This electronic collection of documents is provided for the convenience of the user and is Not a Certified Document –

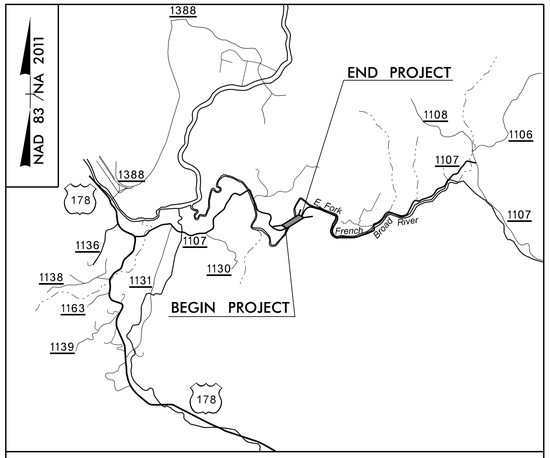
The documents contained herein were originally issued and sealed by the individuals whose names and license numbers appear on each page, on the dates appearing with their signature on that page.
This file or an individual page shall not be considered a certified document.

DocuSign Envelope ID: 1D29D381-20B5-43BC-B7CE-1BF15C5E290C

09/08/99

PROJECT: 17BP.14.R.137

CONTRACT: DN00117



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSYLVANIA COUNTY

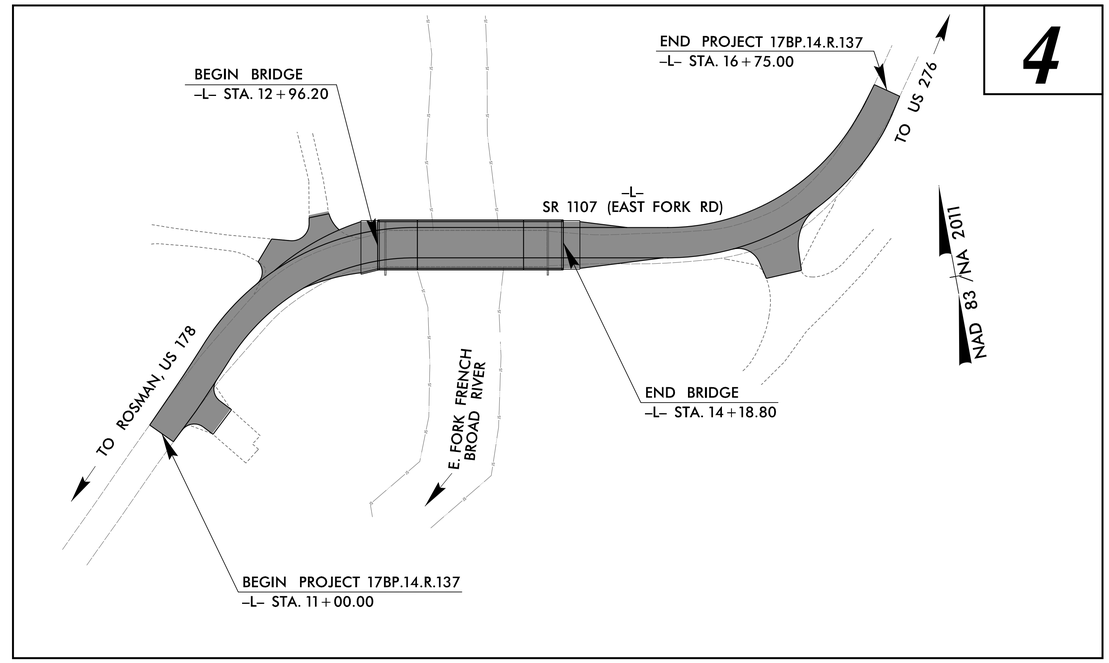
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.14.R.137	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
45360.1.30	BRZ-1107(19)	PE
45360.2.30	BRZ-1107(19)	R/W
17BP.14.R.137		CONST.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

LOCATION: BRIDGE NO. 86 OVER E. FORK FRENCH BROAD RIVER ON SR 1107 (EAST FORK ROAD)

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



V&M
Vaughn & Melton
Consulting Engineers
Asheville, North Carolina 828-253-2796
Charlotte, North Carolina 704-357-8488
Tri-Cities, Tennessee 423-467-8410
Knoxville, Tennessee 865-546-5800
Middlesboro, Kentucky 606-248-6600
Spartanburg, South Carolina 864-574-4775
Copyright © 2006 Vaughn & Melton, Inc. All Rights Reserved

HYDRAULICS & EROSION CONTROL BY:

WETHERILL ENGINEERING

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 = 440
ADT 2025 = 580

T = 6%
V = 35 MPH

FUNC CLASS = RURAL LOCAL
SUB-REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY PROJECT 17BP.14.R.137 = 0.086 MI.

LENGTH STRUCTURE PROJECT 17BP.14.R.137 = 0.023 MI.

TOTAL LENGTH PROJECT 17BP.14.R.137 = 0.109 MI.

Prepared in the Office of:
VAUGHN & MELTON
1318-F PATTON AVE.
ASHEVILLE NC, 28806
FOR THE NORTH CAROLINA DIVISION OF HIGHWAYS

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
FEBRUARY 28, 2014

LETTING DATE:
FEBRUARY 14, 2017

REECE SCHULER, PE
PROJECT ENGINEER

PHIL SCHULER, PE
PROJECT DESIGN ENGINEER

NCDOT CONTACT:
JOSH DEYTON, PE
DIVISION 14 PROGRAM BRIDGE MANAGER

HYDRAULICS ENGINEER

DocuSigned by:
Kevin B. Alford
2BE802BEB76D44D...
1/23/2017
SIGNATURE: *P.E.*

NORTH CAROLINA PROFESSIONAL SEAL 31977 ENGINEER KEVIN B. ALFORD

ROADWAY DESIGN ENGINEER

1/23/2017
DocuSigned by:
Reece M. Schuler
16634024C7824FC...
SIGNATURE: *P.E.*

NORTH CAROLINA PROFESSIONAL SEAL 26960 ENGINEER REECE M. SCHULER

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

12/22/2016
S:\transportation\3i235-08 I4AD Transylvania 86\Roadway\Proj\BD5il4Ad_rdy_tsh.dgn
User:cjmartell

DocuSign Envelope ID: 3D3EB61A-127A-48AF-8FF2-46DF927B665A

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT REFERENCE NO.	SHEET NO.
I7BPJ4.RJ37	1A

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 26960 ENGINEER

DocuSigned by: Kevin M. Schwab, P.E.

1/23/2017

INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
1B	CONVENTIONAL SYMBOLS
1C-1	SURVEY CONTROL SHEET
2A-1	PAVEMENT SCHEDULE, TYPICAL SECTIONS, AND WEDGING DETAILS
2C-1	STRUCTURE ANCHOR UNITS
2C-2	TYPE III - SHOP CURVED STRUCTURE ANCHOR UNIT
3B-1	ASPHALT PAVEMENT REMOVAL SUMMARY, EARTHWORK SUMMARY, AND SUMMARY OF GUARDRAIL
3D-1	SUMMARY OF DRAINAGE QUANTITIES
4	PLAN SHEET
5	PROFILE SHEET
TMP-1 THRU TMP-5	TRAFFIC MANAGEMENT PLANS
PMP-1	PAVEMENT MARKING PLANS
EC-1 THRU EC-3A	EROSION CONTROL PLANS
UC-1 THRU UC-3	UTILITIES BY CONSTRUCTION PLANS
UO-1 THRU UO-2	UTILITIES BY OTHERS PLANS
X-1A	CROSS-SECTION SUMMARY
X-1 THRU X-8	CROSS-SECTIONS
S-1 THRU S-34	STRUCTURE PLANS

GENERAL NOTES:

2012 SPECIFICATIONS
EFFECTIVE: 01-17-2012
REVISED: 07-30-2012

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.

SUPERELEVATION:

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

SHOULDER CONSTRUCTION:

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

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 PLANS WILL BE PAID FOR AT THE CONTRACT PRICE FOR "TEMPORARY SHORING".

END BENTS:

THE ENGINEER SHALL CHECK THE STRUCTURE END BENT PLANS, DETAILS, AND CROSS-SECTION PRIOR TO SETTING OF THE SLOPE STAKES FOR THE EMBANKMENT OR EXCAVATION APPROACHING A BRIDGE.

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE HAYWOOD EMC AND COMPORIUM COMMUNICATIONS.

RIGHT-OF-WAY MARKERS:

ALL RIGHT-OF-WAY MARKERS ON THIS PROJECT SHALL BE PLACED BY CONTRACT IN ACCORDANCE WITH SECTION 801 OF THE 2012 NORTH CAROLINA STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES.

EFF. 01-17-2012
REV. 10-30-2012

2012 ROADWAY ENGLISH STANDARD DRAWINGS

The following Roadway Standards as appear in "Roadway Standard Drawings" Highway Design Branch - N. C. Department of Transportation - Raleigh, N. C., Dated January, 2012 are applicable to this project and by reference hereby are considered a part of these plans:

STD.NO.	TITLE
DIVISION 2 - EARTHWORK	
200.02	Method of Clearing - Method II
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation
DIVISION 4 - MAJOR STRUCTURES	
422.11	Reinforced Bridge Approach Fills - Sub Regional Tier
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
DIVISION 8 - INCIDENTALS	
815.03	Pipe Underdrain and Blind Drain
840.25	Anchorage for Frames
840.29	Frames and Narrow Slot Flat Grates
840.35	Traffic Bearing Grated Drop Inlet
840.46	Traffic Bearing Precast Drainage Structure
846.01	Concrete Curb, Gutter and Curb & Gutter
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units

12/22/2016
s:\roadway\transportation\31235-08 I4AD Transylvania 86\Roadway\Proj\bd5114ad_rdy_sum_1a.dgn
(jsecrest)

04/06/15

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.J37	18

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
- 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
- Potential Contamination Area: Soil
- Known Contamination Area: Water
- Potential Contamination Area: Water
- 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:

- Baseline Control Point
- Existing Right of Way Marker
- Existing Right of Way Line
- Proposed Right of Way Line — RW
- Proposed Right of Way Line with Iron Pin and Cap Marker — RW
- Proposed Right of Way Line with Concrete or Granite R/W Marker — RW
- Proposed Control of Access Line with Concrete C/A Marker — CA
- Existing Control of Access — CA
- Proposed Control of Access — CA
- Existing Easement Line — E
- Proposed Temporary Construction Easement — E
- Proposed Temporary Drainage Easement — TDE
- Proposed Permanent Drainage Easement — PDE
- Proposed Permanent Drainage / Utility Easement — DUE
- Proposed Permanent Utility Easement — PUE
- Proposed Temporary Utility Easement — TUE
- Proposed Aerial Utility Easement — AUE
- Proposed Permanent Easement with Iron Pin and Cap Marker

ROADS AND RELATED FEATURES:

- Existing Edge of Pavement
- Existing Curb
- Proposed Slope Stakes Cut — C
- Proposed Slope Stakes Fill — F
- Proposed Curb Ramp — CR
- Existing Metal Guardrail
- Proposed Guardrail
- Existing Cable Guiderail
- Proposed Cable Guiderail
- Equality Symbol
- Pavement Removal

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.

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.137	1C-1
Location and Surveys	

SURVEY CONTROL SHEET 17BP.14.R.137

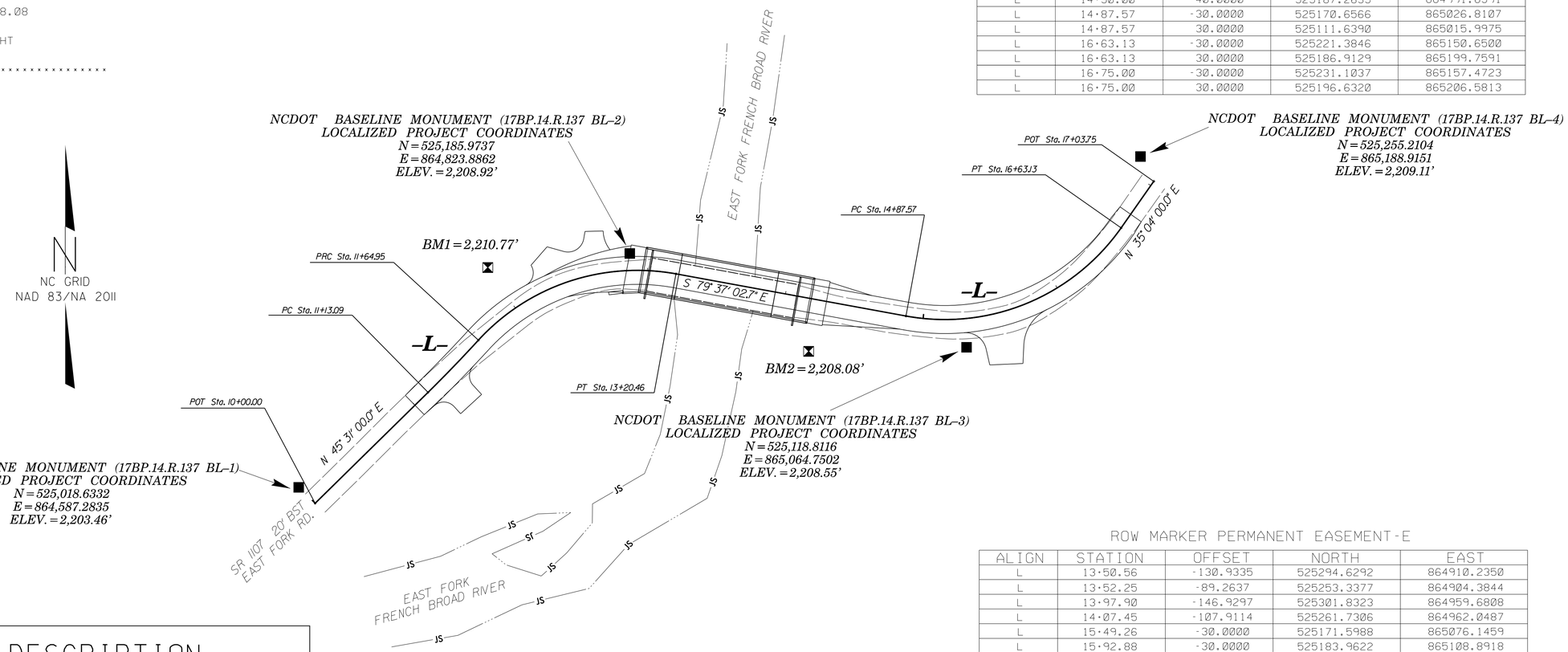
BL

POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
1	BL-1	525018.6332	864587.2835	2203.46	OUTSIDE PROJECT LIMITS	
2	BL-2	525185.9737	864823.8862	2208.92	12+87.56	12.27 LT
3	BL-3	525118.8116	865064.7502	2208.55	15+29.25	20.51 RT
4	BL-4	525255.2104	865188.9151	2209.11	OUTSIDE PROJECT LIMITS	

****
BM1 ELEVATION = 2210.77
N 525176 E 864723
BL STATION 7+01.00 50 LEFT
NAIL IN BASE OF PP
****
****
BM2 ELEVATION = 2208.08
N 525116 E 864952
BL STATION 9+32.00 33 RIGHT
NAIL IN BASE OF 30" OAK
****

ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	11+13.09	30.0000	525065.1885	864700.7661
L	11+25.00	-30.0000	525116.1392	864666.9168
L	11+50.00	-40.0000	525140.4166	864676.5248
L	11+64.95	30.0000	525103.6025	864737.8903
L	12+02.52	-40.4336	525181.9273	864721.9665
L	12+14.05	-30.0000	525180.3934	864739.4881
L	13+20.46	-30.0000	525200.7737	864862.4339
L	13+20.46	40.0000	525131.9199	864849.8185
L	14+00.00	-30.0000	525186.4382	864940.6756
L	14+25.00	-40.0000	525191.7690	864967.0685
L	14+30.00	40.0000	525112.1778	864957.5690
L	14+50.00	-40.0000	525187.2635	864991.6591
L	14+87.57	-30.0000	525170.6566	865026.8107
L	14+87.57	30.0000	525111.6390	865015.9975
L	16+63.13	-30.0000	525221.3846	865150.6500
L	16+63.13	30.0000	525186.9129	865199.7591
L	16+75.00	-30.0000	525231.1037	865157.4723
L	16+75.00	30.0000	525196.6320	865206.5813



ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	13+50.56	-130.9335	525294.6292	864910.2350
L	13+52.25	-89.2637	525253.3377	864904.3844
L	13+97.90	-146.9297	525301.8323	864959.6808
L	14+07.45	-107.9114	525261.7306	864962.0487
L	15+49.26	-30.0000	525171.5988	865076.1459
L	15+92.88	-30.0000	525183.9622	865108.8918

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "17BP.14.R.137 BL-2" WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF NORTHING: 525185.9737(ft) EASTING: 864823.8862(ft) ELEVATION: 2208.92(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99977386
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "17BP.14.R.137 BL-2" TO -L- STATION 11+00 IS S 54°43'44" W 187.99'
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

FINAL -L-

TYPE	STATION	NORTH	EAST
POT	10+00.00	525007.3505	864599.0613
PC	11+13.09	525086.5922	864679.7451
PRC	11+64.95	525123.8806	864715.7815
PT	13+20.46	525171.2649	864857.0273
PC	14+87.57	525141.1478	865021.4041
PT	16+63.13	525204.1487	865175.2045
POT	17+03.75	525237.4019	865198.5464

NOTE: DRAWING NOT TO SCALE

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:
BD5114AD_LS_CONTROL_150312.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
1/6/2017
C:\Transportation\31235-08 14AD Transylvania 86\Roadway\Proj\BD5114AD_ls_1C_150312.dgn
bkerchner

DocuSign Envelope ID: 99C1DB68-0CE4-46F6-ABF1-137598ABA428

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.137	2A-1

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 26960 ENGINEER

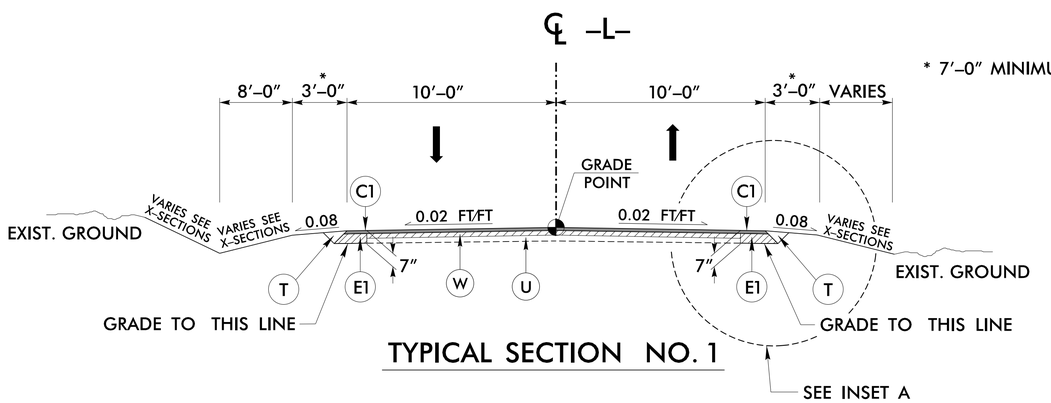
DocuSigned by: Kelly A. McGregor
1/23/2017

PAVEMENT DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 20134 ENGINEER

DocuSigned by: Ronald W. Mahaffey
56AE951E4242482...
1/23/2017

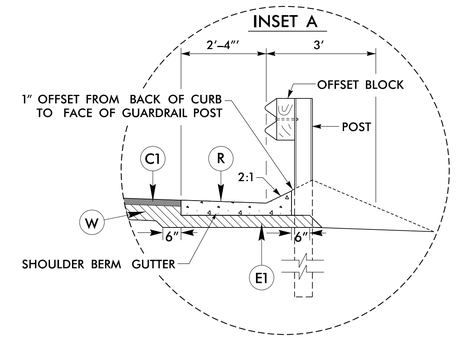
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



TYPICAL SECTION NO. 1

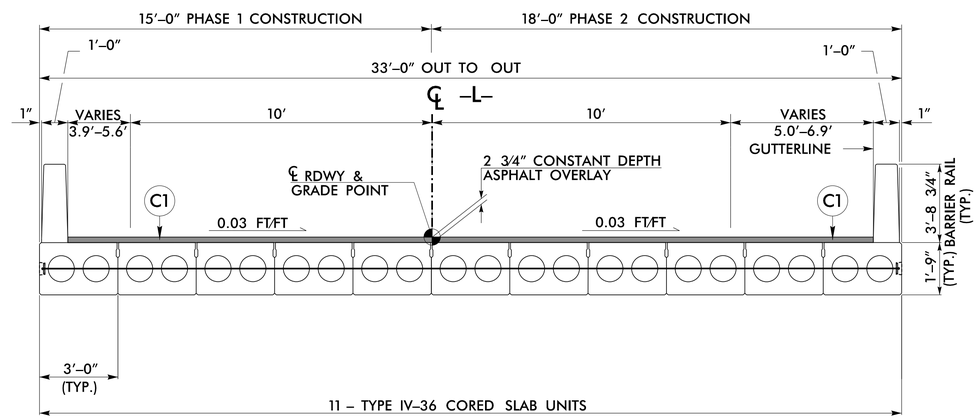
USE TYPICAL SECTION NO. 1

–L– STA. 11+00.00 (BEGIN PROJECT) TO 12+96.20 (BEGIN BRIDGE)
–L– STA. 14+18.80 (END BRIDGE) TO 16+75.00 (END PROJECT)



USE INSET A

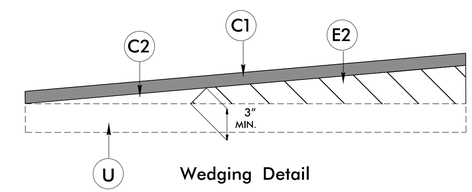
FROM –L– STA. 12+70 RT TO BEGIN APPROACH SLAB



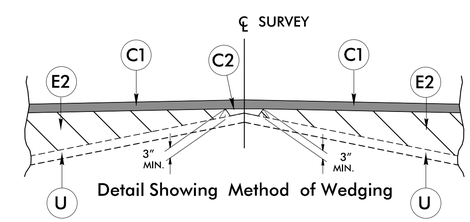
TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2

–L– STA. 12+96.20 (BEGIN BRIDGE) TO STA. 14+18.80 (END END BRIDGE)



Wedging Detail



Detail Showing Method of Wedging

	FINAL PAVEMENT SCHEDULE
C1	PROP. APPROX. 3″ ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1″ DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 1½″ IN DEPTH OR GREATER THAN 2″ IN DEPTH.
E1	PROP. APPROX. 4″ ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1″ DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3″ IN DEPTH OR GREATER THAN 5½″ IN DEPTH.
R	SHOULDER BERM GUTTER (SEE NCDOT STANDARD DRAWING NO. 846.01)
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	PROPOSED WEDGING (SEE APPROPRIATE DETAILS)

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

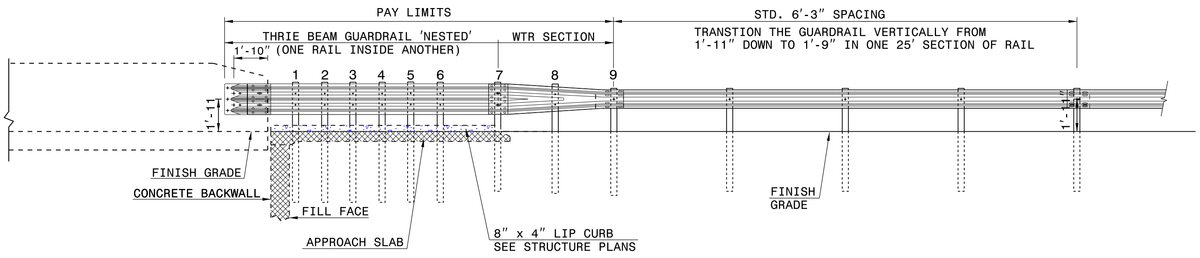
1/23/2017
J:\2017\Transportation\31235-08 14AD Transylvania 86\Roadway\Proj\bd5114Ad_rdy_typ.dgn
(Basic material)

$$$$$$$SYSTIME$$$$$
$$$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

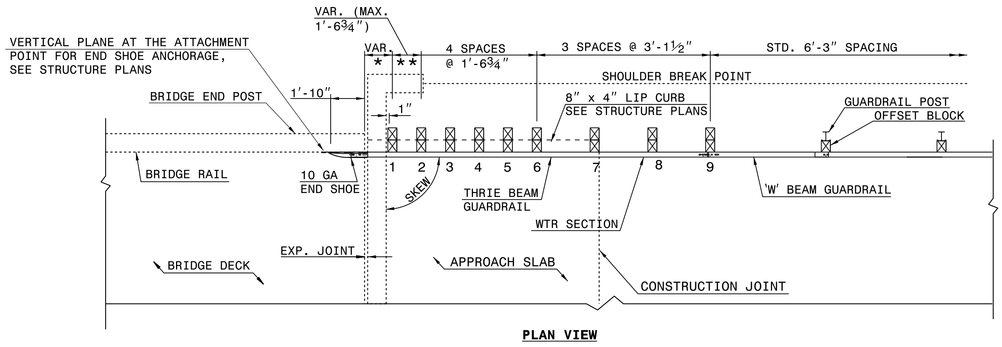
ENGLISH DETAIL DRAWING FOR
STRUCTURE ANCHOR UNITS
GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO RAIL ON BRIDGE - SUB REGIONAL TIER

SHEET 2 OF 7
862d03



ELEVATION

NOTE:
**POST NOT REQUIRED FOR SKEW ANGLES GREATER THAN 150° OR LESS THAN 30° UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
*THE DISTANCE FROM END OF BRIDGE RAIL TO CENTER LINE OF THE FIRST POST SHOULD BE 11½" IF CONCRETE BACKWALL IS NOT PRESENT.
-SHOULDER BERM GUTTER MUST BE INSTALLED TO THE LIMITS 8" x 4" LIP CURB IS SHOWN IF ANCHOR UNIT IS NOT ADJACENT TO AN APPROACH SLAB.
-MEASURE GUARDRAIL HEIGHT FROM THE TOP OF ADJACENT SURFACE (SHOULDER, BERM, OR GUTTER).
-LAP JOINTS IN THE DIRECTION OF TRAFFIC FLOW.
-SEE SHEET 5 FOR POST SECTIONS 1 THRU 9.



PLAN VIEW

GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO RAIL ON BRIDGE - SUB REGIONAL TIER

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

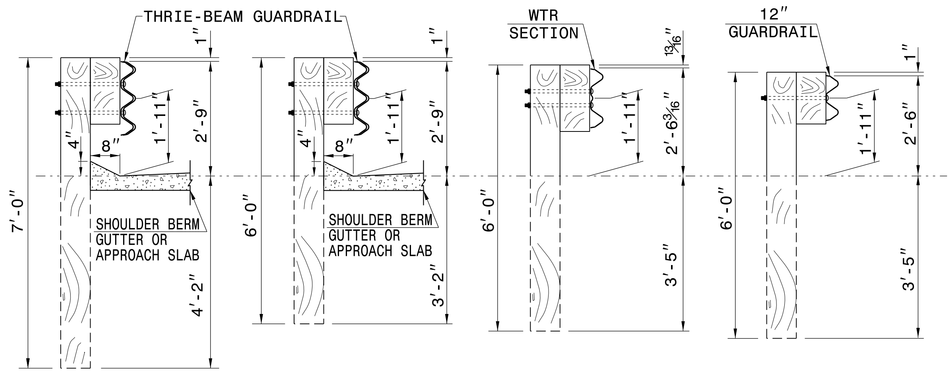
ENGLISH DETAIL DRAWING FOR
STRUCTURE ANCHOR UNITS
GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO RAIL ON BRIDGE - SUB REGIONAL TIER

SHEET 2 OF 7
862d03

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
STRUCTURE ANCHOR UNITS
GUARDRAIL ANCHOR UNIT, TYPE III

SHEET 3 OF 7
862d03

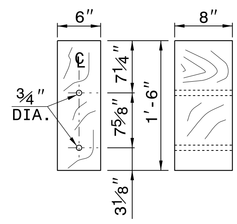


SECTION OF THRIE BEAM POSTS 1 THRU 6

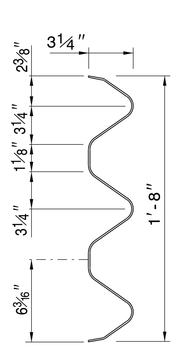
SECTION OF THRIE BEAM POST 7

SECTION OF WTR BEAM POST 8

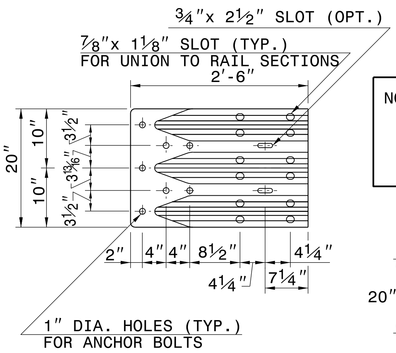
SECTION OF 'W' BEAM POST 9



THRIE BEAM OFFSET BLOCK

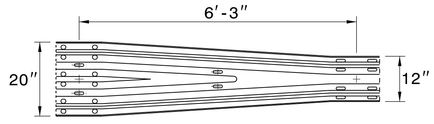


THRIE-BEAM SECTION

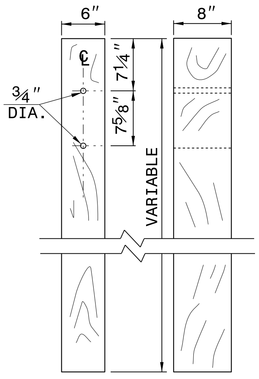


END SHOE

NOTE: THE MID POST AND OFFSET BLOCK OF THE WTR SECTION WILL REQUIRE SPECIAL BOLT HOLE DRILLING IN THE THRIE BEAM OFFSET BLOCK AND LINE POST.



WTR SECTION
ELEVATION VIEW



THRIE BEAM LINE POST

GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO RAIL ON BRIDGE - SUB REGIONAL TIER

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
STRUCTURE ANCHOR UNITS
GUARDRAIL ANCHOR UNIT, TYPE III

SHEET 3 OF 7
862d03

CONTRACT STANDARDS AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

SEE TITLE BLOCK

ORIGINAL BY: J. HOWERTON DATE: 06-22-12
MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC.:

PROJECT REFERENCE NO. 17BP.14.R.137
SHEET NO. 2C-1

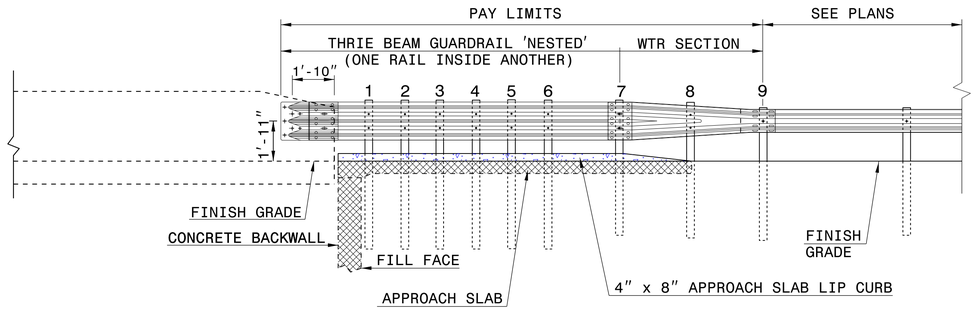
STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR

TYPE III - SHOP CURVED
STRUCTURE ANCHOR UNIT

SHEET 1 OF 1

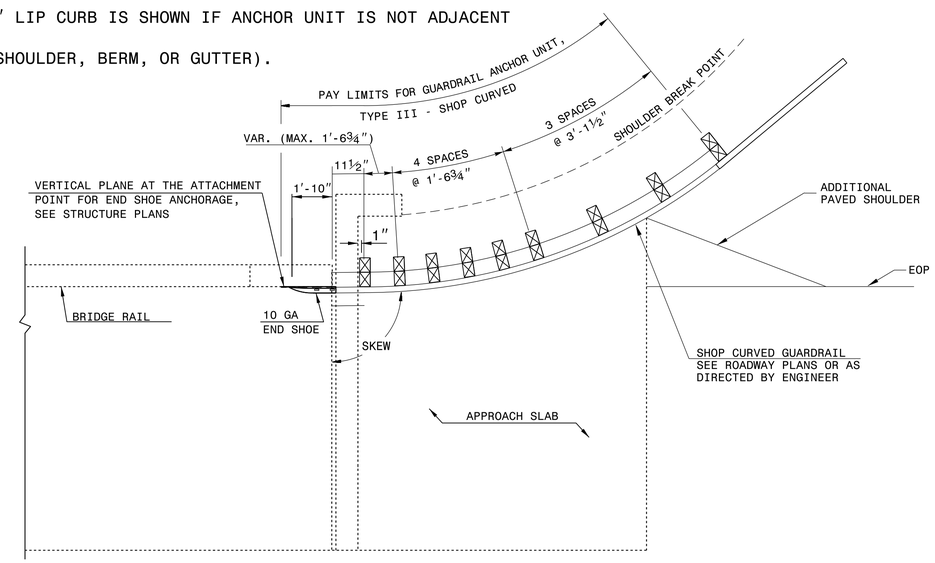
TYPE III SC



ELEVATION

SEE ROADWAY PLANS FOR END TREATMENT

NOTE:
- **POST NOT REQUIRED FOR SKEW ANGLES GREATER THAN 150° OR LESS THAN 30° UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
- *THE DISTANCE FROM END OF BRIDGE RAIL TO CENTER LINE OF THE FIRST POST SHOULD BE 11½" IF CONCRETE BACKWALL IS NOT PRESENT.
- -SHOULDER BERM GUTTER MUST BE INSTALLED TO THE LIMITS 8" x 4" LIP CURB IS SHOWN IF ANCHOR UNIT IS NOT ADJACENT TO AN APPROACH SLAB.
- -MEASURE GUARDRAIL HEIGHT FROM THE TOP OF ADJACENT SURFACE (SHOULDER, BERM, OR GUTTER).
- -USE NO STEEL POSTS WITHIN THE GUARDRAIL ANCHOR UNIT LIMITS.
- -LAP JOINTS IN THE DIRECTION OF TRAFFIC FLOW.
- -SEE STANDARD 862.03 SHEET 4 FOR POST SECTIONS 1 THRU 9.



PLAN VIEW

GUARDRAIL ANCHOR UNIT, TYPE III - SHOP CURVED FOR ATTACHMENT TO RAIL ON BRIDGE

STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR

TYPE III - SHOP CURVED
STRUCTURE ANCHOR UNIT

SHEET 1 OF 1

TYPE III SC

CONTRACT STANDARDS AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

SEE PLATE FOR TITLE

ORIGINAL BY: E.E.Ward DATE: 4-4-02
MODIFIED BY: T.S.Spell DATE: 5-29-09
CHECKED BY: DATE:
FILE SPEC.: ward:\usr\details\stand\862stds\typeiiisc.dgn

5/14/99

$$$$SYSTIME$$$$
$$$$USERNAME$$$$

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PAVEMENT REMOVAL SUMMARY

IN SQUARE YARDS					
LINE	LOCATION	ASPHALT REMOVAL	ASPHALT BREAK-UP	CONCRETE REMOVAL	CONCRETE REMOVAL
-L-	11+00 TO 12+85	46			
-L-	14+30 TO 16+75	72			
	TOTAL	118			
	SAY	120			

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

SUMMARY OF EARTHWORK IN CUBIC YARDS

LOCATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBT+%	BORROW	WASTE
PHASE 1 (LEFT)					
-L- STA. 11+00.00 TO STA. 12+96.20 (BEG. BRIDGE)	99		13		86
-L- STA. 14+18.80 (END BRIDGE) TO STA. 16+75.00	51		203	152	
SUBTOTAL PHASE 1	150		216	152	86
WASTE IN LIEU OF BORROW				-86	-86
PHASE 1 TOTAL	150		216	66	
PHASE 2 (RIGHT)					
-L- STA. 11+00.00 TO STA. 12+96.20 (BEG. BRIDGE)	112		6		106
-L- STA. 14+18.80 (END BRIDGE) TO STA. 16+75.00	6		26	20	
SUBTOTAL PHASE 2	118		32	20	106
WASTE IN LIEU OF BORROW				-20	-20
PHASE 2 TOTAL	118		32		86
PROJECT SUBTOTAL	268		248	66	86
EST. 5% TO REPLACE TOP SOIL ON BORROW PITS				4	
GRAND TOTAL	268		248	70	86

DDE = 32 CY

CONTINGENCY ITEMS:

INCIDENTAL STONE = 50 TONS

UNDERCUT EXCAVATION = 50 CY

SELECT GRANULAR MATERIAL = 50 CY

CLASS IV SUBGRADE STABILIZATION = 50 TONS

GEOTEXTILE FOR SOIL STABILIZATION = 50 SY

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

"N" = DISTANCE FROM EDGE OF LANE TO FACE OF GUARDRAIL.
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.
W = TOTAL WIDTH OF FLARE FROM BEGINNING OF TAPER TO END OF GUARDRAIL.
G = GATING IMPACT ATTENUATOR TYPE 350
NG = NON-GATING IMPACT ATTENUATOR TYPE 350

GUARDRAIL SUMMARY

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH		TEMPORARY		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	REMOVE AND STOCKPILE EXISTING GUARDRAIL	REMARKS
				STRAIGHT	SHOP CURVED	STRAIGHT	SHOP CURVED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	XI MOD	XI	GRAU 350 TL-2	M-350	TYPE III	TYPE III SHOP CURVED	B-77	BIC	AT-1	EA	G	NG				
-L-	12+14.68	12+81.06	RT	25	31.25			12+81.06		6	9	50		1				1			1										
-L-	12+77.49	12+99.52	LT	25					12+99.52	6	7 / VARIES									1				1							
-L-	14+18.80	15+27.16	RT	118.75					14+18.80	7	9		50		1			1		1											
-L-	14+29.62	14+78.33	LT	56.25				14+29.62		4	7	50		1				1		1											
-L-	12+68	14+68	RT			200																									
-L-	12+45	14+60	LT			175	37.5																								
			SUBTOTAL	225	31.25													3		3	1			1							
			LESS DEDUCTIONS FOR ANCHORS																												
			GRAU-350 TL-2 3 @ 25'=	-75																											
			TYPE III 3 @ 18.75'=	-56.25																											
			TYPE III SHOP CURVED 1 @ 18.75'=		-18.75																										
			GRAU-350 TL-2 (TEMP.) 4 @ 25'=			-100																									
			AT-1 1 @ 6.25'=	-6.25																											
			PROJECT TOTALS:	87.5	12.5	275	37.5											3		3	1			1							
			ADDITIONAL GUARDRAIL POSTS=5 EA.																												

6/21/00
12/22/2016
Transportation\31235-08 14AD Transylvania 86\Roadway\Proj\bd5114ad_rdy_sum.dgn
Microstation 8.1

COMPUTED BY: PHS DATE: 3-13-15
CHECKED BY: WCC DATE: 3-13-15

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT REFERENCE NO.	SHEET NO.
17BPJ4.RJ37	3D-1

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
12+72	RT	401		2,208.51	2,205.34														
12+72	RT	401	402		2,205.34	2,202.27													
TOTAL																			

STATION	C.S. PIPE 12" .064	15" .064	18" .064	24" .064	36" .079	42" .109	48" .109	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"
12+72																						
12+72		20																				
TOTAL		20																				

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 PER EACH (0' THRU 5.0')	* TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL.'B') LIN. *FT. A 5.0' THRU 10.0'	B 10.0' AND ABOVE	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	T.B.D.I. STD. 840.35	T.B.D.I. FRAME W/ TWO GRATES STD. 840.29				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.	REMARKS
12+72								1											1	1								
12+72																												
TOTAL								1											1	1								

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

6/21/00

12/22/2016
S:\transportation\31235-08 1440 Transylvania 86\Roadway\Proj\bd5114ed_rdy_sum.dgn

DocuSign Envelope ID: 1D29D381-20B5-43BC-B7CE-1BF15C5E290C

8/17/99

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.137	4

R/W SHEET NO.

V&M
Vaughn & Melton
Consulting Engineers
Asheville, North Carolina
828-253-2796

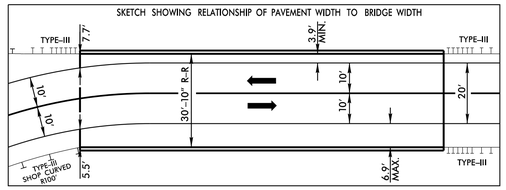
Boone, NC 828-355-9933
Tri-Cities, TN 423-467-8401
Knoxville, TN 865-546-5800
Spartanburg, SC 864-574-4775
Charleston, SC 843-974-5650
Middlesboro, KY 606-248-6600
Atlanta, GA 770-627-3509
Raleigh, NC 919-977-9455
Charlotte, NC 704-357-0488

Copyright © 2006 Vaughn & Melton, Inc. All Rights Reserved

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 26960 ENGINEER ROBERT W. SCHULER
DocuSigned by: 1/23/2017

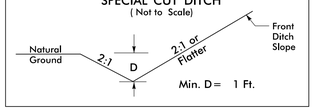
HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 31977 ENGINEER KEVIN B. ALFORD
DocuSigned by: 1/23/2017
2BE802BEB76044D...

SKETCH SHOWING RELATIONSHIP OF PAVEMENT WIDTH TO BRIDGE WIDTH



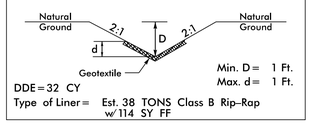
NAD 83 /NA 2011

DETAIL A
SPECIAL CUT DITCH
(Not to Scale)



FROM –L– STA. 11+50 TO STA. 12+50 RT.
FROM –L– STA. 14+25 TO STA. 16+50 LT.

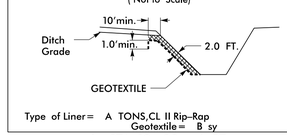
DETAIL B
STANDARD 'V' DITCH
(Not to Scale)



DDE=32 CY
Type of Liner= Est. 38 TONS Class B Rip-Rap w/ 114 SY FF

FROM –L– STA. 12+50 TO STA. 13+19 RT.
FROM –L– STA. 13+85 TO STA. 14+25 LT.

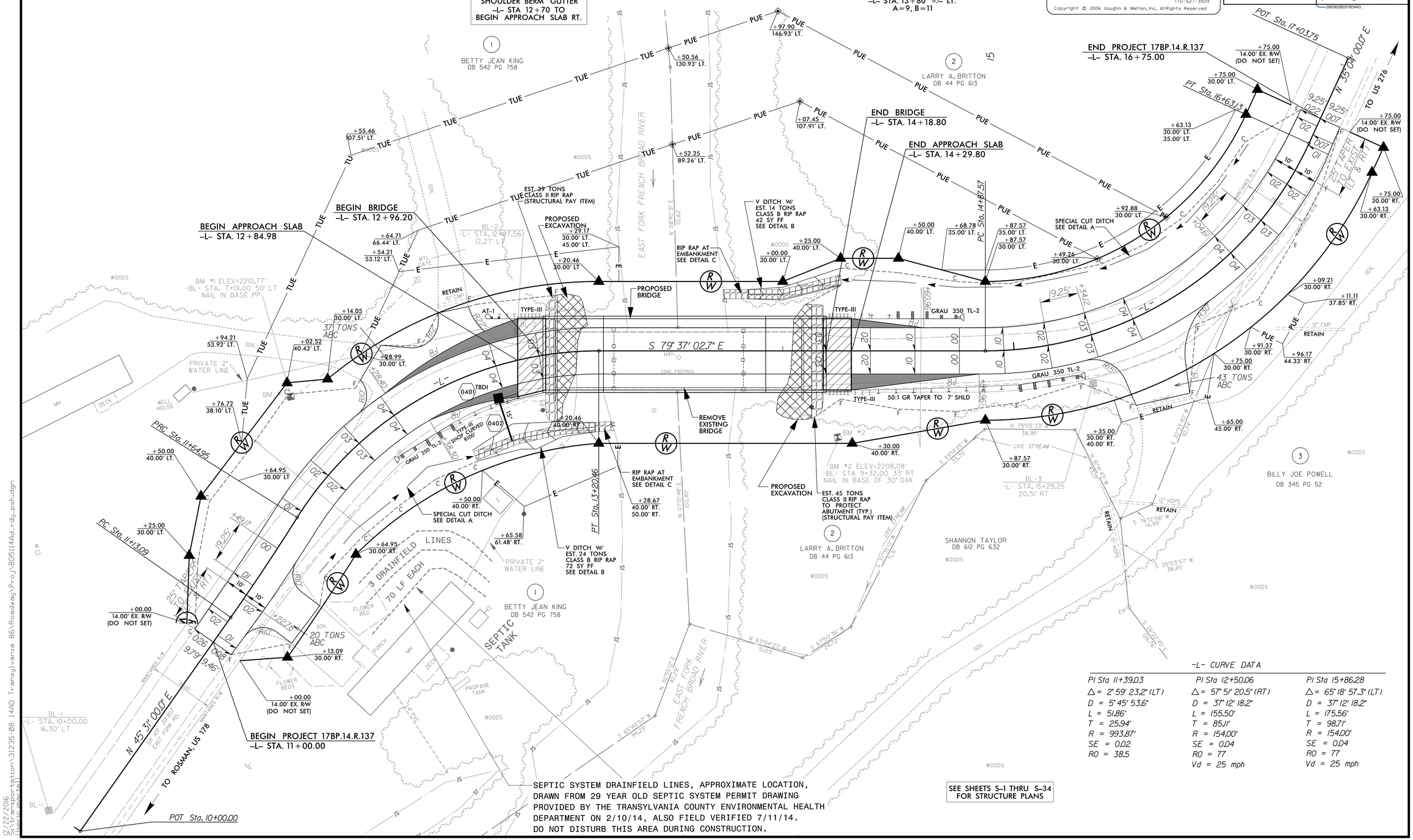
DETAIL C
RIP RAP AT EMBANKMENT
(Not to Scale)



Type of Liner= A TONS,CL II Rip-Rap
Geotextile= B sy

–L– STA. 13+23 +/– RT.
A=8, B=10
–L– STA. 13+80 +/– LT.
A=9, B=11

SHOULDER BERM GUTTER
–L– STA 12+70 TO
BEGIN APPROACH SLAB RT.



SEPTIC SYSTEM DRAINFIELD LINES, APPROXIMATE LOCATION, DRAWN FROM 29 YEAR OLD SEPTIC SYSTEM PERMIT DRAWING PROVIDED BY THE TRANSYLVANIA COUNTY ENVIRONMENTAL HEALTH DEPARTMENT ON 2/10/14, ALSO FIELD VERIFIED 7/11/14. DO NOT DISTURB THIS AREA DURING CONSTRUCTION.

SEE SHEETS S-1 THRU S-34 FOR STRUCTURE PLANS

-L- CURVE DATA

PI Sta 11+39.03	PI Sta 12+50.06	PI Sta 15+86.28
Δ= 2° 59' 23.2" (LT)	Δ= 57° 51' 20.5" (RT)	Δ= 65° 18' 57.3" (LT)
D = 5° 45' 53.6"	D = 37° 12' 18.2"	D = 37° 12' 18.2"
L = 51.86'	L = 155.50'	L = 175.56'
T = 25.94'	T = 85.11'	T = 98.71'
R = 993.87'	R = 154.00'	R = 154.00'
SE = 0.02	SE = 0.04	SE = 0.04
RO = 38.5	RO = 77	RO = 77
	Vd = 25 mph	Vd = 25 mph

12/22/2016
\\vmpc.local\Transportation\31235-08 14AD Transylvania 86\Roadway\Proj\BD5114Ad_rdy_psh.dgn

DocuSign Envelope ID: 1D29D381-20B5-43BC-B7CE-1BF15C5E290C

5/28/99

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.137	5

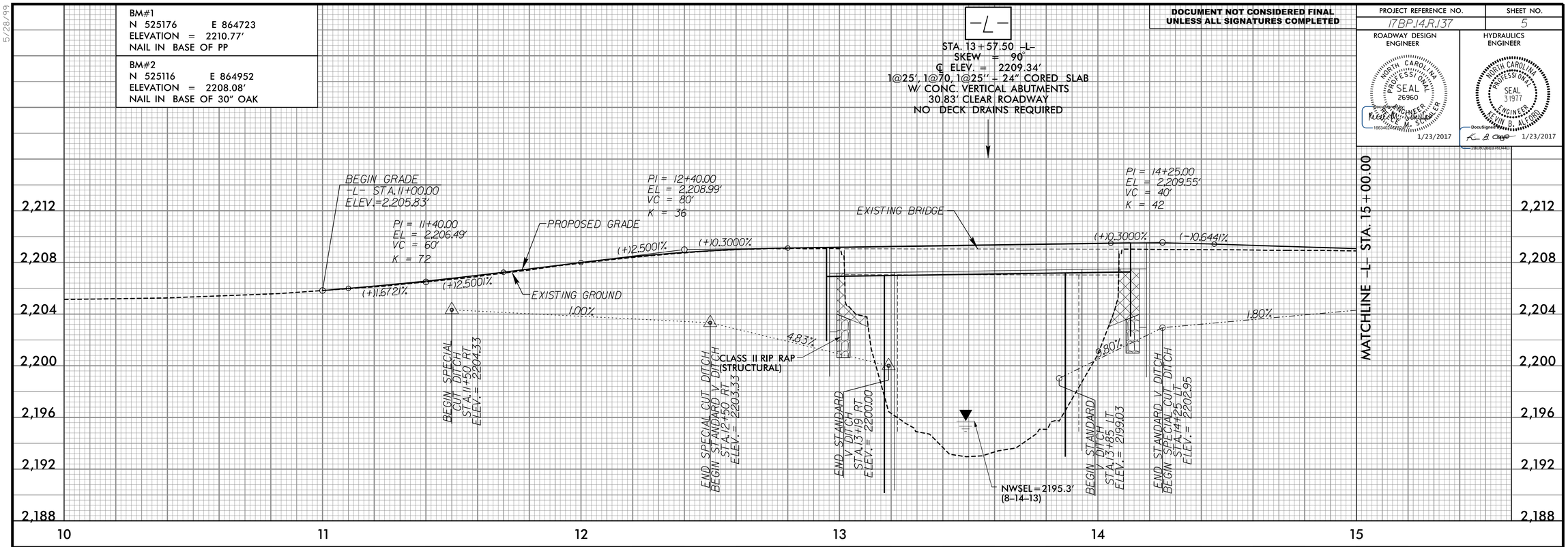
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

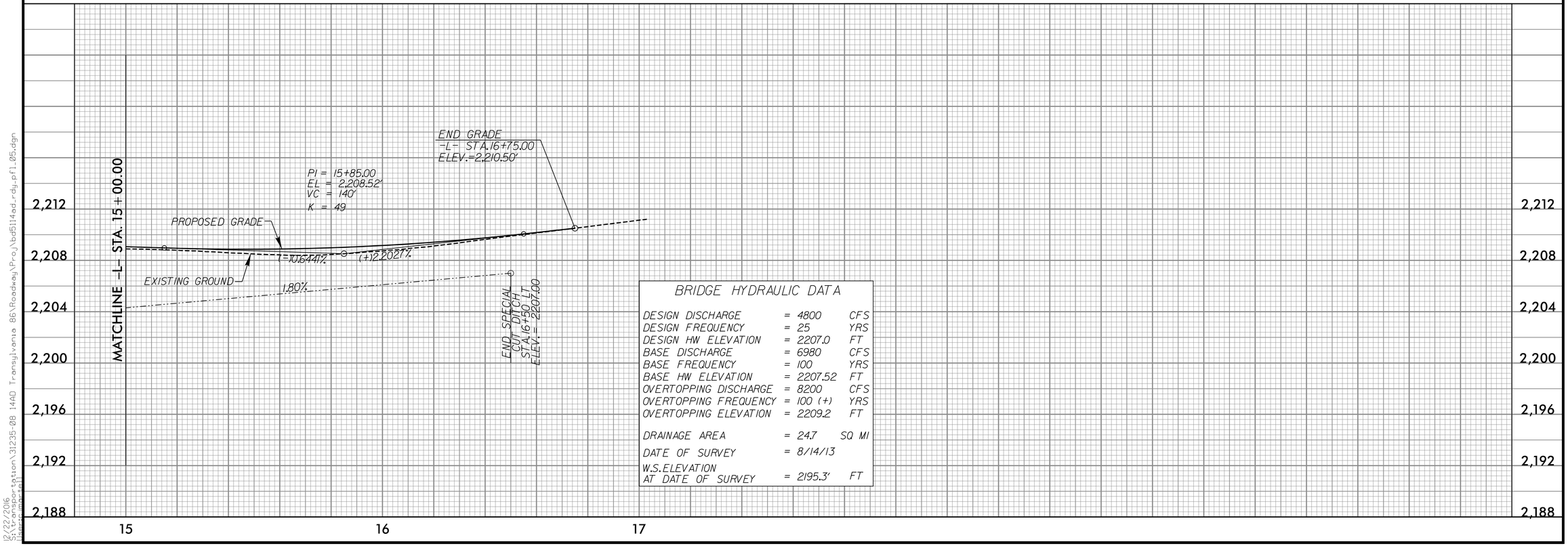
ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 26960 ENGINEER
DocuSigned by: Kelly M. Schuller
1/23/2017

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 31977 ENGINEER
DocuSigned by: Kevin B. Alford
1/23/2017

BM#1
N 525176 E 864723
ELEVATION = 2210.77'
NAIL IN BASE OF PP

BM#2
N 525116 E 864952
ELEVATION = 2208.08'
NAIL IN BASE OF 30" OAK





BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	=	4800	CFS
DESIGN FREQUENCY	=	25	YRS
DESIGN HW ELEVATION	=	2207.0	FT
BASE DISCHARGE	=	6980	CFS
BASE FREQUENCY	=	100	YRS
BASE HW ELEVATION	=	2207.52	FT
OVERTOPPING DISCHARGE	=	8200	CFS
OVERTOPPING FREQUENCY	=	100 (+)	YRS
OVERTOPPING ELEVATION	=	2209.2	FT
DRAINAGE AREA	=	24.7	SQ MI
DATE OF SURVEY	=	8/14/13	
W.S.ELEVATION AT DATE OF SURVEY	=	2195.3'	FT

12/22/2016
S:\Transportation\31235_08 14AD Transylvania 86\Roadway\Proj\bd5114ad_rdy_pf1_05.dgn

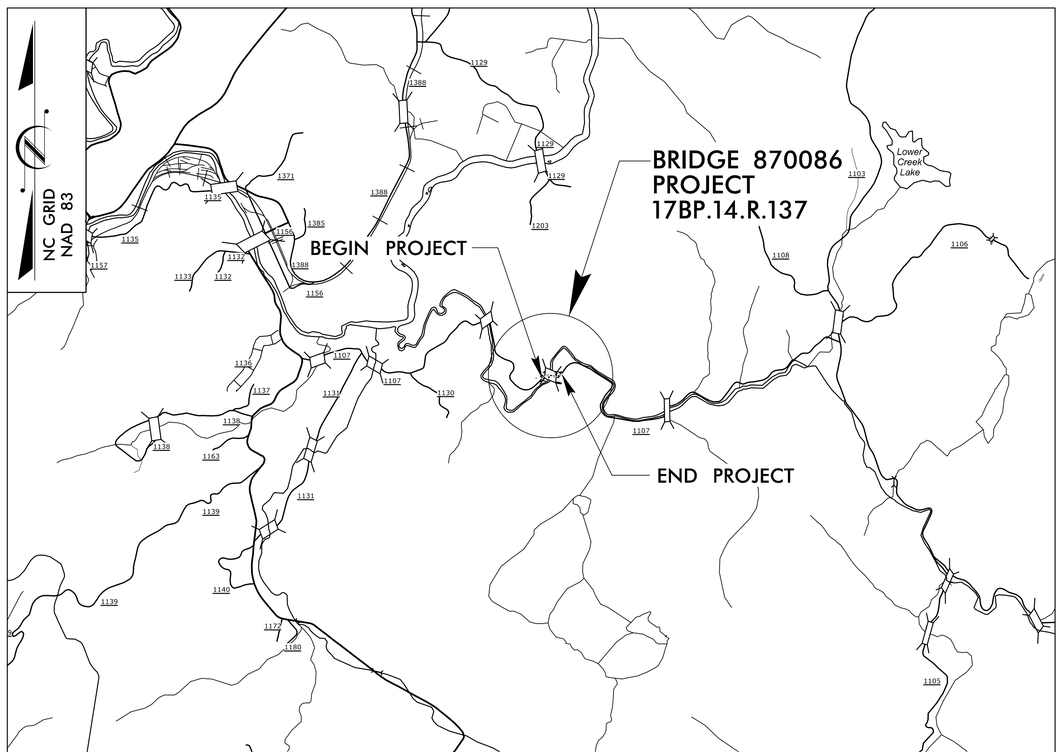
DocuSign Envelope ID: 6A34D3AE-FC83-4AE7-B33D-BD08B37BA8BE

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

TRANSYLVANIA COUNTY

DIVISION 14



VICINITY MAP

INDEX OF SHEETS

SHEET NO.	TITLE
TMP-1	TITLE SHEET AND INDEX OF SHEETS
TMP-1A	ROADWAY STANDARD DRAWINGS AND LEGEND
TMP-2	PROJECT NOTES
TMP-3	PHASING
TMP-4	PHASE I DETAIL
TMP-5	PHASE II DETAIL

SHEET NO.
TMP-1

TIP PROJECT: 17BP.14.R.137

V&M
Vaughn & Melton
Consulting Engineers

Asheville, North Carolina 828·253·2796
Charlotte, North Carolina 704·357·0488
Tri-Cities, Tennessee 423·467·8401
Knoxville, Tennessee 865·546·5800
Middlesboro, Kentucky 606·248·6600
Spartanburg, South Carolina 864·574·4775

Copyright © 2006 Vaughn & Melton, Inc.
All Rights Reserved

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

STV 100 Years
STV Engineers, Inc.
900 West Trade St., Suite 715
Charlotte, NC 28202
NC License Number F-0991

PROJECT ENGINEER NIKKI T. HONEYCUTT, PE

DESIGN ENGINEER GERALD H. McCAULEY, PE

APPROVED: DocuSigned by: Gerald H. McCauley EE8705B1A004A0...
DATE: 1/12/2017

NORTH CAROLINA PROFESSIONAL SEAL 13008 ENGINEER GERALD H. McCAULEY

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

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

J. S. BOURNE, P.E. STATE TRAFFIC MANAGEMENT ENGINEER

TRAFFIC CONTROL PROJECT ENGINEER

TRAFFIC CONTROL PROJECT DESIGN ENGINEER

TRAFFIC CONTROL DESIGN ENGINEER

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

1/4/2017
R:\TCP\B05114AD_TCP_SHT_1.dgn
Wright EP

DocuSign Envelope ID: 6A34D3AE-FC83-4AE7-B33D-BD08B37BA8BE

PROJ. REFERENCE NO.	SHEET NO.
17BP.14.R.137	TMP-1A

STV 100 Years
STV Engineers, Inc.
500 West Trade St., Suite 715
Charlotte, NC 28202
NC License Number F-0991

ROADWAY STANDARD DRAWINGS

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

STD.NO.	TITLE
1101.01	WORK ZONE ADVANCE WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1101.05	WORK ZONE VEHICLE ACCESSES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1115.01	FLASHING ARROW BOARDS
1130.01	DRUM
1135.01	CONES
1145.01	BARRICADES - TYPE III
1150.01	FLAGGING DEVICES
1180.01	SKINNY DRUM
1205.01	PAVEMENT MARKINGS - LINE TYPES & OFFSETS
1205.12	PAVEMENT MARKINGS - BRIDGES
1261.01	GUARDRAIL & BARRIER DELINEATOR SPACING
1261.02	GUARDRAIL & BARRIER DELINEATOR TYPES
1262.01	GUARDRAIL END DELINEATION

LEGEND

GENERAL

- DIRECTION OF TRAFFIC FLOW
- DIRECTION OF PEDESTRIAN TRAFFIC FLOW
- EXIST. PVMT.
- NORTH ARROW
- PROPOSED PVMT.
- WORK AREA
- REMOVAL/BREAKING OF PAVEMENT
- TEMPORARY PAVEMENT

TRAFFIC CONTROL DEVICES

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

TEMPORARY SIGNING

- PORTABLE SIGN
- STATIONARY SIGN
- STATIONARY OR PORTABLE SIGN

SIGNALS

- EXISTING
- PROPOSED
- TEMP TEMPORARY
- PORTABLE TRAFFIC SIGNAL

TEMPORARY PAVEMENT MARKING

PAINT 4"

PA	WHITE EDGELINE

PAINT 24"

P2	WHITE STOPBAR

PAVEMENT MARKINGS

- EXISTING LINES
- TEMPORARY LINES

PAVEMENT MARKERS

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

PAVEMENT MARKING SYMBOLS

PAVEMENT MARKING SYMBOLS

V&M
Vaughn & Melton
Consulting Engineers
Asheville, North Carolina 828-253-2796
Charlotte, North Carolina 704-357-0488
Tri-Cities, Tennessee 423-467-8401
Knoxville, Tennessee 865-546-5800
Middlesboro, Kentucky 606-248-6600
Spartanburg, South Carolina 864-574-4775
Copyright © 2006 Vaughn & Melton, Inc.
All Rights Reserved

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

APPROVED Gerald H. McCauley DATE: 1/12/2017
EE37067B1AB0460...

NORTH CAROLINA PROFESSIONAL SEAL 13008 ENGINEER GERALD H. McCAULEY

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

ROADWAY STANDARD DRAWINGS & LEGEND

1/4/2017
R:\TCP\BDSli4AD_TCP_SHT_1A.dgn
MrightEP

DocuSign Envelope ID: 6A34D3AE-FC83-4AE7-B33D-BD08B37BA8BE

PROJ. REFERENCE NO.	SHEET NO.
17BP.14.R.137	TMP-2

STV 100 Years
STV Engineers, Inc.
900 West Trade St., Suite 715
Charlotte, NC 28202
NC License Number F-0991

PROJECT NOTES

GENERAL NOTES

CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSIONS IN THE DETAIL DRAWINGS, STANDARD DETAILS, AND ROADWAY DETAILS ARE NOT ATTAINABLE TO MEET FIELD CONDITIONS OR RESULT IN DUPLICATE OR UNDESIRED OVERLAPPING OF DEVICES. MODIFICATION MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING, OR REMOVAL OF DEVICES AS DIRECTED BY THE ENGINEER.

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

LANE AND SHOULDER CLOSURE REQUIREMENTS

A) REMOVE LANE CLOSURE DEVICES FROM THE LANE WHEN WORK IS NOT BEING PERFORMED BEHIND THE LANE CLOSURE OR WHEN A LANE CLOSURE IS NO LONGER NEEDED OR AS DIRECTED BY THE ENGINEER.

B) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 15 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN SHOULDER USING ROADWAY STANDARD DRAWING NO. 1101.04 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL OR A LANE CLOSURE IS INSTALLED.

C) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO AN UNDIVIDED FACILITY AND WITHIN 5 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

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) 350 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.

TRAFFIC CONTROL DEVICES

K) 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.

L) PLACE ADDITIONAL SETS OF THREE CHANNELIZING DEVICES PERPENDICULAR TO THE EDGE OF TRAVELWAY ON 500 FT CENTERS WHEN OPENED LANES ARE CLOSED TO TRAFFIC.

PAVEMENT MARKINGS AND MARKERS

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

ROAD NAME	MARKING	MARKER
SR 1107 (EAST FORK RD) (-L-)	PAINT	NONE

N) 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.

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

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

MISCELLANEOUS

Q) 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.

LOCAL NOTES

1. CONTACT TRANSYLVANIA COUNTY EMERGENCY SERVICES AND SCHOOLS AT LEAST ONE MONTH PRIOR TO CONSTRUCTION.
2. THE CONTRACTOR SHALL BUILD AS MUCH AS POSSIBLE AWAY FROM TRAFFIC.

MANAGEMENT STRATEGIES

PHASE I TRAFFIC WILL BE MAINTAINED ON THE EXISTING ROAD, BUT REDUCED TO ONE LANE USING TEMPORARY SIGNALS AND PAVEMENT MARKINGS AS THE NEW ALIGNMENT IS CONSTRUCTED.

PHASE II WILL SHIFT TRAFFIC ONTO THE NEW ALIGNMENT, ONE LANE USING TEMPORARY SIGNALS AND PAVEMENT MARKINGS AS THE REMAINDER OF THE NEW ALIGNMENT IS CONSTRUCTED. A FLAGGING OPERATION WILL BE USED TO CONSTRUCT THE NEW TIE-INS,SHIFT TRAFFIC, AND INSTALL FINAL PAVEMENT MARKINGS.

V&M
Vaughn & Melton
Consulting Engineers
Asheville, North Carolina 828-253-2796
Charlotte, North Carolina 704-357-0488
Tri-Cities, Tennessee 423-467-8401
Knoxville, Tennessee 865-546-5800
Middlesboro, Kentucky 606-248-6600
Spartanburg, South Carolina 864-574-4775
Copyright © 2006 Vaughn & Melton, Inc.
All Rights Reserved

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

APPROVED: Gerald H. McCauley DATE: 1/12/2017

NORTH CAROLINA PROFESSIONAL SEAL 13008 ENGINEER GERALD H. McCAULEY

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

PROJECT NOTES

1/4/2017
R:\TCP\B05114AD_TCP_SHT_2.dgn
WrightEP

DocuSign Envelope ID: 6A34D3AE-FC83-4AE7-B33D-BD08B37BA8BE

PROJ. REFERENCE NO.	SHEET NO.
17BP.14.R.137	TMP-3

STV 100 Years
STV Engineers, Inc.
900 West Trade St., Suite 715
Charlotte, NC 28202
NC License Number F-0991

PROJECT PHASING

PHASE I

STEP 1: INSTALL ADVANCED WORK ZONE WARNING SIGNS IN ACCORDANCE TO NCDOT RSD. 1101.01 SHEET 3 OF 3.

STEP 2: USING RSD. 1101.02 SHEET 1 OF 15, AND FLAGGERS AS NECESSARY, INSTALL WATER LINE WITH ENCASEMENT PIPE PER UTILITY CONSTRUCTION PLANS. CONSTRUCTION SHALL TAKE PLACE DURING DAYTIME CONSTRUCTION ACTIVITIES ONLY. TEMPORARY STONE AND ASPHALT SHALL BE UTILIZED IN OPEN CUT AREA TO MAINTAIN GRADE OF ROADWAY UNTIL WATER LINE CONSTRUCTION IS COMPLETED. SEE SHEET UC-3 FOR WATER LINE DETAILS.

STEP 3: USING NCDOT RSD. 1101.02 SHEET 1 OF 15, INSTALL PORTABLE TRAFFIC SIGNALS, SIGNING, TEMPORARY PAVEMENT MARKINGS, TEMPORARY GUARDRAIL, DRUMS AND TEMPORARY SHORING NO. 1 AND 2 AS SHOWN ON SHEET TMP-4. ONCE SIGNS AND DEVICES ARE IN PLACE, ACTIVATE PORTABLE TRAFFIC SIGNALS AND PLACE TRAFFIC INTO A ONE-LANE, TWO-WAY OPERATION.

STEP 4: REMOVE EXISTING LEFT SIDE BRIDGE RAIL. SAWCUT AND REMOVE LEFT SIDE OF EXISTING BRIDGE AS SHOWN IN SECTION B-B ON SHEET TMP-4. CONSTRUCT LEFT SIDE OF -L- (SR 1107 EAST FORK RD.) FROM STA. 11+00± TO 16+50±, UP TO BUT NOT INCLUDING, FINAL LAYER OF SURFACE COURSE, AS SHOWN ON SHEET TMP-4.

PHASE II

* STEP 1: USING NCDOT RSD. 1101.02 SHEET 1 OF 15, REMOVE TEMPORARY WHITE EDGELINE AND GUARDRAIL FROM PHASE I, INSTALL TEMPORARY PAVEMENT MARKINGS, DRUMS AND GUARDRAIL FOR PHASE II, AS SHOWN ON SHEET TMP-5. ACTIVATE PORTABLE TRAFFIC SIGNALS AND PLACE TRAFFIC INTO A ONE-LANE, TWO-WAY TRAFFIC OPERATION.

STEP 2: REMOVE RIGHT SIDE OF EXISTING STRUCTURE AS SHOWN ON SHEET TMP-5. CONSTRUCT RIGHT SIDE OF -L- (SR 1107 EAST FORK RD.) FROM STA 11+50± TO 16+30±, UP TO BUT NOT INCLUDING, FINAL LAYER OF SURFACE COURSE AS SHOWN ON SHEET TMP-5.

PHASE III

* STEP 1: USING NCDOT RSD. 1101.02 SHEET 1 OF 15, REMOVE TEMPORARY PAVEMENT MARKINGS AND TEMPORARY GUARDRAIL. INSTALL TEMPORARY PAVEMENT MARKINGS AND OPEN ROADWAY TO TWO-WAY TRAFFIC.

STEP 2: USING NCDOT RSD. 1101.02 SHEET 1 OF 15, CONSTRUCT TIE-INS, PLACE FINAL LAYER OF SURFACE COURSE, AND PAVEMENT MARKINGS ON -L- (SR 1107 EAST FORK RD.).

STEP 3: ONCE ALL CONSTRUCTION IS COMPLETE, REMOVE ALL SIGNS AND DEVICES AND PLACE TRAFFIC IN ITS FINAL PATTERN.

* NOTE: PRIOR TO SHIFTING TRAFFIC, REMOVE AND INSTALL GUARDRAIL USING FLAGGERS.

V&M
Vaughn & Melton
Consulting Engineers
Asheville, North Carolina 828-253-2796
Charlotte, North Carolina 704-357-0488
Tri-Cities, Tennessee 423-467-8401
Knoxville, Tennessee 865-546-5800
Middlesboro, Kentucky 606-248-6600
Spartanburg, South Carolina 864-574-4775
Copyright © 2006 Vaughn & Melton, Inc.
All Rights Reserved

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

APPROVED: Gerald H. McCauley DATE: 1/12/2017

NORTH CAROLINA PROFESSIONAL SEAL 13008 ENGINEER GERALD H. McCAULEY

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

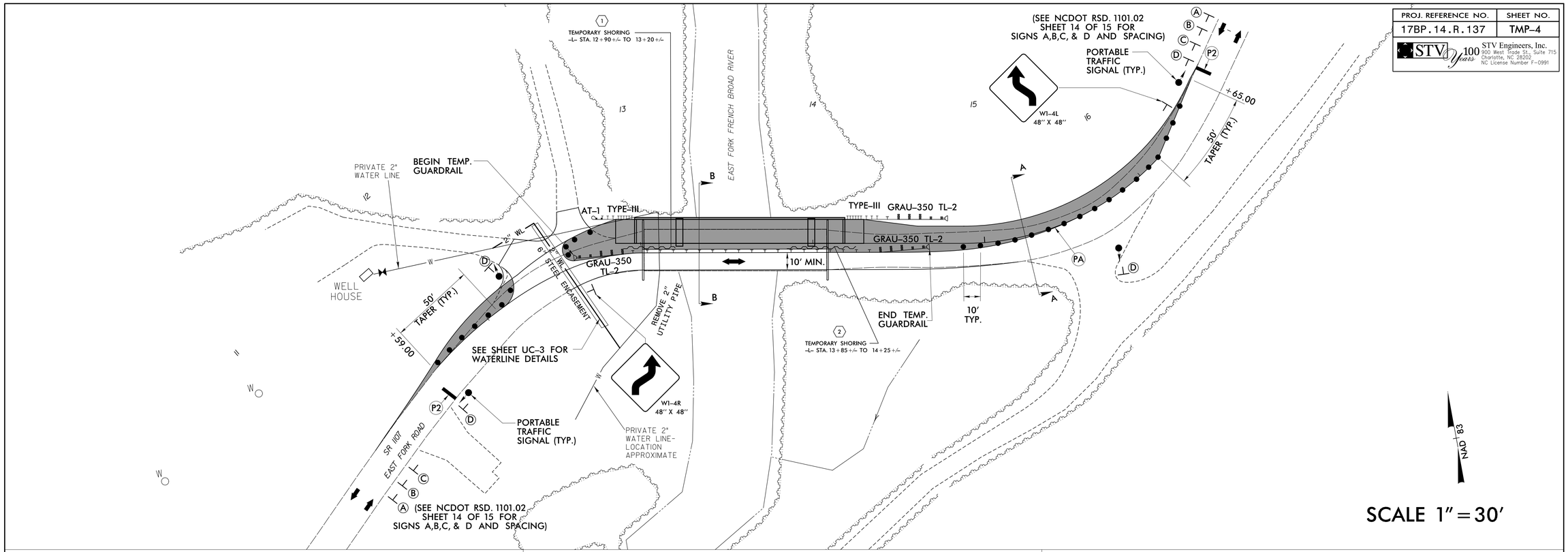
PHASING

1/4/2017
R:\TCP\BD5114AD_TCP_SHT_3.dgn
WrightEP

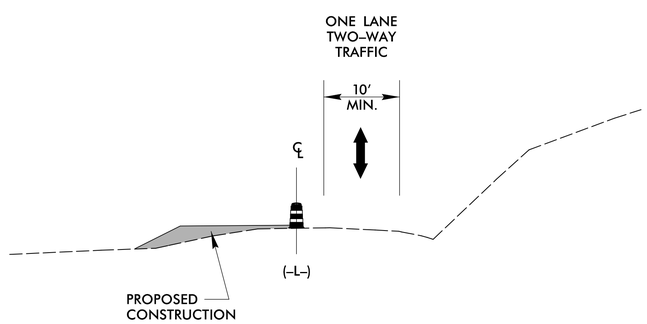
DocuSign Envelope ID: 6A34D3AE-FC83-4AE7-B33D-BD08B37BA8BE

PROJ. REFERENCE NO.	SHEET NO.
17BP.14.R.137	TMP-4

STV 100 Years
STV Engineers, Inc.
900 West Trade St., Suite 715
Charlotte, NC 28202
NC License Number F-0991

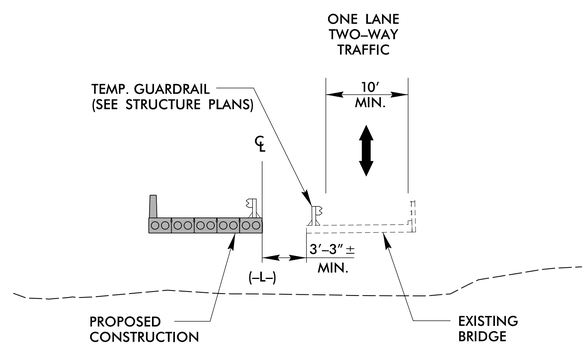


SECTION A-A

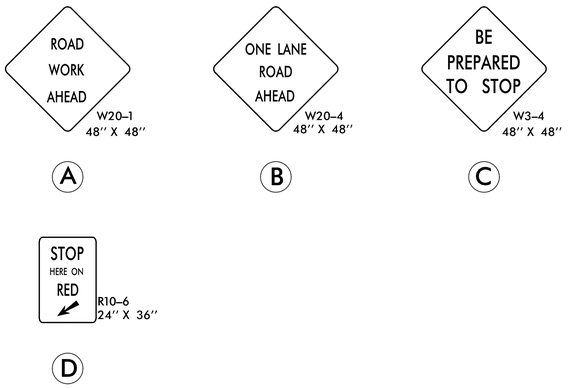


N.T.S

SECTION B-B



N.T.S



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

APPROVED Gerald H. McCaulley DATE: 1/12/2017

NORTH CAROLINA PROFESSIONAL SEAL 13008 ENGINEER GERALD H. McCAULEY

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

PHASE I DETAIL

V&M
Vaughn & Melton
Consulting Engineers
Asheville, North Carolina 828-253-2796
Charlotte, North Carolina 704-357-0488
Tri-Cities, Tennessee 423-467-8401
Knoxville, Tennessee 865-546-5800
Middlesboro, Kentucky 606-248-6600
Spartanburg, South Carolina 864-574-4775

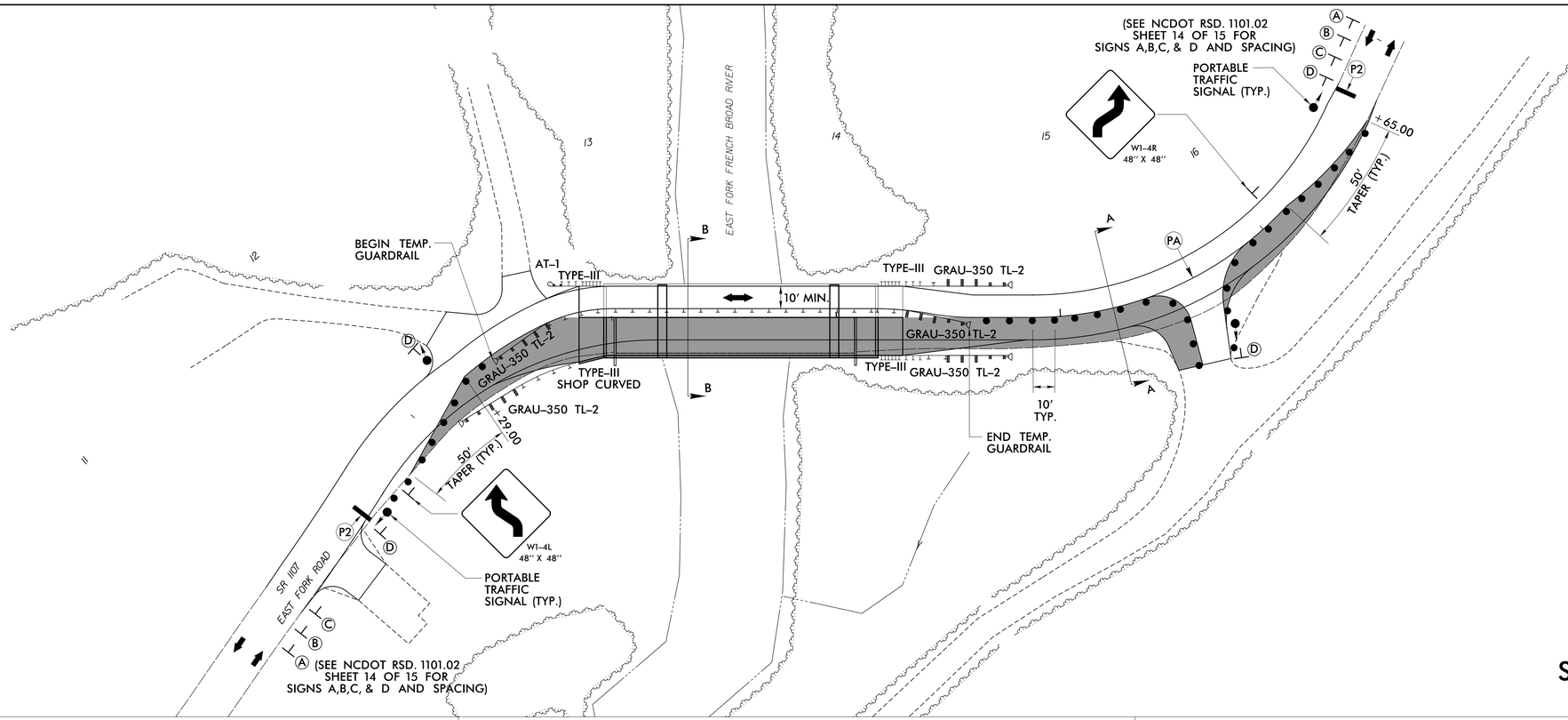
Copyright © 2006 Vaughn & Melton, Inc.
All Rights Reserved

1/4/2017
R:\TCP\BDSI14AD_TCP_SHT_4.dgn
WrightEP

DocuSign Envelope ID: 6A34D3AE-FC83-4AE7-B33D-BD08B37BA8BE

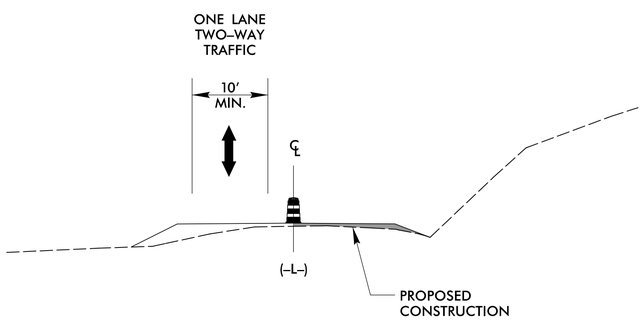
PROJ. REFERENCE NO.	SHEET NO.
17BP.14.R.137	TMP-5

STV 100 Years
STV Engineers, Inc.
900 West Trade St., Suite 715
Charlotte, NC 28202
NC License Number F-0991



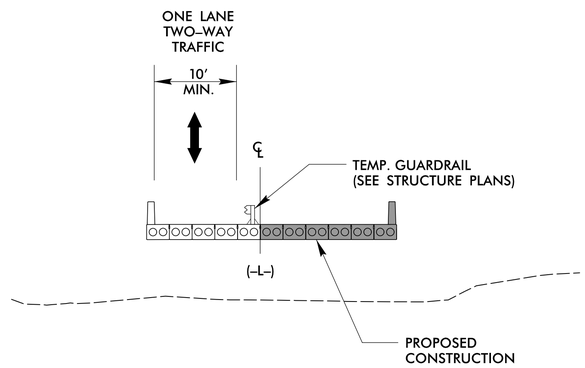
SCALE 1" = 30'

SECTION A-A

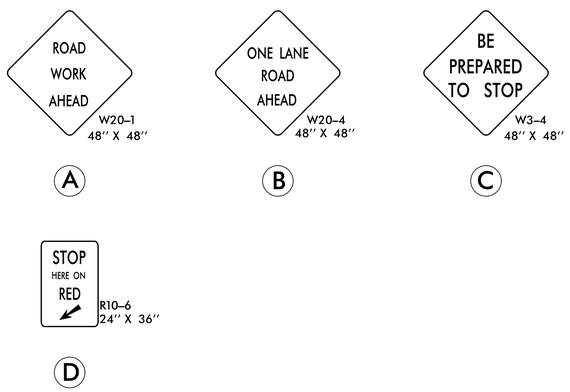


N.T.S

SECTION B-B



N.T.S



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

APPROVED: Gerald H. McCauley DESIGNER/ENGINEER DATE: 1/12/2017

NORTH CAROLINA PROFESSIONAL SEAL 13008 ENGINEER GERALD H. McCAULEY

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

PHASE II DETAIL

Vaughn & Melton
Consulting Engineers
Asheville, North Carolina 828-253-2796
Charlotte, North Carolina 704-357-0488
Tri-Cities, Tennessee 423-467-8401
Knoxville, Tennessee 865-546-5800
Middlesboro, Kentucky 606-248-6600
Spartanburg, South Carolina 864-574-4775

Copyright © 2006 Vaughn & Melton, Inc.
All Rights Reserved

1/4/2017
R:\TCP\BD5114AD_TCP_SHT_5.dgn
WrightEP

DocuSign Envelope ID: DFD5A83E-7DED-4459-9CD9-839A2261600E

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.137	PMP-1

PAVEMENT MARKING PLAN

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 2012 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO LANE & MULTILANE ROADWAYS
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
SR 1107 (EAST FORK ROAD)	PAINT

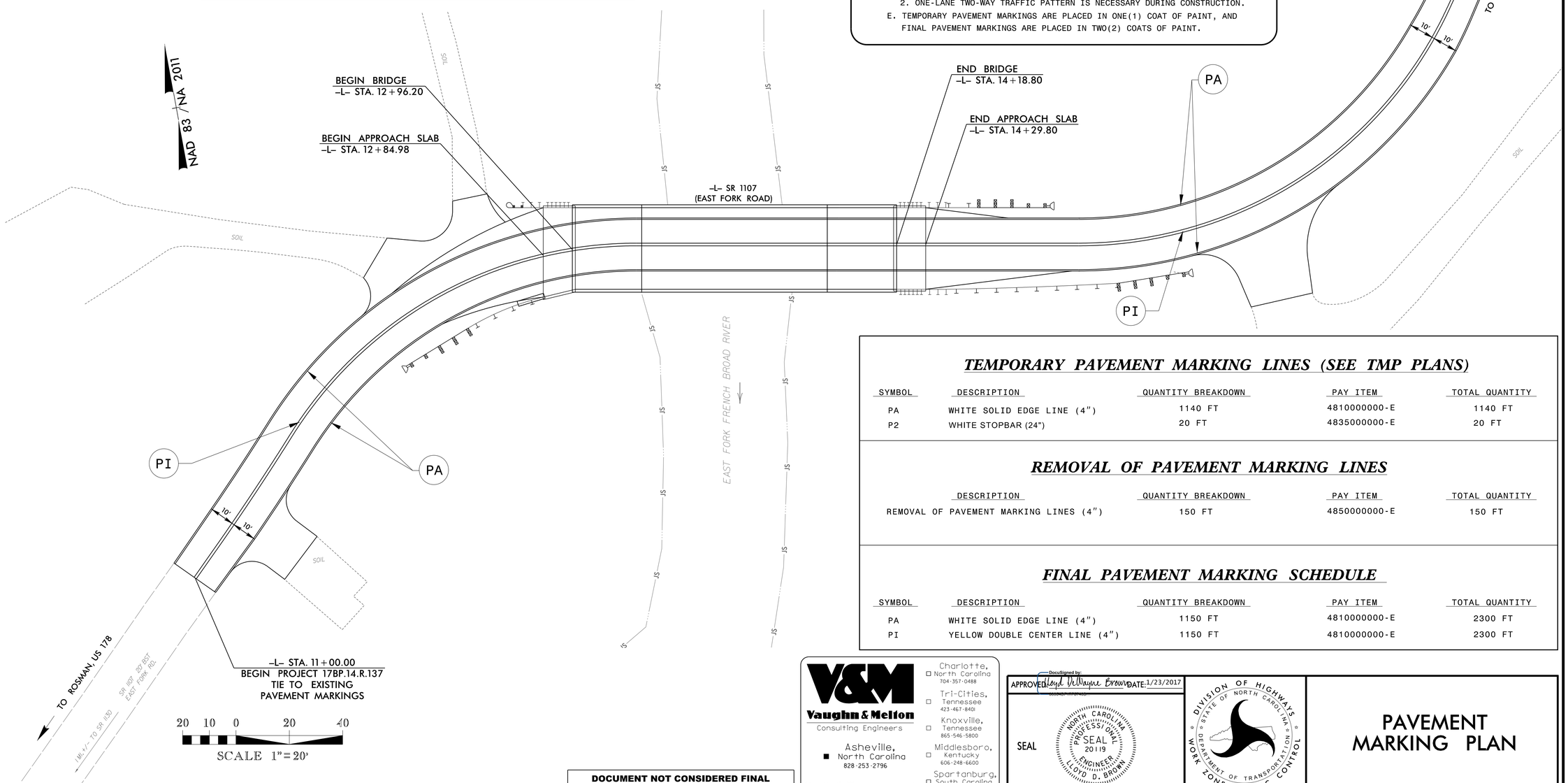
B. TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.

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

D. REMOVAL OF PAVEMENT MARKING LINES MAY OCCUR IF:

1. TEMPORARY STOPBARS ARE PLACED OUTSIDE THE LIMITS OF CONSTRUCTION.
2. ONE-LANE TWO-WAY TRAFFIC PATTERN IS NECESSARY DURING CONSTRUCTION.

E. TEMPORARY PAVEMENT MARKINGS ARE PLACED IN ONE(1) COAT OF PAINT, AND FINAL PAVEMENT MARKINGS ARE PLACED IN TWO(2) COATS OF PAINT.



TEMPORARY PAVEMENT MARKING LINES (SEE TMP PLANS)

SYMBOL	DESCRIPTION	QUANTITY BREAKDOWN	PAY ITEM	TOTAL QUANTITY
PA	WHITE SOLID EDGE LINE (4")	1140 FT	4810000000-E	1140 FT
P2	WHITE STOPBAR (24")	20 FT	4835000000-E	20 FT

REMOVAL OF PAVEMENT MARKING LINES

DESCRIPTION	QUANTITY BREAKDOWN	PAY ITEM	TOTAL QUANTITY
REMOVAL OF PAVEMENT MARKING LINES (4")	150 FT	4850000000-E	150 FT

FINAL PAVEMENT MARKING SCHEDULE

SYMBOL	DESCRIPTION	QUANTITY BREAKDOWN	PAY ITEM	TOTAL QUANTITY
PA	WHITE SOLID EDGE LINE (4")	1150 FT	4810000000-E	2300 FT
PI	YELLOW DOUBLE CENTER LINE (4")	1150 FT	4810000000-E	2300 FT

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

V&M
Vaughn & Melton
Consulting Engineers
Asheville, North Carolina 828-253-2796
Charlotte, North Carolina 704-357-0488
Tri-Cities, Tennessee 423-467-8401
Knoxville, Tennessee 865-546-5800
Middlesboro, Kentucky 606-248-6600
Spartanburg, South Carolina 864-574-4775
Copyright © 2006 Vaughn & Melton, Inc. All Rights Reserved

APPROVED: DocuSigned by: Lloyd DeWayne Brown DATE: 1/23/2017

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 20119 ENGINEER LLOYD D. BROWN

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

PAVEMENT MARKING PLAN

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.137	EC-1

EROSION CONTROL PLAN

ANDREW HOLLEN
LEVEL IIIA NAME

3490
LEVEL IIIA CERTIFICATION NO.

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 4

2012 STANDARD DRAWINGS

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		

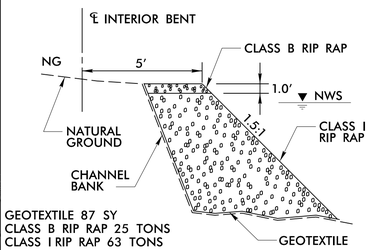
ROADSIDE ENVIRONMENTAL UNIT
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

2012 STANDARD SPECIFICATIONS

ENVIRONMENTALLY SENSITIVE AREA
SEE PROJECT SPECIAL PROVISIONS

TYPICAL SECTION TEMPORARY RIP RAP WORK PAD

NOT TO SCALE

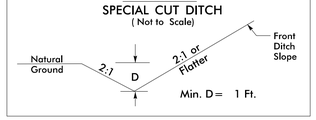


GEOTEXTILE 87 SY
CLASS B RIP RAP 25 TONS
CLASS I RIP RAP 63 TONS

NOTES:
1.) TEMPORARY IN-STREAM WORK PADS TO PROVIDE ACCESS DURING CONSTRUCTION TO INTERIOR PILES.

DETAIL A

SPECIAL CUT DITCH
(Not to Scale)

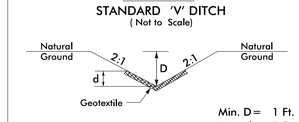


Min. D= 1 Ft.

FROM -L- STA. 11+50 TO STA. 12+50 RT.
FROM -L- STA. 14+25 TO STA. 16+50 LT.

DETAIL B

STANDARD 'V' DITCH
(Not to Scale)



Min. D= 1 Ft.
Max. d= 1 Ft.
Type of Liner= Class B Rip-Rap

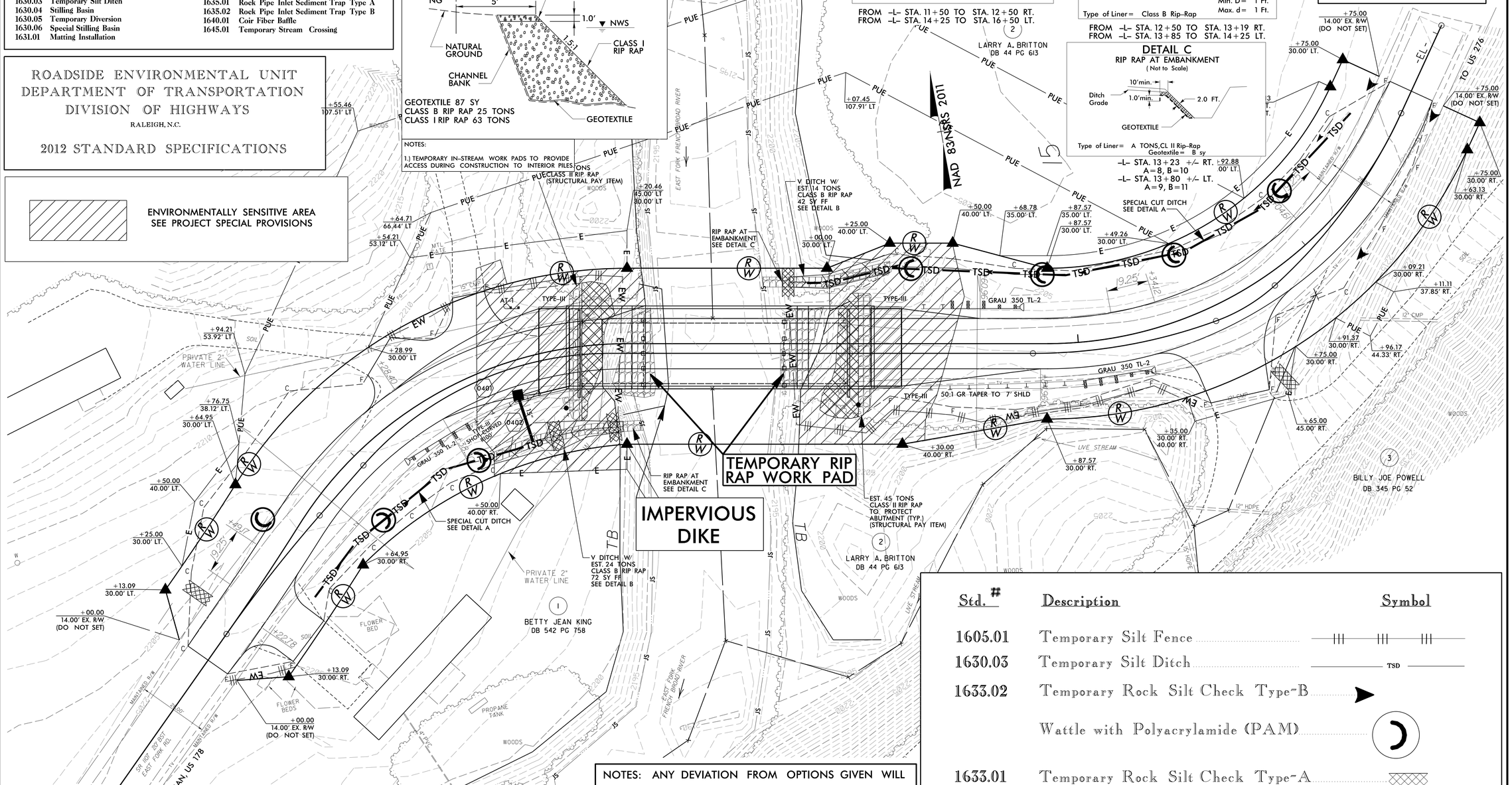
FROM -L- STA. 12+50 TO STA. 13+19 RT.
FROM -L- STA. 13+85 TO STA. 14+25 LT.

DETAIL C

RIP RAP AT EMBANKMENT
(Not to Scale)

Type of Liner= A TONS,CL II Rip-Rap
Geotextile= B sy

-L- STA. 13+23 +/- RT. A=8, B=10
-L- STA. 13+80 +/- LT. A=9, B=11



Std. #	Description	Symbol
1605.01	Temporary Silt Fence	
1630.03	Temporary Silt Ditch	TSD
1633.02	Temporary Rock Silt Check Type-B	
	Wattle with Polyacrylamide (PAM)	
1633.01	Temporary Rock Silt Check Type-A	
1632.03	Rock Inlet Sediment Trap Type C	
	Excelsior Wattle Barrier	- EW -

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.

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.

REVISIONS

8/17/99

$$$$$$SYSTIME$$$$$
$$$$$$

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.137	EC-1A

EROSION CONTROL PLAN

ANDREW HOLLEN
LEVEL IIIA NAME

3490
LEVEL IIIA CERTIFICATION NO.

2012 STANDARD DRAWINGS

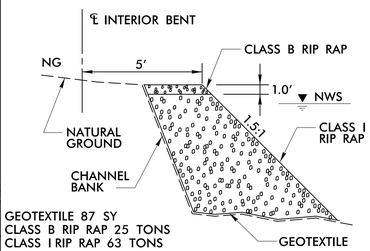
1604.01	Railroad Erosion Control Detail	1632.01	Rock Inlet Sediment Trap Type A
1605.01	Temporary Silt Fence	1632.02	Rock Inlet Sediment Trap Type B
1606.01	Special Sediment Control Fence	1632.03	Rock Inlet Sediment Trap Type C
1607.01	Gravel Construction Entrance	1633.01	Temporary Rock Silt Check Type 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		

ROADSIDE ENVIRONMENTAL UNIT
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

2012 STANDARD SPECIFICATIONS

TYPICAL SECTION TEMPORARY RIP RAP WORK PAD

NOT TO SCALE

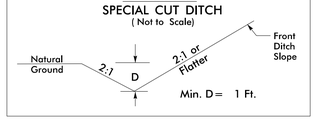


GEOTEXTILE 87 SY
CLASS B RIP RAP 25 TONS
CLASS I RIP RAP 63 TONS

NOTES:
1.) TEMPORARY IN-STREAM WORK PADS TO PROVIDE ACCESS DURING CONSTRUCTION TO INTERIOR PILES.

DETAIL A

SPECIAL CUT DITCH
(Not to Scale)

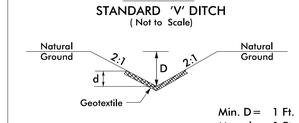


Min. D = 1 Ft.

FROM –L– STA. 11+50 TO STA. 12+50 RT.
FROM –L– STA. 14+25 TO STA. 16+50 LT.

DETAIL B

STANDARD 'V' DITCH
(Not to Scale)



Min. D = 1 Ft.
Max. d = 1 Ft.
Type of Liner = Class B Rip-Rap

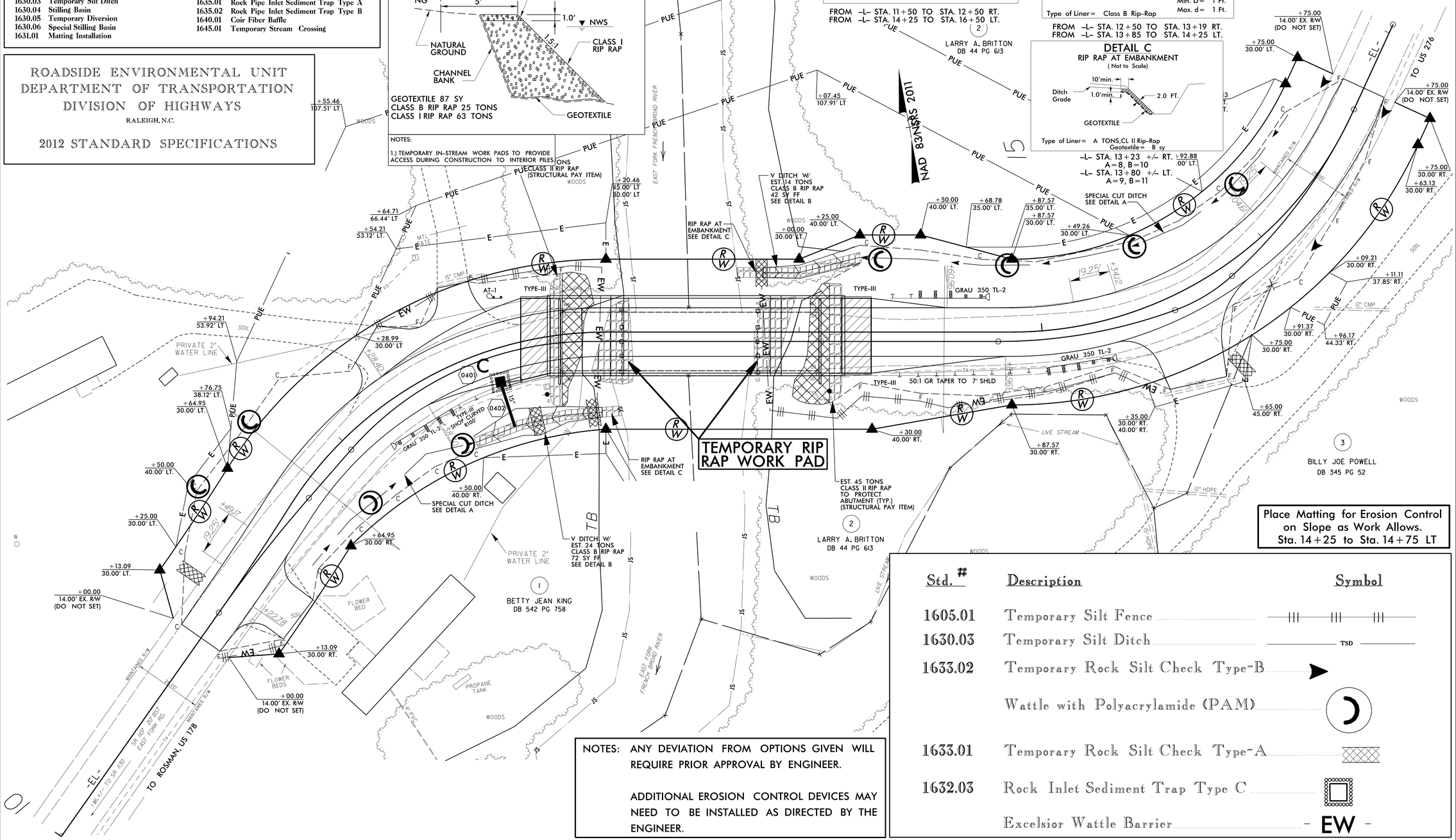
FROM –L– STA. 12+50 TO STA. 13+19 RT.
FROM –L– STA. 13+85 TO STA. 14+25 LT.

DETAIL C

RIP RAP AT EMBANKMENT
(Not to Scale)

Type of Liner = A TONS, CL II Rip-Rap
Geotextile = B sy

–L– STA. 13+23 +/– RT. A=8, B=10
–L– STA. 13+80 +/– LT. A=9, B=11



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.

Std. #	Description	Symbol
1605.01	Temporary Silt Fence	
1630.03	Temporary Silt Ditch	TSD
1633.02	Temporary Rock Silt Check Type-B	
	Wattle with Polyacrylamide (PAM)	
1633.01	Temporary Rock Silt Check Type-A	
1632.03	Rock Inlet Sediment Trap Type C	
	Excelsior Wattle Barrier	– EW –

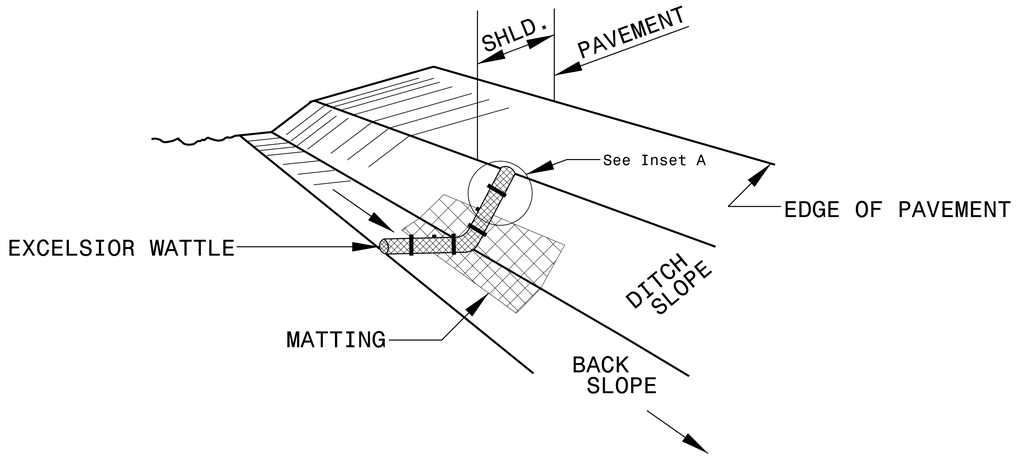
REVISIONS

8/17/99

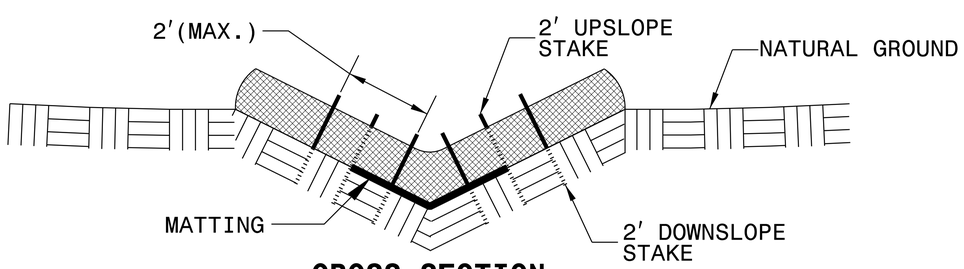
$$$$$$$SYSTIME$$$$$
$$$$$$$USERNAME$$$$$

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.137	EC-2
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

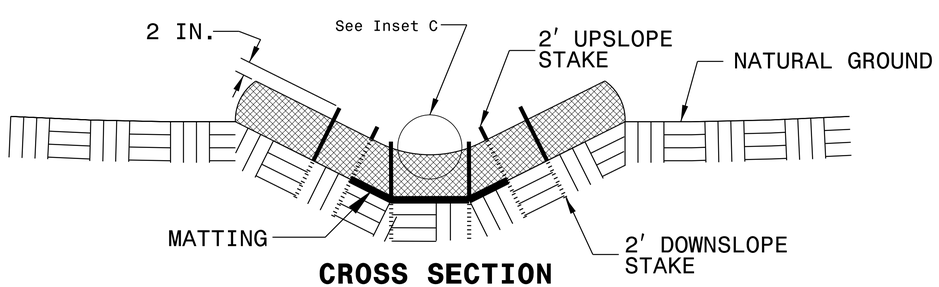
WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL



ISOMETRIC VIEW



CROSS SECTION VEE DITCH



CROSS SECTION TRAPEZOIDAL DITCH

NOTES:

USE MINIMUM 12 IN. DIAMETER EXCELSIOR WATTLE.

USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.

ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.

INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.

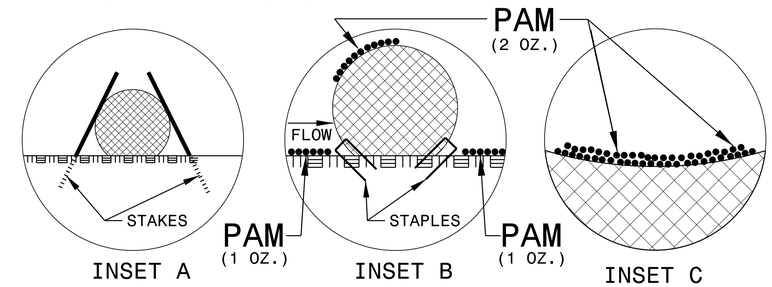
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12″ IN LENGTH.

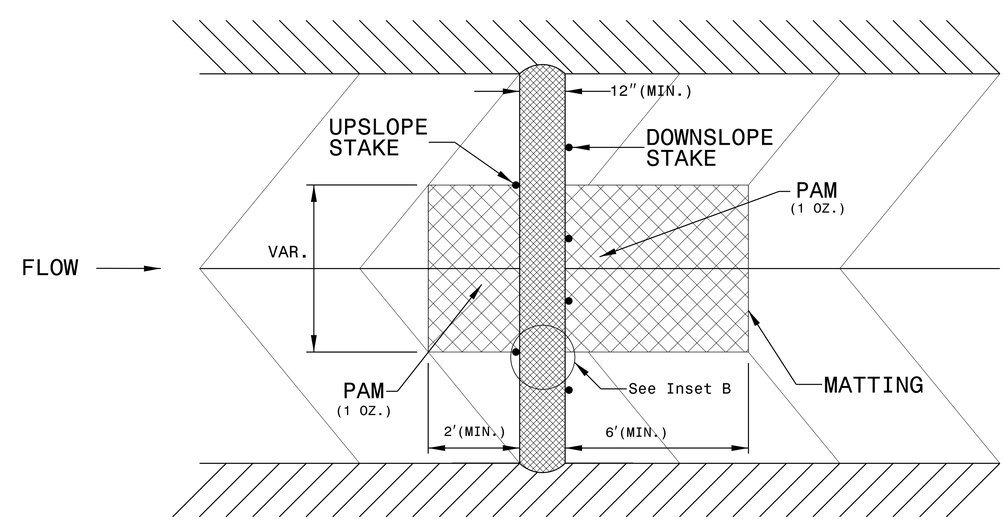
INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

INSTALL MATTING IN ACCORDANCE WITH SECTION 1631 OF THE STANDARD SPECIFICATIONS.

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

INITIALLY APPLY 2 OUNCES OF ANIONIC OR NEUTRALLY CHARGED PAM OVER WATTLE WHERE WATER WILL FLOW AND 1 OUNCE OF PAM ON MATTING ON EACH SIDE OF WATTLE. REAPPLY PAM AFTER EVERY RAINFALL EVENT THAT IS EQUAL TO OR EXCEEDS 0.50 IN.

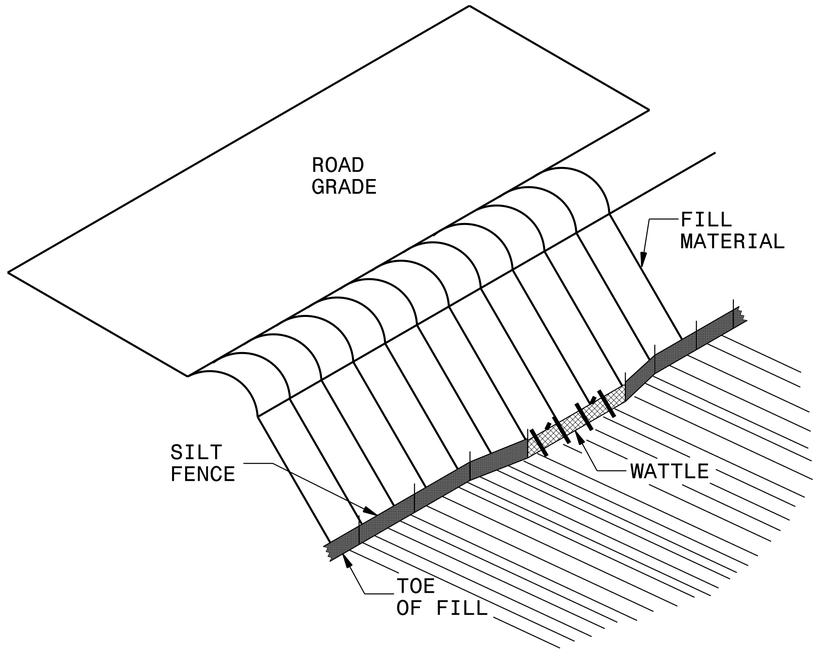




TOP VIEW

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.137	EC-2A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SILT FENCE WATTLE BREAK DETAIL



ISOMETRIC VIEW

NOTES:

USE MINIMUM 12 IN. DIAMETER EXCELSIOR WATTLE AND LENGTH OF 10 FT.

EXCAVATE A 1 TO 2 INCH TRENCH FOR WATTLE TO BE PLACED.

DO NOT PLACE WATTLE ON TOE OF SLOPE.

USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.

INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO GROUND.

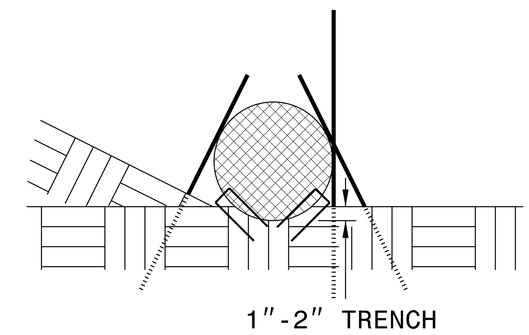
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12″ IN LENGTH.

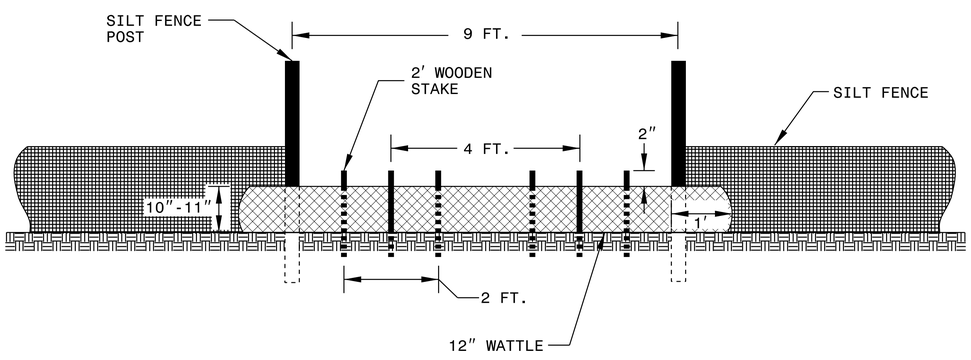
INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

WATTLE INSTALLATION CAN BE ON OUTSIDE OF THE SILT FENCE AS DIRECTED.

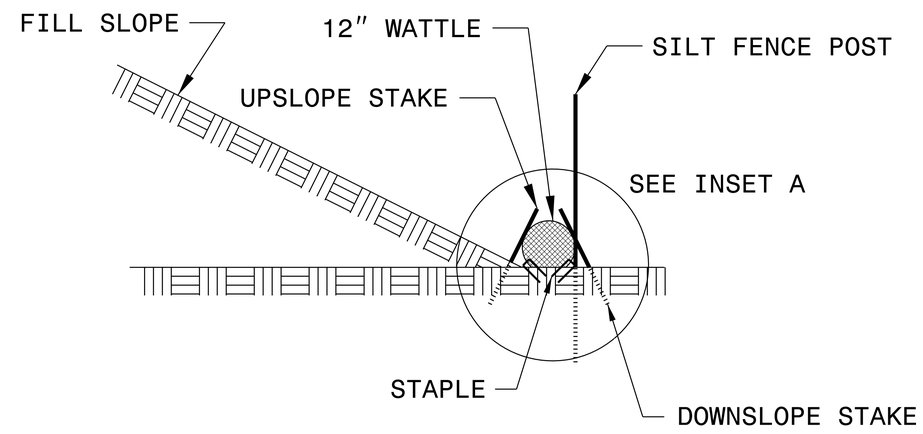
INSTALL TEMPORARY SILT FENCE IN ACCORDANCE WITH SECTION 1605 OF THE STANDARD SPECIFICATIONS.

INSET A





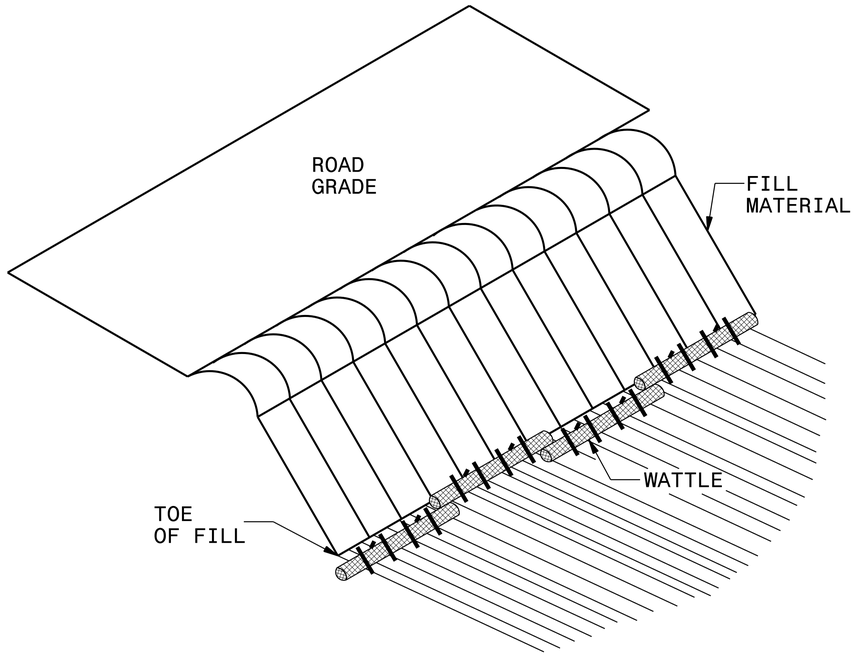
VIEW FROM SLOPE



SIDE VIEW

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.137	EC-2B
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

WATTLE BARRIER DETAIL



ISOMETRIC VIEW

NOTES:

USE MINIMUM 18 IN. NOMINAL DIAMETER EXCELSIOR WATTLE AND LENGTH OF 10 FT.

EXCAVATE A 2 TO 3 INCH TRENCH FOR WATTLE TO BE PLACED.

DO NOT PLACE WATTLES ON TOE OF SLOPE.

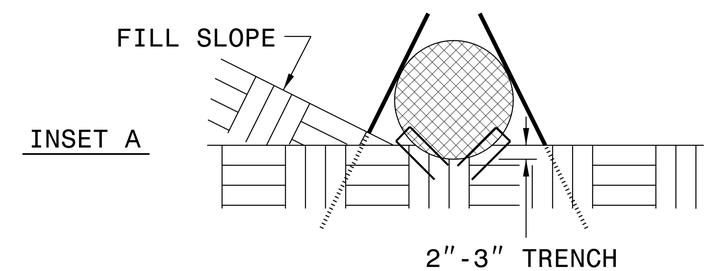
USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.

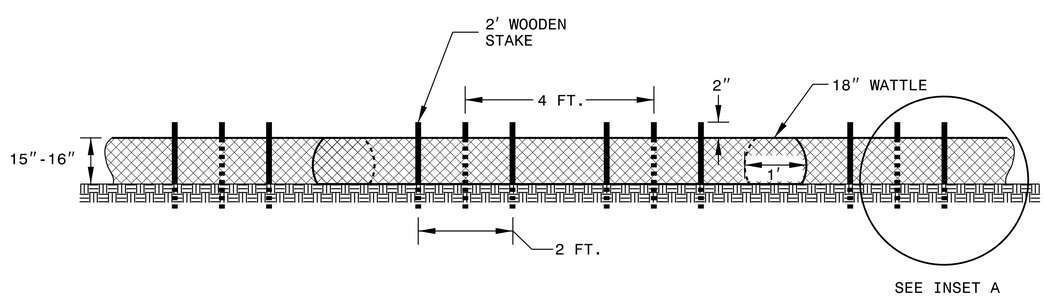
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO GROUND.

PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12″ IN LENGTH.

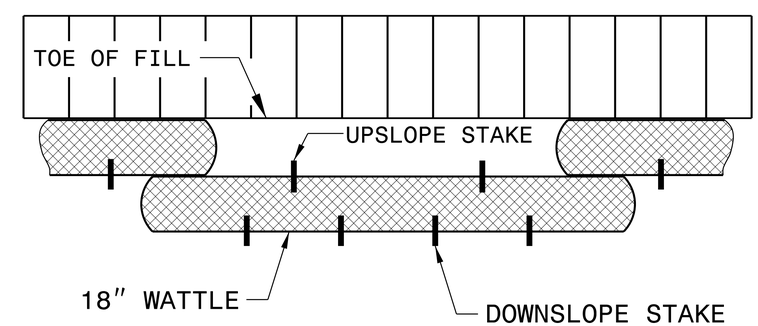
INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

FOR BREAKS ALONG LARGE SLOPES, USE MAXIMUM SPACING OF 25 FT.





FRONT VIEW



TOP VIEW

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.137	EC-3
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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.

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.137	EC-3A

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-	11+50	13+00	RT	180
4	-L-	11+25	12+00	LT	145
4	-L-	14+00	16+50	LT	225
				SUBTOTAL	550
MISCELLANEOUS MATTING TO BE INSTALLED AS DIRECTED BY THE ENGINEER					
				TOTAL	550
				SAY	550

MATTING FOR EROSION CONTROL

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)

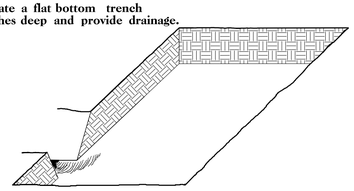
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.14.R.137	RF-1	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	

PLANTING DETAILS

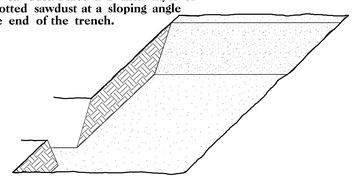
SEEDLING / LINER BAREROOT PLANTING DETAIL

HEALING IN

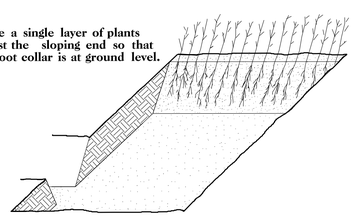
1. Locate a healing-in site in a shady, well protected area.
2. Excavate a flat bottom trench 12 inches deep and provide drainage.



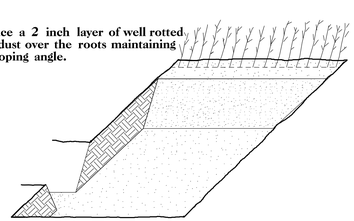
3. Backfill the trench with 2 inches well rotted sawdust. Place a 2 inch layer of well rotted sawdust at a sloping angle at one end of the trench.



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

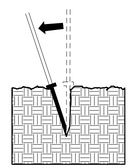


5. Place a 2 inch layer of well rotted sawdust over the roots maintaining a sloping angle.

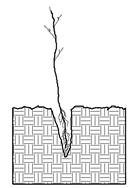


6. Repeat layers of plants and sawdust as necessary and water thoroughly.

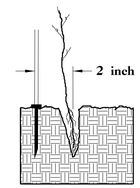
DIBBLE PLANTING METHOD
USING THE KBC PLANTING BAR



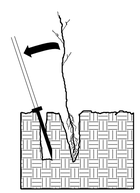
1. Insert planting bar as shown and pull handle toward planter.



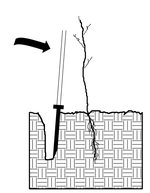
2. Remove planting bar and place seedling at correct depth.



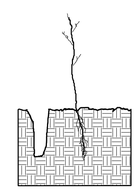
3. Insert planting bar 2 inches toward planter from seedling.



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 neeessary, 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

DocuSign Envelope ID: 3D3EB61A-127A-48AF-8FF2-46DF927B665A

12/12/16

PROJECT: 17BP.14.R.137

CONTRACT: DN00117

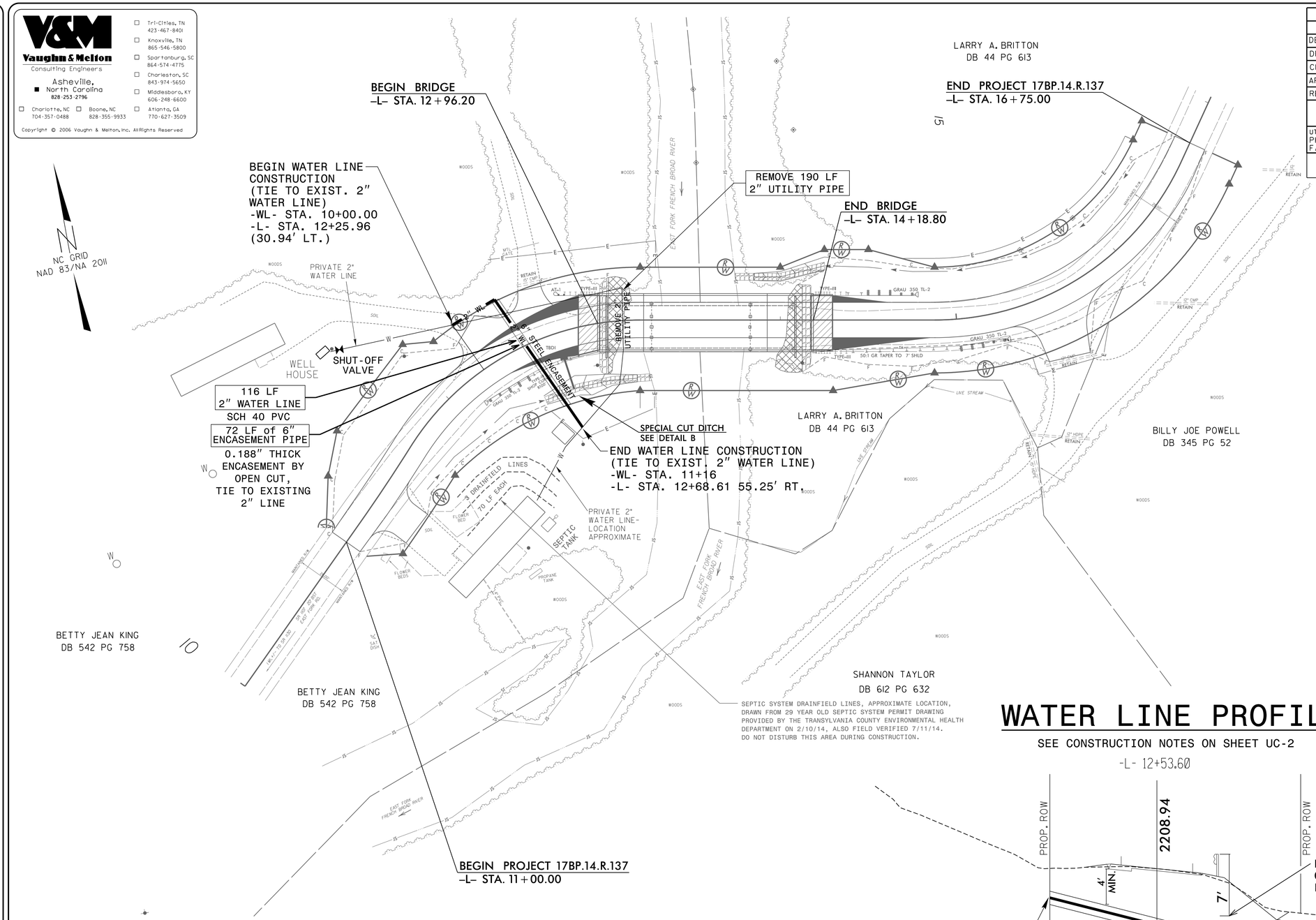
V&M
Vaughn & Melton
Consulting Engineers
Asheville, North Carolina
828-253-2796
Tri-Cities, TN 423-467-8401
Knoxville, TN 865-546-5800
Spartanburg, SC 864-574-4775
Charleston, SC 843-974-5650
Middlesboro, KY 606-248-6600
Atlanta, GA 770-627-3509
Charlotte, NC 704-357-0488
Boone, NC 828-355-9933

Copyright © 2006 Vaughn & Melton, Inc. All Rights Reserved

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.137	UC-3
DESIGNED BY: RMS	
DRAWN BY: LAM	
CHECKED BY: RMS	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE:(919)250-4128 FAX:(919)250-4119	UTILITY CONSTRUCTION PLANS ONLY

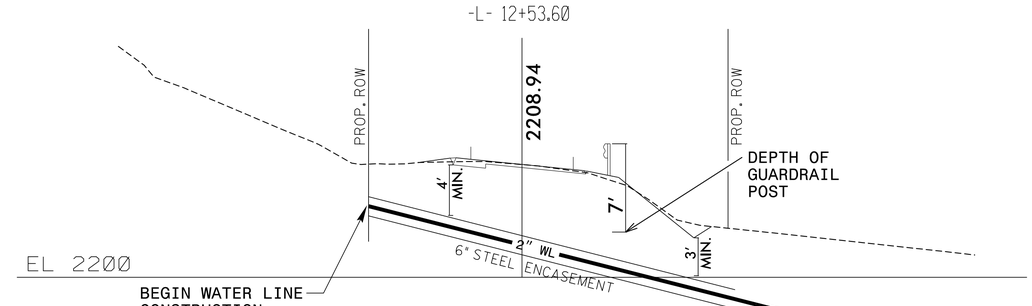
NORTH CAROLINA PROFESSIONAL SEAL 25960 ENGINEER RICHARD M. SCHUCKER
DocuSigned by: Richard M. Schucker 1/23/2017

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



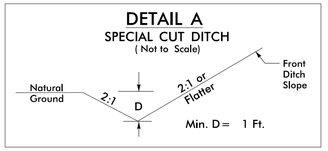
WATER LINE PROFILE

SEE CONSTRUCTION NOTES ON SHEET UC-2



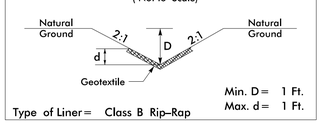
NOTE: SEE TMP PLANS FOR WATER LINE CONSTRUCTION.

DETAIL A
SPECIAL CUT DITCH
(Not to Scale)



FROM -L- STA. 11+50 TO STA. 12+50 RT.
FROM -L- STA. 14+25 TO STA. 16+50 LT.

DETAIL B
STANDARD 'V' DITCH
(Not to Scale)



FROM -L- STA. 12+50 TO STA. 13+19 RT.
FROM -L- STA. 13+85 TO STA. 14+25 LT.

V&M PROJECT #31235-00
TRANSP\31235-00\UTIL\UC-3.DGN

DocuSign Envelope ID: 3D3EB61A-127A-48AF-8FF2-46DF927B665A

12/12/16

Note: Not to Scale

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

UTILITIES PLAN SHEET SYMBOLS

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.137	UC-2
DESIGNED BY: RMS	
DRAWN BY: LAM	
CHECKED BY: RMS	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE:(919)250-4128 FAX:(919)250-4119	UTILITY CONSTRUCTION PLANS ONLY

NORTH CAROLINA PROFESSIONAL SEAL 26960 ENGINEER
DocuSigned by: Rick Morris
1/23/2017

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

UTILITY CONSTRUCTION

Water

Proposed Back Flow Preventor	PBFP
Relocate Back Flow Preventor	RBFP
Existing Water Valve	WV
Proposed Valve	GV
Proposed Tapping Valve	TGV
Existing Water Meter	WM
Proposed Water Meter	PWM
Proposed Water Meter / Vault	PWM
Relocate Water Meter	RWM
Remove Water Meter	REM WM
Existing Well	W
Existing Hydrant	H
Prop Hydrant	PFH
Relocate Hydrant	RFH
Remove Hydrant	REM FH

Proposed RPZ Back Flow Preventor	PRPZ
Relocate RPZ Back Flow Preventor	RRPZ
45° Bend w/Thrust Block	
Water Plug	
Water Cross	
Water Plug	
Water Reducer	
Water Tee	
Water Pump Station	PS(W)
Water Thrust Block	
Blow Off Valve	BO
Air Release Valve	AR
Water Line Stop	LS
Water Line Stop w Bypass	LS/BP

CONSTRUCTION/CONTRACTOR NOTES:

1. The proposed utility construction shall meet the applicable requirements of the NC Department of Transportation's "Standard Specifications for Roads and Structures" dated January 2012 and the Project Special Provisions for utility construction.

2. The contractor shall connect the new water line to the exisitng water lines using necessary fittings.

3. The Contractor shall make every effort to minimize the duration of any water supply disruption.

4. The Contractor shall be responsible for providing temporary potable water supplies to any customer upon request or when the duration of the water service loss or disruption exceeds 4 hours.

5. All materials, equipment, labor, and workmanship shall be in accordance with and subject to North Carolina Administrative Code for private water distribution systems.

Sewer

Existing Manhole	MH
Proposed UT Manhole	
Remove UT Manhole	REM UT MH
Abandon Utility Manhole	ABAND MH
Sewer Line Stop	LS
Sewer Line Stop w Bypass	LS/BP
U/G Sanitary Sewer Line	SS

Sewer Cross	
Sewer Plug	
Sewer Reducer	
Sewer Tee	
Sewer Pump Station	PS(SS)
Sewer Thrust Block	
U/G Septic Drainfield Line	

Utility By Other Symbols

Proposed Tel Pole	
Proposed Power Pole	
Proposed Joint Use Power, Tel Pole	
Proposed Joint Use Power, CATV Pole	
Proposed Joint Use Power, Tel, CATV Pole	
Proposed Joint Use Tel, CATV Pole	

PUE Monument	
Concrete Pier	CP
Steel Pile Pier	SP
Test Hole (SUE)	
Prop Utility Vault	UV

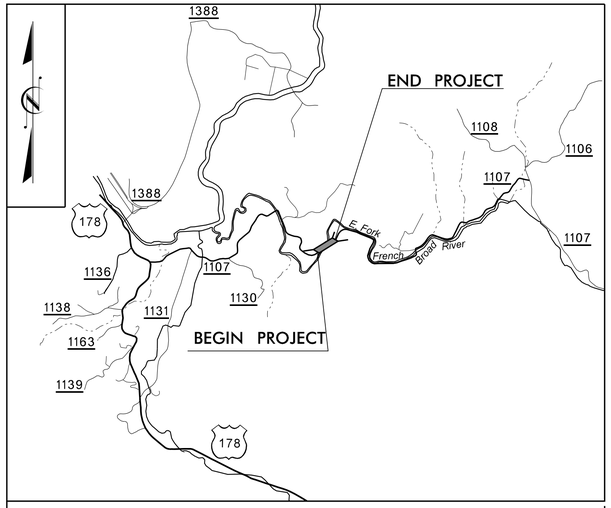
V&M PROJECT #31235-01
TRANSPORTATION\31235-01\UTILITIES\UC-2.DGN

DocuSign Envelope ID: 3D3EB61A-127A-48AF-8FF2-46DF927B665A

12/12/16

PROJECT: 17BP.14.R.137

CONTRACT: DN00117



VICINITY MAP

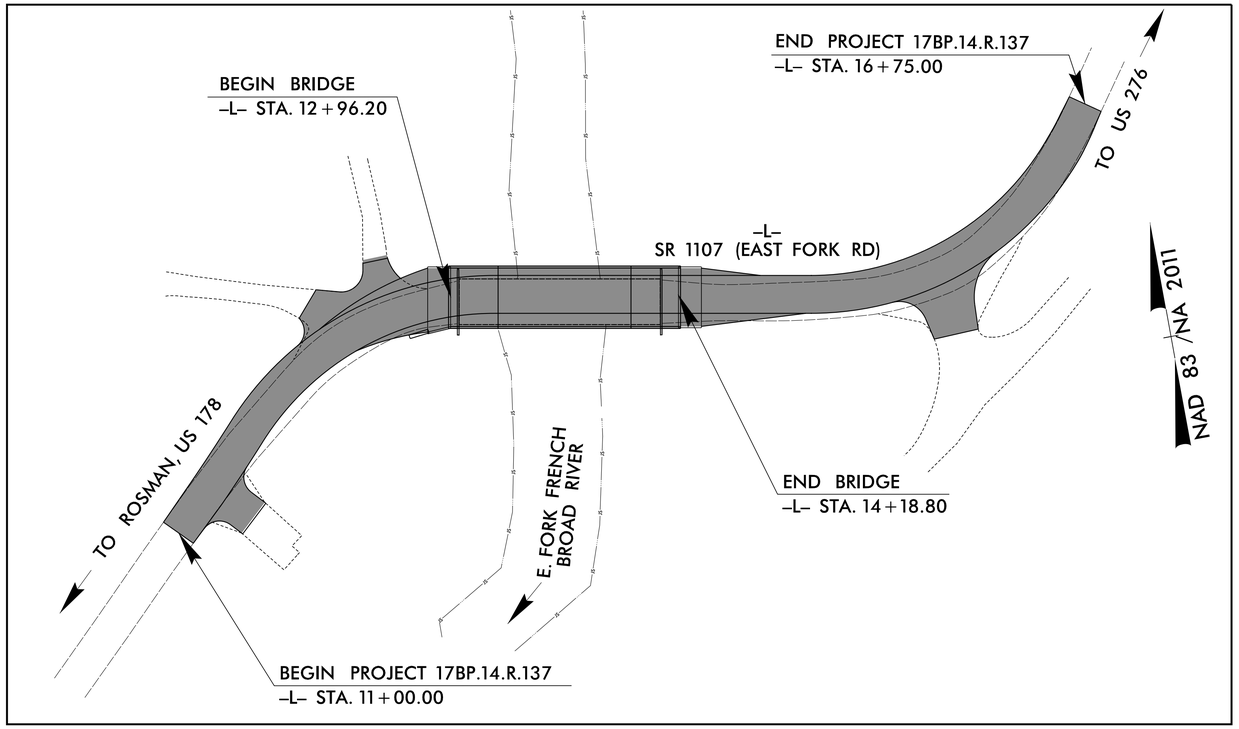
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.137	UC–1

UTILITY CONSTRUCTION PLANS
TRANSYLVANIA COUNTY

LOCATION: BRIDGE NO. 86 OVER THE EAST FORK OF THE FRENCH BROAD RIVER ON SR 1107 (EAST FORK ROAD)

TYPE OF WORK: WATER LINE CONSTRUCTION



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

V&M
Vaughn & Melton
Consulting Engineers
Asheville, North Carolina
828-253-2796
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
Charlotte, NC 704-357-0488
Boone, NC 828-355-9933
Atlanta, GA 770-627-3509

Copyright © 2006 Vaughn & Melton, Inc. All Rights Reserved

GRAPHIC SCALES

30 15 0 30 60

PLANS

INDEX OF SHEETS

SHEET NO.	*DESCRIPTION*
UC–1	*TITLE SHEET*
UC–2	*SYMBOLOGY & CONSTRUCTION NOTES SHEET*
UC–3	*PLAN SHEET*

UTILITY OWNERS ON PROJECT

(1) WATER & SEPTIC – PRIVATE

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 26960 ENGINEER

DocuSigned by: Keith M. Schuler 1/23/2017

V&M
Vaughn & Melton
Consulting Engineers
3089-L Beam Road
Charlotte, NC 28217
704-357-0488

PREPARED FOR THE OFFICE OF:

DIVISION OF HIGHWAYS
UTILITIES ENGINEERING SECTION

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

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

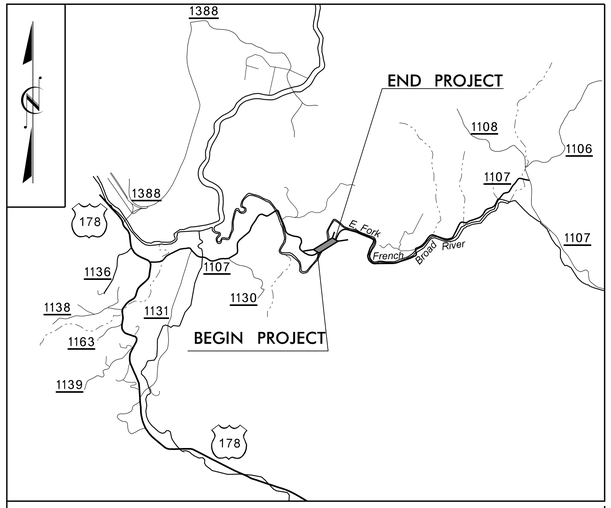
Reece Schuler, P.E. *UTILITIES PROJECT DESIGNER*

V&M PROJECT #31235-08
TRANSPORTATION\31235-08\UTILITIES\UC-1.DGN

12/12/16

PROJECT: 17BP.14.R.137

CONTRACT: DN00117



VICINITY MAP

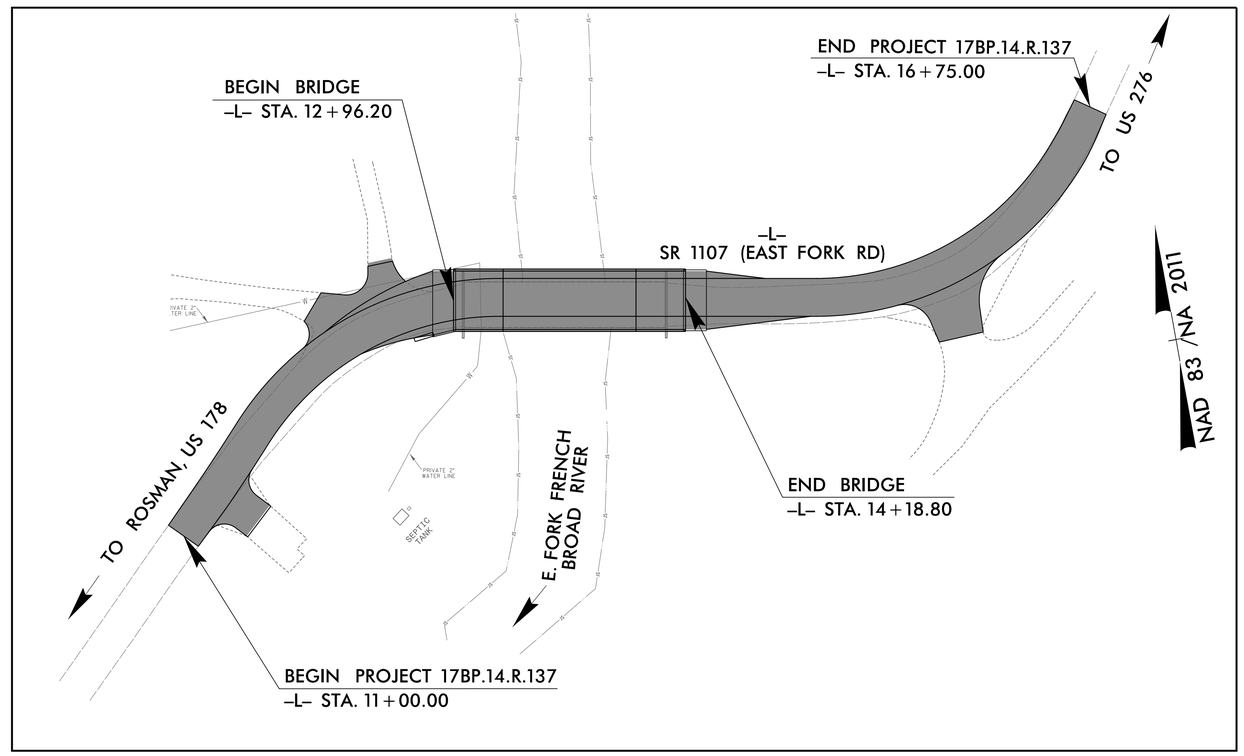
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

T.I.P. NO.	SHEET NO.
17BP.14.R.137	UO–1

UTILITIES BY OTHERS PLANS
TRANSYLVANIA COUNTY

LOCATION: *BRIDGE NO. 86 OVER THE EAST FORK OF THE FRENCH BROAD RIVER ON SR 1107 (EAST FORK ROAD)*

TYPE OF WORK: *AERIAL POWER, TELEPHONE AND CATV AND UNDERGROUND CATV*



V&M
Vaughn & Melton
Consulting Engineers
Asheville, North Carolina
828-253-2796
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
Charlotte, NC 704-357-0488
Boone, NC 828-355-9933
Atlanta, GA 770-627-3509

Copyright © 2006 Vaughn & Melton, Inc. All Rights Reserved

GRAPHIC SCALES

30 15 0 30 60

PLANS

INDEX OF SHEETS

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

UTILITY OWNERS ON PROJECT

(1) POWER – HAYWOOD EMC

(2) TELEPHONE & CATV – COMPORIUM (CITIZENS TELEPHONE COMPANY)

PLANS PREPARED BY:

PREPARED FOR THE OFFICE OF:

DIVISION OF HIGHWAYS UTILITIES ENGINEERING SECTION

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

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

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

V&M PROJECT #31235-08
TRANSPORTATION\31235-08\UTILITIES\UO-1.DGN

3/24/16

PROJECT: 17BP.14.R.137

CONTRACT: DN00117

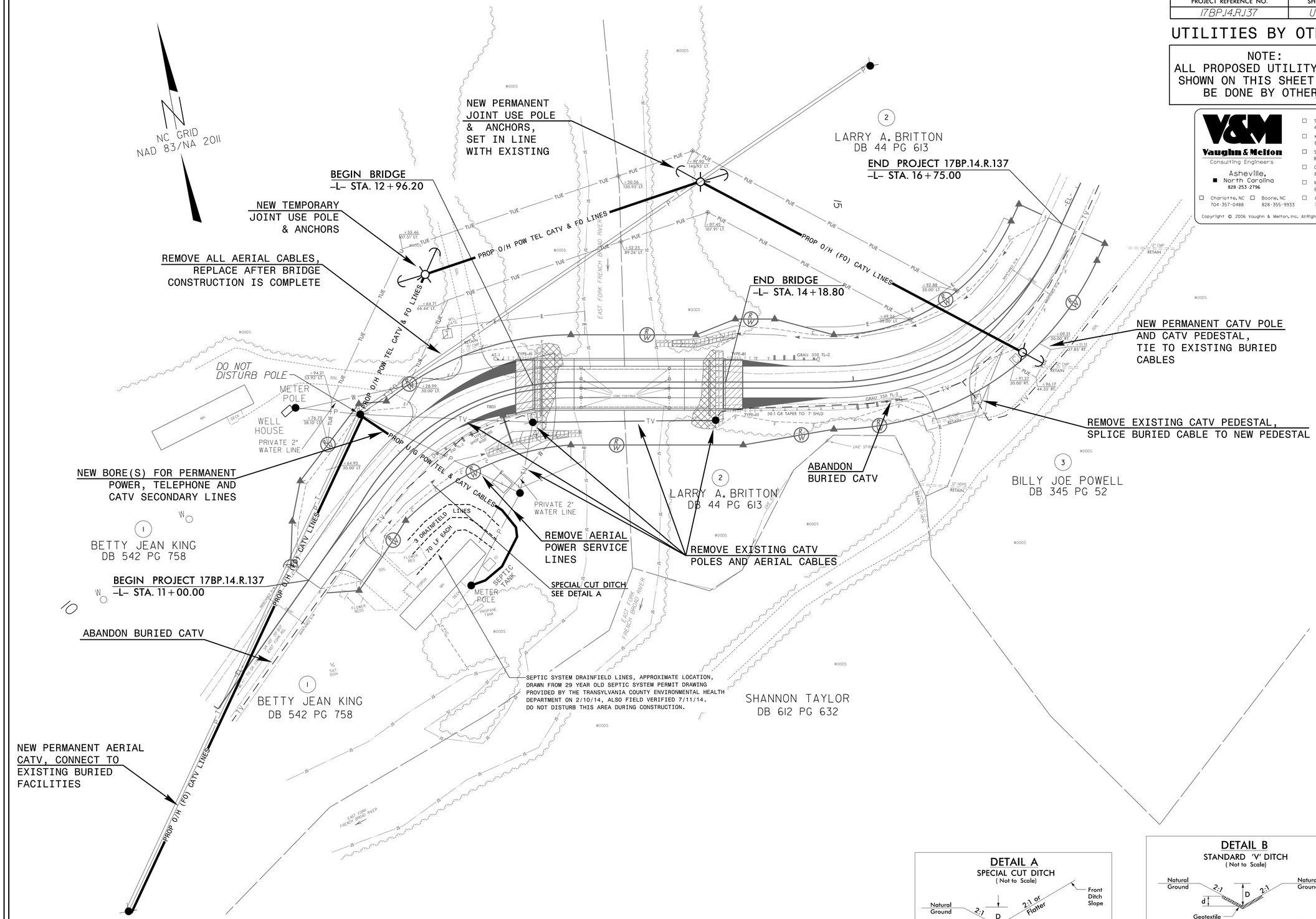
PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.137	UO-2

UTILITIES BY OTHERS

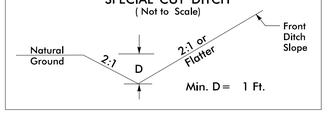
NOTE:
ALL PROPOSED UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS

Vaughn & Melton
Consulting Engineers
Asheville, North Carolina
828-253-2796
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
Charlotte, NC 704-357-0488
Boone, NC 828-355-9933

Copyright © 2006 Vaughn & Melton, Inc. All Rights Reserved

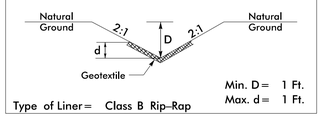


DETAIL A
SPECIAL CUT DITCH
(Not to Scale)



FROM –L– STA. 11+50 TO STA. 12+50 RT.
FROM –L– STA. 14+25 TO STA. 16+50 LT.

DETAIL B
STANDARD 'V' DITCH
(Not to Scale)



Type of Liner = Class B Rip-Rap

FROM –L– STA. 12+50 TO STA. 13+19 RT.
FROM –L– STA. 13+85 TO STA. 14+25 LT.

V&M PROJECT #31235-08
TRANSPORTATION\31235-08\UTILITIES\UO-2.DGN