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

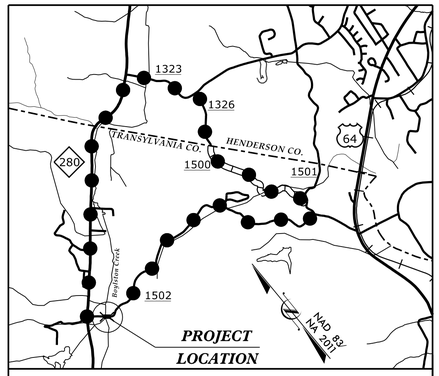
The documents contained herein were originally issued and sealed by the individuals whose names and license numbers appear on each page, on the dates appearing with their signature on that page.
This file or an individual page shall not be considered a certified document.

DocuSign Envelope ID: A4D6DE60-CEA3-4D07-BAB5-6EA3425318A3

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.14.R.127	1	

STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
17BP.14.R.127	N/A	PE
17BP.14.R.127	N/A	ROW, UTL
17BP.14.R.127	N/A	CONST.

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



DETOUR

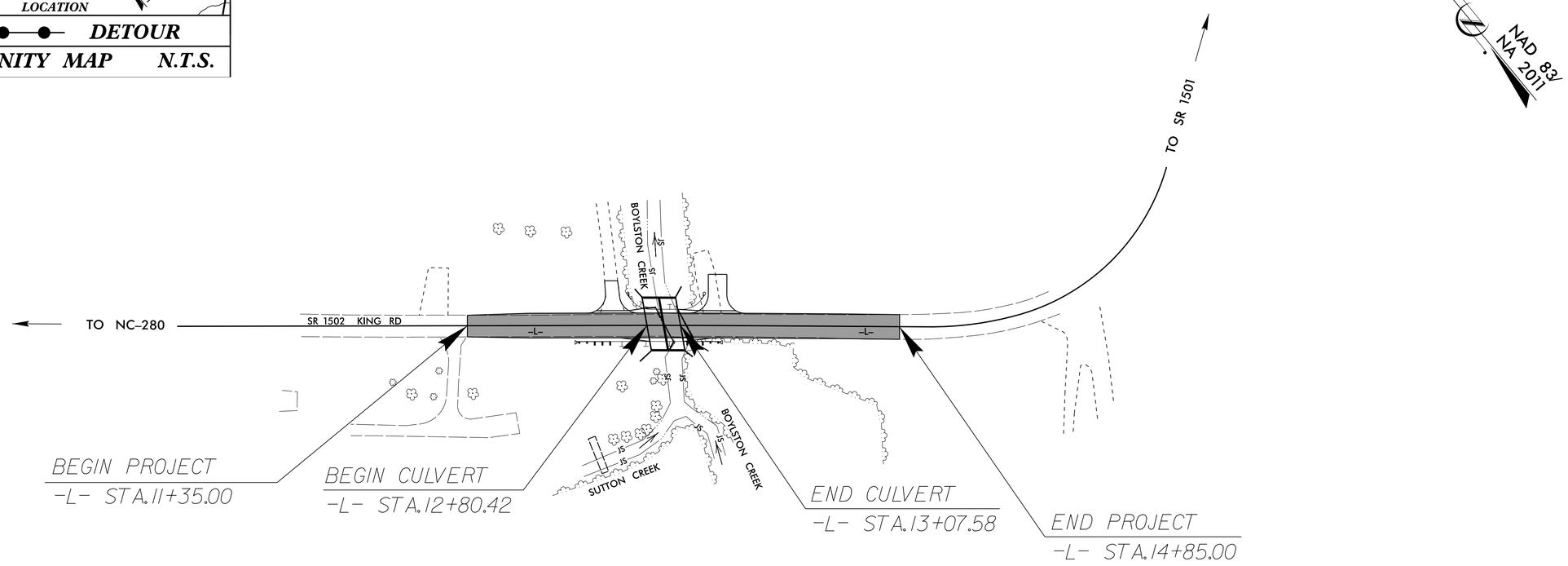
VICINITY MAP N.T.S.

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSYLVANIA COUNTY

LOCATION: BRIDGE #106 ON SR 1502 (KING ROAD) OVER BOYLSTON CREEK

TYPE OF WORK: GRADING, DRAINAGE, PAVING AND CULVERT



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES

50 25 0 50 100 — PLANS

50 25 0 50 100 — PROFILE (HORIZONTAL)

10 5 0 10 20 — PROFILE (VERTICAL)

DESIGN DATA

ADT 2011 = 600

T = 6 %
V = 35 MPH

FUNC CLASS =
MINOR COLLECTOR
SUBREGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY = 0.061 MILES
LENGTH STRUCTURE = 0.005 MILES
TOTAL LENGTH = 0.066 MILES

PLANS PREPARED BY:
RS&H
1520 SOUTH BOULEVARD, SUITE 200
CHARLOTTE, NC 28203
704-752-0610

FOR THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
JULY 31, 2014

LETTING DATE:
2015

JENNIFER FARINO, PE
PROJECT ENGINEER

DREW MORROW, PE
PROJECT DESIGN ENGINEER

JOSH DEYTON, PE
NCDOT CONTACT

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 036188 ENGINEER
5/9/2017
P.E.
SIGNATURE:

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 039222 ENGINEER
5/9/2017
P.E.
SIGNATURE:

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

REVISIONS
PLAN REVISION 05-05-17: TYPE OF WORK CHANGED FROM STRUCTURE TO CULVERT.
PLAN REVISION 05-09-17: "RETAIN" LABEL FOR EXISTING DRIVEWAY PIPE REMOVED.

WBS: 17BP.14.R.127

CONTRACT: DN00295

09-MAY-2017 08:48
R:\Roadway\Proj\8701106_Rdy_tsh.dgn

DocuSign Envelope ID: A4D6DE60-CEA3-4D07-BAB5-6EA3425318A3

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.127	1A

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 039222 ENGINEER

DocuSigned by: 5/9/2017

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS

PLAN REVISION 05-05-17: TEMPORARY SHORING GENERAL NOTE REVISED SINCE A PAY ITEM IS NOT INCLUDED FOR THIS ITEM.
PLAN REVISION 05-05-17: CHANGED STRUCTURE PLANS TO CULVERT PLANS UNDER INDEX OF SHEETS.

INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
1B	CONVENTIONAL SYMBOLS
1C-1	SURVEY CONTROL SHEET
2A-1	PAVEMENT SCHEDULE, TYPICAL SECTIONS
3B-1	SUMMARY OF DRAINAGE QUANTITIES SUMMARY OF GUARDRAIL, EARTHWORK SUMMARY, AND ASPHALT PAVEMENT REMOVAL SUMMARY
4	PLAN AND PROFILE SHEET
TMP-1 THRU TMP-4	TRANSPORTATION MANAGEMENT PLAN
PMP-1 THRU PMP-2	PAVEMENT MARKING PLANS
EC-1 THRU EC-6	EROSION CONTROL PLANS
UO-1 THRU UO-2	UTILITIES BY OTHERS
X-1A	CROSS SECTION SUMMARY SHEET
X-1 THRU X-3	CROSS-SECTIONS
C-1 THRU C-6	CULVERT PLANS
SN	STRUCTURE STANDARD NOTES SHEET

GENERAL NOTES

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

GRADING AND SURFACING OR RESURFACING AND WIDENING:

THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. WHERE NO GRADE LINES ARE SHOWN, THE PROFILES SHOWN DENOTE THE TOP ELEVATION OF THE EXISTING PAVEMENT ALONG THE CENTER LINE OF SURVEY ON WHICH THE PROPOSED RESURFACING WILL BE PLACED. GRADE LINES MAY BE ADJUSTED BY THE ENGINEER IN ORDER TO SECURE A PROPER TIE-IN.

CLEARING:

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.

SUPERELEVATION:

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

SHOULDER CONSTRUCTION:

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

SIDE ROADS:

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

GUARDRAIL:

THE GUARDRAIL LOCATIONS SHOWN ON THE PLANS MAY BE ADJUSTED DURING CONSTRUCTION AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHOULD CONSULT WITH THE ENGINEER PRIOR TO ORDERING GUARDRAIL MATERIAL.

TEMPORARY SHORING:

SHORING REQUIRED FOR THE MAINTENANCE OF TRAFFIC NOT SHOWN ON THE PLANS WILL BE PAID FOR AS "EXTRA WORK" IN ACCORDANCE WITH SECTION 104-7.

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE

AT&T (TELEPHONE), COMPORIUM (TELEPHONE)

ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS.

RIGHT-OF-WAY MARKERS:

ALL RIGHT-OF-WAY MARKERS ON THIS PROJECT SHALL BE PLACED BY CONTRACT IN ACCORDANCE WITH SECTION 801 OF THE 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 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
DIVISION 8 - INCIDENTALS	
862.01	Guardrail Placement
862.02	Guardrail Installation

09-MAY-2017 08:49
R:\Roadway\Proj\8701106_Rdy_tsh.dgn

DocuSign Envelope ID: A4D6DE60-CEA3-4D07-BAB5-6EA3425318A3

PROJECT REFERENCE NO.	SHEET NO.
17BPJ4.RJ27	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
- Designated U/G Water Line (S.U.E.*)
- 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.

12/05/11
24-NOV-2015 10:42
R:\Roadway\Proj\17BP4RJ27_RW_20151124.dgn
$$$$USERNAME$$$$

DocuSign Envelope ID: A4D6DE60-CEA3-4D07-BAB5-6EA3425318A3

6/2/99

PROJECT REFERENCE NO.	SHEET NO.
87-0106	1C-1
Location and Surveys	

SURVEY CONTROL SHEET 87-0106
-FINAL-

BL

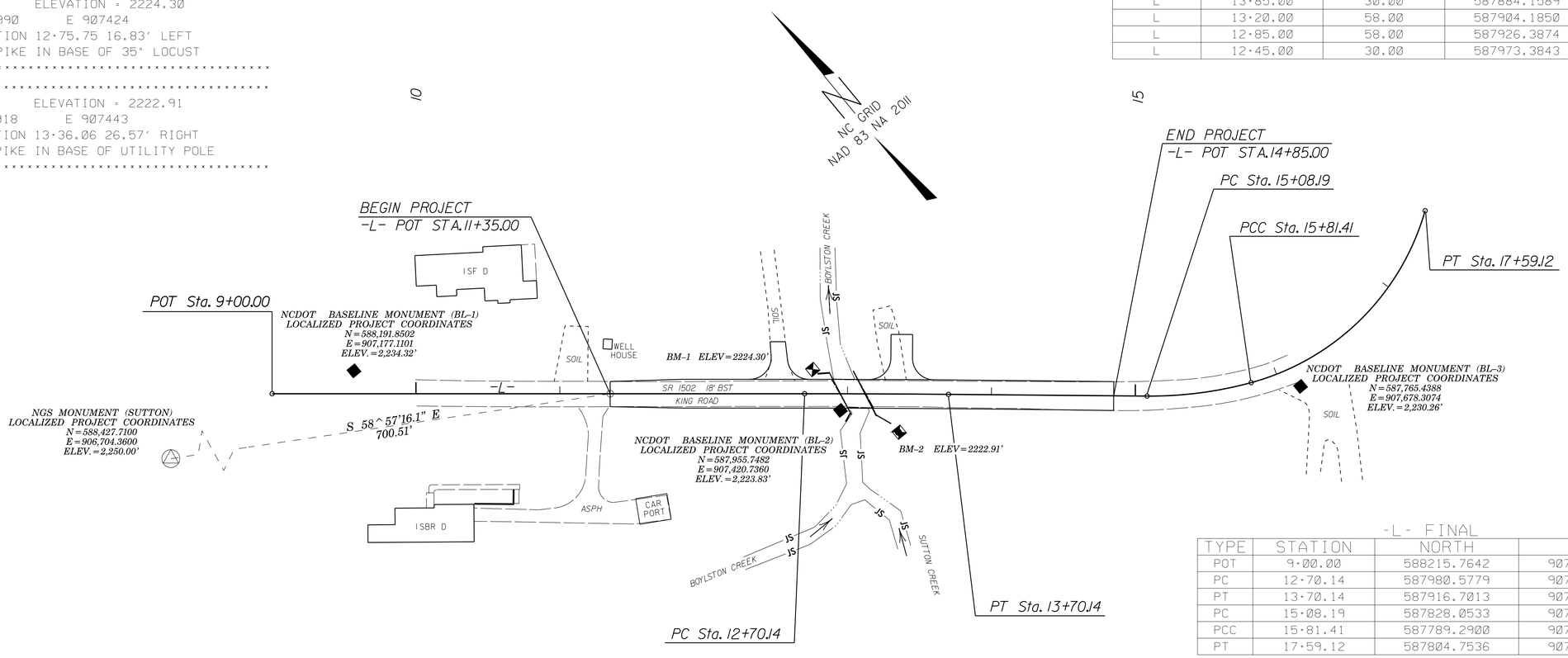
POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
1	BL-1	588191.8502	907177.1101	2234.32	9+56.93	15.87 LT
2	BL-2	587955.7482	907420.7360	2223.83	12+95.10	11.61 RT
3	BL-3	587765.4388	907678.3074	2230.26	16+11.48	14.40 RT

****
BM1 ELEVATION = 2224.30
N 587990 E 907424
L STATION 12+75.75 16.83' LEFT
R/R SPIKE IN BASE OF 35" LOCUST
****

****
BM2 ELEVATION = 2222.91
N 587918 E 907443
L STATION 13+36.06 26.57' RIGHT
R/R SPIKE IN BASE OF UTILITY POLE
****

-FINAL- ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	12+60.00	-30.00	588010.1840	907420.1111
L	12+60.00	-60.00	588033.3493	907439.1733
L	12+70.14	-60.00	588026.9063	907447.0032
L	13+18.00	-60.00	587996.2591	907484.0892
L	13+18.00	-30.00	587973.1736	907464.9305
L	13+85.00	30.00	587884.1589	907477.9468
L	13+20.00	58.00	587904.1850	907410.2627
L	12+85.00	58.00	587926.3874	907383.4358
L	12+45.00	30.00	587973.3843	907370.4041



-L- FINAL

TYPE	STATION	NORTH	EAST
POT	9+00.00	588215.7642	907123.0644
PC	12+70.14	587980.5779	907408.8761
PT	13+70.14	587916.7013	907485.8158
PC	15+08.19	587828.0533	907591.6499
PCC	15+81.41	587789.2900	907653.4940
PT	17+59.12	587804.7536	907822.7848

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NGS FOR MONUMENT "SUTTON"
WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF
NORTHING: 588427.7100(ft) EASTING: 906704.3600(ft)
ELEVATION: 2250.00(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99977021
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "SUTTON" TO -L- STATION 11+35.00 IS
S 58°57'16.1 E 700.51'
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

GEOID MODEL – G12ANC
NOTE: DRAWING NOT TO SCALE

NOTES:

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

   THE FILES TO BE FOUND ARE AS FOLLOWS:
   87-0106_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.

24-NOV-2015 10:38
R:\Roadway\Proj\87_0106_ls_1c-1.dgn
$$$$USERNAME$$$$

DocuSign Envelope ID: A4D6DE60-CEA3-4D07-BAB5-6EA3425318A3

6/2/99

PAVEMENT SCHEDULE

(FINAL PAVEMENT DESIGN)

C1	PROP. APPROX. 3″ ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1″ DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1½″ IN DEPTH.
E1	PROP. APPROX. 5½″ ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1″ DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3″ IN DEPTH OR GREATER THAN 5½″ IN DEPTH.
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	VARIABLE DEPTH ASPHALT PAVEMENT

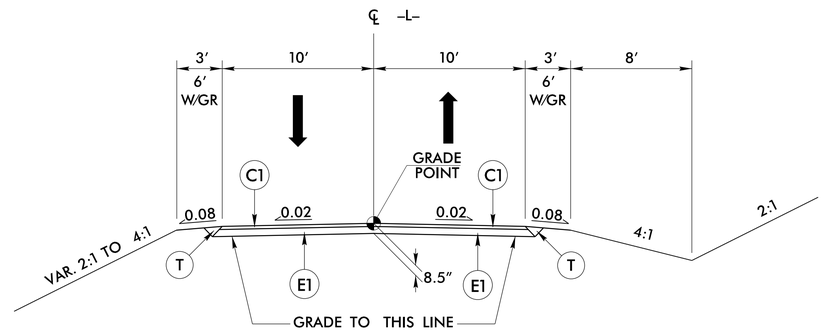
NOTE: ALL PAVEMENT SLOPES 1:1 UNLESS NOTED OTHERWISE

BRIDGE NO. 106

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.127	2A-1
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 039232 ENGINEER DREW D. MORTON 11/19/2015

RS&H

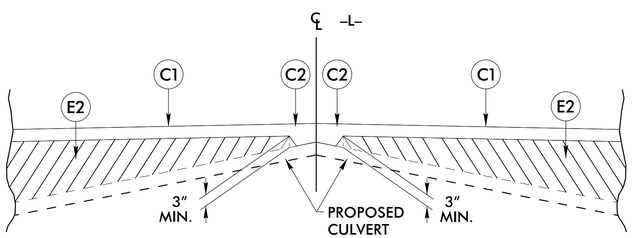


TYPICAL SECTION NO. 1

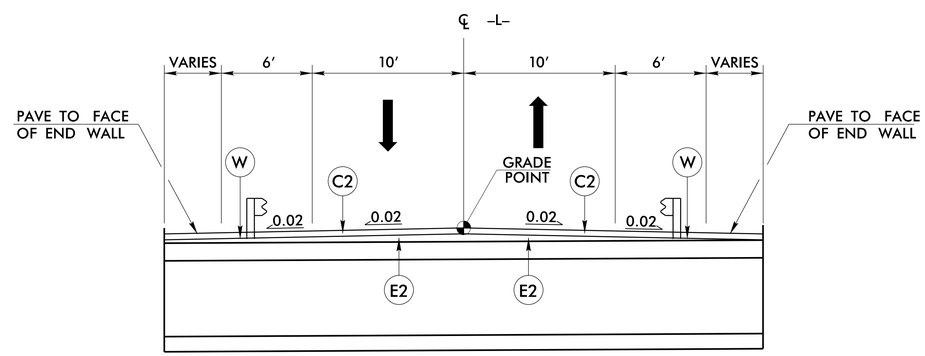
USE TYPICAL SECTION NO. 1

–L– STA. 11+35.00 TO –L– STA. 12+80.42

–L– STA. 13+07.58 TO –L– STA. 14+85.00



STANDARD WEDGING DETAIL



TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2

–L– STA. 12+80.42 TO –L– STA. 13+07.58

24-NOV-2015 10:43
R:\Roadway\Proj\B70106_Rdy_typ.dgn
$$$$USERNAME$$$$

DocuSign Envelope ID: A4D6DE60-CEA3-4D07-BAB5-6EA3425318A3

COMPUTED BY: CJY	DATE: 5-7-15
CHECKED BY: SMK	DATE: 5-11-15

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
17BPJ4.R127	3B-1

SUMMARY OF EARTHWORK

STATION	STATION	UNCL. EXCAV.	EMBANK. %	BORROW	WASTE
-L- STA. 11+35.00	-L- STA. 12+80.42(CULV)	134	30		104
-L- STA. 13+07.58(CULV)	-L- STA. 14+85.00	177	112		65
SUBTOTALS:		311	142		169
EST. 5% TO REPLACE BORROW					
GRAND TOTALS:		311	142		169
SAY:		320			

EST UNDERCUT = 50 CY CONTINGENCY
EST SELECT GRANULAR MATERIAL = 50 CY CONTINGENCY
EST FABRIC FOR SOIL STABILIZATION = 50 SY CONTINGENCY

PAVEMENT REMOVAL SUMMARY

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	YD^3
-L-	11+35.00	12+95.09	CL	312.69
-L-	13+11.98	14+85.00	CL	360.46
			TOTAL:	673.15
			SAY:	675

NOTE: APPROXIMATE QUANTITIES ONLY. UNCLASSIFIED EXCAVATION, FINE GRADING, CLEARING AND GRUBBING, AND REMOVAL OF EXISTING PAVEMENT, WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR "GRADING."

NOTE:
INVERT ELEVATIONS INDICATED 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 / SIZE / THICKNESS OR GAUGE	LOCATION (LT,RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	DRAINAGE PIPE (RCP, CSP, CAAP, HDPE, or PVC) 12"	15"	18"	24"	30"	36"	42"	48"	C.S. PIPE (UNLESS NOTED OTHRWISE) 12" .064	15" .064	18" .064	24" .064	30" .079	36" .079	42" .109	48" .109	CLASS III R.C. PIPE (UNLESS OTHERWISE NOTED) 12"	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.P.	C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES PER EACH (0' THRU 5.0')	* TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL.'B') LIN. *FT. A 5.0' THRU 10.0'	B 10.0' AND ABOVE	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G	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- STA 12+37	LT																																																40	REMOVE 12" CMP

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 TL-2	ANCHORS AT-1	IMPACT ATTENUATOR TYPE 350 EA	G	NG	SINGLE FACED GUARDRAIL	REMOVE EXISTING GUARDRAIL	REMOVE AND STOCKPILE EXISTING GUARDRAIL	REMARKS
-L-	12+25.61	13+38.19	RT.	112.50			12+84.02 (WINGWALL)		3	6	25	25	0.5	0.5	2								GUARDRAIL CALCULATED USING SUBREGIONAL TIER GUIDELINES
-L-	12+65.26	13+26.62	LT.	25.00	50.00		13+03.54 (WINGWALL)		3	6						2							GUARDRAIL REDUCED FOR DRIVEWAY ACCESS
			SUBTOTALS	137.50	50.00																		
			ANCHOR DEDUCTION	50.00	12.50																		
			TOTAL	87.50	37.50																		
			SAY	100.00	50.00																		

ANCHOR DEDUCTION
TYPE TL-2: 2 @ 25' = 50'
TYPE AT-1: 2 @ 6.25' = 12.50'
GRAND TOTAL = 62.50'
ADDITIONAL GUARDRAIL POSTS = 5

03-DEC-2015 18:48
R:\Roadway\Proj\B70106_Rdy_sum.dgn

DocuSign Envelope ID: A4D6DE60-CEA3-4D07-BAB5-6EA3425318A3

BRIDGE NO. 106

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.127	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 039222 ENGINEERING INFRASTRUCTURE ANDREW D. MORROW 8/17/2015

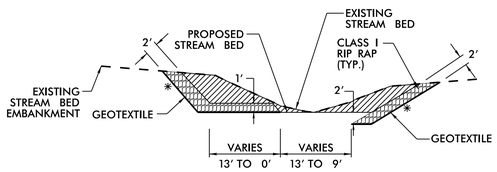
NORTH CAROLINA PROFESSIONAL SEAL 036188 ENGINEERING INFRASTRUCTURE MATT J. WEATHERSBEE 8/17/2015

NAD 83/NA 2011

RS&H

-L- CURVE DATA

PI Sta 13+20.14	PI Sta 15+45.03	PI Sta 16+79.00
△ = 0° 30' 00.0" (RT)	△ = 15° 44' 31.0" (LT)	△ = 58° 51' 15.6" (LT)
D = 0° 30' 00.0"	D = 21° 30' 00.0"	D = 33° 07' 08.2"
L = 100.00'	L = 73.22'	L = 177.71'
T = 50.00'	T = 36.84'	T = 97.59'
R = 11,459.16'	R = 266.49'	R = 173.00'
SE = NC	SE = EXIST.	SE = EXIST.



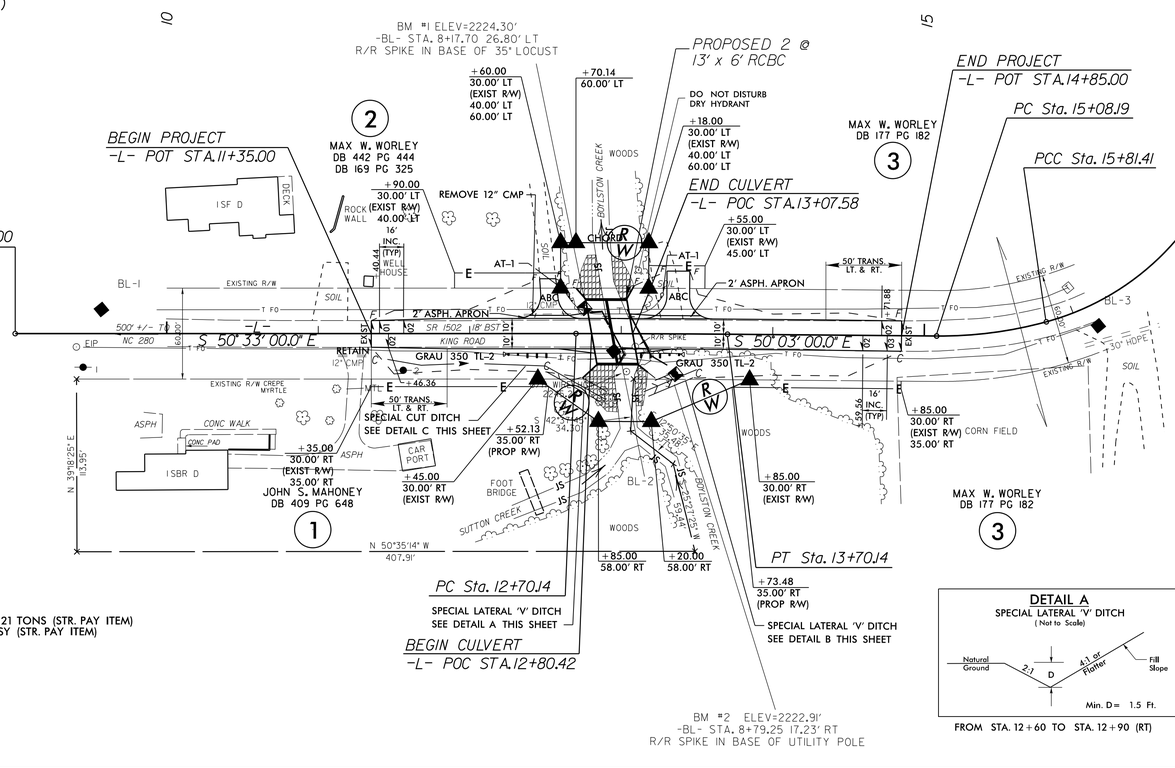
LENGTH OF RIP RAP = 30' MEASURED FROM END OF CULVERT

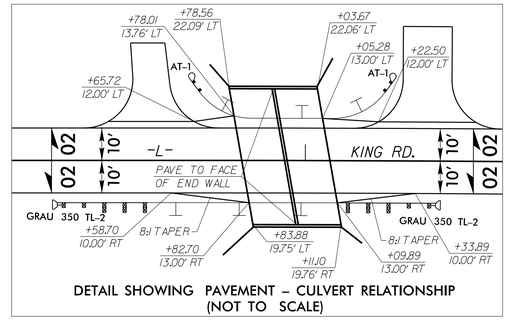
SECTION B-B

CHANNEL EXCAVATION

* SLOPE VARIES FROM 2:1 TO EXISTING

EST. CLASS I RIP RAP = 121 TONS (STR. PAY ITEM)
EST. GEOTEXTILE = 142 SY (STR. PAY ITEM)



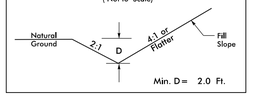


DETAIL SHOWING PAVEMENT – CULVERT RELATIONSHIP (NOT TO SCALE)

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

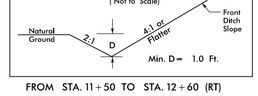
FROM STA. 12+60 TO STA. 12+90 (RT)

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



FROM STA. 13+15 TO STA. 13+50 (RT)

DETAIL C
SPECIAL CUT DITCH
(Not to Scale)



FROM STA. 11+50 TO STA. 12+60 (RT)

NOTE: 15' RADII USED AT DRIVEWAYS

FOR CULVERT PLANS, SEE SHEET C-1 THRU C-6

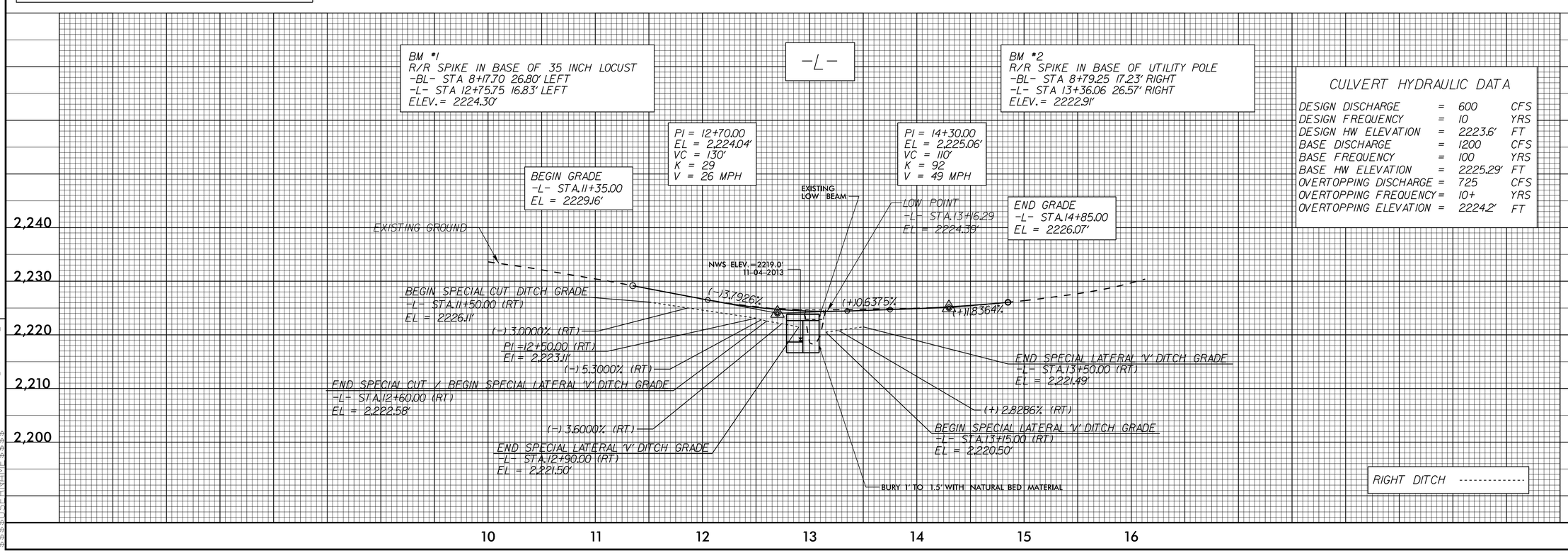
BM #1
R/R SPIKE IN BASE OF 35 INCH LOCUST
-BL- STA 8+17.70 26.80' LEFT
-L- STA 12+75.75 16.83' LEFT
ELEV.= 2224.30'

-L-

BM #2
R/R SPIKE IN BASE OF UTILITY POLE
-BL- STA 8+79.25 17.23' RIGHT
-L- STA 13+36.06 26.57' RIGHT
ELEV.= 2222.91'

CULVERT HYDRAULIC DATA

DESIGN DISCHARGE	=	600	CFS
DESIGN FREQUENCY	=	10	YRS
DESIGN HW ELEVATION	=	2223.6'	FT
BASE DISCHARGE	=	1200	CFS
BASE FREQUENCY	=	100	YRS
BASE HW ELEVATION	=	2225.29'	FT
OVERTOPPING DISCHARGE	=	725	CFS
OVERTOPPING FREQUENCY	=	10+	YRS
OVERTOPPING ELEVATION	=	2224.2'	FT



REVISIONS

8/17/99

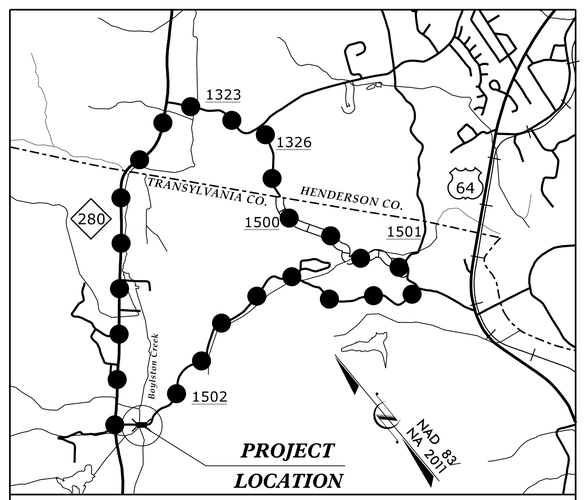
08-DEC-2015 10:11 J:\871006_Rdy_psh.dgn
$$$$USERNAME$$$$

DocuSign Envelope ID: A4D6DE60-CEA3-4D07-BAB5-6EA3425318A3

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

TRANSYLVANIA COUNTY



DETOUR

VICINITY MAP N.T.S.

LOCATION: BRIDGE N0. 870106 OVER BOYLSTON CREEK ON SR 1502 (KING ROAD)

INDEX OF SHEETS

SHEET NO.	TITLE
TMP-1	TITLE SHEET AND INDEX OF SHEETS
TMP-2	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, LEGEND AND MANAGEMENT STRATEGIES
TMP-3	GENERAL NOTES AND PHASING
TMP-4	TEMPORARY TRAFFIC CONTROL DETAIL

SHEET NO.
TMP-1

17BP.14.R.127

WBS ELEMENT:

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

STATE TRAFFIC MANAGEMENT ENGINEER

TRAFFIC CONTROL PROJECT ENGINEER

TRAFFIC CONTROL PROJECT DESIGN ENGINEER

TRAFFIC CONTROL DESIGN ENGINEER

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

RS&H

APPROVED:
DATE:

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 039222 ENGINEER
DREW D. MORROW
12/14/2015

24-NOV-2015 10:53
R:\Traffic\870106_TC_TMP.dgn
$$$$USERNAME$$$$

DocuSign Envelope ID: A4D6DE60-CEA3-4D07-BAB5-6EA3425318A3

PROJ. REFERENCE NO.	SHEET NO.
17BP.14.R.127	TMP-2

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 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
1130.01	DRUMS
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	PORTABLE CONCRETE BARRIER
1180.01	SKINNY - DRUM
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO LANE AND MULTILANE ROADWAYS
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.08	PAVEMENT MARKINGS - SYMBOLS AND WORD MESSAGES
1205.12	PAVEMENT MARKINGS - BRIDGES
1261.01	GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATORS - TYPES AND MOUNTING
1262.01	GUARDRAIL END DELINEATION

MANAGEMENT STRATEGIES

CONSTRUCTION

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

TMP DESIGN PARAMETERS

TRAFFIC WILL BE DETOURED OFF-SITE DURING THE CONSTRUCTION PERIOD.

THE OFF-SITE DETOUR WILL INCLUDE SR 1502, SR 1501, SR 1500, SR 1326, SR 1323, AND NC-280.

LEGEND

GENERAL

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

TRAFFIC CONTROL DEVICES

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

TEMPORARY PAVEMENT MARKING

NONE

TEMPORARY SIGNING

- PORTABLE SIGN
- STATIONARY SIGN
- STATIONARY OR PORTABLE SIGN

SIGNALS

- EXISTING
- PROPOSED
- TEMPORARY

PAVEMENT MARKINGS

- EXISTING LINES
- TEMPORARY LINES

PAVEMENT MARKERS

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

PAVEMENT MARKING SYMBOLS

PAVEMENT MARKING SYMBOLS

RS&H

APPROVED:_____ DATE:_____

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 038722 ENGINEER DREW D. MORRON

12/14/2015

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

LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, LEGEND AND MANAGEMENT STRATEGIES

24-NOV-2015 10:54
R:\Traffic\870106_TC_TMP.dgn
$$$$USERNAME$$$$

DocuSign Envelope ID: A4D6DE60-CEA3-4D07-BAB5-6EA3425318A3

PROJ. REFERENCE NO.	SHEET NO.
17BP.14.R.127	TMP-3

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 AS DIRECTED BY THE ENGINEER.

TRAFFIC PATTERN ALTERATIONS

A) NOTIFY THE ENGINEER ONE MONTH PRIOR TO ANY TRAFFIC PATTERN ALTERATION.

B) DRIVEWAY CONNECTIONS MUST REMAIN ACCESSIBLE AT ALL TIMES DURING CONSTRUCTION.

SIGNING

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

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

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

COVER OR REMOVE ALL SIGNS REQUIRED FOR THE OFF-SITE DETOUR WHEN THE DETOUR IS NOT IN OPERATION.

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

TRAFFIC CONTROL DEVICES

F) PLACE TYPE III BARRICADES WITH "ROAD CLOSED" SIGN R11-2 ATTACHED, OF SUFFICIENT LENGTH TO CLOSE ENTIRE ROADWAY. STAGGER OR OVERLAP BARRICADES TO ALLOW FOR INGRESS OR EGRESS.

PAVEMENT MARKINGS AND MARKERS

G) INSTALL PAVEMENT MARKINGS ON THE FINAL SURFACE AS SHOWN IN THE PAVEMENT MARKING PLAN.

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

PHASING

STEP 1: - INSTALL OFF-SITE DETOUR ROUTE SIGN ASSEMBLIES FOR THE CLOSING OF SR 1502 (KING ROAD, -L-).

- USING ROADWAY STANDARD DRAWING NO. 1101.03, SHEET 1 OF 9, CLOSE SR 1502 (KING ROAD, -L-) TO THRU TRAFFIC.

STEP 2: - REMOVE THE EXISTING STRUCTURE AND CONSTRUCT THE PROPOSED STRUCTURE AND ROADWAY UP TO AND INCLUDING THE FINAL LAYER OF SURFACE COURSE FROM -L- STATION 11+35.00+/- TO -L- STATION 14+85.00+/-.

- PLACE FINAL PAVEMENT MARKINGS FROM -L- STATION 11+35.00 +/- TO -L- STATION 14+85.00+/- (SEE CONSTRUCTION PLANS AND PMP-2).

STEP 3: - REMOVE ALL TRAFFIC CONTROL DEVICES, SIGNING AND DETOUR ROUTE SIGNING.

- OPEN TRAFFIC TO FINAL PATTERN.

RS&H

APPROVED:_____ DATE:_____

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 039222 ENGINEER DREW D. MORROW

12/14/2015

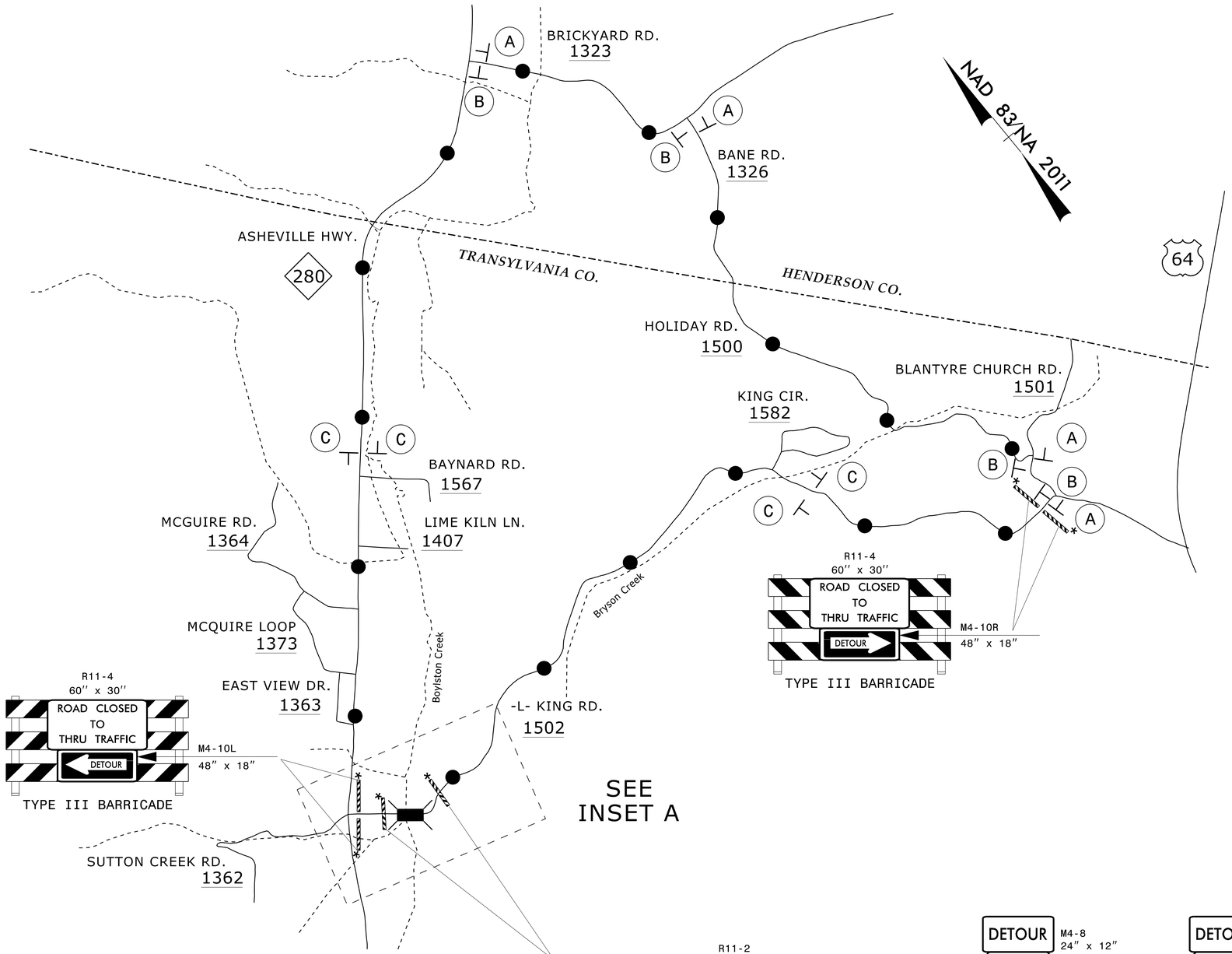
DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION WORK ZONE TRAFFIC CONTROL

GENERAL NOTES AND PHASING

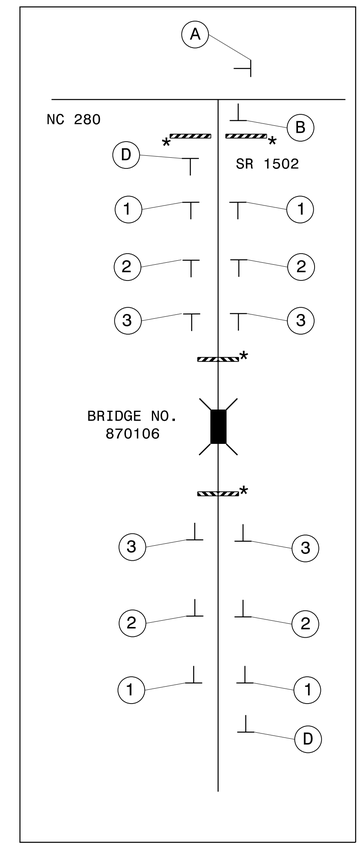
24-NOV-2015 10:54
R:\Traffic\87006_TC_TMP.dgn
$$$$USERNAME$$$$

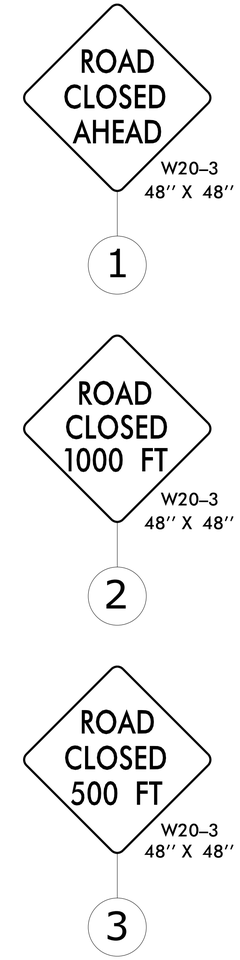
DocuSign Envelope ID: A4D6DE60-CEA3-4D07-BAB5-6EA3425318A3

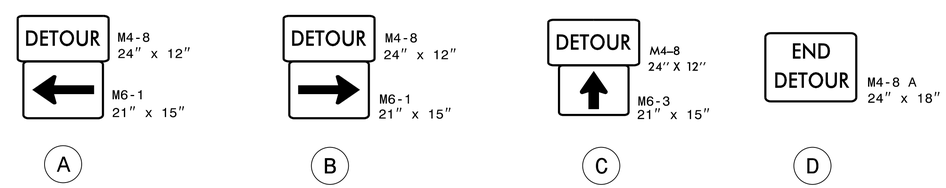
PROJ. REFERENCE NO.	SHEET NO.
17BP.14.R.127	TMP-4



INSET A







NOTES:

- ALL DETOUR SIGN LOCATIONS ARE APPROXIMATE.
- ALL DETOUR SIGNS ARE BLACK ON ORANGE UNLESS OTHERWISE NOTED.

* SEE ROADWAY STANDARD DRAWING NO. 1101.03, SHEET 1 OF 9, FOR ADDITIONAL WORK ZONE SIGNS.

DETOUR ROUTE

RS&H

APPROVED:_____ DATE:_____

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 039222 ENGINEER DREW D. MORROW 12/14/2015

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

TEMPORARY TRAFFIC CONTROL DETAIL

24-NOV-2015 10:54
R:\Traffic\870106_TC_TMP.dgn
$$$$USERNAME$$$$

DocuSign Envelope ID: A4D6DE60-CEA3-4D07-BAB5-6EA3425318A3

09/08/99

WBS: 17BP.14.R.127

CONTRACT: DN00295

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.127	PMP-1

APPROVED: _____

DATE: _____

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 039222 ENGINEER DREW D. MORROW
12/14/2015

RS&H

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKING PLAN
TRANSYLVANIA COUNTY

LOCATION: BRIDGE NO. 106 ON SR 1502 (KING ROAD) OVER BOYLSTON CREEK

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
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - 2 LANE AND MULTILANE ROADWAYS
1205.12	PAVEMENT MARKINGS - BRIDGES
1261.01	GUARDRAIL AND BARRIER DELINEATOR SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATOR TYPES
1262.01	GUARDRAIL END DELINEATION

GENERAL NOTES

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

A) INSTALL PAVEMENT MARKINGS ON THE FINAL SURFACE AS FOLLOWS:

ROAD NAME	MARKING	MARKER
SR 1502	PAINT	N/A

PLACE TWO APPLICATIONS OF PAINT PAVEMENT MARKINGS ON THE FINAL WEARING SURFACE. PLACE THE SECOND APPLICATION OF PAINT UPON SUFFICIENT DRYING TIME OF THE FIRST.

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

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

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

E) ALL EXISTING SIGNS ON WOOD & U POST WITHIN THE PROJECT LIMITS SHALL BE REMOVED AND DISPOSED OF UNLESS OTHERWISE NOTED ON PLANS.

PAVEMENT MARKING SCHEDULE
BRIDGE NO. 870106

FINAL
PAVEMENT MARKINGS

PA	WHITE EDGELINE	PAINT (4")
PI	YELLOW DOUBLE CENTER	PAINT (4")

PLAN PREPARED BY: RS&H ARCHITECT-ENGINEERS-PLANNERS, INC.

JENNIFER FARINO, PE — PROJECT ENGINEER

DREW MORROW, PE — PROJECT DESIGN ENGINEER

INDEX

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

24-NOV-2015 10:52
R:\Traffic\870106_Sgn_PMP.dgn
$$$$USERNAME$$$$

DocuSign Envelope ID: A4D6DE60-CEA3-4D07-BAB5-6EA3425318A3

8/17/99

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.127	PMP-2
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	

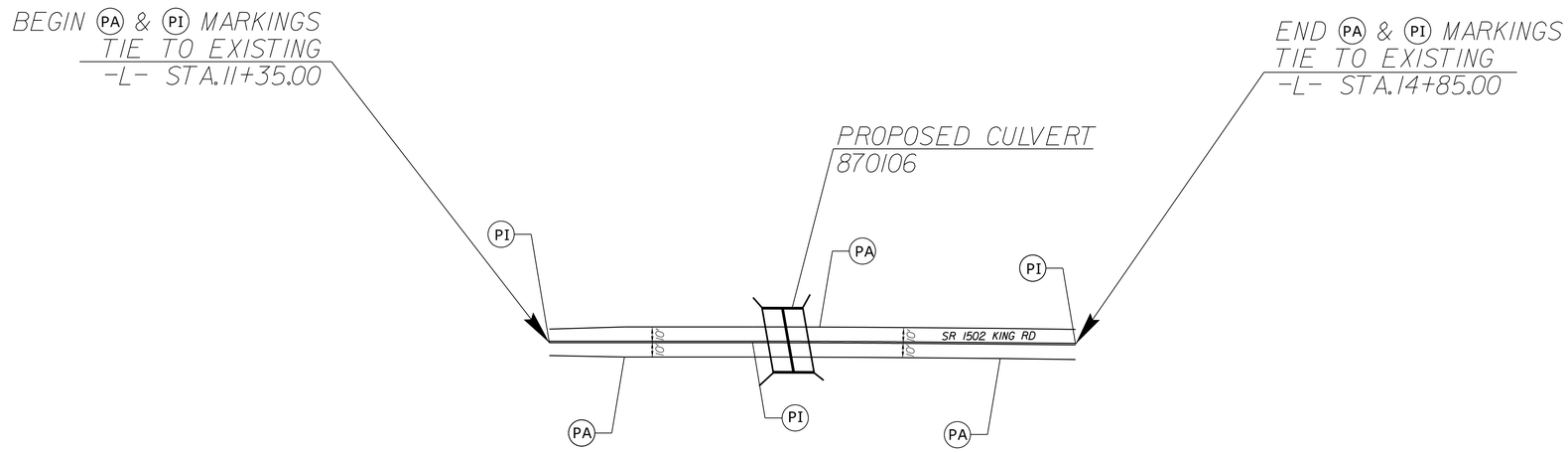
NORTH CAROLINA PROFESSIONAL SEAL 039282 ENGINEER DREW D. MORROW 2015

DocuSign Envelope ID:

RS&H

SYMBOL AND PAVEMENT MARKING LEGEND

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



PAVEMENT MARKING DETAIL

08-DEC-2015 13:18
R:\Traffic\870106_Sgn_PMP.dgn

DocuSign Envelope ID: A4D6DE60-CEA3-4D07-BAB5-6EA3425318A3

WBS: 17BP.14.R.127

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.14.R.127	EC-1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
17BP.14.R.127	N/A	PE
17BP.14.R.127	N/A	ROW, UTL
17BP.14.R.127	N/A	CONST

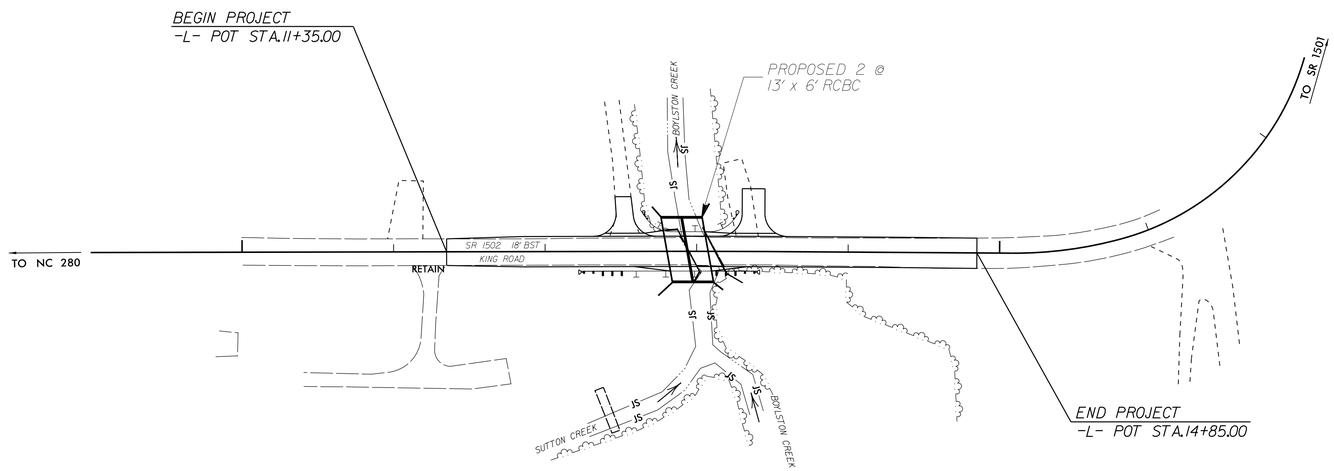
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL

TRANSYLVANIA COUNTY

LOCATION: BRIDGE #106 ON SR 1502 (KING ROAD) OVER BOYLSTON CREEK

TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURE



EROSION AND SEDIMENT CONTROL MEASURES

Std. #	Description	Symbol
1630.03	Temporary Silt Ditch	TSD
1630.05	Temporary Diversion	TD
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	
1622.01	Temporary Berms and Slope Drains	
1630.02	Silt Basin Type B	
1633.01	Temporary Rock Silt Check Type-A	
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	
1633.02	Temporary Rock Silt Check Type-B	
	Wattle/ Coir Fiber Wattle	EW CFW
	Wattle/ Coir Fiber Wattle with Polyacrylamide (PAM)	
1634.01	Temporary Rock Sediment Dam Type-A	
1634.02	Temporary Rock Sediment Dam Type-B	
1635.01	Rock Pipe Inlet Sediment Trap Type-A	
1635.02	Rock Pipe Inlet Sediment Trap Type-B	
1630.04	Stilling Basin	
1630.06	Special Stilling Basin	
	Rock Inlet Sediment Trap:	
1632.01	Type A	A
1632.02	Type B	B
1632.03	Type C	C
	Skimmer Basin	
	Tiered Skimmer Basin	
	Infiltration Basin	

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

THIS PROJECT HAS BEEN DESIGNED TO SENSITIVE WATERSHED STANDARDS.

ENVIRONMENTALLY SENSITIVE AREA(S) EXIST ON THIS PROJECT

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

GRAPHIC SCALE

25 0 50

PLANS

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:

RS&H

1520 SOUTH BOULEVARD, SUITE 200
CHARLOTTE, NC 28203
704-752-0610

2012 STANDARD SPECIFICATIONS

Designed by:

Will Weathersbee, P.E. ***3161***

NAME *LEVEL III CERTIFICATION NO.*

Reviewed in the Office of:

ROADSIDE ENVIRONMENTAL UNIT

1 South Wilmington St.
Raleigh, NC 27611

2012 STANDARD SPECIFICATIONS

Reviewed by:

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		

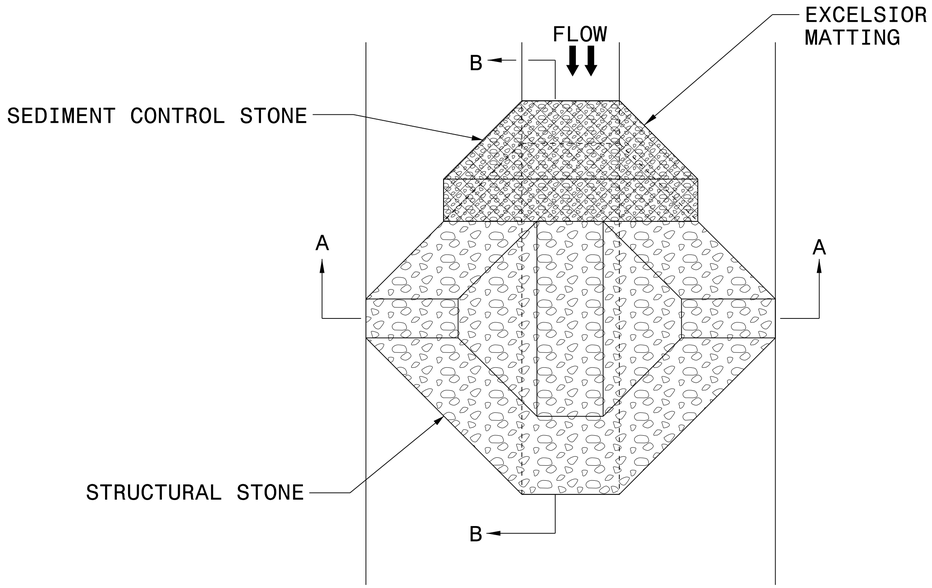
24-NOV-2015 10:22
R:\Hydraulics\Design\870106_EC_tsh.dgn
$$$$USERNAME$$$$

DocuSign Envelope ID: A4D6DE60-CEA3-4D07-BAB5-6EA3425318A3

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.127	EC-2

RS&H

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



PLAN

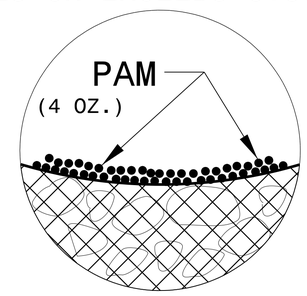
NOTES:

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

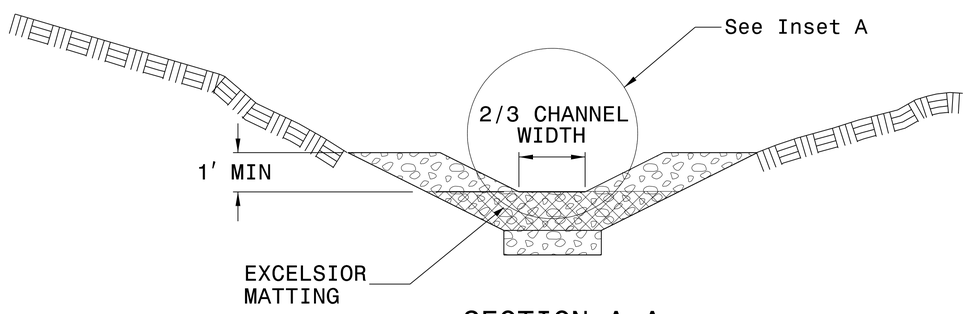
USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

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

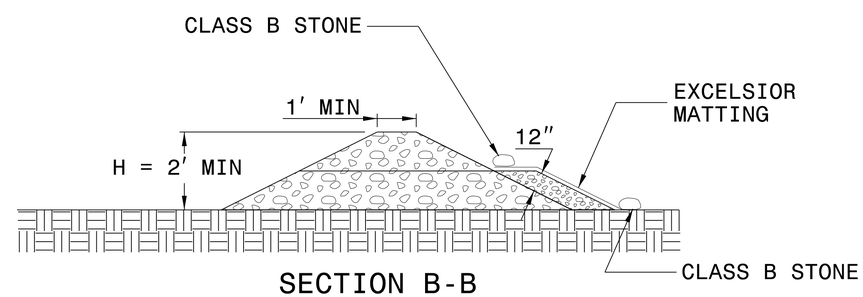
INITIALLY APPLY 4 OUNCES OF POLYACRYLAMIDE (PAM) TO TOP OF MATTING SECTION AND AFTER EVERY RAINFALL EVENT THAT EQUALS OR EXCEEDS 0.50 INCHES.



INSET A



SECTION A-A



SECTION B-B

NOT TO SCALE

24-NOV-2015 10:24
R:\Projects\Design\870106_EC_tsh.dgn
$$$$USERNAME$$$$

DocuSign Envelope ID: A4D6DE60-CEA3-4D07-BAB5-6EA3425318A3

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.127	EC-3

RS&H

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.

24-NOV-2015 10:24
R:\Hydraulics\Hydraulic Design\B70106_EC_tsh.dgn
$$$$USERNAME$$$$

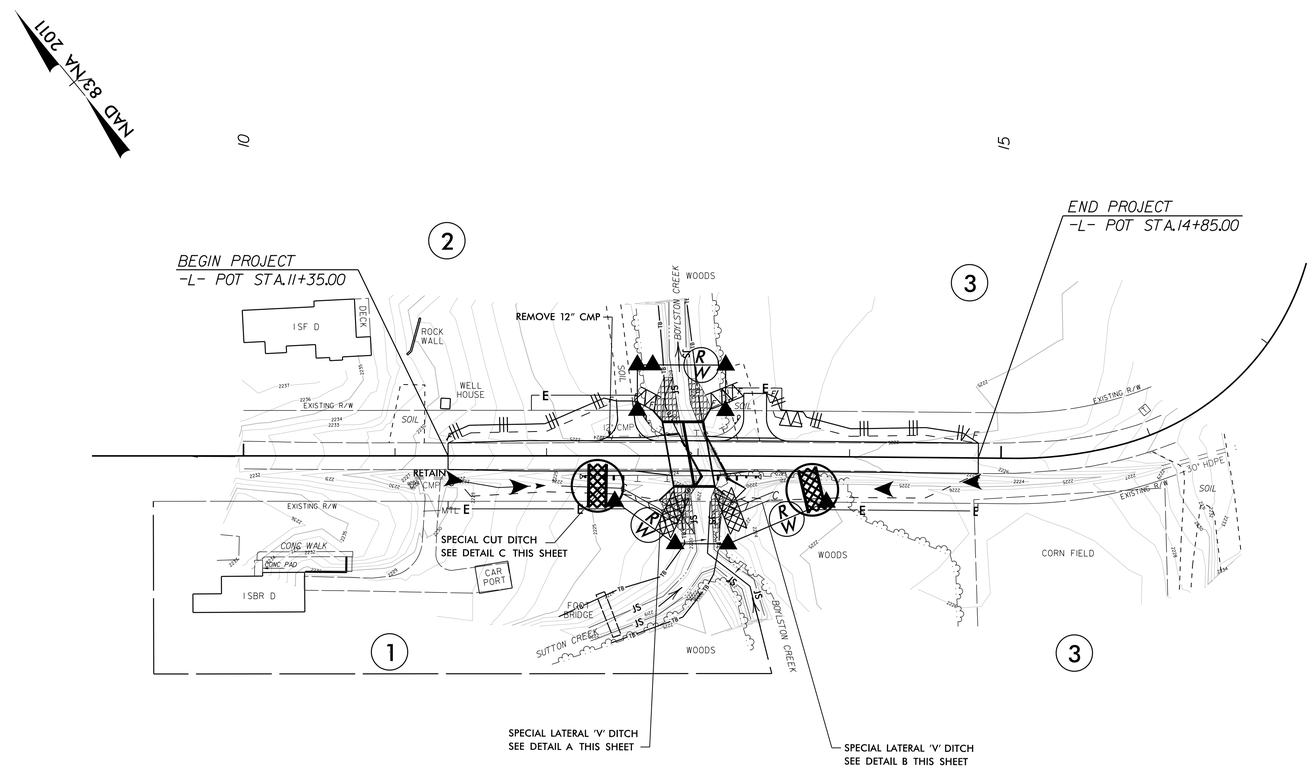
DocuSign Envelope ID: A4D6DE60-CEA3-4D07-BAB5-6EA3425318A3

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.127	EC-4/CONST.4

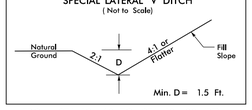
RS&H

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

NOTE:
UTILIZE SPECIAL STILLING BASIN AS STILLING BASIN WHERE APPLICABLE.

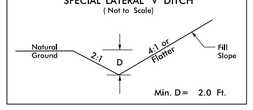


DETAIL A
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



FROM STA. 12+60 TO STA. 12+90 (RT)

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



FROM STA. 13+15 TO STA. 13+50 (RT)

DETAIL C
SPECIAL CUT DITCH
(Not to Scale)

FROM STA. 11+50 TO STA. 12+60 (RT)

24-NOV-2015 10:33
R:\Projects\8170106_EC\Design\8170106_EC_dsn_4.dgn
$$$$USERNAME$$$$

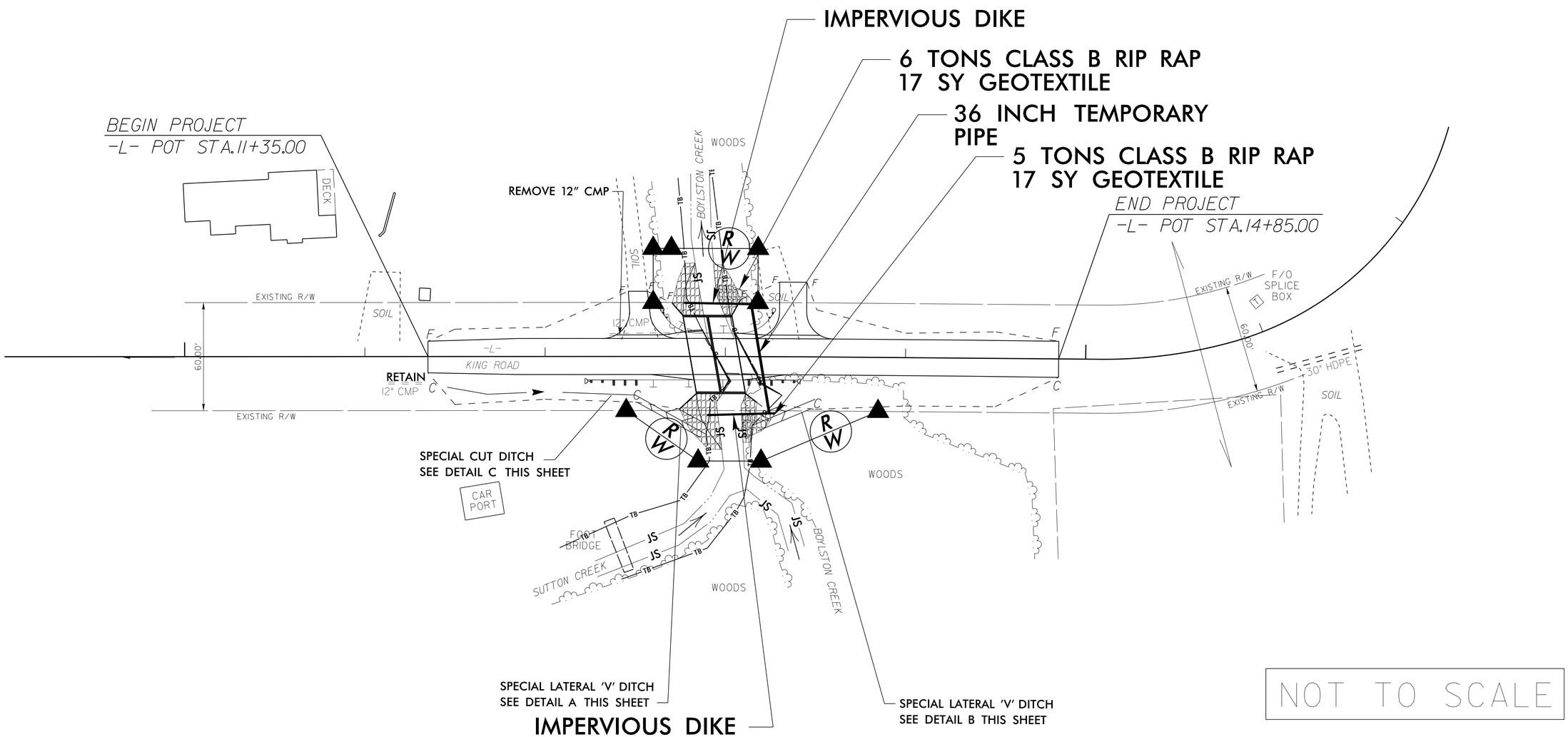
DocuSign Envelope ID: A4D6DE60-CEA3-4D07-BAB5-6EA3425318A3

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.127	EC-5

RS&H

CULVERT CONSTRUCTION SEQUENCE –L– STA. 12 + 94

1. UTILIZE SPECIAL STILLING BASIN(S) AS NEEDED THROUGHOUT CULVERT CONSTRUCTION.
2. CONSTRUCT IMPERVIOUS DIKES AND INSTALL 36 INCH TEMPORARY PIPE, DIVERTING FLOW THROUGH THE TEMPORARY PIPE.
3. CONSTRUCT PROPOSED CULVERT AND INLET/OUTLET CHANNEL IMPROVEMENTS.
4. REMOVE IMPERVIOUS DIKES AND TEMPORARY PIPE. DIVERT FLOW THROUGH CULVERT.
5. COMPLETE ROADWAY.



24-NOV-2015 10:35
R:\Civil\Proj\17BP14R127\Design\B70106_EC_dsn_5.dgn
$$$$USERNAME$$$$

DocuSign Envelope ID: A4D6DE60-CEA3-4D07-BAB5-6EA3425318A3

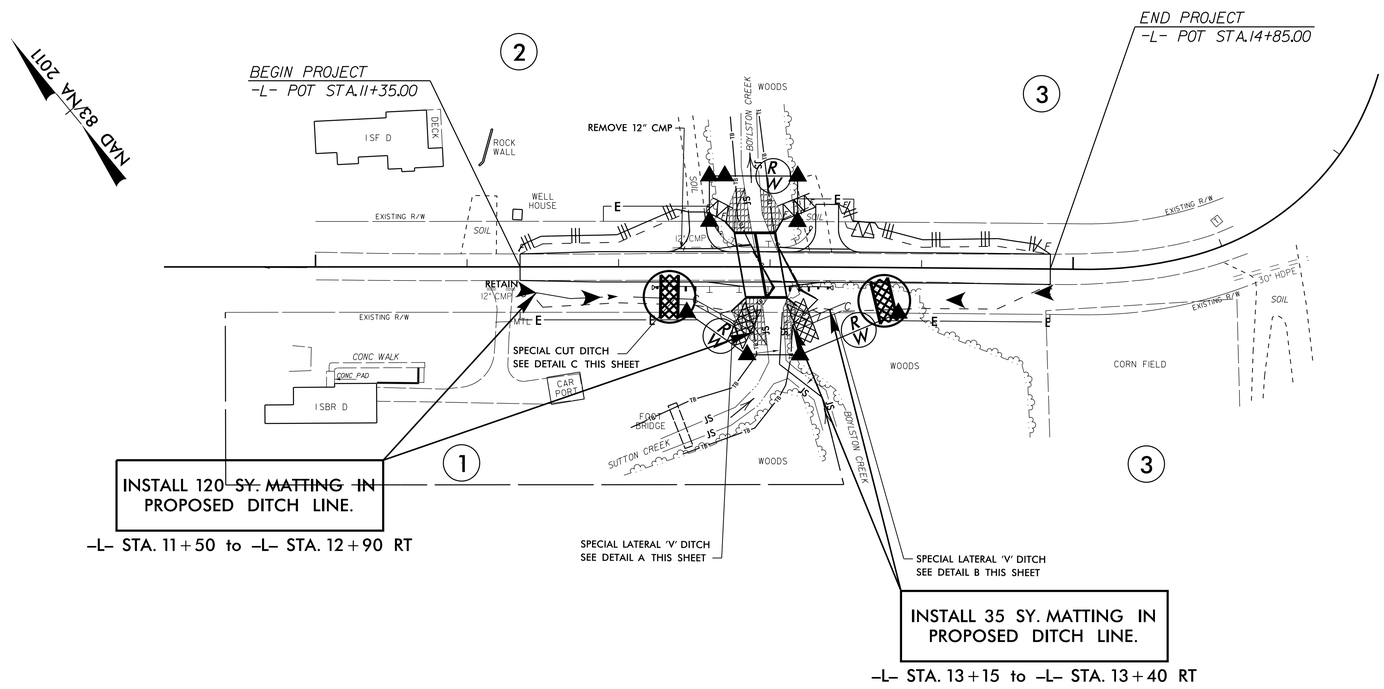
PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.127	EC-6/CONST.4

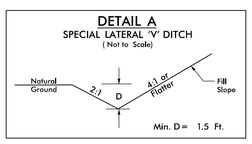
RS&H

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

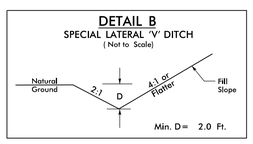
NOTE:
UTILIZE SPECIAL STILLING BASIN AS STILLING BASIN WHERE APPLICABLE.

15

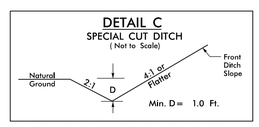




FROM STA. 12+60 TO STA. 12+90 (RT)



FROM STA. 13+15 TO STA. 13+50 (RT)



FROM STA. 11+50 TO STA. 12+60 (RT)

NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED BY THE ENGINEER.

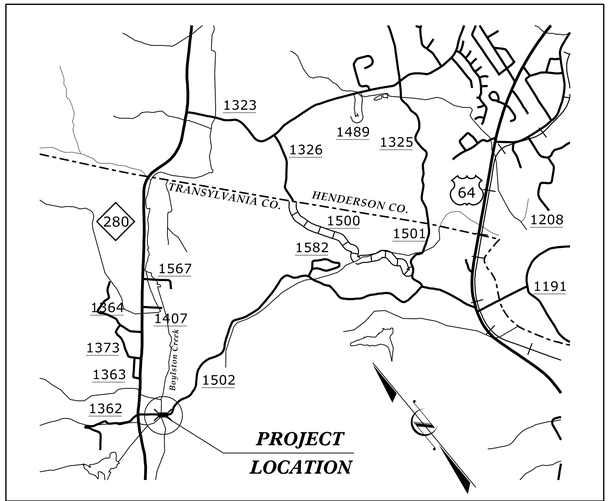
24-NOV-2015 10:37
R:\Environmental\Design\8701106_EC_dsn_6.dgn
$$$$USERNAME$$$$

DocuSign Envelope ID: A4D6DE60-CEA3-4D07-BAB5-6EA3425318A3

3/18/14

WBS ELEMENT: 17BP.14.R.127

CONTRACT: DN00295



VICINITY MAP

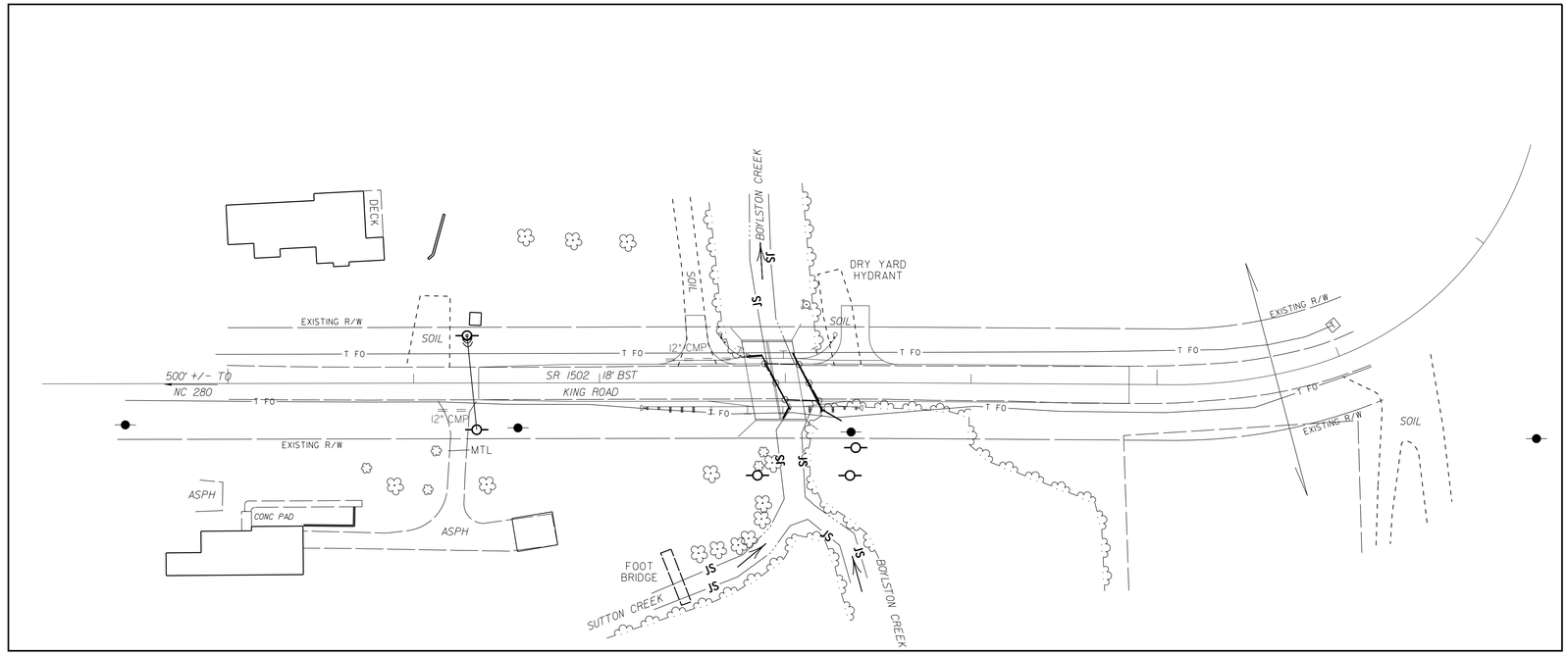
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.127	UO–1

UTILITIES BY OTHERS PLANS
TRANSYLVANIA COUNTY

LOCATION: BRIDGE #106 ON SR 1502 (KING ROAD) OVER BOYLSTON CREEK

TYPE OF WORK: AERIAL TELEPHONE AND BURIED FIBER OPTIC



GRAPHIC SCALES

30 15 0 30 60

PLANS

INDEX OF SHEETS

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

UTILITY OWNERS ON PROJECT

(1) TELEPHONE – AT&T

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

PLANS PREPARED BY:

RS&H

1520 SOUTH BOULEVARD, SUITE 200 CHARLOTTE, NC 28203 704–752–0610

PREPARED FOR THE OFFICE OF:

DIVISION OF HIGHWAYS UTILITIES ENGINEERING SECTION

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

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

Drew Morrow, P.E. — *UTILITIES PROJECT DESIGNER*

24-NOV-2015 10:58
R:\Utilities\Proj\Trans 106 UO-1.dgn
$$$$USERNAME$$$$

DocuSign Envelope ID: A4D6DE60-CEA3-4D07-BAB5-6EA3425318A3

3/13/14

WBS ELEMENT: 17BP.14.R.127

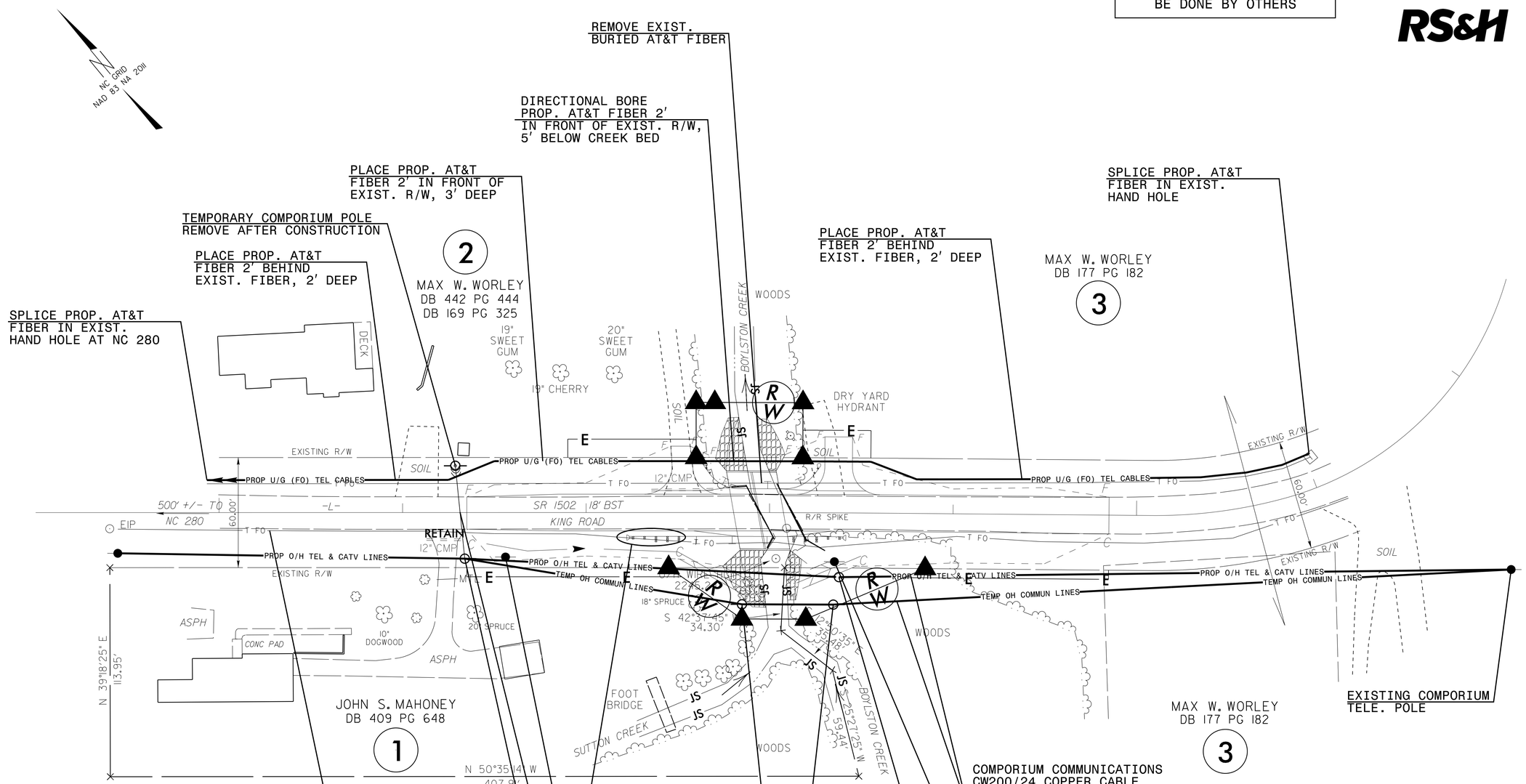
CONTRACT: DN00295

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

PROJECT REFERENCE NO.	SHEET NO.
17BP.14.R.127	UO-2

UTILITIES BY OTHERS

RS&H



COMPORIUM WILL SECURE ALL TEMPORARY AERIAL EASEMENTS FOR CONSTRUCTION.

24-NOV-2015 10:59
R:\17BP.14.R.127_UO_Proj\Trans 106 UO-2.dgn
$$$$USERNAME$$$$