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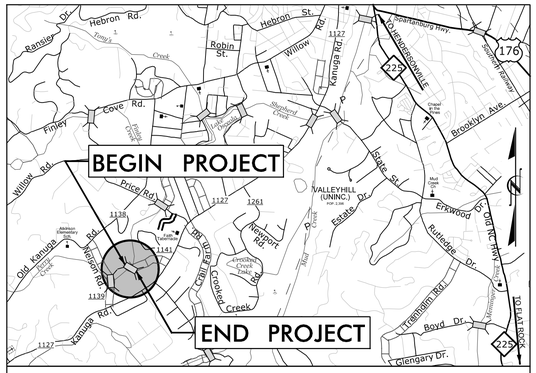
PROJECT: 17BP.14.R.44

CONTRACT: DN00268

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



VICINITY MAP N.T.S.

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

HENDERSON COUNTY

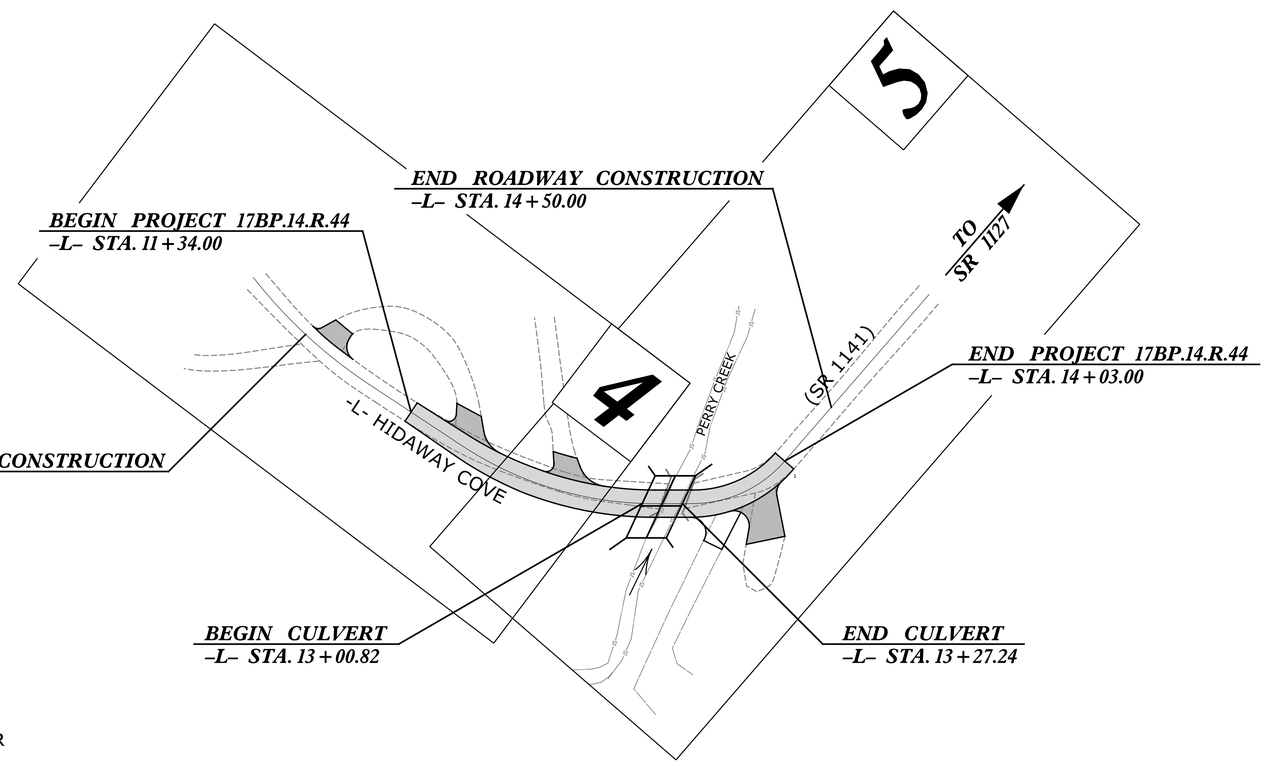
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.14.R.44	1	
HENDERSON COUNTY	CULVERT #440314		

STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
17BP.14.R.44		PE
17BP.14.R.44		RW & UTILITIES
17BP.14.R.44		CONST

LOCATION: BRIDGE #440314 OVER PERRY CREEK ON SR 1141 (HIDAWAY COVE)

TYPE OF WORK: PAVING, GRADING, DRAINAGE & CULVERT

NAD 83/NSRS 2007



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

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 2000 = 130
DHV = NA
D = NA
T = 7% *
V = 20 MPH
*TTST = NA DUAL NA
FUNC CLASS = LOCAL RURAL SUBREGIONAL

PROJECT LENGTH

LENGTH ROADWAY PROJECT 17BP.14.R.44 = 0.046 MILES
LENGTH STRUCTURE PROJECT 17BP.14.R.44 = 0.005 MILES
TOTAL LENGTH PROJECT 17BP.14.R.44 = 0.051 MILES

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

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: JUNE 3, 2015

LETTING DATE: TBD

ALLISON C. JOHNSON, P.E.
PROJECT ENGINEER

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

HYDRAULICS ENGINEER
SEAL 21656
DocuSigned by: Roger S. Weadon
SIGNATURE: P.E. 6/13/2017

ROADWAY DESIGN ENGINEER
SEAL 041650
DocuSigned by: Benjamin C. Pickering II
SIGNATURE: P.E. 6/7/2017

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.44	1A

HENDERSON COUNTY CULVERT #440314

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 041650 ENGINEER BENJAMIN C. PICKERING

DocuSigned by: EE6631DD228540F...

6/7/2017

Plans Prepared By:

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

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES AND LIST OF STANDARDS
1B	CONVENTIONAL SYMBOLS
1C-1	SURVEY CONTROL SHEET
2A-1	PAVEMENT SCHEDULE AND TYPICAL SECTION
3B-1	SUMMARY OF DRAINAGE, GUARDRAIL SUMMARY, SUMMARY OF EARTHWORK AND PARCEL INDEX SHEET
4-5	PLAN AND PROFILE SHEET
TMP-1 THRU TMP-4	TRAFFIC MANAGEMENT PLANS
EC-1 THRU EC-5	EROSION CONTROL PLANS
UO-1 THRU UO-2	UTILITIES BY OTHERS PLANS
X-1A	INDEX OF SHEETS & SUMMARY OF CROSS SECTIONS
X-1 THRU X-2	CROSS-SECTIONS
C-1 THRU C-10	CULVERT PLANS
SN	CULVERT PLANS - STANDARD NOTES

GENERAL NOTES

GENERAL NOTES: 2012 SPECIFICATIONS
EFFECTIVE: 01-17-2012
REVISED: 10-31-2014

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

DRIVEWAYS:

DRIVEWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. 848.02 AT LOCATIONS SHOWN ON PLANS OR AS DIRECTED BY THE ENGINEER.

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.

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE AT&T & DUKE ENERGY

ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS. SEE UTILITY SPECIAL PROVISIONS.

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.

STANDARD DRAWINGS

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

2012 ROADWAY ENGLISH STANDARD DRAWINGS

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

STD.NO.	TITLE
DIVISION 2 - EARTHWORK	
200.02	Method of Clearing - Method II
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation
310.10	Driveway Pipe Construction
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
848.02	Driveway Turnout - Radius Type
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units
876.01	Rip Rap in Channels
876.02	Guide for Rip Rap at Pipe Outlets
876.04	Drainage Ditches with Class 'B' Rip Rap

12/05/11

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.44	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 — 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.

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.44	1C-1
Location and Surveys	

SURVEY CONTROL SHEET 44-0314
-FINAL-

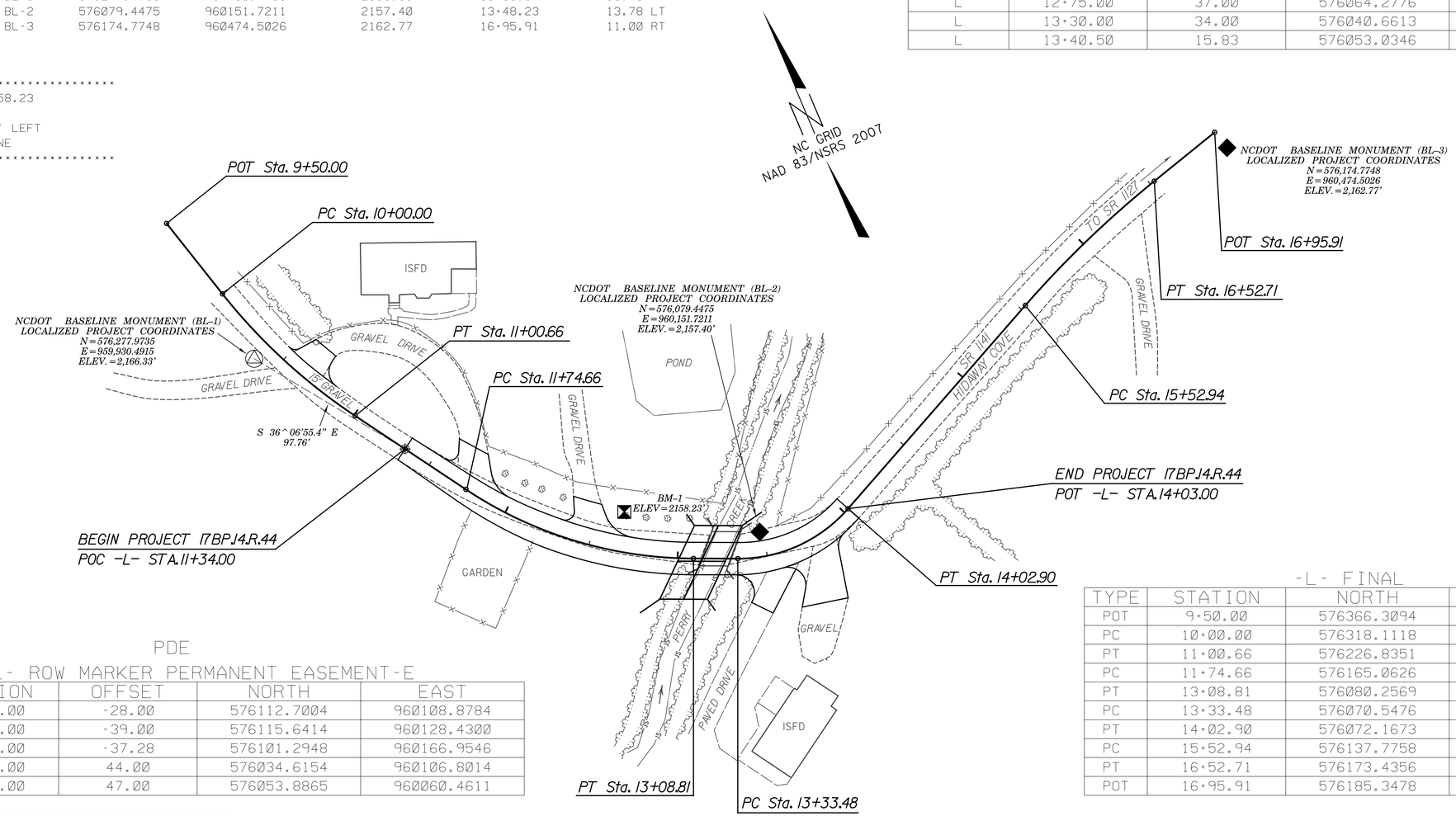
BL

POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
1	BL-1	576277.9735	959930.4915	2166.33	10+38.07	10.91 RT
2	BL-2	576079.4475	960151.7211	2157.40	13+48.23	13.78 LT
3	BL-3	576174.7748	960474.5026	2162.77	16+95.91	11.00 RT

****
BM1 ELEVATION = 2158.23
N 576119 E 960087
L STATION 12+65.89 22.18' LEFT
RR SPIKE IN 30" WHITE PINE
****

-FINAL- ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	12+68.00	16.54	576085.7353	960067.0006
L	12+75.00	37.00	576064.2776	960062.6102
L	13+30.00	34.00	576040.6613	960118.0907
L	13+40.50	15.83	576053.0346	960136.2883



PDE

-FINAL- ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	12+91.00	-28.00	576112.7004	960108.8784
L	13+10.00	-39.00	576115.6414	960128.4300
L	13+67.00	-37.28	576101.2948	960166.9546
L	13+22.00	44.00	576034.6154	960106.8014
L	12+78.00	47.00	576053.8865	960060.4611

-L- FINAL

TYPE	STATION	NORTH	EAST
POT	9+50.00	576366.3094	959915.0064
PC	10+00.00	576318.1118	959928.3100
PT	11+00.66	576226.8351	959969.7526
PC	11+74.66	576165.0626	960010.4972
PT	13+08.81	576080.2569	960111.9885
PC	13+33.48	576070.5476	960134.6721
PT	14+02.90	576072.1673	960201.9648
PC	15+52.94	576137.7758	960336.8995
PT	16+52.71	576173.4356	960429.9475
POT	16+95.91	576185.3478	960471.4693

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "440314 BL-1"
WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF
NORTHING: 576277.9735(ft) EASTING: 959930.4915(ft)
ELEVATION: 2166.33(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999774143
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "440314 BL-1" TO -L- STATION 11+34.00 IS
S36°6'55.44"E 97.76 (ft)
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

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:
440314_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.

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.44	2A–1

HENDERSON COUNTY CULVERT #440314

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 041650 ENGINEER BENJAMIN C. PICKERING

DocuSigned by: EE60310D228540F...

6/7/2017

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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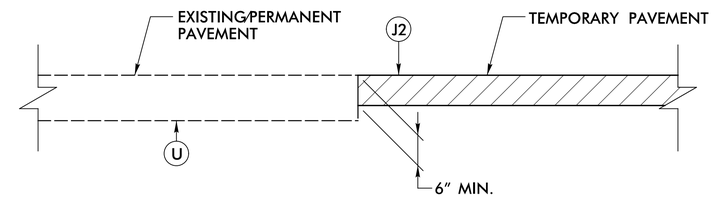
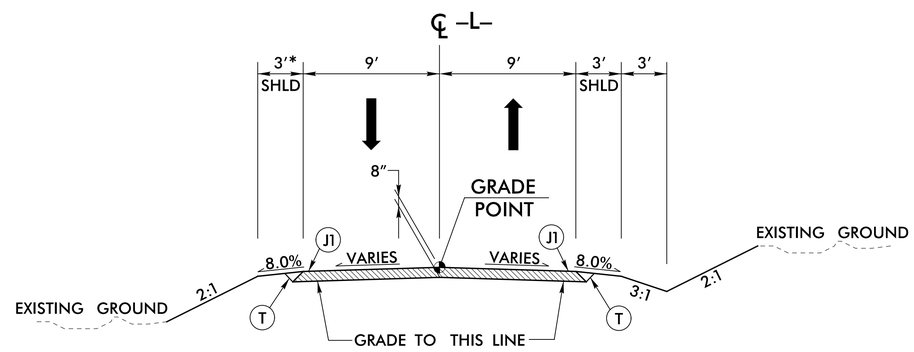


TEMPORARY PAVEMENT DETAIL

NOT TO SCALE

(SEE TRAFFIC MANAGEMENT PLANS)

–L– STA. 11+74.66 TO STA. 13+60.83 RT



TYPICAL SECTION NO. 1

–L– STA. 11+34.00 TO STA. 14+03.00

NOTE: SEE PLAN FOR SUPER ELEVATION RATES AND TRANSITIONS

* 6'–0" WITH GUARDRAIL

DRIVEWAYS

DRIVEWAYS AT STA. 10+63.80, STA. 11+72.50, STA. 12+48.45 AND STA. 13+74.50 REQUIRE ASPHALT SURFACE TREATMENT MAT AND DOUBLE SEAL. DRIVEWAY DESIGN (WIDTH AND DEPTH) WILL BE DIRECTED BY ENGINEER.

PAVEMENT SCHEDULE	
ITEM	DESCRIPTION
J1	PROP. 8" AGGREGATE BASE COURSE
J2	PROP. 6" AGGREGATE BASE COURSE
T	EARTH MATERIAL
U	EXISTING PAVEMENT

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

COMPUTED BY:	BCP	DATE:	4/3/17
CHECKED BY:	ACJ	DATE:	4/3/17

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.44	3B–1

HENDERSON COUNTY CULVERT #440314

Plans Prepared By:

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

SUMMARY OF EARTHWORK
(in Cubic Yards)

STATION	STATION	UNCL. EXCAV.	EMBANK.	BORROW	WASTE
PHASE 1					
–L– STA. 11+34	–L– STA. 14+03	19	128	109	0
PHASE 2					
–L– STA. 11+43	–L– STA. 14+03	51	61	10	0
PROJECT TOTALS:		70	189	119	0
ESTIMATE 5% FOR TOPSOIL ON BORROW PITS				6	
GRAND TOTALS:		70	189	125	
SAY:		70		130	

ESTIMATED

DDE	15 CY
UNDERCUT EXCAVATION	50 CY
SELECT GRANUALR MATERIAL	50 CY
INCIDENTIAL STONE BASE	50 TON

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".

PARCEL INDEX SHEET

PARCEL NO.	SHEET NO.	PROPERTY OWNER NAMES
41	4,5	SUSAN FULLERTON OWENBY
42	4,5	RICHARD A. WHITMIRE
43	5	NANCY H. & WILBURN R. DOTSON

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)								C.S. PIPE (UNLESS NOTED OTHRWISE)													CLASS IV R.C. PIPE (UNLESS OTHERWISE NOTED)							
SIZE								12″	15″	18″	24″	30″	36″	42″	48″	12″	15″	18″	24″		30″		36″		42″		48″		12″	15″	18″	24″	30″	36″	42″	48″
THICKNESS OR GAUGE																.064	.064	.064	.064		.079		.079		.109		.109									
–L– 11+69	LT.	0401																																		
–L– 12+46	LT.	0402																																		
–L– 10+62	LT.	0403																																		
–L– 13+05	LT.	0501							4																											
–L– 14+26	CL.	0502			2157.5	2157.0																								27						
–L– 14+28	CL.	0503			2157.5	2157.0																								27						

STATION	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 * 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'	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								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– 11+69	48																																	28	DRIVEWAY PIPE
–L– 12+46	34																																	26	DRIVEWAY PIPE
–L– 10+62	25																																	26	DRIVEWAY PIPE
–L– 13+05																																			
–L– 14+26																																		22	SINGLE PIPE REMOVAL FOR BOTH 0502 AND 0503
–L– 14+28																																			

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 XI MOD	XI	GRAU 350 TYPE TL–2	M–350	TYPE–III	CAT–1	VI MOD	BIC	AT–1	IMPACT ATTENUATOR TYPE 350 EA	G	NG	SINGLE FACED GUARDRAIL	REMOVE EXISTING GUARDRAIL	REMOVE AND STOCKPILE EXISTING GUARDRAIL	REMARKS
–L–	12+79	13+83	LT.	58	38				3′	6′							1						1							GUARDRAIL CALCULATED USING SUBREGIONAL TIER GUIDELINES
–L–	12+70	13+34	RT.	48	14				3′	6′							1						1							GUARDRAIL CALCULATED USING SUBREGIONAL TIER GUIDELINES
			SUBTOTALS	106	52										DEDUCTIONS FOR GUARDRAIL ACNHOR UNITS															
			ANCHOR DEDUCTION	62.5											TYPE AT–1			2 @ 6.25′ =		12.5	ADDITIONAL GUARDRAIL POSTS = 5									
			TOTAL	43.5	52										TYPE TL–2			2 @ 25.00 =		50										
			SAY	50.0	62.5														TOTAL =	62.5′										

8/17/99

5/30/2017
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Deb Wright

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.44	4
HENDERSON COUNTY CULVERT #440314	
R/W SHEET NO.	

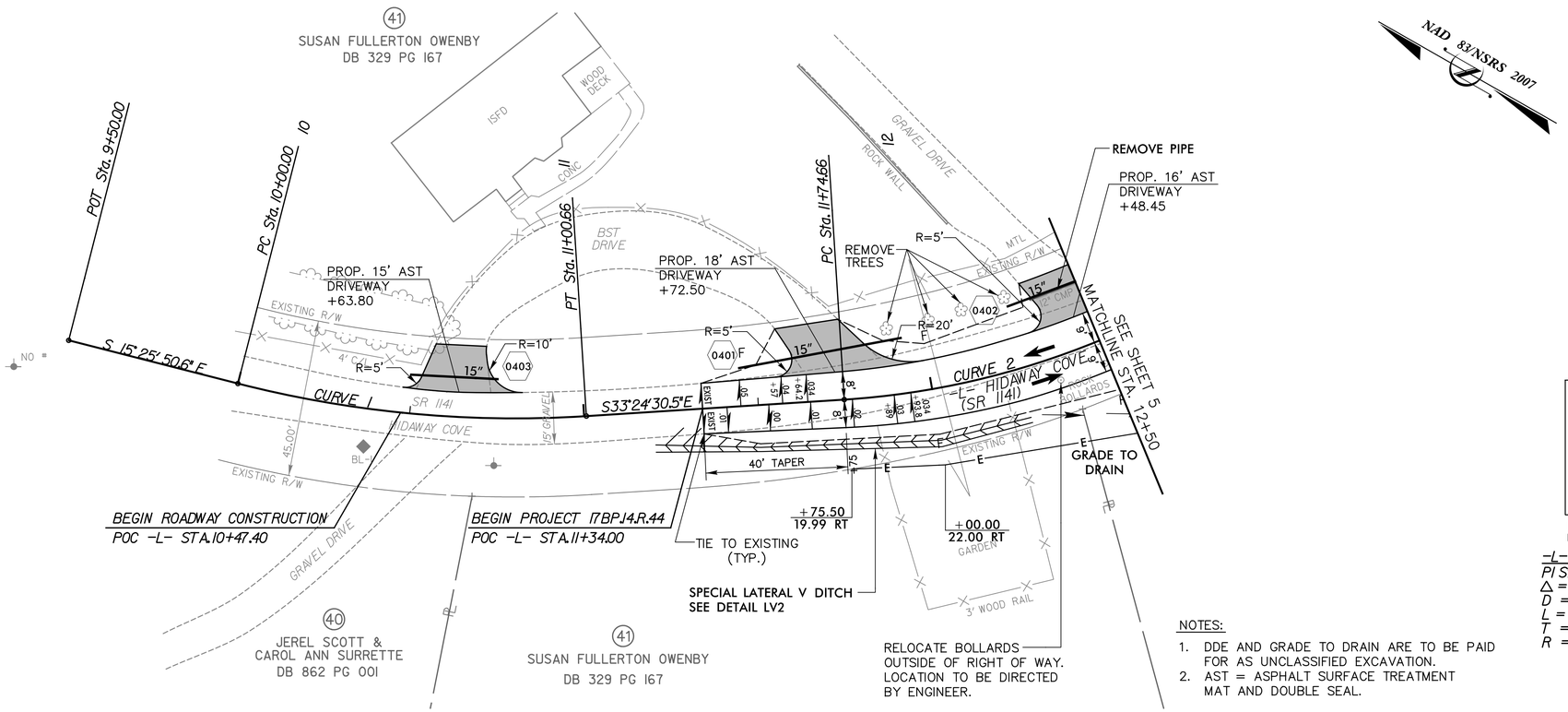
ROADWAY DESIGN ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 041650 ENGINEER BRIAN M. C. PICKERING — 6/7/2017

HYDRAULICS ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 21656 ENGINEER TODD US WEADON — 6/13/2017

Plans Prepared By:

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

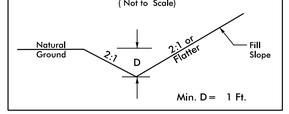
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



NOTES:

1. DDE AND GRADE TO DRAIN ARE TO BE PAID FOR AS UNCLASSIFIED EXCAVATION.
2. AST = ASPHALT SURFACE TREATMENT MAT AND DOUBLE SEAL.

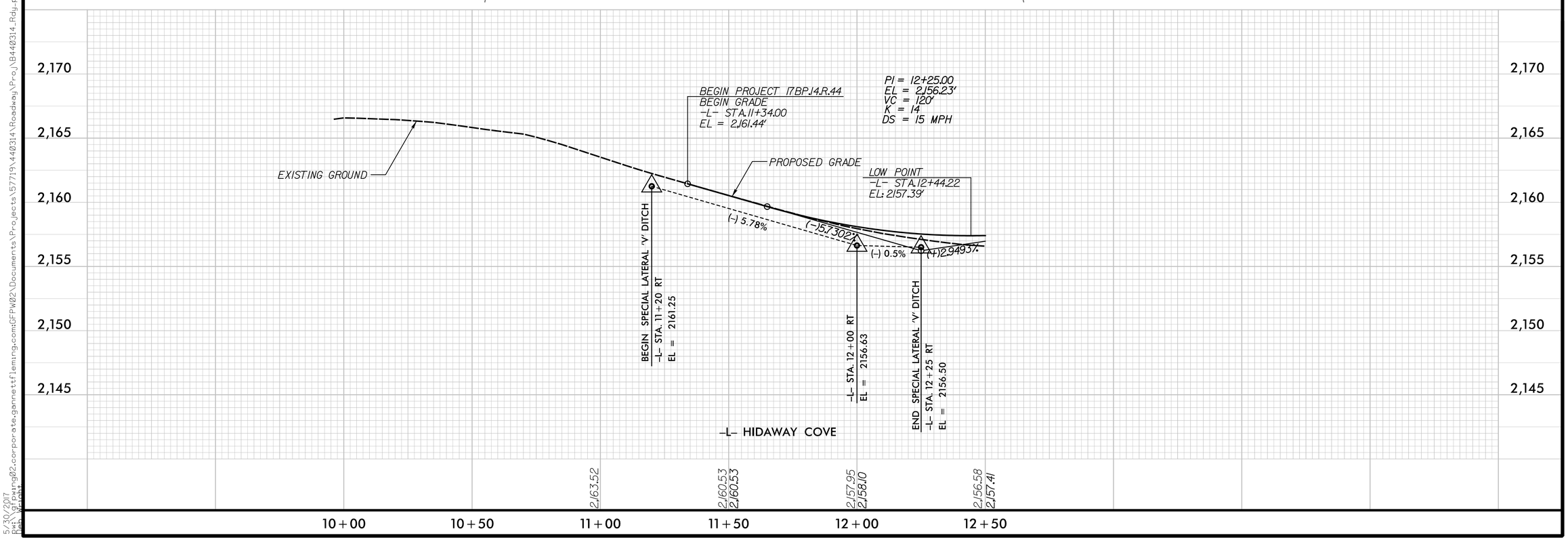
DETAIL LV2
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



FROM -L- STA. 11+20 RT TO STA. 12+25 RT
DDE = 3 CY -L- STA 11+20 RT TO 11+34 RT

-L- CURVE 1 DATA
PI Sta 10+50.75
Δ = 17° 58' 39.9" (LT)
D = 17° 51' 37.7"
L = 100.66'
T = 50.75'
R = 320.80'

-L- CURVE 2 DATA
PI Sta 12+43.70
Δ = 33° 25' 08.6" (LT)
D = 24° 54' 40.4"
L = 134.15'
T = 69.05'
R = 230.00'
DS=20 MPH
e = 0.34



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5/30/2017
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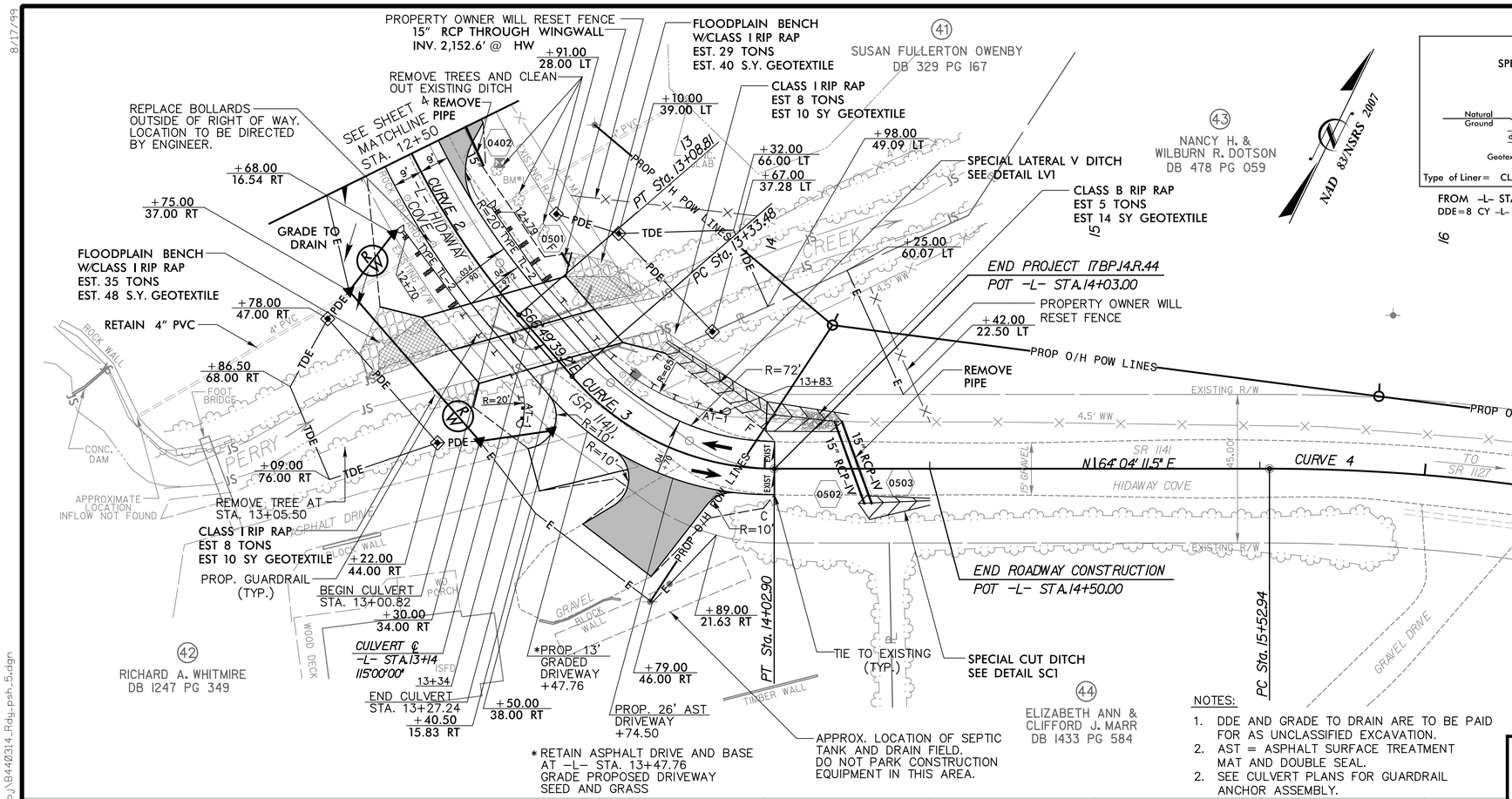
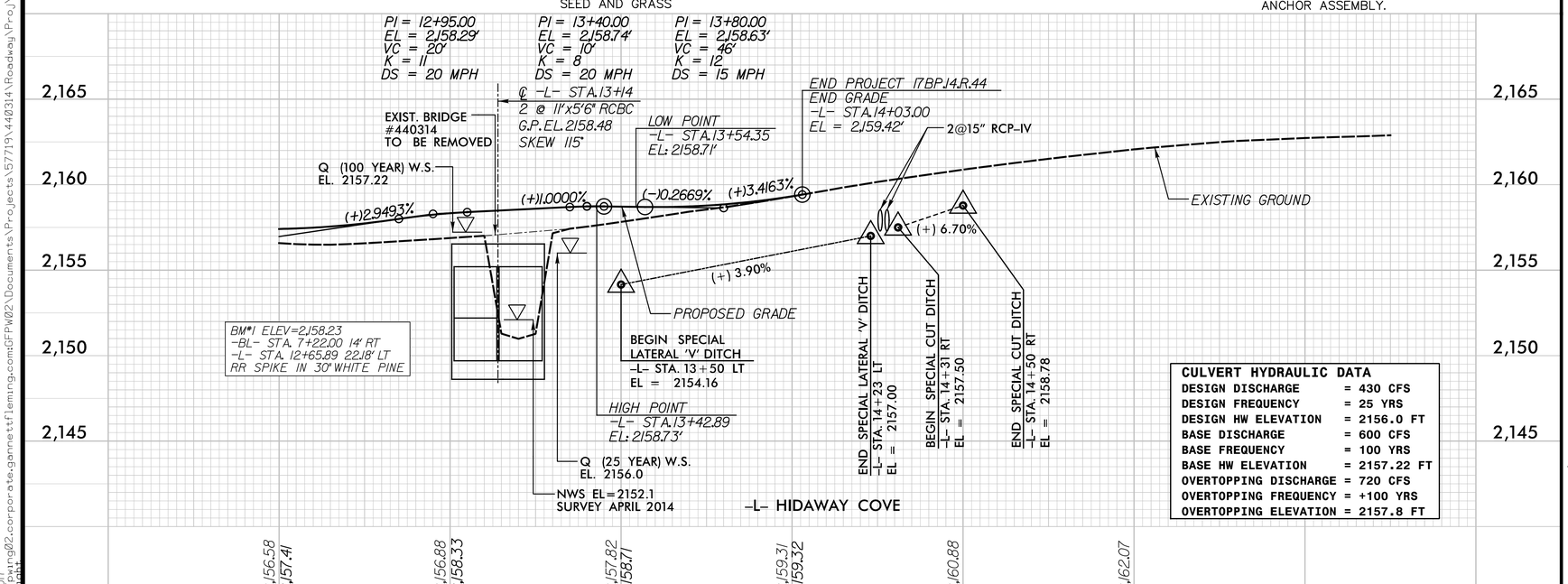


NOTES:

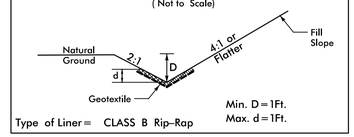
1. DDE AND GRADE TO DRAIN ARE TO BE PAID FOR AS UNCLASSIFIED EXCAVATION.
2. AST = ASPHALT SURFACE TREATMENT MAT AND DOUBLE SEAL.
2. SEE CULVERT PLANS FOR GUARDRAIL ANCHOR ASSEMBLY.



CULVERT HYDRAULIC DATA	
DESIGN DISCHARGE	= 430 CFS
DESIGN FREQUENCY	= 25 YRS
DESIGN HW ELEVATION	= 2156.0 FT
BASE DISCHARGE	= 600 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 2157.22 FT
OVERTOPPING DISCHARGE	= 720 CFS
OVERTOPPING FREQUENCY	= +100 YRS
OVERTOPPING ELEVATION	= 2157.8 FT

DETAIL LV1

SPECIAL LATERAL 'V' DITCH
(Not to Scale)



FROM -L- STA. 13+50 LT TO STA. 14+23 LT
DDE = 8 CY -L- STA 14+00 LT TO 14+23 LT

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.44	5
HENDERSON COUNTY CULVERT #440314	
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
SEAL 041650	SEAL 21656
6/7/2017	6/13/2017

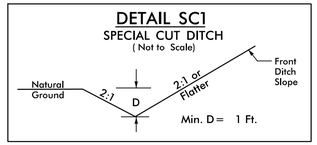
Plans Prepared By:

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

DETAIL SC1

SPECIAL CUT DITCH
(Not to Scale)



FROM -L- STA. 14+31 RT TO STA. 14+50 RT
DDE = 4 CY

FOR CULVERT SEE SHEETS C-1 THRU C-10

-L- CURVE 2 DATA
PI Sta 12+43.70
Δ = 33° 25' 08.6" (LT)
D = 24° 54' 40.4"
L = 134.15'
T = 69.05'
R = 230.00'
DS = 20 MPH
e = 0.34

-L- CURVE 3 DATA
PI Sta 13+70.48
Δ = 49° 06' 09.3" (LT)
D = 70° 44' 07.9"
L = 69.42'
T = 37.00'
R = 81.00'
DS = 15 MPH
e = 0.40

-L- CURVE 4 DATA
PI Sta 16+02.95
Δ = 9° 55' 21.0" (RT)
D = 9° 56' 42.7"
L = 99.77'
T = 50.01'
R = 576.12'

DETAIL 1

(NOT TO SCALE)

SKEWED MULTI-BARREL CULVERT LOW FLOW CHANNEL, SILLS AND FLOOD PLAIN

*NOTES:

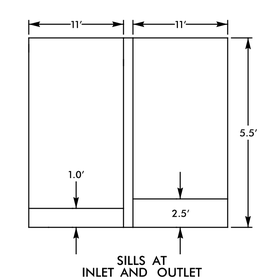
1) NATIVE MATERIAL BETWEEN SILLS IN THE CULVERT SHALL PROVIDE A CONTINUOUS LOW FLOW CHANNEL. NATIVE MATERIAL CONSISTS OF MATERIAL THAT IS EXCAVATED FROM THE THE STREAM OR FLOODPLAIN AT THE PROJECT SITE DURING CONSTRUCTION. ONLY MATERIAL THAT IS EXCAVATED FROM THE STREAM BED MAY BE USED TO LINE THE LOW FLOW CULVERT BARREL. RIP-RAP MAY BE USED TO SUPPLEMENT THE NATIVE MATERIAL IN THE HIGH FLOW CULVERT BARREL. IF RIP-RAP IS USED TO LINE THE HIGH FLOW CULVERT BARREL, NATIVE MATERIAL SHOULD BE PLACED ON TOP TO FILL VOIDS AND PROVIDE A FLAT SURFACE FOR ANIMAL PASSAGE. NATIVE MATERIAL IS SUBJECT TO APPROVAL BY THE ENGINEER AND MAY BE SUBJECT TO PERMIT CONDITIONS.

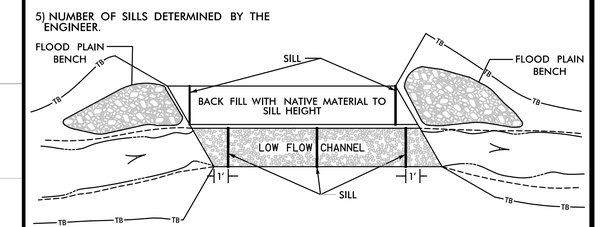
2) SILLS ARE TO BE 1.0 FT. WIDE, CAST SEPARATELY AND ATTACHED BY DOWELS.

3) TOP OF LOW FLOW SILLS SHOULD MATCH STREAM BED ELEVATION IN LOW FLOW CHANNEL OF STREAM.

4) DO NOT SET ELEVATION OF HIGH SILLS ABOVE BANK FULL.

5) NUMBER OF SILLS DETERMINED BY THE ENGINEER.



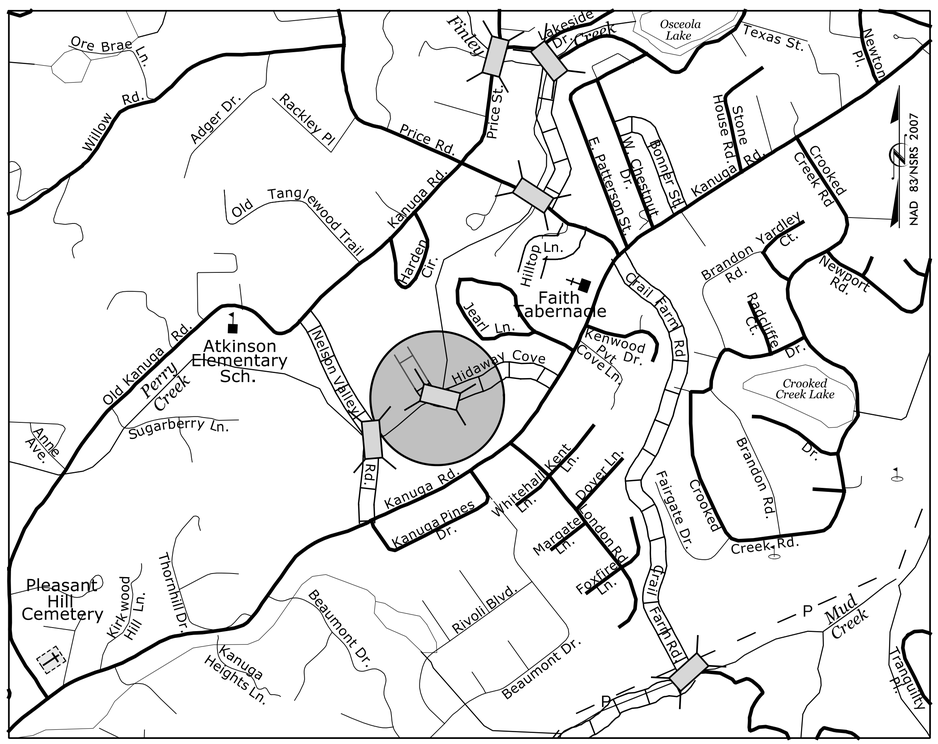


PLAN VIEW

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

HENDERSON COUNTY



VICINITY MAP
NTS

LOCATION: BRIDGE #440314 OVER PERRY CREEK ON SR 1141 (HIDAWAY COVE)

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

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

J. S. BOURNE, P.E. — STATE TRAFFIC MANAGEMENT ENGINEER
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.
TMP-1

PROJECT: 17BP.14.R.44

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Plans Prepared By:

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

APPROVED: DocuSigned by: Allison C. Johnson 6FCE110541674BC...
DATE: 6/7/2017

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 15424 ENGINEER ALLISON C. JOHNSON

5/30/2017
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Deb Wright

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.44	TMP-1A
HENDERSON COUNTY CULVERT #440314	
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 2012 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
1101.01	WORK ZONE ADVANCE WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
1101.03	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
1150.01	FLAGGING DEVICES
1160.01	TEMPORARY CRASH CUSHION
1165.01	WORK VEHICLE LIGHTING SYSTEMS AND TMA DELINEATION
1170.01	POSITIVE PROTECTION
1180.01	SKINNY-DRUM
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO LANE AND MULTILANE ROADWAYS
1205.12	PAVEMENT MARKINGS - BRIDGES
1250.01	RAISED PAVEMENT MARKERS - INSTALLATION SPACING
1251.01	RAISED PAVEMENT MARKERS - (PERMANENT AND TEMPORARY)
1261.01	GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATORS - TYPES AND MOUNTING
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
- CONSTRUCT UNDER TRAFFIC
- TEMPORARY AGGREGATE BASE COURSE

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: Allison C. Johnson DATE: 6/7/2017

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

8/17/99

5/30/2017
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PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.44	TMP-1B
HENDERSON COUNTY CULVERT #440314	
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.

MAINTAIN DRIVEWAY ACCESS TO PROPERTY OWNERS AT ALL TIMES.

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

LANE AND SHOULDER CLOSURE REQUIREMENTS

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

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

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

G) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN A LANE OF TRAVEL OF AN UNDIVIDED OR DIVIDED FACILITY, CLOSE THE LANE ACCORDING TO THE TRAFFIC CONTROL PLANS, ROADWAY STANDARD DRAWINGS, OR AS DIRECTED BY THE ENGINEER. CONDUCT THE WORK SO THAT ALL PERSONNEL AND/OR EQUIPMENT REMAIN WITHIN THE CLOSED TRAVEL LANE.

H) DO NOT WORK SIMULTANEOUSLY WITHIN 15 FT ON BOTH SIDES OF AN OPEN TRAVELWAY WITHIN THE SAME LOCATION UNLESS PROTECTED WITH GUARDRAIL OR BARRIER.

TRAFFIC BARRIER

I) INSTALL TEMPORARY BARRIER ACCORDING TO THE TRANSPORTATION MANAGEMENT PLANS A MAXIMUM OF TWO (2) WEEKS PRIOR TO BEGINNING WORK IN ANY LOCATION. ONCE TEMPORARY BARRIER IS INSTALLED AT ANY LOCATION PROCEED IN A CONTINUOUS MANNER TO COMPLETE THE PROPOSED WORK IN THAT LOCATION UNLESS OTHERWISE STATED IN THE TRANSPORTATION MANAGEMENT PLANS OR AS DIRECTED BY THE ENGINEER.

DO NOT PLACE BARRIER DIRECTLY ON ANY SURFACE OTHER THAN ASPHALT OR CONCRETE, WITHOUT APPROVAL BY THE ENGINEER.

ONCE TEMPORARY BARRIER IS INSTALLED AT ANY LOCATION AND NO WORK IS PERFORMED BEHIND THE TEMPORARY BARRIER FOR A PERIOD LONGER THAN TWO (2) MONTHS, REMOVE / RESET TEMPORARY BARRIER AT NO COST TO THE DEPARTMENT UNLESS OTHERWISE STATED IN THE TRANSPORTATION MANAGEMENT PLANS, TEMPORARY BARRIER IS PROTECTING A HAZARD, OR AS DIRECTED BY THE ENGINEER.

INSTALL TEMPORARY BARRIER WITH THE TRAFFIC FLOW BEGINNING WITH THE UPSTREAM SIDE OF TRAFFIC. REMOVE TEMPORARY BARRIER AGAINST THE TRAFFIC FLOW BEGINNING WITH THE DOWNSTREAM SIDE OF TRAFFIC.INSTALL AND SPACE DRUMS NO GREATER THAN TWICE THE POSTED SPEED LIMIT (MPH) TO CLOSE OR KEEP THE SECTION OF THE ROADWAY CLOSED UNTIL THE TEMPORARY BARRIER CAN BE PLACED OR AFTER THE TEMPORARY BARRIER IS REMOVED.

J) PROTECT THE APPROACH END OF MOVABLE/PORTABLE CONCRETE BARRIER AT ALL TIMES DURING THE INSTALLATION AND REMOVAL OF THE BARRIER BY EITHER A TRUCK MOUNTED ATTENUATOR (MAXIMUM 72 HOURS) OR A TEMPORARY CRASH CUSHION.

PROTECT THE APPROACH END OF MOVABLE/PORTABLE CONCRETE BARRIER FROM ONCOMING TRAFFIC AT ALL TIMES BY A TEMPORARY CRASH CUSHION UNLESS THE APPROACH END OF MOVABLE/PORTABLE CONCRETE BARRIER IS OFFSET FROM ONCOMING TRAFFIC AS FOLLOWS OR AS SHOWN IN THE PLANS: (SEE ALSO 1101.05)

POSTED SPEED LIMIT	MINIMUM OFFSET
40 OR LESS	15 FT
45 - 50	20 FT

TRAFFIC CONTROL DEVICES

K) WHEN LANE CLOSURES ARE NOT IN EFFECT SPACE CHANNELIZING DEVICES IN WORK AREAS NO GREATER IN FEET THAN TWICE THE POSTED SPEED LIMIT (MPH) EXCEPT,10 FT ON-CENTER IN RADII, AND 3 FT OFF THE EDGE OF AN OPEN TRAVELWAY. REFER TO STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES SECTIONS 1130 (DRUMS), 1135 (CONES) AND 1180 (SKINNY DRUMS) FOR ADDITIONAL REQUIREMENTS.

LOCAL NOTES

1) TEMPORARY TRAFFIC SIGNALS SHOWN ARE ASSUMED TO BE PORTABLE TEMPORARY TRAFFIC SIGNALS SUPPLIED BY THE CONTRACTOR. PORTABLE TEMPORARY TRAFFIC SIGNALS ARE TO BE SET A MINIMUM OF 2 FEET OUTSIDE OF THE LANE BEING CONTROLLED. THE BOTTOM OF THE SIGNAL HEAD HOUSING SHALL BE A MINIMUM OF 7 FEET ABOVE THE PAVEMENT.

2) THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING A MINIMUM OF ONE (1) MONTH BEFORE THE TEMPORARY TRAFFIC SIGNAL INSTALLATION IS REQUIRED AND 15 DAYS PRIOR TO THE INSTALLATION OF A LANE CLOSURE.

3) PLACE REFLECTIVE DELINEATORS ON TOP OF PORTABLE CONCRETE BARRIER PER NCDOT STD 1170.01 SHEET 5 OF 5 - SPACED AT 25 FOOT INCREMENTS PER NCDOT STD 1261.01.

4) CONTRACTOR SHALL ASSURE THAT THE ANCHORING OF THE PORTABLE CONCRETE BARRIER AND ASSOCIATED CRASH CUSHIONS DOES NOT INTERFERE WITH EXISTING OR PROPOSED UTILITIES.

5) BARRIER SHALL BE ANCHORED WHERE DROPOFFS EXCEED ALLOWABLE DISTANCE, WHERE BARRIER DEFLECTION DOES NOT MEET MINIMUM REQUIREMENTS, OR AS DIRECTED BY THE ENGINEER.

6) ACCESS TO LAKE ADGER ROAD SHALL BE MAINTAINED FOR FIRE & EMERGENCY SERVICES.

7) THE CONTRACTOR SHALL PROVIDE ONE MONTH NOTICE TO ENGINEER, COUNTY EMS AND COUNTY SCHOOL OFFICIALS PRIOR TO ROAD CLOSURES.

8) THE CONTRACTOR SHALL PROVIDE DRIVEWAY ACCESS AT ALL TIMES.

PHASING NOTES

STAGE 1

1. THE CONTRACTOR SHALL PLACE ALL CONSTRUCTION WARNING ("ROAD WORK AHEAD" W20-1, "END ROAD WORK" G20-2A) SIGNS THROUGHOUT THE PROJECT WITHIN THE TIME FRAME REQUIRED IN THE GENERAL NOTES PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITIES, INCLUDING EROSION AND SEDIMENT CONTROL, AND SHALL REMAIN IN PLACE UNTIL CONSTRUCTION IS COMPLETED.

2. INSTALL EROSION CONTROL DEVICES THROUGHOUT THE PROJECT IN ACCORDANCE WITH THE APPROVED EROSION CONTROL PLANS, CLEARING ONLY THE AREA NECESSARY TO INSTALL THE DEVICES.

3. USING APPLICABLE SHEETS FROM NCDOT STD. 1101.02 CONSTRUCT TEMPORARY AGGREGATE BASE COURSE FOR STAGE 2 - PHASE 1.

STAGE 2
PHASE 1

1. CONTRACTOR SHALL PLACE ALL WORK ZONE RELATED SIGNS, BARRIERS/ANCHORED BARRICADES,DRUMS, AND TEMPORARY PAVEMENT NECESSARY TO MAINTAIN TRAFFIC DURING CONSTRUCTION OF THIS PHASE AS DEPICTED ON SHEET TMP-3. INSTALL TEMPORARY SIGNALIZATION TO MAINTAIN A SINGLE LANE OF TRAFFIC FOR BOTH DIRECTIONS OF TRAFFIC WITH ALTERNATING OPERATION ON THE NORTH SIDE OF THE EXISTING BRIDGE #440314. USE APPLICABLE SHEETS FROM NCDOT STD 1101.02. REMOVE ANY CONFLICTING SIGNS BEFORE SHIFTING TRAFFIC TO A NEW PATTERN.

2. INSTALL SLOPE PROTECTION OR TEMPORARY SHORING AS REQUIRED.

3. CONSTRUCT ANY DRAINAGE FEATURES NECESSARY TO MAINTAIN POSITIVE FLOW DURING CONSTRUCTION.

4. CONSTRUCT THE SOUTHSIDE OF THE PROPOSED CULVERT AND PROPOSED ROADWAY TO THE GREATEST EXTENT POSSIBLE. USE SLOPE PROTECTION OR TEMPORARY SHORING AS NECESSARY BETWEEN THE EXISTING ROAD & PROPOSED CONSTRUCTION.

5. CONSTRUCT PROPOSED AND TEMPORARY AGGREGATE BASE COURSE REQUIRED FOR STAGE 2 - PHASE 2.

STAGE 2
PHASE 2 - STEP 1

1. CONTRACTOR SHALL PLACE ALL WORK ZONE RELATED SIGNS, BARRIERS/ANCHORED BARRICADES, DRUMS, AND TEMPORARY PAVEMENT NECESSARY TO MAINTAIN TRAFFIC DURING CONSTRUCTION OF THIS PHASE AS DEPICTED ON SHEET TMP-4. ADJUST TEMPORARY SIGNALIZATION TO MAINTAIN A SINGLE LANE OF TRAFFIC ON THE SOUTHSIDE OF THE NEWLY CONSTRUCTED CULVERT FOR BOTH DIRECTIONS OF TRAFFIC WITH ALTERNATING OPERATION. USE APPLICABLE SHEETS FROM NCDOT STD 1101.02. REMOVE ANY CONFLICTING SIGNS BEFORE SHIFTING TRAFFIC TO A NEW PATTERN.

2. CONSTRUCT ANY DRAINAGE FEATURES NECESSARY TO MAINTAIN POSITIVE FLOW DURING CONSTRUCTION.

3. CONSTRUCT THE NORTHSIDE OF THE PROPOSED CULVERT, PROPOSED DRAINAGE FEATURES, PROPOSED GRADING AND PROPOSED ROADWAY TO THE GREATEST EXTENT POSSIBLE. USE SLOPE PROTECTION OR TEMPORARY SHORING AS NECESSARY BETWEEN THE EXISTING ROAD & PROPOSED CONSTRUCTION.

4. OPEN ROADWAY TO TWO-LANE, TWO-WAY TRAFFIC OPERATION, UTILIZING TEMPORARY DRUMS AS REQUIRED.

PHASE 2 - STEP 2

1. CONSTRUCT ANY REMAINING AGGREGATE BASE COURSE NOT COMPLETED IN PHASE 1 OR PHASE 2 USING FLAGGING OPERATIONS AS NECESSARY, MAINTAINING ONE LANE OF TRAFFIC IN EACH DIRECTION USING APPLICABLE SHEETS FROM NCDOT STD 1101.02.

2. REMOVE AND REUSE REMAINING TEMPORARY PAVEMENT ON FINAL ROADWAY PAVEMENT SECTON.

3. CONSTRUCT PROPOSED DRAINAGE AND PROPOSED GRADING ON THE SOUTHSIDE.

STAGE 3

1. CONTRACTOR SHALL PLACE ALL WORK ZONE RELATED SIGNS, BARRICADES AND DRUMS NECESSARY TO MAINTAIN TRAFFIC DURING CONSTRUCTION OF THIS PHASE. MAINTAIN ONE LANE OF TRAFFIC IN EACH DIRECTION USING APPLICABLE SHEETS FROM NCDOT STD 1101.02.

2. SEED AND MULCH ALL AREAS DISTURBED AS A RESULT OF THIS CONSTRUCTION.

3. REMOVE ALL EQUIPMENT, TEMPORARY TRAFFIC CONTROL MEASURES, AND ROAD WORK SIGNAGE AND OPEN THE PROJECT TO ALL TRAFFIC.

APPROVED: DocuSigned by: Allison C. Johnson DATE: 6/7/2017

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

8/17/99

5/30/2017
12:13:01 pm
mbrown

CP\B440314_TC_TMP_1B.dgn

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.44	TMP-2
HENDERSON COUNTY CULVERT #440314	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

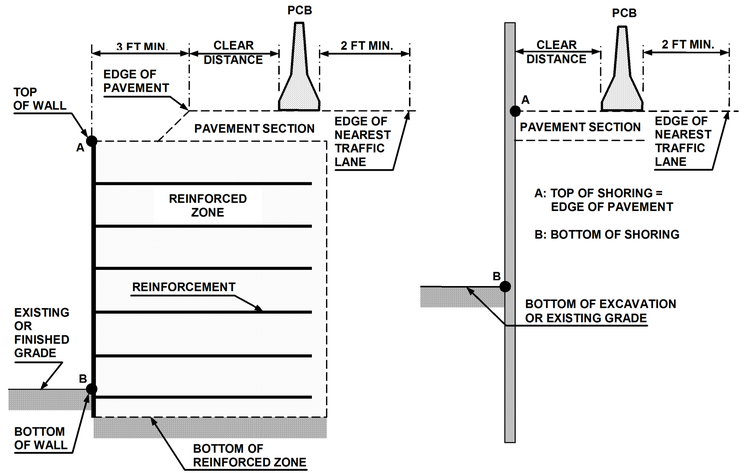


FIGURE A

NOTES

1- REFER TO THE TRAFFIC CONTROL PLANS FOR TEMPORARY SHORING LOCATIONS AND NOTES.

2- REFER TO THE "TEMPORARY SHORING" PROJECT SPECIAL PROVISION FOR INFORMATION ABOUT TEMPORARY SHORING AND PORTABLE CONCRETE BARRIER (PCB).

3- PCB IS REQUIRED IF TEMPORARY SHORING IS LOCATED WITHIN THE CLEAR ZONE IN ACCORDANCE WITH THE AASHTO ROADSIDE DESIGN GUIDE. DO NOT PLACE BARRIER DIRECTLY ON ANY SURFACE OTHER THAN ASPHALT OR CONCRETE. (CONTACT NCDOT PAVEMENT MANAGEMENT UNIT FOR APPLICABLE PAVEMENT DESIGN).

4- BASED ON THE CLEAR DISTANCE, OFFSET, DESIGN SPEED AND PAVEMENT TYPE, CHOOSE AN UNANCHORED OR ANCHORED PCB FROM THE TABLE SHOWN IN FIGURE B. CLEAR DISTANCE IS DEFINED AS SHOWN IN FIGURE A AND OFFSET IS DEFINED AS SHOWN IN FIGURE B.

5- AT THE CONTRACTOR'S OPTION OR IF THE MINIMUM REQUIRED CLEAR DISTANCE IS NOT AVAILABLE, SET PCB NEXT TO AND UP AGAINST THE TRAFFIC SIDE OF THE TEMPORARY SHORING EXCEPT FOR BARRIER ABOVE TEMPORARY WALLS. PCB WITH THE MINIMUM REQUIRED CLEAR DISTANCE IS REQUIRED ABOVE TEMPORARY WALLS.

6- USE NCDOT PORTABLE CONCRETE BARRIER (PCB) IN ACCORDANCE WITH ROADWAY STANDARD DRAWING NO. 1170.01 AND SECTION 1170 OF THE STANDARD SPECIFICATIONS.

7- PCB REQUIREMENTS FOR TEMPORARY WALLS APPLY TO TEMPORARY MECHANICALLY STABILIZED EARTH (MSE) WALLS AND TEMPORARY SOIL NAIL WALLS.

8- SET PCB WITH A MINIMUM HORIZONTAL DISTANCE OF 2 FT BETWEEN THE FRONT FACE OF THE BARRIER AND THE EDGE OF THE NEAREST TRAFFIC LANE AS SHOWN IN FIGURE A UNLESS OTHERWISE SHOWN IN THE PLANS AND OR AS APPROVED BY THE ENGINEER.

9- FOR PCB ABOVE AND BEHIND TEMPORARY WALLS, PROVIDE A MINIMUM DISTANCE OF 3 FT BETWEEN THE EDGE OF PAVEMENT AND THE WALL FACE AS SHOWN IN FIGURE A. IF THESE MINIMUM REQUIRED DISTANCES ARE NOT AVAILABLE, CONTACT THE ENGINEER.

10- TABLE SHOWN IN FIGURE B IS BASED ON NCDOT RESEARCH PROJECT NO. 2005-010 WITH VEHICLE TYPE USED FOR NCHRP 350 CRASH TESTS. BARRIER DEFLECTIONS AND RESULTING MINIMUM REQUIRED CLEAR DISTANCES MIGHT VARY SIGNIFICANTLY FOR LARGER HEAVIER VEHICLES, RUNS OF BARRIER LESS THAN 200 FT IN LENGTH AND WET OR DRY PAVEMENT.

11- SHORING SHALL NOT BE PLACED IN THE STREAM.

MINIMUM REQUIRED CLEAR DISTANCE, inches

Barrier Type	Pavement Type	Offset * ft	Design Speed, mph <30	31-40	41-50	51-60	61-70	71-80
Unanchored PCB	Asphalt	<8	24	26	29	32	36	40
		8-14	26	28	31	35	38	42
		14-20	27	29	34	36	39	43
		20-26	28	31	35	38	40	44
		26-32	29	32	36	39	42	45
		32-38	30	34	38	41	43	46
		38-44	31	34	41	43	45	48
		44-50	31	35	41	43	46	49
		50-56	32	36	42	44	47	50
		>56	32	36	42	45	47	51
	Concrete	<8	17	18	21	22	25	26
		8-14	19	20	23	25	26	29
		14-20	22	22	24	26	28	31
		20-26	23	24	26	27	30	34
		26-32	24	25	27	28	32	35
		32-38	24	26	27	30	33	36
		38-44	25	26	28	30	34	37
		44-50	26	26	28	32	35	37
		50-56	26	26	28	32	35	38
		>56	26	27	29	32	36	38
Anchored PCB	Asphalt	All Offsets	24 for All Design Speeds					
Anchored PCB	Concrete (including bridge approach slabs)	All Offsets	12 for All Design Speeds					

* See Figure Below

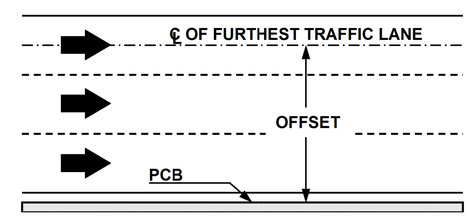


FIGURE B

APPROVED: DocuSigned by: Allison C. Johnson DATE: 6/7/2017

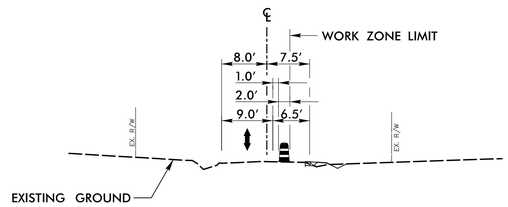
SEAL

NORTH CAROLINA PROFESSIONAL SEAL 15424 ENGINEER ALLISON C. JOHNSON

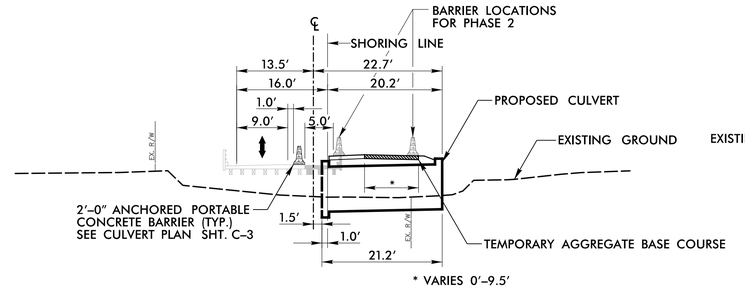
DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION WORK ZONE TRAFFIC CONTROL

PORTABLE CONCRETE BARRIER AT TEMPORARY SHORING LOCATIONS

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.44	TMP-3
HENDERSON COUNTY CULVERT #440314	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

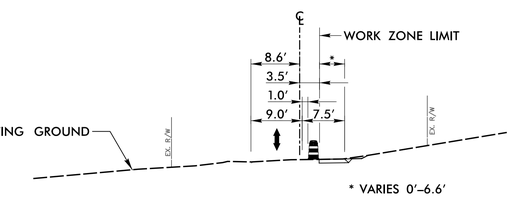


SECTION A–A

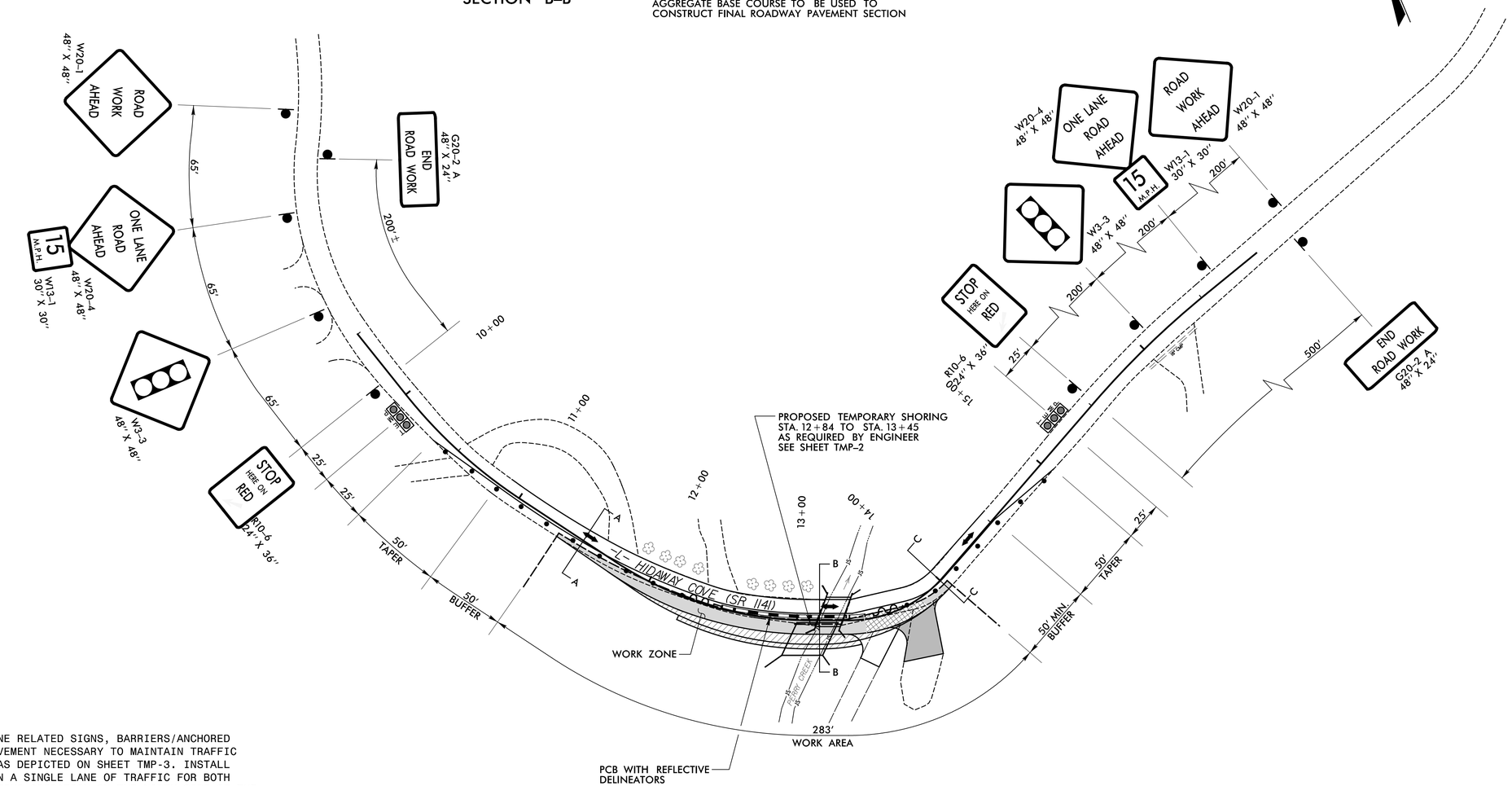


SECTION B–B

NOTE:
AGGREGATE BASE COURSE TO BE USED TO CONSTRUCT FINAL ROADWAY PAVEMENT SECTION



SECTION C–C



PHASING NOTES

STAGE 2
PHASE 1

1. CONTRACTOR SHALL PLACE ALL WORK ZONE RELATED SIGNS, BARRIERS/ANCHORED BARRICADES,DRUMS, AND TEMPORARY PAVEMENT NECESSARY TO MAINTAIN TRAFFIC DURING CONSTRUCTION OF THIS PHASE AS DEPICTED ON SHEET TMP-3. INSTALL TEMPORARY SIGNALIZATION TO MAINTAIN A SINGLE LANE OF TRAFFIC FOR BOTH DIRECTIONS OF TRAFFIC WITH ALTERNATING OPERATION ON THE NORTH SIDE OF THE EXISTING BRIDGE #440314. USE APPLICABLE SHEETS FROM NCDOT STD 1101.02. REMOVE ANY CONFLICTING SIGNS BEFORE SHIFTING TRAFFIC TO A NEW PATTERN.

2. INSTALL SLOPE PROTECTION OR TEMPORARY SHORING AS REQUIRED.

3. CONSTRUCT ANY DRAINAGE FEATURES NECESSARY TO MAINTAIN POSITIVE FLOW DURING CONSTRUCTION.

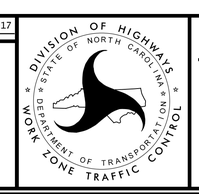
4. CONSTRUCT THE SOUTHSIDE OF THE PROPOSED CULVERT AND PROPOSED ROADWAY TO THE GREATEST EXTENT POSSIBLE. USE SLOPE PROTECTION OR TEMPORARY SHORING AS NECESSARY BETWEEN THE EXISTING ROAD & PROPOSED CONSTRUCTION.

5. CONSTRUCT PROPOSED AND TEMPORARY AGGREGATE BASE COURSE REQUIRED FOR STAGE 2 - PHASE 2.

40 20 0 40 80
Scale 1" = 40'

APPROVED DocuSigned by: Allison C. Johnson DATE: 6/7/2017
ENGINEER

SEAL



TRAFFIC MANAGEMENT PLAN

PHASE 1

8/17/99

5/30/2017
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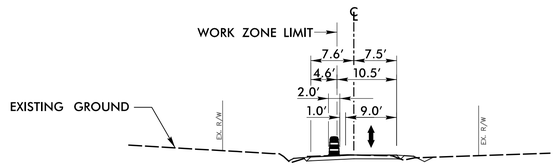
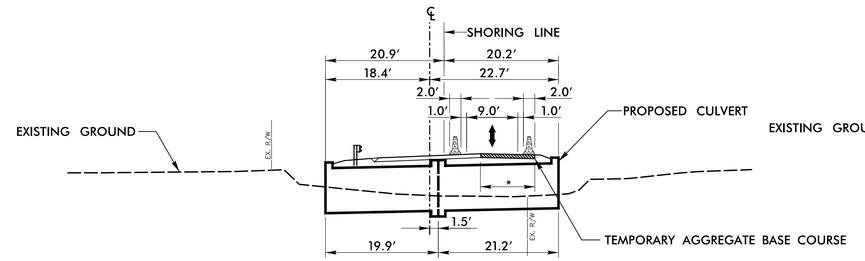
PDL_Lab_Color

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.44	TMP–4
HENDERSON COUNTY CULVERT #440314	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

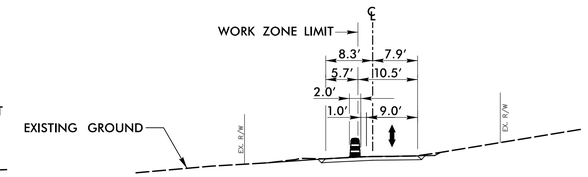


SECTION A–A



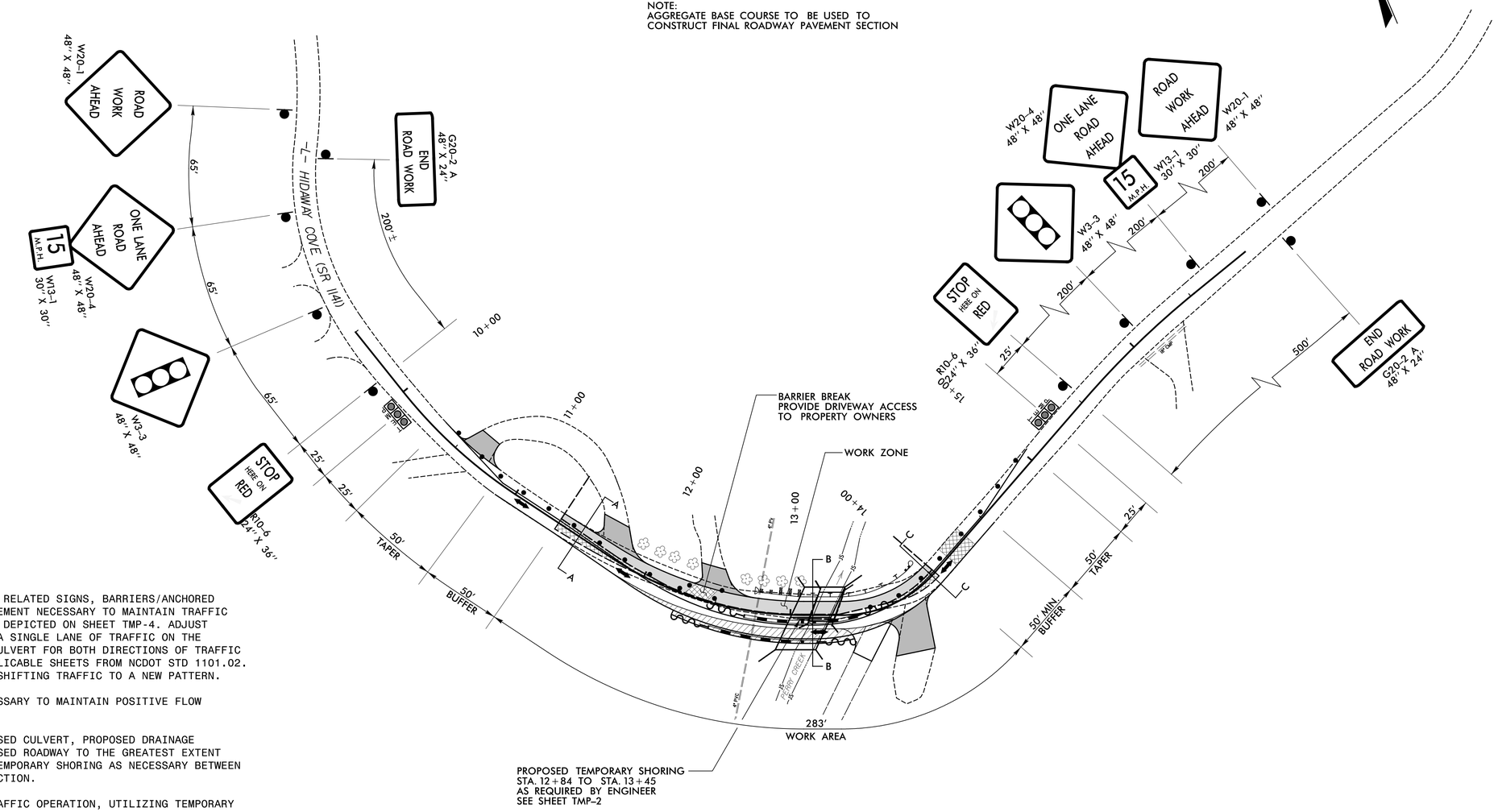
* VARIES 0′–9.6′

SECTION B–B



SECTION C–C

NOTE:
AGGREGATE BASE COURSE TO BE USED TO CONSTRUCT FINAL ROADWAY PAVEMENT SECTION



PHASING NOTES

STAGE 2
PHASE 2 - STEP 1

1. CONTRACTOR SHALL PLACE ALL WORK ZONE RELATED SIGNS, BARRIERS/ANCHORED BARRICADES, DRUMS, AND TEMPORARY PAVEMENT NECESSARY TO MAINTAIN TRAFFIC DURING CONSTRUCTION OF THIS PHASE AS DEPICTED ON SHEET TMP-4. ADJUST TEMPORARY SIGNALIZATION TO MAINTAIN A SINGLE LANE OF TRAFFIC ON THE SOUTHSIDE OF THE NEWLY CONSTRUCTED CULVERT FOR BOTH DIRECTIONS OF TRAFFIC WITH ALTERNATING OPERATION. USE APPLICABLE SHEETS FROM NCDOT STD 1101.02. REMOVE ANY CONFLICTING SIGNS BEFORE SHIFTING TRAFFIC TO A NEW PATTERN.

2. CONSTRUCT ANY DRAINAGE FEATURES NECESSARY TO MAINTAIN POSITIVE FLOW DURING CONSTRUCTION.

3. CONSTRUCT THE NORTHSIDE OF THE PROPOSED CULVERT, PROPOSED DRAINAGE FEATURES, PROPOSED GRADING AND PROPOSED ROADWAY TO THE GREATEST EXTENT POSSIBLE. USE SLOPE PROTECTION OR TEMPORARY SHORING AS NECESSARY BETWEEN THE EXISTING ROAD & PROPOSED CONSTRUCTION.

4. OPEN ROADWAY TO TWO-LANE, TWO-WAY TRAFFIC OPERATION, UTILIZING TEMPORARY DRUMS AS REQUIRED.

PHASE 2 - STEP 2

1. CONSTRUCT ANY REMAINING AGGREGATE BASE COURSE NOT COMPLETED IN PHASE 1 OR PHASE 2 USING FLAGGING OPERATIONS AS NECESSARY, MAINTAINING ONE LANE OF TRAFFIC IN EACH DIRECTION USING APPLICABLE SHEETS FROM NCDOT STD 1101.02.

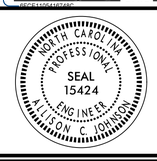
2. REMOVE AND REUSE REMAINING TEMPORARY PAVEMENT ON FINAL ROADWAY PAVEMENT SECTON.

3. CONSTRUCT PROPOSED DRAINAGE AND PROPOSED GRADING ON THE SOUTHSIDE.

40 20 0 40 80
Scale 1″ = 40′

APPROVED: DocuSigned by: Allison C. Johnson DOCUSIGNED BY: DATE: 6/7/2017

SEAL



TRAFFIC MANAGEMENT PLAN

PHASE 2

8/17/99
5/30/2017
pablo.lopez@fleming02.corporate.gannettfleming.com\GFPW02\Documents\Projects\57719\440314\Traffic\TrafficControl\TCP\B440314_TC_TMP_4.dgn

PROJECT: 17BP.14.R.44

CONTRACT: DN00268

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

HENDERSON COUNTY

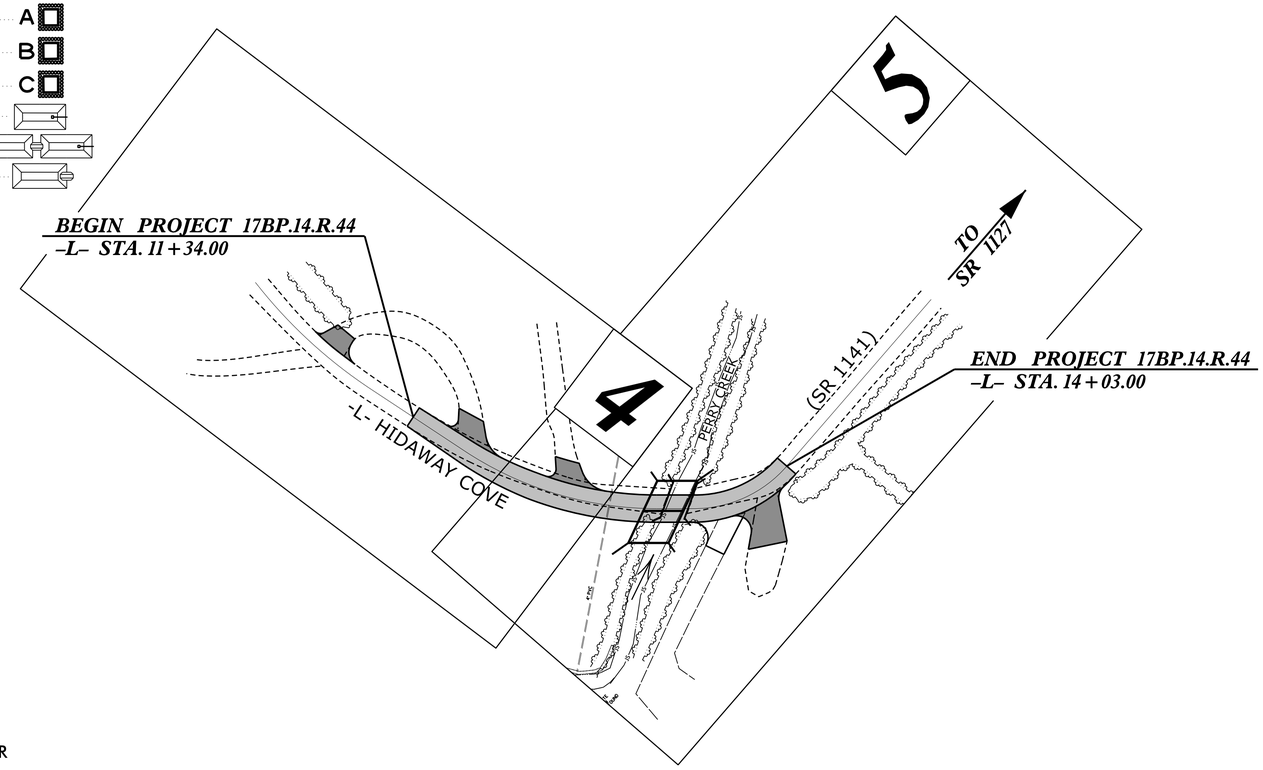
LOCATION: ***BRIDGE #440314 OVER PERRY CREEK ON SR 1141 (HIDAWAY COVE)***

TYPE OF WORK: ***PAVING, GRADING, DRAINAGE & CULVERT***

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.14.R.44	1	
HENDERSON COUNTY	CULVERT #440314		

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
17BP.14.R.44		PE
17BP.14.R.44		RW & UTILITIES
17BP.14.R.44		CONST

NAD 83/NSRS 2007



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

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 3, 2011 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:
JUNE 3, 2015

LETTING DATE:
TBD

PAUL CAMERON, PE
PROJECT ENGINEER
LEVEL III CERTIFICATION
NUMBER 3624

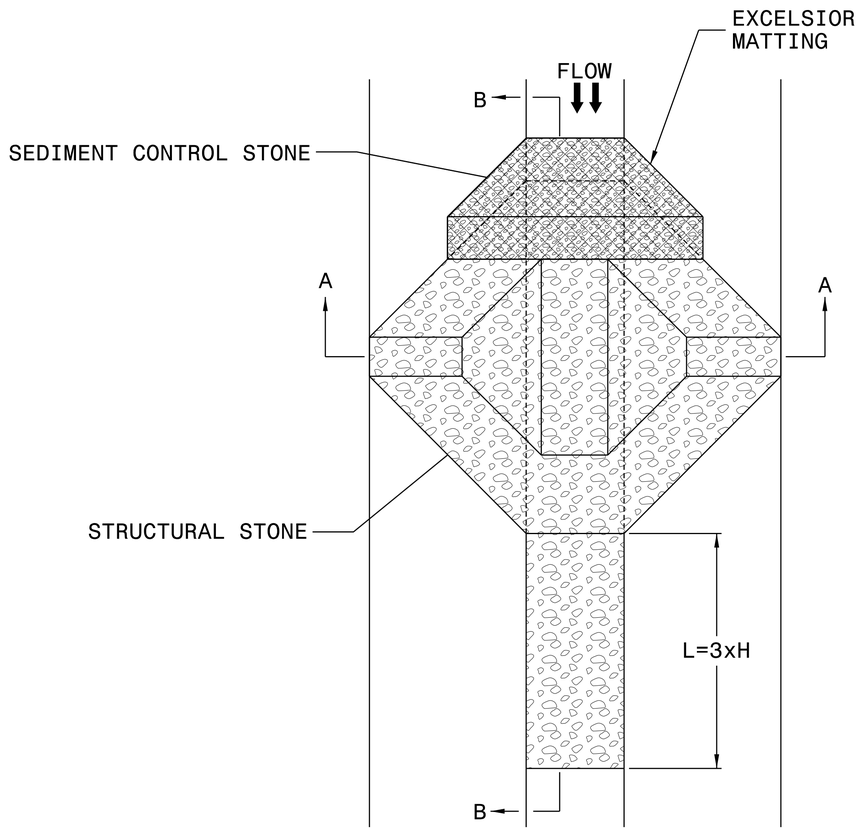
Roadway Standard Drawings

The following roadway english standards as appear in "Roadway Standard Drawings"– Roadway Design Unit – N. C. Department of Transportation – Raleigh, N. C., dated January 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		

PROJECT REFERENCE NO.	SHEET NO.
17BPJ4.R.44	EC-2
R/W SHEET NO.	

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



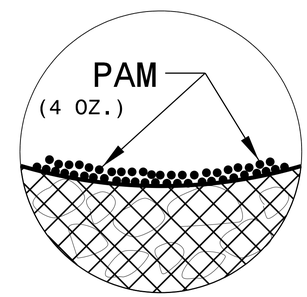
PLAN

NOTES

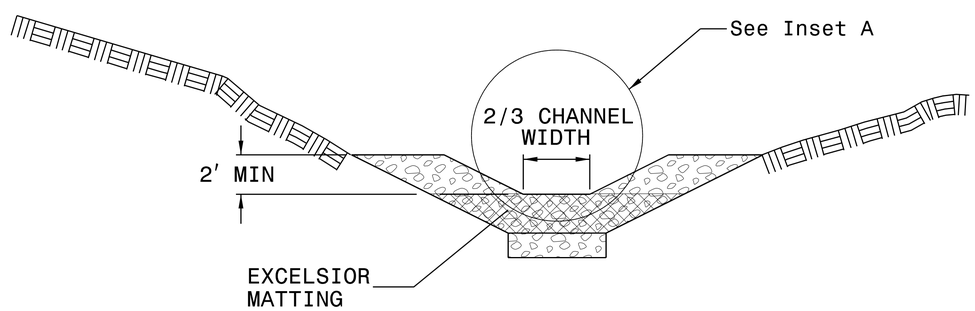
USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

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

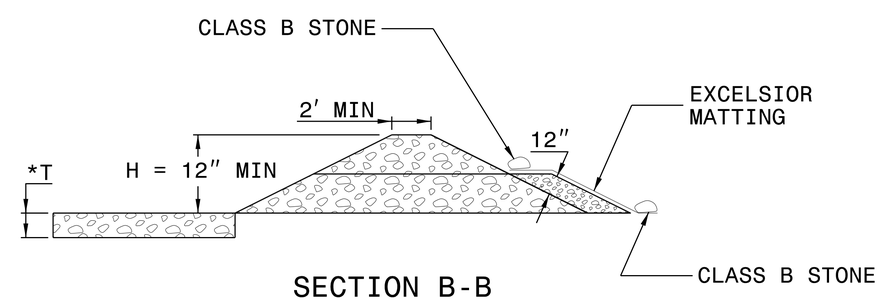
INITIALLY APPLY 4 OUNCES OF POLYACRYLAMIDE (PAM) TO TOP OF MATTING SECTION AND AFTER EVERY RAINFALL EVENT THAT EQUALS OR EXCEEDS 0.50 INCHES.



INSET A



SECTION A-A



SECTION B-B

*T = 12" MIN., 18" MAX.

NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.44	EC-2A
HENDERSON COUNTY CULVERT #440314	

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

17BP.14.R.44
CULVERT CONSTRUCTION SEQUENCE

PHASE 1A

1. PLACE SPECIAL STILING BASIN IN DESIRED LOCATION

2. INSTALL TEMPORARY 54" CSP (BURIED 1') AND TEMPORARY DITCHES FOR DURATION OF CULVERT INSTALLATION

PHASE 1B

1. DIVERT STREAM FLOW TO TEMPORARY PIPE AND DITCHES WITH TEMPORARY IMPERVIOUS DIKE (CONSTRUCTED OF SAND BAGS) AT BOTH UPSTREAM AND DOWNSTREAM OF CULVERT INSTALLATION.

2. PUMP ANY IMPOUNDED FLOW TO SPECIAL STILLING BASIN

PHASE 2

1. CONSTRUCT PHASE 1 TRAFFIC CONTROL APPROACHES, PLACE TEMPORARY SHORING AND INSTALL PHASE 1 TRAFFIC CONTROL DEVICES (SEE TMP-4)

2. REMOVE EXISTING BRIDGE AS NEEDED FOR PHASE 1 OF CONSTRUCTION

3. INSTALL SOUTHERN 21.2' OF BOTH RCBC BARRELS AS DIRECTED BY TMP-4 AND INSTALL FLOODPLAIN BENCH ON WEST BARREL AND CLASS 1 RIP RAP ON BANKS

PHASE 3

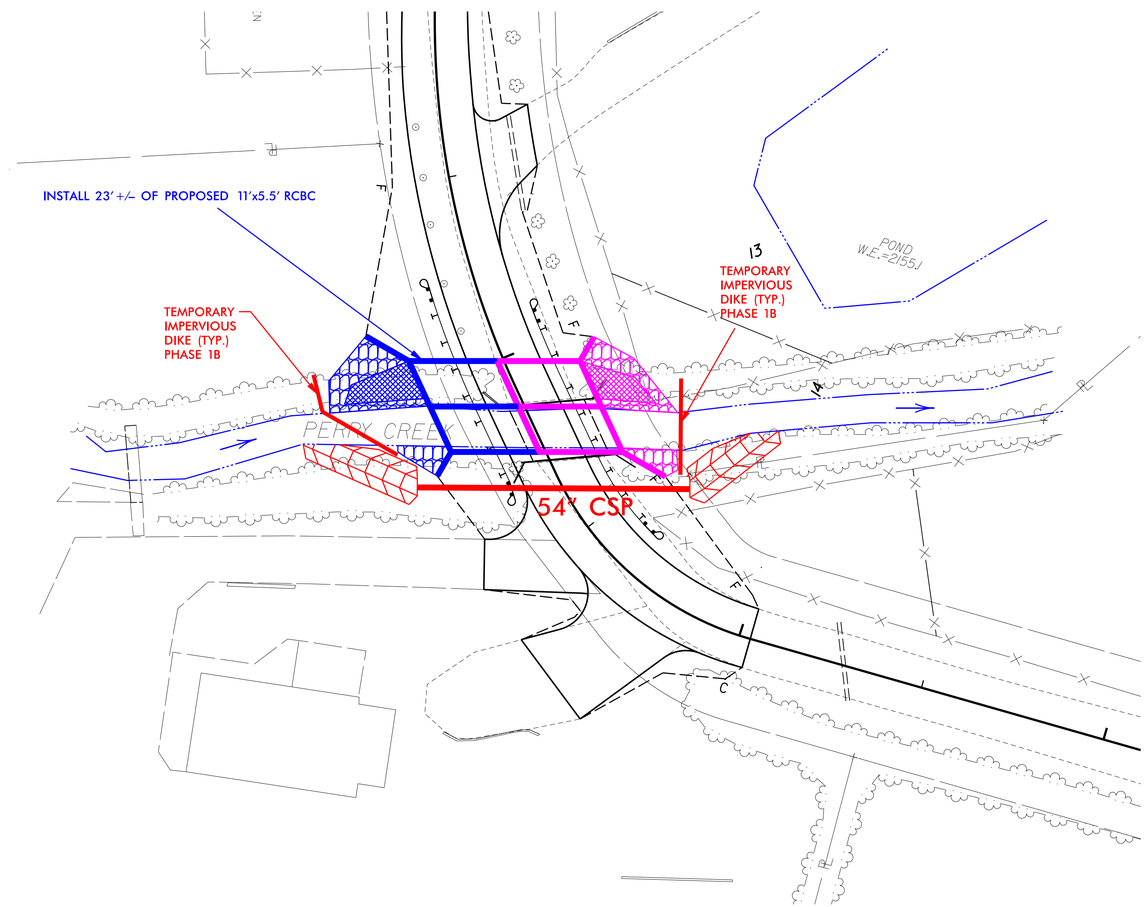
1. SWITCH TO PHASE 2 OF TRAFFIC CONTROL PLAN (SEE TMP-5)

2 INSTALL PHASE 2 ROADWAY APPROACHES AND INSTALL PHASE 2 TRAFFIC CONTROL DEVICES (SEE TMP-5)

3. REMOVE EXISTING BRIDGE AND CONSTRUCT REMAINING PORTION OF RCBC AND FLOODPLAIN BENCH FOR OVERFLOW BARREL (WESTERN BARREL) W/ CLASS 1 RIP RAP ON BANKS AS SHOWN

4. REMOVE TEMPORARY DIKES TO SHIFT FLOW BACK TO MAIN CHANNEL

5. REMOVE 54" TEMPORARY PIPE, STILLING BASIN, AND FILL IN TEMPORARY DITCHES.



REVISIONS

8/17/99

6/29/2016
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PROJECT REFERENCE NO.	SHEET NO.
I7BPJ4.R.44	EC-3

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

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION SUMMARY SHEET

EXCELSIOR MATTING FOR EROSION CONTROL

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
4	L	11+20	12+00	RT	60
4	L	12+00	12+25	RT	15
5	L	13+50	14+23	LT	75
5	L	14+31	14+50	RT	20
				SUBTOTAL	170
MISCELLANEOUS MATTING TO BE INSTALLED AS DIRECTED BY THE ENGINEER					1610
				TOTAL	1780
				SAY	1780

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

SOIL STABILIZATION TIME FRAMES

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

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.44	EC-4/CONST. 4
HENDERSON COUNTY CULVERT #440314	
R/W SHEET NO.	

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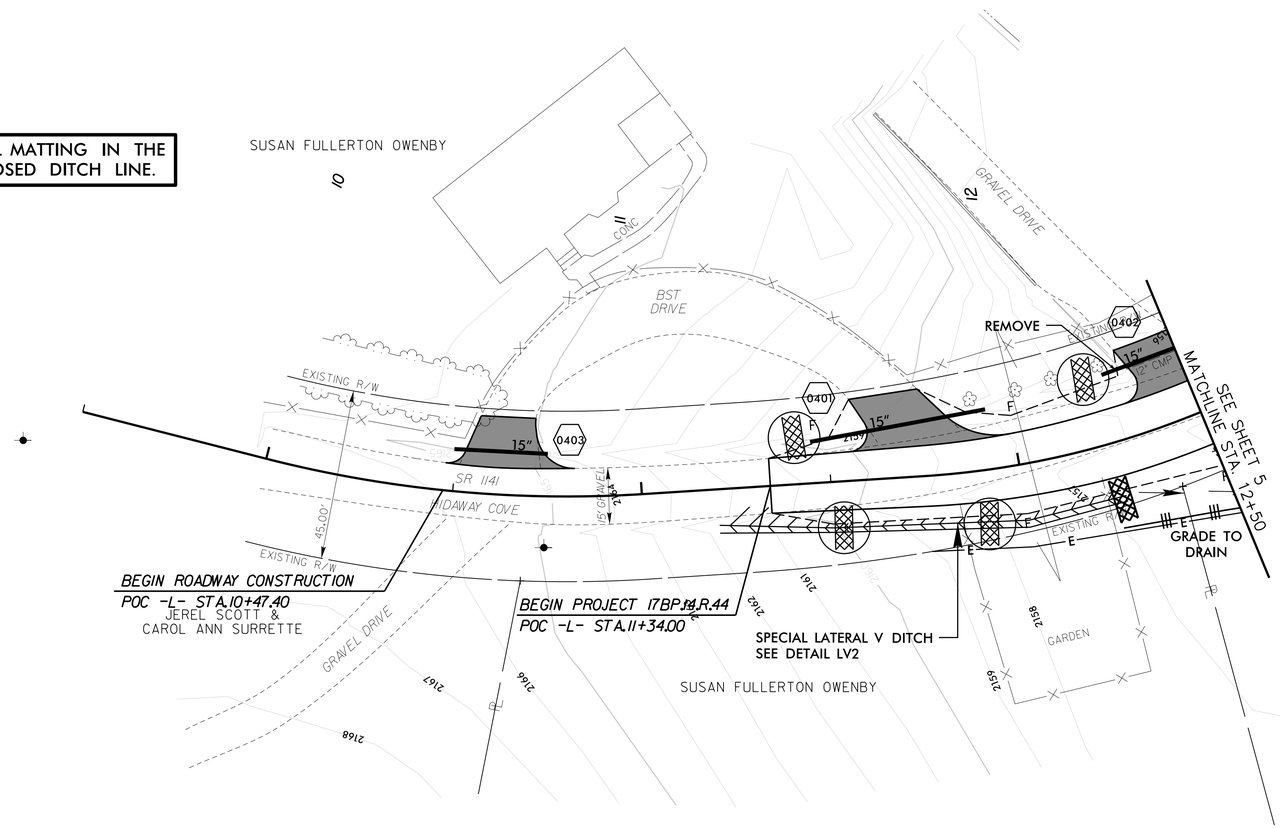
NAD 83/NSRS 2007

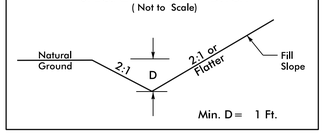
INSTALL MATTING IN THE PROPOSED DITCH LINE.



DETAIL LV2

SPECIAL LATERAL 'V' DITCH

(Not to Scale)



FROM -L- STA. 11+20 RT TO STA. 12+25 RT

REVISIONS

4:06:09 PM

8/22/2017
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PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.44	EC-5/CONST. 5
HENDERSON COUNTY CULVERT #440314	
R/W SHEET NO.	

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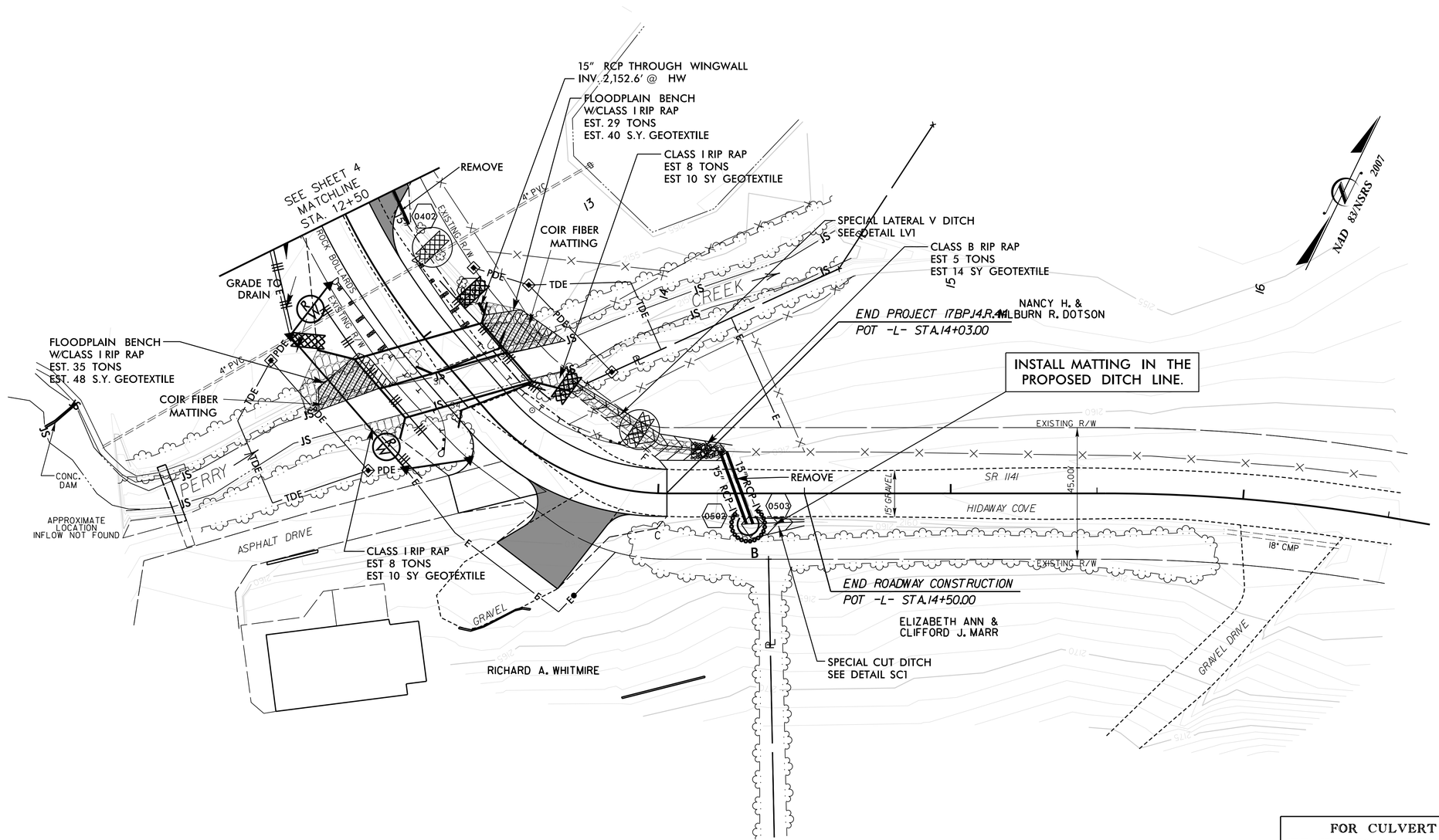
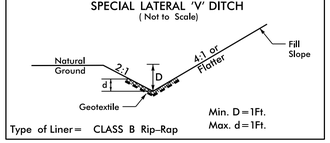


FOR CULVERT
SEE SHEETS C-1 THRU C-10

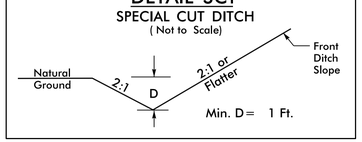
DETAIL LV1
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



Type of Liner = CLASS B Rip-Rap

FROM -L- STA. 13+50 LT TO STA. 14+23 LT

DETAIL SC1
SPECIAL CUT DITCH
(Not to Scale)



FROM -L- STA. 14+31 RT TO STA. 14+50 RT

REVISIONS

8/17/99

6/12/2017
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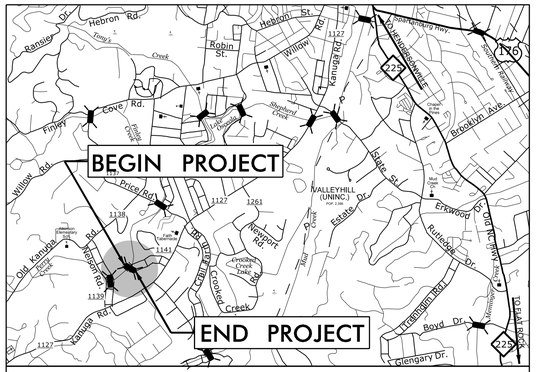
PROJECT: 17BP.14.R.44

CONTRACT: DN00268

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



VICINITY MAP

N.T.S.

FINAL PLANS

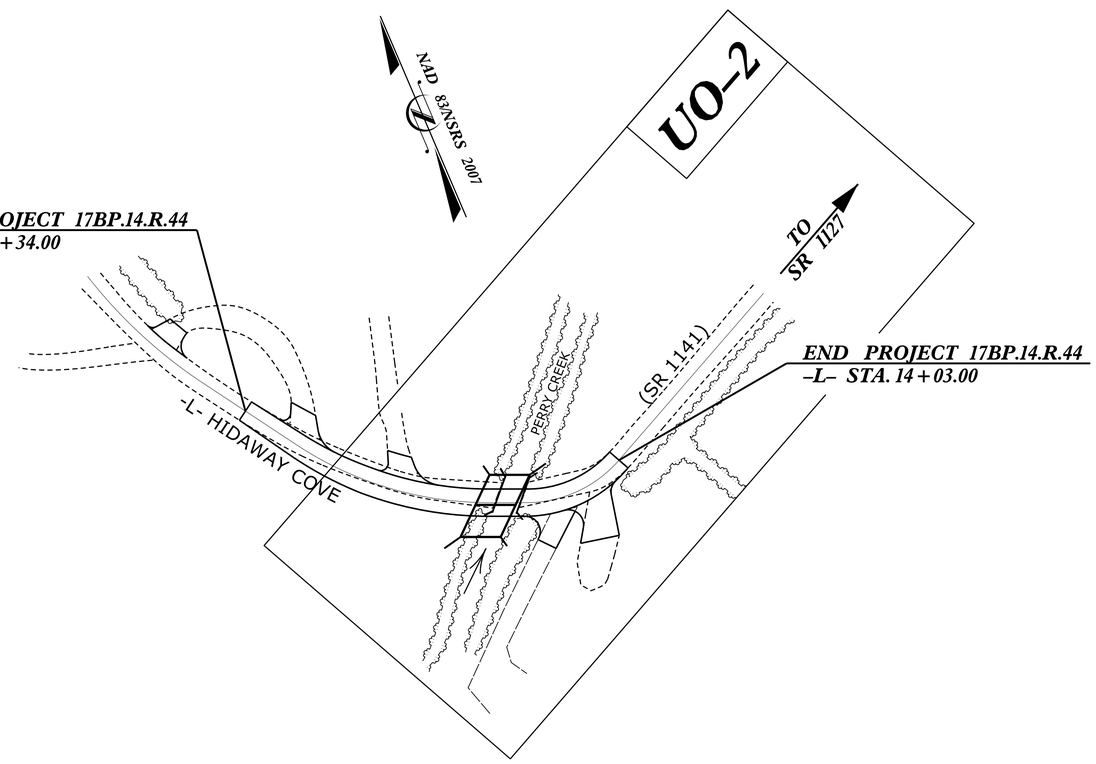
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

T.I.P. NO.	SHEET NO.
17BP.14.R.44	UO–1

UTILITIES BY OTHERS PLANS
HENDERSON COUNTY

LOCATION: BRIDGE NO. 440314 OVER PERRY CREEK ON SR 1141 (HIDAWAY COVE)

TYPE OF WORK: UTILITY BY OTHERS RELOCATION



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–2	PLAN SHEET

UTILITY OWNERS ON PROJECT

(1) POWER – DUKE ENERGY

(2) PHONE – AT&T

UTILITY DESIGN BY:
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

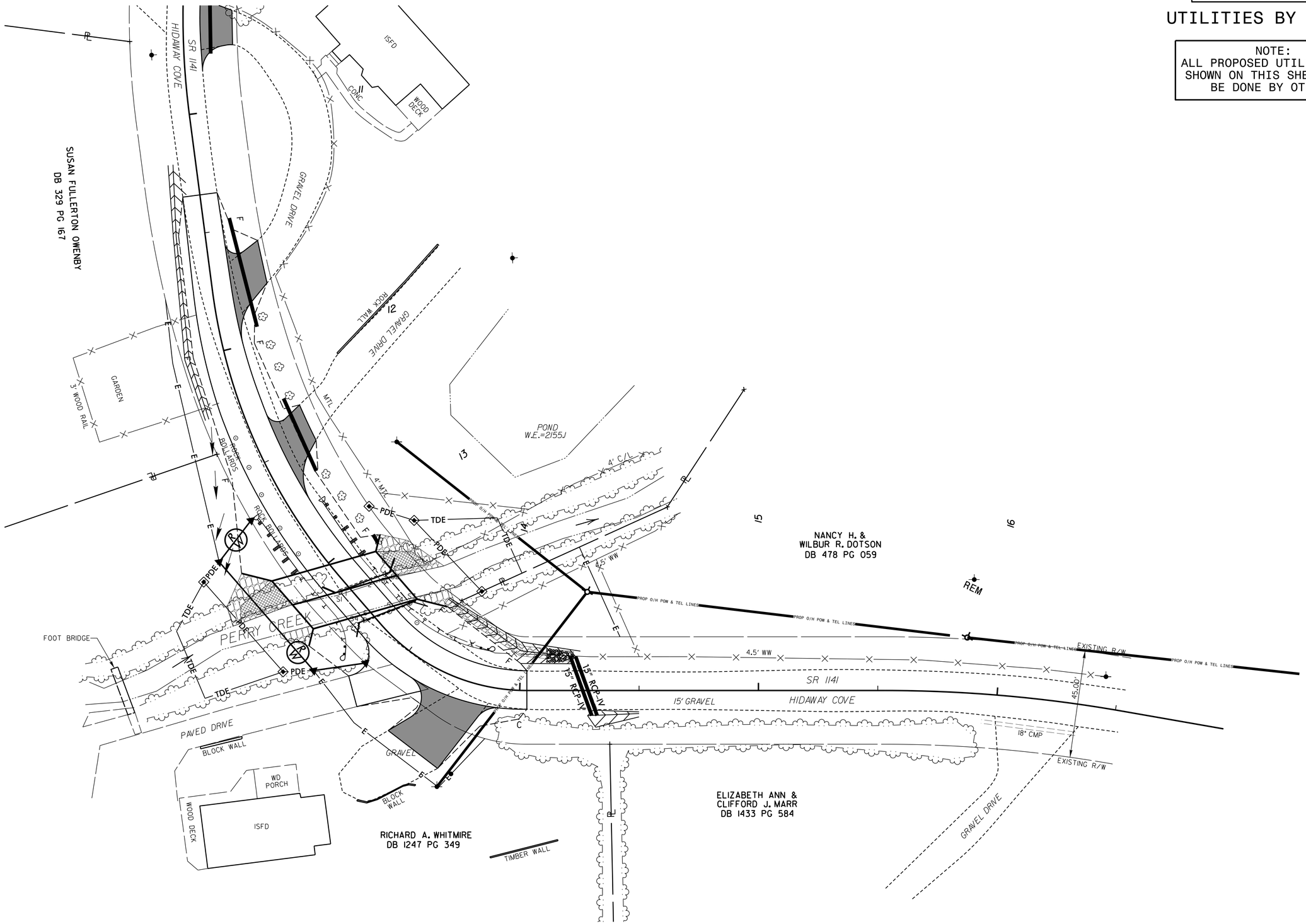
NCDOT PROJECT ENGINEER:
JOSH DEYTON, P.E.

PREPARED FOR:
NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION BRIDGE PROGRAM

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.44	UO-02

UTILITIES BY OTHERS

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



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