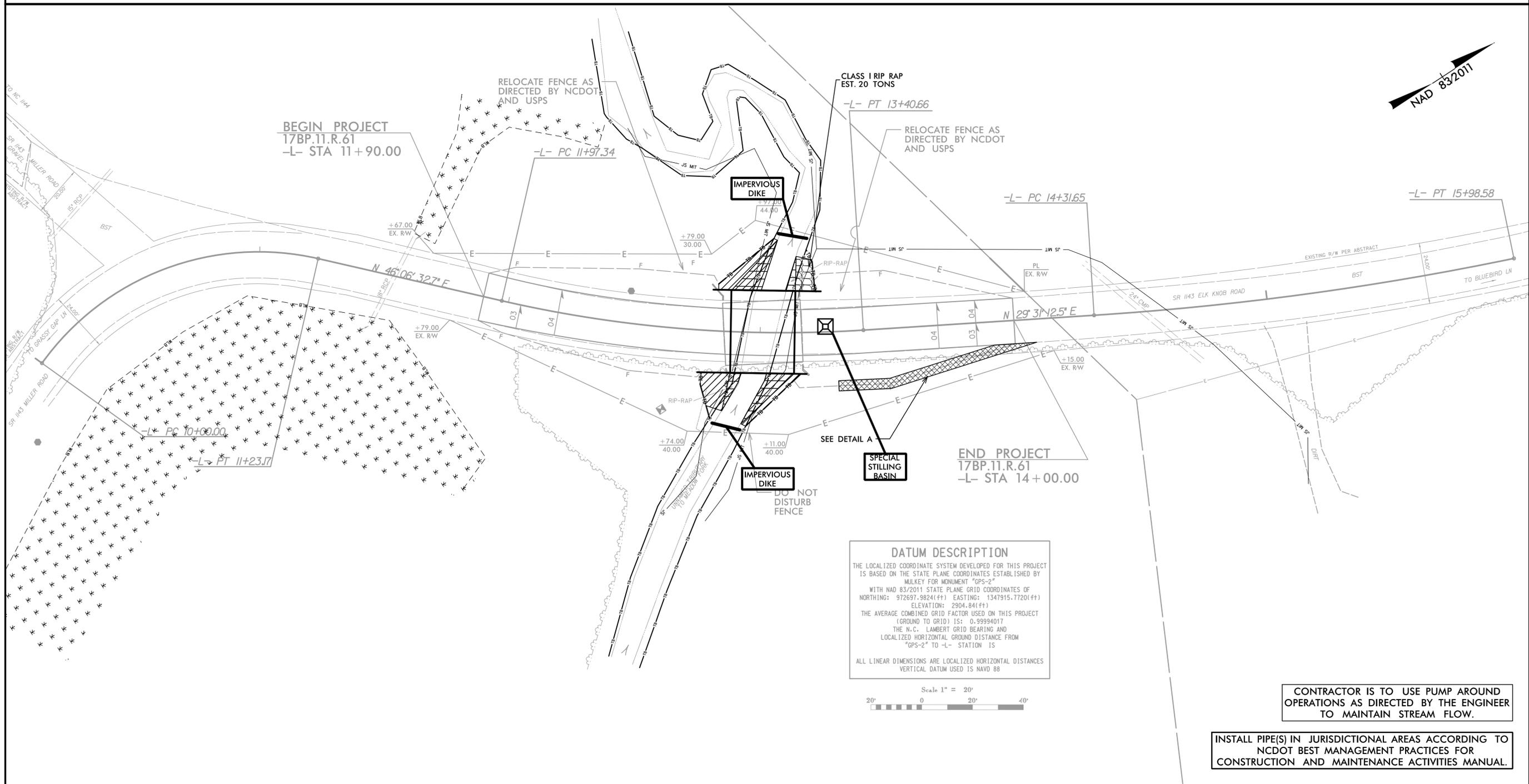


PROJECT REFERENCE NO.	SHEET NO.
17BP.11.R.61	EC-4/CONST.4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CULVERT CONSTRUCTION SEQUENCE STA. 13+01 -L-

PHASING

1. Close SR 1143 (Elk Knob Rd) to traffic as shown in traffic management plans.
2. Install perimeter erosion control devices as shown on EC-3.
3. Construct impervious dikes to restrain stream and begin pump around operations.
4. Remove existing bridge over Unnamed Tributary to Meadow Fork Creek.
5. Install proposed 25'-2" x 6'-2" Aluminum Box Culvert.
6. Complete any necessary Inlet/Outlet channel improvements.
7. Remove impervious dikes and divert water into new culvert.
8. Complete roadway construction.



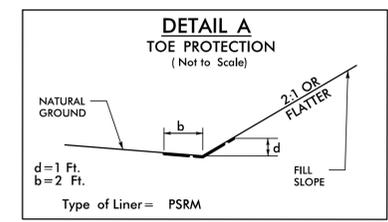
ALLEGHANY COUNTY
BRIDGE #020061

PROJECT REFERENCE NO. 17BP.11.R.61	SHEET NO. EC-5/CONST.4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



Place Matting for Erosion Control on Slope as Work Allows.

Place Matting for Erosion Control on Slopes Adjacent to Permitted Wetlands as Work Allows.

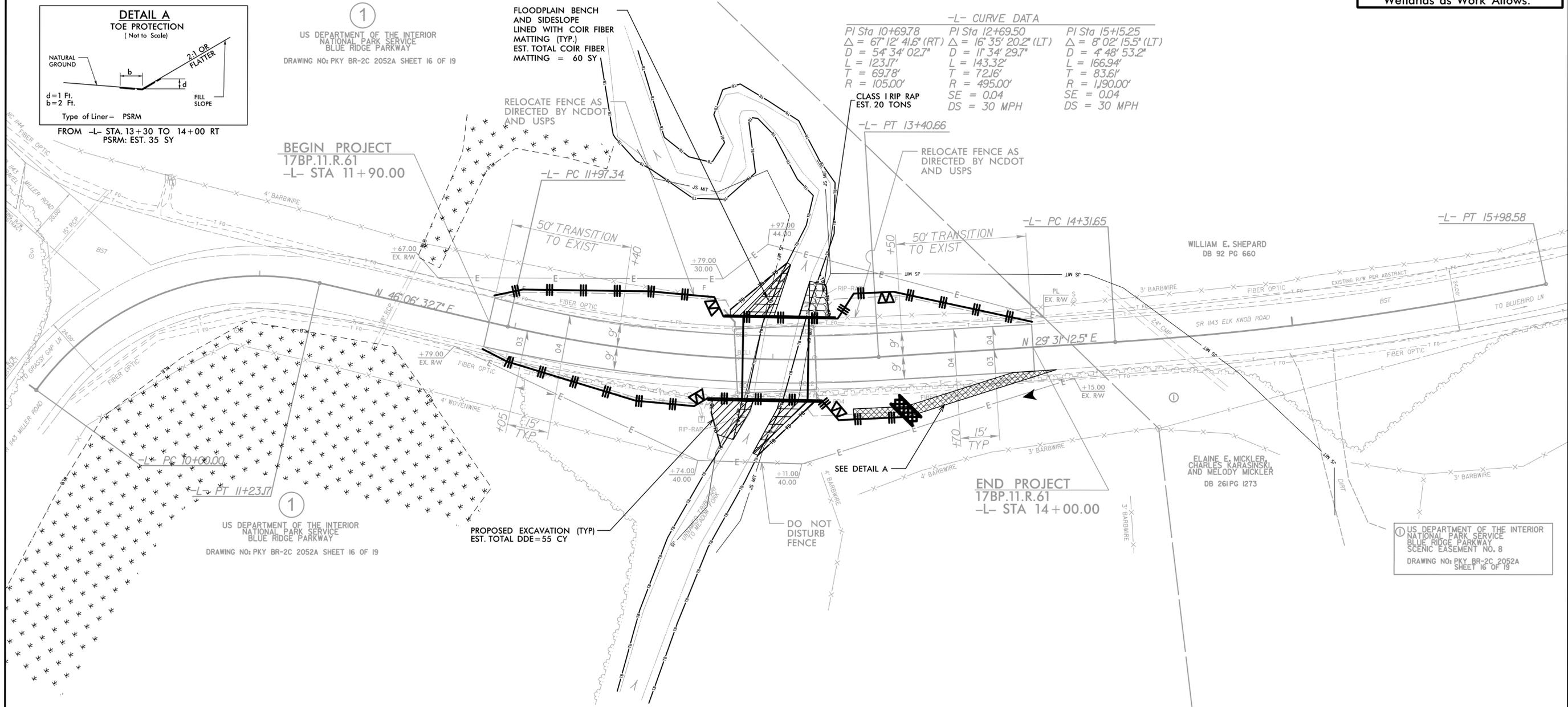


1
US DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
BLUE RIDGE PARKWAY
DRAWING NO: PKY BR-2C 2052A SHEET 16 OF 19

FLOODPLAIN BENCH AND SIDESLOPE LINED WITH COIR FIBER MATTING (TYP.) EST. TOTAL COIR FIBER MATTING = 60 SY

-L- CURVE DATA

PI Sta 10+69.78	PI Sta 12+69.50	PI Sta 15+15.25
$\Delta = 67^{\circ} 12' 41.6''$ (RT)	$\Delta = 16^{\circ} 35' 20.2''$ (LT)	$\Delta = 8^{\circ} 02' 15.5''$ (LT)
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$R = 105.00'$	$R = 495.00'$	$R = 1,190.00'$
	$SE = 0.04$	$SE = 0.04$
	$DS = 30$ MPH	$DS = 30$ MPH



1
US DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
BLUE RIDGE PARKWAY
DRAWING NO: PKY BR-2C 2052A SHEET 16 OF 19

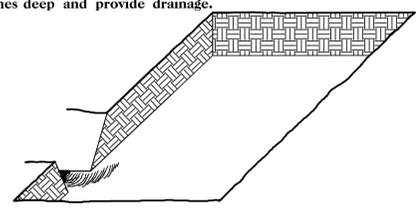
1 US DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
BLUE RIDGE PARKWAY
SCENIC EASEMENT NO. 8
DRAWING NO: PKY BR-2C 2052A
SHEET 16 OF 19

PLANTING DETAILS

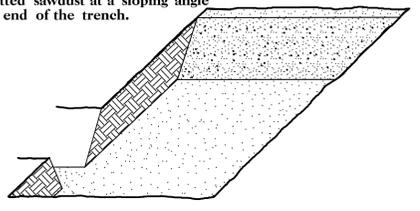
SEEDLING / LINER BAREROOT PLANTING DETAIL

HEALING IN

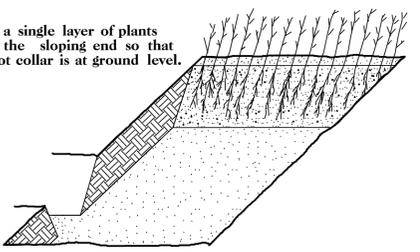
1. Locate a healing-in site in a shady, well protected area.
2. Excavate a flat bottom trench 12 inches deep and provide drainage.



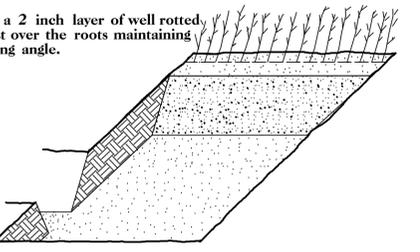
3. Backfill the trench with 2 inches well rotted sawdust. Place a 2 inch layer of well rotted sawdust at a sloping angle at one end of the trench.



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

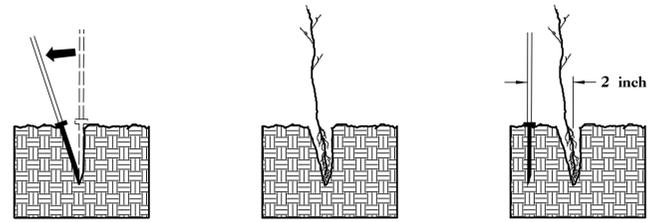


5. Place a 2 inch layer of well rotted sawdust over the roots maintaining a sloping angle.

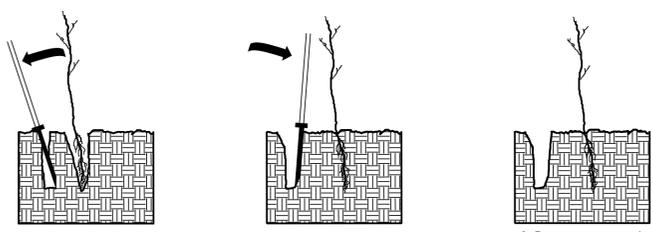


6. Repeat layers of plants and sawdust as necessary and water thoroughly.

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

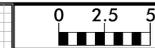
- TREE REFORESTATION SHALL BE PLANTED 6 FT. TO 10 FT. ON CENTER, RANDOM SPACING, AVERAGING 8 FT. ON CENTER, APPROXIMATELY 680 PLANTS PER ACRE.

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

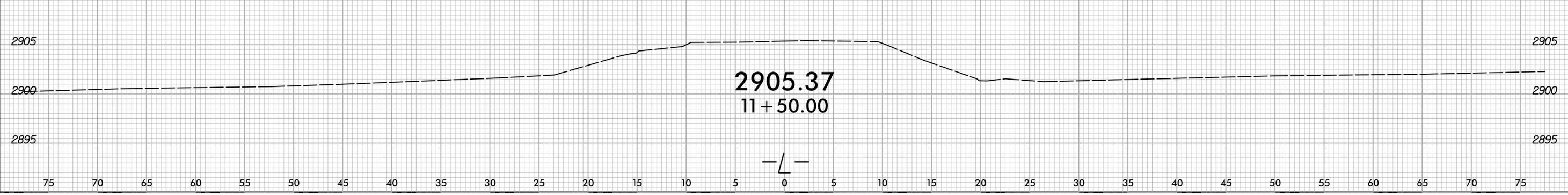
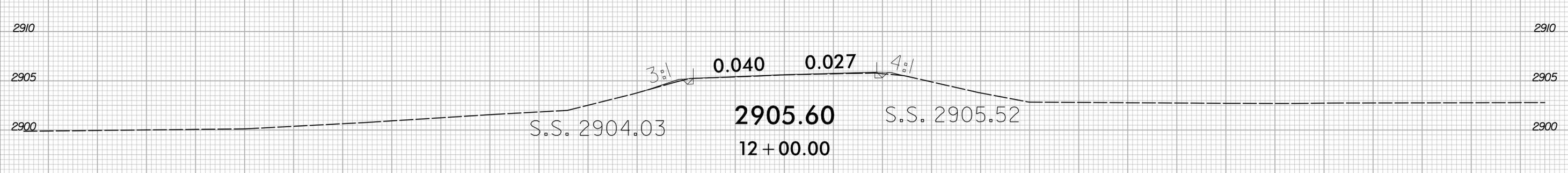
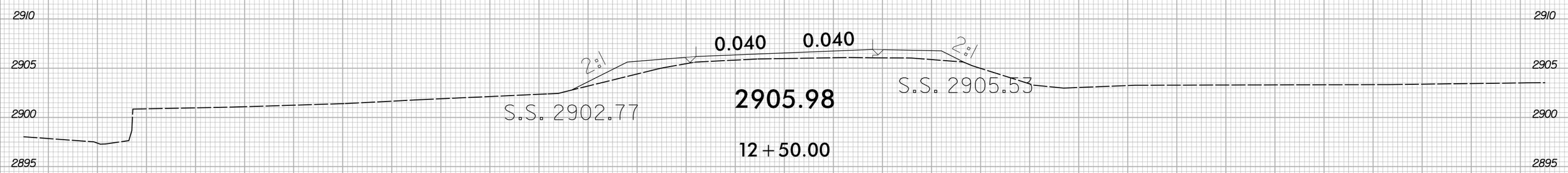
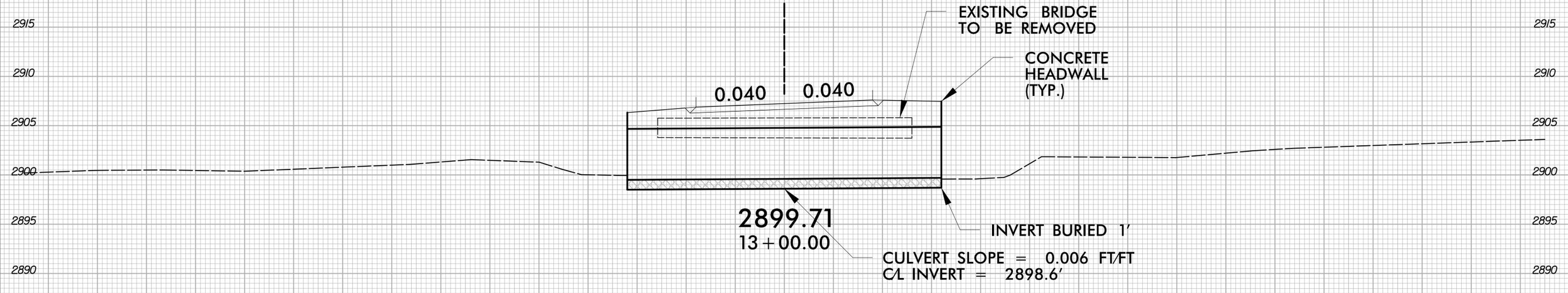
8/23/99



PROJ. REFERENCE NO. 17BP.11.R.61	SHEET NO. X-1
-------------------------------------	------------------

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

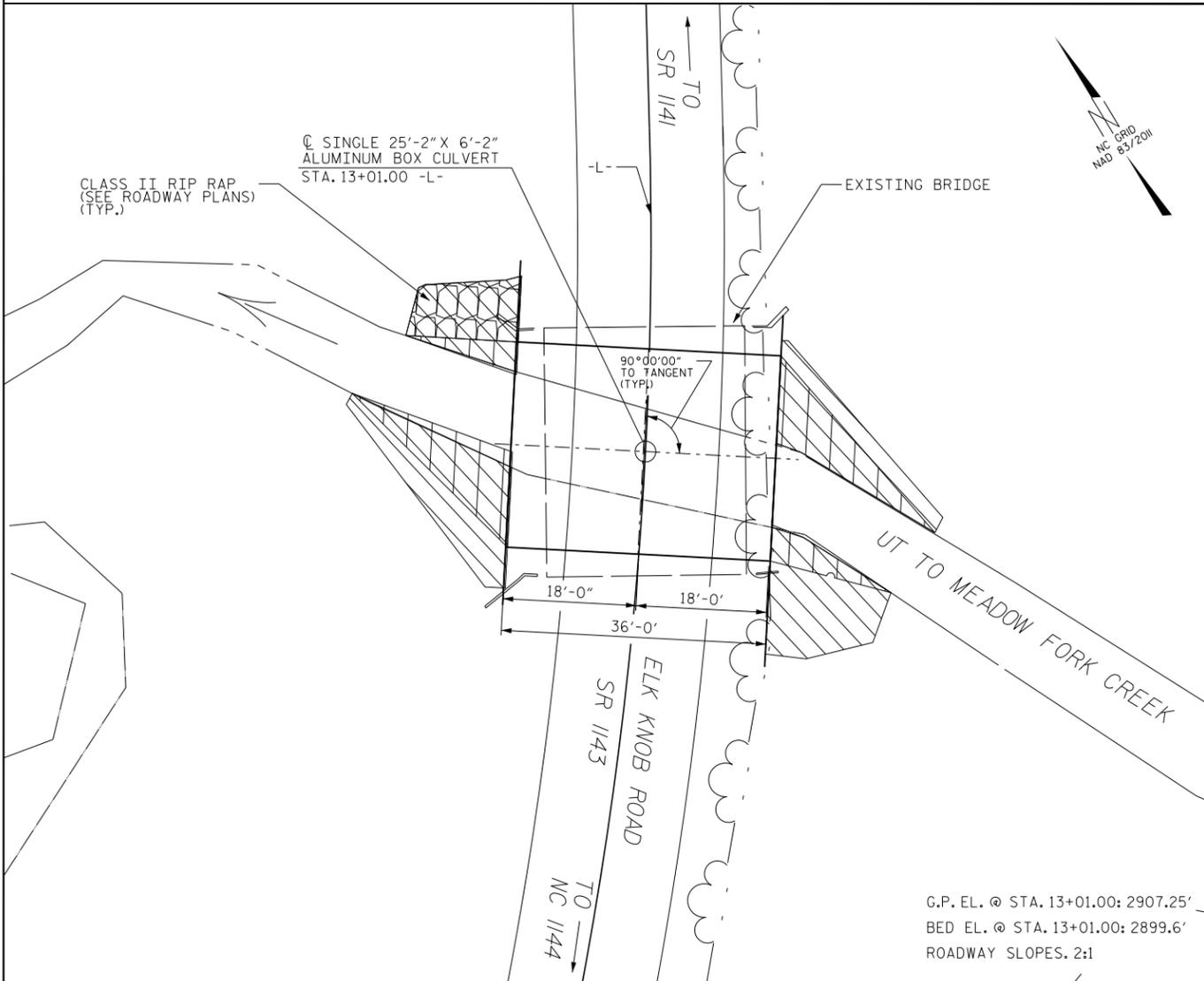
CL -L- STA. 13+01.00
 PROP. 1 @ 25'-2" SPAN x 6'-2" RISE
 ALUMINUM BOX CULVERT
 SKEW = 90



*****SYTIME*****
*****L*****
*****D*****
*****P*****
*****R*****
*****V*****
*****E*****

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

BENCHMARK: BM#1: -L- 12+64 32' RT (N 972682.33, E 1347961.10)
RR SPIKE IN 12" OAK. ELEV. 2904.40' NAVD 88



LOCATION SKETCH

FOR UTILITY INFORMATION, SEE UTILITY PLANS AND SPECIAL PROVISIONS.

NOTES

ASSUMED LIVE LOAD -----HL-93 OR ALTERNATE LOADING.
DESIGN FILL-----MIN: 1'-6", MAX: 2'-10".
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 CULVERT DIVERSION DETAILS AND PAY ITEM, SEE EROSION CONTROL PLANS
FOR OTHER DESIGN DATA AND NOTES SEE STANDARD NOTE SHEET.
FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.
FOR FOUNDATION MATERIAL, SEE SPECIAL PROVISIONS.
FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.
FOR GROUT FOR STRUCTURES, 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)30'-6" TIMBER FLOOR ON I-BEAMS, END BENTS: TIMBER CAPS/TIMBER POST AND SILLS 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 STRUCTURE 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+01.00 -L-.'

EXCAVATE 1' BELOW THE CULVERT AND FOOTING AND REPLACE WITH FOUNDATION CONDITIONING MATERIAL IN ACCORDANCE WITH ARTICLE 414 OF THE STANDARD SPECIFICATIONS.

NO WORK SHALL BE DONE ON THE CULVERT AT STA. 13+01.00-L- UNTIL THE AREA OF THE BOX CULVERT HAS BEEN UNDERCUT TO ELEVATION 2897.6' AND UNSUITABLE MATERIAL REPLACED WITH SUITABLE MATERIAL, PROPERLY COMPACTED TO THE ELEVATION OF THE BOTTOM OF THE PROPOSED CULVERT. THE LIMITS OF THIS UNDERCUT ELEVATION 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. CLASS B 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+01.00-L-	LUMP SUM
ALUMINUM BOX CULVERT @ STA. 13+01.00-L-	LUMP SUM
CULVERT EXCAVATION	LUMP SUM
FOUNDATION MATERIAL	68 TONS
CULVERT BACKFILL	260 TONS
CONCRETE HEADWALLS	43.8 C.Y.
REBAR AS NECESSARY FOR HEADWALLS	LUMP SUM

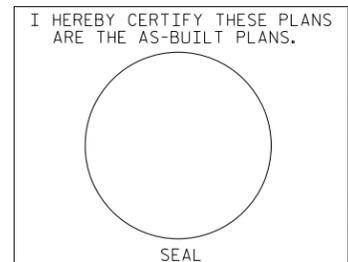
HYDRAULIC DATA:

DESIGN DISCHARGE	470 CFS
FREQUENCY OF DESIGN DISCHARGE	25 YRS.
DESIGN HIGH WATER ELEVATION	2904.3'
DRAINAGE AREA	1.26 SQ. MI.
BASE DISCHARGE	700 CFS
FREQUENCY OF BASE DISCHARGE	100 YRS.
BASE HIGH WATER ELEVATION	2905.72'

OVERTOPPING FLOOD DATA:

OVERTOPPING DISCHARGE	550 CFS
FREQUENCY OF OVERTOPPING FLOOD	50 YR±
OVERTOPPING FLOOD ELEVATION	*2905.28'

*OVERTOPPING ELEVATION REPRESENTS ELEVATION @ SAG (-L- STA. 11+25, 9' LT)

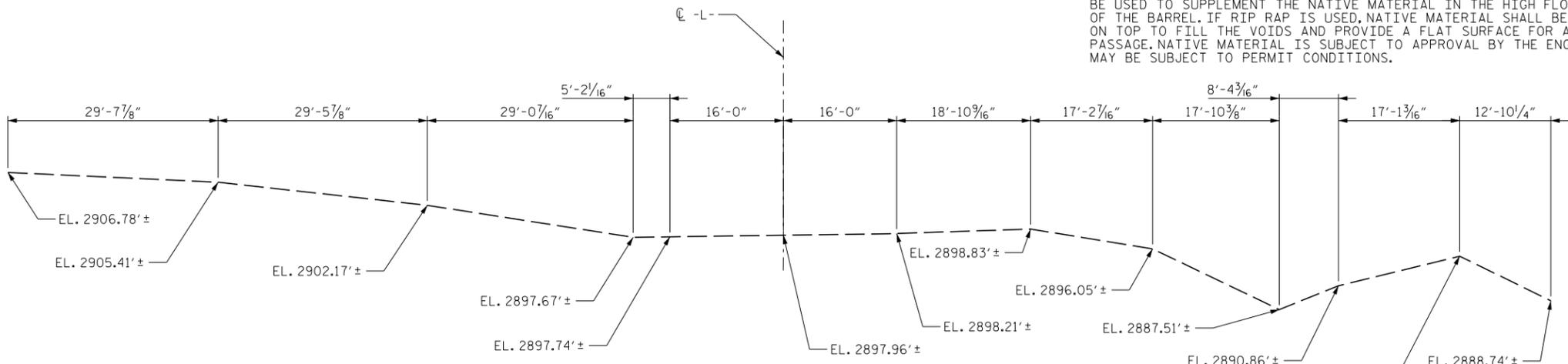


RELEASED FOR CONSTRUCTION

PROJECT NO. 17BP.11.R.61
ALLEGHANY COUNTY
STATION: 13+01.00-L-
SHEET 1 OF 3 REPLACES BR. NO. 020061



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SINGLE
25'-2" X 6'-2"
ALUMINUM BOX CULVERT
@ 90°



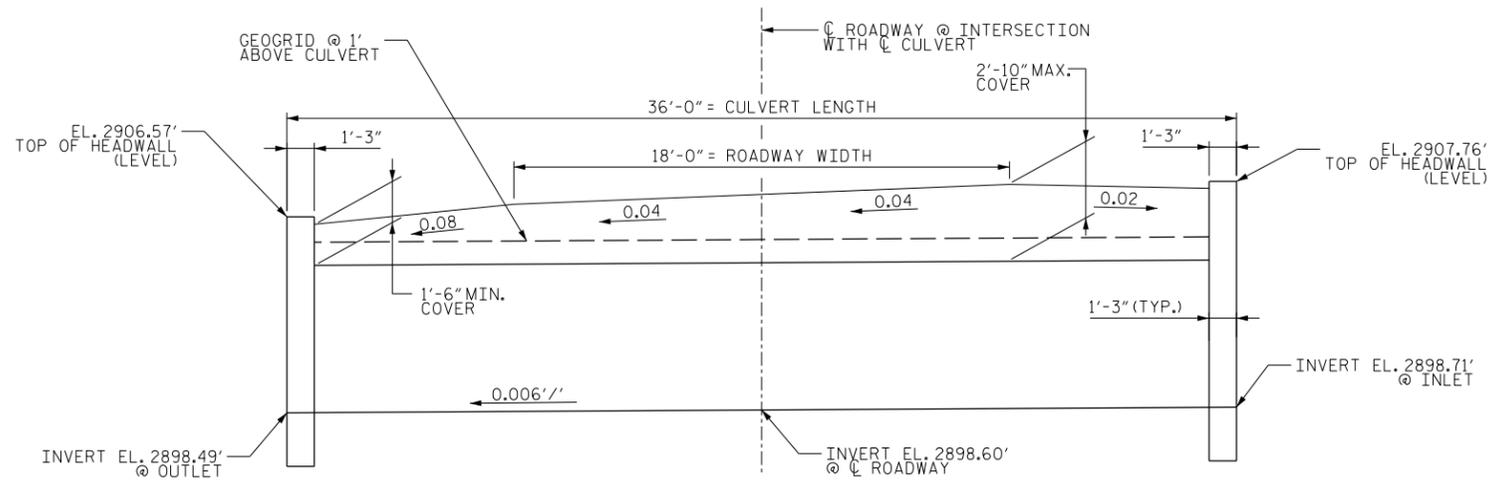
PROFILE ALONG CULVERT

ASSEMBLED BY: CCC DATE: 9/14
CHECKED BY: JBW DATE: 9/14
SPECIAL

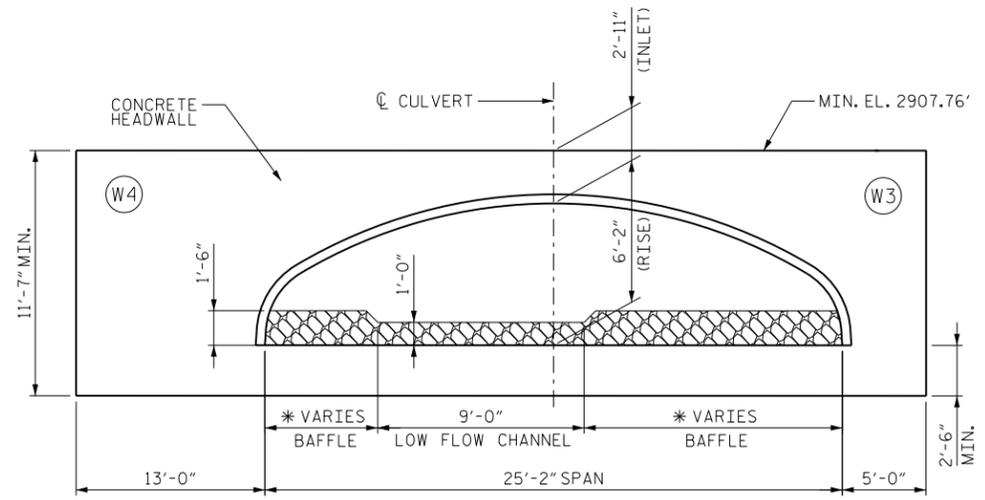
PREPARED BY
TGS ENGINEERS
804 N LAFAYETTE ST
SHELBY, NC 28150

REVISIONS			SHEET NO.		
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

C-1
TOTAL SHEETS 3

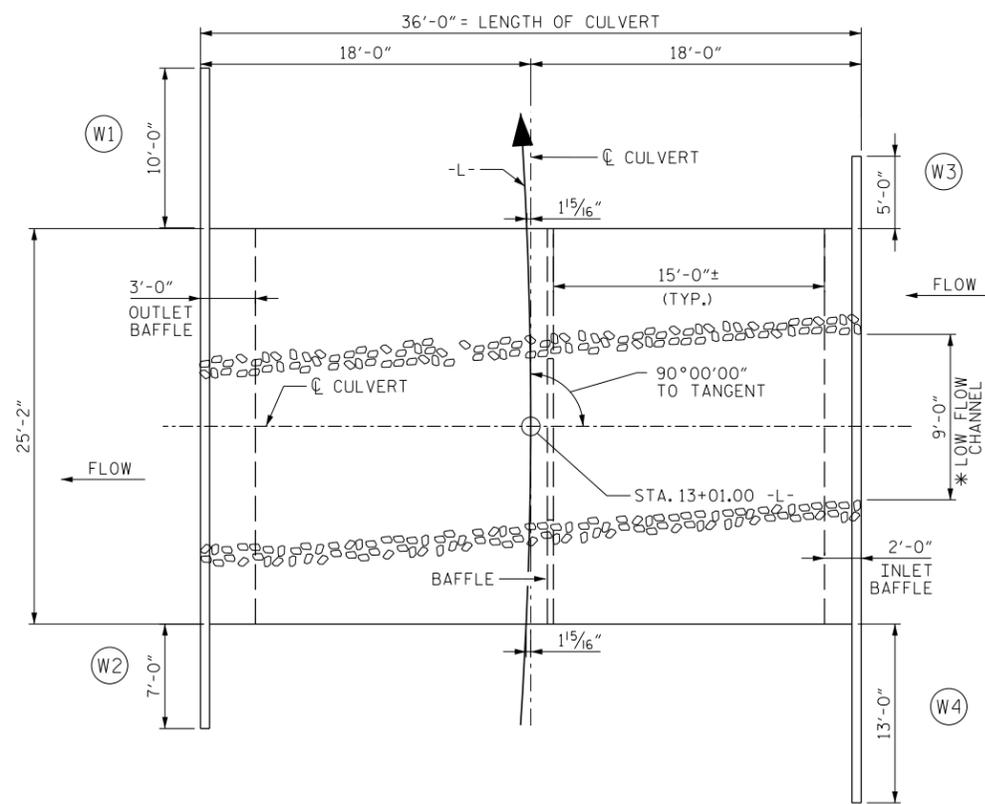


CULVERT SECTION NORMAL TO ROADWAY

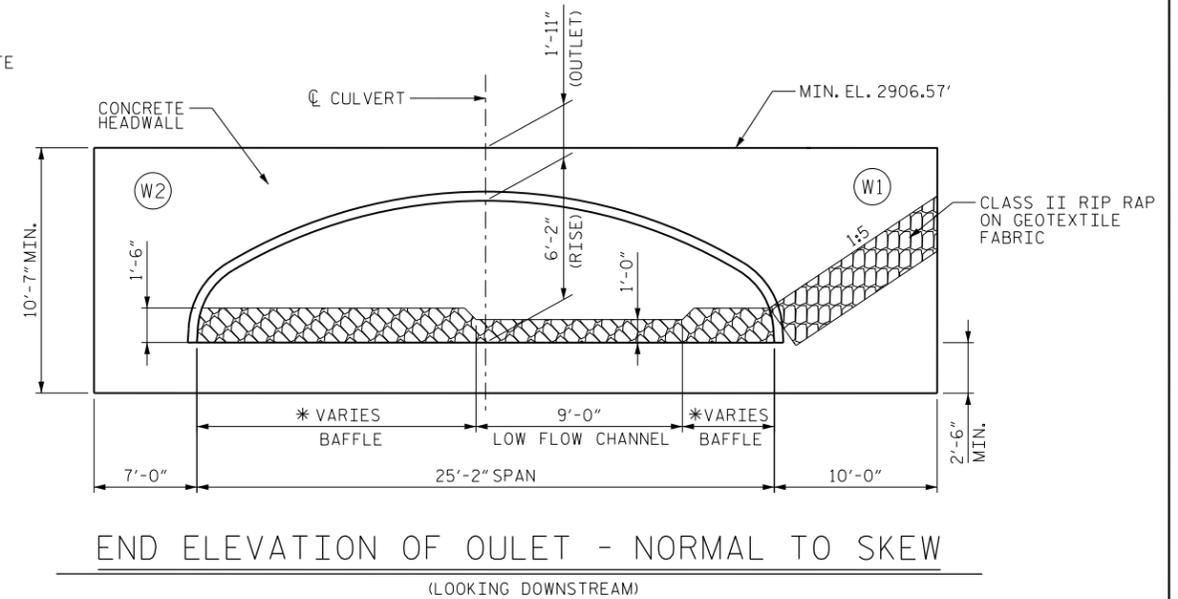


END ELEVATION OF INLET - NORMAL TO SKEW
(LOOKING DOWNSTREAM)

NOTE:
CONCRETE HEADWALLS SHALL BE DESIGNED TO ACCOMMODATE TRAFFIC LOADING.
CONCRETE HEADWALLS MUST BE DYED TO MATCH US DEPARTMENT OF THE INTERIOR NATIONAL PARK SERVICE SPECIFICATIONS.

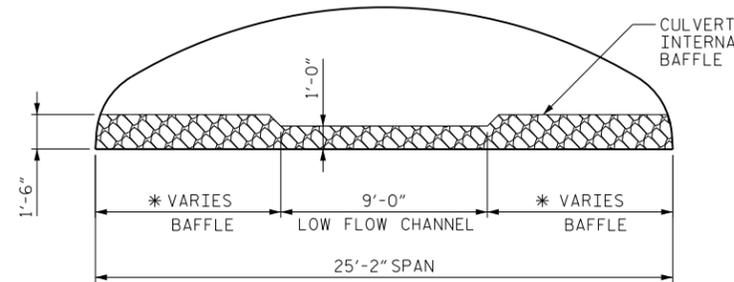


PLAN OF ALUMINUM BOX CULVERT



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

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



CULVERT INTERNAL SECTION
(LOOKING DOWNSTREAM)

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PROJECT NO. 17BP.11.R.61
ALLEGHANY COUNTY
STATION: 13+01.00-L-
SHEET 2 OF 3 REPLACES BR. NO. 020061

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SINGLE
25'-2" X 6'-2"
ALUMINUM BOX CULVERT
@ 90°

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

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. FINIS 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.

PROJECT NO. 17BP.11.R.61

ALLEGHANY COUNTY

STATION: 13+01.00-L-

SHEET 3 OF 3



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

**RELEASED
FOR
CONSTRUCTION**

PREPARED BY
TCS ENGINEERS
804 N. LAFAYETTE ST
SHELBY, NC 28150

DRAWN BY : CCC DATE : 9/14 REV. 6-16-95 EEM () RGW REV. 5-7-03 RWW () JTE REV. 10-1-11 MAA () GM
 CHECKED BY : JBW DATE : 9/14 REV. 8-16-99 RWW () LES REV. 5-1-06 TLA () CM