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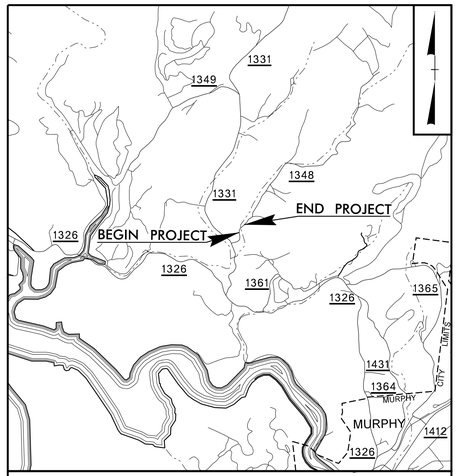
09/08/99

PROJECT NO.: 14SP.20201.1

CONTRACT: DN00134

See Sheet 1A For Index of Sheets



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CHEROKEE COUNTY

LOCATION: BRIDGE NO. 163 OVER BATES CREEK ON SR 1348 (BATES CREEK RD)

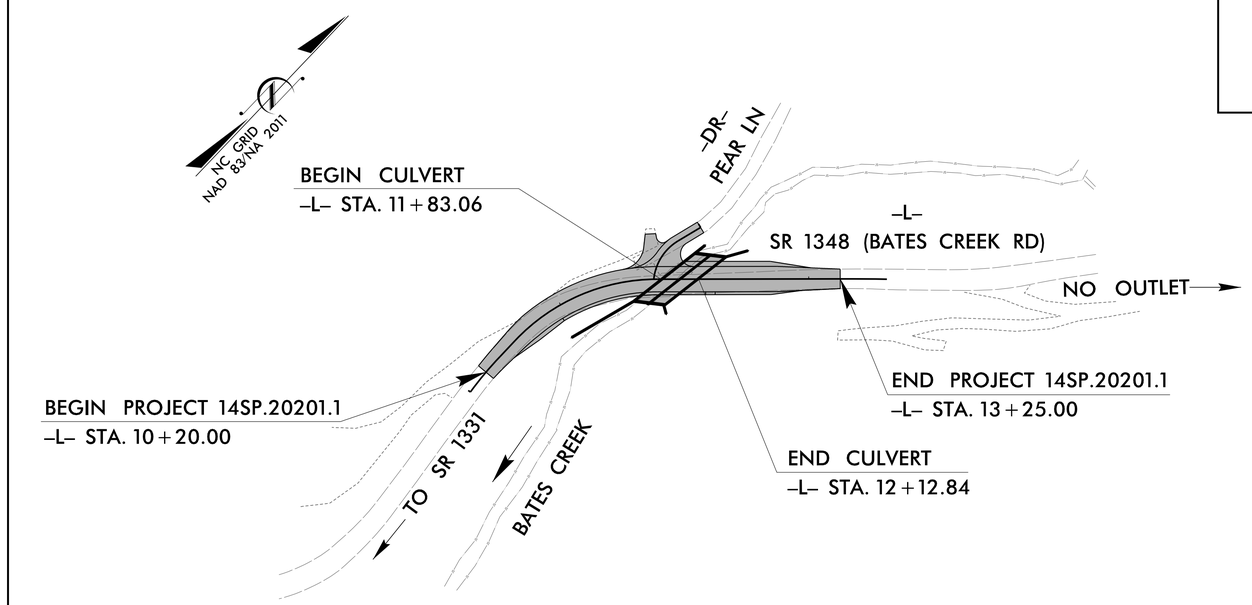
TYPE OF WORK: GRADING, DRAINAGE, PAVING, ON-SITE DETOUR, AND CULVERT

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	14SP.20201.1	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
14SP.20201.1		PE
14SP.20201.2		R/W/UTILITY
14SP.20201.1		CONST.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

4



V&M
Vaughn & Melton
Consulting Engineers
Asheville, North Carolina
828-253-2796
Boone, NC 828-355-9933
Tri-Cities, TN 423-467-8401
Knoxville, TN 865-546-5800
Spartanburg, SC 864-574-4775
Charleston, SC 843-974-5650
Middlesboro, KY 606-248-6600
Atlanta, GA 770-627-3509
Raleigh, NC 919-977-9455
Charlotte, NC 704-357-0488
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GRAPHIC SCALES

20 10 0 20 40
PLANS

20 10 0 20 40
PROFILE (HORIZONTAL)

4 2 0 4 8
PROFILE (VERTICAL)

DESIGN DATA

ADT 2011 = 270
ADT 2031 = 500

V = 25 MPH

FUNC CLASS =
LOCAL
SUBREGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT 14SP.20201.1 = 0.052 MI.
LENGTH STRUCTURE TIP PROJECT 14SP.20201.1 = 0.006 MI.
TOTAL LENGTH TIP PROJECT 14SP.20201.1 = 0.058 MI.

Prepared for the Office of:

DIVISION OF HIGHWAYS

1000 Birch Ridge Dr., Raleigh NC, 27610

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
OCTOBER 3, 2016

LETTING DATE:
AUGUST 14, 2018

REECE SCHULER, PE
PROJECT ENGINEER

HARDY WILLIS, PE
PROJECT DESIGN ENGINEER

JOSH DEYTON, PE
DIVISION 14 BRIDGE PROJECT MANAGER

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 033023 ENGINEER BRADLEY S. RIDNOUR

7/20/2018 1:35:51 PM EDT
DocuSigned by: Bradley Ridnour
P.E.
SIGNATURE:

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 26960 ENGINEER REECE M. SCHULER

7/20/2018 10:14:16 AM PDT
DocuSigned by: Reece M. Schuler
P.E.
SIGNATURE:

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

7/13/2018
V:\Asheville\transportation\3236-IIMTC 14SP.2020i\Cherokee 163\Roadway\Proj\Cherokee 163_rdy_tsh.dgn
User:jddaves

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PROJECT REFERENCE NO.	SHEET NO.
14SP.20201J	1A

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 26960 ENGINEER JUSTIN M. SCHULTZ

8/27/2018 4:26:04 AM PDT

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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 THRU 2A-2	TYPICAL SECTIONS
2B-1	DETOUR PLAN AND PROFILE SHEET
2C-1	MODIFIED CONCRETE FLUME DETAIL
2D-1	DETAIL OF REINFORCED SANDBAG HEADWALL
3B-1	EARTHWORK SUMMARY AND PAVEMENT REMOVAL SUMMARY
3B-2	SUMMARY OF GUARDRAIL
3D-1	DRAINAGE SUMMARIES
4	PLAN SHEET
5	PROFILE SHEET
TMP-1 THRU TMP-6	TRAFFIC MANAGEMENT PLANS
SIG-1	SIGNAL PLAN
PMP-1 THRU PMP-2	PAVEMENT MARKING PLANS
EC-1 THRU EC-7	EROSION CONTROL PLANS
RF-1 THRU RF-3	REFORESTATION DETAIL SHEETS
UO-1 THRU UO-2	UTILITIES BY OTHERS
X-1A	CROSS-SECTION SUMMARY
X-1 THRU X-18	CROSS-SECTIONS
C-1 THRU C-11	STRUCTURE PLANS

GENERAL NOTES:

2018 SPECIFICATIONS
EFFECTIVE: 01-16-2018
REVISED:

GRADE LINE:
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 II.

SHOULDER CONSTRUCTION:

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

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".

SUBSURFACE PLANS:

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

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE: POWER - BLUE RIDGE MOUNTAIN EMC
TELEPHONE - FRONTIER COMMUNICATIONS
SEPTIC SYSTEM - CHEROKEE COUNTY ENVIRONMENTAL HEALTH DEPARTMENT.

RIGHT-OF-WAY MARKERS:

ALL RIGHT-OF-WAY MARKERS ON THIS PROJECT SHALL BE PLACED BY CONTRACT IN ACCORDANCE WITH SECTION 801 OF THE 2018 NORTH CAROLINA STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES.

EFF. 01-16-2018
REV.

2018 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, 2018 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
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
DIVISION 8 - INCIDENTALS	
806.01	Concrete Right-of-Way Marker
840.18	Concrete Grated Drop Inlet Type 'B' - 12" thru 36" Pipe
840.24	Frames and Narrow Slot Sag Grates
840.25	Anchorage for Frames - Brick or Concrete or Precast
840.27	Brick Grated Drop Inlet Type 'B' - 12" thru 36" Pipe
840.45	Precast Drainage Structure
840.66	Drainage Structure Steps
846.01	Concrete Curb, Gutter and Curb & Gutter
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units

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USER: jdaves

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STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

Note: Not to Scale

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

BOUNDARIES AND PROPERTY:

- State Line
- County Line
- Township Line
- City Line
- Reservation Line
- Property Line
- Existing Iron Pin — EIP
- Computed Property Corner
- Property Monument — ECM
- Parcel/Sequence Number — 123
- Existing Fence Line
- 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
- Existing Historic Property Boundary — HPB
- Known Contamination Area: Soil — S
- Potential Contamination Area: Soil — S
- Known Contamination Area: Water — W
- Potential Contamination Area: Water — W
- Contaminated Site: Known or Potential

BUILDINGS AND OTHER CULTURE:

- Gas Pump Vent or U/G Tank Cap
- Sign — S
- 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 — FLOW
- False Sump

RAILROADS:

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

RIGHT OF WAY & PROJECT CONTROL:

- Secondary Horiz and Vert Control Point
- Primary Horiz Control Point
- Primary Horiz and Vert Control Point
- Exist Permanent Easment Pin and Cap
- New Permanent Easement Pin and Cap
- Vertical Benchmark
- Existing Right of Way Marker
- Existing Right of Way Line
- New Right of Way Line — RW
- New Right of Way Line with Pin and Cap — RW
- New Right of Way Line with Concrete or Granite R/W Marker — RW
- New Control of Access Line with Concrete C/A Marker — CA
- Existing Control of Access — CA
- New Control of Access — CA
- Existing Easement Line — E
- New Temporary Construction Easement — E
- New Temporary Drainage Easement — TDE
- New Permanent Drainage Easement — PDE
- New Permanent Drainage / Utility Easement — DUE
- New Permanent Utility Easement — PUE
- New Temporary Utility Easement — TUE
- New Aerial Utility Easement — AUE

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

VEGETATION:

- Single Tree
- Single Shrub
- Hedge
- Woods Line
- 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 — S
- Storm Sewer — S

UTILITIES:

POWER:

- Existing Power Pole
- Proposed Power Pole
- Existing Joint Use Pole
- Proposed Joint Use Pole
- Power Manhole — P
- Power Line Tower
- Power Transformer
- U/G Power Cable Hand Hole
- H-Frame Pole
- U/G Power Line LOS B (S.U.E.*) — P
- U/G Power Line LOS C (S.U.E.*) — P
- U/G Power Line LOS D (S.U.E.*) — P

TELEPHONE:

- Existing Telephone Pole
- Proposed Telephone Pole
- Telephone Manhole — T
- Telephone Pedestal — T
- Telephone Cell Tower
- U/G Telephone Cable Hand Hole
- U/G Telephone Cable LOS B (S.U.E.*) — T
- U/G Telephone Cable LOS C (S.U.E.*) — T
- U/G Telephone Cable LOS D (S.U.E.*) — T
- U/G Telephone Conduit LOS B (S.U.E.*) — TC
- U/G Telephone Conduit LOS C (S.U.E.*) — TC
- U/G Telephone Conduit LOS D (S.U.E.*) — TC
- U/G Fiber Optics Cable LOS B (S.U.E.*) — T FO
- U/G Fiber Optics Cable LOS C (S.U.E.*) — T FO
- U/G Fiber Optics Cable LOS D (S.U.E.*) — T FO

WATER:

- Water Manhole — W
- Water Meter
- Water Valve
- Water Hydrant
- U/G Water Line LOS B (S.U.E*) — W
- U/G Water Line LOS C (S.U.E*) — W
- U/G Water Line LOS D (S.U.E*) — W
- Above Ground Water Line — A/G Water

TV:

- TV Pedestal — C
- TV Tower
- U/G TV Cable Hand Hole — HH
- U/G TV Cable LOS B (S.U.E.*) — TV
- U/G TV Cable LOS C (S.U.E.*) — TV
- U/G TV Cable LOS D (S.U.E.*) — TV
- U/G Fiber Optic Cable LOS B (S.U.E.*) — TV FO
- U/G Fiber Optic Cable LOS C (S.U.E.*) — TV FO
- U/G Fiber Optic Cable LOS D (S.U.E.*) — TV FO

GAS:

- Gas Valve
- Gas Meter
- U/G Gas Line LOS B (S.U.E.*) — G
- U/G Gas Line LOS C (S.U.E.*) — G
- U/G Gas Line LOS D (S.U.E.*) — G
- Above Ground Gas Line — A/G Gas

SANITARY SEWER:

- Sanitary Sewer Manhole
- Sanitary Sewer Cleanout
- U/G Sanitary Sewer Line — SS
- Above Ground Sanitary Sewer — A/G Sanitary Sewer
- SS Forced Main Line LOS B (S.U.E.*) — FSS
- SS Forced Main Line LOS C (S.U.E.*) — FSS
- SS Forced Main Line LOS D (S.U.E.*) — FSS

MISCELLANEOUS:

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

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PROJECT REFERENCE NO.	SHEET NO.
14SP.20201.1	1C-1
Location and Surveys	

SURVEY CONTROL SHEET 19-0163

-FINAL-

BL

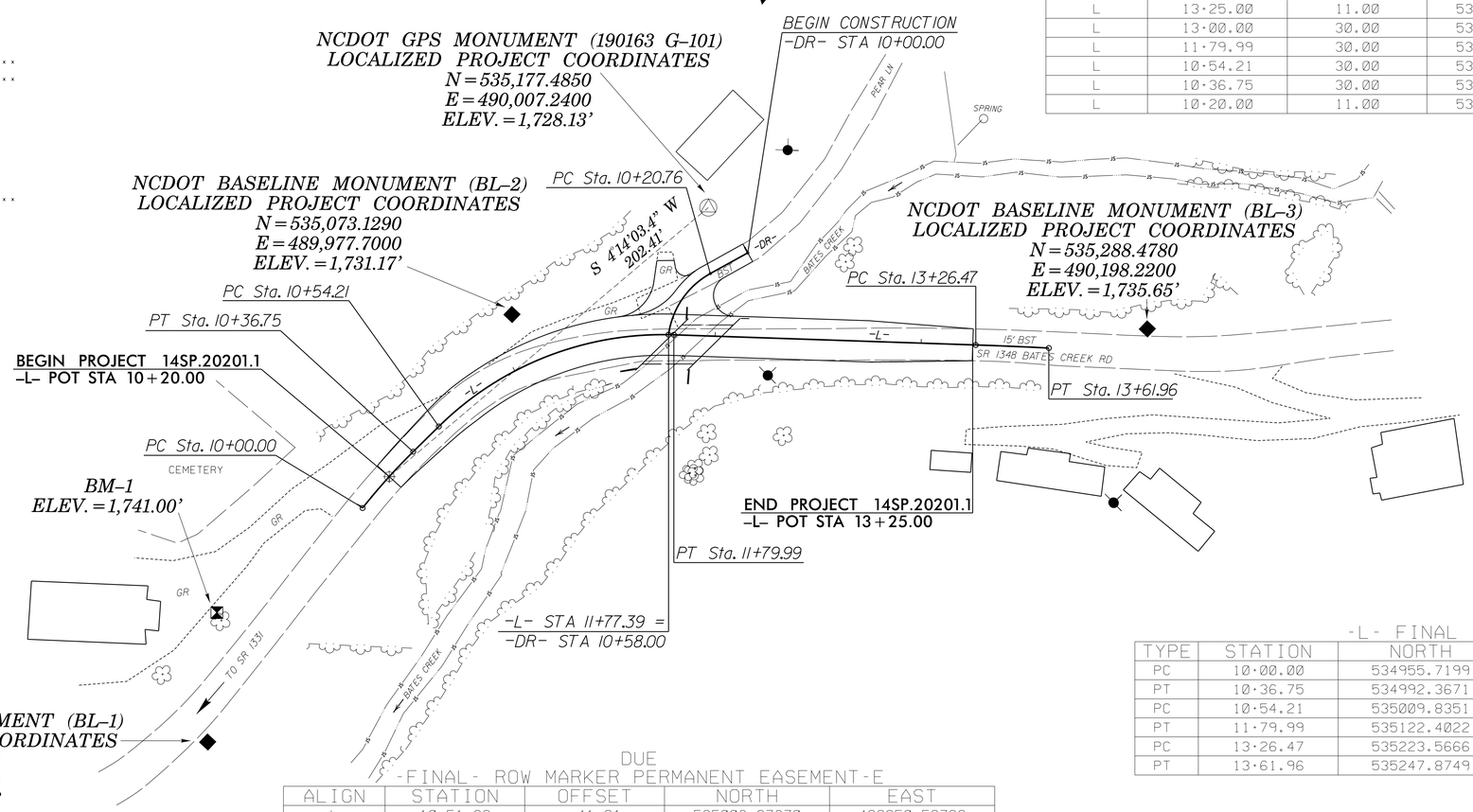
POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
1	BL-1	534822.6020	490022.7020	1724.28	OUTSIDE PROJECT LIMITS	
2	BL-2	535073.1290	489977.7000	1731.17	11+09.84	25.32 LT
3	BL-3	535288.4780	490198.2200	1735.65	OUTSIDE PROJECT LIMITS	

****
BM1 ELEVATION = 1741.00'
N 534869.72 E 489980.97
L STATION 10+20.00
S 6°06'20.83" W DIST 106.51'
8" SPIKE SET IN THE ROOT OF A 26" RED
OAK TREE
****
****
BM2 ELEVATION = 1734.76'
N 535423.56 E 490317.31
L STATION 13+25.00
N 40°40'42.27" E DIST 265.05'
8" SPIKE SET IN THE BASE OF A 28"
WALNUT TREE
****

NAD 83 NC GRID NA 2011

-FINAL- ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	10+20.00	-11.00	534974.98423	489981.31440
L	10+36.75	-30.00	534992.27612	489961.77747
L	10+54.21	-30.00	535009.74411	489961.72449
L	11+79.99	-30.00	535144.09835	490018.95671
L	13+00.00	-30.00	535226.98012	490105.74766
L	13+25.00	-11.00	535230.50501	490136.94982
L	13+25.00	11.00	535214.59447	490152.14373
L	13+00.00	30.00	535183.58775	490147.18558
L	11+79.99	30.00	535100.70598	490060.39463
L	10+54.21	30.00	535009.92608	490021.72422
L	10+36.75	30.00	534992.45810	490021.77720
L	10+20.00	11.00	534976.27826	490003.27631



-L- FINAL

TYPE	STATION	NORTH	EAST
PC	10+00.00	534955.7199	489994.1361
PT	10+36.75	534992.3671	489991.7773
PC	10+54.21	535009.8351	489991.7244
PT	11+79.99	535122.4022	490039.6757
PC	13+26.47	535223.5666	490145.6116
PT	13+61.96	535247.8749	490171.4605

DUE
-FINAL- ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	10+51.38	-41.21	535006.87670	489950.52792
L	10+78.22	-60.94	535042.97103	489933.26559
L	10+95.73	-30.00	535058.72302	489968.17193

PDE
-FINAL- ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	10+54.21	30.00	535009.92608	490021.72422
L	12+00.00	30.00	535114.52454	490074.86495

PUE
-FINAL- ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	11+07.27	42.77	535047.65486	490040.89214
L	11+88.60	75.79	535073.53624	490098.24517
L	12+43.18	30.00	535144.34271	490106.08952

GEOID MODEL - G12NC
NOTE: DRAWING NOT TO SCALE

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "190163 G-101" WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF NORTHING: 535177.485(ft) EASTING: 490007.240(ft) ELEVATION: 1728.13(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9997974554
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "190163 G-101" TO -L- STATION 10+20.00 IS S 4°14'03.4" W 202.41'
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

NOTES:

1. *THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT: HTTPS://CONNECT.NCDOT.GOV/RESOURCES/LOCATION/*

   THE FILES TO BE FOUND ARE AS FOLLOWS: 19-0163_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
7/11/2018 11:44:33 AM
V:\Asset\Transportation\31236-11 MTC 14SP.20201.1 Cherokee 163\Roadway\Proj\190163_ls_1c-1.dgn

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PROJECT REFERENCE NO.	SHEET NO.
14SP.2020.1	2A-1

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL ENGINEER
Docu Sign Envelope ID: 28960
R. Lee M. Schuler
7/20/2018 10:11:25 AM PDT

PAVEMENT DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL ENGINEER
Docu Sign Envelope ID: 26960
R. Lee M. Schuler
7/20/2018 10:11:25 AM PDT

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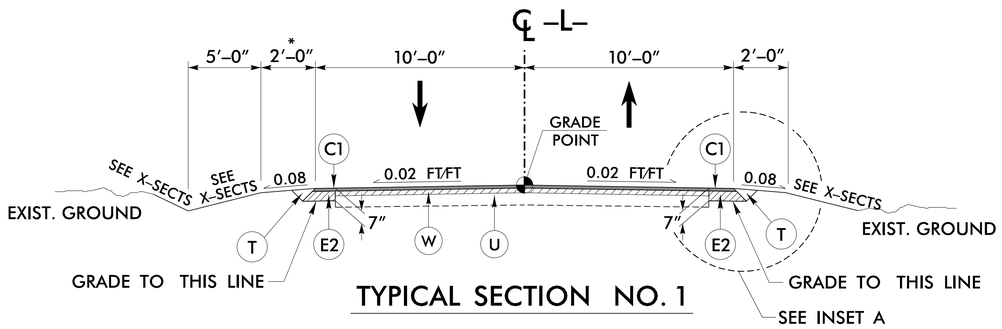


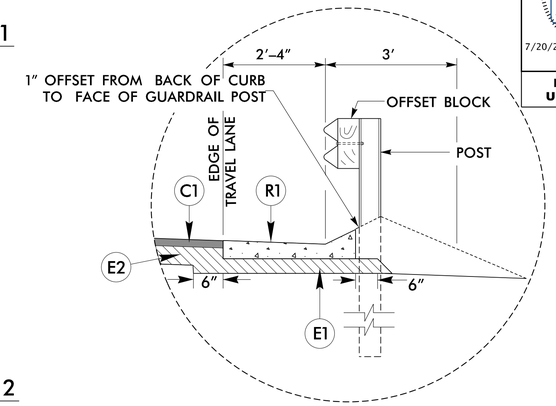
TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1

–L– STA. 10+20.00 TO –L– STA. 11+79.00

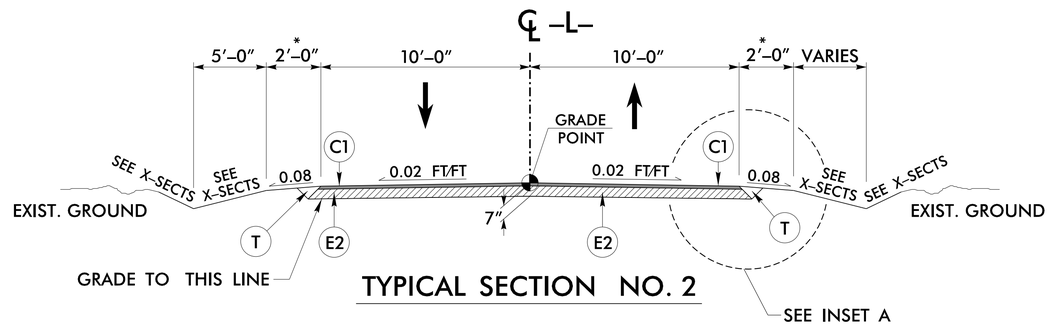
–L– STA. 12+20.00 TO –L– STA. 13+25.00

* 7′–0″ WITH GUARDRAIL



INSET A

–L– STA 10+97.00 RT. TO –L– STA 12+18.39 RT.



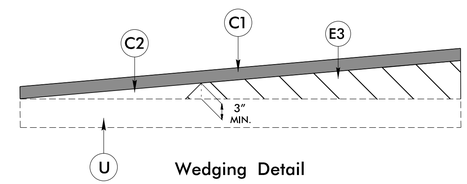
TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2

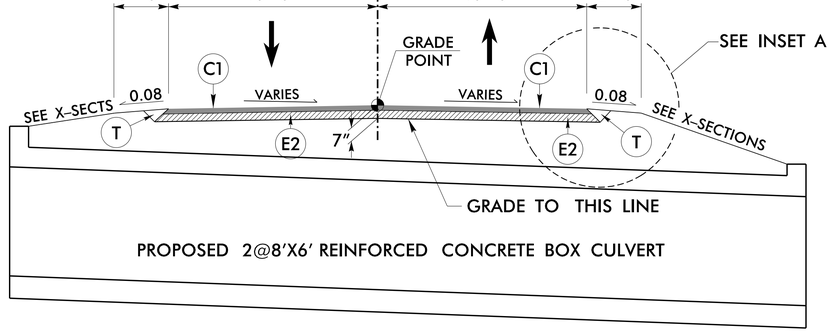
–L– STA. 11+79.00 TO –L– STA. 11+83.06 (BEGIN CULVERT)

–L– STA. 12+12.84 (END CULVERT) TO –L– STA. 12+20.00

* 7′–0″ WITH GUARDRAIL



Wedging Detail

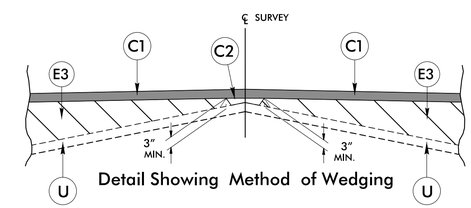


TYPICAL SECTION NO. 3

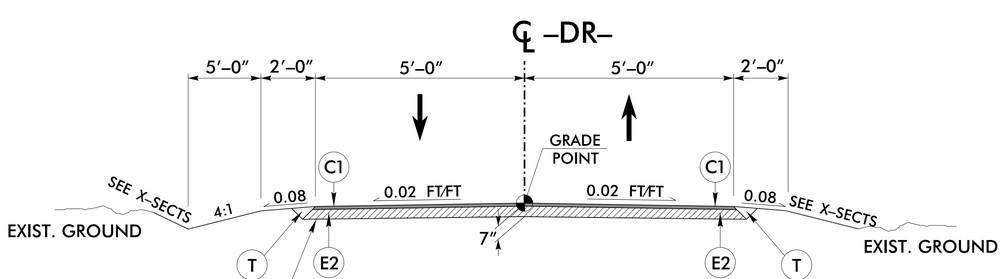
USE TYPICAL SECTION NO. 3

–L– STA. 11+83.06 (BEGIN CULVERT) TO –L– STA. 12+12.84 (END CULVERT)

* 7′–0″ WITH GUARDRAIL



Detail Showing Method of Wedging



TYPICAL SECTION NO. 4

USE TYPICAL SECTION NO. 4

–DR– STA. 10+00.00 TO –DR– STA. 10+47.68

	PAVEMENT SCHEDULE
C1	PROP. APPROX. 3″ ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C 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. 3″ ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD.
E2	PROP. APPROX. 4″ ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E3	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, 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.
J1	6″ AGGREGATE BASE COURSE
R1	SHOULDER BERM GUTTER (NCDOT STANDARD DWG 846.01)
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	PROPOSED WEDGING (SEE APPROPRIATE DETAILS)

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

DRAWINGS NOT TO SCALE

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PROJECT REFERENCE NO.	SHEET NO.
14SP.2020.1	2A-2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
7/20/2018 10:11:25 AM PDT	7/20/2018 10:11:25 AM PDT

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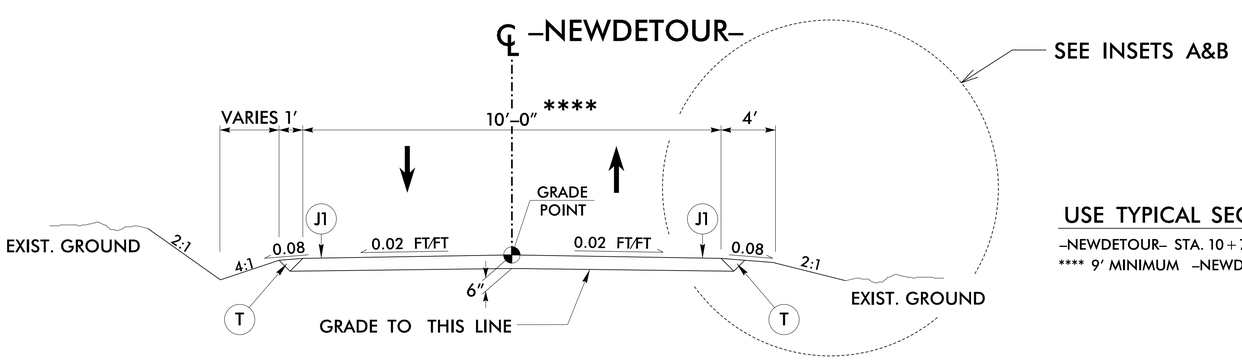
	PAVEMENT SCHEDULE
C1	PROP. APPROX. 3″ ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1″ DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1½″ IN DEPTH.
E1	PROP. APPROX. 3″ ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD.
E2	PROP. APPROX. 4″ ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E3	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, 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.
J1	6″ AGGREGATE BASE COURSE
R1	SHOULDER BERM GUTTER (NCDOT STANDARD DWG 846.01)
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	PROPOSED WEDGING (SEE APPROPRIATE DETAILS)

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

DRAWINGS NOT TO SCALE

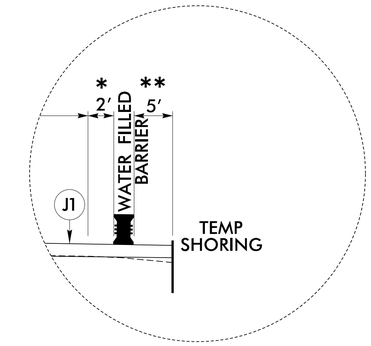


TYPICAL SECTION NO. 5

* 1′ MIN.
** VARIES (3′ MIN.)
*** VARIES SEE X–SECTIONS

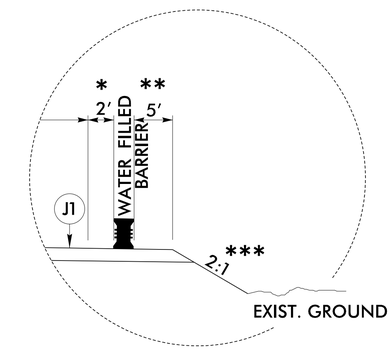
USE TYPICAL SECTION NO. 5

–NEWDETOUR– STA. 10+74.81 TO –NEWDETOUR– STA. 13+23.32
**** 9′ MINIMUM –NEWDETOUR– STA. 12+00 TO 12+30



INSET A

–NEWDETOUR– STA. 11+40 TO –NEWDETOUR– STA. 12+11 RT



INSET B

–NEWDETOUR– STA. 12+11 TO –NEWDETOUR– STA. 12+80 RT
–NEWDETOUR– STA. 12+50 TO –NEWDETOUR– STA. 12+80 LT

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PROJECT REFERENCE NO.	SHEET NO.
14SP.20201.1	2B-1
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 026960 ENGINEER Kevin M. Schmidt
7/20/2018 10:14:16 AM PDT

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 033023 ENGINEER Bradley Kilmer
7/20/2018 1:35:51 PM EDT

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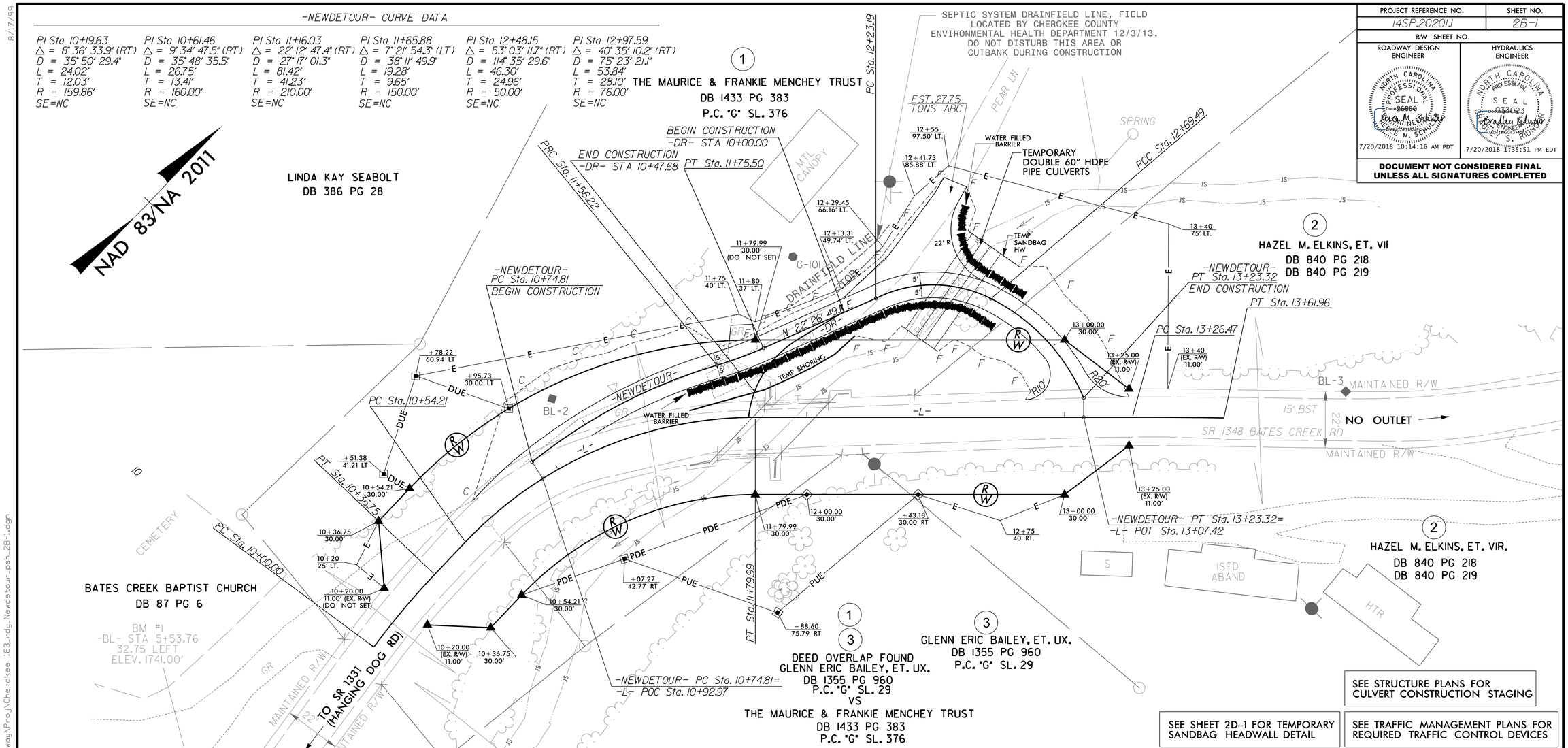
-NEWDETOUR- CURVE DATA

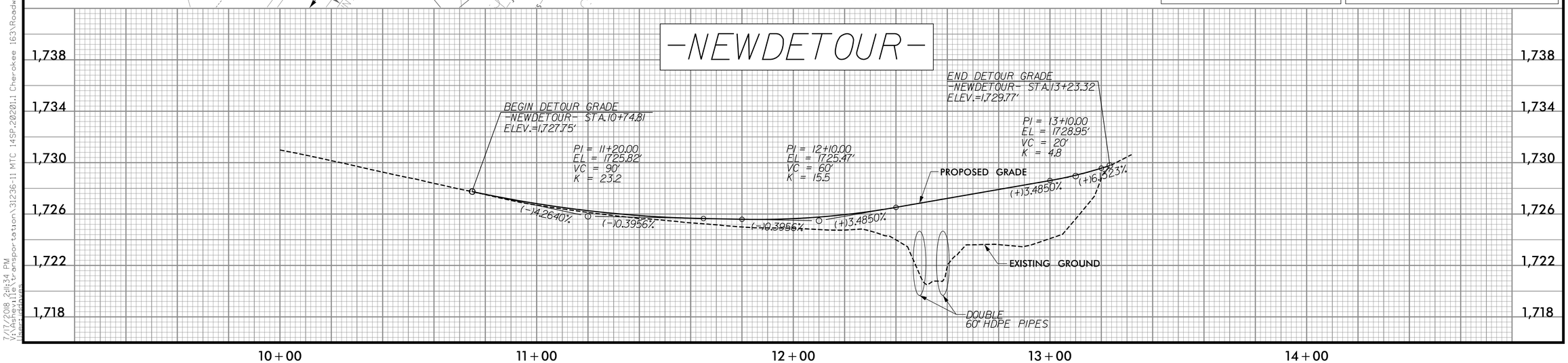
PI Sta 10+19.63	PI Sta 10+61.46	PI Sta 11+16.03	PI Sta 11+65.88	PI Sta 12+48.15	PI Sta 12+97.59
Δ = 8° 36' 33.9" (RT)	Δ = 9° 34' 47.5" (RT)	Δ = 22° 12' 47.4" (RT)	Δ = 7° 21' 54.3" (LT)	Δ = 53° 03' 11.7" (RT)	Δ = 40° 35' 10.2" (RT)
D = 35° 50' 29.4"	D = 35° 48' 35.5"	D = 27° 17' 01.3"	D = 38° 11' 49.9"	D = 114° 35' 29.6"	D = 75° 23' 21.1"
L = 24.02'	L = 26.75'	L = 81.42'	L = 19.28'	L = 46.30'	L = 53.84'
T = 12.03'	T = 13.41'	T = 41.23'	T = 9.65'	T = 24.96'	T = 28.10'
R = 159.86'	R = 160.00'	R = 210.00'	R = 150.00'	R = 50.00'	R = 76.00'
SE=NC	SE=NC	SE=NC	SE=NC	SE=NC	SE=NC



SEE STRUCTURE PLANS FOR CULVERT CONSTRUCTION STAGING

SEE SHEET 2D-1 FOR TEMPORARY SANDBAG HEADWALL DETAIL

SEE TRAFFIC MANAGEMENT PLANS FOR REQUIRED TRAFFIC CONTROL DEVICES



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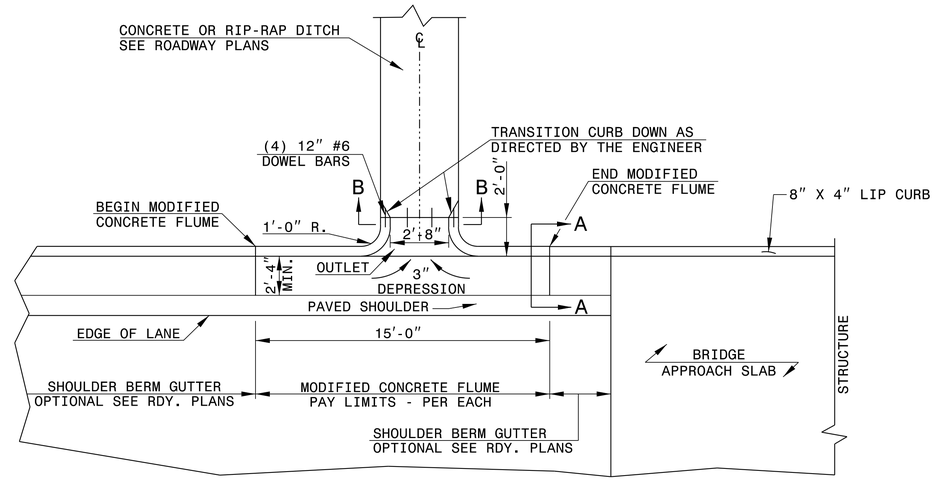
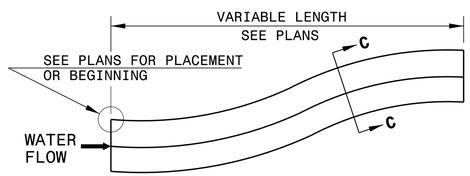
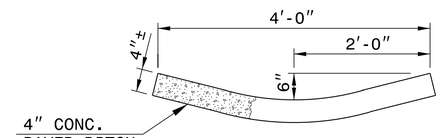
PROJECT REFERENCE NO.	SHEET NO.
14SP.2020I.1	2C-1



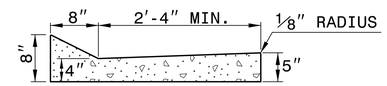
PLAN VIEW



DOWNGRADE OR SAG



SECTION C-C



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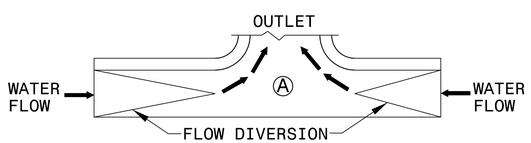
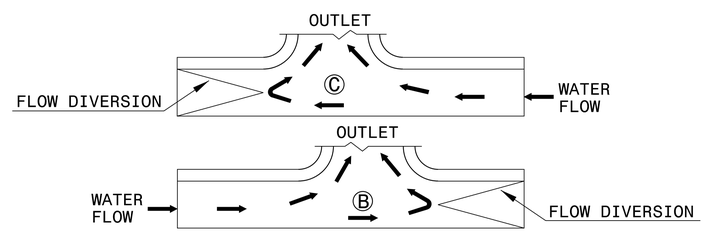
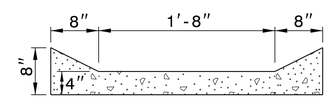


SAG



DOWN GRADE

FLOW DIVERSION EXAMPLES



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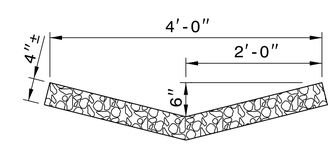

RIP-RAP LINED DITCH

NOTES:

- CONSTRUCT MODIFIED CONCRETE FLUME AND SHOULDER BERM GUTTER IN ACCORDANCE WITH THIS DETAIL.
- CONSTRUCT CONCRETE DITCH IN ACCORDANCE WITH STD. DWG. NO. 850.01.
- CONSTRUCT RIP RAP LINED DITCH IN ACCORDANCE WITH THIS DETAIL, IF CALLED FOR IN PLANS.
- CONCRETE OR RIP RAP LINED DITCH SHALL BE THE TYPE AND LENGTH SPECIFIED BY THE ROADWAY PLANS. THE DITCH SHALL TERMINATE AS SHOWN ON THE PLANS. IF NO TERMINATION IS INDICATED PLACE RIP-RAP AT THE END OF THE DITCH AS INDICATED BY STD. DWG. 876.02 FOR AN 18″ PIPE. TRANSITIONS FROM THE DITCH TO TERMINATION SHALL BE AS DIRECTED BY THE ENGINEER.
- MODIFICATIONS SHALL BE AS DICTATED BY SITE CONDITIONS AND DIRECTED BY THE ENGINEER.
- MODIFIED CONCRETE FLUME OUTLET SHALL BE PLACED BETWEEN PROPOSED GUARDRAIL POSTS.

MODIFIED CONCRETE FLUME

3/23/2018
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kerry.moore

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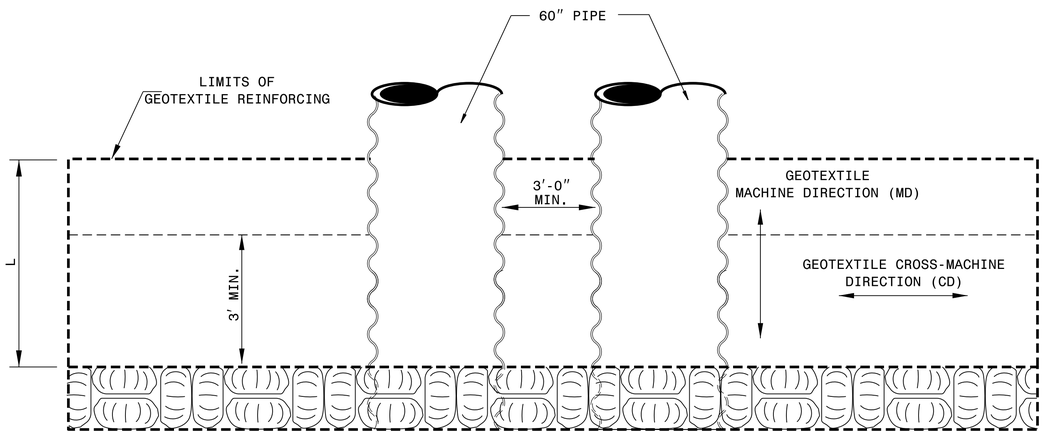
PROJECT REFERENCE NO.	SHEET NO.
14SP.20201.1	2D-1



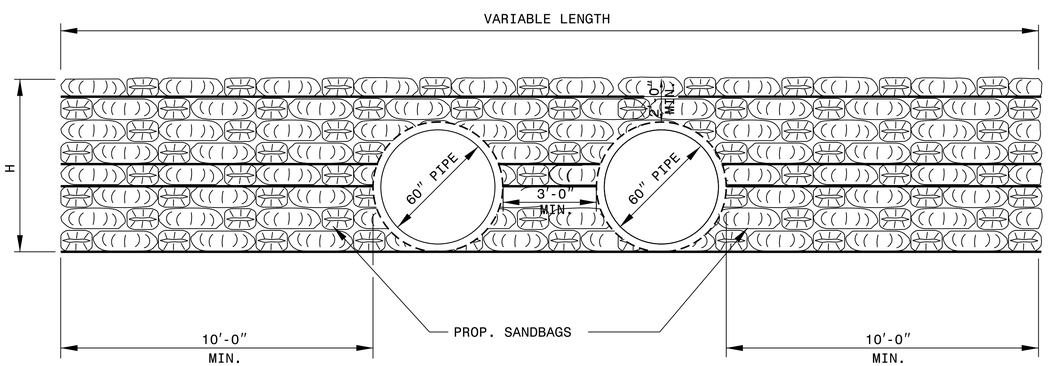
PLAN

GENERAL NOTES:

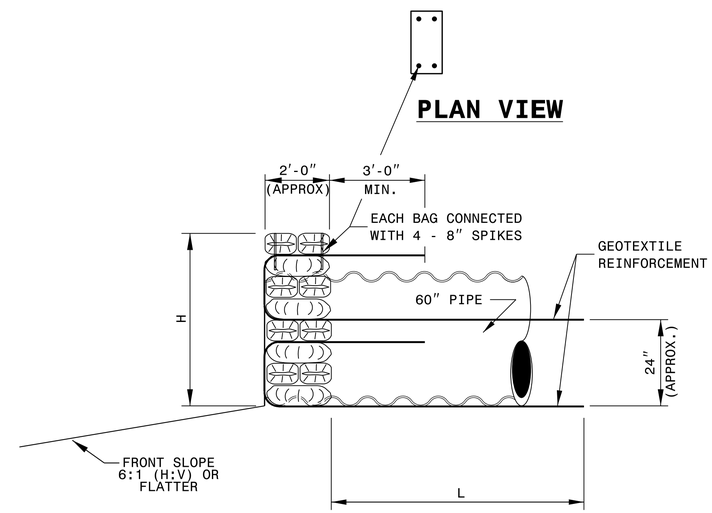
1. FOR REINFORCED SANDBAG HEADWALLS, SEE SANDBAG HEADWALLS PROVISION.
2. REINFORCED SANDBAG HEADWALLS ARE BASED ON A TRAFFIC SURCHARGE OF 250 LB/SF OR LESS AND A BACK SLOPE OF 2:1(H:V) OR FLATTER.
3. REINFORCED SANDBAG HEADWALLS ARE BASED ON THE FOLLOWING IN-SITU ASSUMED SOIL PARAMETERS:

   UNIT WEIGHT, γ = 120 LB/CF
   FRICTION ANGLE, ϕ = 30 DEGREES
   COHESION, c = 0 LB/SF

4. DO NOT USE REINFORCED SANDBAG HEADWALLS IF ASSUMED SOIL PARAMETERS ARE NOT APPLICABLE.
5. DO NOT USE REINFORCED SANDBAG HEADWALLS WHEN VERY LOOSE OR SOFT SOIL OR MUCK IS BELOW SANDBAGS OR PIPES.
6. DO NOT PLACE GEOTEXTILE REINFORCEMENT OR SANDBAGS UNTIL EXCAVATION DIMENSIONS AND FOUNDATION MATERIAL ARE APPROVED.
7. 24″ LONG #4 REINFORCING STEEL BARS MAY BE SUBSTITUTED FOR 8″ LONG STEEL SPIKES. DRIVE #4 BAR THROUGH NO MORE THAN 5 SANDBAGS.
8. DO NOT SPLICE OR OVERLAP GEOTEXTILE REINFORCEMENT SO SEAMS ARE PARALLEL TO THE HEADWALL FACE.
9. HEADWALL DIMENSIONS MAY BE ADJUSTED FOR ONE OR MORE PIPES AS SHOWN IN THE PLANS.



FRONT ELEVATION



SIDE ELEVATION

GEOTEXTILE REINFORCEMENT (TYPE 5 GEOTEXTILE)		
WALL HEIGHT H (ft)	REINF. LENGTH L (ft)	WIDE WIDTH TENSILE STRENGTH @ ULTIMATE (MD) (lb/ft)
< 4	6	2400
4 TO 6	6	3400
6 TO 8	= H	4300
8 TO 10	= H	5200
10 TO 12	= H	6200

TOTAL MIN. AREA SANDBAG HEADWALLS = 233 S.F.

8/27/2018 8:14:37 AM EDT

NORTH CAROLINA PROFESSIONAL SEAL 022966 ENGINEER

DocuSigned by: HOWERTON, JOSEPH T.
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CONTRACT STANDARDS & DEVELOPMENT UNIT
STANDARDS AND SPECIAL DESIGN
Office 919-707-6950 FAX 919-250-4119

DETAIL OF REINFORCED SANDBAG HEADWALL

ORIGINAL BY: _____ DATE: _____
MODIFIED BY: KKEMPF DATE: 9-26-17
CHECKED BY: _____ DATE: _____
FILE SPEC.: s:details/howerton/sandbagheadwall.dgn

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14SP.2020IJ	3B-1

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

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.

SUMMARY OF EARTHWORK

IN CUBIC YARDS

LOCATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBT+%	BORROW	WASTE
SUMMARY NO.1					
-NEWDETOUR- STA. 10+80 TO STA. 13+10	131		390	259	
SUBTOTAL	131		390	259	
SUMMARY NO.2					
-L- STA. 10+20 TO STA. 13+25	139		473	334	
SUBTOTAL	139		473	334	
SUMMARY NO.3					
-NEWDETOUR- REMOVAL STA. 10+80 TO STA. 13+10	243				243
SUBTOTAL	243				243
PROJECT TOTAL	513		863	593	243
EST.5% FOR REPLACING TOP SOIL ON BORROW PITS				30	
GRAND TOTAL	513			623	
SAY	515			625	

CONTINGENCY ITEMS:

INCIDENTAL STONE = 50 TONS

UNDERCUT EXCAVATION = 50 CY

SELECT GRANULAR MATERIAL = 50 CY

GEOTEXTILE FOR SOIL STABILIZATION = 50 SY

Approximate quantities only. Unclassified excavation, fine grading, clearing and grubbing, and removal of existing pavement will be paid for at the contract lump sum price for "grading".

SHOULDER BERM GUTTER SUMMARY

SURVEY LINE	STATION	STATION	LENGTH
-L-	10+97.00 RT	12+18.39 RT	121.39'
		TOTAL:	121.39'
		SAY:	122'

PAVEMENT REMOVAL SUMMARY

IN SQUARE YARDS

LINE	LOCATION	ASPHALT REMOVAL	ASPHALT BREAK-UP	CONCRETE REMOVAL	CONCRETE REMOVAL
-L-	12+03 TO 12+20	38			
	TOTAL	38			
	SAY	40			

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14SP.2020IJ	3B-2

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TOTAL SHOULDER WIDTH = DISTANCE FROM EDGE OF TRAVEL LANE TO SHOULDER BREAK POINT.
FLARE LENGTH = DISTANCE FROM LAST SECTION OF PARALLEL GUARDRAIL TO END OF GUARDRAIL.
G = GATING IMPACT ATTENUATOR TYPE 350
NG = NON-GATING IMPACT ATTENUATOR TYPE 350
"N" = DISTANCE FROM EDGE OF LANE TO FACE OF GUARDRAIL.
W = TOTAL WIDTH OF FLARE FROM BEGINNING OF TAPER TO END OF GUARDRAIL.

TEMPORARY GUARDRAIL SUMMARY

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHOUL. WIDTH	FLARE LENGTH		W		ANCHORS									IMPACT ATTENUATOR TYPE 350			SINGLE FACED GUARDRAIL	TEMP WATER FILLED BARRIER	REMOVE TEMP WATER FILLED BARRIER	REMARKS
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	XI MOD	XI	GREU 350 TL-2	M-350	TYPE III	CAT-1	B-77	BIC	AT-1	EA	G	NG				
-NEWDETOUR-	11+41.10	12+76.72	RT																									135.62'	135.62'	
-NEWDETOUR-	12+53.60	12+79.73	LT																									50'	50'	
			SUBTOTAL																									185.62'	185.62'	
			PROJECT TOTALS:																									187.5'	187.5'	

GUARDRAIL SUMMARY

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHOUL. WIDTH	FLARE LENGTH		W		ANCHORS									IMPACT ATTENUATOR TYPE 350			SINGLE FACED GUARDRAIL	REMOVE EXISTING GUARDRAIL		REMARKS
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	XI MOD	XI	GREU 350 TL-2	M-350	TYPE III	CAT-1	B-77	BIC	AT-1	EA	G	NG				
-L-	10+69.00	12+56.50	RT	112.5'	75'		11+58		2.33'	6'	25'	25'	1'	1'			2													
-L-	12+00.00	12+75.00	LT	50'	31.25'		12+33	12+10	4'	7'	25'	6.25'	1'	1'			1						1							
			SUBTOTAL	162.50'	106.25'																									
		LESS DEDUCTIONS FOR ANCHORS																												
			AT-1 1 @ 6.25'=		-6.25'																									
			GREU 350 TL-2 3 @ 25'=	-75'																										
			PROJECT TOTALS:	87.5'	100'												3						1							
		ADDITIONAL GUARDRAIL POSTS=5 EA.																												

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6/21/00

COMPUTED BY: KTB DATE: 10-19-15
CHECKED BY: DATE:

PROJECT REFERENCE NO.	SHEET NO.
14SP.20201.1	3D-1

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

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

SUB-REGIONAL & REGIONAL
LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48" & UNDER)

STATION	LOCATION (LT,RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	DRAINAGE PIPE (RCP, CSP, CAAP, HDPE, or PVC) 12"	15"	18"	24"	30"	36"	42"	48"	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE
SIZE																			
THICKNESS OR GAUGE																			
-L- 11+00	LT	0402		1726.59	1721.72														
-L- 11+00	℄	0402	0401		1721.72	1720.1													
-L- 11+63.64	LT	0403		1724.39	1722.14														
-L- 11+63.64	LT	0403	0402		1722.14	1721.72													
-L- 12+25	RT	0404																	
TOTAL																			

STATION	C.S. PIPE 12"	15"	18"	24"	36"	42"	48"	R.C. PIPE (CLASS III) 15"	18"	24"	30"	36"	42"	48"	R.C. PIPE (CLASS IV) 12"	15"	18"	24"	30"	36"	42"	48"
SIZE																						
THICKNESS OR GAUGE	.064	.064	.064	.064	.079	.109	.109															
-L- 11+00																						
-L- 11+00																		48				
-L- 11+63.64																						
-L- 11+63.64									72													
-L- 12+25																						
TOTAL									72									48				

STATION	*** R.C. PIPE (CLASS V)	*** R.C. PIPE CULVERTS, CONTRACTOR DESIGN PIPE	*** R.C. PIPE CULVERTS, CONTRACTOR DESIGN PIPE	15" SIDE DRAIN PIPE	18" SIDE DRAIN PIPE	ENDWALLS: STD. 838.01, STD. 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YDS. R.C.P.	C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES * TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL. 'B') LIN. FT. A	B	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G	CONCRETE TRANSITIONAL SECTION CATCH BASIN	DROP INLET	MODIFIED CONCRETE FLUME (PER EACH)	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	840.18 OR 840.27	CORR. STEEL ELBOWS NO. & SIZE	CONC. COLLARS CL. "B" C.Y. STD 840.72	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	PIPE REMOVAL LIN.FT.
SIZE																						
THICKNESS OR GAUGE								PER EACH (0' THRU 5.0')	5.0' THRU 10.0'	10.0' AND ABOVE												
-L- 11+00								1										1	1			
-L- 11+00																						
-L- 11+63.64								1										1	1			
-L- 11+63.64																						24
-L- 12+25								1									1					
TOTAL								3									1	2	2			24

STATION	REMARKS
-L- 11+00	
-L- 11+00	
-L- 11+63.64	
-L- 11+63.64	REVMOVE 18" CMP
-L- 12+25	
TOTAL	

ABBREVIATIONS

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

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

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 54" & OVER)

STATION	LOCATION (LT,RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	CLASS III R.C. PIPE (UNLESS NOTED OTHERWISE) 54"	60"	66"	72"	78"	84"			TEMPORARY C.S. PIPE 54" .109	.138	.168	SHOP ELON-GATED .138	.168	60" .138	.168	66" .138	.168	72" .138	.168		STRUCTURAL PLATE PIPE 60" 12	10		66" 12	10		72" 12	10					
SIZE																																								
THICKNESS OR GAUGE																																								
-NEWDETOUR-																																								
12+50	℄				1719.44	1719.12			44																															
12+60	℄				1719.44	1719.12			44																															
TOTAL									88																															

STATION	REINFORCED ENDWALLS WITH R.C. - C.Y.	WITH C.S. - C.Y.	MASONARY DRAINAGE STRUCTURES CUBIC YARDS	REINF. CONC. FLARED END SECTIONS NO. & SIZE	CORR. STEEL FLARED END SECTIONS NO. & SIZE	REINF. CONC. ELBOWS NO. & SIZE	CORR. STEEL ELBOWS NO. & SIZE	CONC. COLLARS CL. "B" C.Y. STD 840.72	REINFORCED SANDBAG HEADWALL SEE SHEET 2D-1	PIPE REMOVAL LIN.FT.	REMARKS
SIZE											
THICKNESS OR GAUGE											
-NEWDETOUR-											
12+50									1	44	TEMPORARY 60" HDPE
12+60										44	TEMPORARY 60" HDPE
TOTAL									1	88	

ABBREVIATIONS

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

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kbetenbaugh

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PROJECT REFERENCE NO.	SHEET NO.
14SP.20201.1	4
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 26960 ENGINEER — Kevin M. Schiff — 7/20/2018 10:14:16 AM PDT

HYDRAULICS ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 033023 ENGINEER — Brandon Rowe — 7/20/2018 1:33:51 PM EDT

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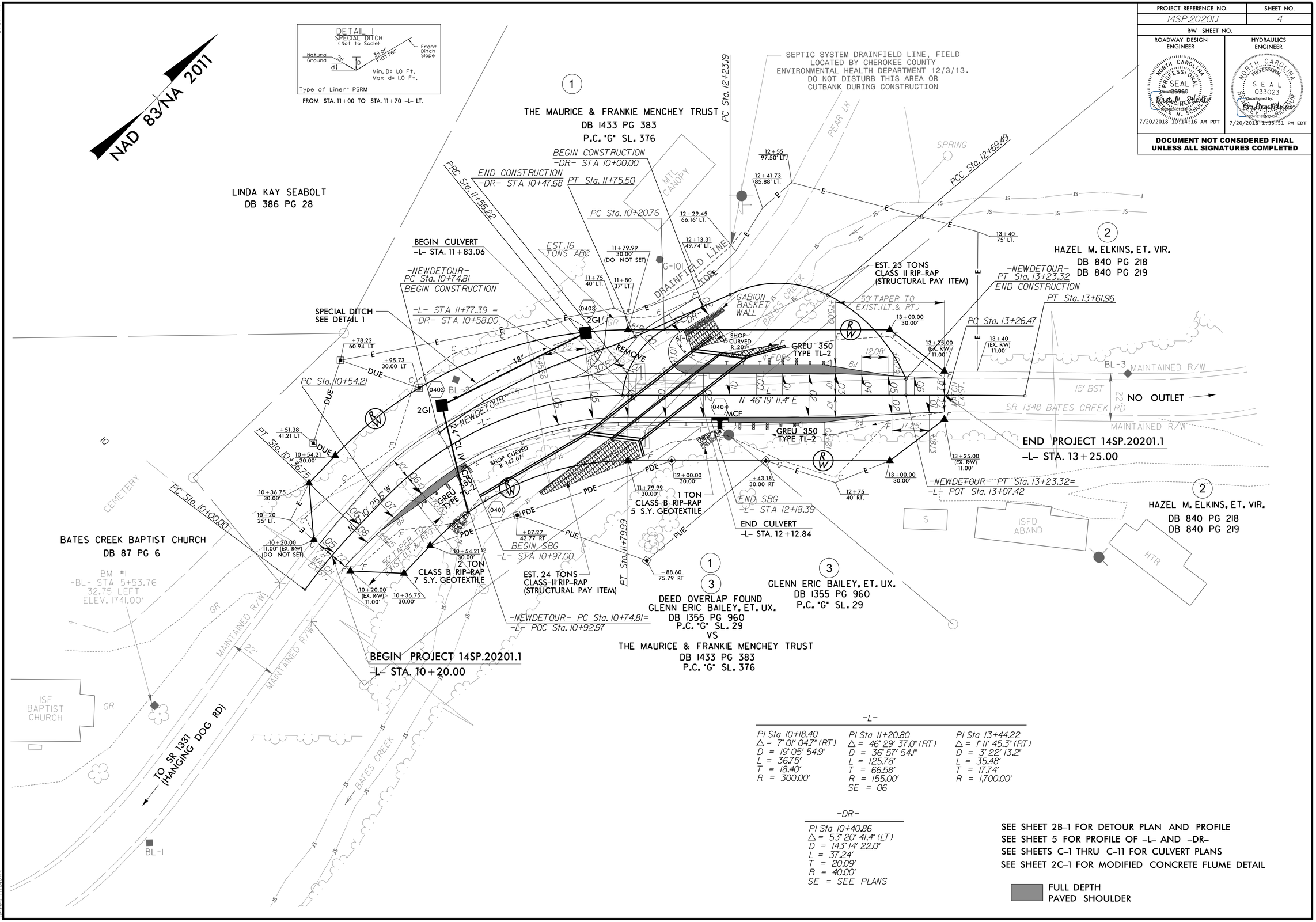

-L-

PI Sta 10+18.40	PI Sta 11+20.80	PI Sta 13+44.22
Δ = 7° 01' 04.7" (RT)	Δ = 46° 29' 37.0" (RT)	Δ = 1° 11' 45.3" (RT)
D = 19° 05' 54.9"	D = 36° 57' 54.1"	D = 3° 22' 13.2"
L = 36.75'	L = 125.78'	L = 35.48'
T = 18.40'	T = 66.58'	T = 17.74'
R = 300.00'	R = 155.00'	R = 1,700.00'
	SE = 06	

-DR-

PI Sta 10+40.86
Δ = 53° 20' 41.4" (LT)
D = 143° 14' 22.0"
L = 37.24'
T = 20.09'
R = 40.00'
SE = SEE PLANS

SEE SHEET 2B-1 FOR DETOUR PLAN AND PROFILE
SEE SHEET 5 FOR PROFILE OF -L- AND -DR-
SEE SHEETS C-1 THRU C-11 FOR CULVERT PLANS
SEE SHEET 2C-1 FOR MODIFIED CONCRETE FLUME DETAIL

FULL DEPTH PAVED SHOULDER

8/17/99

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Jesse Davis

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PROJECT REFERENCE NO.	SHEET NO.
14SP.2020.1.1	5

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 26060 ENGINEER KEVIN M. SCHULTZ

7/20/2018 10:11:16 AM PDT

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 033023 ENGINEER BRIAN CHASE KNOUR

DocuSigned by: 7/20/2018 1:35:51 PM EDT

SEE SHEET 4 FOR -L- DESIGN
SEE SHEET 4 FOR -DR- DESIGN

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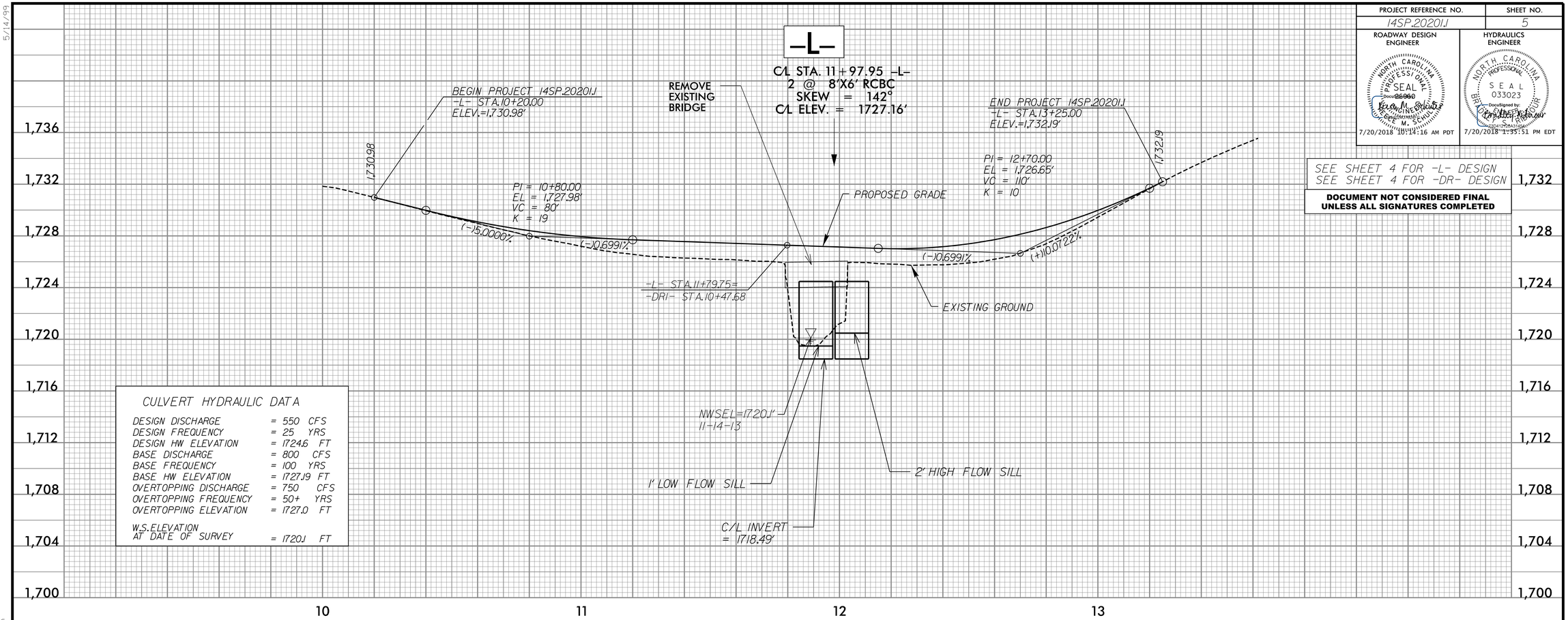
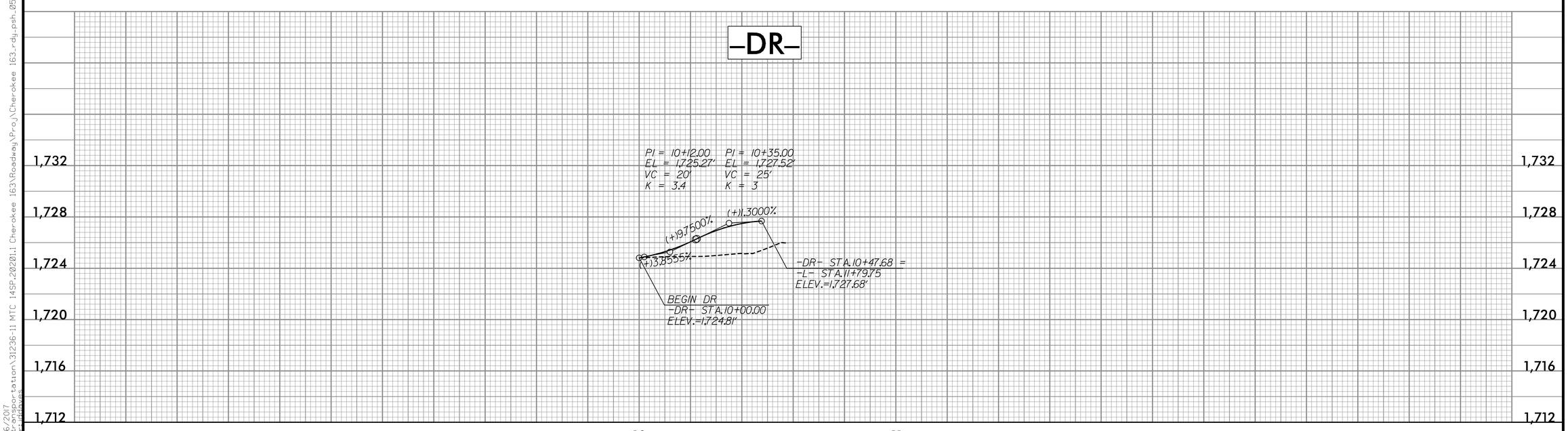


CULVERT HYDRAULIC DATA

DESIGN DISCHARGE	= 550	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 1724.6	FT
BASE DISCHARGE	= 800	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 1727.19	FT
OVERTOPPING DISCHARGE	= 750	CFS
OVERTOPPING FREQUENCY	= 50+	YRS
OVERTOPPING ELEVATION	= 1727.0	FT
W.S.ELEVATION AT DATE OF SURVEY	= 1720.1	FT



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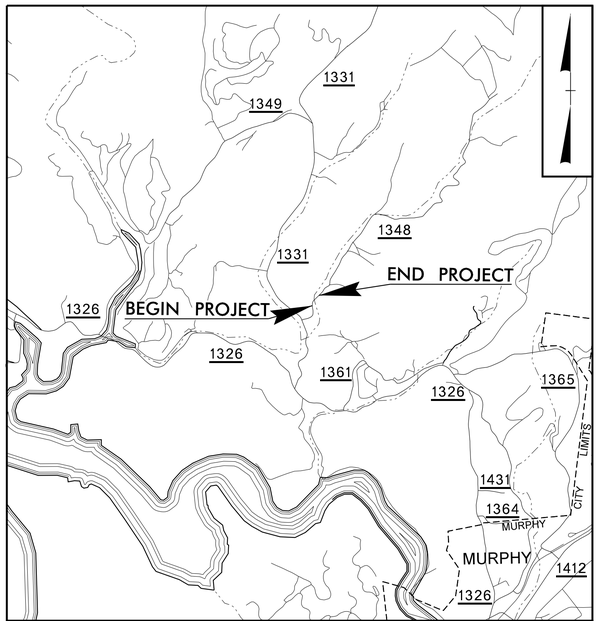
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

CHEROKEE COUNTY



VICINITY MAP

LOCATION: BRIDGE NO. 163 OVER BATES CREEK ON SR 1348 (BATES CREEK ROAD)

INDEX OF SHEETS

SHEET NO.	TITLE
TMP-1	TITLE SHEET, AND INDEX OF SHEETS
TMP-1A	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, LEGEND, AND TEMPORARY PAVEMENT MARKING
TMP-1B	TRANSPORTATION OPERATIONS PLAN: (MANAGEMENT STRATEGIES, GENERAL NOTES AND LOCAL NOTES)
TMP-2	SPECIAL SIGN DESIGNS
TMP-3	TEMPORARY TRAFFIC CONTROL PHASING
TMP-4	TEMPORARY TRAFFIC CONTROL PHASE I DETAIL
TMP-5	TEMPORARY TRAFFIC CONTROL PHASE II DETAIL
TMP-6	TEMPORARY TRAFFIC CONTROL PHASE III DETAIL

SHEET NO.
TMP-1

PROJECT: 14SP.20201.1

WORK ZONE SAFETY & MOBILITY
"from the MOUNTAINS to the COAST"

PLANS PREPARED BY:

LLOYD DEWAYNE BROWN, P.E., P.L.S.
PROJECT ENGINEER

C. GONZALEZ-MARTELL
PROJECT DESIGN ENGINEER

NCDOT CONTACTS:

JOSEPH E. HUMMER
PROJECT ENGINEER

DON A. PARKER, P.E.
PROJECT DESIGN ENGINEER

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

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Boone, NC 828-355-9933
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Knoxville, TN 865-546-5800
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Atlanta, GA 770-627-3590

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SEAL

NORTH CAROLINA PROFESSIONAL SEAL 20119 ENGINEER LLOYD D. BROWN

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PROJ. REFERENCE NO.	SHEET NO.
14SP.20201.1	TMP-1A

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS SHOWN IN "ROADWAY STANDARD DRAWINGS" - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2018 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
1101.01	WORK ZONE ADVANCE WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
1101.03	TEMPORARY ROAD 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	DRUM
1135.01	CONES
1145.01	BARRICADES
1150.01	FLAGGING DEVICES
1170.01	POSITIVE PROTECTION
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO-LANE AND MULTI-LANE ROADWAYS
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.12	PAVEMENT MARKINGS - BRIDGES
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

SIGNALS

- EXISTING
- PROPOSED
- TEMPORARY
- PORTABLE TRAFFIC SIGNAL

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

TEMPORARY PAVEMENT MARKING

SYMBOL	DESCRIPTION
	PAINT
P2	WHITE STOPBAR (24")
PA	WHITE EDGELINE (4")

APPROVED: DocuSigned by: Lloyd DeWayne Brown 339540F17F5746B...

DATE: 7/24/2018 11:57:23 AM PDT

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 20119 ENGINEER LLOYD D. BROWN

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

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ROADWAY STANDARD DRAWINGS & LEGEND

3/26/2018
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PROJ. REFERENCE NO.	SHEET NO.
14SP.20201.1	TMP-1B

GENERAL NOTES / LOCAL 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 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.

LOCAL NOTES:

1) EMERGENCY VEHICLE ACCESS MUST BE MAINTAINED AT ALL TIMES.

2) NOTIFY THE CHEROKEE COUNTY SCHOOL BOARD 30 DAYS PRIOR TO ANY LANE CLOSURES.

3) MAINTAIN ACCESS TO DRIVEWAYS DURING CONSTRUCTION

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.

PAVEMENT MARKING

N) INSTALL TEMPORARY PAVEMENT MARKINGS ON INTERIM LAYERS OF PAVEMENT AS FOLLOWS:

ROAD NAME	MARKING	MARKER
SR 1348 (BATES CREEK ROAD)	PAINT	NONE

O) 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.

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

Q) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS BY THE END OF EACH DAY'S OPERATION.

MISCELLANEOUS

R) IN THE EVENT A TIE-IN CANNOT BE MADE IN ONE DAY'S 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) 100 ft AND 200 ft RESPECTIVELY IN ADVANCE OF THE UNEVEN AREAS. USE DRUMS TO DELINEATE THE EDGE OF ROADWAY ALONG UNPAVED AREAS.

MANAGEMENT STRATEGIES

PHASE I DEPICTS SR 1348 (BATES CREEK ROAD) TRAFFIC TO BE MAINTAINED ON THE EXISTING ROAD WHILE THE PROPOSED -NEWDETOUR- CULVERT AND PORTION OF -NEWDETOUR- ARE CONSTRUCTED.

PHASE II DEPICTS SR 1348 (BATES CREEK ROAD) TRAFFIC TO BE MAINTAINED ON THE EXISTING ROAD WHILE THE REMAINING OF THE PROPOSED -NEWDETOUR- ROADWAY IS CONSTRUCTED.

PHASE III DEPICTS SR 1348 (BATES CREEK ROAD) VEHICLES SHIFTED TO A ONE-WAY TRAFFIC PATTERN ON THE -NEWDETOUR- USING TEMPORARY PORTABLE TRAFFIC SIGNALS AND PAVEMENT MARKINGS WHILE THE PROPOSED SR 1348 (BATES CREEK ROAD) ROADWAY AND CULVERT ARE CONSTRUCTED. A FLAGGING OPERATION WILL BE USED TO CONSTRUCT THE NEW TIE-INS.

APPROVED: DocuSigned by: Lloyd DeWayne Brown 33954DF17575468...

DATE: 7/24/2018 11:57:23 AM PDT

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 20119 ENGINEER LLOYD D. BROWN

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

TRANSPORTATION OPERATIONS PLAN

3/26/2018
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PROJ. REFERENCE NO.	SHEET NO.
14SP.20201.1	TMP-2

SIGN NUMR: PEAR LN
TYPE: D Ground
QUANTITY: 2

BACKG. COLOR: Orange
COPY COLOR: Black

DESIGN BY: CGM
PROJECT ID: 14SP.20201.1
CHK BY: LDB
DIV: 14
DATE: Oct 27, 2016

SIGN WIDTH: 2'-6"
HEIGHT: 1'-0"
TOTAL AREA: 2.5 Sq. Ft.

MAT'L: 0.063 in.(1.6 mm) ALUMINUM

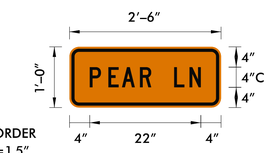
BORDER TYPE: FLUSH
RECESS: 0.38"
WIDTH: 0.63"
RADII: 1.5"

NO. Z BARS:
LENGTH: in.

SYMBOL	X	Y	WID	HT

USE NOTES: 1,3,4

1. Legend and border shall be direct applied encapsulated lens reflective sheeting.
2. Legend and border shall be direct applied enclosed lens reflective sheeting.
3. Shields shall be encapsulated lens reflective sheeting on 0.8mm aluminum and demountable.
4. Background shall be encapsulated lens reflective sheeting.
5. Background shall be enclosed lens reflective sheeting.



BORDER
R=1.5"
TH=0.63"
IN=0.38"

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M.U.T.C.D.: 2009 Edition

Letter spacings are to start of next letter

										Series/Size Text Length
	P	E	A	R		L	N			C 2000/4
4.0	3.7	2.7	3.6	2.2	4.5	3.1	2.2	4.0		22

Spacing Factor is 1 unless specified otherwise

FILENAME: GS40_ENGL

SIGN NUMR: BATES CREEK RD
TYPE: D Ground
QUANTITY: 1

BACKG. COLOR: Orange
COPY COLOR: Black

DESIGN BY: CGM
PROJECT ID: 14SP.20201.1
CHK BY: LDB
DIV: 14
DATE: Oct 27, 2016

SIGN WIDTH: 2'-6"
HEIGHT: 1'-6"
TOTAL AREA: 3.75 Sq. Ft.

MAT'L: 0.063 in.(1.6 mm) ALUMINUM

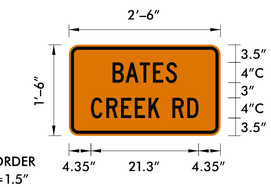
BORDER TYPE: FLUSH
RECESS: 0.38"
WIDTH: 0.63"
RADII: 1.5"

NO. Z BARS:
LENGTH: in.

SYMBOL	X	Y	WID	HT

USE NOTES: 1,3,4

1. Legend and border shall be direct applied encapsulated lens reflective sheeting.
2. Legend and border shall be direct applied enclosed lens reflective sheeting.
3. Shields shall be encapsulated lens reflective sheeting on 0.8mm aluminum and demountable.
4. Background shall be encapsulated lens reflective sheeting.
5. Background shall be enclosed lens reflective sheeting.



BORDER
R=1.5"
TH=0.63"
IN=0.38"

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

Letter spacings are to start of next letter

																												Series/Size Text Length
	B	A	T	E	S																							C 2000/4
8.6	2.6	2.8	2.6	2.5	2.2	8.6																						12.8
	C	R	E	E	K		R	D																				C 2000/4
4.4	3.0	2.9	2.7	2.7	2.2	2.5	2.9	2.2	4.4																			21.3

Spacing Factor is 1 unless specified otherwise

FILENAME: GS40_ENGL

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SEAL

NORTH CAROLINA PROFESSIONAL SEAL 20119 ENGINEER LLOYD D. BROWN

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

SPECIAL SIGN DESIGNS

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User:cimartell

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PROJ. REFERENCE NO.	SHEET NO.
14SP.20201.1	TMP-3

PROJECT PHASING

PHASE I

STEP 1: - ERECT WORK ZONE ADVANCED WARNING SIGNS USING DETAIL DRAWINGS FOR WORK ZONE SIGNS USING ROADWAY STANDARD DRAWINGS NO. 1101.01, SHEET 3 OF 3.

STEP 2: - USING ROADWAY STANDARD DRAWINGS NO. 1101.02, SHEET 1 OF 14, PERFORM THE FOLLOWING ON SR 1348 (BATES CREEK ROAD):

- CONSTRUCT NEW DRIVEWAY ACCESS ALONG -NEWDETOUR- ALIGNMENT AS SHOWN IN PHASE I (SEE SHEET TMP-4).

PHASE II

STEP 1: - USING ROADWAY STANDARD DRAWINGS NO. 1101.02, SHEET 1 OF 14, AND FLAGGERS AS NECESSARY, PERFORM THE FOLLOWING ON SR 1348 (BATES CREEK ROAD):

- OPEN NEW DRIVEWAY ACCESS AND CLOSE OLD ACCESS AS SHOWN IN PHASE II (SEE SHEET TMP-5).

STEP 2: - CONSTRUCT NEW AND TEMPORARY DRAINAGE STRUCTURES ALONG -NEWDETOUR- ALIGNMENT (SEE SHEET TMP-5).

- CONSTRUCT -NEW DETOUR- WITH GUARDRAIL AND TEMPORARY SHORING FROM -NEWDETOUR- STA. 11+40+/- TO STA. 12+10 +/- (SEE SHEET TMP-5).

PHASE III

STEP 1: - USING ROADWAY STANDARD DRAWINGS NO. 1101.02, SHEET 1 & 14 OF 14, AND FLAGGERS AS NECESSARY, PERFORM THE FOLLOWING ON SR 1348 (BATES CREEK ROAD):

- INSTALL AND ACTIVATE PORTABLE TRAFFIC SIGNALS, CLOSE -L-, AND SHIFT TRAFFIC INTO A ONE-LANE ONE-WAY TRAFFIC PATTERN ON -NEWDETOUR- (SEE SHEET SIG-1).

STEP 2: - CONSTRUCT -L- UP TO BUT NOT INCLUDING FINAL PAVEMENT SURFACE LAYER AND NEW CULVERT (SEE SHEET TMP-6).

STEP 3: - USING ROADWAY STANDARD DRAWINGS NO. 1101.02, SHEET 1 OF 14, AND FLAGGERS AS NECESSARY, PLACE THE FINAL LAYER OF SURFACE COURSE, AND THE FINAL PAVEMENT MARKINGS (PAINT) ON THE ENTIRE PROJECT (SEE SHEET PMP-1).

- OPEN SR 1348(BATES CREEK ROAD) IN A TWO-LANE, TWO-WAY TRAFFIC PATTERN.

STEP 4: - REMOVE -NEWDETOUR-, TEMPORARY SHORING, AND TEMPORARY DRAINAGE STRUCTURES AND PIPES.

- REMOVE ALL TEMPORARY TRAFFIC CONTROL DEVICES.

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SEAL

NORTH CAROLINA PROFESSIONAL SEAL 20119 ENGINEER LLOYD D. BROWN

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

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PHASING

3/26/2018
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PROJ. REFERENCE NO.	SHEET NO.
14SP.20201.1	TMP-4

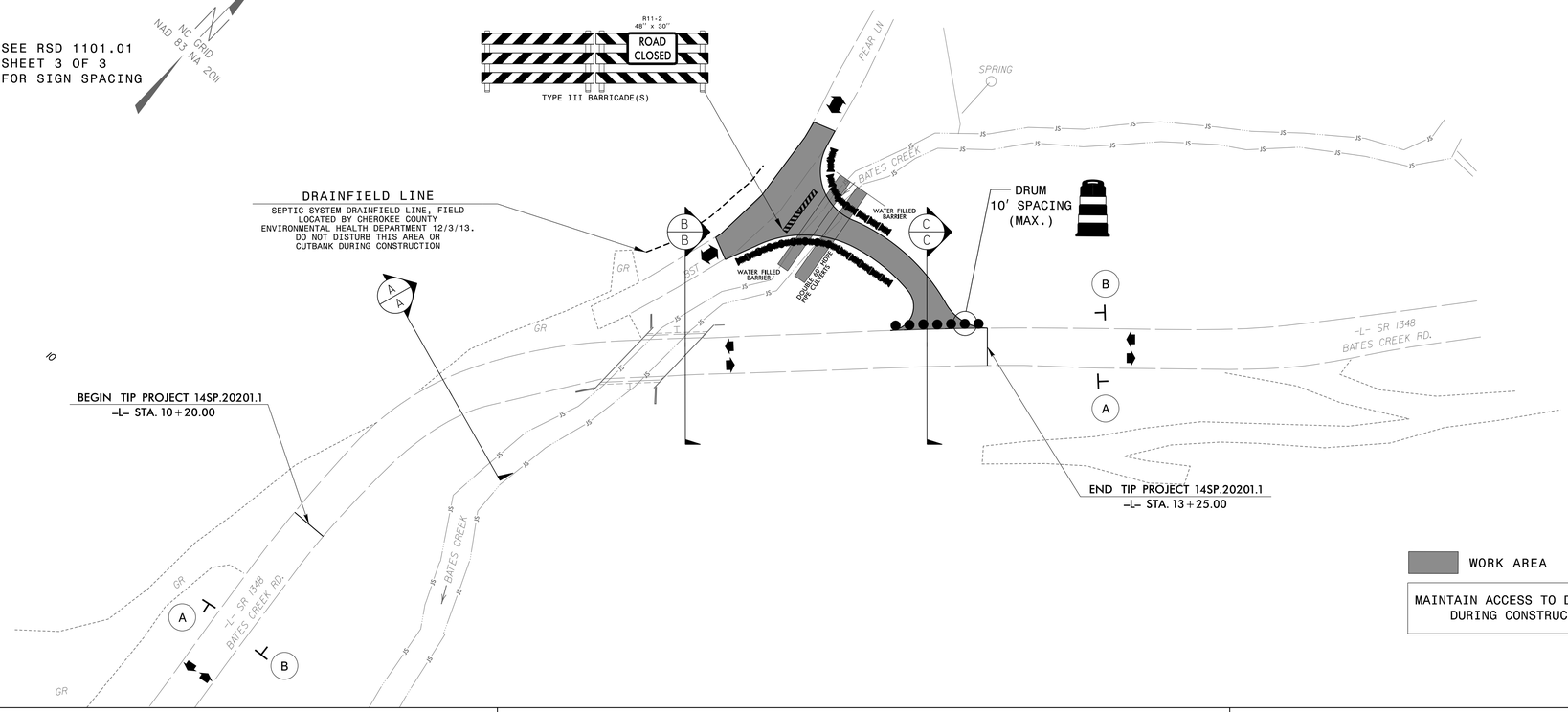
END ROAD WORK
G20-2 A
48" X 24"
(A)

ROAD WORK AHEAD
W20-1
48" X 48"
(B)

SEE RSD 1101.01
SHEET 3 OF 3
FOR SIGN SPACING

NC GRID
NAD 83 NA 2011

R11-2
48" x 30"
ROAD CLOSED
TYPE III BARRICADE(S)



END ROAD WORK
G20-2 A
48" X 24"
(A)

ROAD WORK AHEAD
W20-1
48" X 48"
(B)

SEE RSD 1101.01
SHEET 3 OF 3
FOR SIGN SPACING

WORK AREA

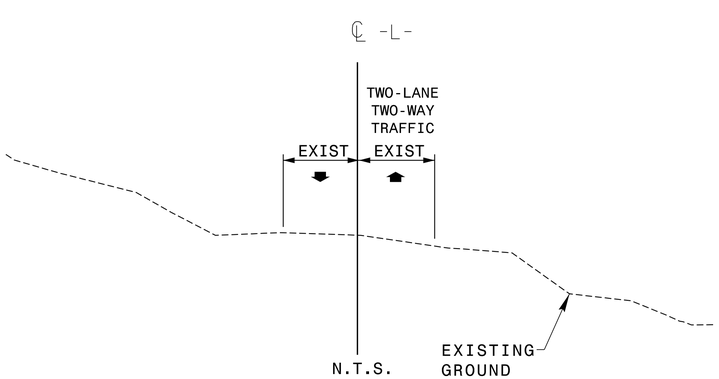
MAINTAIN ACCESS TO DRIVEWAYS DURING CONSTRUCTION

30 15 0 30 60
SCALE 1"=30'

SECTION A-A

-L- STA 11+00

NOT TO SCALE



SECTION B-B

-L- STA 12+00

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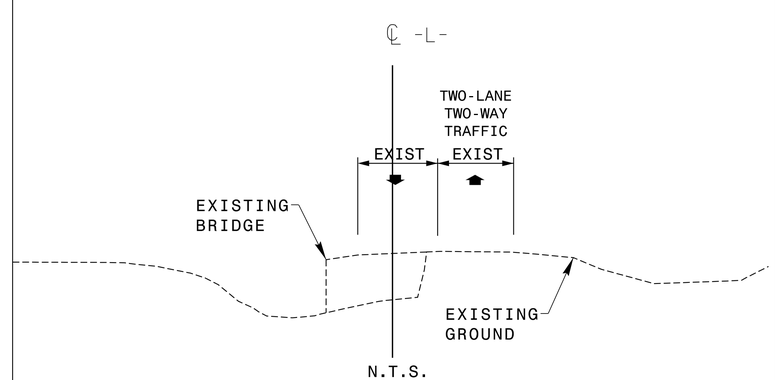
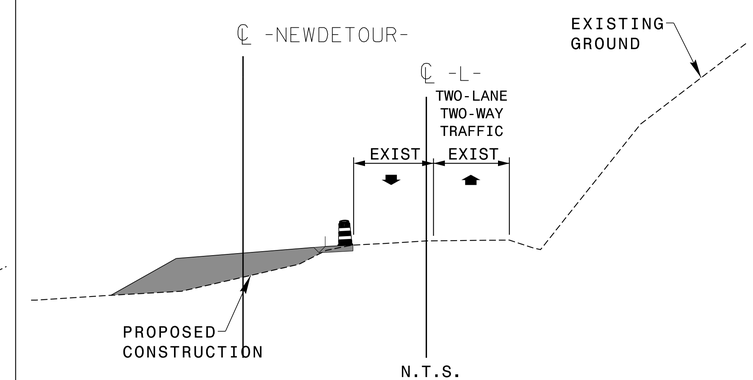


SECTION C-C

-L- STA 13+00

NOT TO SCALE



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

PHASE I

7/17/2018 2:15:22 PM
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User:jdaves

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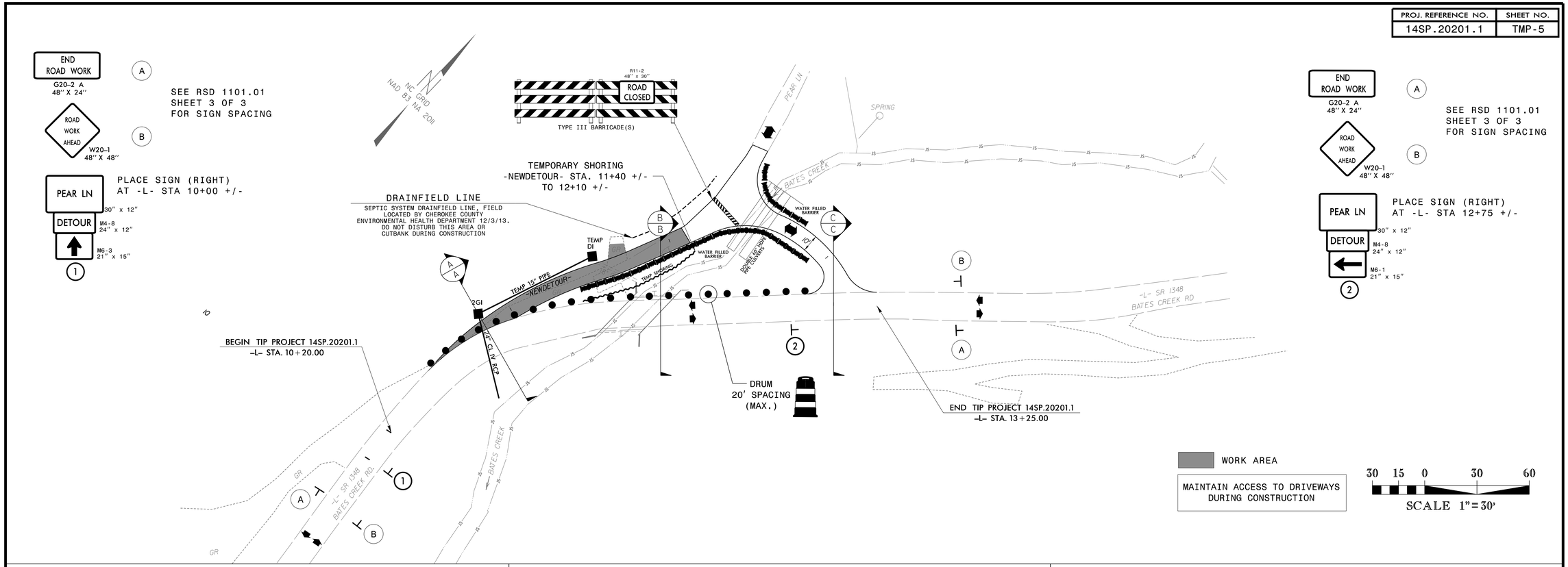
PROJ. REFERENCE NO.	SHEET NO.
14SP.20201.1	TMP-5



SECTION A-A

-L- STA 11+00

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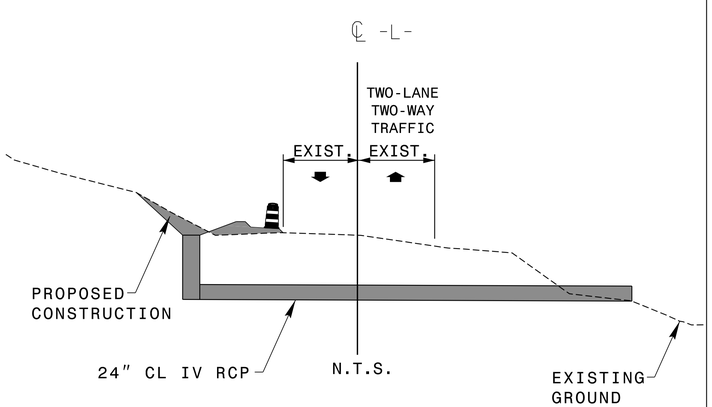

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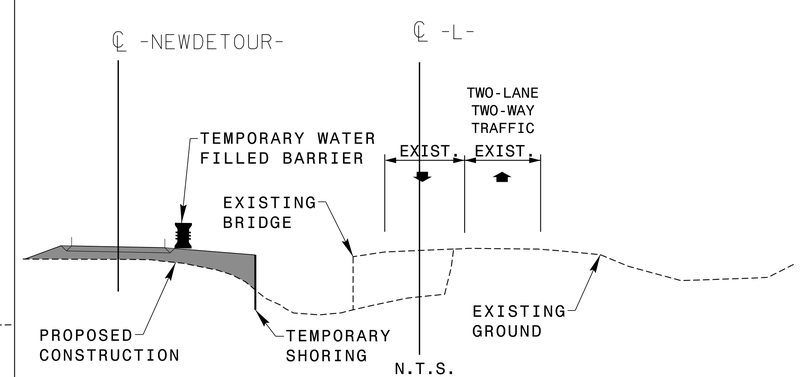

SECTION C-C

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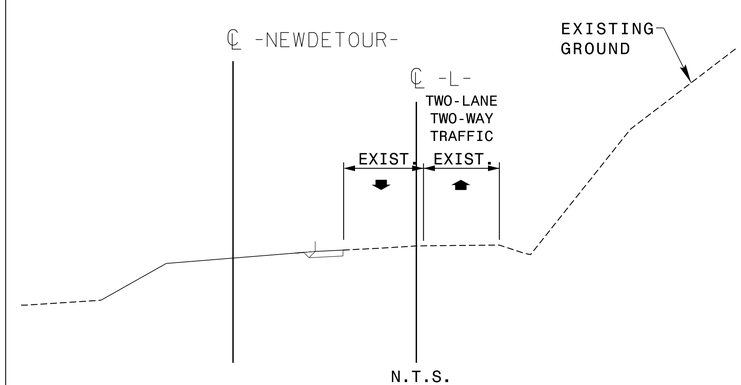

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PHASE II

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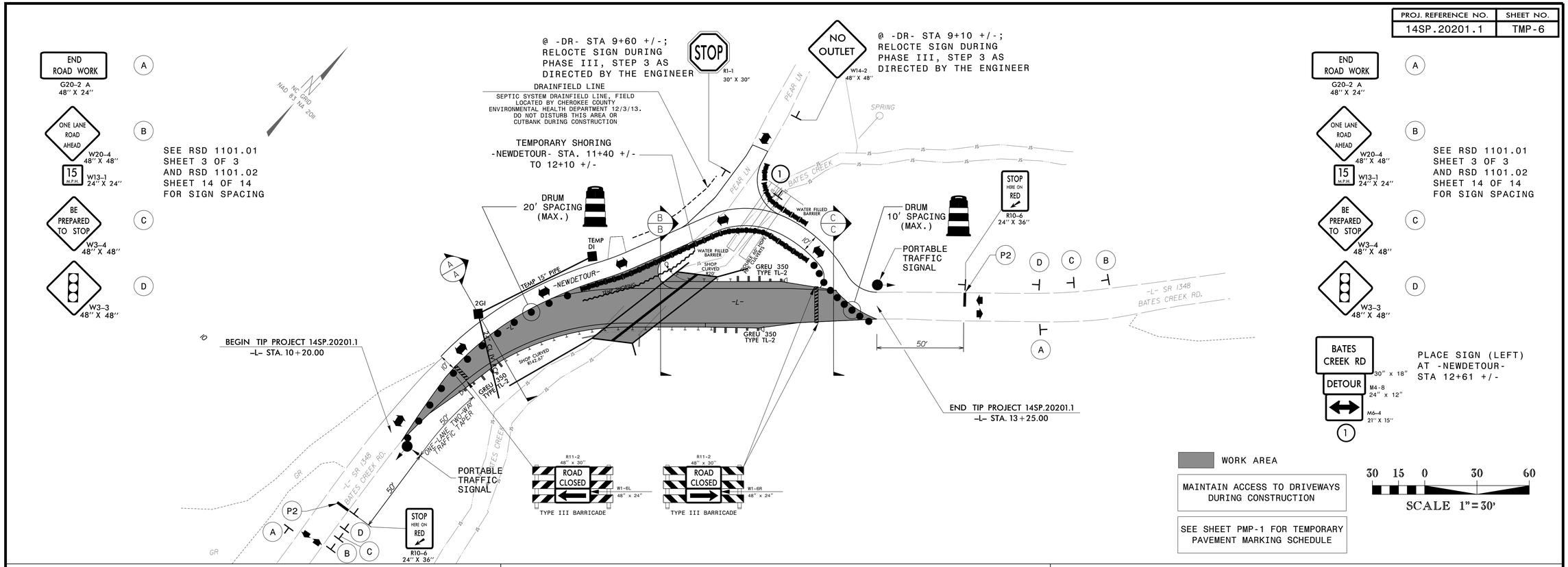
PROJ. REFERENCE NO.	SHEET NO.
14SP.20201.1	TMP-6



SECTION A-A

-L- STA 11+00

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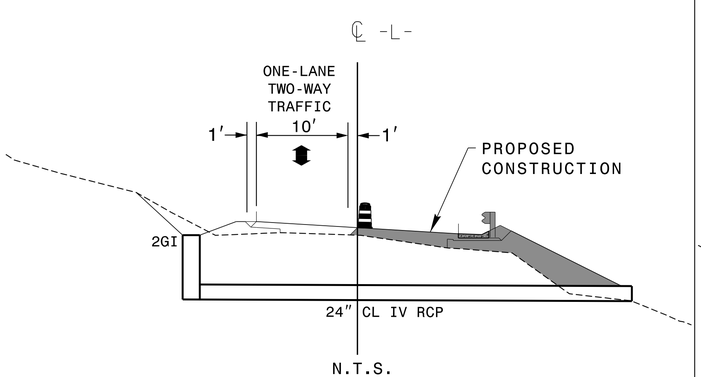

SECTION B-B

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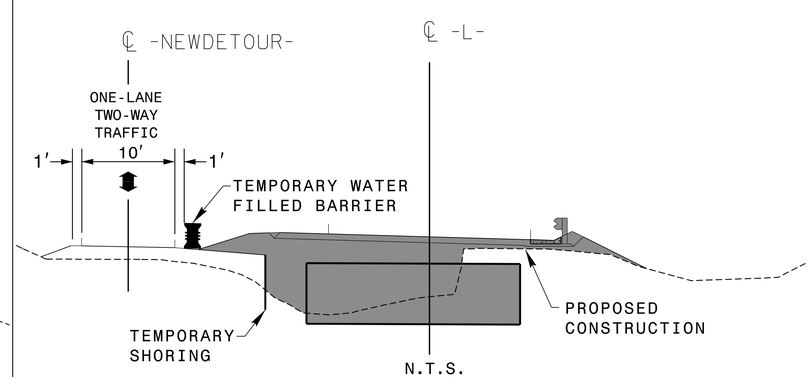

SECTION C-C

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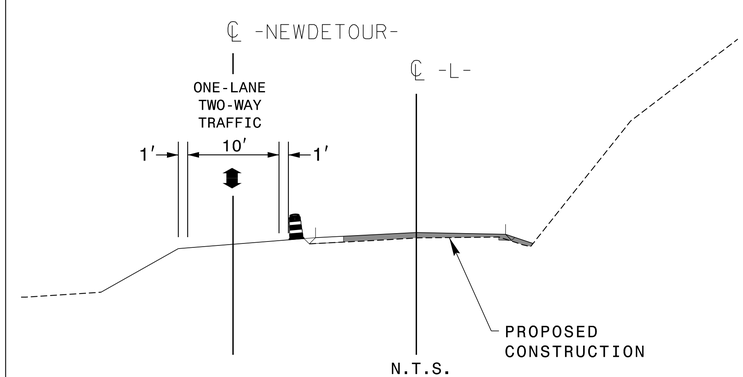

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PHASE III

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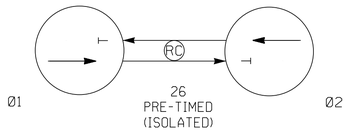
PROJECT REFERENCE NO.	SHEET NO.
14SP.20201.1	SIG. 1

PHASING DIAGRAM



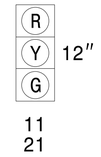
PHASING DIAGRAM DETECTION LEGEND

- DETECTED MOVEMENT
- UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT
- PEDESTRIAN MOVEMENT

TABLE OF OPERATION

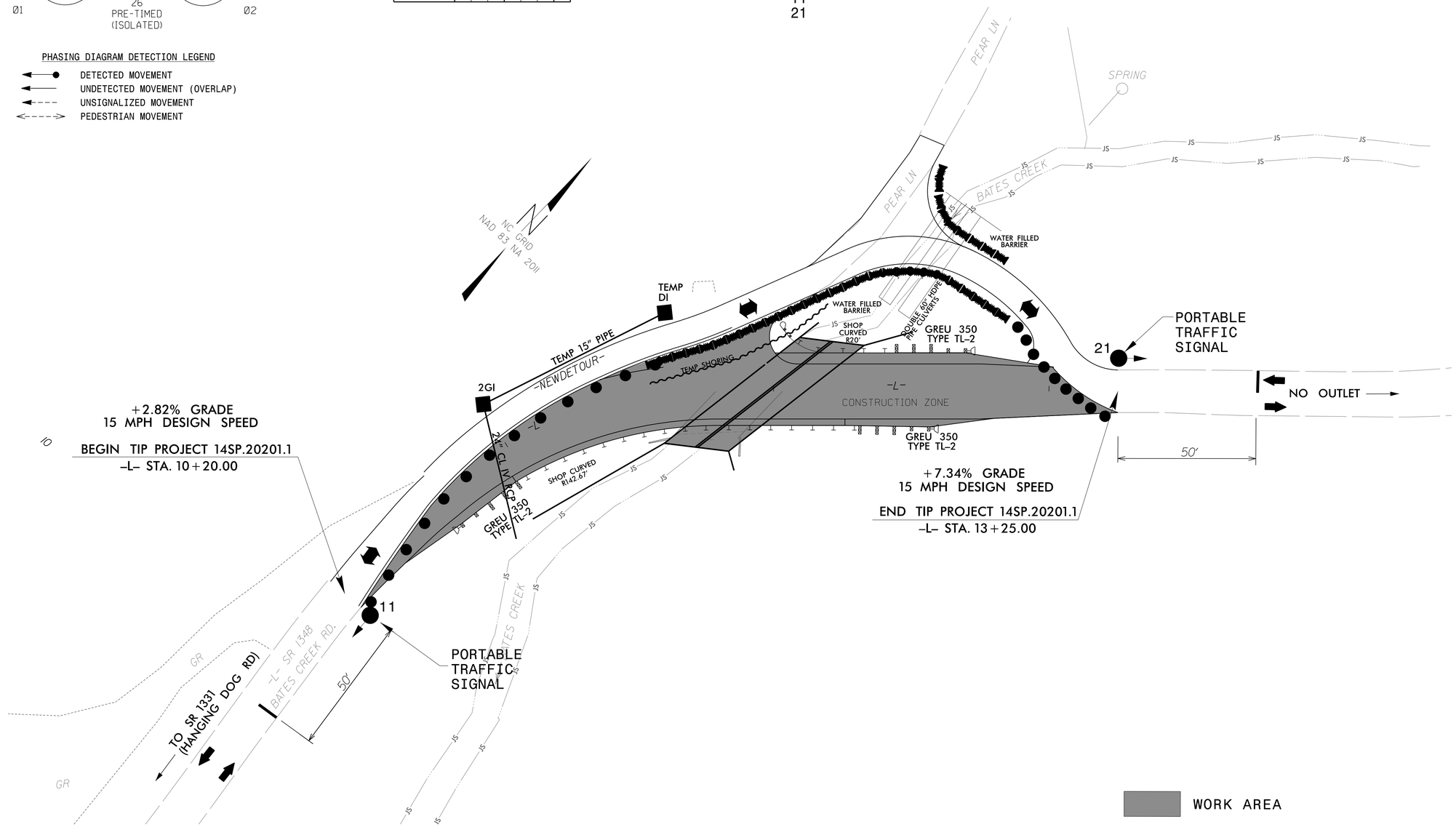
SIGNAL FACE	Ø2 R/W	Ø2 CLEAR Ø1 1	Ø2 CLEAR Ø1 2	Ø1 R/W	Ø1 CLEAR Ø2 1	Ø1 CLEAR Ø2 2	FLASH
11	R	R	R	G	Y	R	R
21	G	Y	R	R	R	R	R

SIGNAL FACE I.D.



NOTES

1. PORTABLE TEMPORARY INSTALLATION.
2. SIGNAL HEADS SHALL BE NO CLOSER THAN 40 FEET FROM THE STOPLINE.
3. NO COUNTS AVAILABLE.
4. CONTRACTOR TO UTILIZE NCDOT PRE-APPROVED PORTABLE TRAFFIC SIGNAL MANUFACTURER AND MODEL.



WORK AREA

TIMING CHART
NEMA CONTROLLER

PHASE	Ø1	Ø2
MINIMUM GREEN	12 SEC.	12 SEC.
PASSAGE/GAP	0 SEC.	0 SEC.
YELLOW CHANGE INT.	3.0 SEC.	3.0 SEC.
RED CLEARANCE	26 SEC.	26 SEC.
MAX. 1	27 SEC.	27 SEC.
RECALL POSITION	MAX. RECALL	MAX. RECALL
VEHI. CALL MEMORY	–	–

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Prepared in the Offices of:
Vaughn & Melton Consulting Engineers
Charlotte, North Carolina 704-351-0488
Tri-Cities, Tennessee 423-467-8400
Knoxville, Tennessee 865-546-9800
Middlesboro, Kentucky 606-248-5600
Spartanburg, South Carolina 864-574-4775
Asheville, North Carolina 828-253-2796
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SCALE 0 20

PORTABLE TRAFFIC SIGNAL PLAN
SR 1348 BATES CREEK RD

DIV. 14 CHEROKEE COUNTY

PLAN DATE: 10/25/16	REVIEWED BY: LDB
PREPARED BY: CGM	REVIEWED BY:

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 20119 ENGINEER LLOYD DeWAYNE BROWN

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PROJECT REFERENCE NO.	SHEET NO.
14SP.20201.1	PMP-1

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STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PAVEMENT MARKING PLAN
CHEROKEE COUNTY
LOCATION : BRIDGE NO. 190163 OVER BATES CREEK ON SR 1348 (BATES CREEK ROAD)

ROADWAY STANDARD DRAWING

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C. DATED JANUARY 2018 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 - TWO LANE & MULTILANE ROADWAYS
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.12	PAVEMENT MARKINGS - BRIDGES
1261.01	GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATORS - TYPES & MOUNTING
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 DIRECTED BY THE ENGINEER.

A) INSTALL PAVEMENT MARKINGS ON THE FINAL SURFACE

ROAD NAME:	MARKING	MARKER
SR 1348 (BATES CREEK ROAD)	PAINT	NONE

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

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

INDEX

SHEET NO.	DESCRIPTION
PMP-1	PAVEMENT MARKING PLAN TITLE SHEET AND SCHEDULE
PMP-2	PAVEMENT MARKING DETAIL AND QUANTITIES

PAVEMENT MARKING SCHEDULE

FINAL
PAVEMENT MARKINGS

SYMBOL	DESCRIPTION
	PAINT (4")
PA	WHITE EDGELINE
PI	YELLOW DOUBLE CENTER
P8	2 FT - 6 FT / SP WHITE MINISKIP

PLANS REVIEWED BY: N.C.D.O.T SIGNING AND DELINEATION UNIT

K. L. JORDAN — SIGNING & DELINEATION REGIONAL ENGINEER

M. TRACEY, P.E. — SIGNING & DELINEATION PROJECT DESIGN ENGINEER

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

V&M Vaughn & Melton Consulting Engineers
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Tri-Cities, TN 423-467-8401
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Charleston, SC 843-974-5650
Middlesboro, KY 606-248-6600
Atlanta, GA 770-627-3509

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TRANSPORTATION ENGINEER — LLOYD D. BROWN, P.E.

TRANSPORTATION DESIGN ENGINEER — C. GONZALEZ-MARTELL

PROJECT: 14SP.20201.1

CONTRACT: DN00134

09/08/99

3/26/2018
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Users_jmartell

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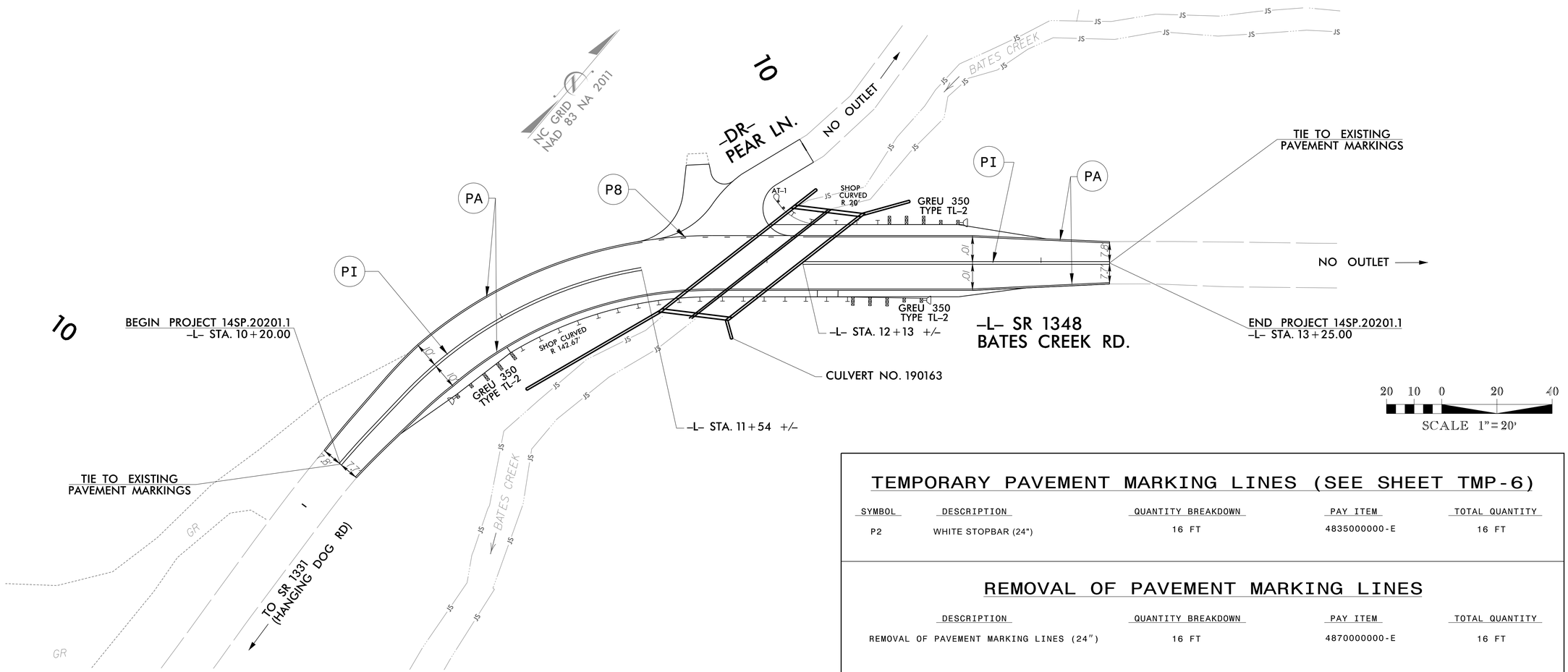
14SP.20201.1	PMP-2



20 10 0 20 40
SCALE 1"=20'

TEMPORARY PAVEMENT MARKING LINES (SEE SHEET TMP-6)

SYMBOL	DESCRIPTION	QUANTITY BREAKDOWN	PAY ITEM	TOTAL QUANTITY
P2	WHITE STOPBAR (24")	16 FT	4835000000-E	16 FT

REMOVAL OF PAVEMENT MARKING LINES

DESCRIPTION	QUANTITY BREAKDOWN	PAY ITEM	TOTAL QUANTITY
REMOVAL OF PAVEMENT MARKING LINES (24")	16 FT	4870000000-E	16 FT

FINAL PAVEMENT MARKING SCHEDULE

SYMBOL	DESCRIPTION	QUANTITY BREAKDOWN	PAY ITEM	TOTAL QUANTITY
PA	WHITE SOLID EDGE LINE (4")	550 FT	4810000000-E	1,100 FT
PI	YELLOW DOUBLE CENTER LINE (4")	496 FT	4810000000-E	992 FT
P8	2 FT. - 6 FT./SP WHITE MINISKIP (4")	16 FT	4810000000-E	32 FT

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NORTH CAROLINA PROFESSIONAL SEAL 20119 ENGINEER LLOYD D. BROWN

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

PAVEMENT MARKING DETAIL AND QUANTITIES

3/26/2018
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User:tmartell

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7/20/2018 10:33:07 AM PDT

PROJECT: 14SP.20201.1

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	14SP.20201.1	EC-1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
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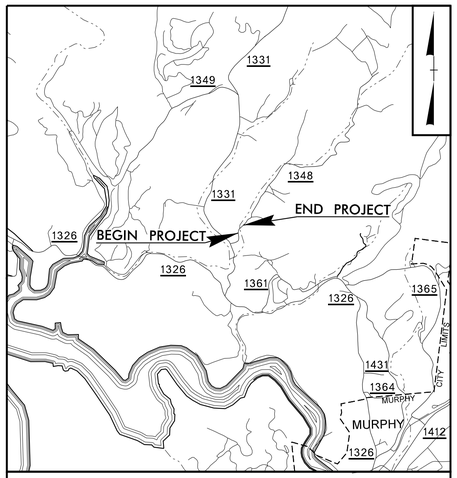
14SP.20201.2		R/W & UTILITIES
14SP.20201.1		CONST.



VICINITY MAP

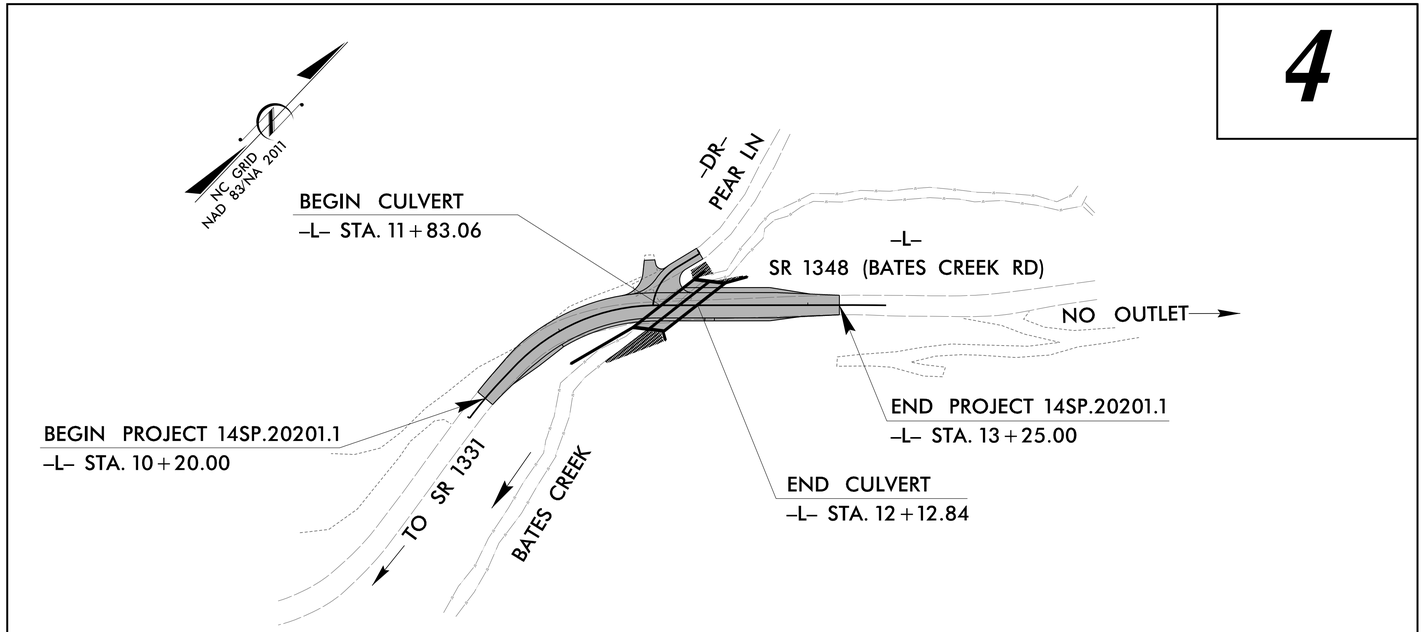
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL

CHEROKEE COUNTY

LOCATION: BRIDGE NO. 190163 OVER BATES CREEK ON SR 1348 (BATES CREEK RD)

TYPE OF WORK: GRADING, DRAINAGE, PAVING, ON–SITE DETOUR, AND CULVERT



4

EROSION AND SEDIMENT CONTROL MEASURES

Std. #	Description	Symbol
1630.03	Temporary Silt Ditch	TSD
1630.05	Temporary Diversion	TD
1605.01	Temporary Silt Fence	
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	EW CFW
	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.

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GRAPHIC SCALE

10 0 20
PLANS

0
PROFILE (HORIZONTAL)

0
PROFILE (VERTICAL)

THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH THE REGULATIONS SET FORTH BY THE NCG-010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE AUGUST 1, 2016 AND ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES DIVISION OF WATER RESOURCES.

Prepared in the Office of:

Vaughn & Melton Consulting Engineers

1318-F Patton Avenue
Asheville, NC 28806

2018 STANDARD SPECIFICATIONS

Designed by:

Christian Gonzalez Martell — ***3939***
NAME — *LEVEL III CERTIFICATION NO.*

Reviewed in the Office of:

ROADSIDE ENVIRONMENTAL UNIT

1 South Wilmington St.
Raleigh, NC 27611

2018 STANDARD SPECIFICATIONS

Reviewed by:

Reid Whitehead, PE, CPESC

Roadway Standard Drawings

The following roadway <u>english</u> standards as appear in "Roadway Standard Drawings"– Roadway Design Unit – N. C. Department of Transportation – Raleigh, N. C., dated January 2018 and the latest revison 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		

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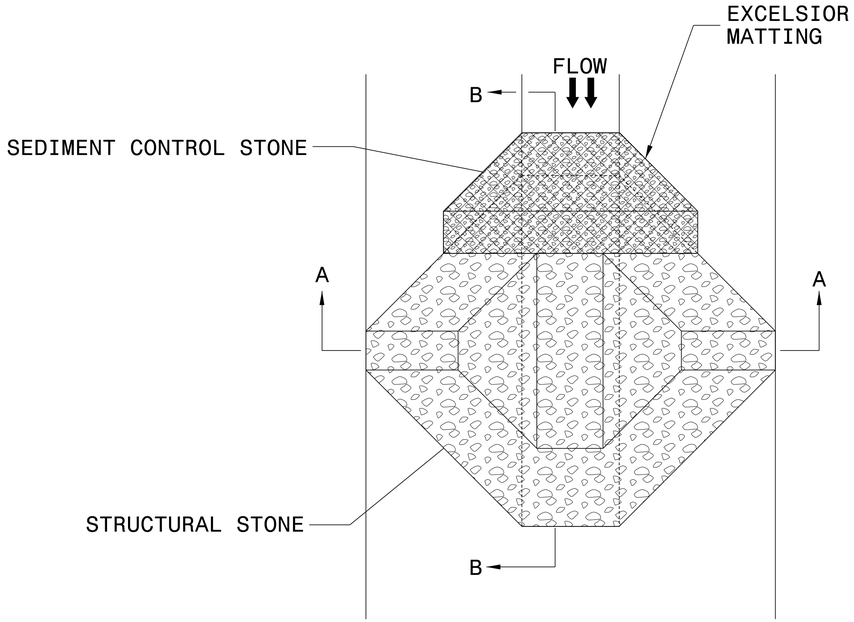
TEMPORARY ROCK SILT CHECK TYPE 'A' WITH EXCELSIOR MATTING AND POLYACRYLAMIDE (PAM)



PLAN

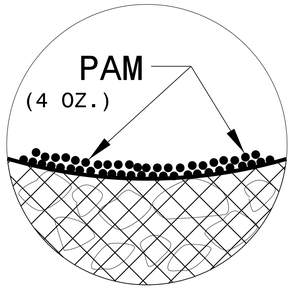
NOTES:

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

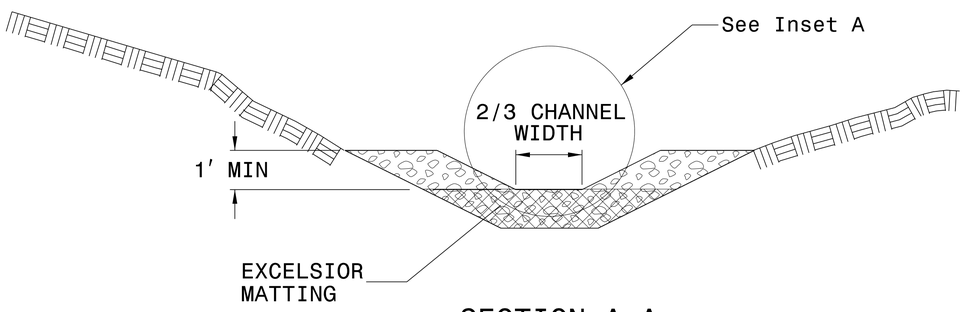
USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

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.

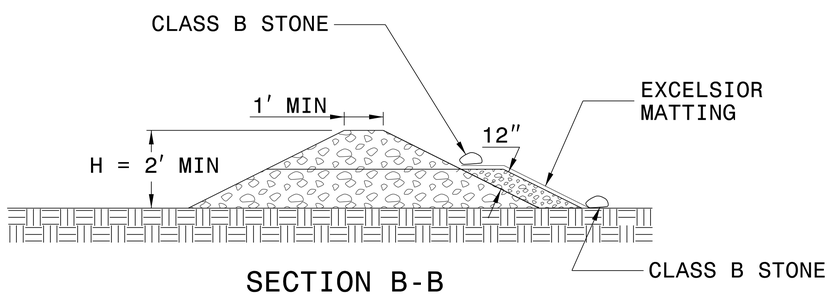
INITIALLY APPLY 4 OUNCES OF POLYACRYLAMIDE (PAM) TO TOP OF MATTING SECTION AND AFTER EVERY RAINFALL EVENT THAT EQUALS OR EXCEEDS 0.50 INCHES.



INSET A



SECTION A-A



SECTION B-B

NOT TO SCALE

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DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION TIMEFRAMES

SITE DESCRIPTION	STABILIZATION TIME	TIMEFRAME EXCEPTIONS
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.

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PROJECT REFERENCE NO.	SHEET NO.
14SP.2020111	EC-3A

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DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION SUMMARY SHEET

MATTING FOR EROSION CONTROL

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
4	-L-	10+25	11+65	LT	140
4	-L-	12+25	13+25	RT	70
28-1	-NEWDETOUR-	10+70	11+60	LT	65
			SUBTOTAL		275
MISCELLANEOUS MATTING TO BE INSTALLED AS DIRECTED BY THE ENGINEER					2,420 **
				TOTAL	2,695
				SAY	2,700
** MATTING FOR EROSION CONTROL TO BE PLACED ON ALL DISTURBED SLOPES					

MATTING FOR EROSION CONTROL

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
			SUBTOTAL		
		ADDITIONAL PSRM TO BE INSTALLED			
				TOTAL	
				SAY	

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jcarpenter

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CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEETS 4 & 2B-1

PROJECT REFERENCE NO.	SHEET NO.
14SP.2020111	EC-4/CONST.4 & 2B-1

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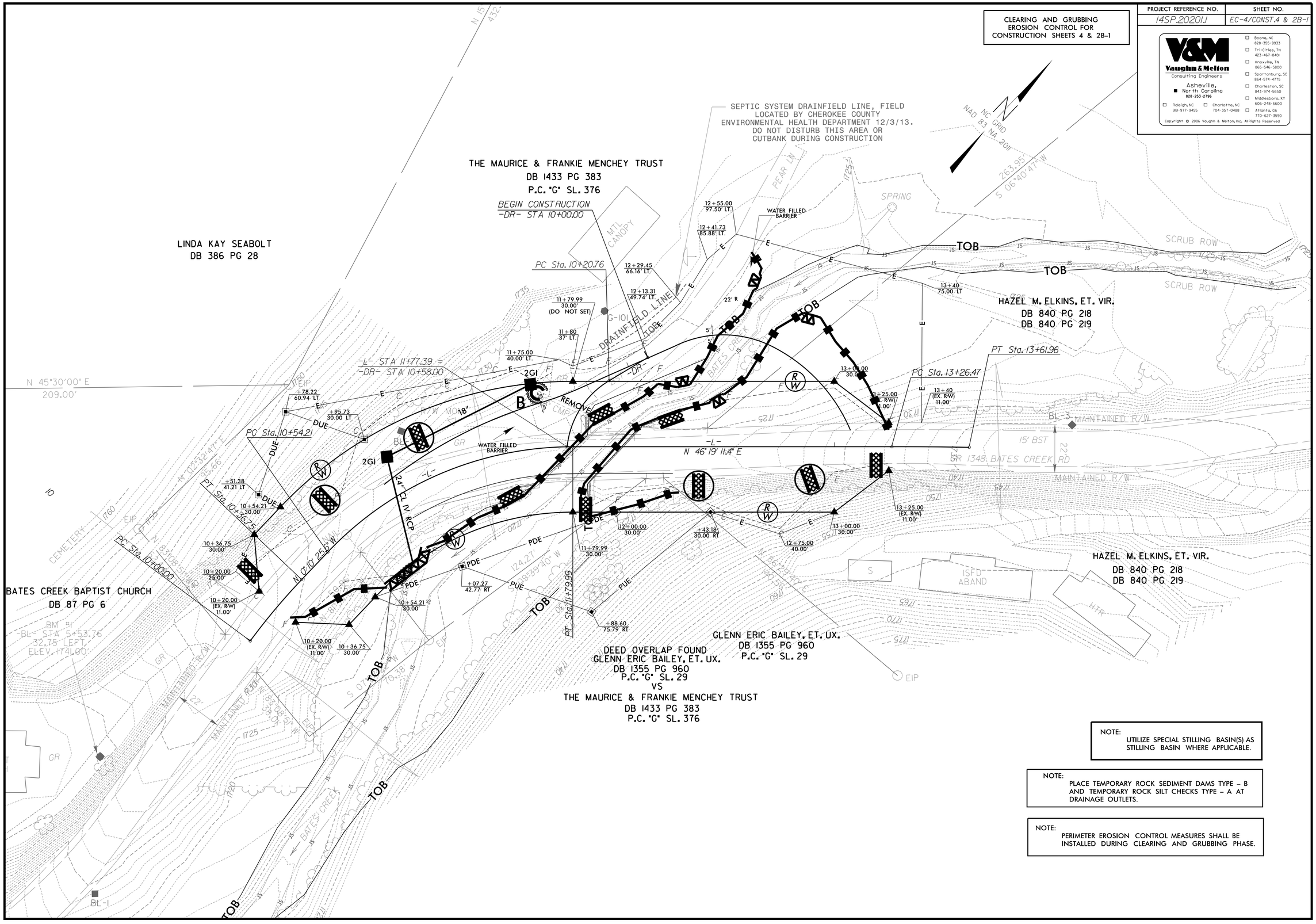

NOTE:
UTILIZE SPECIAL STILLING BASIN(S) AS STILLING BASIN WHERE APPLICABLE.

NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.

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

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PROJECT REFERENCE NO.	SHEET NO.
14SP.20201.1	EC-5

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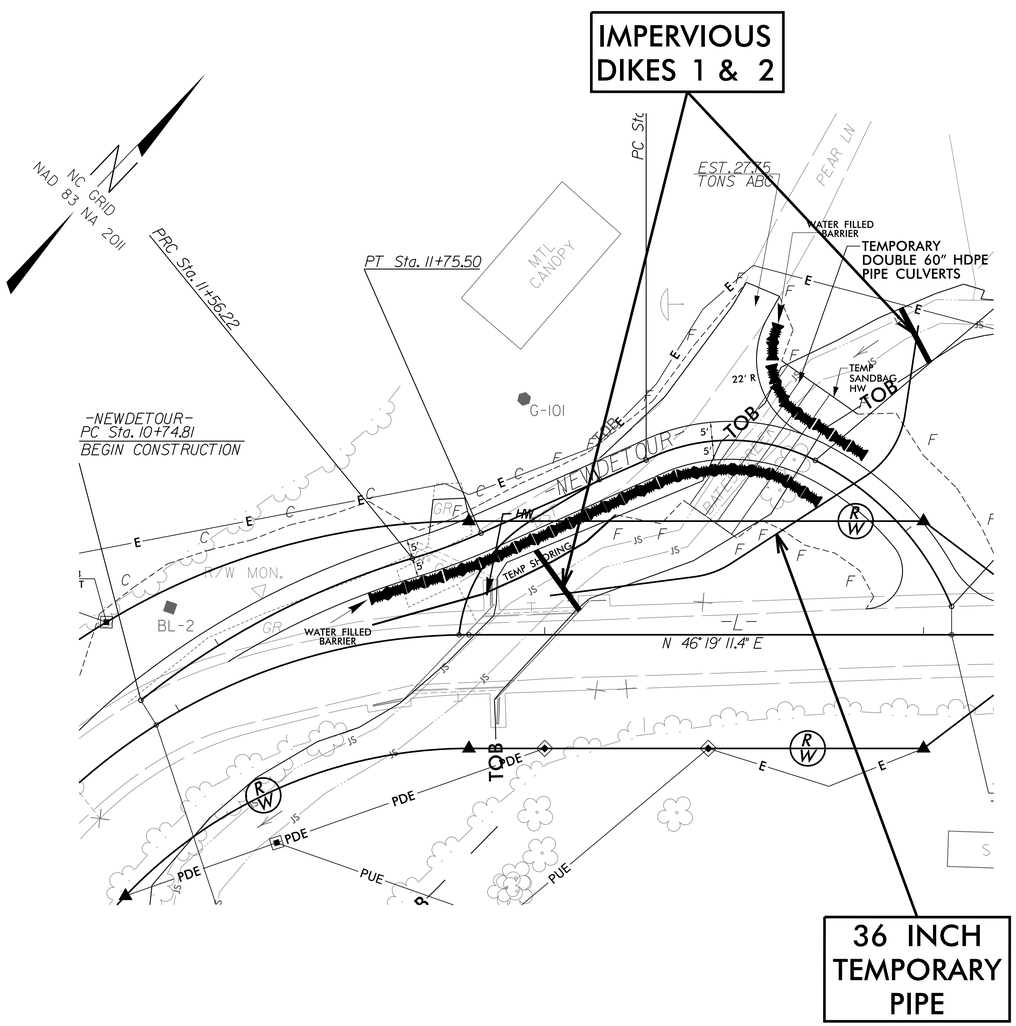
CULVERT CONSTRUCTION SEQUENCE STA. 11+97.95 –L–

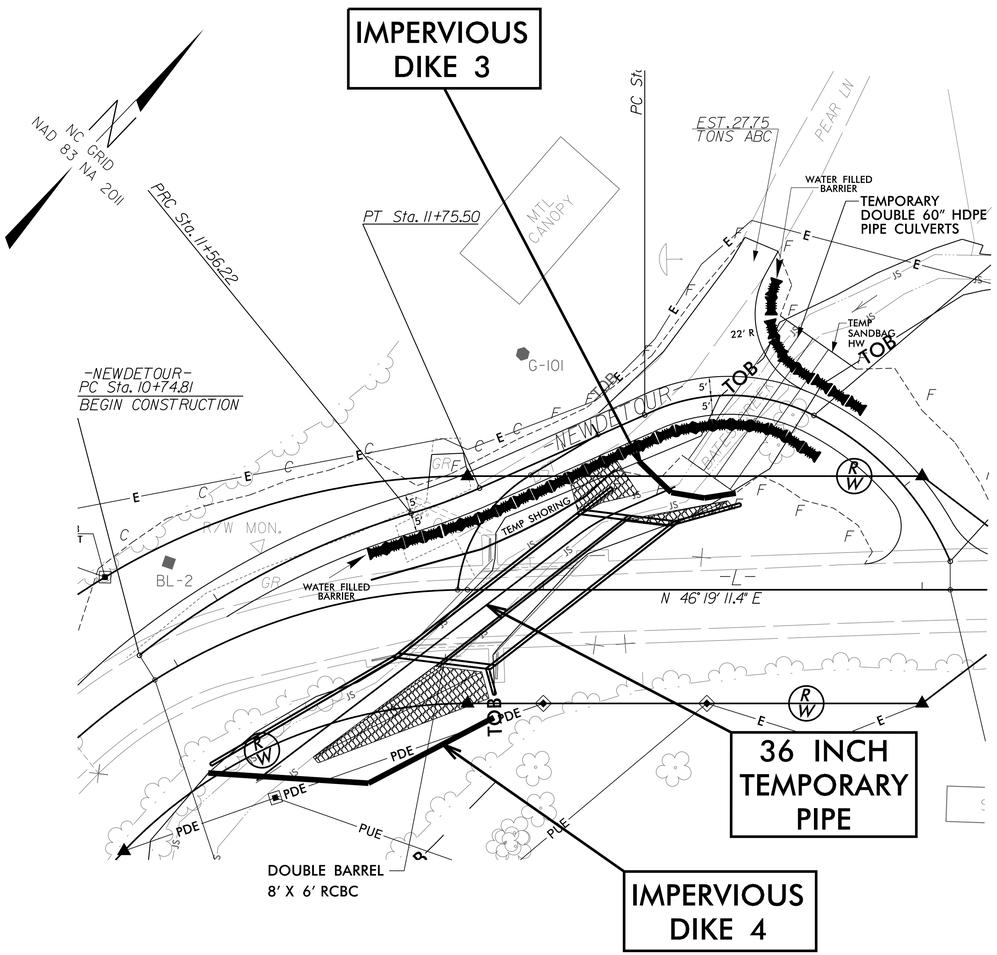
PHASE I

1. INSTALL PROPOSED EROSION CONTROL PERIMETER MEASURES FOR PROJECT.
2. INSTALL SPECIAL STILLING BASIN(S).
3. CONSTRUCT IMPERVIOUS DIKES 1, 2, AND 36" TEMPORARY FLEXIBLE PIPE, 1.5% MIN. SLOPE. EXCAVATE ALONG PROPOSED PIPES FOR TEMPORARY PIPE.
4. INSTALL PROPOSED 2 @ 60" HDPE PIPES FOR DETOUR.
5. CONSTRUCT TEMPORARY HEAD WALL TO THE EXTENT ALLOWED.
6. COMPLETE CONSTRUCTION OF DETOUR.



PHASE II

1. UTILIZE SPECIAL STILLING BASIN(S) DURING CULVERT CONSTRUCTION AS NEEDED.
2. CONSTRUCT IMPERVIOUS DIKE 3 & 4, REMOVE IMPERVIOUS DIKES 1 & 2, AND MOVE 36" TEMPORARY FLEXIBLE PIPE, DIVERTING FLOW THROUGH THE TEMPORARY PIPE.
3. REMOVE EXISTING BRIDGE.
4. CONSTRUCT PROPOSED CULVERT.
5. REMOVE IMPERVIOUS DIKES AND TEMPORARY PIPE.
6. COMPLETE CONSTRUCTION OF ROADWAY AND REMOVE DETOUR AND 2 @ 60" HDPE PIPES.



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PROJECT REFERENCE NO.	SHEET NO.
14SP.20201.J	EC-6/CONST.2B-1

FINAL EROSION CONTROL FOR CONSTRUCTION SHEET 2B-1

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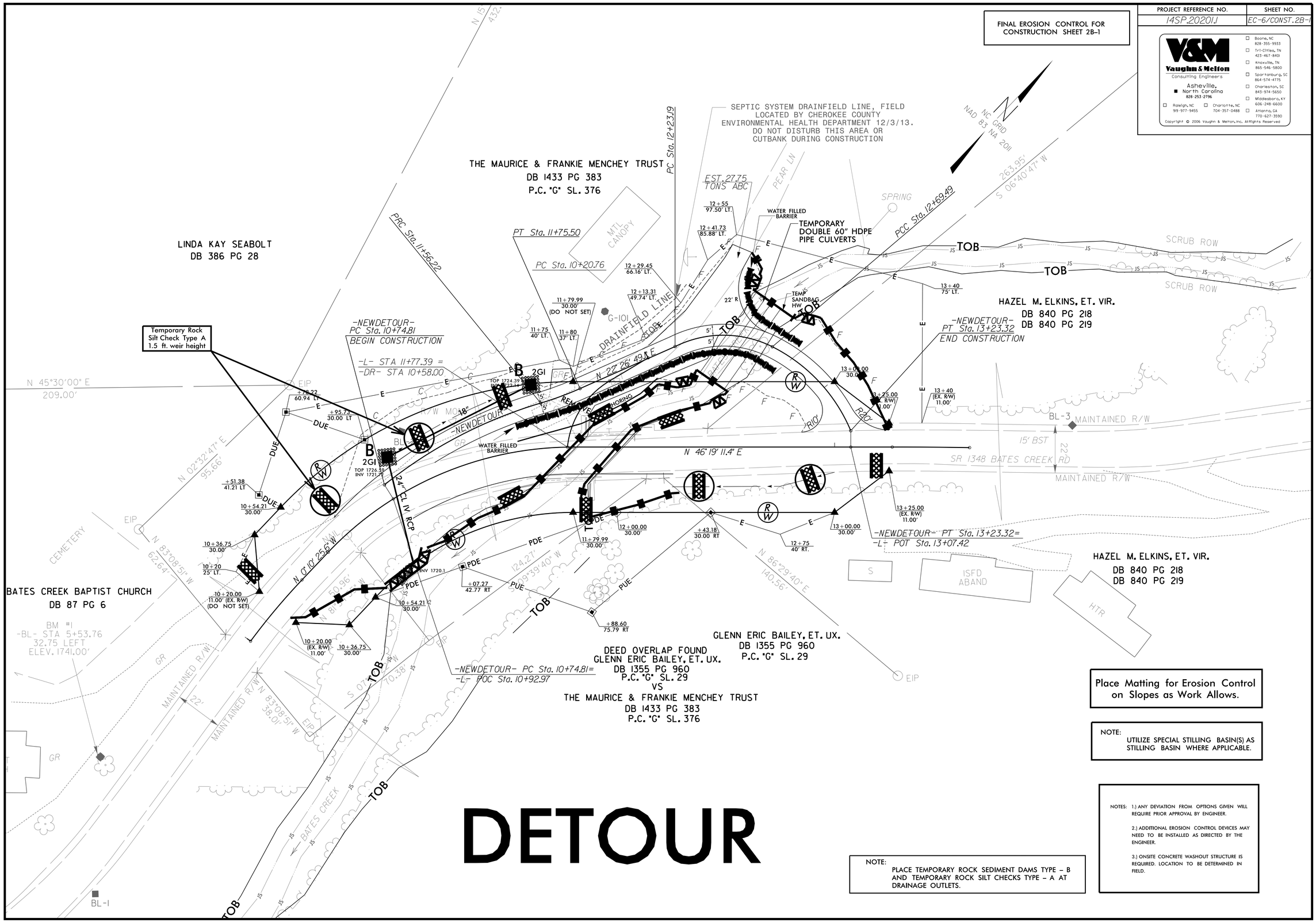

Place Matting for Erosion Control on Slopes as Work Allows.

NOTE:
UTILIZE SPECIAL STILLING BASIN(S) AS STILLING BASIN WHERE APPLICABLE.

NOTES:
1.) ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.
2.) ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED BY THE ENGINEER.
3.) ONSITE CONCRETE WASHOUT STRUCTURE IS REQUIRED. LOCATION TO BE DETERMINED IN FIELD.

NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.

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PROJECT REFERENCE NO.	SHEET NO.
14SP.20201.1	EC-7/CONST.4

FINAL EROSION CONTROL FOR CONSTRUCTION SHEET 4

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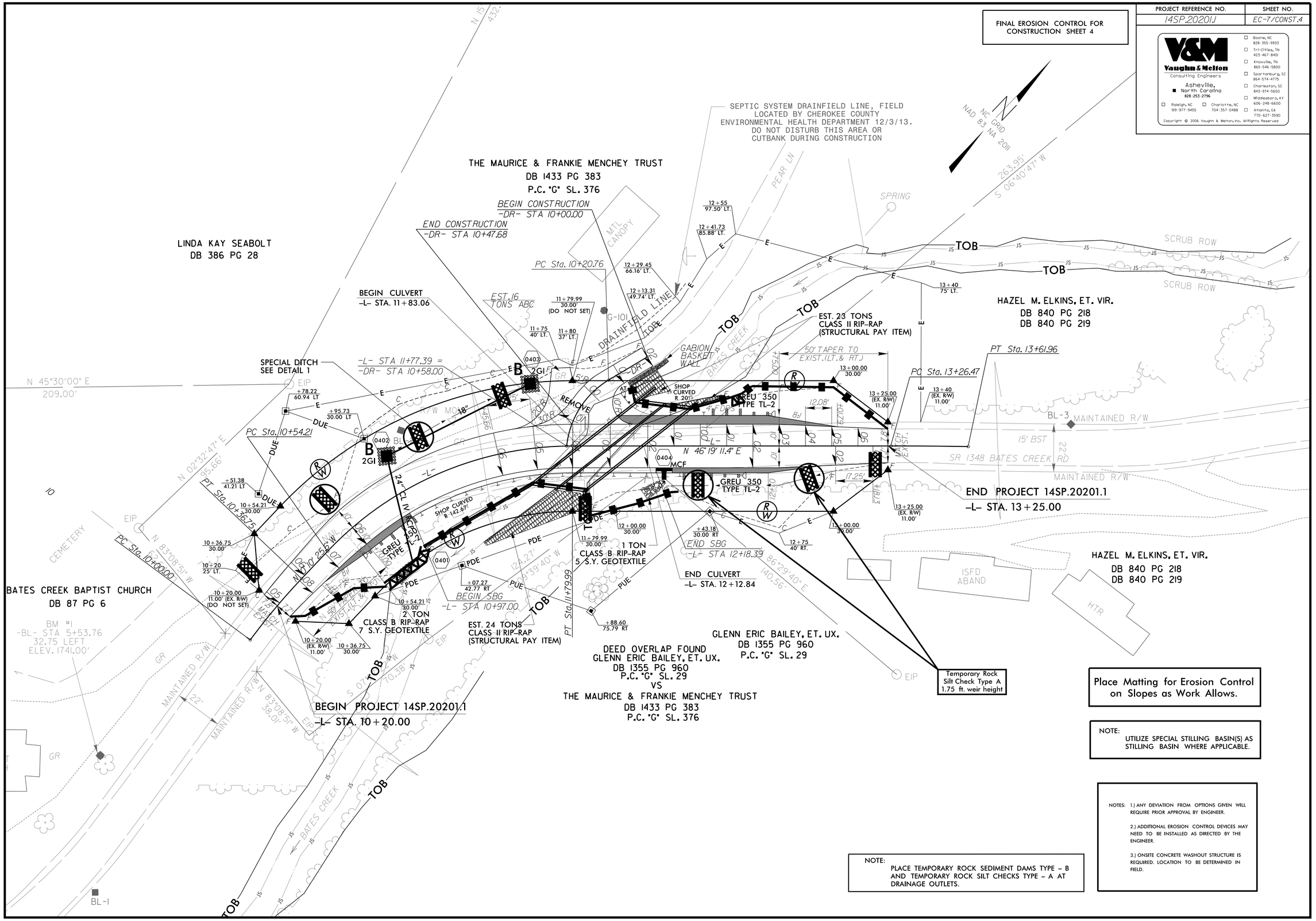

Place Matting for Erosion Control on Slopes as Work Allows.

NOTE:
UTILIZE SPECIAL STILLING BASIN(S) AS STILLING BASIN WHERE APPLICABLE.

NOTES:
1.) ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.
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3.) ONSITE CONCRETE WASHOUT STRUCTURE IS REQUIRED. LOCATION TO BE DETERMINED IN FIELD.

NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE – B AND TEMPORARY ROCK SILT CHECKS TYPE – A AT DRAINAGE OUTLETS.

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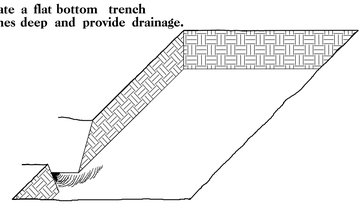
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	14SP.20201.1	RF-1	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	

PLANTING DETAILS

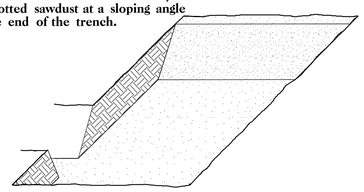
SEEDLING / LINER BAREROOT PLANTING DETAIL

HEALING IN

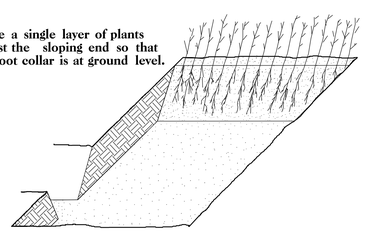
1. Locate a healing-in site in a shady, well protected area.
2. Excavate a flat bottom trench 12 inches deep and provide drainage.



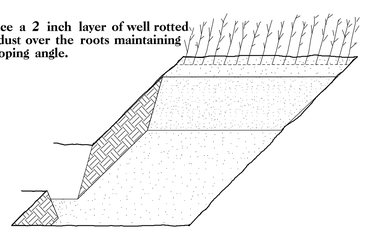
3. Backfill the trench with 2 inches well rotted sawdust. Place a 2 inch layer of well rotted sawdust at a sloping angle at one end of the trench.



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

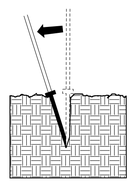


5. Place a 2 inch layer of well rotted sawdust over the roots maintaining a sloping angle.

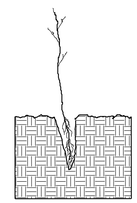


6. Repeat layers of plants and sawdust as necessary and water thoroughly.

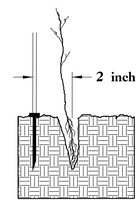
DIBBLE PLANTING METHOD
USING THE KBC PLANTING BAR



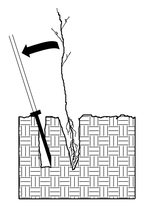
1. Insert planting bar as shown and pull handle toward planter.



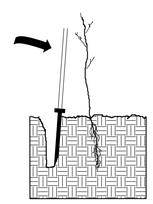
2. Remove planting bar and place seedling at correct depth.



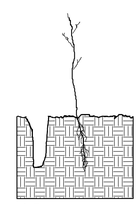
3. Insert planting bar 2 inches toward planter from seedling.



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

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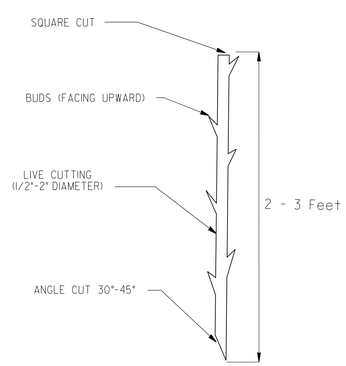
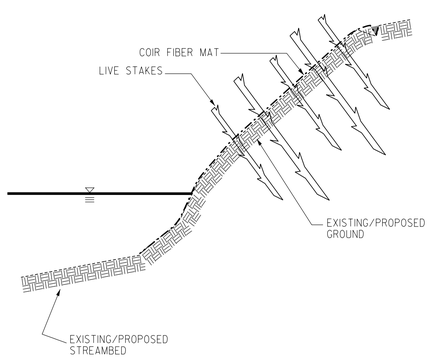
PLANTING DETAILS

LIVE STAKES PLANTING DETAIL

LIVE STAKE

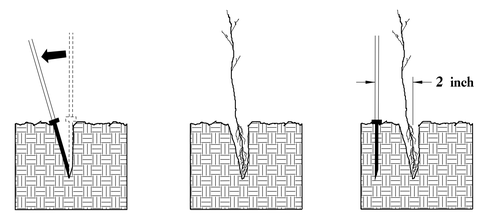




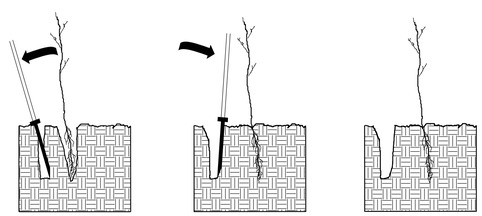
BANK STABILIZATION WITH LIVE STAKES

NOTE:
LIVE STAKES SHALL BE SPACED APPROXIMATELY 4 FEET ON CENTER
LIVE STAKES SHALL BE DRIVEN UNTIL APPROXIMATELY 3/4 OF LIVE STAKE IS WITHIN GROUND

BAREROOT PLANTING DETAIL 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:

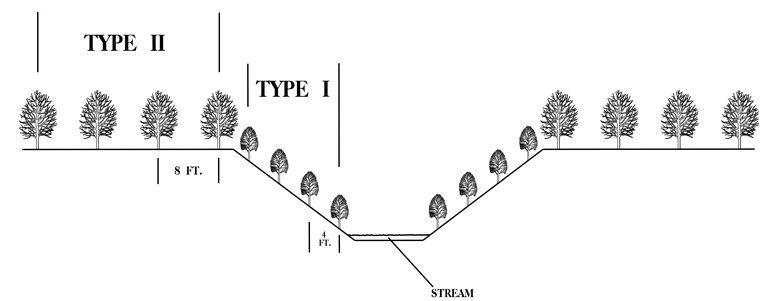
PLANTING BAG
During planting, seedlings shall be kept in a moist canvas bag or similar container to prevent the root systems from drying.

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.

- ☐ 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%	SALIX NIGRA	BLACK WILLOW	2 ft – 3 ft LIVE STAKES
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

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

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PROJECT REFERENCE NO.	SHEET NO.
14SP.2020111	RF-3

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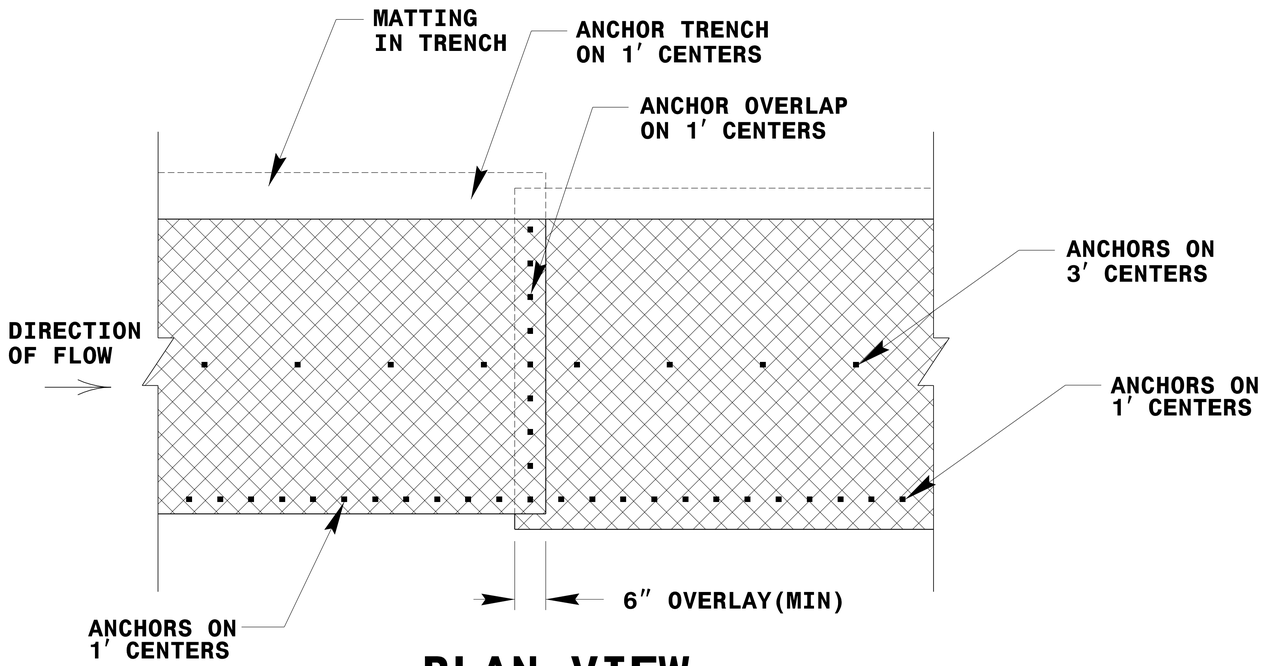
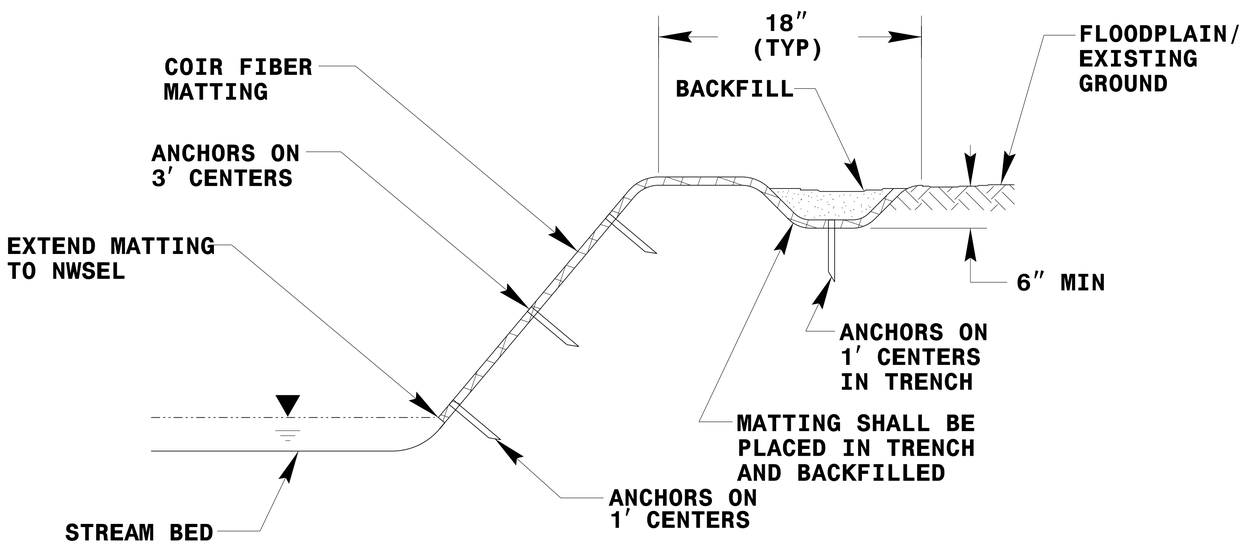
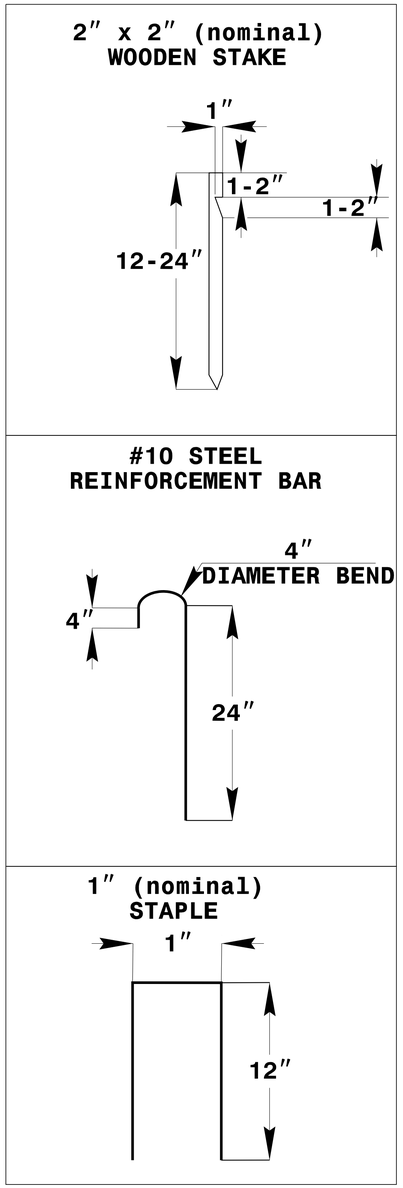


PLAN VIEW



TYPICAL CROSS SECTION



ANCHOR OPTIONS

COIR FIBER MATTING DETAIL

NOT TO SCALE

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

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7/20/2018 10:35:01 AM PDT

5/4/16

PROJECT NO.: 14SP.20201.1

CONTRACT: DN00134

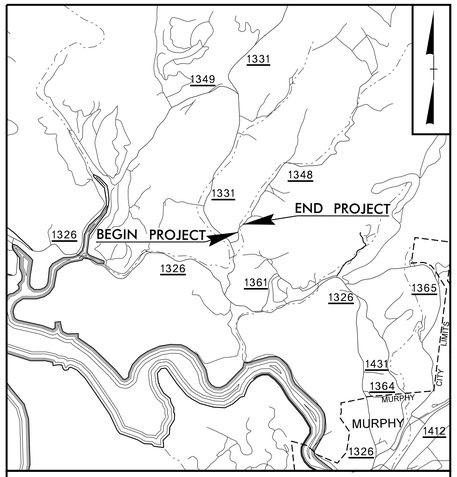
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

T.I.P. NO.	SHEET NO.
14SP.20201.1	UO–1

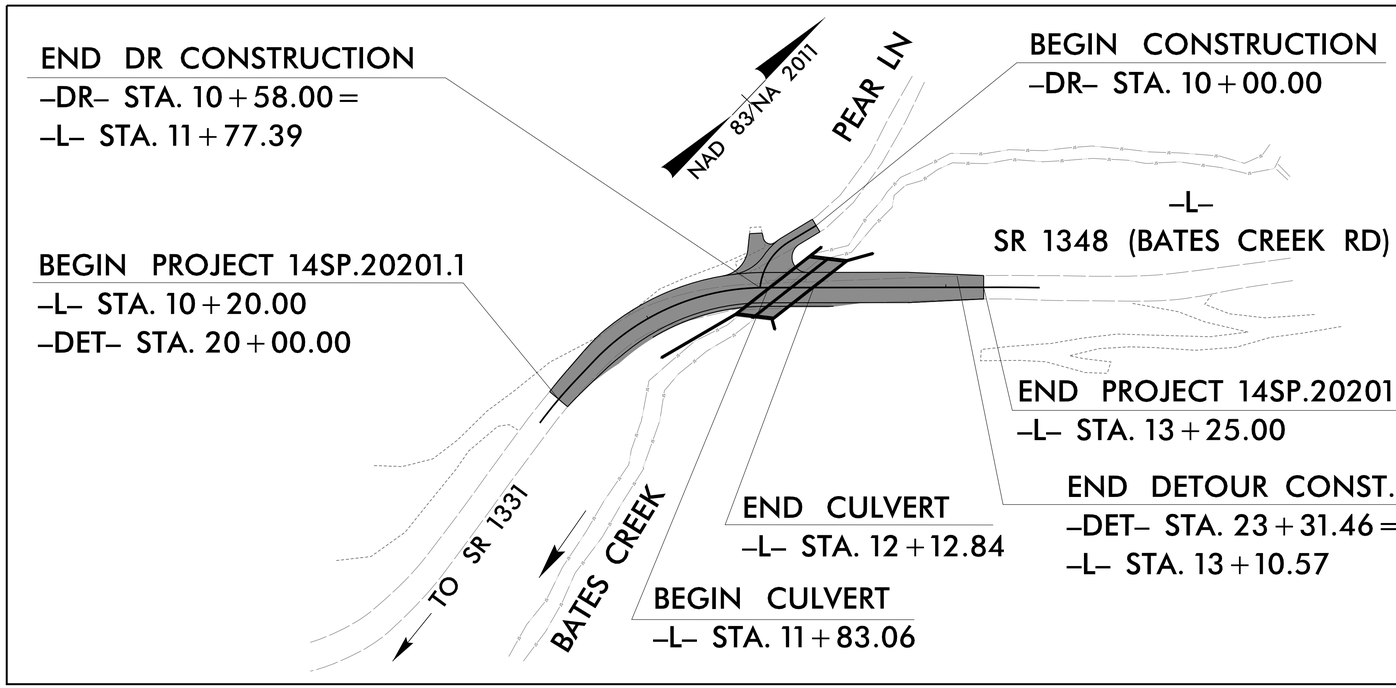
UTILITIES BY OTHERS
CHEROKEE COUNTY

LOCATION: BRIDGE NO. 190163 OVER BATES CREEK ON SR 1348 (BATES CREEK ROAD)

TYPE OF WORK: AERIAL POWER AND TELEPHONE



VICINITY MAP



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Spartanburg, South Carolina 864-574-4775
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GRAPHIC SCALES

20 10 0 20 40
PLANS

INDEX OF SHEETS

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

UTILITY OWNERS ON PROJECT

(1) POWER – BLUE RIDGE MOUNTAIN EMC

(2) TELEPHONE – FRONTIER COMMUNICATIONS

(3) SEPTIC SYSTEM – CHEROKEE COUNTY ENVIRONMENTAL HEALTH DEPARTMENT

PLANS PREPARED BY:

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828-253-2796

PREPARED FOR THE OFFICE OF:
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Robert Golding — DIVISION 14 UTILITY COORDINATOR
Lynn Mann, P.G. — UTILITIES PROJECT COORDINATOR

V&M PROJECT #31236-11
TRANSPORTATION\31236-11\UTILITIES\UO-1.DGN

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NEW DETOUR PLAN UPDATED 5-04-16
UTILITY PLAN REVISED 3-21-16
UTILITY PLAN REVISED 12-9-15
DETOUR ADDED 10/15/15

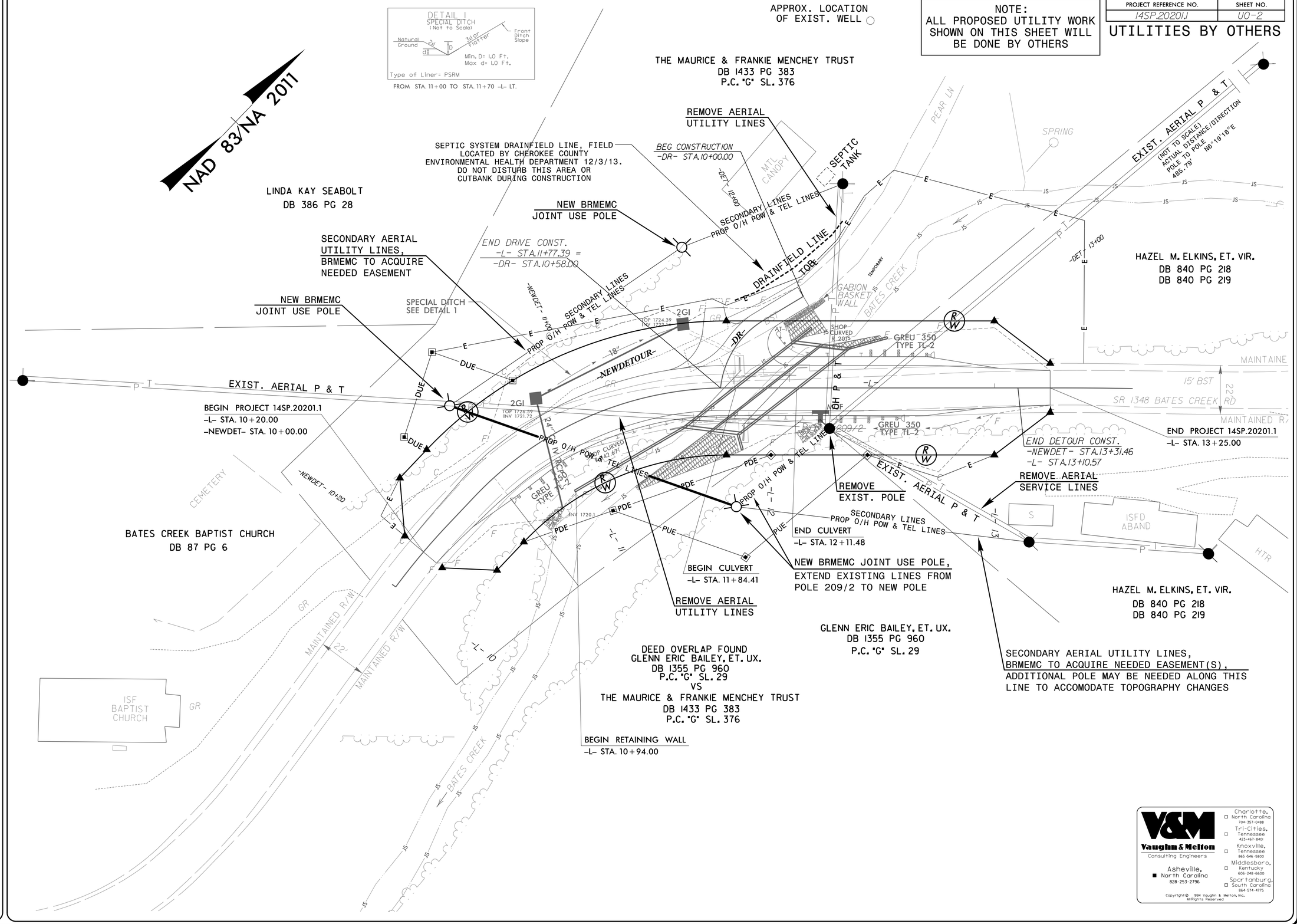
PROJECT NO.: 14SP.20201.1

CONTRACT: DN00134

PROJECT REFERENCE NO.	SHEET NO.
14SP.20201.1	U0-2

UTILITIES BY OTHERS

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



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