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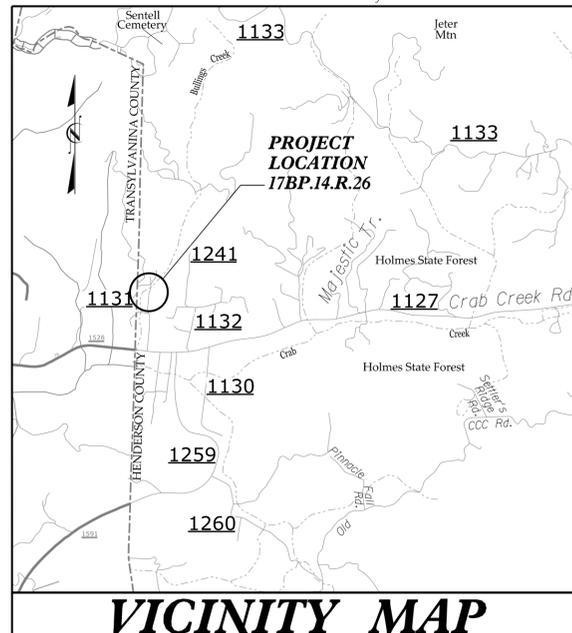
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09/08/99

PROJECT: WBS 17BP.14.R.26

CONTRACT: DN00159

See Sheet 1A For Index of Sheets
See Sheet 1B For Conventional Symbols
See Sheet 1C-1 For Survey Control

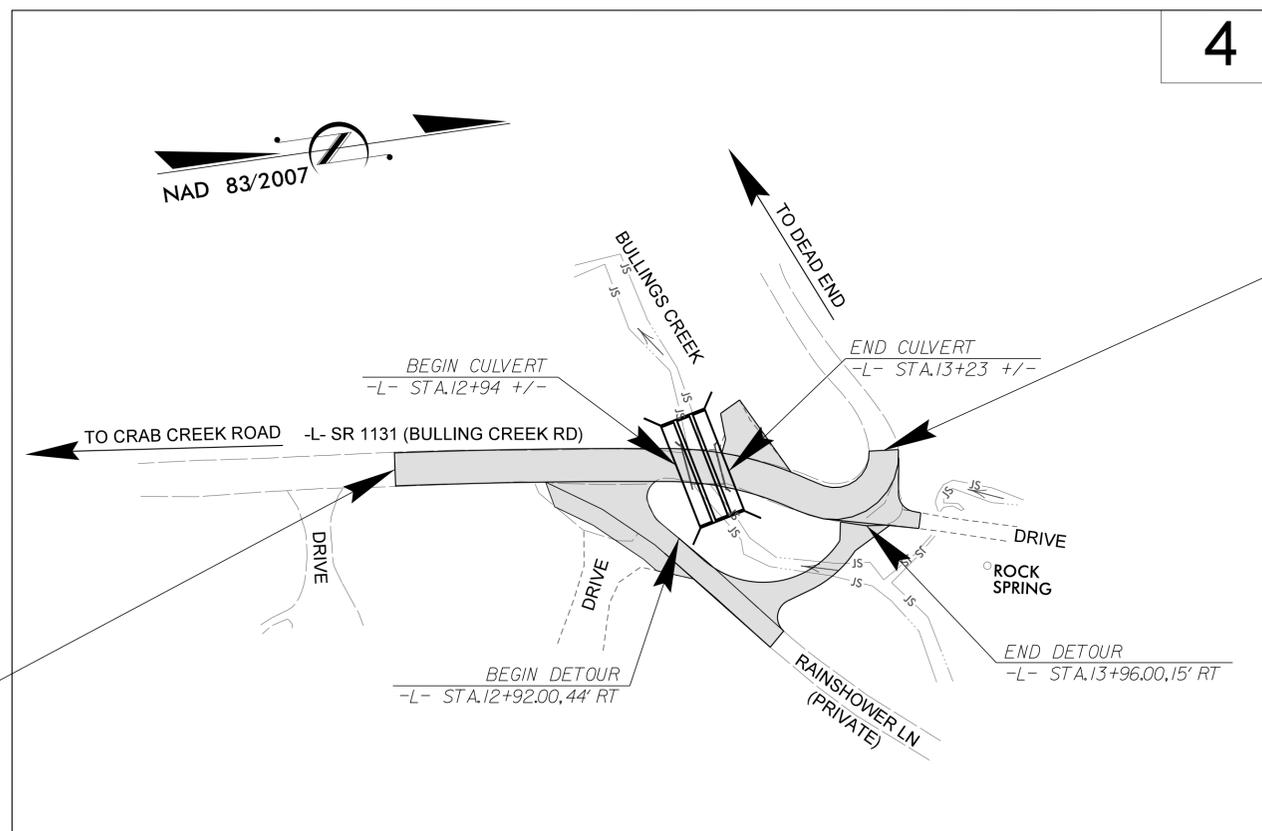


STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

HENDERSON COUNTY

**LOCATION: BRIDGE NO. 273 ON SR 1131 (BULLING CREEK ROAD)
OVER BULLINGS CREEK
0.3 MILES NORTH OF JUNCTION OF SR 1127
TYPE OF WORK: GRADING, PAVING, DRAINAGE, AND STRUCTURE**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.14.R.26	1	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	
17BP.14.R.26		P.E., ROW, UTIL	
17BP.14.R.26		CONST.	

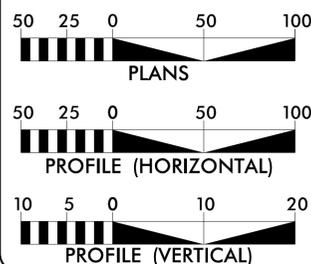


BEGIN PROJECT WBS 17BP.14.R.26
-L- STA. 11 + 40.00

END PROJECT WBS 17BP.14.R.26
-L- STA. 14 + 30.00

THERE IS NO CONTROL OF ACCESS ON THIS PROJECT

GRAPHIC SCALES



DESIGN DATA

ADT 1996 = 20
ADT 2025 = 40
DHV = N/A %
D = N/A %
T = N/A % *
V = 35 MPH
* (TTST=0% + DUAL 0%)
FUNC CLASS = RURAL LOCAL
SUB-REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY PROJECT WBS 17BP.14.R.26 = 0.049 MILES
LENGTH STRUCTURE PROJECT WBS 17BP.14.R.26 = 0.006 MILES
TOTAL LENGTH PROJECT WBS 17BP.14.R.26 = 0.055 MILES



DRMP, INC.
5950 FAIRVIEW ROAD, SUITE 320
CHARLOTTE, NORTH CAROLINA 28210
(704) 332-2289
NC LICENSE NO. C-2213

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:

LETTING DATE:

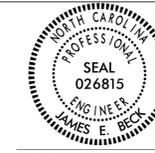
JAMES E. BECK, PE
PROJECT ENGINEER

MICHAEL D. HAGE, PE
PROJECT DESIGN ENGINEER

NC DOT CONTACT:
JOSHUA B. DEYTON, P.E.
DIVISION 14 PROJECT MANAGER



SIGNATURE: Joshua G. Dalton



SIGNATURE: James E. Beck

HYDRAULICS ENGINEER

ROADWAY DESIGN ENGINEER

9/16/2015 R:\Roadway\Proj\44-0273_Rdy_tsh.dgn mhcage

12/05/11

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	-----
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 R/W 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	-C-
Proposed Slope Stakes Fill	-F-
Proposed Curb Ramp	○
Existing Metal Guardrail	-----
Proposed Guardrail	-----
Existing Cable Guiderail	-----
Proposed Cable Guiderail	-----
Equality Symbol	⊕
Pavement Removal	□
VEGETATION:	
Single Tree	☼
Single Shrub	☼
Hedge	-----
Woods Line	-----

Orchard	☼
Vineyard	□

EXISTING STRUCTURES:

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

UTILITIES:

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

TELEPHONE:

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

WATER:

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

TV:

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

GAS:

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

SANITARY SEWER:

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

MISCELLANEOUS:

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

SURVEY CONTROL SHEET 44-0273 -FINAL-

BL	POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
1		BL1	562324.6358	924464.1621	2168.99	10+57.49	13.82 RT
2		BL2	562555.5030	924490.9670	2179.23	12+90.61	13.32 RT
3		BL3	562685.6944	924533.7656	2186.23	14+06.58	34.27 RT

FINAL -PERMANENT DRAINAGE EASEMENT- MARKER				
ALIGN	STATION	OFFSET	NORTH	EAST
L	12+15.00	-22.50	562485.4559	924445.1189
L	12+15.00	-33.00	562486.7829	924434.7031
L	12+50.00	-38.00	562522.4872	924434.3893
L	12+60.00	-75.00	562537.6455	924399.1406
L	12+90.00	-90.00	562570.1833	924388.6962
L	13+47.32	-22.50	562621.5092	924475.1587
L	13+47.32	17.00	562603.4665	924510.2972
L	13+73.00	23.00	562621.4828	924527.8384
L	13+70.00	65.00	562596.8859	924562.0269
L	12+75.00	22.50	562538.8389	924497.7974

 BM1 ELEVATION = 2178.21
 N 562508 E 924456
 L STATION 12+39.00 15 LEFT
 RR SPIKE IN POWER POLE

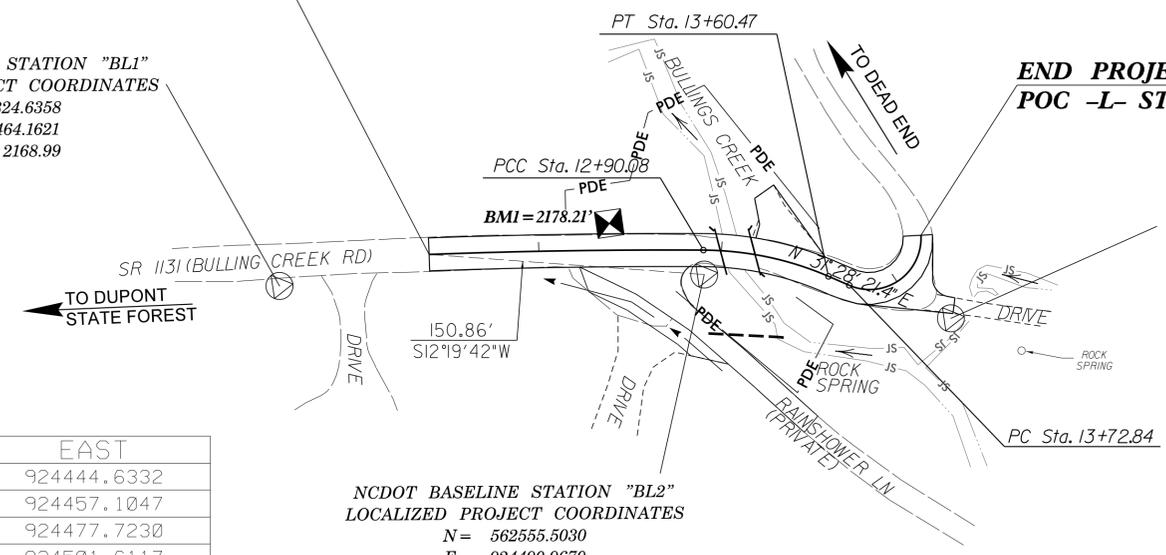
BEGIN PROJECT WBS 17BP.14.R.26
POT -L- STA. 11+40.00

NCDOT BASELINE STATION "BL1"
 LOCALIZED PROJECT COORDINATES
 N = 562324.6358
 E = 924464.1621
 ELEV. = 2168.99

END PROJECT WBS 17BP.14.R.20
POC -L- STA. 14+30.00

NCDOT BASELINE STATION "BL3"
 LOCALIZED PROJECT COORDINATES
 N = 562685.6944
 E = 924533.7656
 ELEV. = 2186.23

NCDOT BASELINE STATION "BL2"
 LOCALIZED PROJECT COORDINATES
 N = 562555.5030
 E = 924490.9670
 ELEV. = 2179.23



FINAL -L-			
TYPE	STATION	NORTH	EAST
POT	10+00.00	562268.8322	924444.6332
PC	11+23.96	562392.1590	924457.1047
PCC	12+90.08	562556.9836	924477.7230
PT	13+60.47	562622.6908	924501.6117
PC	13+72.84	562633.2460	924508.0730
PT	14+47.46	562672.1784	924469.8065
POT	14+86.47	562652.3865	924436.1854

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "440273 BL-2" WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF NORTHING: 562555.5030(±) EASTING: 924490.9670(±) ELEVATION: 2179.23(±)

THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999773377

THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "440273 BL-2" TO -L- STATION 11+40.00 IS S12°19'42"W 150.86'

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

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:
 440273_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.

STRUCTURE: 44-0273
 COUNTY: HENDERSON

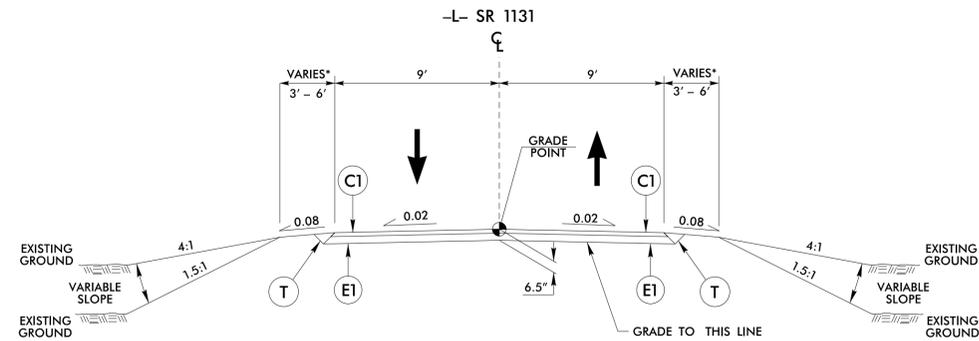
NOTE: DRAWING NOT TO SCALE

8/6/2015 R:\Roadway\Proj\44-0273-Rdy_SHT_1-C.dgn
 6/2/99

PROJECT REFERENCE NO. 17BP14.R.26	SHEET NO. 2A-1
RW SHEET NO.	
ROADWAY DESIGN ENGINEER  James E. Beck	HYDRAULICS ENGINEER  Joshua G. Dalton

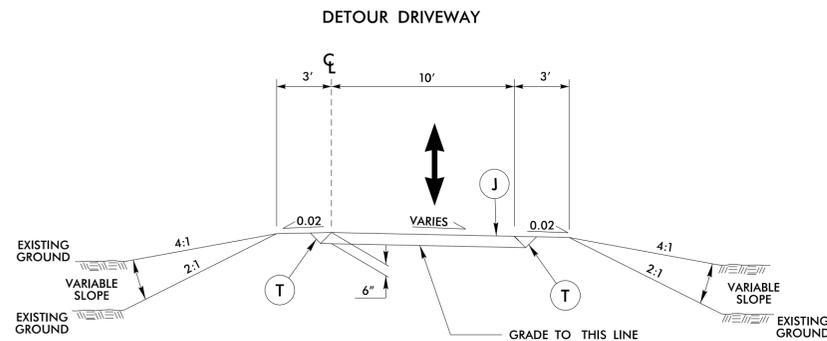
PAVEMENT SCHEDULE	
C1	PROP. APPROX. 2.5" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1½" IN DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 4" IN DEPTH OR GREATER THAN 5½" IN DEPTH.
J	PROP. 6" AGGREGATE BASE COURSE.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL SHEET NO. 2).

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



TYPICAL SECTION NO. 1
-L- STA 11+40.00 TO -L- STA 14+30.00

* NOTE:
FOR RT, USE 6' SHOULDER FROM 12+78 TO 13+25; TRANSITION FROM 6' TO 3' FROM STATION 13+25 TO 13+50
FOR LT, TRANSITION FROM 3' TO 6' SHOULDERS FROM 12+75 TO 13+00; USE 6' SHOULDER FROM 13+00 TO 13+18.45



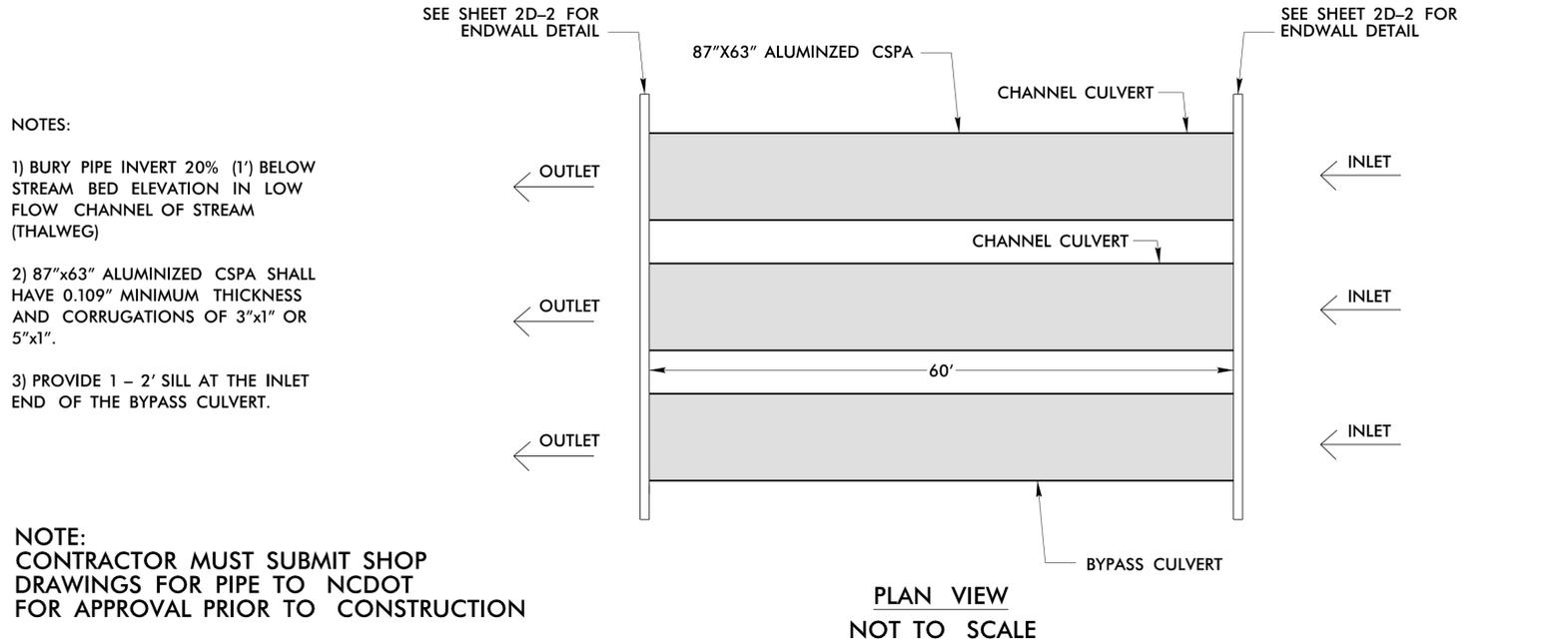
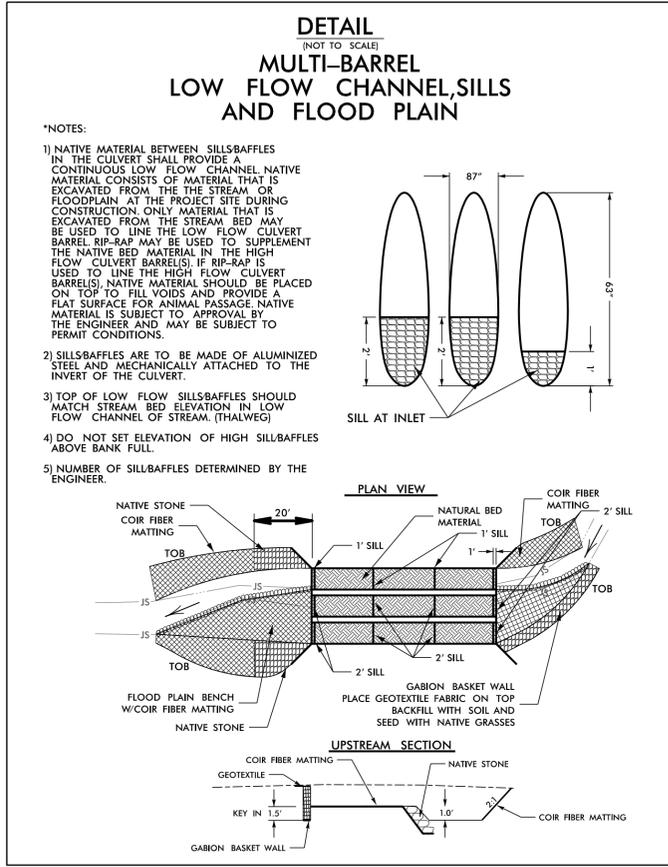
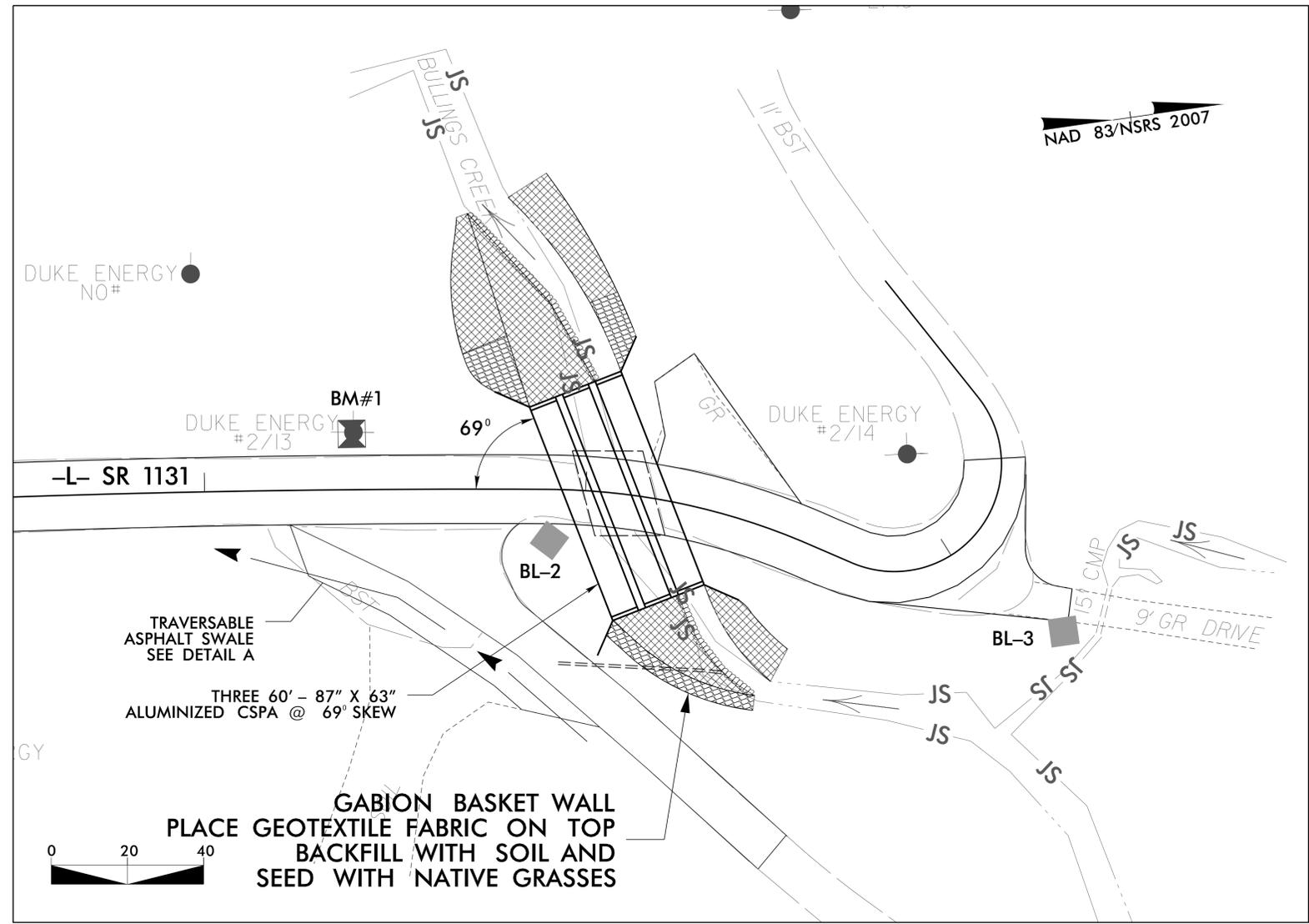
TYPICAL SECTION NO. 2
-DETOUR- STA 10+85.94 TO -DETOUR- STA 11+75.00

NOTE:
OVERLAY 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, ON EXISTING BST RAINSHOWER LANE AFTER DETOUR DRIVEWAY IS REMOVED. REFER TO C2 IN THE PAVEMENT SCHEDULE.

PROJECT REFERENCE NO. 17BP14.R.26	SHEET NO. 2D-1
RW SHEET NO.	
ROADWAY DESIGN ENGINEER  James E. Beck	HYDRAULICS ENGINEER  Joshua G. Dalton

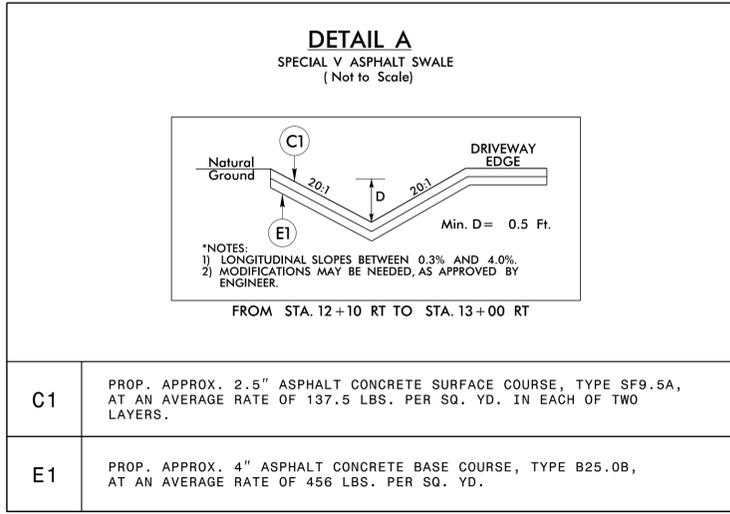
PLANS PREPARED BY:





- NOTES:**
- 1) BURY PIPE INVERT 20% (1') BELOW STREAM BED ELEVATION IN LOW FLOW CHANNEL OF STREAM (THALWEG)
 - 2) 87"x63" ALUMINIZED CSPA SHALL HAVE 0.109" MINIMUM THICKNESS AND CORRUGATIONS OF 3"x1" OR 5"x1".
 - 3) PROVIDE 1 - 2' SILL AT THE INLET END OF THE BYPASS CULVERT.

NOTE:
CONTRACTOR MUST SUBMIT SHOP DRAWINGS FOR PIPE TO NCDOT FOR APPROVAL PRIOR TO CONSTRUCTION





STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUMMARY OF EARTHWORK
IN CUBIC YARDS

STATION	STATION	UNCL. EXCAV.	EMBANK. +15%	BORROW	WASTE
PHASE I					
-L- 11+75.00	14+25.00	2	574	572	
SUBTOTALS:		2	574	572	
PHASE II DETOUR REMOVAL					
DETOUR	DETOUR	40			40
SUBTOTALS:		42			55
SUMMARIES SUBTOTAL:					
PROJECT TOTALS:		42	574	572	55
EST. 5% FOR REPLACING TOP SOIL ON BORROW PITS				29	
GRAND TOTALS:		42	574	600	40
SAY:		50	580	610	40

EST. GRANULAR MATERIAL = 50 CY (CONTINGENCY)
 EST. GEOTEXTILE FOR SOIL STABILIZATION = 50 SY (CONTINGENCY)
 EST. UNDERCUT EXCAVATION = 50 CY (CONTINGENCY)
 EST. INCIDENTAL STONE = 25 TONS (CONTINGENCY)

PAVEMENT REMOVAL SUMMARY

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	YD ²
L	11+40	12+99	LT /RT	320.22
L	13+19	14+30	LT /RT	262.22
DRIVEWAY	12+16	12+82	RT	93.00
TOTAL:				675.44
SAY:				680

RIGHT OF WAY AREA DATA

PARCEL NO.	PROPERTY OWNERS NAMES	TOTAL ACREAGE	AREA TAKEN	AREA REMAINING RT.	AREA REMAINING LT.	CONST. EASE.	PERM. DRAIN. EASE.	TEMP. DRAIN. EASE.
1	JOHN M. BLYTHE AND HEATHER M. BLYTHE	0.000						
2	DALE ALVIN BLYTHE	0.284		0.284		0.234	0.050	
3	BETTY JO SAPP	0.000						
4	DWIGHT SPROUSE	0.000						
5	CHARLES F. CORDELL AND SANDRA B. CORDELL	0.129			0.129	0.022	0.107	

NOTE:
 Earthwork quantities are calculated by the Roadway Design Unit. These earthwork quantities are based in part on subsurface data provided by the Geotechnical Engineering Unit.
 Approximate quantities only. Unclassified Excavation, Borrow Excavation, Fine Grading, Clearing & Grubbing, and Removal & Breakup of existing pavement will be paid at the lump sum price for "Grading".

PROJECT REFERENCE NO. 17BP14.R.26	SHEET NO. 4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER SEAL 026815 JAMES E. BECK	HYDRAULICS ENGINEER SEAL 026971 JOSHUA G. DALTON

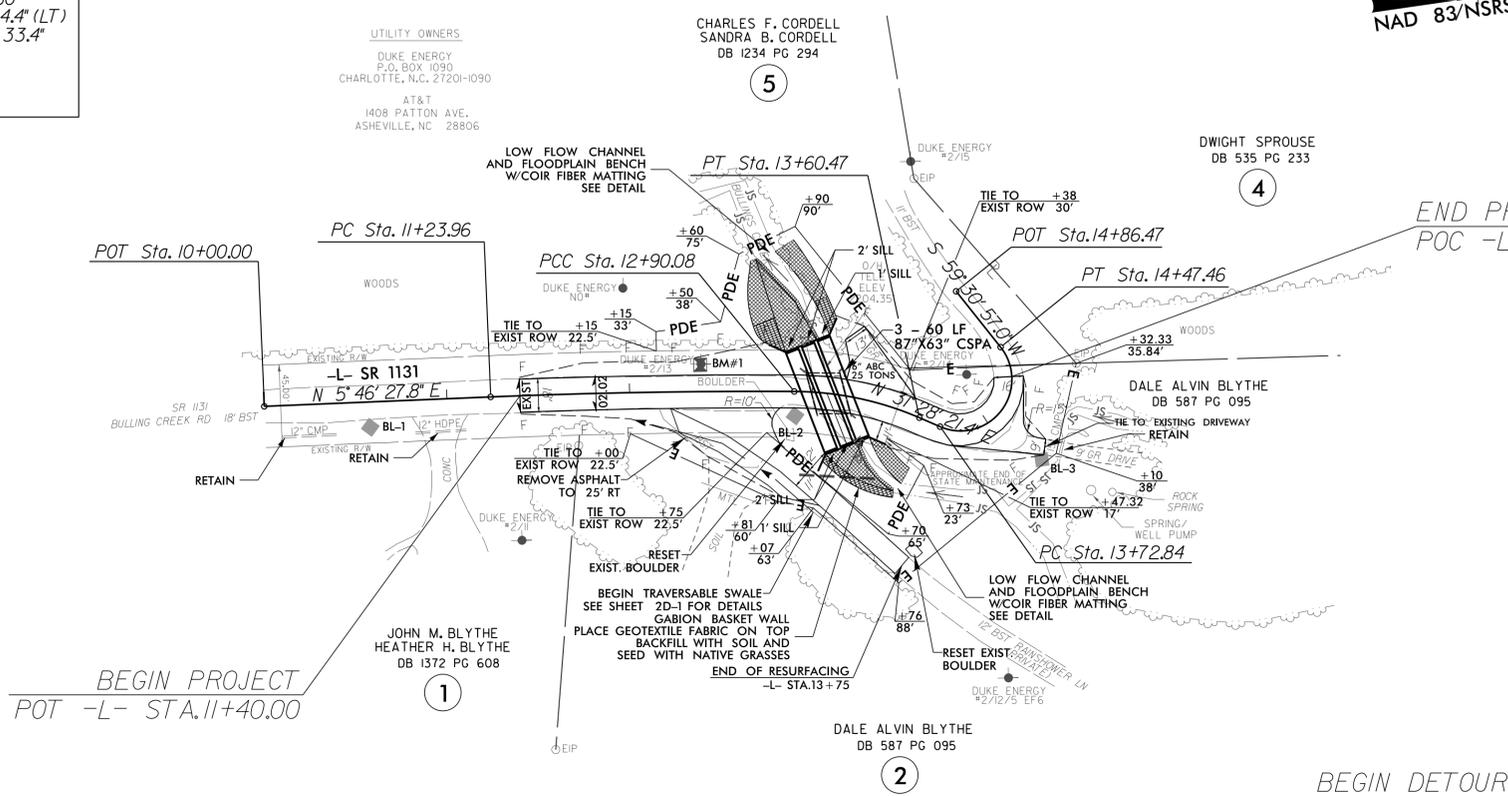
-L- CURVE DATA

PI Sta 12+07.03 Δ = 2° 42' 42.1" (RT) D = 1' 37' 56.4" L = 166.12' T = 83.08' R = 3,510.07'	PI Sta 13+25.75 Δ = 22° 59' 11.4" (RT) D = 32' 39' 27.8" L = 70.39' T = 35.67' R = 175.44'	PI Sta 14+85.50 Δ = 15° 57' 24.4" (LT) D = 203' 39' 33.4" L = 746.1' T = 112.65' R = 28.13'
--	---	--

-DETOUR- CURVE DATA

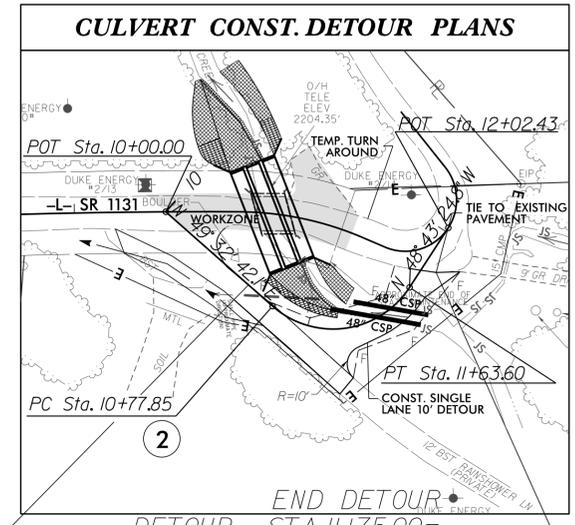
PI Sta 11+35.64 Δ = 98° 16' 06.9" (LT) D = 114' 35' 29.6" L = 85.76' T = 57.79' R = 50.00'

NOTE: DRIVEWAY ACCESS TO BE MAINTAINED DURING CONSTRUCTION



NAD 83/NSRS 2007

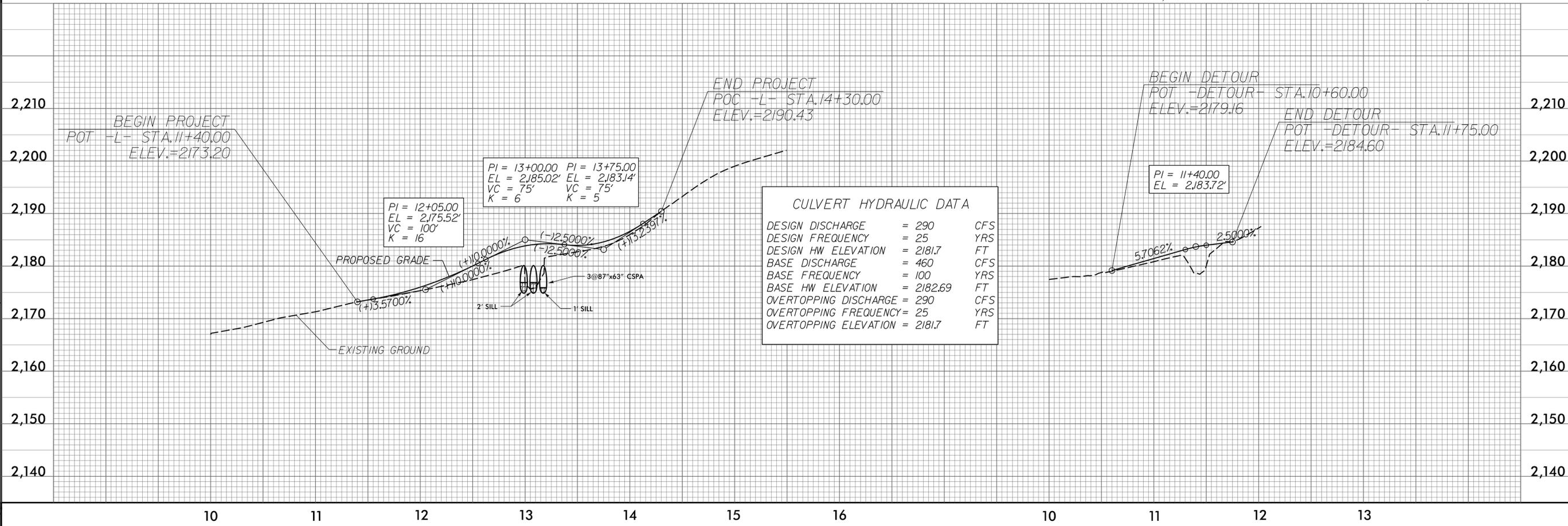
END PROJECT
POC -L- STA. 14+30.00



BEGIN DETOUR
-DETOUR- STA. 10+60.00 =
-L- STA. 12+92.00, 44' RT

END DETOUR
-DETOUR- STA. 11+75.00 =
-L- STA. 13+96.00, 15' RT

REVISIONS



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STATE PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.26	TMP-01

**PLAN FOR PROPOSED
TRAFFIC MANAGEMENT**

HENDERSON COUNTY

ROADWAY STANDARD DRAWINGS

INDEX OF SHEETS

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "METRIC ROADWAY STANDARD DRAWINGS"-ROADWAY DESIGN 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:

SHEET NO.	TITLE
TMP-01	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, LEGEND AND INDEX OF SHEETS
TMP-02	PROJECT NOTES/WRITTEN PHASING
TMP-03	DETAIL SHEET

STD. NO.	TITLE
1101.01	WORK ZONE ADVANCE 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
1130.01	DRUMS
1135.01	CONES
1145.01	BARRICADES
1150.01	FLAGGING DEVICES
1165.01	TRUCK MOUNTED IMPACT ATTENUATOR
1180.01	SKINNY DRUM

LEGEND

GENERAL

- DIRECTION OF TRAFFIC FLOW
- NORTH ARROW
- PROPOSED PVMT. EXIST. PVMT.
- WORK AREA
- ONGOING CONSTRUCTION
- REMOVAL OF EXISTING PAVEMENT
- GRADING ONLY

TRAFFIC CONTROL DEVICES

- TYPE I BARRICADE
- TYPE II BARRICADE
- TYPE III BARRICADE
- CONE
- DRUM
- FLASHING ARROW PANEL (TYPE C)
- TYPE 'B' WARNING LIGHT
- STATIONARY SIGN
- PORTABLE SIGN
- STATIONARY OR PORTABLE SIGN
- WARNING FLAGS
- CRASH CUSHION
- CHANGEABLE MESSAGE SIGN
- TRUCK MOUNTED IMPACT ATTENUATOR (TMIA)
- POLICE
- FLAGGER

PAVEMENT MARKINGS

- CRYSTAL/CRYSTAL PAVEMENT MARKER
- YELLOW/YELLOW PAVEMENT MARKER
- CRYSTAL/RED PAVEMENT MARKER
- PAVEMENT MARKING SYMBOLS

PROJECT: WBS 17BP.14.R.26

PLAN PREPARED IN THE OFFICE OF
PROGRESSIVE
DESIGN GROUP, INC.

ENGINEERS • CONSULTANTS
CHARLOTTE, NC 704.573.3003

APPROVED: DATE: 01/10/13	PLAN PREPARED BY: PROGRESSIVE DESIGN GROUP, INC.
SEAL 	TIM AREY, P.E. TRAFFIC CONTROL ENGINEER
	DONALD SPENCE, P.E. TRAFFIC CONTROL PROJECT ENGINEER
	TRAFFIC CONTROL PROJECT DESIGN ENGINEER
	L.D. ASHLEY TRAFFIC CONTROL DESIGN ENGINEER / TECHNICIAN

GENERAL NOTES

PROJECT NOTES & PHASING

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.26	TMP-02
RW SHEET NO.	

PHASING

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.

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) 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.

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.

DRIVEWAY ACCESS

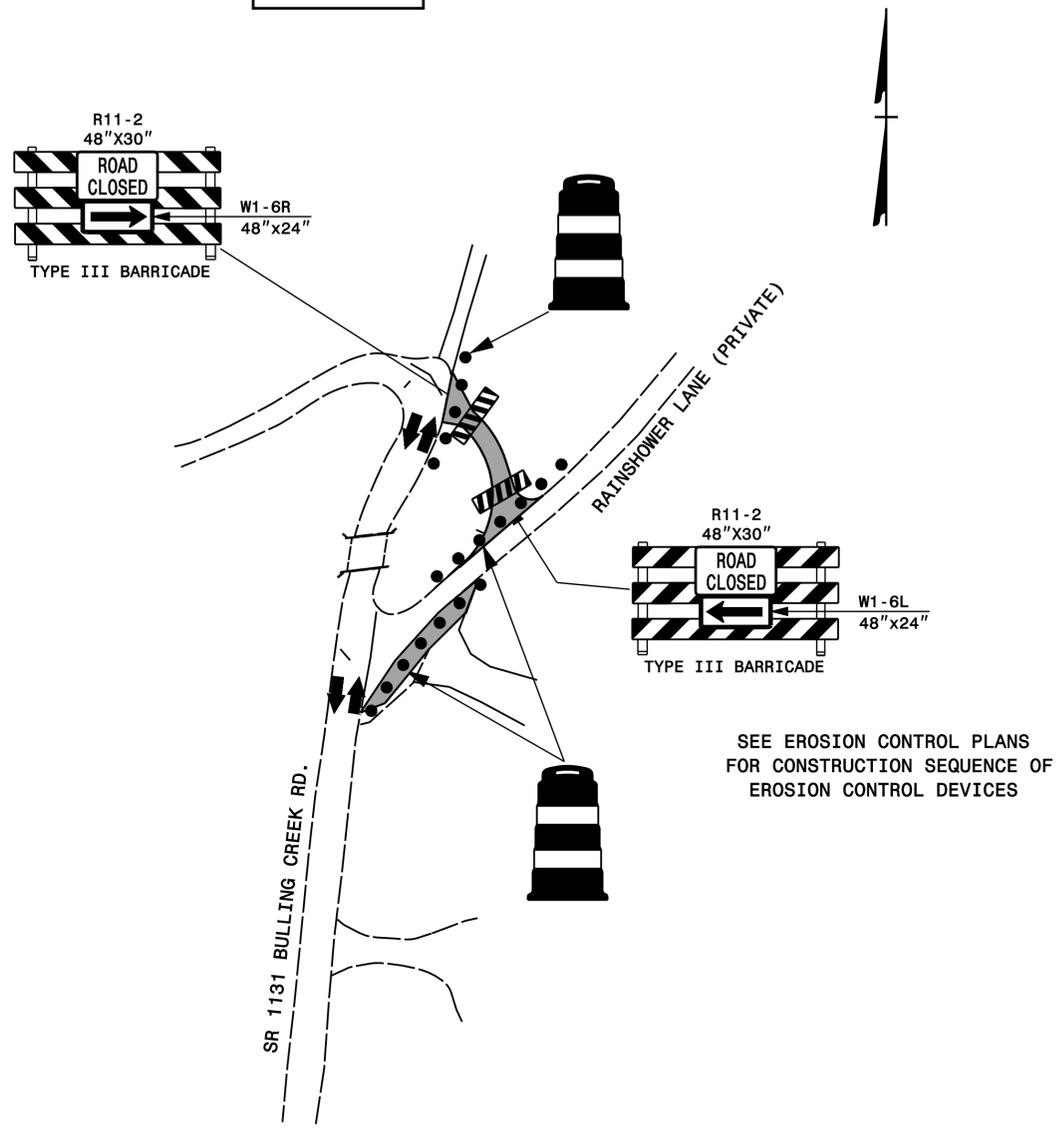
- N) MAINTAIN DRIVEWAY ACCESS DURING CONSTRUCTION.

- STEP 1: INSTALL WORK ZONE ADVANCE WARNING SIGNS AS SHOWN ON ROADWAY STANDARD DRAWING NO. 1101.01.
- STEP 2: CONSTRUCT THE TEMPORARY RUN AROUND DETOUR AND ASPHALT SWALE AS SHOWN IN DETAIL 1 ON SHEET TMP-03. SWITCH TRAFFIC ONTO THE TEMPORARY RUN AROUND DETOUR. CONSTRUCT THE PROPOSED BULLING CREEK ROAD CULVERTS AND ROADWAY AWAY FROM TRAFFIC AS SHOWN IN DETAIL-2 ON SHEET TMP-03.
- STEP 3: USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 1 OF 15, TIE IN PROPOSED BULLING CREEK ROAD TO EXISTING ROAD AND SHIFT TRAFFIC ONTO PROPOSED BULLING CREEK ROAD.
- STEP 4: REMOVE TEMPORARY DETOUR AND FINISH REFORESTATION IN AREA OF DETOUR. USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEET 1 OF 15, PLACE ASPHALT OVERLAY ON RAINSHOWER LANE.



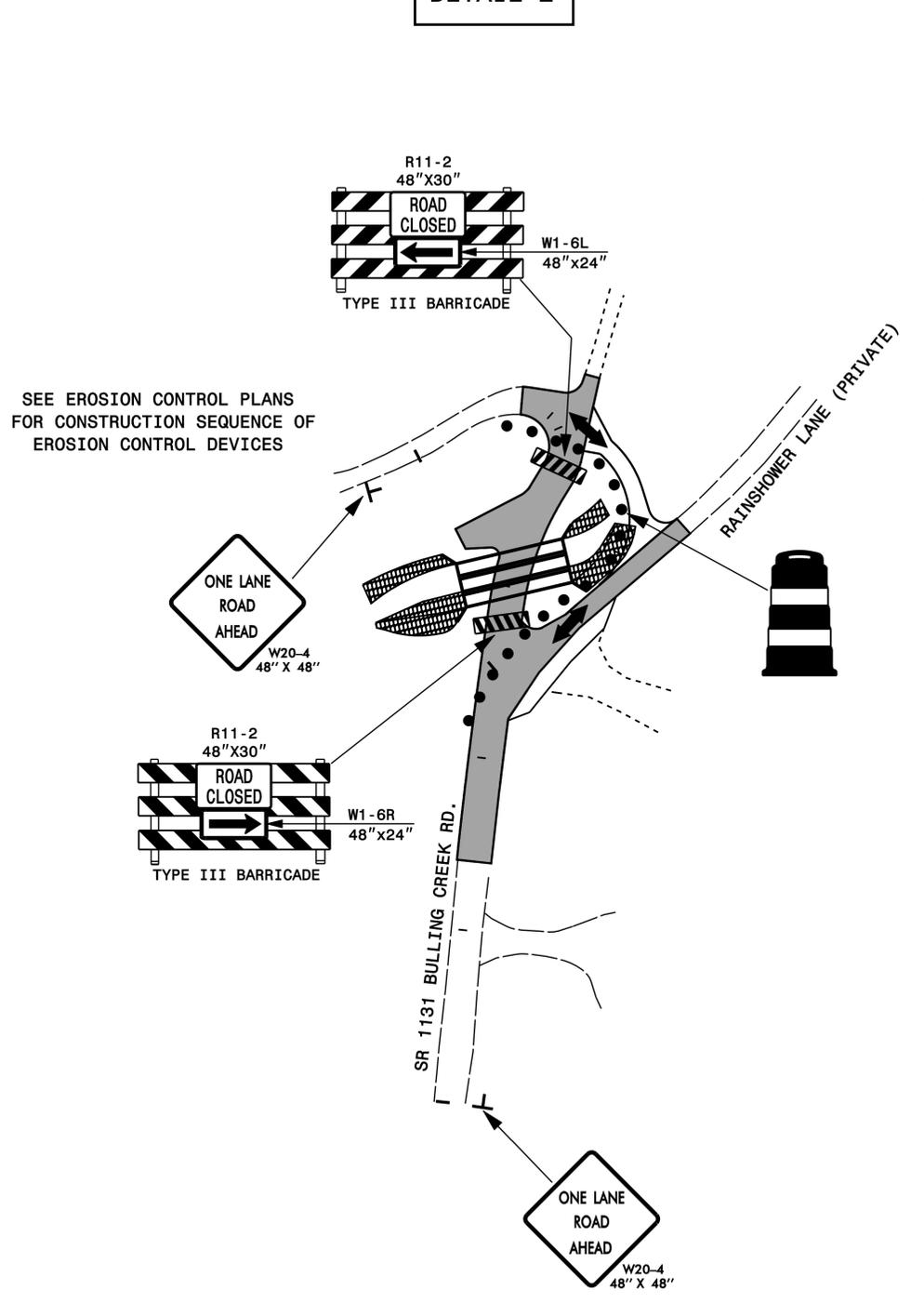
APPROVED: <i>Tom Arny</i> DATE: 07/02/15		PROJECT NOTES & PHASING	
SEAL <i>Tom Arny</i>	SCALE: 1" = 50'		REVISIONS
	DATE: 07/02/15		
	DWG. BY: LDA		
	DESIGN BY: TMA		
	REVIEWED BY: TMA		

DETAIL 1



INSTALL WORK ZONE ADVANCE WARNING SIGNS AS SHOWN ON ROADWAY STANDARD DRAWING NO. 1101.01 AND GENERAL NOTE I

DETAIL 2



INSTALL WORK ZONE ADVANCE WARNING SIGNS AS SHOWN ON ROADWAY STANDARD DRAWING NO. 1101.01 AND GENERAL NOTE I



APPROVED: *Tom Arny* DATE: 07/02/15

SEAL

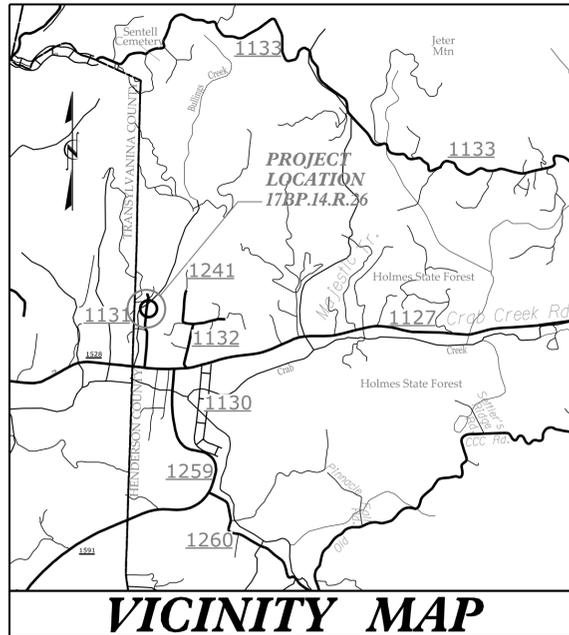
DETAIL SHEET	
SCALE: 1" = 50'	REVISIONS
DATE: 07/02/15	
DWG. BY: LDA	
DESIGN BY: TMA	
REVIEWED BY: TMA	
	CADD FILE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.14.R.26	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
17BP.14.R.26		P.E., ROW, UTIL	

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

HENDERSON COUNTY

BRIDGE NO. 273 ON SR 1131 (BULLING CREEK ROAD)
 OVER BULLING CREEK
 0.3 MILES NORTH OF JUNCTION OF SR 1127
 GRADING, PAVING, DRAINAGE, AND STRUCTURE

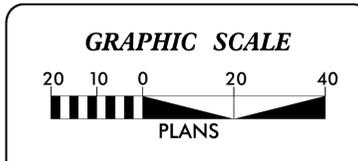
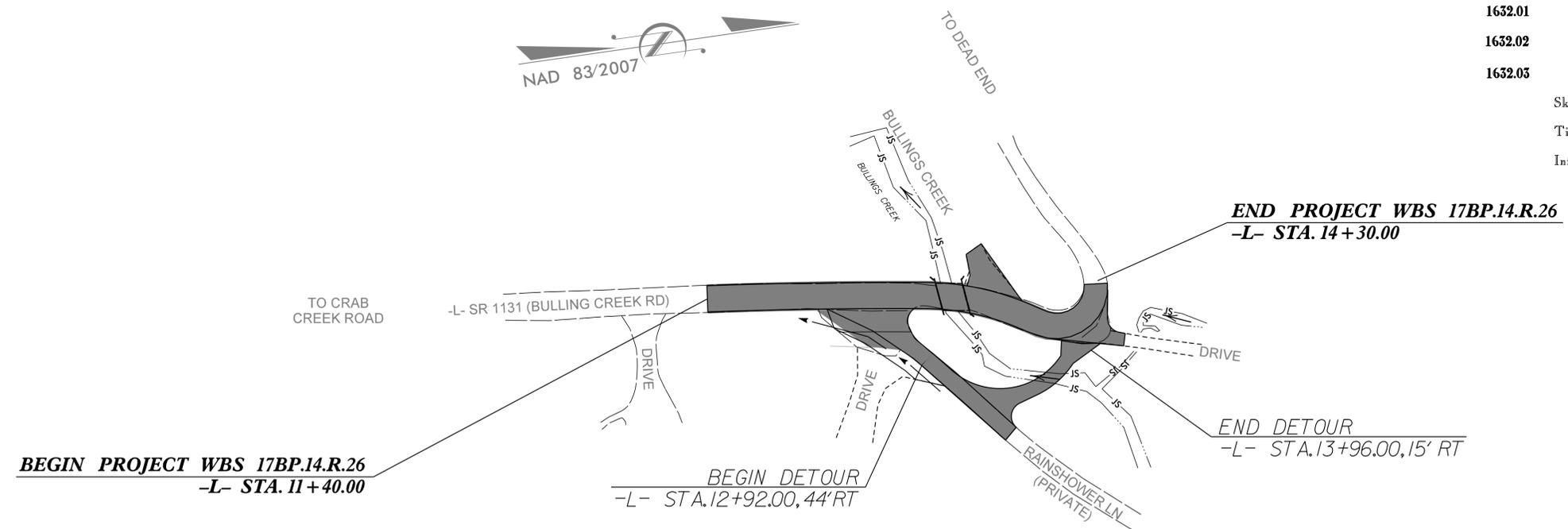


EROSION AND SEDIMENT CONTROL MEASURES

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

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

JOSHUA G. DALTON, PE, CPESC
 LEVEL III NAME
 3552
 LEVEL III CERTIFICATION NO.



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

Prepared in the Office of:

SUNGATE DESIGN GROUP, P.A.
 915 JONES FRANKLIN ROAD
 RALEIGH, NORTH CAROLINA 27606
 TEL (919) 859-2243 FAX (919) 859-6258
 ENG FIRM LICENSE NO. C-890

2012 STANDARD SPECIFICATIONS

Roadway Standard Drawings

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

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

7/1/2012 7:31:53 AM JGD

PROJECT: WBS 17BP.14.R.26

CONTRACT: DN00159

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

PROJECT REFERENCE NO. <i>17BP14R.26</i>	SHEET NO. <i>EC-2</i>
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SOIL STABILIZATION TIMEFRAMES

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

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.

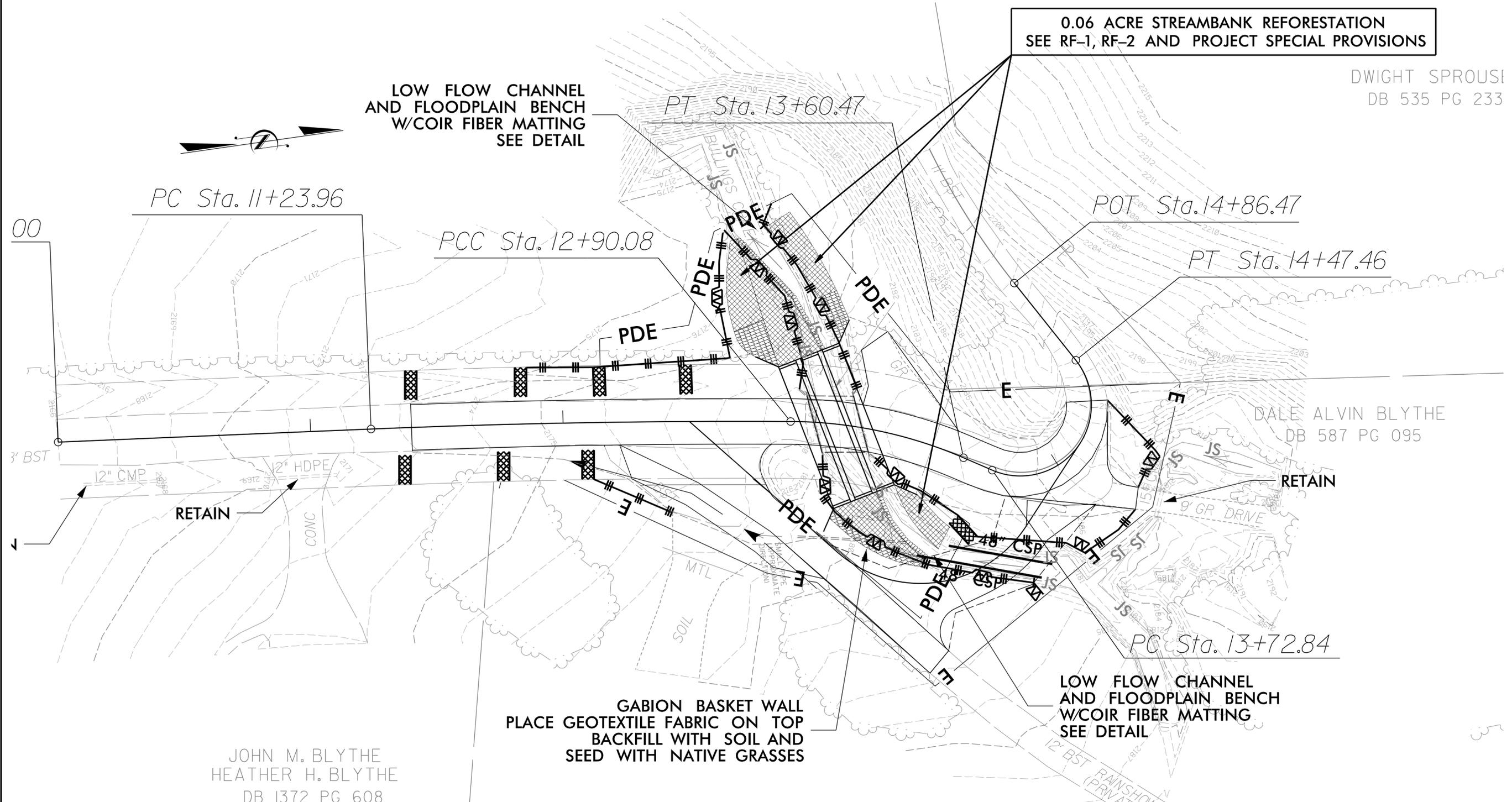
NOTE: PERIMETER EROSION CONTROL MEASURES SHALL BE INSTALLED DURING CLEARING AND GRUBBING PHASE.

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 04

PROJECT REFERENCE NO. 17BP.14.R.26	SHEET NO. EC-03/CONST.04
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



EROSION CONTROL PLAN



LOW FLOW CHANNEL
AND FLOODPLAIN BENCH
W/COIR FIBER MATTING
SEE DETAIL

0.06 ACRE STREAMBANK REFORESTATION
SEE RF-1, RF-2 AND PROJECT SPECIAL PROVISIONS

DWIGHT SPROUSE
DB 535 PG 233

DALE ALVIN BLYTHE
DB 587 PG 095

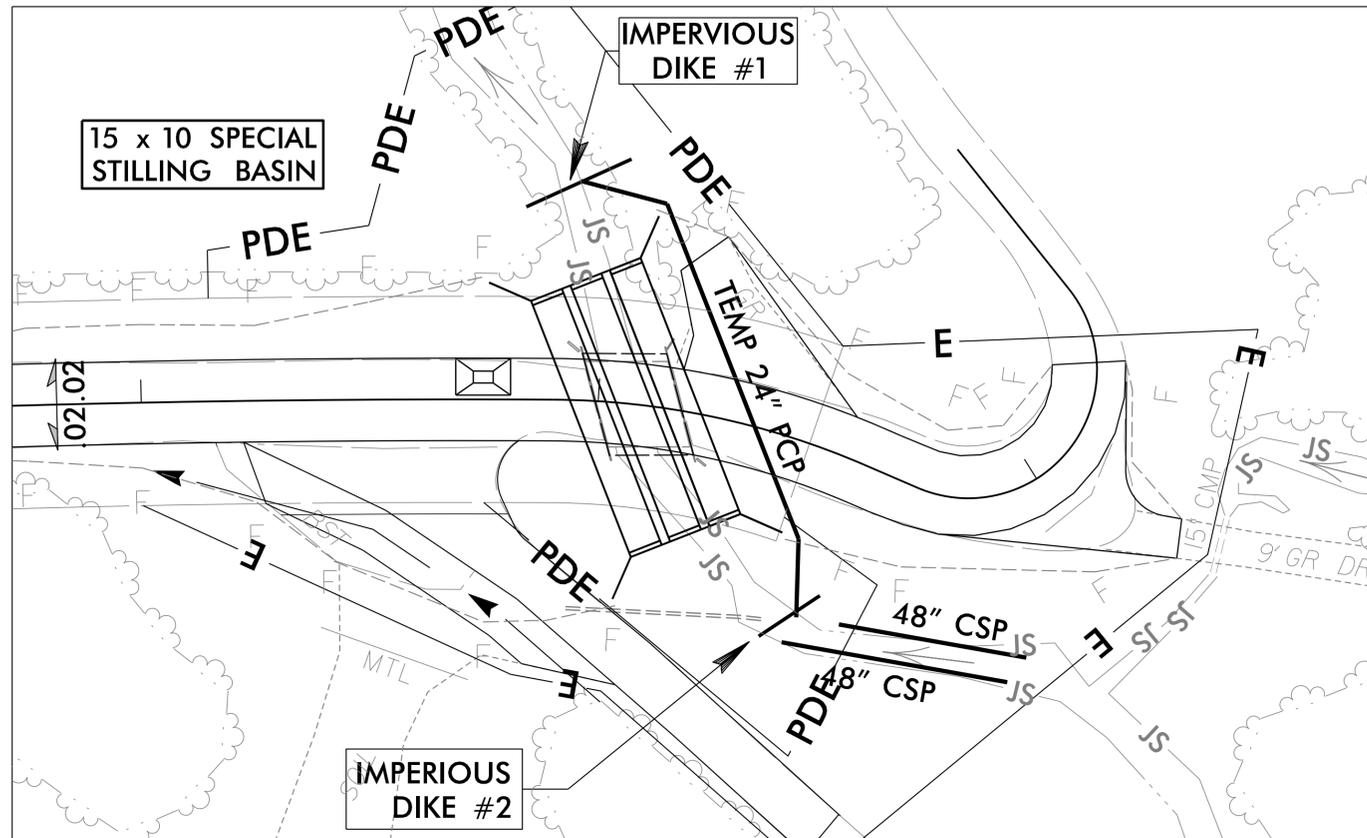
GABION BASKET WALL
PLACE GEOTEXTILE FABRIC ON TOP
BACKFILL WITH SOIL AND
SEED WITH NATIVE GRASSES

LOW FLOW CHANNEL
AND FLOODPLAIN BENCH
W/COIR FIBER MATTING
SEE DETAIL

JOHN M. BLYTHE
HEATHER H. BLYTHE
DB 1372 PG 608

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.26	EC-05/CONST.04
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

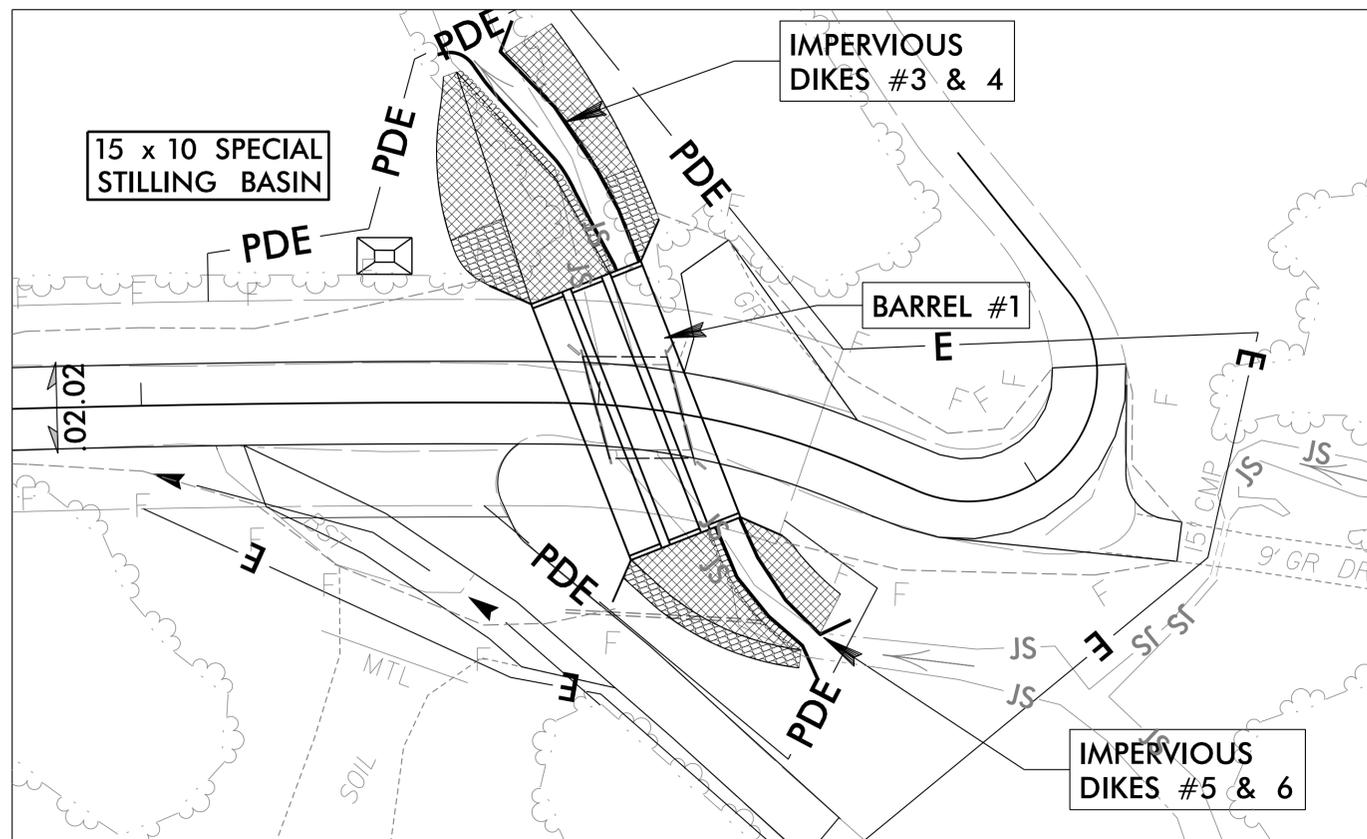
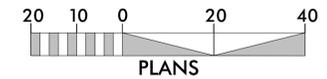
CULVERT INSTALLATION PHASING



PHASE 1

CONSTRUCTION SEQUENCE:

- 1) CONSTRUCT DETOUR
- 2) INSTALL SPECIAL STILLING BASIN
- 3) CONSTRUCT TEMPORARY IMPERVIOUS DIKES #1 AND #2 WITH TEMPORARY 24" PIPE AND DIVERT STREAM FLOW
- 4) DEWATER CONSTRUCTION AREA AND TREAT EFFLUENT WATER USING SPECIAL STILLING BASIN
- 3) REMOVE EXISTING BRIDGE
- 6) INSTALL BARRELS #1, 2, 3, HEADWALLS, AND WINGWALLS
- 7) CONSTRUCT INLET AND OUTLET CHANNELS
- 8) STABILIZE BANKS WITH NATIVE STONE AND COIR FIBER MATTING
- 9) REMOVE IMPERVIOUS DIKE #1



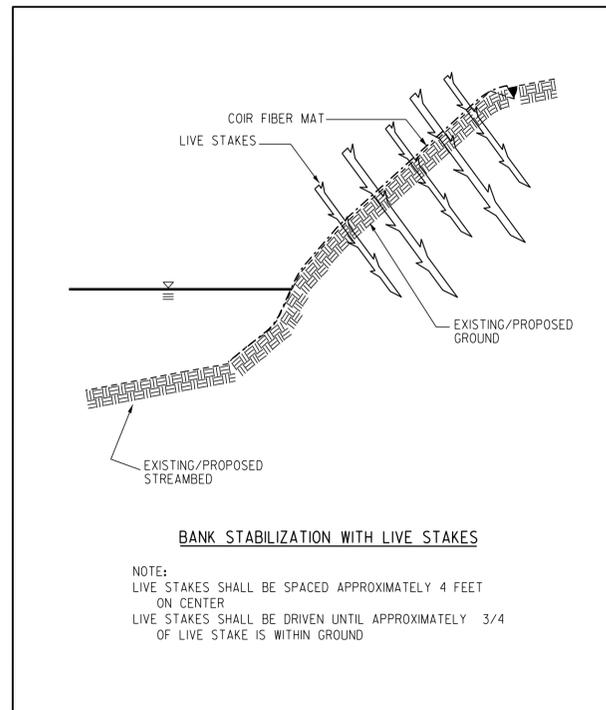
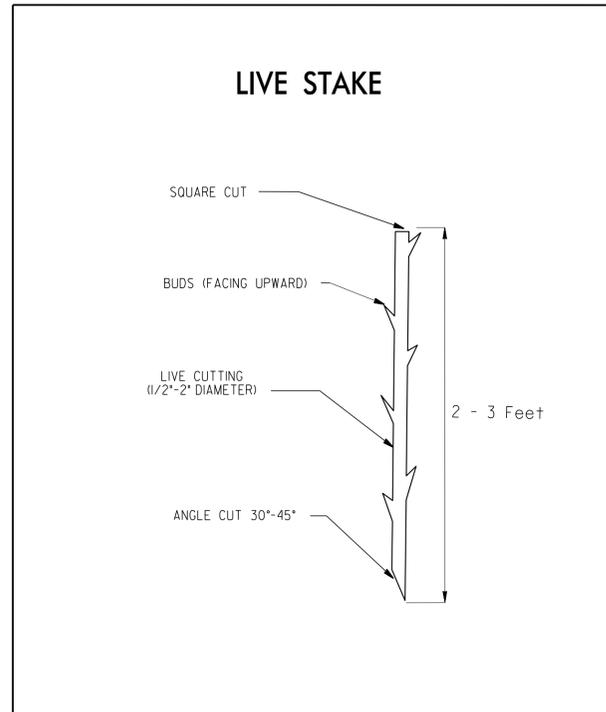
PHASE 2

CONSTRUCTION SEQUENCE:

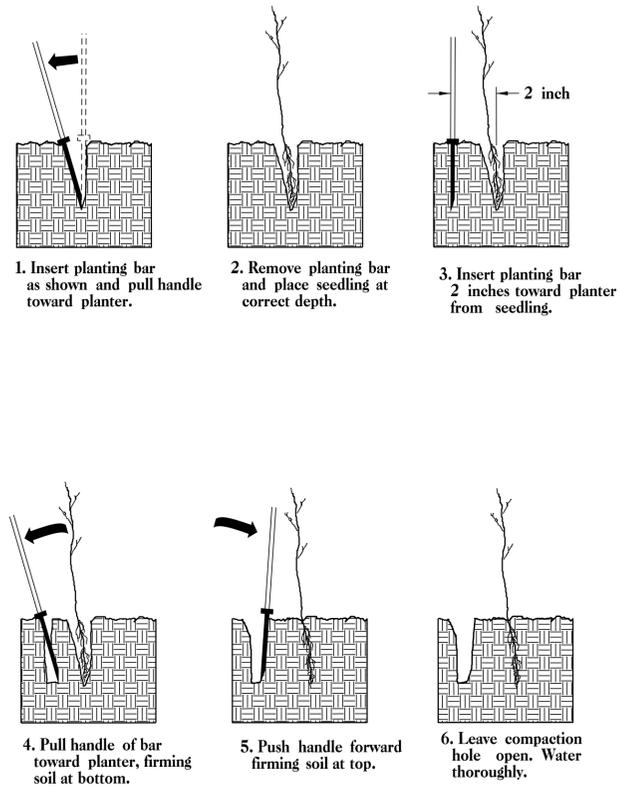
- 1) CONSTRUCT IMPERVIOUS DIKES #3, 4, 5, AND 6.
- 2) REMOVE IMPERVIOUS DIKES #1 AND #2 AND TEMPORARY 24" PIPE. DIVERT FLOW THROUGH BARREL #1.
- 3) COMPLETE ROADWAY CONSTRUCTION AND TRANSFER TRAFFIC
- 4) REMOVE DETOUR
- 5) CONSTRUCT INLET AND OUTLET CHANNELS DEWATER TO SPECIAL STILLING BASIN AS NEEDED
- 6) STABILIZE BANKS WITH NATIVE STONE AND COIR FIBER MATTING
- 7) REMOVE SPECIAL STILLING BASIN AND IMPERVIOUS DIKES #3, 4, 5, AND 6

PLANTING DETAILS

LIVE STAKES PLANTING DETAIL



BAREROOT PLANTING DETAIL DIBBLE PLANTING METHOD USING THE KBC PLANTING BAR



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.



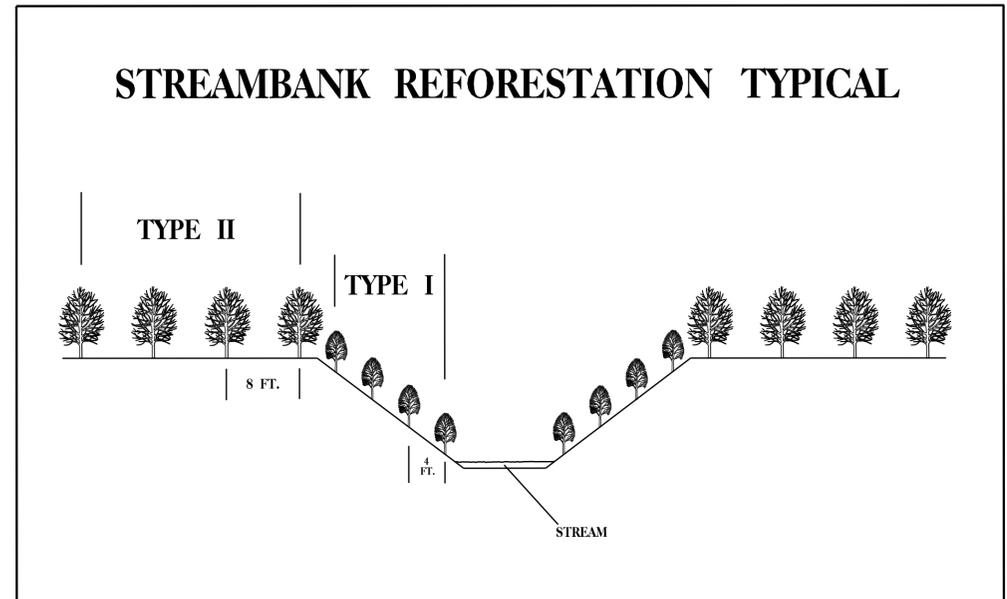
KBC PLANTING BAR
Planting bar shall have a blade with a triangular cross section, and shall be 12 inches long, 4 inches wide and 1 inch thick at center.



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

- TYPE 1 STREAMBANK REFORESTATION SHALL BE PLANTED 3 FT. TO 5 FT. ON CENTER, RANDOM SPACING, AVERAGING 4 FT. ON CENTER, APPROXIMATELY 2724 PLANTS PER ACRE.
- TYPE 2 STREAMBANK REFORESTATION SHALL BE PLANTED 6 FT. TO 10 FT. ON CENTER, RANDOM SPACING, AVERAGING 8 FT. ON CENTER, APPROXIMATELY 680 PLANTS PER ACRE.
- NOTE: TYPE 1 AND TYPE 2 STREAMBANK REFORESTATION SHALL BE PAID FOR AS "STREAMBANK REFORESTATION"

STREAMBANK REFORESTATION TYPICAL



STREAMBANK REFORESTATION

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

TYPE 1

50% RHODODENDRON CATAWBIENSE	CATAWBA RHOD.	3 GALLON SIZE
50% CORNUS AMOMUM	SILKY DOGWOOD	2 ft - 3 ft LIVE STAKES

TYPE 2

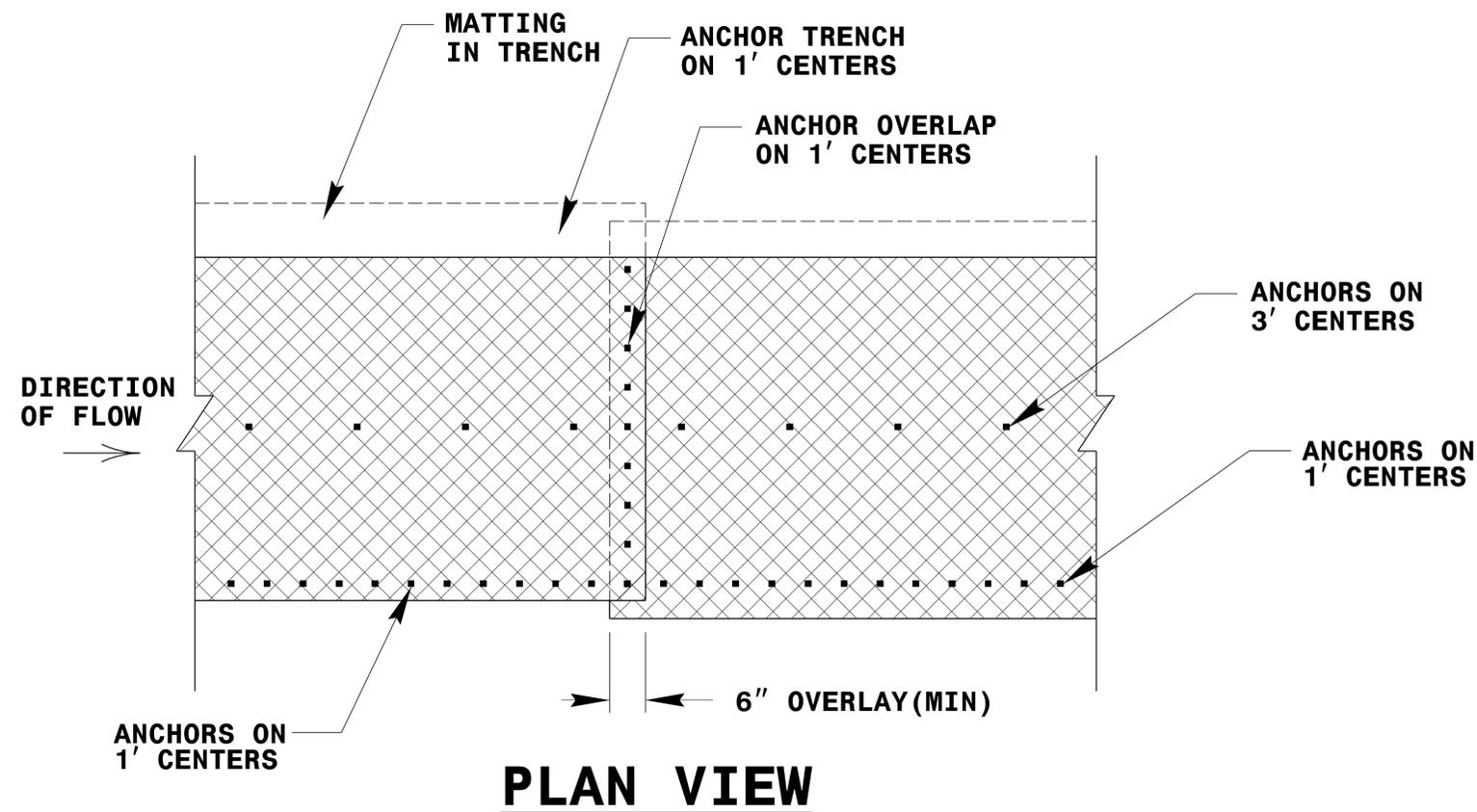
25% LIRIODENDRON TULIPIFERA	TULIP POPLAR	12 in - 18 in BR
25% PLATANUS OCCIDENTALIS	SYCAMORE	12 in - 18 in BR
25% PRUNUS SEROTINA	BLACK CHERRY	12 in - 18 in BR
25% BETULA NIGRA	RIVER BIRCH	12 in - 18 in BR

- SEE PLAN SHEETS FOR AREAS TO BE PLANTED

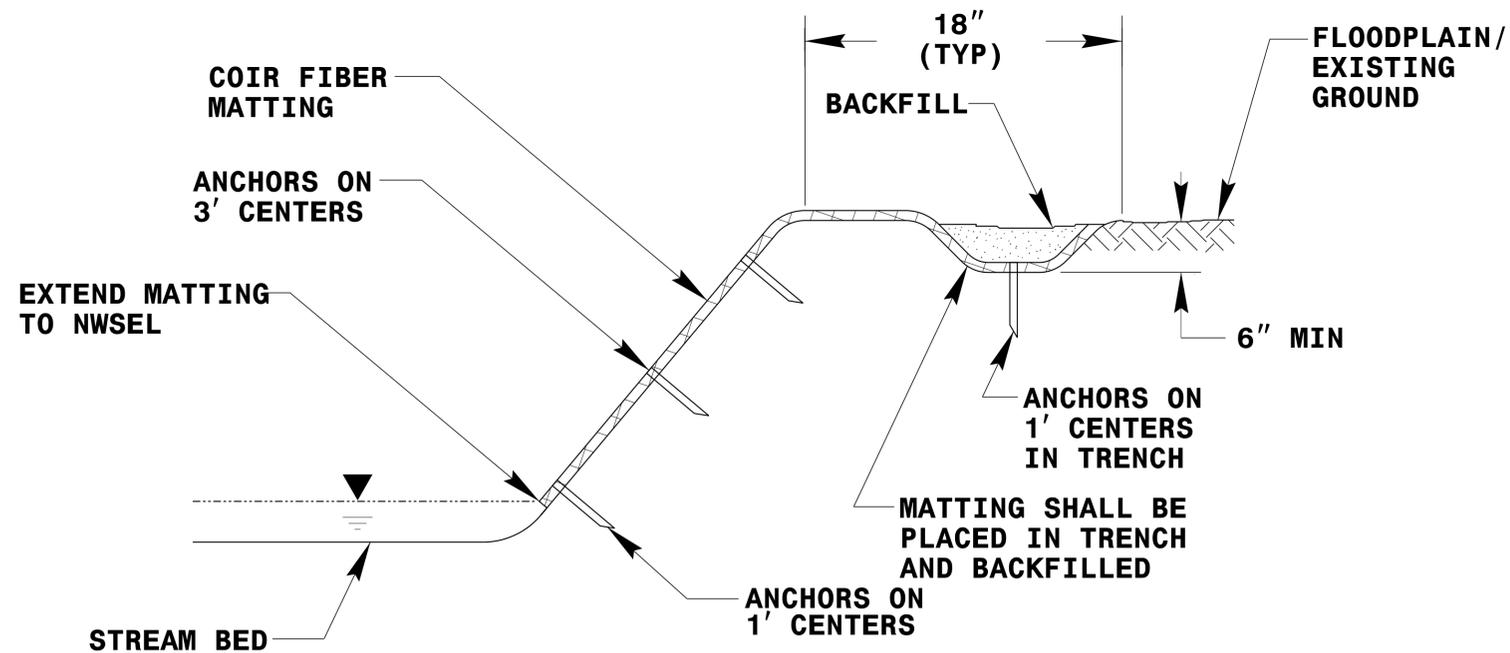
STREAMBANK REFORESTATION

DETAIL SHEET 1 OF 2

PROJECT REFERENCE NO. 17BP14R.26	SHEET NO. RF-2
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



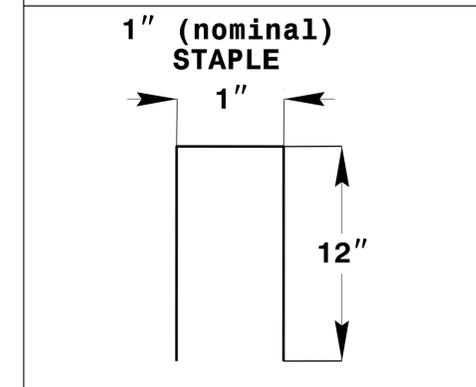
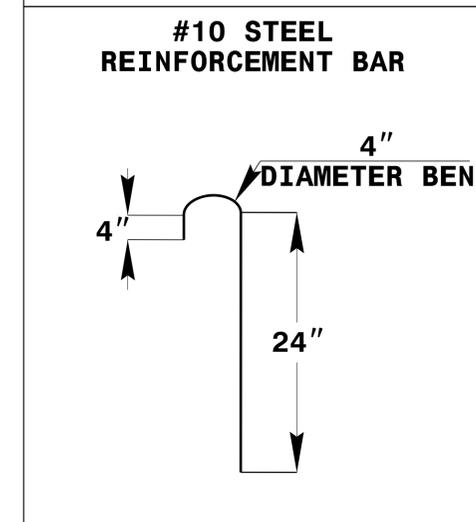
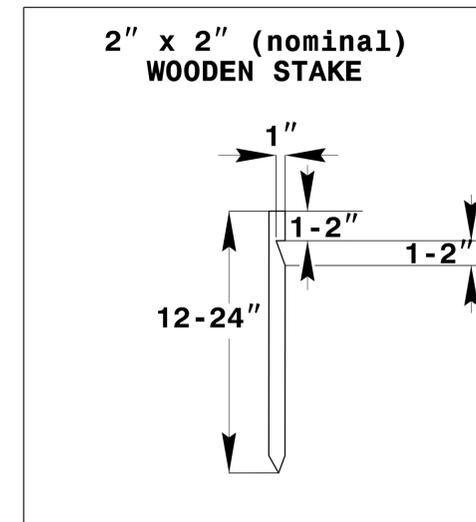
PLAN VIEW



TYPICAL CROSS SECTION

COIR FIBER MATTING DETAIL

NOT TO SCALE



ANCHOR OPTIONS

**STREAMBANK REFORESTATION
DETAIL SHEET 2 OF 2**
N.C.D.O.T. - ROADSIDE ENVIRONMENTAL UNIT

12/06/07

COMPUTED BY: MDH DATE: 03/05/14
CHECKED BY: JEB DATE: 08/06/15

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO. SHEET NO.
17BP.14.R.26 X-1A



CROSS SECTION IN SUMMARY

LOCATION	UNCLASSIFIED EXCAVATION	EMBANKMENT
11+75	0	0
12+00	0	3
12+25	0	18
12+50	1	57
12+75	1	117
13+00	0	134
13+25	0	95
13+50	0	48
13+75	0	17
14+00	0	8
14+25	0	2

EMBANKMENT COLUMN DOES NOT INCLUDE
BACKFILL FOR UNDERCUT.

NOTE:
 Earthwork quantities are calculated by the Roadway Design Unit. These earthwork quantities are based in part on subsurface data provided by the Geotechnical Engineering Unit.
 Approximate quantities only. Unclassified Excavation, Borrow Excavation, Fine Grading, Clearing & Grubbing, and Removal & Breakup of existing pavement will be paid at the lump sum price for "Grading".

8/6/2015
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mhaas

