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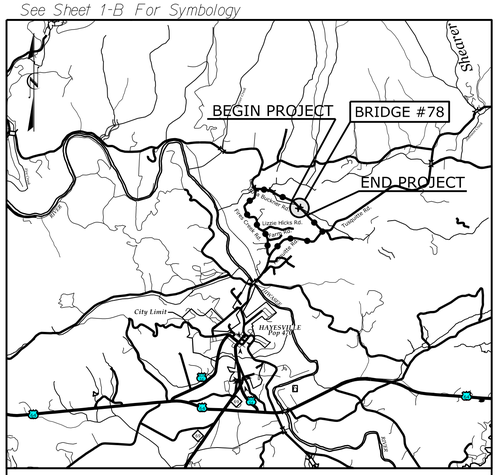
TIP PROJECT: 17BP.14.R.38

CONTRACT: DN00171

See Sheet 1-A For Index of Sheets
See Sheet 1-B For Symbology



VICINITY MAP

N.T.S.

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CLAY COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.14.R.38	1	

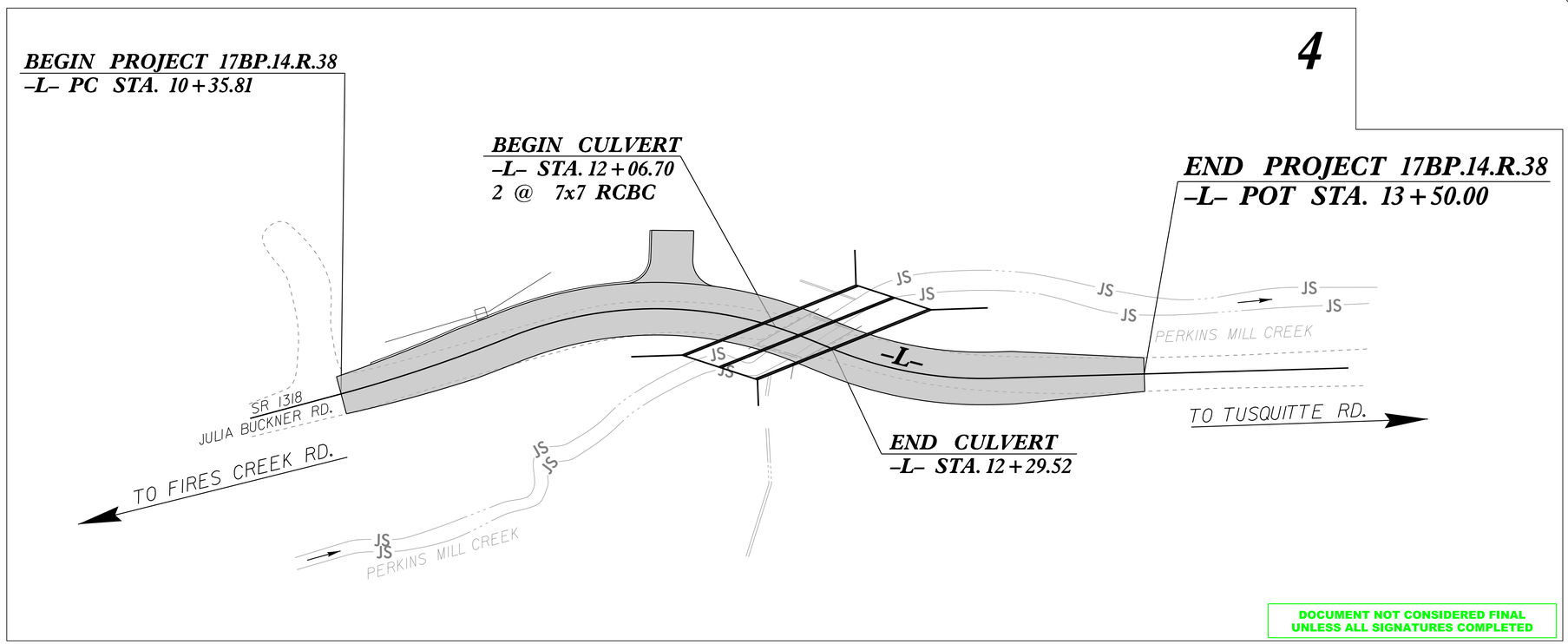
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
17BP.14.R.38		PE, R / W, CONST.

LOCATION: BRIDGE NO. 78 ON SR 1318 (JULIA BUCKNER ROAD) OVER GREASY CREEK

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

NC GRID
NAD 83

4



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GRAPHIC SCALES

20 10 0 20 40
PLANS

20 10 0 20 40
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2000 = 80
V = 20 MPH
FUNC CLASS = LOCAL
SUB-REGIONAL TIER

PROJECT LENGTH

Length of Project 17BP.14.R.38 = 0.060 Miles

NCDOT CONTACT: Josh Deyton, PE
NCDOT DIVISION 14 BRIDGE MANAGER

Prepared By:

Stantec

Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

DIVISION OF HIGHWAYS
1000 Birch Ridge Dr., Raleigh NC, 27610

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: August 21, 2013

LETTING DATE:

Michael D. Lindgren, PE
PROJECT ENGINEER

Michael B. Littlefield, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

DocuSigned by: James C. Davis 9/1/2016 P.E.
SIGNATURE:

ROADWAY DESIGN ENGINEER

DocuSigned by: Mike Lindgren 9/1/2016 P.E.
SIGNATURE:

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

9/1/2016
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5/14/99

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.38	1A

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 035663 ENGINEER MICHAEL B. LITTLEFIELD

10/3/2016

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INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
1-A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
1-B	CONVENTIONAL SYMBOLS
1-C	SURVEY CONTROL SHEET
2	PAVEMENT SCHEDULE & TYPICAL SECTIONS
3A	SUMMARY OF EARTHWORK AND DRAINAGE
4	PLAN/PROFILE SHEET
TMP-1 THRU TMP-3	TRAFFIC MANAGEMENT PLANS
EC-1 THRU EC-6	EROSION CONTROL PLANS
SIGN-1	SIGNING PLAN
X-0 THRU X-3	CROSS-SECTIONS
C-1 THRU C-7	CULVERT PLANS

GENERAL NOTES

GENERAL NOTES:

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

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.

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

SIDE ROADS:
THE CONTRACTOR WILL BE REQUIRED TO DO ALL NECESSARY WORK TO PROVIDE SUITABLE CONNECTIONS WITH ALL ROADS, STREETS, AND DRIVES ENTERING THIS PROJECT. THIS WORK WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR THE PARTICULAR ITEMS INVOLVED.

UTILITIES:
UTILITY OWNERS ON THIS PROJECT ARE DUKE ENERGY AND FRONTIER COMMUNICATIONS (TELEPHONE).

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.

ROADWAY STANDARD DRAWINGS

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
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
DIVISION 8 - INCIDENTALS	
876.02	Guide for Rip Rap at Pipe Outlets

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04/16/11

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.38	1-B

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 — HH
- 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 — HH
- 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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PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.38	1C
Location and Surveys	

SURVEY CONTROL SHEET 21–0078
–FINAL–

BL

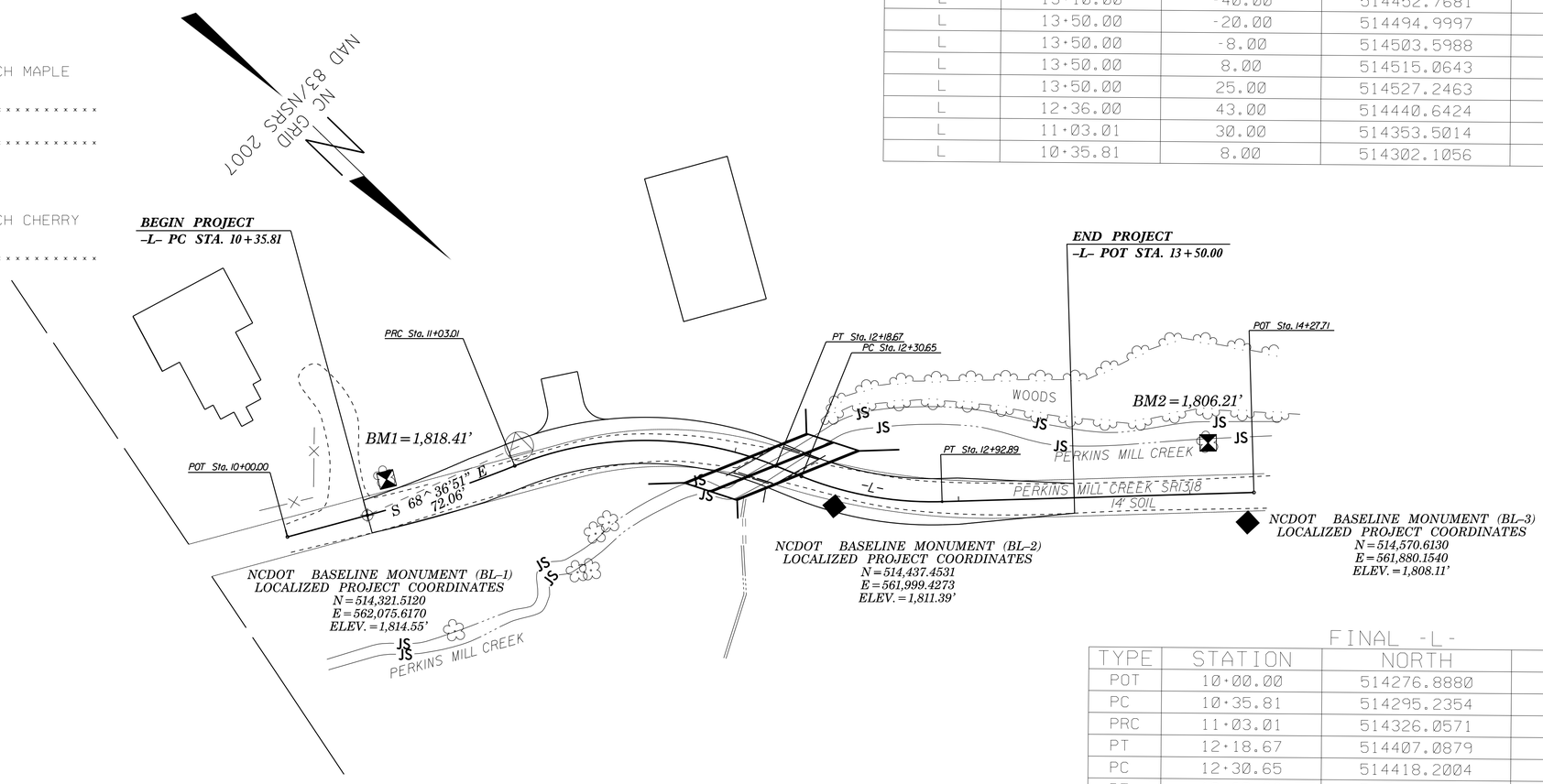
POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
1	BL-1	514321.5120	562075.6170	1814.55	11+07.74	7.24 LT
2	BL-2	514437.4531	561999.4273	1811.39	12+47.90	7.66 RT
3	BL-3	514570.6130	561880.1540	1808.11	14+24.66	12.85 RT

****
BM1 ELEVATION = 1818.41
N 514290 E 562126
L STATION 10+48.00 13 LEFT
8 INCH SPIKE IN BASE OF 20 INCH MAPLE TREE
****

****
BM2 ELEVATION = 1806.21
N 514534 E 561867
L STATION 14+09.00 22 LEFT
8 INCH SPIKE IN BASE OF 16 INCH CHERRY TREE
****

-FINAL- ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	10+35.81	-8.00	514288.3652	562138.6169
L	11+03.01	-20.00	514307.7608	562074.9757
L	12+00.00	-47.00	514367.3813	561971.5519
L	13+10.00	-40.00	514452.7681	561925.4541
L	13+50.00	-20.00	514494.9997	561910.7402
L	13+50.00	-8.00	514503.5988	561919.1101
L	13+50.00	8.00	514515.0643	561930.2700
L	13+50.00	25.00	514527.2463	561942.1273
L	12+36.00	43.00	514440.6424	562037.2453
L	11+03.01	30.00	514353.5014	562095.1697
L	10+35.81	8.00	514302.1056	562146.8146



FINAL -L-

TYPE	STATION	NORTH	EAST
POT	10+00.00	514276.8880	562173.4684
PC	10+35.81	514295.2354	562142.7157
PRC	11+03.01	514326.0571	562083.0533
PT	12+18.67	514407.0879	562004.5576
PC	12+30.65	514418.2004	562000.0678
PT	12+92.89	514469.4983	561965.6141
POT	14+27.71	514563.5369	561869.0003

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "210078 (BL-1)"
WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF
NORTHING: 514321.5120(ft) EASTING: 562075.6170(ft)
ELEVATION: 1814.55(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9997955475
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "210078 (BL-1)" TO -L- STATION 10+35.81 IS
S 68°36'51" E 72.06'
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

GEOIDAL MODEL: G09NC
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:
210078_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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8/4/2016
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PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.38	2
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 25513 ENGINEER MICHAEL D. LINDGREN

9/1/2016

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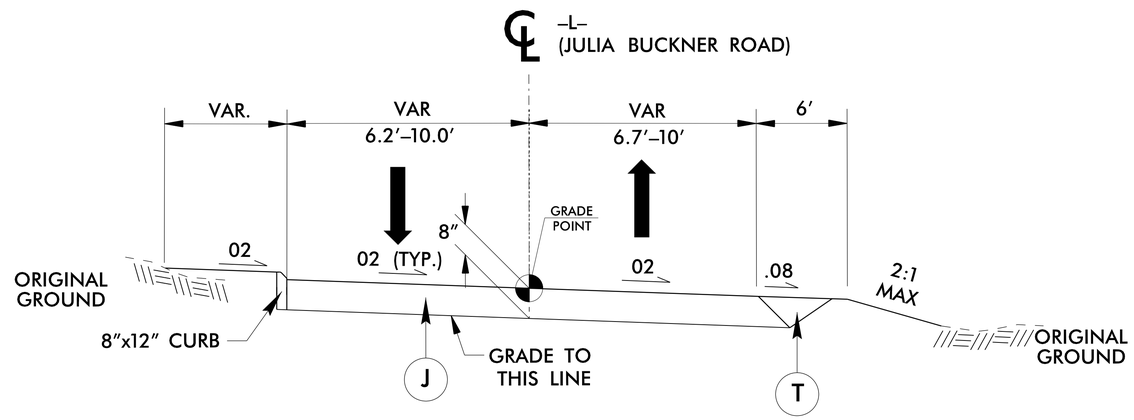
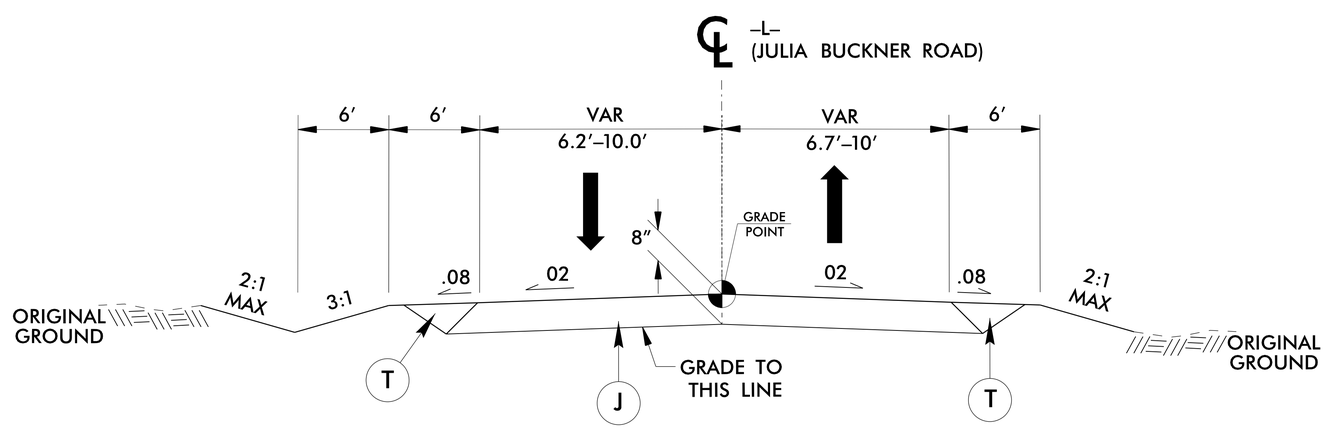
PAVEMENT SCHEDULE	
J	PROPOSED 8" AGGREGATE BASE COURSE
T	EARTH MATERIAL

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



TYPICAL SECTION NO. 1

–L– STA. 10+35.81 TO STA. 11+59.23



TYPICAL SECTION NO. 2

–L– STA. 11+59.23 TO STA. 13+50.00

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6/21/00

COMPUTED BY: MBL	DATE: 04/22/2016
CHECKED BY: MDL	DATE: 04/22/2016

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.38	3A

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

EARTHWORK SUMMARY (CY)

STATION	STATION	UNCLASSIFIED EXCAVATION	EMBT + 15%	BORROW	WASTE
–L– STA. 10 + 50.00 TO –L– STA. 13 + 50.00		63	403	340	
SUBTOTAL SUMMARY		63	403	300	
PROJECT TOTAL		63	403	300	
ESTIMATE 5% FOR TOPSOIL ON BORROW PITS				17	
WASTE IN LIEU OF BORROW					
GRAND TOTAL		63	403	356	
SAY		65		360	

CONTINGENCY ITEMS:
UNDERCUT EXCAVATION – 50 CY
GEOTEXTILE FOR SOIL STABILIZATION – 50 SY

NOTE: Earthwork quantities are calculated by the Roadway Design Unit. These earthwork quantities are based in part on subsurface data provided by the Geotechnical Engineering Unit.

Approximate quantities only. Unclassified Excavation, Borrow Excavation, 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".

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

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 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) SIZE 12" | 15" | 18" | 24" | 30" | 36" | 42" | 48" | C.S. PIPE (UNLESS NOTED OTHRWISE) THICKNESS OR GAUGE 12" | 15" | 18" | 24" | 30" | 36" | 42" | 48" | CLASS III R.C. PIPE (UNLESS OTHERWISE NOTED) 12" | 15" | 18" | 24" | 30" | 36" | 42" | 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. | C.S. | QUANTITIES FOR DRAINAGE STRUCTURES * TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. "A" + 1.3 X COL. "B" PER EACH (0' THRU 5.0') | 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 | 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 | 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 |
|---|---|---|---|---|---

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PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.38	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
SEAL 25513 ENGINEER MICHAEL D. LINDGREN 9/1/2016	SEAL 18462 ENGINEER JAMES C. DAVIS 9/1/2016

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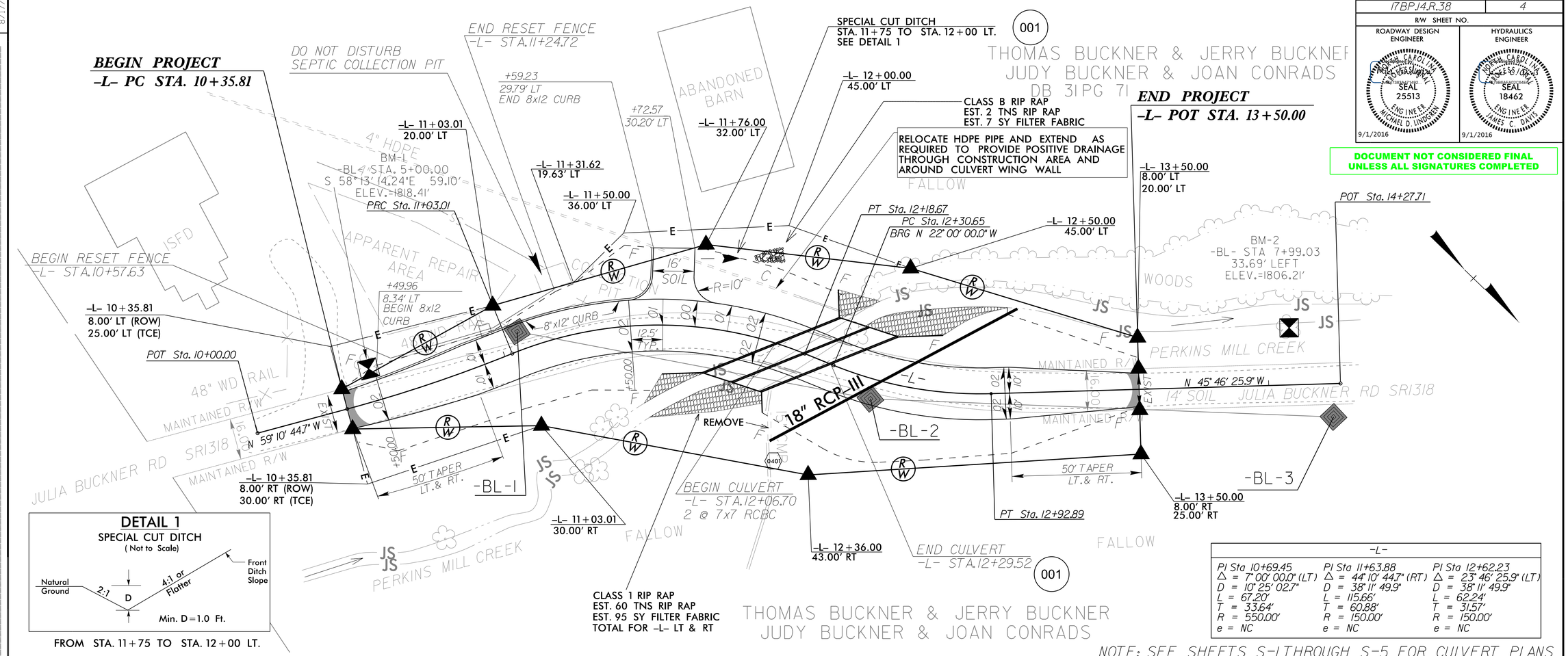
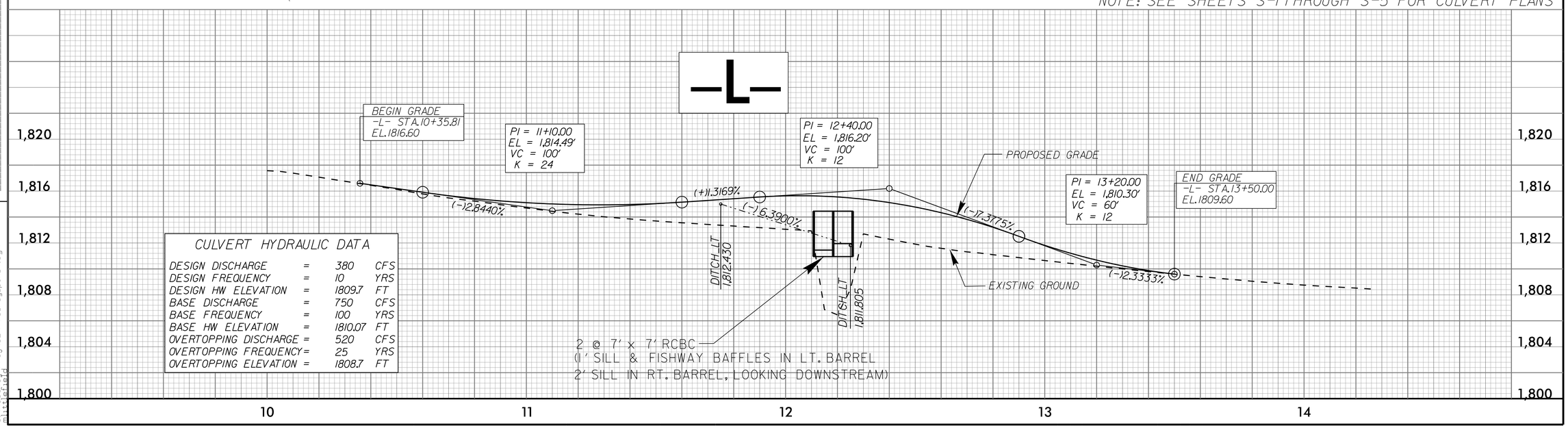


DETAIL 1
SPECIAL CUT DITCH
(Not to Scale)

FROM STA. 11+75 TO STA. 12+00 LT.

-L-		
PI Sta 10+69.45	PI Sta 11+63.88	PI Sta 12+62.23
Δ = 7° 00' 00.0" (LT)	Δ = 44° 10' 44.7" (RT)	Δ = 23° 46' 25.9" (LT)
D = 10° 25' 02.7"	D = 38° 11' 49.9"	D = 38° 11' 49.9"
L = 67.20'	L = 115.66'	L = 62.24'
T = 33.64'	T = 60.88'	T = 31.57'
R = 550.00'	R = 150.00'	R = 150.00'
e = NC	e = NC	e = NC

NOTE: SEE SHEETS S-1 THROUGH S-5 FOR CULVERT PLANS



CULVERT HYDRAULIC DATA			
DESIGN DISCHARGE	=	380	CFS
DESIGN FREQUENCY	=	10	YRS
DESIGN HW ELEVATION	=	1809.7	FT
BASE DISCHARGE	=	750	CFS
BASE FREQUENCY	=	100	YRS
BASE HW ELEVATION	=	1810.07	FT
OVERTOPPING DISCHARGE	=	520	CFS
OVERTOPPING FREQUENCY	=	25	YRS
OVERTOPPING ELEVATION	=	1808.7	FT

REVISIONS

8/17/99

9/1/2016
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mlindgren

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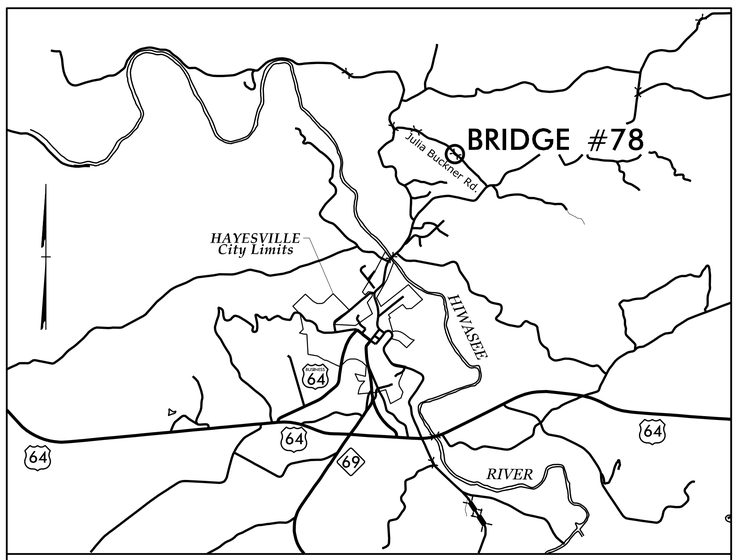
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

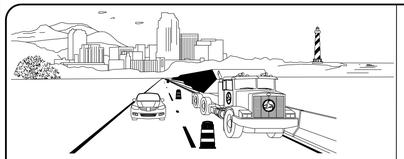
CLAY COUNTY

DIVISION 14

BRIDGE #78 – Julia Buckner Road (SR 1318) over Perkins Mill Creek



VICINITY MAP



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

PLAN PREPARED FOR NCDOT DIVISION 14

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

INDEX OF SHEETS

SHEET NO.	TITLE
TMP-1	TITLE SHEET AND INDEX OF SHEETS
TMP-1A	LEGEND AND LIST OF ROADWAY STANDARD DRAWINGS
TMP-2	GENERAL NOTES & PHASING
TMP-2A	SIGN DESIGN
TMP-3	CLAY #78 - ROAD CLOSURE AND DETOUR ROUTE

TRAFFIC MANAGEMENT STRATEGY

PROPOSED CONSTRUCTION OF BRIDGE WILL BE PERFORMED USING A ROAD CLOSURE WITH OFF-SITE DETOUR. REFER TO SHEET TMP-2 FOR PHASING.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PLAN PREPARED BY:
Stantec Consulting Services Inc.
801 Jones Franklin Road-Suite 300
Raleigh, NC 27606
Tel. 919.851.6866
Fax. 919.851.7024
www.stantec.com

BETSY L. WATSON, PE
SENIOR TRANSPORTATION ENGINEER
GEORGE M. KARAGEORGE, PE
SENIOR TRANSPORTATION ENGINEER
READ GENTRY
TRANSPORTATION DESIGNER

APPROVED: George Karageorge
DATE: 8/3/2016

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 042065 ENGINEER GEORGE M. KARAGEORGE

SHEET NO.
TMP-1

WBS 17BP.14.R.38

6/30/2016
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PROJ. REFERENCE NO.	SHEET NO.
17BP.14.R.38	TMP-1A

LEGEND

DIRECTION OF TRAFFIC FLOW

DIRECTION OF PEDESTRIAN TRAFFIC FLOW

WORK AREA

PAVEMENT REMOVAL

NORTH ARROW

TYPE III BARRICADE

CONE

DRUM

SKINNY DRUM

TUBULAR MARKER

CHANGEABLE MESSAGE SIGN (CMS)

FLAGGER

AUTOMATED FLAGGER ASSISTANCE DEVICE (AFAD)

FLASHING ARROW BOARD(TYPE C)

LAW ENFORCEMENT

TRUCK MOUNTED ATTENUATOR (TMA)

PORTABLE CONCRETE BARRIER (PCB)

TEMPORARY CRASH CUSHION

TEMPORARY SHORING

WORK ZONE SIGN-PORTABLE

WORK ZONE SIGN-STATIONARY

WORK ZONE SIGN-STATIONARY OR PORTABLE

SIGNALS

EXISTING

PROPOSED

TEMP

TEMPORARY

PAVEMENT MARKINGS

EXISTING PAVEMENT MARKING (GRAY)

SKIP LINES

MINI-SKIP LINES

SOLID LINES

PAVEMENT MARKING SYMBOLS

PAVEMENT MARKING SYMBOLS

EXISTING PAVEMENT MARKING SYMBOLS (HOLLOW)

ONLY PAVEMENT MARKING ALPHANUMERIC CHARACTERS

PAVEMENT MARKERS

CRYSTAL/CRYSTAL

CRYSTAL/RED

YELLOW/YELLOW

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

STD. NO.	TITLE
1101.03	TEMPORARY ROAD CLOSURES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1145.01	BARRICADES

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APPROVED: George Karageorge DATE: 8/3/2016

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SEAL

NORTH CAROLINA PROFESSIONAL SEAL 042065 ENGINEER GEORGE M. KARAGEORGE

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

LEGEND
&
ROADWAY STANDARD DRAWINGS

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PROJ. REFERENCE NO.	SHEET NO.
17BP.14.R.38	TMP-2

GENERAL NOTES

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

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.

ROAD CLOSURES

A) NOTIFY THE ENGINEER TWENTY ONE (21) CALENDAR DAYS PRIOR TO ANY ROAD CLOSURE.

B) FURNISH AND INSTALL SIGNING AND DEVICES FOR ROAD CLOSURES ACCORDING TO THE TRAFFIC MANAGEMENT PLAN. COVER OR REMOVE ALL SIGNS AND DEVICES FOR ROAD CLOSURES WHEN NOT IN EFFECT.

C) FURNISH AND INSTALL OFFSITE-DETOUR ROUTE SIGNING AS SHOWN IN THE TRAFFIC MANAGEMENT PLAN. COVER OR REMOVE OFFSITE-DETOUR SIGNING WHEN THE DETOUR IS NOT IN OPERATION. ALL DETOUR ROUTES MUST BE APPROVED BY THE ENGINEER PRIOR TO IMPLEMENTING.

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

E) WHEN CLOSING A ROADWAY OR DRIVEWAY PLACE TYPE III BARRICADES COMPLETELY ACROSS THE ROADWAY. ATTACH BARRICADE MOUNTED "ROAD CLOSED" SIGN R11-2 AT ALL CLOSURE LOCATIONS. IF LOCAL TRAFFIC IS TO BE MAINTAINED STAGGER THE BARRICADES TO ALLOW ACCESS.

F) INSTALL SIGNS BEFORE BARRICADES WHEN CLOSING A ROADWAY TO TRAFFIC. REMOVE BARRICADES BEFORE SIGNS WHEN OPENING A ROADWAY TO TRAFFIC. INSTALL/REMOVE ROAD CLOSURE SIGNS AND BARRICADES IN A CONTINUOUS OPERATION AND WITHIN THE SAME CALENDAR DAY.

MISCELLANEOUS

G) ALL DIMENSIONS AND STATIONS IN THE TRANSPORTATION MANAGEMENT PLAN AND PHASING ARE APPROXIMATE (+/-); FIELD ADJUST AS NECESSARY OR AS DIRECTED BY THE ENGINEER.

H) ENSURE THE OVERSIZE/OVERWEIGHT PERMIT UNIT (919) 733-4740 HAS BEEN ADVISED OF THE ONGOING TRAFFIC OPERATIONS THROUGH THE DIVISION OFFICE.

PHASING

COMPLETE ALL CONSTRUCTION OPERATIONS FOR BRIDGE #78 USING A ROAD CLOSURE WITH OFF-SITE DETOUR IN ACCORDANCE WITH ROADWAY STANDARD DRAWING 1101.03, SHEET 1-ROAD CLOSURE BEYOND DETOUR POINT, AND SHEET TMP-3.

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APPROVED George Karageorge DATE: 8/3/2016

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SEAL

NORTH CAROLINA PROFESSIONAL SEAL 042065 ENGINEER GEORGE M. KARAGEORGE

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

GENERAL NOTES & PHASING

6/30/2016
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PROJ. REFERENCE NO.	SHEET NO.
17BP.14.R.38	TMP-2A

SIGN NUMBER: SD-1
TYPE: STATIONARY
QUANTITY: SEE PLANS

SIGN WIDTH: 42″
HEIGHT: 18″
TOTAL AREA: 5.3 Sq.Ft.

BORDER TYPE: RECESSED
RADII: 1.5″
WIDTH: 0.63″
RECESS: 0.38″

NO. Z BARS:
LENGTH:

BACKG COLOR: Fluorescent Orange
COPY COLOR: Black

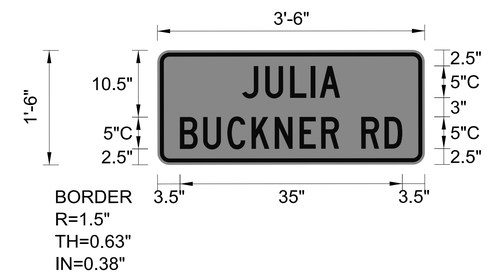
SYMBOL	X	Y	WID	HT

MAT'L: 0.080″ (2.0MM) ALUMINUM

DESIGN BY: RRH
CHECKED BY: GMK
PROJECT ID: 17BP.14.R.38
DIV: 14
DATE: Mar 29, 2016

USE NOTES

1. Legend and border shall be direct applied black non-reflective sheeting.
2. Background shall be NC GRADE B Fluorescent Orange retroreflective sheeting.



Spacing Factor is 1 unless specified otherwise

LETTER POSITIONS

Letter spacings are to start of next letter

	J	U	L	I	A																	Series/Size Text Length
																						C 2000
13.3	3.7	3.9	3.3	1.4	3.2	13.3																15.4
	B	U	C	K	N	E	R		R	D												C 2000
3.5	3.7	3.8	3.8	3.7	3.9	3.4	2.8	3.5	3.7	2.8	3.5											35

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APPROVED George Karageorge DATE: 8/3/2016

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

JULIA BUCKNER ROAD

SIGN DESIGN

6/30/2016
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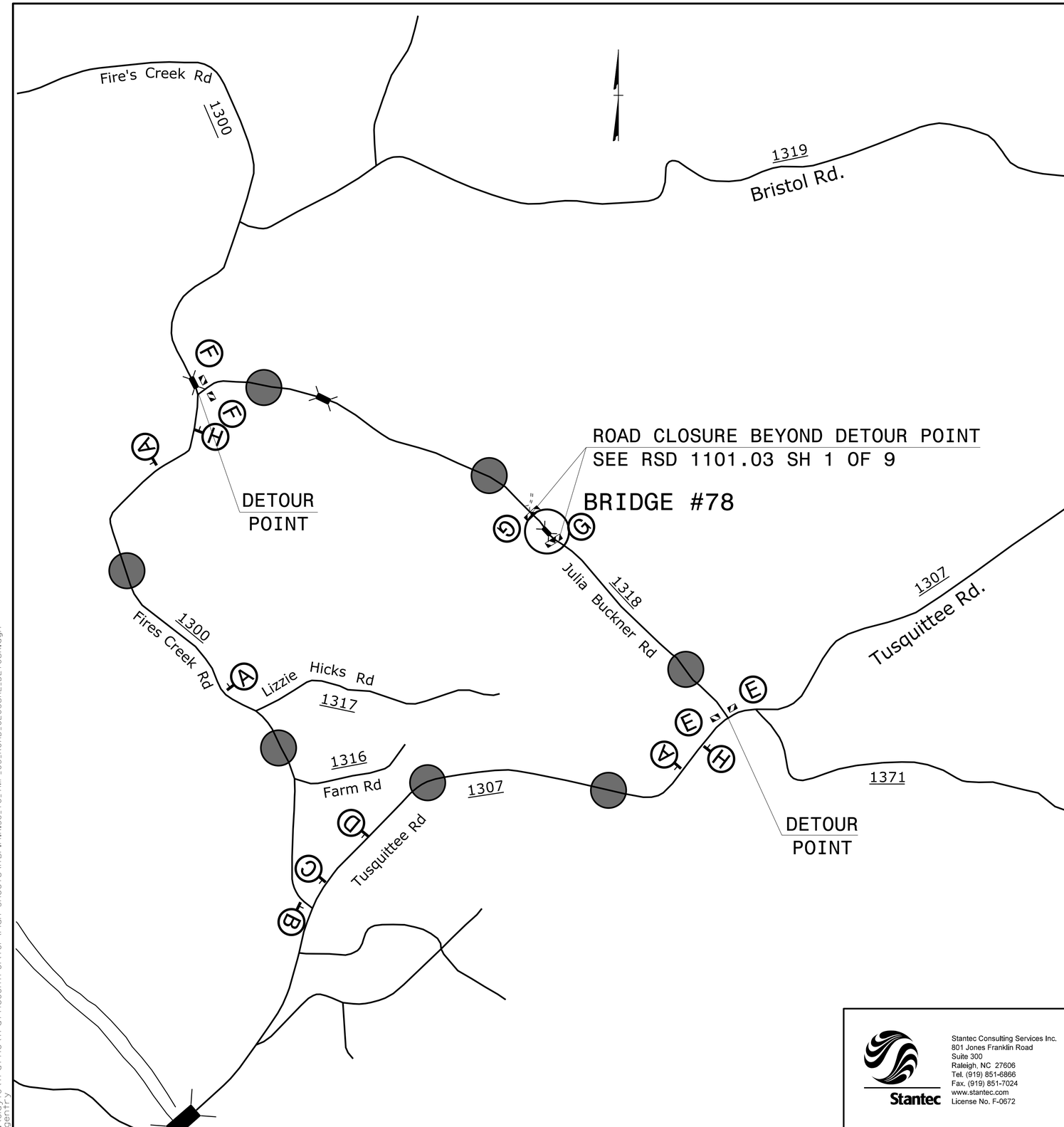
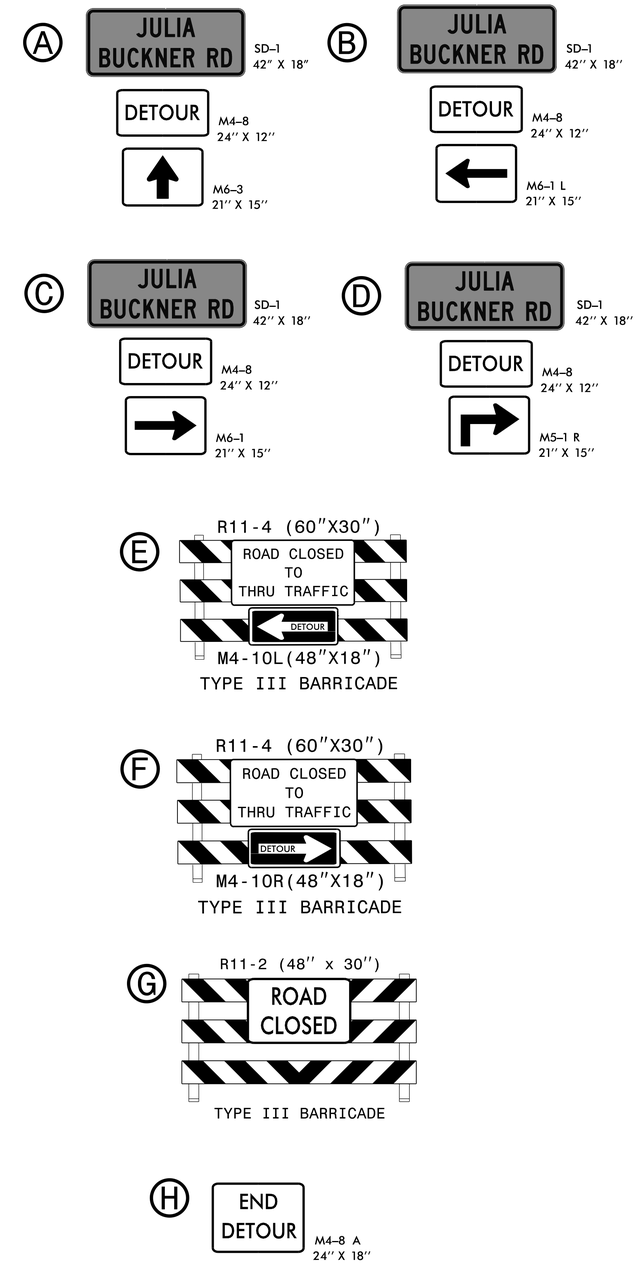
PROJ. REFERENCE NO.	SHEET NO.
17BP.14.R.38	TMP-3





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APPROVED: George Karageorge DATE: 8/3/2016

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SEAL

NORTH CAROLINA PROFESSIONAL SEAL 042065 ENGINEER GEORGE M. KARAGEORGE

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

CLAY CO. BRIDGE #78

ROAD CLOSURE/
DETOUR ROUTE

6/30/2016
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TIP PROJECT: 17BP.14.R.38

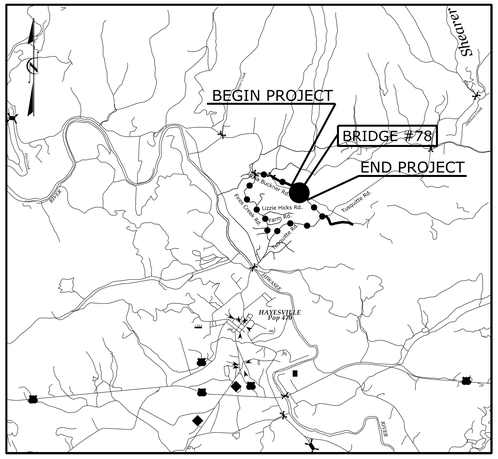
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.14.R.38	EC-1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL

CLAY COUNTY



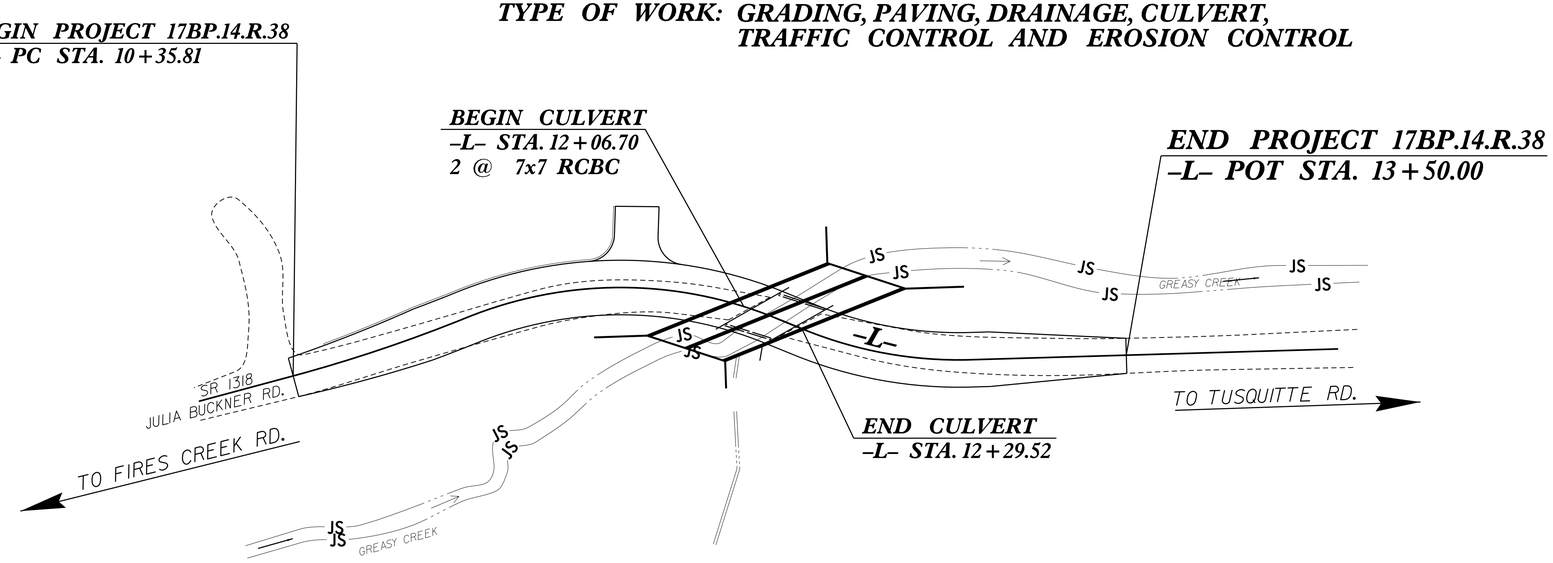
OFFSITE DETOUR

VICINITY MAP

N.T.S.

LOCATION: *BRIDGE NO. 78 ON SR 1318 (JULIA BUCKNER ROAD) OVER GREASY CREEK*

TYPE OF WORK: *GRADING, PAVING, DRAINAGE, CULVERT, TRAFFIC CONTROL AND EROSION CONTROL*



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	SW CFW
	Wattle / Coir Fiber Wattle with Polyacrylamide (PAM)	
1634.01	Temporary Rock Sediment Dam Type-A	
1634.02	Temporary Rock Sediment Dam Type-B	
1635.01	Rock Pipe Inlet Sediment Trap Type-A	
1635.02	Rock Pipe Inlet Sediment Trap Type-B	
1630.04	Stilling Basin	
1630.06	Special Stilling Basin	
	Rock Inlet Sediment Trap:	
1632.01	Type A	A
1632.02	Type B	B
1632.03	Type C	C
	Skimmer Basin	
	Tiered Skimmer Basin	
	Infiltration Basin	

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

ENVIRONMENTALLY SENSITIVE AREA(S) EXIST ON THIS PROJECT

Refer To E. C. Special Provisions for Special Considerations.

GRAPHIC SCALE

0 20
PLANS

0 20
PROFILE (HORIZONTAL)

0
PROFILE (VERTICAL)

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

Prepared In the Office of:

Wetherill Engineering Inc.
1223 Jones Franklin Road
Raleigh, NC 27606

Designed by:

James C. Davis, PE — *NAME*
3554 — *LEVEL III CERTIFICATION NO.*

Reviewed In the Office of:

ROADSIDE ENVIRONMENTAL UNIT
1 South Wilmington St.
Raleigh, NC 27611

2012 STANDARD SPECIFICATIONS

Reviewed by:

Division 14

Roadway Standard Drawings

The following roadway english standards as appear in "Roadway Standard Drawings"– Roadway Design Unit – N. C. Department of Transportation – Raleigh, N. C., dated January 2012 and the latest 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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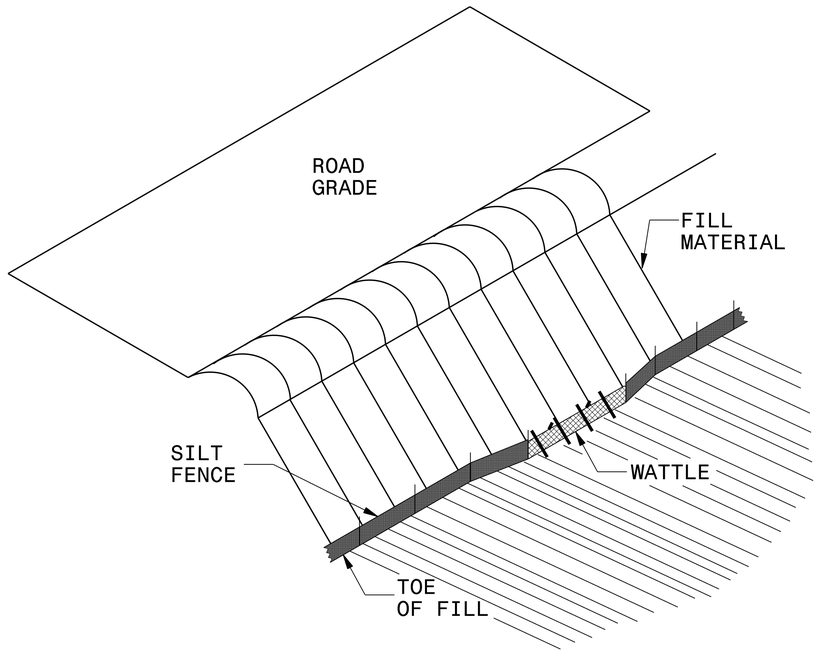
PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.38	EC-2C
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SILT FENCE COIR FIBER WATTLE BREAK DETAIL



ISOMETRIC VIEW

NOTES:

USE MINIMUM 12 IN. DIAMETER COIR FIBER (COCONUT FIBER) 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.

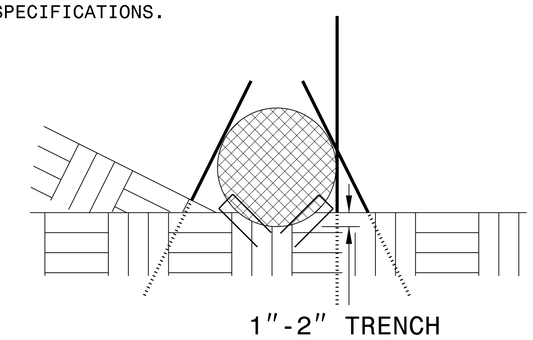
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12″ IN LENGTH.

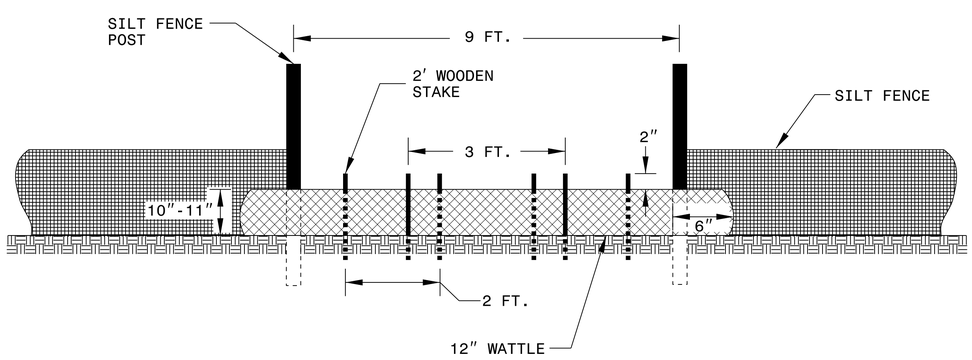
INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

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

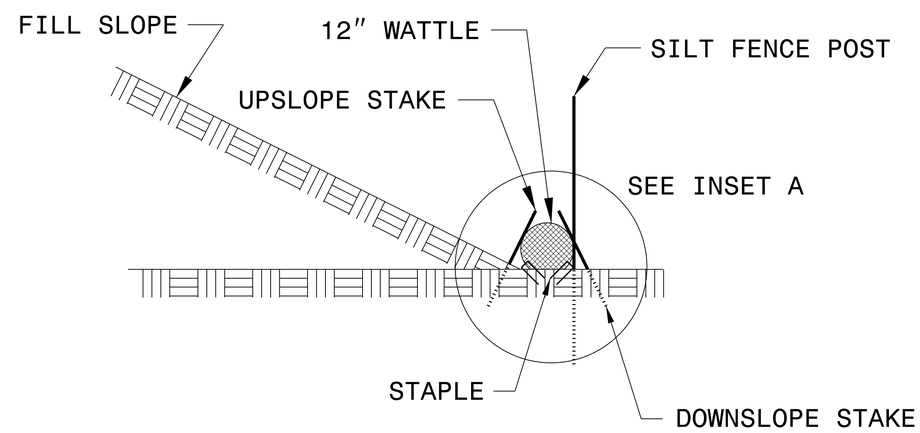
INSTALL TEMPORARY SILT FENCE IN ACCORDANCE WITH SECTION 1605 OF THE STANDARD SPECIFICATIONS.

INSET A





VIEW FROM SLOPE



SIDE VIEW

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PROJECT REFERENCE NO.	SHEET NO.
17BPJ4.R.38	EC-3
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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+25	13+00	RT.	134
4	-L-	12+00	13+00	LT.	77
				SUBTOTAL	211
MISCELLANEOUS MATTING TO BE INSTALLED AS DIRECTED BY THE ENGINEER					25
				TOTAL	236
				SAY	240

MATTING FOR EROSION CONTROL

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

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PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.38	EC-3B
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.

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8/17/99

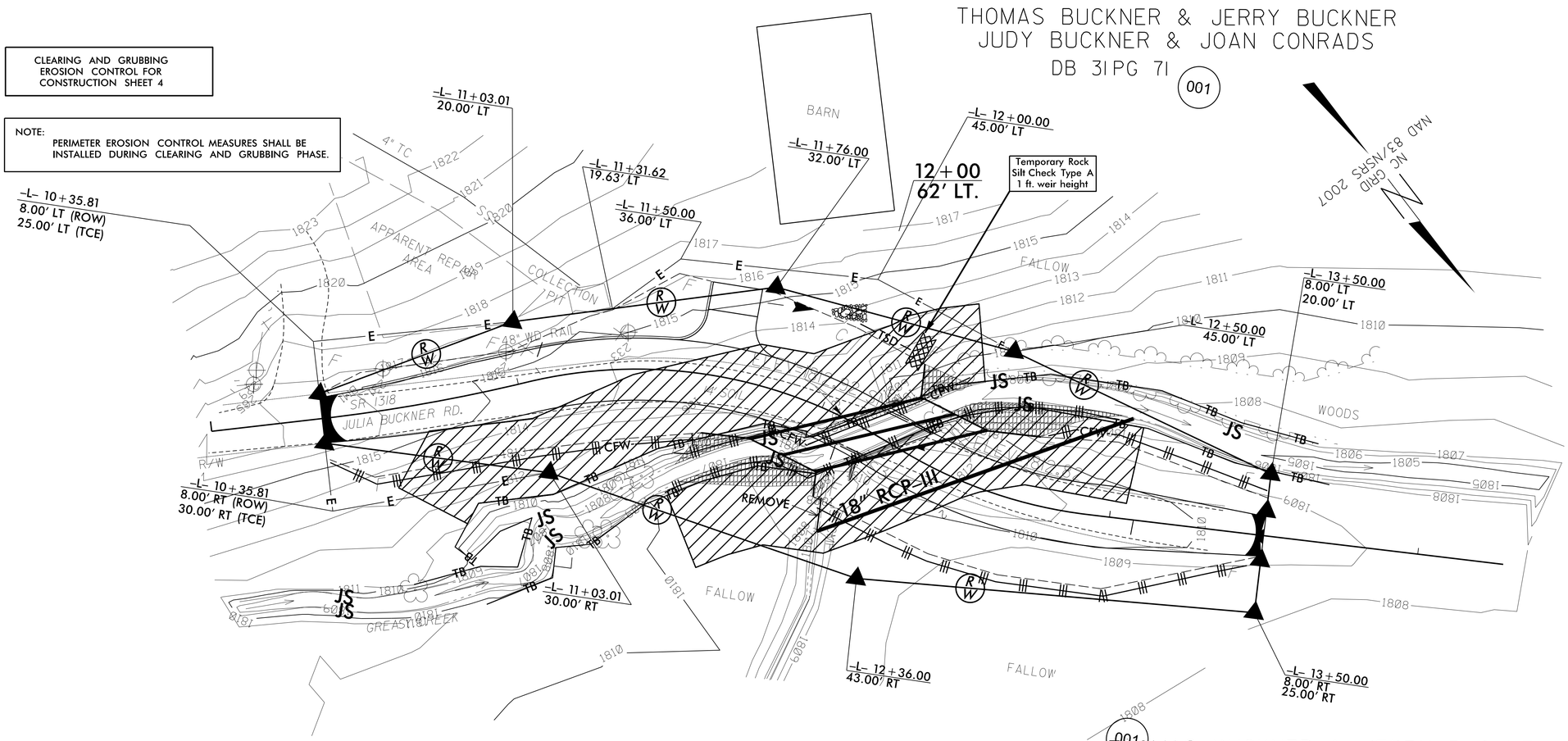
REVISIONS

EROSION CONTROL PLAN

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.38	EC-4/CONST.4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 4

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



ENVIRONMENTALLY SENSITIVE AREA
SEE PROJECT SPECIAL PROVISIONS

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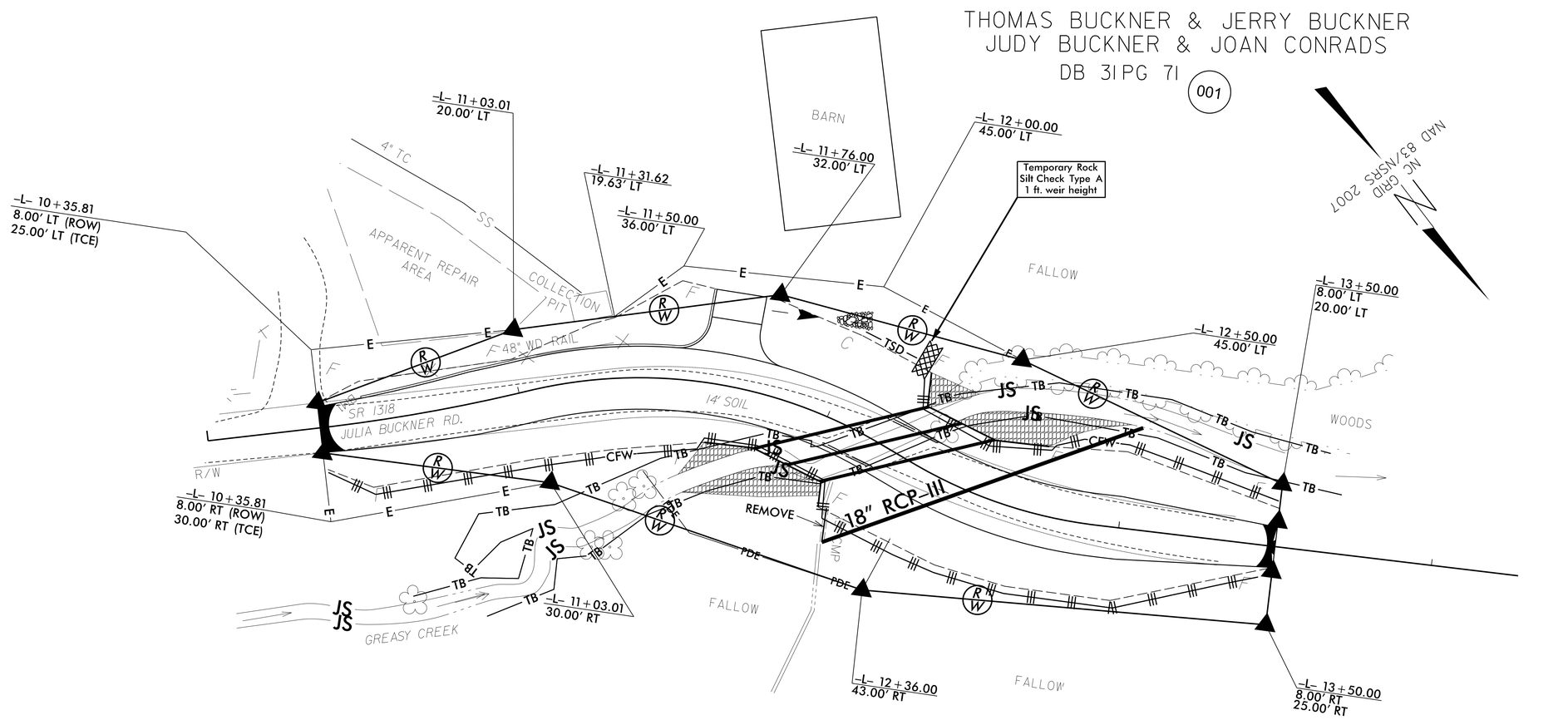
PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.38	EC-5/CONST.4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

EROSION CONTROL PLAN



NOTE:

ONSITE CONCRETE WASHOUT STRUCTURE TO BE PLACED AT LOCATION DETERMINED IN THE FIELD.

REVISIONS

8/17/99

3/31/2016
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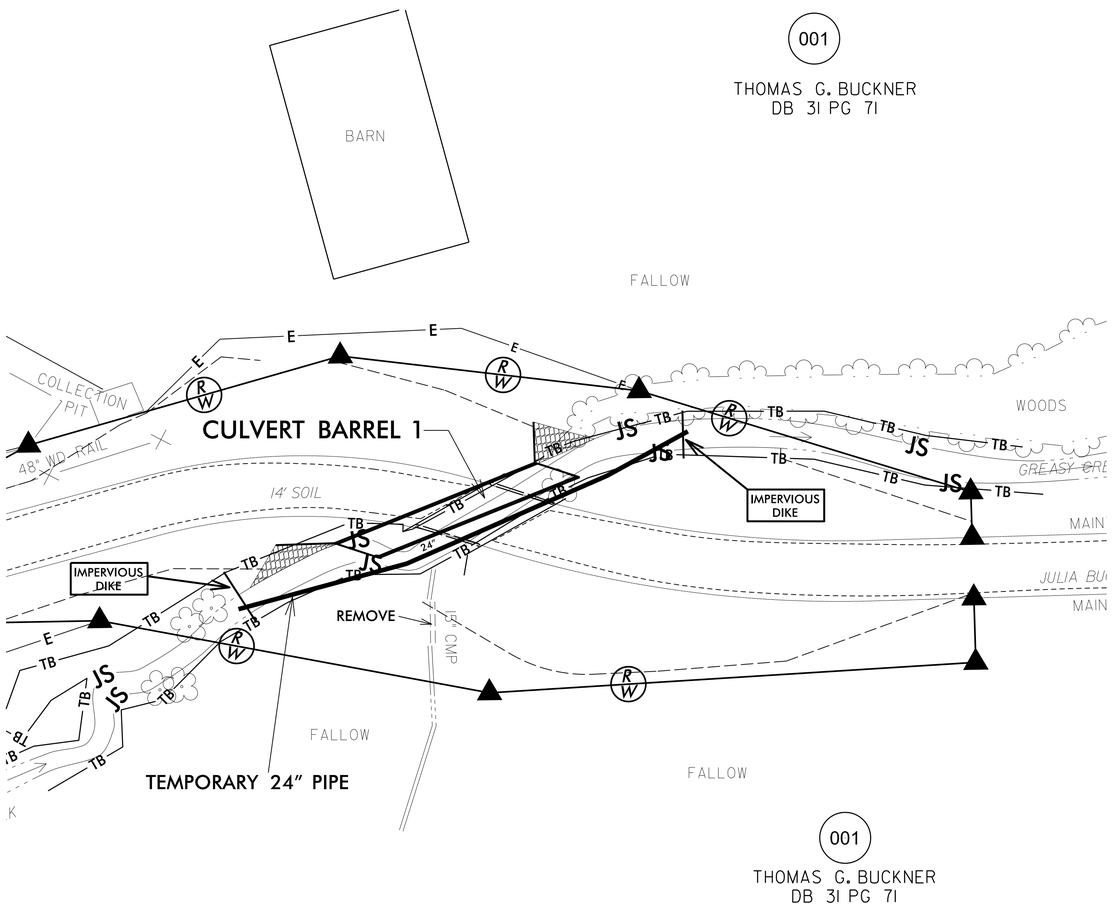
CULVERT CONSTRUCTION SEQUENCE

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.38	EC-6/CONST.4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

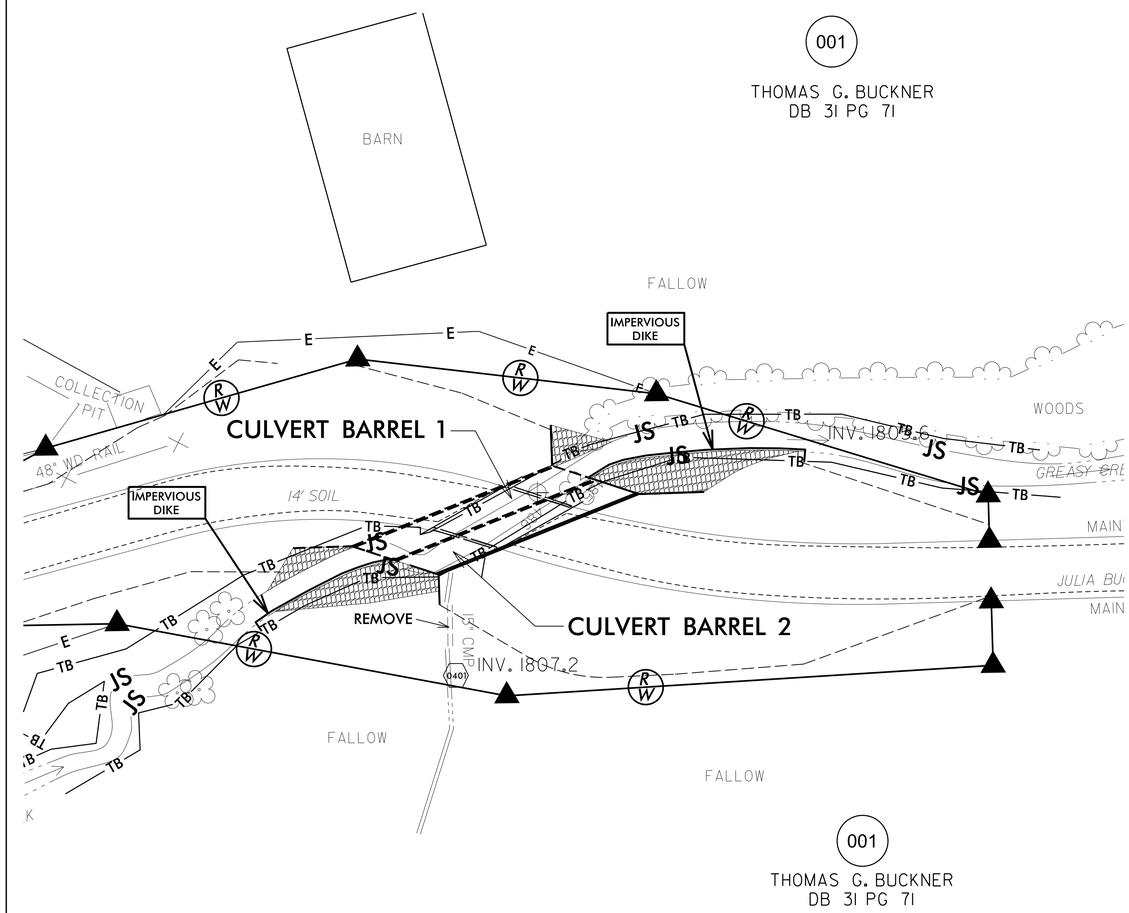
PHASE I

1. INSTALL SPECIAL STILLING BASIN
2. INSTALL TEMPORARY IMPERVIOUS DIKES AND TEMPORARY DIVERSION PIPE
3. REMOVE EXISTING BRIDGE
4. DEWATER AND EXCAVATE AS REQUIRED
5. CONSTRUCT CULVERT BARREL 1 AND WINGWALLS



PHASE II

1. INSTALL TEMPORARY IMPERVIOUS DIKES AS SHOWN
2. DIVERT FLOW INTO CULVERT BARREL 1 AND REMOVE TEMPORARY PIPE
3. DEWATER AND EXCAVATE AS NECESSARY
4. CONSTRUCT CULVERT BARREL 2 AND WINGWALLS
5. REMOVE IMPERVIOUS DIKES



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CONTRACT NO.: DN00171 PROJECT: 17BP.14.R.38

PROJECT NO.	SHEET NO.
17BP.14.R.38	SIGN-1

APPROVED: DocuSigned by: George Karageorge D37A835A67FF4AD...

DATE: 8/3/2016

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 042065 ENGINEER GEORGE M. KARAGEORGE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

SIGNING PLANS
CLAY COUNTY

LOCATION: BRIDGE NO. 78 ON SR 1318 (JULIA BUCKNER ROAD) OVER PERKINS MILL CREEK

GENERAL NOTES

- SIGNS FURNISHED BY CONTRACTOR
- IF REMOVAL OR RELOCATION OF SIGNS ON PRIVATE STREET (NON-STATE MAINTAINED) IS REQUIRED DUE TO CONSTRUCTION, THE CONTRACTOR SHALL INFORM THE ENGINEER. THE WORK WILL BE COMPLETED BY OTHERS.
- SIGNING PLANS DO NOT INCLUDE TEMPORARY CONSTRUCTION SIGNING. SEE TRANSPORTATION MANAGEMENT PLANS.
- WHEN NOT STATIONED OR DIMENSIONED ON PLANS, ALL 'E' SIGNS SHALL BE FIELD LOCATED BY THE ENGINEER
- ALL EXISTING SIGNS ON "U" CHANNEL POST WITHIN THE PROJECT LIMITS SHALL BE REMOVED AND DISPOSED OF UNLESS OTHERWISE NOTED ON PLANS.
- THE BACKGROUND FOR TYPE E SIGNS SHALL BE TYPE C REFLECTIVE SHEETING.

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

STD. NO.	TITLE
1264.01	OBJECT MARKERS - TYPES
1264.02	OBJECT MARKERS - INSTALLATION

SUMMARY OF QUANTITIES

ITEM NO. DESC. NO.	ITEM NO. SECT. NO.	ITEM DESCRIPTION	QUANTITY	UNIT
4155000000	907	DISPOSAL OF SIGN SYSTEM, U-CHANNEL.....	8	EA.
4915000000	1264	7' U-CHANNEL POSTS.....	4	EA.
4957000000	1264	OBJECT MARKERS (TYPE 3).....	4	EA.

401 QUANTITY REQ'D 2

12 x 36
OM-3R

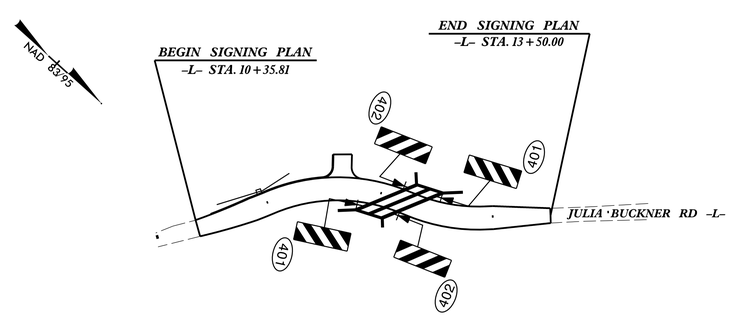
ONE "U" POST PER SIGN

402 QUANTITY REQ'D 2

12 x 36
OM-3L

ONE "U" POST PER SIGN

SIGNING DETAIL



INDEX

SHEET NO.	DESCRIPTION
SIGN-1	TITLE SHEET AND SIGN DETAIL

PLAN PREPARED BY:

GEORGE M. KARAGEORGE, P.E. SENIOR TRANSPORTATION ENGINEER

ROSI R. HENNEIN TRANSPORTATION DESIGNER

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8/3/2016
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