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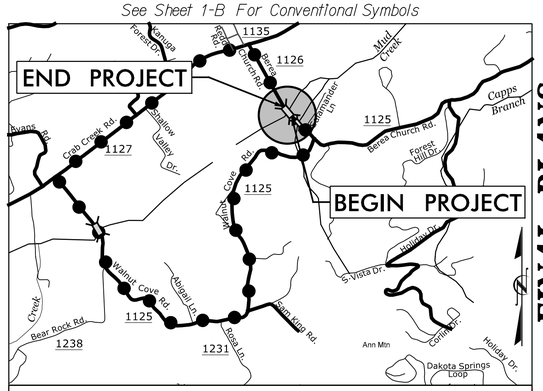
09/08/99

PROJECT: B-6023

CONTRACT: DN00272

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



FINAL PLANS

VICINITY MAP

N.T.S.

● ● ● ● ● ● OFF-SITE DETOUR

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

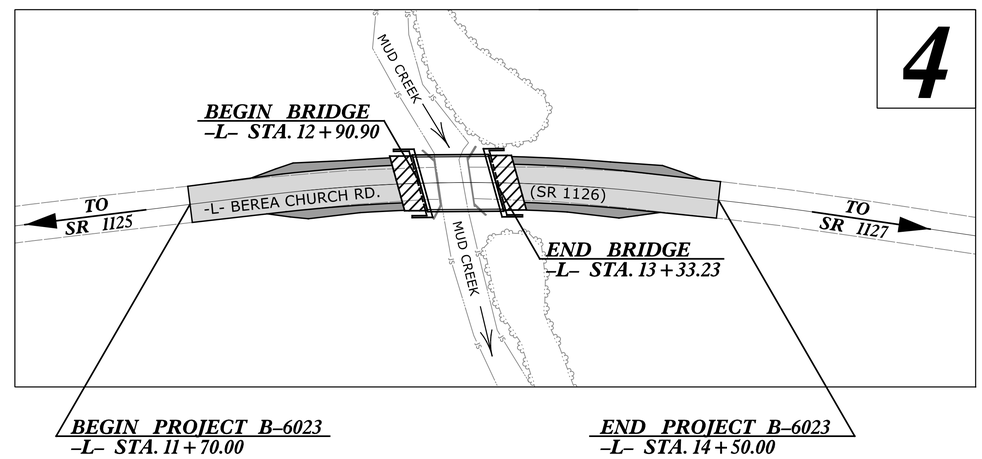
HENDERSON COUNTY

LOCATION: BRIDGE #440192 OVER MUD CREEK ON SR 1126 (BEREA CHURCH ROAD)

TYPE OF WORK: PAVING, GRADING, DRAINAGE & STRUCTURE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-6023	1	
HENDERSON COUNTY		BRIDGE #440192	

STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
17BP.14.R.103	–	PE
17BP.14.R.103	–	R/W & UTILITIES
48218.3.1	BRZ-1126(009)	CONST



NAD 83/NA 2011

NCDOT CONTACT:
HIGHWAY DIVISION 14 BRIDGE MANAGER
ADAM DOCKERY, P.E.
(828) 488-0902

THERE IS NO CONTROL ACCESS ON THIS PROJECT.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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 (2013) = 200
DHV = NA
D = NA
T = 6%
V = 35 MPH
* TTST = NA DUAL NA
FUNC CLASS = RURAL LOCAL

(SUBREGIONAL)

PROJECT LENGTH

LENGTH ROADWAY PROJECT B-6023 = 0.045 MILES
LENGTH STRUCTURE PROJECT B-6023 = 0.008 MILES
TOTAL LENGTH PROJECT B-6023 = 0.053 MILES

DESIGN EXCEPTION:
(1) SAG VERTICAL CURVE K

Plans Prepared by:

AMERICAN Engineering

AMERICAN ENGINEERING ASSOCIATES - SOUTHEAST, PA
8008 CORPORATE CENTER DRIVE, SUITE 110
CHARLOTTE, NORTH CAROLINA 28226
PHONE: 704-375-2438
NC Lic. No. C-3881

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
APRIL 9, 2015

LETTING DATE:
MARCH 12, 2019

ALLISON C. JOHNSON, P.E.
PROJECT ENGINEER

BENJAMIN C. PICKERING II, P.E.
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 40801 ENGINEER PAUL H. CAMERON

DocuSigned by: Paul Cameron 12/5/2018
SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 041650 ENGINEER BENJAMIN C. PICKERING II

DocuSigned by: Benjamin Pickering 12/5/2018
SIGNATURE: P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION

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8/17/99

PROJECT REFERENCE NO.	SHEET NO.
B-6023	1A
HENDERSON COUNTY	BRIDGE #440192

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 041650 ENGINEER BENJAMIN C. PICKERING II

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11/26/2018

Plans Prepared By:

AMERICAN Engineering
8008 CORPORATE CENTER DRIVE, SUITE 110
CHARLOTTE, NORTH CAROLINA 28226
NC Lic. No. C-3881

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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	PAVEMENT SCHEDULE, TYPICAL SECTIONS AND DETAILS
2B-1	MODIFIED CONCRETE FLUME DETAIL
2C-1	STRUCTURE ANCHOR UNIT DETAIL
3B-1	SUMMARY OF DRAINAGE, GUARDRAIL SUMMARY, SUMMARY OF EARTHWORK, SHOULDER BERM GUTTER SUMMARY PARCEL INDEX SHEET AND PAVEMENT REMOVAL SUMMARY
4	PLAN AND PROFILE SHEET
TMP-1 THRU TMP-2A	TRAFFIC MANAGEMENT PLANS
PMP-1 THRU PMP-2	PAVEMENT MARKING & SIGNING PLAN
EC-1 THRU EC-4	EROSION CONTROL PLANS
UO-1 THRU UO-2	UTILITIES BY OTHERS PLANS
X-1A	CROSS SECTION SUMMARY SHEET
X-1 THRU X-2	CROSS-SECTIONS
S-1 THRU S-15	STRUCTURE PLANS
SN	STRUCTURE PLANS - STANDARD NOTES

GENERAL NOTES

GENERAL NOTES: 2018 SPECIFICATIONS
EFFECTIVE: 01-16-2018

GRADE LINE:
GRADING AND SURFACING:

THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. GRADE LINES MAY BE ADJUSTED AT THEIR BEGINNING AND ENDING AND AT STRUCTURES AS DIRECTED 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.

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 AT&T & DUKE ENERGY.
ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS.

RIGHT-OF-WAY MARKERS:

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

STANDARD DRAWINGS

EFF. 01-16-2018

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 4 - MAJOR STRUCTURES	
422.02	Bridge Approach Fills - Type II Modified Approach Fill
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
806.02	Granite Right-Of-Way Marker
816.04	Markers for Drainage Structure and Concrete Pad
846.01	Concrete Curb, Gutter and Curb & Gutter
850.01	Concrete Paved Ditches
862.01	Guardrail Placement
862.02	Guardrail Installation
876.01	Rip Rap in Channels

11/2/2018
Pat Vanhoy
P:\Drawing02.corporate.ganntt\fleming.com\GFPW02\Documents\Projects\57719.440192\Roadway\Proj\B440192_Rdy_tsh_1a.dgn

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12/05/11

PROJECT REFERENCE NO.	SHEET NO.
B-6023	1B

Note: Not to Scale

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

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

BUILDINGS AND OTHER CULTURE:

- Gas Pump Vent or U/G Tank Cap
- Sign — 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
- Recorded U/G Power Line — P
- Designated U/G Power Line (S.U.E.*) — P

TELEPHONE:

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

WATER:

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

TV:

- TV Satellite Dish
- TV Pedestal — C
- TV Tower
- U/G TV Cable Hand Hole
- Recorded U/G TV Cable — TV
- Designated U/G TV Cable (S.U.E.*) — TV
- Recorded U/G Fiber Optic Cable — TV FO
- Designated U/G Fiber Optic Cable (S.U.E.*) — TV FO

GAS:

- Gas Valve
- Gas Meter
- Recorded U/G Gas Line — G
- Designated U/G Gas Line (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
- Recorded SS Forced Main Line — FSS
- Designated SS Forced Main Line (S.U.E.*) — FSS

MISCELLANEOUS:

- Utility Pole
- Utility Pole with Base
- Utility Located Object
- Utility Traffic Signal Box — S
- Utility Unknown U/G Line — ?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 (S.U.E.*)
- Abandoned According to Utility Records — AATUR
- End of Information — E.O.I.

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6/2/99

PROJECT REFERENCE NO.	SHEET NO.
B-6023	1C-1
Location and Surveys	

SURVEY CONTROL SHEET 44-0192
-FINAL-

BL

POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
1	BL-1	565313.2129	954976.7085	2138.65	10+00.72	12.70 LT
2	BL-2	565544.0692	954793.5586	2137.76	12+95.29	13.61 RT
3	BL-3	565790.6656	954609.9270	2137.71	16+03.04	13.26 LT

****
BM1 ELEVATION = 2136.62
N 565574 E 954725
L STATION 13+59.74 23.62' LEFT
NAIL IN BASE OF UTILITY POLE
****

****
BM2 ELEVATION = 2139.46
N 565596 E 954782
L STATION 13+44.94 35.77' RIGHT
NAIL IN BASE OF 12" WALNUT
****

-L- FINAL

TYPE	STATION	NORTH	EAST
POT	10+00.00	565321.5741	954986.2928
PC	12+09.58	565471.4444	954839.7849
PT	14+17.28	565635.6165	954713.3554
PC	14+53.34	565666.5775	954694.8622
PT	15+17.78	565722.4509	954662.7552
POT	16+15.92	565808.3475	954615.3052

PUE

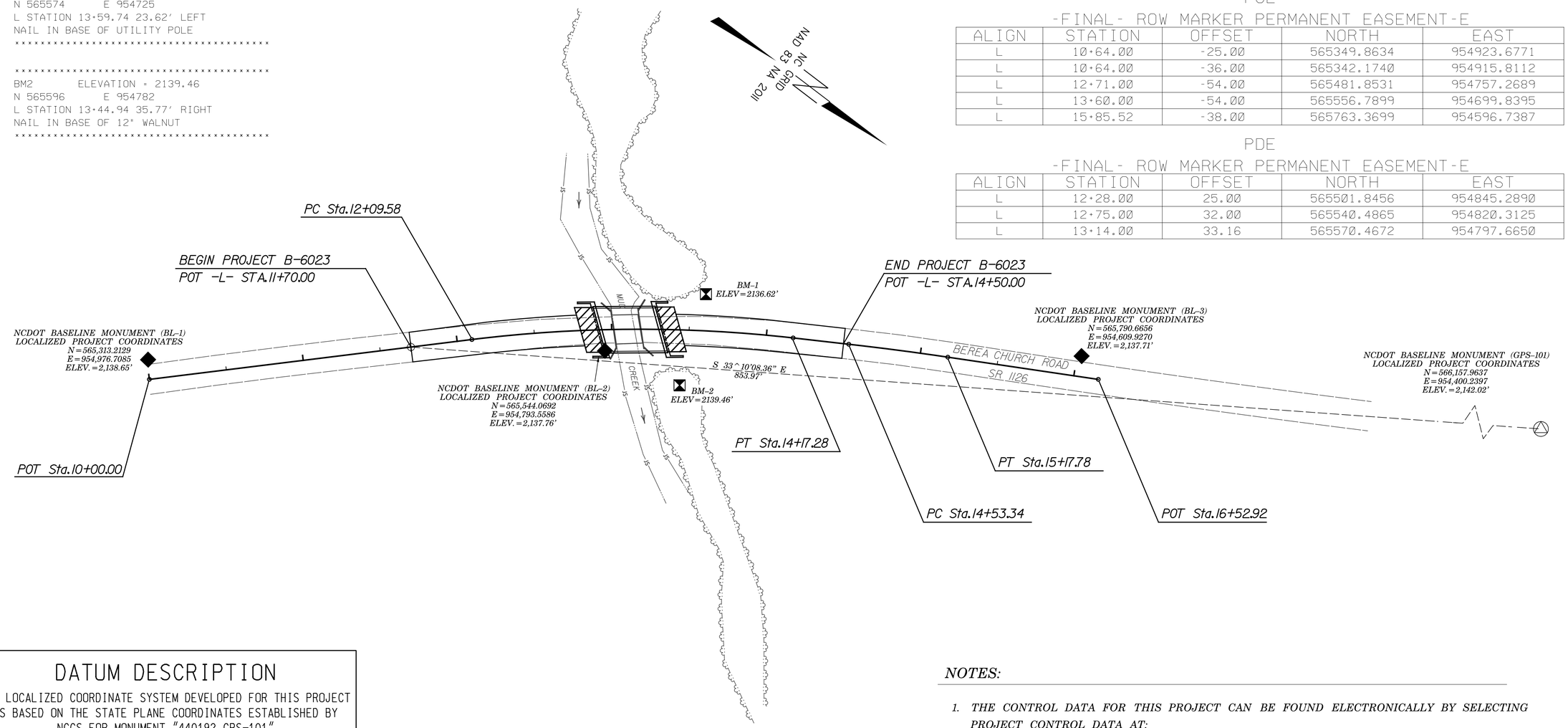
-FINAL- ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	10+64.00	-25.00	565349.8634	954923.6771
L	10+64.00	-36.00	565342.1740	954915.8112
L	12+71.00	-54.00	565481.8531	954757.2689
L	13+60.00	-54.00	565556.7899	954699.8395
L	15+85.52	-38.00	565763.3699	954596.7387

PDE

-FINAL- ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	12+28.00	25.00	565501.8456	954845.2890
L	12+75.00	32.00	565540.4865	954820.3125
L	13+14.00	33.16	565570.4672	954797.6650



DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "440192 GPS-101"
WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF
NORTHING: 566157.9637(ft) EASTING: 954400.2397(ft)
ELEVATION: 2142.02(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99977454
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "440314 GPS-101" TO -L- STATION 11+70.00 IS
S33°10'08.36"E 853.97 (ft)
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

GEOID MODEL: G12ANC
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:
440192_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.

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PROJECT REFERENCE NO.	SHEET NO.
B-6023	2A-1
HENDERSON COUNTY	BRIDGE #440192

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 041650 ENGINEER BENJAMIN C. PICKERING II

DocuSigned by: EE6031002284DF...
11/26/2018

PAVEMENT DESIGN ENGINEER

Plans Prepared By:

AMERICAN Engineering
8008 CORPORATE CENTER DRIVE, SUITE 110
CHARLOTTE, NORTH CAROLINA 28226
NC Lic. No. C-3881

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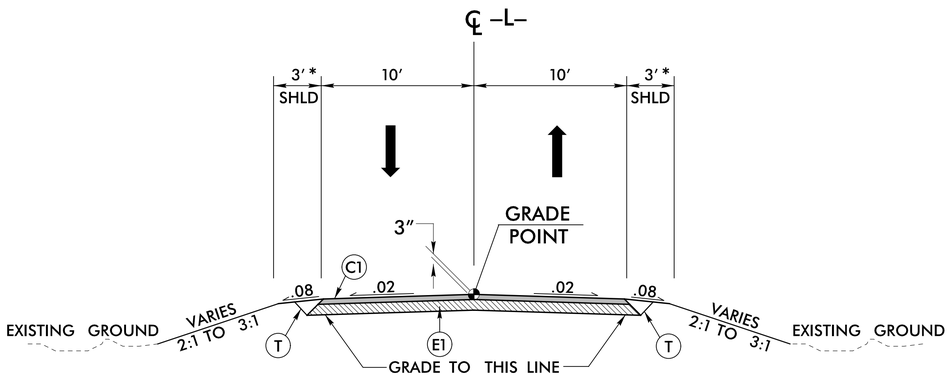
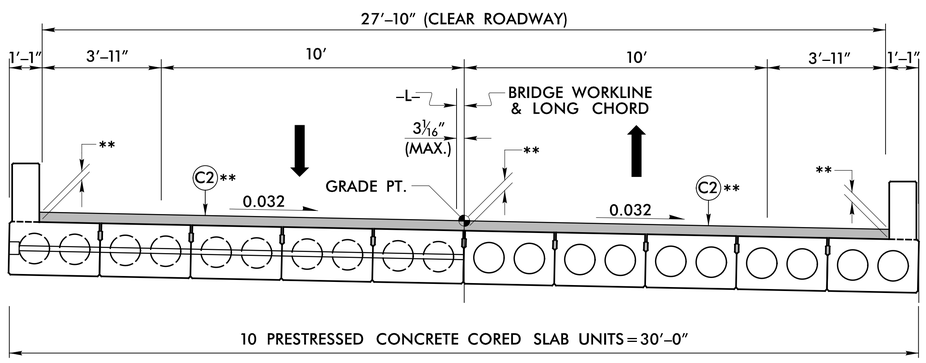


TYPICAL SECTION NO. 1

-L- STA. 11+70.00 TO STA. 12+90.90 (BEGIN BRIDGE)
-L- STA. 13+33.23 (END BRIDGE) TO STA. 14+50.00

NOTE: SEE PLAN FOR SUPERELEVATION RATES AND TRANSITIONS
* 7′-0″ WITH GUARDRAIL INCLUDING UP TO 4′-0″ FULL DEPTH PAVED SHOULDER
-L- STA. 12+03.74 TO STA. 12+77.75 (LT)
-L- STA. 13+40.06 TO STA. 14+39.75 (LT)
-L- STA. 12+09.73 TO STA. 12+83.28 (RT)
-L- STA. 13+47.41 TO STA. 14+20.25 (RT)

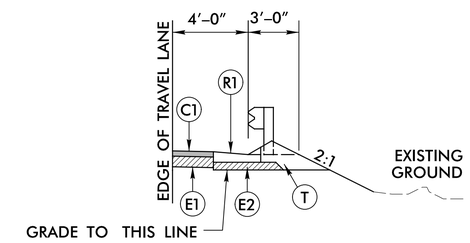


TYPICAL SECTION NO. 2

STRUCTURE

-L- STA. 12+90.90 (BEGIN BRIDGE) TO
-L- STA. 13+33.23 (END BRIDGE)

** SEE STRUCTURE PLANS FOR PAVEMENT DEPTHS



SHOULDER BERM GUTTER DETAIL

-L- STA. 12+57 TO STA. 12+83 (RT)

PAVEMENT SCHEDULE	
ITEM	DESCRIPTION
C1	PROP. APPROX. 3″ ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. IN EACH OF TWO EQUAL LAYERS
C2	PROP. DEPTH, AS SHOWN ON STRUCTURE PLANS, ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1″ DEPTH TO BE PLACED IN LAYERS NOT TO EXCEED 1½″ IN DEPTH.
E1	PROP. APPROX. 5½″ ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.
E2	PROP. APPROX. 3″ ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD.
R1	SHOULDER BERM GUTTER
T	EARTH MATERIAL

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

8/17/99
11/21/2018
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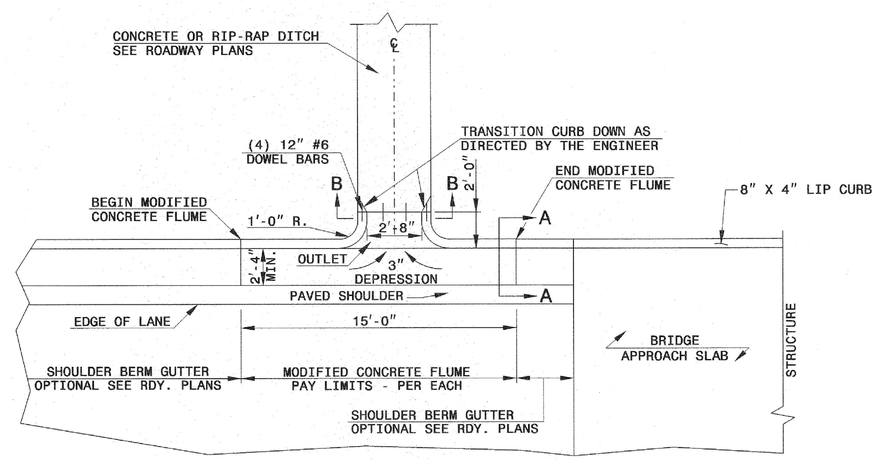
8/17/99

PROJECT REFERENCE NO.	SHEET NO.
B-6023	2B-1
HENDERSON COUNTY BRIDGE #440192	

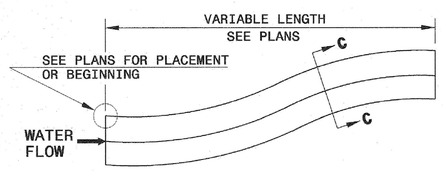
Plans Prepared By:
AMERICAN Engineering
8008 CORPORATE CENTER DRIVE, SUITE 110
CHARLOTTE, NORTH CAROLINA 28226
NC Lic. No. C-3881

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

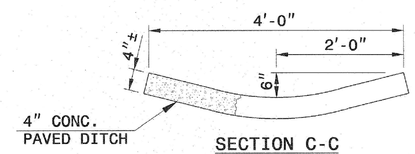
ENGLISH DETAIL DRAWING FOR
MODIFIED CONCRETE FLUME
WITH CONCRETE OR RIP-RAP DITCH



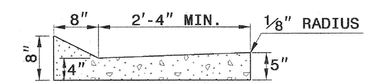
PLAN VIEW



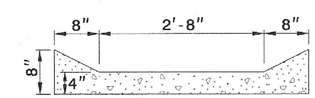
DOWNGRADE OR SAG



SECTION C-C



SECTION A-A



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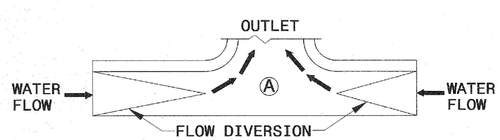

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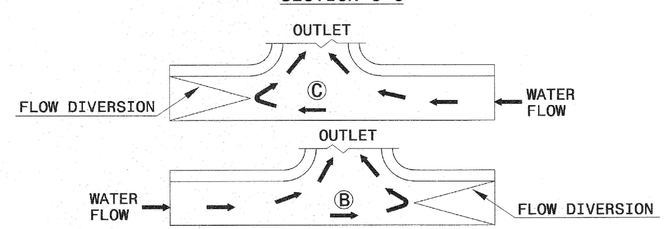
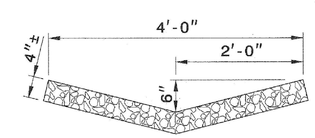


DOWN GRADE

FLOW DIVERSION EXAMPLES



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.

SHEET 1 OF 1
MODFLMDTCH

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

ENGLISH DETAIL DRAWING FOR
MODIFIED CONCRETE FLUME
WITH CONCRETE OR RIP-RAP DITCH

SHEET 1 OF 1
MODFLMDTCH

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

SEE PLATE FOR TITLE

ORIGINAL BY:	E.E. Ward	DATE:	Apr. 2002
MODIFIED BY:	E.E. Ward	DATE:	July 2004
CHECKED BY:		DATE:	
FILE SPEC.:			

11/21/2018
pw:\\gtpwing02.corporate.gannettfleming.com:GFPW02\Documents\Projects\57719\440192\Roadway\Proj\B440192_Rdy_typ_2B-1.dgn

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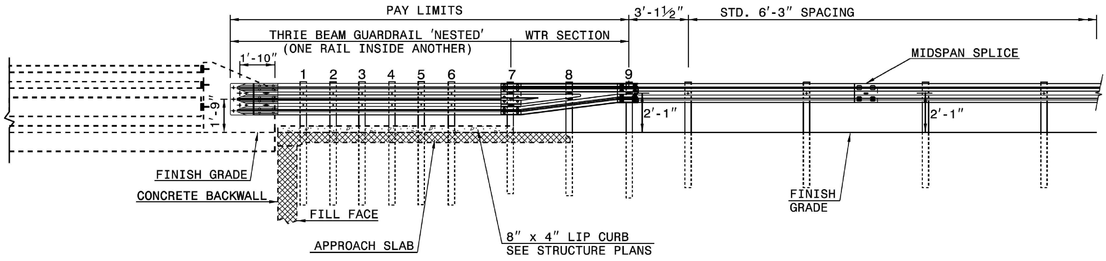
8/17/99

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

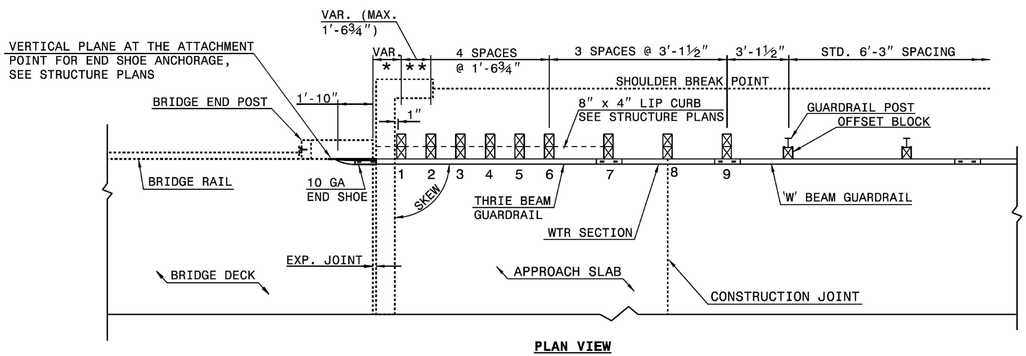
ROADWAY DETAIL DRAWING FOR
STRUCTURE ANCHOR UNITS
GUARDRAIL ANCHOR UNIT, TYPE III
FOR ATTACHMENT TO RAIL ON BRIDGE

SHEET 1 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 3 FOR POST SECTIONS 1 THRU 9.



PLAN VIEW

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

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

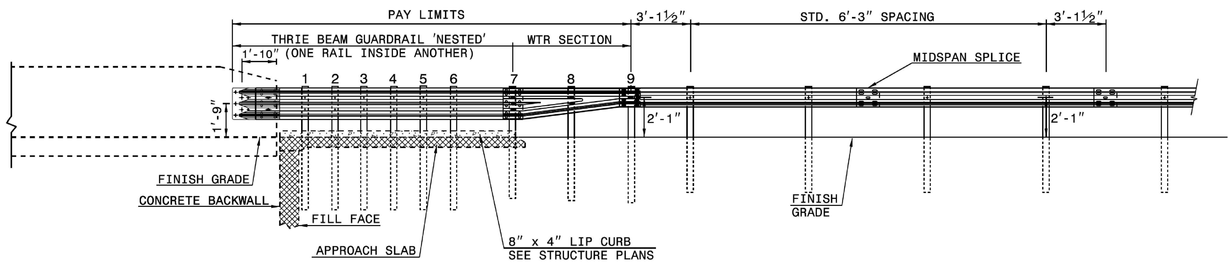
ROADWAY DETAIL DRAWING FOR
STRUCTURE ANCHOR UNITS
GUARDRAIL ANCHOR UNIT, TYPE III
FOR ATTACHMENT TO RAIL ON BRIDGE

SHEET 1 OF 7
862D03

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

ROADWAY 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

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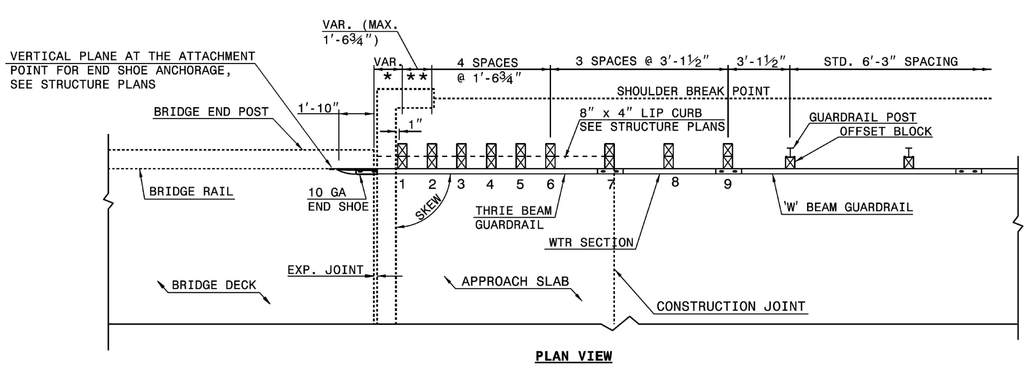
-SEE SHEET 3 FOR POST SECTIONS 1 THRU 9.



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.

ROADWAY 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

SEE TITLE BLOCK

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

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

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 022966 JAMES S. HOWERTON

PROJECT REFERENCE NO. B-6023
SHEET NO. 2C-1
HENDERSON COUNTY BRIDGE #440192

Plans Prepared By:
AMERICAN Engineering
8008 CORPORATE CENTER DRIVE, SUITE 110
CHARLOTTE, NORTH CAROLINA 28226
NC Lic. No. C-3981

DocuSign Envelope ID: 55535BC9-F368-4C93-BF5F-E1B3AB06A1E2

COMPUTED BY: BCP	DATE: 11/09/18
CHECKED BY: ACJ	DATE: 11/09/18

PROJECT REFERENCE NO.	SHEET NO.
B-6023	3B-1
HENDERSON COUNTY BRIDGE #440192	

Plans Prepared By:

AMERICAN Engineering
8008 CORPORATE CENTER DRIVE, SUITE 110
CHARLOTTE, NORTH CAROLINA 28226
NC Lic. No. C-3881

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SUMMARY OF EARTHWORK

(in Cubic Yards)

STATION	STATION	UNCL. EXCAV.	EMBANK.	BORROW	WASTE
-L- STA. 11+70	-L- STA. 12+80	99	10	0	89
-L- STA. 13+44	-L- STA. 14+50	84	18	0	66
PROJECT TOTALS:		183	29	0	154
LOSS DUE TO CELARING AND GRUBBING		-57			-57
WASTE TO REPLACE BORROW					
DDE		20			20
GRAND TOTALS:		146	29		117
SAY:		150			120

Approximate quantities only. Unclassified Excavation, Borrow Excavation, Shoulder Borrow, Fine Grading, Clearing and Grubbing, Breaking of Existing Pavement, and Removal of Existing Pavement will be paid for at the contract lump sum price for "Grading".

SHOULDER BERM GUTTER SUMMARY

SURVEY LINE	SIDE	STATION	STATION	LENGTH
-L-	LT	12+57	12+83	26.0'
			TOTAL:	26.0'
			SAY:	30.0'

PARCEL INDEX SHEET

PARCEL NO.	SHEET NO.	PROPERTY OWNER NAMES
20	4	THERESA A. CAGLE & HUSBAND, HAROLD C. CAGLE, JR.
21	4	THOMAS L. COOPER & WIFE, MARIE Y. COOPER
22	4	SWAN B. BABB, JR. & WIFE, SUZETTE D. BABB

PAVEMENT REMOVAL SUMMARY

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	SY
-L-	11+70	12+80	BOTH	229
-L-	13+44	14+50	BOTH	221
			TOTAL:	450
			SAY:	450

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

STATION / SIZE / THICKNESS OR GAUGE	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"–48"	C.S. PIPE (UNLESS NOTED OTHRWISE) 12" .064, 15" .064, 18" .064, 24" .064, 30" .079, 36" .079, 42" .109, 48" .109	CLASS III R.C. PIPE (UNLESS OTHERWISE NOTED) 12"–48"	15" SIDE DRAIN PIPE	18" SIDE DRAIN PIPE	24" SIDE DRAIN PIPE	ENDWALLS STD. 838.01, STD. 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YDS. R.C.P.	ENDWALLS CU. YDS. C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES PER EACH (0' THRU 5.0')	LIN. *FT. A 5.0' THRU 10.0'	LIN. *FT. 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	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME & GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	G.D.I. FRAME WITH GRATE STD. 840.22	G.D.I. FRAME WITH TWO GRATES STD. 840.22	G.D.I. (N.S.) FRAME WITH GRATE STD. 840.24	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	J.B. STD. 840.31 OR 840.32	MODIFIED CONCRETE FLUME DETAIL (SEE DETAIL SHEET 2B-1)	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
-L- 12+77	RT	401																																1					
TOTAL																																		1					

* TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL.'B')

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

"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 STRAIGHT	LENGTH SHOP CURVED	LENGTH DOUBLE FACED	WARRANT POINT APPROACH END	WARRANT POINT TRAILING END	"N" DIST. FROM E.O.L.	TOTAL SHOUL. WIDTH	FLARE LENGTH APPROACH END	FLARE LENGTH TRAILING END	W APPROACH END	W TRAILING END	ANCHORS GREU TYPE-III	B-77	GREU TL-2	GREU TL-3	CAT-1	AT-1	TYPE III SC	B-77 SC		IMPACT ATTENUATOR TYPE 350 EA	G	NG	SINGLE FACED GUARDRAIL	REMOVE EXISTING GUARDRAIL	REMOVE AND STOCKPILE EXISTING GUARDRAIL	REMARKS
-L-	12+25	12+90.25 (BR)	LT.	65.3			12+25	BRIDGE GREU		7					1		1													GUARDRAIL CALCULATED USING SUBREGIONAL TIER GUIDELINES
-L-	13+26.26 (BR)	14+20	LT.	93.7			BRIDGE GREU	14+20		7					1		1													GUARDRAIL CALCULATED USING SUBREGIONAL TIER GUIDELINES
-L-	12+30	12+97.40 (BR)	RT.	67.4			12+30	BRIDGE GREU		7					1		1													GUARDRAIL CALCULATED USING SUBREGIONAL TIER GUIDELINES
-L-	13+34.60 (BR)	14+00	RT.	65.4			BRIDGE GREU	14+00		7					1		1													GUARDRAIL CALCULATED USING SUBREGIONAL TIER GUIDELINES
			SUBTOTALS	291.8											DEDUCTIONS FOR GUARDRAIL END UNITS															
			ANCHOR DEDUCTION	-175											GREU TYPE TL-2		4 @ 25.00' =	100'												
			TOTAL	116.8											GREU TYPE III		4 @ 18.75' =	75'												
			SAY	125													TOTAL =	175'												

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Deb Wright

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8/17/99

PROJECT REFERENCE NO.	SHEET NO.
B-6023	4
HENDERSON COUNTY	BRIDGE #440192
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 041650 ENGINEER BENJAMIN C. PICKERING — DocuSign 11/26/2018

NORTH CAROLINA PROFESSIONAL SEAL 40801 ENGINEER PAUL T. CAMERON — DocuSign 11/26/2018

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Plans Prepared By:

AMERICAN Engineering
8008 CORPORATE CENTER DRIVE, SUITE 110
CHARLOTTE, NORTH CAROLINA 28226
NC Lic. No. C-3881

DETAIL TP1
TOE PROTECTION
(Not to Scale)

2:1 or Flatter Fill Slope; 2:1 or Flatter Fill Slope; d; Geotextile

d= 1 Ft.

Type of Liner= Class B Rip-Rap

FROM -L- STA. 12+69 TO -L- STA. 12+79 LT

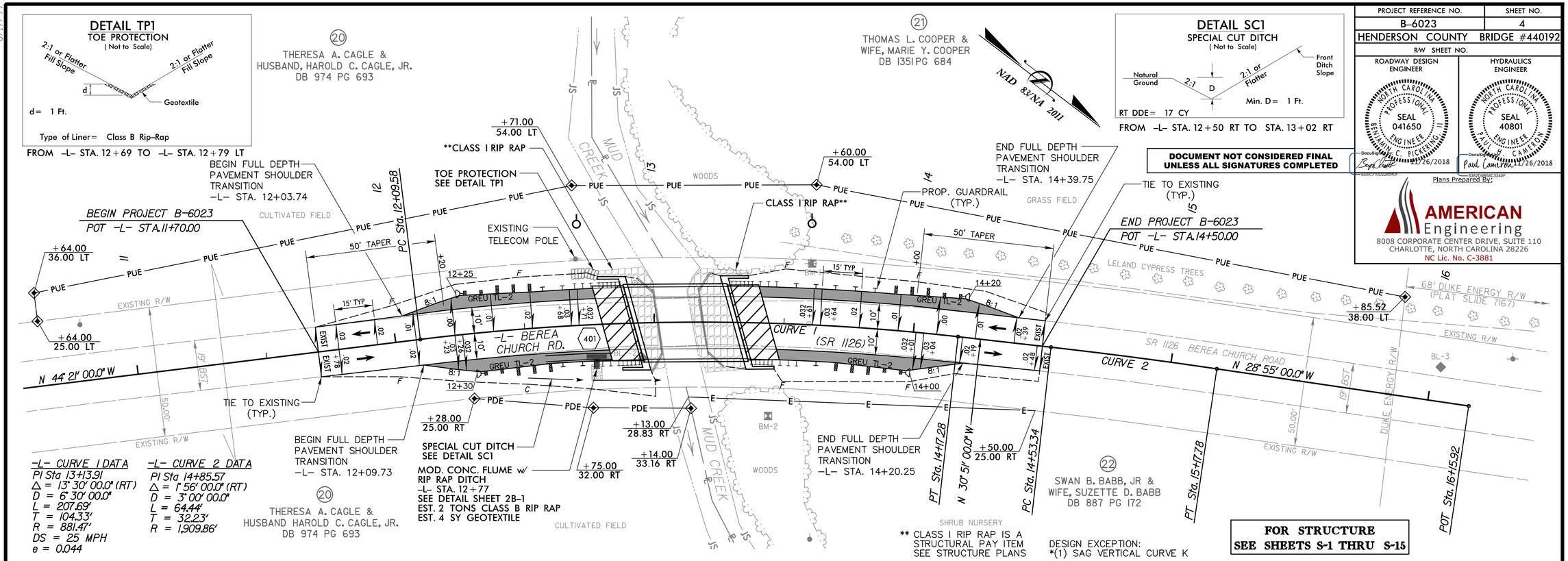
DETAIL SC1
SPECIAL CUT DITCH
(Not to Scale)

Natural Ground; 2:1; D; 2:1 or Flatter; Front Ditch Slope

Min. D= 1 Ft.

RT DDE= 17 CY

FROM -L- STA. 12+50 RT TO STA. 13+02 RT



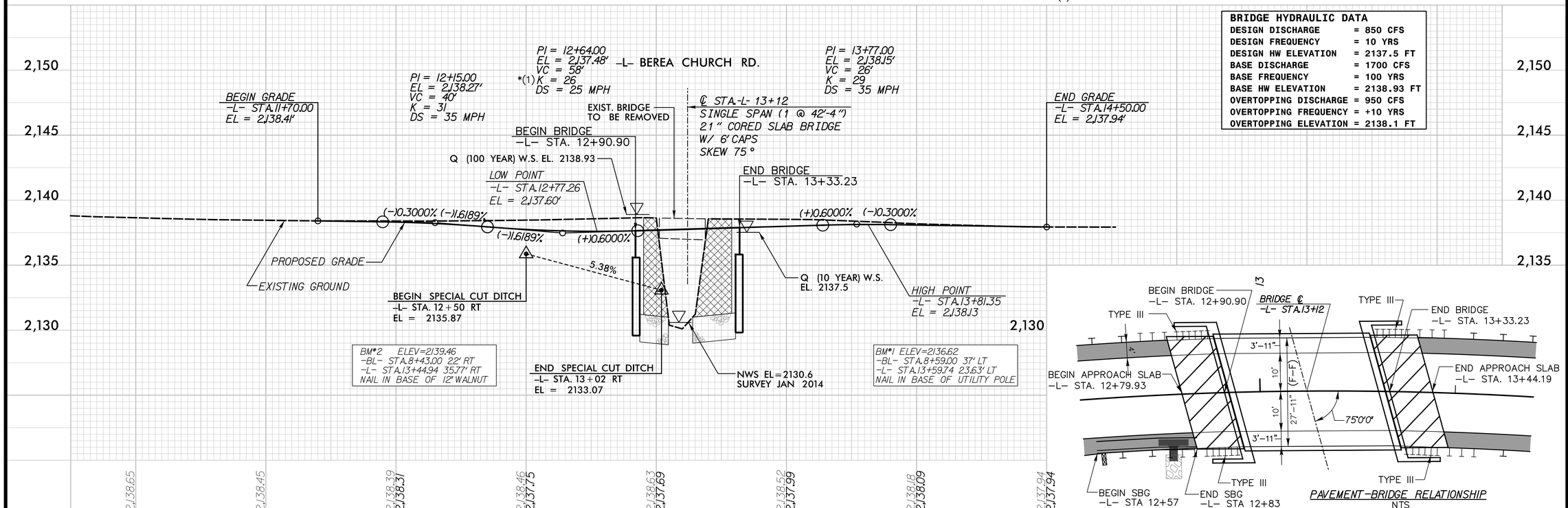
** CLASS I RIP RAP IS A STRUCTURAL PAY ITEM SEE STRUCTURE PLANS

DESIGN EXCEPTION:
*(1) SAG VERTICAL CURVE K

FOR STRUCTURE SEE SHEETS S-1 THRU S-15

BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	= 850 CFS
DESIGN FREQUENCY	= 10 YRS
DESIGN HW ELEVATION	= 2137.5 FT
BASE DISCHARGE	= 1700 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 2138.93 FT
OVERTOPPING DISCHARGE	= 950 CFS
OVERTOPPING FREQUENCY	= +10 YRS
OVERTOPPING ELEVATION	= 2138.1 FT



PAVEMENT-BRIDGE RELATIONSHIP
NTS

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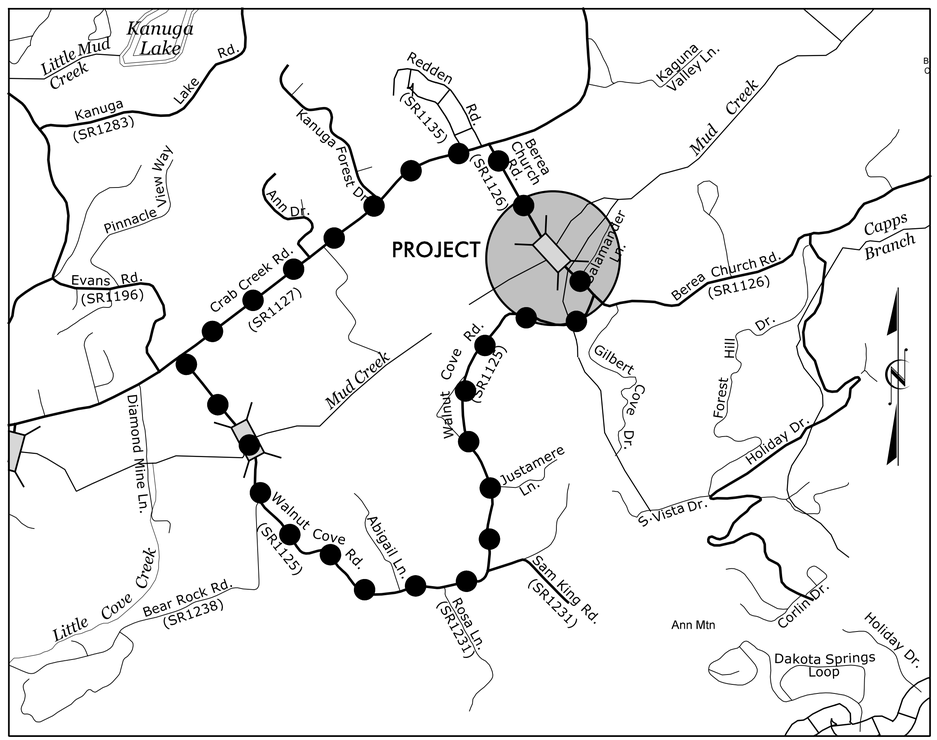
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

HENDERSON COUNTY



VICINITY MAP

NTS

OFF-SITE DETOUR

LOCATION: BRIDGE #440192 OVER MUD CREEK ON SR 1026 (BEREA CHURCH ROAD)

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

JOSEPH E. HUMMER, P.E. — STATE TRAFFIC MANAGEMENT ENGINEER
ALLISON C. JOHNSON, P.E. — TRAFFIC CONTROL PROJECT ENGINEER
BENJAMIN C. PICKERING II, P.E. — TRAFFIC CONTROL PROJECT DESIGN ENGINEER
_____ — TRAFFIC CONTROL DESIGN ENGINEER

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

INDEX OF SHEETS

SHEET NO.	TITLE
TMP-1	TITLE SHEET, VICINITY MAP AND INDEX OF SHEETS
TMP-1A	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, AND LEGEND
TMP-1B	TRANSPORTATION OPERATIONS PLAN: (MANAGEMENT STRATEGIES, GENERAL NOTES AND LOCAL NOTES)
TMP-2	SPECIAL SIGN DESIGN
TMP-2A	OFF-SITE DETOUR ROUTE AND SIGNING

SHEET NO.
TMP-1

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Plans Prepared By:

AMERICAN Engineering
AMERICAN ENGINEERING ASSOCIATES - SOUTHEAST, PA
8008 CORPORATE CENTER DRIVE, SUITE 110
CHARLOTTE, NC 28226
704-375-2438 NC Lic. No. C-3881

APPROVED: Docu(Signed by: A. Christopher Johnson 5014A5...
DATE: 11/26/2018

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 15424 ENGINEER ALLISON C. JOHNSON

PROJECT: B-6023

11/21/2018
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Deb Wright

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8/17/99

PROJECT REFERENCE NO.	SHEET NO.
B-6023	TMP-1A
HENDERSON COUNTY	BRIDGE #440192
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS SHOWN IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 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
1101.04	TEMPORARY SHOULDER CLOSURES
1101.05	WORK ZONE VEHICLE ACCESSES
1101.06	WARNING SIGNS FOR BLASTING ZONES
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
1160.01	TEMPORARY CRASH CUSHION - REFLECTIVE END TREATMENT
1165.01	TRUCK MOUNTED ATTENUATOR - DELINEATION
1170.01	POSITIVE PROTECTION - PORTABLE CONCRETE BARRIER
1180.01	SKINNY DRUM
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - DIVIDED AND UNDIVIDED ROADWAYS
1205.12	PAVEMENT MARKINGS - BRIDGES
1250.01	PAVEMENT MARKER SPACING
1251.01	RAISED PAVEMENT MARKERS - PERMANENT AND TEMPORARY
1261.01	GUARDRAIL AND BARRIER DELINEATOR SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATOR TYPES
1262.01	GUARDRAIL END DELINATION

LEGEND

GENERAL

- DIRECTION OF TRAFFIC FLOW
- DIRECTION OF PEDESTRIAN TRAFFIC FLOW
- EXIST. EDGE OF PAVEMENT
- NORTH ARROW
- PROPOSED PAVEMENT
- WORK AREA
- REMOVAL

SIGNALS

- EXISTING
- PROPOSED
- TEMPORARY

PAVEMENT MARKINGS

- EXISTING LINES
- TEMPORARY LINES

TRAFFIC CONTROL DEVICES

- BARRICADE (TYPE I)
- BARRICADE (TYPE II)
- BARRICADE (TYPE III)
- PORTABLE CONCRETE BARRIER
- CONE / TUBULAR MARKER
- DRUM / SKINNY DRUM
- TEMPORARY CRASH CUSHION
- FLASHING ARROW BOARD
- FLAGGER
- WARNING FLAGS
- LAW ENFORCEMENT
- TRUCK MOUNTED ATTENUATOR (TMA)
- CHANGEABLE MESSAGE SIGN

TEMPORARY SIGNING

- PORTABLE SIGN
- STATIONARY SIGN
- STATIONARY OR PORTABLE SIGN

PAVEMENT MARKERS

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

PAVEMENT MARKING SYMBOLS

- PAVEMENT MARKING SYMBOLS

APPROVED: DocuSigned by: A. Christopher Lindsay FEBEA5AAF0704A6... DATE: 11/20/2018

SEAL — NORTH CAROLINA PROFESSIONAL SEAL 15424 ENGINEER ALLISON C. JOHNSON

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

ROADWAY STANDARD DRAWINGS & LEGEND

11/21/2018
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PWD: Plan

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PROJECT REFERENCE NO.	SHEET NO.
B-6023	TMP-1B
HENDERSON COUNTY	BRIDGE #440192
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

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.

TRAFFIC PATTERN ALTERATIONS

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

SIGNING

B) 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.

C) CONTRACTOR TO PROVIDE SIGNING AND DEVICES REQUIRED TO CLOSE THE ROAD ACCORDING TO THE ROADWAY STANDARD DRAWINGS AND TRAFFIC CONTROL PLANS.

D) CONTRACTOR TO PROVIDE SIGNING REQUIRED FOR THE OFF-SITE DETOUR ROUTE AS SHOWN IN THE TRAFFIC CONTROL PLANS.

E) CONTRACTOR TO COVER OR REMOVE ALL SIGNS AND DEVICES REQUIRED TO CLOSE ROAD WHEN ROAD CLOSURE IS NOT IN OPERATION.

F) CONTRACTOR TO COVER OR REMOVE ALL SIGNS AND DEVICES REQUIRED FOR OFF-SITE DETOUR WHEN THE DETOUR IS NOT IN OPERATION.

E) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

TRAFFIC CONTROL DEVICES

G) PLACE TYPE III BARRICADES, WITH "ROAD CLOSED" SIGN R11-2 ATTACHED, OF SUFFICIENT LENGTH TO CLOSE ENTIRE ROADWAY.

PAVEMENT MARKINGS AND MARKERS

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

MANAGEMENT STRATEGIES

CONSTRUCTION

REMOVE AND REPLACE EXISTING STRUCTURE AND APPROACHES ALONG THE EXISTING ROADWAY ALIGNMENT AS SHOWN IN THE THE CONSTRUCTION PLANS.

TMP DESIGN PARAMETERS

TRAFFIC WILL BE DETOURED OFF-SITE DURING THE CONSTRUCTION PERIOD.
THE OFF-SITE DETOUR WILL INCLUDE SR 1126, SR 1125 AND SR 1127. (SEE TMP-4)

STEP 1:
- INSTALL OFF SITE DETOUR AND ROAD CLOSURE SIGNING (PROVIDED BY CONTRACTOR).
- USING ROADWAY STANDARD NO. 1101.03, SHEET 1 OF 9, CLOSE SR 1126 TO THRU TRAFFIC AND PLACE TRAFFIC ONTO OFF SITE DETOUR AS SHOWN ON SHEET TMP-4.

STEP 2:
- MAINTAIN ACCESS TO SALAMANDER LANE AT ALL TIMES.
- REMOVE EXISTING BRIDGE NO. 192 AND APPROACHES. CONSTRUCT PROPOSED BRIDGE UP TO AND INCLUDING THE FINAL LAYER OF SURFACE COURSE AND FINAL PAINT PAVEMENT MARKINGS FROM - L- STA. 11+70 +/- TO -L- STA. 14+50 +/- (SEE CONSTRUCTION AND PAVEMENT MARKING PLANS).

STEP 3:
- REMOVE ALL TRAFFIC CONTROL DEVICES, SIGNING AND DETOUR ROUTE SIGNING.
- OPEN TO FINAL TRAFFIC PATTERN.

APPROVED: DocuSigned by: A. Christopher Johnson 11/26/2018 DATE

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 15424 ENGINEER ALLISON C. JOHNSON

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

TRANSPORTATION OPERATIONS PLAN

11/2/2018
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8/17/99

PROJECT REFERENCE NO.	SHEET NO.
B-6023	TMP-2
HENDERSON COUNTY	BRIDGE #440192

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SIGN NUMBER:
TYPE: B
QUANTITY: SEE PLANS

SIGN WIDTH: 3'-6"
HEIGHT: 2'-0"
TOTAL AREA: 7.0 Sq.Ft.

BORDER TYPE: INSET
RECESS: 0.47"
WIDTH: 0.63"
RADII: 1.5"

NO. Z BARS: N/A
LENGTH: N/A

BACKG COLOR: Fluorescent Orange
COPY COLOR: Black

SYMBOL	X	Y	WID	HT

MAT'L: 0.080" (2.0 mm) ALUMINUM

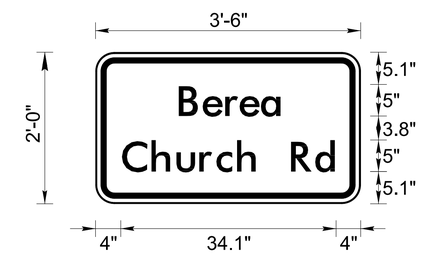
DESIGN BY: DJW
PROJECT ID: B-6023

CHECKED BY: ACJ
DIV: 14

DATE:

USE NOTES: 1,2

1. Legend and border shall be direct applied black non-reflective sheeting.
2. Background shall be NC, Grade B fluorescent orange retroreflective sheeting.



BORDER
R=1.5"
TH=0.63"
TH=0.47"

Spacing Factor is 1 unless specified otherwise

LETTER POSITIONS

Letter spacings are to start of next letter

																											Series/Size Text Length
		B	e	r	e	a																					D 2000
	12.7	4.0	3.7	2.3	3.4	3.3	12.6																				16.7
		C	h	u	r	c	h		R	d																	D 2000
	4.0	4.4	3.9	4.0	2.3	3.6	3.4	5.0	4.0	3.5	3.9																34.1

FILENAME:

NORTH CAROLINA D.O.T. SIGN DETAIL

APPROVED: DocuSigned by: A. Christopher Johnson 10/22/2018 DATE:
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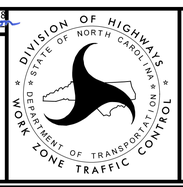
SEAL



SPECIAL SIGN DESIGN

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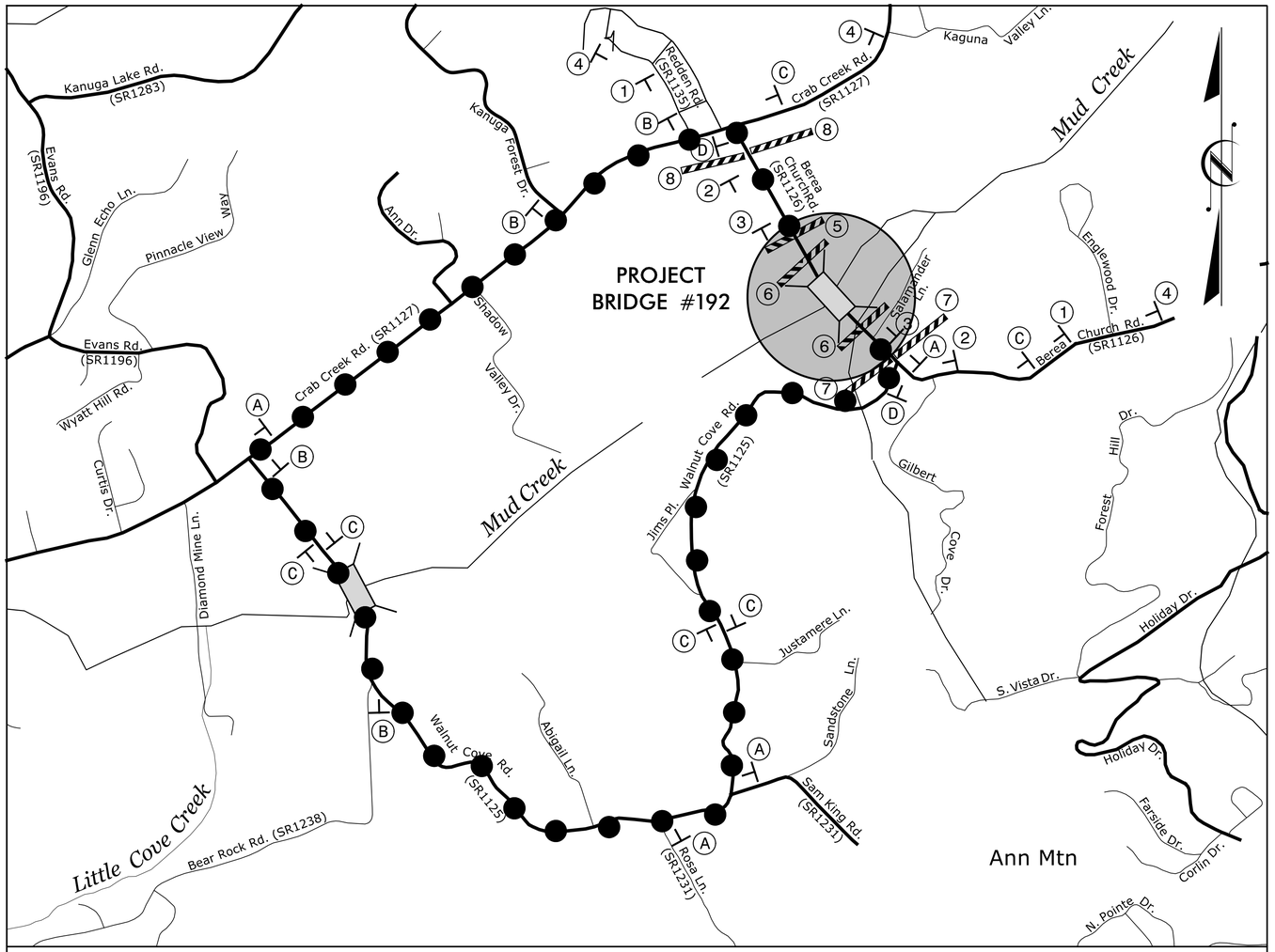
PROJECT REFERENCE NO.	SHEET NO.
B-6023	TMP-2A
HENDERSON COUNTY	BRIDGE #440192
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

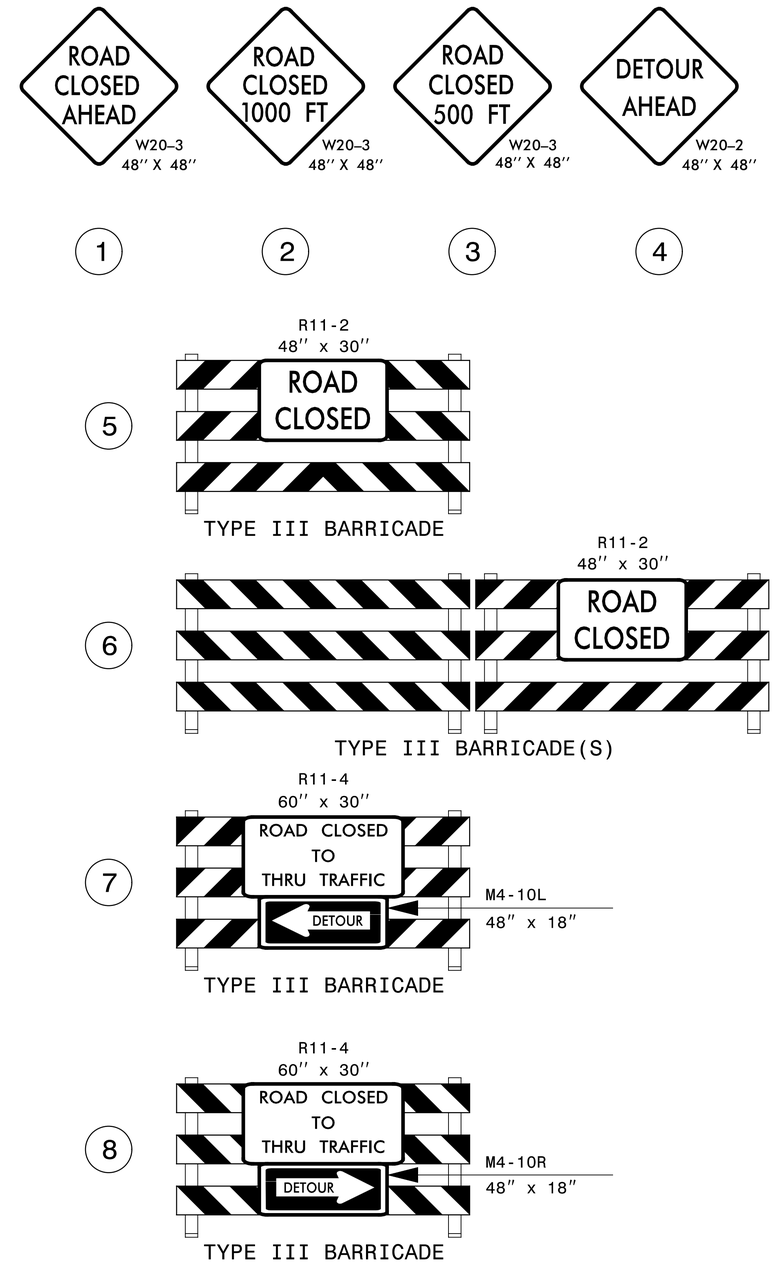
DETOUR ROUTE

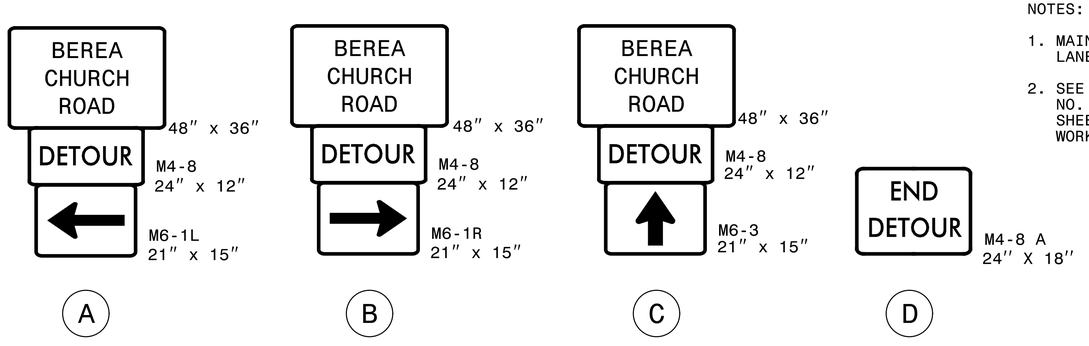


VICINITY MAP

OFF-SITE DETOUR

NTS





NOTES:

1. MAINTAIN ACCESS TO SALAMANDER LANE AT ALL TIMES.
2. SEE ROADWAY STANDARDS DRAWING NO. 1101.03, SHEET 1 OF 9 AND SHEET 2 OF 9, FOR ADDITIONAL WORK ZONE SIGNS.

600 300 0 600 1,200

Scale 1" = 600'

APPROVED: DocuSigned by: FEBEA5AAFD014A5... DATE: 11/26/2018

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 15424 ENGINEER ELTON C. JOHNSON

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

OFF-SITE DETOUR ROUTE & SIGNING

8/17/99

11/21/2018
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PROJECT REFERENCE NO.	SHEET NO.
B-6023	PMP-1

APPROVED: DocuSigned by: A. Christopher Johnson FEBEA5AAFC014A5...

DATE: 11/26/2018

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 15424 ENGINEER ALLISON C. JOHNSON

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PAVEMENT MARKING PLANS

HENDERSON COUNTY

LOCATION: BRIDGE #440192 OVER MUDD CREEK ON SR 1126 (BEREA CHURCH ROAD)

ROADWAY STANDARD DRAWINGS

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 - DIVIDED AND UNDIVIDED ROADWAYS
1205.12	PAVEMENT MARKINGS - BRIDGES
1250.01	PAVEMENT MARKER SPACING
1251.01	RAISED PAVEMENT MARKERS - PERMANENT AND TEMPORARY
1261.01	GUARDRAIL AND BARRIER DELINEATOR SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATOR TYPES
1262.01	GUARDRAIL END DELINATION

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 AND PAVEMENT MARKERS ON THE FINAL SURFACE AS FOLLOWS:

ASPHALT PAVEMENT DESIGN:

ROAD NAME	MARKING	MARKER
SR 1126	PAINT	N/A

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

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

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

PAVEMENT MARKING SCHEDULE

PAVEMENT MARKING LINES

PA – PAINT – WHITE EDGE LINE (4")
PI – PAINT – YELLOW DOUBLE CENTER LINE (4")

INDEX OF SHEETS

SHEET NO.	TITLE
PMP-1	PAVEMENT MARKING & SIGNING PLAN TITLE SHEET
PMP-2	PAVEMENT MARKING & SIGNING PLAN

Plans Prepared By:

AMERICAN Engineering

AMERICAN ENGINEERING ASSOCIATES - SOUTHEAST, PA
8008 CORPORATE CENTER DRIVE, SUITE 110
CHARLOTTE, NC 28226
704-375-2438 NC Lic. No. C-3881

11/21/2018
pw:\\gfpwing02.corporate.gannettfleming.com:GFPW02\Documents\Projects\57719\440192\Traffic\TrafficControl\TCP\B440192_TC_PMP1.dgn
Deb Wright

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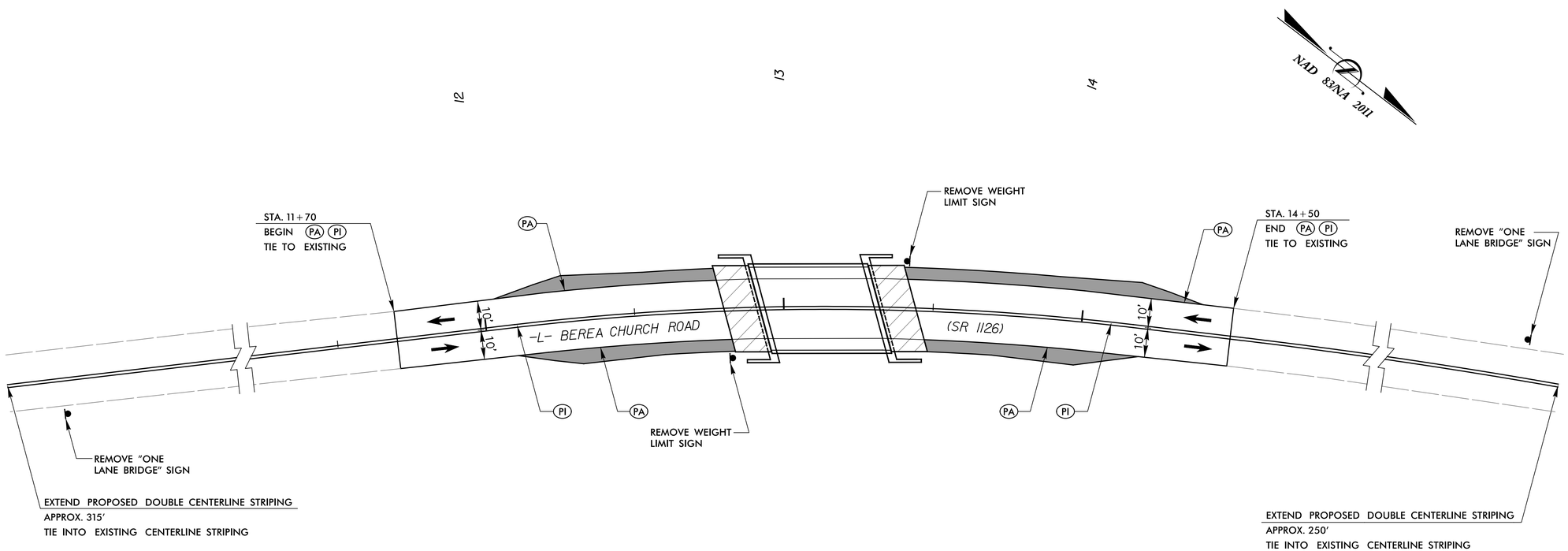
8/17/99

PROJECT REFERENCE NO.	SHEET NO.
B-6023	PMP-2
HENDERSON COUNTY BRIDGE #440192	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



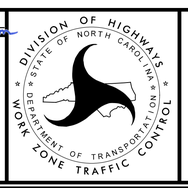
PERMANENT PAVEMENT MARKING SCHEDULE

SYMBOL	WIDTH	COLOR	MATERIAL	DESCRIPTION
PA	4"	WHITE	PAINT	EDGE LINE
PI	4"	YELLOW	PAINT	DOUBLE CENTER

20 10 0 20 40
Scale 1" = 20'

APPROVED: DocuSigned by: FEBEE4... DATE 1/26/2018

SEAL



PAVEMENT MARKING & SIGNING PLAN

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PROJECT: B-6023

CONTRACT: DN00272

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	
	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	

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PLAN FOR PROPOSED HIGHWAY EROSION CONTROL

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-6023	EC-1	
HENDERSON COUNTY	BRIDGE #440192		

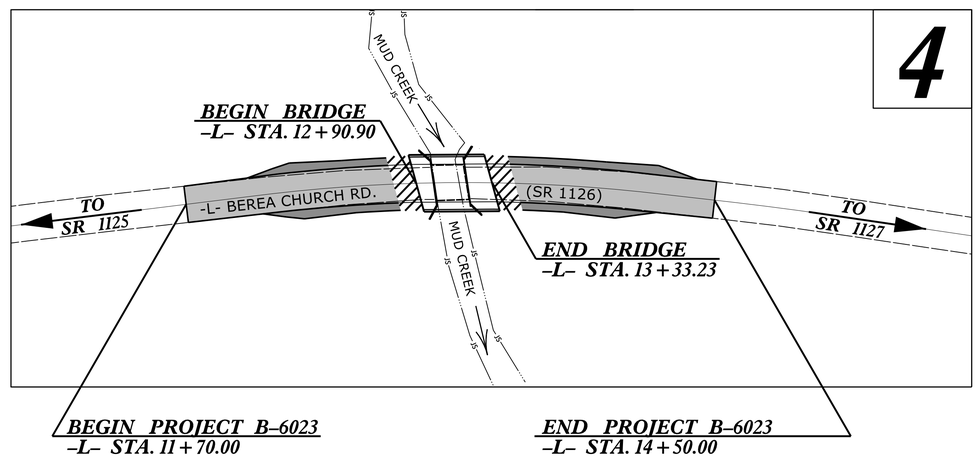
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
17BP.14.R.103	–	PE
17BP.14.R.103	–	R/W & UTILITIES
48218.3.1	BRZ-1126(009)	CONST

HENDERSON COUNTY

LOCATION: BRIDGE #440192 OVER MUD CREEK ON SR 1126 (BEREA CHURCH ROAD)

TYPE OF WORK: PAVING, GRADING, DRAINAGE & STRUCTURE

NAD 83/NA 2011



NCDOT CONTACT:
HIGHWAY DIVISION 14 BRIDGE MANAGER
ADAM DOCKERY, P.E.
(828) 488-0902

THERE IS NO CONTROL ACCESS ON THIS PROJECT.

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

GRAPHIC SCALES

20 10 0 20 40

PLANS

ROADSIDE ENVIRONMENTAL UNIT
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

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

Plans Prepared by:

M A Engineering Consultants, Inc.
598 East Chatham Street - Suite 137
Cary, NC 27511
Phone: 919.297.0220 Fax: 919.297.0221

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
APRIL 9, 2015

LETTING DATE:
MARCH 12, 2019

PAUL CAMERON, PE
PROJECT ENGINEER
LEVEL III CERTIFICATION
NUMBER 3624

Roadway Standard Drawings

The following roadway english standards as appear in "Roadway Standard Drawings"– Roadway Design Unit – N. C. Department of Transportation – Raleigh, N. C., dated January 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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12/5/2018
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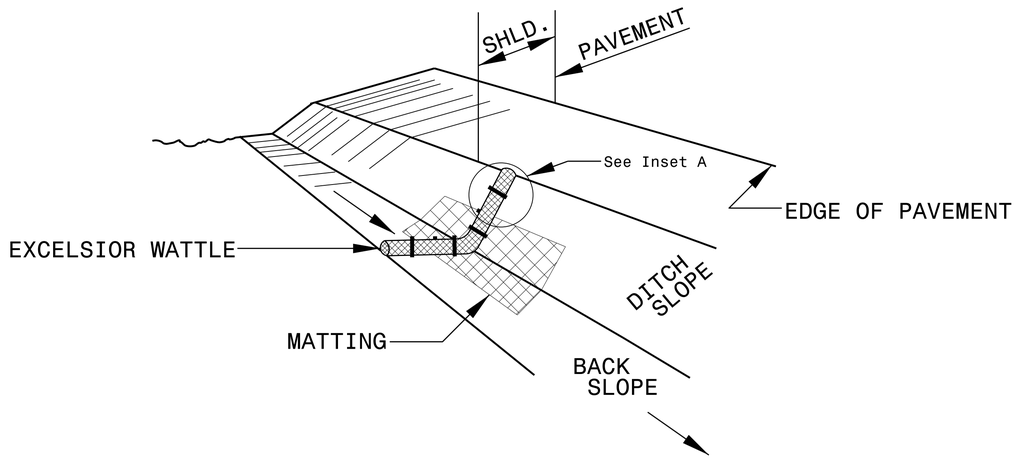
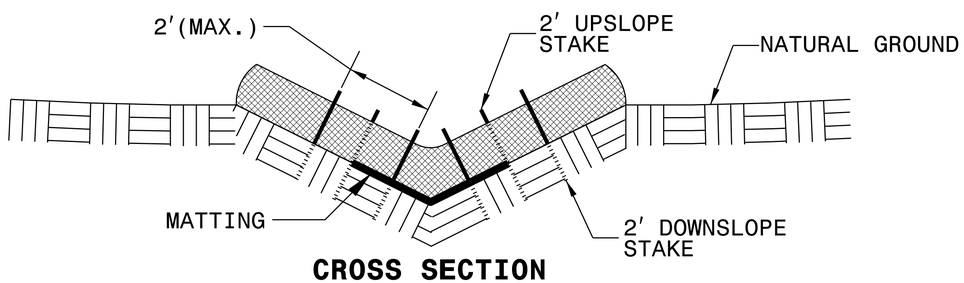
PROJECT REFERENCE NO.	SHEET NO.
B-6023	EC-2

M A Engineering Consultants, Inc.
NC License: F-0160
598 East Chatham Street Suite 137 Cary, NC 27511
Phone: 919.297.0220 Fax: 919.297.0221

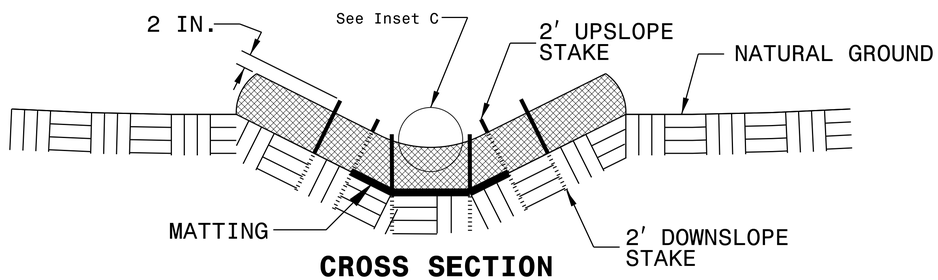
WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL



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.

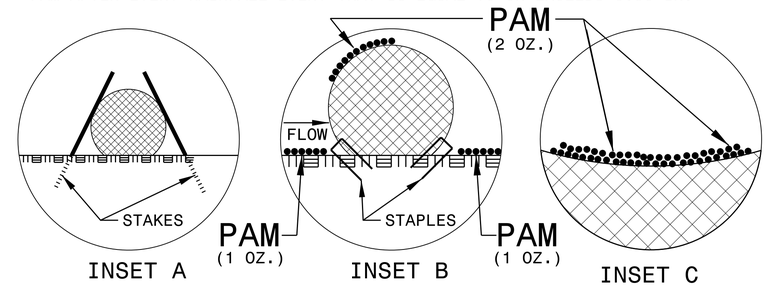
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12″ IN LENGTH.

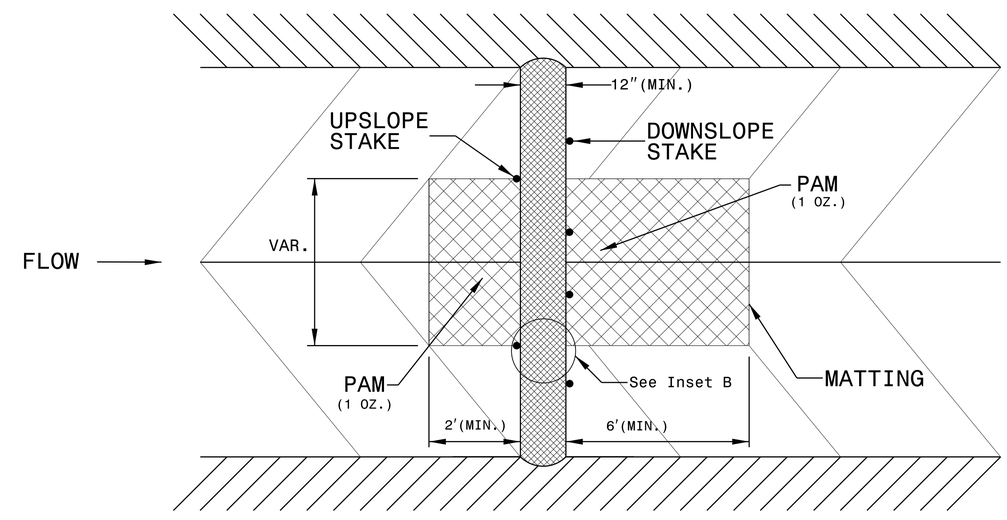
INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

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

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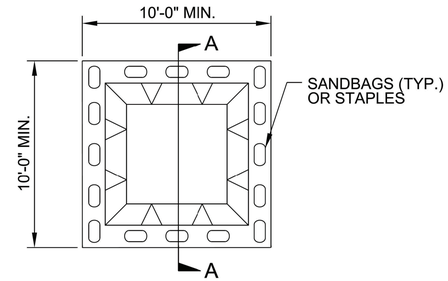
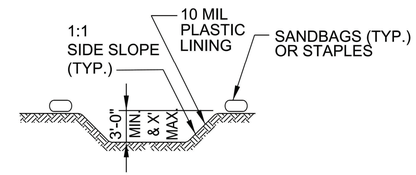
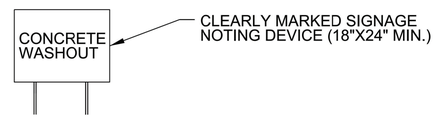
PROJECT REFERENCE NO.	SHEET NO.
B-6023	EC-2A

ONSITE CONCRETE WASHOUT STRUCTURE WITH LINER







SECTION A-A

NOTES:
1. ACTUAL LOCATION DETERMINED IN FIELD

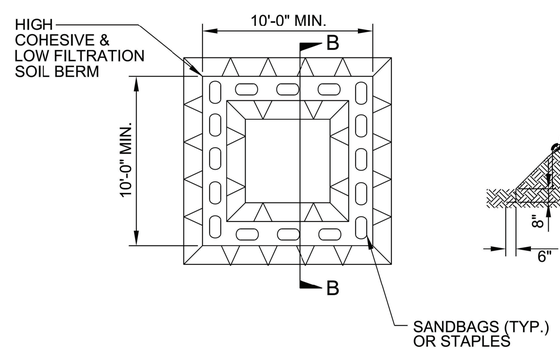
2. THE CONCRETE WASHOUT STRUCTURES SHALL BE MAINTAINED WHEN THE LIQUID AND/OR SOLID REACHES 75% OF THE STRUCTURES CAPACITY.

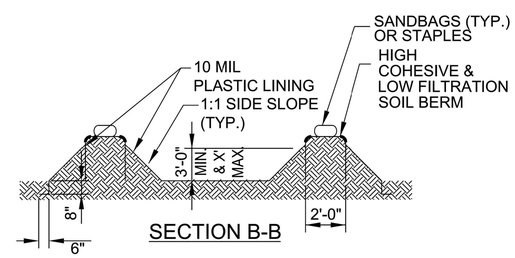
3.CONCRETE WASHOUT STRUCTURE NEEDS TO BE CLEARY MARKED WITH SIGNAGE NOTING DEVICE.

PLAN

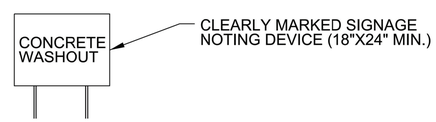
BELOW GRADE WASHOUT STRUCTURE

NOT TO SCALE





SECTION B-B



NOTES:
1. ACTUAL LOCATION DETERMINED IN FIELD

2. THE CONCRETE WASHOUT STRUCTURES SHALL BE MAINTAINED WHEN THE LIQUID AND/OR SOLID REACHES 75% OF THE STRUCTURES CAPACITY TO PROVIDE ADEQUATE HOLDING CAPACITY WITH A MINIMUM 12 INCHES OF FREEBOARD.

3.CONCRETE WASHOUT STRUCTURE NEEDS TO BE CLEARY MARKED WITH SIGNAGE NOTING DEVICE.

PLAN

ABOVE GRADE WASHOUT STRUCTURE

NOT TO SCALE

REVISIONS

8/17/99

SYSTEM FILENAME DATE TIME

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PROJECT REFERENCE NO.	SHEET NO.
B-6023	EC-3

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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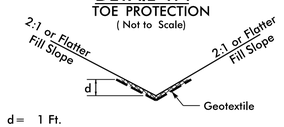
PROJECT REFERENCE NO.	SHEET NO.
B-6023	EC-4
HENDERSON COUNTY BRIDGE #440192	
R/W SHEET NO.	

M A Engineering Consultants, Inc.
NC License: F-0160
598 East Chatham Street Suite 137 Cary, NC 27511
Phone: 919.297.0220 Fax: 919.297.0221

DETAIL TP1
TOE PROTECTION
(Not to Scale)



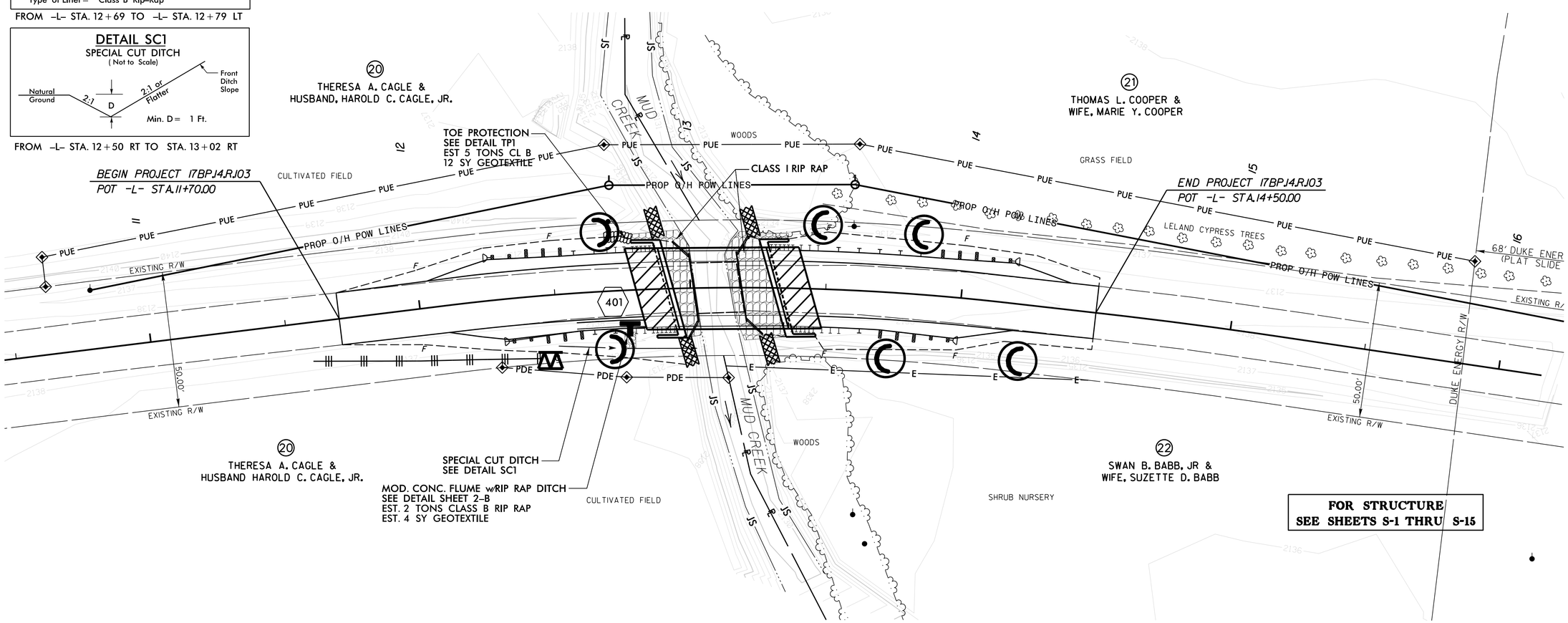
d = 1 Ft.

Type of Liner = Class B Rip-Rap

FROM -L- STA. 12+69 TO -L- STA. 12+79 LT

DETAIL SC1
SPECIAL CUT DITCH
(Not to Scale)

FROM -L- STA. 12+50 RT TO STA. 13+02 RT



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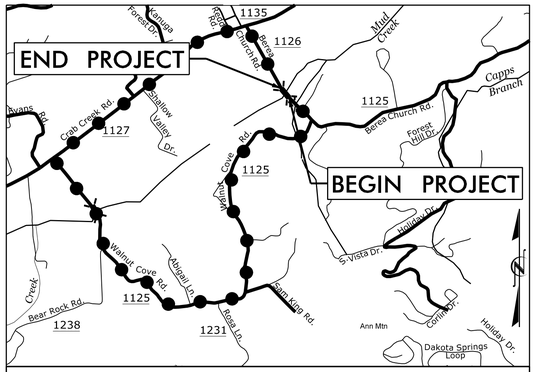
09/08/99

PROJECT: B-6023



VICINITY MAP N.T.S.

● ● ● ● ● ● OFF-SITE DETOUR

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT NO.	SHEET NO.
B-6023	UO-1

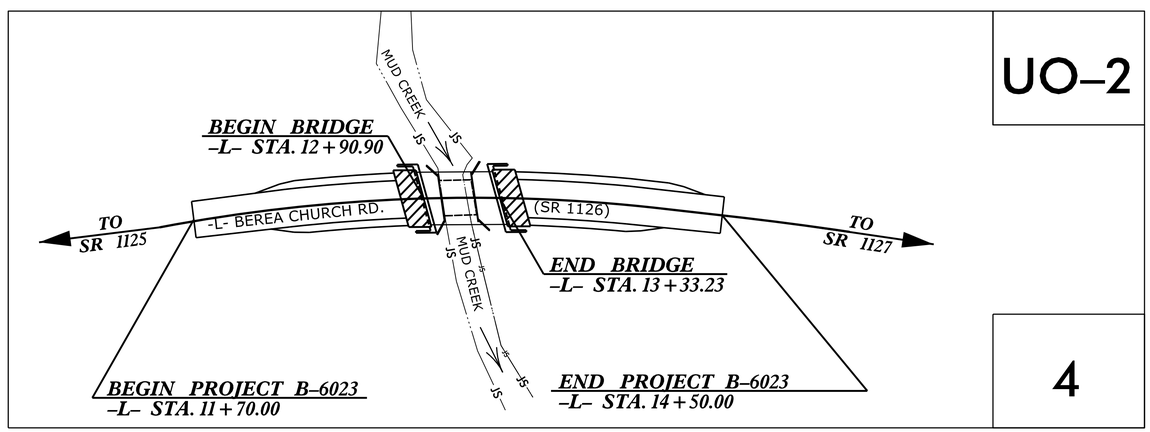
NOTE:
ALL PROPOSED UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS. NO PAYMENT WILL BE MADE TO THE CONTRACTOR FOR UTILITY WORK SHOWN ON THIS SHEET.

UTILITIES BY OTHERS PLANS
HENDERSON COUNTY

LOCATION: BRIDGE NO. 440192 OVER MUD CREEK ON SR 1126 (BEREA CHURCH ROAD)

TYPE OF WORK: UTILITY BY OTHERS RELOCATION

NAD 83/NA 2011



UO-2

4

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

INDEX OF SHEETS

SHEET NO.:	DESCRIPTION:
UO-1	TITLE SHEET
UO-02	UBO PLAN SHEET

UTILITY OWNERS WITH CONFLICTS

(A) POWER - DUKE ENERGY
(B) PHONE - AT&T

PREPARED IN THE OFFICE OF:

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598 East Chatham Street - Suite 137
Cary, NC 27511
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NC License: F-0160

WEBB WHITE — PROJECT UTILITY COORDINATOR

DIVISION OF HIGHWAYS
DIVISION 14
253 WEBSTER ROAD
SYLVA, NC 28779

ADAM DOCKERY	BRIDGE PROGRAM MANAGER
BOB GOLDING	DIVISION UTILITY ENGINEER
BILL GREEN	UTILITIES COORDINATOR

11/30/2018
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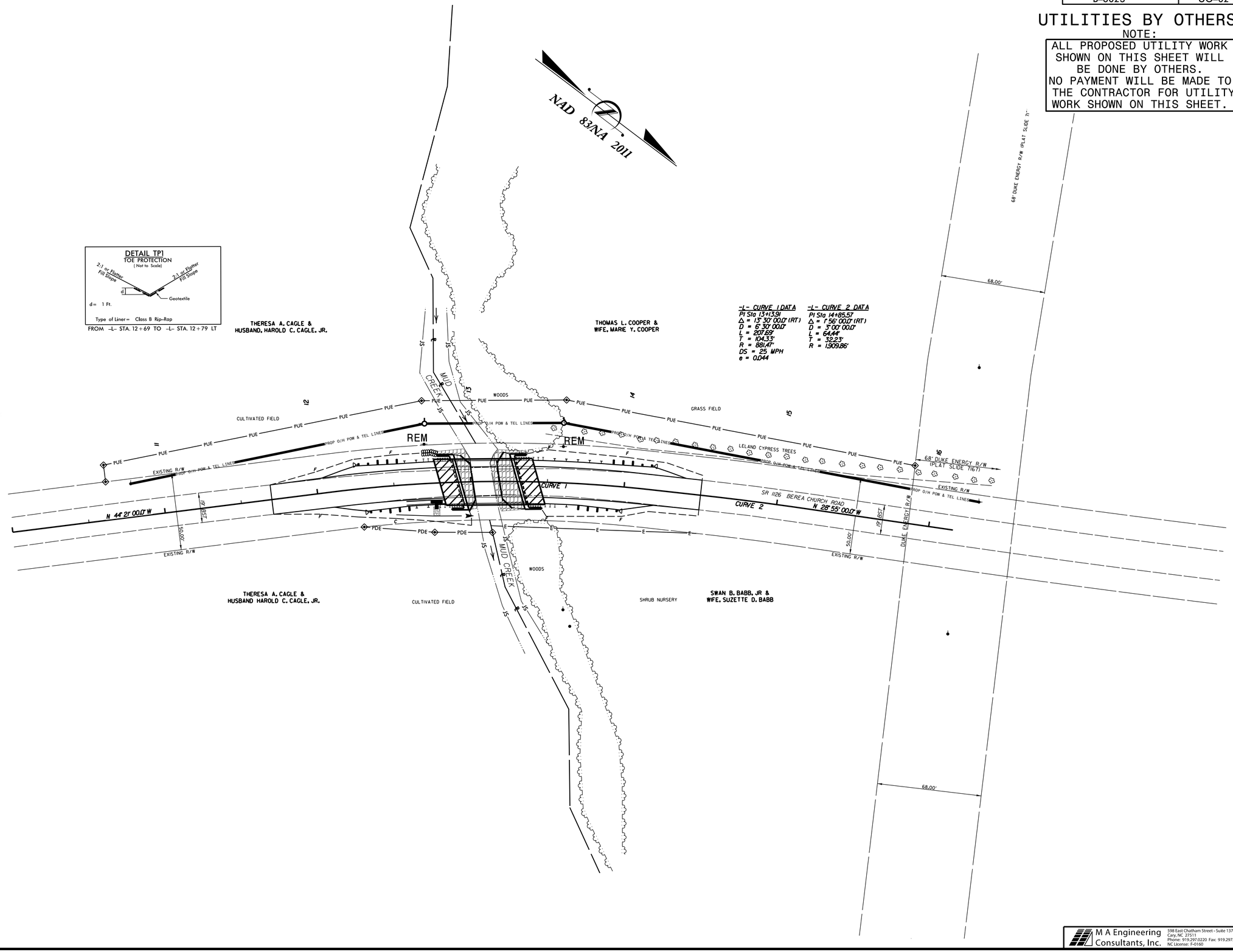
5/14/99

PROJECT REFERENCE NO.	SHEET NO.
B-6023	UO-02

UTILITIES BY OTHERS

NOTE:

ALL PROPOSED UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS. NO PAYMENT WILL BE MADE TO THE CONTRACTOR FOR UTILITY WORK SHOWN ON THIS SHEET.



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1/30/2018