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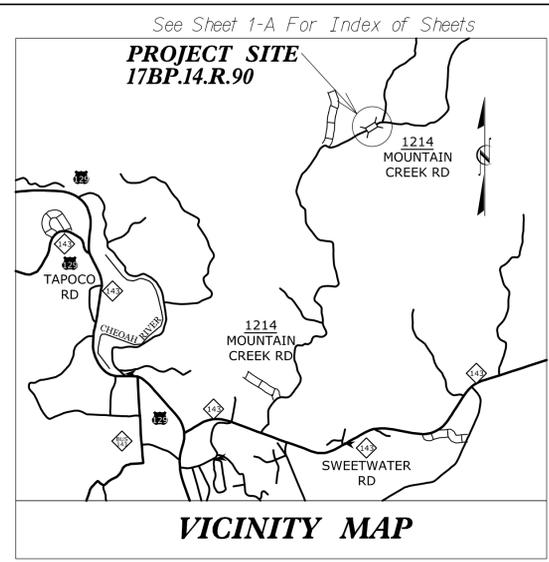
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.14.R.90	1	X
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
17BP.14.R.90	N/A	RIGHT-OF-WAY	
17BP.14.R.90	N/A	PE	
17BP.14.R.90	N/A	CONSTRUCTION	

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

GRAHAM COUNTY

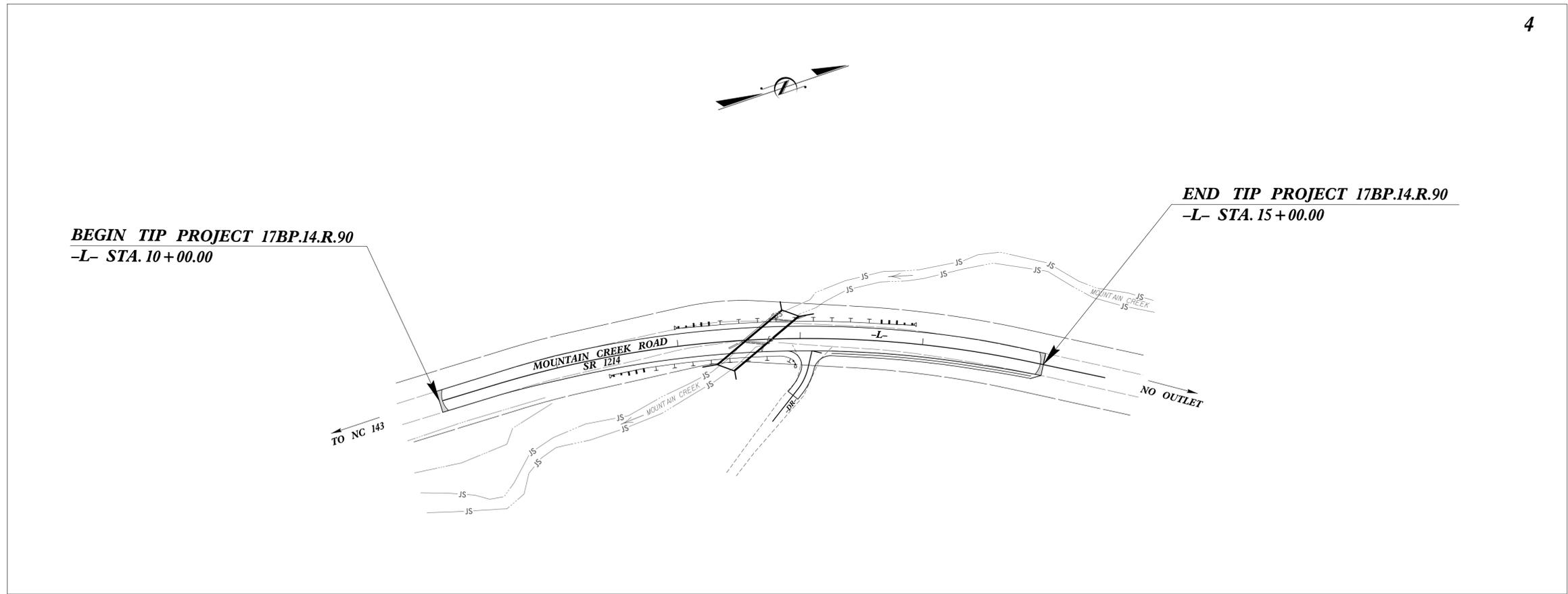
LOCATION: REPLACEMENT OF BRIDGE NO. 107 ON MOUNTAIN CREEK RD. (SR 1214) OVER MOUNTAIN CREEK

TYPE OF WORK: GRADING, PAVING, TRAFFIC CONTROL, DRAINAGE, & CULVERT



TIP PROJECT: 17BP.14.R.90

CONTRACT: DN00266

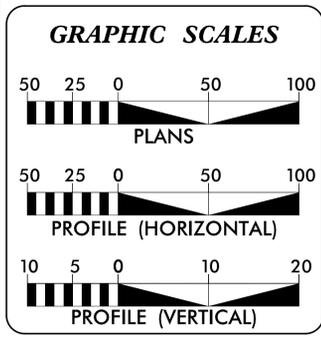


4

CONTACT: JOSHUA B. DEYTON, P.E.
NCDOT HIGHWAY DIVISION 14

THIS IS A PARTIAL CONTROLLED-ACCESS PROJECT WITH ACCESS BEING LIMITED TO POINTS AS SHOWN ON THE PLANS.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



DESIGN DATA

ADT 2008 =	840
ADT 2025 =	1680
DHV =	NA %
D =	NA %
T =	6 % *
V =	30 MPH
* TTST =	NA DUAL NA
FUNC CLASS =	
LOCAL	
SUB REGIONAL TIER	

PROJECT LENGTH

LENGTH OF ROADWAY PROJECT 17BP.14.R.90	=	0.091 MILE
LENGTH OF STRUCTURE PROJECT 17BP.14.R.90	=	0.004 MILE
TOTAL LENGTH PROJECT 17BP.14.R.90	=	0.095 MILE

Prepared in the Office of:

WSP
For The
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: NICK RAMIREZ, PE
PROJECT ENGINEER

LETTING DATE: JENNIFER L. STARNES, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

4/22/2016

SEAL 27876

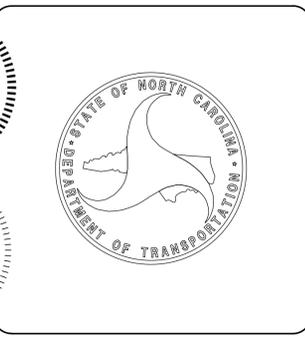
DocuSigned by:
Rana Stansell
EDFF30A043548C
SIGNATURE:

ROADWAY DESIGN ENGINEER

4/22/2016

SEAL 040655

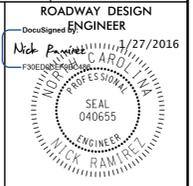
DocuSigned by:
Nick Ramirez
50A07810E12444A
SIGNATURE:





15401 Weston Parkway
Suite 100
Cary, NC 27513
NC License # F-0891
TEL: (919) 678-0035
FAX: (919) 678-0206

PROJECT REFERENCE NO. 17BP.14.R.90	SHEET NO. 1-A
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**DOCUMENT NOT CONSIDERED FINAL
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INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
1-A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
1-B	CONVENTIONAL SYMBOLS
1-C	SURVEY CONTROL SHEET
2	PAVEMENT SCHEDULE, TYPICAL SECTIONS, AND WEDGING DETAILS
2-A	TEMPORARY DETOUR PLAN AND PROFILE
3-A	MISCELLANEOUS SUMMARIES (DRAINAGE, EARTHWORK, GUARDRAIL, PAVEMENT REMOVAL, RIGHT-OF-WAY, & SHOULDER BERM GUTTER)
4	PLAN & PROFILE SHEET
TMP-1 THRU TMP-4	TRAFFIC MANAGEMENT PLANS
PMP-1	PAVEMENT MARKING PLANS
EC-1 THRU EC-7	EROSION CONTROL PLANS
RF-1	REFORESTATION
X-1A	CROSS-SECTION SUMMARY SHEET
X-1 THRU X-11	CROSS-SECTIONS
C-1 THRU C-9	STRUCTURE PLANS

GENERAL NOTES:

2012 SPECIFICATIONS
EFFECTIVE: 01-17-12
REVISED: 11-01-11

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.

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 Superlevation - Two Lane Pavement

CLEARING:

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

DIVISION 3 - PIPE CULVERTS

300.01 Method of Pipe Installation

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.

DIVISION 5 - SUBGRADE, BASES AND SHOULDERS

560.01 Method of Shoulder Construction - High Side of Superelevated Curve - Method I

SHOULDER CONSTRUCTION:

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

DIVISION 6 - ASPHALT BASES AND PAVEMENTS

654.01 Pavement Repairs

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.

DIVISION 8 - INCIDENTALS

840.18 G.D.I. TYPE "B"
840.24 Frames and Narrow Slot Sag Grates
840.29 Frames and Narrow Slot Flat Grates
840.35 Traffic Bearing Grated Drop Inlet
846.01 Concrete Curb, Gutter and Curb & Gutter
846.04 Drop Inlet Installation in Expressway Gutter
862.01 Guardrail Placement
862.02 Guardrail Installation
862.03 Structure Anchor Units
876.02 Guide for Rip Rap at Pipe Outlets

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:

UTILITY	UTILITY OWNER
Power	Duke Energy Corporation
Phone	Frontier Communication

ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS, EXCEPT AS SHOWN ON THE PLANS.

RIGHT-OF-WAY MARKERS:

ALL RIGHT-OF-WAY MARKERS ON THIS PROJECT SHALL BE PLACED BY CONTRACT IN ACCORDANCE WITH SECTION 801 OF THE NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES.

Note: Not to Scale

*S.U.E. = Subsurface Utility Engineering

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	⊙ EIP
Property Corner	-----x
Property Monument	⊠ ECM
Parcel/Sequence Number	Ⓜ 123
Existing Fence Line	-x-x-x-
Proposed Woven Wire Fence	○
Proposed Chain Link Fence	⊠
Proposed Barbed Wire Fence	◇
Existing Wetland Boundary	-WLB-
Proposed Wetland Boundary	-WLB-
Existing Endangered Animal Boundary	-EAB-
Existing Endangered Plant Boundary	-EPB-
Known Soil Contamination: Area or Site	☠ ☠
Potential Soil Contamination: Area or Site	☠ ?

BUILDINGS AND OTHER CULTURE:

Gas Pump Vent or U/G Tank Cap	○
Sign	Ⓞ
Well	Ⓞ W
Small Mine	Ⓧ
Foundation	⊠
Area Outline	⊠
Cemetery	⊠ †
Building	⊠
School	⊠
Church	⊠
Dam	⊠

HYDROLOGY:

Stream or Body of Water	-----
Hydro, Pool or Reservoir	⊠
Jurisdictional Stream	-JS-
Buffer Zone 1	-BZ 1-
Buffer Zone 2	-BZ 2-
Flow Arrow	←
Disappearing Stream	→
Spring	⊙
Wetland	Ⓜ
Proposed Lateral, Tail, Head Ditch	⊠
False Sump	⊠

RAILROADS:

Standard Gauge	-----
RR Signal Milepost	Ⓜ CSX TRANSPORTATION MILEPOST 35
Switch	⊠ SWITCH
RR Abandoned	-----
RR Dismantled	-----

RIGHT OF WAY:

Baseline Control Point	◆
Existing Right of Way Marker	△
Existing Right of Way Line	-----
Proposed Right of Way Line	Ⓜ
Proposed Right of Way Line with Iron Pin and Cap Marker	Ⓜ ▲
Proposed Right of Way Line with Concrete or Granite RW Marker	Ⓜ ▲
Proposed Control of Access Line with Concrete CA Marker	Ⓜ ⊠
Existing Control of Access	Ⓜ ⊠
Proposed Control of Access	Ⓜ ⊠
Existing Easement Line	-E-
Proposed Temporary Construction Easement	-E-
Proposed Temporary Drainage Easement	-TDE-
Proposed Permanent Drainage Easement	-PDE-
Proposed Permanent Drainage / Utility Easement	-DUE-
Proposed Permanent Utility Easement	-PUE-
Proposed Temporary Utility Easement	-TUE-
Proposed Aerial Utility Easement	-AUE-
Proposed Permanent Easement with Iron Pin and Cap Marker	◆

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	-----
Existing Curb	-----
Proposed Slope Stakes Cut	-C-
Proposed Slope Stakes Fill	-F-
Proposed Curb Ramp	Ⓜ CR
Existing Metal Guardrail	Ⓜ
Proposed Guardrail	Ⓜ
Existing Cable Guiderail	Ⓜ
Proposed Cable Guiderail	Ⓜ
Equality Symbol	⊕
Pavement Removal	⊠
Single Tree	Ⓜ
Single Shrub	Ⓜ
Hedge	Ⓜ
Woods Line	Ⓜ

VEGETATION:

Orchard	Ⓜ
Vineyard	Ⓜ 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

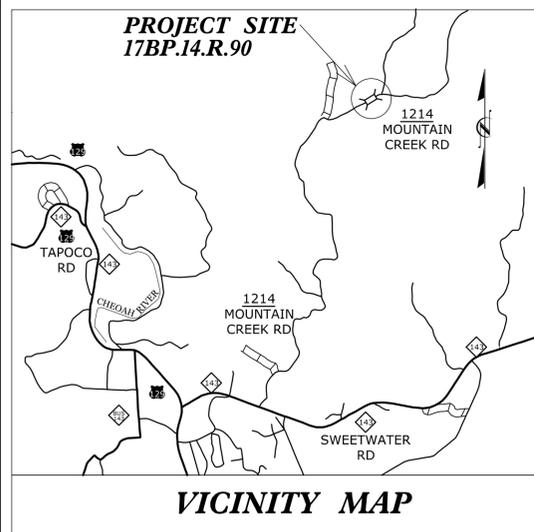
SANITARY SEWER:

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:

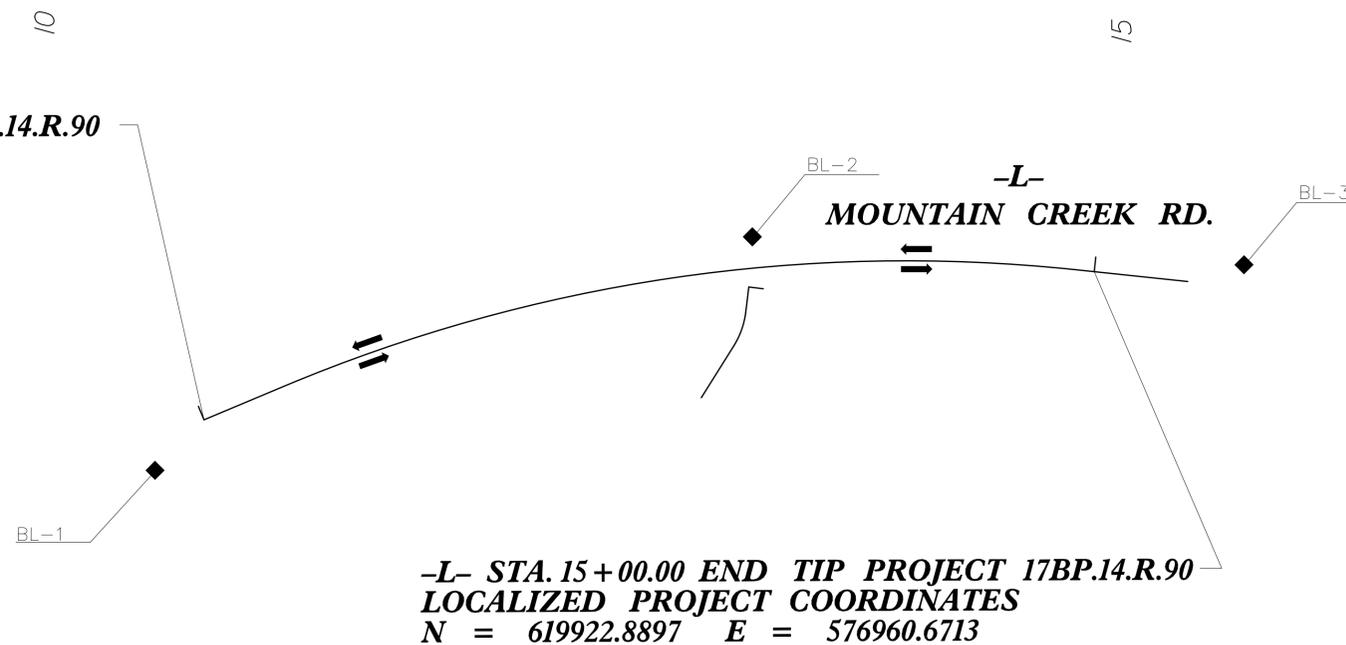
Utility Pole	●
Utility Pole with Base	Ⓜ
Utility Located Object	○
Utility Traffic Signal Box	Ⓜ
Utility Unknown U/G Line	Ⓜ
U/G Tank; Water, Gas, Oil	Ⓜ
Underground Storage Tank, Approx. Loc.	Ⓜ
A/G Tank; Water, Gas, Oil	Ⓜ
Geoenvironmental Boring	Ⓜ
U/G Test Hole (S.U.E.*)	Ⓜ
Abandoned According to Utility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

SURVEY CONTROL SHEET 17BP.14.R.90



BL	POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	L OFFSET
1	-BL-1		619410.4810	576846.2550	2223.69	OUTSIDE LIMITS	OUTSIDE LIMITS
2	-BL-2		619760.6340	576866.0900	2233.97	13+14.33	16.66 LT
3	-BL-3		619998.9410	576991.7080	2243.75	OUTSIDE LIMITS	OUTSIDE LIMITS

-L- STA. 10+00.00 BEGIN TIP PROJECT 17BP.14.R.90
LOCALIZED PROJECT COORDINATES
N = 619446.3216 E = 576831.9213



NOTES:

- THE CONTROL DATA FOR THIS PROJECT WAS PROVIDED BY NCDOT. CONTROL POINTS PROVIDED ARE AS FOLLOWS:
 BL-1
 BL-2
 BL-3
- SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT.
- INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY NCDOT.
 - ◆ INDICATES CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY NCDOT.

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "370107 G-101" WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF NORTHING: 620848.391(ft) EASTING: 577816.965(ft) ELEVATION: 2295.20(ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99977004 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "370107 G-101" TO -L- STATION IS

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

8/17/99

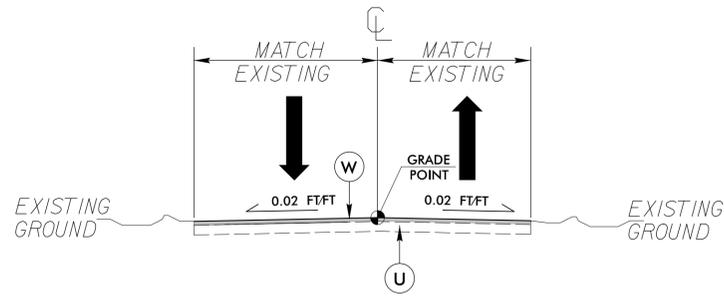
REVISIONS



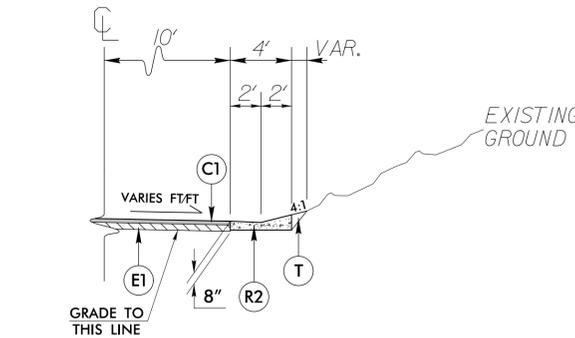
15401 Weston Parkway
Suite 100
Cary, NC 27513
TEL: (919) 678-0035
FAX: (919) 678-0206

PROJECT REFERENCE NO. 17BPJ4.R.90	SHEET NO. 2
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	
	

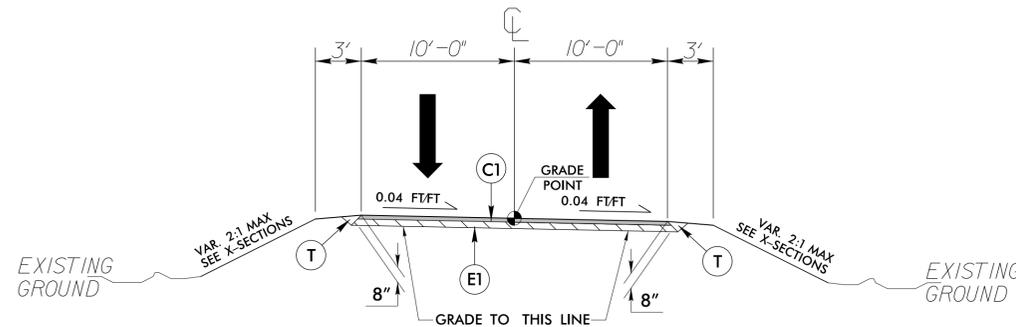
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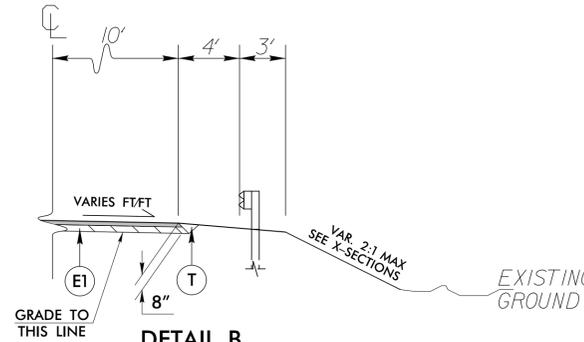
TYPICAL SECTION NO. 1
-L- STA. 10+00.00 TO STA. 10+50.00



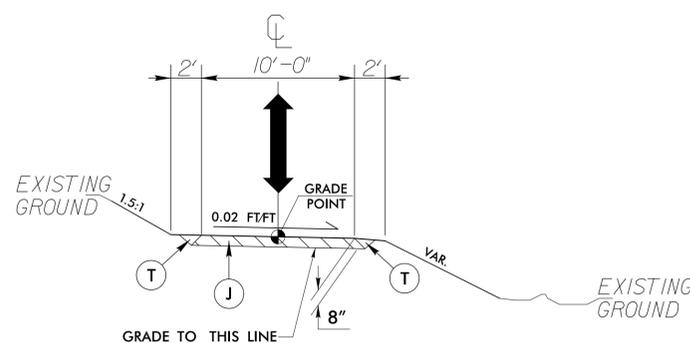
DETAIL A
EXPRESSWAY GUTTER SECTION
-L- STA. 13+26.00 TO 14+92.00 (RT)



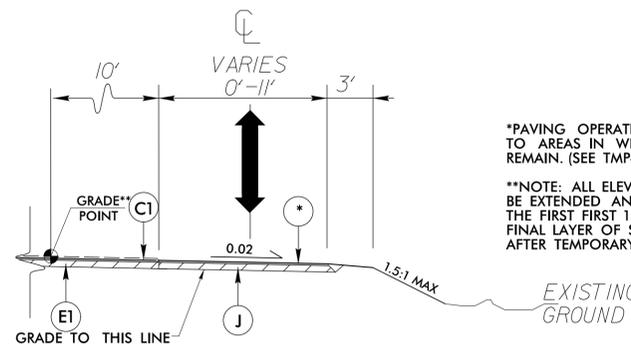
TYPICAL SECTION NO. 2
(USE IN CONJUNCTION WITH DETAIL A AND DETAIL B)
-L- STA. 10+50.00 TO STA. 15+00.00



DETAIL B
GUARDRAIL
-L- STA. 12+00.00 TO 14+00.00 (LT)
-L- STA. 11+43.00 TO 12+97.00 (RT)



TYPICAL SECTION NO. 3
-DR- STA. 10+00.00 TO STA. 10+40.00



TYPICAL SECTION NO. 4
-DET- STA. 10+33.35 TO STA. 11+04.64
(USE IN CONJUNCTION WITH TMP-2)

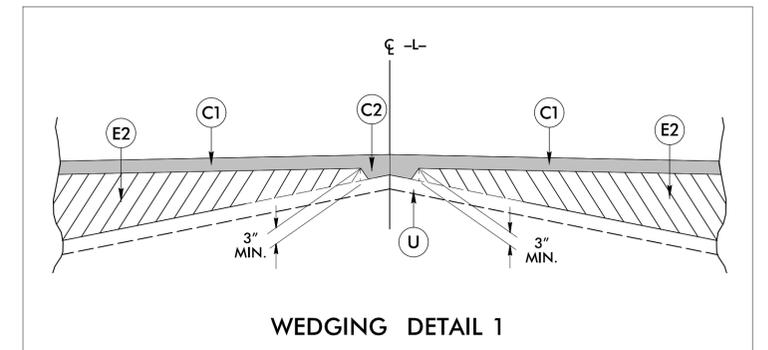
PAVEMENT SCHEDULE	
C1	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 1" IN DEPTH OR GREATER THAN 1 1/2" IN DEPTH.
E1	PROP. APPROX. 5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 570 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.
J	PROP. 8" AGGREGATE BASE COURSE.
R1	SHOULDER BERM GUTTER.
R2	EXPRESSWAY GUTTER.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	WEDGING (SEE DETAIL THIS SHEET).

NOTES:

1. ALL SLOPES ARE 1:1 UNLESS OTHERWISE NOTED.

*PAVING OPERATIONS ALONG -DET- LIMITED ONLY TO AREAS IN WHICH PROPOSED PAVEMENT IS TO REMAIN. (SEE TMP-2)

**NOTE: ALL ELEVATIONS AND SLOPES ARE TO BE EXTENDED AND CONSTRUCTED FROM TOP OF THE FIRST 1.5" LAYER OF SURFACE COURSE. FINAL LAYER OF SURFACE COURSE TO BE CONSTRUCTED AFTER TEMPORARY DETOUR IS REMOVED.



WEDGING DETAIL 1

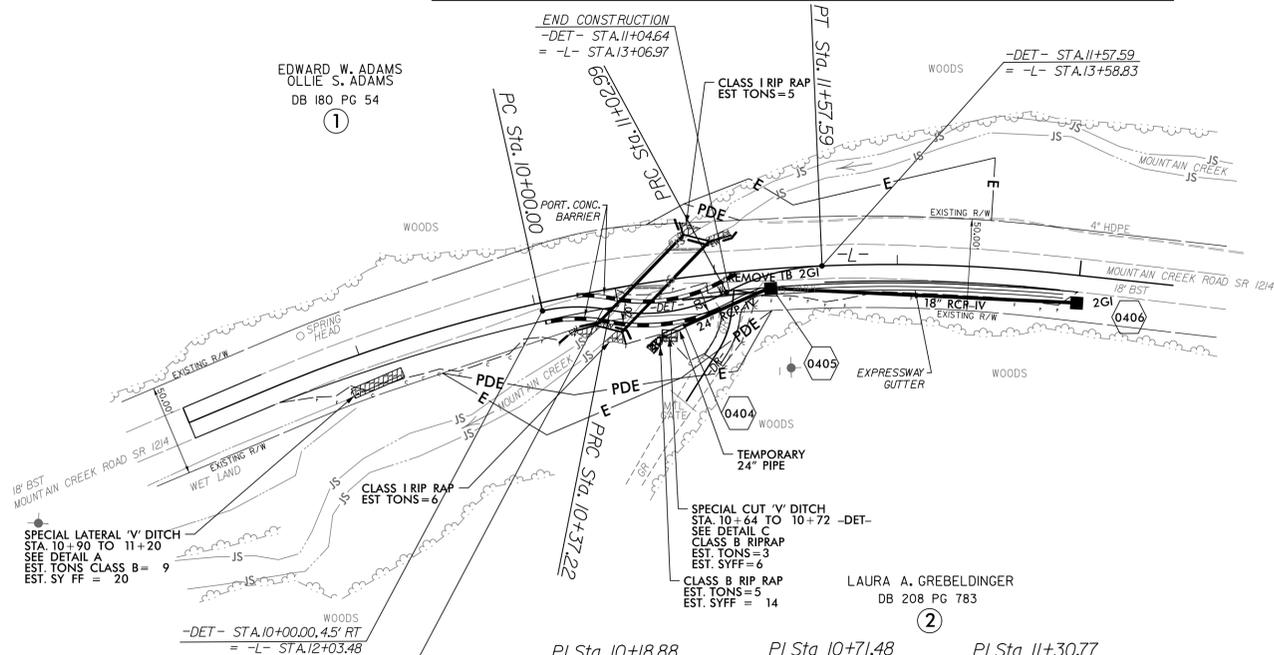
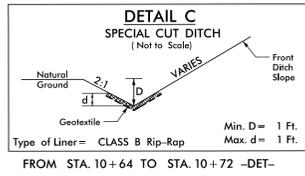
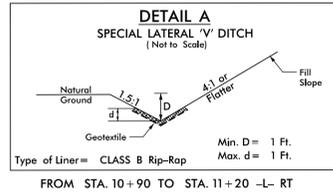
1/27/2016, R:\Raleigh\Office NCDOT\17BP GROUP\1\17BP.14.F.90.370107\Roadway\Pro\1\17BP.14.R.90.RDY_TYP.dgn

8/17/99

DETOUR

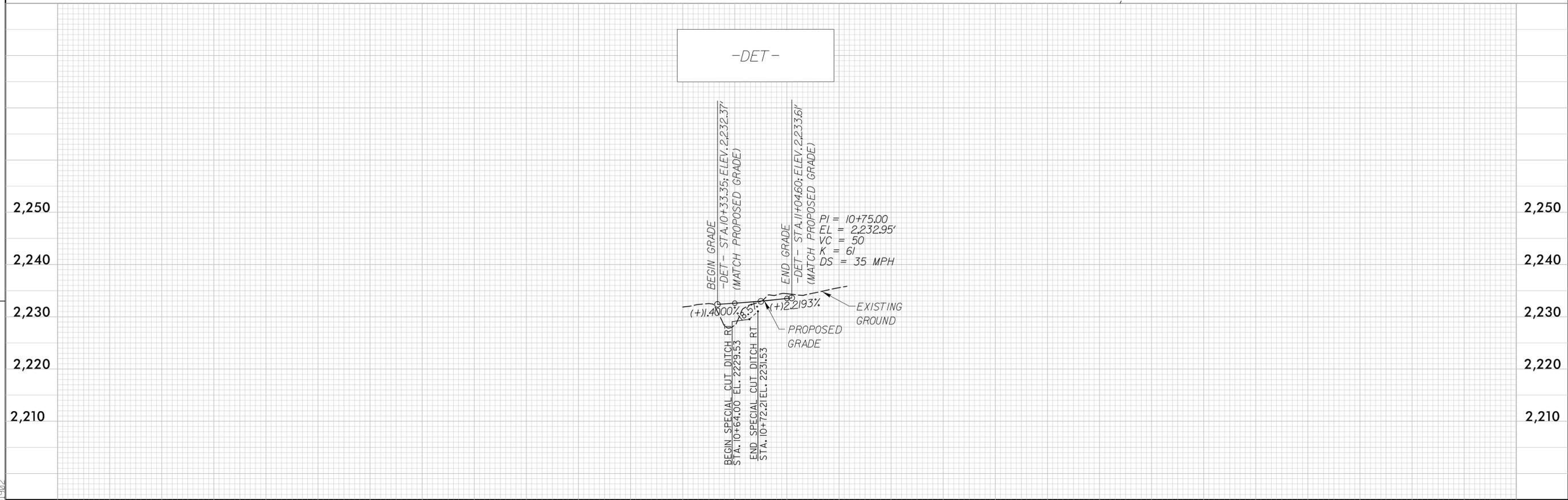


PROJECT REFERENCE NO. 17BP.14.R.90	SHEET NO. 2-A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER Nick Powell Professional Engineer Seal 040655 1/27/2016	HYDRAULICS ENGINEER Professional Engineer Seal 27876 1/27/2016
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

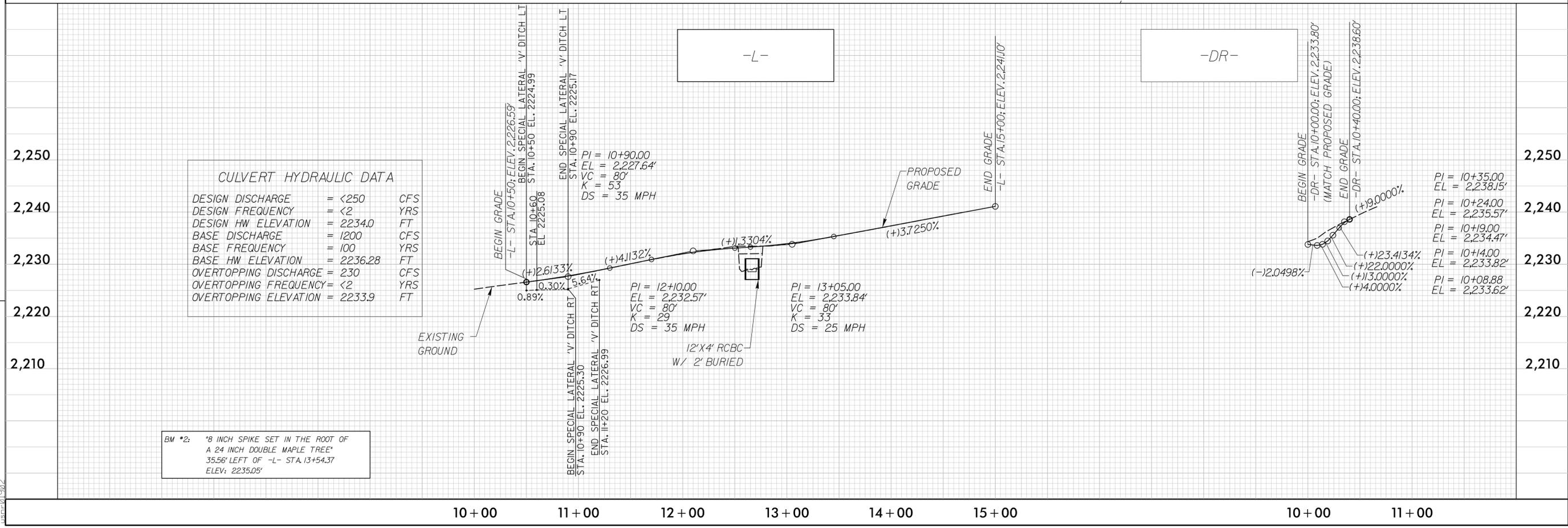
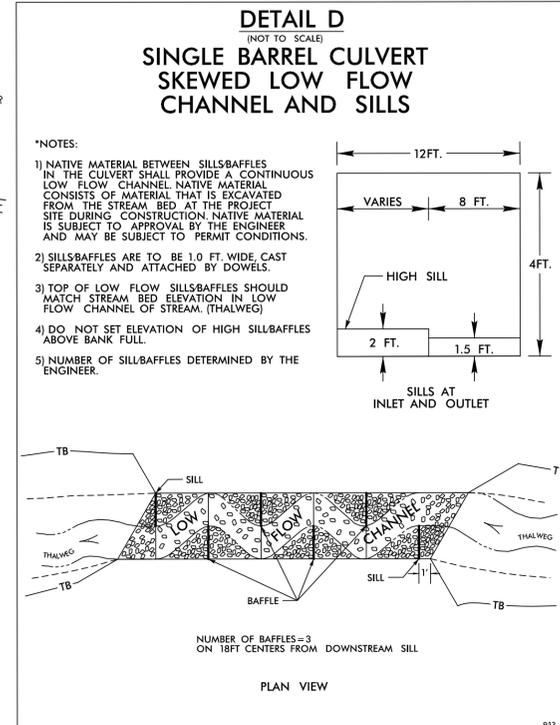
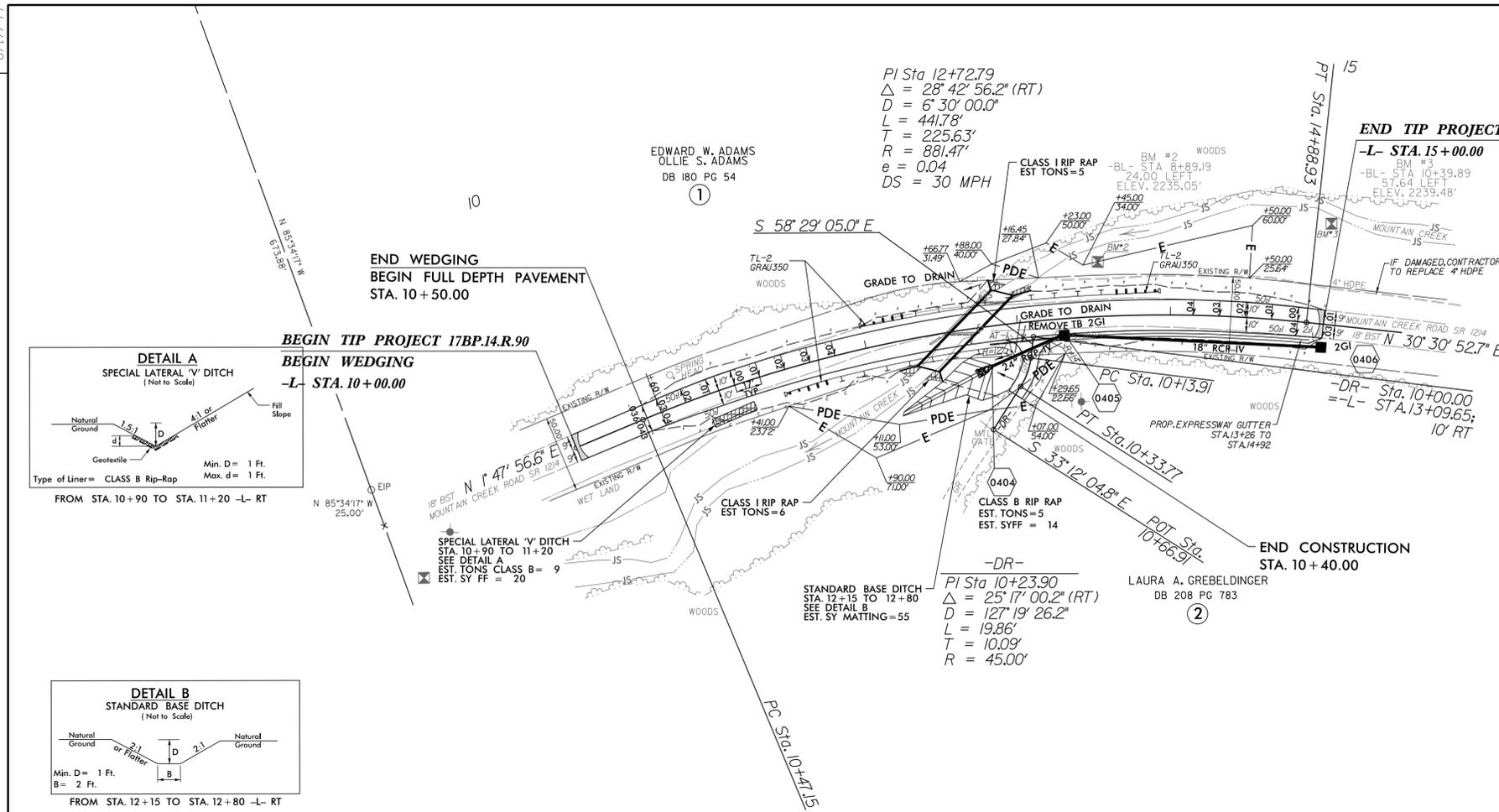


<p>PI Sta 10+18.88 $\Delta = 23^\circ 41' 40.5''$ (RT) D = 63' 39' 43.1" L = 37.22' T = 18.88' R = 90.00' e = 0.02 DS = 15 MPH</p>	<p>PI Sta 10+71.48 $\Delta = 39^\circ 40' 01.5''$ (LT) D = 60' 18' 40.8" L = 65.77' T = 34.26' R = 95.00' e = 0.02 DS = 15 MPH</p>	<p>PI Sta 11+30.77 $\Delta = 26^\circ 04' 12.7''$ (RT) D = 47' 44' 47.3" L = 54.60' T = 27.78' R = 120.00' e = 0.02 DS = 15 MPH</p>
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REVISIONS



1/27/2016
 1:35 PM
 C:\Users\jramon\OneDrive\Documents\17BP.14.R.90\17BP.14.R.90.RDY.02A.dgn
 17BP.14.R.90



BM *2: *8 INCH SPIKE SET IN THE ROOT OF A 24 INCH DOUBLE MAPLE TREE*
35.56' LEFT OF -L- STA. 13+54.37
ELEV: 2235.05'

REVISIONS

1/27/2016
 1:17BP.14.R.90_370107A.Roadway\Pro\17BP.14.R.90.RDY_PSH04.dgn
 NC00117BP GROUP 1\17BP.14.R.90_370107A.Roadway\Pro\17BP.14.R.90.RDY_PSH04.dgn

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

GRAHAM COUNTY



INDEX OF SHEETS

SHEET NO.	TITLE
TMP-1	TITLE SHEET, INDEX OF SHEETS LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, AND LEGEND
TMP-1A	GENERAL NOTES
TMP-1B	CONSTRUCTION PHASING
TMP-2	PHASE I DETAILS
TMP-3	PHASE II DETAILS
TMP-4	PHASE III DETAILS

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 WARNING SIGNS
1101.03	TEMPORARY ROAD CLOSURES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1130.01	DRUMS
1135.01	CONES
1145.01	BARRICADES
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO LANE AND MULTILANE ROADWAYS
1261.01	GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATORS - TYPES AND MOUNTING
1262.01	GUARDRAIL END DELINEATION



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

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

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LEGEND

GENERAL

- DIRECTION OF TRAFFIC FLOW
- DIRECTION OF PEDESTRIAN TRAFFIC FLOW
- EXIST. PVMT.
- NORTH ARROW
- PROPOSED PVMT.
- WORK AREA
- REMOVAL
- USER DEFINED (IF NEEDED)
- USER DEFINED (IF NEEDED)

TRAFFIC CONTROL DEVICES

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

TEMPORARY SIGNING

- PORTABLE SIGN
- STATIONARY SIGN
- STATIONARY OR PORTABLE SIGN

SIGNALS

- EXISTING
- PROPOSED
- TEMPORARY

PAVEMENT MARKINGS

- EXISTING LINES
- TEMPORARY LINES

PAVEMENT MARKERS

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

PAVEMENT MARKING SYMBOLS

- PAVEMENT MARKING SYMBOLS

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15401 Weston Parkway
Suite 100
Cary, NC 27513
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FAX: (919) 678-0206

APPROVED: _____
DATE: 1/27/2016
DocuSigned by:
Nick Ramirez
F30ED0CE798C488
SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER
SEAL 040655
NICK RAMIREZ

TRAFFIC MAINTENANCE 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 UNDESIRABLE 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 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.

WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO A DIVIDED FACILITY AND WITHIN 10 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 2 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS OF 45 MPH OR GREATER.

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) 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.

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

TRAFFIC BARRIER

- M) INSTALL TEMPORARY BARRIER ACCORDING TO THE TRAFFIC CONTROL PLANS A MAXIMUM OF TWO (2) WEEKS PRIOR TO BEGINNING WORK IN ANY LOCATION. ONCE TEMPORARY BARRIER IS INSTALLED AT ANY LOCATION, PROCEED IN A CONTINUOUS MANNER TO COMPLETE THE PROPOSED WORK IN THAT LOCATION UNLESS OTHERWISE STATED IN THE TRAFFIC CONTROL PLANS OR AS DIRECTED BY THE ENGINEER.

DO NOT PLACE BARRIER DIRECTLY ON ANY SURFACE OTHER THAN ASPHALT OR CONCRETE.

ONCE TEMPORARY BARRIER IS INSTALLED AT ANY LOCATION AND NO WORK IS PERFORMED BEHIND THE TEMPORARY BARRIER FOR A PERIOD LONGER THAN TWO (2) MONTHS, REMOVE/RESET TEMPORARY BARRIER AT NO COST TO THE DEPARTMENT UNLESS OTHERWISE STATED IN THE TRAFFIC CONTROL PLANS, TEMPORARY BARRIER IS PROTECTING A HAZARD, OR AS DIRECTED BY THE ENGINEER.

INSTALL TEMPORARY BARRIER WITH THE TRAFFIC FLOW, BEGINNING WITH THE UPSTREAM SIDE OF TRAFFIC. REMOVE TEMPORARY BARRIER AGAINST THE TRAFFIC FLOW, BEGINNING WITH THE DOWNSTREAM SIDE OF TRAFFIC.

INSTALL AND SPACE DRUMS NO GREATER THAN TWICE THE POSTED SPEED LIMIT (MPH) TO CLOSE OR KEEP THE SECTION OF THE ROADWAY CLOSED UNTIL THE TEMPORARY BARRIER CAN BE PLACED OR AFTER THE TEMPORARY BARRIER IS REMOVED.

- N) PROTECT THE APPROACH END OF MOVABLE/PORTABLE CONCRETE BARRIER AT ALL TIMES DURING THE INSTALLATION AND REMOVAL OF THE BARRIER BY EITHER A TRUCK MOUNTED IMPACT ATTENUATOR (MAXIMUM 72 HOURS) OR A TEMPORARY CRASH CUSHION.

PROTECT THE APPROACH END OF MOVABLE/PORTABLE CONCRETE BARRIER FROM ONCOMING TRAFFIC AT ALL TIMES BY A TEMPORARY CRASH CUSHION UNLESS THE APPROACH END OF MOVABLE/PORTABLE CONCRETE BARRIER IS OFFSET FROM ONCOMING TRAFFIC AS FOLLOWS OR AS SHOWN IN THE PLANS:

POSTED SPEED LIMIT	MINIMUM OFFSET
40 OR LESS	15 FT
45 - 50	20 FT
55	25 FT
60 MPH or HIGHER	30 FT

TRAFFIC CONTROL DEVICES

- O) SPACE CHANNELIZING DEVICES IN WORK AREAS NO GREATER THAN TWICE THE POSTED SPEED LIMIT (MPH), EXCEPT 10 FT ON-CENTER IN RADII, AND 3 FT OFF THE EDGE OF AN OPEN TRAVELWAY, WHEN LANE CLOSURES ARE NOT IN EFFECT. WHEN SKINNY DRUMS ARE ALLOWED, REFER TO SECTION 1180 OF STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES OR AS SHOWN IN THE PLANS.
- P) PLACE TYPE III BARRICADES, WITH "ROAD CLOSED" SIGN R11-2 ATTACHED, OF SUFFICIENT LENGTH TO CLOSE ENTIRE ROADWAY.

PAVEMENT MARKINGS AND MARKERS

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

ROAD NAME	MARKING	MARKER
SR1214	PAINT	NONE

- R) INSTALL TEMPORARY PAVEMENT MARKINGS AND TEMPORARY PAVEMENT MARKERS ON INTERIM LAYERS OF PAVEMENT AS FOLLOWS:

ROAD NAME	MARKING	MARKER
SR1214	PAINT	NONE

- S) 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.
- T) PLACE ONE APPLICATION OF PAINT FOR TEMPORARY TRAFFIC PATTERNS. PLACE A SECOND APPLICATION OF PAINT SIX (6) MONTHS AFTER THE INITIAL APPLICATION AND EVERY SIX MONTHS AS DIRECTED BY THE ENGINEER.
- U) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
- V) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS BY THE END OF EACH DAY'S OPERATION.

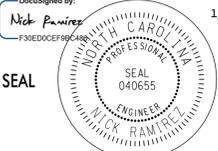
TEMPORARY /FINAL SIGNALS

- W) NOTIFY THE ENGINEER TWO (2) MONTHS BEFORE A TRAFFIC SIGNAL INSTALLATION BY OTHERS IS REQUIRED.

MISCELLANEOUS

- X) IN THE EVENT A TIE-IN CANNOT BE MADE IN ONE DAYS TIME, BRING THE TIE-IN AREA TO AN APPROPRIATE ROADWAY ELEVATION, AS DETERMINED BY THE ENGINEER. PLACE BLACK ON ORANGE "LOOSE GRAVEL" SIGNS (W8-7) AND BLACK ON ORANGE "PAVEMENT ENDS" SIGNS (W8-3) AND RESPECTIVELY IN ADVANCE OF THE UNEVEN AREAS. USE DRUMS TO DELINEATE THE EDGE OF ROADWAY ALONG UNPAVED AREAS.

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 15401 Weston Parkway Suite 100 Cary, NC 27513 NC License # F-0891 TEL: (919) 678-0035 FAX: (919) 678-0206	APPROVED: _____ DATE: _____ DocuSigned by:  1/27/2016 SEAL 		

CONSTRUCTION PHASING

PROJ. REFERENCE NO.	SHEET NO.
17BP.14.R.90	TMP-1B

PHASE I

MAINTAIN VEHICULAR ACCESS TO DRIVEWAYS WITHIN PROJECT LIMITS THROUGHOUT THE DURATION OF THE PROJECT.

STEP 1:

INSTALL WORK ZONE ADVANCE WARNING SIGNS ON ALL ROADWAYS WITHIN THE PROJECT LIMITS (REFER TO TMP-2 THROUGH TMP-4). IF WORK IS NOT PURSUED WITHIN THREE DAYS OF SIGN INSTALLATION, THE SIGNS SHALL BE COVERED OR REMOVED IN A METHOD PPROVED BY THE ENGINEER.

INSTALL/CONSTRUCT TEMPORARY SIGNALS, INCLUDING SIGNAGE, BUT DO NOT ACTIVATE (SEE TMP-2). COVER SIGNS UNTIL SIGNALS ARE ACTIVATED.

STEP 2:

USING RSD NO 1101.02 (SHEET 1 OF 15), PLACE TEMPORARY PAVEMENT MARKINGS AND OBLITERATE EXISTING CONFLICTING MARKINGS AS FOLLOWS (SEE TMP-2).

-L- STA. 10+00 +/- TO STA. 15+00 +/-

ACTIVATE TEMPORARY SIGNALS AND SHIFT TRAFFIC FROM A TWO-LANE, TWO-WAY TRAFFIC PATTERN TO A ONE-LANE, TWO-WAY TRAFFIC PATTERN AS SHOWN ON TMP-2.

STEP 3:

USING FLAGGERS AS NECESSARY, REMOVE PORTION OF EXISTING BRIDGE AND INSTALL TEMPORARY GUARDRAIL AND BARRIER AS SHOWN IN DETAIL TMP-1 (SEE TMP-2).

STEP 4:

USING FLAGGERS AS NECESSARY, CONSTRUCT TEMPORARY SHORING AND NEW CULVERT (STAGE I) AS SHOWN ON TMP-2.

CONSTRUCT -L-, UP TO THE EDGE AND ELEVATION OF THE EXISTING PAVEMENT, AS FOLLOWS:

-L- STA. 10+50 +/- TO STA. 12+45 +/-
-L- STA. 12+90 +/- TO STA. 15+00 +/-

CONSTRUCT TEMPORARY PAVEMENT AS FOLLOWS (SEE CROSS SECTIONS -L- PHASE I AND TMP-2):

-L- STA. 12+03 +/- TO STA. 13+24 +/-

PHASE II

STEP 1:

USING RSD NO. 1101.01 (SHEET 1 OF 15), PLACE TEMPORARY PAVEMENT MARKINGS AND OBLITERATE EXISTING, CONFLICTING MARKINGS AS FOLLOWS (SEE TMP-3)

-L- STA. 10+25 +/- TO STA. 15+25 +/-

SHIFT TRAFFIC FROM A ONE-LANE, TWO-WAY TRAFFIC PATTERN ON EXISTING L TO A ONE-LANE, TWO-WAY TRAFFIC PATTERN ON TEMPORARY PAVEMENT (SEE TMP-3).

STEP 2:

USING FLAGGERS AS NECESSARY, REMOVE REMAINDER OF EXISTING BRIDGE, REMOVE EXISTING PAVEMENT, AND CONSTRUCT STAGE II TEMPORARY SHORING AND REMAINDER OF CULVERT.

CONSTRUCT -L-, UP TO BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE, AS FOLLOWS (SEE TMP-3):

-L- STA. 12+45 +/- TO -L- STA. 12+95 +/-

PHASE III

STEP 1:

USING RSD NO. 1101.02 (SHEET 1 OF 15), PLACE TEMPORARY PAVEMENT MARKINGS AND OBLITERATE EXISTING, CONFLICTING MARKINGS AS FOLLOWS (SEE TMP-4)

-L- STA. 10+00 +/- TO STA. 15+00 +/-

SHIFT TRAFFIC FROM A ONE-LANE, TWO-WAY TRAFFIC PATTERN ON TEMPORARY PAVEMENT TO A ONE-LANE, TWO-WAY TRAFFIC PATTERN ON -L- (SEE TMP-4).

STEP 2:

USING FLAGGERS AS NECESSARY, REMOVE TEMPORARY PAVEMENT AND CONSTRUCT THE REMAINDER OF -L-, UP TO BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE AS FOLLOWS (SEE TMP-4):

-L- STA. 10+00 +/- TO STA. 10+50 +/- (WEDGE)
-L- STA. 10+50 +/- TO STA. 15+00 +/- (FULL DEPTH PAVEMENT)

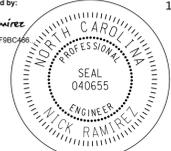
STEP 3:

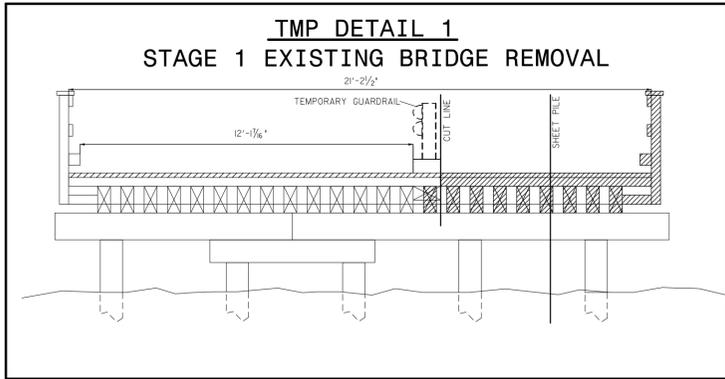
USING RSD NO. 1101.02 (SHEET 1 OF 15), OBLITERATE STOP BARS AND DEACTIVATE TEMPORARY SIGNALS, REMOVING ALL RELATED SIGNAGE.

ALTERNATING LANE CLOSURES AS NECESSARY, COMPLETE CONSTRUCTION OF -L-, INCLUDING THE FINAL LAYER OF SURFACE COURSE, AND INSTALL FINAL PAVEMENT MARKINGS (SEE FINAL PAVEMENT MARKING PLANS).

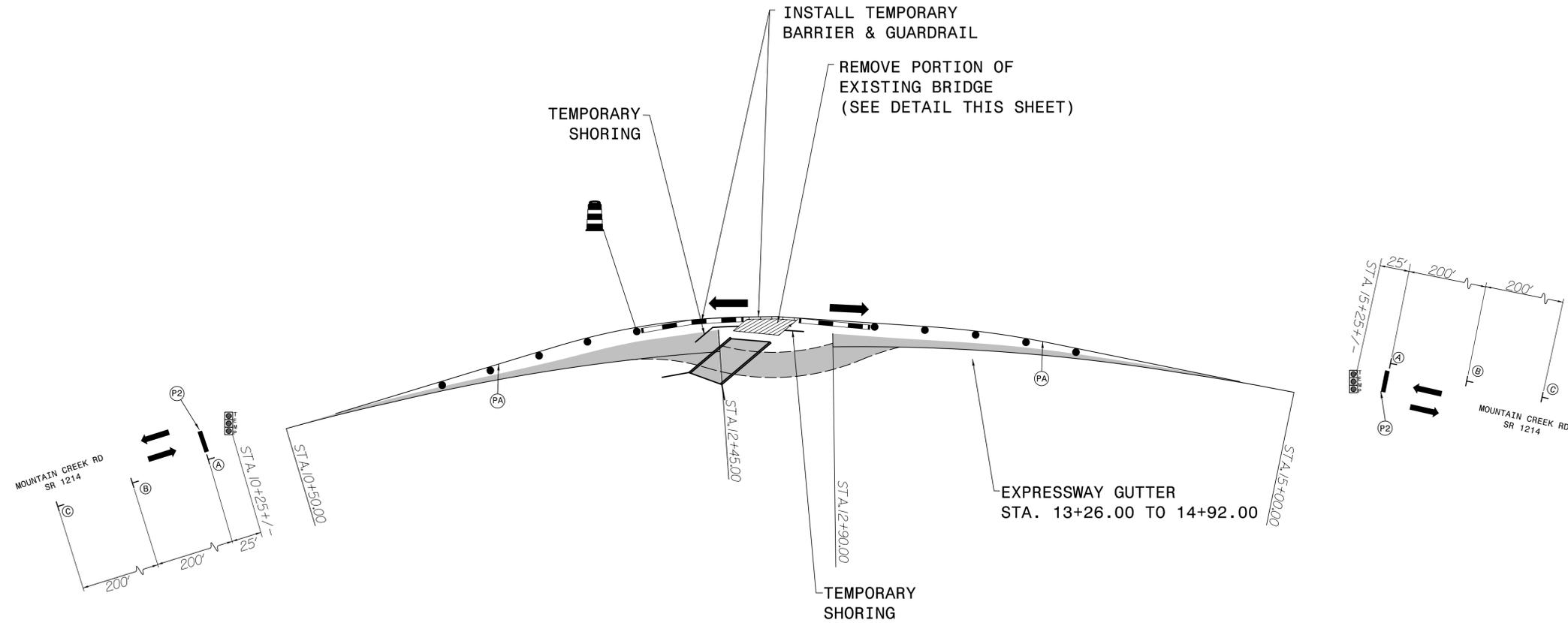
REMOVE ALL TRAFFIC CONTROL DEVICES AND ADVANCE WARNING SIGNS FROM SR 1103 AND PLACE TRAFFIC IN ITS FINAL PATTERN.

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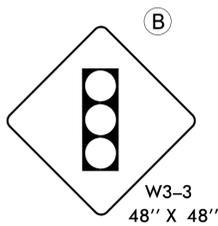
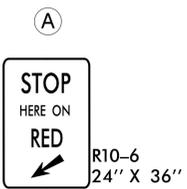
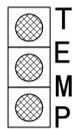
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 15401 Weston Parkway Suite 100 Cary, NC 27513 NC License # F-0891 TEL: (919) 678-0035 FAX: (919) 678-0206	APPROVED: _____ DATE: 1/27/2016 DocuSigned by:  Nick Ramirez F39EDDCEFB9C666 SEAL 		



- PAVEMENT REMOVAL
- CONSTRUCTION AREA
- BRIDGE REMOVAL



STA. 10+25
STA. 15+25



TEMPORARY PAVEMENT MARKING LEGEND	
(PA)	PAINT - WHITE EDGELINE (4")
(P2)	PAINT - WHITE STOP BAR (24")

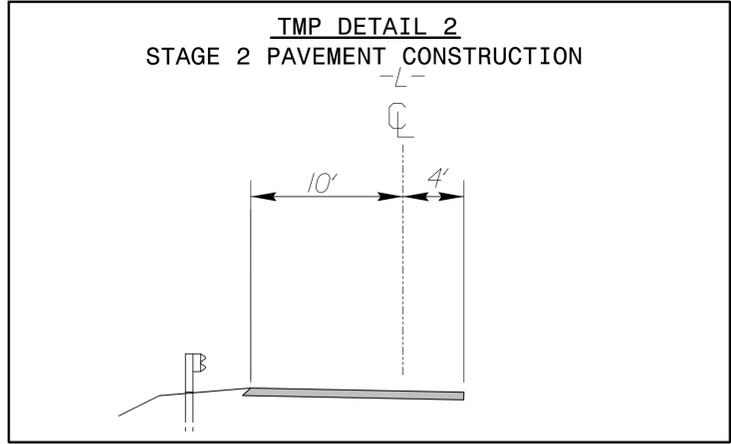
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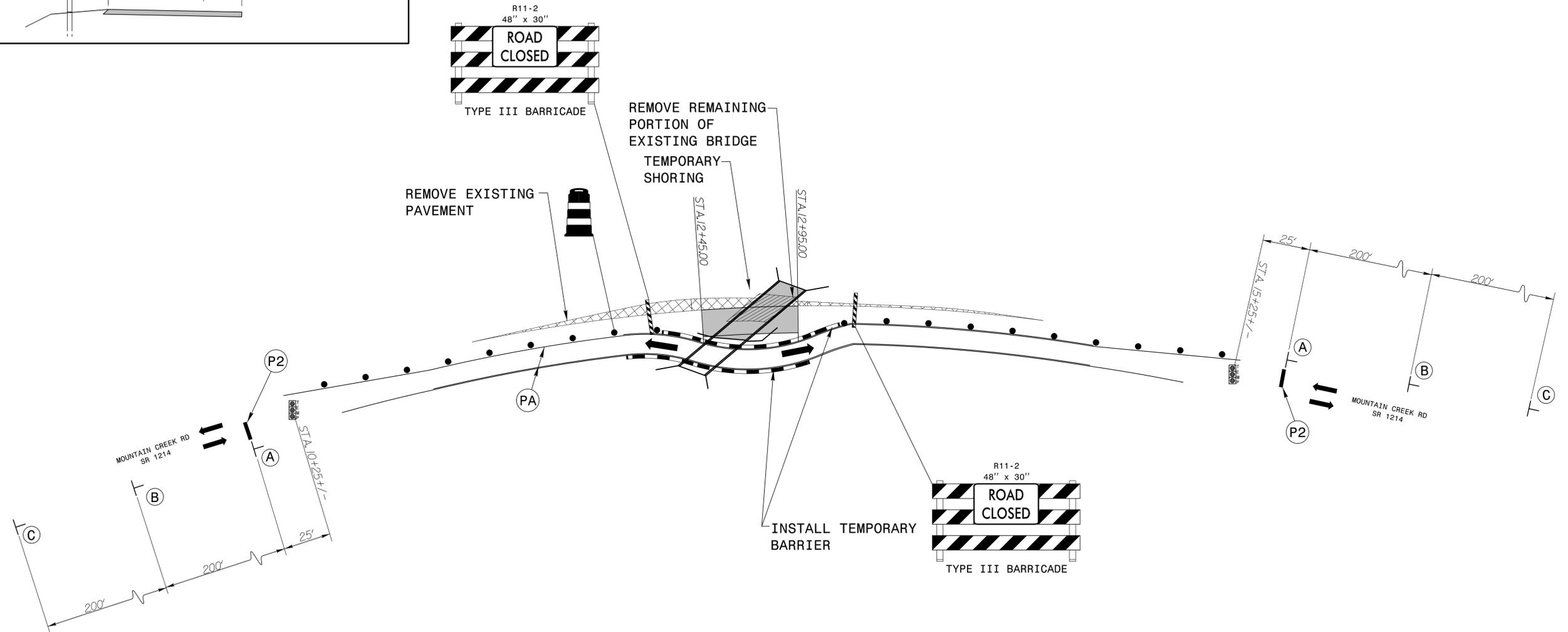
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Seal of Nick Pawnee, Professional Engineer, No. 040655, State of North Carolina.

PHASE I DETAILS

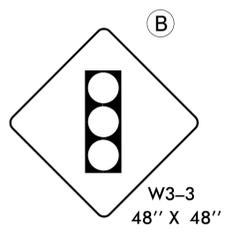
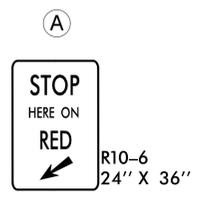
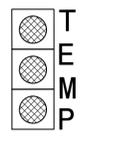
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- PAVEMENT REMOVAL
- CONSTRUCTION AREA
- BRIDGE REMOVAL



STA. 10+25
STA. 15+25



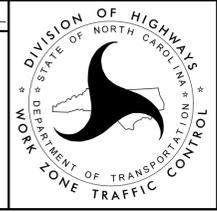
TEMPORARY PAVEMENT MARKING LEGEND	
(PA)	PAINT - WHITE EDGELINE (4")
(P2)	PAINT - WHITE STOP BAR (24")

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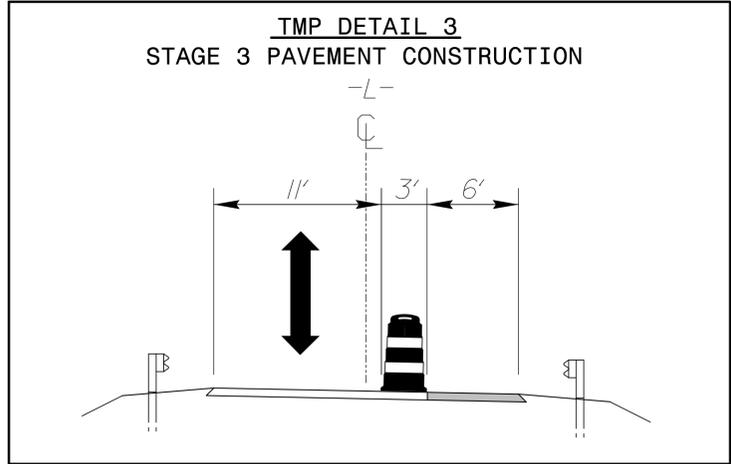
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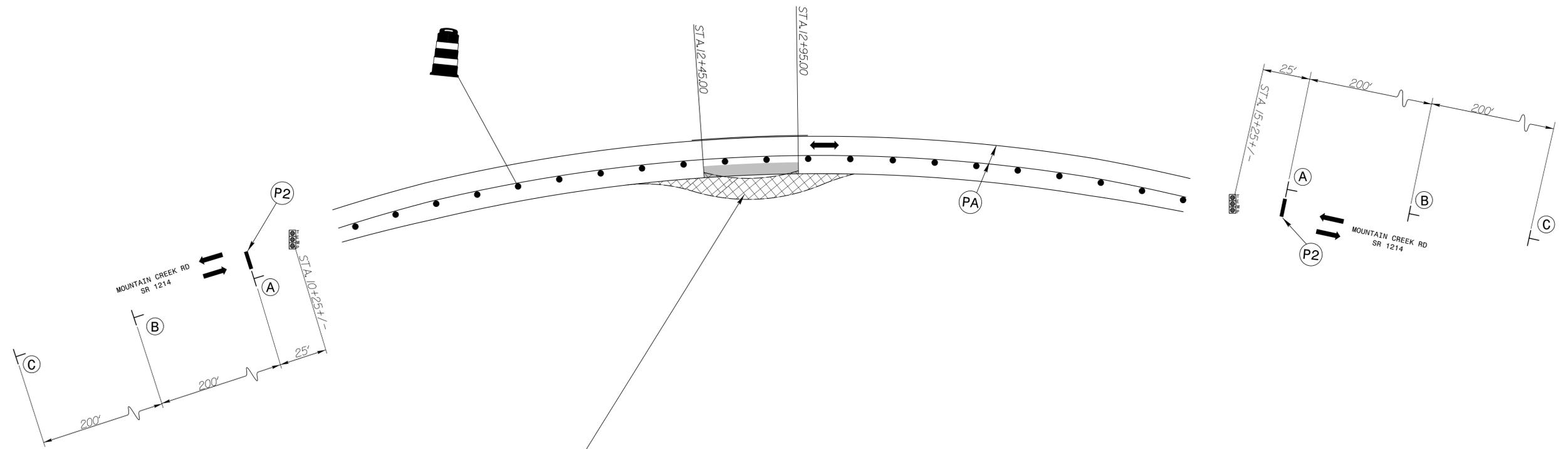
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Designed by: *Nick Ramirez*
SEAL
NORTH CAROLINA
ENGINEER
NICK RAMIREZ



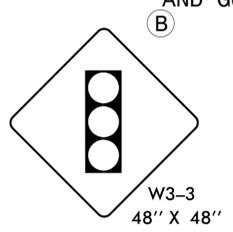
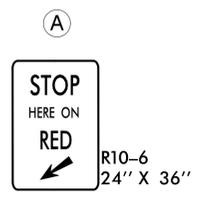
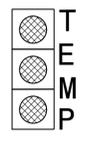
PHASE II DETAILS



- PAVEMENT REMOVAL
- CONSTRUCTION AREA
- BRIDGE REMOVAL



STA. 10+25
STA. 15+25



TEMPORARY PAVEMENT MARKING LEGEND	
(PA)	PAINT - WHITE EDGELINE (4")
(P2)	PAINT - WHITE STOP BAR (24")

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APPROVED: _____ DATE: 1/27/2016
Signed by: *Nick Ramirez*
SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER
SEAL 040655
NICK RAMIREZ

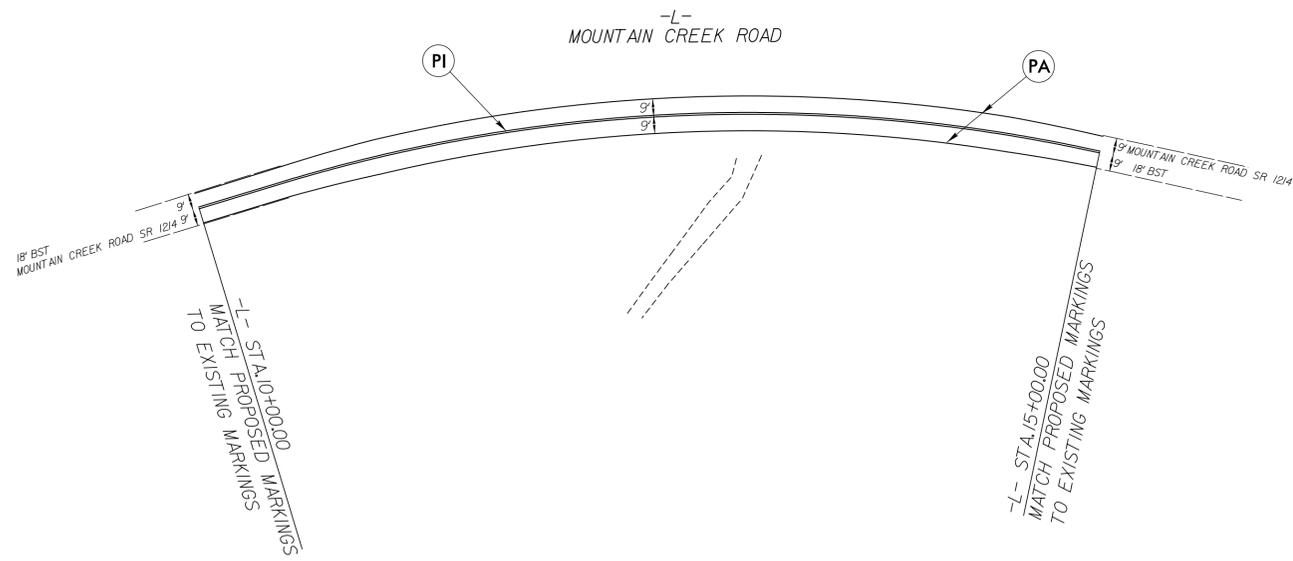


PHASE III DETAILS

PAVEMENT MARKING SCHEDULE TIP PROJECT # 17BP.14.R.90				
SYMBOL	DESCRIPTION	FINAL PAVEMENT MARKINGS	PAY ITEM QUANTITY BREAKDOWN	TOTAL QUANTITY
PI	YELLOW DOUBLE CENTER	PAINT (4", 2 COATS)	1000 LF	2000 LF
PA	WHITE EDGELINE	PAINT (4", 2 COATS)	1000 LF	2000 LF



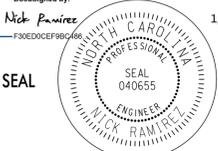
NOTES:
1. WHITE EDGE TO MATCH EXISTING LANE WIDTHS THROUGHOUT NEWLY CONSTRUCTED AREA.



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 TEL: (919) 678-0035
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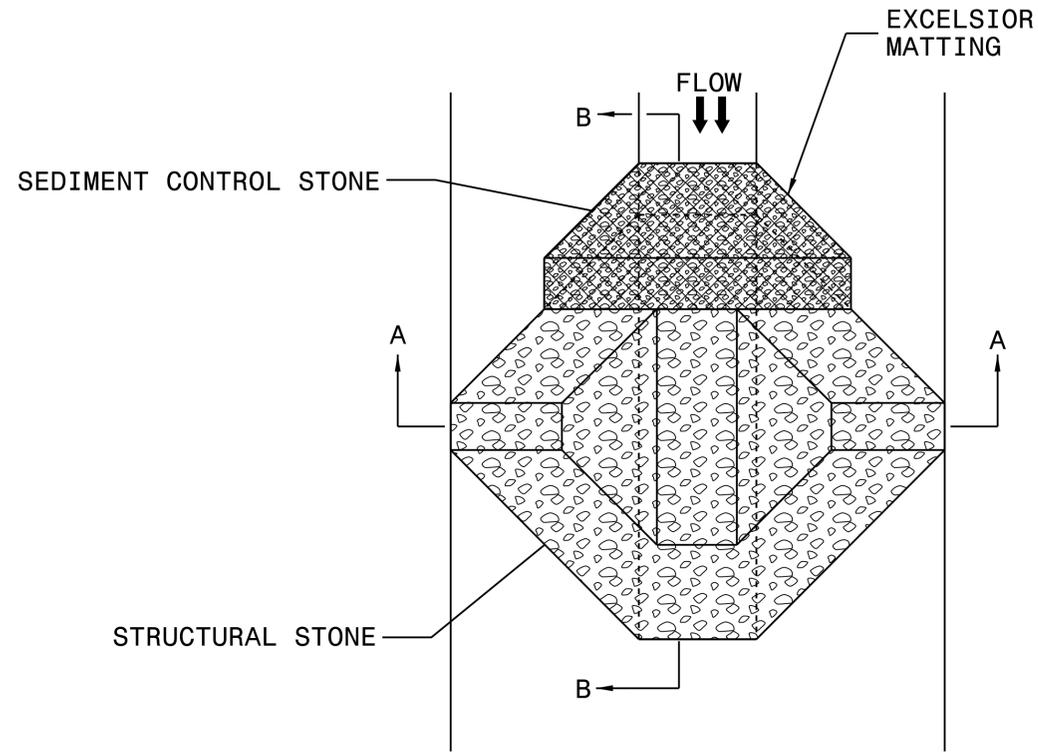
APPROVED: _____ DATE: 1/27/2016
 DocuSigned by:
 Nick Ramirez
 F30EDDCEFB8068




PAVEMENT MARKING PLAN

PROJECT REFERENCE NO. 17BP14R.90	SHEET NO. EC-2
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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



PLAN

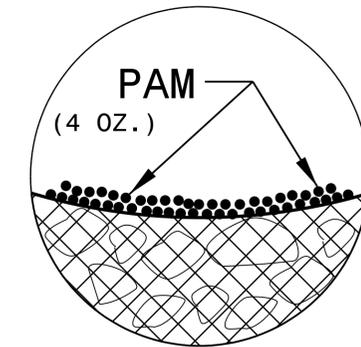
NOTES:

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

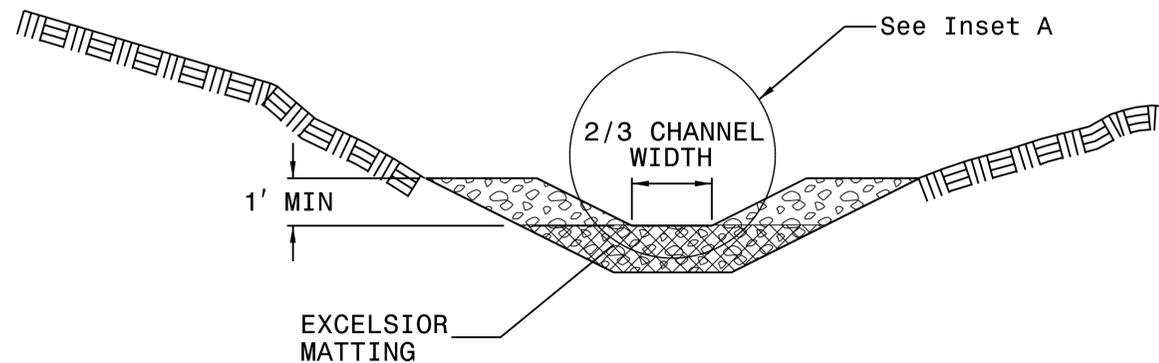
USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

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

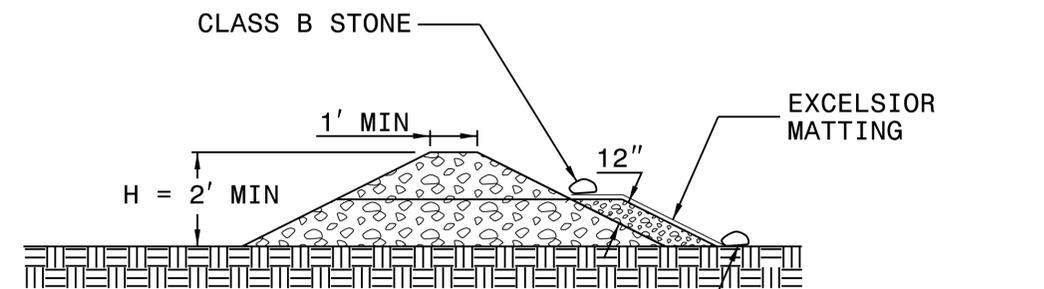
INITIALLY APPLY 4 OUNCES OF POLYACRYLAMIDE (PAM) TO TOP OF MATTING SECTION AND AFTER EVERY RAINFALL EVENT THAT EQUALS OR EXCEEDS 0.50 INCHES.



INSET A



SECTION A-A



SECTION B-B

NOT TO SCALE

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

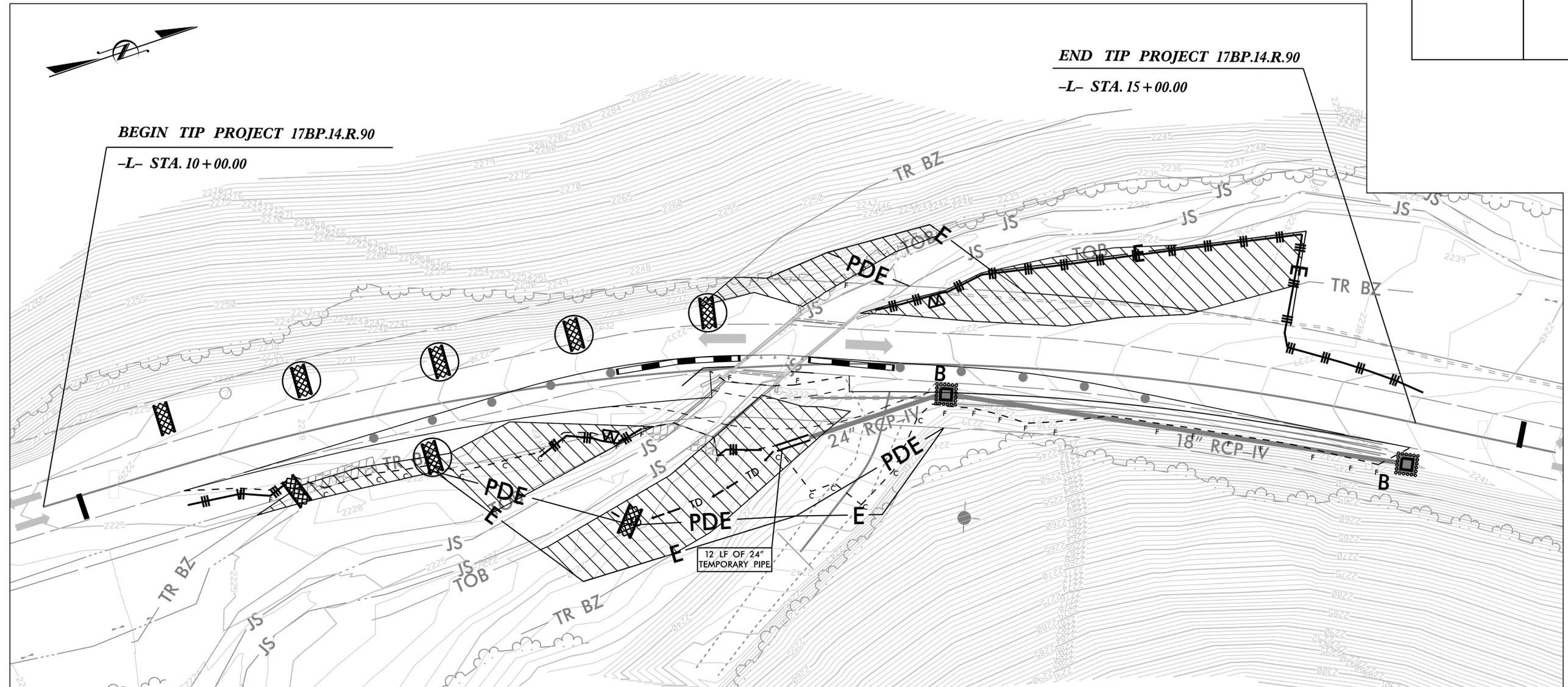
PROJECT REFERENCE NO.	SHEET NO.
<i>17BPJ4.R.90</i>	<i>EC-3</i>
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SOIL STABILIZATION TIMEFRAMES

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

EROSION CONTROL PLAN

PROJECT REFERENCE NO. 17BP14.R.90	SHEET NO. EC-4/CONST.4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEETS 2A, 4
AND TMP-2 (PHASE 1)

CONTRACTOR SHALL INSTALL AN ONSITE CONCRETE WASHOUT STRUCTURE PER THE NCDOT DETAIL AND SPECIAL PROVISIONS. ACTUAL LOCATION OF THE STRUCTURE SHALL BE DETERMINED IN THE FIELD. CONCRETE WASHOUT STRUCTURE SHALL BE MAINTAINED BY THE CONTRACTOR. ALL CONCRETE TRUCKS SHALL USE THE CONCRETE WASHOUT STRUCTURE. NO WASHOUT OF CONCRETE TRUCKS SHALL BE ALLOWED EXCEPT IN THE CONCRETE WASHOUT STRUCTURE.

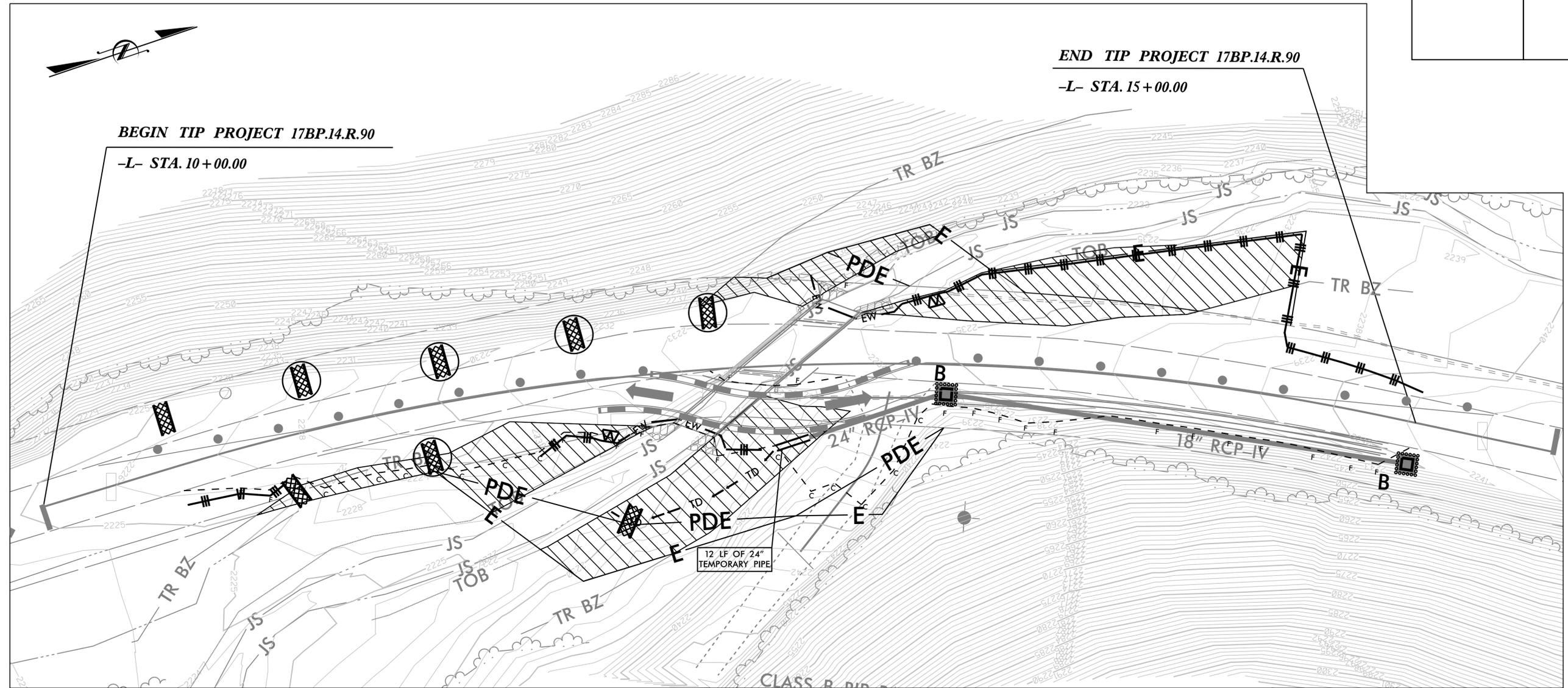
NOTE:
TEMPORARY ROCK SILT CHECKS TYPE - A AT DRAINAGE OUTLETS.

BRIDGE REMOVAL AND CULVERT CONSTRUCTION SHALL BE PER REQUIREMENTS IN THE NCDOT BEST MANAGEMENT PRACTICES FOR CONSTRUCTION AND MAINTENANCE ACTIVITIES MANUAL

TROUT STREAM BUFFER ZONE

EROSION CONTROL PLAN

PROJECT REFERENCE NO. 17BP14.R.90	SHEET NO. EC-5/CONST.4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEETS 2A, 4
AND TMP-3 (PHASE 2)

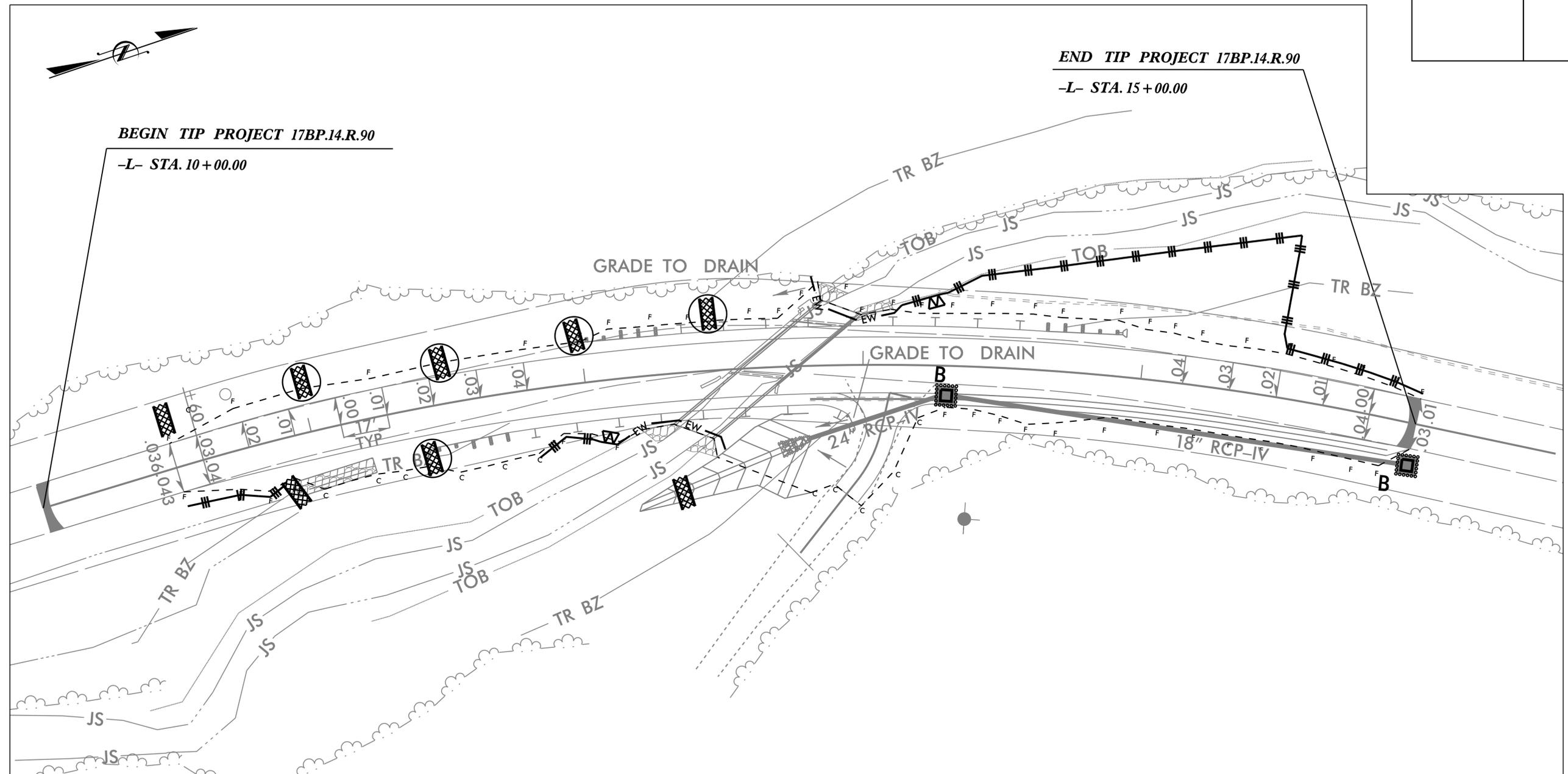
NOTE:
TEMPORARY ROCK SILT CHECKS TYPE - A AT
DRAINAGE OUTLETS.

BRIDGE REMOVAL AND CULVERT CONSTRUCTION SHALL BE PER
REQUIREMENTS IN THE NCDOT BEST MANAGEMENT PRACTICES
FOR CONSTRUCTION AND MAINTENANCE ACTIVITIES MANUAL

TROUT STREAM
BUFFER ZONE

EROSION CONTROL PLAN

PROJECT REFERENCE NO. 17BP14.R.90	SHEET NO. EC-6/CONST.4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



INSTALL CLASS B RIPRAP IN THE PROPOSED DITCH LINE.
STA 10+90 TO STA 11+20 -L- RT

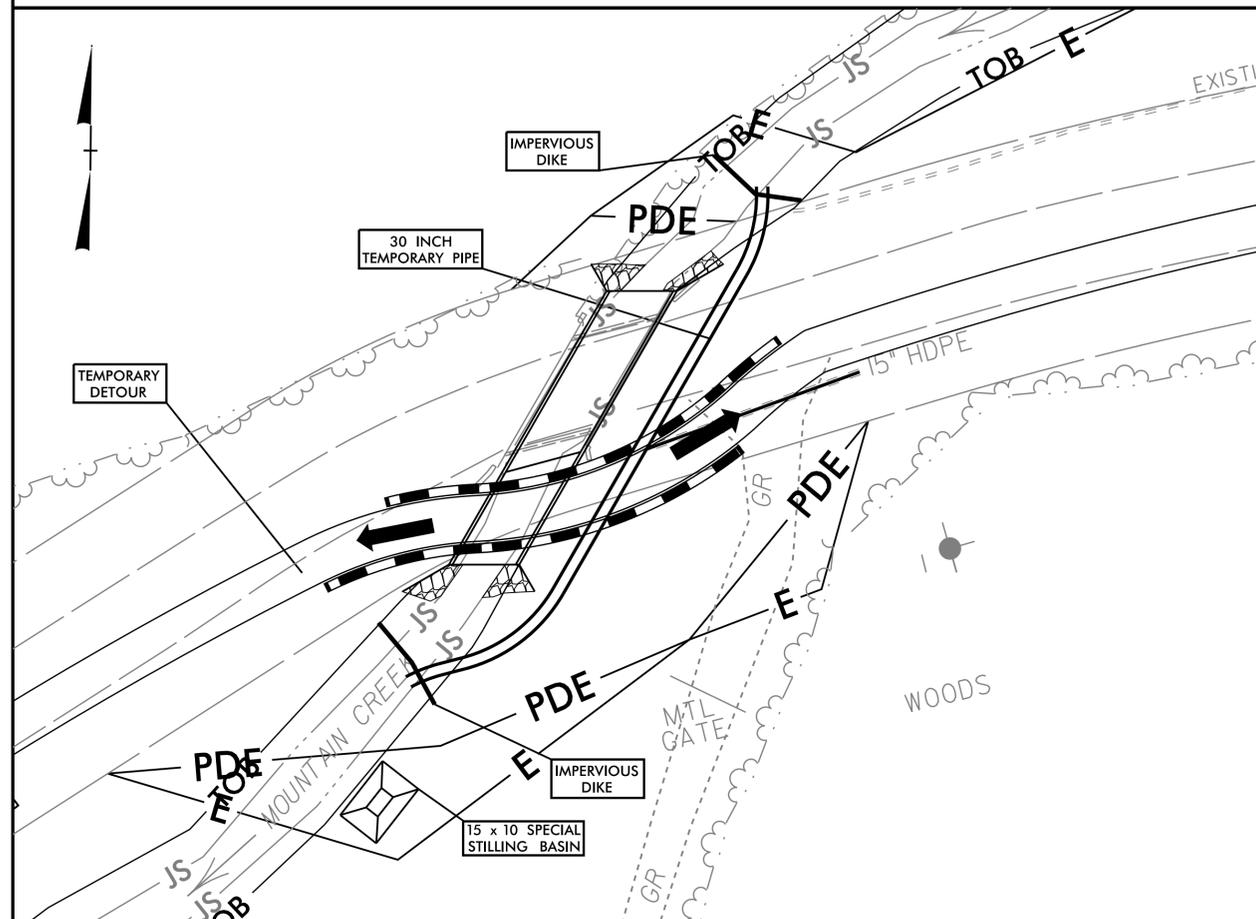
INSTALL MATTING FOR EROSION CONTROL IN THE PROPOSED DITCH LINE.
STA 12+15 TO STA 12+80 -L- RT

CULVERT CONSTRUCTION SEQUENCE STA. 12 + 66.58 -L-

PROJECT REFERENCE NO. 17BPJ4.R.90	SHEET NO. EC-72CONST.4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

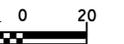
CONSTRUCTION SEQUENCE

12'x4' RCBC -L-



1. INSTALL 30" TEMPORARY PIPE. SHIFT TRAFFIC AS NEEDED ON EXISTING ROAD TO INSTALL TEMPORARY PIPE AND MAINTAIN ONE WAY TRAFFIC DURING TEMPORARY PIPE INSTALLATION.
2. CONSTRUCT IMPERVIOUS DIKES. DEWATER CONSTRUCTION SITE INTO SPECIAL STILLING BASIN.
3. SHIFT TRAFFIC TO NORTHERN SIDE OF EXISTING ROADWAY AS SHOWN ON TMP-2.
4. CONSTRUCT DOWNSTREAM PORTION OF CULVERT INCLUDING WINGWALLS, BOTTOM SLAB, SILLS AND BAFFLES, AND RIPRAP ALONG WINGWALLS. BACKFILL INSIDE BARREL WITH STOCKPILED NATIVE MATERIAL.
5. CONSTRUCT TEMPORARY DETOUR OVER NEWLY CONSTRUCTED CULVERT. REDIRECT TRAFFIC TO TEMPORARY DETOUR.
6. CONSTRUCT NORTHERN PORTION OF CULVERT INCLUDING WINGWALLS, BOTTOM SLAB, SILLS AND BAFFLES, AND RIP RAP ALONG WINGWALLS. BACKFILL INSIDE BARREL WITH STOCKPILED NATIVE MATERIAL.
6. REMOVE IMPERVIOUS DIKES AND SPECIAL STILLING BASIN AND PORTION OF TEMPORARY PIPE THAT IS NOT UNDER TEMPORARY DETOUR ROADWAY.
7. FINISH ROADWAY WORK. REMOVE TEMPORARY DETOUR AND REMAINING 30" TEMPORARY FLEXIBLE PIPE.
8. OPEN NEW ROAD TO TRAFFIC.

GRAPHIC SCALE



STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.14.R.90	RF-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	

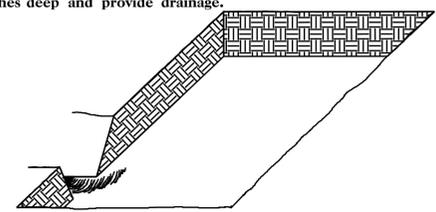
REFORESTATION MAY BE UTILIZED ON THIS PROJECT AT THE DISCRETION OF THE NCDOT FIELD OPERATIONS ENGINEER.

PLANTING DETAILS

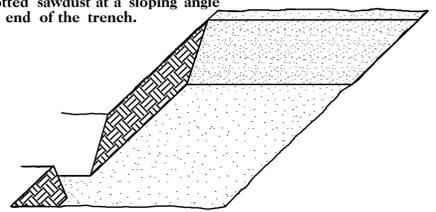
SEEDLING / LINER BAREROOT PLANTING DETAIL

HEALING IN

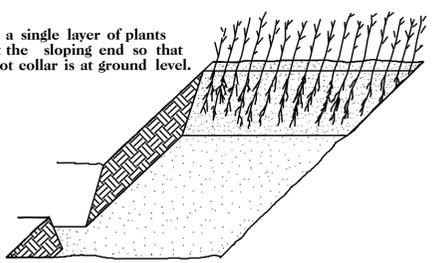
1. Locate a healing-in site in a shady, well protected area.
2. Excavate a flat bottom trench 12 inches deep and provide drainage.



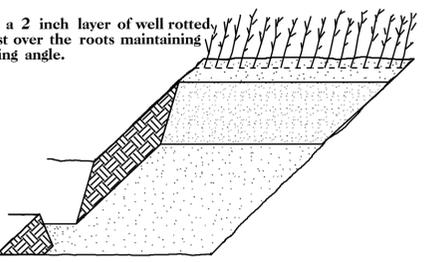
3. Backfill the trench with 2 inches well rotted sawdust. Place a 2 inch layer of well rotted sawdust at a sloping angle at one end of the trench.



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

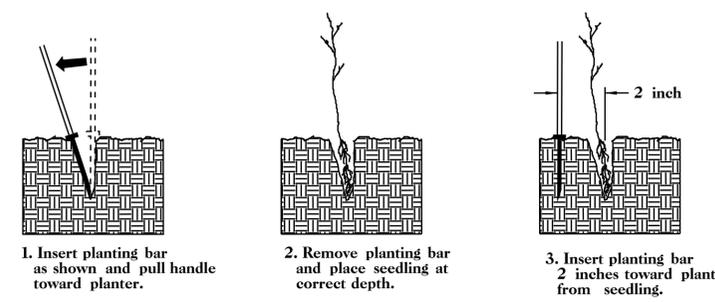


5. Place a 2 inch layer of well rotted sawdust over the roots maintaining a sloping angle.

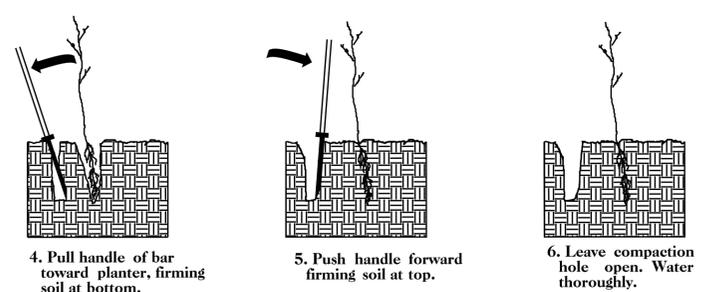


6. Repeat layers of plants and sawdust as necessary and water thoroughly.

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

REFORESTATION DETAIL SHEET

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