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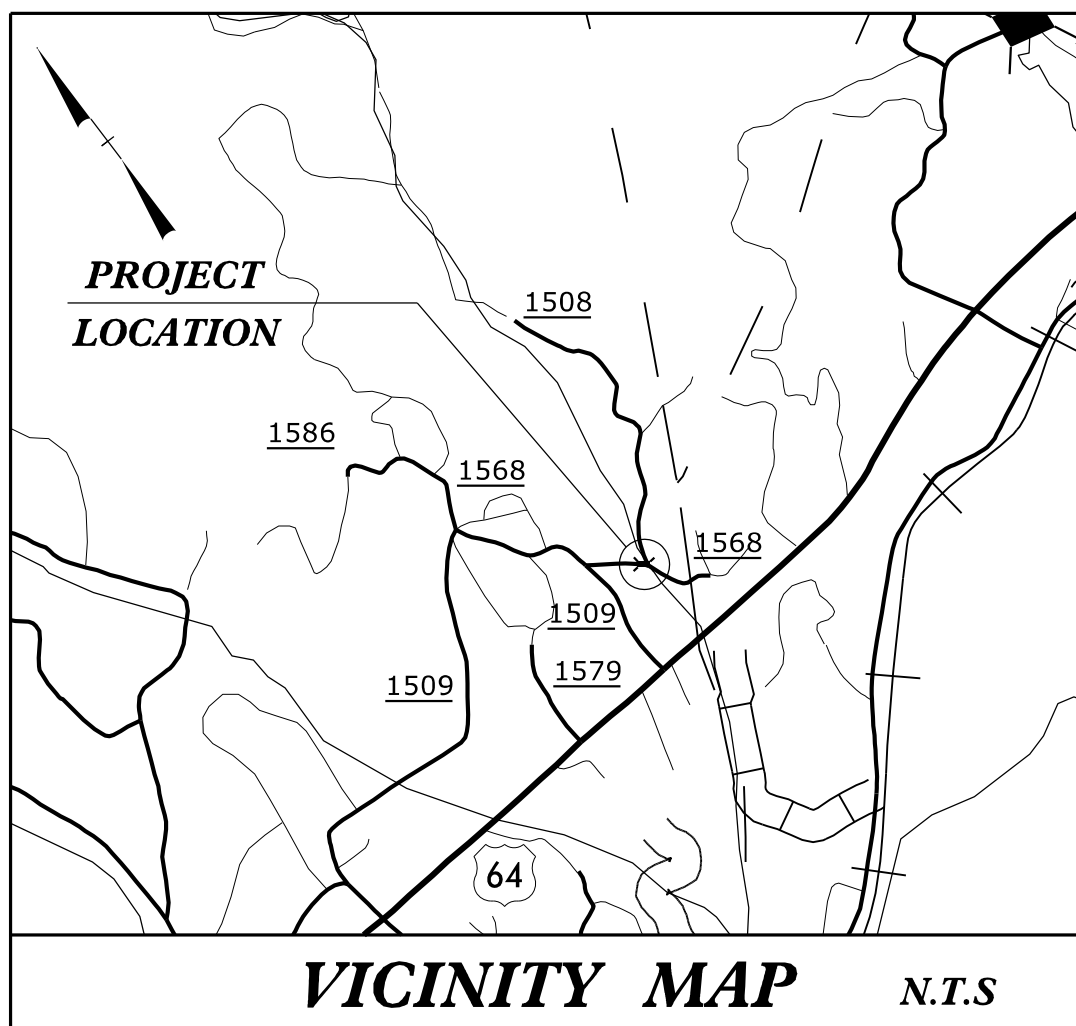
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with their signature on that page.**

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shall not be considered a certified document.**

**WBS: 17BP.14.R.120**

**CONTRACT: DN00288**

See Sheet 1A For Index of Sheets  
See Sheet 1B For Conventional Symbols Sheet



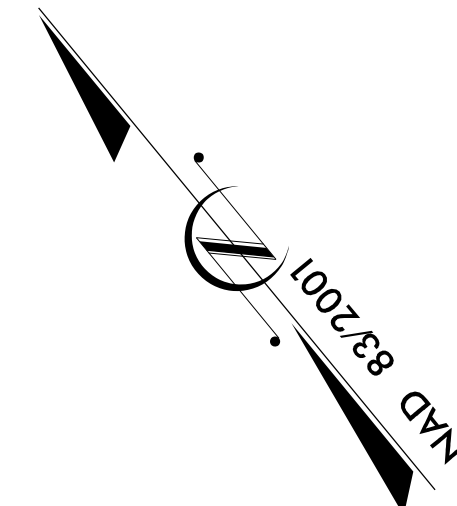
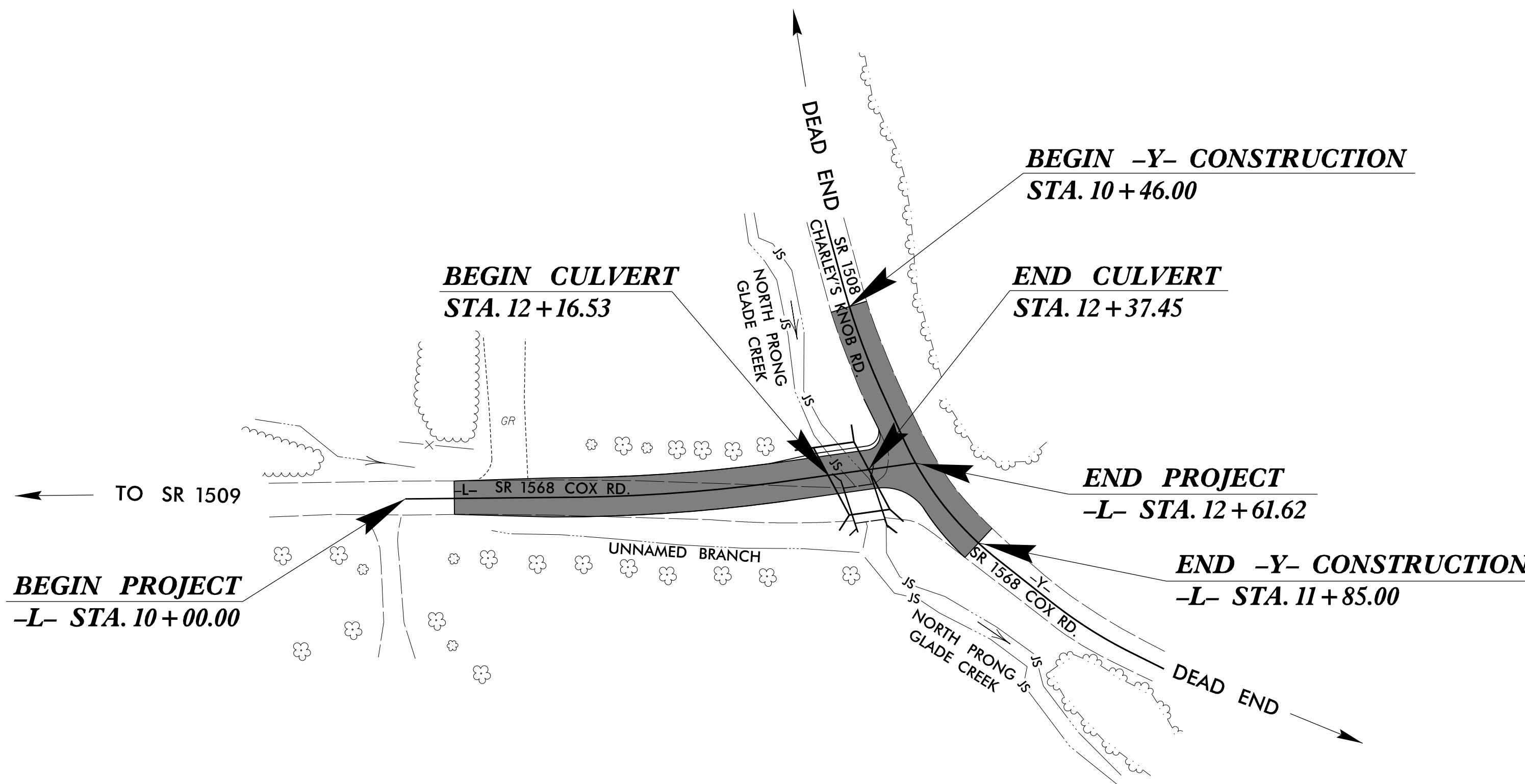
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**TRANSYLVANIA COUNTY**

**LOCATION: BRIDGE NO. 163 OVER NORTH PRONG GLADE CREEK  
ON SR 1568 (COX ROAD)**

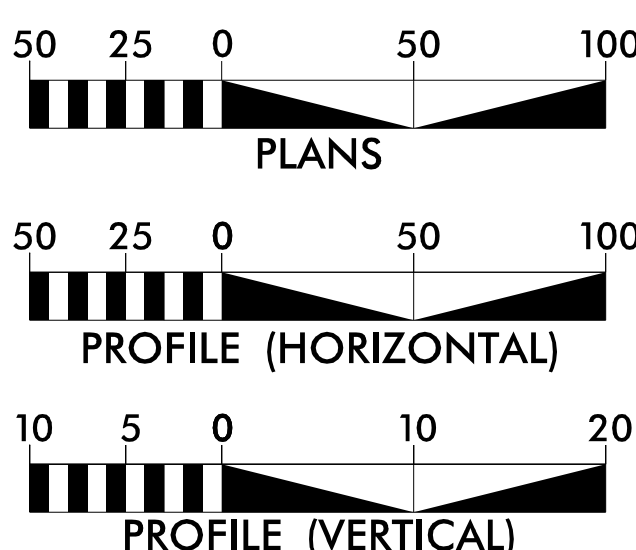
**TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURE (CULVERT)**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.14.R.120	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
17BP.14.R.120	N/A	PE	
17BP.14.R.120	N/A	ROW, UTL	
17BP.14.R.120	N/A	CONST.	



100% ROADWAY PLANS  
SUBMITTAL NO: D-010  
DATE: APRIL 11, 2016  
**DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED**

**GRAPHIC SCALES**



**DESIGN DATA**

ADT 2013 = 370  
  
T = 6%  
V = 15 MPH  
  
FUNC CLASS =  
LOCAL  
SUBREGIONAL TIER

**PROJECT LENGTH**

LENGTH ROADWAY = 0.046 MILES  
LENGTH STRUCTURE = 0.004 MILES  
TOTAL LENGTH = 0.050 MILES

PLANS PREPARED BY:  
**RS&H** 1520 SOUTH BOULEVARD, SUITE 200  
CHARLOTTE, NC 28203  
704-752-0610

FOR THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
2012 STANDARD SPECIFICATIONS

**RIGHT OF WAY DATE:**  
2014

**LETTING DATE:**  
2016

**JENNIFER FARINO, PE**  
PROJECT ENGINEER

**SEAN KORTOVICH**  
PROJECT DESIGNER

**JOSH DEYTON, PE**  
NCDOT CONTACT

**HYDRAULICS ENGINEER**

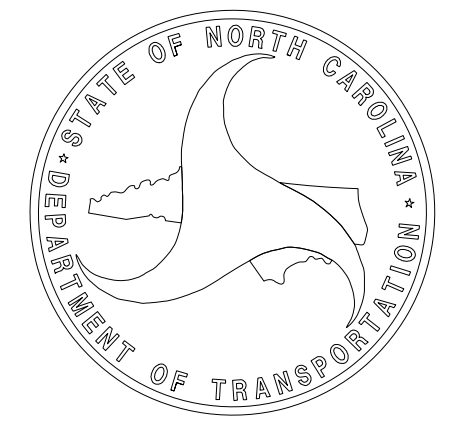
7/26/2016

SIGNATURE: \_\_\_\_\_ P.E.

**ROADWAY DESIGN ENGINEER**

7/15/2016

SIGNATURE: \_\_\_\_\_ P.E.



PROJECT REFERENCE NO. <i>17BPJ4R120</i>	SHEET NO. <i>1A</i>
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ROADWAY DESIGN ENGINEER

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

# 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 SECTIONS, AND WEDGING DETAILS
3B-1	SUMMARY OF DRAINAGE QUANTITIES, SUMMARY OF GUARDRAIL, EARTHWORK SUMMARY, AND ASPHALT PAVEMENT REMOVAL SUMMARY
4	PLAN AND PROFILE SHEET
TMP-1 THRU TMP-3	TRANSPORTATION MANAGEMENT PLANS
PMP-1 THRU PMP-2	PAVEMENT MARKING PLANS
EC-1 THRU EC-6	EROSION CONTROL PLANS
UO-1 THRU UO-2	UTILITIES BY OTHERS
X-1A	CROSS-SECTION SUMMARY SHEET
X-1 THRU X-4	CROSS-SECTIONS
C-1 THRU C-3	STRUCTURE PLANS

# GENERAL NOTES

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

GRADING AND SURFACING OR RESURFACING AND WIDENING:

THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. WHERE NO GRADE LINES ARE SHOWN, THE PROFILES SHOWN DENOTE THE TOP ELEVATION OF THE EXISTING PAVEMENT ALONG THE CENTER LINE OF SURVEY ON WHICH THE PROPOSED RESURFACING WILL BE PLACED. GRADE LINES MAY BE ADJUSTED BY THE ENGINEER IN ORDER TO SECURE A PROPER TIE-IN.

CLEARING:

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD 11.

SUPERELEVATION:

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

SHOULDER CONSTRUCTION:

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

SIDE ROADS:

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

GUARDRAIL:

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

TEMPORARY SHORING:

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

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE

COMORIUM COMMUNICATIONS

DUKE ENERGY

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. IN ACCORDANCE WITH SECTION 801 OF THE 2012 NORTH CAROLINA STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES.

# 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 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation
310.03	Cross Pipe End Section - Precast Concrete Section for 18" to 30" Pipe
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
DIVISION 6 - ASPHALT BASES AND PAVEMENTS	
654.01	Pavement Repairs
DIVISION 8 - INCIDENTALS	
862.01	Guardrail Placement
862.02	Guardrail Installation
876.01	Rip Rap in Channels



STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

# CONVENTIONAL PLAN SHEET SYMBOLS

**Note: Not to Scale**

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

12/05/11

**BOUNDARIES AND PROPERTY:**

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	⊙ EIP
Property Corner	-----
Property Monument	⊠ ECM
Parcel/Sequence Number	Ⓜ 123
Existing Fence Line	-x-x-x-
Proposed Woven Wire Fence	○
Proposed Chain Link Fence	⊠
Proposed Barbed Wire Fence	◇
Existing Wetland Boundary	-WLB-
Proposed Wetland Boundary	-WLB-
Existing Endangered Animal Boundary	-EAB-
Existing Endangered Plant Boundary	-EPB-
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	-JS-
Buffer Zone 1	-BZ 1-
Buffer Zone 2	-BZ 2-
Flow Arrow	←
Disappearing Stream	→
Spring	⊙
Wetland	ⓧ
Proposed Lateral, Tail, Head Ditch	-----
False Sump	⊠

**RAILROADS:**

Standard Gauge	-----
RR Signal Milepost	Ⓜ
Switch	⊠
RR Abandoned	-----
RR Dismantled	-----

**RIGHT OF WAY:**

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

**ROADS AND RELATED FEATURES:**

Existing Edge of Pavement	-----
Existing Curb	-----
Proposed Slope Stakes Cut	-----
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	CONC
Bridge Wing Wall, Head Wall and End Wall	CONC WW
MINOR:	
Head and End Wall	CONC HW
Pipe Culvert	-----
Footbridge	-----
Drainage Box: Catch Basin, DI or JB	CB
Paved Ditch Gutter	-----
Storm Sewer Manhole	Ⓜ
Storm Sewer	-----

**UTILITIES:**

POWER:	
Existing Power Pole	●
Proposed Power Pole	○
Existing Joint Use Pole	●
Proposed Joint Use Pole	○
Power Manhole	Ⓜ
Power Line Tower	⊠
Power Transformer	⊠
U/G Power Cable Hand Hole	Ⓜ
H-Frame Pole	●
Recorded U/G Power Line	-----
Designated U/G Power Line (S.U.E.*)	-----

**TELEPHONE:**

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

**WATER:**

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

**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	A/G Gas

**SANITARY SEWER:**

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

**MISCELLANEOUS:**

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



# SURVEY CONTROL SHEET 87-0163

## - FINAL -

PROJECT REFERENCE NO. 870163	SHEET NO. 1C-1
Location and Surveys	

BL POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
1	BL-1	574782.1848	903720.8069	2122.10	OUTSIDE PROJECT LIMITS	
2	BL-2	574597.9894	903945.6119	2119.76	12+56.05	33.90 RT

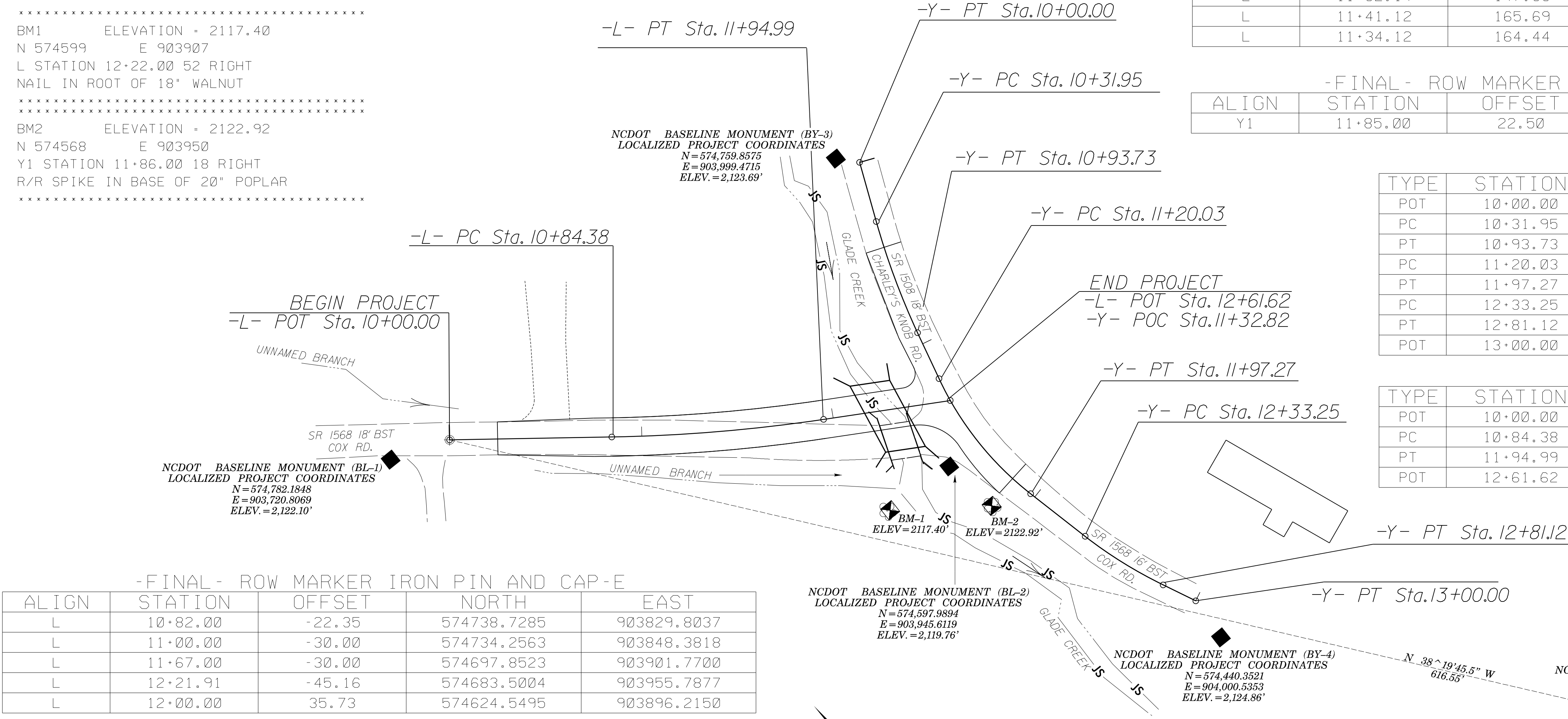
BY POINT	DESC.	NORTH	EAST	ELEVATION	Y1 STATION	OFFSET
3	BY-3	574759.8575	903999.4715	2123.69	OUTSIDE PROJECT LIMITS	
Y2	BL-2	574597.9894	903945.6119	2119.76	11+59.39	19.77 RT
4	BY-4	574440.3521	904000.5353	2124.86	OUTSIDE PROJECT LIMITS	

ALIGN	STATION	OFFSET	NORTH	EAST
L	11+63.51	-30.13	574699.7490	903898.9883
L	11+78.72	-103.82	574755.0356	903949.6781
L	12+11.45	-102.58	574738.4061	903975.5733
L	12+15.94	-72.35	574710.0110	903964.2709
L	12+04.60	-72.85	574716.1438	903954.7209
L	11+97.03	-38.37	574690.1225	903930.8631
L	11+81.99	32.59	574636.6541	903881.8403
L	11+53.29	28.35	574655.9950	903858.8722
L	11+62.14	147.36	574550.5344	903802.8809
L	11+41.12	165.69	574548.7511	903772.0196
L	11+34.12	164.44	574554.4669	903765.7855

ALIGN	STATION	OFFSET	NORTH	EAST
Y1	11+85.00	22.50	574568.9769	903945.2405

TYPE	STATION	NORTH	EAST
POT	10+00.00	574750.6624	904007.8744
PC	10+31.95	574721.2257	903995.4600
PT	10+93.73	574662.6137	903976.1516
PC	11+20.03	574637.0474	903969.9664
PT	11+97.27	574560.5239	903969.8551
PC	12+33.25	574525.5234	903978.2150
PT	12+81.12	574480.4573	903994.1004
POT	13+00.00	574463.4050	904002.1974

TYPE	STATION	NORTH	EAST
POT	10+00.00	574771.0556	903751.2014
PC	10+84.38	574719.5710	903818.0555
PT	11+94.99	574657.9672	903909.8282
POT	12+61.62	574624.5075	903967.4468



ALIGN	STATION	OFFSET	NORTH	EAST
L	10+82.00	-22.35	574738.7285	903829.8037
L	11+00.00	-30.00	574734.2563	903848.3818
L	11+67.00	-30.00	574697.8523	903901.7700
L	12+21.91	-45.16	574683.5004	903955.7877
L	12+00.00	35.73	574624.5495	903896.2150

**DATUM DESCRIPTION**

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "870163 GPS-101" WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF NORTHING: 574287.3975(±) EASTING: 904133.5733(±) ELEVATION: 2133.65(±)

THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99977508

THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "870163 GPS-101" TO -L- STATION 10+00.00 IS  
N 38°19'45.5"W 616.55'

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

**GEOID MODEL - G12ANC**  
NOTE: DRAWING NOT TO SCALE

**NOTES:**

- THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:  
[HTTPS://CONNECT.NCDOT.GOV/RESOURCES/LOCATION/](https://connect.ncdot.gov/resources/location/)  
THE FILES TO BE FOUND ARE AS FOLLOWS:  
870163\_LS\_CONTROL.TXT
- SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.
- ⊕ INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.  
PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.

6/2/99  
5/27/2015  
C:\P\033185000\_Division 14\_YR4\_17BP\_Bridges Group\_4\1033185163\_Bridge\_870163\Project Production\Design\Roadway\Proj\870163\1s\_1c-1.dgn

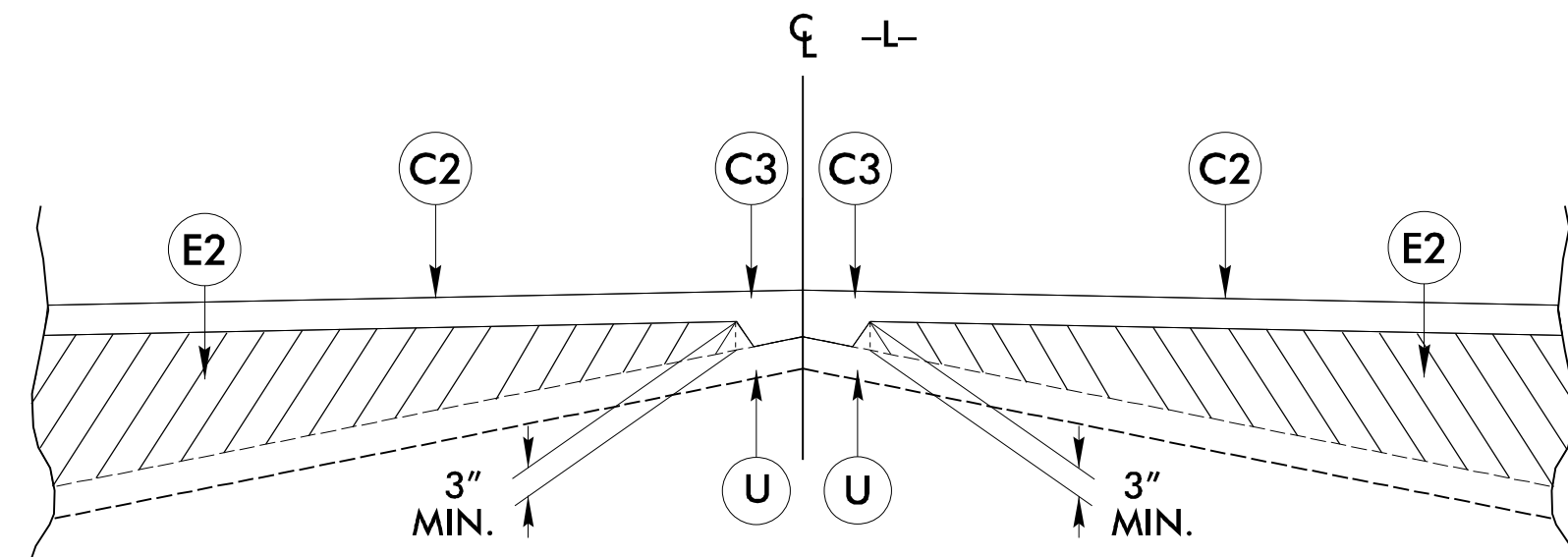
6/2/09

### PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN)

C1	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT TO EXCEED 1½" IN DEPTH.
E1	PROP. APPROX. 5½" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5½" IN DEPTH.
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL)

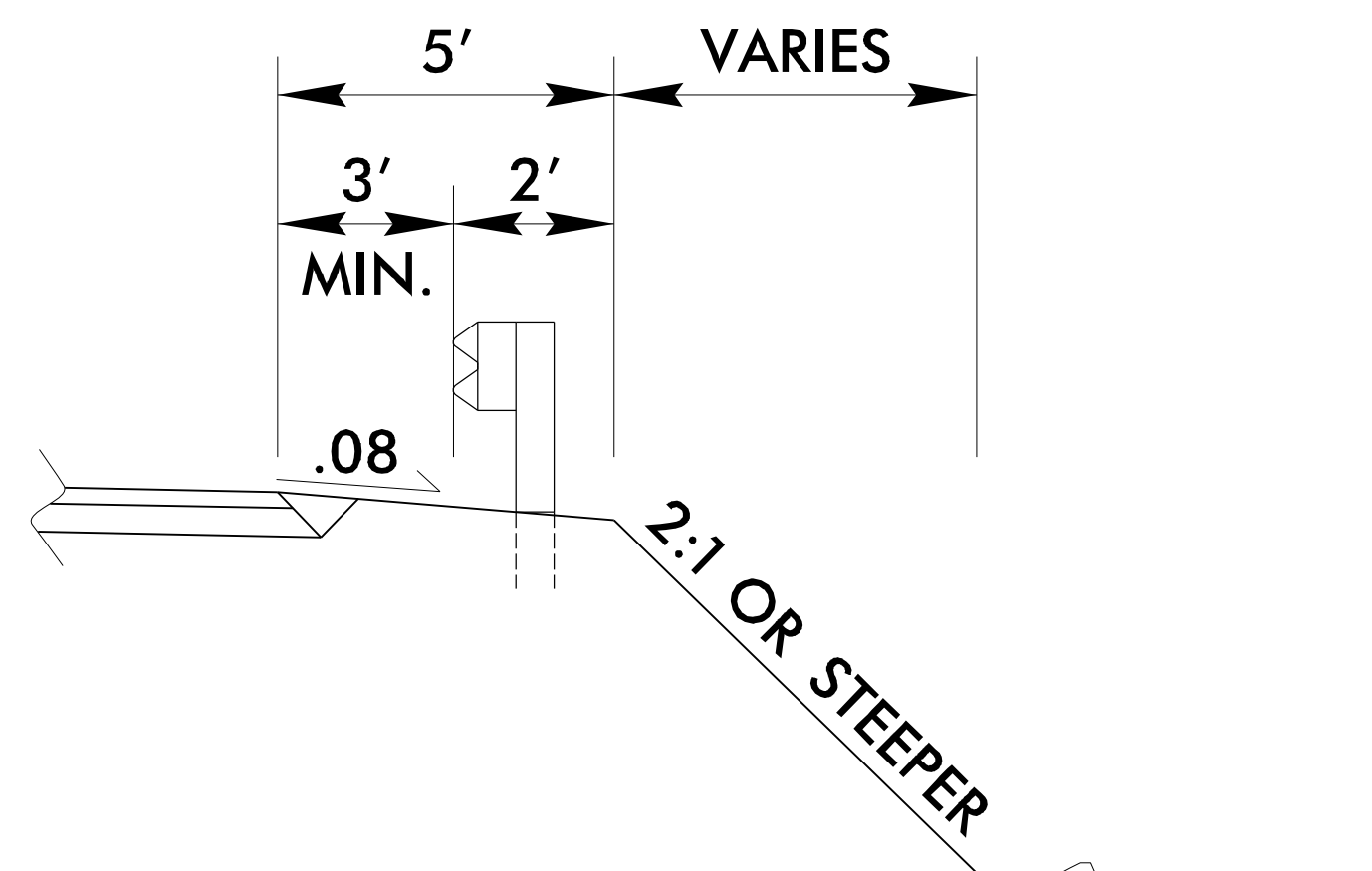
NOTE: ALL PAVEMENT SLOPES 1:1 UNLESS NOTED OTHERWISE.

NOTE: FEATHER ASPHALT 0" TO 3" FROM -L- STA 10+00.00 TO -L- STA 10+25.0  
 FEATHER ASPHALT 0" TO 1.5" FROM -Y- STA 10+46.00 TO -Y- STA 10+61.00  
 FEATHER ASPHALT 0" TO 1.5" FROM -Y- STA 11+70.00 TO -Y- STA 11+85.00



STANDARD WEDGING DETAIL

### SHOULDER DETAIL USE IN CONJUNCTION WITH GUARDRAIL

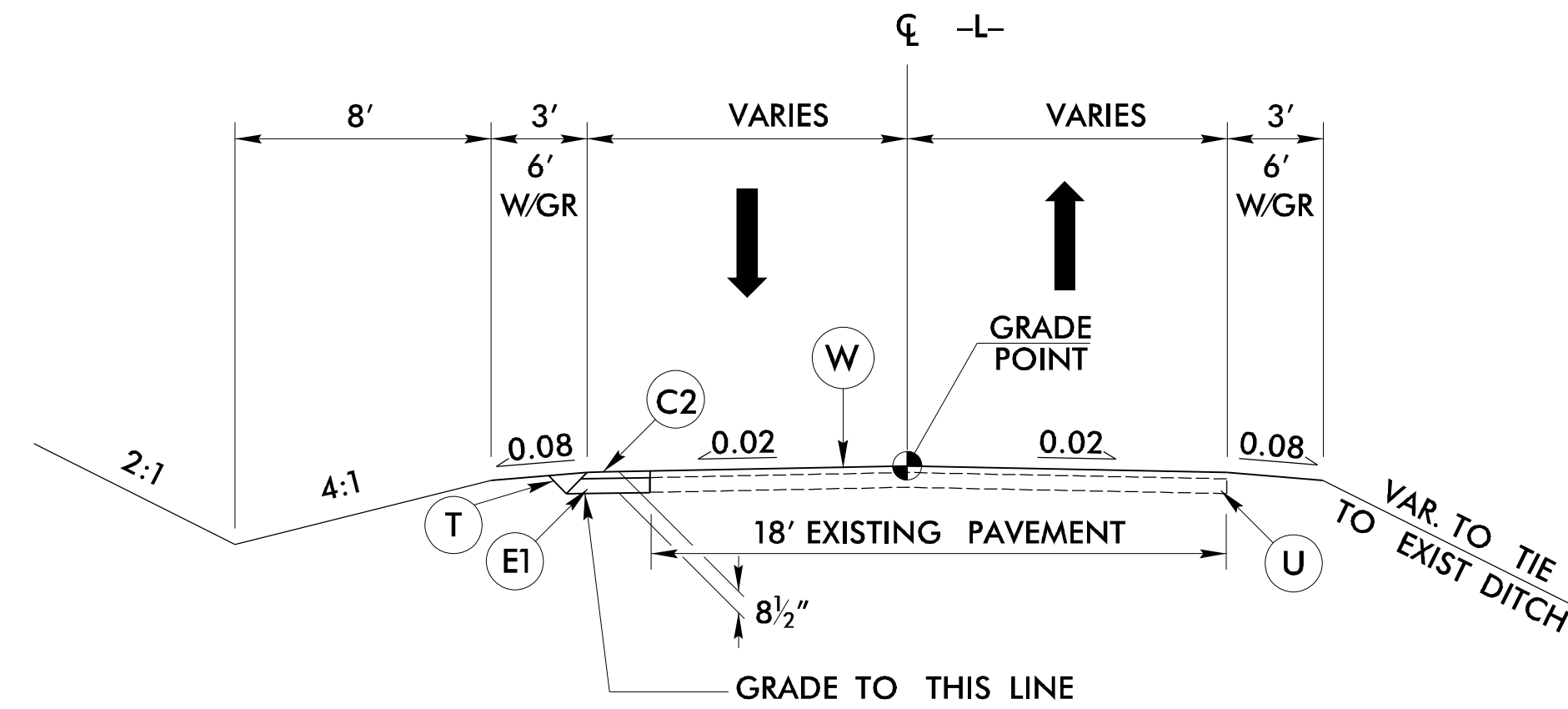


NOTE: USE EXTRA DEPTH STRONG POST GUARDRAIL

EXIST. GROUND

BRIDGE NO. 163

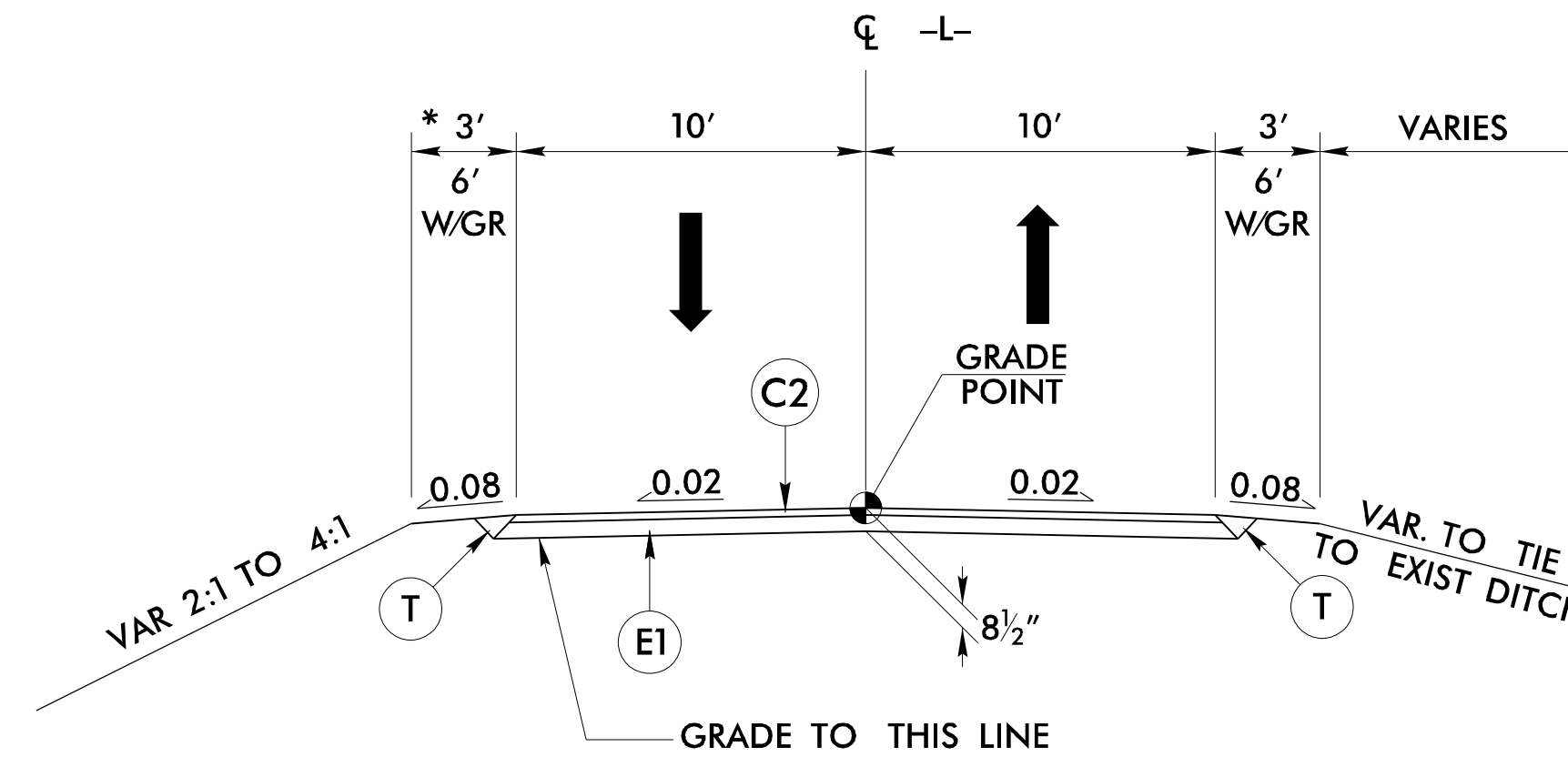
PROJECT REFERENCE NO. 17BP.14.R.120	SHEET NO. 2A-1
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
<p><b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b></p>	



TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1

-L- STA. 10+25.00 TO -L- STA. 10+97.17

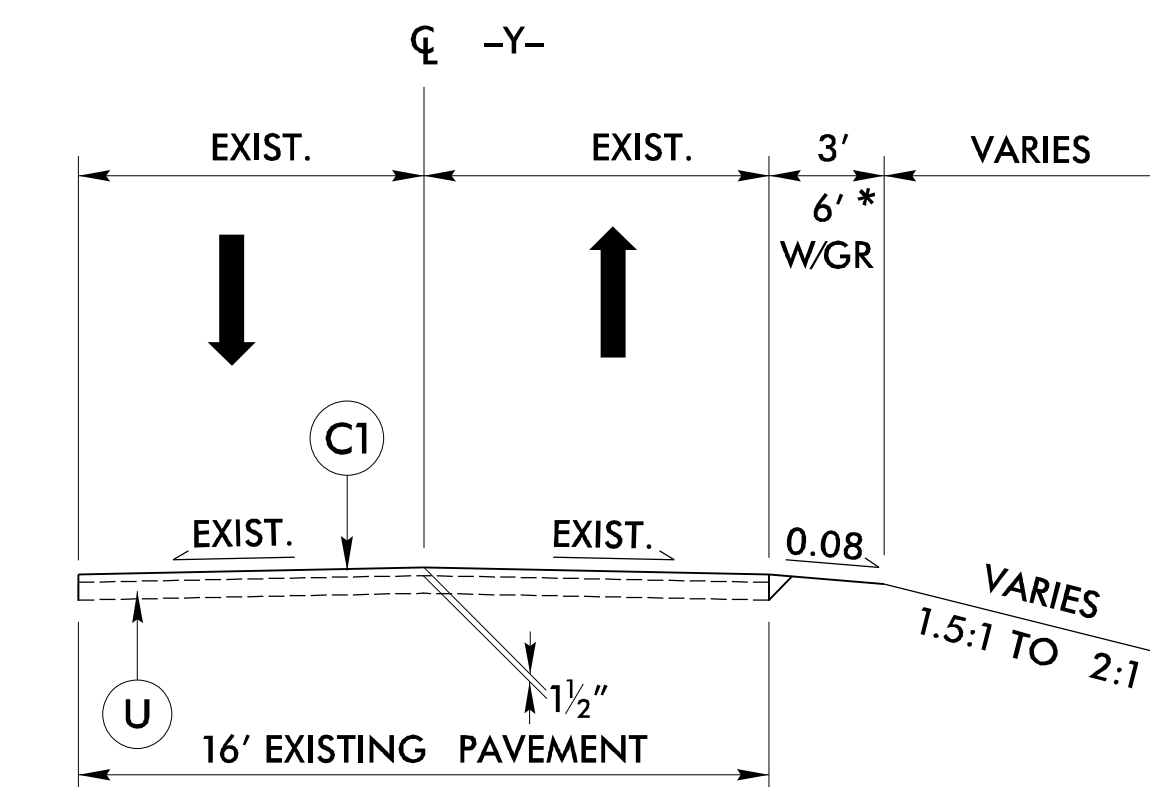


TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2

-L- STA. 10+97.17 TO -L- STA. 12+54.00

\* SEE SHOULDER DETAIL FOR  
-L- STA. 11+55.28 TO -L- STA. 12+39.89 LT.



TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3

-Y- STA. 10+46.00 TO -Y- STA. 11+85.00

\* SEE SHOULDER DETAIL FOR  
-Y- STA. 10+55.06 TO -Y- STA. 11+05.06 RT.

I:\0304\AM\Proj\870163\_Rdwy\_Typ.dgn  
 10/30/04 AM 10:30:04 AM





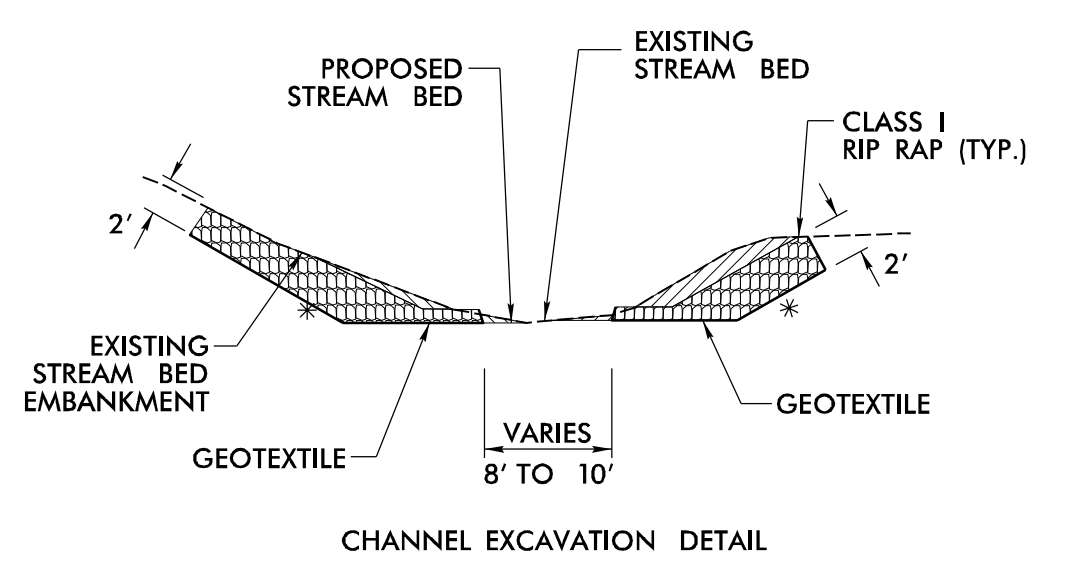
8/17/99

**-L- CURVE DATA**

PI Sta 11+39.76  
 $\Delta = 7^{\circ} 27' 21''$  (LT)  
 $D = 6^{\circ} 44' 26.4''$   
 $L = 110.61'$   
 $T = 55.38'$   
 $R = 850.00'$   
 $V = 15$  MPH  
 $SE = 02$

**-Y- CURVE DATA**

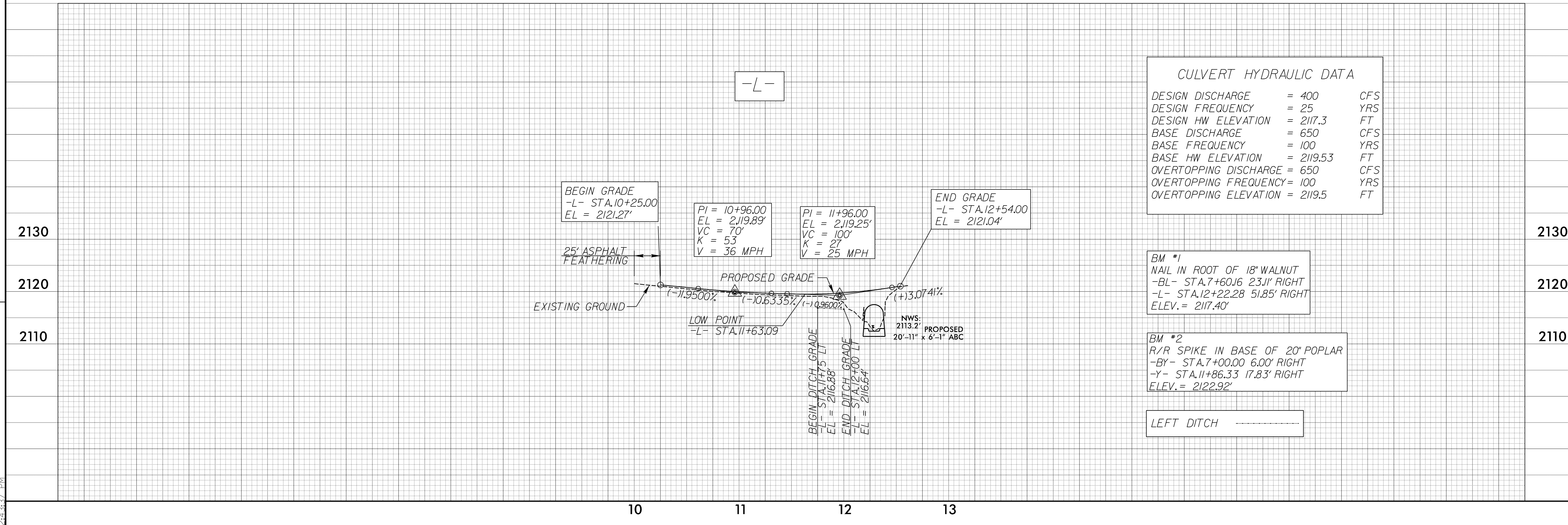
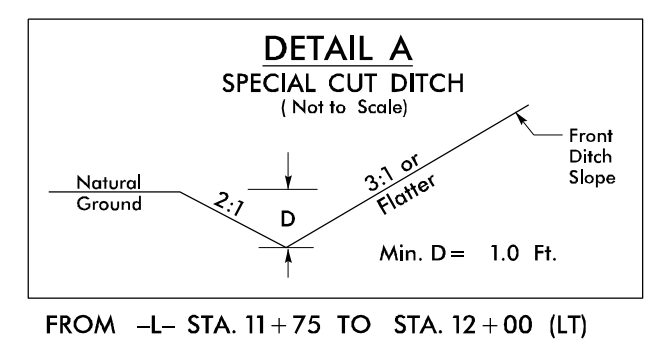
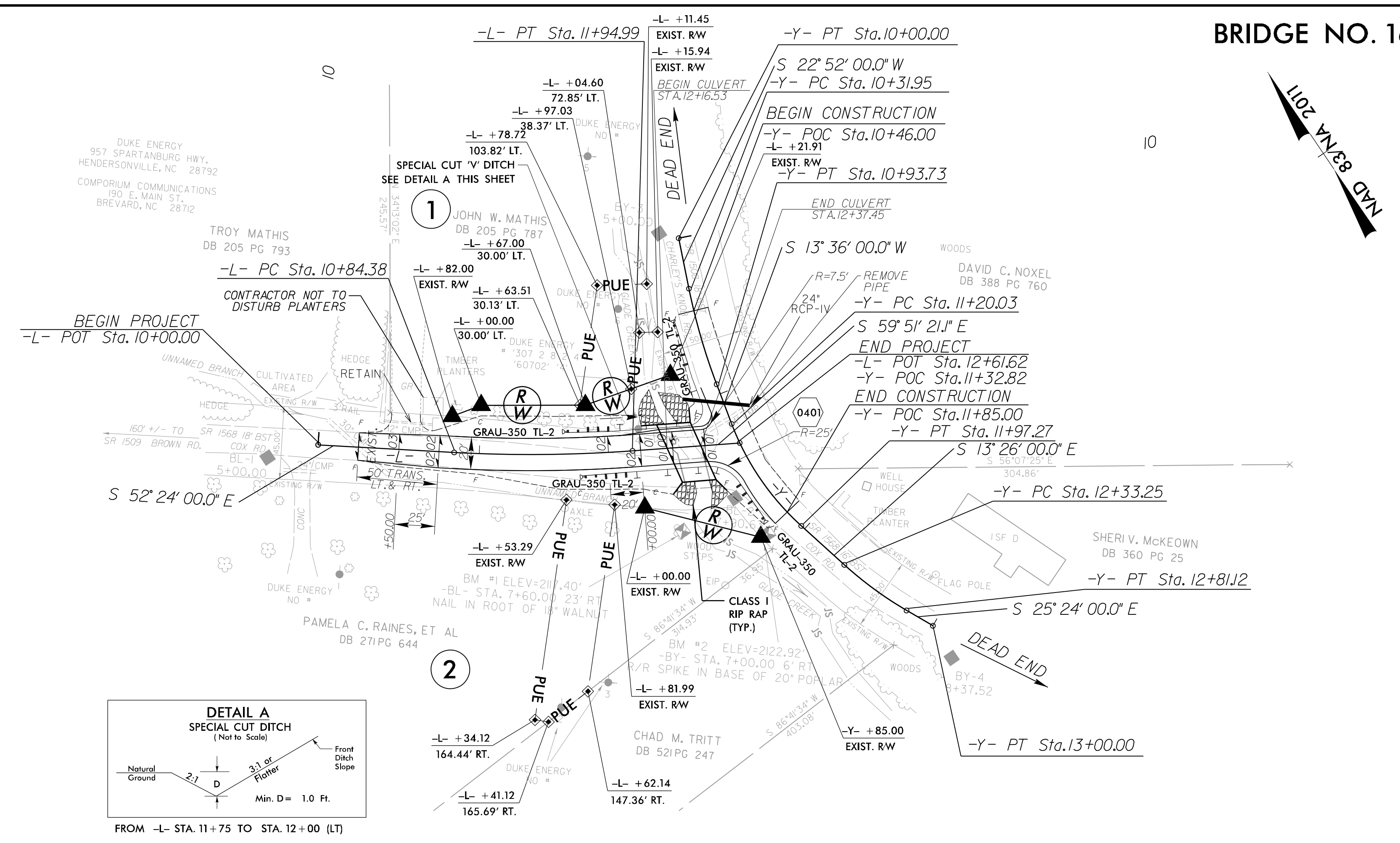
PI Sta 10+62.90 $\Delta = 9^{\circ} 16' 00.0''$ (LT) $D = 15^{\circ} 00' 00.0''$ $L = 61.78'$ $T = 30.96'$ $R = 381.97'$ $SE = EXIST.$	PI Sta 11+59.38 $\Delta = 27^{\circ} 02' 00.0''$ (LT) $D = 35^{\circ} 00' 00.0''$ $L = 77.24'$ $T = 39.35'$ $R = 163.70'$ $SE = EXIST.$	PI Sta 12+57.27 $\Delta = 11^{\circ} 58' 03.8''$ (LT) $D = 25^{\circ} 00' 00.0''$ $L = 47.87'$ $T = 24.02'$ $R = 229.18'$ $SE = EXIST.$
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CHANNEL EXCAVATION  
 \*SLOPE VARIES FROM 2:1 TO EXISTING

EST. CLASS I RIP RAP = 80 TONS (STR. PAY ITEM)  
 EST. GEOTEXTILE = 74 SY (STR. PAY ITEM)

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



REVISIONS

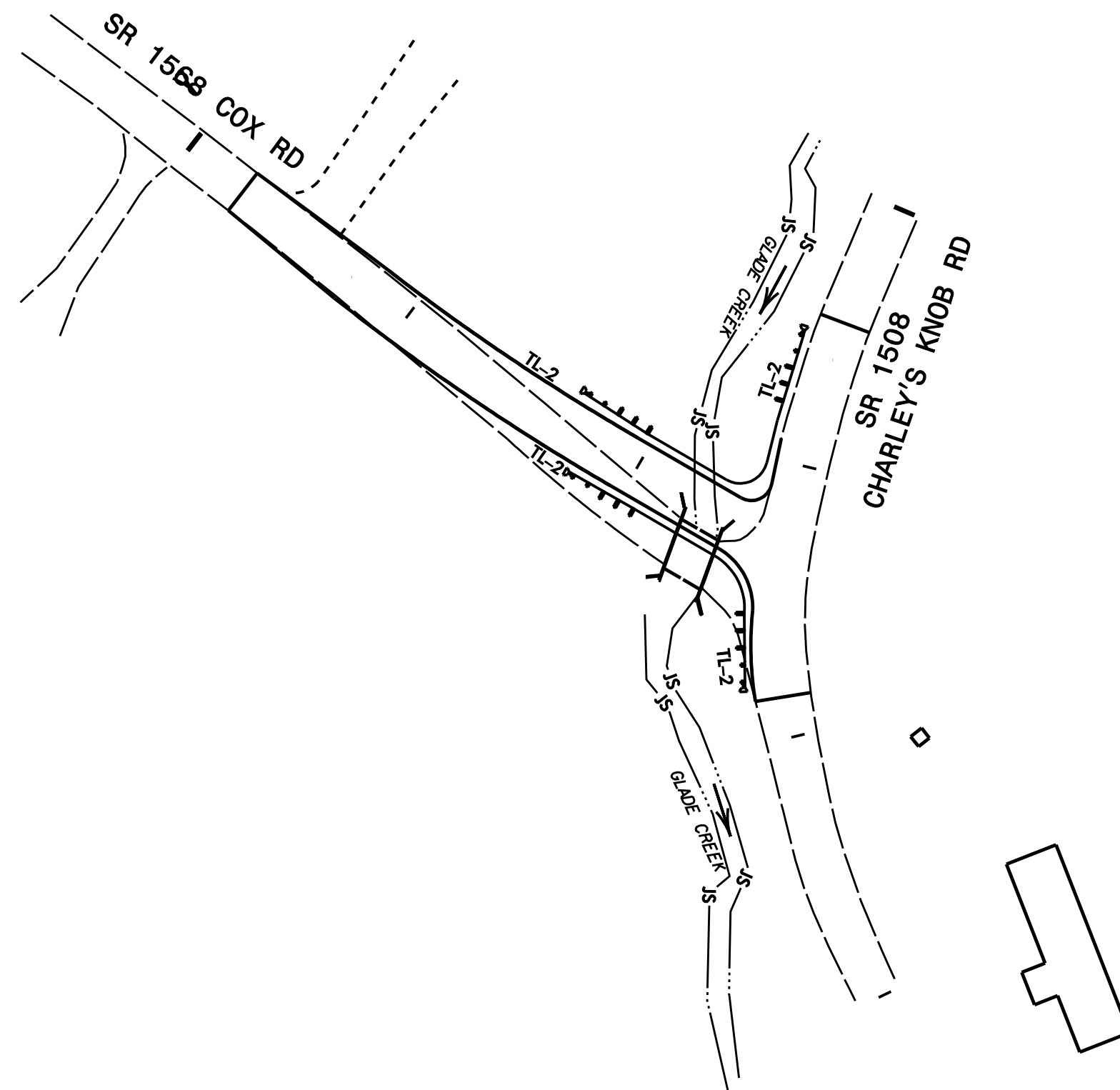
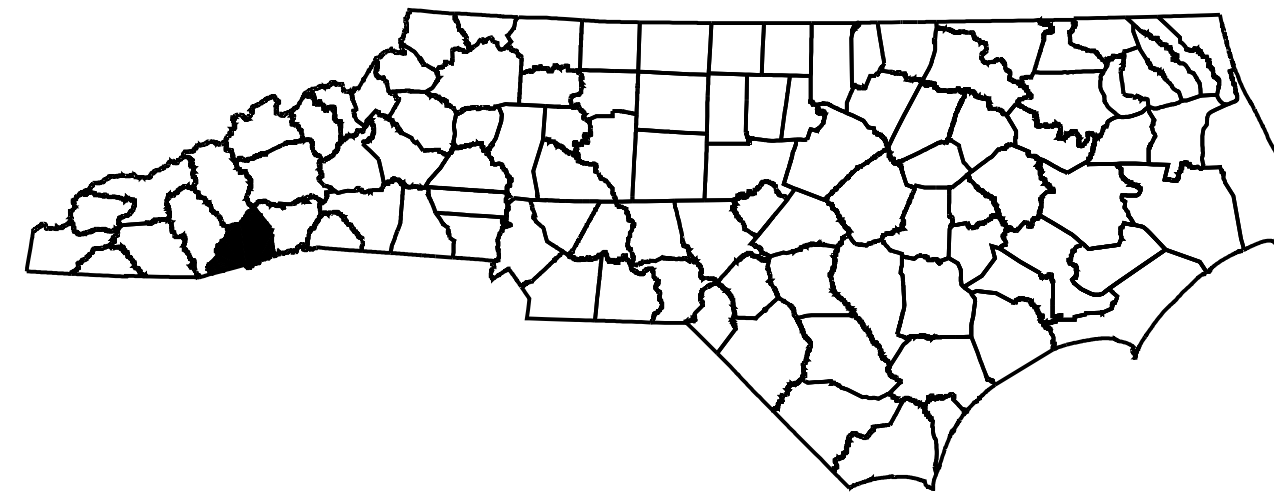
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STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**TRANSPORTATION MANAGEMENT PLAN**

**TRANSYLVANIA COUNTY**



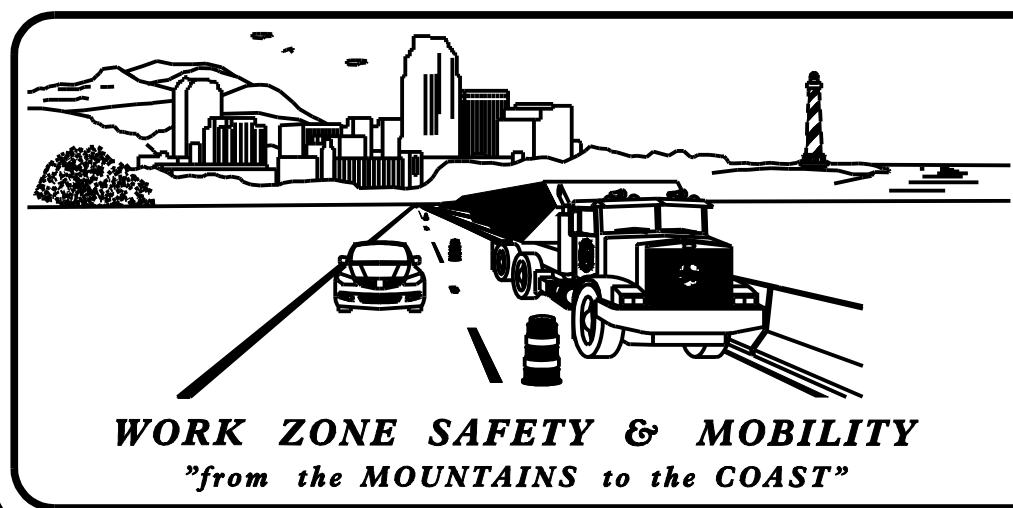
SHEET NO.	TITLE
TMP-1	TITLE SHEET, VICINITY MAP AND INDEX OF SHEETS
TMP-1A	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, AND LEGEND
TMP-1B	TRANSPORTATION OPERATIONS PLAN: (PROJECT NOTES AND PHASING)
TMP-2	PORTABLE CONCRETE BARRIER AT TEMPORARY SHORING LOCATIONS
TMP-3	TEMPORARY TRAFFIC CONTROL PHASE DETAILS

SHEET NO.  
TMP-1

17BP.14.R.120

WBS ELEMENT:

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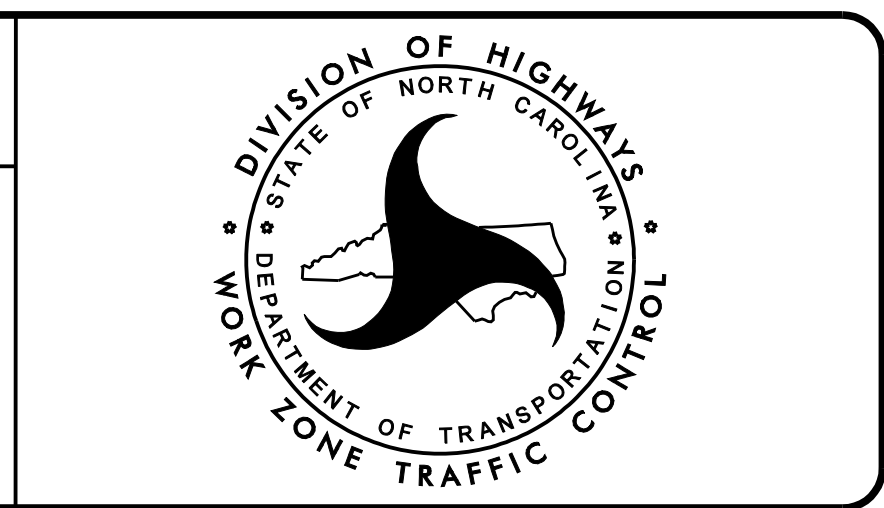
**N.C.D.O.T. WORK ZONE TRAFFIC CONTROL**  
1561 MAIL SERVICE CENTER (MSC) RALEIGH, NC 27699-1561  
750 N. GREENFIELD PARKWAY, GARNER, NC 27529 (DELIVERY)  
PHONE: (919) 773-2800 FAX: (919) 771-2745

\_\_\_\_\_  
STATE TRAFFIC MANAGEMENT ENGINEER

\_\_\_\_\_  
TRAFFIC CONTROL PROJECT ENGINEER

\_\_\_\_\_  
TRAFFIC CONTROL PROJECT DESIGN ENGINEER

\_\_\_\_\_  
TRAFFIC CONTROL DESIGN ENGINEER



Prepared in the Office of:  
**PROGRESSIVE DESIGN GROUP, INC.**  
ENGINEERS • CONSULTANTS

APPROVED: *Tom Arny*  
DATE: 9/8/2016

SEAL



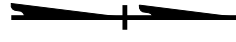
# ROADWAY STANDARD DRAWINGS


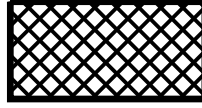
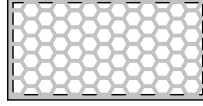
THE FOLLOWING ROADWAY STANDARDS AS SHOWN IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2012 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

<u>STD. NO.</u>	<u>TITLE</u>
1101.01	WORK ZONE WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1101.05	WORK ZONE VEHICLE ACCESSES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1115.01	FLASHING ARROW BOARDS
1130.01	DRUMS
1135.01	CONES
1145.01	BARRICADES
1150.01	FLAGGING DEVICES
1160.01	TEMPORARY CRASH CUSHION
1165.01	WORK VEHICLE LIGHTING SYSTEMS AND TMA DELINEATION
1170.01	PORTABLE CONCRETE BARRIER
1180.01	SKINNY - DRUM
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.08	PAVEMENT MARKINGS - SYMBOLS AND WORD MESSAGES
1205.12	PAVEMENT MARKINGS - BRIDGES
1250.01	RAISED PAVEMENT MARKERS - INSTALLATION SPACING
1251.01	RAISED PAVEMENT MARKERS - (PERMANENT AND TEMPORARY)
1261.01	GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATORS - TYPES AND MOUNTING
1262.01	GUARDRAIL END DELINEATION

# 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
-  TEMPORARY PAVEMENT WEDGING




## 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

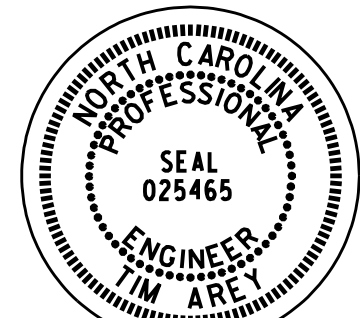
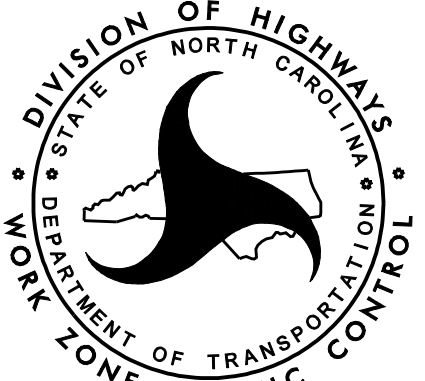
## PAVEMENT MARKERS

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

## PAVEMENT MARKING SYMBOLS

-  PAVEMENT MARKING SYMBOLS

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UNLESS ALL SIGNATURES COMPLETED

<p>PLAN PREPARED IN THE OFFICE OF:</p> <p><b>PROGRESSIVE</b> DESIGN GROUP, INC.</p> <p>ENGINEERS • CONSULTANTS</p>	<p>APPROVED: <i>Sam Ayers</i> DATE: 9/8/2016</p> <p>SEAL</p> 		<p>ROADWAY STANDARD DRAWINGS &amp; LEGEND</p>
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# 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.

## LANE AND SHOULDER CLOSURE REQUIREMENTS

- A) REMOVE LANE CLOSURE DEVICES FROM THE LANE WHEN WORK IS NOT BEING PERFORMED BEHIND THE LANE CLOSURE OR WHEN A LANE CLOSURE IS NO LONGER NEEDED OR AS DIRECTED BY THE ENGINEER.
- B) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 15 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN SHOULDER USING ROADWAY STANDARD DRAWING NO. 1101.04 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL OR A LANE CLOSURE IS INSTALLED.
- C) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO AN UNDIVIDED FACILITY AND WITHIN 5 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.
- D) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN A LANE OF TRAVEL OF AN UNDIVIDED OR DIVIDED FACILITY, CLOSE THE LANE ACCORDING TO THE TRAFFIC CONTROL PLANS, ROADWAY STANDARD DRAWINGS, OR AS DIRECTED BY THE ENGINEER. CONDUCT THE WORK SO THAT ALL PERSONNEL AND/OR EQUIPMENT REMAIN WITHIN THE CLOSED TRAVEL LANE.
- E) DO NOT WORK SIMULTANEOUSLY WITHIN 15 FT ON BOTH SIDES OF AN OPEN TRAVELWAY, RAMP, OR LOOP WITHIN THE SAME LOCATION UNLESS PROTECTED WITH GUARDRAIL OR BARRIER.

## PAVEMENT EDGE DROP OFF REQUIREMENTS

- F) BACKFILL AT A 6:1 SLOPE UP TO THE EDGE AND ELEVATION OF EXISTING PAVEMENT IN AREAS ADJACENT TO AN OPENED TRAVEL LANE THAT HAS AN EDGE OF PAVEMENT DROP-OFF AS FOLLOWS:  
  
BACKFILL DROP-OFFS THAT EXCEED 3 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS LESS THAN 45 MPH.  
  
BACKFILL WITH SUITABLE COMPACTED MATERIAL, AS APPROVED BY THE ENGINEER, AT NO EXPENSE TO THE DEPARTMENT.
- G) DO NOT EXCEED A DIFFERENCE OF 2 INCHES IN ELEVATION BETWEEN OPEN LANES OF TRAFFIC FOR NOMINAL LIFTS OF 1.5 INCHES. INSTALL ADVANCE WARNING "UNEVEN LANES" SIGNS (W8-11) 100 ft IN ADVANCE AND A MINIMUM OF EVERY HALF MILE THROUGHOUT THE UNEVEN AREA.

## TRAFFIC PATTERN ALTERATIONS

- H) NOTIFY THE ENGINEER TWENTY ONE (21) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION.

# PROJECT NOTES & PHASING

PROJ. REFERENCE NO. 17BP.14.R.120	SHEET NO. TMP-1B
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## PHASING

### PHASE I

- STEP 1: INSTALL WORK ZONE ADVANCE WARNING SIGNS AS SHOWN ON ROADWAY STANDARD DRAWING NO. 1101.01.
- STEP 2: INSTALL THE TRAFFIC CONTROL DEVICES FOR THE ONE LANE TRAFFIC PATTERN ACROSS EXISTING COX ROAD BRIDGE AS SHOWN ON THE PHASE I DETAIL, SHEET TMP-3 AND PLACE COX ROAD TRAFFIC INTO THE PATTERN SHOWN ON THE PHASE I DETAIL, SHEET TMP-3.

- STEP 3: WORKING IN A CONTINUOUS MANNER, INSTALL TEMPORARY GUARDRAIL ON EXISTING BRIDGE AS SHOWN IN THE STRUCTURE DESIGN PLANS.

INSTALL TEMPORARY SHORING AS REQUIRED FOR CONSTRUCTION OF STAGE I OF THE PROPOSED COX ROAD CULVERT AND CONSTRUCT STAGE I OF THE PROPOSED COX ROAD CULVERT AND THE PROPOSED ROADWAY APPROACHES AS SHOWN ON THE PHASE I DETAIL, SHEET TMP-3.

### PHASE II

- STEP 1: INSTALL THE TRAFFIC CONTROL DEVICES FOR THE ONE LANE TRAFFIC PATTERN ACROSS STAGE I OF THE PROPOSED COX ROAD CULVERT AS SHOWN ON THE PHASE II DETAIL, SHEET TMP-2 AND PLACE COX ROAD TRAFFIC INTO THE PATTERN SHOWN ON THE PHASE II DETAIL, SHEET TMP-2.

- STEP 2: INSTALL TEMPORARY SHORING AS REQUIRED FOR CONSTRUCTION OF STAGE II OF THE PROPOSED COX ROAD CULVERT AND CONSTRUCT STAGE II OF THE PROPOSED COX ROAD CULVERT AND THE REMAINING SECTIONS OF PROPOSED COX ROAD AND CHARLEYS KNOB ROAD AS SHOWN ON THE PHASE II DETAIL, SHEET TMP-3.

- STEP 3: SHIFT ALL TRAFFIC ONTO THE THE PROPOSED COX ROAD ALIGNMENT COMPLETE ANY REMAINING CONSTRUCTION AND REMOVE ALL TRAFFIC CONTROL DEVICES.




## SIGNING

- I) 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.
- J) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.
- K) INSTALL BLACK ON ORANGE "DIP" SIGNS (W8-2) AND/OR "BUMP" SIGNS (W8-1) 100 ft IN ADVANCE OF THE UNEVEN AREA, OR AS DIRECTED BY THE ENGINEER.

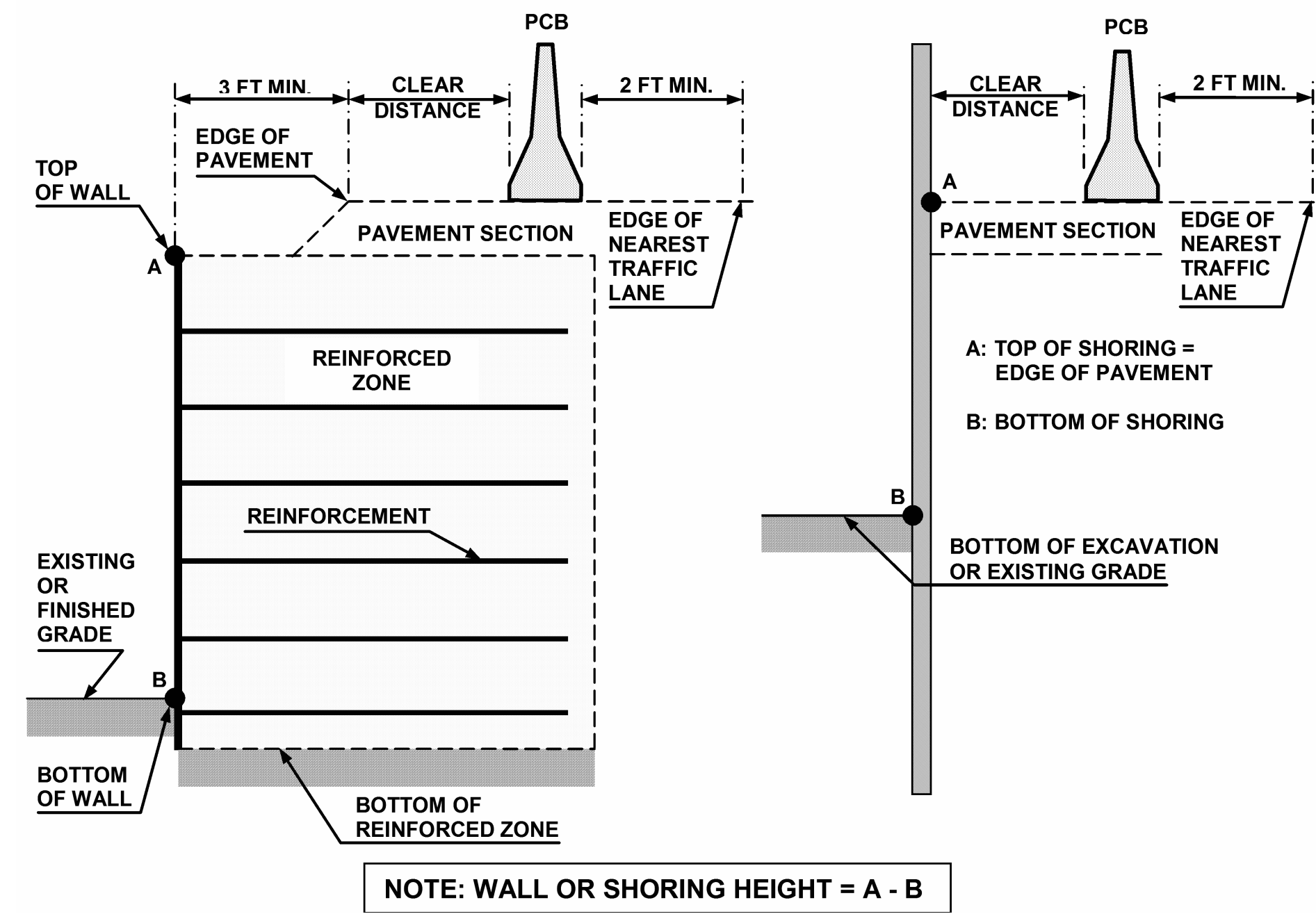
## TRAFFIC CONTROL DEVICES

- L) WHEN LANE CLOSURES ARE NOT IN EFFECT SPACE CHANNELIZING DEVICES IN WORK AREAS NO GREATER IN FEET THAN TWICE THE POSTED SPEED LIMIT (MPH) EXCEPT, 10 FT ON-CENTER IN RADII, AND 3 FT OFF THE EDGE OF AN OPEN TRAVELWAY. REFER TO STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES SECTIONS 1130 (DRUMS), 1135 (CONES) AND 1180 (SKINNY DRUMS) FOR ADDITIONAL REQUIREMENTS.
- M) PLACE TYPE III BARRICADES, WITH "ROAD CLOSED" SIGN R11-2 ATTACHED, OF SUFFICIENT LENGTH TO CLOSE ENTIRE ROADWAY.

DOCUMENT NOT CONSIDERED FINAL  
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<p>PLAN PREPARED IN THE OFFICE OF:</p> <p><b>PROGRESSIVE</b> DESIGN GROUP, INC.</p>  <p>ENGINEERS • CONSULTANTS</p>	<p>APPROVED: <i>John Gray</i> DATE: 9/9/2016</p> <p>SEAL</p> 		<p>TRANSPORTATION OPERATIONS PLAN</p>
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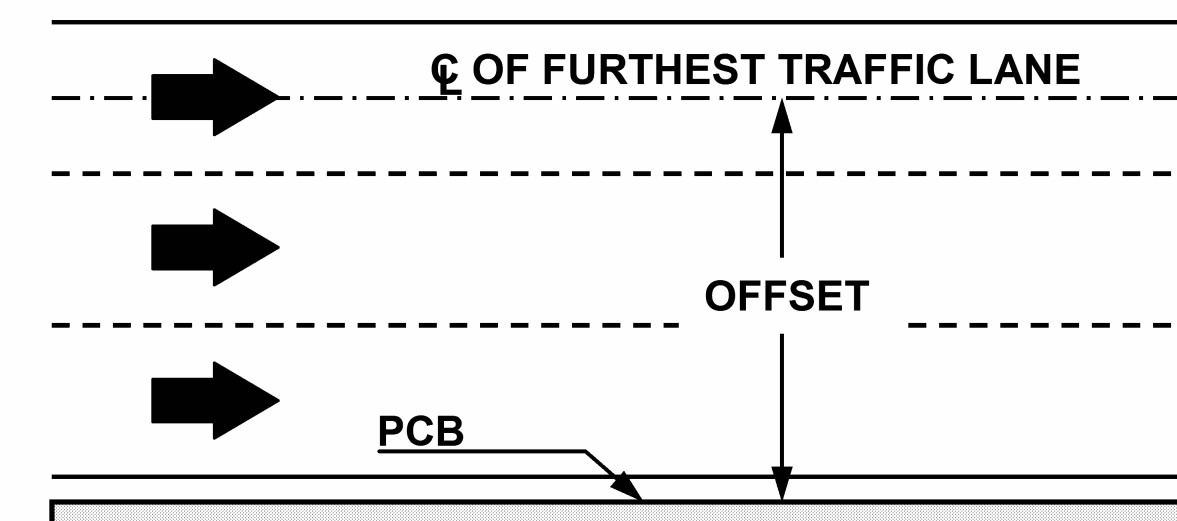
## FIGURE A

### NOTES

- REFER TO THE TRAFFIC CONTROL PLANS FOR TEMPORARY SHORING LOCATIONS AND NOTES.
- PCB IS REQUIRED IF TEMPORARY SHORING IS LOCATED WITHIN THE CLEAR ZONE IN ACCORDANCE WITH THE AASHTO ROADSIDE DESIGN GUIDE. DO NOT PLACE BARRIER DIRECTLY ON ANY SURFACE OTHER THAN ASPHALT OR CONCRETE. (CONTACT NCDOT PAVEMENT MANAGEMENT UNIT FOR APPLICABLE PAVEMENT DESIGN).
- BASED ON THE CLEAR DISTANCE, OFFSET, DESIGN SPEED AND PAVEMENT TYPE, CHOOSE AN UNANCHORED OR ANCHORED PCB FROM THE TABLE SHOWN IN FIGURE B. CLEAR DISTANCE IS DEFINED AS SHOWN IN FIGURE A AND OFFSET IS DEFINED AS SHOWN IN FIGURE B.
- AT THE CONTRACTOR'S OPTION OR IF THE MINIMUM REQUIRED CLEAR DISTANCE IS NOT AVAILABLE, SET PCB NEXT TO AND UP AGAINST THE TRAFFIC SIDE OF THE TEMPORARY SHORING EXCEPT FOR BARRIER ABOVE TEMPORARY WALLS. PCB WITH THE MINIMUM REQUIRED CLEAR DISTANCE IS REQUIRED ABOVE TEMPORARY WALLS.
- USE NCDOT PORTABLE CONCRETE BARRIER (PCB) IN ACCORDANCE WITH ROADWAY STANDARD DRAWING NO. 1170.01 AND SECTION 1170 OF THE STANDARD SPECIFICATIONS.
- PCB REQUIREMENTS FOR TEMPORARY WALLS APPLY TO TEMPORARY MECHANICALLY STABILIZED EARTH (MSE) WALLS AND TEMPORARY SOIL NAIL WALLS.
- SET PCB WITH A MINIMUM HORIZONTAL DISTANCE OF 2 FT BETWEEN THE FRONT FACE OF THE BARRIER AND THE EDGE OF THE NEAREST TRAFFIC LANE AS SHOWN IN FIGURE A UNLESS OTHERWISE SHOWN IN THE PLANS AND OR AS APPROVED BY THE ENGINEER.
- FOR PCB ABOVE AND BEHIND TEMPORARY WALLS, PROVIDE A MINIMUM DISTANCE OF 3 FT BETWEEN THE EDGE OF PAVEMENT AND THE WALL FACE AS SHOWN IN FIGURE A. IF THESE MINIMUM REQUIRED DISTANCES ARE NOT AVAILABLE, CONTACT THE ENGINEER.
- TABLE SHOWN IN FIGURE B IS BASED ON NCDOT RESEARCH PROJECT NO. 2005-010 WITH VEHICLE TYPE USED FOR NCHRP 350 CRASH TESTS. BARRIER DEFLECTIONS AND RESULTING MINIMUM REQUIRED CLEAR DISTANCES MIGHT VARY SIGNIFICANTLY FOR LARGER HEAVIER VEHICLES, RUNS OF BARRIER LESS THAN 200 FT IN LENGTH AND WET OR DRY PAVEMENT.

Barrier Type	Pavement Type	Offset * ft	Design Speed, mph					
			<30	31-40	41-50	51-60	61-70	71-80
Unanchored PCB	Asphalt	<8	24	26	29	32	36	40
		8-14	26	28	31	35	38	42
		14-20	27	29	34	36	39	43
		20-26	28	31	35	38	40	44
		26-32	29	32	36	39	42	45
		32-38	30	34	38	41	43	46
		38-44	31	34	41	43	45	48
	44-50	31	35	41	43	46	49	
	50-56	32	36	42	44	47	50	
	>56	32	36	42	45	47	51	
	Concrete	<8	17	18	21	22	25	26
		8-14	19	20	23	25	26	29
		14-20	22	22	24	26	28	31
		20-26	23	24	26	27	30	34
26-32		24	25	27	28	32	35	
32-38		24	26	27	30	33	36	
38-44		25	26	28	30	34	37	
44-50	26	26	28	32	35	37		
50-56	26	26	28	32	35	38		
>56	26	27	29	32	36	38		
Anchored PCB	Asphalt	All Offsets	24 for All Design Speeds					
Anchored PCB	Concrete (including bridge approach slabs)	All Offsets	12 for All Design Speeds					

\* See Figure Below

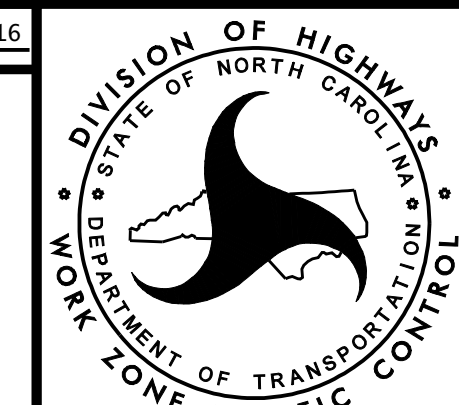
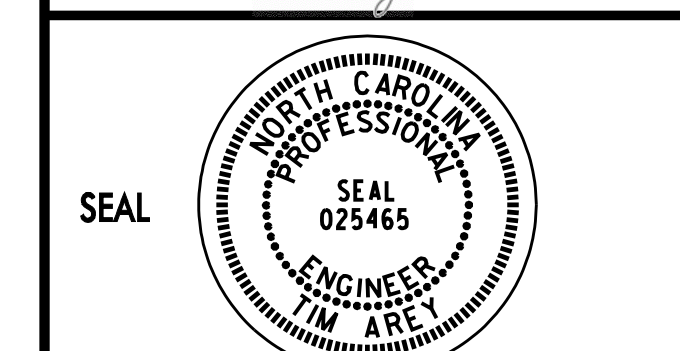


## FIGURE B

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**PROGRESSIVE DESIGN GROUP, INC.**  
ENGINEERS • CONSULTANTS

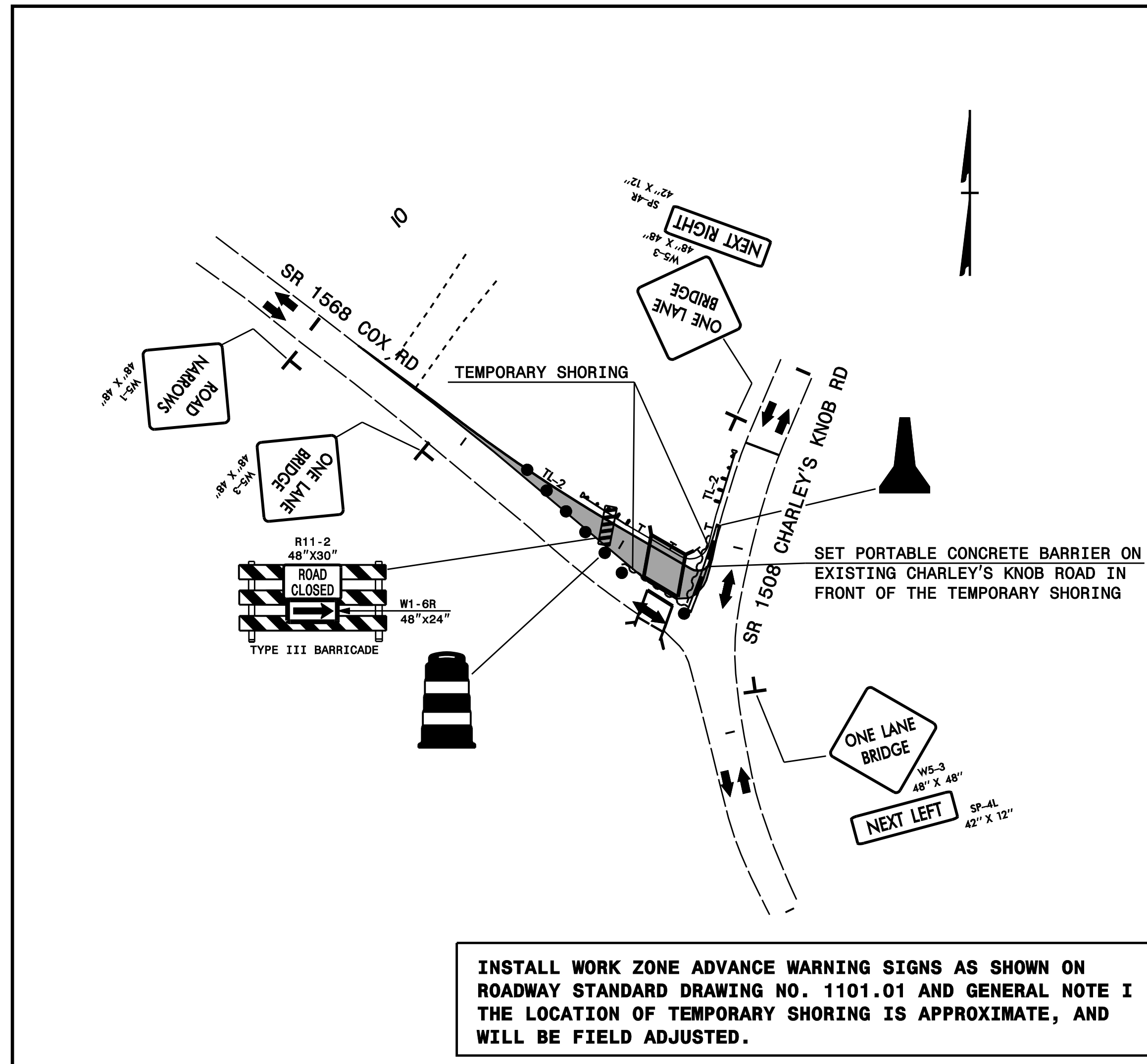
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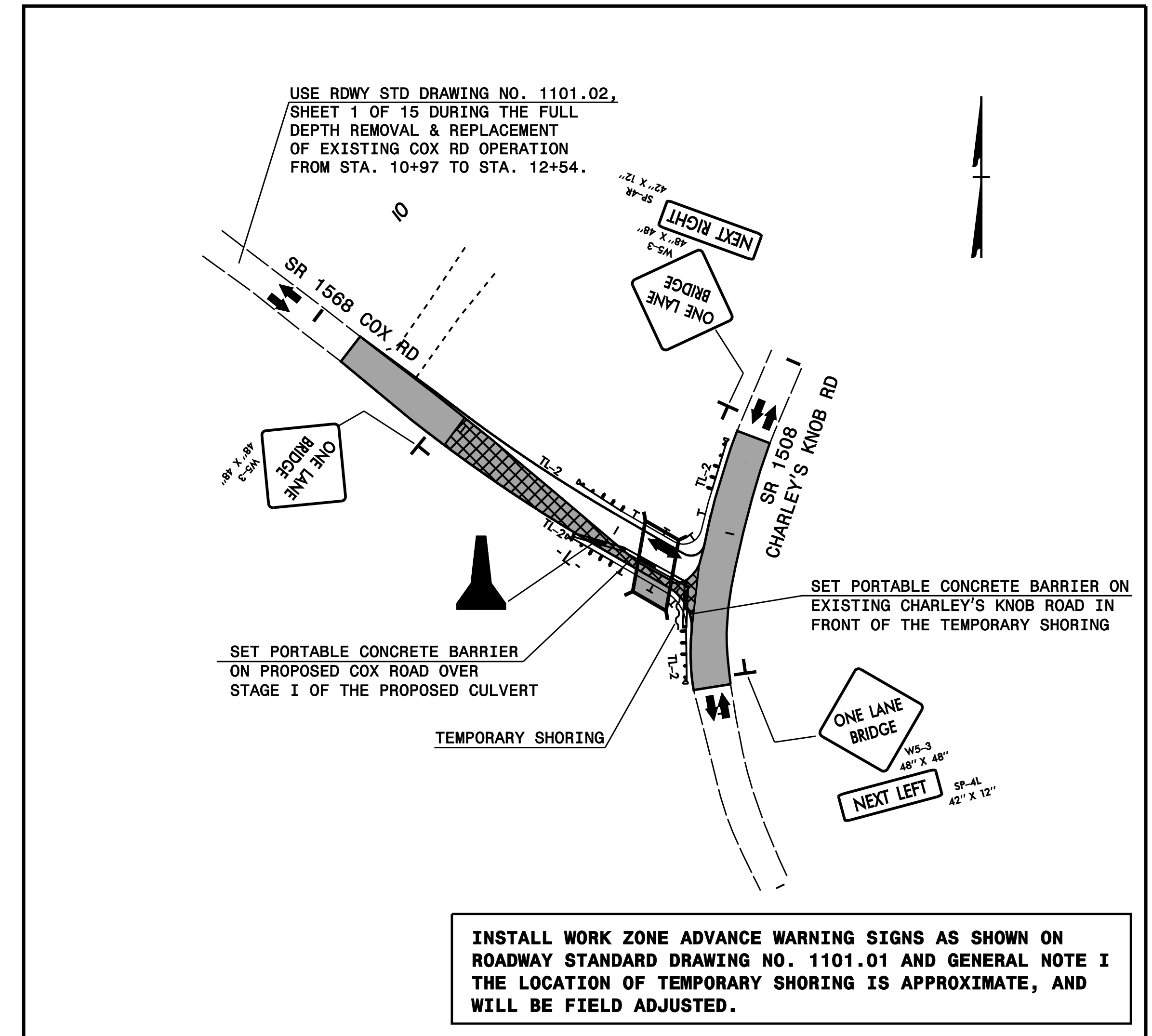
TRANSPORTATION  
MANAGEMENT PLAN  
PORTABLE CONCRETE BARRIER AT  
TEMPORARY SHORING LOCATIONS



PHASE I DETAIL



PHASE II DETAIL



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PLAN PREPARED IN THE OFFICE OF:  
**PROGRESSIVE**  
DESIGN GROUP, INC.  
ENGINEERS • CONSULTANTS

APPROVED: *Tom Arvey* DATE: 9/8/2016  
SEAL  
NORTH CAROLINA PROFESSIONAL ENGINEER  
TIM ARVEY  
SEAL 025465

DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
WORK ZONE TRAFFIC CONTROL

TRANSPORTATION  
MANAGEMENT PLAN

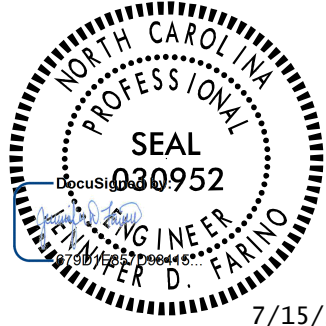
**WBS: 17BP.14.R.120**

**CONTRACT: DN00288**

**STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION**

**PAVEMENT MARKING PLAN  
 TRANSYLVANIA COUNTY**

**LOCATION: BRIDGE NO.163 OVER NORTH PRONG GLADE CREEK ON  
 SR 1568 (COX ROAD)**

WBS	SHEET NO.
17BP.14.R.120	PMP-1
APPROVED: _____	
DATE: _____	
SEAL	
	

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



**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
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - 2 LANE AND MULTILANE ROADWAYS
1205.12	PAVEMENT MARKINGS - BRIDGES
1250.01	PAVEMENT MARKER SPACING
1251.01	RAISED PAVEMENT MARKERS
1261.01	GUARDRAIL AND BARRIER DELINEATOR SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATOR TYPES
1262.01	GUARDRAIL END DELINEATION

**GENERAL NOTES**

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

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

ROAD NAME	MARKING	MARKER
SR 1568	PAINT	N/A
SR 1508	PAINT	N/A

PLACE TWO APPLICATIONS OF PAINT PAVEMENT MARKINGS ON THE FINAL WEARING SURFACE. PLACE THE SECOND APPLICATION OF PAINT UPON SUFFICIENT DRYING TIME OF THE FIRST.

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

C) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS.

D) PASSING ZONES WILL BE DETERMINED IN THE FIELD AND MUST BE APPROVED BY THE ENGINEER.

E) ALL EXISTING SIGNS ON WOOD & U POST WITHIN THE PROJECT LIMITS SHALL BE REMOVED AND DISPOSED OF UNLESS OTHERWISE NOTED ON PLANS.

PAVEMENT MARKING SCHEDULE  
 BRIDGE NO. 870163

FINAL  
 PAVEMENT MARKINGS

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

PLAN PREPARED BY: RS&H ARCHITECT-ENGINEERS-PLANNERS, INC.

JENNIFER FARINO, PE	PROJECT ENGINEER
SEAN KORTOVICH, EI	PROJECT DESIGNER

***INDEX***

SHEET NO.	DESCRIPTION
PMP-1	PAVEMENT MARKING TITLE SHEET & PAVEMENT MARKING SCHEDULE
PMP-2	PAVEMENT MARKING DETAIL



8/17/99

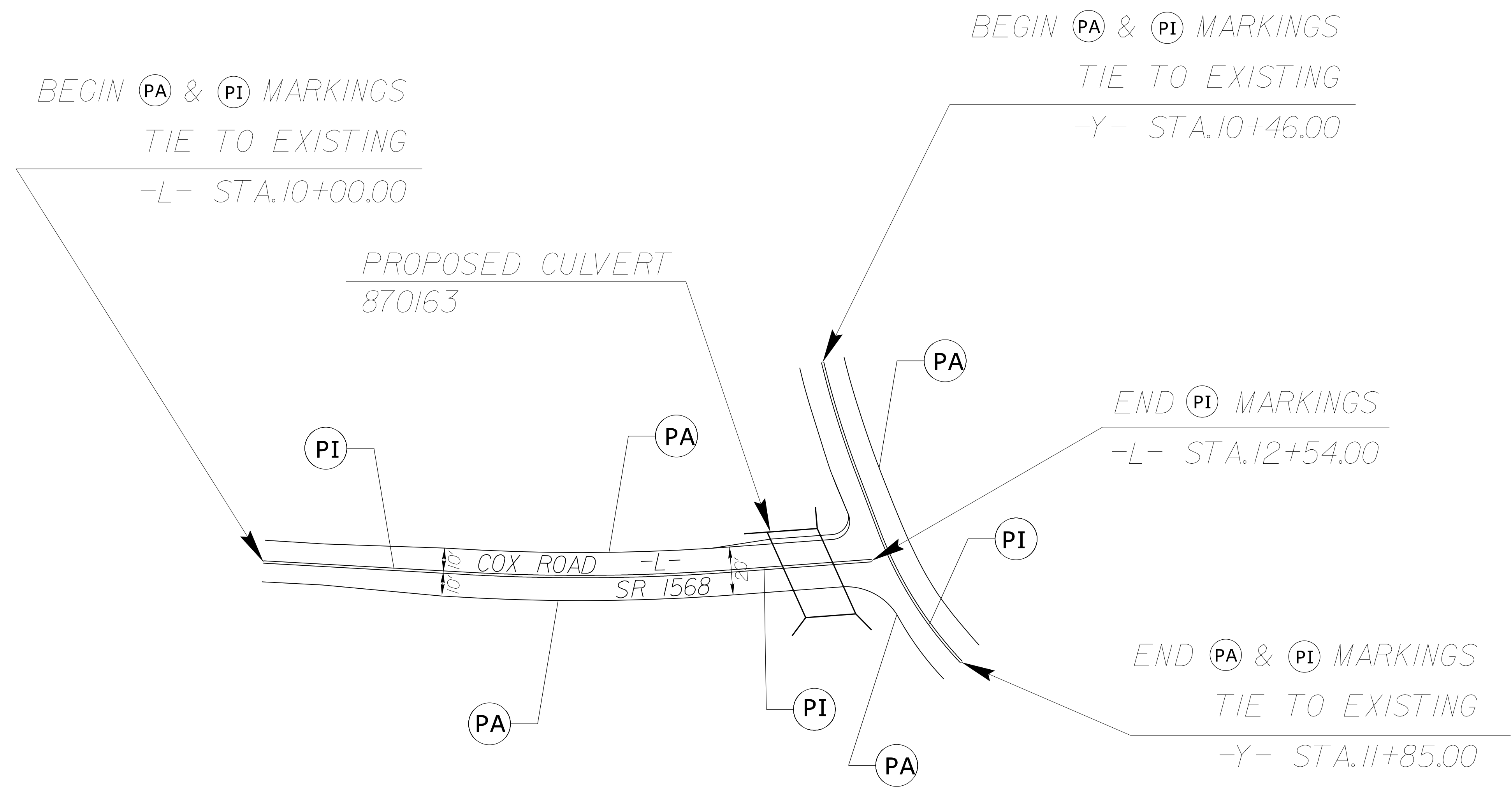
PROJECT REFERENCE NO. 17BP14RJ20	SHEET NO. PMP-2
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	

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SYMBOL AND PAVEMENT MARKING LEGEND	
Ⓟ	WHITE EDGE LINE (4")
Ⓟ	YELLOW DOUBLE CENTER (4")

REVISIONS



\$\$\$\$\$SYTIME\$\$\$\$\$  
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**PAVEMENT MARKING DETAIL**

**WBS: 17BP.14.12.120**

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

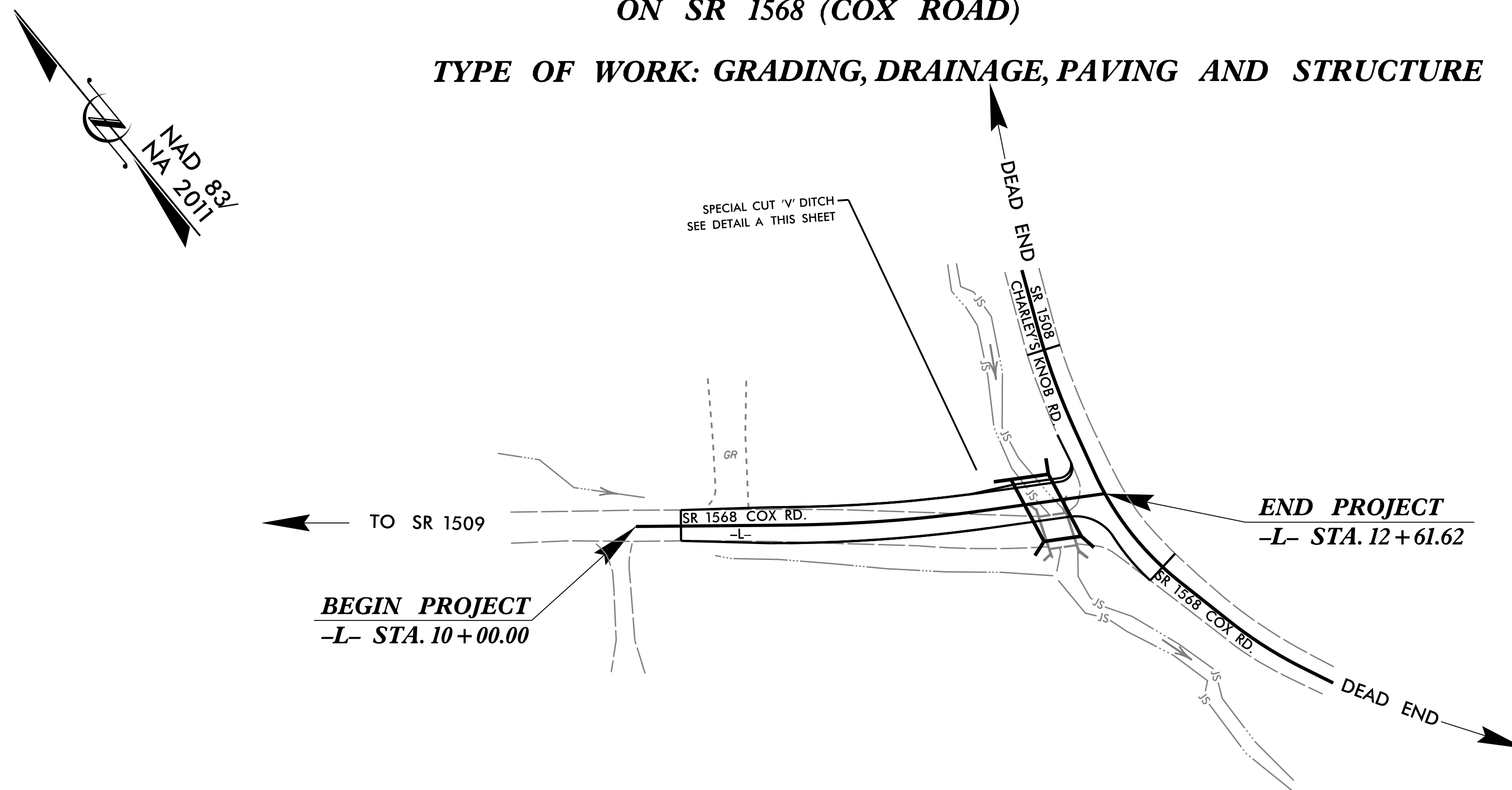
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PLAN FOR PROPOSED  
HIGHWAY EROSION CONTROL

**TRANSYLVANIA COUNTY**

**LOCATION: BRIDGE NO. 163 OVER NORTH PRONG GLADE CREEK  
ON SR 1568 (COX ROAD)**

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



STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.14.R.120	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
17BP.14.R.120	N/A	PE	
17BP.14.R.120	N/A	ROW, UTL	
17BP.14.R.120	N/A	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	ZZZZZZ
1622.01	Temporary Berms and Slope Drains	TD
1630.02	Silt Basin Type B	ZZZZ
1633.01	Temporary Rock Silt Check Type-A	XXXX
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	XXXX
1633.02	Temporary Rock Silt Check Type-B	XXXX
	Wattle / Coir Fiber Wattle	W
	Wattle / Coir Fiber Wattle with Polyacrylamide (PAM)	W
1634.01	Temporary Rock Sediment Dam Type-A	DD
1634.02	Temporary Rock Sediment Dam Type-B	DD
1635.01	Rock Pipe Inlet Sediment Trap Type-A	CT
1635.02	Rock Pipe Inlet Sediment Trap Type-B	CT
1630.04	Stilling Basin	SB
1630.06	Special Stilling Basin	SB
	Rock Inlet Sediment Trap:	
1632.01	Type A	A
1632.02	Type B	B
1632.03	Type C	C
	Skimmer Basin	SK
	Tiered Skimmer Basin	SK
	Infiltration Basin	IB

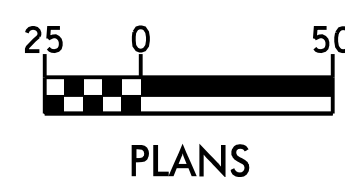
THIS PROJECT CONTAINS  
EROSION CONTROL PLANS  
FOR CLEARING AND  
GRUBBING PHASE OF  
CONSTRUCTION.

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**



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

Prepared In the Office of:

**RS&H**

1520 SOUTH BOULEVARD, SUITE 200  
CHARLOTTE, NC 28203  
704-752-0610

**2012 STANDARD SPECIFICATIONS**

Designed by:

**Will Weathersbee, P.E.**  
NAME

**3161**  
LEVEL III CERTIFICATION NO.

Reviewed In the Office of:

**ROADSIDE ENVIRONMENTAL UNIT**

1 South Wilmington St.  
Raleigh, NC 27611

**2012 STANDARD SPECIFICATIONS**

Reviewed by:

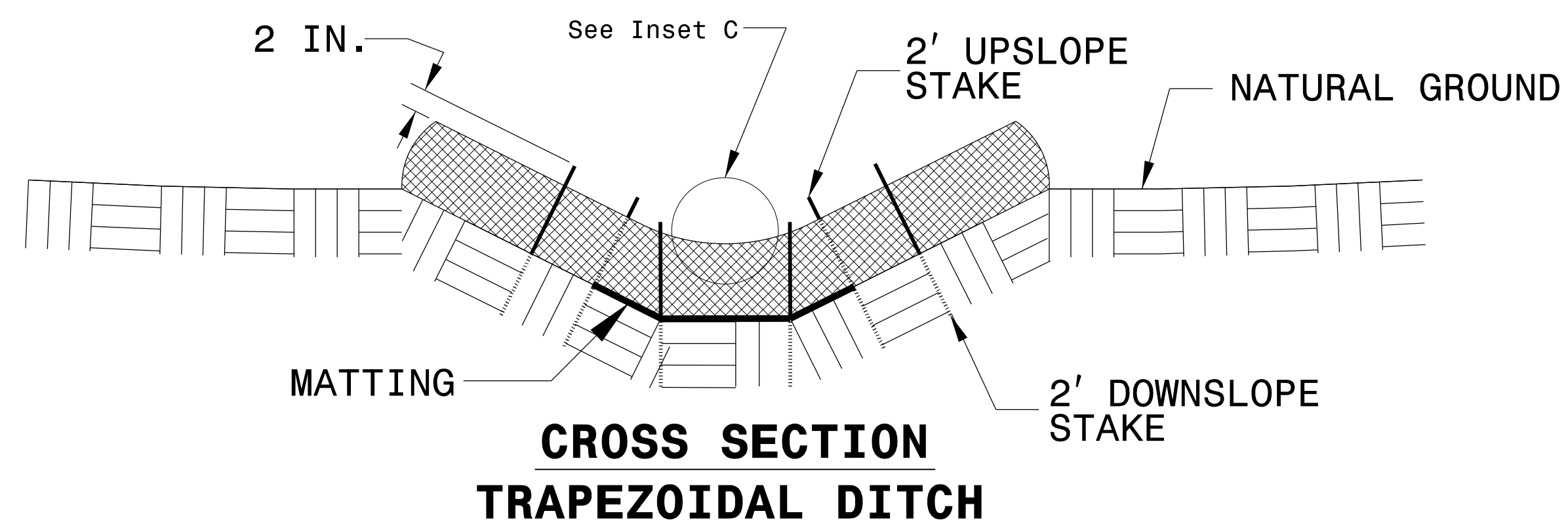
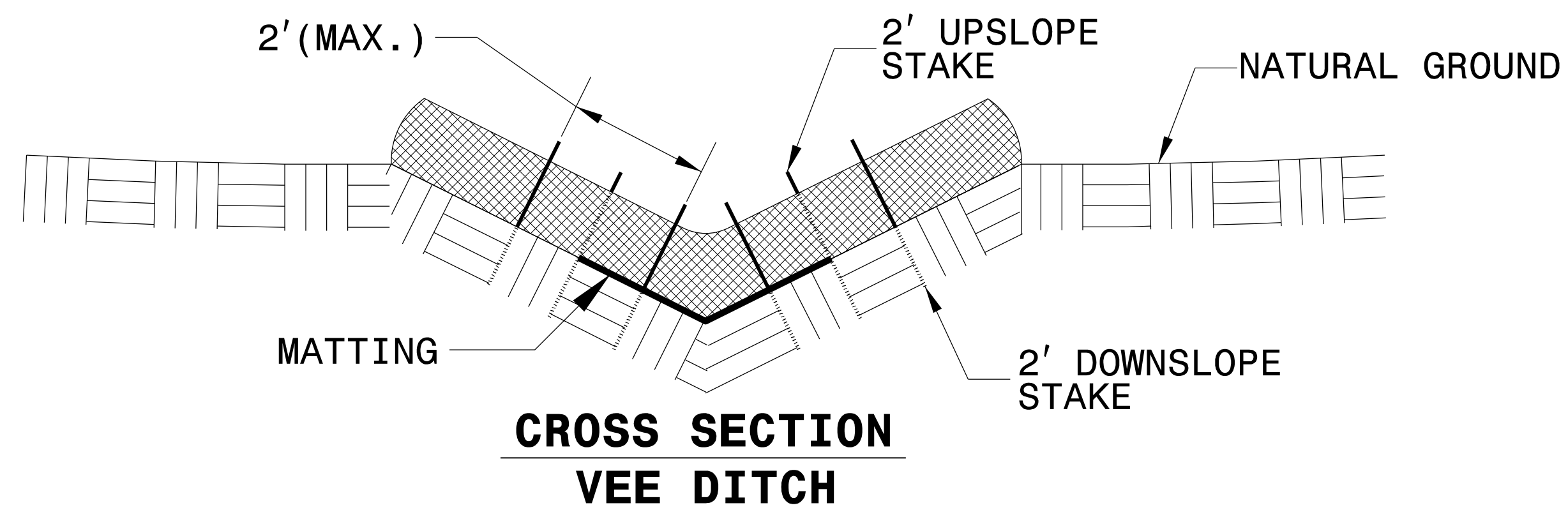
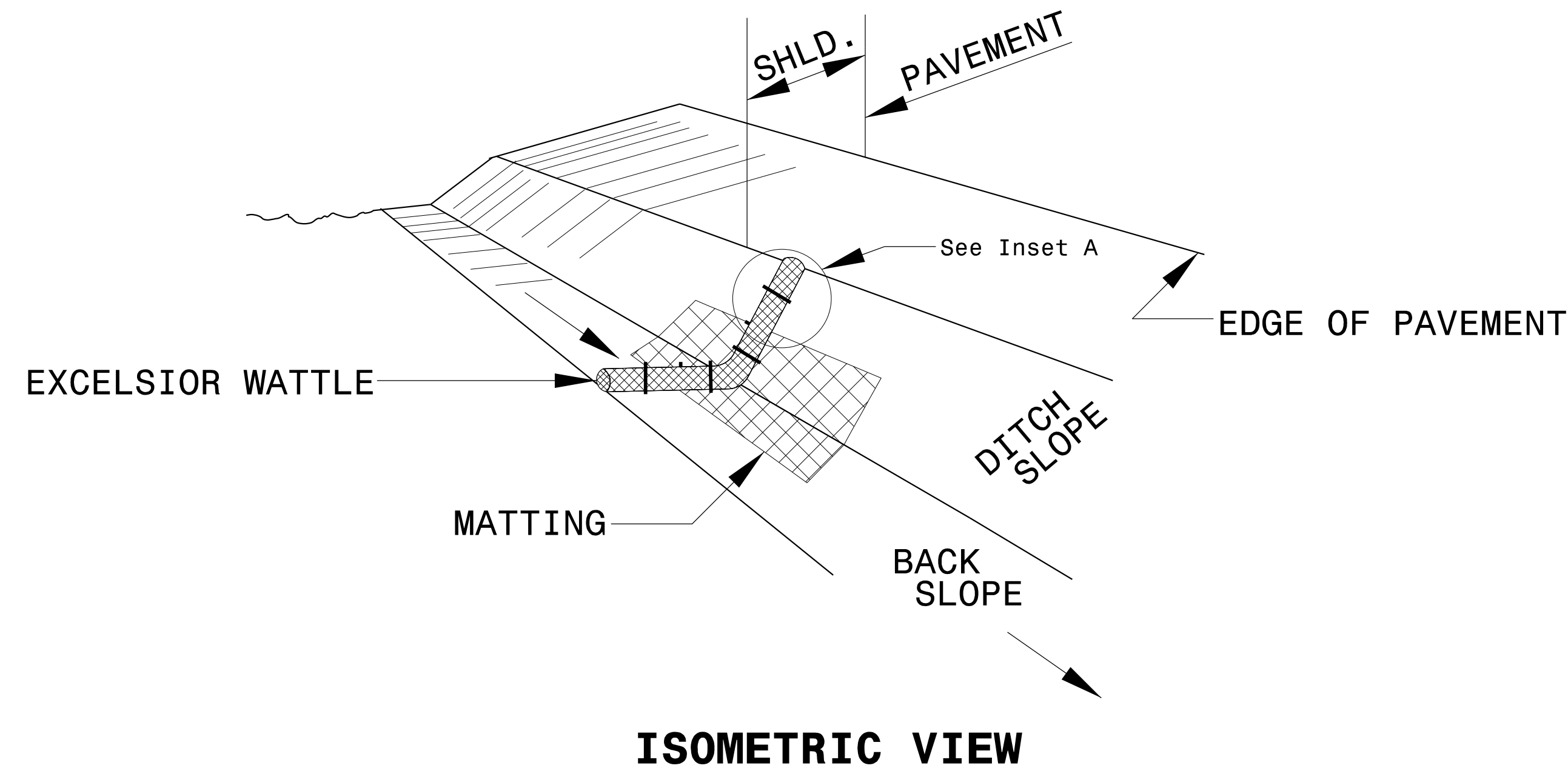
Roadway Standard Drawings

The following roadway 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.

1605.01	Temporary Silt Fence	1630.06	Special Stilling Basin
1606.01	Special Sediment Control Fence	1631.01	Matting Installation
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

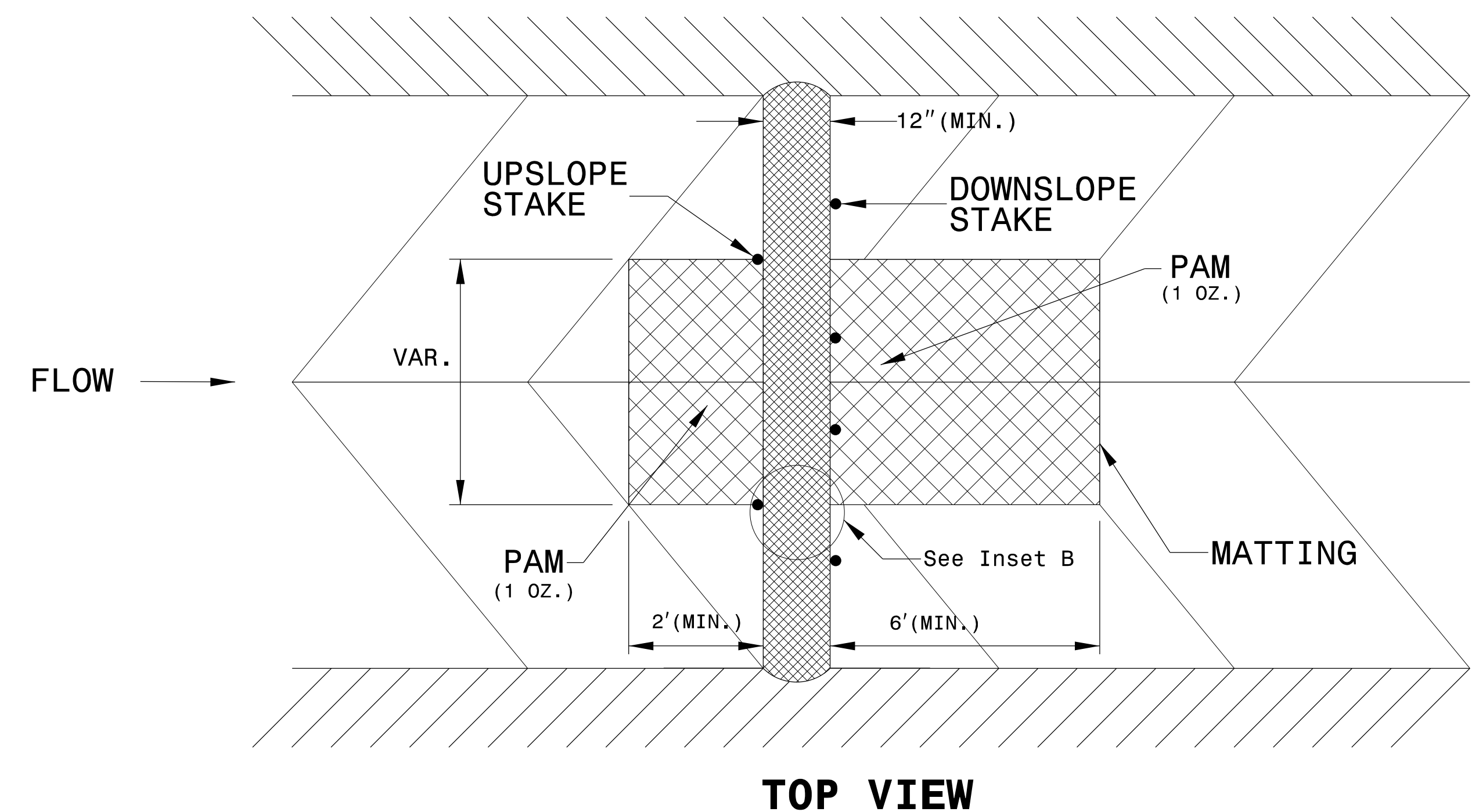
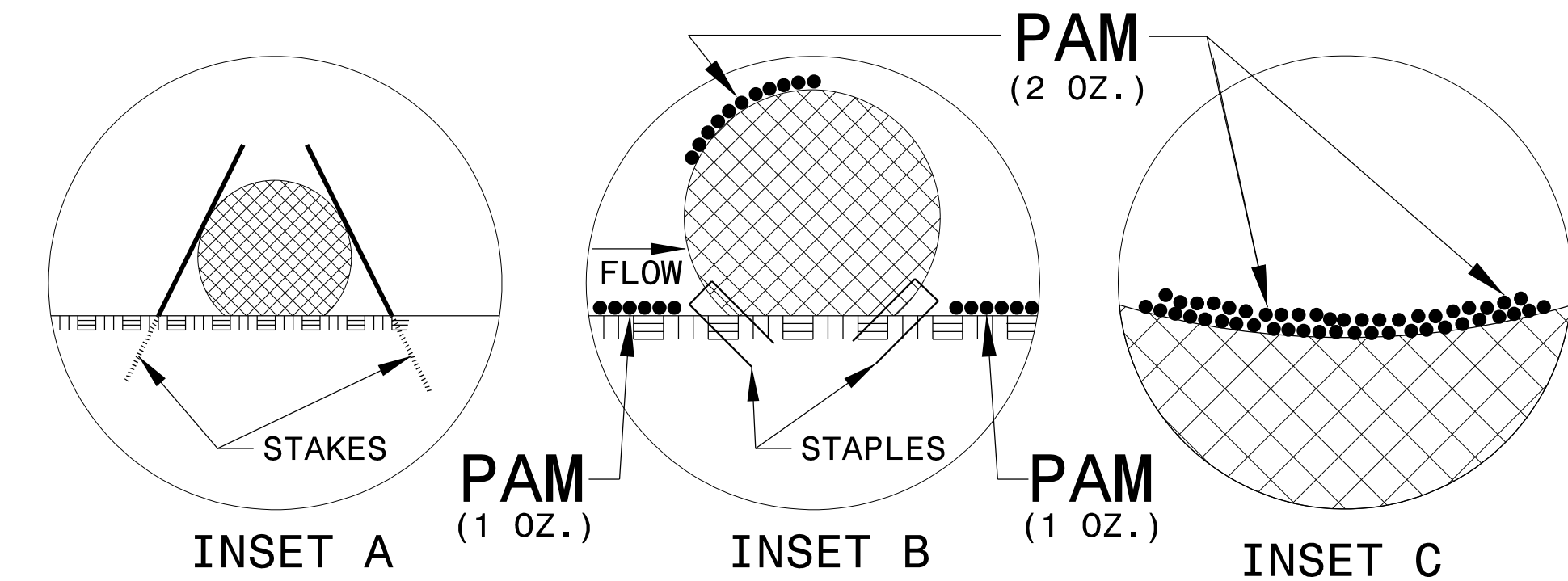


# WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL



**NOTES:**

- USE MINIMUM 12 IN. DIAMETER EXCELSIOR WATTLE.
- USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.
- ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.
- INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.
- PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.
- INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.
- INSTALL MATTING IN ACCORDANCE WITH SECTION 1631 OF THE STANDARD SPECIFICATIONS.
- 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 WATTLE.
- INITIALLY APPLY 2 OUNCES OF ANIONIC OR NEUTRALLY CHARGED PAM OVER WATTLE WHERE WATER WILL FLOW AND 1 OUNCE OF PAM ON MATTING ON EACH SIDE OF WATTLE. REAPPLY PAM AFTER EVERY RAINFALL EVENT THAT IS EQUAL TO OR EXCEEDS 0.50 IN.



DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA

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## ***SOIL STABILIZATION TIMEFRAMES***

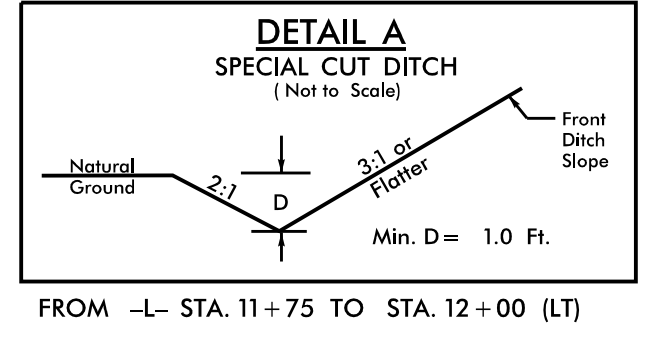
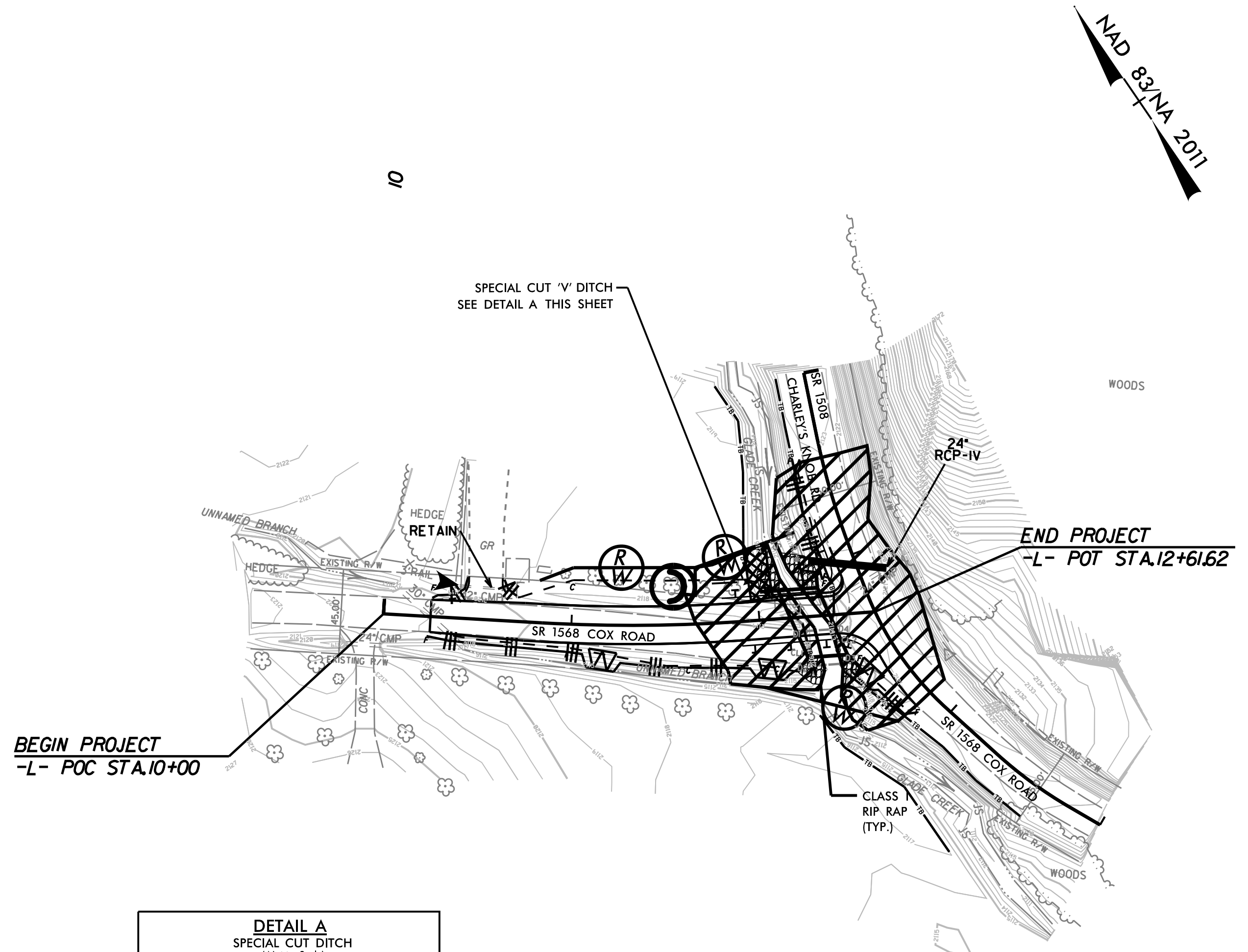
<i>SITE DESCRIPTION</i>	<i>STABILIZATION TIME</i>	<i>TIMEFRAME EXCEPTIONS</i>
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES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





 ENVIRONMENTALLY SENSITIVE AREA  
 SEE PROJECT SPECIAL PROVISIONS

NOTE: PLACE TEMPORARY ROCK SILT CHECK TYPE - A AT DRAINAGE OUTLETS.  
 NOTE: UTILIZE SPECIAL STILLING BASIN AS STILLING BASIN WHERE APPLICABLE.

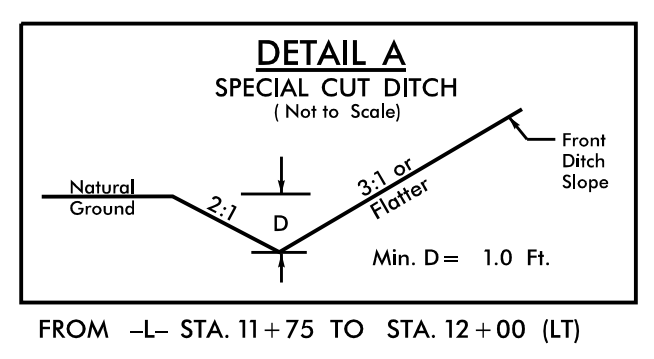
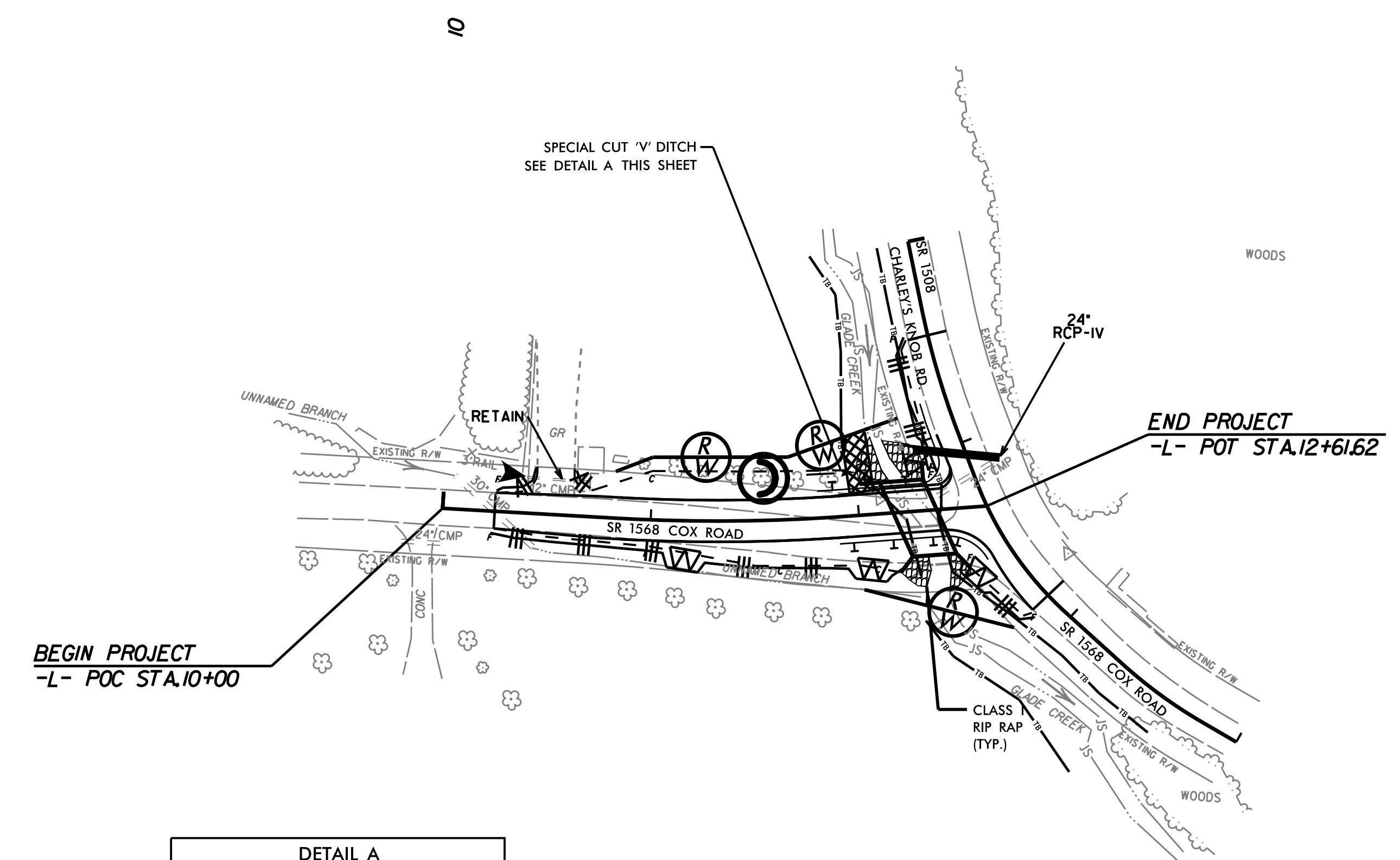
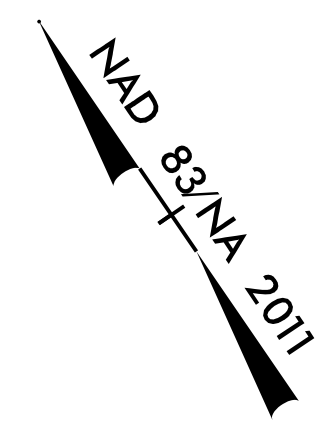




NOTE:  
PLACE TEMPORARY ROCK SILT CHECK TYPE - A  
AT DRAINAGE OUTLETS.

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NOTE:  
UTILIZE SPECIAL STILLING BASIN AS  
STILLING BASIN WHERE APPLICABLE.



NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

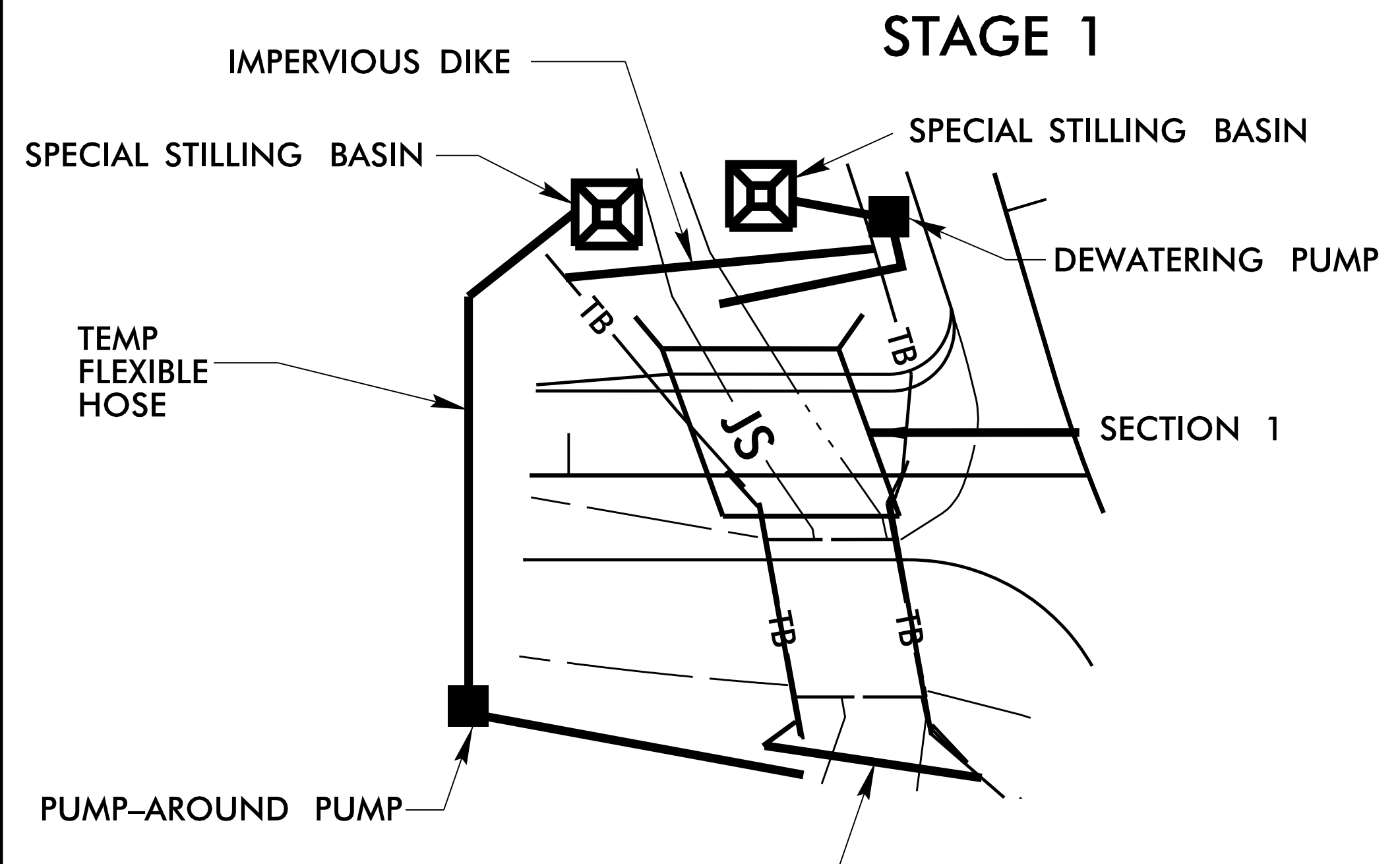
ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED BY THE ENGINEER.





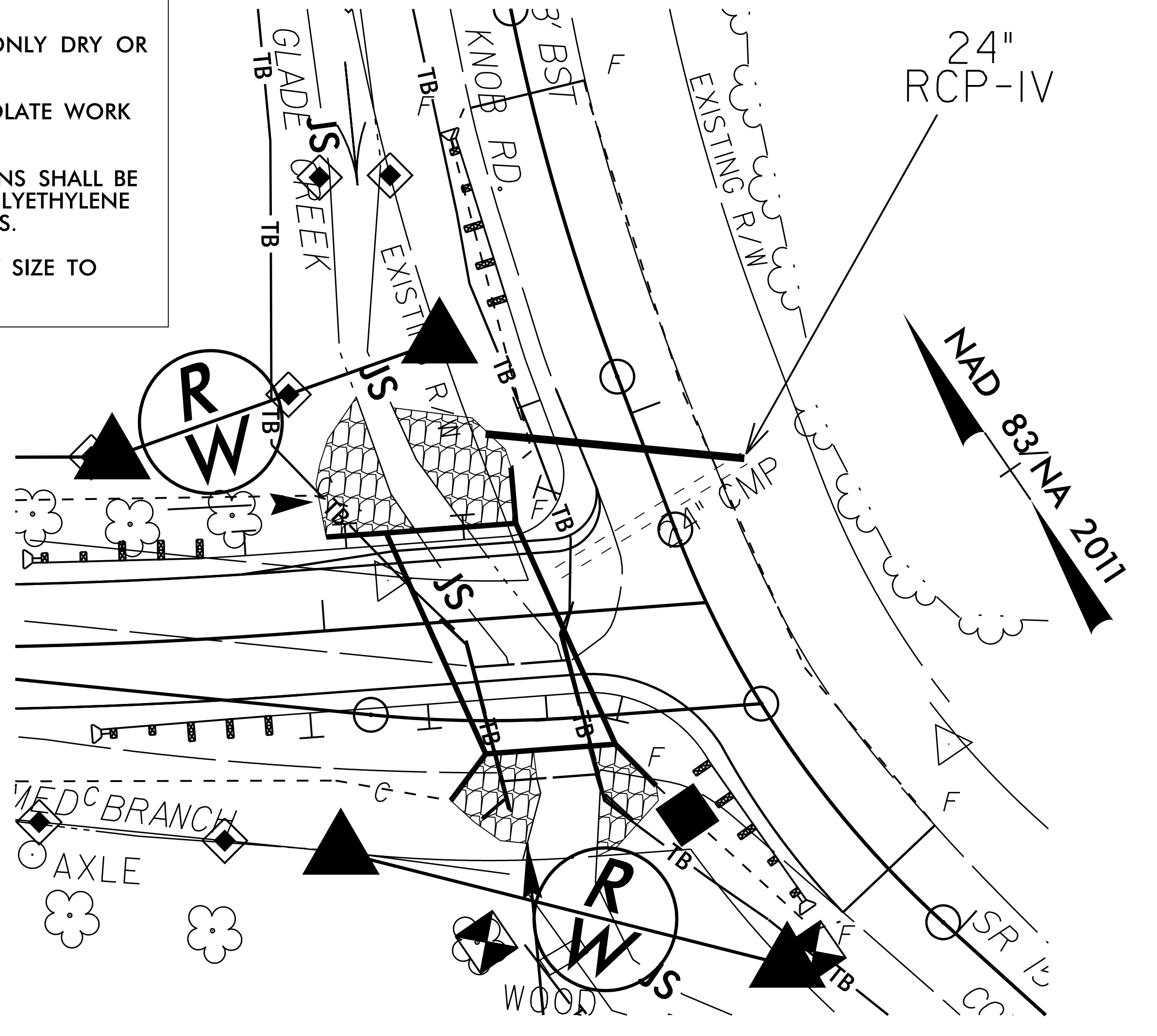
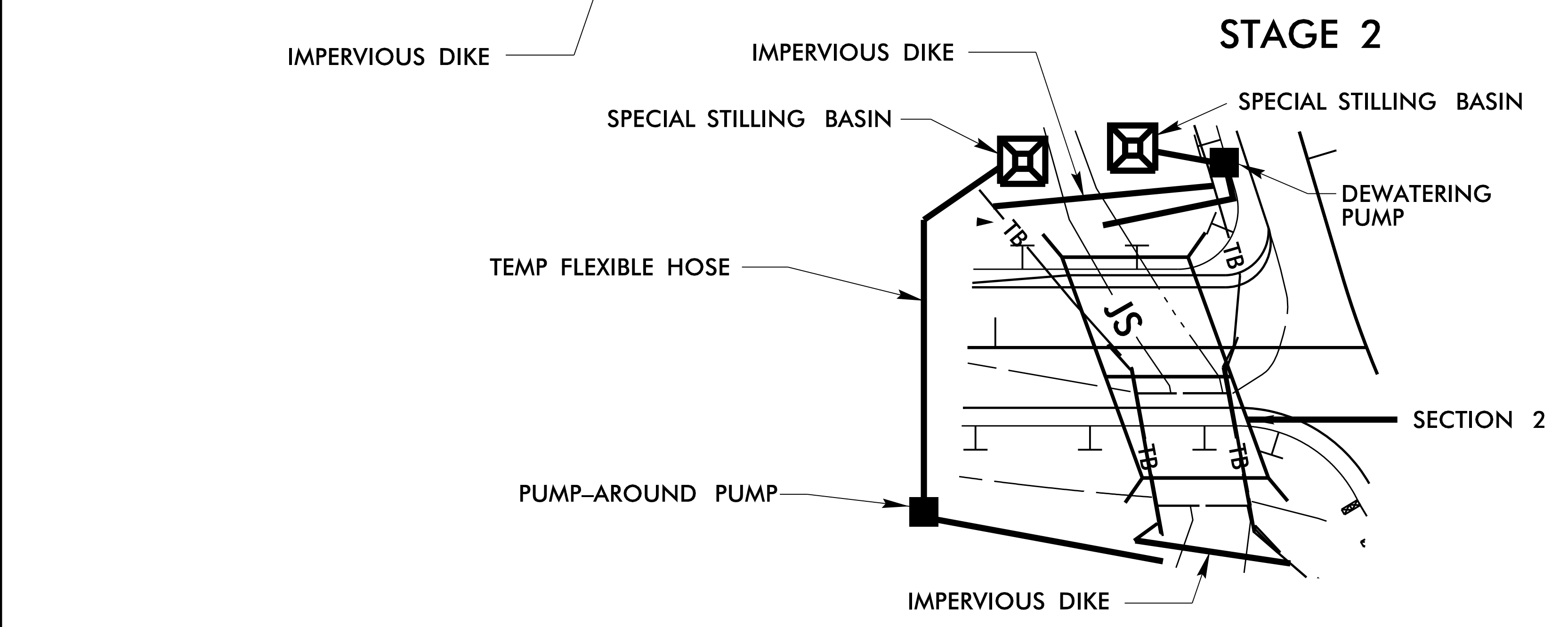
# CULVERT CONSTRUCTION SEQUENCE -L- STA. 12+27

1. UTILIZE SPECIAL STILLING BASINS AS NEEDED THROUGHOUT CULVERT CONSTRUCTION.
2. INSTALL UPSTREAM PUMP AND TEMPORARY FLEXIBLE HOSE.
3. PLACE UPSTREAM IMPERVIOUS DIKE AND BEGIN PUMPING OPERATIONS FOR STREAM DIVERSION.
4. PLACE DOWNSTREAM IMPERVIOUS DIKE AND PUMPING APPARATUS. DEWATER ENTRAPPED AREA. AREA TO BE DEWATERED SHALL BE EQUAL TO ONE DAY'S WORK.
5. STAGE 1 - REMOVE PART OF THE EXISTING BRIDGE TO INSTALL SECTION ONE OF THE PROPOSED CULVERT.
6. INSTALL PROPOSED CULVERT SECTION ONE AS SHOWN.
7. CONSTRUCT ROADWAY OVER PROPOSED CULVERT SECTION ONE AND DIVERT TRAFFIC ONTO NEWLY CONSTRUCTED ROADWAY.
8. STAGE 2 - REMOVE EXISTING BRIDGE AND INSTALL SECTION TWO OF PROPOSED CULVERT AS SHOWN.
9. COMPLETE ROADWAY.
10. EXCAVATE ANY ACCUMULATED SILT AND DEWATER BEFORE REMOVAL OF IMPERVIOUS DIKES, PUMPS, AND TEMPORARY FLEXIBLE HOSE. (DOWNSTREAM IMPERVIOUS DIKES FIRST).
11. REMOVE SPECIAL STILLING BASINS AND BACKFILL. STABILIZE DISTURBED AREA WITH SEED AND MULCH.
12. CONSTRUCT REMAINDER OF INLET/OUTLET CHANNEL IMPROVEMENTS.



NOTES:

- 1) ALL EXCAVATION SHALL BE PERFORMED IN ONLY DRY OR ISOLATED AREAS OF THE WORK ZONE.
- 2) IMPERVIOUS DIKES ARE TO BE USED TO ISOLATE WORK FROM STREAM FLOW WHEN NECESSARY.
- 3) MAINTENANCE OF STREAM FLOW OPERATIONS SHALL BE INCIDENTAL TO THE WORK. THIS INCLUDES POLYETHYLENE SHEATING, DIVERSION PIPES, PUMPS, AND HOSES.
- 4) PUMPS AND HOSES SHALL BE OF SUFFICIENT SIZE TO DEWATER THE WORK AREA.



4/23/15

WBS ELEMENT: 17BP.14.R.120

CONTRACT: DN00288

V&M PROJECT #31430-02 TRANSPORTATION\31430-02\TRANS-163\UTILITIES\UO-1.DGN

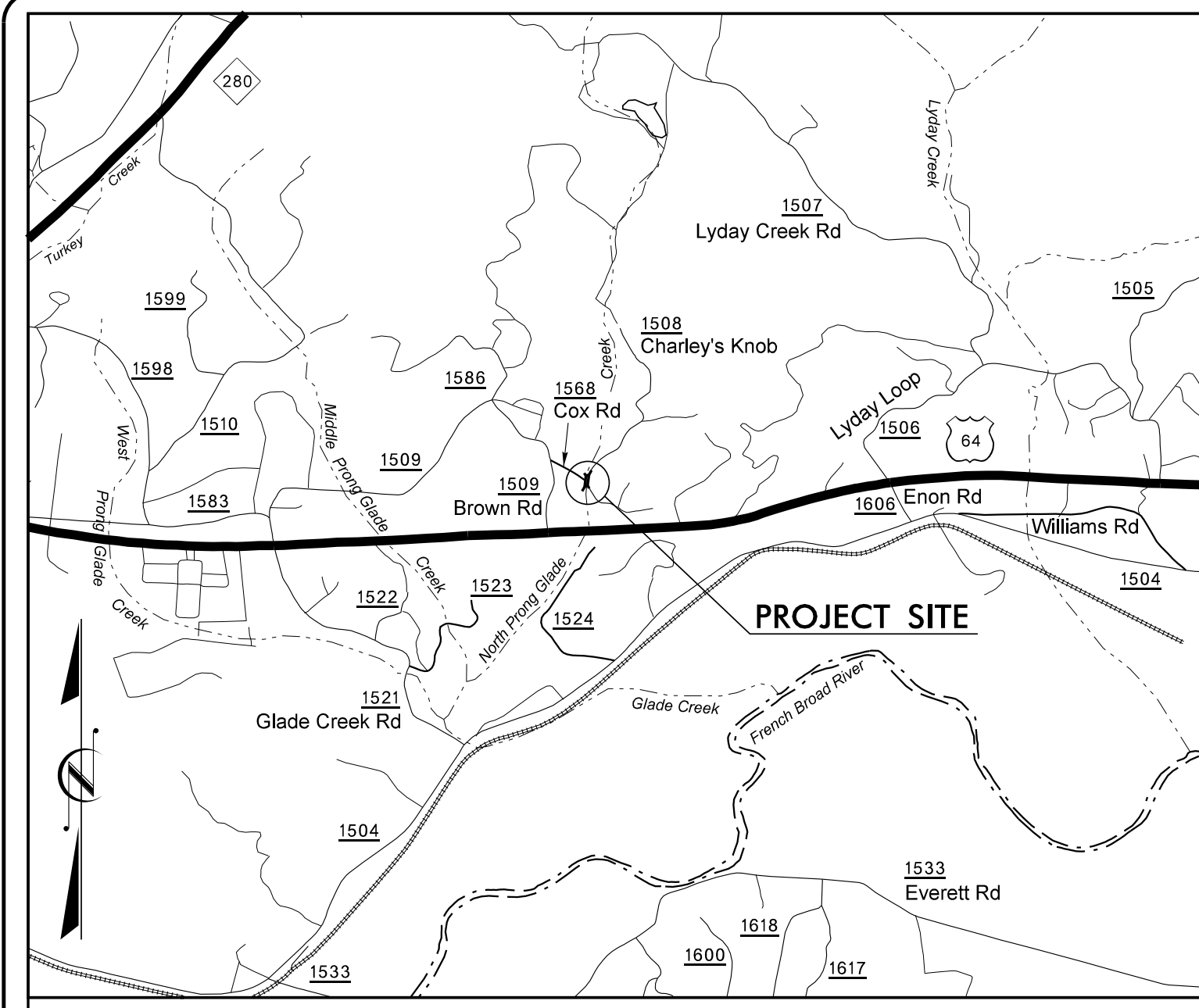
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.120	UO-1

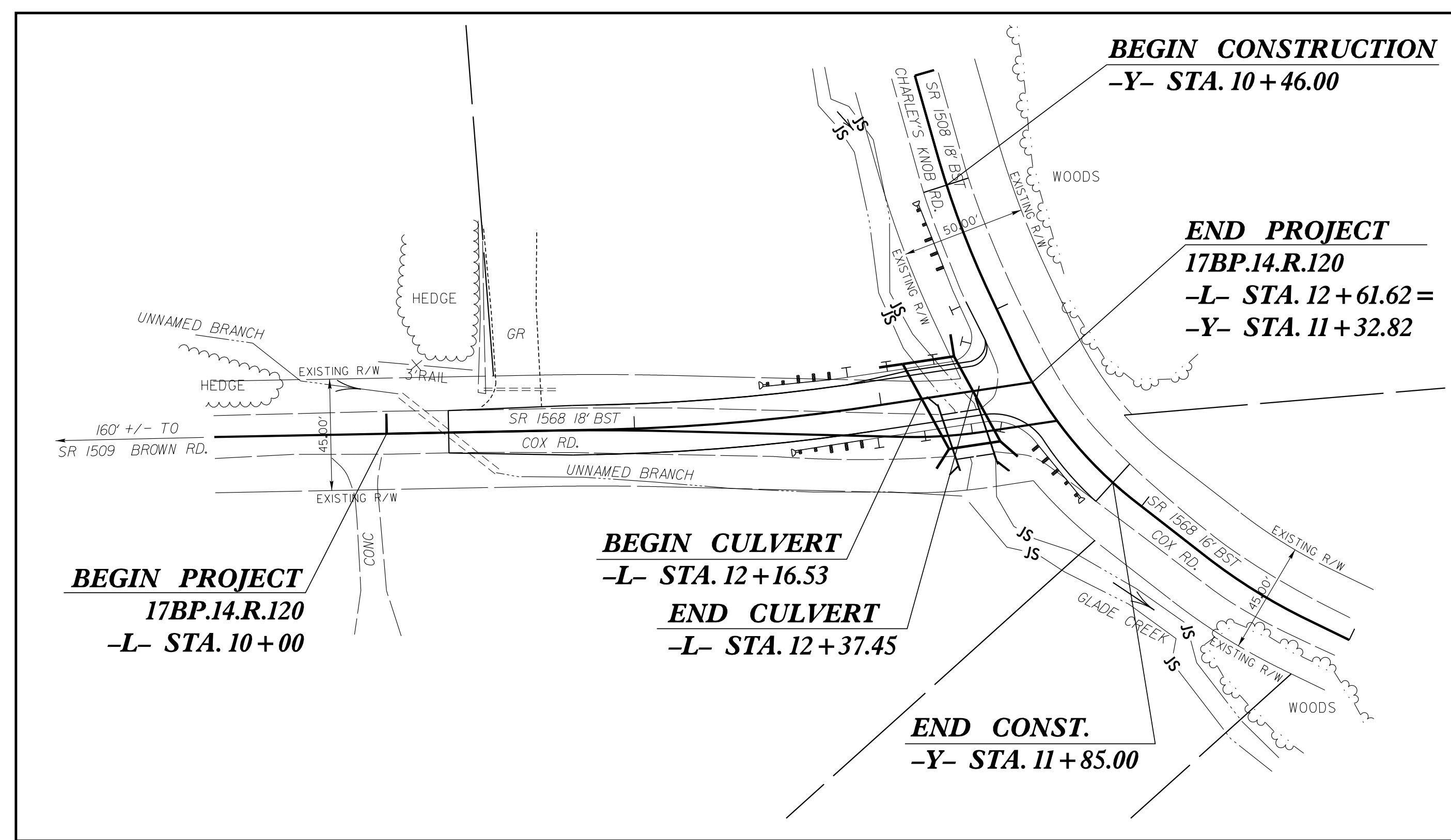
# UTILITIES BY OTHERS PLANS TRANSYLVANIA COUNTY

LOCATION: BRIDGE NO.163 OVER NORTH PRONG  
GLADE CREEK ON SR 1568 (COX ROAD)

TYPE OF WORK: AERIAL POWER, TELEPHONE & CATV



VICINITY MAP

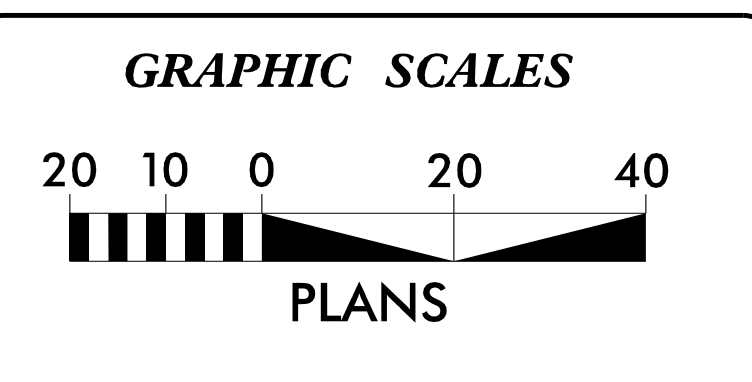


**V&M**  
Vaughn & Melton  
Consulting Engineers

Asheville,  
North Carolina  
828-253-2796

- Charlotte, NC
- Boone, NC
- Atlanta, GA
- Tri-Cities, TN
- Knoxville, TN
- Spartanburg, SC
- Charleston, SC
- Middlesboro, KY
- 770-627-3509

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

- UTILITY OWNERS ON PROJECT
- POWER - DUKE ENERGY
  - TELEPHONE & CATV - COMPORIUM (CITIZENS TELEPHONE COMPANY)

PLANS PREPARED BY:

**V&M**  
Vaughn & Melton  
Consulting Engineers  
1318-F PATTON AVE.  
Asheville, NC 28806  
828-253-2796

PREPARED FOR THE OFFICE OF:  
DIVISION OF HIGHWAYS  
UTILITIES ENGINEERING SECTION

1591 MAIL SERVICES CENTER  
RALEIGH NC 27699-1591  
PHONE (919) 250-4128  
FAX (919) 250-4119

**Roger Worthington, P.E.** UTILITIES SECTION ENGINEER

**Lynn A. Mann, P.G.** UTILITIES PROJECT DESIGNER



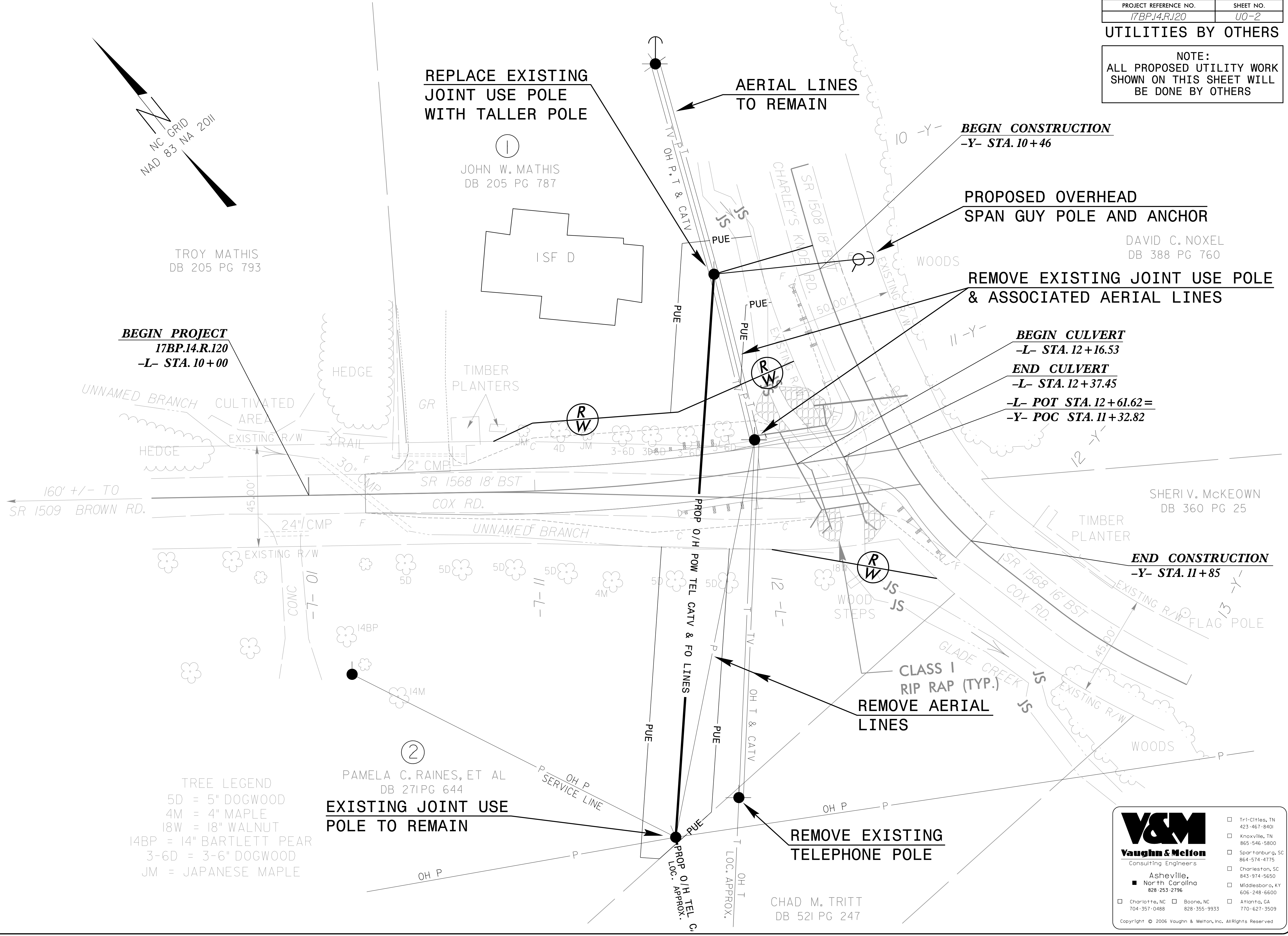
WBS ELEMENT: 17BP.14.R.120

CONTRACT: DN00288

PROJECT REFERENCE NO. 17BP.14.R.120	SHEET NO. U0-2
--	-------------------

UTILITIES BY OTHERS

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



**BEGIN PROJECT**  
17BP.14.R.120  
-L- STA. 10+00

**BEGIN CONSTRUCTION**  
-Y- STA. 10+46

**BEGIN CULVERT**  
-L- STA. 12+16.53  
**END CULVERT**  
-L- STA. 12+37.45  
-L- POT STA. 12+61.62 =  
-Y- POC STA. 11+32.82

**END CONSTRUCTION**  
-Y- STA. 11+85

**TREE LEGEND**  
5D = 5" DOGWOOD  
4M = 4" MAPLE  
18W = 18" WALNUT  
14BP = 14" BARTLETT PEAR  
3-6D = 3-6" DOGWOOD  
JM = JAPANESE MAPLE

**EXISTING JOINT USE POLE TO REMAIN**

**REMOVE EXISTING TELEPHONE POLE**

CHAD M. TRITT  
DB 521 PG 247

**V&M**  
Vaughn & Melton  
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